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July 15, 2020

Ref: 12970.00/14424.00

Sudbury Planning Board
Flynn Building
278 Old Sudbury Road
Sudbury, MA 01776

Re: Sudbury Stormwater Bylaw Permit Application
Sudbury-Hudson Transmission Reliability and Mass Central Rail Trail Project

Dear Members of the Sudbury Planning Board,

The Applicants, NSTAR d/b/a Eversource Energy ("Eversource") and the Massachusetts Department of Conservation and Recreation ("DCR"), are proposing installation of Eversource's 115-kilovolt ("kV") underground transmission line and construction of a portion of DCR's Mass Central Rail Trail ("MCRT"). The Project in Sudbury is approximately 4.3 miles long and is located primarily within the MBTA right-of-way, as well as within approximately 150-foot-long portion of the Eversource driveway to the Sudbury Substation and within the Sudbury Substation itself. It is important to note that the Project is currently undergoing a review by the Sudbury Conservation Commission, their agent, and their peer reviewer (BETA Group), including review of the proposed stormwater management.

Under Section 5C of the Sudbury Stormwater Management Bylaw, a Stormwater Management Permit ("SMP") is required from the Planning Board, or its designee, for the Project. On behalf of Eversource and DCR, we respectfully request that the Planning Board issue a Stormwater Management Permit for the Project. In accordance with Section 7.0B of the Sudbury Stormwater Management Bylaw Regulations and based on an April 21, 2020, phone call and an April 23, 2020, email exchange with Ms. Beth Suedmeyer, the following information is enclosed for review:

- Town of Sudbury Application for Stormwater Management Permit Major application form, signed by Eversource and DCR as the applicants and the MBTA as the property owner;
- List of abutters within 300' of the Project Site that was certified by the Town of Sudbury;
- Check No. 360264 made out to the Town of Sudbury for $525 for the permit application fee ($500) and legal notice ($25);
- Check No. 360263 made out to the Town of Sudbury for $2,000 to be put into an escrow account for a peer review, if necessary;

Engineers | Scientists | Planners | Designers

101 Walnut Street
PO Box 9151
Watertown, Massachusetts 02471
P 617.924.1770
F 617.924.2286

- Two copies of the Stormwater Management Report and Operations and Maintenance Plan with all supporting calculations and documentation;
- Four copies of the Stormwater Management Report narrative and Operations and Maintenance Plan without the calculations;
- One full sized set (24x36) of the Eversource and DCR plans, which includes the erosion and sediment controls (all sheets);
- Two 11x17 sets of the Eversource and DCR plans, which includes the erosion and sediment controls (all sheets);
- Four 11x17 sets of the Eversource and DCR plans, which includes the erosion and sediment controls (construction plans and erosion control details only)

Should you have any questions concerning this submittal or require additional information, please contact Katie Kinsella at 617.607.2157 or kkinsella@vhb.com, or Gene Crouch at 617.607.2783 or gcrouch@vhb.com.

Sincerely,

Katie Kinsella and Gene Crouch

CC: Denise Bartone – Eversource
Paul Jahnige - DCR

Date Submitted: _____
Date Approved: _____

Permit #: _____

TOWN OF SUDBURY
APPLICATION FOR
STORMWATER MANAGEMENT PERMIT
Major

Project / Site Information

Project / Site Name: Sudbury-Hudson Transmission Reliability and Mass Central Rail Trail Project
Project Street / Location: 183 Boston Post Road (Sudbury Substation)
Assessor's Map: K10 Parcel(s): 0014
Plan Prepared by: VHB (Eversource [ES] Plans) / VHB (DCR Plans) Date of Plan: 3/5/20 (ES) 3/4/20 (DCR)

	Applicant	Owner (if different from applicant)	Contractor
Name:	See attached	MBTA	N/A
Address:		10 Park Plaza, Boston, MA 02116	
Phone:			
E-Mail:			
Fax:			

Project Description/Features: (check all that apply)

- o Single family Dwelling
- o Multi Family Development: # of Units_____
- o New Commercial/Industrial Site Plan
- o Re-grading or Land Disturbance
- ● Other Recreation
- o Subdivision: # of Lots _____
- o Redevelopment Site Plan

Total Lot Area: 2,367,103 SF/54.4 Ac Includes MBTA ROW and Sudbury Substation Parcel
Estimated Area to be Disturbed (ft²): 643,985 SF/14.8 Ac

Total Area of Impervious Surfaces: (paved, parking, roofs, decks, etc.) (ft²):	Existing	Proposed
	485 SF	22,7041 SF

Existing Project Site includes the following features:

- o Detention Pond
- o Sub-surface Detention / Infiltration
- o Roof drains discharging overland
- o Perimeter drain
- o Connection to municipal storm drainage system
- o Illicit stormwater connection
- ● Slopes greater than 10% Square Feet Disturbed: 310 SF
- ● Slopes greater than 15% Square Feet Disturbed: 37,620 SF
- ● Slopes greater than 20% Square Feet Disturbed: 183,480 SF

Other Jurisdictions:

- ☑ Wetlands Protection Act / Conservation Commission Jurisdiction
- ☑ Rivers Act / Conservation Commission Jurisdiction
- ☐ Board of Health permit
- ☐ Site Plan Review
- ☐ Planning Board WRPD permit
- ☑ Earth Removal Board
- ☐ Driveway Permit
- ☑ Trench Permit

Certification

I hereby certify that I have reviewed the permit conditions listed above, and the information contained herein, including all attachments, is true, accurate and complete to the best of my knowledge. Further, I grant the Town of Sudbury Planning Board and its authorized agents permission to enter the property to review this application and make inspections during and after construction.

Applicant	Date
Holly Palmgren, MBTA	5/20/20
Owner	Date

Application Requirements

1. The application submitted to the Town of Sudbury Planning Board must include the following:
   - ☑ Completed & Signed Stormwater Management Permit Application
   - ☑ Non-Refundable Permit Review and Inspection Fee
   - ☑ Eighteen (18) complete copies of the completed application with reduced size plans, 11 x 17, and 5 additional full size plans, PDF, Stormwater Management Plan, Erosion & Sediment Control Plan, prepared by a professional engineer licensed by the Commonwealth of Massachusetts, and including the minimum documentation listed in the Town of Sudbury Stormwater Management Bylaw and Regulations for more information.

2. Submit completed application and submission materials to:

   Planning and Community Development Dept.
   Flynn Building
   278 Old Sudbury Road
   Sudbury, MA 01776
   (978)639-3387

Other Jurisdictions:

- ☑ Wetlands Protection Act / Conservation Commission Jurisdiction
- ☑ Rivers Act / Conservation Commission Jurisdiction
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Applicant _____ Date 6/16/20

Owner _____ Date _____

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_____	7/13/2020
Applicant	Date
_____	_____
Owner	Date

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360264

VANASSE HANGEN BRUSTLIN, INC.
101 WALNUT STREET • PO BOX 9151
WATERTOWN, MASSACHUSETTS 02471

CITIZENS BANK
MASSACHUSETTS
5-7017/2110

CHECK DATE

May 13, 2020

Five Hundred Twenty Five and 00/100

AMOUNT

$525.00

Town of Sudbury
278 Old Sudbury Road
Sudbury, MA 01776

AUTHORIZED SIGNATURE

Security Check features included. Details on back.

⑈360264⑈ ⑆211070175⑆ 113016137⑈

VANASSE HANGEN BRUSTLIN, INC.
101 WALNUT STREET • PO BOX 9151
WATERTOWN, MASSACHUSETTS 02471

360264

Check Date: 5/13/2020

Invoice Number	Date	Voucher	Amount	Discounts	Previous Pay	Net Amount
Viviam Kimball 5/1/2	5/1/2020	0092205	$525.00			$525.00
Town of Sudbury		TOTAL	$525.00			$525.00
Citizens	84	0012245				

360263

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Two Thousand and 00/100

AMOUNT

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Town of Sudbury
278 Old Sudbury Road
Sudbury, MA 01776

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Check Date: 5/13/2020

Invoice Number	Date	Voucher	Amount	Discounts	Previous Pay	Net Amount
Vivian Kimball 5/1	5/1/2020	0092204	$2,000.00			$2,000.00
Town of Sudbury		TOTAL	$2,000.00			$2,000.00
Citizens	83	0012245				

K08-0075	22-23 UNION AVENUE LLC		22 UNION AVE		SUDBURY	MA	01776	74578-206	22 UNION AVE
K08-0091	22-23 UNION AVENUE LLC		22 UNION AVE		SUDBURY	MA	01776	74578-206	23 UNION AVE
K09-0059-0-3A3	323 BOSTON POST ROAD REALTY LL		323 BOSTON POST RD STE 3A		SUDBURY	MA	01776	54747-347	323 BOSTON POST RD UNIT A
K09-0059-0-3B3	323 BOSTON POST ROAD REALTY LL		323 BOSTON POST RD STE 3A		SUDBURY	MA	01776	54747-347	323 BOSTON POST RD UNIT B
K08-0025	4 MAPLE LLC		10 MAPLE AVE		SUDBURY	MA	01776	48138-37	4 MAPLE AVE
K08-0081	400 BOSTON POST ROAD LLC		400 BOSTON POST RD		SUDBURY	MA	01776	58595-278	400 BOSTON POST RD
K08-0020-0-701	AARONSON BURTON C & MAXINE		35 MAPLE AVE	UNIT 701	SUDBURY	MA	01776	56656-68	35 MAPLE AVE UNIT 701
K07-0024-0-108	ABRAHAM CATHERINE M		22 FARMSTEAD LN UNIT 108		SUDBURY	MA	01776		
J06-0312	ADMV MANAGEMENT LLC		29 STONEBROOK RD		SUDBURY	MA	01776	68729-520	29 STONEBROOK RD
K07-0024-0-020	AGRAWAL SATISH C & ALKA		21 FARMSTEAD LN		SUDBURY	MA	01776	72588-284	21 FARMSTEAD LN
K09-0072	AINSWORTH MARCUS T		44 MAPLE AVE		SUDBURY	MA	01776	74155-522	44 MAPLE AVE
H04-0727	AKISIK OMER & MAUREEN		34 AMANDA RD		SUDBURY	MA	01776	1502-142	34 AMANDA RD
K07-0024-0-402	AKMAEVA NATALIA I		22 FARMSTEAD LN UNIT 402		SUDBURY	MA	01776		
K10-0018-0-02	ALEXANDER SUSAN E	TRUSTEE OF SUSAN E ALEXANDER	192 BOSTON POST RD UNIT 2		SUDBURY	MA	01776	70763-159	192 BOSTON POST RD UNIT 02
K09-0059-0-2A1	ANDERSON ROBERT M TRS	RMA REALTY TRUST	321 BOSTON POST RD		SUDBURY	MA	01776	27130-457	321 BOSTON POST RD UNIT A
K09-0059-0-2B1	ANDERSON ROBERT M TRS	RMA REALTY TRUST	321 BOSTON POST RD		SUDBURY	MA	01776	27130-457	321 BOSTON POST RD UNIT B
K08-0013	APOSTLE THOMAS C		P.O. BOX 74914		LOS ANGELES	CA	90004	72753-517	395 BOSTON POST RD
J06-0327	APPLEBY BRENDA & WILLIAMS FRED ERIC		14 STONEBROOK RD		SUDBURY	MA	01776	30713-186	14 STONEBROOK RD
K09-0059-0-35	ARCH PROPERTY GROUP LLC		3 BROOKSIDE FARM LN		SUDBURY	MA	01776	71127-430	325 BOSTON POST RD

K09-0063	ARCURI JOSEPH & ANNETTE		271 BOSTON POST RD		SUDBURY	MA	01776	46946-394	BOSTON POST RD
K09-0066	ARCURI JOSEPH & ANNETTE		271 BOSTON POST RD		SUDBURY	MA	01776	46946-394	271 BOSTON POST RD
K10-0038	ARCURI JOSEPH & ANNETTE		271 BOSTON POST RD		SUDBURY	MA	01776	46946-394	BOSTON POST RD
K09-0061	ARNHEIM DAVID L & MERRILL JANE		303 BOSTON POST RD		SUDBURY	MA	01776	64906-592	303 BOSTON POST RD
J05-0330	ARTHUR DOUGLAS R & JOYCE E		229 PEAKHAM RD		SUDBURY	MA	01776	50465-22	229 PEAKHAM RD
K07-0024-0-008	ASCIONE ARLENE R	TRUSTEE OF ARLENE R ASCIONE	16 FARMSTEAD LN		SUDBURY	MA	01776	72691-286	16 FARMSTEAD LN
K07-0024-0-003	BALL JUDITH BARNES &	COSTA MANUEL JOSEPH	6 FARMSTEAD LN		SUDBURY	MA	01776	71445-395	6 FARMSTEAD LN
K10-0405	BALZOTTI CAESAR J		P O BOX 347		WAKEFIELD	MA	01880	16276-67	BOSTON POST RD
J05-0353	BARHYDT BROOKS C & ANDREA C		19 COLBURN CIR		SUDBURY	MA	01776	73022-117	19 COLBURN CIR
J05-0357	BASKARACA SEMA & CENK		71 ROBERT BEST RD		SUDBURY	MA	01776	69828-267	71 ROBERT BEST RD
K09-0065	BAZILE CASTERA		275 BOSTON POST RD		SUDBURY	MA	01776	65607-565	275 BOSTON POST RD
J05-0332	BAZIN FREDERIQUE		98 ROBERT BEST RD		SUDBURY	MA	01776	73001-133	98 ROBERT BEST RD
J06-0124	BENDER JOHN & ROSELLA		63 JARMAN RD		SUDBURY	MA	01776	177764	63 JARMAN RD
K10-0020	BENDORIS K EILEEN TRS	BOSTON POST REALTY TRUST	214 BOSTON POST RD		SUDBURY	MA	01776	181833	214 BOSTON POST RD
K09-0075	BERARDINO RICHARD		54 MAPLE AVE		SUDBURY	MA	01776	57829-68	54 MAPLE AVE
J06-0309	BERRY MATTHEW DANIEL &	SANTANGELO LUCY CARDEN	47 STONEBROOK RD		SUDBURY	MA	01776	71371-475	47 STONEBROOK RD
K07-0024-0-204	BHAN KRISHEN K & LILA		22 FARMSTEAD LN UNIT 204		SUDBURY	MA	01776		
J05-0358	BILLIG RICHARD LEE & MARTHA	THERESA C0-TRUSTEES BILLIG	79 ROBERT BEST RD		SUDBURY	MA	01776	72738-95	79 ROBERT BEST RD
J04-0010	BISSON PAUL E & DOROTHY A		290 DUTTON RD		SUDBURY	MA	01776	49650-378	DUTTON RD

J04-0011	BISSON PAUL E & DOROTHY A		290 DUTTON RD		SUDBURY	MA	01776	14967-113	290 DUTTON RD
K10-0101	BLAIR CHADWICK & LAUREN TRS	CHADWICK BLAIR LIVING TRUST	272 LANDHAM RD		SUDBURY	MA	01776	69955-68	272 LANDHAM RD
J05-0101	BLANCHETTE CHRISTOPHER & MARY		80 JARMAN RD		SUDBURY	MA	01776	1378-121	80 JARMAN RD
J05-0389	BOWHERS MICHAEL J & MEGAN O		12 BULKLEY RD		SUDBURY	MA	01776	66875-77	12 BULKLEY RD
K10-0018-0-04	BOYER KEITH R & ALLAIN TARA		192 BOSTON POST RD UNIT 4		SUDBURY	MA	01776	61821-193	192 BOSTON POST RD UNIT 04
K08-0018	BRADFORD STEVEN R & CAROL J		25 MAPLE AVE		SUDBURY	MA	01776	67167-26	25 MAPLE AVE
K08-0020-0-302	BRADY CORNELIUS W & MARGARET		35 MAPLE AVE UNIT 302		SUDBURY	MA	01776	60240-405	35 MAPLE AVE UNIT 302
K10-0010	BROOKSIDE CUSTOM HOMES INC		416 BOSTON POST RD		SUDBURY	MA	01776	27941-592	239 BOSTON POST RD
K08-0023	BROSNAN JOHN & MIKAYLA		14 MAPLE AVE		SUDBURY	MA	01776	73197-375	14 MAPLE AVE
J05-0719	BROWN JAMES C	BROWN TRACY P	32 BULKLEY RD		SUDBURY	MA	01776	1249-164	32 BULKLEY RD
J07-0106	BRUNO JOHN F & REBECCA B		41 BRIDLE PATH		SUDBURY	MA	01776	73510-95	41 BRIDLE PATH
K11-0020	BUDDY DOG		151 BOSTON POST RD		SUDBURY	MA	01776	N-A	151 BOSTON POST RD
K11-0501	BUDDY DOG HUMANE SOCIETY INC		151 BOSTON POST RD		SUDBURY	MA	01776	70356-327	BOSTON POST RD
K08-0020-0-202	BURKLEY ELAINE J	TRUSTEE OF MAPLE MEADOWS	35 MAPLE AVE	UNIT 202	SUDBURY	MA	01776	65062-255	35 MAPLE AVE UNIT 202
K07-0024-0-102	CALABRIA RONALD A & KATHERINE		22 FARMSTEAD LN UNIT 102		SUDBURY	MA	01776		
K07-0024-0-208	CARLSON GILLIAN		22 FARMSTEAD LN UNIT 208		SUDBURY	MA	01776		
J06-0314	CARTY DANIEL E & FALLON MAURA G		15 STONEBROOK RD		SUDBURY	MA	01776	30611-485	15 STONEBROOK RD
J06-0107	CASS PAUL N & VALERIE R		42 JARMAN RD		SUDBURY	MA	01776	208303	42 JARMAN RD
K07-0024-0-005	CASSARINO LINDA F		10 FARMSTEAD LN		SUDBURY	MA	01776	72079-526	10 FARMSTEAD LN

J08-0006	CAVICCHIO PAUL F JR	TRS, CAVICCHIO FAMILY 1994 TRU ST	110 CODJER LANE		SUDBURY	MA	01776	25172-58	0 CODJER LN
J08-0501	CAVICCHIO PAUL F JR	TRS, CAVICCHIO FAMILY 1994 REA LTY TRUST	110 CODJER LANE		SUDBURY	MA	01776	25172-58	0 CODJER LN
J08-0502	CAVICCHIO PAUL F JR	TRS, CAVICCHIO FAMILY 1994 REA LTY TRUST	110 CODJER LANE		SUDBURY	MA	01776	25172-58	0 CODJER LN
J08-0503	CAVICCHIO PAUL F JR	TRS, CAVICCHIO FAMILY 1994 REA LTY TRUST	110 CODJER LANE		SUDBURY	MA	01776	25172-58	0 CODJER LN
K07-0016	CAVICCHIO PAUL J JR TR	P.N.J. 1995 REALTY TRUST	110 CODJER LN		SUDBURY	MA	01776	36489-033	UNION AVE
K10-0081	CCC POST ROAD 2	LIMITED PARTNERSHIP	34 WASHINGTON ST		BRIGHTON	MA	02135	72514-312	187 BOSTON POST RD
K10-0012	CCC POST ROAD LIMITED PTNRSHIP	C/O THE COOLIDGE	189 BOSTON POST RD		SUDBURY	MA	01776	61918-178	189 BOSTON POST RD
J06-0506	CHABAD CENTER OF SUDBURY		100 HORSE POND RD		SUDBURY	MA	01776	65005-133	100 HORSE POND RD
K09-0059-0-2	CHALAH ANAS & CARLA		6 BIGELOW DR		SUDBURY	MA	01776	72659-290	321 BOSTON POST RD
J05-0387	CHEN BENJAMIN J & REBECCA A		19 BULKLEY ROAD		SUDBURY	MA	01776	62780-97	19 BULKLEY RD
K08-0082	CHEN LI-YUN YUNG-ANN&YUNG-MOU	CHENS FAMILY REALTY TRUST	394 BOSTON POST RD		SUDBURY	MA	01776	20770-90	394 BOSTON POST RD
K07-0024-0-305	CHEN PEI-YU		22 FARMSTEAD LN UNIT 305		SUDBURY	MA	01776		
K08-0053	CHISWICK PARK LLC	C/O PARIS TRUST LLC	490-B BOSTON POST RD STE 201		SUDBURY	MA	01776	70761-304	39 UNION AVE
K08-0057	CHISWICK PARK LLC	C/O PARIS TRUST LLC	490-B BOSTON POST RD STE 201		SUDBURY	MA	01776	70761-297	UNION AVE
K08-0073	CHISWICK PARK LLC	C/O PARIS TRUST LLC	490-B BOSTON POST RD STE 201		SUDBURY	MA	01776	70761-297	0 UNION AVE
K07-0017	CHISWICK PARK LLC	C/O PARIS TRUST LLC	490-B BOSTON POST RD STE 201		SUDBURY	MA	01776	70761-297	33 UNION AVE
K07-0024-0-201	CHYTEN ALAN M &	KEHAYOGLOU MARGARET TRUSTEES	22 FARMSTEAD LN UNIT 201		SUDBURY	MA	01776		
K10-0018-0-03	COELHO HENRIQUE B &	COELHO- VERNEQUE KARLLA	192 BOSTON POST RD UNIT 3		SUDBURY	MA	01776	61698-290	192 BOSTON POST RD UNIT 03
K10-0018-0-03	COELHO HENRIQUE B &	COELHO- VERNEQUE KARLLA	192 BOSTON POST RD UNIT 3		SUDBURY	MA	01776	61698-290	192 BOSTON POST RD UNIT 03

K07-0024-0-303	COHEN ALICE G &	SCHMIDT SUSAN N	22 FARMSTEAD LN UNIT 303		SUDBURY	MA	01776		
K09-0076-0-1002	COLONY DEBORAH A	TRUSTEE OF DEBORAH A COLONY	47 MAPLE AVE	UNIT 1002	SUDBURY	MA	01776	73594-292	47 MAPLE AVE UNIT 1002
K07-0024-0-106	CONE PETER F & JOYCE M	TRUSTEES OF CONE FAMILY TRUST	22 FARMSTEAD LN UNIT 106		SUDBURY	MA	01776		
K10-0009	CONGREGATION B`NAI TORAH INC		PO BOX 273		SUDBURY	MA	01776	27940-168	227 BOSTON POST RD
K10-0040	CONGREGATION B`NAI TORAH INC		PO BOX 273		SUDBURY	MA	01776	27940-168	225 BOSTON POST RD
K08-0020-0-702	CONLIN JEFFREY L		35 MAPLE AVE	UNIT 702	SUDBURY	MA	01776	59227-133	35 MAPLE AVE UNIT 702
K09-0057-0-11A	CONVENIENT HOMECARE SERVICES INC		689 MAIN ST		WALTHAM	MA	02451	72235-139	329 BOSTON POST RD UNIT A
K10-0018-0-16	COSTA CHERYL A	TRUSTEE OF THE CHERYL A COSTA	192 BOSTON POST RD	UNIT 16	SUDBURY	MA	01776	71360-284	192 BOSTON POST RD UNIT 16
K09-0073	COXALL HAROLD		15 PINE ST		WELLESLEY	MA	02481	70151-586	34 MAPLE AVE
J07-0111	CRANE ROBERT		17 TRAILSIDE CIRCLE		SUDBURY	MA	01776	63814-201	17 TRAILSIDE CIR
J05-0355	CROTEAU MARK G &	CROTEAU LINDA B	12 COLBURN CIR		SUDBURY	MA	01776	33602-141	12 COLBURN CIR
J06-0104	CRUZ RAPHAELLE A &	YEATON ERIC C	60 JARMAN ROAD		SUDBURY	MA	01776	1509-50	60 JARMAN RD
K08-5200	CSX		500 WATER ST C910		JACKSONVILLE	FL	32202	N-A	RAILWAY
K09-0057-0-1F	CTA REAL ESTATE HOLDINGS LLC		327 F BOSTON POST RD		SUDBURY	MA	01776	68585-483	327 BOSTON POST RD UNIT F
K09-0057-0-11C	CTA REAL ESTATE HOLDINGS LLC		327 F BOSTON POST RD		SUDBURY	MA	01776	68585-473	329 BOSTON POST RD UNIT C
K09-0057-0-11D	CTA REAL ESTATE HOLDINGS LLC		327 F BOSTON POST RD		SUDBURY	MA	01776	68585-483	329 BOSTON POST RD UNIT D
J05-0331	CUNDY SCOTT T		91 ROBERT BEST RD		SUDBURY	MA	01776	71482-56	91 ROBERT BEST RD
J06-0324	CURRY MICHAEL J & RUTH E		32 STONEBROOK RD		SUDBURY	MA	01776	23487-449	32 STONEBROOK RD
K07-0024-0-019	D`ANNOLFO FREDERICK MARK &	D`ANNOLFO MARGUERITE	19 FARMSTEAD LN		SUDBURY	MA	01776	74008-32	19 FARMSTEAD LN

K09-0076-0-1102	DALING ROELOF & WILLEMINA H	TRUSTEES DALING REALTY TRUST	47 MAPLE AVE	UNIT 1102	SUDBURY	MA	01776	71669-195	47 MAPLE AVE UNIT 1102
J07-0109	DEITEL HARVEY M & BARBARA S		3 TRAILSIDE CIRCLE		SUDBURY	MA	01776	27677-584	3 TRAILSIDE CIR
K10-0019	DELANEY PATRICK J III	NEAVLES ROSEMARY	206 BOSTON POST ROAD		SUDBURY	MA	01776	14699-353	206 BOSTON POST RD
K07-0024-0-015	DEMARINES VICTOR M &	MILLER MELINDA DEMARINES TRS	11 FARMSTEAD LN		SUDBURY	MA	01776	72041-87	11 FARMSTEAD LN
K07-0024-0-018	DEMARINES VICTOR M & LINDA T		17 FARMSTEAD LN		SUDBURY	MA	01776	72069-319	17 FARMSTEAD LN
J05-0381	DENSEL CHRISTIANE P TRS &	DENSEL WILLIAM JR TRS	109 AUSTIN RD		SUDBURY	MA	01776	69493-582	109 AUSTIN RD
K10-0002	DIMODICA MICHAEL J		19 CHRISTOPHER LN		SUDBURY	MA	01776	59326-95	261 LANDHAM RD
J05-0116	DINSMORE JAMES A & JENNIFER A		73 JARMAN RD		SUDBURY	MA	01776	1516-15	73 JARMAN RD
J06-0317	DOHERTY LAEL & HARLAN		129 HORSEPOND RD		SUDBURY	MA	01776	72999-124	129 HORSE POND RD
K08-0012	DONNELLY BRIAN		250 RAYMOND RD		SUDBURY	MA	01776	59568-264	250 RAYMOND RD
K07-0024-0-004	DONOVAN DONNA M	TRUSTEE OF THE DONNA M DONOVAN	8 FARMSTEAD LN		SUDBURY	MA	01776	73081-129	8 FARMSTEAD LN
K08-0020-0-503	DROPKIN GOLDIE		35 MAPLE AVE UNIT 503		SUDBURY	MA	01776	60580-82	35 MAPLE AVE UNIT 503
J06-0017	EHRLICH LEWIS & ALBA		130 HORSE POND RD		SUDBURY	MA	01776	14215-338	130 HORSE POND RD
K10-0007-0-1A	EMMA LOU LLC		1 GLEN PINES WAY		MILLIS	MA	02054	63787-506	215-A BOSTON POST RD UNIT 1
K08-5100	EOT	MASS BAY TRANSPORTATION	10 PARK PLAZA		BOSTON	MA	02116	13117-113	RAILWAY
J08-5100	EOT	MASS BAY TRANSPORTATION	10 PARK PLAZA		BOSTON	MA	02116	13117-113	RAILWAY
J05-5000	EOT	MASS BAY TRANSPORTATION	10 PARK PLAZA		BOSTON	MA	02116	13117-113	RAILWAY
J06-0106	EVANS WILLIAM S & SEELEY HALEY		48 JARMAN RD		SUDBURY	MA	01776	1552-161	48 JARMAN RD
J06-0103	EWART CHRISTOPHER &	LORA KELLY ANN	66 JARMAN RD		SUDBURY	MA	01776	1500-23	66 JARMAN RD

H04-0711	FARAHBAKHSHIAN SEPEHR &	HOGAN KATHERINE J	326 DUTTON RD		SUDBURY	MA	01776	1511-110	326 DUTTON RD
J05-0352	FELSING DAVID & MYLES TRUSTEES DAVID J FLESING TRUST	DAVID KATHLEEN & MYLES TRSTEES KATHLEEN S FELSING TRUST	11 COLBURN CIR		SUDBURY	MA	01776	31827-402	11 COLBURN CIR
J06-0308	FELSING DAVID J & MYLES TRS DAVID J FELSING TRUST	FELSING KATHLEEN & MYLES TRS KATHLEEN S FELSING TRUST	11 COLBURN CIRCLE		SUDBURY	MA	01776	406	46 EVERGREEN RD
J05-0002	FENDELL SHERRY R & IGLESIAS	MARIA A	230 PEAKHAM RD		SUDBURY	MA	01776	61348-109	230 PEAKHAM RD
K08-0071	FIFTEEN UNION AVENUE CORP	C/O SUDBURY COFFEE WORKS	15 UNION AVE		SUDBURY	MA	01776	44413-273	15 UNION AVE
K10-0018-0-26	FINE JAN-CHARLES &	RIVERA-FINE JOSEPHINA	192 BOSTON POST RD	UNIT 26	SUDBURY	MA	01776	69432-589	192 BOSTON POST RD UNIT 26
J05-0115	FIRTH JEREMY R & REBECCA B		79 JARMAN RD		SUDBURY	MA	01776	1481-115	79 JARMAN RD
K08-0020-0-902	FLORU DAN & MARIETTA		35 MAPLE AVE	UNIT 902	SUDBURY	MA	01776	53832-432	35 MAPLE AVE UNIT 902
K07-0024-0-012	FONTE COLAFELLA JENNIFER TRS	ANGELO COLAFELLA TRUST	28 EDMANDS RD # 20		FRAMINGHAM	MA	01701	71286-309	5 FARMSTEAD LN
K10-0018-0-01	FRISSORA CATHERINE TRS	CATHERINE FRISSORA TRUST	192 BOSTON POST RD UNIT 1		SUDBURY	MA	01776	61751-422	192 BOSTON POST RD UNIT 01
K10-0402	FRYKLUND G E & L M TRS		29 GOODMANS HILL RD		SUDBURY	MA	01776	29088-149	29 GOODMANS HILL RD
J05-0356	GENEROSO JOHN A & ROBIN LEE	TRUSTEES OF JOHN A GENEROSO	6 COLBURN CIR		SUDBURY	MA	01776	66070-354	6 COLBURN CIR
K09-0059-0-1C3	GERBE THOMAS		323 BOSTON POST RD UNIT 1C		SUDBURY	MA	01776	48501-540	323 BOSTON POST RD UNIT C
J05-0380	GIBBS DAVID D		115 AUSTIN RD		SUDBURY	MA	01776	45386-494	115 AUSTIN RD
K07-0024-0-306	GINSBERG GLORIA		22 FARMSTEAD LN UNIT 306		SUDBURY	MA	01776		
K08-0060	GOLD BRICK DEVELOPMENT LLC		16 TECH CIRCLE STE 205		NATICK	MA	01760	51912-205	25 UNION AVE
K08-0026	GOLDBERG KENNETH M TRS	C/O INTRUM CORP	180 WELLS AVENUE STE 100		NEWTON	MA	02459	18778-308	365 BOSTON POST RD
K08-0020-0-602	GOODMAN LEON & LEONA		35 MAPLE AVE	UNIT 602	SUDBURY	MA	01776	57930-225	35 MAPLE AVE UNIT 602
J05-0359	GOODRICH MARILYN B		76 ROBERT BEST RD		SUDBURY	MA	01776	13642-311	76 ROBERT BEST RD

K08-0024	GOODRICH PETER M & RACHEL W		10 MAPLE AVE		SUDBURY	MA	01776	27805-252	10 MAPLE AVE
K07-0024-0-406	GRADY DAVID A &	KILBANE MARJORIE A	22 FARMSTEAD LN UNIT 406		SUDBURY	MA	01776		
K08-0044	GRANCO REALTY LLC		60 UNION AVE		SUDBURY	MA	01776	50303-300	56 UNION AVE
K08-0045	GRANCO REALTY LLC		60 UNION AVE		SUDBURY	MA	01776	50303-300	60 UNION AVE
K09-0074	GRIFFITH DAVID & ELIZABETH		55 MAPLE AVE		SUDBURY	MA	01776	57416-594	55 MAPLE AVE
K10-0403	GULAHMADZADEH GULAHMAD		33 GOODMANS HILL RD		SUDBURY	MA	01776	72204-578	33 GOODMANS HILL RD
J05-0008	GUSKI MICHAEL E & HELENE		237 PEAKHAM RD		SUDBURY	MA	01776	18013-516	237 PEAKHAM RD
K07-0024-0-304	GYAN NANIK D & PUSHPA		22 FARMSTEAD LN UNIT 304		SUDBURY	MA	01776		
K10-0018-0-19	HALL LESLIE T & HARDING	SUZANNE J	192 BOSTON POST RD	UNIT 19	SUDBURY	MA	01776	62971-363	192 BOSTON POST RD UNIT 19
K10-0018-0-17	HALPIN ROBERT J & ELIZABETH S		192 BOSTON POST RD	UNIT 17	SUDBURY	MA	01776	62869-11	192 BOSTON POST RD UNIT 17
J06-0108	HAMILTON CHRISTOPHER & LESLIE		36 JARMAN RD		SUDBURY	MA	01776	1229-110	36 JARMAN RD
K10-0005	HAN XU		271 LANDHAM ROAD		SUDBURY	MA	01776	72154-201	271 LANDHAM RD
K07-0024-0-021	HANSON BRIDGET G &	ICKLER CHRISTOPHER B	23 FARMSTEAD LN		SUDBURY	MA	01776	72498-147	23 FARMSTEAD LN
J05-0384	HARDING MICHAEL R & KARA K		89 AUSTIN RD		SUDBURY	MA	01776	59393-206	89 AUSTIN RD
J06-0505	HART JON L		35 BRIDLE PATH		SUDBURY	MA	01776	50168-74	35 BRIDLE PATH
J05-0720	HELON CHRISTOPHER & MARGARET		25 BULKLEY RD		SUDBURY	MA	01776	1340-049	25 BULKLEY RD
K09-0059-0-2B3	HELWIG MARK W & RUTHIE		18 NADINE RD		FRAMINGHAM	MA	01701	35763-060	323 BOSTON POST RD UNIT B
K09-0059-0-2C3	HELWIG MARK W & RUTHIE		18 NADINE RD		FRAMINGHAM	MA	01701	41830-247	323 BOSTON POST RD UNIT C
K09-0059-0-2D3	HELWIG MARK W & RUTHIE		18 NADINE RD		FRAMINGHAM	MA	01701	41830-247	323 BOSTON POST RD UNIT D

K09-0076-0-1103	HENDERSON WAYNE S & MARY S		47 MAPLE AVE UNIT 1103		SUDBURY	MA	01776	62427-435	47 MAPLE AVE UNIT 1103
K11-0017	HERB CHAMBERS 83 BOSTON POST	ROAD LLC	47 EASTERN BLVD		GLASTOBNURY	CT	06033	74344-119	105 BOSTON POST RD
J07-0107	HODEL JOHN F		49 BRIDLE PATH		SUDBURY	MA	01776	71074-17	49 BRIDLE PATH
K07-0024-0-107	HORAN GAIL P &	HORAN MATTHEW J	22 FARMSTEAD LN UNIT 107		SUDBURY	MA	01776		
J06-0132	HOU JOHN Z & WENG JENNY J		3 OLD MEADOW RD		SUDBURY	MA	01776	1272-0163	3 OLD MEADOW RD
K10-0007-0-1B	HOWARD FARM LLC		6 HOWARD FARM RD		SHARON	MA	02067	65122-326	215-B BOSTON POST RD UNIT 1
K10-0018-0-29	HUBNER DAVID P & MICHAEL K		192 BOSTON POST RD	UNIT 29	SUDBURY	MA	01776	62684-244	192 BOSTON POST RD UNIT 29
J05-0001	HUDSON GILBERT L & MEGHAN		222 PEAKHAM RD		SUDBURY	MA	01776	65535-271	222 PEAKHAM RD
K08-0020-0-901	HULIHAN MAILE		35 MAPLE AVE	UNIT 901	SUDBURY	MA	01776	53628-419	35 MAPLE AVE UNIT 901
K08-0016	HULL CAROL L		15 MAPLE AVE		SUDBURY	MA	01776	16410-65	15 MAPLE AVE
K10-0018-0-21	ILANGOVAN BHARATHAN &	SELVARAJ GAYATHRI	192 BOSTON POST RD UNIT 21		SUDBURY	MA	01776	67979-60	192 BOSTON POST RD UNIT 21
J06-0125	INGEMI GREGORY & JANICE L		57 JARMAN RD		SUDBURY	MA	01776	1448-53	57 JARMAN RD
J06-0311	INGHAM JAMES P		33 STONEBROOK RD		SUDBURY	MA	01776	16303-337	33 STONEBROOK RD
K10-0018-0-27	IOANILLI STEVEN & SANTAMARIA	HILDA	192 BOSTON POST RD	UNIT 27	SUDBURY	MA	01776	64052-36	192 BOSTON POST RD UNIT 27
K10-0013	JACOBSON ARNOLD & MAY		266 LANDHAM RD		SUDBURY	MA	01776	42556-0202	266 LANDHAM RD
K09-0057-0-1E	JAFAROV VUGAR		18 PINEWOOD AVE		SUDBURY	MA	01776	73528-86	327 BOSTON POST RD UNIT E
J06-0313	JENDRZEJEWSKI JONATHAN R &	SHETH SAMIRA	21 STONEBROOK RD		SUDBURY	MA	01776	67971-173	21 STONEBROOK RD
J05-0217	JESMAIN ANDREW &	MIZZI VICTORIA N	45 WHISPERING PINE RD		SUDBURY	MA	01776	74036-88	45 WHISPERING PINE RD
J05-0003	JOHNSON ETHEL V,ELNA A & DAVID	H TRS, ETHEL V JOHNSON LIV TR	242 PEAKHAM RD		SUDBURY	MA	01776	24214-42	242 PEAKHAM RD

J04-0013	JONES SARAH B & BRYAN S		114 OLD GARRISON ROAD		SUDBURY	MA	01776	63673-479	114 OLD GARRISON RD
J05-0385	JOST ALAN C & DIANE A		81 AUSTIN RD		SUDBURY	MA	01776	21348-409	81 AUSTIN RD
J06-0102	KAHLER ROYCE C & SHIRLEY B		72 JARMAN RD		SUDBURY	MA	01776	643-68	72 JARMAN RD
K07-0024-0-403	KAO MARGARET TING		22 FARMSTEAD LN UNIT 403		SUDBURY	MA	01776		
K08-0020-0-402	KATZ PHILIP		35 MAPLE AVE	UNIT 402	SUDBURY	MA	01776	65551-5	35 MAPLE AVE UNIT 402
K10-0053	KIM DAL YONG & JUNG HEE		7 GOODMANS HILL RD		SUDBURY	MA	01776	64447-573	7 GOODMANS HILL RD
H04-0725	KINTER ELIZABETH TIMBERLAKE &	MACVICAR MATTHEW ERIC	54 AMANDA RD		SUDBURY	MA	01776	1529-61	54 AMANDA RD
J06-0323	KIRK JOSEPH J		43 EVERGREEN RD		SUDBURY	MA	01776	56877-168	43 EVERGREEN RD
K07-0024-0-307	KNIGHT MICHAEL S		22 FARMSTEAD LN UNIT 307		SUDBURY	MA	01776		
K07-0024-0-203	KOH YUZUNG J & YI-FANG		22 FARMSTEAD LN UNIT 203		SUDBURY	MA	01776		
J05-0114	KUNTZWEILER THERESA		85 JARMAN ROAD		SUDBURY	MA	01776	59461-342	85 JARMAN RD
K10-0016	LACAVA LISA A		174 BOSTON POST RD		SUDBURY	MA	01776	27115-330	174 BOSTON POST RD
K10-0018-0-10	LACURE EDWARD G		192 BOSTON POST RD UNIT 10		SUDBURY	MA	01776	61680-391	192 BOSTON POST RD UNIT 10
K08-0020-0-201	LAMKIN ROBERT B & JOAN R		35 MAPLE AVE	UNIT 201	SUDBURY	MA	01776	65561-153	35 MAPLE AVE UNIT 201
K11-0015	LAND ROVER METROWEST		83 BOSTON POST RD		SUDBURY	MA	01776	35798-182	83 BOSTON POST RD
K09-0071	LEIBOWITZ HENRY & PEPPI JOELLE		50 MAPLE AVE		SUDBURY	MA	01776	55533-460	50 MAPLE AVE
K08-0022	LI WENJUN & LU LU		22 MAPLE AVE		SUDBURY	MA	01776	58659-241	22 MAPLE AVE
K08-0020-0-101	LIEBERMAN BARBARA J		35 MAPLE AVE	UNIT 101	SUDBURY	MA	01776	72157-220	35 MAPLE AVE UNIT 101
J04-0721	LIGHT BRIAN & RHONDA J		33 BULKLEY RD		SUDBURY	MA	01776	210996	33 BULKLEY RD

K07-0024-0-007	LIN JIA		14 FARMSTEAD LN		SUDBURY	MA	01776	72389-230	14 FARMSTEAD LN
K07-0024-0-209	LIPSITZ JOSEPH ALAN &	LIPSITZ-COHEN TOBA LEAH	22 FARMSTEAD LN UNIT 209		SUDBURY	MA	01776		
K10-0018-0-06	LISTER CAROLYN		192 BOSTON POST RD UNIT 6		SUDBURY	MA	01776	61868-470	192 BOSTON POST RD UNIT 06
J05-0377	LOPEZ FELICE		108 AUSTIN RD		SUDBURY	MA	01776	62222-392	108 AUSTIN RD
K09-0059-0-3C3	LOPILATO PAUL V &	LAFRATTA PHILIP J	323 BOSTON POST RD UNIT 3C		SUDBURY	MA	01776	66571-465	323 BOSTON POST RD UNIT C
K09-0059-0-3D3	LOPILATO PAUL V &	LAFRATTA PHILIP J	323 BOSTON POST RD UNIT 3D		SUDBURY	MA	01776	66571-465	323 BOSTON POST RD UNIT D
K08-0020-0-801	LUBAR EDWARD & PHYLLIS TRS	MAPLE AVENUE REALTY TRUST	35 MAPLE AVE UNIT 801		SUDBURY	MA	01776	59083-339	35 MAPLE AVE UNIT 801
J05-0393	LUSTIG MICHAEL M &	LUSTIG JACQUELINE A TRUSTEES	122 AUSTIN RD		SUDBURY	MA	01776	66628-543	122 AUSTIN RD
K08-0019	MACDONALD JAMES R &	TEPLOW DEBORAH R	31 MAPLE AVE		SUDBURY	MA	01776	22102-578	31 MAPLE AVE
K08-0046	MACOT REALTY TRUST		P.O. BOX 810		SUDBURY	MA	01776	23137-404	64 UNION AVE
J04-0733	MAILLET & SON INC		94 BUTLER RD		SUDBURY	MA	01776	1-	DUTTON RD
K10-0018-0-23	MALONEY LAWRENCE M & SHARON S		192 BOSTON POST RD	UNIT 23	SUDBURY	MA	01776	64222-265	192 BOSTON POST RD UNIT 23
J06-0126	MANZIRA FARAYI		51 JARMAN RD		SUDBURY	MA	01776	1491-143	51 JARMAN RD
K08-0036	MARINESCU SORIN R TRS	ROMEX REALTY TRUST	370 BOSTON POST RD		SUDBURY	MA	01776	22760-326	370 BOSTON POST RD
K07-0024-0-105	MARTEL CHRISTOPHER P		22 FARMSTEAD LN UNIT 105		SUDBURY	MA	01776		
K11-5000	MASS BAY TRANSPORTATION		10 PARK PLAZA		BOSTON	MA	02116	11317-113	RAILWAY
K09-5000	MASS BAY TRANSPORTATION		10 PARK PLAZA		BOSTON	MA	02116	13117-113	RAILWAY
K08-5000	MASS BAY TRANSPORTATION		10 PARK PLAZA		BOSTON	MA	02116	13117-113	RAILWAY
K08-0054	MASS BAY TRANSPORTATION	GRAYSTONE MASS REALTY GROUP	20 PARK PLAZA		BOSTON	MA	02116	13117-113	37 UNION AVE

K07-5000	MASS BAY TRANSPORTATION		10 PARK PLAZA		BOSTON	MA	02116	13117-113	RAILWAY
J06-5000	MASS BAY TRANSPORTATION		10 PARK PLAZA		BOSTON	MA	02116	13117-113	RAILWAY
H03-5000	MASS BAY TRANSPORTATION		10 PARK PLAZA		BOSTON	MA	02116	13117-113	RAILWAY
K09-0067	MASS BAY TRANSPORTATION AUTH		10 PARK PLACE		BOSTON	MA	02110	11317-113	BOSTON POST RD
K09-0069	MASS BAY TRANSPORTATION AUTH		50 HIGH ST		BOSTON	MA	02110	11317-113	MAPLE AVE
K10-0018-0-12	MATHEW BIJOY MATHEW &	MATHEW PATEL SONALI ROHIT	192 BOSTON POST RD	UNIT 12	SUDBURY	MA	01776	62349-35	192 BOSTON POST RD UNIT 12
K08-0055	MCCARTHY LAURA B ET AL TRUSTEE S	CAS TRUST	578 BOSTON POST RD		SUDBURY	MA	01776	26825-536	UNION AVE
K07-0024-0-404	MCCLURE ANGELA D & MARK L		4020 MICHAEL NEILL DR		AUSTIN	TX	78730		
K09-0059-0-45	MCGLYNN PARTNERS LLC		325 BOSTON POST ROAD		SUDBURY	MA	01776	65814-379	325 BOSTON POST RD
K10-0018-0-18	MCLELLAN JOHN		192 BOSTON POST RD	UNIT 18	SUDBURY	MA	01776	63114-255	192 BOSTON POST RD UNIT 18
K08-0051	MCLVER SCOTT A TRUSTEE	MACOT REALTY TRUST	P.O. BOX 810		SUDBURY	MA	01776	63090-389	65 UNION AVE
K08-0087	MCLVER SCOTT A TRUSTEE	MACOT REALTY TRUST	P.O. BOX 810		SUDBURY	MA	01776	63090-389	71 UNION AVE
J04-0107	MCMAHON JOHN		249 DUTTON RD		SUDBURY	MA	01776	40255-452	249 DUTTON RD
K08-0074	MCNAMARA ROBERT W TRS		P O BOX 833		SUDBURY	MA	01776	23060-440	28-3 UNION AVE
K08-0056	MCNAMARA ROBERT W TRS	THE ROBMAR REALTY TRUST	28 UNION AVE		SUDBURY	MA	01776	38493-275	27 UNION AVE
K08-0090	MCNEILL A ELLIOTT	& PHYLLIS E LIFE ESTATE	21 UNION AVE		SUDBURY	MA	01776	23052-461	21 UNION AVE
J06-0112	MEIDELL PHILIP & TATIANA		12 JARMAN RD		SUDBURY	MA	01776	179642	12 JARMAN RD
K10-0007-0-2B	MICHELS KARL H & HILDEGARD M	TRUSTEES MICHELS FAMILY TRUST	215 BOSTON POST RD		SUDBURY	MA	01776	61558-142	215-B BOSTON POST RD UNIT 2
K08-0065	MIDDLESEX SAVINGS BANK		6 MAIN STREET		NATICK	MA	01760	49392-161	454 BOSTON POST RD

K10-0018-0-15	MILLER CARL J & MIRIAM		192 BOSTON POST RD	UNIT 15	SUDBURY	MA	01776	73644-60	192 BOSTON POST RD UNIT 15
K08-0047	MKL UNION LLC		80 UNION AVE		SUDBURY	MA	01776	59283-417	80 UNION AVE
J06-0315	MOHANTY SANJIB K & IPSITA		9 STONEBROOK RD		SUDBURY	MA	01776	67290-423	9 STONEBROOK RD
K10-0017	MOLONEY BRIAN T JR & MELIONES	MARINA C	186 BOSTON POST RD		SUDBURY	MA	01776	65780-296	186 BOSTON POST RD
K07-0024-0-016	MOORE SUSAN J		13 FARMSTEAD LN		SUDBURY	MA	01776	73517-220	13 FARMSTEAD LN
K07-0024-0-101	MORCELLI GAYLE P		22 FARMSTEAD LN UNIT 101		SUDBURY	MA	01776		
J05-0009	MORGAN SETH D & SUSAN M		247 PEAKHAM RD		SUDBURY	MA	01776	65523-115	247 PEAKHAM RD
K09-0076-0-1101	MORSE RICHARD A & VIOLA H		47 MAPLE AVE	UNIT 1101	SUDBURY	MA	01776	62228-73	47 MAPLE AVE UNIT 1101
J06-0113	MURPHY MATTHEW D & FELICIA K		111 HORSE POND RD		SUDBURY	MA	01776	1270-0147	111 HORSE POND RD
K08-0039	MUTUAL REALTY TRUST OF SUDBURY INC		34 AUTUMN ST		SUDBURY	MA	01776	55793-302	34 STATION RD
K09-0052	NEW ENGLAND TELEPHONE COMPANY	C/O DUFF AND PHELPS	P.O.BOX 2749		ADDISON	TX	75001	8133-242	351 BOSTON POST RD
K08-0080	NEWMAN MARSHALL F TRUSTEE	KATZ IRREVOCABLE TRUST	410 BOSTON POST RD SUITE 28		SUDBURY	MA	01776	26539-290	410 BOSTON POST RD
K09-0059-0-4C1	NICKERSON GLENDON B & GLENDON	B JR & DAVID A TRS	321 BOSTON POST RD SUITE 4C		SUDBURY	MA	01776	23343-224	321 BOSTON POST RD UNIT C
K08-0020-0-802	NORINA BOYLE		35 MAPLE AVE UNIT 802		SUDBURY	MA	01776	68009-330	35 MAPLE AVE UNIT 802
K10-0014	NSTAR ELECTRIC COMPANY	PROPERTY TAX DEPARTMENT	P.O. BOX 270		HARTFORD	CT	06141	7734-426	183 BOSTON POST RD
K11-0402	NSTAR ELECTRIC COMPANY	PROPERTY TAX DEPT.	P.O. BOX 270		HARTFORD	CT	06141	7734-426	163 BOSTON POST RD
K07-0024-0-010	O`CONNOR DAVID F & MARY E		20 FARMSTEAD LN		SUDBURY	MA	01776	72424-407	20 FARMSTEAD LN
K09-0059-0-15	O`CONNOR REALTY GROUP LLC		325 BOSTON POST RD UNIT 1		SUDBURY	MA	01776	50953-0219	325 BOSTON POST RD
K08-0017	OLIVEIRA PAULO J &	HERMOS CHRISTINA R	19 MAPLE AVE		SUDBURY	MA	01776	55082-166	19 MAPLE AVE

K10-0007-0-1C	ORR CHARLES W & CAROLINA TRS	SPEER REALTY TRUST	215 BOSTON POST RD		SUDBURY	MA	01776	20969-490	215-C BOSTON POST RD UNIT 1
K10-0007-0-2C	ORR CHARLES W & CAROLINA TRS	SPEER REALTY TRUST	215 BOSTON POST RD		SUDBURY	MA	01776	20969-490	215-C BOSTON POST RD UNIT 2
J06-0110	PAPPAS NICHOLAS A &CHRISTINA K	TRUSTEES NICHOLAS PAPPAS A LIVING TRUST	24 JARMAN RD		SUDBURY	MA	01776	1554-130	24 JARMAN RD
K07-0024-0-401	PARK KATHERINE		22 FARMSTEAD LN UNIT 401		SUDBURY	MA	01776		
K07-0024-0-013	PARKHILL CRAIG W &	HANDLEY JUDITH E	7 FARMSTEAD LN		SUDBURY	MA	01776	74145-156	7 FARMSTEAD LN
K08-0020-0-203	PARRISH R WAYNE & CAROLE B	TRUSTEES OF THE PARRISH	35 MAPLE AVE	UNIT 203	SUDBURY	MA	01776	69715-355	35 MAPLE AVE UNIT 203
J04-0722	PARWANI HARISH MOHAN & VIDYA		45 AMANDA RD		SUDBURY	MA	01776	1529-66	45 AMANDA RD
K10-0008	PEARLMAN ALLAN ETAL TR	DELTA LAND TRUST	172 BISHOPS FOREST DR		WALTHAM	MA	02173	15292-175	209 BOSTON POST RD
J06-0215	PEARSON JOHN M &	BROWN PATRICIA A	34 WHISPERING PINE RD		SUDBURY	MA	01776	24793-108	34 WHISPERING PINE RD
K09-0057-0-1B	PEDO REALTY LLC		45 MEADOWBROOK CIR		SUDBURY	MA	01776	61334-47	327 BOSTON POST RD UNIT B
K09-0059-0-3C1	PEDULLA BARBARA M	TRUSTEE OF THE BARBARA M	321 BOSTON POST RD UNIT 3C		SUDBURY	MA	01776	54356-219	321 BOSTON POST RD UNIT C
K08-0020-0-601	PERLMAN NOAH & LAUREN		35 MAPLE AVE	UNIT 601	SUDBURY	MA	01776	57844-410	35 MAPLE AVE UNIT 601
K08-0076	PETRELL WILLIAM E JR &	MUNCEY PETER N JR TR	38 RESNIK RD SUIT 300		PLYMOUTH	MA	02360	19567-164	18 UNION AVE
J06-0216	PHILLIPS RAYMOND JOHN		40 WHISPERING PINE RD		SUDBURY	MA	01776	25564-515	40 WHISPERING PINE RD
K09-0050	PHOENIX UM LLC		118 PARKER ST APT # 26		ACTON	MA	01720	65867-143	357 BOSTON POST RD
J05-0379	PLATH JAMES T & BETHANY BOWLES		123 AUSTIN RD		SUDBURY	MA	01776	71439-228	123 AUSTIN RD
K08-0015	POTEAT VICTOR PAUL JR &	MARSH RYAN JAMES	11 MAPLE AVE		SUDBURY	MA	01776	74386-251	11 MAPLE AVE
K09-0059-0-3A1	POYDAR HENRY R TRS	IVY REALTY TRUST	76 BIRCHWOOD LN		LINCOLN	MA	01773	27265-302	321 BOSTON POST RD UNIT A
K09-0059-0-3B1	POYDAR HENRY R TRS	IVY REALTY TRUST	76 BIRCHWOOD LN		LINCOLN	MA	01773	32997-432	321 BOSTON POST RD UNIT B

K09-0059-0-3D1	PRCC LLC		321 BOSTON POST RD UNIT 3D		SUDBURY	MA	01776	68356-26	321 BOSTON POST RD UNIT D
K07-0024-0-103	PULTE HOME OF NEW ENGLAND LLC		115 FLANDERS RD SUITE 200		WESTBOROUGH	MA	01581		
K07-0024-0-202	PULTE HOME OF NEW ENGLAND LLC		115 FLANDERS RD SUITE 200		WESTBOROUGH	MA	01581		
K07-0024-0-205	PULTE HOME OF NEW ENGLAND LLC		115 FLANDERS RD SUITE 200		WESTBOROUGH	MA	01581		
K07-0024-0-206	PULTE HOME OF NEW ENGLAND LLC		115 FLANDERS RD SUITE 200		WESTBOROUGH	MA	01581		
K07-0024-0-405	PULTE HOME OF NEW ENGLAND LLC		115 FLANDERS RD SUITE 200		WESTBOROUGH	MA	01581		
K07-0024-0-407	PULTE HOME OF NEW ENGLAND LLC		115 FLANDERS RD SUITE 200		WESTBOROUGH	MA	01581		
K07-0024-0-408	PULTE HOME OF NEW ENGLAND LLC		115 FLANDERS RD SUITE 200		WESTBOROUGH	MA	01581		
K07-0024-0-409	PULTE HOME OF NEW ENGLAND LLC		115 FLANDERS RD SUITE 200		WESTBOROUGH	MA	01581		
K07-0024-0-002	PULTE HOME OF NEW ENGLAND LLC		115 FLANDERS RD SUITE 200		WESTBOROUGH	MA	01581	71270-174	4 FARMSTEAD LN
K07-0024	PULTE HOMES OF NEW ENGLAND LLC		115 FLANDERS RD SUITE 200		WESTBOROUGH	MA	01581	70018-208	22 FARMSTEAD LN
K08-0020-0-102	RAPA DENNIS MD &	GILLESPIE JOANNE	35 MAPLE AVE	UNIT 102	SUDBURY	MA	01776	51572-378	35 MAPLE AVE UNIT 102
K07-0024-0-308	RATKOWSKI ANTHONY J	TRUSTEE ANTHONY J RATKOWSKI	22 FARMSTEAD LN UNIT 308		SUDBURY	MA	01776		
K08-0020-0-401	REED JOHN J	TRUSTEE OF THE JOHN J REED	6430 GULF DR		HOLMES BEACH	FL	34217-1690	73039-12	35 MAPLE AVE UNIT 401
J06-0325	REISHTEIN WILLIAM &	REBEKAH SAFAR	26 STONEBROOK RD		SUDBURY	MA	01776	71096-55	26 STONEBROOK RD
J05-0386	RESNIC DAVID J & AMY Z		15 BULKLEY RD		SUDBURY	MA	01776	65969-502	15 BULKLEY RD
K08-0020-0-501	REVIS SUSAN M & ANTONY		35 MAPLE AVE UNIT 501		SUDBURY	MA	01776	59157-108	35 MAPLE AVE UNIT 501
K11-0019	RICHARD J BOSSE HOLDINGS LLC		141 BOSTON POST RD		SUDBURY	MA	01776	1250-85	141 BOSTON POST RD
K11-0019-A	RICHARD J BOSSE HOLDINGS LLC		141 BOSTON POST RD		SUDBURY	MA	01776	1250-85	0 BOSTON POST RD

K07-0024-0-104	ROBINSON JOHN W & MARGARET A		22 FARMSTEAD LN UNIT 104		SUDBURY	MA	01776		
J06-0316	ROGERS ARLIN B & KATHLEEN A		3 STONEBROOK RD		SUDBURY	MA	01776	62435-142	3 STONEBROOK RD
J05-0376	ROMAN HENRY A &	COILE COURTNEY C	4 AXDELL RD		SUDBURY	MA	01776	53152-408	4 AXDELL RD
K09-0059-0-4A3	RONG QING DU		323 BOSTON POST RD 4A		SUDBURY	MA	01776	46606-465	323 BOSTON POST RD UNIT A
K09-0059-0-4B3	RONG QING DU		323 BOSTON POST RD 4A		SUDBURY	MA	01776	46606-465	323 BOSTON POST RD UNIT B
J06-0111	ROSEN THERESA M		18 JARMAN RD		SUDBURY	MA	01776	1311-42	18 JARMAN RD
K10-0018-0-05	ROSENBERG DAVID E & LINDA A		192 BOSTON POST RD	UNIT 5	SUDBURY	MA	01776	61959-593	192 BOSTON POST RD UNIT 05
K10-0018-0-31	ROZEN PETER & LEONORA		192 BOSTON POST RD UNIT 31		SUDBURY	MA	01776	68436-399	192 BOSTON POST RD UNIT 31
K09-0059-0-4A1	RPG PROPERTIES LLC		321 BOSTON POST RD	UNIT 4A 4B	SUDBURY	MA	01776	56947-336	321 BOSTON POST RD UNIT A
K09-0059-0-4B1	RPG PROPERTIES LLC		321 BOSTON POST RD	UNIT 4A 4B	SUDBURY	MA	01776	56947-336	321 BOSTON POST RD UNIT B
K07-0024-0-017	RYAN THOMAS K & LISA A		15 FARMSTEAD LN		SUDBURY	MA	01776	73312-563	15 FARMSTEAD LN
K10-0003	SAFAR GASTON		132 NEWBURY ST		BOSTON	MA	02116	48358-458	267 LANDHAM RD
K10-0004	SAFAR GASTON		132 NEWBURY ST		BOSTON	MA	02116	48358-458	LANDHAM RD
J06-0310	SAGE CYRILLE &	SCHEFFER DEBORAH	41 STONEBROOK RD		SUDBURY	MA	01776	70299-492	41 STONEBROOK RD
K09-0059-0-1A3	SALVIA PETER M & SUSAN W		45 BISHOP LANE		SUDBURY	MA	01776	35101-346	323 BOSTON POST RD UNIT A
K09-0059-0-1B3	SALVIA PETER M & SUSAN W		45 BISHOP LANE		SUDBURY	MA	01776	35101-347	323 BOSTON POST RD UNIT B
J06-0128	SCHINELLER WILLIAM J & SUZANNE		37 JARMAN RD		SUDBURY	MA	01776	1294-149	37 JARMAN RD
J06-0105	SCHOLTEN JAMES E &	LEPAK AMY E	54 JARMAN RD		SUDBURY	MA	01776	179145	54 JARMAN RD
J04-0723	SCONYERS JOSEPH B & SHANA M		49 AMANDA RD		SUDBURY	MA	01776	1530-66	49 AMANDA RD

K08-0037	SCRIVANOS CONSTANTINE G TRS	SUD REALTY TRUST	3 PLUFF AVENUE		NORTH READING	MA	01864	24571-301	378 BOSTON POST RD
K07-0024-0-301	SEAMANS THOMAS F TRUSTEE	THOMAS F SEAMANS REVOCABLE	22 FARMSTEAD LN UNIT 301		SUDBURY	MA	01776		
J06-0214	SEEGER JOHN A & ROCK MARIE L		26 WHISPERING PINE RD		SUDBURY	MA	01776	31362-446	26 WHISPERING PINE RD
K10-0018-0-30	SERRET NADIA		192 BOSTON POST RD	UNIT 30	SUDBURY	MA	01776	63052-148	192 BOSTON POST RD UNIT 30
K10-0018-0-30	SERRET NADIA		192 BOSTON POST RD	UNIT 30	SUDBURY	MA	01776	63052-148	192 BOSTON POST RD UNIT 30
K09-0057-0-11B	SHANNON PRODUCTS CORP		329 BOSTON POST RD, UNIT 2B		SUDBURY	MA	01776	24317-502	329 BOSTON POST RD UNIT B
K08-0042	SHANNON TIMOTHY L TR	ARSENAL AVENUE TRUST	150 PRIDES CROSSING RD		SUDBURY	MA	01776	60623-260	50 UNION AVE
J06-0016	SHEA JOSEPH & RAPUANO-SHEA	DOLORES	124 HORSE POND RD		SUDBURY	MA	01776	51626-496	124 HORSE POND RD
J06-0139	SHEN YUE & PENG SONG		6 OLD MEADOW RD		SUDBURY	MA	01776	1511-33	6 OLD MEADOW RD
J06-0145	SHI YANG & CHEN JIE		1 JARMAN ROAD		SUDBURY	MA	01776	1474-16	1 JARMAN RD
J05-0005	SHNAPIR BORIS &SINITSKAYA INNA		250 PEAKHAM RD		SUDBURY	MA	01776	21562-170	250 PEAKHAM RD
K07-0024-0-006	SILVERMAN KAY M	TRUSTEE SILVERMAN FAMILY TRUST	12 FARMSTEAD LN		SUDBURY	MA	01776	72290-197	12 FARMSTEAD LN
K10-0018-0-08	SIMMONS CHARLES P JR &	SIMMONS MAUREEN A TRUSTEES OF	192 BOSTON POST RD UNIT 8		SUDBURY	MA	01776	66516-498	192 BOSTON POST RD UNIT 08
K07-0024-0-014	SINGH NEENA		9 FARMSTEAD LN		SUDBURY	MA	01776	71306-280	9 FARMSTEAD LN
K09-0059-0-25	SLB PUBLISHING LLC		42 FAIRVIEW RD		WESTON	MA	02493	73781-417	325 BOSTON POST RD
K09-0076-0-1001	SORVILLO MARILYN J & JOHN M		47 MAPLE AVE	UNIT 1001	SUDBURY	MA	01776	62722-340	47 MAPLE AVE UNIT 1001
K09-0056	SPACECRAFT LLC		51 RIVER STREET		WELLESLEY HILLS	MA	02481	63286-534	333 BOSTON POST RD
K09-0057-0-1A	SPENCER THOMAS W JR		327A BOSTON POST RD		SUDBURY	MA	01776	41438-157	327 BOSTON POST RD UNIT A
J07-0108	SPEROU JOHN C & CHALAT T TRS	SPEROU REALTY TRUST	57 BRIDLE PATH		SUDBURY	MA	01776	26497-315	57 BRIDLE PATH

J07-0122	SPUEHLER RALPH J JR & SARAH E		P.O. BOX 299		WOLFEBORO	NH	03894	27101-4	36 BRIDLE PATH
K10-0018-0-28	ST JAMES EDEN		192 BOSTON POST RD	UNIT 28	SUDBURY	MA	01776	63346-32	192 BOSTON POST RD UNIT 28
K10-0018-0-13	STACK GARY L		192 BOSTON POST RD	UNIT 13	SUDBURY	MA	01776	69328-547	192 BOSTON POST RD UNIT 13
K08-0040	STATION RD AUTO BODY & GAR INC		38-40 STATION RD		SUDBURY	MA	01776	17730-559	40 STATION RD
K10-0018-0-11	STOCKLEY CLIFFORD O & MARGARET A	TRUSTEES STOCKLEY FAMILY	192 BOSTON POST RD UNIT 11		SUDBURY	MA	01776	74088-291	192 BOSTON POST RD UNIT 11
K06-0600	STONE ANNE TRS	THE STONE FAMILY IRREVOCABLE	554 BOSTON POST RD		SUDBURY	MA	01776	30097-114	BOSTON POST RD
K07-0024-0-207	STONE ELLEN B		22 FARMSTEAD LN UNIT 207		SUDBURY	MA	01776		
K09-0059-0-2A3	STONE LAURA & RICHARD		323 2A BOSTON POST RD		SUDBURY	MA	01776	36037-106	323 BOSTON POST RD UNIT A
K09-0060	STORE MASTER FUNDING XI LLC	C/O CADENCE EDUCATION INC	8800 NORTH GAINEY CENTER DR STE 300		SCOTTSDALE	AZ	85258	67490-433	307 BOSTON POST RD
K09-0057-0-1C	STRAUS MERRIL & ELLEN		327 BOSTON POST RD SUITE C		SUDBURY	MA	01776	27358-383	327 BOSTON POST RD UNIT C
J04-0101	STREETER HAROLD M		289 DUTTON RD		SUDBURY	MA	01776	19071-523	289 DUTTON RD
K07-0024-0-302	STUCCHI MICHAEL R & GRISCO	LYNN M TRUSTEES ROBERT STUCCHI	22 FARMSTEAD LN UNIT 302		SUDBURY	MA	01776		
J07-0101	SUCCESOR TRS OF TALL PINES TR	TALL PINES HOME OWNERS ASSO	P.O. BOX 86		SUDBURY	MA	01776	17488-71	BRIDLE PATH
K07-0023	SUDBURY AVALON INC	C/O AVALON COMMUNITIES	600 ATLANTIC AVE 20TH FLOOR		BOSTON	MA	02210	69465-593	260-269 BAY DR
K08-0029	SUDBURY VALLEY TRUSTEES INC		18 WOLBACH RD		SUDBURY	MA	01776	14360-552	BOSTON POST RD
J03-0001	SUDBURY VALLEY TRUSTEES INC	MEMORIAL FOREST GFW	18 WOLBACH RD		SUDBURY	MA	01776	30259-117	0 DUTTON RD
K09-0059-0-4C3	SUITE 4C LLC		323 BOSTON POST RD 4C		SUDBURY	MA	01776	69580-127	323 BOSTON POST RD UNIT C
K10-0018-0-09	SUTELA KEVIN J		192 BOSTON POST RD UNIT 9		SUDBURY	MA	01776	61168-58	192 BOSTON POST RD UNIT 09
K08-0020-0-502	SYNNOTT MARK B & CHERYL E		35 MAPLE AVE UNIT 502		SUDBURY	MA	01776	73238-155	35 MAPLE AVE UNIT 502

K08-0020-0-301	TABLOSKI THEODORE F & PATRICIA A		35 MAPLE AVE UNIT 301		SUDBURY	MA	01776	60278-395	35 MAPLE AVE UNIT 301
K10-0018-0-20	TAN LAI-SENG & TANG QUYEN		192 BOSTON POST RD	UNIT 20	SUDBURY	MA	01776	63230-183	192 BOSTON POST RD UNIT 20
J06-0326	THIBEAULT JUSTIN P & EMILY		18 STONEBROOK RD		SUDBURY	MA	01776	72921-205	18 STONEBROOK RD
J05-0383	THOLANDER JASON B & LEWARS	JEANINE	95 AUSTIN RD		SUDBURY	MA	01776	64513-84	95 AUSTIN RD
K09-0059-0-1	THOMPSON ROBERT J		5 APPLESEED DR		WESTBOROUGH	MA	01581	70108-90	321 BOSTON POST RD
K07-0024-0-001	TICHNOR GEORGE M &	GORDON JUDITH F TRUSTEES	2 FARMSTEAD LN		SUDBURY	MA	01776	72182-533	2 FARMSTEAD LN
K10-0018-0-25	TIJAN TEODOR & CAROL		192 BOSTON POST RD UNIT 25		SUDBURY	MA	01776	68910-469	192 BOSTON POST RD UNIT 25
J06-0127	TING CARINA M		45 JARMAN RD		SUDBURY	MA	01776	1377-83	45 JARMAN RD
K10-0404	TOWN OF SUDBURY	TREASURER	278 OLD SUDBURY ROAD		SUDBURY	MA	01776	18839-313	BOSTON POST RD
K10-0041	TOWN OF SUDBURY	CONSERVATION	278 OLD SUDBURY ROAD		SUDBURY	MA	01776	12200-139	LANDHAM RD
K09-0081	TOWN OF SUDBURY	CONSERVATION	278 OLD SUDBURY RD		SUDBURY	MA	01776	35205-051	0 BOSTON POST RD
K08-0033	TOWN OF SUDBURY	LIBRARY	21 CONCORD RD		SUDBURY	MA	01776	7093-446	21 CONCORD RD
K08-0084	TOWN OF SUDBURY	TREASURER	278 OLD SUDBURY RD		Sudbury	MA	01776	N-A	OFF BOSTON POST RD
J08-0009	TOWN OF SUDBURY	CONSERVATION COMMISSION	278 OLD SUDBURY RD		SUDBURY	MA	01776	31017-194	UNION AVE
J06-0500	TOWN OF SUDBURY	TREASURER	278 OLD SUDBURY RD		SUDBURY	MA	01776	49650-386	TALL PINE DR
J07-0100	TOWN OF SUDBURY	TREASURER	278 OLD SUDBURY RD		Sudbury	MA	01776	49332-350	TRAILSIDE CIR
H04-0009	TOWN OF SUDBURY	CONSERVATION	278 OLD SUDBURY ROAD		SUDBURY	MA	01776	11608-127	325 DUTTON RD
J07-0012	TP FARMING LLC		110 CODJER LN		SUDBURY	MA	01776	37249-229	CODJER LN
K10-0006	TRANTER EDWARD J & KRISTIE		277 LANDHAM RD		SUDBURY	MA	01776	47521-148	277 LANDHAM RD

J05-0218	TROTTER JOHN & KRISCH KATHLEEN		41 WHISPERING PINE RD		SUDBURY	MA	01776	42954-336	41 WHISPERING PINE RD
J05-0354	TU TYSON		22 COLBURN CIR		SUDBURY	MA	01776	71104-63	22 COLBURN CIR
K08-0050	TUCKER PROPERTIES LLC		75 UNION AVE		SUDBURY	MA	01776	53165-230	75 UNION AVE
K08-0052	TUCKER PROPERTIES LLC		75 UNION AVE		SUDBURY	MA	01776	53165-224	57 UNION AVE
J05-0388	TUMS ARNOLD E & DAINA A		20 BULKLEY RD		SUDBURY	MA	01776	68116-224	20 BULKLEY RD
K08-0041	UNION AVENUE REALTY LLC		46 UNION AVE		SUDBURY	MA	01776	44569-168	46 UNION AVE
K08-0043	UNION AVENUE REALTY LLC		46 UNION AVE		SUDBURY	MA	01776	44569-168	OFF UNION AVE
K08-0038	UNION AVENUE REALTY, LLC		46 UNION AV		SUDBURY	MA	01776	1456-81	0 STATION RD
K10-0015	UNITED STATES OF AMERICA		260 LANDHAM RD		SUDBURY	MA	01776	25403-57	256 LANDHAM RD
K11-0400	UNITED STATES OF AMERICA	DEPT. OF INTERIOR	300 WESTGATE CENTER DR		HADLEY	MA	01035	22103-515	PELHAM ISLAND RD
K10-0015	UNITED STATES OF AMERICA		260 LANDHAM RD		SUDBURY	MA	01776	25403-57	256 LANDHAM RD
F03-0002	UNITED STATES OF AMERICA	US FISH AND WILDLIFE	300 WESTGATE CENTER DR		HADLEY	MA	01035	N-A	HUDSON RD
K08-0020-0-303	VANWOERKOM JACK A &	MOORE BARBARA L	46 CONCORD RD		WESTON	MA	02493	73041-384	35 MAPLE AVE UNIT 303
K08-0020-0-703	VARGO MARK W & KAREN M		35 MAPLE AVE	UNIT 703	SUDBURY	MA	01776	57056-541	35 MAPLE AVE UNIT 703
K08-0021	VELLOM DANIEL C		28 MAPLE AVE		SUDBURY	MA	01776	55346-527	28 MAPLE AVE
H04-0726	VLAHOS GEORGE S & SUZANNE E	TRUSTEES OF THE VLAHOS	46 AMANDA RD		SUDBURY	MA	01776	1495-104	46 AMANDA RD
K07-0024-0-011	VON PETERFFY ALEXANDRA H	TRUSTEE OF A H VON PETERFFY	3 FARMSTEAD LN		SUDBURY	MA	01776	71777-1	3 FARMSTEAD LN
K08-0014	WADE WILLIAM S JR &	WADE ELIZABETH S	7 MAPLE AVE		SUDBURY	MA	01776	69364-168	7 MAPLE AVE
K08-0020-0-103	WADSWORTH PAMELA R & CHARLES K		35 MAPLE AVE	UNIT 103	SUDBURY	MA	01776	64307-576	35 MAPLE AVE UNIT 103

J06-0504	WATSON DAVID OSBORNE &	WATSON EVA RANEEN	25 BRIDLE PATH		SUDBURY	MA	01776	74435-122	25 BRIDLE PATH
J06-0131	WATSON PATRICK & CAROLYN		29 JARMAN RD		SUDBURY	MA	01776	1489-33	29 JARMAN RD
K07-0024-0-109	WEIR WILLIAM N & HAEKYUNG K		22 FARMSTEAD LN UNIT 109		SUDBURY	MA	01776		
K07-0024-0-009	WENDEL MARY K		18 FARMSTEAD LN		SUDBURY	MA	01776	74124-134	18 FARMSTEAD LN
K10-0018-0-07	WIDELL BETTY ANN TRUSTEE	BETTY ANN WIDELL FAMILY TRUST	192 BOSTON POST RD	UNIT 7	SUDBURY	MA	01776	69900-528	192 BOSTON POST RD UNIT 07
J04-0724	WILNER HOWARD & MARIA	TRUSTEES OF THE MARIA WILNER	55 AMANDA RD		SUDBURY	MA	01776	1430-113	55 AMANDA RD
K10-0018-0-14	WYMAN KATHLEEN		192 BOSTON POST RD	UNIT 14	SUDBURY	MA	01776	62532-138	192 BOSTON POST RD UNIT 14
K07-0024-0-309	XIE RONG & YU YANG VIVIAN		22 FARMSTEAD LN UNIT 309		SUDBURY	MA	01776		
K09-0057-0-1D	YAFFE PETER E & STEINBERG	CAROL S TRS PETER E YAFFE TRS	327 BOSTON POST RD		SUDBURY	MA	01776	69116-486	327 BOSTON POST RD UNIT D
J07-0110	YANZHEN JENNY & CAO YONG		11 TRAILSIDE CIR		SUDBURY	MA	01776	62252-156	11 TRAILSIDE CIR
J06-0109	YE XIUZI & YU RUISHENG		30 JARMAN RD		SUDBURY	MA	01776	206252	30 JARMAN RD
J04-0012	ZACCAGNINI MICHAEL & KATHENDY	ETHEL	122 OLD GARRISON RD		SUDBURY	MA	01776	1392-41	122 OLD GARRISON RD
K10-0018-0-24	ZAKI EMAD & NERMIN S		192 BOSTON POST RD	UNIT 24	SUDBURY	MA	01776	64102-317	192 BOSTON POST RD UNIT 24
K10-0018-0-22	ZHU DINGHUAN & XU LINGLING		192 BOSTON POST RD UNIT 22		SUDBURY	MA	01776	69572-386	192 BOSTON POST RD UNIT 22
J04-0712	ZIFFER RANDALL E & LYNNE E		318 DUTTON RD		SUDBURY	MA	01776	1401-43	318 DUTTON RD
J05-0382	ZIMMER CHARLES C & GLADYS E		101 AUSTIN RD		SUDBURY	MA	01776	12864-117	101 AUSTIN RD
J05-0378	ZZIWA HELLEN & GODFREY		116 AUSTIN RD		SUDBURY	MA	01776	65750-330	116 AUSTIN RD
abutters in Hudson & Stow									
Abutters in Wayland									

Sudbury-Hudson Transmission Reliability Project and Mass Central Rail Trail Project

Sudbury, Massachusetts

PREPARED FOR

NSTAR Electric Company d/b/a Eversource Energy
247 Station Drive
Westwood, MA 02090

Department of Conservation and Recreation
251 Causeway Street #900
Boston, MA 02114

PREPARED BY

101 Walnut Street
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JULY 2020

7/14/2020

Kenneth Staffier Digitally signed by Kenneth Staffier Date: 2020.07.14 18:17:52-04'00'

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1

Stormwater Management Plan Narrative

This Stormwater Management Plan Narrative was prepared to demonstrate compliance with the Town of Sudbury's Stormwater Management By-Law and Regulations. Sections 1.1 through 1.4 describe the proposed Project, stormwater analysis methodology, and existing and proposed drainage conditions. Section 2 describes the Project's compliance with the Massachusetts Stormwater Management Standards, and Section 3 describes the Project's compliance with the additional requirements in the Stormwater Management Bylaw Regulations for the Town of Sudbury.

1.1 Project Description

The overall Project includes completion of a portion of the regional Massachusetts Central Rail Trail ("MCRT") and construction of a portion of a new 115-kilovolt ("kV") underground electric transmission line ("the underground transmission line") within the inactive MBTA right-of-way ("ROW"). The Project stormwater system is designed for the final use as a bike path and includes a stormwater management system that uses vegetated swales with check dams, consistent with DCR's standard design for bike path facilities. The entire Project is approximately 9.0 miles long and is located primarily in the towns of Sudbury and Hudson, with short sections in the Town of Stow and the City of Marlborough (see Figure 1).

The portion of the Project within Sudbury originates at the Sudbury/Hudson town line and follows the MBTA ROW to the Sudbury Substation, located south of Route 20, between Landham Crossing and Goodman's Hill Road. This stormwater narrative addresses the portion of the Project located in the Town of Sudbury.

1.2 Methodology

The rainfall-runoff response of the Site under the existing and proposed conditions was analyzed for storm events with recurrence intervals of 2, 10, 25, and 100 years, with rainfall amounts of 3.2", 4.8", 6.0", and 8.6", respectively, as outlined by the Stormwater Management Bylaw Regulations for the Town of Sudbury. A rainfall depth of one inch (1") was also evaluated. The runoff coefficients and time of concentration for the existing and proposed conditions were determined using the NRCS Technical Release 55 (TR-55) methodology in HydroCAD. The HydroCAD model is based on the NRCS Technical Release 20 (TR-20) Model for Project Formulation Hydrology.

1.3 Existing Drainage Conditions

The Project is located within the MBTA ROW between the Hudson/Sudbury town line and the Sudbury Substation located off of Route 20 in Sudbury. Under existing conditions, a portion of the Project footprint contains the ballast, ties and rails of the inactive railroad, and an area adjacent to the rails is worn down and used as a path by hikers, individuals walking dogs and/or riding horses, mountain bikers, motorized dirt bikers and snowmobilers. In general, the vegetation in the Project area is scattered to moderately dense saplings and young trees, with some localized areas of shrub growth. There are few large mature trees located within the Project's limit of work.

The predominant existing cross section in the Project area consists of the rail line located either on a berm elevated above the adjacent terrain or in areas below adjacent terrain where the rail line was built by excavating into the landscape. In its present condition, the rail line sits on stone ballast and wood ties and occupies a footprint that is approximately 11 feet wide. The steel tracks are still present in most areas.

Figures 2a-2e illustrate the existing drainage patterns within the study area. Under current conditions, the Study Area is divided into 71 drainage areas within Sudbury, which discharge stormwater runoff to 69 Design Points. These Design Points are identified as DP-X.X. The existing drainage areas are delineated based on the overall areas contributing to each design point. The roadways that intersect the ROW were used to create the limits for the five segments and break the Project area into smaller areas for evaluation. The following is a list of the Sudbury segments:

- Segment 5 – From approximately the Sudbury/Hudson Town Limits to Dutton Road
- Segment 6 – From Dutton Road to Peakham Road
- Segment 7 – Peakham Road to Horse Pond Road
- Segment 8 - Horse Pond Road to Union Avenue
- Segment 9/10 – Union Avenue to the eastern Project Limits

Table 1 below provides a summary of the hydrologic data under the existing conditions.

Table 1 Hydrologic Data under the Existing Conditions

Drainage Area	Discharge Location	Design Point	Area (Acres)	Curve Number	Time of Concentration (min)
EX-5.6	Wetland 18	DP-5.6	16.6	30	44.1
EX-5.7	Wetland 19	DP-5.7	9.5	31	63.9
EX-5.8	Wetland 45	DP-5.8	8.7	32	49.3
EX-5.9	Low Point	DP-5.9	4.7	32	28.1
EX-5.10	Low Point	DP-5.10	1.7	31	50.3
EX-5.11	Low Point	DP-5.11	4.6	30	71.5
EX-5.12	Wetland 44	DP-5.12	8.2	47	119.8
EX-5.13	Wetland 44	DP-5.13	34.3	35	217.6
EX-5.14	Wetland 44	DP-5.14	14.0	46	23.1
EX-5.15	Wetland 44	DP-5.15	10.7	41	34.8
EX-5.16	Wetland*	DP-5.16	8.5	50	22.6
EX-5.17	Wetlands 41 & 43 Vernal Pools 11 & 13	DP-5.17	18.5	52	6.4
EX-5.18	Wetland 42 Vernal Pool 12	DP-5.18	10.4	42	75.8
EX-5.19	Wetland 40 Vernal Pool 10	DP-5.19	0.7	35	21.0
EX-5.20	Off Site	DP-5.20	1.1	30	20.3
EX-5.21	Wetland 39 Vernal Pool 9	DP-5.21	5.7	30	28.2
EX-6.1	Low Point	DP-6.1	0.8	39	48.2
EX-6.2	Dutton	DP-6.2	0.7	32	41.6
EX-6.3	Low Point	DP-6.3	0.8	42	15.4
EX-6.4	Low Point	DP-6.4	2.9	50	27.4
EX-6.5	Low Point	DP-6.5	16.9	36	36.0
EX-6.6	Wetlands 36 & 38	DP-6.6	7.2	42	52.6
EX-6.7	Wetland 37	DP-6.7	7.1	39	31.7
EX-6.8	Low Point	DP-6.8	4.9	32	34.1
EX-6.9	Low Point	DP-6.9	0.9	41	17.4
EX-6.10	Low Point	DP-6.10	3.9	44	16.1
EX-6.11	Approximate Vernal Pool/Wetland*	DP-6.11	0.8	33	12.0
EX-6.12	Wetland 35 Vernal Pool 8	DP-6.12	0.6	32	14.2
EX-6.13	Wetland 34	DP-6.13	3.2	52	20.6
EX-6.14	Wetland 33	DP-6.14	5.1	60	30.8

Drainage Area	Discharge Location	Design Point	Area (Acres)	Curve Number	Time of Concentration (min)
EX-6.15	Low Point	DP-6.15	0.1	84	6.0
EX-7.1	Wetland 30	DP-7.1	9.0	56	44.3
EX-7.2	Wetland 32	DP-7.2	2.7	36	25.2
EX-7.3	Low Point	DP-7.3	3.6	41	35.2
EX-7.4	Low Point	DP-7.4	9.0	52	39.3
EX-7.5	Wetland 31	DP-7.5	23.1	52	34.6
EX-7.6	Low Point	DP-7.6	0.9	33	14.1
EX-7.7	Low Point	DP-7.7	0.7	35	11.2
EX-7.8	Low Point	DP-7.8	1.2	35	18.5
EX-7.9	Low Point	DP-7.9	5.7	43	18.2
EX-7.10	Low Point	DP-7.10	0.3	38	21.3
EX-7.11	Low Point	DP-7.11	1.6	45	17.6
EX-7.12	Low Point	DP-7.12	1.2	46	19.3
EX-8.1A	Wetlands 28 & 29	DP-8.1	19.9	56	17.5
EX-8.1B	Wetlands 28 & 29	DP-8.1	0.3	32	36.7
EX-8.2	Wetland 27	DP-8.2	16.2	43	49.4
EX-8.3	Wetland 25	DP-8.3	15.7	54	51.8
EX-8.4	Wetland 26	DP-8.4	1.0	34	30
EX-8.5	Low Point	DP-8.5	4.0	68	24.9
EX-8.6	Wetland 24	DP-8.6	24.8	65	62.4
EX-8.7	Low Point	DP-8.7	0.8	72	17.8
EX-8.8	Low Point	DP-8.8	0.9	74	34.8
EX-8.9	Wetland 24A Vernal Pool 5	DP-8.9	1.0	41	30.3
EX-8.10	Low Point	DP-8.10	3.6	91	14.1
EX-8.11	Wetland*	DP-8.11	0.9	85	8.9
EX-9.1	Station Road	DP-9.1	2.2	87	41.2
EX-10.1	Wetland 18	DP-10.1	1.1	78	19.0
EX-10.2	Wetland 19	DP-10.2	4.2	68	14.0
EX-10.3	Wetland 15	DP-10.3	1.0	78	13.4
EX-10.4	Wetland 16	DP-10.4	4.9	62	25.4
EX-10.5	Wetland 14	DP-10.5	0.8	78	23.4
EX-10.6	Wetland 11	DP-10.6	5.1	49	14.1
EX-10.7	Wetland 13	DP-10.7	1.8	40	62.5
EX-10.8	Wetland 10	DP-10.8	0.9	47	7.3
EX-10.9	Wetland 5 Vernal Pools 2 & 3	DP-10.9	2.8	63	7.6
EX-10.10	Vernal Pool 4	DP-10.10	0.1	78	7.0
EX-10.11	Wetland 5	DP-10.11/13	1.1	52	10.7

Drainage Area	Discharge Location	Design Point	Area (Acres)	Curve Number	Time of Concentration (min)
EX-10.12	Wetland 6	DP-10.12	1.3	51	24.2
EX-10.13	Wetland 5	DP-10.11/13	1.7	73	15.0
EX-10.14	Wetland 3 Vernal Pool 1	DP-10.14	7.0	74	37.1
EX-10.15	Wetland 4	DP-10.15	4.3	42	22.5

*Wetlands without a number designation (e.g., "Wetland") are located outside of the MBTA ROW. These wetlands were not field delineated and are shown as approximate on the plans.

1.4 Proposed Drainage Conditions

Figures 3a-3e illustrate the proposed post-construction drainage conditions for the Project. The study area was divided into 87 drainage areas that discharge stormwater to the 69 existing Design Points. A summary of the hydrologic data under the proposed conditions is provided in Table 2.

Table 2 Hydrologic Data under the Proposed Conditions

Drainage Area	Discharge Location	Design Point	Area (acres)	Curve Number	Time of Concentration (min)
PR-5.6	Wetland 18	DP-5.6	17.4	31	22.8
PR-5.7	Wetland 19	DP-5.7	9.6	30	63.9
PR-5.8A	Wetland 45	DP-5.8	8.0	31	30.8
PR-5.8B	Wetland 45	DP-5.8	0.2	52	11.8
PR-5.9	Low Point	DP-5.9	4.3	30	13.4
PR-5.10	Low Point	DP-5.10	1.6	32	50.3
PR-5.11	Low Point	DP-5.11	4.6	30	71.5
PR-5.12	Wetland 44	DP-5.12	7.9	45	84.9
PR-5.13	Wetland 44	DP-5.13	34.6	35	217.6
PR-5.14A	Wetland 44	DP-5.14	13.7	46	13.2
PR-5.14B	Wetland 44	DP-5.14	0.4	39	6.9
PR-5.15	Wetland 44	DP-5.15	10.5	41	34.8
PR-5.16	Wetland*	DP-5.16	8.6	50	22.6
PR-5.17	Wetlands 41 & 43 Vernal Pools 11 & 13	DP-5.17	18.5	52	6.4
PR-5.18A	Wetland 42 Vernal Pool 12	DP-5.18	10.5	42	75.8
PR-5.18B	Wetland 42 Vernal Pool 12	DP-5.18	0.1	46	6.0
PR-5.19	Wetland 40 Vernal Pool 10	DP-5.19	0.7	31	21.0
PR-5.20	Off Site	DP-5.20	1.2	37	20.3

Drainage Area	Discharge Location	Design Point	Area (acres)	Curve Number	Time of Concentration (min)
PR-5.21	Wetland 39 Vernal Pool 9	DP-5.21	5.6	30	28.2
PR-6.1A	Low Point	DP-6.1	0.1	43	15.7
PR-6.1B	Low Point	DP-6.1	0.6	35	12.0
PR-6.2	Dutton	DP-6.2	1.0	43	24.9
PR-6.3	Low Point	DP-6.3	0.8	42	15.0
PR-6.4	Low Point	DP-6.4	2.8	50	27.4
PR-6.5	Low Point	DP-6.5	16.9	36	36.0
PR-6.6A	Wetlands 36 & 38	DP-6.6	0.6	52	10.7
PR-6.6B	Wetland 36 & 38	DP-6.6	6.6	44	21.7
PR-6.7	Wetland 37	DP-6.7	7.0	38	16.2
PR-6.8	Low Point	DP-6.8	4.9	32	34.1
PR-6.9	Low Point	DP-6.9	0.9	41	17.4
PR-6.10	Low Point	DP-6.10	3.9	44	16.1
PR-6.11	Approximate Vernal Pool/Wetland*	DP-6.11	0.8	33	12.0
PR-6.12	Wetland 35 Vernal Pool 8	DP-6.12	0.6	32	14.2
PR-6.13	Wetland 34	DP-6.13	3.2	52	20.6
PR-6.14	Wetland 33	DP-6.14	5.2	62	12.4
PR-6.15	Low Point	DP-6.15	0.1	84	6.0
PR-7.1A	Wetland 30	DP-7.1	0.2	55	5.3
PR-7.1B	Wetland 30	DP-7.1	8.9	57	44.3
PR-7.2	Wetland 32	DP-7.2	2.6	35	25.2
PR-7.3	Low Point	DP-7.3	3.6	41	35.2
PR-7.4	Low Point	DP-7.4	9.0	52	39.3
PR-7.5	Wetland 31	DP-7.5	23.1	52	34.6
PR-7.6	Low Point	DP-7.6	0.9	41	17.7
PR-7.7	Low Point	DP-7.7	0.6	30	13.3
PR-7.8	Low Point	DP-7.8	1.3	40	30.0
PR-7.9	Low Point	DP-7.9	5.7	43	18.2
PR-7.10	Low Point	DP-7.10	0.3	31	24.1
PR-7.11	Low Point	DP-7.11	1.6	45	17.6
PR-7.12	Low Point	DP-7.12	1.2	46	19.3
PR-8.1A	Wetlands 28 & 29	DP-8.1	19.8	56	17.5
PR-8.1B	Wetlands 28 & 29	DP-8.1	0.3	30	33.1
PR-8.2A	Wetland 27	DP-8.2	14.9	44	49.4
PR-8.2B	Wetland 27	DP-8.2	1.4	35	42.5
PR-8.3A	Wetland 25	DP-8.3	13.4	57	36.5

Drainage Area	Discharge Location	Design Point	Area (acres)	Curve Number	Time of Concentration (min)
PR-8.3B	Wetland 25	DP-8.3	2.2	36	47.7
PR-8.4A	Wetland 26	DP-8.4	0.4	52	14.0
PR-8.4B	Wetland 26	DP-8.4	0.7	46	18.8
PR-8.5A	Low Point	DP-8.5	0.7	50	19.4
PR-8.5B	Low Point	DP-8.5	3.5	77	15.3
PR-8.6	Wetland 24	DP-8.6	24.7	65	62.4
PR-8.7	Low Point	DP-8.7	0.8	75	17.8
PR-8.8	Low Point	DP-8.8	0.9	79	34.8
PR-8.9	Wetland 24A Vernal Pool 5	DP-8.9	0.9	40	30.3
PR-8.10	Low Point	DP-8.10	3.6	91	14.1
PR-8.11	Wetland*	DP-8.11	0.9	85	8.9
PR-9.1	Station Road	DP-9.1	2.2	90	29.7
PR-10.1	Wetland 18	DP-10.1	1.2	80	19.0
PR-10.2	Wetland 19	DP-10.2	4.1	69	14.0
PR-10.3	Wetland 15	DP-10.3	1.0	79	10.1
PR-10.4A	Wetland 16	DP-10.4	1.8	63	11.3
PR-10.4B	Wetland 16	DP-10.4	3.0	63	13.4
PR-10.5	Wetland 14	DP-10.5	0.8	78	23.4
PR-10.6A	Wetland 11	DP-10.6	1.5	35	10.3
PR-10.6B	Wetland 11	DP-10.6	4.5	52	9.9
PR-10.7A	Wetland 13	DP-10.7	0.8	47	17.3
PR-10.7B	Wetland 13	DP-10.7	0.1	79	11.8
PR-10.8	Wetland 10	DP-10.8	0.9	50	7.3
PR-10.9	Wetland 5 Vernal Pools 2 & 3	DP-10.9	2.8	65	7.6
PR-10.10	Vernal Pool 4	DP-10.10	0.1	80	6.0
PR-10.11	Wetland 5	DP-10.11/13	1.1	52	10.7
PR-10.12A	Wetland 6	DP-10.12	0.3	41	12.4
PR-10.12B	Wetland 6	DP-10.12	0.9	58	14.7
PR-10.13A	Wetland 5	DP-10.11/13	1.4	73	6.9
PR-10.13B	Wetland 5	DP-10/11/13	0.4	74	6.0
PR-10.14A	Wetland 3 Vernal Pool 1	DP-10.14	4.1	66	7.5
PR-10.14B	Wetland 3 Vernal Pool 1	DP-10.14	2.9	84	19.4
PR-10.15A	Wetland 4	DP-10.15	4.3	44	20.3
PR-10.15B	Wetland 4	DP-10.15	0.1	50	12.2

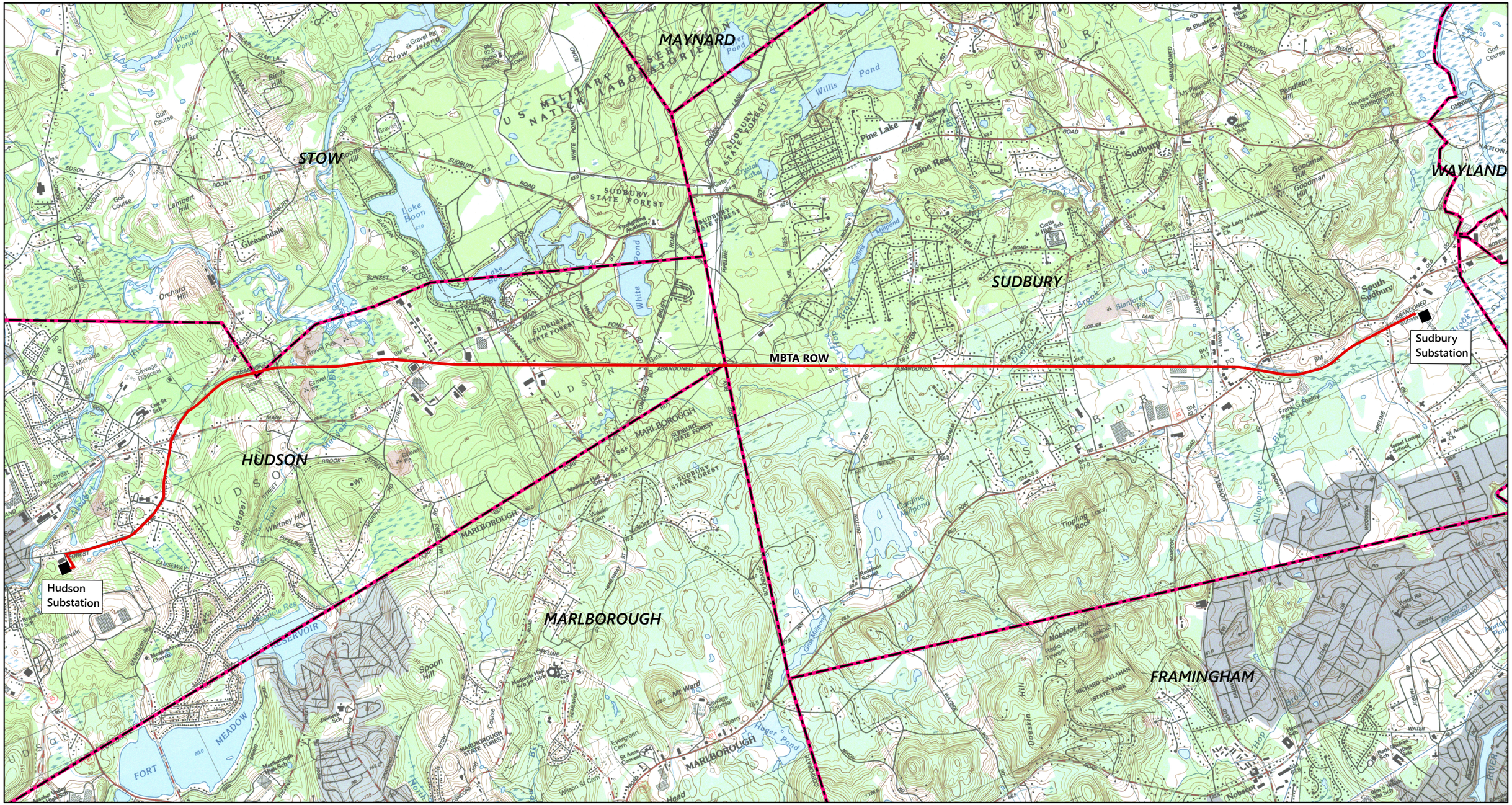
*Wetlands without a number designation (e.g., "Wetland") are located outside of the MBTA ROW. These wetlands were not field delineated and are shown as approximate on the plans.

As per 310 CMR 10.05(6)(m)(6), "Footpaths, bike paths and other paths for pedestrian and/or nonmotorized vehicle access" shall meet the Stormwater Management Standards to the maximum extent practicable. The Project is not considered a Land Use with Higher Pollutant Load ("LUHPPL") and was designed in accordance with MassDEP's Massachusetts Stormwater Handbook (rev. 2008). The design incorporates the use of structural and non-structural Best Management Practices ("BMPs") to mitigate stormwater flows and promote infiltration and recharge, which is consistent with DCR's standard design for all its rail trail facilities. Additionally, existing and proposed flows to vernal pools were analyzed using the TR-20 methodology to confirm that the Project will not adversely affect the hydrologic regime contributing to these resource areas.

The structural BMPs include areas of increased infiltration, which are swales with check dams or basins, and conveyance swales. Check dam locations throughout the areas of increased infiltration were maximized in order to increase detention, treat stormwater, and ensure non-erosive flows. Conveyance swales are also included throughout the Project to help convey stormwater and although they provide benefits, they are not included in the stormwater calculations. The Project also utilizes "impervious disconnection," a non-structural BMP, to provide filtering and infiltration by redirecting stormwater from areas of impervious cover to areas of pervious cover. Although these areas provide benefits, they are also not included in the stormwater calculations for recharge and water quality because they are not considered recharge and treatment BMPs by MassDEP's Stormwater Management Handbook.

HydroCAD uses the SCS Unit Curve Number methodology in order to estimate storm runoff. The determination of runoff curve number depends on the watershed's characteristics including cover type and hydrologic soil group. The complete list of surface soils according to the National Resources Conservation Service ("NRCS") has been included in Appendix C, which includes the classification of on-site soils as Hydrologic Soil Groups ("HSG") A, B, C, and D. Soil groups previously defined by the NRCS as HSG unknown soils were determined by evaluating the NRCS's definition of the map soil unit. The NRCS Soil Resource Report provides guidance on the ability for a soil to infiltrate; this approach is consistent with standard engineering practice. Based on the soil information included in Appendix C, the vast majority of the Site is not considered to be within an area of rapid infiltration (soils with a saturated hydraulic conductivity greater than 2.4 inches per hour) with the exception of soils located near BMP P-6.2. Boring logs used in support of determining hydraulic conductivity for the proposed stormwater structural BMPs have been included in Appendix C.

A hydrologic analysis was performed for each design point shown in Figures 2a-2e and 3a-3e. The runoff from the large contributing areas was only minimally affected by the change in time of concentration (reduction in channel slope along ROW),changes to the curve number (CN) based on the increase impervious area (DCRs MCRT), and changes to the cover type.



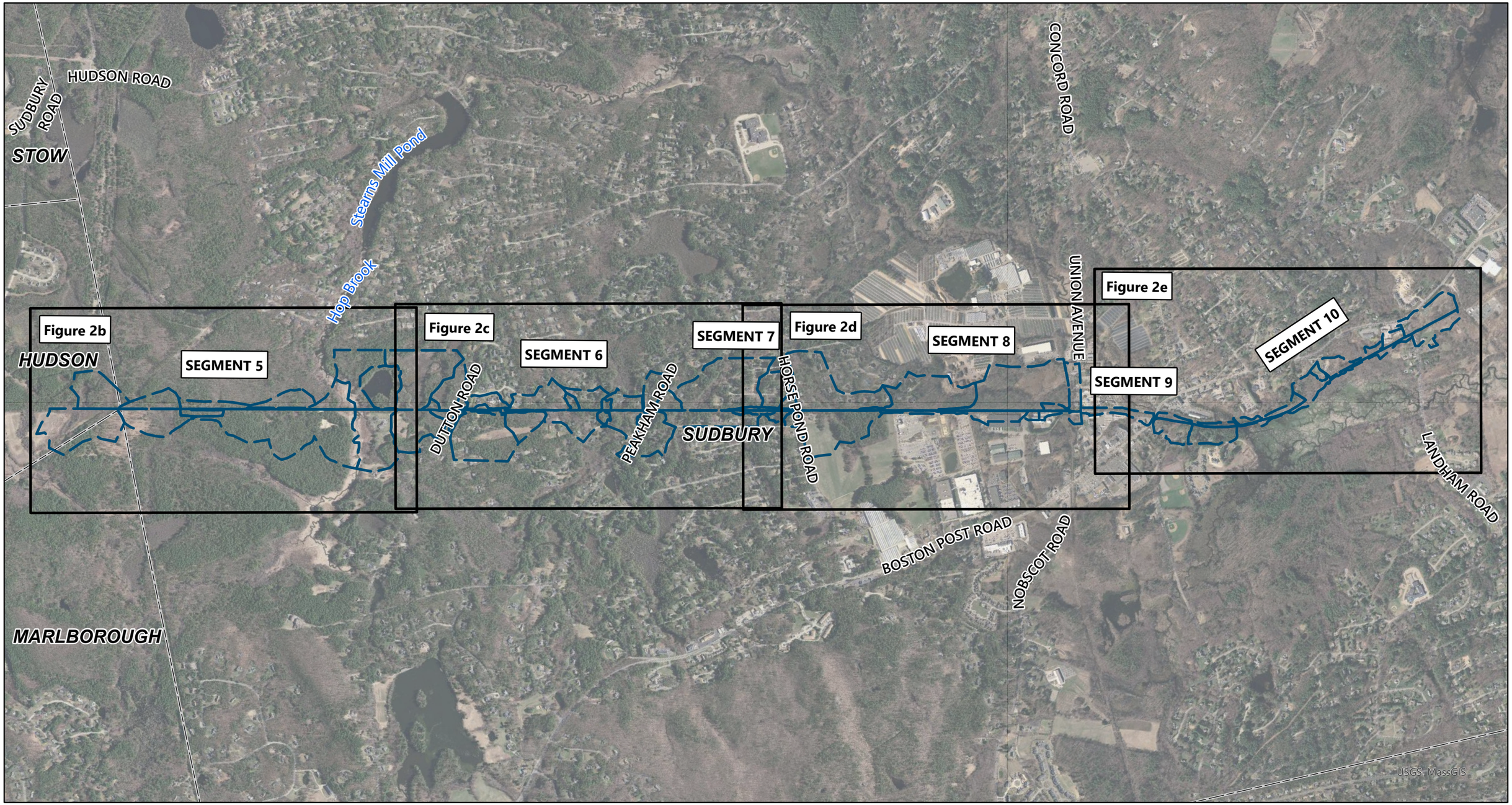
EVERSOURCE ENERGY

dcr MASSACHUSETTS DEPARTMENT OF CONSERVATION AND RECREATION

Sudbury-Hudson Transmission Reliability and Mass Central Rail Trail Project

Figure 1: Locus Map (USGS)

vhb



Map Boundaries

Existing Drainage Areas

Massachusetts Municipalities

N

Source:
MassGIS, VHB

0 1,500 3,000 Feet

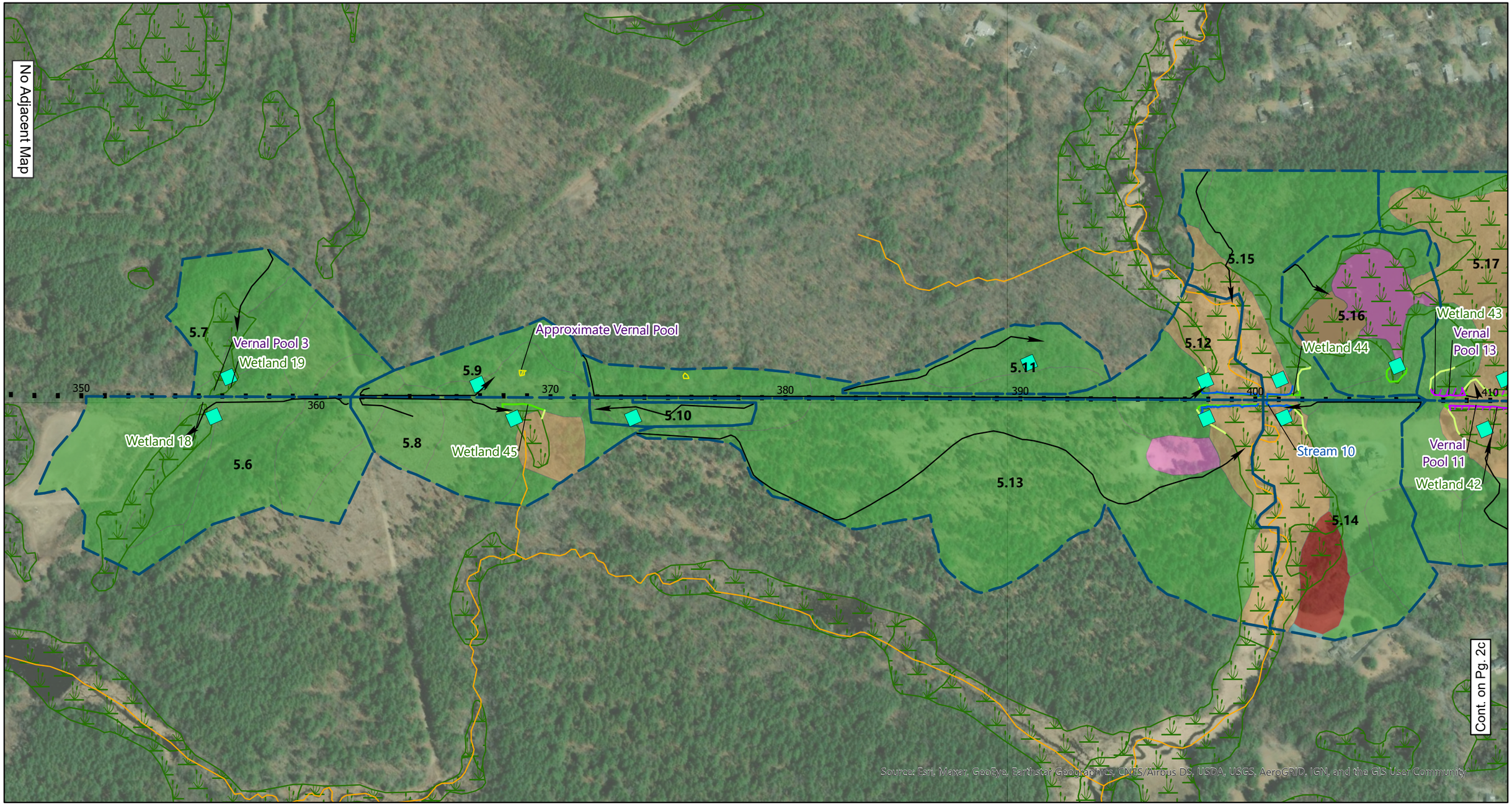
EVERSOURCE ENERGY

Sudbury-Hudson Overall Transmission Reliability Project

Figure 2a: Existing Drainage Areas

Date: 7/7/2020

vhb



MA DFW Coldwater Fisheries Resources

Delineated Top of Bank

Delineated Vernal Pool Edge

Approximate Wetland Edge

Delineated Wetland Edge

Vernal Pool

Approximate Vernal Pool

Approximate Isolated Wetland

Approximate Wetland Resource Areas (From MassGIS)

DEP Approved Zone II

Project Stationing

Massachusetts Municipalities

Design Point

Time of Concentration

Hydraulic Soil Group

A

A/D

B

B/D

D

N

0 400 800 Feet

EVERSOURCE ENERGY

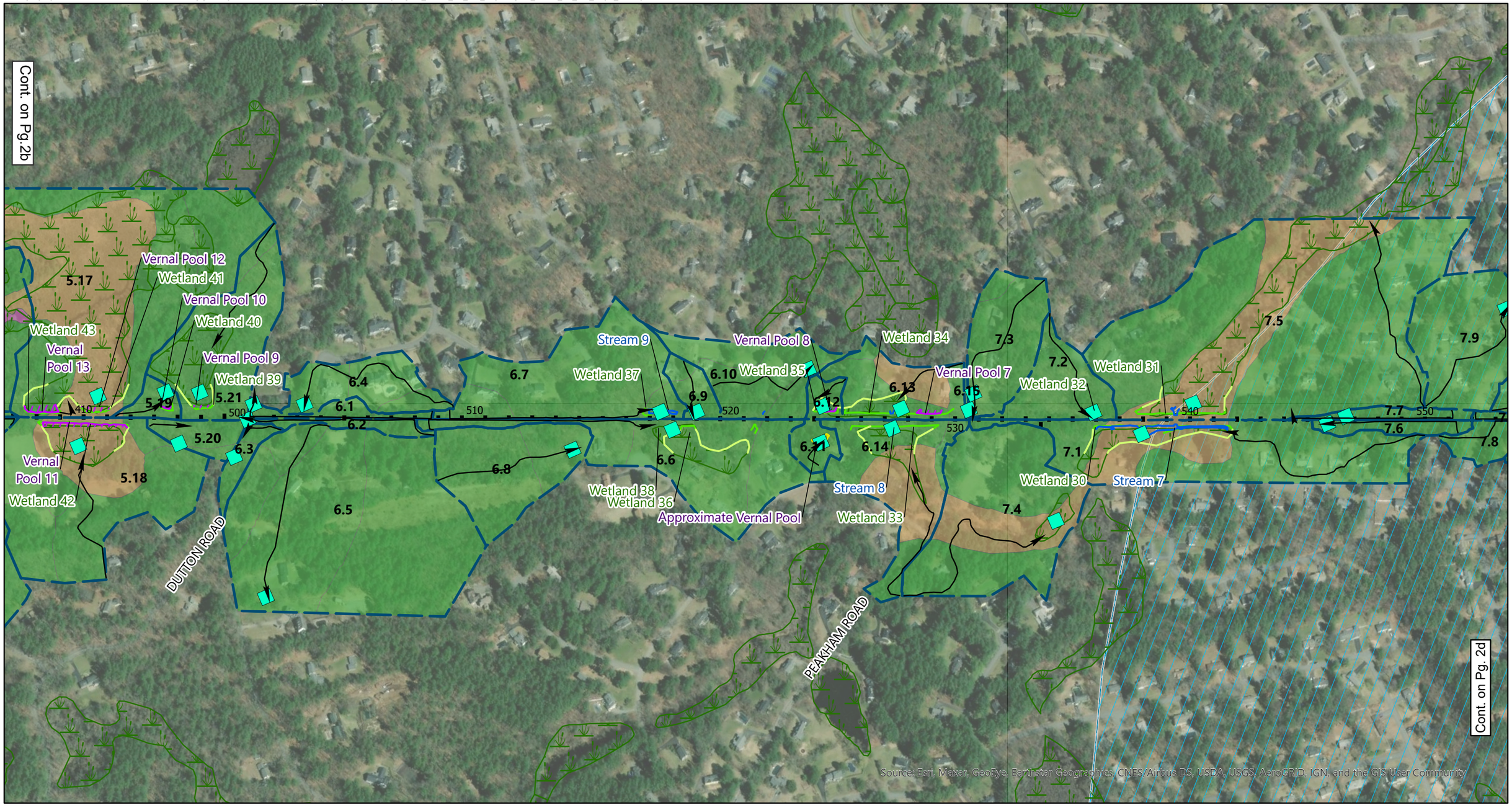
Sudbury-Hudson Transmission Reliability Project

Figure 2b: Existing Drainage Areas

Date: 7/8/2020

Source:
MassGIS, VHB

vhb



MA DFW Coldwater Fisheries Resources

Delineated Top of Bank

Delineated Vernal Pool Edge

Approximate Wetland Edge

Delineated Wetland Edge

Vernal Pool

Approximate Vernal Pool

Approximate Isolated Wetland

Approximate Wetland Resource Areas (From MassGIS)

DEP Approved Zone II

Project Stationing

Massachusetts Municipalities

Design Point

Time of Concentration

Hydraulic Soil Group

A

B/D

D

N

0 400 800 Feet

EVERSOURCE ENERGY

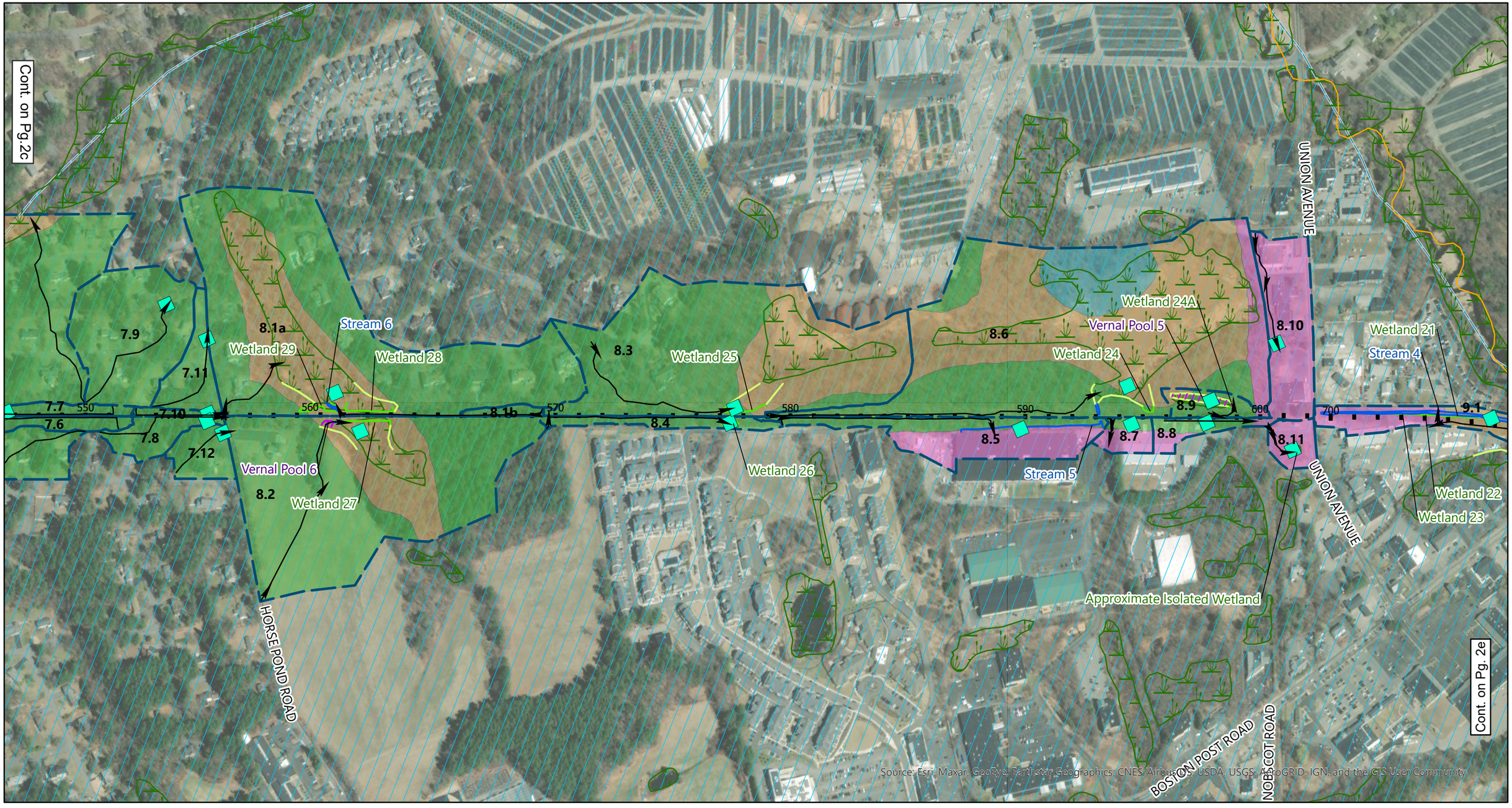
Sudbury-Hudson Transmission Reliability Project

Figure 2c: Existing Drainage Areas

Date: 7/8/2020

Source:
MassGIS, VHB

vhb



MA DFW Coldwater Fisheries Resources

Delineated Top of Bank

Delineated Vernal Pool Edge

Approximate Wetland Edge

Delineated Wetland Edge

Vernal Pool

Approximate Vernal Pool

Approximate Isolated Wetland

Approximate Wetland Resource Areas (From MassGIS)

DEP Approved Zone II

Project Stationing

Massachusetts Municipalities

Design Point

Time of Concentration

Hydraulic Soil Group

A

A/D

B/D

D

N

0 400 800 Feet

EVERSOURCE ENERGY

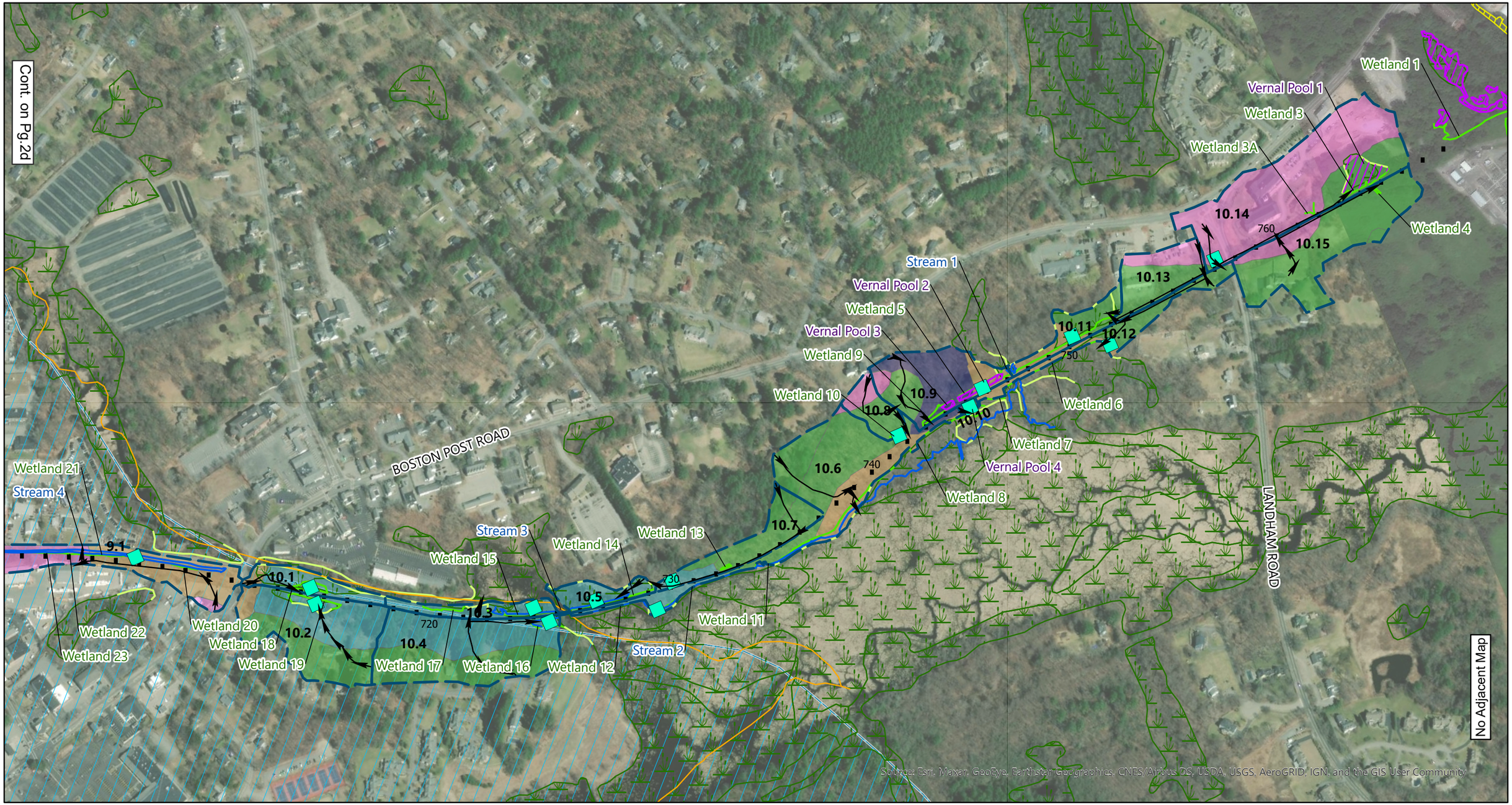
Sudbury-Hudson Transmission Reliability Project

Figure 2d: Existing Drainage Areas

Date: 7/8/2020

Source:
MassGIS, VHB

vhb



MA DFW Coldwater Fisheries Resources

Delineated Top of Bank

Delineated Vernal Pool Edge

Approximate Wetland Edge

Delineated Wetland Edge

Vernal Pool

Approximate Vernal Pool

Approximate Isolated Wetland

Approximate Wetland Resource Areas (From MassGIS)

DEP Approved Zone II

Project Stationing

Massachusetts Municipalities

Design Point

Time of Concentration

Hydraulic Soil Group

- A
- A/D
- B/D
- C
- D

N

0 400 800 Feet

EVERSOURCE ENERGY

Sudbury-Hudson Transmission Reliability Project

Figure 2e: Existing Drainage Areas

Date: 7/8/2020

Source:
MassGIS, VHB

vhb

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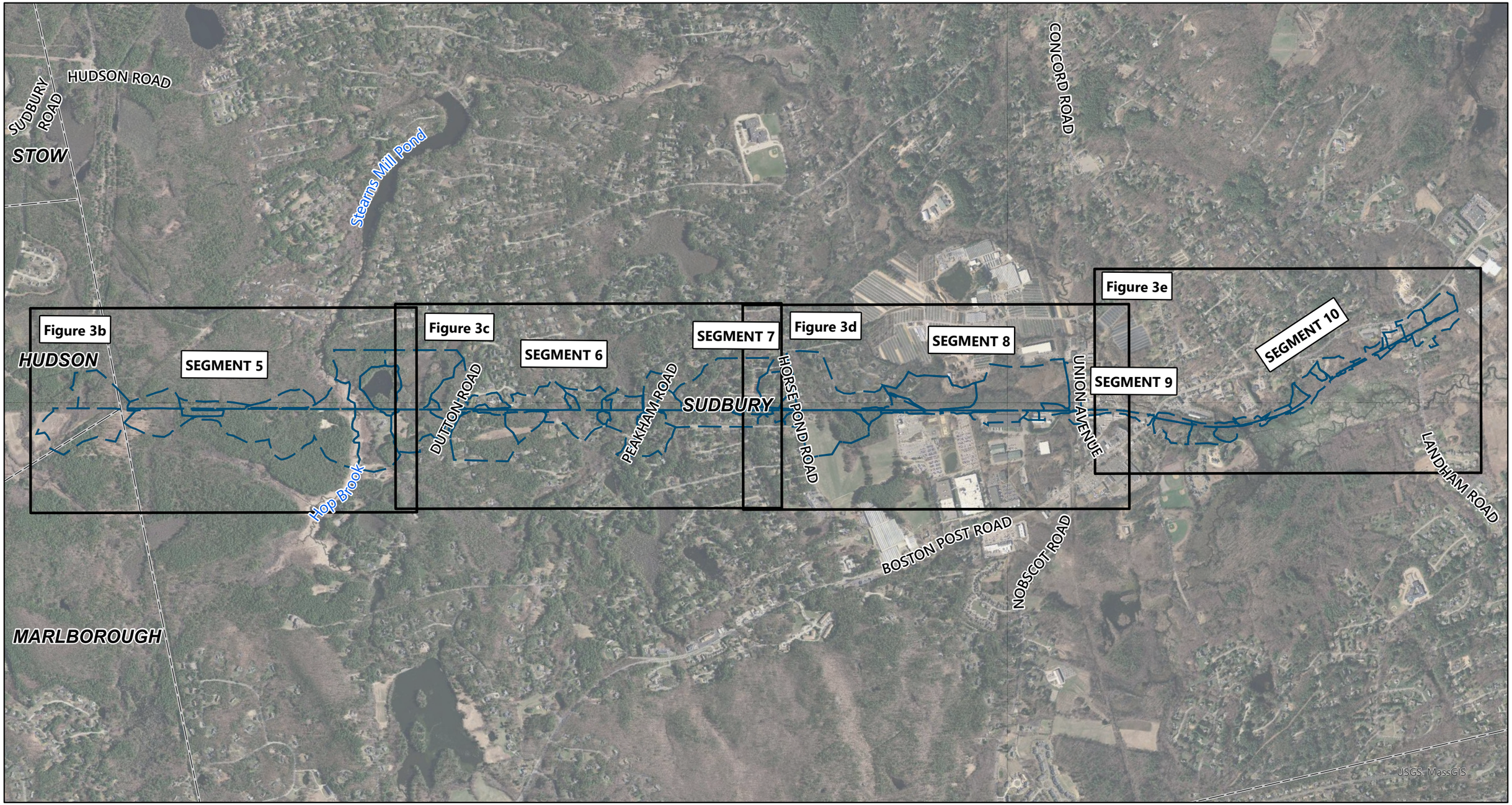


Map Boundaries

Proposed Drainage Areas

Massachusetts Municipalities

N

Source:
MassGIS, VHB

0 1,500 3,000 Feet

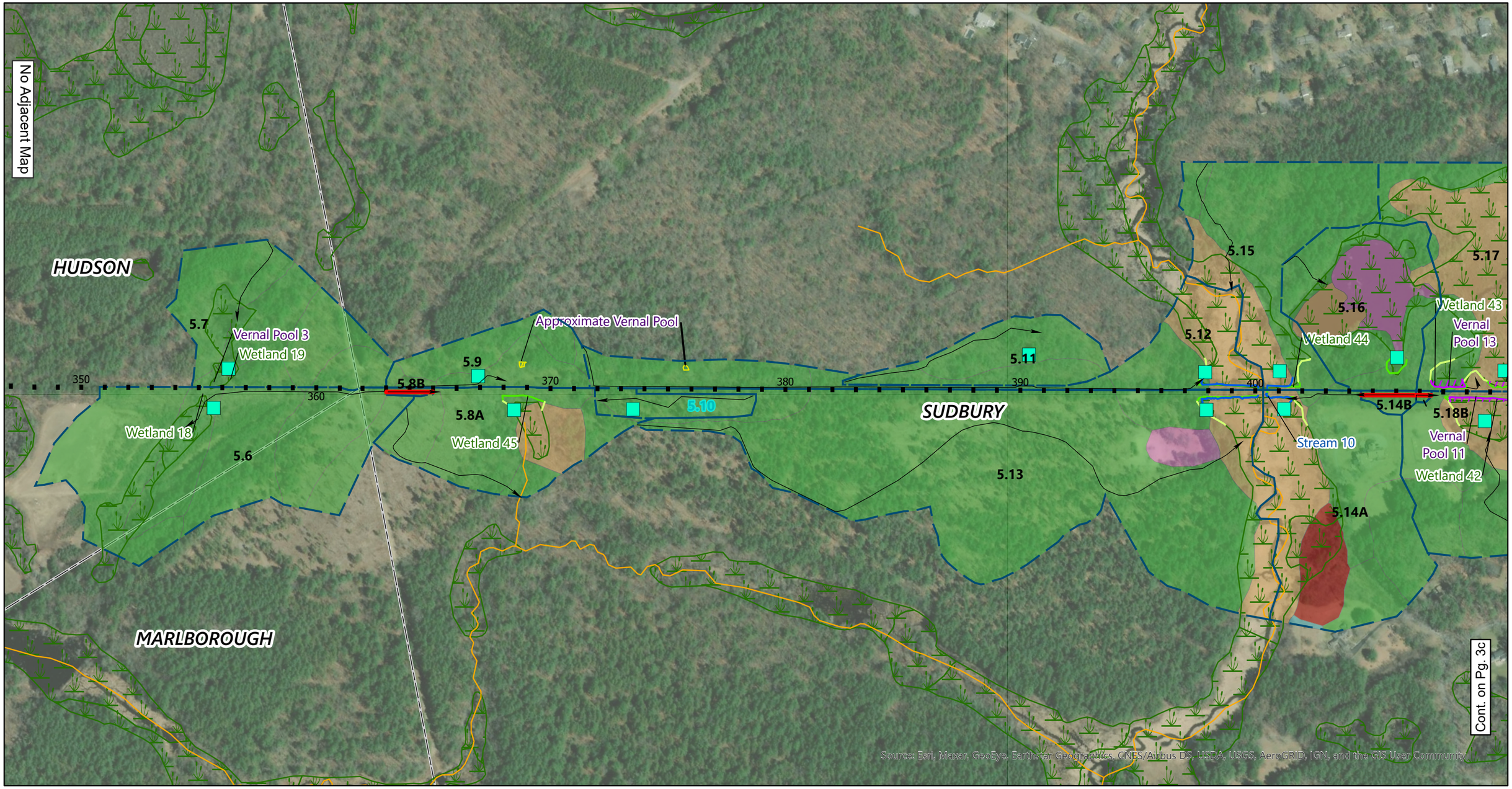
EVERSOURCE ENERGY

Sudbury-Hudson Overall Transmission Reliability Project

Figure 3a: Proposed Drainage Areas

Date: 7/7/2020

vhb



MA DFW Coldwater Fisheries Resources

Delineated Wetland Edge

Approximate Wetland Edge

Delineated Top of Bank

Delineated Vernal Pool Edge

Vernal Pool

Approximate Vernal Pool

Approximate Isolated Wetland

Approximate Wetland Resource Areas (From MassGIS)

DEP Approved Zone II

Project Stationing

Proposed Drainage Areas

Massachusetts Municipalities

Design Point

Time of Concentration

Area of Increased Infiltration

Hydrologic Soil Group

D

A

A/D

B

B/D

C

N

0 400 800 Feet

EVERSOURCE ENERGY

Sudbury-Hudson Transmission Reliability Project

Figure 3b: Proposed Drainage Areas

Date: 7/7/2020

Source:
MassGIS, VHB

vhb

Cont. on Pg.3b

Vernal Pool 12
Wetland 41
Vernal Pool 10
Wetland 40
Wetland 43
Vernal Pool 13
Vernal Pool 9
Wetland 39
Stream 9
Vernal Pool 8
Wetland 34
Wetland 37
Wetland 35
Vernal Pool 7
Wetland 31
Wetland 32
SUDBURY
Vernal Pool 11
Wetland 42
Wetland 38
Wetland 36
Approximate Vernal Pool
Stream 8
Wetland 33
Wetland 30
Stream 7
DUTTON ROAD
PEAKHAM ROAD
5.17
5.19
5.21
6.1A
6.1B
6.4
6.7
6.10
6.9
6.12
6.13
6.15
7.3
7.2
7.5
7.9
510
6.6A
520
530
7.1A
540
550
7.7
7.6
7.8
5.18B
5.20
6.3
6.2
5.18A
6.6B
6.11
6.14
7.1B
6.8
6.5
7.4

Cont. on Pg. 3d

- MA DFW Coldwater Fisheries Resources
- Delineated Wetland Edge
- Approximate Wetland Edge
- Delineated Top of Bank
- Delineated Vernal Pool Edge
- Vernal Pool
- Approximate Vernal Pool
- Approximate Isolated Wetland
- Approximate Wetland Resource Areas (From MassGIS)
- DEP Approved Zone II
- Project Stationing
- Proposed Drainage Areas
- Massachusetts Municipalities
- Design Point
- Time of Concentration
- Area of Increased Infiltration

Hydrologic Soil Group

- D
- A
- A/D
- B
- B/D
- C

N

0 400 800 Feet

EVERSOURCE ENERGY

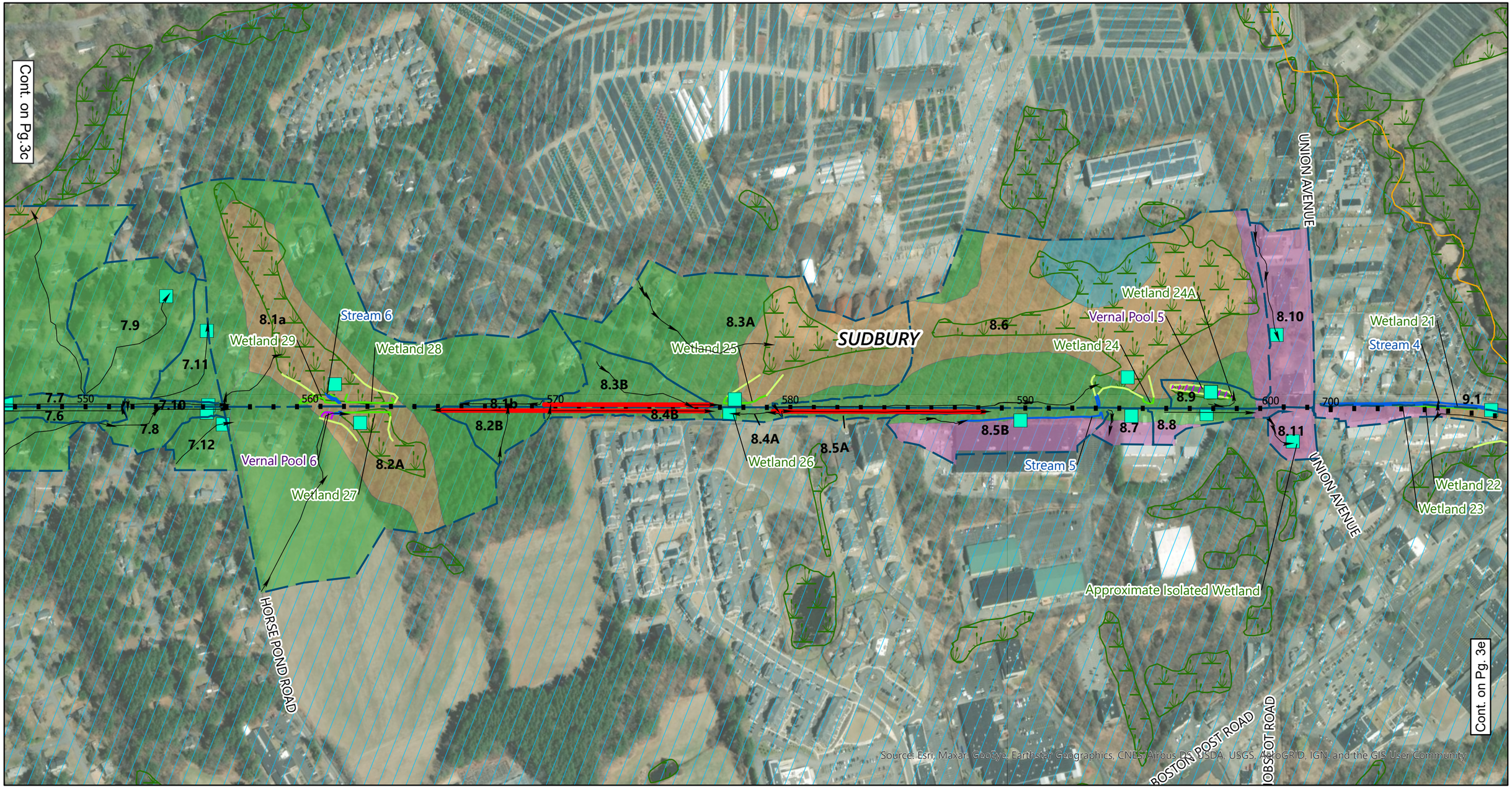
Sudbury-Hudson Transmission Reliability Project

Figure 3c: Proposed Drainage Areas

Date: 7/7/2020

Source:
MassGIS, VHB

vhb



MA DFW Coldwater Fisheries Resources

Delineated Wetland Edge

Approximate Wetland Edge

Delineated Top of Bank

Delineated Vernal Pool Edge

Vernal Pool

Approximate Vernal Pool

Approximate Isolated Wetland

Approximate Wetland Resource Areas (From MassGIS)

DEP Approved Zone II

Project Stationing

Proposed Drainage Areas

Massachusetts Municipalities

Design Point

Time of Concentration

Area of Increased Infiltration

Hydrologic Soil Group

D

A

A/D

B

B/D

C

N

0 400 800 Feet

EVERSOURCE ENERGY

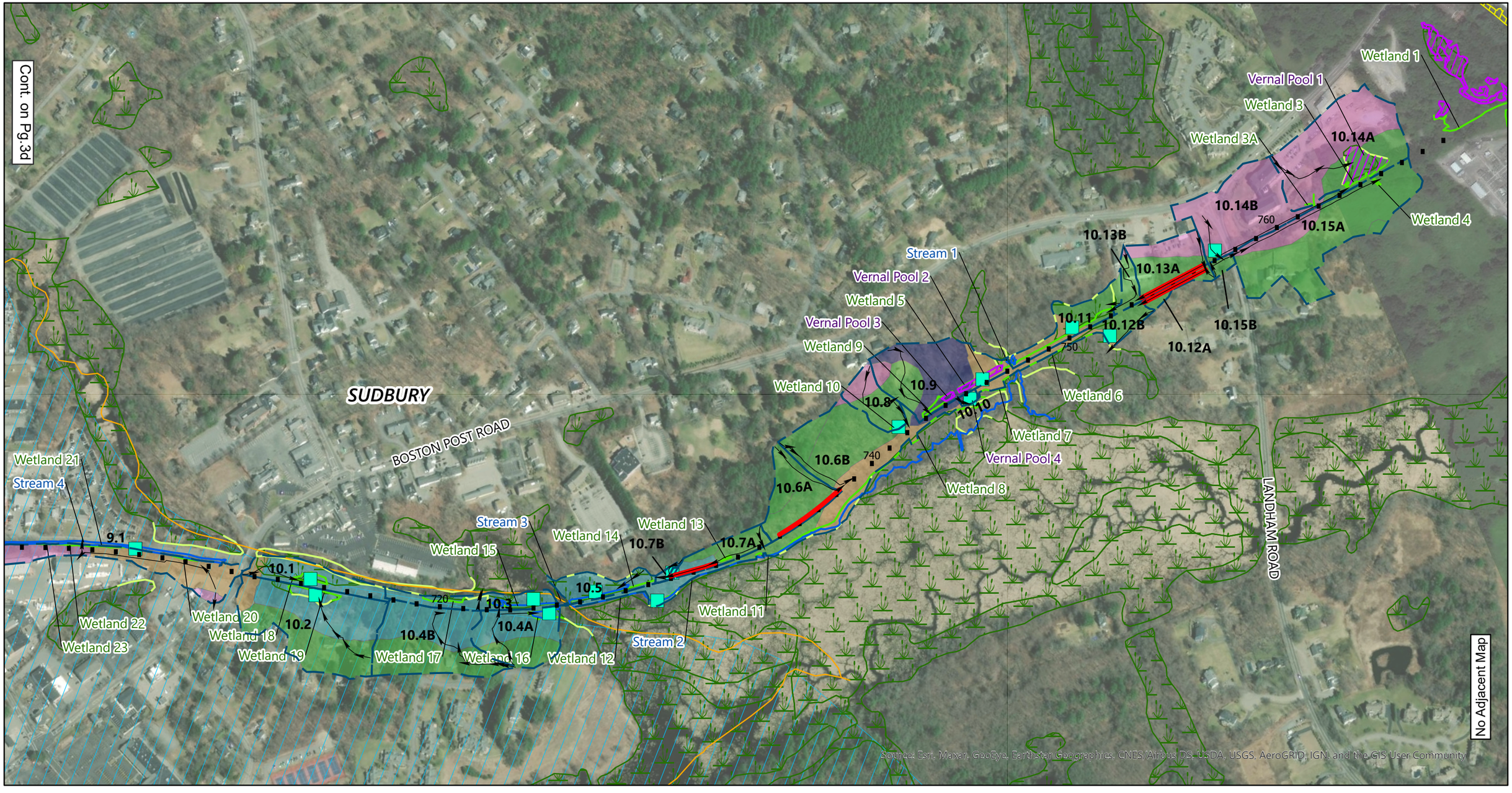
Sudbury-Hudson Transmission Reliability Project

Figure 3d: Proposed Drainage Areas

Date: 7/7/2020

Source: MassGIS, VHB

vhb



MA DFW Coldwater Fisheries Resources

Delineated Wetland Edge

Approximate Wetland Edge

Delineated Top of Bank

Delineated Vernal Pool Edge

Vernal Pool

Approximate Vernal Pool

Approximate Isolated Wetland

Approximate Wetland Resource Areas (From MassGIS)

DEP Approved Zone II

Project Stationing

Proposed Drainage Areas

Massachusetts Municipalities

Design Point

Time of Concentration

Area of Increased Infiltration

Hydrologic Soil Group

D

A

A/D

B

B/D

C

N

0 400 800 Feet

EVERSOURCE ENERGY

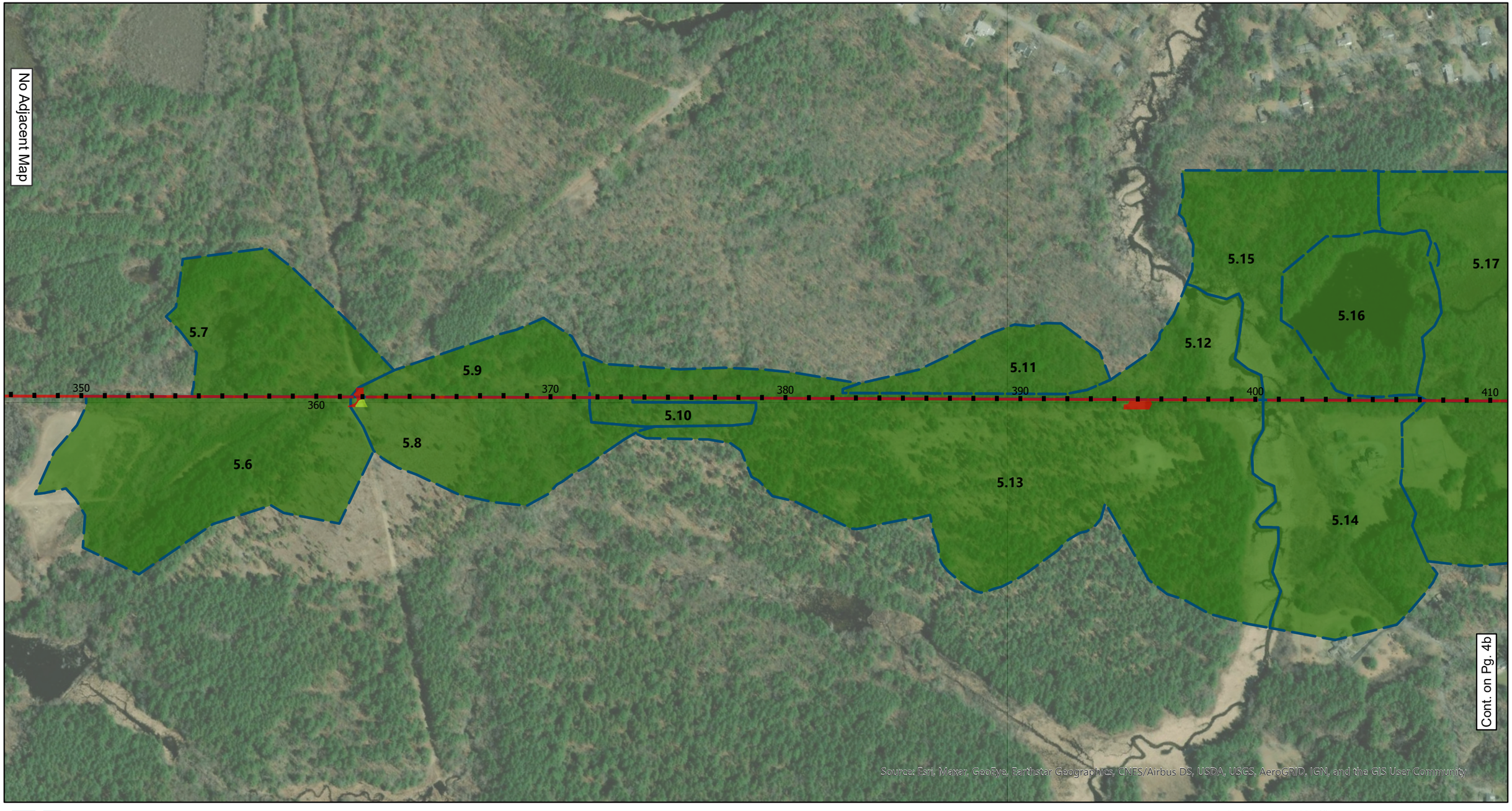
Sudbury-Hudson Transmission Reliability Project

Figure 3e: Proposed Drainage Areas

Date: 7/7/2020

Source: MassGIS, VHB

vhb



Existing Drainage Areas

Massachusetts Municipalities

Project Stationing

Cover Type
- Woods - Good
- Grass - Good
- Gravel Road

Cover Type
- Paved Parking
- Paved Roads with Curb
- Water Surface

Roofs

N

0 400 800 Feet

EVERSOURCE ENERGY

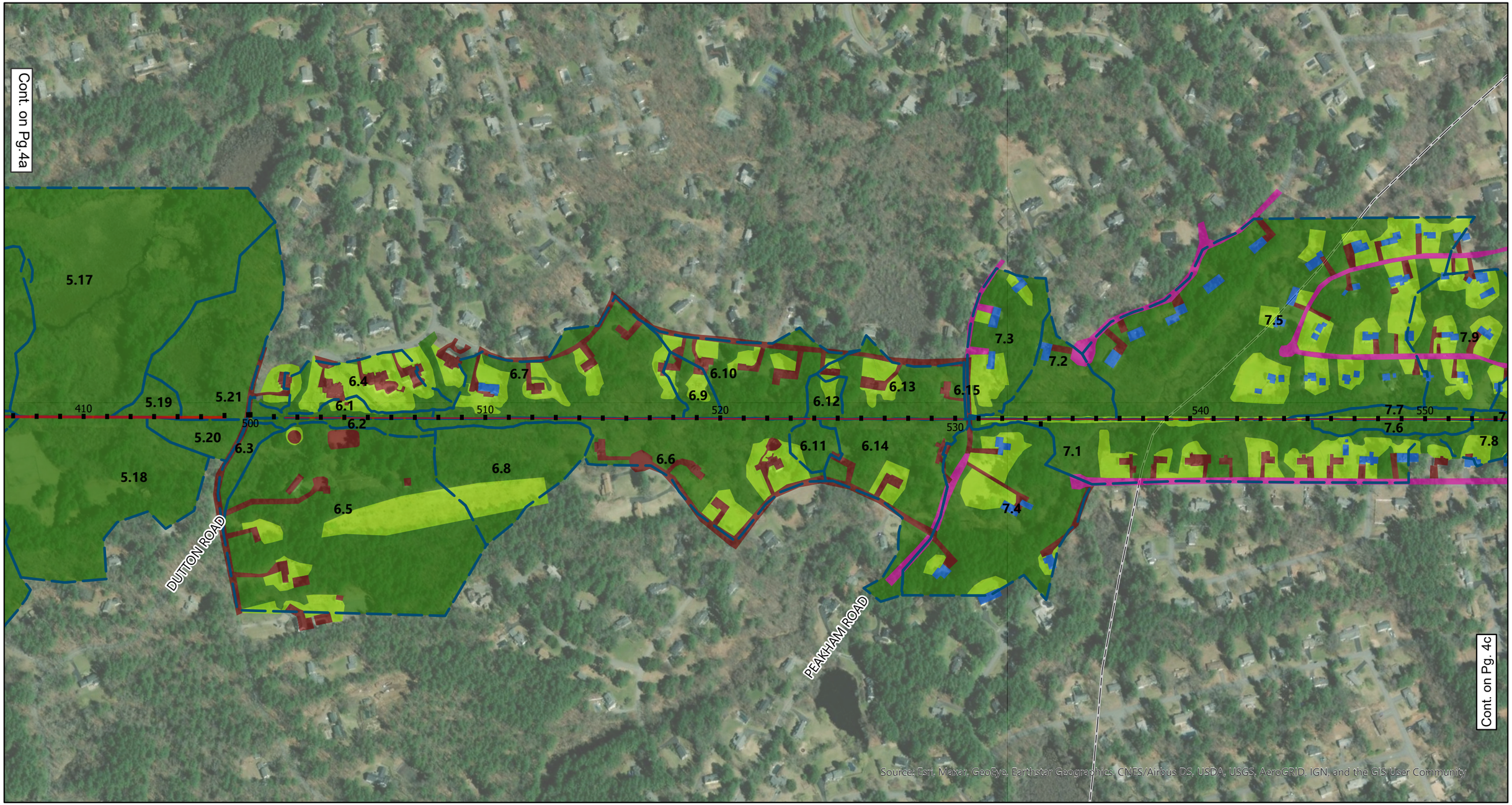
Sudbury-Hudson Transmission Reliability Project

Figure 4a: Existing Cover Type

Date: 7/13/2020

Source:
MassGIS, VHB

vhb



Existing Drainage Areas

Massachusetts Municipalities

Project Stationing

Cover Type

- Woods - Good
- Grass - Good
- Gravel Road

Cover Type

- Paved Parking
- Paved Roads with Curb
- Water Surface

Roofs

N

0 400 800 Feet

EVERSOURCE ENERGY

Sudbury-Hudson Transmission Reliability Project

Figure 4b: Existing Cover Type

Date: 7/13/2020

Source:
MassGIS, VHB

vhb

\\vhb\gis\proj\Wat-TE\14009.00 Sudbury-Hudson Eng\gis\Project\NOI Stormwater Report Figures\Sudbury\Figure_4abcd_EX_LU_Maps\Figure_4abcd_EX_LU_Maps_RTC.aprx 7/13/2020

Existing Drainage Areas

Massachusetts Municipalities

Project Stationing

Cover Type

- Woods - Good
- Grass - Good
- Gravel Road

Cover Type

- Paved Parking
- Paved Roads with Curb
- Water Surface

Roofs

N

0 400 800 Feet

EVERSOURCE ENERGY

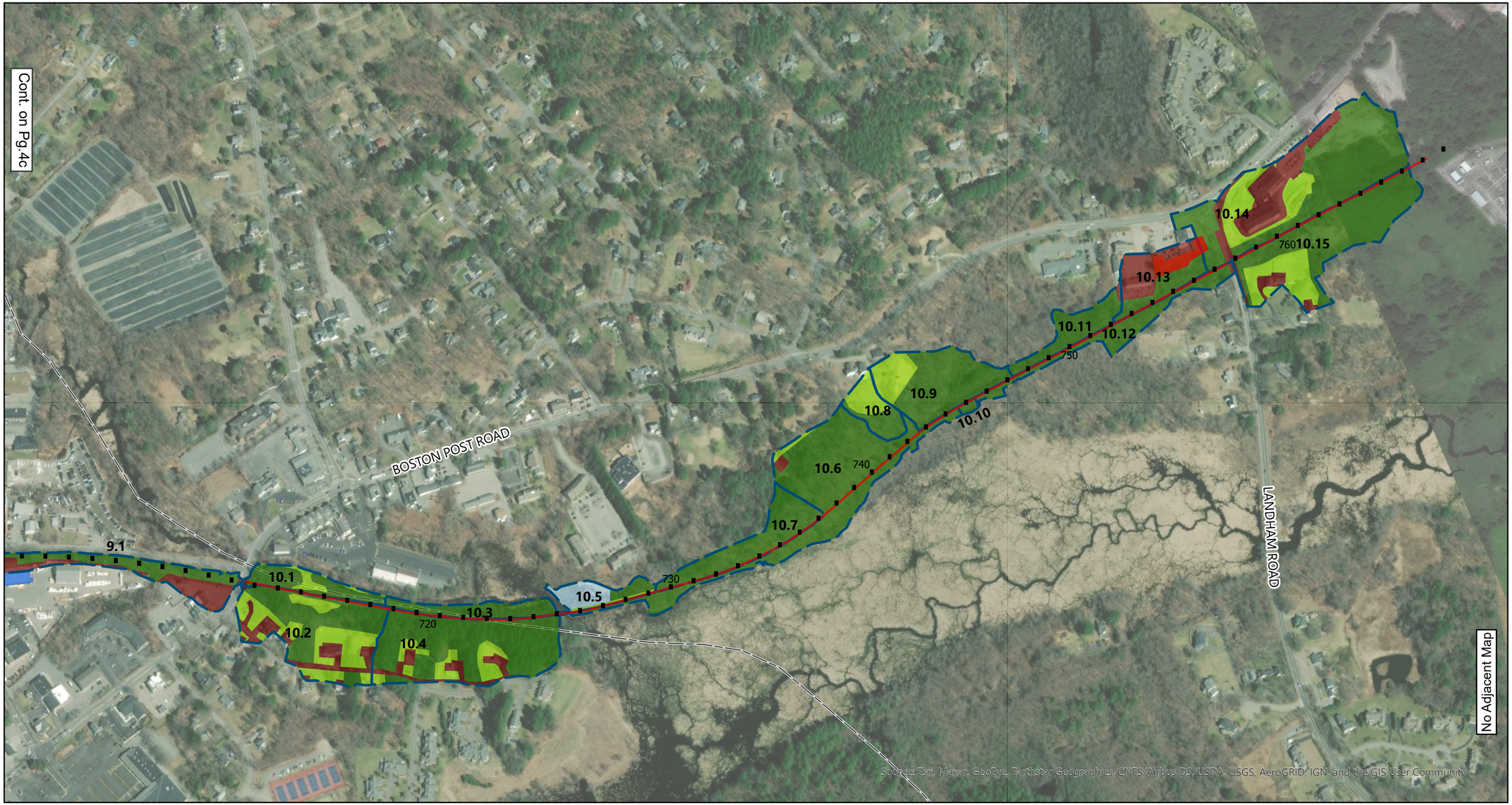
Sudbury-Hudson Transmission Reliability Project

Figure 4c: Existing Cover Type

Date: 7/13/2020

Source:
MassGIS, VHB

vhb



Existing Drainage Areas

Massachusetts Municipalities

Project Stationing

Cover Type

- Woods - Good
- Grass - Good
- Gravel Road

Cover Type

- Paved Parking
- Paved Roads with Curb
- Water Surface

Roofs

N

0 400 800 Feet

EVERSOURCE ENERGY

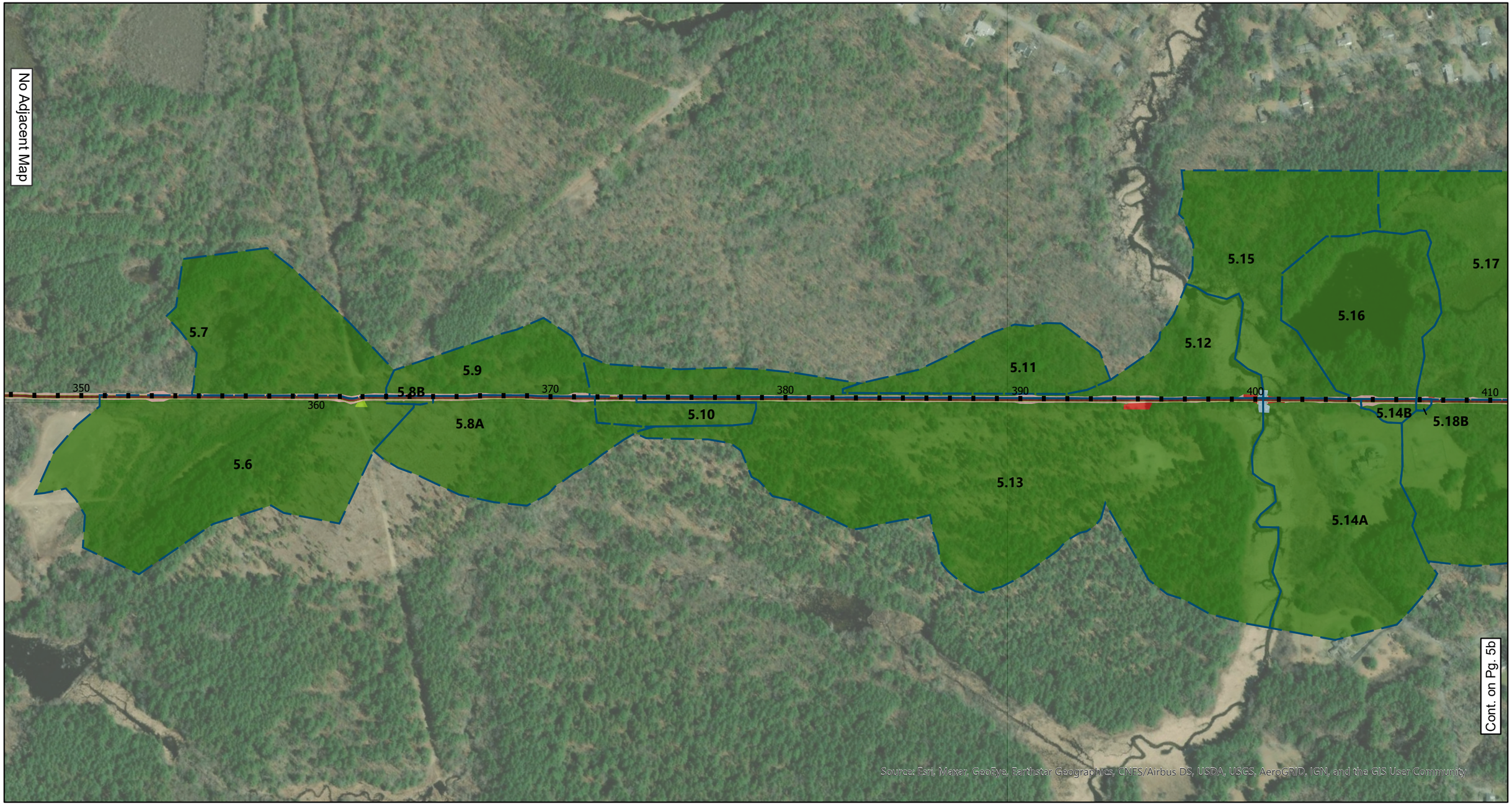
Sudbury-Hudson Transmission Reliability Project

Figure 4d: Existing Cover Type

Date: 7/13/2020

Source:
MassGIS, VHB

vhb



Proposed Drainage Areas

Massachusetts Municipalities

Project Stationing

Cover Type

- Woods - Good
- Grass - Good
- Gravel Road
- Paved Parking
- Paved Roads with Curb
- Meadow Non-Grazed
- Water Surface
- Roofs

N

0 400 800 Feet

EVERSOURCE ENERGY

Sudbury-Hudson Transmission Reliability Project

Figure 5a: Proposed Cover Type

Date: 7/13/2020

Source:
MassGIS, VHB

vhb

Proposed Drainage Areas

Massachusetts Municipalities

Project Stationing

Cover Type

- Woods - Good
- Grass - Good
- Gravel Road
- Paved Parking
- Paved Roads with Curb
- Meadow Non-Grazed
- Water Surface
- Roofs

N

0 400 800 Feet

EVERSOURCE ENERGY

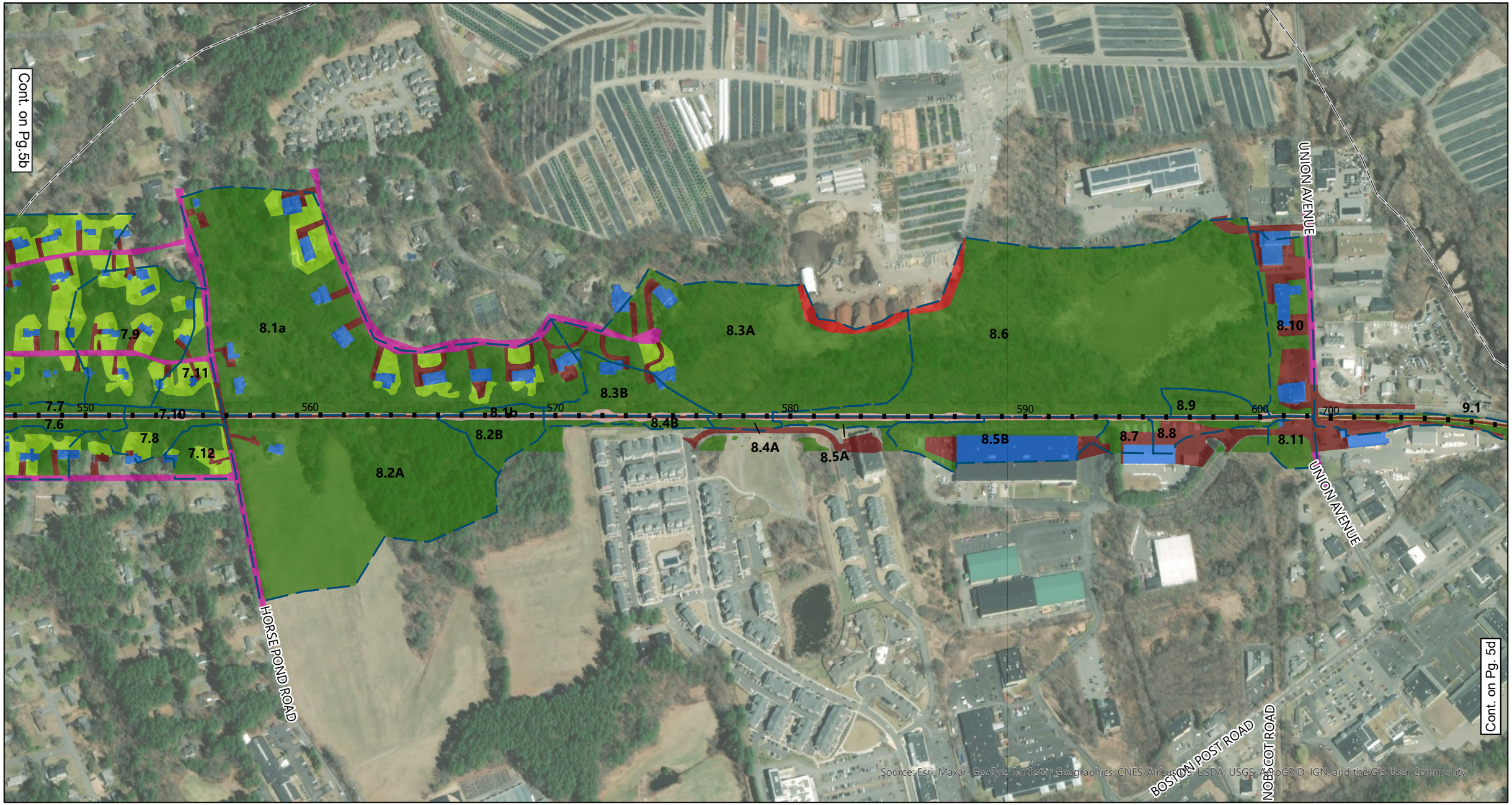
Sudbury-Hudson Transmission Reliability Project

Figure 5b: Proposed Cover Type

Date: 7/13/2020

Source:
MassGIS, VHB

vhb



Proposed Drainage Areas

Massachusetts Municipalities

Project Stationing

Cover Type

Woods - Good

Grass - Good

Gravel Road

Paved Parking

Paved Roads with Curb

Meadow Non-Grazed

Water Surface

Roofs

N

0 400 800 Feet

EVERSOURCE ENERGY

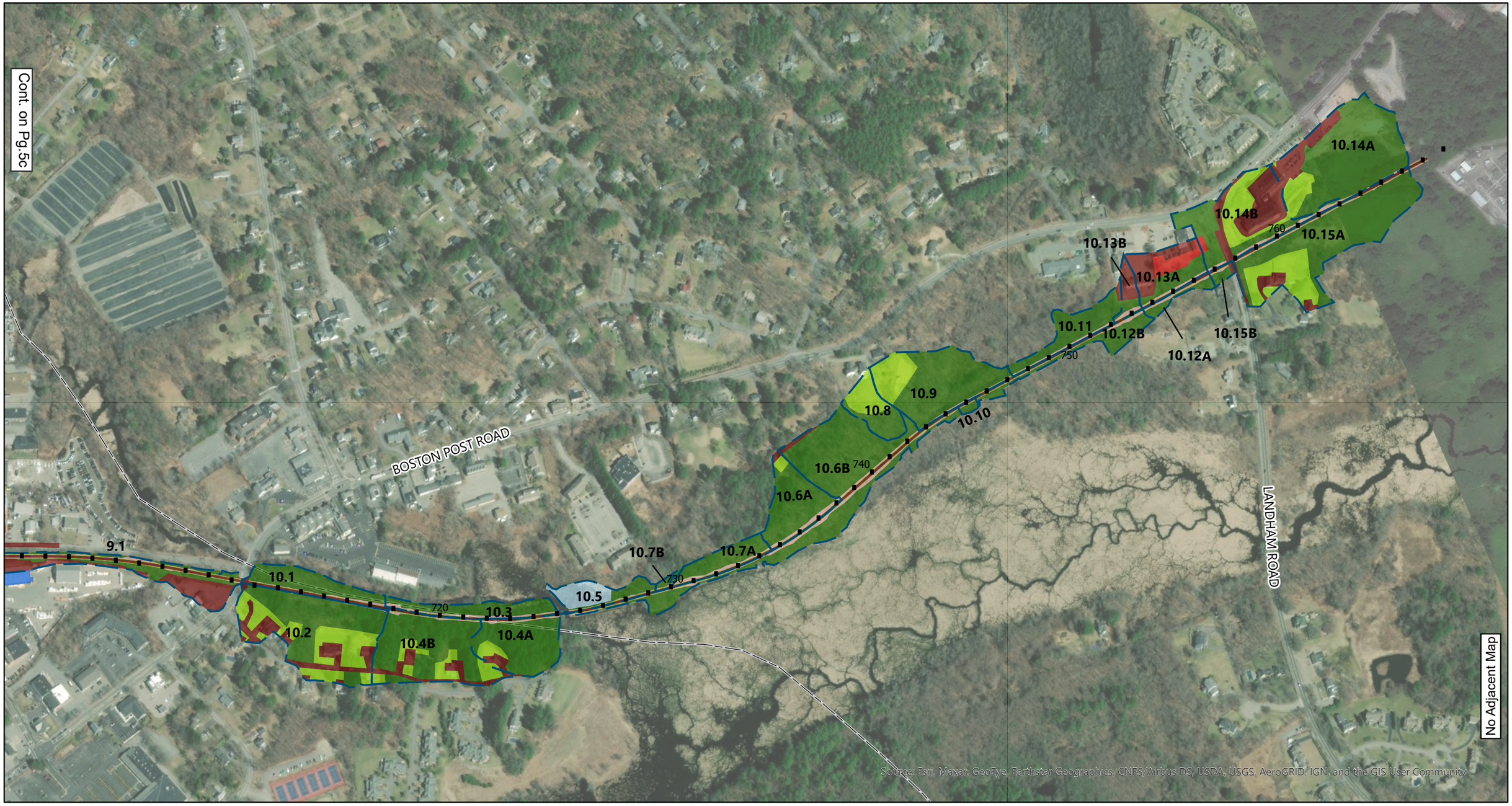
Sudbury-Hudson Transmission Reliability Project

Figure 5c: Proposed Cover Type

Date: 7/13/2020

Source:
MassGIS, VHB

vhb



Proposed Drainage Areas

Massachusetts Municipalities

Project Stationing

Cover Type

- Woods - Good
- Grass - Good
- Gravel Road
- Paved Parking
- Paved Roads with Curb
- Meadow Non-Grazed
- Water Surface
- Roofs

N

0 400 800 Feet

EVERSOURCE ENERGY

Sudbury-Hudson Transmission Reliability Project

Figure 5d: Proposed Cover Type

Date: 7/13/2020

Source:
MassGIS, VHB

vhb

2

Compliance with Massachusetts Stormwater Management Standards

As required by Section 8.0(A)(1) of the Sudbury Bylaw Regulations, and as demonstrated below, the proposed Project complies with the performance standards in the most recent MassDEP Stormwater Management Standards for footpaths, bike paths, and other paths for pedestrians and/or nonmotorized vehicle access. The DEP Checklist for the Stormwater Report is provided in Appendix G.

The stormwater management system was designed for the final condition of the Project, which is a 10-foot-wide paved bike path and incorporates areas of increased infiltration and conveyance swales to promote recharge. Stormwater discharging from the bike path to critical areas (CFRs and Zone IIs) is conveyed to areas of increased infiltration. The characteristics of the areas of increased infiltration most closely match an infiltration basin Best Management Practice ("BMP") because they detain, treat, and infiltrate stormwater. In addition to areas of increased infiltration, conveyance swales are also proposed to convey and treat stormwater. These conveyance swales will provide stormwater detention, infiltration, and treatment. However, although these features provide benefits, this report did not account for the recharge and water quality treatment from these swales because they are not considered recharge and treatment BMPs by MassDEP's Stormwater Management Handbook.

Stormwater from the bike path will also discharge to adjacent vegetated areas where stormwater will naturally infiltrate under the majority of storm events. This approach is referred to as an "impervious area disconnection," which is the redirection of stormwater from impervious cover (i.e., paved bike path) to an area of pervious cover (i.e., vegetated area) to provide filtering and infiltration. This non-structural BMP will provide peak rate attenuation, recharge and water quality treatment. The benefit of this feature is supported by EPA guidance, which notes pollutant and volume reductions from an impervious to pervious area ratio as little as 8:1 with no slope requirements.

The stormwater management design provides stormwater treatment and recharge throughout the Project area and targets additional treatment at critical areas while reducing disturbance to existing vegetation, limiting impacts to buffer zones and resource areas, and providing a manageable system for long-term maintenance. The proposed measures for this Project also exceed what is typically incorporated into rail trail projects, especially since stormwater runoff from bike paths is a limited source of pollutants such as total suspended solids and phosphorus.

Under 310 CMR 10.05(6)(m)6, the Stormwater Management Standards apply to the maximum extent practicable to bike paths. As required by 310 CMR 10.05(6)(o), all reasonable efforts were made to meet Standards 2, 3, 4, and 6. (Standard 5 does not apply.) A complete evaluation was made of possible stormwater management measures including environmentally sensitive site design and low impact development techniques that minimize land disturbance and impervious surfaces, structural stormwater best management practices, pollution prevention, erosion and sedimentation control and proper operation and maintenance of stormwater best management practices; and the highest practicable level of stormwater management is being implemented. The Project fully meets Standards 1, 8, and 9. See below for further descriptions regarding the Project's compliance with each standard.

Standard 1: No New Untreated Discharges or Erosion to Wetlands

The Project fully complies with Standard 1.

The existing drainage patterns will be maintained where feasible and all proposed Project stormwater outlets and conveyances were designed to not cause erosion or scour to wetlands or receiving waters or result in new untreated discharge points. The outlet from the closed drainage system was designed with a flared end section and stone protection to dissipate discharge velocity. Overflows from BMPs that impound stormwater were designed with vegetation to protect down-gradient areas from erosion. Velocities and shear stresses were calculated, and swales were appropriately designed to reduce the potential for erosion, as necessary in accordance with Federal Highway Administration ("FHWA") Hydraulic Engineering Circular Number 15 ("HEC-15"). The 25-year event was used to calculate the effects of erosion and scour throughout the Project in accordance with the Massachusetts Department of Transportation's ("MassDOT") Project Development and Design Guide. Computations and supporting information are provided in Appendix A.

Standard 2: Peak Rate Attenuation

The Project complies with Standard 2 to the maximum extent practicable for the following reasons:

- In order to construct additional structural stormwater BMPs significant earthwork, vegetation removal, and possible impacts to wetland resource areas would be necessary. The design avoided these additional impacts where there would be negligible peak rate attenuation benefits.
- The Project team evaluated several other structural BMP options in order to make all reasonable efforts to fully meet Standard 2. This included a trench along the downslope side of the path and subsurface detention/infiltration beneath the bike path. These were determined to be impractical due to long-term maintenance requirements, additional vegetation removal and wetland impacts, engineering challenges, costs, and negligible benefits in comparison to the proposed stormwater management design.

As outlined in the Stormwater Management Bylaw Regulations for the Town of Sudbury, the rainfall-runoff response of the Site under the existing and proposed conditions was analyzed for storm events with recurrence intervals of 2, 10, 25, and 100 years, with rainfall amounts of 3.2", 4.8", 6.0", and 8.6", respectively. A rainfall depth of one inch was also evaluated, as outlined by the Stormwater Management Bylaw Regulations for the Town of Sudbury. The results of the analysis are summarized in the following bullet points and in Tables 3 to 8 below.

- Five design points exhibit an increase in peak discharge rates between the existing and proposed conditions for the 1-inch storm
- Twenty-three design points exhibit an increase in peak discharge rates between the existing and proposed conditions for the 2-year storm
- Thirty-one design points exhibit increases in peak discharge rates between the existing and proposed conditions in the 10-year storm
- Twenty-two design points exhibit an increase in peak discharge rate between the existing and proposed conditions for the 25-year storm
- Thirty-five design points exhibit an increase in peak discharge rate between existing and proposed conditions for the 100-year storm

The increases in peak rates described above between the existing and proposed conditions are minimal, so the impacts of implementing additional structural stormwater BMPs to decrease the peak flow outweigh the minor benefit gained from adding such measures. The red numbers in Tables 3 through 8 below indicate increases in peak rate attenuation between existing and proposed conditions.

It should also be noted that conveyance swales were not included as detention ponds in the proposed conditions model. Although these swales were not included as detention ponds they will filter and detain stormwater, and include check dams that will detain and infiltrate stormwater which will reduce the peak rate of runoff. If these swales were included in the modeling, peak rates in the proposed conditions would be further reduced from what is presented below.

Design Points with Proposed Structural Stormwater Controls:

The following design points can mitigate peak flows with the use of areas of increased infiltration:

DP-5.8: A one-foot-deep area of increased infiltration is proposed for 200 ft along the edge of the bike path to attenuate the proposed peak flows. This area of increased infiltration is relatively flat and includes additional check dams to promote infiltration above that of a standard swale.

DP-5.14: A one-foot-deep area of increased infiltration is proposed for 250 ft along the edge of the bike path to attenuate the proposed peak flows. This area of increased infiltration is relatively flat and includes additional check dams to promote infiltration above that of a standard swale.

DP-5.18: A one-foot-deep area of increased infiltration is proposed for 85 ft along the edge of the bike path to attenuate the proposed peak flows. This area of increased infiltration is relatively flat and includes additional check dams to promote infiltration above that of a standard swale.

DP-6.2 – An eight to ten-foot wide increased area of infiltration is proposed along the south side of the bike path to mitigate peak flows. This widened area of increased infiltration is in line with a swale that is relatively flat and includes additional check dams to promote infiltration above that of a standard swale prior to discharging into the area of increased infiltration.

DP-6.6: A one-foot-deep area of increased infiltration is proposed for 700 ft along the edge of the bike path to attenuate the proposed peak flows. This area of increased infiltration is relatively flat and includes additional check dams to promote infiltration above that of a standard swale.

DP-7.1: An increased area of infiltration basin is proposed approximately 270 ft from Peakham Road. A catch basin is proposed where the bike path and Peakham Road meet to collect any additional runoff from the Site onto Peakham Road and route the runoff to the area of increased infiltration.

DP-8.2: A one-foot-deep area of increased infiltration is proposed for 450 ft along the edge of the bike path to attenuate the proposed peak flows. This area of increased infiltration is relatively flat and includes additional check dams to promote infiltration above that of a standard swale.

DP-8.3: A one-foot-deep area of increased infiltration is proposed for 725 ft along the edge of the bike path to attenuate the proposed peak flows. This area of increased infiltration is relatively flat and includes additional check dams to promote infiltration above that of a standard swale.

DP-8.4: A one-foot-deep area of increased infiltration is proposed for 700 ft along the edge of the bike path to attenuate the proposed peak flows. This area of increased infiltration is relatively flat and includes additional check dams to promote infiltration above that of a standard swale.

DP-8.5: A one-foot-deep area of increased infiltration is proposed for 900 ft along the edge of the bike path to attenuate the proposed peak flows. This area of increased infiltration is relatively flat and includes additional check dams to promote infiltration above that of a standard swale.

DP-10.6: A one-foot-deep area of increased infiltration is proposed for 350 ft along the edge of the bike path to attenuate the proposed peak flows. This area of increased infiltration is relatively flat and includes additional check dams to promote infiltration above that of a standard swale.

DP-10.7: A one-foot-deep area of increased infiltration is proposed for 200 ft along the edge of the bike path to attenuate the proposed peak flows. This area of increased infiltration is relatively flat and includes additional check dams to promote infiltration above that of a standard swale.

DP-10.12: A one-foot-deep area of increased infiltration is proposed for 300 ft along the edge of the bike path to attenuate the proposed peak flows. This area of increased infiltration is relatively flat and includes additional check dams to promote infiltration above that of a standard swale.

DP-10.13: A one-foot-deep area of increased infiltration is proposed for 300 ft along the edge of the bike path to attenuate the proposed peak flows. This area of increased infiltration is relatively flat and includes additional check dams to promote infiltration above that of a standard swale.

Design Points that Comply with Standard 2 to the Maximum Extent Practicable

Thirty-seven design points that were analyzed comply with Standard 2 to the maximum extent practicable and demonstrated an increase in peak runoff.

The time of concentrations for the sub-catchments with BMPs assumes a "grassed waterway" surface type for the entire length of the areas of increased infiltration and conveyance swales and does not take into account the impact of the check dams. This results in decreased times of concentration under proposed conditions as compared to existing conditions. However, the time of concentration is likely to increase based on flow attenuation and storage behind check dams within the areas if increased infiltration and conveyance swales. Additionally, there are several locations where sub-watersheds were delineated in the proposed conditions but not the existing conditions in order to accurately design conveyance swales and areas of increased infiltration. In these locations the time of concentration was larger in the existing conditions than the proposed conditions which resulted in the modeling estimating larger flows under proposed conditions for areas with little or no impact from the proposed project.

The Project evaluated the impacts of the increased runoff on areas downstream of the project. Several of the design points that had increase in flows (5.6, 5.14, 9.1, 10.4, and 10.6) directly discharge to a larger waterbody (i.e. Hop Brook or a tributary of Hop Brook), in which these increases are negligible in comparison to the peak flow rate of the waterbody. In other locations the Project team reviewed the changes in volume (6.6, 8.3, 8.5, 10.11/10.13, 10.14, and 10.15) and compared that change to available storage volume of the receiving

wetland. This evaluation noted that there would be negligible increases in flood elevations assuming no-infiltration within the wetland.

As previously noted the project evaluated additional structural stormwater BMPs, however the construction impacts (tree clearing, earthwork, etc. in and near wetland resources) for implementing additional structural BMPs to mitigate these increases would outweigh the minor benefit gained from adding such measures.

The computations and supporting information for the hydrologic model are provided in Appendix B.

Table 3 Peak Discharge Rates (cfs) – Segment 5

	Design Storms				
Design Point	**1-inch**	**2-year**	**10-year**	**25-year**	**100-year**
DP-5.6					
Existing	0.0	0.0	0.0	0.2	2.1
Proposed	0.2	0.6	0.9	1.1	3.6
DP-5.7					
Existing	0.0	0.0	0.0	0.1	1.0
Proposed	0.0	0.0	0.0	0.1	1.0
DP-5.8					
Existing	0.0	0.0	0.0	0.2	1.3
Proposed	0.1	0.3	0.6	0.7	1.7
DP-5.9					
Existing	0.0	0.0	0.0	0.1	1.2
Proposed	0.0	0.0	0.0	0.1	0.8
DP-5.10					
Existing	0.0	0.0	0.0	0.0	0.2
Proposed	0.0	0.1	0.1	0.1	0.3
DP-5.11					
Existing	0.0	0.0	0.0	0.0	0.2
Proposed	0.0	0.0	0.0	0.0	0.2
DP-5.12					
Existing	0.0	0.1	0.8	1.7	4.6
Proposed	0.0	0.1	0.8	1.9	5.2
DP-5.13					
Existing	0.0	0.0	0.4	1.2	5.0
Proposed	0.1	0.4	0.6	1.3	5.1

	Design Storms				
Design Point	1-inch	2-year	10-year	25-year	100-year
DP-5.14[1]					
Existing	0.0	0.1	3.0	7.2	20.1
Proposed	0.1	0.3	3.7	9.0	25.2
DP-5.15					
Existing	0.0	0.0	0.7	2.4	8.7
Proposed	0.0	0.0	0.7	2.3	8.5
DP-5.16					
Existing	0.0	0.2	3.2	6.6	15.7
Proposed	0.0	0.2	3.2	6.6	15.8
DP-5.17					
Existing	0.0	1.2	13.1	25.7	58.0
Proposed	0.0	1.2	13.1	25.7	57.9
DP-5.18					
Existing	0.0	0.0	0.6	1.8	5.9
Proposed	0.0	0.1	0.8	2.0	6.2
DP-5.19					
Existing	0.0	0.0	0.0	0.0	0.3
Proposed	0.0	0.0	0.0	0.0	0.1
DP-5.20					
Existing	0.0	0.0	0.0	0.0	0.2
Proposed	0.1	0.3	0.4	0.5	0.8
DP-5.21					
Existing	0.0	0.0	0.0	0.1	0.8
Proposed	0.0	0.0	0.1	0.1	0.9

Table 4 Peak Discharge Rates (cfs) – Segment 6

	Design Storms				
Design Point	1-inch	2-year	10-year	25-year	100-year
DP-6.1					
Existing	0.0	0.0	0.0	0.1	0.4
Proposed	0.0	0.0	0.0	0.1	0.5
DP-6.2					
Existing	0.0	0.0	0.0	0.0	0.2
Proposed	0.0	0.0	0.0	0.2	1.0
DP-6.3					

[1] The increase in peak rates at this design point is a result of breaking out watersheds into two parts (area that goes to the BMP and area that goes directly to the design point) in proposed condition but not existing conditions. This resulted in time of concentrations being reduced under proposed conditions and larger peak rates.

	Design Storms				
Design Point	**1-inch**	**2-year**	**10-year**	**25-year**	**100-year**
Existing	0.0	0.0	0.1	0.3	0.9
Proposed	0.0	0.0	0.1	0.3	0.9
DP-6.4					
Existing	0.0	0.1	1.0	2.0	4.8
Proposed	0.0	0.1	1.0	2.0	4.8
DP-6.5					
Existing	0.0	0.0	0.3	1.2	7.5
Proposed	0.0	0.0	0.3	1.2	7.5
DP-6.6[1]					
Existing	0.0	0.0	0.5	1.5	5.0
Proposed	0.0	0.0	1.1	3.1	9.4
DP-6.7					
Existing	0.0	0.0	0.2	1.1	4.9
Proposed	0.0	0.0	0.2	1.1	5.4
DP-6.8					
Existing	0.0	0.0	0.0	0.1	1.1
Proposed	0.0	0.0	0.0	0.1	1.1
DP-6.9					
Existing	0.0	0.0	0.1	0.2	1.0
Proposed	0.0	0.0	0.1	0.2	0.9
DP-6.10					
Existing	0.0	0.0	0.7	1.7	5.6
Proposed	0.0	0.0	0.6	1.7	5.5
DP-6.11					
Existing	0.0	0.0	0.0	0.0	0.3
Proposed	0.0	0.0	0.0	0.0	0.3
DP-6.12					
Existing	0.0	0.0	0.0	0.0	0.2
Proposed	0.0	0.0	0.0	0.0	0.2
DP-6.13					
Existing	0.0	0.2	1.6	3.0	6.7
Proposed	0.0	0.2	1.5	2.9	6.7
DP-6.14					
Existing	0.0	1.0	4.1	6.6	12.5
Proposed	0.0	1.3	4.7	7.3	13.5
DP-6.15					
Existing	0.0	0.2	0.3	0.4	0.6
Proposed	0.0	0.2	0.3	0.4	0.6

Table 5 Peak Discharge Rates (cfs) – Segment 7

	Design Storms				
Design Point	1-inch	2-year	10-year	25-year	100-year
DP-7.1					
Existing	0.0	0.8	4.5	7.8	15.9
Proposed	0.0	1.0	4.9	8.3	16.5
DP-7.2					
Existing	0.0	0.0	0.0	0.2	1.4
Proposed	0.0	0.0	0.0	0.1	1.2
DP-7.3					
Existing	0.0	0.0	0.2	0.8	2.9
Proposed	0.0	0.0	0.2	0.8	2.9
DP-7.4					
Existing	0.0	0.4	3.3	6.3	14.1
Proposed	0.0	0.4	3.3	6.3	14.1
DP-7.5					
Existing	0.0	1.0	9.2	17.4	38.9
Proposed	0.0	1.0	9.2	17.4	38.8
DP-7.6					
Existing	0.0	0.0	0.0	0.0	0.0
Proposed	0.0	0.0	0.0	0.0	0.0
DP-7.7					
Existing	0.0	0.0	0.0	0.1	0.4
Proposed	0.0	0.0	0.0	0.0	0.1
DP-7.8					
Existing	0.0	0.0	0.0	0.0	0.5
Proposed	0.0	0.0	0.0	0.2	1.0
DP-7.9					
Existing	0.0	0.0	0.8	2.1	7.2
Proposed	0.0	0.0	0.8	2.1	7.2
DP-7.10					
Existing	0.0	0.0	0.0	0.0	0.2
Proposed	0.0	0.0	0.0	0.0	0.1
DP-7.11					
Existing	0.0	0.0	0.3	0.8	2.3
Proposed	0.0	0.0	0.3	0.8	2.3
DP-7.12					
Existing	0.0	0.0	0.3	0.7	1.9
Proposed	0.0	0.0	0.3	0.7	1.9

Table 6 Peak Discharge Rates (cfs) – Segment 8

	Design Storms				
Design Point	1-inch	2-year	10-year	25-year	100-year
DP-8.1					
Existing	0.0	2.6	15.0	26.1	53.4
Proposed	0.0	2.6	14.9	26.0	53.2
DP-8.2					
Existing	0.0	0.1	1.4	4.0	12.9
Proposed	0.0	0.1	1.6	4.3	12.9
DP-8.3[1]					
Existing	0.0	0.9	6.1	11.0	23.4
Proposed	0.0	1.6	8.1	13.6	27.3
DP-8.4					
Existing	0.0	0.0	0.0	0.0	0.4
Proposed	0.0	0.0	0.3	0.7	1.9
DP-8.5[1]					
Existing	0.0	2.0	5.4	7.9	13.6
Proposed	0.0	3.8	8.3	11.2	17.6
DP-8.6					
Existing	0.0	5.9	18.2	27.4	49.0
Proposed	0.0	5.8	18.1	27.3	48.7
DP-8.7					
Existing	0.0	0.1	1.1	1.9	3.2
Proposed	0.0	0.1	1.2	2.7	3.7
DP-8.8					
Existing	0.0	0.6	1.3	1.8	3.0
Proposed	0.0	0.8	1.7	2.3	3.5
DP-8.9					
Existing	0.0	0.0	0.1	0.2	0.8
Proposed	0.0	0.0	0.0	0.2	0.7
DP-8.10					
Existing	0.0	7.4	12.6	15.9	24.4
Proposed	0.0	7.2	12.4	15.6	23.2
DP-8.11					
Existing	0.0	1.7	3.2	4.1	6.1
Proposed	0.0	1.8	3.4	4.4	6.4

Table 7 Peak Discharge Rates (cfs) – Segment 9

	Design Storms				
Design Point	1-inch	2-year	10-year	25-year	100-year
DP-9.1					
Existing	0.2	2.5	4.5	5.8	8.5
Proposed	0.4	3.3	5.7	7.2	10.3

Table 8 Peak Discharge Rates (cfs) – Segment 10

	Design Storms				
Design Point	1-inch	2-year	10-year	25-year	100-year
DP-10.1					
Existing	0.0	1.1	2.4	3.3	5.1
Proposed	0.0	1.4	2.9	3.9	5.9
DP-10.2					
Existing	0.0	2.6	7.2	10.6	18.1
Proposed	0.0	2.7	7.3	10.6	18.0
DP-10.3					
Existing	0.0	1.2	2.6	3.4	5.4
Proposed	0.0	1.4	2.9	3.9	6.0
DP-10.4					
Existing	0.0	1.3	4.8	7.5	13.8
Proposed	0.0	1.9	6.7	10.3	18.8
DP-10.5					
Existing	0.0	0.8	1.7	2.3	3.6
Proposed	0.0	0.8	1.7	2.3	3.6
DP-10.6[1]					
Existing	0.0	0.1	1.9	4.3	10.7
Proposed	0.0	0.3	2.8	5.5	12.4
DP-10.7					
Existing	0.0	0.0	0.1	0.2	1.0
Proposed	0.0	0.1	0.3	0.7	1.8
DP-10.8					
Existing	0.0	0.0	0.3	0.8	2.1
Proposed	0.0	0.0	0.5	1.0	2.5
DP-10.9					
Existing	0.0	1.3	4.6	7.1	12.9
Proposed	0.0	1.6	5.1	7.7	13.7
DP-10.10					
Existing	0.0	0.1	0.3	0.4	0.6
Proposed	0.0	0.1	0.3	0.4	0.6

	Design Storms				
Design Point	1-inch	2-year	10-year	25-year	100-year
DP-10.11&10.13					
Existing	0.0	1.5	4.2	6.3	11.1
Proposed	0.0	1.8	4.9	7.4	12.9
DP-10.12					
Existing	0.0	0.0	0.5	1.1	2.4
Proposed	0.0	0.2	0.8	1.3	2.6
DP-10.14					
Existing	0.0	4.4	10.2	14.1	22.9
Proposed	0.2	5.9	13.5	19.0	31.2
DP-10.15					
Existing	0.0	0.0	0.4	1.3	4.5
Proposed	0.0	0.0	0.7	1.9	5.8

Per the Sudbury Stormwater Bylaws, total volume of discharge was calculated as part of the analysis. The red numbers in Tables 9 through 14 below indicate increases in peak rate attenuation between existing and proposed conditions.

Table 9 Discharge Volumes (af) – Segment 5

	Design Storms				
Design Point	1-inch	2-year	10-year	25-year	100-year
DP-5.6					
Existing	0	0	0.011	0.136	0.787
Proposed	0.018	0.072	0.125	0.280	1.004
DP-5.7					
Existing	0	0	0.006	0.077	0.447
Proposed	0	0	0.006	0.079	0.454
DP-5.8					
Existing	0	0	0.013	0.096	0.475
Proposed	0.010	0.042	0.077	0.155	0.507
DP-5.9					
Existing	0	0	0.013	0.066	0.287
Proposed	0	0	0.003	0.035	0.205
DP-5.10					
Existing	0	0	0.003	0.018	0.090
Proposed	0.003	0.010	0.018	0.033	0.103
DP-5.11					
Existing	0	0	0	0	0.075
Proposed	0	0	0	0	0.075

	Design Storms				
Design Point	1-inch	2-year	10-year	25-year	100-year
DP-5.12					
Existing	0.001	0.053	0.362	0.664	1.487
Proposed	0.001	0.041	0.317	0.594	1.360
DP-5.13					
Existing	0.002	0.006	0.285	0.870	2.927
Proposed	0.042	0.162	0.461	1.034	3.053
DP-5.14					
Existing	0.002	0.091	0.621	1.140	2.555
Proposed	0.008	0.113	0.646	1.161	2.568
DP-5.15					
Existing	0.001	0.015	0.271	0.571	1.459
Proposed	0.001	0.014	0.265	0.560	1.432
DP-5.16					
Existing	0	0.107	0.523	0.896	1.869
Proposed	0	0.108	0.528	0.905	1.889
DP-5.17					
Existing	0	0.305	1.306	2.175	4.396
Proposed	0	0.304	1.304	2.171	4.388
DP-5.18					
Existing	0	0.018	0.295	0.606	1.511
Proposed	0.008	0.050	0.528	0.666	1.590
DP-5.19					
Existing	0	0	0.006	0.017	0.059
Proposed	0	0	0.001	0.007	0.035
DP-5.20					
Existing	0	0	0.001	0.009	0.053
Proposed	0.009	0.034	0.054	0.075	0.144
DP-5.21					
Existing	0	0	0.004	0.046	0.269
Proposed	0.001	0.005	0.011	0.055	0.276

Table 10 Discharge Volumes (af) – Segment 6

	Design Storms				
Design Point	1-inch	2-year	10-year	25-year	100-year
DP-6.1					
Existing	0	0	0.015	0.034	0.094
Proposed	0	0	0.008	0.022	0.067

	Design Storms				
Design Point	1-inch	2-year	10-year	25-year	100-year
DP-6.2					
Existing	0	0	0.002	0.010	0.045
Proposed	0	0	0	0.014	0.090
DP-6.3					
Existing	0	0.001	0.022	0.045	0.113
Proposed	0	0.001	0.021	0.043	0.108
DP-6.4					
Existing	0	0.036	0.176	0.301	0.628
Proposed	0	0.036	0.176	0.301	0.628
DP-6.5					
Existing	0	0	0.173	0.491	1.567
Proposed	0	0	0.173	0.491	1.567
DP-6.6					
Existing	0	0.012	0.202	0.415	1.035
Proposed	0	0.023	0.253	0.497	1.179
DP-6.7					
Existing	0	0.001	0.131	0.304	0.840
Proposed	0	0	0.109	0.267	0.768
DP-6.8					
Existing	0	0	0.013	0.069	0.303
Proposed	0	0	0.013	0.069	0.303
DP-6.9					
Existing	0	0.001	0.022	0.048	0.122
Proposed	0	0.001	0.022	0.047	0.121
DP-6.10					
Existing	0	0.014	0.140	0.271	0.639
Proposed	0	0.014	0.139	0.270	0.636
DP-6.11					
Existing	0	0	0.003	0.014	0.055
Proposed	0	0	0.003	0.014	0.053
DP-6.12					
Existing	0	0	0.002	0.009	0.037
Proposed	0	0	0.002	0.008	0.037
DP-6.13					
Existing	0	0.053	0.227	0.377	0.762
Proposed	0	0.052	0.224	0.372	0.752
DP-6.14					
Existing	0	0.190	0.576	0.878	1.605
Proposed	0	0.226	0.646	0.968	1.733

	Design Storms				
Design Point	1-inch	2-year	10-year	25-year	100-year
DP-6.15					
Existing	0.001	0.012	0.022	0.030	0.045
Proposed	0.001	0.012	0.022	0.029	0.044

Table 11 Discharge Volumes (af) – Segment 7

	Design Storms				
Design Point	1-inch	2-year	10-year	25-year	100-year
DP-7.1					
Existing	0	0.234	0.821	1.302	2.492
Proposed	0	0.257	0.875	1.376	2.605
DP-7.2					
Existing	0	0	0.027	0.077	0.247
Proposed	0	0	0.021	0.066	0.222
DP-7.3					
Existing	0	0.004	0.090	0.192	0.494
Proposed	0	0.004	0.090	0.192	0.494
DP-7.4					
Existing	0	0.148	0.634	1.055	2.132
Proposed	0	0.148	0.633	1.054	2.132
DP-7.5					
Existing	0	0.381	1.635	2.722	5.503
Proposed	0	0.380	1.631	2.715	5.488
DP-7.6					
Existing	0	0	0	0	0
Proposed	0	0	0	0	0.008
DP-7.7					
Existing	0	0	0.006	0.018	0.063
Proposed	0	0	0	0.005	0.031
DP-7.8					
Existing	0	0	0	0.018	0.090
Proposed	0	0	0.015	0.049	0.150
DP-7.9					
Existing	0	0.014	0.183	0.364	0.881
Proposed	0	0.014	0.183	0.364	0.881
DP-7.10					
Existing	0	0	0.004	0.010	0.029
Proposed	0	0	0	0.003	0.014

	Design Storms				
Design Point	1-inch	2-year	10-year	25-year	100-year
DP-7.11					
Existing	0	0.007	0.063	0.118	0.273
Proposed	0	0.007	0.063	0.118	0.273
DP-7.12					
Existing	0	0.007	0.054	0.100	0.224
Proposed	0	0.007	0.054	0.100	0.224

Table 12 Discharge Volumes (af) – Segment 8

	Design Storms				
Design Point	1-inch	2-year	10-year	25-year	100-year
DP-8.1					
Existing	0	0.517	1.813	2.878	5.518
Proposed	0	0.514	1.805	2.864	5.489
DP-8.2					
Existing	0	0.041	0.515	1.027	2.487
Proposed	0	0.053	0.532	1.043	2.524
DP-8.3					
Existing	0	0.330	1.269	2.059	4.046
Proposed	0	0.385	1.298	2.055	4.009
DP-8.4					
Existing	0	0	0.006	0.022	0.079
Proposed	0	0.010	0.058	0.102	0.220
DP-8.5					
Existing	0	0.261	0.646	0.927	1.571
Proposed	0.014	0.371	0.793	1.104	1.803
DP-8.6					
Existing	0	1.345	3.561	5.216	9.076
Proposed	0	1.338	3.542	5.189	9.028
DP-8.7					
Existing	0	0.024	0.105	0.162	0.291
Proposed	0	0.029	0.116	0.177	0.312
DP-8.8					
Existing	0.002	0.081	0.179	0.248	0.401
Proposed	0.005	0.110	0.225	0.303	0.474
DP-8.9					
Existing	0	0.001	0.024	0.051	0.132
Proposed	0	0	0.020	0.045	0.119

	Design Storms				
Design Point	1-inch	2-year	10-year	25-year	100-year
DP-8.10					
Existing	0	0.551	1.074	1.408	2.115
Proposed	0	0.538	1.052	1.380	2.074
DP-8.11					
Existing	0.013	0.135	0.253	0.331	0.497
Proposed	0.013	0.143	0.268	0.350	0.526

Table 13 Discharge Volumes (af) – Segment 9

	Design Storms				
Design Point	1-inch	2-year	10-year	25-year	100-year
DP-9.1					
Existing	0.041	0.369	0.675	0.873	1.296
Proposed	0.059	0.417	0.732	0.934	1.363

Table 14 Discharge Volumes (af) – Segment 10

	Design Storms				
Design Point	1-inch	2-year	10-year	25-year	100-year
DP-10.1					
Existing	0.005	0.120	0.250	0.338	0.532
Proposed	0.008	0.148	0.298	0.399	0.619
DP-10.2					
Existing	0	0.276	0.683	0.980	1.661
Proposed	0.001	0.284	0.689	0.983	1.652
DP-10.3					
Existing	0.005	0.111	0.230	0.310	0.488
Proposed	0.006	0.116	0.237	0.319	0.498
DP-10.4					
Existing	0	0.212	0.607	0.909	1.628
Proposed	0	0.228	0.636	0.945	1.676
DP-10.5					
Existing	0	0.094	0.195	0.264	0.415
Proposed	0.004	0.094	0.195	0.264	0.415
DP-10.6[1]					
Existing	0	0.055	0.290	0.505	1.072
Proposed	0	0.074	0.317	0.527	1.122

	Design Storms				
Design Point	1-inch	2-year	10-year	25-year	100-year
DP-10.7					
Existing	0	0.001	0.039	0.086	0.229
Proposed	0	0.010	0.052	0.094	0.193
DP-10.8					
Existing	0	0.007	0.043	0.078	0.172
Proposed	0	0.011	0.055	0.091	0.197
DP-10.9					
Existing	0	0.133	0.370	0.550	0.975
Proposed	0	0.153	0.405	0.593	1.031
DP-10.10					
Existing	0	0.009	0.020	0.026	0.042
Proposed	0.001	0.010	0.021	0.028	0.043
DP-10.11&10.13					
Existing	0.002	0.169	0.419	0.604	1.037
Proposed	0.001	0.131	0.377	0.560	0.989
DP-10.12					
Existing	0	0.019	0.086	0.145	0.297
Proposed	0	0.027	0.087	0.135	0.267
DP-10.14					
Existing	0.014	0.643	1.423	1.968	3.182
Proposed	0.037	0.665	1.426	1.958	3.150
DP-10.15					
Existing	0	0.007	0.121	0.248	0.619
Proposed	0	0.017	0.161	0.311	0.729

Standard 3: Stormwater Recharge

The Project complies with Standard 3 to the maximum extent practicable.

A combination of structural and non-structural stormwater BMPs are used to meet Standard 3 to the maximum extent practicable. Along portions of the Project located in critical areas, structural stormwater BMPs are proposed to promote recharge. These areas of increased infiltration are basins or swales with check dams spaced to achieve the most effective recharge based on the longitudinal slope of the swale.

Additionally, stormwater from the bike path will discharge to the adjacent vegetated areas where stormwater will naturally infiltrate under the majority of storm events. This approach is a non-structural stormwater BMP known as impervious area disconnection, which redirects stormwater from areas of impervious cover to areas of pervious cover. This non-structural BMP provides stormwater recharge, and although DEP protocols do not provide credit for this feature, EPA guidance notes pollutant and volume reductions from this BMP type.

As noted previously, the Project evaluated whether additional structural stormwater BMPs would be practicable in order to more closely approximate annual recharge from pre-construction conditions. However, these BMPs would require additional impacts to existing vegetation and wetland resources and are impractical due to maintenance requirements and costs and would have provided minor improvement over the currently proposed stormwater management design.

The recharge calculations for the proposed structural stormwater BMPs (areas of increased infiltration) are provided in Table 15. The provided recharge calculations do not include the potential recharge volume from the conveyance swales or the non-structural stormwater BMP which are not considered recharge BMPs by MassDEP's Stormwater Management Handbook.

Table 15 Summary of Recharge Calculations

Infiltration BMP	Provided Recharge Volume (cf)
P-5.8B	226
P-5.14B	191
P-5.18B	46
P-6.2	473
P-6.6A	413
P-7.1	104
P-8.2B	578
P-8.3B	1,262
P-8.4B	578
P-8.5A	816
P-10.6A	653
P-10.7A	198
P-10.12A	258
P-10.13A	320
Total Recharge Provided	6,116
Total Recharge Required	8,971
Total Recharge Required (with Capture Area Adjustment)	21,121

The soil evaluation, computations, and supporting information are provided in Appendix C.

Standard 4: Water Quality

The Project complies with Standard 4 to the maximum extent practicable.

As described above, the Project is proposing structural and non-structural stormwater BMPs to provide stormwater treatment, detention, and infiltration that will provide water quality treatment.

As noted previously, the Project completed an evaluation of additional structural stormwater BMPs. These BMPs were determined to be impractical due to long-term maintenance

requirements, additional impacts to vegetated areas and wetland resources, engineering challenges, costs, and negligible benefits in comparison to proposed stormwater management design. From a water quality perspective, this conclusion considered that the bike paths do not have a source of contaminants to the path surface, and therefore little to no contaminants will be washed off the path surface by stormwater runoff (see the Standard 5 discussion below). Other than in emergency situations, vehicular access along the path is limited to bi-weekly mowing over the shoulder by DCR, annual mowing of the duct bank, inspections by Eversource approximately once every three years, and other maintenance as needed by both Eversource and DCR. The path will not be plowed or treated in the winter. Thus, the Project will not have a significant impact on water quality.

However, the Project will implement areas of increased infiltration with check dams along portions of the path to improve water quality. In addition, the Project proposes:

- One area where the area of increased infiltration will be widened to create a greater infiltration area;
- One area where an area of increased infiltration basin will be added to mitigate flows onto the roadway; and
- Twelve areas where areas of increased infiltration were added to provide treatment of the water quality volume to the maximum extent practicable.

Per the Massachusetts Stormwater Standards, BMPs within and draining to critical areas should calculate the water quality volume based on 1-inch of runoff while BMPs outside of these resource areas shall be calculated using the 0.5-inch runoff. While the majority of the BMPs are within the critical areas of a Zone II Wellhead Protection Area ("WPA") or a Coldwater Fishery Resource, six BMPs do fall outside of these resource areas (P-6.2, P-6.6, P-10. 7, P-10.6, P-10.7, P-10.12, and P-10.13.). Additionally, the Stormwater Management Bylaw Regulations for the Town of Sudbury require that the water quality volume for sizing of BMPs shall be based on the one-inch runoff volume. In order to meet by Sudbury Stormwater Bylaws and conservatively comply with the Massachusetts Stormwater Standards, the water quality volume was calculated using a one-inch rainfall depth across the impervious area of the entire project.

The water quality volume calculations for the proposed structural stormwater BMPs (areas of increased infiltration) are provided in Table 16. The provided recharge calculations do not include the potential treatment volume from the conveyance swales or the non-structural stormwater BMP which are not considered treatment BMPs by MassDEP's Stormwater Management Handbook.

Table 16 Summary of Water Quality Volume Calculations

Treatment BMP	Provided Water Quality Volume (cf)
P-5.8B	226
P-5.14B	191
P-5.18B	46
P-6.2	473
P-6.6A	413
P-7.1	104

Treatment BMP	Provided Water Quality Volume (cf)
P-8.2B	578
P-8.3B	1,262
P-8.4B	578
P-8.5A	816
P-10.6A	653
P-10.7A	198
P-10.12A	258
P-10.13A	320
Total Water Quality Volume Provided	6,116
Total Water Quality Volume Required	18,847

Computations and supporting information are provided in Appendix D.

Standard 5: Land Uses with Higher Potential Pollutant Loads (LUHPPLs)

This standard does not apply. The Project's end use will be a bike path, which is not considered a LUHPPL.

Standard 6: Critical Areas

The Project complies with Standard 6 to the maximum extent practicable. The Project is proposing structural and non-structural stormwater BMPs to provide stormwater treatment, detention, and infiltration to the proposed bike path and avoid impacts to critical areas.

The Project passes through one Zone II Wellhead Protection Area ("WPA") and a Coldwater Fishery Resource, which are considered critical areas. Although the Project avoids work within vernal pools (which qualify as Outstanding Resource Waters ("ORWs")) or vernal pool habitat, there are eight vernal pools within the ROW in Sudbury. The potential stormwater impacts (peak discharge rates and volume) to these resources were evaluated in Standard 2 above.

In critical areas, the Stormwater Management Standards require that at least 44% of the total suspended solids ("TSS") be removed prior to discharge into an infiltration structure. This requirement would typically require multiple pretreatment practices in series. The Stormwater Handbook identifies several acceptable stormwater treatment BMPs for critical areas, including bioretention areas, sand or organic filters, and infiltration basins, trenches, or subsurface structures. The Stormwater Management Standards also require that BMPs be set back 100 feet from vernal pools and that all infiltrating BMPs be located at least 50 feet from any surface water including wetlands, which limits the available space for such features within this linear corridor. As noted previously in the report the Project evaluated additional structural stormwater BMPs These BMPs were determined to be impractical due to long-term maintenance requirements, additional impacts to vegetated areas and wetlands, engineering challenges, and negligible benefits in comparison to proposed stormwater management design.

The proposed measures also exceed what is typically incorporated into rail trail projects, especially since stormwater runoff from bike paths is a limited source of pollutants such as total suspended solids and phosphorus.

Standard 7: Redevelopments and Other Projects Subject to the Standards only to the Maximum Extent Practicable

As required under Standard 7, the Project is designed to comply with Stormwater Management Standards 2, 3, 4, and 6 to the maximum extent practicable. (Standard 5 does not apply).

Please refer to the discussion above for each of these Standards for the applicable computations and supporting information.

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Controls

The Project fully complies with Standard 8. As required, the proposed erosion and sedimentation controls are shown on the Project plans. The Project will disturb more than one acre of land; thus, coverage under the Environmental Protection Agency ("EPA") National Pollutant Discharge Elimination System ("NPDES") Construction General Permit is required. Under this permit, a Stormwater Pollution Prevention Plan ("SWPPP") will be developed and submitted before land disturbance begins. Drafts of Eversource and DCR's SWPPP manuals are attached with this report in Appendix E.

Standard 9: Operation and Maintenance Plan

The Project fully complies with this standard. A draft Long-Term Operation and Maintenance (O&M) Plan for the stormwater management system is provided in Appendix F.

Standard 10: Prohibition of Illicit Discharges

This standard does not apply. There is no sanitary sewer infrastructure known to exist on-site. The stormwater management system has been designed in compliance with current standards. Once the Project is constructed a finalized and signed illicit discharge statement will be provided.

3

Additional Municipal Rules and Regulations

As demonstrated below, the proposed Project complies with the Design and Performance Criteria identified in Section 8.0.A parts 3, 4, and 5 of the Stormwater Management Bylaw Regulations for the Town of Sudbury.

3A. Environmentally Sensitive Site Design

The Project preserves the existing natural hydrologic conditions with respect to the ground and surface water to the maximum extent feasible. The design limits the amount of vegetation clearing and earthwork though the corridor. The Project uses vegetated shoulders and conveyance swales with check dams to promote infiltration and recharge to maintain the existing drainage patterns.

3B. Low Impact Development

The Project incorporates Low Impact Design where feasible including conveyance swales, areas of increased infiltration, impervious area disconnect, and low impact sustainable landscaping such as combined herbaceous/woody seed mix along the bike path. These design elements provide treatment while also preserving the existing landscape as much as possible.

3C. Limiting Contaminants and Pollution - Best Management Practices (BMPs)

The Project will be used by pedestrians and bicyclists, which will not contribute significant contaminants to the path surfaces. Other than in emergency situations, vehicular access along the path will be limited to bi-weekly mowing over the shoulder by DCR, annual mowing of the duct bank, inspections by Eversource approximately once every three years, and other periodic maintenance as needed by both Eversource and DCR. The path will not be plowed and/or treated in the winter. The proposed measures exceed what is typically incorporated into rail trail projects, especially since stormwater runoff from bike paths is a limited source of pollutants such as total suspended solids and phosphorus.

The Project was designed to include the use of areas of increased infiltration and conveyance swales along portions of the project to promote infiltration and recharge, consistent with DCR's standard design for all its rail trail facilities. In addition, the Project proposes:

- One area where the area of increased infiltration will be widened to create a greater infiltration area
- One area where an increased area of infiltration basin will be added to mitigate flows onto the roadway
- Twelve additional areas where areas of increased infiltration were added.

These areas of increased infiltration have additional check dams that were placed to maximize infiltration above that of a standard conveyance swale and provide treatment of the water quality volume to the maximum extent practicable.

3D. Water Quality Volume

The Sudbury Stormwater Regulations require that water quality volume for sizing of BMPs shall be based on 1-inch of runoff from the net new impervious area. This requirement was met.

3E. Methodology

The hydrologic analysis for the existing and proposed conditions, as previously described, was determined using HydroCAD modeling software which is based on the NRCS Technical Release 20 and 55 (TR-20 and TR-55) methodology.

3F. Design Storms: 1-inch, 2-, 10-, 25-, and 100-year

The rainfall-runoff response of the Site under the existing and proposed conditions was analyzed for storm events with recurrence intervals of 2, 10, 25, and 100 years, with rainfall amounts of 3.2", 4.8", 6.0", and 8.6", respectively, as outlined by the Stormwater Management Bylaw Regulations for the Town of Sudbury. A rainfall depth of one inch (1") was also evaluated, as outlined by the Stormwater Management Bylaw Regulations

for the Town of Sudbury. The results of the analysis, as summarized in Tables 3 to 8, are found in the above Section 2, Standard 2.

3G. Pre and Post Sub-Watershed

The Site was analyzed for the pre and post development, at designated design control points.

3H. Land Area for Existing and Proposed Conditions

The Site was analyzed using the same land area for the existing and proposed conditions per Section 8.0.A.3.h of the Sudbury Stormwater By-Law Regulations.

3I. Total Volume of Discharge and Peak Rates

The total volume of discharge and peak rates were calculated and are documented in the discussion of MassDEP Standard 2 in this report.

3J. Redevelopment Standards

Under this section of the Bylaw Regulations the Project must be designed in accordance with the redevelopment checklist provided in the latest Massachusetts Stormwater Handbook. The checklist provides additional details on compliance with the Stormwater Management Standards and specifically the standards that redevelopment projects are required to meet to the maximum extent practicable. The Project complies with the redevelopment checklist; see discussion of compliance with Standard 7 in Chapter 2 above.

4. Water Reuse/Water Conservation

This standard is not applicable as this Project does not include any buildings and irrigation is not proposed.

5. Landscape Design

The Project will restore all disturbed areas outside the 10-foot-wide MCRT using a native seed mix with a focus on developing herbaceous and low-growing woody vegetation over the two-foot shoulders and the duct bank (a 5-foot area). In addition, any areas outside of the 19-foot-wide maintained corridor (which includes the 10-foot paved MCRT, two 2-foot shoulders, and 5-foot area over the duct bank) will be allowed to naturally revegetate with herbaceous and taller woody vegetation.

Appendix A – Standard 1 Computations and Supporting Information

Flow Stability Calculations: Areas of Increased Infiltration

Project Name: Sudbury Hudson Eversource
Project Location: Sudbury/Hudson, MA

Proj. No.: 14009.00
Date: July 2020
Calculated by: RPL
Checked by: AHF

		Channel Geometry																			
BMP ID:	Design Flow 'Q' (cfs)	Avg. Bottom Width 'B' (ft)	Channel Side Slope 'Z_1' (ft)	Channel Side Slope 'Z_2' (ft)	Top Width 'T' (ft)	Channel Slope 'S_o' (ft/ft)	Channel Depth 'd' (ft) [1]	Cross Sectional Area 'A' (sq. ft)	Wetted Perimeter 'P' (ft)	Hydraulic Radius 'R' (ft)	Mean Boundary Shear Stress 'τ_o' (lb/sq. ft)	Grass Roughness Coefficient 'C_n' [2]	Mannings Roughness 'n' [3]	Flow 'Q_1' (cfs)	Is Q1 within 5% of Q?	Max. Shear Stress in Channel @ depth 'τ_d' (lb/sq. ft)	Permissible Soil Shear Stress '$\tau_{p,soil}$' (lb/sq. ft) [4]	Cover Factor Values for Uniform Strands of Grass 'C_f' [5]	Soil Grain Roughness 'n_s' [6]	Permissible Vegetation/Soil Shear Stress 'τ_p' (lb/sq. ft)	Is the lining Stable? (Y/N)
P-5.8B	0.20	3.0	2.0	6.0	4.7	0.0045	0.210	0.81	4.75	0.17	0.05	0.168	0.121	0.20	YES	0.059	0.020	0.700	0.016	3.80	YES
P-5.14B	0.30	1.0	6.0	6.0	3.0	0.0318	0.165	0.33	3.00	0.11	0.22	0.168	0.066	0.30	YES	0.327	0.020	0.700	0.016	1.14	YES
P-5.18B	0.10	1.0	2.0	6.0	1.8	0.0427	0.095	0.13	1.79	0.07	0.20	0.168	0.069	0.10	YES	0.253	0.020	0.700	0.016	1.23	YES
P-6.2	0.30	1.0	2.0	7.5	2.6	0.0350	0.165	0.29	2.62	0.11	0.25	0.168	0.063	0.30	YES	0.360	0.020	0.700	0.016	1.03	YES
P-6.6A	0.70	3.0	1.0	6.0	3.8	0.0700	0.117	0.40	3.88	0.10	0.45	0.168	0.049	0.70	YES	0.511	0.020	0.700	0.016	0.63	YES
P-8.2B	0.10	5.0	2.0	6.0	5.4	0.0330	0.050	0.26	5.42	0.05	0.10	0.168	0.090	0.10	YES	0.103	0.020	0.700	0.016	2.12	YES
P-8.3B	0.10	8.0	2.0	6.0	8.3	0.0440	0.035	0.29	8.29	0.03	0.10	0.168	0.092	0.10	YES	0.097	0.020	0.700	0.016	2.19	YES
P-8.4B	0.40	5.0	2.0	6.0	5.7	0.0440	0.085	0.45	5.71	0.08	0.22	0.168	0.066	0.40	YES	0.234	0.020	0.700	0.016	1.13	YES
P-8.5A	0.60	3.0	2.0	6.0	4.3	0.0275	0.162	0.59	4.35	0.14	0.23	0.168	0.064	0.60	YES	0.277	0.020	0.700	0.016	1.07	YES
P-10.6A	0.10	6.5	2.0	6.0	7.0	0.0137	0.065	0.44	7.04	0.06	0.05	0.168	0.116	0.10	YES	0.056	0.020	0.700	0.016	3.48	YES
P-10.7A	0.50	1.0	2.0	6.0	4.0	0.0071	0.378	0.95	4.15	0.23	0.10	0.168	0.089	0.50	YES	0.168	0.020	0.700	0.016	2.08	YES
P-10.12A	0.10	1.0	2.0	6.0	1.9	0.0265	0.117	0.17	1.97	0.09	0.14	0.168	0.078	0.10	YES	0.193	0.020	0.700	0.016	1.58	YES
P-10.13A	5.00	1.0	2.0	6.0	5.6	0.0265	0.573	1.89	5.77	0.33	0.54	0.168	0.046	4.75	YES	0.948	0.020	0.980	0.016	8.18	YES

1) Channel Depth 'd' is determined by the iteritive process as shown in Chapter 3: General Design Procedures in HEC-15.
2) Grass Roughness Coefficient 'C_n' determined from Table 4.3 in HEC-15.
3) Manning's Roughness 'n' is determined from Equation 4.2 in HEC-15 and is a function of the Mean Boundary Shear Stress 'τ_o'.
4) Permissible Soil Shear Stress '$\tau_{p,soil}$' is conservatively estimated as 0.02 lb/sq.ft per section 4.3.2.1 Non-Cohesive Soils in HEC-15, as site soils are found to be silty sands.
5) Cover Factor Values for Uniform Strands of Grass 'Cf' is selected from Table 4.5 in HEC-15 for 'Mixed in Fair Condition'. P-10.13A is designed with a Cf of 0.98 (Sod in Excellent Conditon) to provide a stable lining.
6) 'Soil Grain Roughness 'ns' is conservatively estimated as 0.016 for D_{75} < 0.05 inches per Section 4.3.1 Effective Shear Stress in HEC-15

Flow Stability Calculations: Conveyance Swales

Project Name: Sudbury Hudson Eversource
Project Location: Sudbury/Hudson, MA

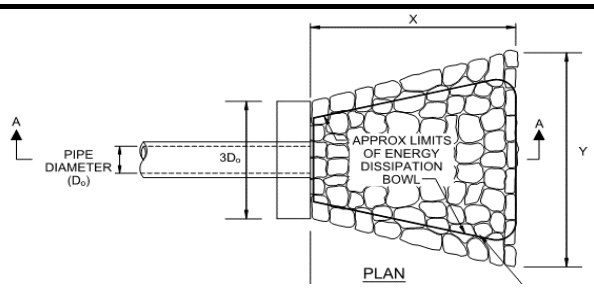
Proj. No.: 14009.00
Date: July 2020
Calculated by: RPL
Checked by: AHF

		Channel Geometry																		
BMP ID:	Design Flow 'Q' (cfs)	Avg. Bottom Width 'B' (ft)	Channel Side Slope 'Z_1' (ft)	Channel Side Slope 'Z_2' (ft)	Channel Slope 'S_o' (ft/ft)	Channel Depth 'd' (ft) [1]	Cross Sectional Area 'A' (sq. ft)	Wetted Perimeter 'P' (ft)	Hydraulic Radius 'R' (ft)	Mean Boundary Shear Stress 'τ_o' (lb/sq. ft)	Grass Roughness Coefficient 'C_n' [2]	Mannings Roughness 'n' [3]	Flow 'Q_s' (cfs)	Is Q1 within 5% of Q?	Max. Shear Stress in Channel @ depth 'τ_d' (lb/sq. ft)	Permissible Soil Shear Stress '$\tau_{p,soil}$' (lb/sq. ft) [4]	Cover Factor Values for Uniform Strands of Grass 'C_f' [5]	Soil Grain Roughness 'n_s' [6]	Permissible Vegetation/Soil Shear Stress 'τ_p' (lb/sq. ft)	Is the lining Stable? (Y/N)
DP-5.6	1.10	1.0	6.0	2.0	0.0160	0.387	0.99	4.22	0.23	0.23	0.168	0.064	1.10	YES	0.386	0.020	0.700	0.016	1.07	YES
DP-5.7	0.10	7.5	6.0	2.0	0.0032	0.115	0.91	8.45	0.11	0.02	0.168	0.166	0.10	YES	0.023	0.020	0.700	0.016	7.19	YES
DP-5.9	0.10	7.0	6.0	2.0	0.0045	0.102	0.76	7.85	0.10	0.03	0.168	0.152	0.10	YES	0.029	0.020	0.700	0.016	5.99	YES
DP-5.11	0.10	5.0	6.0	2.0	0.0100	0.085	0.45	5.70	0.08	0.05	0.168	0.119	0.10	YES	0.053	0.020	0.700	0.016	3.70	YES
DP-5.12	1.90	8.5	6.0	2.0	0.0340	0.157	1.43	9.80	0.15	0.31	0.168	0.057	1.90	YES	0.332	0.020	0.700	0.016	0.85	YES
DP-5.13	1.30	1.0	6.0	2.0	0.0062	0.576	1.90	5.79	0.33	0.13	0.168	0.082	1.30	YES	0.223	0.020	0.700	0.016	1.74	YES
DP-6.1	0.10	5.5	6.0	2.0	0.0270	0.052	0.30	5.94	0.05	0.08	0.168	0.096	0.10	YES	0.088	0.020	0.700	0.016	2.40	YES
DP-6.7	1.10	7.5	6.0	2.0	0.0225	0.153	1.24	8.77	0.14	0.20	0.168	0.068	1.10	YES	0.215	0.020	0.700	0.016	1.22	YES
DP-6.7	1.10	3.0	6.0	2.0	0.0387	0.186	0.70	4.55	0.15	0.37	0.168	0.053	1.10	YES	0.450	0.020	0.700	0.016	0.74	YES
DP-7.2	0.10	1.0	6.0	2.0	0.0400	0.099	0.14	1.82	0.08	0.19	0.168	0.070	0.10	YES	0.246	0.020	0.700	0.016	1.27	YES
DP-8.1A	0.00	5.0	6.0	2.0	0.0024		0.00	5.00	0.00	0.00	0.168				0.000	0.020	0.700	0.016		Flow = 0.0
DP-10.4A	4.00	3.0	6.0	2.0	0.0083	0.614	3.35	8.10	0.41	0.21	0.168	0.066	3.80	YES	0.318	0.020	0.700	0.016	1.15	YES
DP-10.4B	6.40	3.0	6.0	2.0	0.0173	0.566	2.98	7.71	0.39	0.42	0.168	0.051	6.10	YES	0.611	0.020	0.700	0.016	0.67	YES
DP-10.14	10.20	5.0	6.0	2.0	0.0103	0.712	5.59	10.93	0.51	0.33	0.168	0.056	9.69	YES	0.458	0.020	0.700	0.016	0.81	YES

1) Channel Depth 'd' is determined by the iteritive process as shown in Chapter 3: General Design Procedures in HEC-15.
2) Grass Roughness Coefficient 'C_n' determined from Table 4.3 in HEC-15.
3) Manning's Roughness 'n' is determined from Equation 4.2 in HEC-15 and is a function of the Mean Boundary Shear Stress 'τ_o'.
4) Permissible Soil Shear Stress '$\tau_{p,soil}$' is conservatively estimated as 0.02 lb/sq.ft per section 4.3.2.1 Non-Cohesive Soils in HEC-15, as site soils are found to be silty sands.
5) Cover Factor Values for Uniform Strands of Grass 'Cf' is selected from Table 4.5 in HEC-15 for 'Mixed in Fair Condition'.
6) 'Soil Grain Roughness 'ns' is conservatively estimated as 0.016 for D_{75} < 0.05 inches per Section 4.3.1 Effective Shear Stress in HEC-15

Outlet Protection Calculations: Stone For Pipe Ends

Project Name: Sudbury Hudson Eversource
Proj. No.: 14009.00
Date: July 2020
Project Location: Sudbury/Hudson, MA
Calculated by: AHF
Checked by: MAC



FES 10

STA 533+46, 14.9' RT

Calculations completed using FHWA Hydraulic Toolbox 4.1

Riprap Analysis

Structure type: Culvert Outlet Protection

Geotextile/Granular Filter Design...

Parameter	Value	Units	Notes
Channel Parameters			
Select Channel	<Define Local Data>		
	Channel Calculator...		
Input Parameters			
	Transfer Values From Channel Calculator		
Flow	0.400	cfs	
Culvert Diameter	1.000	ft	
Normal Depth in Culvert	0.269	ft	
Tailwater Depth	0.000	ft	If tailwater is unknown, use 0.4D
Flow Type	subcritical		
Results			
D50	0.175	in	
D50	0.015	ft	The sizing equation assumes a rock s.g.=2.65. If s.g. is not 2.65, rock size (D...
Riprap Shape	Riprap shape should be angular		
Riprap Class			
Riprap Class Name	CLASS I		
Riprap Class Order	1		
D15	4.50	in	This value is an 'average' of the size fraction range for the selected riprap class
D50	6.50	in	This value is an 'average' of the size fraction range for the selected riprap class
D85	9.00	in	This value is an 'average' of the size fraction range for the selected riprap class
D100	12.00	in	This value is an 'average' of the size fraction range for the selected riprap class
Layout			
Apron Length	4.000	ft	
Apron Depth	0.000	ft	
Apron Width (at apron end)	5.667	ft	
Computation Variables			
Tailwater Depth Used in Computations	0.400	ft	
Culvert Diameter Used in Calculations	1.000	ft	

OK Cancel

Stone Protection Dimensions:

X = 4.0 ft.
Y = 5.7 ft.
Z = 12.0 in.
d_{50} = 6.5 in.

HW 11

STA 713+63, 10.0' LT

Headwall 11 is replacing an existing headwall which is currently stable from erosion. The existing wetland does not experience erosion under existing conditions and is not expected to experience erosion as a result of the proposed project.

Outlet Protection Calculations: Stone For Pipe Ends

Project Name: Sudbury Hudson Eversource
Proj. No.: 14009.00
Date: July 2020
Project Location: Sudbury/Hudson, MA
Calculated by: AHF
Checked by: MAC

HW 12 STA 713+63, 10.0' RT

Headwall 12 is replacing an existing headwall which is currently stable from erosion. The existing wetland does not experience erosion under existing conditions and is not expected to experience erosion as a result of the proposed project.

HW 13 STA 738+77, 12.0' LT

Headwall 13 is replacing an existing headwall which is currently stable from erosion. The existing headwall does not experience erosion under existing conditions. The headwall is an upstream inlet of a low point along the right-of-way and is not expected to experiece erosion as a result of the project.

HW 14 STA 738+77, 15.4' RT

Riprap Analysis - HW 14

Structure type: Culvert Outlet Protection — Geotextile/Granular Filter Design...

Parameter	Value	Units	Notes
Channel Parameters			
Select Channel	<Define Local Data>		
	Channel Calculator...		
Input Parameters			
	Transfer Values From Channel Calculator		
Flow	5.500	cfs	
Culvert Diameter	1.500	ft	
Normal Depth in Culvert	0.992	ft	
Tailwater Depth	0.000	ft	If tailwater is unknown, use 0.4D
Flow Type	subcritical		
Results			
D50	2.236	in	
D50	0.186	ft	The sizing equation assumes a rock s.g.=2.65. If s.g. is not 2.65, rock size (D...
Riprap Shape	Riprap shape should be angular		
Riprap Class			
Riprap Class Name	CLASS I		
Riprap Class Order	1		
D15	4.50	in	This value is an 'average' of the size fraction range for the selected ripraap class
D50	6.50	in	This value is an 'average' of the size fraction range for the selected ripraap class
D85	9.00	in	This value is an 'average' of the size fraction range for the selected ripraap class
D100	12.00	in	This value is an 'average' of the size fraction range for the selected ripraap class
Layout			
Apron Length	6.000	ft	
Apron Depth	0.000	ft	
Apron Width (at apron end)	8.500	ft	
Computation Variables			
Tailwater Depth Used in Computations	0.600	ft	
Culvert Diameter Used in Calculations	1.500	ft	

OK Cancel

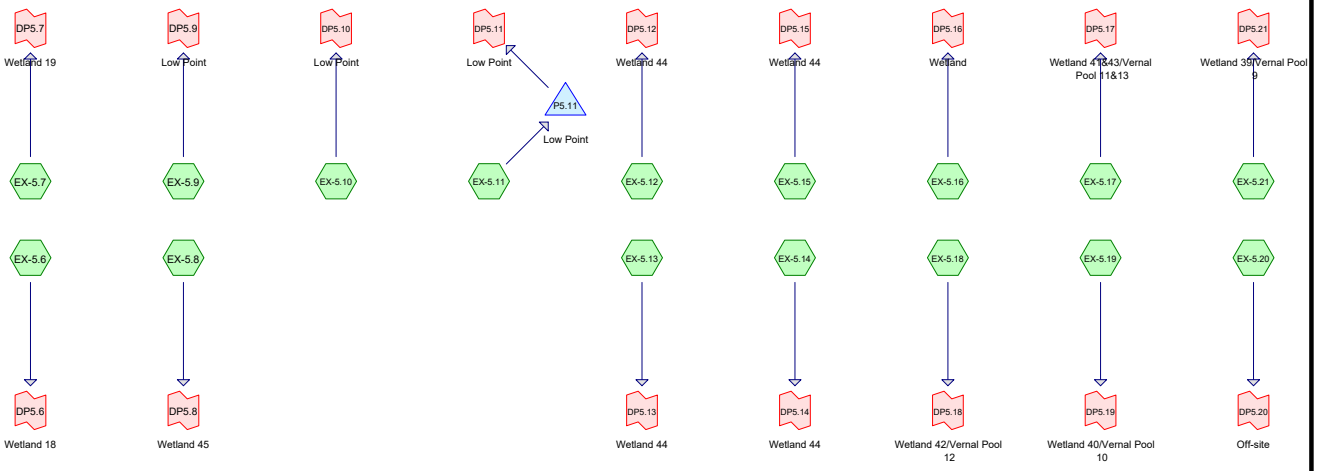
Stone Protection Dimensions:

X = 6.0 ft.
Y = 8.5 ft.
Z = 12.0 in.
d_{50} = 6.5 in.

Appendix B – Standard 2 Computations and Supporting Information

The rainfall-runoff response of the Site under existing and proposed conditions was evaluated for storm events with recurrence intervals of 2, 10, 25 and 100-years. Rainfall volumes used for this analysis were based on the Stormwater Management Bylaw Regulations for the Town of Sudbury: 3.2, 4.8, 6.0, and 8.6 inches, respectively. Runoff coefficients for the pre- and post-development conditions, as previously shown in Tables 1 and 2 respectively, were determined using NRCS Technical Release 55 (TR-55) methodology as provided in HydroCAD. Drainage areas used in the analyses were described in previous sections and shown on Figures 2 and 3. The HydroCAD model is based on the NRCS Technical Release 20 (TR-20) Model for Project Formulation Hydrology.

HydroCAD Analysis: Existing Conditions



Subcat Reach Pond Link

Routing Diagram for Sudbury_EX Segment 5_ResponsetoComments
Prepared by VHB, Printed 7/10/2020

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentEX-5.10: Runoff Area=1.650 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=670' Tc=50.3 min CN=31/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.11: Runoff Area=4.623 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=870' Tc=71.5 min CN=30/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.12: Runoff Area=8.157 ac 0.24% Impervious Runoff Depth=0.00"
Flow Length=2,769' Tc=119.8 min CN=46/98 Runoff=0.0 cfs 0.001 af

SubcatchmentEX-5.13: Runoff Area=34.338 ac 0.07% Impervious Runoff Depth=0.00"
Flow Length=3,005' Tc=217.6 min CN=35/98 Runoff=0.0 cfs 0.002 af

SubcatchmentEX-5.14: Runoff Area=14.028 ac 0.20% Impervious Runoff Depth=0.00"
Flow Length=566' Tc=23.1 min CN=46/98 Runoff=0.0 cfs 0.002 af

SubcatchmentEX-5.15: Runoff Area=10.681 ac 0.16% Impervious Runoff Depth=0.00"
Flow Length=608' Tc=34.8 min CN=41/98 Runoff=0.0 cfs 0.001 af

SubcatchmentEX-5.16: Runoff Area=8.549 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=215' Tc=22.6 min CN=50/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.17: Runoff Area=18.486 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=75' Tc=6.4 min CN=52/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.18: Runoff Area=10.449 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=590' Tc=75.8 min CN=42/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.19: Runoff Area=0.695 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=190' Tc=21.0 min CN=35/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.20: Runoff Area=1.129 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=147' Tc=20.3 min CN=30/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.21: Runoff Area=5.680 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=633' Tc=28.2 min CN=30/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.6: Runoff Area=16.647 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=767' Tc=44.1 min CN=30/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.7: Runoff Area=9.451 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=369' Tc=63.9 min CN=30/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.8: Runoff Area=8.747 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=879' Tc=49.3 min CN=31/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.9: Runoff Area=4.665 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=560' Tc=28.1 min CN=32/0 Runoff=0.0 cfs 0.000 af

Pond P5.11: Low Point Peak Elev=174.50' Storage=0 cf Inflow=0.0 cfs 0.000 af
Outflow=0.0 cfs 0.000 af

Link DP5.10: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.11: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.12: Wetland 44 Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP5.13: Wetland 44 Inflow=0.0 cfs 0.002 af
Primary=0.0 cfs 0.002 af

Link DP5.14: Wetland 44 Inflow=0.0 cfs 0.002 af
Primary=0.0 cfs 0.002 af

Link DP5.15: Wetland 44 Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP5.16: Wetland Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.17: Wetland 41&43/Vernal Pool 11&13 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.18: Wetland 42/Vernal Pool 12 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.19: Wetland 40/Vernal Pool 10 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.20: Off-site Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.21: Wetland 39/Vernal Pool 9 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.6: Wetland 18 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.7: Wetland 19 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.8: Wetland 45 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.9: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Total Runoff Area = 157.975 ac Runoff Volume = 0.006 af Average Runoff Depth = 0.00"
99.94% Pervious = 157.886 ac 0.06% Impervious = 0.089 ac

Summary for Subcatchment EX-5.10:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.025	76	Gravel roads, HSG A
1.625	30	Woods, Good, HSG A
1.650	31	Weighted Average
1.650	31	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
29.2	620	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
50.3	670	Total			

Summary for Subcatchment EX-5.11:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
4.623	30	Woods, Good, HSG A
4.623	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.9	50	0.0110	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
44.6	820	0.0150	0.31		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
71.5	870	Total			

Summary for Subcatchment EX-5.12:

Runoff = 0.0 cfs @ 13.57 hrs, Volume= 0.001 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.331	76	Gravel roads, HSG A
0.024	91	Gravel roads, HSG D
0.019	98	Water Surface, HSG D
5.293	30	Woods, Good, HSG A
2.489	77	Woods, Good, HSG D
8.157	47	Weighted Average
8.138	46	99.76% Pervious Area
0.019	98	0.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.8	50	0.0270	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
10.0	139	0.0086	0.23		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
90.7	2,538	0.0087	0.47		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	42	0.2285	2.39		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
119.8	2,769	Total			

Summary for Subcatchment EX-5.13:

Runoff = 0.0 cfs @ 14.75 hrs, Volume= 0.002 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.457	76	Gravel roads, HSG A
0.034	91	Gravel roads, HSG D
0.024	98	Water Surface, HSG D
30.978	30	Woods, Good, HSG A
2.844	77	Woods, Good, HSG D
34.338	35	Weighted Average
34.313	35	99.93% Pervious Area
0.024	98	0.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.8	50	0.0085	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
187.8	2,955	0.0110	0.26		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
217.6	3,005	Total			

Summary for Subcatchment EX-5.14:

Runoff = 0.0 cfs @ 12.30 hrs, Volume= 0.002 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.092	76	Gravel roads, HSG A
0.023	91	Gravel roads, HSG D
0.028	98	Water Surface, HSG D
7.787	30	Woods, Good, HSG A
3.269	55	Woods, Good, HSG B
2.829	77	Woods, Good, HSG D
14.028	46	Weighted Average
13.999	46	99.80% Pervious Area
0.028	98	0.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	50	0.2300	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
13.8	413	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	103	0.0730	1.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
23.1	566	Total			

Summary for Subcatchment EX-5.15:

Runoff = 0.0 cfs @ 12.48 hrs, Volume= 0.001 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.055	76	Gravel roads, HSG A
0.015	91	Gravel roads, HSG D
0.017	98	Water Surface, HSG D
8.194	30	Woods, Good, HSG A
2.399	77	Woods, Good, HSG D
10.681	41	Weighted Average
10.664	41	99.84% Pervious Area
0.017	98	0.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	50	0.0700	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
11.3	434	0.0650	0.64		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
10.7	124	0.0060	0.19		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
34.8	608	Total			

Summary for Subcatchment EX-5.16:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
4.849	30	Woods, Good, HSG A
3.700	77	Woods, Good, HSG D
8.549	50	Weighted Average
8.549	50	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.9	165	0.0194	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
22.6	215	Total			

Summary for Subcatchment EX-5.17:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.011	76	Gravel roads, HSG A
0.043	91	Gravel roads, HSG D
9.850	30	Woods, Good, HSG A
8.582	77	Woods, Good, HSG D
18.486	52	Weighted Average
18.486	52	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	30	0.1500	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.1	45	0.1600	6.44		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
6.4	75	Total			

Summary for Subcatchment EX-5.18:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.025	76	Gravel roads, HSG A
0.051	91	Gravel roads, HSG D
7.797	30	Woods, Good, HSG A
2.576	77	Woods, Good, HSG D
10.449	42	Weighted Average
10.449	42	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.1260	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
65.7	540	0.0030	0.14		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
75.8	590	Total			

Summary for Subcatchment EX-5.19:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.042	76	Gravel roads, HSG A
0.008	91	Gravel roads, HSG D
0.626	30	Woods, Good, HSG A
0.019	77	Woods, Good, HSG D
0.695	35	Weighted Average
0.695	35	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	50	0.0750	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.2	110	0.0020	0.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	30	0.1300	1.80		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
21.0	190	Total			

Summary for Subcatchment EX-5.20:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.011	76	Gravel roads, HSG A
1.118	30	Woods, Good, HSG A
1.129	30	Weighted Average
1.129	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.0	50	0.0300	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	97	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.3	147	Total			

Summary for Subcatchment EX-5.21:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.053	76	Gravel roads, HSG A
5.627	30	Woods, Good, HSG A
5.680	30	Weighted Average
5.680	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.1800	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
19.4	583	0.0400	0.50		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
28.2	633	Total			

Summary for Subcatchment EX-5.6:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.162	76	Gravel roads, HSG A
16.485	30	Woods, Good, HSG A
16.647	30	Weighted Average
16.647	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.5	50	0.0490	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
35.6	717	0.0180	0.34		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
44.1	767	Total			

Summary for Subcatchment EX-5.7:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.092	76	Gravel roads, HSG A
9.360	30	Woods, Good, HSG A
9.451	30	Weighted Average
9.451	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
45.2	50	0.0030	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
18.7	319	0.0130	0.29		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
63.9	369	Total			

Summary for Subcatchment EX-5.8:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.028	39	>75% Grass cover, Good, HSG A
0.160	76	Gravel roads, HSG A
8.559	30	Woods, Good, HSG A
8.747	31	Weighted Average
8.747	31	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.9	50	0.0100	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.8	208	0.0080	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.6	621	0.0230	0.76		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
49.3	879	Total			

Summary for Subcatchment EX-5.9:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.154	76	Gravel roads, HSG A
4.511	30	Woods, Good, HSG A
4.665	32	Weighted Average
4.665	32	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	50	0.1000	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
17.0	510	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
28.1	560	Total			

Summary for Pond P5.11: Low Point

Inflow Area = 4.623 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 174.50' @ 0.00 hrs Surf.Area= 5,600 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	174.50'	9,900 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
174.50	5,600	0	0
175.00	6,260	2,965	2,965
175.50	6,930	3,298	6,263
176.00	7,620	3,638	9,900

Device	Routing	Invert	Outlet Devices
#1	Primary	175.50'	**30.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=174.50' TW=0.00' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link DP5.10: Low Point

Inflow Area = 1.650 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.11: Low Point

Inflow Area = 4.623 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.12: Wetland 44

Inflow Area = 8.157 ac, 0.24% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 13.57 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 13.57 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.13: Wetland 44

Inflow Area = 34.338 ac, 0.07% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 14.75 hrs, Volume= 0.002 af
Primary = 0.0 cfs @ 14.75 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.14: Wetland 44

Inflow Area = 14.028 ac, 0.20% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 12.30 hrs, Volume= 0.002 af
Primary = 0.0 cfs @ 12.30 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.15: Wetland 44

Inflow Area = 10.681 ac, 0.16% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 12.48 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 12.48 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.16: Wetland

Inflow Area = 8.549 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.17: Wetland 41&43/Vernal Pool 11&13

Inflow Area = 18.486 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.18: Wetland 42/Vernal Pool 12

Inflow Area = 10.449 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.19: Wetland 40/Vernal Pool 10

Inflow Area = 0.695 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.20: Off-site

Inflow Area = 1.129 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.21: Wetland 39/Vernal Pool 9

Inflow Area = 5.680 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.6: Wetland 18

Inflow Area = 16.647 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.7: Wetland 19

Inflow Area = 9.451 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.8: Wetland 45

Inflow Area = 8.747 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.9: Low Point

Inflow Area = 4.665 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentEX-5.10: Runoff Area=1.650 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=670' Tc=50.3 min CN=31/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.11: Runoff Area=4.623 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=870' Tc=71.5 min CN=30/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.12: Runoff Area=8.157 ac 0.24% Impervious Runoff Depth=0.08"
Flow Length=2,769' Tc=119.8 min CN=46/98 Runoff=0.1 cfs 0.053 af

SubcatchmentEX-5.13: Runoff Area=34.338 ac 0.07% Impervious Runoff Depth=0.00"
Flow Length=3,005' Tc=217.6 min CN=35/98 Runoff=0.0 cfs 0.006 af

SubcatchmentEX-5.14: Runoff Area=14.028 ac 0.20% Impervious Runoff Depth=0.08"
Flow Length=566' Tc=23.1 min CN=46/98 Runoff=0.1 cfs 0.091 af

SubcatchmentEX-5.15: Runoff Area=10.681 ac 0.16% Impervious Runoff Depth=0.02"
Flow Length=608' Tc=34.8 min CN=41/98 Runoff=0.0 cfs 0.015 af

SubcatchmentEX-5.16: Runoff Area=8.549 ac 0.00% Impervious Runoff Depth=0.15"
Flow Length=215' Tc=22.6 min CN=50/0 Runoff=0.2 cfs 0.107 af

SubcatchmentEX-5.17: Runoff Area=18.486 ac 0.00% Impervious Runoff Depth=0.20"
Flow Length=75' Tc=6.4 min CN=52/0 Runoff=1.2 cfs 0.305 af

SubcatchmentEX-5.18: Runoff Area=10.449 ac 0.00% Impervious Runoff Depth=0.02"
Flow Length=590' Tc=75.8 min CN=42/0 Runoff=0.0 cfs 0.018 af

SubcatchmentEX-5.19: Runoff Area=0.695 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=190' Tc=21.0 min CN=35/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.20: Runoff Area=1.129 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=147' Tc=20.3 min CN=30/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.21: Runoff Area=5.680 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=633' Tc=28.2 min CN=30/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.6: Runoff Area=16.647 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=767' Tc=44.1 min CN=30/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.7: Runoff Area=9.451 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=369' Tc=63.9 min CN=30/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.8: Runoff Area=8.747 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=879' Tc=49.3 min CN=31/0 Runoff=0.0 cfs 0.000 af

SubcatchmentEX-5.9: Runoff Area=4.665 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=560' Tc=28.1 min CN=32/0 Runoff=0.0 cfs 0.000 af

Pond P5.11: Low Point Peak Elev=174.50' Storage=0 cf Inflow=0.0 cfs 0.000 af
Outflow=0.0 cfs 0.000 af

Link DP5.10: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.11: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.12: Wetland 44 Inflow=0.1 cfs 0.053 af
Primary=0.1 cfs 0.053 af

Link DP5.13: Wetland 44 Inflow=0.0 cfs 0.006 af
Primary=0.0 cfs 0.006 af

Link DP5.14: Wetland 44 Inflow=0.1 cfs 0.091 af
Primary=0.1 cfs 0.091 af

Link DP5.15: Wetland 44 Inflow=0.0 cfs 0.015 af
Primary=0.0 cfs 0.015 af

Link DP5.16: Wetland Inflow=0.2 cfs 0.107 af
Primary=0.2 cfs 0.107 af

Link DP5.17: Wetland 41&43/Vernal Pool 11&13 Inflow=1.2 cfs 0.305 af
Primary=1.2 cfs 0.305 af

Link DP5.18: Wetland 42/Vernal Pool 12 Inflow=0.0 cfs 0.018 af
Primary=0.0 cfs 0.018 af

Link DP5.19: Wetland 40/Vernal Pool 10 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.20: Off-site Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.21: Wetland 39/Vernal Pool 9 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.6: Wetland 18 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.7: Wetland 19 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.8: Wetland 45 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.9: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Total Runoff Area = 157.975 ac Runoff Volume = 0.594 af Average Runoff Depth = 0.05"
99.94% Pervious = 157.886 ac 0.06% Impervious = 0.089 ac

Summary for Subcatchment EX-5.10:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.025	76	Gravel roads, HSG A
1.625	30	Woods, Good, HSG A
1.650	31	Weighted Average
1.650	31	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
29.2	620	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
50.3	670	Total			

Summary for Subcatchment EX-5.11:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
4.623	30	Woods, Good, HSG A
4.623	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.9	50	0.0110	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
44.6	820	0.0150	0.31		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
71.5	870	Total			

Summary for Subcatchment EX-5.12:

Runoff = 0.1 cfs @ 16.64 hrs, Volume= 0.053 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.331	76	Gravel roads, HSG A
0.024	91	Gravel roads, HSG D
0.019	98	Water Surface, HSG D
5.293	30	Woods, Good, HSG A
2.489	77	Woods, Good, HSG D
8.157	47	Weighted Average
8.138	46	99.76% Pervious Area
0.019	98	0.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.8	50	0.0270	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
10.0	139	0.0086	0.23		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
90.7	2,538	0.0087	0.47		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	42	0.2285	2.39		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
119.8	2,769	Total			

Summary for Subcatchment EX-5.13:

Runoff = 0.0 cfs @ 14.75 hrs, Volume= 0.006 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.457	76	Gravel roads, HSG A
0.034	91	Gravel roads, HSG D
0.024	98	Water Surface, HSG D
30.978	30	Woods, Good, HSG A
2.844	77	Woods, Good, HSG D
34.338	35	Weighted Average
34.313	35	99.93% Pervious Area
0.024	98	0.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.8	50	0.0085	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
187.8	2,955	0.0110	0.26		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
217.6	3,005	Total			

Summary for Subcatchment EX-5.14:

Runoff = 0.1 cfs @ 15.07 hrs, Volume= 0.091 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.092	76	Gravel roads, HSG A
0.023	91	Gravel roads, HSG D
0.028	98	Water Surface, HSG D
7.787	30	Woods, Good, HSG A
3.269	55	Woods, Good, HSG B
2.829	77	Woods, Good, HSG D
14.028	46	Weighted Average
13.999	46	99.80% Pervious Area
0.028	98	0.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	50	0.2300	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
13.8	413	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	103	0.0730	1.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
23.1	566	Total			

Summary for Subcatchment EX-5.15:

Runoff = 0.0 cfs @ 12.45 hrs, Volume= 0.015 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.055	76	Gravel roads, HSG A
0.015	91	Gravel roads, HSG D
0.017	98	Water Surface, HSG D
8.194	30	Woods, Good, HSG A
2.399	77	Woods, Good, HSG D
10.681	41	Weighted Average
10.664	41	99.84% Pervious Area
0.017	98	0.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	50	0.0700	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
11.3	434	0.0650	0.64		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
10.7	124	0.0060	0.19		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
34.8	608	Total			

Summary for Subcatchment EX-5.16:

Runoff = 0.2 cfs @ 12.73 hrs, Volume= 0.107 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
4.849	30	Woods, Good, HSG A
3.700	77	Woods, Good, HSG D
8.549	50	Weighted Average
8.549	50	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.9	165	0.0194	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
22.6	215	Total			

Summary for Subcatchment EX-5.17:

Runoff = 1.2 cfs @ 12.39 hrs, Volume= 0.305 af, Depth= 0.20"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.011	76	Gravel roads, HSG A
0.043	91	Gravel roads, HSG D
9.850	30	Woods, Good, HSG A
8.582	77	Woods, Good, HSG D
18.486	52	Weighted Average
18.486	52	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	30	0.1500	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.1	45	0.1600	6.44		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
6.4	75	Total			

Summary for Subcatchment EX-5.18:

Runoff = 0.0 cfs @ 21.65 hrs, Volume= 0.018 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.025	76	Gravel roads, HSG A
0.051	91	Gravel roads, HSG D
7.797	30	Woods, Good, HSG A
2.576	77	Woods, Good, HSG D
10.449	42	Weighted Average
10.449	42	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.1260	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
65.7	540	0.0030	0.14		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
75.8	590	Total			

Summary for Subcatchment EX-5.19:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.042	76	Gravel roads, HSG A
0.008	91	Gravel roads, HSG D
0.626	30	Woods, Good, HSG A
0.019	77	Woods, Good, HSG D
0.695	35	Weighted Average
0.695	35	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	50	0.0750	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.2	110	0.0020	0.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	30	0.1300	1.80		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
21.0	190	Total			

Summary for Subcatchment EX-5.20:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.011	76	Gravel roads, HSG A
1.118	30	Woods, Good, HSG A
1.129	30	Weighted Average
1.129	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.0	50	0.0300	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	97	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.3	147	Total			

Summary for Subcatchment EX-5.21:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.053	76	Gravel roads, HSG A
5.627	30	Woods, Good, HSG A
5.680	30	Weighted Average
5.680	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.1800	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
19.4	583	0.0400	0.50		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
28.2	633	Total			

Summary for Subcatchment EX-5.6:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.162	76	Gravel roads, HSG A
16.485	30	Woods, Good, HSG A
16.647	30	Weighted Average
16.647	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.5	50	0.0490	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
35.6	717	0.0180	0.34		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
44.1	767	Total			

Summary for Subcatchment EX-5.7:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.092	76	Gravel roads, HSG A
9.360	30	Woods, Good, HSG A
9.451	30	Weighted Average
9.451	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
45.2	50	0.0030	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
18.7	319	0.0130	0.29		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
63.9	369	Total			

Summary for Subcatchment EX-5.8:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.028	39	>75% Grass cover, Good, HSG A
0.160	76	Gravel roads, HSG A
8.559	30	Woods, Good, HSG A
8.747	31	Weighted Average
8.747	31	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.9	50	0.0100	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.8	208	0.0080	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.6	621	0.0230	0.76		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
49.3	879	Total			

Summary for Subcatchment EX-5.9:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.154	76	Gravel roads, HSG A
4.511	30	Woods, Good, HSG A
4.665	32	Weighted Average
4.665	32	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	50	0.1000	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
17.0	510	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
28.1	560	Total			

Summary for Pond P5.11: Low Point

Inflow Area = 4.623 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 174.50' @ 0.00 hrs Surf.Area= 5,600 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	174.50'	9,900 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
174.50	5,600	0	0
175.00	6,260	2,965	2,965
175.50	6,930	3,298	6,263
176.00	7,620	3,638	9,900

Device	Routing	Invert	Outlet Devices
#1	Primary	175.50'	**30.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=174.50' TW=0.00' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link DP5.10: Low Point

Inflow Area = 1.650 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.11: Low Point

Inflow Area = 4.623 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.12: Wetland 44

Inflow Area = 8.157 ac, 0.24% Impervious, Inflow Depth = 0.08" for 2-year event
Inflow = 0.1 cfs @ 16.64 hrs, Volume= 0.053 af
Primary = 0.1 cfs @ 16.64 hrs, Volume= 0.053 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.13: Wetland 44

Inflow Area = 34.338 ac, 0.07% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.0 cfs @ 14.75 hrs, Volume= 0.006 af
Primary = 0.0 cfs @ 14.75 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.14: Wetland 44

Inflow Area = 14.028 ac, 0.20% Impervious, Inflow Depth = 0.08" for 2-year event
Inflow = 0.1 cfs @ 15.07 hrs, Volume= 0.091 af
Primary = 0.1 cfs @ 15.07 hrs, Volume= 0.091 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.15: Wetland 44

Inflow Area = 10.681 ac, 0.16% Impervious, Inflow Depth = 0.02" for 2-year event
Inflow = 0.0 cfs @ 12.45 hrs, Volume= 0.015 af
Primary = 0.0 cfs @ 12.45 hrs, Volume= 0.015 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.16: Wetland

Inflow Area = 8.549 ac, 0.00% Impervious, Inflow Depth = 0.15" for 2-year event
Inflow = 0.2 cfs @ 12.73 hrs, Volume= 0.107 af
Primary = 0.2 cfs @ 12.73 hrs, Volume= 0.107 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.17: Wetland 41&43/Vernal Pool 11&13

Inflow Area = 18.486 ac, 0.00% Impervious, Inflow Depth = 0.20" for 2-year event
Inflow = 1.2 cfs @ 12.39 hrs, Volume= 0.305 af
Primary = 1.2 cfs @ 12.39 hrs, Volume= 0.305 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.18: Wetland 42/Vernal Pool 12

Inflow Area = 10.449 ac, 0.00% Impervious, Inflow Depth = 0.02" for 2-year event
Inflow = 0.0 cfs @ 21.65 hrs, Volume= 0.018 af
Primary = 0.0 cfs @ 21.65 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.19: Wetland 40/Vernal Pool 10

Inflow Area = 0.695 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.20: Off-site

Inflow Area = 1.129 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.21: Wetland 39/Vernal Pool 9

Inflow Area = 5.680 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.6: Wetland 18

Inflow Area = 16.647 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.7: Wetland 19

Inflow Area = 9.451 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.8: Wetland 45

Inflow Area = 8.747 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.9: Low Point

Inflow Area = 4.665 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentEX-5.10: Runoff Area=1.650 ac 0.00% Impervious Runoff Depth=0.02"
Flow Length=670' Tc=50.3 min CN=31/0 Runoff=0.0 cfs 0.003 af

SubcatchmentEX-5.11: Runoff Area=4.623 ac 0.00% Impervious Runoff Depth=0.01"
Flow Length=870' Tc=71.5 min CN=30/0 Runoff=0.0 cfs 0.003 af

SubcatchmentEX-5.12: Runoff Area=8.157 ac 0.24% Impervious Runoff Depth=0.53"
Flow Length=2,769' Tc=119.8 min CN=46/98 Runoff=0.8 cfs 0.362 af

SubcatchmentEX-5.13: Runoff Area=34.338 ac 0.07% Impervious Runoff Depth=0.10"
Flow Length=3,005' Tc=217.6 min CN=35/98 Runoff=0.4 cfs 0.285 af

SubcatchmentEX-5.14: Runoff Area=14.028 ac 0.20% Impervious Runoff Depth=0.53"
Flow Length=566' Tc=23.1 min CN=46/98 Runoff=3.0 cfs 0.621 af

SubcatchmentEX-5.15: Runoff Area=10.681 ac 0.16% Impervious Runoff Depth=0.30"
Flow Length=608' Tc=34.8 min CN=41/98 Runoff=0.7 cfs 0.271 af

SubcatchmentEX-5.16: Runoff Area=8.549 ac 0.00% Impervious Runoff Depth=0.73"
Flow Length=215' Tc=22.6 min CN=50/0 Runoff=3.2 cfs 0.523 af

SubcatchmentEX-5.17: Runoff Area=18.486 ac 0.00% Impervious Runoff Depth=0.85"
Flow Length=75' Tc=6.4 min CN=52/0 Runoff=13.1 cfs 1.306 af

SubcatchmentEX-5.18: Runoff Area=10.449 ac 0.00% Impervious Runoff Depth=0.34"
Flow Length=590' Tc=75.8 min CN=42/0 Runoff=0.6 cfs 0.295 af

SubcatchmentEX-5.19: Runoff Area=0.695 ac 0.00% Impervious Runoff Depth=0.10"
Flow Length=190' Tc=21.0 min CN=35/0 Runoff=0.0 cfs 0.006 af

SubcatchmentEX-5.20: Runoff Area=1.129 ac 0.00% Impervious Runoff Depth=0.01"
Flow Length=147' Tc=20.3 min CN=30/0 Runoff=0.0 cfs 0.001 af

SubcatchmentEX-5.21: Runoff Area=5.680 ac 0.00% Impervious Runoff Depth=0.01"
Flow Length=633' Tc=28.2 min CN=30/0 Runoff=0.0 cfs 0.004 af

SubcatchmentEX-5.6: Runoff Area=16.647 ac 0.00% Impervious Runoff Depth=0.01"
Flow Length=767' Tc=44.1 min CN=30/0 Runoff=0.0 cfs 0.011 af

SubcatchmentEX-5.7: Runoff Area=9.451 ac 0.00% Impervious Runoff Depth=0.01"
Flow Length=369' Tc=63.9 min CN=30/0 Runoff=0.0 cfs 0.006 af

SubcatchmentEX-5.8: Runoff Area=8.747 ac 0.00% Impervious Runoff Depth=0.02"
Flow Length=879' Tc=49.3 min CN=31/0 Runoff=0.0 cfs 0.013 af

SubcatchmentEX-5.9: Runoff Area=4.665 ac 0.00% Impervious Runoff Depth=0.03"
Flow Length=560' Tc=28.1 min CN=32/0 Runoff=0.0 cfs 0.013 af

Pond P5.11: Low Point Peak Elev=174.52' Storage=133 cf Inflow=0.0 cfs 0.003 af
Outflow=0.0 cfs 0.000 af

Link DP5.10: Low Point Inflow=0.0 cfs 0.003 af
Primary=0.0 cfs 0.003 af

Link DP5.11: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.12: Wetland 44 Inflow=0.8 cfs 0.362 af
Primary=0.8 cfs 0.362 af

Link DP5.13: Wetland 44 Inflow=0.4 cfs 0.285 af
Primary=0.4 cfs 0.285 af

Link DP5.14: Wetland 44 Inflow=3.0 cfs 0.621 af
Primary=3.0 cfs 0.621 af

Link DP5.15: Wetland 44 Inflow=0.7 cfs 0.271 af
Primary=0.7 cfs 0.271 af

Link DP5.16: Wetland Inflow=3.2 cfs 0.523 af
Primary=3.2 cfs 0.523 af

Link DP5.17: Wetland 41&43/Vernal Pool 11&13 Inflow=13.1 cfs 1.306 af
Primary=13.1 cfs 1.306 af

Link DP5.18: Wetland 42/Vernal Pool 12 Inflow=0.6 cfs 0.295 af
Primary=0.6 cfs 0.295 af

Link DP5.19: Wetland 40/Vernal Pool 10 Inflow=0.0 cfs 0.006 af
Primary=0.0 cfs 0.006 af

Link DP5.20: Off-site Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP5.21: Wetland 39/Vernal Pool 9 Inflow=0.0 cfs 0.004 af
Primary=0.0 cfs 0.004 af

Link DP5.6: Wetland 18 Inflow=0.0 cfs 0.011 af
Primary=0.0 cfs 0.011 af

Link DP5.7: Wetland 19 Inflow=0.0 cfs 0.006 af
Primary=0.0 cfs 0.006 af

Link DP5.8: Wetland 45 Inflow=0.0 cfs 0.013 af
Primary=0.0 cfs 0.013 af

Link DP5.9: Low Point Inflow=0.0 cfs 0.013 af
Primary=0.0 cfs 0.013 af

Total Runoff Area = 157.975 ac Runoff Volume = 3.722 af Average Runoff Depth = 0.28"
99.94% Pervious = 157.886 ac 0.06% Impervious = 0.089 ac

Summary for Subcatchment EX-5.10:

Runoff = 0.0 cfs @ 22.52 hrs, Volume= 0.003 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.025	76	Gravel roads, HSG A
1.625	30	Woods, Good, HSG A
1.650	31	Weighted Average
1.650	31	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
29.2	620	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
50.3	670	Total			

Summary for Subcatchment EX-5.11:

Runoff = 0.0 cfs @ 24.07 hrs, Volume= 0.003 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
4.623	30	Woods, Good, HSG A
4.623	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.9	50	0.0110	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
44.6	820	0.0150	0.31		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
71.5	870	Total			

Summary for Subcatchment EX-5.12:

Runoff = 0.8 cfs @ 14.11 hrs, Volume= 0.362 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.331	76	Gravel roads, HSG A
0.024	91	Gravel roads, HSG D
0.019	98	Water Surface, HSG D
5.293	30	Woods, Good, HSG A
2.489	77	Woods, Good, HSG D
8.157	47	Weighted Average
8.138	46	99.76% Pervious Area
0.019	98	0.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.8	50	0.0270	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
10.0	139	0.0086	0.23		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
90.7	2,538	0.0087	0.47		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	42	0.2285	2.39		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
119.8	2,769	Total			

Summary for Subcatchment EX-5.13:

Runoff = 0.4 cfs @ 18.62 hrs, Volume= 0.285 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.457	76	Gravel roads, HSG A
0.034	91	Gravel roads, HSG D
0.024	98	Water Surface, HSG D
30.978	30	Woods, Good, HSG A
2.844	77	Woods, Good, HSG D
34.338	35	Weighted Average
34.313	35	99.93% Pervious Area
0.024	98	0.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.8	50	0.0085	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
187.8	2,955	0.0110	0.26		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
217.6	3,005	Total			

Summary for Subcatchment EX-5.14:

Runoff = 3.0 cfs @ 12.53 hrs, Volume= 0.621 af, Depth= 0.53"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.092	76	Gravel roads, HSG A
0.023	91	Gravel roads, HSG D
0.028	98	Water Surface, HSG D
7.787	30	Woods, Good, HSG A
3.269	55	Woods, Good, HSG B
2.829	77	Woods, Good, HSG D
14.028	46	Weighted Average
13.999	46	99.80% Pervious Area
0.028	98	0.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	50	0.2300	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
13.8	413	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	103	0.0730	1.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
23.1	566	Total			

Summary for Subcatchment EX-5.15:

Runoff = 0.7 cfs @ 12.84 hrs, Volume= 0.271 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.055	76	Gravel roads, HSG A
0.015	91	Gravel roads, HSG D
0.017	98	Water Surface, HSG D
8.194	30	Woods, Good, HSG A
2.399	77	Woods, Good, HSG D
10.681	41	Weighted Average
10.664	41	99.84% Pervious Area
0.017	98	0.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	50	0.0700	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
11.3	434	0.0650	0.64		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
10.7	124	0.0060	0.19		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
34.8	608	Total			

Summary for Subcatchment EX-5.16:

Runoff = 3.2 cfs @ 12.43 hrs, Volume= 0.523 af, Depth= 0.73"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
4.849	30	Woods, Good, HSG A
3.700	77	Woods, Good, HSG D
8.549	50	Weighted Average
8.549	50	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.9	165	0.0194	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
22.6	215	Total			

Summary for Subcatchment EX-5.17:

Runoff = 13.1 cfs @ 12.12 hrs, Volume= 1.306 af, Depth= 0.85"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.011	76	Gravel roads, HSG A
0.043	91	Gravel roads, HSG D
9.850	30	Woods, Good, HSG A
8.582	77	Woods, Good, HSG D
18.486	52	Weighted Average
18.486	52	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	30	0.1500	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.1	45	0.1600	6.44		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
6.4	75	Total			

Summary for Subcatchment EX-5.18:

Runoff = 0.6 cfs @ 13.56 hrs, Volume= 0.295 af, Depth= 0.34"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.025	76	Gravel roads, HSG A
0.051	91	Gravel roads, HSG D
7.797	30	Woods, Good, HSG A
2.576	77	Woods, Good, HSG D
10.449	42	Weighted Average
10.449	42	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.1260	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
65.7	540	0.0030	0.14		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
75.8	590	Total			

Summary for Subcatchment EX-5.19:

Runoff = 0.0 cfs @ 15.24 hrs, Volume= 0.006 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.042	76	Gravel roads, HSG A
0.008	91	Gravel roads, HSG D
0.626	30	Woods, Good, HSG A
0.019	77	Woods, Good, HSG D
0.695	35	Weighted Average
0.695	35	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	50	0.0750	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.2	110	0.0020	0.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	30	0.1300	1.80		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
21.0	190	Total			

Summary for Subcatchment EX-5.20:

Runoff = 0.0 cfs @ 23.48 hrs, Volume= 0.001 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.011	76	Gravel roads, HSG A
1.118	30	Woods, Good, HSG A
1.129	30	Weighted Average
1.129	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.0	50	0.0300	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	97	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.3	147	Total			

Summary for Subcatchment EX-5.21:

Runoff = 0.0 cfs @ 23.59 hrs, Volume= 0.004 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.053	76	Gravel roads, HSG A
5.627	30	Woods, Good, HSG A
5.680	30	Weighted Average
5.680	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.1800	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
19.4	583	0.0400	0.50		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
28.2	633	Total			

Summary for Subcatchment EX-5.6:

Runoff = 0.0 cfs @ 23.86 hrs, Volume= 0.011 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.162	76	Gravel roads, HSG A
16.485	30	Woods, Good, HSG A
16.647	30	Weighted Average
16.647	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.5	50	0.0490	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
35.6	717	0.0180	0.34		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
44.1	767	Total			

Summary for Subcatchment EX-5.7:

Runoff = 0.0 cfs @ 24.07 hrs, Volume= 0.006 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.092	76	Gravel roads, HSG A
9.360	30	Woods, Good, HSG A
9.451	30	Weighted Average
9.451	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
45.2	50	0.0030	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
18.7	319	0.0130	0.29		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
63.9	369	Total			

Summary for Subcatchment EX-5.8:

Runoff = 0.0 cfs @ 22.51 hrs, Volume= 0.013 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.028	39	>75% Grass cover, Good, HSG A
0.160	76	Gravel roads, HSG A
8.559	30	Woods, Good, HSG A
8.747	31	Weighted Average
8.747	31	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.9	50	0.0100	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.8	208	0.0080	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.6	621	0.0230	0.76		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
49.3	879	Total			

Summary for Subcatchment EX-5.9:

Runoff = 0.0 cfs @ 17.58 hrs, Volume= 0.013 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.154	76	Gravel roads, HSG A
4.511	30	Woods, Good, HSG A
4.665	32	Weighted Average
4.665	32	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	50	0.1000	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
17.0	510	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
28.1	560	Total			

Summary for Pond P5.11: Low Point

Inflow Area = 4.623 ac, 0.00% Impervious, Inflow Depth = 0.01" for 10-year event
Inflow = 0.0 cfs @ 24.07 hrs, Volume= 0.003 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 174.52' @ 28.13 hrs Surf.Area= 5,631 sf Storage= 133 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	174.50'	9,900 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
174.50	5,600	0	0
175.00	6,260	2,965	2,965
175.50	6,930	3,298	6,263
176.00	7,620	3,638	9,900

Device	Routing	Invert	Outlet Devices
#1	Primary	175.50'	**30.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=174.50' TW=0.00' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link DP5.10: Low Point

Inflow Area = 1.650 ac, 0.00% Impervious, Inflow Depth = 0.02" for 10-year event
Inflow = 0.0 cfs @ 22.52 hrs, Volume= 0.003 af
Primary = 0.0 cfs @ 22.52 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.11: Low Point

Inflow Area = 4.623 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-year event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.12: Wetland 44

Inflow Area = 8.157 ac, 0.24% Impervious, Inflow Depth = 0.53" for 10-year event
Inflow = 0.8 cfs @ 14.11 hrs, Volume= 0.362 af
Primary = 0.8 cfs @ 14.11 hrs, Volume= 0.362 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.13: Wetland 44

Inflow Area = 34.338 ac, 0.07% Impervious, Inflow Depth = 0.10" for 10-year event
Inflow = 0.4 cfs @ 18.62 hrs, Volume= 0.285 af
Primary = 0.4 cfs @ 18.62 hrs, Volume= 0.285 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.14: Wetland 44

Inflow Area = 14.028 ac, 0.20% Impervious, Inflow Depth = 0.53" for 10-year event
Inflow = 3.0 cfs @ 12.53 hrs, Volume= 0.621 af
Primary = 3.0 cfs @ 12.53 hrs, Volume= 0.621 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.15: Wetland 44

Inflow Area = 10.681 ac, 0.16% Impervious, Inflow Depth = 0.30" for 10-year event
Inflow = 0.7 cfs @ 12.84 hrs, Volume= 0.271 af
Primary = 0.7 cfs @ 12.84 hrs, Volume= 0.271 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.16: Wetland

Inflow Area = 8.549 ac, 0.00% Impervious, Inflow Depth = 0.73" for 10-year event
Inflow = 3.2 cfs @ 12.43 hrs, Volume= 0.523 af
Primary = 3.2 cfs @ 12.43 hrs, Volume= 0.523 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.17: Wetland 41&43/Vernal Pool 11&13

Inflow Area = 18.486 ac, 0.00% Impervious, Inflow Depth = 0.85" for 10-year event
Inflow = 13.1 cfs @ 12.12 hrs, Volume= 1.306 af
Primary = 13.1 cfs @ 12.12 hrs, Volume= 1.306 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.18: Wetland 42/Vernal Pool 12

Inflow Area = 10.449 ac, 0.00% Impervious, Inflow Depth = 0.34" for 10-year event
Inflow = 0.6 cfs @ 13.56 hrs, Volume= 0.295 af
Primary = 0.6 cfs @ 13.56 hrs, Volume= 0.295 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.19: Wetland 40/Vernal Pool 10

Inflow Area = 0.695 ac, 0.00% Impervious, Inflow Depth = 0.10" for 10-year event
Inflow = 0.0 cfs @ 15.24 hrs, Volume= 0.006 af
Primary = 0.0 cfs @ 15.24 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.20: Off-site

Inflow Area = 1.129 ac, 0.00% Impervious, Inflow Depth = 0.01" for 10-year event
Inflow = 0.0 cfs @ 23.48 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 23.48 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.21: Wetland 39/Vernal Pool 9

Inflow Area = 5.680 ac, 0.00% Impervious, Inflow Depth = 0.01" for 10-year event
Inflow = 0.0 cfs @ 23.59 hrs, Volume= 0.004 af
Primary = 0.0 cfs @ 23.59 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.6: Wetland 18

Inflow Area = 16.647 ac, 0.00% Impervious, Inflow Depth = 0.01" for 10-year event
Inflow = 0.0 cfs @ 23.86 hrs, Volume= 0.011 af
Primary = 0.0 cfs @ 23.86 hrs, Volume= 0.011 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.7: Wetland 19

Inflow Area = 9.451 ac, 0.00% Impervious, Inflow Depth = 0.01" for 10-year event
Inflow = 0.0 cfs @ 24.07 hrs, Volume= 0.006 af
Primary = 0.0 cfs @ 24.07 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.8: Wetland 45

Inflow Area = 8.747 ac, 0.00% Impervious, Inflow Depth = 0.02" for 10-year event
Inflow = 0.0 cfs @ 22.51 hrs, Volume= 0.013 af
Primary = 0.0 cfs @ 22.51 hrs, Volume= 0.013 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.9: Low Point

Inflow Area = 4.665 ac, 0.00% Impervious, Inflow Depth = 0.03" for 10-year event
Inflow = 0.0 cfs @ 17.58 hrs, Volume= 0.013 af
Primary = 0.0 cfs @ 17.58 hrs, Volume= 0.013 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentEX-5.10: Runoff Area=1.650 ac 0.00% Impervious Runoff Depth=0.13"
Flow Length=670' Tc=50.3 min CN=31/0 Runoff=0.0 cfs 0.018 af

SubcatchmentEX-5.11: Runoff Area=4.623 ac 0.00% Impervious Runoff Depth=0.10"
Flow Length=870' Tc=71.5 min CN=30/0 Runoff=0.1 cfs 0.038 af

SubcatchmentEX-5.12: Runoff Area=8.157 ac 0.24% Impervious Runoff Depth=0.98"
Flow Length=2,769' Tc=119.8 min CN=46/98 Runoff=1.7 cfs 0.664 af

SubcatchmentEX-5.13: Runoff Area=34.338 ac 0.07% Impervious Runoff Depth=0.30"
Flow Length=3,005' Tc=217.6 min CN=35/98 Runoff=1.2 cfs 0.870 af

SubcatchmentEX-5.14: Runoff Area=14.028 ac 0.20% Impervious Runoff Depth=0.97"
Flow Length=566' Tc=23.1 min CN=46/98 Runoff=7.2 cfs 1.140 af

SubcatchmentEX-5.15: Runoff Area=10.681 ac 0.16% Impervious Runoff Depth=0.64"
Flow Length=608' Tc=34.8 min CN=41/98 Runoff=2.4 cfs 0.571 af

SubcatchmentEX-5.16: Runoff Area=8.549 ac 0.00% Impervious Runoff Depth=1.26"
Flow Length=215' Tc=22.6 min CN=50/0 Runoff=6.6 cfs 0.896 af

SubcatchmentEX-5.17: Runoff Area=18.486 ac 0.00% Impervious Runoff Depth=1.41"
Flow Length=75' Tc=6.4 min CN=52/0 Runoff=25.7 cfs 2.175 af

SubcatchmentEX-5.18: Runoff Area=10.449 ac 0.00% Impervious Runoff Depth=0.70"
Flow Length=590' Tc=75.8 min CN=42/0 Runoff=1.8 cfs 0.606 af

SubcatchmentEX-5.19: Runoff Area=0.695 ac 0.00% Impervious Runoff Depth=0.30"
Flow Length=190' Tc=21.0 min CN=35/0 Runoff=0.0 cfs 0.017 af

SubcatchmentEX-5.20: Runoff Area=1.129 ac 0.00% Impervious Runoff Depth=0.10"
Flow Length=147' Tc=20.3 min CN=30/0 Runoff=0.0 cfs 0.009 af

SubcatchmentEX-5.21: Runoff Area=5.680 ac 0.00% Impervious Runoff Depth=0.10"
Flow Length=633' Tc=28.2 min CN=30/0 Runoff=0.1 cfs 0.046 af

SubcatchmentEX-5.6: Runoff Area=16.647 ac 0.00% Impervious Runoff Depth=0.10"
Flow Length=767' Tc=44.1 min CN=30/0 Runoff=0.2 cfs 0.136 af

SubcatchmentEX-5.7: Runoff Area=9.451 ac 0.00% Impervious Runoff Depth=0.10"
Flow Length=369' Tc=63.9 min CN=30/0 Runoff=0.1 cfs 0.077 af

SubcatchmentEX-5.8: Runoff Area=8.747 ac 0.00% Impervious Runoff Depth=0.13"
Flow Length=879' Tc=49.3 min CN=31/0 Runoff=0.2 cfs 0.096 af

SubcatchmentEX-5.9: Runoff Area=4.665 ac 0.00% Impervious Runoff Depth=0.17"
Flow Length=560' Tc=28.1 min CN=32/0 Runoff=0.1 cfs 0.066 af

Pond P5.11: Low Point Peak Elev=174.78' Storage=1,647 cf Inflow=0.1 cfs 0.038 af
Outflow=0.0 cfs 0.000 af

Link DP5.10: Low Point Inflow=0.0 cfs 0.018 af
Primary=0.0 cfs 0.018 af

Link DP5.11: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP5.12: Wetland 44 Inflow=1.7 cfs 0.664 af
Primary=1.7 cfs 0.664 af

Link DP5.13: Wetland 44 Inflow=1.2 cfs 0.870 af
Primary=1.2 cfs 0.870 af

Link DP5.14: Wetland 44 Inflow=7.2 cfs 1.140 af
Primary=7.2 cfs 1.140 af

Link DP5.15: Wetland 44 Inflow=2.4 cfs 0.571 af
Primary=2.4 cfs 0.571 af

Link DP5.16: Wetland Inflow=6.6 cfs 0.896 af
Primary=6.6 cfs 0.896 af

Link DP5.17: Wetland 41&43/Vernal Pool 11&13 Inflow=25.7 cfs 2.175 af
Primary=25.7 cfs 2.175 af

Link DP5.18: Wetland 42/Vernal Pool 12 Inflow=1.8 cfs 0.606 af
Primary=1.8 cfs 0.606 af

Link DP5.19: Wetland 40/Vernal Pool 10 Inflow=0.0 cfs 0.017 af
Primary=0.0 cfs 0.017 af

Link DP5.20: Off-site Inflow=0.0 cfs 0.009 af
Primary=0.0 cfs 0.009 af

Link DP5.21: Wetland 39/Vernal Pool 9 Inflow=0.1 cfs 0.046 af
Primary=0.1 cfs 0.046 af

Link DP5.6: Wetland 18 Inflow=0.2 cfs 0.136 af
Primary=0.2 cfs 0.136 af

Link DP5.7: Wetland 19 Inflow=0.1 cfs 0.077 af
Primary=0.1 cfs 0.077 af

Link DP5.8: Wetland 45 Inflow=0.2 cfs 0.096 af
Primary=0.2 cfs 0.096 af

Link DP5.9: Low Point Inflow=0.1 cfs 0.066 af
Primary=0.1 cfs 0.066 af

Total Runoff Area = 157.975 ac Runoff Volume = 7.426 af Average Runoff Depth = 0.56"
99.94% Pervious = 157.886 ac 0.06% Impervious = 0.089 ac

Summary for Subcatchment EX-5.10:

Runoff = 0.0 cfs @ 15.59 hrs, Volume= 0.018 af, Depth= 0.13"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.025	76	Gravel roads, HSG A
1.625	30	Woods, Good, HSG A
1.650	31	Weighted Average
1.650	31	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
29.2	620	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
50.3	670	Total			

Summary for Subcatchment EX-5.11:

Runoff = 0.1 cfs @ 16.29 hrs, Volume= 0.038 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
4.623	30	Woods, Good, HSG A
4.623	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.9	50	0.0110	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
44.6	820	0.0150	0.31		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
71.5	870	Total			

Summary for Subcatchment EX-5.12:

Runoff = 1.7 cfs @ 13.97 hrs, Volume= 0.664 af, Depth= 0.98"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.331	76	Gravel roads, HSG A
0.024	91	Gravel roads, HSG D
0.019	98	Water Surface, HSG D
5.293	30	Woods, Good, HSG A
2.489	77	Woods, Good, HSG D
8.157	47	Weighted Average
8.138	46	99.76% Pervious Area
0.019	98	0.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.8	50	0.0270	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
10.0	139	0.0086	0.23		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
90.7	2,538	0.0087	0.47		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	42	0.2285	2.39		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
119.8	2,769	Total			

Summary for Subcatchment EX-5.13:

Runoff = 1.2 cfs @ 16.93 hrs, Volume= 0.870 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.457	76	Gravel roads, HSG A
0.034	91	Gravel roads, HSG D
0.024	98	Water Surface, HSG D
30.978	30	Woods, Good, HSG A
2.844	77	Woods, Good, HSG D
34.338	35	Weighted Average
34.313	35	99.93% Pervious Area
0.024	98	0.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.8	50	0.0085	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
187.8	2,955	0.0110	0.26		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
217.6	3,005	Total			

Summary for Subcatchment EX-5.14:

Runoff = 7.2 cfs @ 12.43 hrs, Volume= 1.140 af, Depth= 0.97"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.092	76	Gravel roads, HSG A
0.023	91	Gravel roads, HSG D
0.028	98	Water Surface, HSG D
7.787	30	Woods, Good, HSG A
3.269	55	Woods, Good, HSG B
2.829	77	Woods, Good, HSG D
14.028	46	Weighted Average
13.999	46	99.80% Pervious Area
0.028	98	0.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	50	0.2300	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
13.8	413	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	103	0.0730	1.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
23.1	566	Total			

Summary for Subcatchment EX-5.15:

Runoff = 2.4 cfs @ 12.69 hrs, Volume= 0.571 af, Depth= 0.64"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.055	76	Gravel roads, HSG A
0.015	91	Gravel roads, HSG D
0.017	98	Water Surface, HSG D
8.194	30	Woods, Good, HSG A
2.399	77	Woods, Good, HSG D
10.681	41	Weighted Average
10.664	41	99.84% Pervious Area
0.017	98	0.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	50	0.0700	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
11.3	434	0.0650	0.64		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
10.7	124	0.0060	0.19		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
34.8	608	Total			

Summary for Subcatchment EX-5.16:

Runoff = 6.6 cfs @ 12.38 hrs, Volume= 0.896 af, Depth= 1.26"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
4.849	30	Woods, Good, HSG A
3.700	77	Woods, Good, HSG D
8.549	50	Weighted Average
8.549	50	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.9	165	0.0194	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
22.6	215	Total			

Summary for Subcatchment EX-5.17:

Runoff = 25.7 cfs @ 12.11 hrs, Volume= 2.175 af, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.011	76	Gravel roads, HSG A
0.043	91	Gravel roads, HSG D
9.850	30	Woods, Good, HSG A
8.582	77	Woods, Good, HSG D
18.486	52	Weighted Average
18.486	52	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	30	0.1500	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.1	45	0.1600	6.44		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
6.4	75	Total			

Summary for Subcatchment EX-5.18:

Runoff = 1.8 cfs @ 13.31 hrs, Volume= 0.606 af, Depth= 0.70"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.025	76	Gravel roads, HSG A
0.051	91	Gravel roads, HSG D
7.797	30	Woods, Good, HSG A
2.576	77	Woods, Good, HSG D
10.449	42	Weighted Average
10.449	42	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.1260	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
65.7	540	0.0030	0.14		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
75.8	590	Total			

Summary for Subcatchment EX-5.19:

Runoff = 0.0 cfs @ 12.67 hrs, Volume= 0.017 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.042	76	Gravel roads, HSG A
0.008	91	Gravel roads, HSG D
0.626	30	Woods, Good, HSG A
0.019	77	Woods, Good, HSG D
0.695	35	Weighted Average
0.695	35	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	50	0.0750	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.2	110	0.0020	0.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	30	0.1300	1.80		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
21.0	190	Total			

Summary for Subcatchment EX-5.20:

Runoff = 0.0 cfs @ 15.45 hrs, Volume= 0.009 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.011	76	Gravel roads, HSG A
1.118	30	Woods, Good, HSG A
1.129	30	Weighted Average
1.129	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.0	50	0.0300	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	97	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.3	147	Total			

Summary for Subcatchment EX-5.21:

Runoff = 0.1 cfs @ 15.57 hrs, Volume= 0.046 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.053	76	Gravel roads, HSG A
5.627	30	Woods, Good, HSG A
5.680	30	Weighted Average
5.680	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.1800	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
19.4	583	0.0400	0.50		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
28.2	633	Total			

Summary for Subcatchment EX-5.6:

Runoff = 0.2 cfs @ 15.83 hrs, Volume= 0.136 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.162	76	Gravel roads, HSG A
16.485	30	Woods, Good, HSG A
16.647	30	Weighted Average
16.647	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.5	50	0.0490	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
35.6	717	0.0180	0.34		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
44.1	767	Total			

Summary for Subcatchment EX-5.7:

Runoff = 0.1 cfs @ 16.12 hrs, Volume= 0.077 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.092	76	Gravel roads, HSG A
9.360	30	Woods, Good, HSG A
9.451	30	Weighted Average
9.451	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
45.2	50	0.0030	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
18.7	319	0.0130	0.29		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
63.9	369	Total			

Summary for Subcatchment EX-5.8:

Runoff = 0.2 cfs @ 15.61 hrs, Volume= 0.096 af, Depth= 0.13"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.028	39	>75% Grass cover, Good, HSG A
0.160	76	Gravel roads, HSG A
8.559	30	Woods, Good, HSG A
8.747	31	Weighted Average
8.747	31	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.9	50	0.0100	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.8	208	0.0080	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.6	621	0.0230	0.76		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
49.3	879	Total			

Summary for Subcatchment EX-5.9:

Runoff = 0.1 cfs @ 14.89 hrs, Volume= 0.066 af, Depth= 0.17"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.154	76	Gravel roads, HSG A
4.511	30	Woods, Good, HSG A
4.665	32	Weighted Average
4.665	32	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	50	0.1000	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
17.0	510	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
28.1	560	Total			

Summary for Pond P5.11: Low Point

Inflow Area = 4.623 ac, 0.00% Impervious, Inflow Depth = 0.10" for 25-year event
Inflow = 0.1 cfs @ 16.29 hrs, Volume= 0.038 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 174.78' @ 28.13 hrs Surf.Area= 5,976 sf Storage= 1,647 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	174.50'	9,900 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
174.50	5,600	0	0
175.00	6,260	2,965	2,965
175.50	6,930	3,298	6,263
176.00	7,620	3,638	9,900

Device	Routing	Invert	Outlet Devices
#1	Primary	175.50'	**30.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=174.50' TW=0.00' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link DP5.10: Low Point

Inflow Area = 1.650 ac, 0.00% Impervious, Inflow Depth = 0.13" for 25-year event
Inflow = 0.0 cfs @ 15.59 hrs, Volume= 0.018 af
Primary = 0.0 cfs @ 15.59 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.11: Low Point

Inflow Area = 4.623 ac, 0.00% Impervious, Inflow Depth = 0.00" for 25-year event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.12: Wetland 44

Inflow Area = 8.157 ac, 0.24% Impervious, Inflow Depth = 0.98" for 25-year event
Inflow = 1.7 cfs @ 13.97 hrs, Volume= 0.664 af
Primary = 1.7 cfs @ 13.97 hrs, Volume= 0.664 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.13: Wetland 44

Inflow Area = 34.338 ac, 0.07% Impervious, Inflow Depth = 0.30" for 25-year event
Inflow = 1.2 cfs @ 16.93 hrs, Volume= 0.870 af
Primary = 1.2 cfs @ 16.93 hrs, Volume= 0.870 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.14: Wetland 44

Inflow Area = 14.028 ac, 0.20% Impervious, Inflow Depth = 0.97" for 25-year event
Inflow = 7.2 cfs @ 12.43 hrs, Volume= 1.140 af
Primary = 7.2 cfs @ 12.43 hrs, Volume= 1.140 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.15: Wetland 44

Inflow Area = 10.681 ac, 0.16% Impervious, Inflow Depth = 0.64" for 25-year event
Inflow = 2.4 cfs @ 12.69 hrs, Volume= 0.571 af
Primary = 2.4 cfs @ 12.69 hrs, Volume= 0.571 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.16: Wetland

Inflow Area = 8.549 ac, 0.00% Impervious, Inflow Depth = 1.26" for 25-year event
Inflow = 6.6 cfs @ 12.38 hrs, Volume= 0.896 af
Primary = 6.6 cfs @ 12.38 hrs, Volume= 0.896 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.17: Wetland 41&43/Vernal Pool 11&13

Inflow Area = 18.486 ac, 0.00% Impervious, Inflow Depth = 1.41" for 25-year event
Inflow = 25.7 cfs @ 12.11 hrs, Volume= 2.175 af
Primary = 25.7 cfs @ 12.11 hrs, Volume= 2.175 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.18: Wetland 42/Vernal Pool 12

Inflow Area = 10.449 ac, 0.00% Impervious, Inflow Depth = 0.70" for 25-year event
Inflow = 1.8 cfs @ 13.31 hrs, Volume= 0.606 af
Primary = 1.8 cfs @ 13.31 hrs, Volume= 0.606 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.19: Wetland 40/Vernal Pool 10

Inflow Area = 0.695 ac, 0.00% Impervious, Inflow Depth = 0.30" for 25-year event
Inflow = 0.0 cfs @ 12.67 hrs, Volume= 0.017 af
Primary = 0.0 cfs @ 12.67 hrs, Volume= 0.017 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.20: Off-site

Inflow Area = 1.129 ac, 0.00% Impervious, Inflow Depth = 0.10" for 25-year event
Inflow = 0.0 cfs @ 15.45 hrs, Volume= 0.009 af
Primary = 0.0 cfs @ 15.45 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.21: Wetland 39/Vernal Pool 9

Inflow Area = 5.680 ac, 0.00% Impervious, Inflow Depth = 0.10" for 25-year event
Inflow = 0.1 cfs @ 15.57 hrs, Volume= 0.046 af
Primary = 0.1 cfs @ 15.57 hrs, Volume= 0.046 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.6: Wetland 18

Inflow Area = 16.647 ac, 0.00% Impervious, Inflow Depth = 0.10" for 25-year event
Inflow = 0.2 cfs @ 15.83 hrs, Volume= 0.136 af
Primary = 0.2 cfs @ 15.83 hrs, Volume= 0.136 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.7: Wetland 19

Inflow Area = 9.451 ac, 0.00% Impervious, Inflow Depth = 0.10" for 25-year event
Inflow = 0.1 cfs @ 16.12 hrs, Volume= 0.077 af
Primary = 0.1 cfs @ 16.12 hrs, Volume= 0.077 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.8: Wetland 45

Inflow Area = 8.747 ac, 0.00% Impervious, Inflow Depth = 0.13" for 25-year event
Inflow = 0.2 cfs @ 15.61 hrs, Volume= 0.096 af
Primary = 0.2 cfs @ 15.61 hrs, Volume= 0.096 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.9: Low Point

Inflow Area = 4.665 ac, 0.00% Impervious, Inflow Depth = 0.17" for 25-year event
Inflow = 0.1 cfs @ 14.89 hrs, Volume= 0.066 af
Primary = 0.1 cfs @ 14.89 hrs, Volume= 0.066 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentEX-5.10: Runoff Area=1.650 ac 0.00% Impervious Runoff Depth=0.65"
Flow Length=670' Tc=50.3 min CN=31/0 Runoff=0.2 cfs 0.090 af

SubcatchmentEX-5.11: Runoff Area=4.623 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=870' Tc=71.5 min CN=30/0 Runoff=0.5 cfs 0.219 af

SubcatchmentEX-5.12: Runoff Area=8.157 ac 0.24% Impervious Runoff Depth=2.19"
Flow Length=2,769' Tc=119.8 min CN=46/98 Runoff=4.6 cfs 1.487 af

SubcatchmentEX-5.13: Runoff Area=34.338 ac 0.07% Impervious Runoff Depth=1.02"
Flow Length=3,005' Tc=217.6 min CN=35/98 Runoff=5.0 cfs 2.927 af

SubcatchmentEX-5.14: Runoff Area=14.028 ac 0.20% Impervious Runoff Depth=2.19"
Flow Length=566' Tc=23.1 min CN=46/98 Runoff=20.1 cfs 2.555 af

SubcatchmentEX-5.15: Runoff Area=10.681 ac 0.16% Impervious Runoff Depth=1.64"
Flow Length=608' Tc=34.8 min CN=41/98 Runoff=8.7 cfs 1.459 af

SubcatchmentEX-5.16: Runoff Area=8.549 ac 0.00% Impervious Runoff Depth=2.62"
Flow Length=215' Tc=22.6 min CN=50/0 Runoff=15.7 cfs 1.869 af

SubcatchmentEX-5.17: Runoff Area=18.486 ac 0.00% Impervious Runoff Depth=2.85"
Flow Length=75' Tc=6.4 min CN=52/0 Runoff=58.0 cfs 4.396 af

SubcatchmentEX-5.18: Runoff Area=10.449 ac 0.00% Impervious Runoff Depth=1.73"
Flow Length=590' Tc=75.8 min CN=42/0 Runoff=5.9 cfs 1.511 af

SubcatchmentEX-5.19: Runoff Area=0.695 ac 0.00% Impervious Runoff Depth=1.02"
Flow Length=190' Tc=21.0 min CN=35/0 Runoff=0.3 cfs 0.059 af

SubcatchmentEX-5.20: Runoff Area=1.129 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=147' Tc=20.3 min CN=30/0 Runoff=0.2 cfs 0.053 af

SubcatchmentEX-5.21: Runoff Area=5.680 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=633' Tc=28.2 min CN=30/0 Runoff=0.8 cfs 0.269 af

SubcatchmentEX-5.6: Runoff Area=16.647 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=767' Tc=44.1 min CN=30/0 Runoff=2.1 cfs 0.787 af

SubcatchmentEX-5.7: Runoff Area=9.451 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=369' Tc=63.9 min CN=30/0 Runoff=1.0 cfs 0.447 af

SubcatchmentEX-5.8: Runoff Area=8.747 ac 0.00% Impervious Runoff Depth=0.65"
Flow Length=879' Tc=49.3 min CN=31/0 Runoff=1.3 cfs 0.475 af

SubcatchmentEX-5.9: Runoff Area=4.665 ac 0.00% Impervious Runoff Depth=0.74"
Flow Length=560' Tc=28.1 min CN=32/0 Runoff=1.2 cfs 0.287 af

Pond P5.11: Low Point Peak Elev=175.52' Storage=6,376 cf Inflow=0.5 cfs 0.219 af
Outflow=0.2 cfs 0.075 af

Link DP5.10: Low Point Inflow=0.2 cfs 0.090 af
Primary=0.2 cfs 0.090 af

Link DP5.11: Low Point Inflow=0.2 cfs 0.075 af
Primary=0.2 cfs 0.075 af

Link DP5.12: Wetland 44 Inflow=4.6 cfs 1.487 af
Primary=4.6 cfs 1.487 af

Link DP5.13: Wetland 44 Inflow=5.0 cfs 2.927 af
Primary=5.0 cfs 2.927 af

Link DP5.14: Wetland 44 Inflow=20.1 cfs 2.555 af
Primary=20.1 cfs 2.555 af

Link DP5.15: Wetland 44 Inflow=8.7 cfs 1.459 af
Primary=8.7 cfs 1.459 af

Link DP5.16: Wetland Inflow=15.7 cfs 1.869 af
Primary=15.7 cfs 1.869 af

Link DP5.17: Wetland 41&43/Vernal Pool 11&13 Inflow=58.0 cfs 4.396 af
Primary=58.0 cfs 4.396 af

Link DP5.18: Wetland 42/Vernal Pool 12 Inflow=5.9 cfs 1.511 af
Primary=5.9 cfs 1.511 af

Link DP5.19: Wetland 40/Vernal Pool 10 Inflow=0.3 cfs 0.059 af
Primary=0.3 cfs 0.059 af

Link DP5.20: Off-site Inflow=0.2 cfs 0.053 af
Primary=0.2 cfs 0.053 af

Link DP5.21: Wetland 39/Vernal Pool 9 Inflow=0.8 cfs 0.269 af
Primary=0.8 cfs 0.269 af

Link DP5.6: Wetland 18 Inflow=2.1 cfs 0.787 af
Primary=2.1 cfs 0.787 af

Link DP5.7: Wetland 19 Inflow=1.0 cfs 0.447 af
Primary=1.0 cfs 0.447 af

Link DP5.8: Wetland 45 Inflow=1.3 cfs 0.475 af
Primary=1.3 cfs 0.475 af

Link DP5.9: Low Point Inflow=1.2 cfs 0.287 af
Primary=1.2 cfs 0.287 af

Total Runoff Area = 157.975 ac Runoff Volume = 18.888 af Average Runoff Depth = 1.43"
99.94% Pervious = 157.886 ac 0.06% Impervious = 0.089 ac

Summary for Subcatchment EX-5.10:

Runoff = 0.2 cfs @ 13.02 hrs, Volume= 0.090 af, Depth= 0.65"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.025	76	Gravel roads, HSG A
1.625	30	Woods, Good, HSG A
1.650	31	Weighted Average
1.650	31	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
29.2	620	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
50.3	670	Total			

Summary for Subcatchment EX-5.11:

Runoff = 0.5 cfs @ 13.50 hrs, Volume= 0.219 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
4.623	30	Woods, Good, HSG A
4.623	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.9	50	0.0110	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
44.6	820	0.0150	0.31		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
71.5	870	Total			

Summary for Subcatchment EX-5.12:

Runoff = 4.6 cfs @ 13.72 hrs, Volume= 1.487 af, Depth= 2.19"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.331	76	Gravel roads, HSG A
0.024	91	Gravel roads, HSG D
0.019	98	Water Surface, HSG D
5.293	30	Woods, Good, HSG A
2.489	77	Woods, Good, HSG D
8.157	47	Weighted Average
8.138	46	99.76% Pervious Area
0.019	98	0.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.8	50	0.0270	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
10.0	139	0.0086	0.23		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
90.7	2,538	0.0087	0.47		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	42	0.2285	2.39		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
119.8	2,769	Total			

Summary for Subcatchment EX-5.13:

Runoff = 5.0 cfs @ 15.72 hrs, Volume= 2.927 af, Depth= 1.02"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.457	76	Gravel roads, HSG A
0.034	91	Gravel roads, HSG D
0.024	98	Water Surface, HSG D
30.978	30	Woods, Good, HSG A
2.844	77	Woods, Good, HSG D
34.338	35	Weighted Average
34.313	35	99.93% Pervious Area
0.024	98	0.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.8	50	0.0085	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
187.8	2,955	0.0110	0.26		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
217.6	3,005	Total			

Summary for Subcatchment EX-5.14:

Runoff = 20.1 cfs @ 12.37 hrs, Volume= 2.555 af, Depth= 2.19"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.092	76	Gravel roads, HSG A
0.023	91	Gravel roads, HSG D
0.028	98	Water Surface, HSG D
7.787	30	Woods, Good, HSG A
3.269	55	Woods, Good, HSG B
2.829	77	Woods, Good, HSG D
14.028	46	Weighted Average
13.999	46	99.80% Pervious Area
0.028	98	0.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	50	0.2300	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
13.8	413	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	103	0.0730	1.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
23.1	566	Total			

Summary for Subcatchment EX-5.15:

Runoff = 8.7 cfs @ 12.57 hrs, Volume= 1.459 af, Depth= 1.64"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.055	76	Gravel roads, HSG A
0.015	91	Gravel roads, HSG D
0.017	98	Water Surface, HSG D
8.194	30	Woods, Good, HSG A
2.399	77	Woods, Good, HSG D
10.681	41	Weighted Average
10.664	41	99.84% Pervious Area
0.017	98	0.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	50	0.0700	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
11.3	434	0.0650	0.64		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
10.7	124	0.0060	0.19		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
34.8	608	Total			

Summary for Subcatchment EX-5.16:

Runoff = 15.7 cfs @ 12.34 hrs, Volume= 1.869 af, Depth= 2.62"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
4.849	30	Woods, Good, HSG A
3.700	77	Woods, Good, HSG D
8.549	50	Weighted Average
8.549	50	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.9	165	0.0194	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
22.6	215	Total			

Summary for Subcatchment EX-5.17:

Runoff = 58.0 cfs @ 12.10 hrs, Volume= 4.396 af, Depth= 2.85"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.011	76	Gravel roads, HSG A
0.043	91	Gravel roads, HSG D
9.850	30	Woods, Good, HSG A
8.582	77	Woods, Good, HSG D
18.486	52	Weighted Average
18.486	52	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	30	0.1500	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.1	45	0.1600	6.44		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
6.4	75	Total			

Summary for Subcatchment EX-5.18:

Runoff = 5.9 cfs @ 13.22 hrs, Volume= 1.511 af, Depth= 1.73"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.025	76	Gravel roads, HSG A
0.051	91	Gravel roads, HSG D
7.797	30	Woods, Good, HSG A
2.576	77	Woods, Good, HSG D
10.449	42	Weighted Average
10.449	42	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.1260	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
65.7	540	0.0030	0.14		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
75.8	590	Total			

Summary for Subcatchment EX-5.19:

Runoff = 0.3 cfs @ 12.46 hrs, Volume= 0.059 af, Depth= 1.02"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.042	76	Gravel roads, HSG A
0.008	91	Gravel roads, HSG D
0.626	30	Woods, Good, HSG A
0.019	77	Woods, Good, HSG D
0.695	35	Weighted Average
0.695	35	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	50	0.0750	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.2	110	0.0020	0.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	30	0.1300	1.80		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
21.0	190	Total			

Summary for Subcatchment EX-5.20:

Runoff = 0.2 cfs @ 12.58 hrs, Volume= 0.053 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.011	76	Gravel roads, HSG A
1.118	30	Woods, Good, HSG A
1.129	30	Weighted Average
1.129	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.0	50	0.0300	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	97	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.3	147	Total			

Summary for Subcatchment EX-5.21:

Runoff = 0.8 cfs @ 12.69 hrs, Volume= 0.269 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.053	76	Gravel roads, HSG A
5.627	30	Woods, Good, HSG A
5.680	30	Weighted Average
5.680	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.1800	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
19.4	583	0.0400	0.50		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
28.2	633	Total			

Summary for Subcatchment EX-5.6:

Runoff = 2.1 cfs @ 12.98 hrs, Volume= 0.787 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.162	76	Gravel roads, HSG A
16.485	30	Woods, Good, HSG A
16.647	30	Weighted Average
16.647	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.5	50	0.0490	0.10		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
35.6	717	0.0180	0.34		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
44.1	767	Total			

Summary for Subcatchment EX-5.7:

Runoff = 1.0 cfs @ 13.35 hrs, Volume= 0.447 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.092	76	Gravel roads, HSG A
9.360	30	Woods, Good, HSG A
9.451	30	Weighted Average
9.451	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
45.2	50	0.0030	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
18.7	319	0.0130	0.29		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
63.9	369	Total			

Summary for Subcatchment EX-5.8:

Runoff = 1.3 cfs @ 12.99 hrs, Volume= 0.475 af, Depth= 0.65"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.028	39	>75% Grass cover, Good, HSG A
0.160	76	Gravel roads, HSG A
8.559	30	Woods, Good, HSG A
8.747	31	Weighted Average
8.747	31	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.9	50	0.0100	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.8	208	0.0080	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.6	621	0.0230	0.76		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
49.3	879	Total			

Summary for Subcatchment EX-5.9:

Runoff = 1.2 cfs @ 12.64 hrs, Volume= 0.287 af, Depth= 0.74"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.154	76	Gravel roads, HSG A
4.511	30	Woods, Good, HSG A
4.665	32	Weighted Average
4.665	32	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	50	0.1000	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
17.0	510	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
28.1	560	Total			

Summary for Pond P5.11: Low Point

Inflow Area = 4.623 ac, 0.00% Impervious, Inflow Depth = 0.57" for 100-year event
Inflow = 0.5 cfs @ 13.50 hrs, Volume= 0.219 af
Outflow = 0.2 cfs @ 18.61 hrs, Volume= 0.075 af, Atten= 64%, Lag= 306.7 min
Primary = 0.2 cfs @ 18.61 hrs, Volume= 0.075 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 175.52' @ 18.61 hrs Surf.Area= 6,953 sf Storage= 6,376 cf

Plug-Flow detention time= 456.4 min calculated for 0.075 af (34% of inflow)
Center-of-Mass det. time= 257.2 min (1,286.8 - 1,029.5)

Volume	Invert	Avail.Storage	Storage Description
#1	174.50'	9,900 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
174.50	5,600	0	0
175.00	6,260	2,965	2,965
175.50	6,930	3,298	6,263
176.00	7,620	3,638	9,900

Device	Routing	Invert	Outlet Devices
#1	Primary	175.50'	**30.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.2 cfs @ 18.61 hrs HW=175.52' TW=0.00' (Dynamic Tailwater)
↑**1=Broad-Crested Rectangular Weir** (Weir Controls 0.2 cfs @ 0.34 fps)

Summary for Link DP5.10: Low Point

Inflow Area = 1.650 ac, 0.00% Impervious, Inflow Depth = 0.65" for 100-year event
Inflow = 0.2 cfs @ 13.02 hrs, Volume= 0.090 af
Primary = 0.2 cfs @ 13.02 hrs, Volume= 0.090 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.11: Low Point

Inflow Area = 4.623 ac, 0.00% Impervious, Inflow Depth = 0.19" for 100-year event
Inflow = 0.2 cfs @ 18.61 hrs, Volume= 0.075 af
Primary = 0.2 cfs @ 18.61 hrs, Volume= 0.075 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.12: Wetland 44

Inflow Area = 8.157 ac, 0.24% Impervious, Inflow Depth = 2.19" for 100-year event
Inflow = 4.6 cfs @ 13.72 hrs, Volume= 1.487 af
Primary = 4.6 cfs @ 13.72 hrs, Volume= 1.487 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.13: Wetland 44

Inflow Area = 34.338 ac, 0.07% Impervious, Inflow Depth = 1.02" for 100-year event
Inflow = 5.0 cfs @ 15.72 hrs, Volume= 2.927 af
Primary = 5.0 cfs @ 15.72 hrs, Volume= 2.927 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.14: Wetland 44

Inflow Area = 14.028 ac, 0.20% Impervious, Inflow Depth = 2.19" for 100-year event
Inflow = 20.1 cfs @ 12.37 hrs, Volume= 2.555 af
Primary = 20.1 cfs @ 12.37 hrs, Volume= 2.555 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.15: Wetland 44

Inflow Area = 10.681 ac, 0.16% Impervious, Inflow Depth = 1.64" for 100-year event
Inflow = 8.7 cfs @ 12.57 hrs, Volume= 1.459 af
Primary = 8.7 cfs @ 12.57 hrs, Volume= 1.459 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.16: Wetland

Inflow Area = 8.549 ac, 0.00% Impervious, Inflow Depth = 2.62" for 100-year event
Inflow = 15.7 cfs @ 12.34 hrs, Volume= 1.869 af
Primary = 15.7 cfs @ 12.34 hrs, Volume= 1.869 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.17: Wetland 41&43/Vernal Pool 11&13

Inflow Area = 18.486 ac, 0.00% Impervious, Inflow Depth = 2.85" for 100-year event
Inflow = 58.0 cfs @ 12.10 hrs, Volume= 4.396 af
Primary = 58.0 cfs @ 12.10 hrs, Volume= 4.396 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.18: Wetland 42/Vernal Pool 12

Inflow Area = 10.449 ac, 0.00% Impervious, Inflow Depth = 1.73" for 100-year event
Inflow = 5.9 cfs @ 13.22 hrs, Volume= 1.511 af
Primary = 5.9 cfs @ 13.22 hrs, Volume= 1.511 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.19: Wetland 40/Vernal Pool 10

Inflow Area = 0.695 ac, 0.00% Impervious, Inflow Depth = 1.02" for 100-year event
Inflow = 0.3 cfs @ 12.46 hrs, Volume= 0.059 af
Primary = 0.3 cfs @ 12.46 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.20: Off-site

Inflow Area = 1.129 ac, 0.00% Impervious, Inflow Depth = 0.57" for 100-year event
Inflow = 0.2 cfs @ 12.58 hrs, Volume= 0.053 af
Primary = 0.2 cfs @ 12.58 hrs, Volume= 0.053 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.21: Wetland 39/Vernal Pool 9

Inflow Area = 5.680 ac, 0.00% Impervious, Inflow Depth = 0.57" for 100-year event
Inflow = 0.8 cfs @ 12.69 hrs, Volume= 0.269 af
Primary = 0.8 cfs @ 12.69 hrs, Volume= 0.269 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.6: Wetland 18

Inflow Area = 16.647 ac, 0.00% Impervious, Inflow Depth = 0.57" for 100-year event
Inflow = 2.1 cfs @ 12.98 hrs, Volume= 0.787 af
Primary = 2.1 cfs @ 12.98 hrs, Volume= 0.787 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.7: Wetland 19

Inflow Area = 9.451 ac, 0.00% Impervious, Inflow Depth = 0.57" for 100-year event
Inflow = 1.0 cfs @ 13.35 hrs, Volume= 0.447 af
Primary = 1.0 cfs @ 13.35 hrs, Volume= 0.447 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.8: Wetland 45

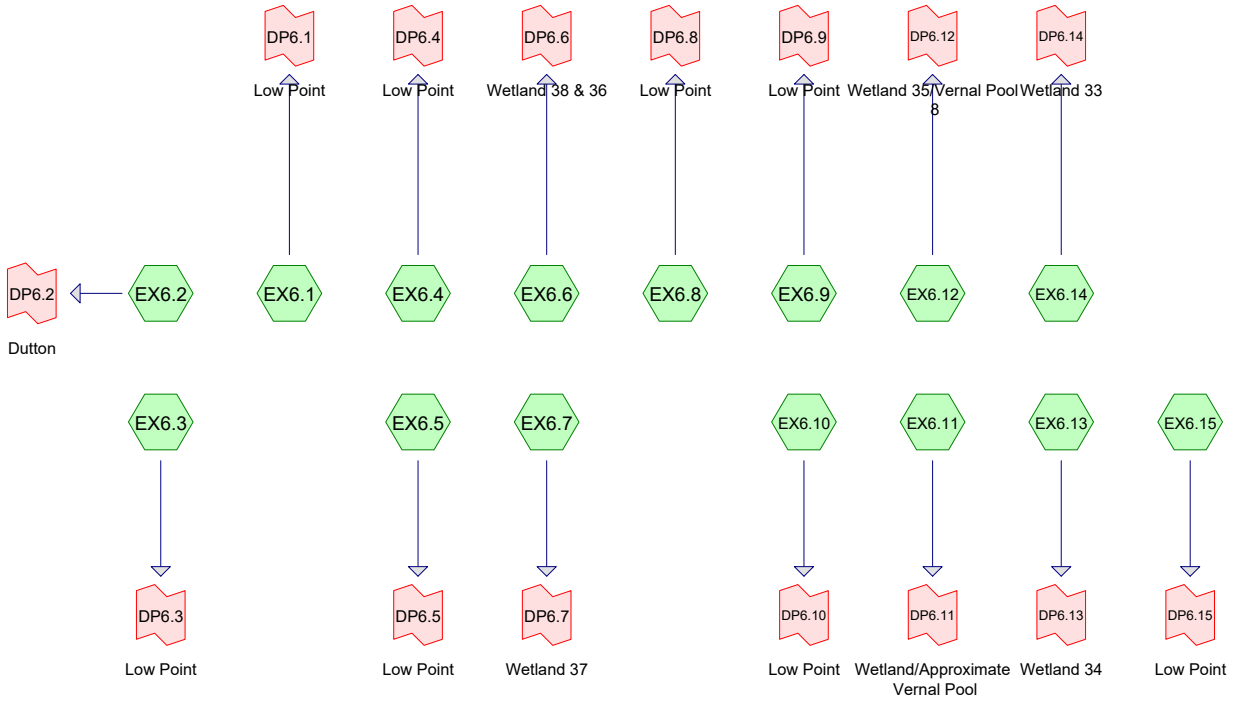
Inflow Area = 8.747 ac, 0.00% Impervious, Inflow Depth = 0.65" for 100-year event
Inflow = 1.3 cfs @ 12.99 hrs, Volume= 0.475 af
Primary = 1.3 cfs @ 12.99 hrs, Volume= 0.475 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP5.9: Low Point

Inflow Area = 4.665 ac, 0.00% Impervious, Inflow Depth = 0.74" for 100-year event
Inflow = 1.2 cfs @ 12.64 hrs, Volume= 0.287 af
Primary = 1.2 cfs @ 12.64 hrs, Volume= 0.287 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs



Subcat Reach Pond Link

Routing Diagram for 14009.00-EX-Segment 6_ResponsetoComments
Prepared by VHB, Printed 7/10/2020

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentEX6.1: Runoff Area=0.794 ac 4.78% Impervious Runoff Depth=0.00"
Flow Length=893' Tc=48.2 min CN=39 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.10: Runoff Area=3.928 ac 18.34% Impervious Runoff Depth=0.00"
Flow Length=495' Tc=16.1 min CN=44 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.11: Runoff Area=0.796 ac 2.47% Impervious Runoff Depth=0.00"
Flow Length=128' Tc=12.0 min CN=33 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.12: Runoff Area=0.605 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=117' Tc=14.2 min CN=32 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.13: Runoff Area=3.205 ac 11.76% Impervious Runoff Depth=0.00"
Flow Length=300' Tc=20.6 min CN=52 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.14: Runoff Area=5.082 ac 9.86% Impervious Runoff Depth=0.00"
Flow Length=639' Tc=30.8 min CN=60 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.15: Runoff Area=0.080 ac 79.67% Impervious Runoff Depth=0.15"
Tc=6.0 min CN=84 Runoff=0.0 cfs 0.001 af

SubcatchmentEX6.2: Runoff Area=0.727 ac 0.57% Impervious Runoff Depth=0.00"
Flow Length=844' Tc=41.6 min CN=32 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.3: Runoff Area=0.780 ac 17.16% Impervious Runoff Depth=0.00"
Flow Length=155' Tc=15.4 min CN=42 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.4: Runoff Area=2.872 ac 21.71% Impervious Runoff Depth=0.00"
Flow Length=877' Tc=27.4 min CN=50 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.5: Runoff Area=16.864 ac 7.05% Impervious Runoff Depth=0.00"
Flow Length=836' Tc=36.0 min CN=36 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.6: Runoff Area=7.161 ac 14.39% Impervious Runoff Depth=0.00"
Flow Length=997' Tc=52.6 min CN=42 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.7: Runoff Area=7.106 ac 10.56% Impervious Runoff Depth=0.00"
Flow Length=886' Tc=31.7 min CN=39 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.8: Runoff Area=4.917 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=603' Tc=34.1 min CN=32 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.9: Runoff Area=0.902 ac 11.91% Impervious Runoff Depth=0.00"
Flow Length=230' Slope=0.0500 '/' Tc=17.4 min CN=41 Runoff=0.0 cfs 0.000 af

Link DP6.1: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.10: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.11: Wetland/ApproximateVernal Pool Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.12: Wetland 35/Vernal Pool 8 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.13: Wetland 34 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.14: Wetland 33 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.15: Low Point Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP6.2: Dutton Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.3: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.4: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.5: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.6: Wetland 38 & 36 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.7: Wetland 37 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.8: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.9: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Total Runoff Area = 55.820 ac Runoff Volume = 0.001 af Average Runoff Depth = 0.00"
90.04% Pervious = 50.261 ac 9.96% Impervious = 5.559 ac

Summary for Subcatchment EX6.1:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.185	39	>75% Grass cover, Good, HSG A
0.060	76	Gravel roads, HSG A
0.038	98	Paved parking, HSG A
0.511	30	Woods, Good, HSG A
0.794	39	Weighted Average
0.756		95.22% Pervious Area
0.038		4.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.9	39	0.4790	0.13		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
23.6	671	0.0090	0.47		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.7	88	0.0011	0.08		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
2.0	95	0.0260	0.81		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
48.2	893	Total			

Summary for Subcatchment EX6.10:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.585	39	>75% Grass cover, Good, HSG A
0.016	76	Gravel roads, HSG A
0.720	98	Paved parking, HSG A
2.600	30	Woods, Good, HSG A
0.007	77	Woods, Good, HSG D
3.928	44	Weighted Average
3.207		81.66% Pervious Area
0.720		18.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
3.0	185	0.0430	1.04		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.9	80	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.9	180	0.0240	0.77		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.1	495	Total			

Summary for Subcatchment EX6.11:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.080	39	>75% Grass cover, Good, HSG A
0.006	76	Gravel roads, HSG A
0.020	98	Paved parking, HSG A
0.691	30	Woods, Good, HSG A
0.796	33	Weighted Average
0.777		97.53% Pervious Area
0.020		2.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	50	0.1300	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.0	78	0.0700	0.66		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
12.0	128	Total			

Summary for Subcatchment EX6.12:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.122	39	>75% Grass cover, Good, HSG A
0.005	76	Gravel roads, HSG A
0.477	30	Woods, Good, HSG A
0.605	32	Weighted Average
0.605		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	47	0.0680	1.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	20	0.0900	1.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.2	117	Total			

Summary for Subcatchment EX6.13:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.341	39	>75% Grass cover, Good, HSG A
0.188	80	>75% Grass cover, Good, HSG D
0.034	76	Gravel roads, HSG A
0.255	98	Paved parking, HSG A
0.122	98	Paved parking, HSG D
1.607	30	Woods, Good, HSG A
0.660	77	Woods, Good, HSG D
3.205	52	Weighted Average
2.828		88.24% Pervious Area
0.377		11.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.7	50	0.0360	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.9	250	0.0450	1.06		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.6	300	Total			

Summary for Subcatchment EX6.14:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.335	80	>75% Grass cover, Good, HSG D
0.045	76	Gravel roads, HSG A
0.234	98	Paved parking, HSG A
0.267	98	Paved parking, HSG D
1.951	30	Woods, Good, HSG A
0.594	70	Woods, Good, HSG C
1.657	77	Woods, Good, HSG D
5.082	60	Weighted Average
4.581		90.14% Pervious Area
0.501		9.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	50	0.1000	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.8	129	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.8	257	0.0747	5.55		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
15.1	203	0.0080	0.22		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
30.8	639	Total			

Summary for Subcatchment EX6.15:

Runoff = 0.0 cfs @ 12.12 hrs, Volume= 0.001 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.064	98	Paved parking, HSG A
0.016	30	Woods, Good, HSG A
0.080	84	Weighted Average
0.016		20.33% Pervious Area
0.064		79.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment EX6.2:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.023	76	Gravel roads, HSG A
0.004	98	Paved parking, HSG A
0.700	30	Woods, Good, HSG A
0.727	32	Weighted Average
0.723		99.43% Pervious Area
0.004		0.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.4	50	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.2	82	0.2180	1.17		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
25.0	712	0.0090	0.47		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
41.6	844	Total			

Summary for Subcatchment EX6.3:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.134	98	Paved parking, HSG A
0.646	30	Woods, Good, HSG A
0.780	42	Weighted Average
0.646		82.84% Pervious Area
0.134		17.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	50	0.0660	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	105	0.0238	0.77		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
15.4	155	Total			

Summary for Subcatchment EX6.4:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
1.721	39	>75% Grass cover, Good, HSG A
0.624	98	Paved parking, HSG A
0.527	30	Woods, Good, HSG A
2.872	50	Weighted Average
2.249		78.29% Pervious Area
0.624		21.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	50	0.0800	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.7	74	0.0860	0.73		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.1	360	0.0286	1.18		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	23	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.9	135	0.0030	0.38		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	65	0.0230	3.08		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.1	170	0.0380	1.36		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
27.4	877	Total			

Summary for Subcatchment EX6.5:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
2.733	39	>75% Grass cover, Good, HSG A
1.189	98	Paved parking, HSG A
12.942	30	Woods, Good, HSG A
16.864	36	Weighted Average
15.675		92.95% Pervious Area
1.189		7.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.5	150	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
10.8	341	0.0110	0.52		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	66	0.0150	0.86		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.9	145	0.0280	0.84		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	16	0.0400	4.06		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.7	68	0.0170	0.65		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
36.0	836	Total			

Summary for Subcatchment EX6.6:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
1.233	39	>75% Grass cover, Good, HSG A
0.127	76	Gravel roads, HSG A
1.030	98	Paved parking, HSG A
4.770	30	Woods, Good, HSG A
7.161	42	Weighted Average
6.131		85.61% Pervious Area
1.030		14.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	50	0.3000	0.12		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
37.1	747	0.0180	0.34		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
8.3	200	0.0255	0.40		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
52.6	997	Total			

Summary for Subcatchment EX6.7:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
1.418	39	>75% Grass cover, Good, HSG A
0.061	76	Gravel roads, HSG A
0.672	98	Paved parking, HSG A
0.078	98	Roofs, HSG A
4.876	30	Woods, Good, HSG A
7.106	39	Weighted Average
6.355		89.44% Pervious Area
0.751		10.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.2	50	0.4240	0.13		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
11.2	262	0.0061	0.39		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.3	574	0.0180	0.67		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
31.7	886	Total			

Summary for Subcatchment EX6.8:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
1.052	39	>75% Grass cover, Good, HSG A
3.865	30	Woods, Good, HSG A
4.917	32	Weighted Average
4.917		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	50	0.0400	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
12.2	370	0.0410	0.51		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.9	183	0.0430	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
34.1	603	Total			

Summary for Subcatchment EX6.9:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.259	39	>75% Grass cover, Good, HSG A
0.005	76	Gravel roads, HSG A
0.108	98	Paved parking, HSG A
0.531	30	Woods, Good, HSG A
0.902	41	Weighted Average
0.795		88.09% Pervious Area
0.108		11.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.7	180	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.4	230	Total			

Summary for Link DP6.1: Low Point

Inflow Area = 0.794 ac, 4.78% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.10: Low Point

Inflow Area = 3.928 ac, 18.34% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.11: Wetland/Approximate Vernal Pool

Inflow Area = 0.796 ac, 2.47% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.12: Wetland 35/Vernal Pool 8

Inflow Area = 0.605 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.13: Wetland 34

Inflow Area = 3.205 ac, 11.76% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.14: Wetland 33

Inflow Area = 5.082 ac, 9.86% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.15: Low Point

Inflow Area = 0.080 ac, 79.67% Impervious, Inflow Depth = 0.15" for 1" event
Inflow = 0.0 cfs @ 12.12 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 12.12 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.2: Dutton

Inflow Area = 0.727 ac, 0.57% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.3: Low Point

Inflow Area = 0.780 ac, 17.16% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.4: Low Point

Inflow Area = 2.872 ac, 21.71% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.5: Low Point

Inflow Area = 16.864 ac, 7.05% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.6: Wetland 38 & 36

Inflow Area = 7.161 ac, 14.39% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.7: Wetland 37

Inflow Area = 7.106 ac, 10.56% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.8: Low Point

Inflow Area = 4.917 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.9: Low Point

Inflow Area = 0.902 ac, 11.91% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentEX6.1: Runoff Area=0.794 ac 4.78% Impervious Runoff Depth=0.00"
Flow Length=893' Tc=48.2 min CN=39 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.10: Runoff Area=3.928 ac 18.34% Impervious Runoff Depth=0.04"
Flow Length=495' Tc=16.1 min CN=44 Runoff=0.0 cfs 0.014 af

SubcatchmentEX6.11: Runoff Area=0.796 ac 2.47% Impervious Runoff Depth=0.00"
Flow Length=128' Tc=12.0 min CN=33 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.12: Runoff Area=0.605 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=117' Tc=14.2 min CN=32 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.13: Runoff Area=3.205 ac 11.76% Impervious Runoff Depth=0.20"
Flow Length=300' Tc=20.6 min CN=52 Runoff=0.2 cfs 0.053 af

SubcatchmentEX6.14: Runoff Area=5.082 ac 9.86% Impervious Runoff Depth=0.45"
Flow Length=639' Tc=30.8 min CN=60 Runoff=1.0 cfs 0.190 af

SubcatchmentEX6.15: Runoff Area=0.080 ac 79.67% Impervious Runoff Depth=1.77"
Tc=6.0 min CN=84 Runoff=0.2 cfs 0.012 af

SubcatchmentEX6.2: Runoff Area=0.727 ac 0.57% Impervious Runoff Depth=0.00"
Flow Length=844' Tc=41.6 min CN=32 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.3: Runoff Area=0.780 ac 17.16% Impervious Runoff Depth=0.02"
Flow Length=155' Tc=15.4 min CN=42 Runoff=0.0 cfs 0.001 af

SubcatchmentEX6.4: Runoff Area=2.872 ac 21.71% Impervious Runoff Depth=0.15"
Flow Length=877' Tc=27.4 min CN=50 Runoff=0.1 cfs 0.036 af

SubcatchmentEX6.5: Runoff Area=16.864 ac 7.05% Impervious Runoff Depth=0.00"
Flow Length=836' Tc=36.0 min CN=36 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.6: Runoff Area=7.161 ac 14.39% Impervious Runoff Depth=0.02"
Flow Length=997' Tc=52.6 min CN=42 Runoff=0.0 cfs 0.012 af

SubcatchmentEX6.7: Runoff Area=7.106 ac 10.56% Impervious Runoff Depth=0.00"
Flow Length=886' Tc=31.7 min CN=39 Runoff=0.0 cfs 0.001 af

SubcatchmentEX6.8: Runoff Area=4.917 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=603' Tc=34.1 min CN=32 Runoff=0.0 cfs 0.000 af

SubcatchmentEX6.9: Runoff Area=0.902 ac 11.91% Impervious Runoff Depth=0.01"
Flow Length=230' Slope=0.0500 '/' Tc=17.4 min CN=41 Runoff=0.0 cfs 0.001 af

Link DP6.1: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.10: Low Point Inflow=0.0 cfs 0.014 af
Primary=0.0 cfs 0.014 af

Link DP6.11: Wetland/ApproximateVernal Pool Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.12: Wetland 35/Vernal Pool 8 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.13: Wetland 34 Inflow=0.2 cfs 0.053 af
Primary=0.2 cfs 0.053 af

Link DP6.14: Wetland 33 Inflow=1.0 cfs 0.190 af
Primary=1.0 cfs 0.190 af

Link DP6.15: Low Point Inflow=0.2 cfs 0.012 af
Primary=0.2 cfs 0.012 af

Link DP6.2: Dutton Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.3: Low Point Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP6.4: Low Point Inflow=0.1 cfs 0.036 af
Primary=0.1 cfs 0.036 af

Link DP6.5: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.6: Wetland 38 & 36 Inflow=0.0 cfs 0.012 af
Primary=0.0 cfs 0.012 af

Link DP6.7: Wetland 37 Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP6.8: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.9: Low Point Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Total Runoff Area = 55.820 ac Runoff Volume = 0.320 af Average Runoff Depth = 0.07"
90.04% Pervious = 50.261 ac 9.96% Impervious = 5.559 ac

Summary for Subcatchment EX6.1:

Runoff = 0.0 cfs @ 24.15 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.185	39	>75% Grass cover, Good, HSG A
0.060	76	Gravel roads, HSG A
0.038	98	Paved parking, HSG A
0.511	30	Woods, Good, HSG A
0.794	39	Weighted Average
0.756		95.22% Pervious Area
0.038		4.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.9	39	0.4790	0.13		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
23.6	671	0.0090	0.47		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.7	88	0.0011	0.08		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
2.0	95	0.0260	0.81		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
48.2	893	Total			

Summary for Subcatchment EX6.10:

Runoff = 0.0 cfs @ 15.58 hrs, Volume= 0.014 af, Depth= 0.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.585	39	>75% Grass cover, Good, HSG A
0.016	76	Gravel roads, HSG A
0.720	98	Paved parking, HSG A
2.600	30	Woods, Good, HSG A
0.007	77	Woods, Good, HSG D
3.928	44	Weighted Average
3.207		81.66% Pervious Area
0.720		18.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
3.0	185	0.0430	1.04		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.9	80	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.9	180	0.0240	0.77		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.1	495	Total			

Summary for Subcatchment EX6.11:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.080	39	>75% Grass cover, Good, HSG A
0.006	76	Gravel roads, HSG A
0.020	98	Paved parking, HSG A
0.691	30	Woods, Good, HSG A
0.796	33	Weighted Average
0.777		97.53% Pervious Area
0.020		2.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	50	0.1300	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.0	78	0.0700	0.66		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
12.0	128	Total			

Summary for Subcatchment EX6.12:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.122	39	>75% Grass cover, Good, HSG A
0.005	76	Gravel roads, HSG A
0.477	30	Woods, Good, HSG A
0.605	32	Weighted Average
0.605		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	47	0.0680	1.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	20	0.0900	1.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.2	117	Total			

Summary for Subcatchment EX6.13:

Runoff = 0.2 cfs @ 12.61 hrs, Volume= 0.053 af, Depth= 0.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.341	39	>75% Grass cover, Good, HSG A
0.188	80	>75% Grass cover, Good, HSG D
0.034	76	Gravel roads, HSG A
0.255	98	Paved parking, HSG A
0.122	98	Paved parking, HSG D
1.607	30	Woods, Good, HSG A
0.660	77	Woods, Good, HSG D
3.205	52	Weighted Average
2.828		88.24% Pervious Area
0.377		11.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.7	50	0.0360	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.9	250	0.0450	1.06		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.6	300	Total			

Summary for Subcatchment EX6.14:

Runoff = 1.0 cfs @ 12.56 hrs, Volume= 0.190 af, Depth= 0.45"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.335	80	>75% Grass cover, Good, HSG D
0.045	76	Gravel roads, HSG A
0.234	98	Paved parking, HSG A
0.267	98	Paved parking, HSG D
1.951	30	Woods, Good, HSG A
0.594	70	Woods, Good, HSG C
1.657	77	Woods, Good, HSG D
5.082	60	Weighted Average
4.581		90.14% Pervious Area
0.501		9.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	50	0.1000	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.8	129	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.8	257	0.0747	5.55		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
15.1	203	0.0080	0.22		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
30.8	639	Total			

Summary for Subcatchment EX6.15:

Runoff = 0.2 cfs @ 12.09 hrs, Volume= 0.012 af, Depth= 1.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.064	98	Paved parking, HSG A
0.016	30	Woods, Good, HSG A
0.080	84	Weighted Average
0.016		20.33% Pervious Area
0.064		79.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment EX6.2:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.023	76	Gravel roads, HSG A
0.004	98	Paved parking, HSG A
0.700	30	Woods, Good, HSG A
0.727	32	Weighted Average
0.723		99.43% Pervious Area
0.004		0.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.4	50	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.2	82	0.2180	1.17		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
25.0	712	0.0090	0.47		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
41.6	844	Total			

Summary for Subcatchment EX6.3:

Runoff = 0.0 cfs @ 20.86 hrs, Volume= 0.001 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.134	98	Paved parking, HSG A
0.646	30	Woods, Good, HSG A
0.780	42	Weighted Average
0.646		82.84% Pervious Area
0.134		17.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	50	0.0660	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	105	0.0238	0.77		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
15.4	155	Total			

Summary for Subcatchment EX6.4:

Runoff = 0.1 cfs @ 12.87 hrs, Volume= 0.036 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
1.721	39	>75% Grass cover, Good, HSG A
0.624	98	Paved parking, HSG A
0.527	30	Woods, Good, HSG A
2.872	50	Weighted Average
2.249		78.29% Pervious Area
0.624		21.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	50	0.0800	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.7	74	0.0860	0.73		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.1	360	0.0286	1.18		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	23	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.9	135	0.0030	0.38		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	65	0.0230	3.08		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.1	170	0.0380	1.36		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
27.4	877	Total			

Summary for Subcatchment EX6.5:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
2.733	39	>75% Grass cover, Good, HSG A
1.189	98	Paved parking, HSG A
12.942	30	Woods, Good, HSG A
16.864	36	Weighted Average
15.675		92.95% Pervious Area
1.189		7.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.5	150	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
10.8	341	0.0110	0.52		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	66	0.0150	0.86		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.9	145	0.0280	0.84		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	16	0.0400	4.06		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.7	68	0.0170	0.65		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
36.0	836	Total			

Summary for Subcatchment EX6.6:

Runoff = 0.0 cfs @ 21.33 hrs, Volume= 0.012 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
1.233	39	>75% Grass cover, Good, HSG A
0.127	76	Gravel roads, HSG A
1.030	98	Paved parking, HSG A
4.770	30	Woods, Good, HSG A
7.161	42	Weighted Average
6.131		85.61% Pervious Area
1.030		14.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	50	0.3000	0.12		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
37.1	747	0.0180	0.34		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
8.3	200	0.0255	0.40		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
52.6	997	Total			

Summary for Subcatchment EX6.7:

Runoff = 0.0 cfs @ 24.06 hrs, Volume= 0.001 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
1.418	39	>75% Grass cover, Good, HSG A
0.061	76	Gravel roads, HSG A
0.672	98	Paved parking, HSG A
0.078	98	Roofs, HSG A
4.876	30	Woods, Good, HSG A
7.106	39	Weighted Average
6.355		89.44% Pervious Area
0.751		10.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.2	50	0.4240	0.13		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
11.2	262	0.0061	0.39		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.3	574	0.0180	0.67		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
31.7	886	Total			

Summary for Subcatchment EX6.8:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
1.052	39	>75% Grass cover, Good, HSG A
3.865	30	Woods, Good, HSG A
4.917	32	Weighted Average
4.917		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	50	0.0400	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
12.2	370	0.0410	0.51		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.9	183	0.0430	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
34.1	603	Total			

Summary for Subcatchment EX6.9:

Runoff = 0.0 cfs @ 21.98 hrs, Volume= 0.001 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.259	39	>75% Grass cover, Good, HSG A
0.005	76	Gravel roads, HSG A
0.108	98	Paved parking, HSG A
0.531	30	Woods, Good, HSG A
0.902	41	Weighted Average
0.795		88.09% Pervious Area
0.108		11.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.7	180	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.4	230	Total			

Summary for Link DP6.1: Low Point

Inflow Area = 0.794 ac, 4.78% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 24.15 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 24.15 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.10: Low Point

Inflow Area = 3.928 ac, 18.34% Impervious, Inflow Depth = 0.04" for 2-yr event
Inflow = 0.0 cfs @ 15.58 hrs, Volume= 0.014 af
Primary = 0.0 cfs @ 15.58 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.11: Wetland/Approximate Vernal Pool

Inflow Area = 0.796 ac, 2.47% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.12: Wetland 35/Vernal Pool 8

Inflow Area = 0.605 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.13: Wetland 34

Inflow Area = 3.205 ac, 11.76% Impervious, Inflow Depth = 0.20" for 2-yr event
Inflow = 0.2 cfs @ 12.61 hrs, Volume= 0.053 af
Primary = 0.2 cfs @ 12.61 hrs, Volume= 0.053 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.14: Wetland 33

Inflow Area = 5.082 ac, 9.86% Impervious, Inflow Depth = 0.45" for 2-yr event
Inflow = 1.0 cfs @ 12.56 hrs, Volume= 0.190 af
Primary = 1.0 cfs @ 12.56 hrs, Volume= 0.190 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.15: Low Point

Inflow Area = 0.080 ac, 79.67% Impervious, Inflow Depth = 1.77" for 2-yr event
Inflow = 0.2 cfs @ 12.09 hrs, Volume= 0.012 af
Primary = 0.2 cfs @ 12.09 hrs, Volume= 0.012 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.2: Dutton

Inflow Area = 0.727 ac, 0.57% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.3: Low Point

Inflow Area = 0.780 ac, 17.16% Impervious, Inflow Depth = 0.02" for 2-yr event
Inflow = 0.0 cfs @ 20.86 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 20.86 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.4: Low Point

Inflow Area = 2.872 ac, 21.71% Impervious, Inflow Depth = 0.15" for 2-yr event
Inflow = 0.1 cfs @ 12.87 hrs, Volume= 0.036 af
Primary = 0.1 cfs @ 12.87 hrs, Volume= 0.036 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.5: Low Point

Inflow Area = 16.864 ac, 7.05% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.6: Wetland 38 & 36

Inflow Area = 7.161 ac, 14.39% Impervious, Inflow Depth = 0.02" for 2-yr event
Inflow = 0.0 cfs @ 21.33 hrs, Volume= 0.012 af
Primary = 0.0 cfs @ 21.33 hrs, Volume= 0.012 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.7: Wetland 37

Inflow Area = 7.106 ac, 10.56% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 24.06 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 24.06 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.8: Low Point

Inflow Area = 4.917 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.9: Low Point

Inflow Area = 0.902 ac, 11.91% Impervious, Inflow Depth = 0.01" for 2-yr event
Inflow = 0.0 cfs @ 21.98 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 21.98 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentEX6.1: Runoff Area=0.794 ac 4.78% Impervious Runoff Depth=0.22"
Flow Length=893' Tc=48.2 min CN=39 Runoff=0.0 cfs 0.015 af

SubcatchmentEX6.10: Runoff Area=3.928 ac 18.34% Impervious Runoff Depth=0.43"
Flow Length=495' Tc=16.1 min CN=44 Runoff=0.7 cfs 0.140 af

SubcatchmentEX6.11: Runoff Area=0.796 ac 2.47% Impervious Runoff Depth=0.05"
Flow Length=128' Tc=12.0 min CN=33 Runoff=0.0 cfs 0.003 af

SubcatchmentEX6.12: Runoff Area=0.605 ac 0.00% Impervious Runoff Depth=0.03"
Flow Length=117' Tc=14.2 min CN=32 Runoff=0.0 cfs 0.002 af

SubcatchmentEX6.13: Runoff Area=3.205 ac 11.76% Impervious Runoff Depth=0.85"
Flow Length=300' Tc=20.6 min CN=52 Runoff=1.6 cfs 0.227 af

SubcatchmentEX6.14: Runoff Area=5.082 ac 9.86% Impervious Runoff Depth=1.36"
Flow Length=639' Tc=30.8 min CN=60 Runoff=4.1 cfs 0.576 af

SubcatchmentEX6.15: Runoff Area=0.080 ac 79.67% Impervious Runoff Depth=3.36"
Tc=6.0 min CN=84 Runoff=0.3 cfs 0.022 af

SubcatchmentEX6.2: Runoff Area=0.727 ac 0.57% Impervious Runoff Depth=0.03"
Flow Length=844' Tc=41.6 min CN=32 Runoff=0.0 cfs 0.002 af

SubcatchmentEX6.3: Runoff Area=0.780 ac 17.16% Impervious Runoff Depth=0.34"
Flow Length=155' Tc=15.4 min CN=42 Runoff=0.1 cfs 0.022 af

SubcatchmentEX6.4: Runoff Area=2.872 ac 21.71% Impervious Runoff Depth=0.73"
Flow Length=877' Tc=27.4 min CN=50 Runoff=1.0 cfs 0.176 af

SubcatchmentEX6.5: Runoff Area=16.864 ac 7.05% Impervious Runoff Depth=0.12"
Flow Length=836' Tc=36.0 min CN=36 Runoff=0.3 cfs 0.173 af

SubcatchmentEX6.6: Runoff Area=7.161 ac 14.39% Impervious Runoff Depth=0.34"
Flow Length=997' Tc=52.6 min CN=42 Runoff=0.5 cfs 0.202 af

SubcatchmentEX6.7: Runoff Area=7.106 ac 10.56% Impervious Runoff Depth=0.22"
Flow Length=886' Tc=31.7 min CN=39 Runoff=0.2 cfs 0.131 af

SubcatchmentEX6.8: Runoff Area=4.917 ac 0.00% Impervious Runoff Depth=0.03"
Flow Length=603' Tc=34.1 min CN=32 Runoff=0.0 cfs 0.013 af

SubcatchmentEX6.9: Runoff Area=0.902 ac 11.91% Impervious Runoff Depth=0.30"
Flow Length=230' Slope=0.0500 '/' Tc=17.4 min CN=41 Runoff=0.1 cfs 0.022 af

Link DP6.1: Low Point Inflow=0.0 cfs 0.015 af
Primary=0.0 cfs 0.015 af

Link DP6.10: Low Point Inflow=0.7 cfs 0.140 af
Primary=0.7 cfs 0.140 af

Link DP6.11: Wetland/ApproximateVernal Pool Inflow=0.0 cfs 0.003 af
Primary=0.0 cfs 0.003 af

Link DP6.12: Wetland 35/Vernal Pool 8 Inflow=0.0 cfs 0.002 af
Primary=0.0 cfs 0.002 af

Link DP6.13: Wetland 34 Inflow=1.6 cfs 0.227 af
Primary=1.6 cfs 0.227 af

Link DP6.14: Wetland 33 Inflow=4.1 cfs 0.576 af
Primary=4.1 cfs 0.576 af

Link DP6.15: Low Point Inflow=0.3 cfs 0.022 af
Primary=0.3 cfs 0.022 af

Link DP6.2: Dutton Inflow=0.0 cfs 0.002 af
Primary=0.0 cfs 0.002 af

Link DP6.3: Low Point Inflow=0.1 cfs 0.022 af
Primary=0.1 cfs 0.022 af

Link DP6.4: Low Point Inflow=1.0 cfs 0.176 af
Primary=1.0 cfs 0.176 af

Link DP6.5: Low Point Inflow=0.3 cfs 0.173 af
Primary=0.3 cfs 0.173 af

Link DP6.6: Wetland 38 & 36 Inflow=0.5 cfs 0.202 af
Primary=0.5 cfs 0.202 af

Link DP6.7: Wetland 37 Inflow=0.2 cfs 0.131 af
Primary=0.2 cfs 0.131 af

Link DP6.8: Low Point Inflow=0.0 cfs 0.013 af
Primary=0.0 cfs 0.013 af

Link DP6.9: Low Point Inflow=0.1 cfs 0.022 af
Primary=0.1 cfs 0.022 af

Total Runoff Area = 55.820 ac Runoff Volume = 1.726 af Average Runoff Depth = 0.37"
90.04% Pervious = 50.261 ac 9.96% Impervious = 5.559 ac

Summary for Subcatchment EX6.1:

Runoff = 0.0 cfs @ 13.76 hrs, Volume= 0.015 af, Depth= 0.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.185	39	>75% Grass cover, Good, HSG A
0.060	76	Gravel roads, HSG A
0.038	98	Paved parking, HSG A
0.511	30	Woods, Good, HSG A
0.794	39	Weighted Average
0.756		95.22% Pervious Area
0.038		4.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.9	39	0.4790	0.13		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
23.6	671	0.0090	0.47		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.7	88	0.0011	0.08		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
2.0	95	0.0260	0.81		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
48.2	893	Total			

Summary for Subcatchment EX6.10:

Runoff = 0.7 cfs @ 12.47 hrs, Volume= 0.140 af, Depth= 0.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.585	39	>75% Grass cover, Good, HSG A
0.016	76	Gravel roads, HSG A
0.720	98	Paved parking, HSG A
2.600	30	Woods, Good, HSG A
0.007	77	Woods, Good, HSG D
3.928	44	Weighted Average
3.207		81.66% Pervious Area
0.720		18.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
3.0	185	0.0430	1.04		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.9	80	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.9	180	0.0240	0.77		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.1	495	Total			

Summary for Subcatchment EX6.11:

Runoff = 0.0 cfs @ 15.80 hrs, Volume= 0.003 af, Depth= 0.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.080	39	>75% Grass cover, Good, HSG A
0.006	76	Gravel roads, HSG A
0.020	98	Paved parking, HSG A
0.691	30	Woods, Good, HSG A
0.796	33	Weighted Average
0.777		97.53% Pervious Area
0.020		2.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	50	0.1300	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.0	78	0.0700	0.66		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
12.0	128	Total			

Summary for Subcatchment EX6.12:

Runoff = 0.0 cfs @ 17.37 hrs, Volume= 0.002 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.122	39	>75% Grass cover, Good, HSG A
0.005	76	Gravel roads, HSG A
0.477	30	Woods, Good, HSG A
0.605	32	Weighted Average
0.605		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	47	0.0680	1.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	20	0.0900	1.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.2	117	Total			

Summary for Subcatchment EX6.13:

Runoff = 1.6 cfs @ 12.38 hrs, Volume= 0.227 af, Depth= 0.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.341	39	>75% Grass cover, Good, HSG A
0.188	80	>75% Grass cover, Good, HSG D
0.034	76	Gravel roads, HSG A
0.255	98	Paved parking, HSG A
0.122	98	Paved parking, HSG D
1.607	30	Woods, Good, HSG A
0.660	77	Woods, Good, HSG D
3.205	52	Weighted Average
2.828		88.24% Pervious Area
0.377		11.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.7	50	0.0360	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.9	250	0.0450	1.06		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.6	300	Total			

Summary for Subcatchment EX6.14:

Runoff = 4.1 cfs @ 12.49 hrs, Volume= 0.576 af, Depth= 1.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.335	80	>75% Grass cover, Good, HSG D
0.045	76	Gravel roads, HSG A
0.234	98	Paved parking, HSG A
0.267	98	Paved parking, HSG D
1.951	30	Woods, Good, HSG A
0.594	70	Woods, Good, HSG C
1.657	77	Woods, Good, HSG D
5.082	60	Weighted Average
4.581		90.14% Pervious Area
0.501		9.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	50	0.1000	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.8	129	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.8	257	0.0747	5.55		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
15.1	203	0.0080	0.22		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
30.8	639	Total			

Summary for Subcatchment EX6.15:

Runoff = 0.3 cfs @ 12.09 hrs, Volume= 0.022 af, Depth= 3.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.064	98	Paved parking, HSG A
0.016	30	Woods, Good, HSG A
0.080	84	Weighted Average
0.016		20.33% Pervious Area
0.064		79.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment EX6.2:

Runoff = 0.0 cfs @ 17.80 hrs, Volume= 0.002 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.023	76	Gravel roads, HSG A
0.004	98	Paved parking, HSG A
0.700	30	Woods, Good, HSG A
0.727	32	Weighted Average
0.723		99.43% Pervious Area
0.004		0.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.4	50	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.2	82	0.2180	1.17		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
25.0	712	0.0090	0.47		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
41.6	844	Total			

Summary for Subcatchment EX6.3:

Runoff = 0.1 cfs @ 12.51 hrs, Volume= 0.022 af, Depth= 0.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.134	98	Paved parking, HSG A
0.646	30	Woods, Good, HSG A
0.780	42	Weighted Average
0.646		82.84% Pervious Area
0.134		17.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	50	0.0660	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	105	0.0238	0.77		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
15.4	155	Total			

Summary for Subcatchment EX6.4:

Runoff = 1.0 cfs @ 12.51 hrs, Volume= 0.176 af, Depth= 0.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
1.721	39	>75% Grass cover, Good, HSG A
0.624	98	Paved parking, HSG A
0.527	30	Woods, Good, HSG A
2.872	50	Weighted Average
2.249		78.29% Pervious Area
0.624		21.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	50	0.0800	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.7	74	0.0860	0.73		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.1	360	0.0286	1.18		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	23	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.9	135	0.0030	0.38		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	65	0.0230	3.08		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.1	170	0.0380	1.36		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
27.4	877	Total			

Summary for Subcatchment EX6.5:

Runoff = 0.3 cfs @ 15.16 hrs, Volume= 0.173 af, Depth= 0.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
2.733	39	>75% Grass cover, Good, HSG A
1.189	98	Paved parking, HSG A
12.942	30	Woods, Good, HSG A
16.864	36	Weighted Average
15.675		92.95% Pervious Area
1.189		7.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.5	150	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
10.8	341	0.0110	0.52		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	66	0.0150	0.86		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.9	145	0.0280	0.84		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	16	0.0400	4.06		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.7	68	0.0170	0.65		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
36.0	836	Total			

Summary for Subcatchment EX6.6:

Runoff = 0.5 cfs @ 13.15 hrs, Volume= 0.202 af, Depth= 0.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
1.233	39	>75% Grass cover, Good, HSG A
0.127	76	Gravel roads, HSG A
1.030	98	Paved parking, HSG A
4.770	30	Woods, Good, HSG A
7.161	42	Weighted Average
6.131		85.61% Pervious Area
1.030		14.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	50	0.3000	0.12		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
37.1	747	0.0180	0.34		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
8.3	200	0.0255	0.40		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
52.6	997	Total			

Summary for Subcatchment EX6.7:

Runoff = 0.2 cfs @ 13.07 hrs, Volume= 0.131 af, Depth= 0.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
1.418	39	>75% Grass cover, Good, HSG A
0.061	76	Gravel roads, HSG A
0.672	98	Paved parking, HSG A
0.078	98	Roofs, HSG A
4.876	30	Woods, Good, HSG A
7.106	39	Weighted Average
6.355		89.44% Pervious Area
0.751		10.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.2	50	0.4240	0.13		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
11.2	262	0.0061	0.39		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.3	574	0.0180	0.67		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
31.7	886	Total			

Summary for Subcatchment EX6.8:

Runoff = 0.0 cfs @ 17.69 hrs, Volume= 0.013 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
1.052	39	>75% Grass cover, Good, HSG A
3.865	30	Woods, Good, HSG A
4.917	32	Weighted Average
4.917		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	50	0.0400	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
12.2	370	0.0410	0.51		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.9	183	0.0430	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
34.1	603	Total			

Summary for Subcatchment EX6.9:

Runoff = 0.1 cfs @ 12.56 hrs, Volume= 0.022 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.259	39	>75% Grass cover, Good, HSG A
0.005	76	Gravel roads, HSG A
0.108	98	Paved parking, HSG A
0.531	30	Woods, Good, HSG A
0.902	41	Weighted Average
0.795		88.09% Pervious Area
0.108		11.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.7	180	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.4	230	Total			

Summary for Link DP6.1: Low Point

Inflow Area = 0.794 ac, 4.78% Impervious, Inflow Depth = 0.22" for 10-yr event
Inflow = 0.0 cfs @ 13.76 hrs, Volume= 0.015 af
Primary = 0.0 cfs @ 13.76 hrs, Volume= 0.015 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.10: Low Point

Inflow Area = 3.928 ac, 18.34% Impervious, Inflow Depth = 0.43" for 10-yr event
Inflow = 0.7 cfs @ 12.47 hrs, Volume= 0.140 af
Primary = 0.7 cfs @ 12.47 hrs, Volume= 0.140 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.11: Wetland/Approximate Vernal Pool

Inflow Area = 0.796 ac, 2.47% Impervious, Inflow Depth = 0.05" for 10-yr event
Inflow = 0.0 cfs @ 15.80 hrs, Volume= 0.003 af
Primary = 0.0 cfs @ 15.80 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.12: Wetland 35/Vernal Pool 8

Inflow Area = 0.605 ac, 0.00% Impervious, Inflow Depth = 0.03" for 10-yr event
Inflow = 0.0 cfs @ 17.37 hrs, Volume= 0.002 af
Primary = 0.0 cfs @ 17.37 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.13: Wetland 34

Inflow Area = 3.205 ac, 11.76% Impervious, Inflow Depth = 0.85" for 10-yr event
Inflow = 1.6 cfs @ 12.38 hrs, Volume= 0.227 af
Primary = 1.6 cfs @ 12.38 hrs, Volume= 0.227 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.14: Wetland 33

Inflow Area = 5.082 ac, 9.86% Impervious, Inflow Depth = 1.36" for 10-yr event
Inflow = 4.1 cfs @ 12.49 hrs, Volume= 0.576 af
Primary = 4.1 cfs @ 12.49 hrs, Volume= 0.576 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.15: Low Point

Inflow Area = 0.080 ac, 79.67% Impervious, Inflow Depth = 3.36" for 10-yr event
Inflow = 0.3 cfs @ 12.09 hrs, Volume= 0.022 af
Primary = 0.3 cfs @ 12.09 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.2: Dutton

Inflow Area = 0.727 ac, 0.57% Impervious, Inflow Depth = 0.03" for 10-yr event
Inflow = 0.0 cfs @ 17.80 hrs, Volume= 0.002 af
Primary = 0.0 cfs @ 17.80 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.3: Low Point

Inflow Area = 0.780 ac, 17.16% Impervious, Inflow Depth = 0.34" for 10-yr event
Inflow = 0.1 cfs @ 12.51 hrs, Volume= 0.022 af
Primary = 0.1 cfs @ 12.51 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.4: Low Point

Inflow Area = 2.872 ac, 21.71% Impervious, Inflow Depth = 0.73" for 10-yr event
Inflow = 1.0 cfs @ 12.51 hrs, Volume= 0.176 af
Primary = 1.0 cfs @ 12.51 hrs, Volume= 0.176 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.5: Low Point

Inflow Area = 16.864 ac, 7.05% Impervious, Inflow Depth = 0.12" for 10-yr event
Inflow = 0.3 cfs @ 15.16 hrs, Volume= 0.173 af
Primary = 0.3 cfs @ 15.16 hrs, Volume= 0.173 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.6: Wetland 38 & 36

Inflow Area = 7.161 ac, 14.39% Impervious, Inflow Depth = 0.34" for 10-yr event
Inflow = 0.5 cfs @ 13.15 hrs, Volume= 0.202 af
Primary = 0.5 cfs @ 13.15 hrs, Volume= 0.202 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.7: Wetland 37

Inflow Area = 7.106 ac, 10.56% Impervious, Inflow Depth = 0.22" for 10-yr event
Inflow = 0.2 cfs @ 13.07 hrs, Volume= 0.131 af
Primary = 0.2 cfs @ 13.07 hrs, Volume= 0.131 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.8: Low Point

Inflow Area = 4.917 ac, 0.00% Impervious, Inflow Depth = 0.03" for 10-yr event
Inflow = 0.0 cfs @ 17.69 hrs, Volume= 0.013 af
Primary = 0.0 cfs @ 17.69 hrs, Volume= 0.013 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.9: Low Point

Inflow Area = 0.902 ac, 11.91% Impervious, Inflow Depth = 0.30" for 10-yr event
Inflow = 0.1 cfs @ 12.56 hrs, Volume= 0.022 af
Primary = 0.1 cfs @ 12.56 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentEX6.1: Runoff Area=0.794 ac 4.78% Impervious Runoff Depth=0.51"
Flow Length=893' Tc=48.2 min CN=39 Runoff=0.1 cfs 0.034 af

SubcatchmentEX6.10: Runoff Area=3.928 ac 18.34% Impervious Runoff Depth=0.83"
Flow Length=495' Tc=16.1 min CN=44 Runoff=1.7 cfs 0.271 af

SubcatchmentEX6.11: Runoff Area=0.796 ac 2.47% Impervious Runoff Depth=0.21"
Flow Length=128' Tc=12.0 min CN=33 Runoff=0.0 cfs 0.014 af

SubcatchmentEX6.12: Runoff Area=0.605 ac 0.00% Impervious Runoff Depth=0.17"
Flow Length=117' Tc=14.2 min CN=32 Runoff=0.0 cfs 0.009 af

SubcatchmentEX6.13: Runoff Area=3.205 ac 11.76% Impervious Runoff Depth=1.41"
Flow Length=300' Tc=20.6 min CN=52 Runoff=3.0 cfs 0.377 af

SubcatchmentEX6.14: Runoff Area=5.082 ac 9.86% Impervious Runoff Depth=2.07"
Flow Length=639' Tc=30.8 min CN=60 Runoff=6.6 cfs 0.878 af

SubcatchmentEX6.15: Runoff Area=0.080 ac 79.67% Impervious Runoff Depth=4.41"
Tc=6.0 min CN=84 Runoff=0.4 cfs 0.030 af

SubcatchmentEX6.2: Runoff Area=0.727 ac 0.57% Impervious Runoff Depth=0.17"
Flow Length=844' Tc=41.6 min CN=32 Runoff=0.0 cfs 0.010 af

SubcatchmentEX6.3: Runoff Area=0.780 ac 17.16% Impervious Runoff Depth=0.70"
Flow Length=155' Tc=15.4 min CN=42 Runoff=0.3 cfs 0.045 af

SubcatchmentEX6.4: Runoff Area=2.872 ac 21.71% Impervious Runoff Depth=1.26"
Flow Length=877' Tc=27.4 min CN=50 Runoff=2.0 cfs 0.301 af

SubcatchmentEX6.5: Runoff Area=16.864 ac 7.05% Impervious Runoff Depth=0.35"
Flow Length=836' Tc=36.0 min CN=36 Runoff=1.2 cfs 0.491 af

SubcatchmentEX6.6: Runoff Area=7.161 ac 14.39% Impervious Runoff Depth=0.70"
Flow Length=997' Tc=52.6 min CN=42 Runoff=1.5 cfs 0.415 af

SubcatchmentEX6.7: Runoff Area=7.106 ac 10.56% Impervious Runoff Depth=0.51"
Flow Length=886' Tc=31.7 min CN=39 Runoff=1.1 cfs 0.304 af

SubcatchmentEX6.8: Runoff Area=4.917 ac 0.00% Impervious Runoff Depth=0.17"
Flow Length=603' Tc=34.1 min CN=32 Runoff=0.1 cfs 0.069 af

SubcatchmentEX6.9: Runoff Area=0.902 ac 11.91% Impervious Runoff Depth=0.63"
Flow Length=230' Slope=0.0500 '/' Tc=17.4 min CN=41 Runoff=0.2 cfs 0.048 af

Link DP6.1: Low Point Inflow=0.1 cfs 0.034 af
Primary=0.1 cfs 0.034 af

Link DP6.10: Low Point Inflow=1.7 cfs 0.271 af
Primary=1.7 cfs 0.271 af

Link DP6.11: Wetland/ApproximateVernal Pool Inflow=0.0 cfs 0.014 af
Primary=0.0 cfs 0.014 af

Link DP6.12: Wetland 35/Vernal Pool 8 Inflow=0.0 cfs 0.009 af
Primary=0.0 cfs 0.009 af

Link DP6.13: Wetland 34 Inflow=3.0 cfs 0.377 af
Primary=3.0 cfs 0.377 af

Link DP6.14: Wetland 33 Inflow=6.6 cfs 0.878 af
Primary=6.6 cfs 0.878 af

Link DP6.15: Low Point Inflow=0.4 cfs 0.030 af
Primary=0.4 cfs 0.030 af

Link DP6.2: Dutton Inflow=0.0 cfs 0.010 af
Primary=0.0 cfs 0.010 af

Link DP6.3: Low Point Inflow=0.3 cfs 0.045 af
Primary=0.3 cfs 0.045 af

Link DP6.4: Low Point Inflow=2.0 cfs 0.301 af
Primary=2.0 cfs 0.301 af

Link DP6.5: Low Point Inflow=1.2 cfs 0.491 af
Primary=1.2 cfs 0.491 af

Link DP6.6: Wetland 38 & 36 Inflow=1.5 cfs 0.415 af
Primary=1.5 cfs 0.415 af

Link DP6.7: Wetland 37 Inflow=1.1 cfs 0.304 af
Primary=1.1 cfs 0.304 af

Link DP6.8: Low Point Inflow=0.1 cfs 0.069 af
Primary=0.1 cfs 0.069 af

Link DP6.9: Low Point Inflow=0.2 cfs 0.048 af
Primary=0.2 cfs 0.048 af

Total Runoff Area = 55.820 ac Runoff Volume = 3.296 af Average Runoff Depth = 0.71"
90.04% Pervious = 50.261 ac 9.96% Impervious = 5.559 ac

Summary for Subcatchment EX6.1:

Runoff = 0.1 cfs @ 12.96 hrs, Volume= 0.034 af, Depth= 0.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.185	39	>75% Grass cover, Good, HSG A
0.060	76	Gravel roads, HSG A
0.038	98	Paved parking, HSG A
0.511	30	Woods, Good, HSG A
0.794	39	Weighted Average
0.756		95.22% Pervious Area
0.038		4.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.9	39	0.4790	0.13		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
23.6	671	0.0090	0.47		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.7	88	0.0011	0.08		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
2.0	95	0.0260	0.81		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
48.2	893	Total			

Summary for Subcatchment EX6.10:

Runoff = 1.7 cfs @ 12.33 hrs, Volume= 0.271 af, Depth= 0.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.585	39	>75% Grass cover, Good, HSG A
0.016	76	Gravel roads, HSG A
0.720	98	Paved parking, HSG A
2.600	30	Woods, Good, HSG A
0.007	77	Woods, Good, HSG D
3.928	44	Weighted Average
3.207		81.66% Pervious Area
0.720		18.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
3.0	185	0.0430	1.04		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.9	80	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.9	180	0.0240	0.77		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.1	495	Total			

Summary for Subcatchment EX6.11:

Runoff = 0.0 cfs @ 13.77 hrs, Volume= 0.014 af, Depth= 0.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.080	39	>75% Grass cover, Good, HSG A
0.006	76	Gravel roads, HSG A
0.020	98	Paved parking, HSG A
0.691	30	Woods, Good, HSG A
0.796	33	Weighted Average
0.777		97.53% Pervious Area
0.020		2.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	50	0.1300	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.0	78	0.0700	0.66		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
12.0	128	Total			

Summary for Subcatchment EX6.12:

Runoff = 0.0 cfs @ 14.72 hrs, Volume= 0.009 af, Depth= 0.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.122	39	>75% Grass cover, Good, HSG A
0.005	76	Gravel roads, HSG A
0.477	30	Woods, Good, HSG A
0.605	32	Weighted Average
0.605		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	47	0.0680	1.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	20	0.0900	1.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.2	117	Total			

Summary for Subcatchment EX6.13:

Runoff = 3.0 cfs @ 12.34 hrs, Volume= 0.377 af, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.341	39	>75% Grass cover, Good, HSG A
0.188	80	>75% Grass cover, Good, HSG D
0.034	76	Gravel roads, HSG A
0.255	98	Paved parking, HSG A
0.122	98	Paved parking, HSG D
1.607	30	Woods, Good, HSG A
0.660	77	Woods, Good, HSG D
3.205	52	Weighted Average
2.828		88.24% Pervious Area
0.377		11.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.7	50	0.0360	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.9	250	0.0450	1.06		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.6	300	Total			

Summary for Subcatchment EX6.14:

Runoff = 6.6 cfs @ 12.46 hrs, Volume= 0.878 af, Depth= 2.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.335	80	>75% Grass cover, Good, HSG D
0.045	76	Gravel roads, HSG A
0.234	98	Paved parking, HSG A
0.267	98	Paved parking, HSG D
1.951	30	Woods, Good, HSG A
0.594	70	Woods, Good, HSG C
1.657	77	Woods, Good, HSG D
5.082	60	Weighted Average
4.581		90.14% Pervious Area
0.501		9.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	50	0.1000	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.8	129	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.8	257	0.0747	5.55		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
15.1	203	0.0080	0.22		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
30.8	639	Total			

Summary for Subcatchment EX6.15:

Runoff = 0.4 cfs @ 12.09 hrs, Volume= 0.030 af, Depth= 4.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.064	98	Paved parking, HSG A
0.016	30	Woods, Good, HSG A
0.080	84	Weighted Average
0.016		20.33% Pervious Area
0.064		79.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment EX6.2:

Runoff = 0.0 cfs @ 15.11 hrs, Volume= 0.010 af, Depth= 0.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.023	76	Gravel roads, HSG A
0.004	98	Paved parking, HSG A
0.700	30	Woods, Good, HSG A
0.727	32	Weighted Average
0.723		99.43% Pervious Area
0.004		0.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.4	50	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.2	82	0.2180	1.17		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
25.0	712	0.0090	0.47		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
41.6	844	Total			

Summary for Subcatchment EX6.3:

Runoff = 0.3 cfs @ 12.40 hrs, Volume= 0.045 af, Depth= 0.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.134	98	Paved parking, HSG A
0.646	30	Woods, Good, HSG A
0.780	42	Weighted Average
0.646		82.84% Pervious Area
0.134		17.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	50	0.0660	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	105	0.0238	0.77		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
15.4	155	Total			

Summary for Subcatchment EX6.4:

Runoff = 2.0 cfs @ 12.45 hrs, Volume= 0.301 af, Depth= 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
1.721	39	>75% Grass cover, Good, HSG A
0.624	98	Paved parking, HSG A
0.527	30	Woods, Good, HSG A
2.872	50	Weighted Average
2.249		78.29% Pervious Area
0.624		21.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	50	0.0800	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.7	74	0.0860	0.73		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.1	360	0.0286	1.18		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	23	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.9	135	0.0030	0.38		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	65	0.0230	3.08		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.1	170	0.0380	1.36		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
27.4	877	Total			

Summary for Subcatchment EX6.5:

Runoff = 1.2 cfs @ 12.92 hrs, Volume= 0.491 af, Depth= 0.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
2.733	39	>75% Grass cover, Good, HSG A
1.189	98	Paved parking, HSG A
12.942	30	Woods, Good, HSG A
16.864	36	Weighted Average
15.675		92.95% Pervious Area
1.189		7.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.5	150	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
10.8	341	0.0110	0.52		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	66	0.0150	0.86		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.9	145	0.0280	0.84		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	16	0.0400	4.06		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.7	68	0.0170	0.65		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
36.0	836	Total			

Summary for Subcatchment EX6.6:

Runoff = 1.5 cfs @ 12.92 hrs, Volume= 0.415 af, Depth= 0.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
1.233	39	>75% Grass cover, Good, HSG A
0.127	76	Gravel roads, HSG A
1.030	98	Paved parking, HSG A
4.770	30	Woods, Good, HSG A
7.161	42	Weighted Average
6.131		85.61% Pervious Area
1.030		14.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	50	0.3000	0.12		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
37.1	747	0.0180	0.34		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
8.3	200	0.0255	0.40		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
52.6	997	Total			

Summary for Subcatchment EX6.7:

Runoff = 1.1 cfs @ 12.71 hrs, Volume= 0.304 af, Depth= 0.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
1.418	39	>75% Grass cover, Good, HSG A
0.061	76	Gravel roads, HSG A
0.672	98	Paved parking, HSG A
0.078	98	Roofs, HSG A
4.876	30	Woods, Good, HSG A
7.106	39	Weighted Average
6.355		89.44% Pervious Area
0.751		10.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.2	50	0.4240	0.13		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
11.2	262	0.0061	0.39		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.3	574	0.0180	0.67		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
31.7	886	Total			

Summary for Subcatchment EX6.8:

Runoff = 0.1 cfs @ 14.97 hrs, Volume= 0.069 af, Depth= 0.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
1.052	39	>75% Grass cover, Good, HSG A
3.865	30	Woods, Good, HSG A
4.917	32	Weighted Average
4.917		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	50	0.0400	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
12.2	370	0.0410	0.51		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.9	183	0.0430	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
34.1	603	Total			

Summary for Subcatchment EX6.9:

Runoff = 0.2 cfs @ 12.45 hrs, Volume= 0.048 af, Depth= 0.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.259	39	>75% Grass cover, Good, HSG A
0.005	76	Gravel roads, HSG A
0.108	98	Paved parking, HSG A
0.531	30	Woods, Good, HSG A
0.902	41	Weighted Average
0.795		88.09% Pervious Area
0.108		11.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.7	180	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.4	230	Total			

Summary for Link DP6.1: Low Point

Inflow Area = 0.794 ac, 4.78% Impervious, Inflow Depth = 0.51" for 25-yr event
Inflow = 0.1 cfs @ 12.96 hrs, Volume= 0.034 af
Primary = 0.1 cfs @ 12.96 hrs, Volume= 0.034 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.10: Low Point

Inflow Area = 3.928 ac, 18.34% Impervious, Inflow Depth = 0.83" for 25-yr event
Inflow = 1.7 cfs @ 12.33 hrs, Volume= 0.271 af
Primary = 1.7 cfs @ 12.33 hrs, Volume= 0.271 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.11: Wetland/Approximate Vernal Pool

Inflow Area = 0.796 ac, 2.47% Impervious, Inflow Depth = 0.21" for 25-yr event
Inflow = 0.0 cfs @ 13.77 hrs, Volume= 0.014 af
Primary = 0.0 cfs @ 13.77 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.12: Wetland 35/Vernal Pool 8

Inflow Area = 0.605 ac, 0.00% Impervious, Inflow Depth = 0.17" for 25-yr event
Inflow = 0.0 cfs @ 14.72 hrs, Volume= 0.009 af
Primary = 0.0 cfs @ 14.72 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.13: Wetland 34

Inflow Area = 3.205 ac, 11.76% Impervious, Inflow Depth = 1.41" for 25-yr event
Inflow = 3.0 cfs @ 12.34 hrs, Volume= 0.377 af
Primary = 3.0 cfs @ 12.34 hrs, Volume= 0.377 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.14: Wetland 33

Inflow Area = 5.082 ac, 9.86% Impervious, Inflow Depth = 2.07" for 25-yr event
Inflow = 6.6 cfs @ 12.46 hrs, Volume= 0.878 af
Primary = 6.6 cfs @ 12.46 hrs, Volume= 0.878 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.15: Low Point

Inflow Area = 0.080 ac, 79.67% Impervious, Inflow Depth = 4.41" for 25-yr event
Inflow = 0.4 cfs @ 12.09 hrs, Volume= 0.030 af
Primary = 0.4 cfs @ 12.09 hrs, Volume= 0.030 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.2: Dutton

Inflow Area = 0.727 ac, 0.57% Impervious, Inflow Depth = 0.17" for 25-yr event
Inflow = 0.0 cfs @ 15.11 hrs, Volume= 0.010 af
Primary = 0.0 cfs @ 15.11 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.3: Low Point

Inflow Area = 0.780 ac, 17.16% Impervious, Inflow Depth = 0.70" for 25-yr event
Inflow = 0.3 cfs @ 12.40 hrs, Volume= 0.045 af
Primary = 0.3 cfs @ 12.40 hrs, Volume= 0.045 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.4: Low Point

Inflow Area = 2.872 ac, 21.71% Impervious, Inflow Depth = 1.26" for 25-yr event
Inflow = 2.0 cfs @ 12.45 hrs, Volume= 0.301 af
Primary = 2.0 cfs @ 12.45 hrs, Volume= 0.301 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.5: Low Point

Inflow Area = 16.864 ac, 7.05% Impervious, Inflow Depth = 0.35" for 25-yr event
Inflow = 1.2 cfs @ 12.92 hrs, Volume= 0.491 af
Primary = 1.2 cfs @ 12.92 hrs, Volume= 0.491 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.6: Wetland 38 & 36

Inflow Area = 7.161 ac, 14.39% Impervious, Inflow Depth = 0.70" for 25-yr event
Inflow = 1.5 cfs @ 12.92 hrs, Volume= 0.415 af
Primary = 1.5 cfs @ 12.92 hrs, Volume= 0.415 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.7: Wetland 37

Inflow Area = 7.106 ac, 10.56% Impervious, Inflow Depth = 0.51" for 25-yr event
Inflow = 1.1 cfs @ 12.71 hrs, Volume= 0.304 af
Primary = 1.1 cfs @ 12.71 hrs, Volume= 0.304 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.8: Low Point

Inflow Area = 4.917 ac, 0.00% Impervious, Inflow Depth = 0.17" for 25-yr event
Inflow = 0.1 cfs @ 14.97 hrs, Volume= 0.069 af
Primary = 0.1 cfs @ 14.97 hrs, Volume= 0.069 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.9: Low Point

Inflow Area = 0.902 ac, 11.91% Impervious, Inflow Depth = 0.63" for 25-yr event
Inflow = 0.2 cfs @ 12.45 hrs, Volume= 0.048 af
Primary = 0.2 cfs @ 12.45 hrs, Volume= 0.048 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentEX6.1: Runoff Area=0.794 ac 4.78% Impervious Runoff Depth=1.42"
Flow Length=893' Tc=48.2 min CN=39 Runoff=0.4 cfs 0.094 af

SubcatchmentEX6.10: Runoff Area=3.928 ac 18.34% Impervious Runoff Depth=1.95"
Flow Length=495' Tc=16.1 min CN=44 Runoff=5.6 cfs 0.639 af

SubcatchmentEX6.11: Runoff Area=0.796 ac 2.47% Impervious Runoff Depth=0.83"
Flow Length=128' Tc=12.0 min CN=33 Runoff=0.3 cfs 0.055 af

SubcatchmentEX6.12: Runoff Area=0.605 ac 0.00% Impervious Runoff Depth=0.74"
Flow Length=117' Tc=14.2 min CN=32 Runoff=0.2 cfs 0.037 af

SubcatchmentEX6.13: Runoff Area=3.205 ac 11.76% Impervious Runoff Depth=2.85"
Flow Length=300' Tc=20.6 min CN=52 Runoff=6.7 cfs 0.762 af

SubcatchmentEX6.14: Runoff Area=5.082 ac 9.86% Impervious Runoff Depth=3.79"
Flow Length=639' Tc=30.8 min CN=60 Runoff=12.5 cfs 1.605 af

SubcatchmentEX6.15: Runoff Area=0.080 ac 79.67% Impervious Runoff Depth=6.67"
Tc=6.0 min CN=84 Runoff=0.6 cfs 0.045 af

SubcatchmentEX6.2: Runoff Area=0.727 ac 0.57% Impervious Runoff Depth=0.74"
Flow Length=844' Tc=41.6 min CN=32 Runoff=0.2 cfs 0.045 af

SubcatchmentEX6.3: Runoff Area=0.780 ac 17.16% Impervious Runoff Depth=1.73"
Flow Length=155' Tc=15.4 min CN=42 Runoff=0.9 cfs 0.113 af

SubcatchmentEX6.4: Runoff Area=2.872 ac 21.71% Impervious Runoff Depth=2.62"
Flow Length=877' Tc=27.4 min CN=50 Runoff=4.8 cfs 0.628 af

SubcatchmentEX6.5: Runoff Area=16.864 ac 7.05% Impervious Runoff Depth=1.11"
Flow Length=836' Tc=36.0 min CN=36 Runoff=7.5 cfs 1.567 af

SubcatchmentEX6.6: Runoff Area=7.161 ac 14.39% Impervious Runoff Depth=1.73"
Flow Length=997' Tc=52.6 min CN=42 Runoff=5.0 cfs 1.035 af

SubcatchmentEX6.7: Runoff Area=7.106 ac 10.56% Impervious Runoff Depth=1.42"
Flow Length=886' Tc=31.7 min CN=39 Runoff=4.9 cfs 0.840 af

SubcatchmentEX6.8: Runoff Area=4.917 ac 0.00% Impervious Runoff Depth=0.74"
Flow Length=603' Tc=34.1 min CN=32 Runoff=1.1 cfs 0.303 af

SubcatchmentEX6.9: Runoff Area=0.902 ac 11.91% Impervious Runoff Depth=1.63"
Flow Length=230' Slope=0.0500 '/' Tc=17.4 min CN=41 Runoff=1.0 cfs 0.122 af

Link DP6.1: Low Point Inflow=0.4 cfs 0.094 af
Primary=0.4 cfs 0.094 af

Link DP6.10: Low Point Inflow=5.6 cfs 0.639 af
Primary=5.6 cfs 0.639 af

Link DP6.11: Wetland/ApproximateVernal Pool Inflow=0.3 cfs 0.055 af
Primary=0.3 cfs 0.055 af

Link DP6.12: Wetland 35/Vernal Pool 8 Inflow=0.2 cfs 0.037 af
Primary=0.2 cfs 0.037 af

Link DP6.13: Wetland 34 Inflow=6.7 cfs 0.762 af
Primary=6.7 cfs 0.762 af

Link DP6.14: Wetland 33 Inflow=12.5 cfs 1.605 af
Primary=12.5 cfs 1.605 af

Link DP6.15: Low Point Inflow=0.6 cfs 0.045 af
Primary=0.6 cfs 0.045 af

Link DP6.2: Dutton Inflow=0.2 cfs 0.045 af
Primary=0.2 cfs 0.045 af

Link DP6.3: Low Point Inflow=0.9 cfs 0.113 af
Primary=0.9 cfs 0.113 af

Link DP6.4: Low Point Inflow=4.8 cfs 0.628 af
Primary=4.8 cfs 0.628 af

Link DP6.5: Low Point Inflow=7.5 cfs 1.567 af
Primary=7.5 cfs 1.567 af

Link DP6.6: Wetland 38 & 36 Inflow=5.0 cfs 1.035 af
Primary=5.0 cfs 1.035 af

Link DP6.7: Wetland 37 Inflow=4.9 cfs 0.840 af
Primary=4.9 cfs 0.840 af

Link DP6.8: Low Point Inflow=1.1 cfs 0.303 af
Primary=1.1 cfs 0.303 af

Link DP6.9: Low Point Inflow=1.0 cfs 0.122 af
Primary=1.0 cfs 0.122 af

Total Runoff Area = 55.820 ac Runoff Volume = 7.890 af Average Runoff Depth = 1.70"
90.04% Pervious = 50.261 ac 9.96% Impervious = 5.559 ac

Summary for Subcatchment EX6.1:

Runoff = 0.4 cfs @ 12.80 hrs, Volume= 0.094 af, Depth= 1.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.185	39	>75% Grass cover, Good, HSG A
0.060	76	Gravel roads, HSG A
0.038	98	Paved parking, HSG A
0.511	30	Woods, Good, HSG A
0.794	39	Weighted Average
0.756		95.22% Pervious Area
0.038		4.78% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.9	39	0.4790	0.13		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
23.6	671	0.0090	0.47		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.7	88	0.0011	0.08		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
2.0	95	0.0260	0.81		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
48.2	893	Total			

Summary for Subcatchment EX6.10:

Runoff = 5.6 cfs @ 12.25 hrs, Volume= 0.639 af, Depth= 1.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.585	39	>75% Grass cover, Good, HSG A
0.016	76	Gravel roads, HSG A
0.720	98	Paved parking, HSG A
2.600	30	Woods, Good, HSG A
0.007	77	Woods, Good, HSG D
3.928	44	Weighted Average
3.207		81.66% Pervious Area
0.720		18.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
3.0	185	0.0430	1.04		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.9	80	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.9	180	0.0240	0.77		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.1	495	Total			

Summary for Subcatchment EX6.11:

Runoff = 0.3 cfs @ 12.38 hrs, Volume= 0.055 af, Depth= 0.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.080	39	>75% Grass cover, Good, HSG A
0.006	76	Gravel roads, HSG A
0.020	98	Paved parking, HSG A
0.691	30	Woods, Good, HSG A
0.796	33	Weighted Average
0.777		97.53% Pervious Area
0.020		2.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	50	0.1300	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.0	78	0.0700	0.66		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
12.0	128	Total			

Summary for Subcatchment EX6.12:

Runoff = 0.2 cfs @ 12.45 hrs, Volume= 0.037 af, Depth= 0.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.122	39	>75% Grass cover, Good, HSG A
0.005	76	Gravel roads, HSG A
0.477	30	Woods, Good, HSG A
0.605	32	Weighted Average
0.605		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	47	0.0680	1.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	20	0.0900	1.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.2	117	Total			

Summary for Subcatchment EX6.13:

Runoff = 6.7 cfs @ 12.30 hrs, Volume= 0.762 af, Depth= 2.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.341	39	>75% Grass cover, Good, HSG A
0.188	80	>75% Grass cover, Good, HSG D
0.034	76	Gravel roads, HSG A
0.255	98	Paved parking, HSG A
0.122	98	Paved parking, HSG D
1.607	30	Woods, Good, HSG A
0.660	77	Woods, Good, HSG D
3.205	52	Weighted Average
2.828		88.24% Pervious Area
0.377		11.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.7	50	0.0360	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.9	250	0.0450	1.06		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.6	300	Total			

Summary for Subcatchment EX6.14:

Runoff = 12.5 cfs @ 12.43 hrs, Volume= 1.605 af, Depth= 3.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.335	80	>75% Grass cover, Good, HSG D
0.045	76	Gravel roads, HSG A
0.234	98	Paved parking, HSG A
0.267	98	Paved parking, HSG D
1.951	30	Woods, Good, HSG A
0.594	70	Woods, Good, HSG C
1.657	77	Woods, Good, HSG D
5.082	60	Weighted Average
4.581		90.14% Pervious Area
0.501		9.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	50	0.1000	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.8	129	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.8	257	0.0747	5.55		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
15.1	203	0.0080	0.22		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
30.8	639	Total			

Summary for Subcatchment EX6.15:

Runoff = 0.6 cfs @ 12.09 hrs, Volume= 0.045 af, Depth= 6.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.064	98	Paved parking, HSG A
0.016	30	Woods, Good, HSG A
0.080	84	Weighted Average
0.016		20.33% Pervious Area
0.064		79.67% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment EX6.2:

Runoff = 0.2 cfs @ 12.84 hrs, Volume= 0.045 af, Depth= 0.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.023	76	Gravel roads, HSG A
0.004	98	Paved parking, HSG A
0.700	30	Woods, Good, HSG A
0.727	32	Weighted Average
0.723		99.43% Pervious Area
0.004		0.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.4	50	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.2	82	0.2180	1.17		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
25.0	712	0.0090	0.47		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
41.6	844	Total			

Summary for Subcatchment EX6.3:

Runoff = 0.9 cfs @ 12.25 hrs, Volume= 0.113 af, Depth= 1.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.134	98	Paved parking, HSG A
0.646	30	Woods, Good, HSG A
0.780	42	Weighted Average
0.646		82.84% Pervious Area
0.134		17.16% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.1	50	0.0660	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	105	0.0238	0.77		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
15.4	155	Total			

Summary for Subcatchment EX6.4:

Runoff = 4.8 cfs @ 12.42 hrs, Volume= 0.628 af, Depth= 2.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
1.721	39	>75% Grass cover, Good, HSG A
0.624	98	Paved parking, HSG A
0.527	30	Woods, Good, HSG A
2.872	50	Weighted Average
2.249		78.29% Pervious Area
0.624		21.71% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	50	0.0800	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.7	74	0.0860	0.73		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.1	360	0.0286	1.18		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	23	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.9	135	0.0030	0.38		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	65	0.0230	3.08		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.1	170	0.0380	1.36		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
27.4	877	Total			

Summary for Subcatchment EX6.5:

Runoff = 7.5 cfs @ 12.68 hrs, Volume= 1.567 af, Depth= 1.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
2.733	39	>75% Grass cover, Good, HSG A
1.189	98	Paved parking, HSG A
12.942	30	Woods, Good, HSG A
16.864	36	Weighted Average
15.675		92.95% Pervious Area
1.189		7.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.5	150	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
10.8	341	0.0110	0.52		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	66	0.0150	0.86		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.9	145	0.0280	0.84		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	16	0.0400	4.06		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.7	68	0.0170	0.65		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
36.0	836	Total			

Summary for Subcatchment EX6.6:

Runoff = 5.0 cfs @ 12.85 hrs, Volume= 1.035 af, Depth= 1.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
1.233	39	>75% Grass cover, Good, HSG A
0.127	76	Gravel roads, HSG A
1.030	98	Paved parking, HSG A
4.770	30	Woods, Good, HSG A
7.161	42	Weighted Average
6.131		85.61% Pervious Area
1.030		14.39% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.2	50	0.3000	0.12		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
37.1	747	0.0180	0.34		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
8.3	200	0.0255	0.40		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
52.6	997	Total			

Summary for Subcatchment EX6.7:

Runoff = 4.9 cfs @ 12.57 hrs, Volume= 0.840 af, Depth= 1.42"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
1.418	39	>75% Grass cover, Good, HSG A
0.061	76	Gravel roads, HSG A
0.672	98	Paved parking, HSG A
0.078	98	Roofs, HSG A
4.876	30	Woods, Good, HSG A
7.106	39	Weighted Average
6.355		89.44% Pervious Area
0.751		10.56% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.2	50	0.4240	0.13		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
11.2	262	0.0061	0.39		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.3	574	0.0180	0.67		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
31.7	886	Total			

Summary for Subcatchment EX6.8:

Runoff = 1.1 cfs @ 12.73 hrs, Volume= 0.303 af, Depth= 0.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
1.052	39	>75% Grass cover, Good, HSG A
3.865	30	Woods, Good, HSG A
4.917	32	Weighted Average
4.917		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	50	0.0400	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
12.2	370	0.0410	0.51		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.9	183	0.0430	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
34.1	603	Total			

Summary for Subcatchment EX6.9:

Runoff = 1.0 cfs @ 12.30 hrs, Volume= 0.122 af, Depth= 1.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.259	39	>75% Grass cover, Good, HSG A
0.005	76	Gravel roads, HSG A
0.108	98	Paved parking, HSG A
0.531	30	Woods, Good, HSG A
0.902	41	Weighted Average
0.795		88.09% Pervious Area
0.108		11.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.7	180	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.4	230	Total			

Summary for Link DP6.1: Low Point

Inflow Area = 0.794 ac, 4.78% Impervious, Inflow Depth = 1.42" for 100-yr event
Inflow = 0.4 cfs @ 12.80 hrs, Volume= 0.094 af
Primary = 0.4 cfs @ 12.80 hrs, Volume= 0.094 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.10: Low Point

Inflow Area = 3.928 ac, 18.34% Impervious, Inflow Depth = 1.95" for 100-yr event
Inflow = 5.6 cfs @ 12.25 hrs, Volume= 0.639 af
Primary = 5.6 cfs @ 12.25 hrs, Volume= 0.639 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.11: Wetland/Approximate Vernal Pool

Inflow Area = 0.796 ac, 2.47% Impervious, Inflow Depth = 0.83" for 100-yr event
Inflow = 0.3 cfs @ 12.38 hrs, Volume= 0.055 af
Primary = 0.3 cfs @ 12.38 hrs, Volume= 0.055 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.12: Wetland 35/Vernal Pool 8

Inflow Area = 0.605 ac, 0.00% Impervious, Inflow Depth = 0.74" for 100-yr event
Inflow = 0.2 cfs @ 12.45 hrs, Volume= 0.037 af
Primary = 0.2 cfs @ 12.45 hrs, Volume= 0.037 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.13: Wetland 34

Inflow Area = 3.205 ac, 11.76% Impervious, Inflow Depth = 2.85" for 100-yr event
Inflow = 6.7 cfs @ 12.30 hrs, Volume= 0.762 af
Primary = 6.7 cfs @ 12.30 hrs, Volume= 0.762 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.14: Wetland 33

Inflow Area = 5.082 ac, 9.86% Impervious, Inflow Depth = 3.79" for 100-yr event
Inflow = 12.5 cfs @ 12.43 hrs, Volume= 1.605 af
Primary = 12.5 cfs @ 12.43 hrs, Volume= 1.605 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.15: Low Point

Inflow Area = 0.080 ac, 79.67% Impervious, Inflow Depth = 6.67" for 100-yr event
Inflow = 0.6 cfs @ 12.09 hrs, Volume= 0.045 af
Primary = 0.6 cfs @ 12.09 hrs, Volume= 0.045 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.2: Dutton

Inflow Area = 0.727 ac, 0.57% Impervious, Inflow Depth = 0.74" for 100-yr event
Inflow = 0.2 cfs @ 12.84 hrs, Volume= 0.045 af
Primary = 0.2 cfs @ 12.84 hrs, Volume= 0.045 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.3: Low Point

Inflow Area = 0.780 ac, 17.16% Impervious, Inflow Depth = 1.73" for 100-yr event
Inflow = 0.9 cfs @ 12.25 hrs, Volume= 0.113 af
Primary = 0.9 cfs @ 12.25 hrs, Volume= 0.113 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.4: Low Point

Inflow Area = 2.872 ac, 21.71% Impervious, Inflow Depth = 2.62" for 100-yr event
Inflow = 4.8 cfs @ 12.42 hrs, Volume= 0.628 af
Primary = 4.8 cfs @ 12.42 hrs, Volume= 0.628 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.5: Low Point

Inflow Area = 16.864 ac, 7.05% Impervious, Inflow Depth = 1.11" for 100-yr event
Inflow = 7.5 cfs @ 12.68 hrs, Volume= 1.567 af
Primary = 7.5 cfs @ 12.68 hrs, Volume= 1.567 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.6: Wetland 38 & 36

Inflow Area = 7.161 ac, 14.39% Impervious, Inflow Depth = 1.73" for 100-yr event
Inflow = 5.0 cfs @ 12.85 hrs, Volume= 1.035 af
Primary = 5.0 cfs @ 12.85 hrs, Volume= 1.035 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.7: Wetland 37

Inflow Area = 7.106 ac, 10.56% Impervious, Inflow Depth = 1.42" for 100-yr event
Inflow = 4.9 cfs @ 12.57 hrs, Volume= 0.840 af
Primary = 4.9 cfs @ 12.57 hrs, Volume= 0.840 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.8: Low Point

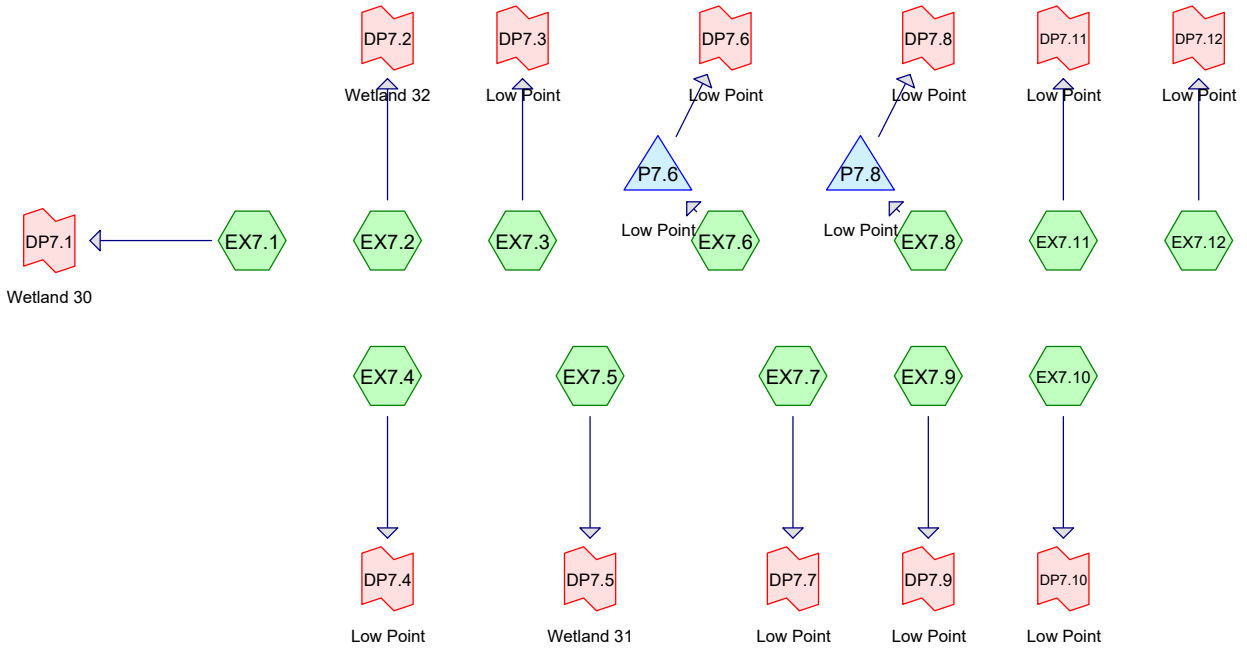
Inflow Area = 4.917 ac, 0.00% Impervious, Inflow Depth = 0.74" for 100-yr event
Inflow = 1.1 cfs @ 12.73 hrs, Volume= 0.303 af
Primary = 1.1 cfs @ 12.73 hrs, Volume= 0.303 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP6.9: Low Point

Inflow Area = 0.902 ac, 11.91% Impervious, Inflow Depth = 1.63" for 100-yr event
Inflow = 1.0 cfs @ 12.30 hrs, Volume= 0.122 af
Primary = 1.0 cfs @ 12.30 hrs, Volume= 0.122 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs



Subcat Reach Pond Link

Routing Diagram for 14009.00-EX-Segment 7_ResponsetoComments
Prepared by VHB, Printed 7/10/2020

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentEX7.1: Runoff Area=9.010 ac 15.95% Impervious Runoff Depth=0.00"
Flow Length=968' Tc=44.3 min CN=56 Runoff=0.0 cfs 0.000 af

SubcatchmentEX7.10: Runoff Area=0.269 ac 2.11% Impervious Runoff Depth=0.00"
Flow Length=385' Tc=21.3 min CN=38 Runoff=0.0 cfs 0.000 af

SubcatchmentEX7.11: Runoff Area=1.587 ac 17.29% Impervious Runoff Depth=0.00"
Flow Length=443' Tc=17.6 min CN=45 Runoff=0.0 cfs 0.000 af

SubcatchmentEX7.12: Runoff Area=1.240 ac 20.02% Impervious Runoff Depth=0.00"
Flow Length=295' Tc=19.3 min CN=46 Runoff=0.0 cfs 0.000 af

SubcatchmentEX7.2: Runoff Area=2.658 ac 7.70% Impervious Runoff Depth=0.00"
Flow Length=485' Tc=25.2 min CN=36 Runoff=0.0 cfs 0.000 af

SubcatchmentEX7.3: Runoff Area=3.639 ac 12.37% Impervious Runoff Depth=0.00"
Flow Length=738' Tc=35.2 min CN=41 Runoff=0.0 cfs 0.000 af

SubcatchmentEX7.4: Runoff Area=8.965 ac 12.52% Impervious Runoff Depth=0.00"
Flow Length=900' Tc=39.3 min CN=52 Runoff=0.0 cfs 0.000 af

SubcatchmentEX7.5: Runoff Area=23.140 ac 12.90% Impervious Runoff Depth=0.00"
Flow Length=843' Tc=34.6 min CN=52 Runoff=0.0 cfs 0.000 af

SubcatchmentEX7.6: Runoff Area=0.894 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=174' Tc=14.1 min CN=33 Runoff=0.0 cfs 0.000 af

SubcatchmentEX7.7: Runoff Area=0.737 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=140' Tc=11.2 min CN=35 Runoff=0.0 cfs 0.000 af

SubcatchmentEX7.8: Runoff Area=1.201 ac 3.79% Impervious Runoff Depth=0.00"
Flow Length=554' Tc=18.5 min CN=35 Runoff=0.0 cfs 0.000 af

SubcatchmentEX7.9: Runoff Area=5.740 ac 14.60% Impervious Runoff Depth=0.00"
Flow Length=610' Tc=18.2 min CN=43 Runoff=0.0 cfs 0.000 af

Pond P7.6: Low Point Peak Elev=132.00' Storage=0 cf Inflow=0.0 cfs 0.000 af
Outflow=0.0 cfs 0.000 af

Pond P7.8: Low Point Peak Elev=168.00' Storage=0 cf Inflow=0.0 cfs 0.000 af
Outflow=0.0 cfs 0.000 af

Link DP7.1: Wetland 30 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.10: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.11: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.12: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.2: Wetland 32 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.3: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.4: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.5: Wetland 31 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.6: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.7: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.8: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.9: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Total Runoff Area = 59.079 ac Runoff Volume = 0.000 af Average Runoff Depth = 0.00"
87.12% Pervious = 51.469 ac 12.88% Impervious = 7.610 ac

Summary for Subcatchment EX7.1:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
2.052	39	>75% Grass cover, Good, HSG A
0.682	80	>75% Grass cover, Good, HSG D
0.072	76	Gravel roads, HSG A
0.030	91	Gravel roads, HSG D
0.535	98	Paved parking, HSG A
0.159	98	Paved parking, HSG D
0.480	98	Paved roads w/curbs & sewers, HSG A
0.122	98	Paved roads w/curbs & sewers, HSG D
0.141	98	Roofs, HSG A
3.133	30	Woods, Good, HSG A
1.604	77	Woods, Good, HSG D
9.010	56	Weighted Average
7.572		84.05% Pervious Area
1.437		15.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.9	50	0.0100	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.2	130	0.0070	0.42		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.7	263	0.0280	1.17		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	27	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.9	68	0.0330	1.27		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.1	320	0.0340	1.29		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.4	110	0.0230	0.76		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
44.3	968	Total			

Summary for Subcatchment EX7.10:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.006	39	>75% Grass cover, Good, HSG A
0.039	76	Gravel roads, HSG A
0.006	98	Paved parking, HSG A
0.219	30	Woods, Good, HSG A
0.269	38	Weighted Average
0.263		97.89% Pervious Area
0.006		2.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	35	0.0700	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
11.7	350	0.0400	0.50		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
21.3	385	Total			

Summary for Subcatchment EX7.11:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.624	39	>75% Grass cover, Good, HSG A
0.087	98	Paved parking, HSG A
0.149	98	Paved roads w/curbs & sewers, HSG A
0.038	98	Roofs, HSG A
0.689	30	Woods, Good, HSG A
1.587	45	Weighted Average
1.313		82.71% Pervious Area
0.274		17.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.0270	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
4.2	180	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.0	118	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	95	0.0170	2.65		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
17.6	443	Total			

Summary for Subcatchment EX7.12:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.321	39	>75% Grass cover, Good, HSG A
0.084	98	Paved parking, HSG A
0.141	98	Paved roads w/curbs & sewers, HSG A
0.023	98	Roofs, HSG A
0.670	30	Woods, Good, HSG A
1.240	46	Weighted Average
0.991		79.98% Pervious Area
0.248		20.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	50	0.0140	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.6	66	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.1	50	0.0120	0.77		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	104	0.0230	0.76		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	25	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
19.3	295	Total			

Summary for Subcatchment EX7.2:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.110	39	>75% Grass cover, Good, HSG A
0.001	80	>75% Grass cover, Good, HSG D
0.027	76	Gravel roads, HSG A
0.001	91	Gravel roads, HSG D
0.058	98	Paved parking, HSG A
0.079	98	Paved roads w/curbs & sewers, HSG A
0.068	98	Roofs, HSG A
2.313	30	Woods, Good, HSG A
2.658	36	Weighted Average
2.453		92.30% Pervious Area
0.205		7.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3	50	0.0450	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.8	106	0.0620	0.62		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.1	46	0.1700	8.37		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.0	283	0.0720	0.67		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
25.2	485	Total			

Summary for Subcatchment EX7.3:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.827	39	>75% Grass cover, Good, HSG A
0.024	39	>75% Grass cover, Good, HSG A
0.033	98	Paved parking, HSG A
0.191	98	Paved roads w/curbs & sewers, HSG A
0.044	98	Paved roads w/curbs & sewers, HSG A
0.181	98	Roofs, HSG A
0.001	98	Roofs, HSG A
2.129	30	Woods, Good, HSG A
0.209	30	Woods, Good, HSG A
3.639	41	Weighted Average
3.189		87.63% Pervious Area
0.450		12.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.8	36	0.0833	0.72		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	48	0.0410	1.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.6	286	0.0490	0.55		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.4	68	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.0	135	0.0259	1.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.2	115	0.0070	0.21		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
35.2	738	Total			

Summary for Subcatchment EX7.4:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
1.572	39	>75% Grass cover, Good, HSG A
0.034	80	>75% Grass cover, Good, HSG D
0.391	98	Paved parking, HSG A
0.104	98	Paved parking, HSG D
0.222	98	Paved roads w/curbs & sewers, HSG A
0.115	98	Paved roads w/curbs & sewers, HSG D
0.288	98	Roofs, HSG A
0.002	98	Roofs, HSG D
4.035	30	Woods, Good, HSG A
2.201	77	Woods, Good, HSG D
8.965	52	Weighted Average
7.843		87.48% Pervious Area
1.122		12.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	50	0.1000	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.8	156	0.0750	0.68		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.6	132	0.0370	1.35		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
22.8	562	0.0269	0.41		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
39.3	900	Total			

Summary for Subcatchment EX7.5:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
3.962	39	>75% Grass cover, Good, HSG A
0.722	80	>75% Grass cover, Good, HSG D
0.020	76	Gravel roads, HSG A
0.038	91	Gravel roads, HSG D
0.666	98	Paved parking, HSG A
0.079	98	Paved parking, HSG D
1.090	98	Paved roads w/curbs & sewers, HSG A
0.990	98	Roofs, HSG A
0.161	98	Roofs, HSG D
10.498	30	Woods, Good, HSG A
4.915	77	Woods, Good, HSG D
23.140	52	Weighted Average
20.155		87.10% Pervious Area
2.984		12.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.4	50	0.0220	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.9	59	0.0430	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.9	36	0.0020	0.31		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	33	0.0280	3.40		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.5	54	0.0680	1.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	118	0.0530	4.67		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.7	95	0.0070	0.59		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.4	225	0.0190	0.69		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	115	0.0290	3.46		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.6	58	0.0900	1.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
34.6	843	Total			

Summary for Subcatchment EX7.6:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.078	39	>75% Grass cover, Good, HSG A
0.041	76	Gravel roads, HSG A
0.775	30	Woods, Good, HSG A
0.894	33	Weighted Average
0.894		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	50	0.0760	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.7	124	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.1	174	Total			

Summary for Subcatchment EX7.7:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.131	39	>75% Grass cover, Good, HSG A
0.061	76	Gravel roads, HSG A
0.545	30	Woods, Good, HSG A
0.737	35	Weighted Average
0.737		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	50	0.1500	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.8	90	0.0290	0.85		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.2	140	Total			

Summary for Subcatchment EX7.8:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.293	39	>75% Grass cover, Good, HSG A
0.007	76	Gravel roads, HSG A
0.024	98	Paved parking, HSG A
0.021	98	Roofs, HSG A
0.855	30	Woods, Good, HSG A
1.201	35	Weighted Average
1.156		96.21% Pervious Area
0.045		3.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	41	0.1390	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.3	163	0.0083	0.64		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.9	350	0.0389	0.99		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.5	554	Total			

Summary for Subcatchment EX7.9:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
1.941	39	>75% Grass cover, Good, HSG A
0.258	98	Paved parking, HSG A
0.216	98	Paved roads w/curbs & sewers, HSG A
0.364	98	Roofs, HSG A
2.961	30	Woods, Good, HSG A
5.740	43	Weighted Average
4.902		85.40% Pervious Area
0.838		14.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	50	0.0400	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
3.3	87	0.0310	0.44		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.7	43	0.0230	1.06		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	167	0.0320	3.63		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.3	80	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.9	183	0.0450	1.06		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.2	610	Total			

Summary for Pond P7.6: Low Point

Inflow Area = 0.894 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 132.00' @ 0.00 hrs Surf.Area= 250 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	132.00'	6,580 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
132.00	250	0	0
133.00	2,120	1,185	1,185
134.00	2,690	2,405	3,590
135.00	3,290	2,990	6,580

Device	Routing	Invert	Outlet Devices
#1	Primary	134.50'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=132.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.0 cfs)

Summary for Pond P7.8: Low Point

Inflow Area = 1.201 ac, 3.79% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 168.00' @ 0.00 hrs Surf.Area= 300 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	168.00'	1,500 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
168.00	300	0	0
169.00	750	525	525
170.00	1,200	975	1,500

Device	Routing	Invert	Outlet Devices
#1	Primary	169.00'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=168.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.0 cfs)

Summary for Link DP7.1: Wetland 30

Inflow Area = 9.010 ac, 15.95% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.10: Low Point

Inflow Area = 0.269 ac, 2.11% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.11: Low Point

Inflow Area = 1.587 ac, 17.29% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.12: Low Point

Inflow Area = 1.240 ac, 20.02% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.2: Wetland 32

Inflow Area = 2.658 ac, 7.70% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.3: Low Point

Inflow Area = 3.639 ac, 12.37% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.4: Low Point

Inflow Area = 8.965 ac, 12.52% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.5: Wetland 31

Inflow Area = 23.140 ac, 12.90% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.6: Low Point

Inflow Area = 0.894 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.7: Low Point

Inflow Area = 0.737 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.8: Low Point

Inflow Area = 1.201 ac, 3.79% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.9: Low Point

Inflow Area = 5.740 ac, 14.60% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentEX7.1: Runoff Area=9.010 ac 15.95% Impervious Runoff Depth=0.31"
Flow Length=968' Tc=44.3 min CN=56 Runoff=0.8 cfs 0.234 af

SubcatchmentEX7.10: Runoff Area=0.269 ac 2.11% Impervious Runoff Depth=0.00"
Flow Length=385' Tc=21.3 min CN=38 Runoff=0.0 cfs 0.000 af

SubcatchmentEX7.11: Runoff Area=1.587 ac 17.29% Impervious Runoff Depth=0.06"
Flow Length=443' Tc=17.6 min CN=45 Runoff=0.0 cfs 0.007 af

SubcatchmentEX7.12: Runoff Area=1.240 ac 20.02% Impervious Runoff Depth=0.07"
Flow Length=295' Tc=19.3 min CN=46 Runoff=0.0 cfs 0.007 af

SubcatchmentEX7.2: Runoff Area=2.658 ac 7.70% Impervious Runoff Depth=0.00"
Flow Length=485' Tc=25.2 min CN=36 Runoff=0.0 cfs 0.000 af

SubcatchmentEX7.3: Runoff Area=3.639 ac 12.37% Impervious Runoff Depth=0.01"
Flow Length=738' Tc=35.2 min CN=41 Runoff=0.0 cfs 0.004 af

SubcatchmentEX7.4: Runoff Area=8.965 ac 12.52% Impervious Runoff Depth=0.20"
Flow Length=900' Tc=39.3 min CN=52 Runoff=0.4 cfs 0.148 af

SubcatchmentEX7.5: Runoff Area=23.140 ac 12.90% Impervious Runoff Depth=0.20"
Flow Length=843' Tc=34.6 min CN=52 Runoff=1.0 cfs 0.381 af

SubcatchmentEX7.6: Runoff Area=0.894 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=174' Tc=14.1 min CN=33 Runoff=0.0 cfs 0.000 af

SubcatchmentEX7.7: Runoff Area=0.737 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=140' Tc=11.2 min CN=35 Runoff=0.0 cfs 0.000 af

SubcatchmentEX7.8: Runoff Area=1.201 ac 3.79% Impervious Runoff Depth=0.00"
Flow Length=554' Tc=18.5 min CN=35 Runoff=0.0 cfs 0.000 af

SubcatchmentEX7.9: Runoff Area=5.740 ac 14.60% Impervious Runoff Depth=0.03"
Flow Length=610' Tc=18.2 min CN=43 Runoff=0.0 cfs 0.014 af

Pond P7.6: Low Point Peak Elev=132.00' Storage=0 cf Inflow=0.0 cfs 0.000 af
Outflow=0.0 cfs 0.000 af

Pond P7.8: Low Point Peak Elev=168.00' Storage=0 cf Inflow=0.0 cfs 0.000 af
Outflow=0.0 cfs 0.000 af

Link DP7.1: Wetland 30 Inflow=0.8 cfs 0.234 af
Primary=0.8 cfs 0.234 af

Link DP7.10: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.11: Low Point Inflow=0.0 cfs 0.007 af
Primary=0.0 cfs 0.007 af

Link DP7.12: Low Point Inflow=0.0 cfs 0.007 af
Primary=0.0 cfs 0.007 af

Link DP7.2: Wetland 32 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.3: Low Point Inflow=0.0 cfs 0.004 af
Primary=0.0 cfs 0.004 af

Link DP7.4: Low Point Inflow=0.4 cfs 0.148 af
Primary=0.4 cfs 0.148 af

Link DP7.5: Wetland 31 Inflow=1.0 cfs 0.381 af
Primary=1.0 cfs 0.381 af

Link DP7.6: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.7: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.8: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.9: Low Point Inflow=0.0 cfs 0.014 af
Primary=0.0 cfs 0.014 af

Total Runoff Area = 59.079 ac Runoff Volume = 0.796 af Average Runoff Depth = 0.16"
87.12% Pervious = 51.469 ac 12.88% Impervious = 7.610 ac

Summary for Subcatchment EX7.1:

Runoff = 0.8 cfs @ 12.85 hrs, Volume= 0.234 af, Depth= 0.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
2.052	39	>75% Grass cover, Good, HSG A
0.682	80	>75% Grass cover, Good, HSG D
0.072	76	Gravel roads, HSG A
0.030	91	Gravel roads, HSG D
0.535	98	Paved parking, HSG A
0.159	98	Paved parking, HSG D
0.480	98	Paved roads w/curbs & sewers, HSG A
0.122	98	Paved roads w/curbs & sewers, HSG D
0.141	98	Roofs, HSG A
3.133	30	Woods, Good, HSG A
1.604	77	Woods, Good, HSG D
9.010	56	Weighted Average
7.572		84.05% Pervious Area
1.437		15.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.9	50	0.0100	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.2	130	0.0070	0.42		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.7	263	0.0280	1.17		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	27	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.9	68	0.0330	1.27		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.1	320	0.0340	1.29		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.4	110	0.0230	0.76		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
44.3	968	Total			

Summary for Subcatchment EX7.10:

Runoff = 0.0 cfs @ 24.11 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.006	39	>75% Grass cover, Good, HSG A
0.039	76	Gravel roads, HSG A
0.006	98	Paved parking, HSG A
0.219	30	Woods, Good, HSG A
0.269	38	Weighted Average
0.263		97.89% Pervious Area
0.006		2.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	35	0.0700	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
11.7	350	0.0400	0.50		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
21.3	385	Total			

Summary for Subcatchment EX7.11:

Runoff = 0.0 cfs @ 15.31 hrs, Volume= 0.007 af, Depth= 0.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.624	39	>75% Grass cover, Good, HSG A
0.087	98	Paved parking, HSG A
0.149	98	Paved roads w/curbs & sewers, HSG A
0.038	98	Roofs, HSG A
0.689	30	Woods, Good, HSG A
1.587	45	Weighted Average
1.313		82.71% Pervious Area
0.274		17.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.0270	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
4.2	180	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.0	118	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	95	0.0170	2.65		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
17.6	443	Total			

Summary for Subcatchment EX7.12:

Runoff = 0.0 cfs @ 15.03 hrs, Volume= 0.007 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.321	39	>75% Grass cover, Good, HSG A
0.084	98	Paved parking, HSG A
0.141	98	Paved roads w/curbs & sewers, HSG A
0.023	98	Roofs, HSG A
0.670	30	Woods, Good, HSG A
1.240	46	Weighted Average
0.991		79.98% Pervious Area
0.248		20.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	50	0.0140	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.6	66	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.1	50	0.0120	0.77		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	104	0.0230	0.76		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	25	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
19.3	295	Total			

Summary for Subcatchment EX7.2:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.110	39	>75% Grass cover, Good, HSG A
0.001	80	>75% Grass cover, Good, HSG D
0.027	76	Gravel roads, HSG A
0.001	91	Gravel roads, HSG D
0.058	98	Paved parking, HSG A
0.079	98	Paved roads w/curbs & sewers, HSG A
0.068	98	Roofs, HSG A
2.313	30	Woods, Good, HSG A
2.658	36	Weighted Average
2.453		92.30% Pervious Area
0.205		7.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3	50	0.0450	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.8	106	0.0620	0.62		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.1	46	0.1700	8.37		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.0	283	0.0720	0.67		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
25.2	485	Total			

Summary for Subcatchment EX7.3:

Runoff = 0.0 cfs @ 22.25 hrs, Volume= 0.004 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.827	39	>75% Grass cover, Good, HSG A
0.024	39	>75% Grass cover, Good, HSG A
0.033	98	Paved parking, HSG A
0.191	98	Paved roads w/curbs & sewers, HSG A
0.044	98	Paved roads w/curbs & sewers, HSG A
0.181	98	Roofs, HSG A
0.001	98	Roofs, HSG A
2.129	30	Woods, Good, HSG A
0.209	30	Woods, Good, HSG A
3.639	41	Weighted Average
3.189		87.63% Pervious Area
0.450		12.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.8	36	0.0833	0.72		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	48	0.0410	1.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.6	286	0.0490	0.55		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.4	68	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.0	135	0.0259	1.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.2	115	0.0070	0.21		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
35.2	738	Total			

Summary for Subcatchment EX7.4:

Runoff = 0.4 cfs @ 12.93 hrs, Volume= 0.148 af, Depth= 0.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
1.572	39	>75% Grass cover, Good, HSG A
0.034	80	>75% Grass cover, Good, HSG D
0.391	98	Paved parking, HSG A
0.104	98	Paved parking, HSG D
0.222	98	Paved roads w/curbs & sewers, HSG A
0.115	98	Paved roads w/curbs & sewers, HSG D
0.288	98	Roofs, HSG A
0.002	98	Roofs, HSG D
4.035	30	Woods, Good, HSG A
2.201	77	Woods, Good, HSG D
8.965	52	Weighted Average
7.843		87.48% Pervious Area
1.122		12.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	50	0.1000	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.8	156	0.0750	0.68		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.6	132	0.0370	1.35		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
22.8	562	0.0269	0.41		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
39.3	900	Total			

Summary for Subcatchment EX7.5:

Runoff = 1.0 cfs @ 12.84 hrs, Volume= 0.381 af, Depth= 0.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
3.962	39	>75% Grass cover, Good, HSG A
0.722	80	>75% Grass cover, Good, HSG D
0.020	76	Gravel roads, HSG A
0.038	91	Gravel roads, HSG D
0.666	98	Paved parking, HSG A
0.079	98	Paved parking, HSG D
1.090	98	Paved roads w/curbs & sewers, HSG A
0.990	98	Roofs, HSG A
0.161	98	Roofs, HSG D
10.498	30	Woods, Good, HSG A
4.915	77	Woods, Good, HSG D
23.140	52	Weighted Average
20.155		87.10% Pervious Area
2.984		12.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.4	50	0.0220	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.9	59	0.0430	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.9	36	0.0020	0.31		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	33	0.0280	3.40		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.5	54	0.0680	1.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	118	0.0530	4.67		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.7	95	0.0070	0.59		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.4	225	0.0190	0.69		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	115	0.0290	3.46		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.6	58	0.0900	1.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
34.6	843	Total			

Summary for Subcatchment EX7.6:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.078	39	>75% Grass cover, Good, HSG A
0.041	76	Gravel roads, HSG A
0.775	30	Woods, Good, HSG A
0.894	33	Weighted Average
0.894		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	50	0.0760	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.7	124	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.1	174	Total			

Summary for Subcatchment EX7.7:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.131	39	>75% Grass cover, Good, HSG A
0.061	76	Gravel roads, HSG A
0.545	30	Woods, Good, HSG A
0.737	35	Weighted Average
0.737		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	50	0.1500	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.8	90	0.0290	0.85		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.2	140	Total			

Summary for Subcatchment EX7.8:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.293	39	>75% Grass cover, Good, HSG A
0.007	76	Gravel roads, HSG A
0.024	98	Paved parking, HSG A
0.021	98	Roofs, HSG A
0.855	30	Woods, Good, HSG A
1.201	35	Weighted Average
1.156		96.21% Pervious Area
0.045		3.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	41	0.1390	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.3	163	0.0083	0.64		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.9	350	0.0389	0.99		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.5	554	Total			

Summary for Subcatchment EX7.9:

Runoff = 0.0 cfs @ 16.97 hrs, Volume= 0.014 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
1.941	39	>75% Grass cover, Good, HSG A
0.258	98	Paved parking, HSG A
0.216	98	Paved roads w/curbs & sewers, HSG A
0.364	98	Roofs, HSG A
2.961	30	Woods, Good, HSG A
5.740	43	Weighted Average
4.902		85.40% Pervious Area
0.838		14.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	50	0.0400	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
3.3	87	0.0310	0.44		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.7	43	0.0230	1.06		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	167	0.0320	3.63		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.3	80	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.9	183	0.0450	1.06		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.2	610	Total			

Summary for Pond P7.6: Low Point

Inflow Area = 0.894 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 132.00' @ 0.00 hrs Surf.Area= 250 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	132.00'	6,580 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
132.00	250	0	0
133.00	2,120	1,185	1,185
134.00	2,690	2,405	3,590
135.00	3,290	2,990	6,580

Device	Routing	Invert	Outlet Devices
#1	Primary	134.50'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=132.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.0 cfs)

Summary for Pond P7.8: Low Point

Inflow Area = 1.201 ac, 3.79% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 168.00' @ 0.00 hrs Surf.Area= 300 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	168.00'	1,500 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
168.00	300	0	0
169.00	750	525	525
170.00	1,200	975	1,500

Device	Routing	Invert	Outlet Devices
#1	Primary	169.00'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=168.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.0 cfs)

Summary for Link DP7.1: Wetland 30

Inflow Area = 9.010 ac, 15.95% Impervious, Inflow Depth = 0.31" for 2-yr event
Inflow = 0.8 cfs @ 12.85 hrs, Volume= 0.234 af
Primary = 0.8 cfs @ 12.85 hrs, Volume= 0.234 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.10: Low Point

Inflow Area = 0.269 ac, 2.11% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 24.11 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 24.11 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.11: Low Point

Inflow Area = 1.587 ac, 17.29% Impervious, Inflow Depth = 0.06" for 2-yr event
Inflow = 0.0 cfs @ 15.31 hrs, Volume= 0.007 af
Primary = 0.0 cfs @ 15.31 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.12: Low Point

Inflow Area = 1.240 ac, 20.02% Impervious, Inflow Depth = 0.07" for 2-yr event
Inflow = 0.0 cfs @ 15.03 hrs, Volume= 0.007 af
Primary = 0.0 cfs @ 15.03 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.2: Wetland 32

Inflow Area = 2.658 ac, 7.70% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.3: Low Point

Inflow Area = 3.639 ac, 12.37% Impervious, Inflow Depth = 0.01" for 2-yr event
Inflow = 0.0 cfs @ 22.25 hrs, Volume= 0.004 af
Primary = 0.0 cfs @ 22.25 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.4: Low Point

Inflow Area = 8.965 ac, 12.52% Impervious, Inflow Depth = 0.20" for 2-yr event
Inflow = 0.4 cfs @ 12.93 hrs, Volume= 0.148 af
Primary = 0.4 cfs @ 12.93 hrs, Volume= 0.148 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.5: Wetland 31

Inflow Area = 23.140 ac, 12.90% Impervious, Inflow Depth = 0.20" for 2-yr event
Inflow = 1.0 cfs @ 12.84 hrs, Volume= 0.381 af
Primary = 1.0 cfs @ 12.84 hrs, Volume= 0.381 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.6: Low Point

Inflow Area = 0.894 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.7: Low Point

Inflow Area = 0.737 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.8: Low Point

Inflow Area = 1.201 ac, 3.79% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.9: Low Point

Inflow Area = 5.740 ac, 14.60% Impervious, Inflow Depth = 0.03" for 2-yr event
Inflow = 0.0 cfs @ 16.97 hrs, Volume= 0.014 af
Primary = 0.0 cfs @ 16.97 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentEX7.1: Runoff Area=9.010 ac 15.95% Impervious Runoff Depth=1.09"
Flow Length=968' Tc=44.3 min CN=56 Runoff=4.5 cfs 0.821 af

SubcatchmentEX7.10: Runoff Area=0.269 ac 2.11% Impervious Runoff Depth=0.19"
Flow Length=385' Tc=21.3 min CN=38 Runoff=0.0 cfs 0.004 af

SubcatchmentEX7.11: Runoff Area=1.587 ac 17.29% Impervious Runoff Depth=0.47"
Flow Length=443' Tc=17.6 min CN=45 Runoff=0.3 cfs 0.063 af

SubcatchmentEX7.12: Runoff Area=1.240 ac 20.02% Impervious Runoff Depth=0.52"
Flow Length=295' Tc=19.3 min CN=46 Runoff=0.3 cfs 0.054 af

SubcatchmentEX7.2: Runoff Area=2.658 ac 7.70% Impervious Runoff Depth=0.12"
Flow Length=485' Tc=25.2 min CN=36 Runoff=0.0 cfs 0.027 af

SubcatchmentEX7.3: Runoff Area=3.639 ac 12.37% Impervious Runoff Depth=0.30"
Flow Length=738' Tc=35.2 min CN=41 Runoff=0.2 cfs 0.090 af

SubcatchmentEX7.4: Runoff Area=8.965 ac 12.52% Impervious Runoff Depth=0.85"
Flow Length=900' Tc=39.3 min CN=52 Runoff=3.3 cfs 0.634 af

SubcatchmentEX7.5: Runoff Area=23.140 ac 12.90% Impervious Runoff Depth=0.85"
Flow Length=843' Tc=34.6 min CN=52 Runoff=9.2 cfs 1.635 af

SubcatchmentEX7.6: Runoff Area=0.894 ac 0.00% Impervious Runoff Depth=0.05"
Flow Length=174' Tc=14.1 min CN=33 Runoff=0.0 cfs 0.004 af

SubcatchmentEX7.7: Runoff Area=0.737 ac 0.00% Impervious Runoff Depth=0.10"
Flow Length=140' Tc=11.2 min CN=35 Runoff=0.0 cfs 0.006 af

SubcatchmentEX7.8: Runoff Area=1.201 ac 3.79% Impervious Runoff Depth=0.10"
Flow Length=554' Tc=18.5 min CN=35 Runoff=0.0 cfs 0.010 af

SubcatchmentEX7.9: Runoff Area=5.740 ac 14.60% Impervious Runoff Depth=0.38"
Flow Length=610' Tc=18.2 min CN=43 Runoff=0.8 cfs 0.183 af

Pond P7.6: Low Point Peak Elev=132.31' Storage=164 cf Inflow=0.0 cfs 0.004 af
Outflow=0.0 cfs 0.000 af

Pond P7.8: Low Point Peak Elev=168.85' Storage=419 cf Inflow=0.0 cfs 0.010 af
Outflow=0.0 cfs 0.000 af

Link DP7.1: Wetland 30 Inflow=4.5 cfs 0.821 af
Primary=4.5 cfs 0.821 af

Link DP7.10: Low Point Inflow=0.0 cfs 0.004 af
Primary=0.0 cfs 0.004 af

Link DP7.11: Low Point Inflow=0.3 cfs 0.063 af
Primary=0.3 cfs 0.063 af

Link DP7.12: Low Point Inflow=0.3 cfs 0.054 af
Primary=0.3 cfs 0.054 af

Link DP7.2: Wetland 32 Inflow=0.0 cfs 0.027 af
Primary=0.0 cfs 0.027 af

Link DP7.3: Low Point Inflow=0.2 cfs 0.090 af
Primary=0.2 cfs 0.090 af

Link DP7.4: Low Point Inflow=3.3 cfs 0.634 af
Primary=3.3 cfs 0.634 af

Link DP7.5: Wetland 31 Inflow=9.2 cfs 1.635 af
Primary=9.2 cfs 1.635 af

Link DP7.6: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.7: Low Point Inflow=0.0 cfs 0.006 af
Primary=0.0 cfs 0.006 af

Link DP7.8: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.9: Low Point Inflow=0.8 cfs 0.183 af
Primary=0.8 cfs 0.183 af

Total Runoff Area = 59.079 ac Runoff Volume = 3.530 af Average Runoff Depth = 0.72"
87.12% Pervious = 51.469 ac 12.88% Impervious = 7.610 ac

Summary for Subcatchment EX7.1:

Runoff = 4.5 cfs @ 12.70 hrs, Volume= 0.821 af, Depth= 1.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
2.052	39	>75% Grass cover, Good, HSG A
0.682	80	>75% Grass cover, Good, HSG D
0.072	76	Gravel roads, HSG A
0.030	91	Gravel roads, HSG D
0.535	98	Paved parking, HSG A
0.159	98	Paved parking, HSG D
0.480	98	Paved roads w/curbs & sewers, HSG A
0.122	98	Paved roads w/curbs & sewers, HSG D
0.141	98	Roofs, HSG A
3.133	30	Woods, Good, HSG A
1.604	77	Woods, Good, HSG D
9.010	56	Weighted Average
7.572		84.05% Pervious Area
1.437		15.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.9	50	0.0100	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.2	130	0.0070	0.42		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.7	263	0.0280	1.17		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	27	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.9	68	0.0330	1.27		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.1	320	0.0340	1.29		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.4	110	0.0230	0.76		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
44.3	968	Total			

Summary for Subcatchment EX7.10:

Runoff = 0.0 cfs @ 13.80 hrs, Volume= 0.004 af, Depth= 0.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.006	39	>75% Grass cover, Good, HSG A
0.039	76	Gravel roads, HSG A
0.006	98	Paved parking, HSG A
0.219	30	Woods, Good, HSG A
0.269	38	Weighted Average
0.263		97.89% Pervious Area
0.006		2.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	35	0.0700	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
11.7	350	0.0400	0.50		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
21.3	385	Total			

Summary for Subcatchment EX7.11:

Runoff = 0.3 cfs @ 12.47 hrs, Volume= 0.063 af, Depth= 0.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.624	39	>75% Grass cover, Good, HSG A
0.087	98	Paved parking, HSG A
0.149	98	Paved roads w/curbs & sewers, HSG A
0.038	98	Roofs, HSG A
0.689	30	Woods, Good, HSG A
1.587	45	Weighted Average
1.313		82.71% Pervious Area
0.274		17.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.0270	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
4.2	180	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.0	118	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	95	0.0170	2.65		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
17.6	443	Total			

Summary for Subcatchment EX7.12:

Runoff = 0.3 cfs @ 12.47 hrs, Volume= 0.054 af, Depth= 0.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.321	39	>75% Grass cover, Good, HSG A
0.084	98	Paved parking, HSG A
0.141	98	Paved roads w/curbs & sewers, HSG A
0.023	98	Roofs, HSG A
0.670	30	Woods, Good, HSG A
1.240	46	Weighted Average
0.991		79.98% Pervious Area
0.248		20.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	50	0.0140	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.6	66	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.1	50	0.0120	0.77		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	104	0.0230	0.76		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	25	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
19.3	295	Total			

Summary for Subcatchment EX7.2:

Runoff = 0.0 cfs @ 15.04 hrs, Volume= 0.027 af, Depth= 0.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.110	39	>75% Grass cover, Good, HSG A
0.001	80	>75% Grass cover, Good, HSG D
0.027	76	Gravel roads, HSG A
0.001	91	Gravel roads, HSG D
0.058	98	Paved parking, HSG A
0.079	98	Paved roads w/curbs & sewers, HSG A
0.068	98	Roofs, HSG A
2.313	30	Woods, Good, HSG A
2.658	36	Weighted Average
2.453		92.30% Pervious Area
0.205		7.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3	50	0.0450	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.8	106	0.0620	0.62		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.1	46	0.1700	8.37		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.0	283	0.0720	0.67		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
25.2	485	Total			

Summary for Subcatchment EX7.3:

Runoff = 0.2 cfs @ 12.87 hrs, Volume= 0.090 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.827	39	>75% Grass cover, Good, HSG A
0.024	39	>75% Grass cover, Good, HSG A
0.033	98	Paved parking, HSG A
0.191	98	Paved roads w/curbs & sewers, HSG A
0.044	98	Paved roads w/curbs & sewers, HSG A
0.181	98	Roofs, HSG A
0.001	98	Roofs, HSG A
2.129	30	Woods, Good, HSG A
0.209	30	Woods, Good, HSG A
3.639	41	Weighted Average
3.189		87.63% Pervious Area
0.450		12.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.8	36	0.0833	0.72		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	48	0.0410	1.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.6	286	0.0490	0.55		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.4	68	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.0	135	0.0259	1.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.2	115	0.0070	0.21		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
35.2	738	Total			

Summary for Subcatchment EX7.4:

Runoff = 3.3 cfs @ 12.67 hrs, Volume= 0.634 af, Depth= 0.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
1.572	39	>75% Grass cover, Good, HSG A
0.034	80	>75% Grass cover, Good, HSG D
0.391	98	Paved parking, HSG A
0.104	98	Paved parking, HSG D
0.222	98	Paved roads w/curbs & sewers, HSG A
0.115	98	Paved roads w/curbs & sewers, HSG D
0.288	98	Roofs, HSG A
0.002	98	Roofs, HSG D
4.035	30	Woods, Good, HSG A
2.201	77	Woods, Good, HSG D
8.965	52	Weighted Average
7.843		87.48% Pervious Area
1.122		12.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	50	0.1000	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.8	156	0.0750	0.68		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.6	132	0.0370	1.35		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
22.8	562	0.0269	0.41		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
39.3	900	Total			

Summary for Subcatchment EX7.5:

Runoff = 9.2 cfs @ 12.61 hrs, Volume= 1.635 af, Depth= 0.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
3.962	39	>75% Grass cover, Good, HSG A
0.722	80	>75% Grass cover, Good, HSG D
0.020	76	Gravel roads, HSG A
0.038	91	Gravel roads, HSG D
0.666	98	Paved parking, HSG A
0.079	98	Paved parking, HSG D
1.090	98	Paved roads w/curbs & sewers, HSG A
0.990	98	Roofs, HSG A
0.161	98	Roofs, HSG D
10.498	30	Woods, Good, HSG A
4.915	77	Woods, Good, HSG D
23.140	52	Weighted Average
20.155		87.10% Pervious Area
2.984		12.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.4	50	0.0220	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.9	59	0.0430	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.9	36	0.0020	0.31		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	33	0.0280	3.40		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.5	54	0.0680	1.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	118	0.0530	4.67		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.7	95	0.0070	0.59		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.4	225	0.0190	0.69		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	115	0.0290	3.46		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.6	58	0.0900	1.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
34.6	843	Total			

Summary for Subcatchment EX7.6:

Runoff = 0.0 cfs @ 15.84 hrs, Volume= 0.004 af, Depth= 0.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.078	39	>75% Grass cover, Good, HSG A
0.041	76	Gravel roads, HSG A
0.775	30	Woods, Good, HSG A
0.894	33	Weighted Average
0.894		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	50	0.0760	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.7	124	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.1	174	Total			

Summary for Subcatchment EX7.7:

Runoff = 0.0 cfs @ 15.07 hrs, Volume= 0.006 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.131	39	>75% Grass cover, Good, HSG A
0.061	76	Gravel roads, HSG A
0.545	30	Woods, Good, HSG A
0.737	35	Weighted Average
0.737		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	50	0.1500	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.8	90	0.0290	0.85		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.2	140	Total			

Summary for Subcatchment EX7.8:

Runoff = 0.0 cfs @ 15.19 hrs, Volume= 0.010 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.293	39	>75% Grass cover, Good, HSG A
0.007	76	Gravel roads, HSG A
0.024	98	Paved parking, HSG A
0.021	98	Roofs, HSG A
0.855	30	Woods, Good, HSG A
1.201	35	Weighted Average
1.156		96.21% Pervious Area
0.045		3.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	41	0.1390	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.3	163	0.0083	0.64		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.9	350	0.0389	0.99		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.5	554	Total			

Summary for Subcatchment EX7.9:

Runoff = 0.8 cfs @ 12.52 hrs, Volume= 0.183 af, Depth= 0.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
1.941	39	>75% Grass cover, Good, HSG A
0.258	98	Paved parking, HSG A
0.216	98	Paved roads w/curbs & sewers, HSG A
0.364	98	Roofs, HSG A
2.961	30	Woods, Good, HSG A
5.740	43	Weighted Average
4.902		85.40% Pervious Area
0.838		14.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	50	0.0400	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
3.3	87	0.0310	0.44		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.7	43	0.0230	1.06		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	167	0.0320	3.63		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.3	80	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.9	183	0.0450	1.06		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.2	610	Total			

Summary for Pond P7.6: Low Point

Inflow Area = 0.894 ac, 0.00% Impervious, Inflow Depth = 0.05" for 10-yr event
Inflow = 0.0 cfs @ 15.84 hrs, Volume= 0.004 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 132.31' @ 24.79 hrs Surf.Area= 822 sf Storage= 164 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	132.00'	6,580 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
132.00	250	0	0
133.00	2,120	1,185	1,185
134.00	2,690	2,405	3,590
135.00	3,290	2,990	6,580

Device	Routing	Invert	Outlet Devices
#1	Primary	134.50'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=132.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.0 cfs)

Summary for Pond P7.8: Low Point

Inflow Area = 1.201 ac, 3.79% Impervious, Inflow Depth = 0.10" for 10-yr event
Inflow = 0.0 cfs @ 15.19 hrs, Volume= 0.010 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 168.85' @ 25.05 hrs Surf.Area= 684 sf Storage= 419 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	168.00'	1,500 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
168.00	300	0	0
169.00	750	525	525
170.00	1,200	975	1,500

Device	Routing	Invert	Outlet Devices
#1	Primary	169.00'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=168.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.0 cfs)

Summary for Link DP7.1: Wetland 30

Inflow Area = 9.010 ac, 15.95% Impervious, Inflow Depth = 1.09" for 10-yr event
Inflow = 4.5 cfs @ 12.70 hrs, Volume= 0.821 af
Primary = 4.5 cfs @ 12.70 hrs, Volume= 0.821 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.10: Low Point

Inflow Area = 0.269 ac, 2.11% Impervious, Inflow Depth = 0.19" for 10-yr event
Inflow = 0.0 cfs @ 13.80 hrs, Volume= 0.004 af
Primary = 0.0 cfs @ 13.80 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.11: Low Point

Inflow Area = 1.587 ac, 17.29% Impervious, Inflow Depth = 0.47" for 10-yr event
Inflow = 0.3 cfs @ 12.47 hrs, Volume= 0.063 af
Primary = 0.3 cfs @ 12.47 hrs, Volume= 0.063 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.12: Low Point

Inflow Area = 1.240 ac, 20.02% Impervious, Inflow Depth = 0.52" for 10-yr event
Inflow = 0.3 cfs @ 12.47 hrs, Volume= 0.054 af
Primary = 0.3 cfs @ 12.47 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.2: Wetland 32

Inflow Area = 2.658 ac, 7.70% Impervious, Inflow Depth = 0.12" for 10-yr event
Inflow = 0.0 cfs @ 15.04 hrs, Volume= 0.027 af
Primary = 0.0 cfs @ 15.04 hrs, Volume= 0.027 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.3: Low Point

Inflow Area = 3.639 ac, 12.37% Impervious, Inflow Depth = 0.30" for 10-yr event
Inflow = 0.2 cfs @ 12.87 hrs, Volume= 0.090 af
Primary = 0.2 cfs @ 12.87 hrs, Volume= 0.090 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.4: Low Point

Inflow Area = 8.965 ac, 12.52% Impervious, Inflow Depth = 0.85" for 10-yr event
Inflow = 3.3 cfs @ 12.67 hrs, Volume= 0.634 af
Primary = 3.3 cfs @ 12.67 hrs, Volume= 0.634 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.5: Wetland 31

Inflow Area = 23.140 ac, 12.90% Impervious, Inflow Depth = 0.85" for 10-yr event
Inflow = 9.2 cfs @ 12.61 hrs, Volume= 1.635 af
Primary = 9.2 cfs @ 12.61 hrs, Volume= 1.635 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.6: Low Point

Inflow Area = 0.894 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.7: Low Point

Inflow Area = 0.737 ac, 0.00% Impervious, Inflow Depth = 0.10" for 10-yr event
Inflow = 0.0 cfs @ 15.07 hrs, Volume= 0.006 af
Primary = 0.0 cfs @ 15.07 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.8: Low Point

Inflow Area = 1.201 ac, 3.79% Impervious, Inflow Depth = 0.00" for 10-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.9: Low Point

Inflow Area = 5.740 ac, 14.60% Impervious, Inflow Depth = 0.38" for 10-yr event
Inflow = 0.8 cfs @ 12.52 hrs, Volume= 0.183 af
Primary = 0.8 cfs @ 12.52 hrs, Volume= 0.183 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentEX7.1: Runoff Area=9.010 ac 15.95% Impervious Runoff Depth=1.73"
Flow Length=968' Tc=44.3 min CN=56 Runoff=7.8 cfs 1.302 af

SubcatchmentEX7.10: Runoff Area=0.269 ac 2.11% Impervious Runoff Depth=0.46"
Flow Length=385' Tc=21.3 min CN=38 Runoff=0.0 cfs 0.010 af

SubcatchmentEX7.11: Runoff Area=1.587 ac 17.29% Impervious Runoff Depth=0.90"
Flow Length=443' Tc=17.6 min CN=45 Runoff=0.8 cfs 0.118 af

SubcatchmentEX7.12: Runoff Area=1.240 ac 20.02% Impervious Runoff Depth=0.96"
Flow Length=295' Tc=19.3 min CN=46 Runoff=0.7 cfs 0.100 af

SubcatchmentEX7.2: Runoff Area=2.658 ac 7.70% Impervious Runoff Depth=0.35"
Flow Length=485' Tc=25.2 min CN=36 Runoff=0.2 cfs 0.077 af

SubcatchmentEX7.3: Runoff Area=3.639 ac 12.37% Impervious Runoff Depth=0.63"
Flow Length=738' Tc=35.2 min CN=41 Runoff=0.8 cfs 0.192 af

SubcatchmentEX7.4: Runoff Area=8.965 ac 12.52% Impervious Runoff Depth=1.41"
Flow Length=900' Tc=39.3 min CN=52 Runoff=6.3 cfs 1.055 af

SubcatchmentEX7.5: Runoff Area=23.140 ac 12.90% Impervious Runoff Depth=1.41"
Flow Length=843' Tc=34.6 min CN=52 Runoff=17.4 cfs 2.722 af

SubcatchmentEX7.6: Runoff Area=0.894 ac 0.00% Impervious Runoff Depth=0.21"
Flow Length=174' Tc=14.1 min CN=33 Runoff=0.0 cfs 0.016 af

SubcatchmentEX7.7: Runoff Area=0.737 ac 0.00% Impervious Runoff Depth=0.30"
Flow Length=140' Tc=11.2 min CN=35 Runoff=0.1 cfs 0.018 af

SubcatchmentEX7.8: Runoff Area=1.201 ac 3.79% Impervious Runoff Depth=0.30"
Flow Length=554' Tc=18.5 min CN=35 Runoff=0.1 cfs 0.030 af

SubcatchmentEX7.9: Runoff Area=5.740 ac 14.60% Impervious Runoff Depth=0.76"
Flow Length=610' Tc=18.2 min CN=43 Runoff=2.1 cfs 0.364 af

Pond P7.6: Low Point Peak Elev=132.73' Storage=680 cf Inflow=0.0 cfs 0.016 af
Outflow=0.0 cfs 0.000 af

Pond P7.8: Low Point Peak Elev=169.01' Storage=535 cf Inflow=0.1 cfs 0.030 af
Outflow=0.0 cfs 0.018 af

Link DP7.1: Wetland 30 Inflow=7.8 cfs 1.302 af
Primary=7.8 cfs 1.302 af

Link DP7.10: Low Point Inflow=0.0 cfs 0.010 af
Primary=0.0 cfs 0.010 af

Link DP7.11: Low Point Inflow=0.8 cfs 0.118 af
Primary=0.8 cfs 0.118 af

Link DP7.12: Low Point Inflow=0.7 cfs 0.100 af
Primary=0.7 cfs 0.100 af

Link DP7.2: Wetland 32 Inflow=0.2 cfs 0.077 af
Primary=0.2 cfs 0.077 af

Link DP7.3: Low Point Inflow=0.8 cfs 0.192 af
Primary=0.8 cfs 0.192 af

Link DP7.4: Low Point Inflow=6.3 cfs 1.055 af
Primary=6.3 cfs 1.055 af

Link DP7.5: Wetland 31 Inflow=17.4 cfs 2.722 af
Primary=17.4 cfs 2.722 af

Link DP7.6: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.7: Low Point Inflow=0.1 cfs 0.018 af
Primary=0.1 cfs 0.018 af

Link DP7.8: Low Point Inflow=0.0 cfs 0.018 af
Primary=0.0 cfs 0.018 af

Link DP7.9: Low Point Inflow=2.1 cfs 0.364 af
Primary=2.1 cfs 0.364 af

Total Runoff Area = 59.079 ac Runoff Volume = 6.004 af Average Runoff Depth = 1.22"
87.12% Pervious = 51.469 ac 12.88% Impervious = 7.610 ac

Summary for Subcatchment EX7.1:

Runoff = 7.8 cfs @ 12.66 hrs, Volume= 1.302 af, Depth= 1.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
2.052	39	>75% Grass cover, Good, HSG A
0.682	80	>75% Grass cover, Good, HSG D
0.072	76	Gravel roads, HSG A
0.030	91	Gravel roads, HSG D
0.535	98	Paved parking, HSG A
0.159	98	Paved parking, HSG D
0.480	98	Paved roads w/curbs & sewers, HSG A
0.122	98	Paved roads w/curbs & sewers, HSG D
0.141	98	Roofs, HSG A
3.133	30	Woods, Good, HSG A
1.604	77	Woods, Good, HSG D
9.010	56	Weighted Average
7.572		84.05% Pervious Area
1.437		15.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.9	50	0.0100	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.2	130	0.0070	0.42		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.7	263	0.0280	1.17		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	27	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.9	68	0.0330	1.27		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.1	320	0.0340	1.29		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.4	110	0.0230	0.76		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
44.3	968	Total			

Summary for Subcatchment EX7.10:

Runoff = 0.0 cfs @ 12.57 hrs, Volume= 0.010 af, Depth= 0.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.006	39	>75% Grass cover, Good, HSG A
0.039	76	Gravel roads, HSG A
0.006	98	Paved parking, HSG A
0.219	30	Woods, Good, HSG A
0.269	38	Weighted Average
0.263		97.89% Pervious Area
0.006		2.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	35	0.0700	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
11.7	350	0.0400	0.50		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
21.3	385	Total			

Summary for Subcatchment EX7.11:

Runoff = 0.8 cfs @ 12.34 hrs, Volume= 0.118 af, Depth= 0.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.624	39	>75% Grass cover, Good, HSG A
0.087	98	Paved parking, HSG A
0.149	98	Paved roads w/curbs & sewers, HSG A
0.038	98	Roofs, HSG A
0.689	30	Woods, Good, HSG A
1.587	45	Weighted Average
1.313		82.71% Pervious Area
0.274		17.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.0270	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
4.2	180	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.0	118	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	95	0.0170	2.65		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
17.6	443	Total			

Summary for Subcatchment EX7.12:

Runoff = 0.7 cfs @ 12.37 hrs, Volume= 0.100 af, Depth= 0.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.321	39	>75% Grass cover, Good, HSG A
0.084	98	Paved parking, HSG A
0.141	98	Paved roads w/curbs & sewers, HSG A
0.023	98	Roofs, HSG A
0.670	30	Woods, Good, HSG A
1.240	46	Weighted Average
0.991		79.98% Pervious Area
0.248		20.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	50	0.0140	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.6	66	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.1	50	0.0120	0.77		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	104	0.0230	0.76		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	25	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
19.3	295	Total			

Summary for Subcatchment EX7.2:

Runoff = 0.2 cfs @ 12.69 hrs, Volume= 0.077 af, Depth= 0.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.110	39	>75% Grass cover, Good, HSG A
0.001	80	>75% Grass cover, Good, HSG D
0.027	76	Gravel roads, HSG A
0.001	91	Gravel roads, HSG D
0.058	98	Paved parking, HSG A
0.079	98	Paved roads w/curbs & sewers, HSG A
0.068	98	Roofs, HSG A
2.313	30	Woods, Good, HSG A
2.658	36	Weighted Average
2.453		92.30% Pervious Area
0.205		7.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3	50	0.0450	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.8	106	0.0620	0.62		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.1	46	0.1700	8.37		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.0	283	0.0720	0.67		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
25.2	485	Total			

Summary for Subcatchment EX7.3:

Runoff = 0.8 cfs @ 12.71 hrs, Volume= 0.192 af, Depth= 0.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.827	39	>75% Grass cover, Good, HSG A
0.024	39	>75% Grass cover, Good, HSG A
0.033	98	Paved parking, HSG A
0.191	98	Paved roads w/curbs & sewers, HSG A
0.044	98	Paved roads w/curbs & sewers, HSG A
0.181	98	Roofs, HSG A
0.001	98	Roofs, HSG A
2.129	30	Woods, Good, HSG A
0.209	30	Woods, Good, HSG A
3.639	41	Weighted Average
3.189		87.63% Pervious Area
0.450		12.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.8	36	0.0833	0.72		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	48	0.0410	1.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.6	286	0.0490	0.55		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.4	68	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.0	135	0.0259	1.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.2	115	0.0070	0.21		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
35.2	738	Total			

Summary for Subcatchment EX7.4:

Runoff = 6.3 cfs @ 12.62 hrs, Volume= 1.055 af, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
1.572	39	>75% Grass cover, Good, HSG A
0.034	80	>75% Grass cover, Good, HSG D
0.391	98	Paved parking, HSG A
0.104	98	Paved parking, HSG D
0.222	98	Paved roads w/curbs & sewers, HSG A
0.115	98	Paved roads w/curbs & sewers, HSG D
0.288	98	Roofs, HSG A
0.002	98	Roofs, HSG D
4.035	30	Woods, Good, HSG A
2.201	77	Woods, Good, HSG D
8.965	52	Weighted Average
7.843		87.48% Pervious Area
1.122		12.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	50	0.1000	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.8	156	0.0750	0.68		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.6	132	0.0370	1.35		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
22.8	562	0.0269	0.41		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
39.3	900	Total			

Summary for Subcatchment EX7.5:

Runoff = 17.4 cfs @ 12.57 hrs, Volume= 2.722 af, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
3.962	39	>75% Grass cover, Good, HSG A
0.722	80	>75% Grass cover, Good, HSG D
0.020	76	Gravel roads, HSG A
0.038	91	Gravel roads, HSG D
0.666	98	Paved parking, HSG A
0.079	98	Paved parking, HSG D
1.090	98	Paved roads w/curbs & sewers, HSG A
0.990	98	Roofs, HSG A
0.161	98	Roofs, HSG D
10.498	30	Woods, Good, HSG A
4.915	77	Woods, Good, HSG D
23.140	52	Weighted Average
20.155		87.10% Pervious Area
2.984		12.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.4	50	0.0220	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.9	59	0.0430	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.9	36	0.0020	0.31		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	33	0.0280	3.40		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.5	54	0.0680	1.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	118	0.0530	4.67		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.7	95	0.0070	0.59		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.4	225	0.0190	0.69		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	115	0.0290	3.46		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.6	58	0.0900	1.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
34.6	843	Total			

Summary for Subcatchment EX7.6:

Runoff = 0.0 cfs @ 13.80 hrs, Volume= 0.016 af, Depth= 0.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.078	39	>75% Grass cover, Good, HSG A
0.041	76	Gravel roads, HSG A
0.775	30	Woods, Good, HSG A
0.894	33	Weighted Average
0.894		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	50	0.0760	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.7	124	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.1	174	Total			

Summary for Subcatchment EX7.7:

Runoff = 0.1 cfs @ 12.51 hrs, Volume= 0.018 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.131	39	>75% Grass cover, Good, HSG A
0.061	76	Gravel roads, HSG A
0.545	30	Woods, Good, HSG A
0.737	35	Weighted Average
0.737		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	50	0.1500	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.8	90	0.0290	0.85		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.2	140	Total			

Summary for Subcatchment EX7.8:

Runoff = 0.1 cfs @ 12.63 hrs, Volume= 0.030 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.293	39	>75% Grass cover, Good, HSG A
0.007	76	Gravel roads, HSG A
0.024	98	Paved parking, HSG A
0.021	98	Roofs, HSG A
0.855	30	Woods, Good, HSG A
1.201	35	Weighted Average
1.156		96.21% Pervious Area
0.045		3.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	41	0.1390	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.3	163	0.0083	0.64		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.9	350	0.0389	0.99		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.5	554	Total			

Summary for Subcatchment EX7.9:

Runoff = 2.1 cfs @ 12.40 hrs, Volume= 0.364 af, Depth= 0.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
1.941	39	>75% Grass cover, Good, HSG A
0.258	98	Paved parking, HSG A
0.216	98	Paved roads w/curbs & sewers, HSG A
0.364	98	Roofs, HSG A
2.961	30	Woods, Good, HSG A
5.740	43	Weighted Average
4.902		85.40% Pervious Area
0.838		14.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	50	0.0400	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
3.3	87	0.0310	0.44		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.7	43	0.0230	1.06		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	167	0.0320	3.63		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.3	80	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.9	183	0.0450	1.06		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.2	610	Total			

Summary for Pond P7.6: Low Point

Inflow Area = 0.894 ac, 0.00% Impervious, Inflow Depth = 0.21" for 25-yr event
Inflow = 0.0 cfs @ 13.80 hrs, Volume= 0.016 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 132.73' @ 24.79 hrs Surf.Area= 1,614 sf Storage= 680 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	132.00'	6,580 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
132.00	250	0	0
133.00	2,120	1,185	1,185
134.00	2,690	2,405	3,590
135.00	3,290	2,990	6,580

Device	Routing	Invert	Outlet Devices
#1	Primary	134.50'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=132.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.0 cfs)

Summary for Pond P7.8: Low Point

Inflow Area = 1.201 ac, 3.79% Impervious, Inflow Depth = 0.30" for 25-yr event
Inflow = 0.1 cfs @ 12.63 hrs, Volume= 0.030 af
Outflow = 0.0 cfs @ 15.36 hrs, Volume= 0.018 af, Atten= 42%, Lag= 163.8 min
Primary = 0.0 cfs @ 15.36 hrs, Volume= 0.018 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 169.01' @ 15.36 hrs Surf.Area= 756 sf Storage= 535 cf

Plug-Flow detention time= 271.2 min calculated for 0.018 af (60% of inflow)
Center-of-Mass det. time= 129.8 min (1,135.9 - 1,006.1)

Volume	Invert	Avail.Storage	Storage Description
#1	168.00'	1,500 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
168.00	300	0	0
169.00	750	525	525
170.00	1,200	975	1,500

Device	Routing	Invert	Outlet Devices
#1	Primary	169.00'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.0 cfs @ 15.36 hrs HW=169.01' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 0.0 cfs @ 0.27 fps)

Summary for Link DP7.1: Wetland 30

Inflow Area = 9.010 ac, 15.95% Impervious, Inflow Depth = 1.73" for 25-yr event
Inflow = 7.8 cfs @ 12.66 hrs, Volume= 1.302 af
Primary = 7.8 cfs @ 12.66 hrs, Volume= 1.302 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.10: Low Point

Inflow Area = 0.269 ac, 2.11% Impervious, Inflow Depth = 0.46" for 25-yr event
Inflow = 0.0 cfs @ 12.57 hrs, Volume= 0.010 af
Primary = 0.0 cfs @ 12.57 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.11: Low Point

Inflow Area = 1.587 ac, 17.29% Impervious, Inflow Depth = 0.90" for 25-yr event
Inflow = 0.8 cfs @ 12.34 hrs, Volume= 0.118 af
Primary = 0.8 cfs @ 12.34 hrs, Volume= 0.118 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.12: Low Point

Inflow Area = 1.240 ac, 20.02% Impervious, Inflow Depth = 0.96" for 25-yr event
Inflow = 0.7 cfs @ 12.37 hrs, Volume= 0.100 af
Primary = 0.7 cfs @ 12.37 hrs, Volume= 0.100 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.2: Wetland 32

Inflow Area = 2.658 ac, 7.70% Impervious, Inflow Depth = 0.35" for 25-yr event
Inflow = 0.2 cfs @ 12.69 hrs, Volume= 0.077 af
Primary = 0.2 cfs @ 12.69 hrs, Volume= 0.077 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.3: Low Point

Inflow Area = 3.639 ac, 12.37% Impervious, Inflow Depth = 0.63" for 25-yr event
Inflow = 0.8 cfs @ 12.71 hrs, Volume= 0.192 af
Primary = 0.8 cfs @ 12.71 hrs, Volume= 0.192 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.4: Low Point

Inflow Area = 8.965 ac, 12.52% Impervious, Inflow Depth = 1.41" for 25-yr event
Inflow = 6.3 cfs @ 12.62 hrs, Volume= 1.055 af
Primary = 6.3 cfs @ 12.62 hrs, Volume= 1.055 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.5: Wetland 31

Inflow Area = 23.140 ac, 12.90% Impervious, Inflow Depth = 1.41" for 25-yr event
Inflow = 17.4 cfs @ 12.57 hrs, Volume= 2.722 af
Primary = 17.4 cfs @ 12.57 hrs, Volume= 2.722 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.6: Low Point

Inflow Area = 0.894 ac, 0.00% Impervious, Inflow Depth = 0.00" for 25-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.7: Low Point

Inflow Area = 0.737 ac, 0.00% Impervious, Inflow Depth = 0.30" for 25-yr event
Inflow = 0.1 cfs @ 12.51 hrs, Volume= 0.018 af
Primary = 0.1 cfs @ 12.51 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.8: Low Point

Inflow Area = 1.201 ac, 3.79% Impervious, Inflow Depth = 0.18" for 25-yr event
Inflow = 0.0 cfs @ 15.36 hrs, Volume= 0.018 af
Primary = 0.0 cfs @ 15.36 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.9: Low Point

Inflow Area = 5.740 ac, 14.60% Impervious, Inflow Depth = 0.76" for 25-yr event
Inflow = 2.1 cfs @ 12.40 hrs, Volume= 0.364 af
Primary = 2.1 cfs @ 12.40 hrs, Volume= 0.364 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentEX7.1: Runoff Area=9.010 ac 15.95% Impervious Runoff Depth=3.32"
Flow Length=968' Tc=44.3 min CN=56 Runoff=15.9 cfs 2.492 af

SubcatchmentEX7.10: Runoff Area=0.269 ac 2.11% Impervious Runoff Depth=1.32"
Flow Length=385' Tc=21.3 min CN=38 Runoff=0.2 cfs 0.029 af

SubcatchmentEX7.11: Runoff Area=1.587 ac 17.29% Impervious Runoff Depth=2.06"
Flow Length=443' Tc=17.6 min CN=45 Runoff=2.3 cfs 0.273 af

SubcatchmentEX7.12: Runoff Area=1.240 ac 20.02% Impervious Runoff Depth=2.17"
Flow Length=295' Tc=19.3 min CN=46 Runoff=1.9 cfs 0.224 af

SubcatchmentEX7.2: Runoff Area=2.658 ac 7.70% Impervious Runoff Depth=1.11"
Flow Length=485' Tc=25.2 min CN=36 Runoff=1.4 cfs 0.247 af

SubcatchmentEX7.3: Runoff Area=3.639 ac 12.37% Impervious Runoff Depth=1.63"
Flow Length=738' Tc=35.2 min CN=41 Runoff=2.9 cfs 0.494 af

SubcatchmentEX7.4: Runoff Area=8.965 ac 12.52% Impervious Runoff Depth=2.85"
Flow Length=900' Tc=39.3 min CN=52 Runoff=14.1 cfs 2.132 af

SubcatchmentEX7.5: Runoff Area=23.140 ac 12.90% Impervious Runoff Depth=2.85"
Flow Length=843' Tc=34.6 min CN=52 Runoff=38.9 cfs 5.503 af

SubcatchmentEX7.6: Runoff Area=0.894 ac 0.00% Impervious Runoff Depth=0.83"
Flow Length=174' Tc=14.1 min CN=33 Runoff=0.3 cfs 0.062 af

SubcatchmentEX7.7: Runoff Area=0.737 ac 0.00% Impervious Runoff Depth=1.02"
Flow Length=140' Tc=11.2 min CN=35 Runoff=0.4 cfs 0.063 af

SubcatchmentEX7.8: Runoff Area=1.201 ac 3.79% Impervious Runoff Depth=1.02"
Flow Length=554' Tc=18.5 min CN=35 Runoff=0.6 cfs 0.102 af

SubcatchmentEX7.9: Runoff Area=5.740 ac 14.60% Impervious Runoff Depth=1.84"
Flow Length=610' Tc=18.2 min CN=43 Runoff=7.2 cfs 0.881 af

Pond P7.6: Low Point Peak Elev=133.65' Storage=2,692 cf Inflow=0.3 cfs 0.062 af
Outflow=0.0 cfs 0.000 af

Pond P7.8: Low Point Peak Elev=169.08' Storage=587 cf Inflow=0.6 cfs 0.102 af
Outflow=0.5 cfs 0.090 af

Link DP7.1: Wetland 30 Inflow=15.9 cfs 2.492 af
Primary=15.9 cfs 2.492 af

Link DP7.10: Low Point Inflow=0.2 cfs 0.029 af
Primary=0.2 cfs 0.029 af

Link DP7.11: Low Point Inflow=2.3 cfs 0.273 af
Primary=2.3 cfs 0.273 af

Link DP7.12: Low Point Inflow=1.9 cfs 0.224 af
Primary=1.9 cfs 0.224 af

Link DP7.2: Wetland 32 Inflow=1.4 cfs 0.247 af
Primary=1.4 cfs 0.247 af

Link DP7.3: Low Point Inflow=2.9 cfs 0.494 af
Primary=2.9 cfs 0.494 af

Link DP7.4: Low Point Inflow=14.1 cfs 2.132 af
Primary=14.1 cfs 2.132 af

Link DP7.5: Wetland 31 Inflow=38.9 cfs 5.503 af
Primary=38.9 cfs 5.503 af

Link DP7.6: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.7: Low Point Inflow=0.4 cfs 0.063 af
Primary=0.4 cfs 0.063 af

Link DP7.8: Low Point Inflow=0.5 cfs 0.090 af
Primary=0.5 cfs 0.090 af

Link DP7.9: Low Point Inflow=7.2 cfs 0.881 af
Primary=7.2 cfs 0.881 af

Total Runoff Area = 59.079 ac Runoff Volume = 12.501 af Average Runoff Depth = 2.54"
87.12% Pervious = 51.469 ac 12.88% Impervious = 7.610 ac

Summary for Subcatchment EX7.1:

Runoff = 15.9 cfs @ 12.65 hrs, Volume= 2.492 af, Depth= 3.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
2.052	39	>75% Grass cover, Good, HSG A
0.682	80	>75% Grass cover, Good, HSG D
0.072	76	Gravel roads, HSG A
0.030	91	Gravel roads, HSG D
0.535	98	Paved parking, HSG A
0.159	98	Paved parking, HSG D
0.480	98	Paved roads w/curbs & sewers, HSG A
0.122	98	Paved roads w/curbs & sewers, HSG D
0.141	98	Roofs, HSG A
3.133	30	Woods, Good, HSG A
1.604	77	Woods, Good, HSG D
9.010	56	Weighted Average
7.572		84.05% Pervious Area
1.437		15.95% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.9	50	0.0100	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.2	130	0.0070	0.42		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.7	263	0.0280	1.17		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	27	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.9	68	0.0330	1.27		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.1	320	0.0340	1.29		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.4	110	0.0230	0.76		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
44.3	968	Total			

Summary for Subcatchment EX7.10:

Runoff = 0.2 cfs @ 12.40 hrs, Volume= 0.029 af, Depth= 1.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.006	39	>75% Grass cover, Good, HSG A
0.039	76	Gravel roads, HSG A
0.006	98	Paved parking, HSG A
0.219	30	Woods, Good, HSG A
0.269	38	Weighted Average
0.263		97.89% Pervious Area
0.006		2.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.6	35	0.0700	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
11.7	350	0.0400	0.50		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
21.3	385	Total			

Summary for Subcatchment EX7.11:

Runoff = 2.3 cfs @ 12.28 hrs, Volume= 0.273 af, Depth= 2.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.624	39	>75% Grass cover, Good, HSG A
0.087	98	Paved parking, HSG A
0.149	98	Paved roads w/curbs & sewers, HSG A
0.038	98	Roofs, HSG A
0.689	30	Woods, Good, HSG A
1.587	45	Weighted Average
1.313		82.71% Pervious Area
0.274		17.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.0270	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
4.2	180	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.0	118	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	95	0.0170	2.65		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
17.6	443	Total			

Summary for Subcatchment EX7.12:

Runoff = 1.9 cfs @ 12.30 hrs, Volume= 0.224 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.321	39	>75% Grass cover, Good, HSG A
0.084	98	Paved parking, HSG A
0.141	98	Paved roads w/curbs & sewers, HSG A
0.023	98	Roofs, HSG A
0.670	30	Woods, Good, HSG A
1.240	46	Weighted Average
0.991		79.98% Pervious Area
0.248		20.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	50	0.0140	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.6	66	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.1	50	0.0120	0.77		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	104	0.0230	0.76		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	25	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
19.3	295	Total			

Summary for Subcatchment EX7.2:

Runoff = 1.4 cfs @ 12.51 hrs, Volume= 0.247 af, Depth= 1.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.110	39	>75% Grass cover, Good, HSG A
0.001	80	>75% Grass cover, Good, HSG D
0.027	76	Gravel roads, HSG A
0.001	91	Gravel roads, HSG D
0.058	98	Paved parking, HSG A
0.079	98	Paved roads w/curbs & sewers, HSG A
0.068	98	Roofs, HSG A
2.313	30	Woods, Good, HSG A
2.658	36	Weighted Average
2.453		92.30% Pervious Area
0.205		7.70% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3	50	0.0450	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.8	106	0.0620	0.62		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.1	46	0.1700	8.37		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.0	283	0.0720	0.67		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
25.2	485	Total			

Summary for Subcatchment EX7.3:

Runoff = 2.9 cfs @ 12.59 hrs, Volume= 0.494 af, Depth= 1.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.827	39	>75% Grass cover, Good, HSG A
0.024	39	>75% Grass cover, Good, HSG A
0.033	98	Paved parking, HSG A
0.191	98	Paved roads w/curbs & sewers, HSG A
0.044	98	Paved roads w/curbs & sewers, HSG A
0.181	98	Roofs, HSG A
0.001	98	Roofs, HSG A
2.129	30	Woods, Good, HSG A
0.209	30	Woods, Good, HSG A
3.639	41	Weighted Average
3.189		87.63% Pervious Area
0.450		12.37% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.8	36	0.0833	0.72		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	48	0.0410	1.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.6	286	0.0490	0.55		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.4	68	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.0	135	0.0259	1.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.2	115	0.0070	0.21		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
35.2	738	Total			

Summary for Subcatchment EX7.4:

Runoff = 14.1 cfs @ 12.58 hrs, Volume= 2.132 af, Depth= 2.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
1.572	39	>75% Grass cover, Good, HSG A
0.034	80	>75% Grass cover, Good, HSG D
0.391	98	Paved parking, HSG A
0.104	98	Paved parking, HSG D
0.222	98	Paved roads w/curbs & sewers, HSG A
0.115	98	Paved roads w/curbs & sewers, HSG D
0.288	98	Roofs, HSG A
0.002	98	Roofs, HSG D
4.035	30	Woods, Good, HSG A
2.201	77	Woods, Good, HSG D
8.965	52	Weighted Average
7.843		87.48% Pervious Area
1.122		12.52% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	50	0.1000	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.8	156	0.0750	0.68		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.6	132	0.0370	1.35		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
22.8	562	0.0269	0.41		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
39.3	900	Total			

Summary for Subcatchment EX7.5:

Runoff = 38.9 cfs @ 12.53 hrs, Volume= 5.503 af, Depth= 2.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
3.962	39	>75% Grass cover, Good, HSG A
0.722	80	>75% Grass cover, Good, HSG D
0.020	76	Gravel roads, HSG A
0.038	91	Gravel roads, HSG D
0.666	98	Paved parking, HSG A
0.079	98	Paved parking, HSG D
1.090	98	Paved roads w/curbs & sewers, HSG A
0.990	98	Roofs, HSG A
0.161	98	Roofs, HSG D
10.498	30	Woods, Good, HSG A
4.915	77	Woods, Good, HSG D
23.140	52	Weighted Average
20.155		87.10% Pervious Area
2.984		12.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.4	50	0.0220	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.9	59	0.0430	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.9	36	0.0020	0.31		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	33	0.0280	3.40		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.5	54	0.0680	1.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	118	0.0530	4.67		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.7	95	0.0070	0.59		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.4	225	0.0190	0.69		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	115	0.0290	3.46		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.6	58	0.0900	1.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
34.6	843	Total			

Summary for Subcatchment EX7.6:

Runoff = 0.3 cfs @ 12.42 hrs, Volume= 0.062 af, Depth= 0.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.078	39	>75% Grass cover, Good, HSG A
0.041	76	Gravel roads, HSG A
0.775	30	Woods, Good, HSG A
0.894	33	Weighted Average
0.894		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.4	50	0.0760	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.7	124	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.1	174	Total			

Summary for Subcatchment EX7.7:

Runoff = 0.4 cfs @ 12.26 hrs, Volume= 0.063 af, Depth= 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.131	39	>75% Grass cover, Good, HSG A
0.061	76	Gravel roads, HSG A
0.545	30	Woods, Good, HSG A
0.737	35	Weighted Average
0.737		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	50	0.1500	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.8	90	0.0290	0.85		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.2	140	Total			

Summary for Subcatchment EX7.8:

Runoff = 0.6 cfs @ 12.43 hrs, Volume= 0.102 af, Depth= 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.293	39	>75% Grass cover, Good, HSG A
0.007	76	Gravel roads, HSG A
0.024	98	Paved parking, HSG A
0.021	98	Roofs, HSG A
0.855	30	Woods, Good, HSG A
1.201	35	Weighted Average
1.156		96.21% Pervious Area
0.045		3.79% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.3	41	0.1390	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.3	163	0.0083	0.64		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.9	350	0.0389	0.99		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.5	554	Total			

Summary for Subcatchment EX7.9:

Runoff = 7.2 cfs @ 12.30 hrs, Volume= 0.881 af, Depth= 1.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
1.941	39	>75% Grass cover, Good, HSG A
0.258	98	Paved parking, HSG A
0.216	98	Paved roads w/curbs & sewers, HSG A
0.364	98	Roofs, HSG A
2.961	30	Woods, Good, HSG A
5.740	43	Weighted Average
4.902		85.40% Pervious Area
0.838		14.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	50	0.0400	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
3.3	87	0.0310	0.44		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.7	43	0.0230	1.06		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	167	0.0320	3.63		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.3	80	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.9	183	0.0450	1.06		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.2	610	Total			

Summary for Pond P7.6: Low Point

Inflow Area = 0.894 ac, 0.00% Impervious, Inflow Depth = 0.83" for 100-yr event
Inflow = 0.3 cfs @ 12.42 hrs, Volume= 0.062 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 133.65' @ 24.79 hrs Surf.Area= 2,493 sf Storage= 2,692 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	132.00'	6,580 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
132.00	250	0	0
133.00	2,120	1,185	1,185
134.00	2,690	2,405	3,590
135.00	3,290	2,990	6,580

Device	Routing	Invert	Outlet Devices
#1	Primary	134.50'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=132.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.0 cfs)

Summary for Pond P7.8: Low Point

Inflow Area = 1.201 ac, 3.79% Impervious, Inflow Depth = 1.02" for 100-yr event
Inflow = 0.6 cfs @ 12.43 hrs, Volume= 0.102 af
Outflow = 0.5 cfs @ 12.54 hrs, Volume= 0.090 af, Atten= 7%, Lag= 7.1 min
Primary = 0.5 cfs @ 12.54 hrs, Volume= 0.090 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 169.08' @ 12.54 hrs Surf.Area= 786 sf Storage= 587 cf

Plug-Flow detention time= 84.0 min calculated for 0.090 af (88% of inflow)
Center-of-Mass det. time= 29.7 min (966.8 - 937.1)

Volume	Invert	Avail.Storage	Storage Description
#1	168.00'	1,500 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
168.00	300	0	0
169.00	750	525	525
170.00	1,200	975	1,500

Device	Routing	Invert	Outlet Devices
#1	Primary	169.00'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.5 cfs @ 12.54 hrs HW=169.08' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 0.5 cfs @ 0.67 fps)

Summary for Link DP7.1: Wetland 30

Inflow Area = 9.010 ac, 15.95% Impervious, Inflow Depth = 3.32" for 100-yr event
Inflow = 15.9 cfs @ 12.65 hrs, Volume= 2.492 af
Primary = 15.9 cfs @ 12.65 hrs, Volume= 2.492 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.10: Low Point

Inflow Area = 0.269 ac, 2.11% Impervious, Inflow Depth = 1.32" for 100-yr event
Inflow = 0.2 cfs @ 12.40 hrs, Volume= 0.029 af
Primary = 0.2 cfs @ 12.40 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.11: Low Point

Inflow Area = 1.587 ac, 17.29% Impervious, Inflow Depth = 2.06" for 100-yr event
Inflow = 2.3 cfs @ 12.28 hrs, Volume= 0.273 af
Primary = 2.3 cfs @ 12.28 hrs, Volume= 0.273 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.12: Low Point

Inflow Area = 1.240 ac, 20.02% Impervious, Inflow Depth = 2.17" for 100-yr event
Inflow = 1.9 cfs @ 12.30 hrs, Volume= 0.224 af
Primary = 1.9 cfs @ 12.30 hrs, Volume= 0.224 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.2: Wetland 32

Inflow Area = 2.658 ac, 7.70% Impervious, Inflow Depth = 1.11" for 100-yr event
Inflow = 1.4 cfs @ 12.51 hrs, Volume= 0.247 af
Primary = 1.4 cfs @ 12.51 hrs, Volume= 0.247 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.3: Low Point

Inflow Area = 3.639 ac, 12.37% Impervious, Inflow Depth = 1.63" for 100-yr event
Inflow = 2.9 cfs @ 12.59 hrs, Volume= 0.494 af
Primary = 2.9 cfs @ 12.59 hrs, Volume= 0.494 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.4: Low Point

Inflow Area = 8.965 ac, 12.52% Impervious, Inflow Depth = 2.85" for 100-yr event
Inflow = 14.1 cfs @ 12.58 hrs, Volume= 2.132 af
Primary = 14.1 cfs @ 12.58 hrs, Volume= 2.132 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.5: Wetland 31

Inflow Area = 23.140 ac, 12.90% Impervious, Inflow Depth = 2.85" for 100-yr event
Inflow = 38.9 cfs @ 12.53 hrs, Volume= 5.503 af
Primary = 38.9 cfs @ 12.53 hrs, Volume= 5.503 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.6: Low Point

Inflow Area = 0.894 ac, 0.00% Impervious, Inflow Depth = 0.00" for 100-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.7: Low Point

Inflow Area = 0.737 ac, 0.00% Impervious, Inflow Depth = 1.02" for 100-yr event
Inflow = 0.4 cfs @ 12.26 hrs, Volume= 0.063 af
Primary = 0.4 cfs @ 12.26 hrs, Volume= 0.063 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.8: Low Point

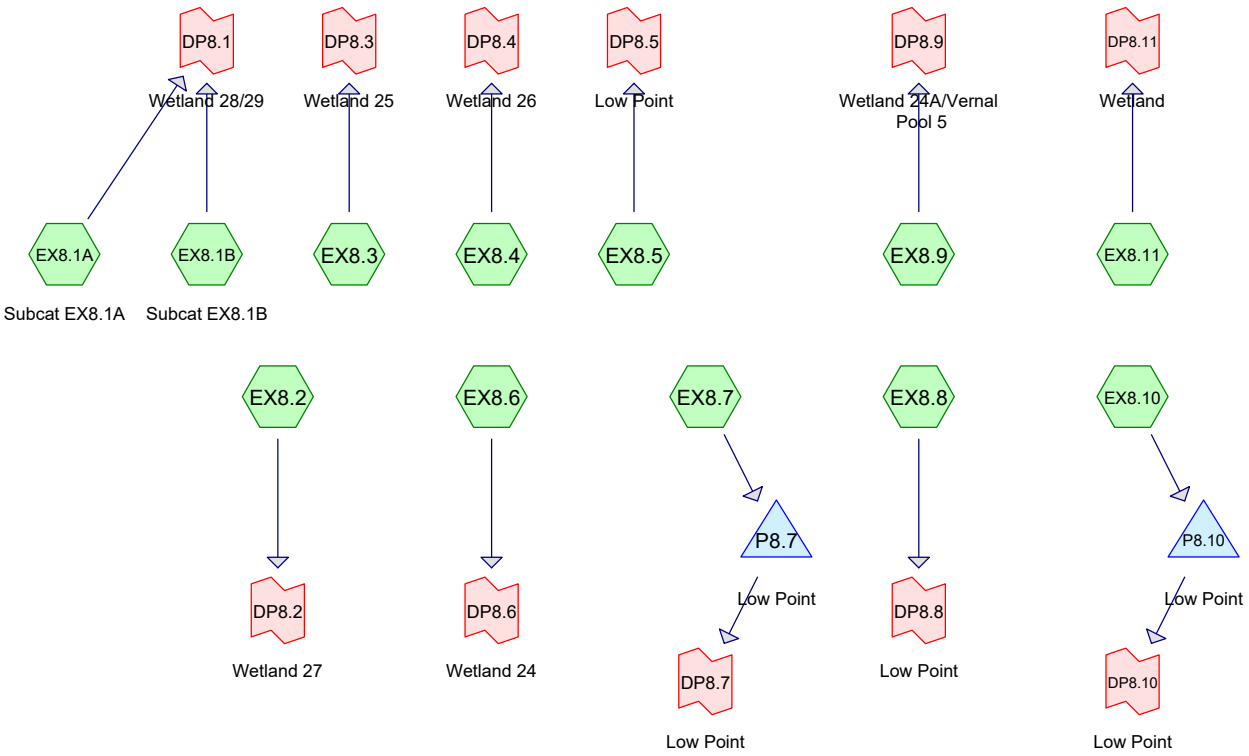
Inflow Area = 1.201 ac, 3.79% Impervious, Inflow Depth = 0.90" for 100-yr event
Inflow = 0.5 cfs @ 12.54 hrs, Volume= 0.090 af
Primary = 0.5 cfs @ 12.54 hrs, Volume= 0.090 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.9: Low Point

Inflow Area = 5.740 ac, 14.60% Impervious, Inflow Depth = 1.84" for 100-yr event
Inflow = 7.2 cfs @ 12.30 hrs, Volume= 0.881 af
Primary = 7.2 cfs @ 12.30 hrs, Volume= 0.881 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs



Subcat Reach Pond Link

Routing Diagram for 14009.00-EX-Segment 8_ResponsetoComments
Prepared by VHB, Printed 7/10/2020

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentEX8.10: Runoff Area=3.634 ac 67.45% Impervious Runoff Depth=0.36"
Flow Length=497' Tc=14.1 min CN=91 Runoff=1.1 cfs 0.109 af

SubcatchmentEX8.11: Runoff Area=0.878 ac 37.23% Impervious Runoff Depth=0.17"
Flow Length=145' Tc=8.9 min CN=85 Runoff=0.1 cfs 0.013 af

SubcatchmentEX8.1A: Subcat EX8.1A Runoff Area=19.886 ac 16.06% Impervious Runoff Depth=0.00"
Flow Length=356' Tc=17.5 min CN=56 Runoff=0.0 cfs 0.000 af

SubcatchmentEX8.1B: Subcat EX8.1B Runoff Area=0.305 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=892' Tc=36.7 min CN=32 Runoff=0.0 cfs 0.000 af

SubcatchmentEX8.2: Runoff Area=16.199 ac 2.32% Impervious Runoff Depth=0.00"
Flow Length=911' Tc=49.4 min CN=43 Runoff=0.0 cfs 0.000 af

SubcatchmentEX8.3: Runoff Area=15.735 ac 7.63% Impervious Runoff Depth=0.00"
Flow Length=764' Tc=51.8 min CN=54 Runoff=0.0 cfs 0.000 af

SubcatchmentEX8.4: Runoff Area=1.029 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=806' Tc=30.0 min CN=34 Runoff=0.0 cfs 0.000 af

SubcatchmentEX8.5: Runoff Area=3.974 ac 40.84% Impervious Runoff Depth=0.00"
Flow Length=764' Tc=24.9 min CN=68 Runoff=0.0 cfs 0.000 af

SubcatchmentEX8.6: Runoff Area=24.840 ac 0.58% Impervious Runoff Depth=0.00"
Flow Length=1,434' Tc=62.4 min CN=65 Runoff=0.0 cfs 0.000 af

SubcatchmentEX8.7: Runoff Area=0.755 ac 44.48% Impervious Runoff Depth=0.01"
Flow Length=87' Tc=17.8 min CN=72 Runoff=0.0 cfs 0.001 af

SubcatchmentEX8.8: Runoff Area=0.881 ac 54.84% Impervious Runoff Depth=0.02"
Flow Length=418' Tc=34.8 min CN=74 Runoff=0.0 cfs 0.002 af

SubcatchmentEX8.9: Runoff Area=0.970 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=147' Tc=30.3 min CN=41 Runoff=0.0 cfs 0.000 af

Pond P8.10: Low Point Peak Elev=134.18' Storage=4,740 cf Inflow=1.1 cfs 0.109 af
Outflow=0.0 cfs 0.000 af

Pond P8.7: Low Point Peak Elev=135.07' Storage=33 cf Inflow=0.0 cfs 0.001 af
Outflow=0.0 cfs 0.000 af

Link DP8.1: Wetland 28/29 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.10: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.11: Wetland Inflow=0.1 cfs 0.013 af
Primary=0.1 cfs 0.013 af

Link DP8.2: Wetland 27 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.3: Wetland 25 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.4: Wetland 26 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.5: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.6: Wetland 24 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.7: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.8: Low Point Inflow=0.0 cfs 0.002 af
Primary=0.0 cfs 0.002 af

Link DP8.9: Wetland 24A/Vernal Pool 5 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Total Runoff Area = 89.087 ac Runoff Volume = 0.124 af Average Runoff Depth = 0.02"
88.62% Pervious = 78.952 ac 11.38% Impervious = 10.134 ac

Summary for Subcatchment EX8.10:

Runoff = 1.1 cfs @ 12.20 hrs, Volume= 0.109 af, Depth= 0.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.003	91	Gravel roads, HSG D
1.408	98	Paved parking, HSG D
0.269	98	Paved roads w/curbs & sewers, HSG D
0.775	98	Roofs, HSG D
1.180	77	Woods, Good, HSG D
3.634	91	Weighted Average
1.183		32.55% Pervious Area
2.451		67.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.22		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
1.0	184	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
12.4	263	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.1	497	Total			

Summary for Subcatchment EX8.11:

Runoff = 0.1 cfs @ 12.15 hrs, Volume= 0.013 af, Depth= 0.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.278	98	Paved parking, HSG D
0.028	98	Paved roads w/curbs & sewers, HSG D
0.020	98	Roofs, HSG D
0.551	77	Woods, Good, HSG D
0.878	85	Weighted Average
0.551		62.77% Pervious Area
0.327		37.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	16	0.0625	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.6	34	0.0120	0.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
2.9	95	0.0120	0.55		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
8.9	145	Total			

Summary for Subcatchment EX8.1A: Subcat EX8.1A

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
1.938	39	>75% Grass cover, Good, HSG A
0.003	80	>75% Grass cover, Good, HSG D
0.034	76	Gravel roads, HSG A
0.028	91	Gravel roads, HSG D
1.228	98	Paved parking, HSG A
0.788	98	Paved roads w/curbs & sewers, HSG A
1.177	98	Roofs, HSG A
8.564	30	Woods, Good, HSG A
0.000	70	Woods, Good, HSG C
6.126	77	Woods, Good, HSG D
19.886	56	Weighted Average
16.693		83.94% Pervious Area
3.193		16.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	22	0.0138	0.89		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
6.6	28	0.0040	0.07		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
10.5	306	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
17.5	356	Total			

Summary for Subcatchment EX8.1B: Subcat EX8.1B

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.010	76	Gravel roads, HSG A
0.295	30	Woods, Good, HSG A
0.305	32	Weighted Average
0.305		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	50	0.1880	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
28.1	842	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
36.7	892	Total			

Summary for Subcatchment EX8.2:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.081	76	Gravel roads, HSG A
0.029	91	Gravel roads, HSG D
0.092	98	Paved parking, HSG A
0.227	98	Paved roads w/curbs & sewers, HSG A
0.058	98	Roofs, HSG A
12.034	30	Woods, Good, HSG A
3.679	77	Woods, Good, HSG D
16.199	43	Weighted Average
15.823		97.68% Pervious Area
0.376		2.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.1	50	0.0160	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.8	500	0.0184	0.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.5	361	0.0190	0.34		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
49.4	911	Total			

Summary for Subcatchment EX8.3:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.261	39	>75% Grass cover, Good, HSG A
0.058	76	Gravel roads, HSG A
0.494	91	Gravel roads, HSG D
0.517	98	Paved parking, HSG A
0.254	98	Paved roads w/curbs & sewers, HSG A
0.429	98	Roofs, HSG A
8.130	30	Woods, Good, HSG A
5.591	77	Woods, Good, HSG D
15.735	54	Weighted Average
14.534		92.37% Pervious Area
1.201		7.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
30.7	714	0.0240	0.39		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
51.8	764	Total			

Summary for Subcatchment EX8.4:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.068	76	Gravel roads, HSG A
0.948	30	Woods, Good, HSG A
0.013	77	Woods, Good, HSG D
1.029	34	Weighted Average
1.029		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	50	0.1500	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
20.6	756	0.0150	0.61		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
30.0	806	Total			

Summary for Subcatchment EX8.5:

Runoff = 0.0 cfs @ 24.04 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.074	76	Gravel roads, HSG A
0.001	91	Gravel roads, HSG D
0.448	98	Paved parking, HSG D
1.175	98	Roofs, HSG D
1.471	30	Woods, Good, HSG A
0.805	77	Woods, Good, HSG D
3.974	68	Weighted Average
2.351		59.16% Pervious Area
1.623		40.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	50	0.1480	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
15.4	714	0.0240	0.77		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
24.9	764	Total			

Summary for Subcatchment EX8.6:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.476	76	Gravel roads, HSG A
0.031	91	Gravel roads, HSG D
0.145	98	Paved parking, HSG D
6.266	30	Woods, Good, HSG A
17.922	77	Woods, Good, HSG D
24.840	65	Weighted Average
24.695		99.42% Pervious Area
0.145		0.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.9	50	0.0120	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
36.5	1,384	0.0160	0.63		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
62.4	1,434	Total			

Summary for Subcatchment EX8.7:

Runoff = 0.0 cfs @ 15.68 hrs, Volume= 0.001 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.011	76	Gravel roads, HSG A
0.232	98	Paved parking, HSG D
0.104	98	Roofs, HSG D
0.222	30	Woods, Good, HSG A
0.186	77	Woods, Good, HSG D
0.755	72	Weighted Average
0.419		55.52% Pervious Area
0.336		44.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	50	0.0320	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.3	37	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.8	87	Total			

Summary for Subcatchment EX8.8:

Runoff = 0.0 cfs @ 15.20 hrs, Volume= 0.002 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.036	76	Gravel roads, HSG A
0.006	91	Gravel roads, HSG D
0.234	98	Paved parking, HSG A
0.171	98	Paved parking, HSG D
0.079	98	Roofs, HSG D
0.279	30	Woods, Good, HSG A
0.077	77	Woods, Good, HSG D
0.881	74	Weighted Average
0.398		45.16% Pervious Area
0.483		54.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
13.7	368	0.0080	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
34.8	418	Total			

Summary for Subcatchment EX8.9:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.031	76	Gravel roads, HSG A
0.004	91	Gravel roads, HSG D
0.736	30	Woods, Good, HSG A
0.199	77	Woods, Good, HSG D
0.970	41	Weighted Average
0.970		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.4	50	0.0140	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.9	97	0.0120	0.27		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
30.3	147	Total			

Summary for Pond P8.10: Low Point

Inflow Area = 3.634 ac, 67.45% Impervious, Inflow Depth = 0.36" for 1" event
Inflow = 1.1 cfs @ 12.20 hrs, Volume= 0.109 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 134.18' @ 24.79 hrs Surf.Area= 5,093 sf Storage= 4,740 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	133.00'	9,535 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
133.00	2,935	0	0
134.00	4,745	3,840	3,840
135.00	6,645	5,695	9,535

Device	Routing	Invert	Outlet Devices
#1	Primary	134.60'	**25.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=133.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P8.7: Low Point

Inflow Area = 0.755 ac, 44.48% Impervious, Inflow Depth = 0.01" for 1" event
Inflow = 0.0 cfs @ 15.68 hrs, Volume= 0.001 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 135.07' @ 25.01 hrs Surf.Area= 509 sf Storage= 33 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	135.00'	2,343 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
135.00	460	0	0
136.00	1,185	823	823
137.00	1,855	1,520	2,343

Device	Routing	Invert	Outlet Devices
#1	Primary	136.60'	**10.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=135.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link DP8.1: Wetland 28/29

Inflow Area = 20.191 ac, 15.81% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.10: Low Point

Inflow Area = 3.634 ac, 67.45% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.11: Wetland

Inflow Area = 0.878 ac, 37.23% Impervious, Inflow Depth = 0.17" for 1" event
Inflow = 0.1 cfs @ 12.15 hrs, Volume= 0.013 af
Primary = 0.1 cfs @ 12.15 hrs, Volume= 0.013 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.2: Wetland 27

Inflow Area = 16.199 ac, 2.32% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.3: Wetland 25

Inflow Area = 15.735 ac, 7.63% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.4: Wetland 26

Inflow Area = 1.029 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.5: Low Point

Inflow Area = 3.974 ac, 40.84% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 24.04 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 24.04 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.6: Wetland 24

Inflow Area = 24.840 ac, 0.58% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.7: Low Point

Inflow Area = 0.755 ac, 44.48% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.8: Low Point

Inflow Area = 0.881 ac, 54.84% Impervious, Inflow Depth = 0.02" for 1" event
Inflow = 0.0 cfs @ 15.20 hrs, Volume= 0.002 af
Primary = 0.0 cfs @ 15.20 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.9: Wetland 24A/Vernal Pool 5

Inflow Area = 0.970 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentEX8.10: Runoff Area=3.634 ac 67.45% Impervious Runoff Depth=2.35"
Flow Length=497' Tc=14.1 min CN=91 Runoff=7.7 cfs 0.712 af

SubcatchmentEX8.11: Runoff Area=0.878 ac 37.23% Impervious Runoff Depth=1.84"
Flow Length=145' Tc=8.9 min CN=85 Runoff=1.7 cfs 0.135 af

SubcatchmentEX8.1A: Subcat EX8.1A Runoff Area=19.886 ac 16.06% Impervious Runoff Depth=0.31"
Flow Length=356' Tc=17.5 min CN=56 Runoff=2.6 cfs 0.517 af

SubcatchmentEX8.1B: Subcat EX8.1B Runoff Area=0.305 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=892' Tc=36.7 min CN=32 Runoff=0.0 cfs 0.000 af

SubcatchmentEX8.2: Runoff Area=16.199 ac 2.32% Impervious Runoff Depth=0.03"
Flow Length=911' Tc=49.4 min CN=43 Runoff=0.1 cfs 0.041 af

SubcatchmentEX8.3: Runoff Area=15.735 ac 7.63% Impervious Runoff Depth=0.25"
Flow Length=764' Tc=51.8 min CN=54 Runoff=0.9 cfs 0.330 af

SubcatchmentEX8.4: Runoff Area=1.029 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=806' Tc=30.0 min CN=34 Runoff=0.0 cfs 0.000 af

SubcatchmentEX8.5: Runoff Area=3.974 ac 40.84% Impervious Runoff Depth=0.79"
Flow Length=764' Tc=24.9 min CN=68 Runoff=2.0 cfs 0.261 af

SubcatchmentEX8.6: Runoff Area=24.840 ac 0.58% Impervious Runoff Depth=0.65"
Flow Length=1,434' Tc=62.4 min CN=65 Runoff=5.9 cfs 1.345 af

SubcatchmentEX8.7: Runoff Area=0.755 ac 44.48% Impervious Runoff Depth=0.99"
Flow Length=87' Tc=17.8 min CN=72 Runoff=0.6 cfs 0.062 af

SubcatchmentEX8.8: Runoff Area=0.881 ac 54.84% Impervious Runoff Depth=1.10"
Flow Length=418' Tc=34.8 min CN=74 Runoff=0.6 cfs 0.081 af

SubcatchmentEX8.9: Runoff Area=0.970 ac 0.00% Impervious Runoff Depth=0.01"
Flow Length=147' Tc=30.3 min CN=41 Runoff=0.0 cfs 0.001 af

Pond P8.10: Low Point Peak Elev=134.83' Storage=8,423 cf Inflow=7.7 cfs 0.712 af
Outflow=7.4 cfs 0.551 af

Pond P8.7: Low Point Peak Elev=136.62' Storage=1,681 cf Inflow=0.6 cfs 0.062 af
Outflow=0.1 cfs 0.024 af

Link DP8.1: Wetland 28/29 Inflow=2.6 cfs 0.517 af
Primary=2.6 cfs 0.517 af

Link DP8.10: Low Point Inflow=7.4 cfs 0.551 af
Primary=7.4 cfs 0.551 af

Link DP8.11: Wetland Inflow=1.7 cfs 0.135 af
Primary=1.7 cfs 0.135 af

Link DP8.2: Wetland 27 Inflow=0.1 cfs 0.041 af
Primary=0.1 cfs 0.041 af

Link DP8.3: Wetland 25 Inflow=0.9 cfs 0.330 af
Primary=0.9 cfs 0.330 af

Link DP8.4: Wetland 26 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.5: Low Point Inflow=2.0 cfs 0.261 af
Primary=2.0 cfs 0.261 af

Link DP8.6: Wetland 24 Inflow=5.9 cfs 1.345 af
Primary=5.9 cfs 1.345 af

Link DP8.7: Low Point Inflow=0.1 cfs 0.024 af
Primary=0.1 cfs 0.024 af

Link DP8.8: Low Point Inflow=0.6 cfs 0.081 af
Primary=0.6 cfs 0.081 af

Link DP8.9: Wetland 24A/Vernal Pool 5 Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Total Runoff Area = 89.087 ac Runoff Volume = 3.485 af Average Runoff Depth = 0.47"
88.62% Pervious = 78.952 ac 11.38% Impervious = 10.134 ac

Summary for Subcatchment EX8.10:

Runoff = 7.7 cfs @ 12.19 hrs, Volume= 0.712 af, Depth= 2.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.003	91	Gravel roads, HSG D
1.408	98	Paved parking, HSG D
0.269	98	Paved roads w/curbs & sewers, HSG D
0.775	98	Roofs, HSG D
1.180	77	Woods, Good, HSG D
3.634	91	Weighted Average
1.183		32.55% Pervious Area
2.451		67.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.22		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
1.0	184	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
12.4	263	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.1	497	Total			

Summary for Subcatchment EX8.11:

Runoff = 1.7 cfs @ 12.13 hrs, Volume= 0.135 af, Depth= 1.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.278	98	Paved parking, HSG D
0.028	98	Paved roads w/curbs & sewers, HSG D
0.020	98	Roofs, HSG D
0.551	77	Woods, Good, HSG D
0.878	85	Weighted Average
0.551		62.77% Pervious Area
0.327		37.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	16	0.0625	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.6	34	0.0120	0.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
2.9	95	0.0120	0.55		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
8.9	145	Total			

Summary for Subcatchment EX8.1A: Subcat EX8.1A

Runoff = 2.6 cfs @ 12.47 hrs, Volume= 0.517 af, Depth= 0.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
1.938	39	>75% Grass cover, Good, HSG A
0.003	80	>75% Grass cover, Good, HSG D
0.034	76	Gravel roads, HSG A
0.028	91	Gravel roads, HSG D
1.228	98	Paved parking, HSG A
0.788	98	Paved roads w/curbs & sewers, HSG A
1.177	98	Roofs, HSG A
8.564	30	Woods, Good, HSG A
0.000	70	Woods, Good, HSG C
6.126	77	Woods, Good, HSG D
19.886	56	Weighted Average
16.693		83.94% Pervious Area
3.193		16.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	22	0.0138	0.89		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
6.6	28	0.0040	0.07		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
10.5	306	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
17.5	356	Total			

Summary for Subcatchment EX8.1B: Subcat EX8.1B

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.010	76	Gravel roads, HSG A
0.295	30	Woods, Good, HSG A
0.305	32	Weighted Average
0.305		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	50	0.1880	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
28.1	842	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
36.7	892	Total			

Summary for Subcatchment EX8.2:

Runoff = 0.1 cfs @ 17.40 hrs, Volume= 0.041 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.081	76	Gravel roads, HSG A
0.029	91	Gravel roads, HSG D
0.092	98	Paved parking, HSG A
0.227	98	Paved roads w/curbs & sewers, HSG A
0.058	98	Roofs, HSG A
12.034	30	Woods, Good, HSG A
3.679	77	Woods, Good, HSG D
16.199	43	Weighted Average
15.823		97.68% Pervious Area
0.376		2.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.1	50	0.0160	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.8	500	0.0184	0.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.5	361	0.0190	0.34		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
49.4	911	Total			

Summary for Subcatchment EX8.3:

Runoff = 0.9 cfs @ 13.06 hrs, Volume= 0.330 af, Depth= 0.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.261	39	>75% Grass cover, Good, HSG A
0.058	76	Gravel roads, HSG A
0.494	91	Gravel roads, HSG D
0.517	98	Paved parking, HSG A
0.254	98	Paved roads w/curbs & sewers, HSG A
0.429	98	Roofs, HSG A
8.130	30	Woods, Good, HSG A
5.591	77	Woods, Good, HSG D
15.735	54	Weighted Average
14.534		92.37% Pervious Area
1.201		7.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
30.7	714	0.0240	0.39		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
51.8	764	Total			

Summary for Subcatchment EX8.4:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.068	76	Gravel roads, HSG A
0.948	30	Woods, Good, HSG A
0.013	77	Woods, Good, HSG D
1.029	34	Weighted Average
1.029		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	50	0.1500	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
20.6	756	0.0150	0.61		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
30.0	806	Total			

Summary for Subcatchment EX8.5:

Runoff = 2.0 cfs @ 12.40 hrs, Volume= 0.261 af, Depth= 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.074	76	Gravel roads, HSG A
0.001	91	Gravel roads, HSG D
0.448	98	Paved parking, HSG D
1.175	98	Roofs, HSG D
1.471	30	Woods, Good, HSG A
0.805	77	Woods, Good, HSG D
3.974	68	Weighted Average
2.351		59.16% Pervious Area
1.623		40.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	50	0.1480	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
15.4	714	0.0240	0.77		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
24.9	764	Total			

Summary for Subcatchment EX8.6:

Runoff = 5.9 cfs @ 12.97 hrs, Volume= 1.345 af, Depth= 0.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.476	76	Gravel roads, HSG A
0.031	91	Gravel roads, HSG D
0.145	98	Paved parking, HSG D
6.266	30	Woods, Good, HSG A
17.922	77	Woods, Good, HSG D
24.840	65	Weighted Average
24.695		99.42% Pervious Area
0.145		0.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.9	50	0.0120	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
36.5	1,384	0.0160	0.63		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
62.4	1,434	Total			

Summary for Subcatchment EX8.7:

Runoff = 0.6 cfs @ 12.27 hrs, Volume= 0.062 af, Depth= 0.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.011	76	Gravel roads, HSG A
0.232	98	Paved parking, HSG D
0.104	98	Roofs, HSG D
0.222	30	Woods, Good, HSG A
0.186	77	Woods, Good, HSG D
0.755	72	Weighted Average
0.419		55.52% Pervious Area
0.336		44.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	50	0.0320	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.3	37	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.8	87	Total			

Summary for Subcatchment EX8.8:

Runoff = 0.6 cfs @ 12.53 hrs, Volume= 0.081 af, Depth= 1.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.036	76	Gravel roads, HSG A
0.006	91	Gravel roads, HSG D
0.234	98	Paved parking, HSG A
0.171	98	Paved parking, HSG D
0.079	98	Roofs, HSG D
0.279	30	Woods, Good, HSG A
0.077	77	Woods, Good, HSG D
0.881	74	Weighted Average
0.398		45.16% Pervious Area
0.483		54.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
13.7	368	0.0080	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
34.8	418	Total			

Summary for Subcatchment EX8.9:

Runoff = 0.0 cfs @ 22.12 hrs, Volume= 0.001 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.031	76	Gravel roads, HSG A
0.004	91	Gravel roads, HSG D
0.736	30	Woods, Good, HSG A
0.199	77	Woods, Good, HSG D
0.970	41	Weighted Average
0.970		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.4	50	0.0140	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.9	97	0.0120	0.27		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
30.3	147	Total			

Summary for Pond P8.10: Low Point

Inflow Area = 3.634 ac, 67.45% Impervious, Inflow Depth = 2.35" for 2-yr event
Inflow = 7.7 cfs @ 12.19 hrs, Volume= 0.712 af
Outflow = 7.4 cfs @ 12.23 hrs, Volume= 0.551 af, Atten= 4%, Lag= 2.3 min
Primary = 7.4 cfs @ 12.23 hrs, Volume= 0.551 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 134.83' @ 12.23 hrs Surf.Area= 6,319 sf Storage= 8,423 cf

Plug-Flow detention time= 133.0 min calculated for 0.551 af (77% of inflow)
Center-of-Mass det. time= 51.9 min (860.7 - 808.8)

Volume	Invert	Avail.Storage	Storage Description
#1	133.00'	9,535 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
133.00	2,935	0	0
134.00	4,745	3,840	3,840
135.00	6,645	5,695	9,535

Device	Routing	Invert	Outlet Devices
#1	Primary	134.60'	**25.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=7.4 cfs @ 12.23 hrs HW=134.83' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 7.4 cfs @ 1.29 fps)

Summary for Pond P8.7: Low Point

Inflow Area = 0.755 ac, 44.48% Impervious, Inflow Depth = 0.99" for 2-yr event
Inflow = 0.6 cfs @ 12.27 hrs, Volume= 0.062 af
Outflow = 0.1 cfs @ 14.50 hrs, Volume= 0.024 af, Atten= 89%, Lag= 133.7 min
Primary = 0.1 cfs @ 14.50 hrs, Volume= 0.024 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 136.62' @ 14.50 hrs Surf.Area= 1,598 sf Storage= 1,681 cf

Plug-Flow detention time= 335.7 min calculated for 0.024 af (39% of inflow)
Center-of-Mass det. time= 194.8 min (1,072.4 - 877.6)

Volume	Invert	Avail.Storage	Storage Description
#1	135.00'	2,343 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
135.00	460	0	0
136.00	1,185	823	823
137.00	1,855	1,520	2,343

Device	Routing	Invert	Outlet Devices
#1	Primary	136.60'	**10.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.1 cfs @ 14.50 hrs HW=136.62' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.1 cfs @ 0.35 fps)

Summary for Link DP8.1: Wetland 28/29

Inflow Area = 20.191 ac, 15.81% Impervious, Inflow Depth = 0.31" for 2-yr event
Inflow = 2.6 cfs @ 12.47 hrs, Volume= 0.517 af
Primary = 2.6 cfs @ 12.47 hrs, Volume= 0.517 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.10: Low Point

Inflow Area = 3.634 ac, 67.45% Impervious, Inflow Depth = 1.82" for 2-yr event
Inflow = 7.4 cfs @ 12.23 hrs, Volume= 0.551 af
Primary = 7.4 cfs @ 12.23 hrs, Volume= 0.551 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.11: Wetland

Inflow Area = 0.878 ac, 37.23% Impervious, Inflow Depth = 1.84" for 2-yr event
Inflow = 1.7 cfs @ 12.13 hrs, Volume= 0.135 af
Primary = 1.7 cfs @ 12.13 hrs, Volume= 0.135 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.2: Wetland 27

Inflow Area = 16.199 ac, 2.32% Impervious, Inflow Depth = 0.03" for 2-yr event
Inflow = 0.1 cfs @ 17.40 hrs, Volume= 0.041 af
Primary = 0.1 cfs @ 17.40 hrs, Volume= 0.041 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.3: Wetland 25

Inflow Area = 15.735 ac, 7.63% Impervious, Inflow Depth = 0.25" for 2-yr event
Inflow = 0.9 cfs @ 13.06 hrs, Volume= 0.330 af
Primary = 0.9 cfs @ 13.06 hrs, Volume= 0.330 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.4: Wetland 26

Inflow Area = 1.029 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.5: Low Point

Inflow Area = 3.974 ac, 40.84% Impervious, Inflow Depth = 0.79" for 2-yr event
Inflow = 2.0 cfs @ 12.40 hrs, Volume= 0.261 af
Primary = 2.0 cfs @ 12.40 hrs, Volume= 0.261 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.6: Wetland 24

Inflow Area = 24.840 ac, 0.58% Impervious, Inflow Depth = 0.65" for 2-yr event
Inflow = 5.9 cfs @ 12.97 hrs, Volume= 1.345 af
Primary = 5.9 cfs @ 12.97 hrs, Volume= 1.345 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.7: Low Point

Inflow Area = 0.755 ac, 44.48% Impervious, Inflow Depth = 0.39" for 2-yr event
Inflow = 0.1 cfs @ 14.50 hrs, Volume= 0.024 af
Primary = 0.1 cfs @ 14.50 hrs, Volume= 0.024 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.8: Low Point

Inflow Area = 0.881 ac, 54.84% Impervious, Inflow Depth = 1.10" for 2-yr event
Inflow = 0.6 cfs @ 12.53 hrs, Volume= 0.081 af
Primary = 0.6 cfs @ 12.53 hrs, Volume= 0.081 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.9: Wetland 24A/Vernal Pool 5

Inflow Area = 0.970 ac, 0.00% Impervious, Inflow Depth = 0.01" for 2-yr event
Inflow = 0.0 cfs @ 22.12 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 22.12 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentEX8.10: Runoff Area=3.634 ac 67.45% Impervious Runoff Depth=4.08"
Flow Length=497' Tc=14.1 min CN=91 Runoff=12.9 cfs 1.235 af

SubcatchmentEX8.11: Runoff Area=0.878 ac 37.23% Impervious Runoff Depth=3.46"
Flow Length=145' Tc=8.9 min CN=85 Runoff=3.2 cfs 0.253 af

SubcatchmentEX8.1A: Subcat EX8.1A Runoff Area=19.886 ac 16.06% Impervious Runoff Depth=1.09"
Flow Length=356' Tc=17.5 min CN=56 Runoff=15.0 cfs 1.812 af

SubcatchmentEX8.1B: Subcat EX8.1B Runoff Area=0.305 ac 0.00% Impervious Runoff Depth=0.03"
Flow Length=892' Tc=36.7 min CN=32 Runoff=0.0 cfs 0.001 af

SubcatchmentEX8.2: Runoff Area=16.199 ac 2.32% Impervious Runoff Depth=0.38"
Flow Length=911' Tc=49.4 min CN=43 Runoff=1.4 cfs 0.515 af

SubcatchmentEX8.3: Runoff Area=15.735 ac 7.63% Impervious Runoff Depth=0.97"
Flow Length=764' Tc=51.8 min CN=54 Runoff=6.1 cfs 1.269 af

SubcatchmentEX8.4: Runoff Area=1.029 ac 0.00% Impervious Runoff Depth=0.07"
Flow Length=806' Tc=30.0 min CN=34 Runoff=0.0 cfs 0.006 af

SubcatchmentEX8.5: Runoff Area=3.974 ac 40.84% Impervious Runoff Depth=1.95"
Flow Length=764' Tc=24.9 min CN=68 Runoff=5.4 cfs 0.646 af

SubcatchmentEX8.6: Runoff Area=24.840 ac 0.58% Impervious Runoff Depth=1.72"
Flow Length=1,434' Tc=62.4 min CN=65 Runoff=18.2 cfs 3.561 af

SubcatchmentEX8.7: Runoff Area=0.755 ac 44.48% Impervious Runoff Depth=2.28"
Flow Length=87' Tc=17.8 min CN=72 Runoff=1.4 cfs 0.143 af

SubcatchmentEX8.8: Runoff Area=0.881 ac 54.84% Impervious Runoff Depth=2.44"
Flow Length=418' Tc=34.8 min CN=74 Runoff=1.3 cfs 0.179 af

SubcatchmentEX8.9: Runoff Area=0.970 ac 0.00% Impervious Runoff Depth=0.30"
Flow Length=147' Tc=30.3 min CN=41 Runoff=0.1 cfs 0.024 af

Pond P8.10: Low Point Peak Elev=134.93' Storage=9,050 cf Inflow=12.9 cfs 1.235 af
Outflow=12.6 cfs 1.074 af

Pond P8.7: Low Point Peak Elev=136.72' Storage=1,851 cf Inflow=1.4 cfs 0.143 af
Outflow=1.1 cfs 0.105 af

Link DP8.1: Wetland 28/29 Inflow=15.0 cfs 1.813 af
Primary=15.0 cfs 1.813 af

Link DP8.10: Low Point Inflow=12.6 cfs 1.074 af
Primary=12.6 cfs 1.074 af

Link DP8.11: Wetland Inflow=3.2 cfs 0.253 af
Primary=3.2 cfs 0.253 af

Link DP8.2: Wetland 27 Inflow=1.4 cfs 0.515 af
Primary=1.4 cfs 0.515 af

Link DP8.3: Wetland 25 Inflow=6.1 cfs 1.269 af
Primary=6.1 cfs 1.269 af

Link DP8.4: Wetland 26 Inflow=0.0 cfs 0.006 af
Primary=0.0 cfs 0.006 af

Link DP8.5: Low Point Inflow=5.4 cfs 0.646 af
Primary=5.4 cfs 0.646 af

Link DP8.6: Wetland 24 Inflow=18.2 cfs 3.561 af
Primary=18.2 cfs 3.561 af

Link DP8.7: Low Point Inflow=1.1 cfs 0.105 af
Primary=1.1 cfs 0.105 af

Link DP8.8: Low Point Inflow=1.3 cfs 0.179 af
Primary=1.3 cfs 0.179 af

Link DP8.9: Wetland 24A/Vernal Pool 5 Inflow=0.1 cfs 0.024 af
Primary=0.1 cfs 0.024 af

Total Runoff Area = 89.087 ac Runoff Volume = 9.647 af Average Runoff Depth = 1.30"
88.62% Pervious = 78.952 ac 11.38% Impervious = 10.134 ac

Summary for Subcatchment EX8.10:

Runoff = 12.9 cfs @ 12.19 hrs, Volume= 1.235 af, Depth= 4.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.003	91	Gravel roads, HSG D
1.408	98	Paved parking, HSG D
0.269	98	Paved roads w/curbs & sewers, HSG D
0.775	98	Roofs, HSG D
1.180	77	Woods, Good, HSG D
3.634	91	Weighted Average
1.183		32.55% Pervious Area
2.451		67.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.22		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
1.0	184	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
12.4	263	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.1	497	Total			

Summary for Subcatchment EX8.11:

Runoff = 3.2 cfs @ 12.12 hrs, Volume= 0.253 af, Depth= 3.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.278	98	Paved parking, HSG D
0.028	98	Paved roads w/curbs & sewers, HSG D
0.020	98	Roofs, HSG D
0.551	77	Woods, Good, HSG D
0.878	85	Weighted Average
0.551		62.77% Pervious Area
0.327		37.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	16	0.0625	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.6	34	0.0120	0.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
2.9	95	0.0120	0.55		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
8.9	145	Total			

Summary for Subcatchment EX8.1A: Subcat EX8.1A

Runoff = 15.0 cfs @ 12.28 hrs, Volume= 1.812 af, Depth= 1.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
1.938	39	>75% Grass cover, Good, HSG A
0.003	80	>75% Grass cover, Good, HSG D
0.034	76	Gravel roads, HSG A
0.028	91	Gravel roads, HSG D
1.228	98	Paved parking, HSG A
0.788	98	Paved roads w/curbs & sewers, HSG A
1.177	98	Roofs, HSG A
8.564	30	Woods, Good, HSG A
0.000	70	Woods, Good, HSG C
6.126	77	Woods, Good, HSG D
19.886	56	Weighted Average
16.693		83.94% Pervious Area
3.193		16.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	22	0.0138	0.89		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
6.6	28	0.0040	0.07		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
10.5	306	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
17.5	356	Total			

Summary for Subcatchment EX8.1B: Subcat EX8.1B

Runoff = 0.0 cfs @ 17.74 hrs, Volume= 0.001 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.010	76	Gravel roads, HSG A
0.295	30	Woods, Good, HSG A
0.305	32	Weighted Average
0.305		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	50	0.1880	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
28.1	842	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
36.7	892	Total			

Summary for Subcatchment EX8.2:

Runoff = 1.4 cfs @ 13.01 hrs, Volume= 0.515 af, Depth= 0.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.081	76	Gravel roads, HSG A
0.029	91	Gravel roads, HSG D
0.092	98	Paved parking, HSG A
0.227	98	Paved roads w/curbs & sewers, HSG A
0.058	98	Roofs, HSG A
12.034	30	Woods, Good, HSG A
3.679	77	Woods, Good, HSG D
16.199	43	Weighted Average
15.823		97.68% Pervious Area
0.376		2.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.1	50	0.0160	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.8	500	0.0184	0.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.5	361	0.0190	0.34		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
49.4	911	Total			

Summary for Subcatchment EX8.3:

Runoff = 6.1 cfs @ 12.83 hrs, Volume= 1.269 af, Depth= 0.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.261	39	>75% Grass cover, Good, HSG A
0.058	76	Gravel roads, HSG A
0.494	91	Gravel roads, HSG D
0.517	98	Paved parking, HSG A
0.254	98	Paved roads w/curbs & sewers, HSG A
0.429	98	Roofs, HSG A
8.130	30	Woods, Good, HSG A
5.591	77	Woods, Good, HSG D
15.735	54	Weighted Average
14.534		92.37% Pervious Area
1.201		7.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
30.7	714	0.0240	0.39		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
51.8	764	Total			

Summary for Subcatchment EX8.4:

Runoff = 0.0 cfs @ 15.70 hrs, Volume= 0.006 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.068	76	Gravel roads, HSG A
0.948	30	Woods, Good, HSG A
0.013	77	Woods, Good, HSG D
1.029	34	Weighted Average
1.029		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	50	0.1500	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
20.6	756	0.0150	0.61		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
30.0	806	Total			

Summary for Subcatchment EX8.5:

Runoff = 5.4 cfs @ 12.37 hrs, Volume= 0.646 af, Depth= 1.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.074	76	Gravel roads, HSG A
0.001	91	Gravel roads, HSG D
0.448	98	Paved parking, HSG D
1.175	98	Roofs, HSG D
1.471	30	Woods, Good, HSG A
0.805	77	Woods, Good, HSG D
3.974	68	Weighted Average
2.351		59.16% Pervious Area
1.623		40.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	50	0.1480	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
15.4	714	0.0240	0.77		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
24.9	764	Total			

Summary for Subcatchment EX8.6:

Runoff = 18.2 cfs @ 12.90 hrs, Volume= 3.561 af, Depth= 1.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.476	76	Gravel roads, HSG A
0.031	91	Gravel roads, HSG D
0.145	98	Paved parking, HSG D
6.266	30	Woods, Good, HSG A
17.922	77	Woods, Good, HSG D
24.840	65	Weighted Average
24.695		99.42% Pervious Area
0.145		0.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.9	50	0.0120	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
36.5	1,384	0.0160	0.63		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
62.4	1,434	Total			

Summary for Subcatchment EX8.7:

Runoff = 1.4 cfs @ 12.25 hrs, Volume= 0.143 af, Depth= 2.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.011	76	Gravel roads, HSG A
0.232	98	Paved parking, HSG D
0.104	98	Roofs, HSG D
0.222	30	Woods, Good, HSG A
0.186	77	Woods, Good, HSG D
0.755	72	Weighted Average
0.419		55.52% Pervious Area
0.336		44.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	50	0.0320	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.3	37	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.8	87	Total			

Summary for Subcatchment EX8.8:

Runoff = 1.3 cfs @ 12.49 hrs, Volume= 0.179 af, Depth= 2.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.036	76	Gravel roads, HSG A
0.006	91	Gravel roads, HSG D
0.234	98	Paved parking, HSG A
0.171	98	Paved parking, HSG D
0.079	98	Roofs, HSG D
0.279	30	Woods, Good, HSG A
0.077	77	Woods, Good, HSG D
0.881	74	Weighted Average
0.398		45.16% Pervious Area
0.483		54.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
13.7	368	0.0080	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
34.8	418	Total			

Summary for Subcatchment EX8.9:

Runoff = 0.1 cfs @ 12.76 hrs, Volume= 0.024 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.031	76	Gravel roads, HSG A
0.004	91	Gravel roads, HSG D
0.736	30	Woods, Good, HSG A
0.199	77	Woods, Good, HSG D
0.970	41	Weighted Average
0.970		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.4	50	0.0140	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.9	97	0.0120	0.27		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
30.3	147	Total			

Summary for Pond P8.10: Low Point

Inflow Area = 3.634 ac, 67.45% Impervious, Inflow Depth = 4.08" for 10-yr event
Inflow = 12.9 cfs @ 12.19 hrs, Volume= 1.235 af
Outflow = 12.6 cfs @ 12.22 hrs, Volume= 1.074 af, Atten= 2%, Lag= 1.9 min
Primary = 12.6 cfs @ 12.22 hrs, Volume= 1.074 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 134.93' @ 12.22 hrs Surf.Area= 6,505 sf Storage= 9,050 cf

Plug-Flow detention time= 98.0 min calculated for 1.074 af (87% of inflow)
Center-of-Mass det. time= 39.7 min (833.4 - 793.7)

Volume	Invert	Avail.Storage	Storage Description
#1	133.00'	9,535 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
133.00	2,935	0	0
134.00	4,745	3,840	3,840
135.00	6,645	5,695	9,535

Device	Routing	Invert	Outlet Devices
#1	Primary	134.60'	**25.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=12.6 cfs @ 12.22 hrs HW=134.93' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 12.6 cfs @ 1.55 fps)

Summary for Pond P8.7: Low Point

Inflow Area = 0.755 ac, 44.48% Impervious, Inflow Depth = 2.28" for 10-yr event
Inflow = 1.4 cfs @ 12.25 hrs, Volume= 0.143 af
Outflow = 1.1 cfs @ 12.39 hrs, Volume= 0.105 af, Atten= 19%, Lag= 8.7 min
Primary = 1.1 cfs @ 12.39 hrs, Volume= 0.105 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 136.72' @ 12.39 hrs Surf.Area= 1,668 sf Storage= 1,851 cf

Plug-Flow detention time= 148.2 min calculated for 0.105 af (73% of inflow)
Center-of-Mass det. time= 54.6 min (907.1 - 852.5)

Volume	Invert	Avail.Storage	Storage Description
#1	135.00'	2,343 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
135.00	460	0	0
136.00	1,185	823	823
137.00	1,855	1,520	2,343

Device	Routing	Invert	Outlet Devices
#1	Primary	136.60'	**10.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=1.1 cfs @ 12.39 hrs HW=136.72' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 1.1 cfs @ 0.94 fps)

Summary for Link DP8.1: Wetland 28/29

Inflow Area = 20.191 ac, 15.81% Impervious, Inflow Depth = 1.08" for 10-yr event
Inflow = 15.0 cfs @ 12.28 hrs, Volume= 1.813 af
Primary = 15.0 cfs @ 12.28 hrs, Volume= 1.813 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.10: Low Point

Inflow Area = 3.634 ac, 67.45% Impervious, Inflow Depth = 3.55" for 10-yr event
Inflow = 12.6 cfs @ 12.22 hrs, Volume= 1.074 af
Primary = 12.6 cfs @ 12.22 hrs, Volume= 1.074 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.11: Wetland

Inflow Area = 0.878 ac, 37.23% Impervious, Inflow Depth = 3.46" for 10-yr event
Inflow = 3.2 cfs @ 12.12 hrs, Volume= 0.253 af
Primary = 3.2 cfs @ 12.12 hrs, Volume= 0.253 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.2: Wetland 27

Inflow Area = 16.199 ac, 2.32% Impervious, Inflow Depth = 0.38" for 10-yr event
Inflow = 1.4 cfs @ 13.01 hrs, Volume= 0.515 af
Primary = 1.4 cfs @ 13.01 hrs, Volume= 0.515 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.3: Wetland 25

Inflow Area = 15.735 ac, 7.63% Impervious, Inflow Depth = 0.97" for 10-yr event
Inflow = 6.1 cfs @ 12.83 hrs, Volume= 1.269 af
Primary = 6.1 cfs @ 12.83 hrs, Volume= 1.269 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.4: Wetland 26

Inflow Area = 1.029 ac, 0.00% Impervious, Inflow Depth = 0.07" for 10-yr event
Inflow = 0.0 cfs @ 15.70 hrs, Volume= 0.006 af
Primary = 0.0 cfs @ 15.70 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.5: Low Point

Inflow Area = 3.974 ac, 40.84% Impervious, Inflow Depth = 1.95" for 10-yr event
Inflow = 5.4 cfs @ 12.37 hrs, Volume= 0.646 af
Primary = 5.4 cfs @ 12.37 hrs, Volume= 0.646 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.6: Wetland 24

Inflow Area = 24.840 ac, 0.58% Impervious, Inflow Depth = 1.72" for 10-yr event
Inflow = 18.2 cfs @ 12.90 hrs, Volume= 3.561 af
Primary = 18.2 cfs @ 12.90 hrs, Volume= 3.561 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.7: Low Point

Inflow Area = 0.755 ac, 44.48% Impervious, Inflow Depth = 1.67" for 10-yr event
Inflow = 1.1 cfs @ 12.39 hrs, Volume= 0.105 af
Primary = 1.1 cfs @ 12.39 hrs, Volume= 0.105 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.8: Low Point

Inflow Area = 0.881 ac, 54.84% Impervious, Inflow Depth = 2.44" for 10-yr event
Inflow = 1.3 cfs @ 12.49 hrs, Volume= 0.179 af
Primary = 1.3 cfs @ 12.49 hrs, Volume= 0.179 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.9: Wetland 24A/Vernal Pool 5

Inflow Area = 0.970 ac, 0.00% Impervious, Inflow Depth = 0.30" for 10-yr event
Inflow = 0.1 cfs @ 12.76 hrs, Volume= 0.024 af
Primary = 0.1 cfs @ 12.76 hrs, Volume= 0.024 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentEX8.10: Runoff Area=3.634 ac 67.45% Impervious Runoff Depth=5.18"
Flow Length=497' Tc=14.1 min CN=91 Runoff=16.2 cfs 1.570 af

SubcatchmentEX8.11: Runoff Area=0.878 ac 37.23% Impervious Runoff Depth=4.52"
Flow Length=145' Tc=8.9 min CN=85 Runoff=4.1 cfs 0.331 af

SubcatchmentEX8.1A: Subcat EX8.1A Runoff Area=19.886 ac 16.06% Impervious Runoff Depth=1.73"
Flow Length=356' Tc=17.5 min CN=56 Runoff=26.1 cfs 2.873 af

SubcatchmentEX8.1B: Subcat EX8.1B Runoff Area=0.305 ac 0.00% Impervious Runoff Depth=0.17"
Flow Length=892' Tc=36.7 min CN=32 Runoff=0.0 cfs 0.004 af

SubcatchmentEX8.2: Runoff Area=16.199 ac 2.32% Impervious Runoff Depth=0.76"
Flow Length=911' Tc=49.4 min CN=43 Runoff=4.0 cfs 1.027 af

SubcatchmentEX8.3: Runoff Area=15.735 ac 7.63% Impervious Runoff Depth=1.57"
Flow Length=764' Tc=51.8 min CN=54 Runoff=11.0 cfs 2.059 af

SubcatchmentEX8.4: Runoff Area=1.029 ac 0.00% Impervious Runoff Depth=0.25"
Flow Length=806' Tc=30.0 min CN=34 Runoff=0.0 cfs 0.022 af

SubcatchmentEX8.5: Runoff Area=3.974 ac 40.84% Impervious Runoff Depth=2.80"
Flow Length=764' Tc=24.9 min CN=68 Runoff=7.9 cfs 0.927 af

SubcatchmentEX8.6: Runoff Area=24.840 ac 0.58% Impervious Runoff Depth=2.52"
Flow Length=1,434' Tc=62.4 min CN=65 Runoff=27.4 cfs 5.216 af

SubcatchmentEX8.7: Runoff Area=0.755 ac 44.48% Impervious Runoff Depth=3.18"
Flow Length=87' Tc=17.8 min CN=72 Runoff=2.0 cfs 0.200 af

SubcatchmentEX8.8: Runoff Area=0.881 ac 54.84% Impervious Runoff Depth=3.38"
Flow Length=418' Tc=34.8 min CN=74 Runoff=1.8 cfs 0.248 af

SubcatchmentEX8.9: Runoff Area=0.970 ac 0.00% Impervious Runoff Depth=0.63"
Flow Length=147' Tc=30.3 min CN=41 Runoff=0.2 cfs 0.051 af

Pond P8.10: Low Point Peak Elev=134.98' Storage=9,399 cf Inflow=16.2 cfs 1.570 af
Outflow=15.9 cfs 1.408 af

Pond P8.7: Low Point Peak Elev=136.77' Storage=1,938 cf Inflow=2.0 cfs 0.200 af
Outflow=1.9 cfs 0.162 af

Link DP8.1: Wetland 28/29 Inflow=26.1 cfs 2.878 af
Primary=26.1 cfs 2.878 af

Link DP8.10: Low Point Inflow=15.9 cfs 1.408 af
Primary=15.9 cfs 1.408 af

Link DP8.11: Wetland Inflow=4.1 cfs 0.331 af
Primary=4.1 cfs 0.331 af

Link DP8.2: Wetland 27 Inflow=4.0 cfs 1.027 af
Primary=4.0 cfs 1.027 af

Link DP8.3: Wetland 25 Inflow=11.0 cfs 2.059 af
Primary=11.0 cfs 2.059 af

Link DP8.4: Wetland 26 Inflow=0.0 cfs 0.022 af
Primary=0.0 cfs 0.022 af

Link DP8.5: Low Point Inflow=7.9 cfs 0.927 af
Primary=7.9 cfs 0.927 af

Link DP8.6: Wetland 24 Inflow=27.4 cfs 5.216 af
Primary=27.4 cfs 5.216 af

Link DP8.7: Low Point Inflow=1.9 cfs 0.162 af
Primary=1.9 cfs 0.162 af

Link DP8.8: Low Point Inflow=1.8 cfs 0.248 af
Primary=1.8 cfs 0.248 af

Link DP8.9: Wetland 24A/Vernal Pool 5 Inflow=0.2 cfs 0.051 af
Primary=0.2 cfs 0.051 af

Total Runoff Area = 89.087 ac Runoff Volume = 14.529 af Average Runoff Depth = 1.96"
88.62% Pervious = 78.952 ac 11.38% Impervious = 10.134 ac

Summary for Subcatchment EX8.10:

Runoff = 16.2 cfs @ 12.19 hrs, Volume= 1.570 af, Depth= 5.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.003	91	Gravel roads, HSG D
1.408	98	Paved parking, HSG D
0.269	98	Paved roads w/curbs & sewers, HSG D
0.775	98	Roofs, HSG D
1.180	77	Woods, Good, HSG D
3.634	91	Weighted Average
1.183		32.55% Pervious Area
2.451		67.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.22		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
1.0	184	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
12.4	263	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.1	497	Total			

Summary for Subcatchment EX8.11:

Runoff = 4.1 cfs @ 12.12 hrs, Volume= 0.331 af, Depth= 4.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.278	98	Paved parking, HSG D
0.028	98	Paved roads w/curbs & sewers, HSG D
0.020	98	Roofs, HSG D
0.551	77	Woods, Good, HSG D
0.878	85	Weighted Average
0.551		62.77% Pervious Area
0.327		37.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	16	0.0625	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.6	34	0.0120	0.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
2.9	95	0.0120	0.55		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
8.9	145	Total			

Summary for Subcatchment EX8.1A: Subcat EX8.1A

Runoff = 26.1 cfs @ 12.27 hrs, Volume= 2.873 af, Depth= 1.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
1.938	39	>75% Grass cover, Good, HSG A
0.003	80	>75% Grass cover, Good, HSG D
0.034	76	Gravel roads, HSG A
0.028	91	Gravel roads, HSG D
1.228	98	Paved parking, HSG A
0.788	98	Paved roads w/curbs & sewers, HSG A
1.177	98	Roofs, HSG A
8.564	30	Woods, Good, HSG A
0.000	70	Woods, Good, HSG C
6.126	77	Woods, Good, HSG D
19.886	56	Weighted Average
16.693		83.94% Pervious Area
3.193		16.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	22	0.0138	0.89		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
6.6	28	0.0040	0.07		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
10.5	306	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
17.5	356	Total			

Summary for Subcatchment EX8.1B: Subcat EX8.1B

Runoff = 0.0 cfs @ 15.05 hrs, Volume= 0.004 af, Depth= 0.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.010	76	Gravel roads, HSG A
0.295	30	Woods, Good, HSG A
0.305	32	Weighted Average
0.305		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	50	0.1880	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
28.1	842	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
36.7	892	Total			

Summary for Subcatchment EX8.2:

Runoff = 4.0 cfs @ 12.90 hrs, Volume= 1.027 af, Depth= 0.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.081	76	Gravel roads, HSG A
0.029	91	Gravel roads, HSG D
0.092	98	Paved parking, HSG A
0.227	98	Paved roads w/curbs & sewers, HSG A
0.058	98	Roofs, HSG A
12.034	30	Woods, Good, HSG A
3.679	77	Woods, Good, HSG D
16.199	43	Weighted Average
15.823		97.68% Pervious Area
0.376		2.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.1	50	0.0160	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.8	500	0.0184	0.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.5	361	0.0190	0.34		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
49.4	911	Total			

Summary for Subcatchment EX8.3:

Runoff = 11.0 cfs @ 12.78 hrs, Volume= 2.059 af, Depth= 1.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.261	39	>75% Grass cover, Good, HSG A
0.058	76	Gravel roads, HSG A
0.494	91	Gravel roads, HSG D
0.517	98	Paved parking, HSG A
0.254	98	Paved roads w/curbs & sewers, HSG A
0.429	98	Roofs, HSG A
8.130	30	Woods, Good, HSG A
5.591	77	Woods, Good, HSG D
15.735	54	Weighted Average
14.534		92.37% Pervious Area
1.201		7.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
30.7	714	0.0240	0.39		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
51.8	764	Total			

Summary for Subcatchment EX8.4:

Runoff = 0.0 cfs @ 13.17 hrs, Volume= 0.022 af, Depth= 0.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.068	76	Gravel roads, HSG A
0.948	30	Woods, Good, HSG A
0.013	77	Woods, Good, HSG D
1.029	34	Weighted Average
1.029		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	50	0.1500	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
20.6	756	0.0150	0.61		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
30.0	806	Total			

Summary for Subcatchment EX8.5:

Runoff = 7.9 cfs @ 12.36 hrs, Volume= 0.927 af, Depth= 2.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.074	76	Gravel roads, HSG A
0.001	91	Gravel roads, HSG D
0.448	98	Paved parking, HSG D
1.175	98	Roofs, HSG D
1.471	30	Woods, Good, HSG A
0.805	77	Woods, Good, HSG D
3.974	68	Weighted Average
2.351		59.16% Pervious Area
1.623		40.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	50	0.1480	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
15.4	714	0.0240	0.77		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
24.9	764	Total			

Summary for Subcatchment EX8.6:

Runoff = 27.4 cfs @ 12.89 hrs, Volume= 5.216 af, Depth= 2.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.476	76	Gravel roads, HSG A
0.031	91	Gravel roads, HSG D
0.145	98	Paved parking, HSG D
6.266	30	Woods, Good, HSG A
17.922	77	Woods, Good, HSG D
24.840	65	Weighted Average
24.695		99.42% Pervious Area
0.145		0.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.9	50	0.0120	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
36.5	1,384	0.0160	0.63		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
62.4	1,434	Total			

Summary for Subcatchment EX8.7:

Runoff = 2.0 cfs @ 12.24 hrs, Volume= 0.200 af, Depth= 3.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.011	76	Gravel roads, HSG A
0.232	98	Paved parking, HSG D
0.104	98	Roofs, HSG D
0.222	30	Woods, Good, HSG A
0.186	77	Woods, Good, HSG D
0.755	72	Weighted Average
0.419		55.52% Pervious Area
0.336		44.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	50	0.0320	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.3	37	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.8	87	Total			

Summary for Subcatchment EX8.8:

Runoff = 1.8 cfs @ 12.49 hrs, Volume= 0.248 af, Depth= 3.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.036	76	Gravel roads, HSG A
0.006	91	Gravel roads, HSG D
0.234	98	Paved parking, HSG A
0.171	98	Paved parking, HSG D
0.079	98	Roofs, HSG D
0.279	30	Woods, Good, HSG A
0.077	77	Woods, Good, HSG D
0.881	74	Weighted Average
0.398		45.16% Pervious Area
0.483		54.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
13.7	368	0.0080	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
34.8	418	Total			

Summary for Subcatchment EX8.9:

Runoff = 0.2 cfs @ 12.63 hrs, Volume= 0.051 af, Depth= 0.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.031	76	Gravel roads, HSG A
0.004	91	Gravel roads, HSG D
0.736	30	Woods, Good, HSG A
0.199	77	Woods, Good, HSG D
0.970	41	Weighted Average
0.970		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.4	50	0.0140	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.9	97	0.0120	0.27		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
30.3	147	Total			

Summary for Pond P8.10: Low Point

Inflow Area = 3.634 ac, 67.45% Impervious, Inflow Depth = 5.18" for 25-yr event
Inflow = 16.2 cfs @ 12.19 hrs, Volume= 1.570 af
Outflow = 15.9 cfs @ 12.22 hrs, Volume= 1.408 af, Atten= 2%, Lag= 1.8 min
Primary = 15.9 cfs @ 12.22 hrs, Volume= 1.408 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 134.98' @ 12.22 hrs Surf.Area= 6,606 sf Storage= 9,399 cf

Plug-Flow detention time= 85.6 min calculated for 1.408 af (90% of inflow)
Center-of-Mass det. time= 35.9 min (823.3 - 787.4)

Volume	Invert	Avail.Storage	Storage Description
#1	133.00'	9,535 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
133.00	2,935	0	0
134.00	4,745	3,840	3,840
135.00	6,645	5,695	9,535

Device	Routing	Invert	Outlet Devices
#1	Primary	134.60'	**25.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=15.9 cfs @ 12.22 hrs HW=134.98' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 15.9 cfs @ 1.67 fps)

Summary for Pond P8.7: Low Point

Inflow Area = 0.755 ac, 44.48% Impervious, Inflow Depth = 3.18" for 25-yr event
Inflow = 2.0 cfs @ 12.24 hrs, Volume= 0.200 af
Outflow = 1.9 cfs @ 12.29 hrs, Volume= 0.162 af, Atten= 3%, Lag= 2.7 min
Primary = 1.9 cfs @ 12.29 hrs, Volume= 0.162 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 136.77' @ 12.29 hrs Surf.Area= 1,703 sf Storage= 1,938 cf

Plug-Flow detention time= 114.7 min calculated for 0.162 af (81% of inflow)
Center-of-Mass det. time= 38.7 min (881.4 - 842.7)

Volume	Invert	Avail.Storage	Storage Description
#1	135.00'	2,343 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
135.00	460	0	0
136.00	1,185	823	823
137.00	1,855	1,520	2,343

Device	Routing	Invert	Outlet Devices
#1	Primary	136.60'	**10.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=1.9 cfs @ 12.29 hrs HW=136.77' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 1.9 cfs @ 1.12 fps)

Summary for Link DP8.1: Wetland 28/29

Inflow Area = 20.191 ac, 15.81% Impervious, Inflow Depth = 1.71" for 25-yr event
Inflow = 26.1 cfs @ 12.27 hrs, Volume= 2.878 af
Primary = 26.1 cfs @ 12.27 hrs, Volume= 2.878 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.10: Low Point

Inflow Area = 3.634 ac, 67.45% Impervious, Inflow Depth = 4.65" for 25-yr event
Inflow = 15.9 cfs @ 12.22 hrs, Volume= 1.408 af
Primary = 15.9 cfs @ 12.22 hrs, Volume= 1.408 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.11: Wetland

Inflow Area = 0.878 ac, 37.23% Impervious, Inflow Depth = 4.52" for 25-yr event
Inflow = 4.1 cfs @ 12.12 hrs, Volume= 0.331 af
Primary = 4.1 cfs @ 12.12 hrs, Volume= 0.331 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.2: Wetland 27

Inflow Area = 16.199 ac, 2.32% Impervious, Inflow Depth = 0.76" for 25-yr event
Inflow = 4.0 cfs @ 12.90 hrs, Volume= 1.027 af
Primary = 4.0 cfs @ 12.90 hrs, Volume= 1.027 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.3: Wetland 25

Inflow Area = 15.735 ac, 7.63% Impervious, Inflow Depth = 1.57" for 25-yr event
Inflow = 11.0 cfs @ 12.78 hrs, Volume= 2.059 af
Primary = 11.0 cfs @ 12.78 hrs, Volume= 2.059 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.4: Wetland 26

Inflow Area = 1.029 ac, 0.00% Impervious, Inflow Depth = 0.25" for 25-yr event
Inflow = 0.0 cfs @ 13.17 hrs, Volume= 0.022 af
Primary = 0.0 cfs @ 13.17 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.5: Low Point

Inflow Area = 3.974 ac, 40.84% Impervious, Inflow Depth = 2.80" for 25-yr event
Inflow = 7.9 cfs @ 12.36 hrs, Volume= 0.927 af
Primary = 7.9 cfs @ 12.36 hrs, Volume= 0.927 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.6: Wetland 24

Inflow Area = 24.840 ac, 0.58% Impervious, Inflow Depth = 2.52" for 25-yr event
Inflow = 27.4 cfs @ 12.89 hrs, Volume= 5.216 af
Primary = 27.4 cfs @ 12.89 hrs, Volume= 5.216 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.7: Low Point

Inflow Area = 0.755 ac, 44.48% Impervious, Inflow Depth = 2.58" for 25-yr event
Inflow = 1.9 cfs @ 12.29 hrs, Volume= 0.162 af
Primary = 1.9 cfs @ 12.29 hrs, Volume= 0.162 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.8: Low Point

Inflow Area = 0.881 ac, 54.84% Impervious, Inflow Depth = 3.38" for 25-yr event
Inflow = 1.8 cfs @ 12.49 hrs, Volume= 0.248 af
Primary = 1.8 cfs @ 12.49 hrs, Volume= 0.248 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.9: Wetland 24A/Vernal Pool 5

Inflow Area = 0.970 ac, 0.00% Impervious, Inflow Depth = 0.63" for 25-yr event
Inflow = 0.2 cfs @ 12.63 hrs, Volume= 0.051 af
Primary = 0.2 cfs @ 12.63 hrs, Volume= 0.051 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentEX8.10: Runoff Area=3.634 ac 67.45% Impervious Runoff Depth=7.52"
Flow Length=497' Tc=14.1 min CN=91 Runoff=23.1 cfs 2.277 af

SubcatchmentEX8.11: Runoff Area=0.878 ac 37.23% Impervious Runoff Depth=6.79"
Flow Length=145' Tc=8.9 min CN=85 Runoff=6.1 cfs 0.497 af

SubcatchmentEX8.1A: Subcat EX8.1A Runoff Area=19.886 ac 16.06% Impervious Runoff Depth=3.32"
Flow Length=356' Tc=17.5 min CN=56 Runoff=53.4 cfs 5.500 af

SubcatchmentEX8.1B: Subcat EX8.1B Runoff Area=0.305 ac 0.00% Impervious Runoff Depth=0.74"
Flow Length=892' Tc=36.7 min CN=32 Runoff=0.1 cfs 0.019 af

SubcatchmentEX8.2: Runoff Area=16.199 ac 2.32% Impervious Runoff Depth=1.84"
Flow Length=911' Tc=49.4 min CN=43 Runoff=12.9 cfs 2.487 af

SubcatchmentEX8.3: Runoff Area=15.735 ac 7.63% Impervious Runoff Depth=3.09"
Flow Length=764' Tc=51.8 min CN=54 Runoff=23.4 cfs 4.046 af

SubcatchmentEX8.4: Runoff Area=1.029 ac 0.00% Impervious Runoff Depth=0.92"
Flow Length=806' Tc=30.0 min CN=34 Runoff=0.4 cfs 0.079 af

SubcatchmentEX8.5: Runoff Area=3.974 ac 40.84% Impervious Runoff Depth=4.74"
Flow Length=764' Tc=24.9 min CN=68 Runoff=13.6 cfs 1.571 af

SubcatchmentEX8.6: Runoff Area=24.840 ac 0.58% Impervious Runoff Depth=4.38"
Flow Length=1,434' Tc=62.4 min CN=65 Runoff=49.0 cfs 9.076 af

SubcatchmentEX8.7: Runoff Area=0.755 ac 44.48% Impervious Runoff Depth=5.22"
Flow Length=87' Tc=17.8 min CN=72 Runoff=3.3 cfs 0.329 af

SubcatchmentEX8.8: Runoff Area=0.881 ac 54.84% Impervious Runoff Depth=5.47"
Flow Length=418' Tc=34.8 min CN=74 Runoff=3.0 cfs 0.401 af

SubcatchmentEX8.9: Runoff Area=0.970 ac 0.00% Impervious Runoff Depth=1.63"
Flow Length=147' Tc=30.3 min CN=41 Runoff=0.8 cfs 0.132 af

Pond P8.10: Low Point Peak Elev=135.10' Storage=9,535 cf Inflow=23.1 cfs 2.277 af
Outflow=24.4 cfs 2.115 af

Pond P8.7: Low Point Peak Elev=136.84' Storage=2,060 cf Inflow=3.3 cfs 0.329 af
Outflow=3.2 cfs 0.291 af

Link DP8.1: Wetland 28/29 Inflow=53.4 cfs 5.518 af
Primary=53.4 cfs 5.518 af

Link DP8.10: Low Point Inflow=24.4 cfs 2.115 af
Primary=24.4 cfs 2.115 af

Link DP8.11: Wetland Inflow=6.1 cfs 0.497 af
Primary=6.1 cfs 0.497 af

Link DP8.2: Wetland 27 Inflow=12.9 cfs 2.487 af
Primary=12.9 cfs 2.487 af

Link DP8.3: Wetland 25 Inflow=23.4 cfs 4.046 af
Primary=23.4 cfs 4.046 af

Link DP8.4: Wetland 26 Inflow=0.4 cfs 0.079 af
Primary=0.4 cfs 0.079 af

Link DP8.5: Low Point Inflow=13.6 cfs 1.571 af
Primary=13.6 cfs 1.571 af

Link DP8.6: Wetland 24 Inflow=49.0 cfs 9.076 af
Primary=49.0 cfs 9.076 af

Link DP8.7: Low Point Inflow=3.2 cfs 0.291 af
Primary=3.2 cfs 0.291 af

Link DP8.8: Low Point Inflow=3.0 cfs 0.401 af
Primary=3.0 cfs 0.401 af

Link DP8.9: Wetland 24A/Vernal Pool 5 Inflow=0.8 cfs 0.132 af
Primary=0.8 cfs 0.132 af

Total Runoff Area = 89.087 ac Runoff Volume = 26.413 af Average Runoff Depth = 3.56"
88.62% Pervious = 78.952 ac 11.38% Impervious = 10.134 ac

Summary for Subcatchment EX8.10:

Runoff = 23.1 cfs @ 12.18 hrs, Volume= 2.277 af, Depth= 7.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.003	91	Gravel roads, HSG D
1.408	98	Paved parking, HSG D
0.269	98	Paved roads w/curbs & sewers, HSG D
0.775	98	Roofs, HSG D
1.180	77	Woods, Good, HSG D
3.634	91	Weighted Average
1.183		32.55% Pervious Area
2.451		67.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.22		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
1.0	184	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
12.4	263	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.1	497	Total			

Summary for Subcatchment EX8.11:

Runoff = 6.1 cfs @ 12.12 hrs, Volume= 0.497 af, Depth= 6.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.278	98	Paved parking, HSG D
0.028	98	Paved roads w/curbs & sewers, HSG D
0.020	98	Roofs, HSG D
0.551	77	Woods, Good, HSG D
0.878	85	Weighted Average
0.551		62.77% Pervious Area
0.327		37.23% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	16	0.0625	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.6	34	0.0120	0.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
2.9	95	0.0120	0.55		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
8.9	145	Total			

Summary for Subcatchment EX8.1A: Subcat EX8.1A

Runoff = 53.4 cfs @ 12.25 hrs, Volume= 5.500 af, Depth= 3.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
1.938	39	>75% Grass cover, Good, HSG A
0.003	80	>75% Grass cover, Good, HSG D
0.034	76	Gravel roads, HSG A
0.028	91	Gravel roads, HSG D
1.228	98	Paved parking, HSG A
0.788	98	Paved roads w/curbs & sewers, HSG A
1.177	98	Roofs, HSG A
8.564	30	Woods, Good, HSG A
0.000	70	Woods, Good, HSG C
6.126	77	Woods, Good, HSG D
19.886	56	Weighted Average
16.693		83.94% Pervious Area
3.193		16.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	22	0.0138	0.89		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
6.6	28	0.0040	0.07		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
10.5	306	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
17.5	356	Total			

Summary for Subcatchment EX8.1B: Subcat EX8.1B

Runoff = 0.1 cfs @ 12.76 hrs, Volume= 0.019 af, Depth= 0.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.010	76	Gravel roads, HSG A
0.295	30	Woods, Good, HSG A
0.305	32	Weighted Average
0.305		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.6	50	0.1880	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
28.1	842	0.0100	0.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
36.7	892	Total			

Summary for Subcatchment EX8.2:

Runoff = 12.9 cfs @ 12.79 hrs, Volume= 2.487 af, Depth= 1.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.081	76	Gravel roads, HSG A
0.029	91	Gravel roads, HSG D
0.092	98	Paved parking, HSG A
0.227	98	Paved roads w/curbs & sewers, HSG A
0.058	98	Roofs, HSG A
12.034	30	Woods, Good, HSG A
3.679	77	Woods, Good, HSG D
16.199	43	Weighted Average
15.823		97.68% Pervious Area
0.376		2.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.1	50	0.0160	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.8	500	0.0184	0.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.5	361	0.0190	0.34		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
49.4	911	Total			

Summary for Subcatchment EX8.3:

Runoff = 23.4 cfs @ 12.72 hrs, Volume= 4.046 af, Depth= 3.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.261	39	>75% Grass cover, Good, HSG A
0.058	76	Gravel roads, HSG A
0.494	91	Gravel roads, HSG D
0.517	98	Paved parking, HSG A
0.254	98	Paved roads w/curbs & sewers, HSG A
0.429	98	Roofs, HSG A
8.130	30	Woods, Good, HSG A
5.591	77	Woods, Good, HSG D
15.735	54	Weighted Average
14.534		92.37% Pervious Area
1.201		7.63% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
30.7	714	0.0240	0.39		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
51.8	764	Total			

Summary for Subcatchment EX8.4:

Runoff = 0.4 cfs @ 12.63 hrs, Volume= 0.079 af, Depth= 0.92"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.068	76	Gravel roads, HSG A
0.948	30	Woods, Good, HSG A
0.013	77	Woods, Good, HSG D
1.029	34	Weighted Average
1.029		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.4	50	0.1500	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
20.6	756	0.0150	0.61		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
30.0	806	Total			

Summary for Subcatchment EX8.5:

Runoff = 13.6 cfs @ 12.34 hrs, Volume= 1.571 af, Depth= 4.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.074	76	Gravel roads, HSG A
0.001	91	Gravel roads, HSG D
0.448	98	Paved parking, HSG D
1.175	98	Roofs, HSG D
1.471	30	Woods, Good, HSG A
0.805	77	Woods, Good, HSG D
3.974	68	Weighted Average
2.351		59.16% Pervious Area
1.623		40.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	50	0.1480	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
15.4	714	0.0240	0.77		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
24.9	764	Total			

Summary for Subcatchment EX8.6:

Runoff = 49.0 cfs @ 12.83 hrs, Volume= 9.076 af, Depth= 4.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.476	76	Gravel roads, HSG A
0.031	91	Gravel roads, HSG D
0.145	98	Paved parking, HSG D
6.266	30	Woods, Good, HSG A
17.922	77	Woods, Good, HSG D
24.840	65	Weighted Average
24.695		99.42% Pervious Area
0.145		0.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.9	50	0.0120	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
36.5	1,384	0.0160	0.63		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
62.4	1,434	Total			

Summary for Subcatchment EX8.7:

Runoff = 3.3 cfs @ 12.24 hrs, Volume= 0.329 af, Depth= 5.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.011	76	Gravel roads, HSG A
0.232	98	Paved parking, HSG D
0.104	98	Roofs, HSG D
0.222	30	Woods, Good, HSG A
0.186	77	Woods, Good, HSG D
0.755	72	Weighted Average
0.419		55.52% Pervious Area
0.336		44.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	50	0.0320	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.3	37	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.8	87	Total			

Summary for Subcatchment EX8.8:

Runoff = 3.0 cfs @ 12.49 hrs, Volume= 0.401 af, Depth= 5.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.036	76	Gravel roads, HSG A
0.006	91	Gravel roads, HSG D
0.234	98	Paved parking, HSG A
0.171	98	Paved parking, HSG D
0.079	98	Roofs, HSG D
0.279	30	Woods, Good, HSG A
0.077	77	Woods, Good, HSG D
0.881	74	Weighted Average
0.398		45.16% Pervious Area
0.483		54.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
13.7	368	0.0080	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
34.8	418	Total			

Summary for Subcatchment EX8.9:

Runoff = 0.8 cfs @ 12.52 hrs, Volume= 0.132 af, Depth= 1.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.031	76	Gravel roads, HSG A
0.004	91	Gravel roads, HSG D
0.736	30	Woods, Good, HSG A
0.199	77	Woods, Good, HSG D
0.970	41	Weighted Average
0.970		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.4	50	0.0140	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.9	97	0.0120	0.27		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
30.3	147	Total			

Summary for Pond P8.10: Low Point

Inflow Area = 3.634 ac, 67.45% Impervious, Inflow Depth = 7.52" for 100-yr event
Inflow = 23.1 cfs @ 12.18 hrs, Volume= 2.277 af
Outflow = 24.4 cfs @ 12.18 hrs, Volume= 2.115 af, Atten= 0%, Lag= 0.0 min
Primary = 24.4 cfs @ 12.18 hrs, Volume= 2.115 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 135.10' @ 12.18 hrs Surf.Area= 6,645 sf Storage= 9,535 cf

Plug-Flow detention time= 68.2 min calculated for 2.115 af (93% of inflow)
Center-of-Mass det. time= 30.3 min (808.4 - 778.1)

Volume	Invert	Avail.Storage	Storage Description
#1	133.00'	9,535 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
133.00	2,935	0	0
134.00	4,745	3,840	3,840
135.00	6,645	5,695	9,535

Device	Routing	Invert	Outlet Devices
#1	Primary	134.60'	**25.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=24.4 cfs @ 12.18 hrs HW=135.10' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 24.4 cfs @ 1.94 fps)

Summary for Pond P8.7: Low Point

Inflow Area = 0.755 ac, 44.48% Impervious, Inflow Depth = 5.22" for 100-yr event
Inflow = 3.3 cfs @ 12.24 hrs, Volume= 0.329 af
Outflow = 3.2 cfs @ 12.27 hrs, Volume= 0.291 af, Atten= 1%, Lag= 1.6 min
Primary = 3.2 cfs @ 12.27 hrs, Volume= 0.291 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 136.84' @ 12.27 hrs Surf.Area= 1,750 sf Storage= 2,060 cf

Plug-Flow detention time= 81.4 min calculated for 0.291 af (88% of inflow)
Center-of-Mass det. time= 27.5 min (855.9 - 828.5)

Volume	Invert	Avail.Storage	Storage Description
#1	135.00'	2,343 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
135.00	460	0	0
136.00	1,185	823	823
137.00	1,855	1,520	2,343

Device	Routing	Invert	Outlet Devices
#1	Primary	136.60'	**10.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=3.2 cfs @ 12.27 hrs HW=136.84' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 3.2 cfs @ 1.33 fps)

Summary for Link DP8.1: Wetland 28/29

Inflow Area = 20.191 ac, 15.81% Impervious, Inflow Depth = 3.28" for 100-yr event
Inflow = 53.4 cfs @ 12.25 hrs, Volume= 5.518 af
Primary = 53.4 cfs @ 12.25 hrs, Volume= 5.518 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.10: Low Point

Inflow Area = 3.634 ac, 67.45% Impervious, Inflow Depth = 6.98" for 100-yr event
Inflow = 24.4 cfs @ 12.18 hrs, Volume= 2.115 af
Primary = 24.4 cfs @ 12.18 hrs, Volume= 2.115 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.11: Wetland

Inflow Area = 0.878 ac, 37.23% Impervious, Inflow Depth = 6.79" for 100-yr event
Inflow = 6.1 cfs @ 12.12 hrs, Volume= 0.497 af
Primary = 6.1 cfs @ 12.12 hrs, Volume= 0.497 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.2: Wetland 27

Inflow Area = 16.199 ac, 2.32% Impervious, Inflow Depth = 1.84" for 100-yr event
Inflow = 12.9 cfs @ 12.79 hrs, Volume= 2.487 af
Primary = 12.9 cfs @ 12.79 hrs, Volume= 2.487 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.3: Wetland 25

Inflow Area = 15.735 ac, 7.63% Impervious, Inflow Depth = 3.09" for 100-yr event
Inflow = 23.4 cfs @ 12.72 hrs, Volume= 4.046 af
Primary = 23.4 cfs @ 12.72 hrs, Volume= 4.046 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.4: Wetland 26

Inflow Area = 1.029 ac, 0.00% Impervious, Inflow Depth = 0.92" for 100-yr event
Inflow = 0.4 cfs @ 12.63 hrs, Volume= 0.079 af
Primary = 0.4 cfs @ 12.63 hrs, Volume= 0.079 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.5: Low Point

Inflow Area = 3.974 ac, 40.84% Impervious, Inflow Depth = 4.74" for 100-yr event
Inflow = 13.6 cfs @ 12.34 hrs, Volume= 1.571 af
Primary = 13.6 cfs @ 12.34 hrs, Volume= 1.571 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.6: Wetland 24

Inflow Area = 24.840 ac, 0.58% Impervious, Inflow Depth = 4.38" for 100-yr event
Inflow = 49.0 cfs @ 12.83 hrs, Volume= 9.076 af
Primary = 49.0 cfs @ 12.83 hrs, Volume= 9.076 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.7: Low Point

Inflow Area = 0.755 ac, 44.48% Impervious, Inflow Depth = 4.62" for 100-yr event
Inflow = 3.2 cfs @ 12.27 hrs, Volume= 0.291 af
Primary = 3.2 cfs @ 12.27 hrs, Volume= 0.291 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.8: Low Point

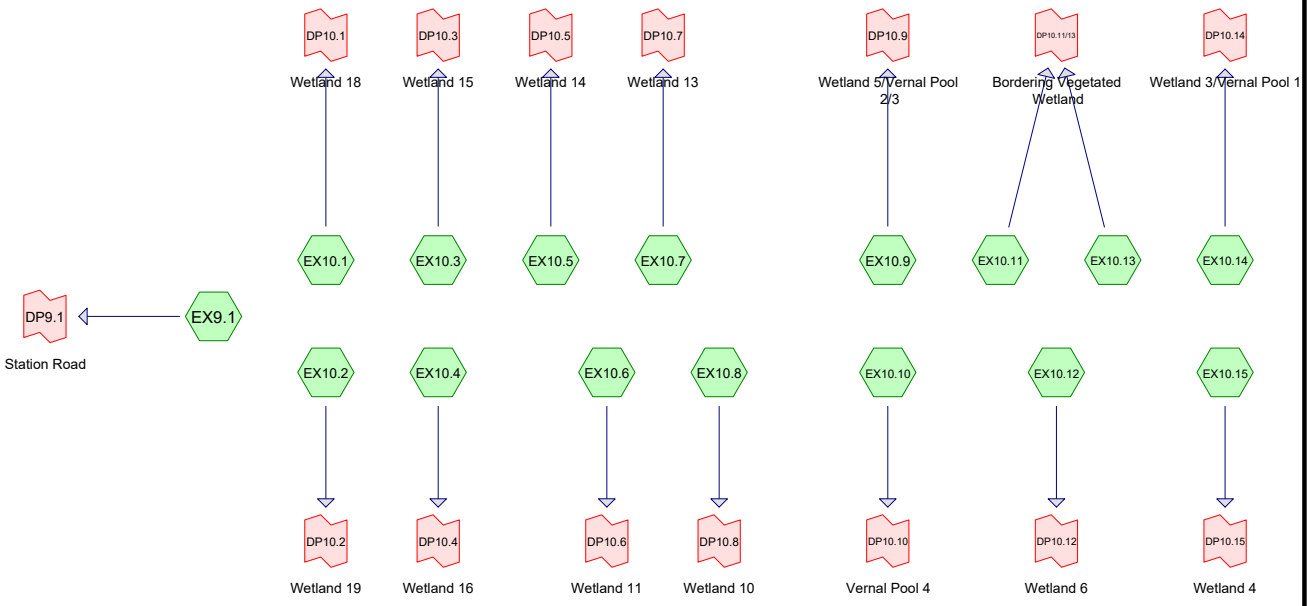
Inflow Area = 0.881 ac, 54.84% Impervious, Inflow Depth = 5.47" for 100-yr event
Inflow = 3.0 cfs @ 12.49 hrs, Volume= 0.401 af
Primary = 3.0 cfs @ 12.49 hrs, Volume= 0.401 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.9: Wetland 24A/Vernal Pool 5

Inflow Area = 0.970 ac, 0.00% Impervious, Inflow Depth = 1.63" for 100-yr event
Inflow = 0.8 cfs @ 12.52 hrs, Volume= 0.132 af
Primary = 0.8 cfs @ 12.52 hrs, Volume= 0.132 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs



Subcat Reach Pond Link

Routing Diagram for EX_Segment_9-10_ResponsetoComments
Prepared by VHB, Printed 7/10/2020

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentEX10.1: Runoff Area=1.073 ac 1.74% Impervious Runoff Depth=0.06"
Flow Length=250' Tc=19.0 min CN=78 Runoff=0.0 cfs 0.005 af

SubcatchmentEX10.10: Runoff Area=0.084 ac 0.00% Impervious Runoff Depth=0.06"
Flow Length=38' Slope=0.1840 '/' Tc=7.0 min CN=78 Runoff=0.0 cfs 0.000 af

SubcatchmentEX10.11: Runoff Area=1.132 ac 3.32% Impervious Runoff Depth=0.00"
Flow Length=38' Slope=0.0630 '/' Tc=10.7 min CN=52 Runoff=0.0 cfs 0.000 af

SubcatchmentEX10.12: Runoff Area=1.302 ac 1.86% Impervious Runoff Depth=0.00"
Flow Length=585' Tc=24.2 min CN=51 Runoff=0.0 cfs 0.000 af

SubcatchmentEX10.13: Runoff Area=1.723 ac 45.55% Impervious Runoff Depth=0.02"
Flow Length=590' Tc=15.0 min CN=73 Runoff=0.0 cfs 0.002 af

SubcatchmentEX10.14: Runoff Area=6.987 ac 23.41% Impervious Runoff Depth=0.02"
Flow Length=824' Tc=37.1 min CN=74 Runoff=0.0 cfs 0.014 af

SubcatchmentEX10.15: Runoff Area=186,416 sf 6.17% Impervious Runoff Depth=0.00"
Flow Length=649' Tc=22.5 min CN=42 Runoff=0.0 cfs 0.000 af

SubcatchmentEX10.2: Runoff Area=4.202 ac 18.25% Impervious Runoff Depth=0.00"
Flow Length=342' Tc=14.0 min CN=68 Runoff=0.0 cfs 0.000 af

SubcatchmentEX10.3: Runoff Area=0.985 ac 0.00% Impervious Runoff Depth=0.06"
Flow Length=100' Tc=13.4 min CN=78 Runoff=0.0 cfs 0.005 af

SubcatchmentEX10.4: Runoff Area=4.852 ac 10.38% Impervious Runoff Depth=0.00"
Flow Length=629' Tc=25.4 min CN=62 Runoff=0.0 cfs 0.000 af

SubcatchmentEX10.5: Runoff Area=0.836 ac 0.00% Impervious Runoff Depth=0.06"
Flow Length=118' Tc=23.4 min CN=78 Runoff=0.0 cfs 0.004 af

SubcatchmentEX10.6: Runoff Area=5.125 ac 1.24% Impervious Runoff Depth=0.00"
Flow Length=92' Tc=14.1 min CN=49 Runoff=0.0 cfs 0.000 af

SubcatchmentEX10.7: Runoff Area=1.802 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=913' Tc=62.5 min CN=40 Runoff=0.0 cfs 0.000 af

SubcatchmentEX10.8: Runoff Area=0.901 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=433' Tc=7.3 min CN=47 Runoff=0.0 cfs 0.000 af

SubcatchmentEX10.9: Runoff Area=2.822 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=384' Tc=7.6 min CN=63 Runoff=0.0 cfs 0.000 af

SubcatchmentEX9.1: Runoff Area=2.211 ac 49.73% Impervious Runoff Depth=0.22"
Flow Length=727' Tc=41.2 min CN=87 Runoff=0.2 cfs 0.041 af

Link DP10.1: Wetland 18 Inflow=0.0 cfs 0.005 af
Primary=0.0 cfs 0.005 af

Link DP10.10: Vernal Pool 4 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP10.11/13: Bordering Vegetated Wetland Inflow=0.0 cfs 0.002 af
Primary=0.0 cfs 0.002 af

Link DP10.12: Wetland 6 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP10.14: Wetland 3/Vernal Pool 1 Inflow=0.0 cfs 0.014 af
Primary=0.0 cfs 0.014 af

Link DP10.15: Wetland 4 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP10.2: Wetland 19 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP10.3: Wetland 15 Inflow=0.0 cfs 0.005 af
Primary=0.0 cfs 0.005 af

Link DP10.4: Wetland 16 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP10.5: Wetland 14 Inflow=0.0 cfs 0.004 af
Primary=0.0 cfs 0.004 af

Link DP10.6: Wetland 11 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP10.7: Wetland 13 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP10.8: Wetland 10 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP10.9: Wetland 5/Vernal Pool 2/3 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP9.1: Station Road Inflow=0.2 cfs 0.041 af
Primary=0.2 cfs 0.041 af

Total Runoff Area = 40.317 ac Runoff Volume = 0.072 af Average Runoff Depth = 0.02"
87.11% Pervious = 35.119 ac 12.89% Impervious = 5.198 ac

Summary for Subcatchment EX10.1:

Runoff = 0.0 cfs @ 12.59 hrs, Volume= 0.005 af, Depth= 0.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.045	91	Gravel roads, HSG D
0.019	98	Paved parking, HSG D
1.009	77	Woods, Good, HSG D
1.073	78	Weighted Average
1.054		98.26% Pervious Area
0.019		1.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	25	0.0040	0.56		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
8.9	25	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
9.4	200	0.0200	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.0	250	Total			

Summary for Subcatchment EX10.10:

Runoff = 0.0 cfs @ 12.41 hrs, Volume= 0.000 af, Depth= 0.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.010	89	Gravel roads, HSG C
0.005	91	Gravel roads, HSG D
0.011	70	Woods, Good, HSG C
0.058	77	Woods, Good, HSG D
0.084	78	Weighted Average
0.084		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	38	0.1840	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment EX10.11:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.007	76	Gravel roads, HSG A
0.019	91	Gravel roads, HSG D
0.038	98	Paved parking, HSG A
0.626	30	Woods, Good, HSG A
0.443	77	Woods, Good, HSG D
1.132	52	Weighted Average
1.094		96.68% Pervious Area
0.038		3.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	38	0.0630	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment EX10.12:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.099	76	Gravel roads, HSG A
0.101	91	Gravel roads, HSG D
0.018	98	Paved parking, HSG A
0.006	98	Paved parking, HSG D
0.760	30	Woods, Good, HSG A
0.318	77	Woods, Good, HSG D
1.302	51	Weighted Average
1.278		98.14% Pervious Area
0.024		1.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.0	50	0.0680	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.6	395	0.0300	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.6	140	0.0660	0.64		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
24.2	585	Total			

Summary for Subcatchment EX10.13:

Runoff = 0.0 cfs @ 15.25 hrs, Volume= 0.002 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.136	76	Gravel roads, HSG A
0.197	91	Gravel roads, HSG D
0.455	98	Paved parking, HSG A
0.329	98	Paved parking, HSG D
0.561	30	Woods, Good, HSG A
0.044	77	Woods, Good, HSG D
1.723	73	Weighted Average
0.938		54.45% Pervious Area
0.785		45.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	50	0.0100	0.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
1.8	104	0.1500	0.97		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
12.3	436	0.0140	0.59		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
15.0	590	Total			

Summary for Subcatchment EX10.14:

Runoff = 0.0 cfs @ 15.21 hrs, Volume= 0.014 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.015	76	Gravel roads, HSG A
0.073	91	Gravel roads, HSG D
1.636	98	Paved parking, HSG D
1.260	30	Woods, Good, HSG A
4.003	77	Woods, Good, HSG D
6.987	74	Weighted Average
5.352		76.59% Pervious Area
1.636		23.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
3.2	156	0.1060	0.81		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
26.6	618	0.0060	0.39		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
37.1	824	Total			

Summary for Subcatchment EX10.15:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (sf)	CN	Description
3,599	76	Gravel roads, HSG A
3,103	91	Gravel roads, HSG D
11,248	98	Paved parking, HSG A
253	98	Paved parking, HSG D
145,915	30	Woods, Good, HSG A
22,299	77	Woods, Good, HSG D
186,416	42	Weighted Average
174,915		93.83% Pervious Area
11,500		6.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7	50	0.0560	0.23		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
0.8	73	0.0420	1.43		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	68	0.0570	0.60		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
16.1	458	0.0090	0.47		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
22.5	649	Total			

Summary for Subcatchment EX10.2:

Runoff = 0.0 cfs @ 24.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.095	91	Gravel roads, HSG D
0.685	98	Paved parking, HSG A
0.081	98	Paved parking, HSG D
1.179	30	Woods, Good, HSG A
2.161	77	Woods, Good, HSG D
4.202	68	Weighted Average
3.435		81.75% Pervious Area
0.767		18.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0040	0.08		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
1.1	79	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.2	63	0.0870	5.99		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.7	92	0.0980	2.19		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.5	58	0.0630	0.63		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
14.0	342	Total			

Summary for Subcatchment EX10.3:

Runoff = 0.0 cfs @ 12.51 hrs, Volume= 0.005 af, Depth= 0.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.063	91	Gravel roads, HSG D
0.922	77	Woods, Good, HSG D
0.985	78	Weighted Average
0.985		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.0	50	0.0680	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	50	0.1470	1.92		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.4	100	Total			

Summary for Subcatchment EX10.4:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.110	91	Gravel roads, HSG D
0.503	98	Paved parking, HSG A
0.000	98	Paved parking, HSG D
1.838	30	Woods, Good, HSG A
2.401	77	Woods, Good, HSG D
4.852	62	Weighted Average
4.348		89.62% Pervious Area
0.504		10.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.9	115	0.0960	2.17		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.4	197	0.0910	0.75		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
6.5	267	0.0190	0.69		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
25.4	629	Total			

Summary for Subcatchment EX10.5:

Runoff = 0.0 cfs @ 12.66 hrs, Volume= 0.004 af, Depth= 0.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.049	91	Gravel roads, HSG D
0.788	77	Woods, Good, HSG D
0.836	78	Weighted Average
0.836		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	68	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
23.4	118	Total			

Summary for Subcatchment EX10.6:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.039	76	Gravel roads, HSG A
0.042	89	Gravel roads, HSG C
0.188	91	Gravel roads, HSG D
0.063	98	Paved parking, HSG A
3.112	30	Woods, Good, HSG A
0.093	70	Woods, Good, HSG C
1.588	77	Woods, Good, HSG D
5.125	49	Weighted Average
5.062		98.76% Pervious Area
0.063		1.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.5	42	0.0950	1.54		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.1	92	Total			

Summary for Subcatchment EX10.7:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.079	76	Gravel roads, HSG A
0.039	91	Gravel roads, HSG D
1.418	30	Woods, Good, HSG A
0.265	77	Woods, Good, HSG D
1.802	40	Weighted Average
1.802		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.9	50	0.0100	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.0	193	0.1800	1.06		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
31.6	670	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
62.5	913	Total			

Summary for Subcatchment EX10.8:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.572	30	Woods, Good, HSG A
0.007	70	Woods, Good, HSG C
0.322	77	Woods, Good, HSG D
0.901	47	Weighted Average
0.901		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.0500	0.22		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.3	277	0.0830	2.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	47	0.2550	1.26		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	59	0.3700	1.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.3	433	Total			

Summary for Subcatchment EX10.9:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.009	89	Gravel roads, HSG C
0.013	91	Gravel roads, HSG D
0.580	30	Woods, Good, HSG A
1.674	70	Woods, Good, HSG C
0.546	77	Woods, Good, HSG D
2.822	63	Weighted Average
2.822		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	50	0.4600	0.24		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
2.2	194	0.0460	1.50		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	140	0.2400	1.22		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.6	384	Total			

Summary for Subcatchment EX9.1:

Runoff = 0.2 cfs @ 12.67 hrs, Volume= 0.041 af, Depth= 0.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
1.100	98	Paved parking, HSG D
1.112	77	Woods, Good, HSG D
2.211	87	Weighted Average
1.112		50.27% Pervious Area
1.100		49.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	50	0.0500	1.75		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
0.4	100	0.0360	3.85		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
40.2	540	0.0020	0.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	37	0.0030	4.66	14.64	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
41.2	727	Total			

Summary for Link DP10.1: Wetland 18

Inflow Area = 1.073 ac, 1.74% Impervious, Inflow Depth = 0.06" for 1" event
Inflow = 0.0 cfs @ 12.59 hrs, Volume= 0.005 af
Primary = 0.0 cfs @ 12.59 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.10: Vernal Pool 4

Inflow Area = 0.084 ac, 0.00% Impervious, Inflow Depth = 0.06" for 1" event
Inflow = 0.0 cfs @ 12.41 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 12.41 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.11/13: Bordering Vegetated Wetland

Inflow Area = 2.855 ac, 28.80% Impervious, Inflow Depth = 0.01" for 1" event
Inflow = 0.0 cfs @ 15.25 hrs, Volume= 0.002 af
Primary = 0.0 cfs @ 15.25 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.12: Wetland 6

Inflow Area = 1.302 ac, 1.86% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.14: Wetland 3/Vernal Pool 1

Inflow Area = 6.987 ac, 23.41% Impervious, Inflow Depth = 0.02" for 1" event
Inflow = 0.0 cfs @ 15.21 hrs, Volume= 0.014 af
Primary = 0.0 cfs @ 15.21 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.15: Wetland 4

Inflow Area = 4.280 ac, 6.17% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.2: Wetland 19

Inflow Area = 4.202 ac, 18.25% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 24.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 24.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.3: Wetland 15

Inflow Area = 0.985 ac, 0.00% Impervious, Inflow Depth = 0.06" for 1" event
Inflow = 0.0 cfs @ 12.51 hrs, Volume= 0.005 af
Primary = 0.0 cfs @ 12.51 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.4: Wetland 16

Inflow Area = 4.852 ac, 10.38% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.5: Wetland 14

Inflow Area = 0.836 ac, 0.00% Impervious, Inflow Depth = 0.06" for 1" event
Inflow = 0.0 cfs @ 12.66 hrs, Volume= 0.004 af
Primary = 0.0 cfs @ 12.66 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.6: Wetland 11

Inflow Area = 5.125 ac, 1.24% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.7: Wetland 13

Inflow Area = 1.802 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.8: Wetland 10

Inflow Area = 0.901 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.9: Wetland 5/Vernal Pool 2/3

Inflow Area = 2.822 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP9.1: Station Road

Inflow Area = 2.211 ac, 49.73% Impervious, Inflow Depth = 0.22" for 1" event
Inflow = 0.2 cfs @ 12.67 hrs, Volume= 0.041 af
Primary = 0.2 cfs @ 12.67 hrs, Volume= 0.041 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentEX10.1: Runoff Area=1.073 ac 1.74% Impervious Runoff Depth=1.35"
Flow Length=250' Tc=19.0 min CN=78 Runoff=1.1 cfs 0.120 af

SubcatchmentEX10.10: Runoff Area=0.084 ac 0.00% Impervious Runoff Depth=1.35"
Flow Length=38' Slope=0.1840 '/' Tc=7.0 min CN=78 Runoff=0.1 cfs 0.009 af

SubcatchmentEX10.11: Runoff Area=1.132 ac 3.32% Impervious Runoff Depth=0.20"
Flow Length=38' Slope=0.0630 '/' Tc=10.7 min CN=52 Runoff=0.1 cfs 0.019 af

SubcatchmentEX10.12: Runoff Area=1.302 ac 1.86% Impervious Runoff Depth=0.17"
Flow Length=585' Tc=24.2 min CN=51 Runoff=0.0 cfs 0.019 af

SubcatchmentEX10.13: Runoff Area=1.723 ac 45.55% Impervious Runoff Depth=1.05"
Flow Length=590' Tc=15.0 min CN=73 Runoff=1.5 cfs 0.150 af

SubcatchmentEX10.14: Runoff Area=6.987 ac 23.41% Impervious Runoff Depth=1.10"
Flow Length=824' Tc=37.1 min CN=74 Runoff=4.4 cfs 0.643 af

SubcatchmentEX10.15: Runoff Area=186,416 sf 6.17% Impervious Runoff Depth=0.02"
Flow Length=649' Tc=22.5 min CN=42 Runoff=0.0 cfs 0.007 af

SubcatchmentEX10.2: Runoff Area=4.202 ac 18.25% Impervious Runoff Depth=0.79"
Flow Length=342' Tc=14.0 min CN=68 Runoff=2.6 cfs 0.276 af

SubcatchmentEX10.3: Runoff Area=0.985 ac 0.00% Impervious Runoff Depth=1.35"
Flow Length=100' Tc=13.4 min CN=78 Runoff=1.2 cfs 0.111 af

SubcatchmentEX10.4: Runoff Area=4.852 ac 10.38% Impervious Runoff Depth=0.52"
Flow Length=629' Tc=25.4 min CN=62 Runoff=1.3 cfs 0.212 af

SubcatchmentEX10.5: Runoff Area=0.836 ac 0.00% Impervious Runoff Depth=1.35"
Flow Length=118' Tc=23.4 min CN=78 Runoff=0.8 cfs 0.094 af

SubcatchmentEX10.6: Runoff Area=5.125 ac 1.24% Impervious Runoff Depth=0.13"
Flow Length=92' Tc=14.1 min CN=49 Runoff=0.1 cfs 0.055 af

SubcatchmentEX10.7: Runoff Area=1.802 ac 0.00% Impervious Runoff Depth=0.01"
Flow Length=913' Tc=62.5 min CN=40 Runoff=0.0 cfs 0.001 af

SubcatchmentEX10.8: Runoff Area=0.901 ac 0.00% Impervious Runoff Depth=0.09"
Flow Length=433' Tc=7.3 min CN=47 Runoff=0.0 cfs 0.007 af

SubcatchmentEX10.9: Runoff Area=2.822 ac 0.00% Impervious Runoff Depth=0.56"
Flow Length=384' Tc=7.6 min CN=63 Runoff=1.3 cfs 0.133 af

SubcatchmentEX9.1: Runoff Area=2.211 ac 49.73% Impervious Runoff Depth=2.00"
Flow Length=727' Tc=41.2 min CN=87 Runoff=2.5 cfs 0.369 af

Link DP10.1: Wetland 18 Inflow=1.1 cfs 0.120 af
Primary=1.1 cfs 0.120 af

Link DP10.10: Vernal Pool 4 Inflow=0.1 cfs 0.009 af
Primary=0.1 cfs 0.009 af

Link DP10.11/13: Bordering Vegetated Wetland Inflow=1.5 cfs 0.169 af
Primary=1.5 cfs 0.169 af

Link DP10.12: Wetland 6 Inflow=0.0 cfs 0.019 af
Primary=0.0 cfs 0.019 af

Link DP10.14: Wetland 3/Vernal Pool 1 Inflow=4.4 cfs 0.643 af
Primary=4.4 cfs 0.643 af

Link DP10.15: Wetland 4 Inflow=0.0 cfs 0.007 af
Primary=0.0 cfs 0.007 af

Link DP10.2: Wetland 19 Inflow=2.6 cfs 0.276 af
Primary=2.6 cfs 0.276 af

Link DP10.3: Wetland 15 Inflow=1.2 cfs 0.111 af
Primary=1.2 cfs 0.111 af

Link DP10.4: Wetland 16 Inflow=1.3 cfs 0.212 af
Primary=1.3 cfs 0.212 af

Link DP10.5: Wetland 14 Inflow=0.8 cfs 0.094 af
Primary=0.8 cfs 0.094 af

Link DP10.6: Wetland 11 Inflow=0.1 cfs 0.055 af
Primary=0.1 cfs 0.055 af

Link DP10.7: Wetland 13 Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP10.8: Wetland 10 Inflow=0.0 cfs 0.007 af
Primary=0.0 cfs 0.007 af

Link DP10.9: Wetland 5/Vernal Pool 2/3 Inflow=1.3 cfs 0.133 af
Primary=1.3 cfs 0.133 af

Link DP9.1: Station Road Inflow=2.5 cfs 0.369 af
Primary=2.5 cfs 0.369 af

Total Runoff Area = 40.317 ac Runoff Volume = 2.224 af Average Runoff Depth = 0.66"
87.11% Pervious = 35.119 ac 12.89% Impervious = 5.198 ac

Summary for Subcatchment EX10.1:

Runoff = 1.1 cfs @ 12.27 hrs, Volume= 0.120 af, Depth= 1.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.045	91	Gravel roads, HSG D
0.019	98	Paved parking, HSG D
1.009	77	Woods, Good, HSG D
1.073	78	Weighted Average
1.054		98.26% Pervious Area
0.019		1.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	25	0.0040	0.56		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
8.9	25	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
9.4	200	0.0200	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.0	250	Total			

Summary for Subcatchment EX10.10:

Runoff = 0.1 cfs @ 12.11 hrs, Volume= 0.009 af, Depth= 1.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.010	89	Gravel roads, HSG C
0.005	91	Gravel roads, HSG D
0.011	70	Woods, Good, HSG C
0.058	77	Woods, Good, HSG D
0.084	78	Weighted Average
0.084		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	38	0.1840	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment EX10.11:

Runoff = 0.1 cfs @ 12.47 hrs, Volume= 0.019 af, Depth= 0.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.007	76	Gravel roads, HSG A
0.019	91	Gravel roads, HSG D
0.038	98	Paved parking, HSG A
0.626	30	Woods, Good, HSG A
0.443	77	Woods, Good, HSG D
1.132	52	Weighted Average
1.094		96.68% Pervious Area
0.038		3.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	38	0.0630	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment EX10.12:

Runoff = 0.0 cfs @ 12.71 hrs, Volume= 0.019 af, Depth= 0.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.099	76	Gravel roads, HSG A
0.101	91	Gravel roads, HSG D
0.018	98	Paved parking, HSG A
0.006	98	Paved parking, HSG D
0.760	30	Woods, Good, HSG A
0.318	77	Woods, Good, HSG D
1.302	51	Weighted Average
1.278		98.14% Pervious Area
0.024		1.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.0	50	0.0680	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.6	395	0.0300	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.6	140	0.0660	0.64		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
24.2	585	Total			

Summary for Subcatchment EX10.13:

Runoff = 1.5 cfs @ 12.22 hrs, Volume= 0.150 af, Depth= 1.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.136	76	Gravel roads, HSG A
0.197	91	Gravel roads, HSG D
0.455	98	Paved parking, HSG A
0.329	98	Paved parking, HSG D
0.561	30	Woods, Good, HSG A
0.044	77	Woods, Good, HSG D
1.723	73	Weighted Average
0.938		54.45% Pervious Area
0.785		45.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	50	0.0100	0.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
1.8	104	0.1500	0.97		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
12.3	436	0.0140	0.59		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
15.0	590	Total			

Summary for Subcatchment EX10.14:

Runoff = 4.4 cfs @ 12.57 hrs, Volume= 0.643 af, Depth= 1.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.015	76	Gravel roads, HSG A
0.073	91	Gravel roads, HSG D
1.636	98	Paved parking, HSG D
1.260	30	Woods, Good, HSG A
4.003	77	Woods, Good, HSG D
6.987	74	Weighted Average
5.352		76.59% Pervious Area
1.636		23.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
3.2	156	0.1060	0.81		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
26.6	618	0.0060	0.39		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
37.1	824	Total			

Summary for Subcatchment EX10.15:

Runoff = 0.0 cfs @ 20.98 hrs, Volume= 0.007 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (sf)	CN	Description
3,599	76	Gravel roads, HSG A
3,103	91	Gravel roads, HSG D
11,248	98	Paved parking, HSG A
253	98	Paved parking, HSG D
145,915	30	Woods, Good, HSG A
22,299	77	Woods, Good, HSG D
186,416	42	Weighted Average
174,915		93.83% Pervious Area
11,500		6.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7	50	0.0560	0.23		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
0.8	73	0.0420	1.43		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	68	0.0570	0.60		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
16.1	458	0.0090	0.47		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
22.5	649	Total			

Summary for Subcatchment EX10.2:

Runoff = 2.6 cfs @ 12.22 hrs, Volume= 0.276 af, Depth= 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.095	91	Gravel roads, HSG D
0.685	98	Paved parking, HSG A
0.081	98	Paved parking, HSG D
1.179	30	Woods, Good, HSG A
2.161	77	Woods, Good, HSG D
4.202	68	Weighted Average
3.435		81.75% Pervious Area
0.767		18.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0040	0.08		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
1.1	79	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.2	63	0.0870	5.99		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.7	92	0.0980	2.19		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.5	58	0.0630	0.63		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
14.0	342	Total			

Summary for Subcatchment EX10.3:

Runoff = 1.2 cfs @ 12.19 hrs, Volume= 0.111 af, Depth= 1.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.063	91	Gravel roads, HSG D
0.922	77	Woods, Good, HSG D
0.985	78	Weighted Average
0.985		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.0	50	0.0680	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	50	0.1470	1.92		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.4	100	Total			

Summary for Subcatchment EX10.4:

Runoff = 1.3 cfs @ 12.45 hrs, Volume= 0.212 af, Depth= 0.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.110	91	Gravel roads, HSG D
0.503	98	Paved parking, HSG A
0.000	98	Paved parking, HSG D
1.838	30	Woods, Good, HSG A
2.401	77	Woods, Good, HSG D
4.852	62	Weighted Average
4.348		89.62% Pervious Area
0.504		10.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.9	115	0.0960	2.17		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.4	197	0.0910	0.75		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
6.5	267	0.0190	0.69		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
25.4	629	Total			

Summary for Subcatchment EX10.5:

Runoff = 0.8 cfs @ 12.35 hrs, Volume= 0.094 af, Depth= 1.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.049	91	Gravel roads, HSG D
0.788	77	Woods, Good, HSG D
0.836	78	Weighted Average
0.836		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	68	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
23.4	118	Total			

Summary for Subcatchment EX10.6:

Runoff = 0.1 cfs @ 12.63 hrs, Volume= 0.055 af, Depth= 0.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.039	76	Gravel roads, HSG A
0.042	89	Gravel roads, HSG C
0.188	91	Gravel roads, HSG D
0.063	98	Paved parking, HSG A
3.112	30	Woods, Good, HSG A
0.093	70	Woods, Good, HSG C
1.588	77	Woods, Good, HSG D
5.125	49	Weighted Average
5.062		98.76% Pervious Area
0.063		1.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.5	42	0.0950	1.54		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.1	92	Total			

Summary for Subcatchment EX10.7:

Runoff = 0.0 cfs @ 23.96 hrs, Volume= 0.001 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.079	76	Gravel roads, HSG A
0.039	91	Gravel roads, HSG D
1.418	30	Woods, Good, HSG A
0.265	77	Woods, Good, HSG D
1.802	40	Weighted Average
1.802		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.9	50	0.0100	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.0	193	0.1800	1.06		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
31.6	670	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
62.5	913	Total			

Summary for Subcatchment EX10.8:

Runoff = 0.0 cfs @ 14.64 hrs, Volume= 0.007 af, Depth= 0.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.572	30	Woods, Good, HSG A
0.007	70	Woods, Good, HSG C
0.322	77	Woods, Good, HSG D
0.901	47	Weighted Average
0.901		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.0500	0.22		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.3	277	0.0830	2.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	47	0.2550	1.26		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	59	0.3700	1.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.3	433	Total			

Summary for Subcatchment EX10.9:

Runoff = 1.3 cfs @ 12.13 hrs, Volume= 0.133 af, Depth= 0.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.009	89	Gravel roads, HSG C
0.013	91	Gravel roads, HSG D
0.580	30	Woods, Good, HSG A
1.674	70	Woods, Good, HSG C
0.546	77	Woods, Good, HSG D
2.822	63	Weighted Average
2.822		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	50	0.4600	0.24		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
2.2	194	0.0460	1.50		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	140	0.2400	1.22		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.6	384	Total			

Summary for Subcatchment EX9.1:

Runoff = 2.5 cfs @ 12.58 hrs, Volume= 0.369 af, Depth= 2.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
1.100	98	Paved parking, HSG D
1.112	77	Woods, Good, HSG D
2.211	87	Weighted Average
1.112		50.27% Pervious Area
1.100		49.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	50	0.0500	1.75		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
0.4	100	0.0360	3.85		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
40.2	540	0.0020	0.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	37	0.0030	4.66	14.64	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
41.2	727	Total			

Summary for Link DP10.1: Wetland 18

Inflow Area = 1.073 ac, 1.74% Impervious, Inflow Depth = 1.35" for 2-yr event
Inflow = 1.1 cfs @ 12.27 hrs, Volume= 0.120 af
Primary = 1.1 cfs @ 12.27 hrs, Volume= 0.120 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.10: Vernal Pool 4

Inflow Area = 0.084 ac, 0.00% Impervious, Inflow Depth = 1.35" for 2-yr event
Inflow = 0.1 cfs @ 12.11 hrs, Volume= 0.009 af
Primary = 0.1 cfs @ 12.11 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.11/13: Bordering Vegetated Wetland

Inflow Area = 2.855 ac, 28.80% Impervious, Inflow Depth = 0.71" for 2-yr event
Inflow = 1.5 cfs @ 12.22 hrs, Volume= 0.169 af
Primary = 1.5 cfs @ 12.22 hrs, Volume= 0.169 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.12: Wetland 6

Inflow Area = 1.302 ac, 1.86% Impervious, Inflow Depth = 0.17" for 2-yr event
Inflow = 0.0 cfs @ 12.71 hrs, Volume= 0.019 af
Primary = 0.0 cfs @ 12.71 hrs, Volume= 0.019 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.14: Wetland 3/Vernal Pool 1

Inflow Area = 6.987 ac, 23.41% Impervious, Inflow Depth = 1.10" for 2-yr event
Inflow = 4.4 cfs @ 12.57 hrs, Volume= 0.643 af
Primary = 4.4 cfs @ 12.57 hrs, Volume= 0.643 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.15: Wetland 4

Inflow Area = 4.280 ac, 6.17% Impervious, Inflow Depth = 0.02" for 2-yr event
Inflow = 0.0 cfs @ 20.98 hrs, Volume= 0.007 af
Primary = 0.0 cfs @ 20.98 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.2: Wetland 19

Inflow Area = 4.202 ac, 18.25% Impervious, Inflow Depth = 0.79" for 2-yr event
Inflow = 2.6 cfs @ 12.22 hrs, Volume= 0.276 af
Primary = 2.6 cfs @ 12.22 hrs, Volume= 0.276 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.3: Wetland 15

Inflow Area = 0.985 ac, 0.00% Impervious, Inflow Depth = 1.35" for 2-yr event
Inflow = 1.2 cfs @ 12.19 hrs, Volume= 0.111 af
Primary = 1.2 cfs @ 12.19 hrs, Volume= 0.111 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.4: Wetland 16

Inflow Area = 4.852 ac, 10.38% Impervious, Inflow Depth = 0.52" for 2-yr event
Inflow = 1.3 cfs @ 12.45 hrs, Volume= 0.212 af
Primary = 1.3 cfs @ 12.45 hrs, Volume= 0.212 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.5: Wetland 14

Inflow Area = 0.836 ac, 0.00% Impervious, Inflow Depth = 1.35" for 2-yr event
Inflow = 0.8 cfs @ 12.35 hrs, Volume= 0.094 af
Primary = 0.8 cfs @ 12.35 hrs, Volume= 0.094 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.6: Wetland 11

Inflow Area = 5.125 ac, 1.24% Impervious, Inflow Depth = 0.13" for 2-yr event
Inflow = 0.1 cfs @ 12.63 hrs, Volume= 0.055 af
Primary = 0.1 cfs @ 12.63 hrs, Volume= 0.055 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.7: Wetland 13

Inflow Area = 1.802 ac, 0.00% Impervious, Inflow Depth = 0.01" for 2-yr event
Inflow = 0.0 cfs @ 23.96 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 23.96 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.8: Wetland 10

Inflow Area = 0.901 ac, 0.00% Impervious, Inflow Depth = 0.09" for 2-yr event
Inflow = 0.0 cfs @ 14.64 hrs, Volume= 0.007 af
Primary = 0.0 cfs @ 14.64 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.9: Wetland 5/Vernal Pool 2/3

Inflow Area = 2.822 ac, 0.00% Impervious, Inflow Depth = 0.56" for 2-yr event
Inflow = 1.3 cfs @ 12.13 hrs, Volume= 0.133 af
Primary = 1.3 cfs @ 12.13 hrs, Volume= 0.133 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP9.1: Station Road

Inflow Area = 2.211 ac, 49.73% Impervious, Inflow Depth = 2.00" for 2-yr event
Inflow = 2.5 cfs @ 12.58 hrs, Volume= 0.369 af
Primary = 2.5 cfs @ 12.58 hrs, Volume= 0.369 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentEX10.1: Runoff Area=1.073 ac 1.74% Impervious Runoff Depth=2.80"
Flow Length=250' Tc=19.0 min CN=78 Runoff=2.4 cfs 0.250 af

SubcatchmentEX10.10: Runoff Area=0.084 ac 0.00% Impervious Runoff Depth=2.80"
Flow Length=38' Slope=0.1840 '/' Tc=7.0 min CN=78 Runoff=0.3 cfs 0.020 af

SubcatchmentEX10.11: Runoff Area=1.132 ac 3.32% Impervious Runoff Depth=0.85"
Flow Length=38' Slope=0.0630 '/' Tc=10.7 min CN=52 Runoff=0.7 cfs 0.080 af

SubcatchmentEX10.12: Runoff Area=1.302 ac 1.86% Impervious Runoff Depth=0.79"
Flow Length=585' Tc=24.2 min CN=51 Runoff=0.5 cfs 0.086 af

SubcatchmentEX10.13: Runoff Area=1.723 ac 45.55% Impervious Runoff Depth=2.36"
Flow Length=590' Tc=15.0 min CN=73 Runoff=3.6 cfs 0.339 af

SubcatchmentEX10.14: Runoff Area=6.987 ac 23.41% Impervious Runoff Depth=2.44"
Flow Length=824' Tc=37.1 min CN=74 Runoff=10.2 cfs 1.423 af

SubcatchmentEX10.15: Runoff Area=186,416 sf 6.17% Impervious Runoff Depth=0.34"
Flow Length=649' Tc=22.5 min CN=42 Runoff=0.4 cfs 0.121 af

SubcatchmentEX10.2: Runoff Area=4.202 ac 18.25% Impervious Runoff Depth=1.95"
Flow Length=342' Tc=14.0 min CN=68 Runoff=7.2 cfs 0.683 af

SubcatchmentEX10.3: Runoff Area=0.985 ac 0.00% Impervious Runoff Depth=2.80"
Flow Length=100' Tc=13.4 min CN=78 Runoff=2.6 cfs 0.230 af

SubcatchmentEX10.4: Runoff Area=4.852 ac 10.38% Impervious Runoff Depth=1.50"
Flow Length=629' Tc=25.4 min CN=62 Runoff=4.8 cfs 0.607 af

SubcatchmentEX10.5: Runoff Area=0.836 ac 0.00% Impervious Runoff Depth=2.80"
Flow Length=118' Tc=23.4 min CN=78 Runoff=1.7 cfs 0.195 af

SubcatchmentEX10.6: Runoff Area=5.125 ac 1.24% Impervious Runoff Depth=0.68"
Flow Length=92' Tc=14.1 min CN=49 Runoff=1.9 cfs 0.290 af

SubcatchmentEX10.7: Runoff Area=1.802 ac 0.00% Impervious Runoff Depth=0.26"
Flow Length=913' Tc=62.5 min CN=40 Runoff=0.1 cfs 0.039 af

SubcatchmentEX10.8: Runoff Area=0.901 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=433' Tc=7.3 min CN=47 Runoff=0.3 cfs 0.043 af

SubcatchmentEX10.9: Runoff Area=2.822 ac 0.00% Impervious Runoff Depth=1.57"
Flow Length=384' Tc=7.6 min CN=63 Runoff=4.6 cfs 0.370 af

SubcatchmentEX9.1: Runoff Area=2.211 ac 49.73% Impervious Runoff Depth=3.66"
Flow Length=727' Tc=41.2 min CN=87 Runoff=4.5 cfs 0.675 af

Link DP10.1: Wetland 18 Inflow=2.4 cfs 0.250 af
Primary=2.4 cfs 0.250 af

Link DP10.10: Vernal Pool 4 Inflow=0.3 cfs 0.020 af
Primary=0.3 cfs 0.020 af

Link DP10.11/13: Bordering Vegetated Wetland Inflow=4.2 cfs 0.419 af
Primary=4.2 cfs 0.419 af

Link DP10.12: Wetland 6 Inflow=0.5 cfs 0.086 af
Primary=0.5 cfs 0.086 af

Link DP10.14: Wetland 3/Vernal Pool 1 Inflow=10.2 cfs 1.423 af
Primary=10.2 cfs 1.423 af

Link DP10.15: Wetland 4 Inflow=0.4 cfs 0.121 af
Primary=0.4 cfs 0.121 af

Link DP10.2: Wetland 19 Inflow=7.2 cfs 0.683 af
Primary=7.2 cfs 0.683 af

Link DP10.3: Wetland 15 Inflow=2.6 cfs 0.230 af
Primary=2.6 cfs 0.230 af

Link DP10.4: Wetland 16 Inflow=4.8 cfs 0.607 af
Primary=4.8 cfs 0.607 af

Link DP10.5: Wetland 14 Inflow=1.7 cfs 0.195 af
Primary=1.7 cfs 0.195 af

Link DP10.6: Wetland 11 Inflow=1.9 cfs 0.290 af
Primary=1.9 cfs 0.290 af

Link DP10.7: Wetland 13 Inflow=0.1 cfs 0.039 af
Primary=0.1 cfs 0.039 af

Link DP10.8: Wetland 10 Inflow=0.3 cfs 0.043 af
Primary=0.3 cfs 0.043 af

Link DP10.9: Wetland 5/Vernal Pool 2/3 Inflow=4.6 cfs 0.370 af
Primary=4.6 cfs 0.370 af

Link DP9.1: Station Road Inflow=4.5 cfs 0.675 af
Primary=4.5 cfs 0.675 af

Total Runoff Area = 40.317 ac Runoff Volume = 5.449 af Average Runoff Depth = 1.62"
87.11% Pervious = 35.119 ac 12.89% Impervious = 5.198 ac

Summary for Subcatchment EX10.1:

Runoff = 2.4 cfs @ 12.26 hrs, Volume= 0.250 af, Depth= 2.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.045	91	Gravel roads, HSG D
0.019	98	Paved parking, HSG D
1.009	77	Woods, Good, HSG D
1.073	78	Weighted Average
1.054		98.26% Pervious Area
0.019		1.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	25	0.0040	0.56		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
8.9	25	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
9.4	200	0.0200	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.0	250	Total			

Summary for Subcatchment EX10.10:

Runoff = 0.3 cfs @ 12.10 hrs, Volume= 0.020 af, Depth= 2.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.010	89	Gravel roads, HSG C
0.005	91	Gravel roads, HSG D
0.011	70	Woods, Good, HSG C
0.058	77	Woods, Good, HSG D
0.084	78	Weighted Average
0.084		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	38	0.1840	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment EX10.11:

Runoff = 0.7 cfs @ 12.19 hrs, Volume= 0.080 af, Depth= 0.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.007	76	Gravel roads, HSG A
0.019	91	Gravel roads, HSG D
0.038	98	Paved parking, HSG A
0.626	30	Woods, Good, HSG A
0.443	77	Woods, Good, HSG D
1.132	52	Weighted Average
1.094		96.68% Pervious Area
0.038		3.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	38	0.0630	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment EX10.12:

Runoff = 0.5 cfs @ 12.45 hrs, Volume= 0.086 af, Depth= 0.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.099	76	Gravel roads, HSG A
0.101	91	Gravel roads, HSG D
0.018	98	Paved parking, HSG A
0.006	98	Paved parking, HSG D
0.760	30	Woods, Good, HSG A
0.318	77	Woods, Good, HSG D
1.302	51	Weighted Average
1.278		98.14% Pervious Area
0.024		1.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.0	50	0.0680	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.6	395	0.0300	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.6	140	0.0660	0.64		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
24.2	585	Total			

Summary for Subcatchment EX10.13:

Runoff = 3.6 cfs @ 12.21 hrs, Volume= 0.339 af, Depth= 2.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.136	76	Gravel roads, HSG A
0.197	91	Gravel roads, HSG D
0.455	98	Paved parking, HSG A
0.329	98	Paved parking, HSG D
0.561	30	Woods, Good, HSG A
0.044	77	Woods, Good, HSG D
1.723	73	Weighted Average
0.938		54.45% Pervious Area
0.785		45.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	50	0.0100	0.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
1.8	104	0.1500	0.97		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
12.3	436	0.0140	0.59		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
15.0	590	Total			

Summary for Subcatchment EX10.14:

Runoff = 10.2 cfs @ 12.53 hrs, Volume= 1.423 af, Depth= 2.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.015	76	Gravel roads, HSG A
0.073	91	Gravel roads, HSG D
1.636	98	Paved parking, HSG D
1.260	30	Woods, Good, HSG A
4.003	77	Woods, Good, HSG D
6.987	74	Weighted Average
5.352		76.59% Pervious Area
1.636		23.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
3.2	156	0.1060	0.81		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
26.6	618	0.0060	0.39		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
37.1	824	Total			

Summary for Subcatchment EX10.15:

Runoff = 0.4 cfs @ 12.62 hrs, Volume= 0.121 af, Depth= 0.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (sf)	CN	Description
3,599	76	Gravel roads, HSG A
3,103	91	Gravel roads, HSG D
11,248	98	Paved parking, HSG A
253	98	Paved parking, HSG D
145,915	30	Woods, Good, HSG A
22,299	77	Woods, Good, HSG D
186,416	42	Weighted Average
174,915		93.83% Pervious Area
11,500		6.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7	50	0.0560	0.23		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
0.8	73	0.0420	1.43		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	68	0.0570	0.60		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
16.1	458	0.0090	0.47		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
22.5	649	Total			

Summary for Subcatchment EX10.2:

Runoff = 7.2 cfs @ 12.20 hrs, Volume= 0.683 af, Depth= 1.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.095	91	Gravel roads, HSG D
0.685	98	Paved parking, HSG A
0.081	98	Paved parking, HSG D
1.179	30	Woods, Good, HSG A
2.161	77	Woods, Good, HSG D
4.202	68	Weighted Average
3.435		81.75% Pervious Area
0.767		18.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0040	0.08		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
1.1	79	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.2	63	0.0870	5.99		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.7	92	0.0980	2.19		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.5	58	0.0630	0.63		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
14.0	342	Total			

Summary for Subcatchment EX10.3:

Runoff = 2.6 cfs @ 12.19 hrs, Volume= 0.230 af, Depth= 2.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.063	91	Gravel roads, HSG D
0.922	77	Woods, Good, HSG D
0.985	78	Weighted Average
0.985		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.0	50	0.0680	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	50	0.1470	1.92		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.4	100	Total			

Summary for Subcatchment EX10.4:

Runoff = 4.8 cfs @ 12.39 hrs, Volume= 0.607 af, Depth= 1.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.110	91	Gravel roads, HSG D
0.503	98	Paved parking, HSG A
0.000	98	Paved parking, HSG D
1.838	30	Woods, Good, HSG A
2.401	77	Woods, Good, HSG D
4.852	62	Weighted Average
4.348		89.62% Pervious Area
0.504		10.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.9	115	0.0960	2.17		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.4	197	0.0910	0.75		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
6.5	267	0.0190	0.69		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
25.4	629	Total			

Summary for Subcatchment EX10.5:

Runoff = 1.7 cfs @ 12.32 hrs, Volume= 0.195 af, Depth= 2.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.049	91	Gravel roads, HSG D
0.788	77	Woods, Good, HSG D
0.836	78	Weighted Average
0.836		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	68	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
23.4	118	Total			

Summary for Subcatchment EX10.6:

Runoff = 1.9 cfs @ 12.29 hrs, Volume= 0.290 af, Depth= 0.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.039	76	Gravel roads, HSG A
0.042	89	Gravel roads, HSG C
0.188	91	Gravel roads, HSG D
0.063	98	Paved parking, HSG A
3.112	30	Woods, Good, HSG A
0.093	70	Woods, Good, HSG C
1.588	77	Woods, Good, HSG D
5.125	49	Weighted Average
5.062		98.76% Pervious Area
0.063		1.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.5	42	0.0950	1.54		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.1	92	Total			

Summary for Subcatchment EX10.7:

Runoff = 0.1 cfs @ 13.54 hrs, Volume= 0.039 af, Depth= 0.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.079	76	Gravel roads, HSG A
0.039	91	Gravel roads, HSG D
1.418	30	Woods, Good, HSG A
0.265	77	Woods, Good, HSG D
1.802	40	Weighted Average
1.802		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.9	50	0.0100	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.0	193	0.1800	1.06		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
31.6	670	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
62.5	913	Total			

Summary for Subcatchment EX10.8:

Runoff = 0.3 cfs @ 12.16 hrs, Volume= 0.043 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.572	30	Woods, Good, HSG A
0.007	70	Woods, Good, HSG C
0.322	77	Woods, Good, HSG D
0.901	47	Weighted Average
0.901		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.0500	0.22		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.3	277	0.0830	2.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	47	0.2550	1.26		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	59	0.3700	1.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.3	433	Total			

Summary for Subcatchment EX10.9:

Runoff = 4.6 cfs @ 12.12 hrs, Volume= 0.370 af, Depth= 1.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.009	89	Gravel roads, HSG C
0.013	91	Gravel roads, HSG D
0.580	30	Woods, Good, HSG A
1.674	70	Woods, Good, HSG C
0.546	77	Woods, Good, HSG D
2.822	63	Weighted Average
2.822		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	50	0.4600	0.24		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
2.2	194	0.0460	1.50		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	140	0.2400	1.22		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.6	384	Total			

Summary for Subcatchment EX9.1:

Runoff = 4.5 cfs @ 12.55 hrs, Volume= 0.675 af, Depth= 3.66"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
1.100	98	Paved parking, HSG D
1.112	77	Woods, Good, HSG D
2.211	87	Weighted Average
1.112		50.27% Pervious Area
1.100		49.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	50	0.0500	1.75		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
0.4	100	0.0360	3.85		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
40.2	540	0.0020	0.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	37	0.0030	4.66	14.64	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
41.2	727	Total			

Summary for Link DP10.1: Wetland 18

Inflow Area = 1.073 ac, 1.74% Impervious, Inflow Depth = 2.80" for 10-yr event
Inflow = 2.4 cfs @ 12.26 hrs, Volume= 0.250 af
Primary = 2.4 cfs @ 12.26 hrs, Volume= 0.250 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.10: Vernal Pool 4

Inflow Area = 0.084 ac, 0.00% Impervious, Inflow Depth = 2.80" for 10-yr event
Inflow = 0.3 cfs @ 12.10 hrs, Volume= 0.020 af
Primary = 0.3 cfs @ 12.10 hrs, Volume= 0.020 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.11/13: Bordering Vegetated Wetland

Inflow Area = 2.855 ac, 28.80% Impervious, Inflow Depth = 1.76" for 10-yr event
Inflow = 4.2 cfs @ 12.21 hrs, Volume= 0.419 af
Primary = 4.2 cfs @ 12.21 hrs, Volume= 0.419 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.12: Wetland 6

Inflow Area = 1.302 ac, 1.86% Impervious, Inflow Depth = 0.79" for 10-yr event
Inflow = 0.5 cfs @ 12.45 hrs, Volume= 0.086 af
Primary = 0.5 cfs @ 12.45 hrs, Volume= 0.086 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.14: Wetland 3/Vernal Pool 1

Inflow Area = 6.987 ac, 23.41% Impervious, Inflow Depth = 2.44" for 10-yr event
Inflow = 10.2 cfs @ 12.53 hrs, Volume= 1.423 af
Primary = 10.2 cfs @ 12.53 hrs, Volume= 1.423 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.15: Wetland 4

Inflow Area = 4.280 ac, 6.17% Impervious, Inflow Depth = 0.34" for 10-yr event
Inflow = 0.4 cfs @ 12.62 hrs, Volume= 0.121 af
Primary = 0.4 cfs @ 12.62 hrs, Volume= 0.121 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.2: Wetland 19

Inflow Area = 4.202 ac, 18.25% Impervious, Inflow Depth = 1.95" for 10-yr event
Inflow = 7.2 cfs @ 12.20 hrs, Volume= 0.683 af
Primary = 7.2 cfs @ 12.20 hrs, Volume= 0.683 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.3: Wetland 15

Inflow Area = 0.985 ac, 0.00% Impervious, Inflow Depth = 2.80" for 10-yr event
Inflow = 2.6 cfs @ 12.19 hrs, Volume= 0.230 af
Primary = 2.6 cfs @ 12.19 hrs, Volume= 0.230 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.4: Wetland 16

Inflow Area = 4.852 ac, 10.38% Impervious, Inflow Depth = 1.50" for 10-yr event
Inflow = 4.8 cfs @ 12.39 hrs, Volume= 0.607 af
Primary = 4.8 cfs @ 12.39 hrs, Volume= 0.607 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.5: Wetland 14

Inflow Area = 0.836 ac, 0.00% Impervious, Inflow Depth = 2.80" for 10-yr event
Inflow = 1.7 cfs @ 12.32 hrs, Volume= 0.195 af
Primary = 1.7 cfs @ 12.32 hrs, Volume= 0.195 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.6: Wetland 11

Inflow Area = 5.125 ac, 1.24% Impervious, Inflow Depth = 0.68" for 10-yr event
Inflow = 1.9 cfs @ 12.29 hrs, Volume= 0.290 af
Primary = 1.9 cfs @ 12.29 hrs, Volume= 0.290 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.7: Wetland 13

Inflow Area = 1.802 ac, 0.00% Impervious, Inflow Depth = 0.26" for 10-yr event
Inflow = 0.1 cfs @ 13.54 hrs, Volume= 0.039 af
Primary = 0.1 cfs @ 13.54 hrs, Volume= 0.039 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.8: Wetland 10

Inflow Area = 0.901 ac, 0.00% Impervious, Inflow Depth = 0.57" for 10-yr event
Inflow = 0.3 cfs @ 12.16 hrs, Volume= 0.043 af
Primary = 0.3 cfs @ 12.16 hrs, Volume= 0.043 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.9: Wetland 5/Vernal Pool 2/3

Inflow Area = 2.822 ac, 0.00% Impervious, Inflow Depth = 1.57" for 10-yr event
Inflow = 4.6 cfs @ 12.12 hrs, Volume= 0.370 af
Primary = 4.6 cfs @ 12.12 hrs, Volume= 0.370 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP9.1: Station Road

Inflow Area = 2.211 ac, 49.73% Impervious, Inflow Depth = 3.66" for 10-yr event
Inflow = 4.5 cfs @ 12.55 hrs, Volume= 0.675 af
Primary = 4.5 cfs @ 12.55 hrs, Volume= 0.675 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentEX10.1: Runoff Area=1.073 ac 1.74% Impervious Runoff Depth=3.78"
Flow Length=250' Tc=19.0 min CN=78 Runoff=3.3 cfs 0.338 af

SubcatchmentEX10.10: Runoff Area=0.084 ac 0.00% Impervious Runoff Depth=3.78"
Flow Length=38' Slope=0.1840 '/' Tc=7.0 min CN=78 Runoff=0.4 cfs 0.026 af

SubcatchmentEX10.11: Runoff Area=1.132 ac 3.32% Impervious Runoff Depth=1.41"
Flow Length=38' Slope=0.0630 '/' Tc=10.7 min CN=52 Runoff=1.4 cfs 0.133 af

SubcatchmentEX10.12: Runoff Area=1.302 ac 1.86% Impervious Runoff Depth=1.33"
Flow Length=585' Tc=24.2 min CN=51 Runoff=1.1 cfs 0.145 af

SubcatchmentEX10.13: Runoff Area=1.723 ac 45.55% Impervious Runoff Depth=3.28"
Flow Length=590' Tc=15.0 min CN=73 Runoff=5.0 cfs 0.471 af

SubcatchmentEX10.14: Runoff Area=6.987 ac 23.41% Impervious Runoff Depth=3.38"
Flow Length=824' Tc=37.1 min CN=74 Runoff=14.1 cfs 1.968 af

SubcatchmentEX10.15: Runoff Area=186,416 sf 6.17% Impervious Runoff Depth=0.70"
Flow Length=649' Tc=22.5 min CN=42 Runoff=1.3 cfs 0.248 af

SubcatchmentEX10.2: Runoff Area=4.202 ac 18.25% Impervious Runoff Depth=2.80"
Flow Length=342' Tc=14.0 min CN=68 Runoff=10.6 cfs 0.980 af

SubcatchmentEX10.3: Runoff Area=0.985 ac 0.00% Impervious Runoff Depth=3.78"
Flow Length=100' Tc=13.4 min CN=78 Runoff=3.4 cfs 0.310 af

SubcatchmentEX10.4: Runoff Area=4.852 ac 10.38% Impervious Runoff Depth=2.25"
Flow Length=629' Tc=25.4 min CN=62 Runoff=7.5 cfs 0.909 af

SubcatchmentEX10.5: Runoff Area=0.836 ac 0.00% Impervious Runoff Depth=3.78"
Flow Length=118' Tc=23.4 min CN=78 Runoff=2.3 cfs 0.264 af

SubcatchmentEX10.6: Runoff Area=5.125 ac 1.24% Impervious Runoff Depth=1.18"
Flow Length=92' Tc=14.1 min CN=49 Runoff=4.3 cfs 0.505 af

SubcatchmentEX10.7: Runoff Area=1.802 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=913' Tc=62.5 min CN=40 Runoff=0.2 cfs 0.086 af

SubcatchmentEX10.8: Runoff Area=0.901 ac 0.00% Impervious Runoff Depth=1.04"
Flow Length=433' Tc=7.3 min CN=47 Runoff=0.8 cfs 0.078 af

SubcatchmentEX10.9: Runoff Area=2.822 ac 0.00% Impervious Runoff Depth=2.34"
Flow Length=384' Tc=7.6 min CN=63 Runoff=7.1 cfs 0.550 af

SubcatchmentEX9.1: Runoff Area=2.211 ac 49.73% Impervious Runoff Depth=4.74"
Flow Length=727' Tc=41.2 min CN=87 Runoff=5.8 cfs 0.873 af

Link DP10.1: Wetland 18 Inflow=3.3 cfs 0.338 af
Primary=3.3 cfs 0.338 af

Link DP10.10: Vernal Pool 4 Inflow=0.4 cfs 0.026 af
Primary=0.4 cfs 0.026 af

Link DP10.11/13: Bordering Vegetated Wetland Inflow=6.3 cfs 0.604 af
Primary=6.3 cfs 0.604 af

Link DP10.12: Wetland 6 Inflow=1.1 cfs 0.145 af
Primary=1.1 cfs 0.145 af

Link DP10.14: Wetland 3/Vernal Pool 1 Inflow=14.1 cfs 1.968 af
Primary=14.1 cfs 1.968 af

Link DP10.15: Wetland 4 Inflow=1.3 cfs 0.248 af
Primary=1.3 cfs 0.248 af

Link DP10.2: Wetland 19 Inflow=10.6 cfs 0.980 af
Primary=10.6 cfs 0.980 af

Link DP10.3: Wetland 15 Inflow=3.4 cfs 0.310 af
Primary=3.4 cfs 0.310 af

Link DP10.4: Wetland 16 Inflow=7.5 cfs 0.909 af
Primary=7.5 cfs 0.909 af

Link DP10.5: Wetland 14 Inflow=2.3 cfs 0.264 af
Primary=2.3 cfs 0.264 af

Link DP10.6: Wetland 11 Inflow=4.3 cfs 0.505 af
Primary=4.3 cfs 0.505 af

Link DP10.7: Wetland 13 Inflow=0.2 cfs 0.086 af
Primary=0.2 cfs 0.086 af

Link DP10.8: Wetland 10 Inflow=0.8 cfs 0.078 af
Primary=0.8 cfs 0.078 af

Link DP10.9: Wetland 5/Vernal Pool 2/3 Inflow=7.1 cfs 0.550 af
Primary=7.1 cfs 0.550 af

Link DP9.1: Station Road Inflow=5.8 cfs 0.873 af
Primary=5.8 cfs 0.873 af

Total Runoff Area = 40.317 ac Runoff Volume = 7.885 af Average Runoff Depth = 2.35"
87.11% Pervious = 35.119 ac 12.89% Impervious = 5.198 ac

Summary for Subcatchment EX10.1:

Runoff = 3.3 cfs @ 12.26 hrs, Volume= 0.338 af, Depth= 3.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.045	91	Gravel roads, HSG D
0.019	98	Paved parking, HSG D
1.009	77	Woods, Good, HSG D
1.073	78	Weighted Average
1.054		98.26% Pervious Area
0.019		1.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	25	0.0040	0.56		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
8.9	25	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
9.4	200	0.0200	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.0	250	Total			

Summary for Subcatchment EX10.10:

Runoff = 0.4 cfs @ 12.10 hrs, Volume= 0.026 af, Depth= 3.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.010	89	Gravel roads, HSG C
0.005	91	Gravel roads, HSG D
0.011	70	Woods, Good, HSG C
0.058	77	Woods, Good, HSG D
0.084	78	Weighted Average
0.084		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	38	0.1840	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment EX10.11:

Runoff = 1.4 cfs @ 12.17 hrs, Volume= 0.133 af, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.007	76	Gravel roads, HSG A
0.019	91	Gravel roads, HSG D
0.038	98	Paved parking, HSG A
0.626	30	Woods, Good, HSG A
0.443	77	Woods, Good, HSG D
1.132	52	Weighted Average
1.094		96.68% Pervious Area
0.038		3.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	38	0.0630	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment EX10.12:

Runoff = 1.1 cfs @ 12.40 hrs, Volume= 0.145 af, Depth= 1.33"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.099	76	Gravel roads, HSG A
0.101	91	Gravel roads, HSG D
0.018	98	Paved parking, HSG A
0.006	98	Paved parking, HSG D
0.760	30	Woods, Good, HSG A
0.318	77	Woods, Good, HSG D
1.302	51	Weighted Average
1.278		98.14% Pervious Area
0.024		1.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.0	50	0.0680	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.6	395	0.0300	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.6	140	0.0660	0.64		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
24.2	585	Total			

Summary for Subcatchment EX10.13:

Runoff = 5.0 cfs @ 12.21 hrs, Volume= 0.471 af, Depth= 3.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.136	76	Gravel roads, HSG A
0.197	91	Gravel roads, HSG D
0.455	98	Paved parking, HSG A
0.329	98	Paved parking, HSG D
0.561	30	Woods, Good, HSG A
0.044	77	Woods, Good, HSG D
1.723	73	Weighted Average
0.938		54.45% Pervious Area
0.785		45.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	50	0.0100	0.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
1.8	104	0.1500	0.97		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
12.3	436	0.0140	0.59		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
15.0	590	Total			

Summary for Subcatchment EX10.14:

Runoff = 14.1 cfs @ 12.50 hrs, Volume= 1.968 af, Depth= 3.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.015	76	Gravel roads, HSG A
0.073	91	Gravel roads, HSG D
1.636	98	Paved parking, HSG D
1.260	30	Woods, Good, HSG A
4.003	77	Woods, Good, HSG D
6.987	74	Weighted Average
5.352		76.59% Pervious Area
1.636		23.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
3.2	156	0.1060	0.81		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
26.6	618	0.0060	0.39		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
37.1	824	Total			

Summary for Subcatchment EX10.15:

Runoff = 1.3 cfs @ 12.50 hrs, Volume= 0.248 af, Depth= 0.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (sf)	CN	Description
3,599	76	Gravel roads, HSG A
3,103	91	Gravel roads, HSG D
11,248	98	Paved parking, HSG A
253	98	Paved parking, HSG D
145,915	30	Woods, Good, HSG A
22,299	77	Woods, Good, HSG D
186,416	42	Weighted Average
174,915		93.83% Pervious Area
11,500		6.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7	50	0.0560	0.23		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
0.8	73	0.0420	1.43		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	68	0.0570	0.60		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
16.1	458	0.0090	0.47		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
22.5	649	Total			

Summary for Subcatchment EX10.2:

Runoff = 10.6 cfs @ 12.20 hrs, Volume= 0.980 af, Depth= 2.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.095	91	Gravel roads, HSG D
0.685	98	Paved parking, HSG A
0.081	98	Paved parking, HSG D
1.179	30	Woods, Good, HSG A
2.161	77	Woods, Good, HSG D
4.202	68	Weighted Average
3.435		81.75% Pervious Area
0.767		18.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0040	0.08		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
1.1	79	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.2	63	0.0870	5.99		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.7	92	0.0980	2.19		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.5	58	0.0630	0.63		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
14.0	342	Total			

Summary for Subcatchment EX10.3:

Runoff = 3.4 cfs @ 12.18 hrs, Volume= 0.310 af, Depth= 3.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.063	91	Gravel roads, HSG D
0.922	77	Woods, Good, HSG D
0.985	78	Weighted Average
0.985		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.0	50	0.0680	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	50	0.1470	1.92		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.4	100	Total			

Summary for Subcatchment EX10.4:

Runoff = 7.5 cfs @ 12.39 hrs, Volume= 0.909 af, Depth= 2.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.110	91	Gravel roads, HSG D
0.503	98	Paved parking, HSG A
0.000	98	Paved parking, HSG D
1.838	30	Woods, Good, HSG A
2.401	77	Woods, Good, HSG D
4.852	62	Weighted Average
4.348		89.62% Pervious Area
0.504		10.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.9	115	0.0960	2.17		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.4	197	0.0910	0.75		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
6.5	267	0.0190	0.69		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
25.4	629	Total			

Summary for Subcatchment EX10.5:

Runoff = 2.3 cfs @ 12.32 hrs, Volume= 0.264 af, Depth= 3.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.049	91	Gravel roads, HSG D
0.788	77	Woods, Good, HSG D
0.836	78	Weighted Average
0.836		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	68	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
23.4	118	Total			

Summary for Subcatchment EX10.6:

Runoff = 4.3 cfs @ 12.24 hrs, Volume= 0.505 af, Depth= 1.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.039	76	Gravel roads, HSG A
0.042	89	Gravel roads, HSG C
0.188	91	Gravel roads, HSG D
0.063	98	Paved parking, HSG A
3.112	30	Woods, Good, HSG A
0.093	70	Woods, Good, HSG C
1.588	77	Woods, Good, HSG D
5.125	49	Weighted Average
5.062		98.76% Pervious Area
0.063		1.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.5	42	0.0950	1.54		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.1	92	Total			

Summary for Subcatchment EX10.7:

Runoff = 0.2 cfs @ 13.13 hrs, Volume= 0.086 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.079	76	Gravel roads, HSG A
0.039	91	Gravel roads, HSG D
1.418	30	Woods, Good, HSG A
0.265	77	Woods, Good, HSG D
1.802	40	Weighted Average
1.802		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.9	50	0.0100	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.0	193	0.1800	1.06		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
31.6	670	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
62.5	913	Total			

Summary for Subcatchment EX10.8:

Runoff = 0.8 cfs @ 12.13 hrs, Volume= 0.078 af, Depth= 1.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.572	30	Woods, Good, HSG A
0.007	70	Woods, Good, HSG C
0.322	77	Woods, Good, HSG D
0.901	47	Weighted Average
0.901		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.0500	0.22		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.3	277	0.0830	2.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	47	0.2550	1.26		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	59	0.3700	1.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.3	433	Total			

Summary for Subcatchment EX10.9:

Runoff = 7.1 cfs @ 12.12 hrs, Volume= 0.550 af, Depth= 2.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.009	89	Gravel roads, HSG C
0.013	91	Gravel roads, HSG D
0.580	30	Woods, Good, HSG A
1.674	70	Woods, Good, HSG C
0.546	77	Woods, Good, HSG D
2.822	63	Weighted Average
2.822		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	50	0.4600	0.24		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
2.2	194	0.0460	1.50		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	140	0.2400	1.22		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.6	384	Total			

Summary for Subcatchment EX9.1:

Runoff = 5.8 cfs @ 12.55 hrs, Volume= 0.873 af, Depth= 4.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
1.100	98	Paved parking, HSG D
1.112	77	Woods, Good, HSG D
2.211	87	Weighted Average
1.112		50.27% Pervious Area
1.100		49.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	50	0.0500	1.75		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
0.4	100	0.0360	3.85		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
40.2	540	0.0020	0.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	37	0.0030	4.66	14.64	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
41.2	727	Total			

Summary for Link DP10.1: Wetland 18

Inflow Area = 1.073 ac, 1.74% Impervious, Inflow Depth = 3.78" for 25-yr event
Inflow = 3.3 cfs @ 12.26 hrs, Volume= 0.338 af
Primary = 3.3 cfs @ 12.26 hrs, Volume= 0.338 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.10: Vernal Pool 4

Inflow Area = 0.084 ac, 0.00% Impervious, Inflow Depth = 3.78" for 25-yr event
Inflow = 0.4 cfs @ 12.10 hrs, Volume= 0.026 af
Primary = 0.4 cfs @ 12.10 hrs, Volume= 0.026 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.11/13: Bordering Vegetated Wetland

Inflow Area = 2.855 ac, 28.80% Impervious, Inflow Depth = 2.54" for 25-yr event
Inflow = 6.3 cfs @ 12.20 hrs, Volume= 0.604 af
Primary = 6.3 cfs @ 12.20 hrs, Volume= 0.604 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.12: Wetland 6

Inflow Area = 1.302 ac, 1.86% Impervious, Inflow Depth = 1.33" for 25-yr event
Inflow = 1.1 cfs @ 12.40 hrs, Volume= 0.145 af
Primary = 1.1 cfs @ 12.40 hrs, Volume= 0.145 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.14: Wetland 3/Vernal Pool 1

Inflow Area = 6.987 ac, 23.41% Impervious, Inflow Depth = 3.38" for 25-yr event
Inflow = 14.1 cfs @ 12.50 hrs, Volume= 1.968 af
Primary = 14.1 cfs @ 12.50 hrs, Volume= 1.968 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.15: Wetland 4

Inflow Area = 4.280 ac, 6.17% Impervious, Inflow Depth = 0.70" for 25-yr event
Inflow = 1.3 cfs @ 12.50 hrs, Volume= 0.248 af
Primary = 1.3 cfs @ 12.50 hrs, Volume= 0.248 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.2: Wetland 19

Inflow Area = 4.202 ac, 18.25% Impervious, Inflow Depth = 2.80" for 25-yr event
Inflow = 10.6 cfs @ 12.20 hrs, Volume= 0.980 af
Primary = 10.6 cfs @ 12.20 hrs, Volume= 0.980 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.3: Wetland 15

Inflow Area = 0.985 ac, 0.00% Impervious, Inflow Depth = 3.78" for 25-yr event
Inflow = 3.4 cfs @ 12.18 hrs, Volume= 0.310 af
Primary = 3.4 cfs @ 12.18 hrs, Volume= 0.310 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.4: Wetland 16

Inflow Area = 4.852 ac, 10.38% Impervious, Inflow Depth = 2.25" for 25-yr event
Inflow = 7.5 cfs @ 12.39 hrs, Volume= 0.909 af
Primary = 7.5 cfs @ 12.39 hrs, Volume= 0.909 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.5: Wetland 14

Inflow Area = 0.836 ac, 0.00% Impervious, Inflow Depth = 3.78" for 25-yr event
Inflow = 2.3 cfs @ 12.32 hrs, Volume= 0.264 af
Primary = 2.3 cfs @ 12.32 hrs, Volume= 0.264 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.6: Wetland 11

Inflow Area = 5.125 ac, 1.24% Impervious, Inflow Depth = 1.18" for 25-yr event
Inflow = 4.3 cfs @ 12.24 hrs, Volume= 0.505 af
Primary = 4.3 cfs @ 12.24 hrs, Volume= 0.505 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.7: Wetland 13

Inflow Area = 1.802 ac, 0.00% Impervious, Inflow Depth = 0.57" for 25-yr event
Inflow = 0.2 cfs @ 13.13 hrs, Volume= 0.086 af
Primary = 0.2 cfs @ 13.13 hrs, Volume= 0.086 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.8: Wetland 10

Inflow Area = 0.901 ac, 0.00% Impervious, Inflow Depth = 1.04" for 25-yr event
Inflow = 0.8 cfs @ 12.13 hrs, Volume= 0.078 af
Primary = 0.8 cfs @ 12.13 hrs, Volume= 0.078 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.9: Wetland 5/Vernal Pool 2/3

Inflow Area = 2.822 ac, 0.00% Impervious, Inflow Depth = 2.34" for 25-yr event
Inflow = 7.1 cfs @ 12.12 hrs, Volume= 0.550 af
Primary = 7.1 cfs @ 12.12 hrs, Volume= 0.550 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP9.1: Station Road

Inflow Area = 2.211 ac, 49.73% Impervious, Inflow Depth = 4.74" for 25-yr event
Inflow = 5.8 cfs @ 12.55 hrs, Volume= 0.873 af
Primary = 5.8 cfs @ 12.55 hrs, Volume= 0.873 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentEX10.1: Runoff Area=1.073 ac 1.74% Impervious Runoff Depth=5.95"
Flow Length=250' Tc=19.0 min CN=78 Runoff=5.1 cfs 0.532 af

SubcatchmentEX10.10: Runoff Area=0.084 ac 0.00% Impervious Runoff Depth=5.95"
Flow Length=38' Slope=0.1840 '/' Tc=7.0 min CN=78 Runoff=0.6 cfs 0.042 af

SubcatchmentEX10.11: Runoff Area=1.132 ac 3.32% Impervious Runoff Depth=2.85"
Flow Length=38' Slope=0.0630 '/' Tc=10.7 min CN=52 Runoff=3.1 cfs 0.269 af

SubcatchmentEX10.12: Runoff Area=1.302 ac 1.86% Impervious Runoff Depth=2.74"
Flow Length=585' Tc=24.2 min CN=51 Runoff=2.4 cfs 0.297 af

SubcatchmentEX10.13: Runoff Area=1.723 ac 45.55% Impervious Runoff Depth=5.35"
Flow Length=590' Tc=15.0 min CN=73 Runoff=8.2 cfs 0.767 af

SubcatchmentEX10.14: Runoff Area=6.987 ac 23.41% Impervious Runoff Depth=5.47"
Flow Length=824' Tc=37.1 min CN=74 Runoff=22.9 cfs 3.182 af

SubcatchmentEX10.15: Runoff Area=186,416 sf 6.17% Impervious Runoff Depth=1.73"
Flow Length=649' Tc=22.5 min CN=42 Runoff=4.5 cfs 0.619 af

SubcatchmentEX10.2: Runoff Area=4.202 ac 18.25% Impervious Runoff Depth=4.74"
Flow Length=342' Tc=14.0 min CN=68 Runoff=18.1 cfs 1.661 af

SubcatchmentEX10.3: Runoff Area=0.985 ac 0.00% Impervious Runoff Depth=5.95"
Flow Length=100' Tc=13.4 min CN=78 Runoff=5.4 cfs 0.488 af

SubcatchmentEX10.4: Runoff Area=4.852 ac 10.38% Impervious Runoff Depth=4.03"
Flow Length=629' Tc=25.4 min CN=62 Runoff=13.8 cfs 1.628 af

SubcatchmentEX10.5: Runoff Area=0.836 ac 0.00% Impervious Runoff Depth=5.95"
Flow Length=118' Tc=23.4 min CN=78 Runoff=3.6 cfs 0.415 af

SubcatchmentEX10.6: Runoff Area=5.125 ac 1.24% Impervious Runoff Depth=2.51"
Flow Length=92' Tc=14.1 min CN=49 Runoff=10.7 cfs 1.072 af

SubcatchmentEX10.7: Runoff Area=1.802 ac 0.00% Impervious Runoff Depth=1.52"
Flow Length=913' Tc=62.5 min CN=40 Runoff=1.0 cfs 0.229 af

SubcatchmentEX10.8: Runoff Area=0.901 ac 0.00% Impervious Runoff Depth=2.28"
Flow Length=433' Tc=7.3 min CN=47 Runoff=2.1 cfs 0.172 af

SubcatchmentEX10.9: Runoff Area=2.822 ac 0.00% Impervious Runoff Depth=4.15"
Flow Length=384' Tc=7.6 min CN=63 Runoff=12.9 cfs 0.975 af

SubcatchmentEX9.1: Runoff Area=2.211 ac 49.73% Impervious Runoff Depth=7.03"
Flow Length=727' Tc=41.2 min CN=87 Runoff=8.5 cfs 1.296 af

Link DP10.1: Wetland 18 Inflow=5.1 cfs 0.532 af
Primary=5.1 cfs 0.532 af

Link DP10.10: Vernal Pool 4 Inflow=0.6 cfs 0.042 af
Primary=0.6 cfs 0.042 af

Link DP10.11/13: Bordering Vegetated Wetland Inflow=11.1 cfs 1.037 af
Primary=11.1 cfs 1.037 af

Link DP10.12: Wetland 6 Inflow=2.4 cfs 0.297 af
Primary=2.4 cfs 0.297 af

Link DP10.14: Wetland 3/Vernal Pool 1 Inflow=22.9 cfs 3.182 af
Primary=22.9 cfs 3.182 af

Link DP10.15: Wetland 4 Inflow=4.5 cfs 0.619 af
Primary=4.5 cfs 0.619 af

Link DP10.2: Wetland 19 Inflow=18.1 cfs 1.661 af
Primary=18.1 cfs 1.661 af

Link DP10.3: Wetland 15 Inflow=5.4 cfs 0.488 af
Primary=5.4 cfs 0.488 af

Link DP10.4: Wetland 16 Inflow=13.8 cfs 1.628 af
Primary=13.8 cfs 1.628 af

Link DP10.5: Wetland 14 Inflow=3.6 cfs 0.415 af
Primary=3.6 cfs 0.415 af

Link DP10.6: Wetland 11 Inflow=10.7 cfs 1.072 af
Primary=10.7 cfs 1.072 af

Link DP10.7: Wetland 13 Inflow=1.0 cfs 0.229 af
Primary=1.0 cfs 0.229 af

Link DP10.8: Wetland 10 Inflow=2.1 cfs 0.172 af
Primary=2.1 cfs 0.172 af

Link DP10.9: Wetland 5/Vernal Pool 2/3 Inflow=12.9 cfs 0.975 af
Primary=12.9 cfs 0.975 af

Link DP9.1: Station Road Inflow=8.5 cfs 1.296 af
Primary=8.5 cfs 1.296 af

Total Runoff Area = 40.317 ac Runoff Volume = 13.644 af Average Runoff Depth = 4.06"
87.11% Pervious = 35.119 ac 12.89% Impervious = 5.198 ac

Summary for Subcatchment EX10.1:

Runoff = 5.1 cfs @ 12.26 hrs, Volume= 0.532 af, Depth= 5.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.045	91	Gravel roads, HSG D
0.019	98	Paved parking, HSG D
1.009	77	Woods, Good, HSG D
1.073	78	Weighted Average
1.054		98.26% Pervious Area
0.019		1.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	25	0.0040	0.56		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
8.9	25	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
9.4	200	0.0200	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.0	250	Total			

Summary for Subcatchment EX10.10:

Runoff = 0.6 cfs @ 12.10 hrs, Volume= 0.042 af, Depth= 5.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.010	89	Gravel roads, HSG C
0.005	91	Gravel roads, HSG D
0.011	70	Woods, Good, HSG C
0.058	77	Woods, Good, HSG D
0.084	78	Weighted Average
0.084		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.0	38	0.1840	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment EX10.11:

Runoff = 3.1 cfs @ 12.16 hrs, Volume= 0.269 af, Depth= 2.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.007	76	Gravel roads, HSG A
0.019	91	Gravel roads, HSG D
0.038	98	Paved parking, HSG A
0.626	30	Woods, Good, HSG A
0.443	77	Woods, Good, HSG D
1.132	52	Weighted Average
1.094		96.68% Pervious Area
0.038		3.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	38	0.0630	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment EX10.12:

Runoff = 2.4 cfs @ 12.37 hrs, Volume= 0.297 af, Depth= 2.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.099	76	Gravel roads, HSG A
0.101	91	Gravel roads, HSG D
0.018	98	Paved parking, HSG A
0.006	98	Paved parking, HSG D
0.760	30	Woods, Good, HSG A
0.318	77	Woods, Good, HSG D
1.302	51	Weighted Average
1.278		98.14% Pervious Area
0.024		1.86% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.0	50	0.0680	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.6	395	0.0300	0.87		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.6	140	0.0660	0.64		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
24.2	585	Total			

Summary for Subcatchment EX10.13:

Runoff = 8.2 cfs @ 12.20 hrs, Volume= 0.767 af, Depth= 5.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.136	76	Gravel roads, HSG A
0.197	91	Gravel roads, HSG D
0.455	98	Paved parking, HSG A
0.329	98	Paved parking, HSG D
0.561	30	Woods, Good, HSG A
0.044	77	Woods, Good, HSG D
1.723	73	Weighted Average
0.938		54.45% Pervious Area
0.785		45.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	50	0.0100	0.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
1.8	104	0.1500	0.97		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
12.3	436	0.0140	0.59		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
15.0	590	Total			

Summary for Subcatchment EX10.14:

Runoff = 22.9 cfs @ 12.49 hrs, Volume= 3.182 af, Depth= 5.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.015	76	Gravel roads, HSG A
0.073	91	Gravel roads, HSG D
1.636	98	Paved parking, HSG D
1.260	30	Woods, Good, HSG A
4.003	77	Woods, Good, HSG D
6.987	74	Weighted Average
5.352		76.59% Pervious Area
1.636		23.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
3.2	156	0.1060	0.81		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
26.6	618	0.0060	0.39		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
37.1	824	Total			

Summary for Subcatchment EX10.15:

Runoff = 4.5 cfs @ 12.38 hrs, Volume= 0.619 af, Depth= 1.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (sf)	CN	Description
3,599	76	Gravel roads, HSG A
3,103	91	Gravel roads, HSG D
11,248	98	Paved parking, HSG A
253	98	Paved parking, HSG D
145,915	30	Woods, Good, HSG A
22,299	77	Woods, Good, HSG D
186,416	42	Weighted Average
174,915		93.83% Pervious Area
11,500		6.17% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.7	50	0.0560	0.23		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
0.8	73	0.0420	1.43		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	68	0.0570	0.60		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
16.1	458	0.0090	0.47		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
22.5	649	Total			

Summary for Subcatchment EX10.2:

Runoff = 18.1 cfs @ 12.19 hrs, Volume= 1.661 af, Depth= 4.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.095	91	Gravel roads, HSG D
0.685	98	Paved parking, HSG A
0.081	98	Paved parking, HSG D
1.179	30	Woods, Good, HSG A
2.161	77	Woods, Good, HSG D
4.202	68	Weighted Average
3.435		81.75% Pervious Area
0.767		18.25% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0040	0.08		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
1.1	79	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.2	63	0.0870	5.99		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.7	92	0.0980	2.19		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.5	58	0.0630	0.63		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
14.0	342	Total			

Summary for Subcatchment EX10.3:

Runoff = 5.4 cfs @ 12.18 hrs, Volume= 0.488 af, Depth= 5.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.063	91	Gravel roads, HSG D
0.922	77	Woods, Good, HSG D
0.985	78	Weighted Average
0.985		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.0	50	0.0680	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	50	0.1470	1.92		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
13.4	100	Total			

Summary for Subcatchment EX10.4:

Runoff = 13.8 cfs @ 12.36 hrs, Volume= 1.628 af, Depth= 4.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.110	91	Gravel roads, HSG D
0.503	98	Paved parking, HSG A
0.000	98	Paved parking, HSG D
1.838	30	Woods, Good, HSG A
2.401	77	Woods, Good, HSG D
4.852	62	Weighted Average
4.348		89.62% Pervious Area
0.504		10.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.9	115	0.0960	2.17		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.4	197	0.0910	0.75		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
6.5	267	0.0190	0.69		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
25.4	629	Total			

Summary for Subcatchment EX10.5:

Runoff = 3.6 cfs @ 12.31 hrs, Volume= 0.415 af, Depth= 5.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.049	91	Gravel roads, HSG D
0.788	77	Woods, Good, HSG D
0.836	78	Weighted Average
0.836		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	68	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
23.4	118	Total			

Summary for Subcatchment EX10.6:

Runoff = 10.7 cfs @ 12.21 hrs, Volume= 1.072 af, Depth= 2.51"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.039	76	Gravel roads, HSG A
0.042	89	Gravel roads, HSG C
0.188	91	Gravel roads, HSG D
0.063	98	Paved parking, HSG A
3.112	30	Woods, Good, HSG A
0.093	70	Woods, Good, HSG C
1.588	77	Woods, Good, HSG D
5.125	49	Weighted Average
5.062		98.76% Pervious Area
0.063		1.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.5	42	0.0950	1.54		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.1	92	Total			

Summary for Subcatchment EX10.7:

Runoff = 1.0 cfs @ 12.99 hrs, Volume= 0.229 af, Depth= 1.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.079	76	Gravel roads, HSG A
0.039	91	Gravel roads, HSG D
1.418	30	Woods, Good, HSG A
0.265	77	Woods, Good, HSG D
1.802	40	Weighted Average
1.802		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.9	50	0.0100	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.0	193	0.1800	1.06		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
31.6	670	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
62.5	913	Total			

Summary for Subcatchment EX10.8:

Runoff = 2.1 cfs @ 12.12 hrs, Volume= 0.172 af, Depth= 2.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.572	30	Woods, Good, HSG A
0.007	70	Woods, Good, HSG C
0.322	77	Woods, Good, HSG D
0.901	47	Weighted Average
0.901		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.0500	0.22		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.3	277	0.0830	2.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	47	0.2550	1.26		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	59	0.3700	1.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.3	433	Total			

Summary for Subcatchment EX10.9:

Runoff = 12.9 cfs @ 12.11 hrs, Volume= 0.975 af, Depth= 4.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.009	89	Gravel roads, HSG C
0.013	91	Gravel roads, HSG D
0.580	30	Woods, Good, HSG A
1.674	70	Woods, Good, HSG C
0.546	77	Woods, Good, HSG D
2.822	63	Weighted Average
2.822		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	50	0.4600	0.24		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
2.2	194	0.0460	1.50		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	140	0.2400	1.22		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.6	384	Total			

Summary for Subcatchment EX9.1:

Runoff = 8.5 cfs @ 12.54 hrs, Volume= 1.296 af, Depth= 7.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
1.100	98	Paved parking, HSG D
1.112	77	Woods, Good, HSG D
2.211	87	Weighted Average
1.112		50.27% Pervious Area
1.100		49.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	50	0.0500	1.75		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
0.4	100	0.0360	3.85		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
40.2	540	0.0020	0.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	37	0.0030	4.66	14.64	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
41.2	727	Total			

Summary for Link DP10.1: Wetland 18

Inflow Area = 1.073 ac, 1.74% Impervious, Inflow Depth = 5.95" for 100-yr event
Inflow = 5.1 cfs @ 12.26 hrs, Volume= 0.532 af
Primary = 5.1 cfs @ 12.26 hrs, Volume= 0.532 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.10: Vernal Pool 4

Inflow Area = 0.084 ac, 0.00% Impervious, Inflow Depth = 5.95" for 100-yr event
Inflow = 0.6 cfs @ 12.10 hrs, Volume= 0.042 af
Primary = 0.6 cfs @ 12.10 hrs, Volume= 0.042 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.11/13: Bordering Vegetated Wetland

Inflow Area = 2.855 ac, 28.80% Impervious, Inflow Depth = 4.36" for 100-yr event
Inflow = 11.1 cfs @ 12.19 hrs, Volume= 1.037 af
Primary = 11.1 cfs @ 12.19 hrs, Volume= 1.037 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.12: Wetland 6

Inflow Area = 1.302 ac, 1.86% Impervious, Inflow Depth = 2.74" for 100-yr event
Inflow = 2.4 cfs @ 12.37 hrs, Volume= 0.297 af
Primary = 2.4 cfs @ 12.37 hrs, Volume= 0.297 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.14: Wetland 3/Vernal Pool 1

Inflow Area = 6.987 ac, 23.41% Impervious, Inflow Depth = 5.47" for 100-yr event
Inflow = 22.9 cfs @ 12.49 hrs, Volume= 3.182 af
Primary = 22.9 cfs @ 12.49 hrs, Volume= 3.182 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.15: Wetland 4

Inflow Area = 4.280 ac, 6.17% Impervious, Inflow Depth = 1.73" for 100-yr event
Inflow = 4.5 cfs @ 12.38 hrs, Volume= 0.619 af
Primary = 4.5 cfs @ 12.38 hrs, Volume= 0.619 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.2: Wetland 19

Inflow Area = 4.202 ac, 18.25% Impervious, Inflow Depth = 4.74" for 100-yr event
Inflow = 18.1 cfs @ 12.19 hrs, Volume= 1.661 af
Primary = 18.1 cfs @ 12.19 hrs, Volume= 1.661 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.3: Wetland 15

Inflow Area = 0.985 ac, 0.00% Impervious, Inflow Depth = 5.95" for 100-yr event
Inflow = 5.4 cfs @ 12.18 hrs, Volume= 0.488 af
Primary = 5.4 cfs @ 12.18 hrs, Volume= 0.488 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.4: Wetland 16

Inflow Area = 4.852 ac, 10.38% Impervious, Inflow Depth = 4.03" for 100-yr event
Inflow = 13.8 cfs @ 12.36 hrs, Volume= 1.628 af
Primary = 13.8 cfs @ 12.36 hrs, Volume= 1.628 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.5: Wetland 14

Inflow Area = 0.836 ac, 0.00% Impervious, Inflow Depth = 5.95" for 100-yr event
Inflow = 3.6 cfs @ 12.31 hrs, Volume= 0.415 af
Primary = 3.6 cfs @ 12.31 hrs, Volume= 0.415 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.6: Wetland 11

Inflow Area = 5.125 ac, 1.24% Impervious, Inflow Depth = 2.51" for 100-yr event
Inflow = 10.7 cfs @ 12.21 hrs, Volume= 1.072 af
Primary = 10.7 cfs @ 12.21 hrs, Volume= 1.072 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.7: Wetland 13

Inflow Area = 1.802 ac, 0.00% Impervious, Inflow Depth = 1.52" for 100-yr event
Inflow = 1.0 cfs @ 12.99 hrs, Volume= 0.229 af
Primary = 1.0 cfs @ 12.99 hrs, Volume= 0.229 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.8: Wetland 10

Inflow Area = 0.901 ac, 0.00% Impervious, Inflow Depth = 2.28" for 100-yr event
Inflow = 2.1 cfs @ 12.12 hrs, Volume= 0.172 af
Primary = 2.1 cfs @ 12.12 hrs, Volume= 0.172 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.9: Wetland 5/Vernal Pool 2/3

Inflow Area = 2.822 ac, 0.00% Impervious, Inflow Depth = 4.15" for 100-yr event
Inflow = 12.9 cfs @ 12.11 hrs, Volume= 0.975 af
Primary = 12.9 cfs @ 12.11 hrs, Volume= 0.975 af, Atten= 0%, Lag= 0.0 min

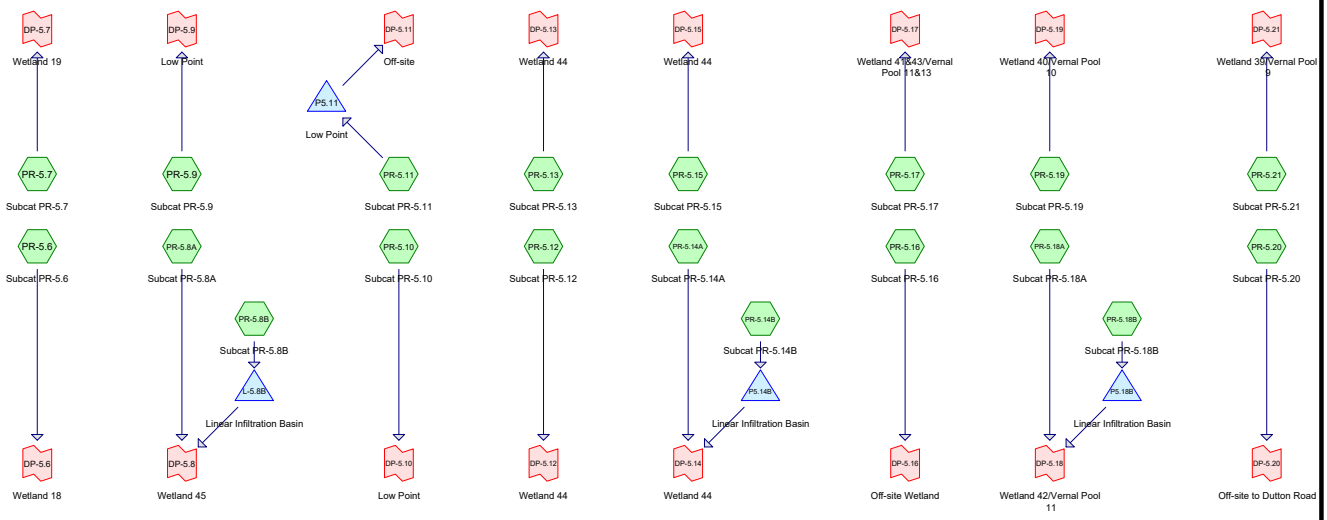
Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP9.1: Station Road

Inflow Area = 2.211 ac, 49.73% Impervious, Inflow Depth = 7.03" for 100-yr event
Inflow = 8.5 cfs @ 12.54 hrs, Volume= 1.296 af
Primary = 8.5 cfs @ 12.54 hrs, Volume= 1.296 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

HydroCAD Analysis: Proposed Conditions



Subcat Reach Pond Link

Routing Diagram for Sudbury_PR Segment 5_ResponsetoComments
Prepared by VHB, Printed 7/10/2020

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentPR-5.10: Subcat PR-5.10 Runoff Area=1.619 ac 2.51% Impervious Runoff Depth=0.02"
Flow Length=670' Tc=50.3 min CN=30/98 Runoff=0.0 cfs 0.003 af

SubcatchmentPR-5.11: Subcat PR-5.11 Runoff Area=4.623 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=870' Tc=71.5 min CN=30/0 Runoff=0.0 cfs 0.000 af

SubcatchmentPR-5.12: Subcat PR-5.12 Runoff Area=7.868 ac 0.20% Impervious Runoff Depth=0.00"
Flow Length=2,528' Tc=84.9 min CN=45/98 Runoff=0.0 cfs 0.001 af

SubcatchmentPR-5.13: Subcat PR-5.13 Runoff Area=34.599 ac 1.84% Impervious Runoff Depth=0.01"
Flow Length=3,005' Tc=217.6 min CN=34/98 Runoff=0.1 cfs 0.042 af

SubcatchmentPR-5.14A: Subcat PR-5.14A Runoff Area=13.677 ac 0.90% Impervious Runoff Depth=0.01"
Flow Length=290' Tc=13.2 min CN=46/98 Runoff=0.1 cfs 0.008 af

SubcatchmentPR-5.14B: Subcat PR-5.14B Runoff Area=0.413 ac 13.05% Impervious Runoff Depth=0.10"
Flow Length=235' Tc=6.9 min CN=31/98 Runoff=0.0 cfs 0.004 af

SubcatchmentPR-5.15: Subcat PR-5.15 Runoff Area=10.495 ac 0.14% Impervious Runoff Depth=0.00"
Flow Length=608' Tc=34.8 min CN=41/98 Runoff=0.0 cfs 0.001 af

SubcatchmentPR-5.16: Subcat PR-5.16 Runoff Area=8.640 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=215' Tc=22.6 min CN=50/0 Runoff=0.0 cfs 0.000 af

SubcatchmentPR-5.17: Subcat PR-5.17 Runoff Area=18.452 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=75' Tc=6.4 min CN=52/0 Runoff=0.0 cfs 0.000 af

SubcatchmentPR-5.18A: Subcat PR-5.18A Runoff Area=10.467 ac 1.14% Impervious Runoff Depth=0.01"
Flow Length=590' Tc=75.8 min CN=42/98 Runoff=0.0 cfs 0.008 af

SubcatchmentPR-5.18B: Subcat PR-5.18B Runoff Area=0.066 ac 22.91% Impervious Runoff Depth=0.18"
Flow Length=94' Tc=6.0 min CN=31/98 Runoff=0.0 cfs 0.001 af

SubcatchmentPR-5.19: Subcat PR-5.19 Runoff Area=0.653 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=190' Tc=21.0 min CN=31/0 Runoff=0.0 cfs 0.000 af

SubcatchmentPR-5.20: Subcat PR-5.20 Runoff Area=1.246 ac 10.55% Impervious Runoff Depth=0.08"
Flow Length=147' Tc=20.3 min CN=30/98 Runoff=0.1 cfs 0.009 af

SubcatchmentPR-5.21: Subcat PR-5.21 Runoff Area=5.589 ac 0.32% Impervious Runoff Depth=0.00"
Flow Length=633' Tc=28.2 min CN=30/98 Runoff=0.0 cfs 0.001 af

SubcatchmentPR-5.6: Subcat PR-5.6 Runoff Area=17.390 ac 1.61% Impervious Runoff Depth=0.01"
Flow Length=905' Tc=22.8 min CN=30/98 Runoff=0.2 cfs 0.018 af

SubcatchmentPR-5.7: Subcat PR-5.7 Runoff Area=9.603 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=369' Tc=63.9 min CN=30/0 Runoff=0.0 cfs 0.000 af

Subcatchment PR-5.8A: Subcat PR-5.8A Runoff Area=8.023 ac 1.97% Impervious Runoff Depth=0.02"
Flow Length=773' Tc=30.8 min CN=30/98 Runoff=0.1 cfs 0.010 af

Subcatchment PR-5.8B: Subcat PR-5.8B Runoff Area=0.153 ac 29.90% Impervious Runoff Depth=0.24"
Flow Length=198' Tc=11.8 min CN=32/98 Runoff=0.0 cfs 0.003 af

Subcatchment PR-5.9: Subcat PR-5.9 Runoff Area=4.330 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=449' Tc=13.4 min CN=30/0 Runoff=0.0 cfs 0.000 af

Pond L-5.8B: Linear Infiltration Basin Peak Elev=200.37' Storage=66 cf Inflow=0.0 cfs 0.003 af
Discarded=0.0 cfs 0.003 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.003 af

Pond P5.11: Low Point Peak Elev=174.50' Storage=0 cf Inflow=0.0 cfs 0.000 af
Outflow=0.0 cfs 0.000 af

Pond P5.14B: Linear Infiltration Basin Peak Elev=171.06' Storage=52 cf Inflow=0.0 cfs 0.004 af
Discarded=0.0 cfs 0.004 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.004 af

Pond P5.18B: Linear Infiltration Basin Peak Elev=172.78' Storage=27 cf Inflow=0.0 cfs 0.001 af
Discarded=0.0 cfs 0.001 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.001 af

Link DP-5.10: Low Point Inflow=0.0 cfs 0.003 af
Primary=0.0 cfs 0.003 af

Link DP-5.11: Off-site Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP-5.12: Wetland 44 Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP-5.13: Wetland 44 Inflow=0.1 cfs 0.042 af
Primary=0.1 cfs 0.042 af

Link DP-5.14: Wetland 44 Inflow=0.1 cfs 0.008 af
Primary=0.1 cfs 0.008 af

Link DP-5.15: Wetland 44 Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP-5.16: Off-site Wetland Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP-5.17: Wetland 41&43/Vernal Pool 11&13 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP-5.18: Wetland 42/Vernal Pool 11 Inflow=0.0 cfs 0.008 af
Primary=0.0 cfs 0.008 af

Link DP-5.19: Wetland 40/Vernal Pool 10 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP-5.20: Off-site to Dutton Road Inflow=0.1 cfs 0.009 af
Primary=0.1 cfs 0.009 af

Link DP-5.21: Wetland 39/Vernal Pool 9 Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP-5.6: Wetland 18 Inflow=0.2 cfs 0.018 af
Primary=0.2 cfs 0.018 af

Link DP-5.7: Wetland 19 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP-5.8: Wetland 45 Inflow=0.1 cfs 0.010 af
Primary=0.1 cfs 0.010 af

Link DP-5.9: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Total Runoff Area = 157.906 ac Runoff Volume = 0.109 af Average Runoff Depth = 0.01"
98.95% Pervious = 156.254 ac 1.05% Impervious = 1.652 ac

Summary for Subcatchment PR-5.10: Subcat PR-5.10

Runoff = 0.0 cfs @ 12.68 hrs, Volume= 0.003 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.016	39	>75% Grass cover, Good, HSG A
0.041	98	Paved parking, HSG A
1.563	30	Woods, Good, HSG A
1.619	32	Weighted Average
1.579	30	97.49% Pervious Area
0.041	98	2.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
29.2	620	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
50.3	670	Total			

Summary for Subcatchment PR-5.11: Subcat PR-5.11

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
4.623	30	Woods, Good, HSG A
4.623	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.9	50	0.0110	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
44.6	820	0.0150	0.31		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
71.5	870	Total			

Summary for Subcatchment PR-5.12: Subcat PR-5.12

Runoff = 0.0 cfs @ 13.11 hrs, Volume= 0.001 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.007	39	>75% Grass cover, Good, HSG A
0.018	91	Gravel roads, HSG D
0.016	98	Water Surface, HSG D
5.366	30	Woods, Good, HSG A
2.463	77	Woods, Good, HSG D
7.868	45	Weighted Average
7.852	45	99.80% Pervious Area
0.016	98	0.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.8	50	0.0270	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
9.5	132	0.0086	0.23		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.2	128	0.0004	0.14		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.5	325	0.0065	1.21		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
32.4	1,427	0.0110	0.73		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.9	401	0.0130	1.71		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.6	65	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
84.9	2,528	Total			

Summary for Subcatchment PR-5.13: Subcat PR-5.13

Runoff = 0.1 cfs @ 14.75 hrs, Volume= 0.042 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.217	39	>75% Grass cover, Good, HSG A
0.019	80	>75% Grass cover, Good, HSG D
0.069	76	Gravel roads, HSG A
0.002	91	Gravel roads, HSG D
0.560	98	Paved parking, HSG A
0.053	98	Paved parking, HSG D
0.023	98	Water Surface, HSG D
30.814	30	Woods, Good, HSG A
2.842	77	Woods, Good, HSG D
34.599	35	Weighted Average
33.963	34	98.16% Pervious Area
0.635	98	1.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.8	50	0.0085	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
187.8	2,955	0.0110	0.26		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
217.6	3,005	Total			

Summary for Subcatchment PR-5.14A: Subcat PR-5.14A

Runoff = 0.1 cfs @ 12.18 hrs, Volume= 0.008 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.024	39	>75% Grass cover, Good, HSG A
0.013	80	>75% Grass cover, Good, HSG D
0.006	91	Gravel roads, HSG D
0.060	98	Paved parking, HSG A
0.036	98	Paved parking, HSG D
0.027	98	Water Surface, HSG D
7.420	30	Woods, Good, HSG A
3.269	55	Woods, Good, HSG B
2.824	77	Woods, Good, HSG D
13.677	46	Weighted Average
13.554	46	99.10% Pervious Area
0.123	98	0.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	50	0.0080	0.10		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.8	143	0.0146	0.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.4	97	0.0730	0.68		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.2	290	Total			

Summary for Subcatchment PR-5.14B: Subcat PR-5.14B

Runoff = 0.0 cfs @ 12.10 hrs, Volume= 0.004 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.022	39	>75% Grass cover, Good, HSG A
0.054	98	Paved parking, HSG A
0.337	30	Woods, Good, HSG A
0.413	39	Weighted Average
0.359	31	86.95% Pervious Area
0.054	98	13.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	50	0.0262	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
1.9	185	0.0119	1.64		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
6.9	235	Total			

Summary for Subcatchment PR-5.15: Subcat PR-5.15

Runoff = 0.0 cfs @ 12.48 hrs, Volume= 0.001 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.006	91	Gravel roads, HSG D
0.015	98	Water Surface, HSG D
8.088	30	Woods, Good, HSG A
2.387	77	Woods, Good, HSG D
10.495	41	Weighted Average
10.481	41	99.86% Pervious Area
0.015	98	0.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	50	0.0700	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
11.3	434	0.0650	0.64		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
10.7	124	0.0060	0.19		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
34.8	608	Total			

Summary for Subcatchment PR-5.16: Subcat PR-5.16

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
4.940	30	Woods, Good, HSG A
3.700	77	Woods, Good, HSG D
8.640	50	Weighted Average
8.640	50	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.9	165	0.0194	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
22.6	215	Total			

Summary for Subcatchment PR-5.17: Subcat PR-5.17

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.002	76	Gravel roads, HSG A
9.857	30	Woods, Good, HSG A
8.593	77	Woods, Good, HSG D
18.452	52	Weighted Average
18.452	52	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	30	0.1500	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.1	45	0.1600	6.44		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
6.4	75	Total			

Summary for Subcatchment PR-5.18A: Subcat PR-5.18A

Runoff = 0.0 cfs @ 12.97 hrs, Volume= 0.008 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.014	39	>75% Grass cover, Good, HSG A
0.034	80	>75% Grass cover, Good, HSG D
0.034	98	Paved parking, HSG A
0.085	98	Paved parking, HSG D
7.754	30	Woods, Good, HSG A
2.545	77	Woods, Good, HSG D
10.467	42	Weighted Average
10.347	42	98.86% Pervious Area
0.119	98	1.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.1260	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
65.7	540	0.0030	0.14		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
75.8	590	Total			

Summary for Subcatchment PR-5.18B: Subcat PR-5.18B

Runoff = 0.0 cfs @ 12.08 hrs, Volume= 0.001 af, Depth= 0.18"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.006	39	>75% Grass cover, Good, HSG A
0.015	98	Paved parking, HSG A
0.045	30	Woods, Good, HSG A
0.066	46	Weighted Average
0.051	31	77.09% Pervious Area
0.015	98	22.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	29	0.3030	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	65	0.0292	2.56		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
5.0	94	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment PR-5.19: Subcat PR-5.19

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.632	30	Woods, Good, HSG A
0.021	77	Woods, Good, HSG D
0.653	31	Weighted Average
0.653	31	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	50	0.0750	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.2	110	0.0020	0.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	30	0.1300	1.80		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
21.0	190	Total			

Summary for Subcatchment PR-5.20: Subcat PR-5.20

Runoff = 0.1 cfs @ 12.27 hrs, Volume= 0.009 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.038	39	>75% Grass cover, Good, HSG A
0.132	98	Paved parking, HSG A
1.077	30	Woods, Good, HSG A
1.246	37	Weighted Average
1.115	30	89.45% Pervious Area
0.132	98	10.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.0	50	0.0300	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	97	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.3	147	Total			

Summary for Subcatchment PR-5.21: Subcat PR-5.21

Runoff = 0.0 cfs @ 12.38 hrs, Volume= 0.001 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.018	98	Paved parking, HSG A
5.571	30	Woods, Good, HSG A
5.589	30	Weighted Average
5.571	30	99.68% Pervious Area
0.018	98	0.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.1800	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
19.4	583	0.0400	0.50		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
28.2	633	Total			

Summary for Subcatchment PR-5.6: Subcat PR-5.6

Runoff = 0.2 cfs @ 12.29 hrs, Volume= 0.018 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.135	39	>75% Grass cover, Good, HSG A
0.281	98	Paved parking, HSG A
16.975	30	Woods, Good, HSG A
17.390	31	Weighted Average
17.110	30	98.39% Pervious Area
0.281	98	1.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	15	0.0660	1.54		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
2.9	306	0.0140	1.77		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
7.1	285	0.0091	0.67		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
12.6	299	0.0250	0.40		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
22.8	905	Total			

Summary for Subcatchment PR-5.7: Subcat PR-5.7

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
9.603	30	Woods, Good, HSG A
9.603	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
45.2	50	0.0030	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
18.7	319	0.0130	0.29		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
63.9	369	Total			

Summary for Subcatchment PR-5.8A: Subcat PR-5.8A

Runoff = 0.1 cfs @ 12.42 hrs, Volume= 0.010 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.063	39	>75% Grass cover, Good, HSG A
0.158	98	Paved parking, HSG A
7.802	30	Woods, Good, HSG A
8.023	31	Weighted Average
7.865	30	98.03% Pervious Area
0.158	98	1.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.7	50	0.0240	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.4	490	0.0340	1.84		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
6.7	233	0.0530	0.58		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
30.8	773	Total			

Summary for Subcatchment PR-5.8B: Subcat PR-5.8B

Runoff = 0.0 cfs @ 12.16 hrs, Volume= 0.003 af, Depth= 0.24"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
0.018	39	>75% Grass cover, Good, HSG A
0.046	98	Paved parking, HSG A
0.089	30	Woods, Good, HSG A
0.153	51	Weighted Average
0.107	32	70.10% Pervious Area
0.046	98	29.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	50	0.0060	0.09		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.8	148	0.0034	0.87		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
11.8	198	Total			

Summary for Subcatchment PR-5.9: Subcat PR-5.9

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1-inch Rainfall=1.00"

Area (ac)	CN	Description
4.330	30	Woods, Good, HSG A
4.330	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	25	0.2200	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.0	142	0.0063	1.19		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
1.8	148	0.0372	1.35		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.9	134	0.0335	0.46		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.4	449	Total			

Summary for Pond L-5.8B: Linear Infiltration Basin

Inflow Area = 0.153 ac, 29.90% Impervious, Inflow Depth = 0.24" for 1-inch event
Inflow = 0.0 cfs @ 12.16 hrs, Volume= 0.003 af
Outflow = 0.0 cfs @ 13.34 hrs, Volume= 0.003 af, Atten= 91%, Lag= 70.8 min
Discarded = 0.0 cfs @ 13.34 hrs, Volume= 0.003 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 200.37' @ 13.34 hrs Surf.Area= 490 sf Storage= 66 cf

Plug-Flow detention time= 256.6 min calculated for 0.003 af (100% of inflow)
Center-of-Mass det. time= 256.6 min (1,049.9 - 793.2)

Volume	Invert	Avail.Storage	Storage Description
#1	200.10'	869 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
200.10	0	0	0
200.60	902	226	226
201.10	1,673	644	869

Device	Routing	Invert	Outlet Devices
#1	Primary	200.60'	**5.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	200.10'	**0.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 13.34 hrs HW=200.37' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=200.10' TW=0.00' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P5.11: Low Point

Inflow Area = 4.623 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 174.50' @ 0.00 hrs Surf.Area= 5,600 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	174.50'	9,900 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
174.50	5,600	0	0
175.00	6,260	2,965	2,965
175.50	6,930	3,298	6,263
176.00	7,620	3,638	9,900

Device	Routing	Invert	Outlet Devices
#1	Primary	175.50'	**30.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=174.50' TW=0.00' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P5.14B: Linear Infiltration Basin

Inflow Area = 0.413 ac, 13.05% Impervious, Inflow Depth = 0.10" for 1-inch event
Inflow = 0.0 cfs @ 12.10 hrs, Volume= 0.004 af
Outflow = 0.0 cfs @ 12.53 hrs, Volume= 0.004 af, Atten= 80%, Lag= 26.2 min
Discarded = 0.0 cfs @ 12.53 hrs, Volume= 0.004 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 171.06' @ 12.53 hrs Surf.Area= 399 sf Storage= 52 cf

Plug-Flow detention time= 51.4 min calculated for 0.004 af (100% of inflow)
Center-of-Mass det. time= 51.4 min (840.1 - 788.7)

Volume	Invert	Avail.Storage	Storage Description
#1	170.80'	869 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
170.80	0	0	0
171.30	765	191	191
171.80	1,945	678	869

Device	Routing	Invert	Outlet Devices
#1	Primary	171.30'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	170.80'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.53 hrs HW=171.06' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=170.80' TW=0.00' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P5.18B: Linear Infiltration Basin

Inflow Area = 0.066 ac, 22.91% Impervious, Inflow Depth = 0.18" for 1-inch event
Inflow = 0.0 cfs @ 12.08 hrs, Volume= 0.001 af
Outflow = 0.0 cfs @ 15.04 hrs, Volume= 0.001 af, Atten= 96%, Lag= 177.4 min
Discarded = 0.0 cfs @ 15.04 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 172.78' @ 15.04 hrs Surf.Area= 141 sf Storage= 27 cf

Plug-Flow detention time= 589.1 min calculated for 0.001 af (100% of inflow)
Center-of-Mass det. time= 589.2 min (1,377.1 - 787.9)

Volume	Invert	Avail.Storage	Storage Description
#1	172.40'	200 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
172.40	0	0	0
172.90	185	46	46
173.40	429	154	200

Device	Routing	Invert	Outlet Devices
#1	Primary	172.90'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	172.40'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 15.04 hrs HW=172.78' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=172.40' TW=0.00' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link DP-5.10: Low Point

Inflow Area = 1.619 ac, 2.51% Impervious, Inflow Depth = 0.02" for 1-inch event
Inflow = 0.0 cfs @ 12.68 hrs, Volume= 0.003 af
Primary = 0.0 cfs @ 12.68 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.11: Off-site

Inflow Area = 4.623 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.12: Wetland 44

Inflow Area = 7.868 ac, 0.20% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 13.11 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 13.11 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.13: Wetland 44

Inflow Area = 34.599 ac, 1.84% Impervious, Inflow Depth = 0.01" for 1-inch event
Inflow = 0.1 cfs @ 14.75 hrs, Volume= 0.042 af
Primary = 0.1 cfs @ 14.75 hrs, Volume= 0.042 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.14: Wetland 44

Inflow Area = 14.090 ac, 1.25% Impervious, Inflow Depth = 0.01" for 1-inch event
Inflow = 0.1 cfs @ 12.18 hrs, Volume= 0.008 af
Primary = 0.1 cfs @ 12.18 hrs, Volume= 0.008 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.15: Wetland 44

Inflow Area = 10.495 ac, 0.14% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 12.48 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 12.48 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.16: Off-site Wetland

Inflow Area = 8.640 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.17: Wetland 41&43/Vernal Pool 11&13

Inflow Area = 18.452 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.18: Wetland 42/Vernal Pool 11

Inflow Area = 10.532 ac, 1.28% Impervious, Inflow Depth = 0.01" for 1-inch event
Inflow = 0.0 cfs @ 12.97 hrs, Volume= 0.008 af
Primary = 0.0 cfs @ 12.97 hrs, Volume= 0.008 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.19: Wetland 40/Vernal Pool 10

Inflow Area = 0.653 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.20: Off-site to Dutton Road

Inflow Area = 1.246 ac, 10.55% Impervious, Inflow Depth = 0.08" for 1-inch event
Inflow = 0.1 cfs @ 12.27 hrs, Volume= 0.009 af
Primary = 0.1 cfs @ 12.27 hrs, Volume= 0.009 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.21: Wetland 39/Vernal Pool 9

Inflow Area = 5.589 ac, 0.32% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 12.38 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 12.38 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.6: Wetland 18

Inflow Area = 17.390 ac, 1.61% Impervious, Inflow Depth = 0.01" for 1-inch event
Inflow = 0.2 cfs @ 12.29 hrs, Volume= 0.018 af
Primary = 0.2 cfs @ 12.29 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.7: Wetland 19

Inflow Area = 9.603 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.8: Wetland 45

Inflow Area = 8.177 ac, 2.50% Impervious, Inflow Depth = 0.02" for 1-inch event
Inflow = 0.1 cfs @ 12.42 hrs, Volume= 0.010 af
Primary = 0.1 cfs @ 12.42 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.9: Low Point

Inflow Area = 4.330 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1-inch event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentPR-5.10: Subcat PR-5.10 Runoff Area=1.619 ac 2.51% Impervious Runoff Depth=0.08"
Flow Length=670' Tc=50.3 min CN=30/98 Runoff=0.1 cfs 0.010 af

SubcatchmentPR-5.11: Subcat PR-5.11 Runoff Area=4.623 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=870' Tc=71.5 min CN=30/0 Runoff=0.0 cfs 0.000 af

SubcatchmentPR-5.12: Subcat PR-5.12 Runoff Area=7.868 ac 0.20% Impervious Runoff Depth=0.06"
Flow Length=2,528' Tc=84.9 min CN=45/98 Runoff=0.1 cfs 0.041 af

SubcatchmentPR-5.13: Subcat PR-5.13 Runoff Area=34.599 ac 1.84% Impervious Runoff Depth=0.06"
Flow Length=3,005' Tc=217.6 min CN=34/98 Runoff=0.4 cfs 0.162 af

SubcatchmentPR-5.14A: Subcat PR-5.14A Runoff Area=13.677 ac 0.90% Impervious Runoff Depth=0.10"
Flow Length=290' Tc=13.2 min CN=46/98 Runoff=0.3 cfs 0.112 af

SubcatchmentPR-5.14B: Subcat PR-5.14B Runoff Area=0.413 ac 13.05% Impervious Runoff Depth=0.40"
Flow Length=235' Tc=6.9 min CN=31/98 Runoff=0.2 cfs 0.014 af

SubcatchmentPR-5.15: Subcat PR-5.15 Runoff Area=10.495 ac 0.14% Impervious Runoff Depth=0.02"
Flow Length=608' Tc=34.8 min CN=41/98 Runoff=0.0 cfs 0.014 af

SubcatchmentPR-5.16: Subcat PR-5.16 Runoff Area=8.640 ac 0.00% Impervious Runoff Depth=0.15"
Flow Length=215' Tc=22.6 min CN=50/0 Runoff=0.2 cfs 0.108 af

SubcatchmentPR-5.17: Subcat PR-5.17 Runoff Area=18.452 ac 0.00% Impervious Runoff Depth=0.20"
Flow Length=75' Tc=6.4 min CN=52/0 Runoff=1.2 cfs 0.304 af

SubcatchmentPR-5.18A: Subcat PR-5.18A Runoff Area=10.467 ac 1.14% Impervious Runoff Depth=0.05"
Flow Length=590' Tc=75.8 min CN=42/98 Runoff=0.1 cfs 0.048 af

SubcatchmentPR-5.18B: Subcat PR-5.18B Runoff Area=0.066 ac 22.91% Impervious Runoff Depth=0.70"
Flow Length=94' Tc=6.0 min CN=31/98 Runoff=0.0 cfs 0.004 af

SubcatchmentPR-5.19: Subcat PR-5.19 Runoff Area=0.653 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=190' Tc=21.0 min CN=31/0 Runoff=0.0 cfs 0.000 af

SubcatchmentPR-5.20: Subcat PR-5.20 Runoff Area=1.246 ac 10.55% Impervious Runoff Depth=0.32"
Flow Length=147' Tc=20.3 min CN=30/98 Runoff=0.3 cfs 0.034 af

SubcatchmentPR-5.21: Subcat PR-5.21 Runoff Area=5.589 ac 0.32% Impervious Runoff Depth=0.01"
Flow Length=633' Tc=28.2 min CN=30/98 Runoff=0.0 cfs 0.005 af

SubcatchmentPR-5.6: Subcat PR-5.6 Runoff Area=17.390 ac 1.61% Impervious Runoff Depth=0.05"
Flow Length=905' Tc=22.8 min CN=30/98 Runoff=0.6 cfs 0.072 af

SubcatchmentPR-5.7: Subcat PR-5.7 Runoff Area=9.603 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=369' Tc=63.9 min CN=30/0 Runoff=0.0 cfs 0.000 af

Subcatchment PR-5.8A: Subcat PR-5.8A Runoff Area=8.023 ac 1.97% Impervious Runoff Depth=0.06"
Flow Length=773' Tc=30.8 min CN=30/98 Runoff=0.3 cfs 0.040 af

Subcatchment PR-5.8B: Subcat PR-5.8B Runoff Area=0.153 ac 29.90% Impervious Runoff Depth=0.92"
Flow Length=198' Tc=11.8 min CN=32/98 Runoff=0.1 cfs 0.012 af

Subcatchment PR-5.9: Subcat PR-5.9 Runoff Area=4.330 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=449' Tc=13.4 min CN=30/0 Runoff=0.0 cfs 0.000 af

Pond L-5.8B: Linear Infiltration Basin Peak Elev=200.62' Storage=245 cf Inflow=0.1 cfs 0.012 af
Discarded=0.0 cfs 0.010 af Primary=0.0 cfs 0.002 af Outflow=0.0 cfs 0.012 af

Pond P5.11: Low Point Peak Elev=174.50' Storage=0 cf Inflow=0.0 cfs 0.000 af
Outflow=0.0 cfs 0.000 af

Pond P5.14B: Linear Infiltration Basin Peak Elev=171.32' Storage=205 cf Inflow=0.2 cfs 0.014 af
Discarded=0.0 cfs 0.012 af Primary=0.1 cfs 0.001 af Outflow=0.1 cfs 0.014 af

Pond P5.18B: Linear Infiltration Basin Peak Elev=172.92' Storage=49 cf Inflow=0.0 cfs 0.004 af
Discarded=0.0 cfs 0.002 af Primary=0.0 cfs 0.002 af Outflow=0.0 cfs 0.004 af

Link DP-5.10: Low Point Inflow=0.1 cfs 0.010 af
Primary=0.1 cfs 0.010 af

Link DP-5.11: Off-site Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP-5.12: Wetland 44 Inflow=0.1 cfs 0.041 af
Primary=0.1 cfs 0.041 af

Link DP-5.13: Wetland 44 Inflow=0.4 cfs 0.162 af
Primary=0.4 cfs 0.162 af

Link DP-5.14: Wetland 44 Inflow=0.3 cfs 0.113 af
Primary=0.3 cfs 0.113 af

Link DP-5.15: Wetland 44 Inflow=0.0 cfs 0.014 af
Primary=0.0 cfs 0.014 af

Link DP-5.16: Off-site Wetland Inflow=0.2 cfs 0.108 af
Primary=0.2 cfs 0.108 af

Link DP-5.17: Wetland 41&43/Vernal Pool 11&13 Inflow=1.2 cfs 0.304 af
Primary=1.2 cfs 0.304 af

Link DP-5.18: Wetland 42/Vernal Pool 11 Inflow=0.1 cfs 0.050 af
Primary=0.1 cfs 0.050 af

Link DP-5.19: Wetland 40/Vernal Pool 10 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP-5.20: Off-site to Dutton Road Inflow=0.3 cfs 0.034 af
Primary=0.3 cfs 0.034 af

Link DP-5.21: Wetland 39/Vernal Pool 9 Inflow=0.0 cfs 0.005 af
Primary=0.0 cfs 0.005 af

Link DP-5.6: Wetland 18 Inflow=0.6 cfs 0.072 af
Primary=0.6 cfs 0.072 af

Link DP-5.7: Wetland 19 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP-5.8: Wetland 45 Inflow=0.3 cfs 0.042 af
Primary=0.3 cfs 0.042 af

Link DP-5.9: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Total Runoff Area = 157.906 ac Runoff Volume = 0.979 af Average Runoff Depth = 0.07"
98.95% Pervious = 156.254 ac 1.05% Impervious = 1.652 ac

Summary for Subcatchment PR-5.10: Subcat PR-5.10

Runoff = 0.1 cfs @ 12.68 hrs, Volume= 0.010 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.016	39	>75% Grass cover, Good, HSG A
0.041	98	Paved parking, HSG A
1.563	30	Woods, Good, HSG A
1.619	32	Weighted Average
1.579	30	97.49% Pervious Area
0.041	98	2.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
29.2	620	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
50.3	670	Total			

Summary for Subcatchment PR-5.11: Subcat PR-5.11

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
4.623	30	Woods, Good, HSG A
4.623	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.9	50	0.0110	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
44.6	820	0.0150	0.31		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
71.5	870	Total			

Summary for Subcatchment PR-5.12: Subcat PR-5.12

Runoff = 0.1 cfs @ 16.32 hrs, Volume= 0.041 af, Depth= 0.06"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.007	39	>75% Grass cover, Good, HSG A
0.018	91	Gravel roads, HSG D
0.016	98	Water Surface, HSG D
5.366	30	Woods, Good, HSG A
2.463	77	Woods, Good, HSG D
7.868	45	Weighted Average
7.852	45	99.80% Pervious Area
0.016	98	0.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.8	50	0.0270	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
9.5	132	0.0086	0.23		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.2	128	0.0004	0.14		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.5	325	0.0065	1.21		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
32.4	1,427	0.0110	0.73		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.9	401	0.0130	1.71		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.6	65	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
84.9	2,528	Total			

Summary for Subcatchment PR-5.13: Subcat PR-5.13

Runoff = 0.4 cfs @ 14.75 hrs, Volume= 0.162 af, Depth= 0.06"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.217	39	>75% Grass cover, Good, HSG A
0.019	80	>75% Grass cover, Good, HSG D
0.069	76	Gravel roads, HSG A
0.002	91	Gravel roads, HSG D
0.560	98	Paved parking, HSG A
0.053	98	Paved parking, HSG D
0.023	98	Water Surface, HSG D
30.814	30	Woods, Good, HSG A
2.842	77	Woods, Good, HSG D
34.599	35	Weighted Average
33.963	34	98.16% Pervious Area
0.635	98	1.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.8	50	0.0085	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
187.8	2,955	0.0110	0.26		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
217.6	3,005	Total			

Summary for Subcatchment PR-5.14A: Subcat PR-5.14A

Runoff = 0.3 cfs @ 12.17 hrs, Volume= 0.112 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.024	39	>75% Grass cover, Good, HSG A
0.013	80	>75% Grass cover, Good, HSG D
0.006	91	Gravel roads, HSG D
0.060	98	Paved parking, HSG A
0.036	98	Paved parking, HSG D
0.027	98	Water Surface, HSG D
7.420	30	Woods, Good, HSG A
3.269	55	Woods, Good, HSG B
2.824	77	Woods, Good, HSG D
13.677	46	Weighted Average
13.554	46	99.10% Pervious Area
0.123	98	0.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	50	0.0080	0.10		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.8	143	0.0146	0.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.4	97	0.0730	0.68		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.2	290	Total			

Summary for Subcatchment PR-5.14B: Subcat PR-5.14B

Runoff = 0.2 cfs @ 12.09 hrs, Volume= 0.014 af, Depth= 0.40"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.022	39	>75% Grass cover, Good, HSG A
0.054	98	Paved parking, HSG A
0.337	30	Woods, Good, HSG A
0.413	39	Weighted Average
0.359	31	86.95% Pervious Area
0.054	98	13.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	50	0.0262	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
1.9	185	0.0119	1.64		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
6.9	235	Total			

Summary for Subcatchment PR-5.15: Subcat PR-5.15

Runoff = 0.0 cfs @ 12.45 hrs, Volume= 0.014 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.006	91	Gravel roads, HSG D
0.015	98	Water Surface, HSG D
8.088	30	Woods, Good, HSG A
2.387	77	Woods, Good, HSG D
10.495	41	Weighted Average
10.481	41	99.86% Pervious Area
0.015	98	0.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	50	0.0700	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
11.3	434	0.0650	0.64		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
10.7	124	0.0060	0.19		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
34.8	608	Total			

Summary for Subcatchment PR-5.16: Subcat PR-5.16

Runoff = 0.2 cfs @ 12.73 hrs, Volume= 0.108 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
4.940	30	Woods, Good, HSG A
3.700	77	Woods, Good, HSG D
8.640	50	Weighted Average
8.640	50	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.9	165	0.0194	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
22.6	215	Total			

Summary for Subcatchment PR-5.17: Subcat PR-5.17

Runoff = 1.2 cfs @ 12.39 hrs, Volume= 0.304 af, Depth= 0.20"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.002	76	Gravel roads, HSG A
9.857	30	Woods, Good, HSG A
8.593	77	Woods, Good, HSG D
18.452	52	Weighted Average
18.452	52	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	30	0.1500	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.1	45	0.1600	6.44		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
6.4	75	Total			

Summary for Subcatchment PR-5.18A: Subcat PR-5.18A

Runoff = 0.1 cfs @ 12.97 hrs, Volume= 0.048 af, Depth= 0.05"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.014	39	>75% Grass cover, Good, HSG A
0.034	80	>75% Grass cover, Good, HSG D
0.034	98	Paved parking, HSG A
0.085	98	Paved parking, HSG D
7.754	30	Woods, Good, HSG A
2.545	77	Woods, Good, HSG D
10.467	42	Weighted Average
10.347	42	98.86% Pervious Area
0.119	98	1.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.1260	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
65.7	540	0.0030	0.14		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
75.8	590	Total			

Summary for Subcatchment PR-5.18B: Subcat PR-5.18B

Runoff = 0.0 cfs @ 12.08 hrs, Volume= 0.004 af, Depth= 0.70"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.006	39	>75% Grass cover, Good, HSG A
0.015	98	Paved parking, HSG A
0.045	30	Woods, Good, HSG A
0.066	46	Weighted Average
0.051	31	77.09% Pervious Area
0.015	98	22.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	29	0.3030	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	65	0.0292	2.56		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
5.0	94	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment PR-5.19: Subcat PR-5.19

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.632	30	Woods, Good, HSG A
0.021	77	Woods, Good, HSG D
0.653	31	Weighted Average
0.653	31	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	50	0.0750	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.2	110	0.0020	0.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	30	0.1300	1.80		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
21.0	190	Total			

Summary for Subcatchment PR-5.20: Subcat PR-5.20

Runoff = 0.3 cfs @ 12.26 hrs, Volume= 0.034 af, Depth= 0.32"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.038	39	>75% Grass cover, Good, HSG A
0.132	98	Paved parking, HSG A
1.077	30	Woods, Good, HSG A
1.246	37	Weighted Average
1.115	30	89.45% Pervious Area
0.132	98	10.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.0	50	0.0300	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	97	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.3	147	Total			

Summary for Subcatchment PR-5.21: Subcat PR-5.21

Runoff = 0.0 cfs @ 12.37 hrs, Volume= 0.005 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.018	98	Paved parking, HSG A
5.571	30	Woods, Good, HSG A
5.589	30	Weighted Average
5.571	30	99.68% Pervious Area
0.018	98	0.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.1800	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
19.4	583	0.0400	0.50		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
28.2	633	Total			

Summary for Subcatchment PR-5.6: Subcat PR-5.6

Runoff = 0.6 cfs @ 12.29 hrs, Volume= 0.072 af, Depth= 0.05"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.135	39	>75% Grass cover, Good, HSG A
0.281	98	Paved parking, HSG A
16.975	30	Woods, Good, HSG A
17.390	31	Weighted Average
17.110	30	98.39% Pervious Area
0.281	98	1.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	15	0.0660	1.54		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
2.9	306	0.0140	1.77		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
7.1	285	0.0091	0.67		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
12.6	299	0.0250	0.40		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
22.8	905	Total			

Summary for Subcatchment PR-5.7: Subcat PR-5.7

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
9.603	30	Woods, Good, HSG A
9.603	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
45.2	50	0.0030	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
18.7	319	0.0130	0.29		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
63.9	369	Total			

Summary for Subcatchment PR-5.8A: Subcat PR-5.8A

Runoff = 0.3 cfs @ 12.42 hrs, Volume= 0.040 af, Depth= 0.06"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.063	39	>75% Grass cover, Good, HSG A
0.158	98	Paved parking, HSG A
7.802	30	Woods, Good, HSG A
8.023	31	Weighted Average
7.865	30	98.03% Pervious Area
0.158	98	1.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.7	50	0.0240	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.4	490	0.0340	1.84		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
6.7	233	0.0530	0.58		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
30.8	773	Total			

Summary for Subcatchment PR-5.8B: Subcat PR-5.8B

Runoff = 0.1 cfs @ 12.15 hrs, Volume= 0.012 af, Depth= 0.92"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
0.018	39	>75% Grass cover, Good, HSG A
0.046	98	Paved parking, HSG A
0.089	30	Woods, Good, HSG A
0.153	51	Weighted Average
0.107	32	70.10% Pervious Area
0.046	98	29.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	50	0.0060	0.09		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.8	148	0.0034	0.87		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
11.8	198	Total			

Summary for Subcatchment PR-5.9: Subcat PR-5.9

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-year Rainfall=3.30"

Area (ac)	CN	Description
4.330	30	Woods, Good, HSG A
4.330	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	25	0.2200	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.0	142	0.0063	1.19		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
1.8	148	0.0372	1.35		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.9	134	0.0335	0.46		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.4	449	Total			

Summary for Pond L-5.8B: Linear Infiltration Basin

Inflow Area = 0.153 ac, 29.90% Impervious, Inflow Depth = 0.92" for 2-year event
Inflow = 0.1 cfs @ 12.15 hrs, Volume= 0.012 af
Outflow = 0.0 cfs @ 12.48 hrs, Volume= 0.012 af, Atten= 62%, Lag= 19.5 min
Discarded = 0.0 cfs @ 12.48 hrs, Volume= 0.010 af
Primary = 0.0 cfs @ 12.48 hrs, Volume= 0.002 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 200.62' @ 12.48 hrs Surf.Area= 934 sf Storage= 245 cf

Plug-Flow detention time= 403.5 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 403.5 min (1,164.7 - 761.1)

Volume	Invert	Avail.Storage	Storage Description
#1	200.10'	869 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
200.10	0	0	0
200.60	902	226	226
201.10	1,673	644	869

Device	Routing	Invert	Outlet Devices
#1	Primary	200.60'	**5.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	200.10'	**0.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.48 hrs HW=200.62' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 12.48 hrs HW=200.62' TW=0.00' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.0 cfs @ 0.39 fps)

Summary for Pond P5.11: Low Point

Inflow Area = 4.623 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 174.50' @ 0.00 hrs Surf.Area= 5,600 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	174.50'	9,900 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
174.50	5,600	0	0
175.00	6,260	2,965	2,965
175.50	6,930	3,298	6,263
176.00	7,620	3,638	9,900

Device	Routing	Invert	Outlet Devices
#1	Primary	175.50'	**30.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=174.50' TW=0.00' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P5.14B: Linear Infiltration Basin

Inflow Area = 0.413 ac, 13.05% Impervious, Inflow Depth = 0.40" for 2-year event
Inflow = 0.2 cfs @ 12.09 hrs, Volume= 0.014 af
Outflow = 0.1 cfs @ 12.29 hrs, Volume= 0.014 af, Atten= 57%, Lag= 12.0 min
Discarded = 0.0 cfs @ 12.29 hrs, Volume= 0.012 af
Primary = 0.1 cfs @ 12.29 hrs, Volume= 0.001 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 171.32' @ 12.29 hrs Surf.Area= 805 sf Storage= 205 cf

Plug-Flow detention time= 100.3 min calculated for 0.014 af (100% of inflow)
Center-of-Mass det. time= 100.3 min (856.9 - 756.6)

Volume	Invert	Avail.Storage	Storage Description
#1	170.80'	869 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
170.80	0	0	0
171.30	765	191	191
171.80	1,945	678	869

Device	Routing	Invert	Outlet Devices
#1	Primary	171.30'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	170.80'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.29 hrs HW=171.32' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.1 cfs @ 12.29 hrs HW=171.32' TW=0.00' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.1 cfs @ 0.32 fps)

Summary for Pond P5.18B: Linear Infiltration Basin

Inflow Area = 0.066 ac, 22.91% Impervious, Inflow Depth = 0.70" for 2-year event
Inflow = 0.0 cfs @ 12.08 hrs, Volume= 0.004 af
Outflow = 0.0 cfs @ 12.10 hrs, Volume= 0.004 af, Atten= 1%, Lag= 0.7 min
Discarded = 0.0 cfs @ 12.10 hrs, Volume= 0.002 af
Primary = 0.0 cfs @ 12.10 hrs, Volume= 0.002 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 172.92' @ 12.10 hrs Surf.Area= 193 sf Storage= 49 cf

Plug-Flow detention time= 411.0 min calculated for 0.004 af (100% of inflow)
Center-of-Mass det. time= 411.3 min (1,167.0 - 755.8)

Volume	Invert	Avail.Storage	Storage Description
#1	172.40'	200 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
172.40	0	0	0
172.90	185	46	46
173.40	429	154	200

Device	Routing	Invert	Outlet Devices
#1	Primary	172.90'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	172.40'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.10 hrs HW=172.92' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 12.10 hrs HW=172.92' TW=0.00' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.0 cfs @ 0.30 fps)

Summary for Link DP-5.10: Low Point

Inflow Area = 1.619 ac, 2.51% Impervious, Inflow Depth = 0.08" for 2-year event
Inflow = 0.1 cfs @ 12.68 hrs, Volume= 0.010 af
Primary = 0.1 cfs @ 12.68 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.11: Off-site

Inflow Area = 4.623 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.12: Wetland 44

Inflow Area = 7.868 ac, 0.20% Impervious, Inflow Depth = 0.06" for 2-year event
Inflow = 0.1 cfs @ 16.32 hrs, Volume= 0.041 af
Primary = 0.1 cfs @ 16.32 hrs, Volume= 0.041 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.13: Wetland 44

Inflow Area = 34.599 ac, 1.84% Impervious, Inflow Depth = 0.06" for 2-year event
Inflow = 0.4 cfs @ 14.75 hrs, Volume= 0.162 af
Primary = 0.4 cfs @ 14.75 hrs, Volume= 0.162 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.14: Wetland 44

Inflow Area = 14.090 ac, 1.25% Impervious, Inflow Depth = 0.10" for 2-year event
Inflow = 0.3 cfs @ 12.22 hrs, Volume= 0.113 af
Primary = 0.3 cfs @ 12.22 hrs, Volume= 0.113 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.15: Wetland 44

Inflow Area = 10.495 ac, 0.14% Impervious, Inflow Depth = 0.02" for 2-year event
Inflow = 0.0 cfs @ 12.45 hrs, Volume= 0.014 af
Primary = 0.0 cfs @ 12.45 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.16: Off-site Wetland

Inflow Area = 8.640 ac, 0.00% Impervious, Inflow Depth = 0.15" for 2-year event
Inflow = 0.2 cfs @ 12.73 hrs, Volume= 0.108 af
Primary = 0.2 cfs @ 12.73 hrs, Volume= 0.108 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.17: Wetland 41&43/Vernal Pool 11&13

Inflow Area = 18.452 ac, 0.00% Impervious, Inflow Depth = 0.20" for 2-year event
Inflow = 1.2 cfs @ 12.39 hrs, Volume= 0.304 af
Primary = 1.2 cfs @ 12.39 hrs, Volume= 0.304 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.18: Wetland 42/Vernal Pool 11

Inflow Area = 10.532 ac, 1.28% Impervious, Inflow Depth = 0.06" for 2-year event
Inflow = 0.1 cfs @ 12.97 hrs, Volume= 0.050 af
Primary = 0.1 cfs @ 12.97 hrs, Volume= 0.050 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.19: Wetland 40/Vernal Pool 10

Inflow Area = 0.653 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.20: Off-site to Dutton Road

Inflow Area = 1.246 ac, 10.55% Impervious, Inflow Depth = 0.32" for 2-year event
Inflow = 0.3 cfs @ 12.26 hrs, Volume= 0.034 af
Primary = 0.3 cfs @ 12.26 hrs, Volume= 0.034 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.21: Wetland 39/Vernal Pool 9

Inflow Area = 5.589 ac, 0.32% Impervious, Inflow Depth = 0.01" for 2-year event
Inflow = 0.0 cfs @ 12.37 hrs, Volume= 0.005 af
Primary = 0.0 cfs @ 12.37 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.6: Wetland 18

Inflow Area = 17.390 ac, 1.61% Impervious, Inflow Depth = 0.05" for 2-year event
Inflow = 0.6 cfs @ 12.29 hrs, Volume= 0.072 af
Primary = 0.6 cfs @ 12.29 hrs, Volume= 0.072 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.7: Wetland 19

Inflow Area = 9.603 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.8: Wetland 45

Inflow Area = 8.177 ac, 2.50% Impervious, Inflow Depth = 0.06" for 2-year event
Inflow = 0.3 cfs @ 12.43 hrs, Volume= 0.042 af
Primary = 0.3 cfs @ 12.43 hrs, Volume= 0.042 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.9: Low Point

Inflow Area = 4.330 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-year event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentPR-5.10: Subcat PR-5.10 Runoff Area=1.619 ac 2.51% Impervious Runoff Depth=0.13"
Flow Length=670' Tc=50.3 min CN=30/98 Runoff=0.1 cfs 0.018 af

SubcatchmentPR-5.11: Subcat PR-5.11 Runoff Area=4.623 ac 0.00% Impervious Runoff Depth=0.01"
Flow Length=870' Tc=71.5 min CN=30/0 Runoff=0.0 cfs 0.003 af

SubcatchmentPR-5.12: Subcat PR-5.12 Runoff Area=7.868 ac 0.20% Impervious Runoff Depth=0.48"
Flow Length=2,528' Tc=84.9 min CN=45/98 Runoff=0.8 cfs 0.317 af

SubcatchmentPR-5.13: Subcat PR-5.13 Runoff Area=34.599 ac 1.84% Impervious Runoff Depth=0.16"
Flow Length=3,005' Tc=217.6 min CN=34/98 Runoff=0.6 cfs 0.461 af

SubcatchmentPR-5.14A: Subcat PR-5.14A Runoff Area=13.677 ac 0.90% Impervious Runoff Depth=0.56"
Flow Length=290' Tc=13.2 min CN=46/98 Runoff=3.6 cfs 0.640 af

SubcatchmentPR-5.14B: Subcat PR-5.14B Runoff Area=0.413 ac 13.05% Impervious Runoff Depth=0.65"
Flow Length=235' Tc=6.9 min CN=31/98 Runoff=0.3 cfs 0.022 af

SubcatchmentPR-5.15: Subcat PR-5.15 Runoff Area=10.495 ac 0.14% Impervious Runoff Depth=0.30"
Flow Length=608' Tc=34.8 min CN=41/98 Runoff=0.7 cfs 0.265 af

SubcatchmentPR-5.16: Subcat PR-5.16 Runoff Area=8.640 ac 0.00% Impervious Runoff Depth=0.73"
Flow Length=215' Tc=22.6 min CN=50/0 Runoff=3.2 cfs 0.528 af

SubcatchmentPR-5.17: Subcat PR-5.17 Runoff Area=18.452 ac 0.00% Impervious Runoff Depth=0.85"
Flow Length=75' Tc=6.4 min CN=52/0 Runoff=13.1 cfs 1.304 af

SubcatchmentPR-5.18A: Subcat PR-5.18A Runoff Area=10.467 ac 1.14% Impervious Runoff Depth=0.39"
Flow Length=590' Tc=75.8 min CN=42/98 Runoff=0.8 cfs 0.340 af

SubcatchmentPR-5.18B: Subcat PR-5.18B Runoff Area=0.066 ac 22.91% Impervious Runoff Depth=1.13"
Flow Length=94' Tc=6.0 min CN=31/98 Runoff=0.1 cfs 0.006 af

SubcatchmentPR-5.19: Subcat PR-5.19 Runoff Area=0.653 ac 0.00% Impervious Runoff Depth=0.02"
Flow Length=190' Tc=21.0 min CN=31/0 Runoff=0.0 cfs 0.001 af

SubcatchmentPR-5.20: Subcat PR-5.20 Runoff Area=1.246 ac 10.55% Impervious Runoff Depth=0.52"
Flow Length=147' Tc=20.3 min CN=30/98 Runoff=0.4 cfs 0.054 af

SubcatchmentPR-5.21: Subcat PR-5.21 Runoff Area=5.589 ac 0.32% Impervious Runoff Depth=0.02"
Flow Length=633' Tc=28.2 min CN=30/98 Runoff=0.1 cfs 0.011 af

SubcatchmentPR-5.6: Subcat PR-5.6 Runoff Area=17.390 ac 1.61% Impervious Runoff Depth=0.09"
Flow Length=905' Tc=22.8 min CN=30/98 Runoff=0.9 cfs 0.125 af

SubcatchmentPR-5.7: Subcat PR-5.7 Runoff Area=9.603 ac 0.00% Impervious Runoff Depth=0.01"
Flow Length=369' Tc=63.9 min CN=30/0 Runoff=0.0 cfs 0.006 af

Subcatchment PR-5.8A: Subcat PR-5.8A Runoff Area=8.023 ac 1.97% Impervious Runoff Depth=0.10"
Flow Length=773' Tc=30.8 min CN=30/98 Runoff=0.4 cfs 0.069 af

Subcatchment PR-5.8B: Subcat PR-5.8B Runoff Area=0.153 ac 29.90% Impervious Runoff Depth=1.48"
Flow Length=198' Tc=11.8 min CN=32/98 Runoff=0.2 cfs 0.019 af

Subcatchment PR-5.9: Subcat PR-5.9 Runoff Area=4.330 ac 0.00% Impervious Runoff Depth=0.01"
Flow Length=449' Tc=13.4 min CN=30/0 Runoff=0.0 cfs 0.003 af

Pond L-5.8B: Linear Infiltration Basin Peak Elev=200.65' Storage=274 cf Inflow=0.2 cfs 0.019 af
Discarded=0.0 cfs 0.011 af Primary=0.2 cfs 0.008 af Outflow=0.2 cfs 0.019 af

Pond P5.11: Low Point Peak Elev=174.52' Storage=133 cf Inflow=0.0 cfs 0.003 af
Outflow=0.0 cfs 0.000 af

Pond P5.14B: Linear Infiltration Basin Peak Elev=171.34' Storage=227 cf Inflow=0.3 cfs 0.022 af
Discarded=0.0 cfs 0.017 af Primary=0.2 cfs 0.006 af Outflow=0.2 cfs 0.022 af

Pond P5.18B: Linear Infiltration Basin Peak Elev=172.92' Storage=50 cf Inflow=0.1 cfs 0.006 af
Discarded=0.0 cfs 0.002 af Primary=0.1 cfs 0.004 af Outflow=0.1 cfs 0.006 af

Link DP-5.10: Low Point Inflow=0.1 cfs 0.018 af
Primary=0.1 cfs 0.018 af

Link DP-5.11: Off-site Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP-5.12: Wetland 44 Inflow=0.8 cfs 0.317 af
Primary=0.8 cfs 0.317 af

Link DP-5.13: Wetland 44 Inflow=0.6 cfs 0.461 af
Primary=0.6 cfs 0.461 af

Link DP-5.14: Wetland 44 Inflow=3.7 cfs 0.646 af
Primary=3.7 cfs 0.646 af

Link DP-5.15: Wetland 44 Inflow=0.7 cfs 0.265 af
Primary=0.7 cfs 0.265 af

Link DP-5.16: Off-site Wetland Inflow=3.2 cfs 0.528 af
Primary=3.2 cfs 0.528 af

Link DP-5.17: Wetland 41&43/Vernal Pool 11&13 Inflow=13.1 cfs 1.304 af
Primary=13.1 cfs 1.304 af

Link DP-5.18: Wetland 42/Vernal Pool 11 Inflow=0.8 cfs 0.344 af
Primary=0.8 cfs 0.344 af

Link DP-5.19: Wetland 40/Vernal Pool 10 Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP-5.20: Off-site to Dutton Road Inflow=0.4 cfs 0.054 af
Primary=0.4 cfs 0.054 af

Link DP-5.21: Wetland 39/Vernal Pool 9 Inflow=0.1 cfs 0.011 af
Primary=0.1 cfs 0.011 af

Link DP-5.6: Wetland 18 Inflow=0.9 cfs 0.125 af
Primary=0.9 cfs 0.125 af

Link DP-5.7: Wetland 19 Inflow=0.0 cfs 0.006 af
Primary=0.0 cfs 0.006 af

Link DP-5.8: Wetland 45 Inflow=0.6 cfs 0.077 af
Primary=0.6 cfs 0.077 af

Link DP-5.9: Low Point Inflow=0.0 cfs 0.003 af
Primary=0.0 cfs 0.003 af

Total Runoff Area = 157.906 ac Runoff Volume = 4.193 af Average Runoff Depth = 0.32"
98.95% Pervious = 156.254 ac 1.05% Impervious = 1.652 ac

Summary for Subcatchment PR-5.10: Subcat PR-5.10

Runoff = 0.1 cfs @ 12.68 hrs, Volume= 0.018 af, Depth= 0.13"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.016	39	>75% Grass cover, Good, HSG A
0.041	98	Paved parking, HSG A
1.563	30	Woods, Good, HSG A
1.619	32	Weighted Average
1.579	30	97.49% Pervious Area
0.041	98	2.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
29.2	620	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
50.3	670	Total			

Summary for Subcatchment PR-5.11: Subcat PR-5.11

Runoff = 0.0 cfs @ 24.07 hrs, Volume= 0.003 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
4.623	30	Woods, Good, HSG A
4.623	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.9	50	0.0110	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
44.6	820	0.0150	0.31		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
71.5	870	Total			

Summary for Subcatchment PR-5.12: Subcat PR-5.12

Runoff = 0.8 cfs @ 13.50 hrs, Volume= 0.317 af, Depth= 0.48"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.007	39	>75% Grass cover, Good, HSG A
0.018	91	Gravel roads, HSG D
0.016	98	Water Surface, HSG D
5.366	30	Woods, Good, HSG A
2.463	77	Woods, Good, HSG D
7.868	45	Weighted Average
7.852	45	99.80% Pervious Area
0.016	98	0.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.8	50	0.0270	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
9.5	132	0.0086	0.23		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.2	128	0.0004	0.14		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.5	325	0.0065	1.21		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
32.4	1,427	0.0110	0.73		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.9	401	0.0130	1.71		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.6	65	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
84.9	2,528	Total			

Summary for Subcatchment PR-5.13: Subcat PR-5.13

Runoff = 0.6 cfs @ 14.75 hrs, Volume= 0.461 af, Depth= 0.16"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.217	39	>75% Grass cover, Good, HSG A
0.019	80	>75% Grass cover, Good, HSG D
0.069	76	Gravel roads, HSG A
0.002	91	Gravel roads, HSG D
0.560	98	Paved parking, HSG A
0.053	98	Paved parking, HSG D
0.023	98	Water Surface, HSG D
30.814	30	Woods, Good, HSG A
2.842	77	Woods, Good, HSG D
34.599	35	Weighted Average
33.963	34	98.16% Pervious Area
0.635	98	1.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.8	50	0.0085	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
187.8	2,955	0.0110	0.26		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
217.6	3,005	Total			

Summary for Subcatchment PR-5.14A: Subcat PR-5.14A

Runoff = 3.6 cfs @ 12.36 hrs, Volume= 0.640 af, Depth= 0.56"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.024	39	>75% Grass cover, Good, HSG A
0.013	80	>75% Grass cover, Good, HSG D
0.006	91	Gravel roads, HSG D
0.060	98	Paved parking, HSG A
0.036	98	Paved parking, HSG D
0.027	98	Water Surface, HSG D
7.420	30	Woods, Good, HSG A
3.269	55	Woods, Good, HSG B
2.824	77	Woods, Good, HSG D
13.677	46	Weighted Average
13.554	46	99.10% Pervious Area
0.123	98	0.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	50	0.0080	0.10		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.8	143	0.0146	0.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.4	97	0.0730	0.68		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.2	290	Total			

Summary for Subcatchment PR-5.14B: Subcat PR-5.14B

Runoff = 0.3 cfs @ 12.09 hrs, Volume= 0.022 af, Depth= 0.65"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.022	39	>75% Grass cover, Good, HSG A
0.054	98	Paved parking, HSG A
0.337	30	Woods, Good, HSG A
0.413	39	Weighted Average
0.359	31	86.95% Pervious Area
0.054	98	13.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	50	0.0262	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
1.9	185	0.0119	1.64		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
6.9	235	Total			

Summary for Subcatchment PR-5.15: Subcat PR-5.15

Runoff = 0.7 cfs @ 12.84 hrs, Volume= 0.265 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.006	91	Gravel roads, HSG D
0.015	98	Water Surface, HSG D
8.088	30	Woods, Good, HSG A
2.387	77	Woods, Good, HSG D
10.495	41	Weighted Average
10.481	41	99.86% Pervious Area
0.015	98	0.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	50	0.0700	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
11.3	434	0.0650	0.64		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
10.7	124	0.0060	0.19		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
34.8	608	Total			

Summary for Subcatchment PR-5.16: Subcat PR-5.16

Runoff = 3.2 cfs @ 12.43 hrs, Volume= 0.528 af, Depth= 0.73"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
4.940	30	Woods, Good, HSG A
3.700	77	Woods, Good, HSG D
8.640	50	Weighted Average
8.640	50	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.9	165	0.0194	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
22.6	215	Total			

Summary for Subcatchment PR-5.17: Subcat PR-5.17

Runoff = 13.1 cfs @ 12.12 hrs, Volume= 1.304 af, Depth= 0.85"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.002	76	Gravel roads, HSG A
9.857	30	Woods, Good, HSG A
8.593	77	Woods, Good, HSG D
18.452	52	Weighted Average
18.452	52	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	30	0.1500	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.1	45	0.1600	6.44		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
6.4	75	Total			

Summary for Subcatchment PR-5.18A: Subcat PR-5.18A

Runoff = 0.8 cfs @ 13.40 hrs, Volume= 0.340 af, Depth= 0.39"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.014	39	>75% Grass cover, Good, HSG A
0.034	80	>75% Grass cover, Good, HSG D
0.034	98	Paved parking, HSG A
0.085	98	Paved parking, HSG D
7.754	30	Woods, Good, HSG A
2.545	77	Woods, Good, HSG D
10.467	42	Weighted Average
10.347	42	98.86% Pervious Area
0.119	98	1.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.1260	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
65.7	540	0.0030	0.14		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
75.8	590	Total			

Summary for Subcatchment PR-5.18B: Subcat PR-5.18B

Runoff = 0.1 cfs @ 12.08 hrs, Volume= 0.006 af, Depth= 1.13"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.006	39	>75% Grass cover, Good, HSG A
0.015	98	Paved parking, HSG A
0.045	30	Woods, Good, HSG A
0.066	46	Weighted Average
0.051	31	77.09% Pervious Area
0.015	98	22.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	29	0.3030	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	65	0.0292	2.56		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
5.0	94	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment PR-5.19: Subcat PR-5.19

Runoff = 0.0 cfs @ 22.05 hrs, Volume= 0.001 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.632	30	Woods, Good, HSG A
0.021	77	Woods, Good, HSG D
0.653	31	Weighted Average
0.653	31	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	50	0.0750	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.2	110	0.0020	0.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	30	0.1300	1.80		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
21.0	190	Total			

Summary for Subcatchment PR-5.20: Subcat PR-5.20

Runoff = 0.4 cfs @ 12.26 hrs, Volume= 0.054 af, Depth= 0.52"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.038	39	>75% Grass cover, Good, HSG A
0.132	98	Paved parking, HSG A
1.077	30	Woods, Good, HSG A
1.246	37	Weighted Average
1.115	30	89.45% Pervious Area
0.132	98	10.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.0	50	0.0300	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	97	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.3	147	Total			

Summary for Subcatchment PR-5.21: Subcat PR-5.21

Runoff = 0.1 cfs @ 12.37 hrs, Volume= 0.011 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.018	98	Paved parking, HSG A
5.571	30	Woods, Good, HSG A
5.589	30	Weighted Average
5.571	30	99.68% Pervious Area
0.018	98	0.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.1800	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
19.4	583	0.0400	0.50		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
28.2	633	Total			

Summary for Subcatchment PR-5.6: Subcat PR-5.6

Runoff = 0.9 cfs @ 12.29 hrs, Volume= 0.125 af, Depth= 0.09"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.135	39	>75% Grass cover, Good, HSG A
0.281	98	Paved parking, HSG A
16.975	30	Woods, Good, HSG A
17.390	31	Weighted Average
17.110	30	98.39% Pervious Area
0.281	98	1.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	15	0.0660	1.54		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
2.9	306	0.0140	1.77		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
7.1	285	0.0091	0.67		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
12.6	299	0.0250	0.40		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
22.8	905	Total			

Summary for Subcatchment PR-5.7: Subcat PR-5.7

Runoff = 0.0 cfs @ 24.07 hrs, Volume= 0.006 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
9.603	30	Woods, Good, HSG A
9.603	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
45.2	50	0.0030	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
18.7	319	0.0130	0.29		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
63.9	369	Total			

Summary for Subcatchment PR-5.8A: Subcat PR-5.8A

Runoff = 0.4 cfs @ 12.42 hrs, Volume= 0.069 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.063	39	>75% Grass cover, Good, HSG A
0.158	98	Paved parking, HSG A
7.802	30	Woods, Good, HSG A
8.023	31	Weighted Average
7.865	30	98.03% Pervious Area
0.158	98	1.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.7	50	0.0240	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.4	490	0.0340	1.84		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
6.7	233	0.0530	0.58		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
30.8	773	Total			

Summary for Subcatchment PR-5.8B: Subcat PR-5.8B

Runoff = 0.2 cfs @ 12.15 hrs, Volume= 0.019 af, Depth= 1.48"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
0.018	39	>75% Grass cover, Good, HSG A
0.046	98	Paved parking, HSG A
0.089	30	Woods, Good, HSG A
0.153	51	Weighted Average
0.107	32	70.10% Pervious Area
0.046	98	29.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	50	0.0060	0.09		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.8	148	0.0034	0.87		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
11.8	198	Total			

Summary for Subcatchment PR-5.9: Subcat PR-5.9

Runoff = 0.0 cfs @ 23.36 hrs, Volume= 0.003 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-year Rainfall=5.10"

Area (ac)	CN	Description
4.330	30	Woods, Good, HSG A
4.330	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	25	0.2200	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.0	142	0.0063	1.19		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
1.8	148	0.0372	1.35		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.9	134	0.0335	0.46		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.4	449	Total			

Summary for Pond L-5.8B: Linear Infiltration Basin

Inflow Area = 0.153 ac, 29.90% Impervious, Inflow Depth = 1.48" for 10-year event
Inflow = 0.2 cfs @ 12.15 hrs, Volume= 0.019 af
Outflow = 0.2 cfs @ 12.23 hrs, Volume= 0.019 af, Atten= 14%, Lag= 4.3 min
Discarded = 0.0 cfs @ 12.23 hrs, Volume= 0.011 af
Primary = 0.2 cfs @ 12.23 hrs, Volume= 0.008 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 200.65' @ 12.23 hrs Surf.Area= 982 sf Storage= 274 cf

Plug-Flow detention time= 307.9 min calculated for 0.019 af (100% of inflow)
Center-of-Mass det. time= 308.0 min (1,067.7 - 759.7)

Volume	Invert	Avail.Storage	Storage Description
#1	200.10'	869 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
200.10	0	0	0
200.60	902	226	226
201.10	1,673	644	869

Device	Routing	Invert	Outlet Devices
#1	Primary	200.60'	**5.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	200.10'	**0.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.23 hrs HW=200.65' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.2 cfs @ 12.23 hrs HW=200.65' TW=0.00' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.2 cfs @ 0.61 fps)

Summary for Pond P5.11: Low Point

Inflow Area = 4.623 ac, 0.00% Impervious, Inflow Depth = 0.01" for 10-year event
Inflow = 0.0 cfs @ 24.07 hrs, Volume= 0.003 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 174.52' @ 28.13 hrs Surf.Area= 5,631 sf Storage= 133 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	174.50'	9,900 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
174.50	5,600	0	0
175.00	6,260	2,965	2,965
175.50	6,930	3,298	6,263
176.00	7,620	3,638	9,900

Device	Routing	Invert	Outlet Devices
#1	Primary	175.50'	**30.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=174.50' TW=0.00' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P5.14B: Linear Infiltration Basin

Inflow Area = 0.413 ac, 13.05% Impervious, Inflow Depth = 0.65" for 10-year event
Inflow = 0.3 cfs @ 12.09 hrs, Volume= 0.022 af
Outflow = 0.2 cfs @ 12.13 hrs, Volume= 0.022 af, Atten= 8%, Lag= 2.2 min
Discarded = 0.0 cfs @ 12.13 hrs, Volume= 0.017 af
Primary = 0.2 cfs @ 12.13 hrs, Volume= 0.006 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 171.34' @ 12.13 hrs Surf.Area= 867 sf Storage= 227 cf

Plug-Flow detention time= 88.0 min calculated for 0.022 af (100% of inflow)
Center-of-Mass det. time= 88.0 min (848.2 - 760.2)

Volume	Invert	Avail.Storage	Storage Description
#1	170.80'	869 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
170.80	0	0	0
171.30	765	191	191
171.80	1,945	678	869

Device	Routing	Invert	Outlet Devices
#1	Primary	171.30'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	170.80'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.13 hrs HW=171.34' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.2 cfs @ 12.13 hrs HW=171.34' TW=0.00' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.2 cfs @ 0.51 fps)

Summary for Pond P5.18B: Linear Infiltration Basin

Inflow Area = 0.066 ac, 22.91% Impervious, Inflow Depth = 1.13" for 10-year event
Inflow = 0.1 cfs @ 12.08 hrs, Volume= 0.006 af
Outflow = 0.1 cfs @ 12.09 hrs, Volume= 0.006 af, Atten= 1%, Lag= 0.6 min
Discarded = 0.0 cfs @ 12.09 hrs, Volume= 0.002 af
Primary = 0.1 cfs @ 12.09 hrs, Volume= 0.004 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 172.92' @ 12.09 hrs Surf.Area= 195 sf Storage= 50 cf

Plug-Flow detention time= 284.5 min calculated for 0.006 af (100% of inflow)
Center-of-Mass det. time= 284.7 min (1,038.4 - 753.7)

Volume	Invert	Avail.Storage	Storage Description
#1	172.40'	200 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
172.40	0	0	0
172.90	185	46	46
173.40	429	154	200

Device	Routing	Invert	Outlet Devices
#1	Primary	172.90'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	172.40'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.09 hrs HW=172.92' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.1 cfs @ 12.09 hrs HW=172.92' TW=0.00' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.1 cfs @ 0.35 fps)

Summary for Link DP-5.10: Low Point

Inflow Area = 1.619 ac, 2.51% Impervious, Inflow Depth = 0.13" for 10-year event
Inflow = 0.1 cfs @ 12.68 hrs, Volume= 0.018 af
Primary = 0.1 cfs @ 12.68 hrs, Volume= 0.018 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.11: Off-site

Inflow Area = 4.623 ac, 0.00% Impervious, Inflow Depth = 0.00" for 10-year event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.12: Wetland 44

Inflow Area = 7.868 ac, 0.20% Impervious, Inflow Depth = 0.48" for 10-year event
Inflow = 0.8 cfs @ 13.50 hrs, Volume= 0.317 af
Primary = 0.8 cfs @ 13.50 hrs, Volume= 0.317 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.13: Wetland 44

Inflow Area = 34.599 ac, 1.84% Impervious, Inflow Depth = 0.16" for 10-year event
Inflow = 0.6 cfs @ 14.75 hrs, Volume= 0.461 af
Primary = 0.6 cfs @ 14.75 hrs, Volume= 0.461 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.14: Wetland 44

Inflow Area = 14.090 ac, 1.25% Impervious, Inflow Depth = 0.55" for 10-year event
Inflow = 3.7 cfs @ 12.36 hrs, Volume= 0.646 af
Primary = 3.7 cfs @ 12.36 hrs, Volume= 0.646 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.15: Wetland 44

Inflow Area = 10.495 ac, 0.14% Impervious, Inflow Depth = 0.30" for 10-year event
Inflow = 0.7 cfs @ 12.84 hrs, Volume= 0.265 af
Primary = 0.7 cfs @ 12.84 hrs, Volume= 0.265 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.16: Off-site Wetland

Inflow Area = 8.640 ac, 0.00% Impervious, Inflow Depth = 0.73" for 10-year event
Inflow = 3.2 cfs @ 12.43 hrs, Volume= 0.528 af
Primary = 3.2 cfs @ 12.43 hrs, Volume= 0.528 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.17: Wetland 41&43/Vernal Pool 11&13

Inflow Area = 18.452 ac, 0.00% Impervious, Inflow Depth = 0.85" for 10-year event
Inflow = 13.1 cfs @ 12.12 hrs, Volume= 1.304 af
Primary = 13.1 cfs @ 12.12 hrs, Volume= 1.304 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.18: Wetland 42/Vernal Pool 11

Inflow Area = 10.532 ac, 1.28% Impervious, Inflow Depth = 0.39" for 10-year event
Inflow = 0.8 cfs @ 13.40 hrs, Volume= 0.344 af
Primary = 0.8 cfs @ 13.40 hrs, Volume= 0.344 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.19: Wetland 40/Vernal Pool 10

Inflow Area = 0.653 ac, 0.00% Impervious, Inflow Depth = 0.02" for 10-year event
Inflow = 0.0 cfs @ 22.05 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 22.05 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.20: Off-site to Dutton Road

Inflow Area = 1.246 ac, 10.55% Impervious, Inflow Depth = 0.52" for 10-year event
Inflow = 0.4 cfs @ 12.26 hrs, Volume= 0.054 af
Primary = 0.4 cfs @ 12.26 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.21: Wetland 39/Vernal Pool 9

Inflow Area = 5.589 ac, 0.32% Impervious, Inflow Depth = 0.02" for 10-year event
Inflow = 0.1 cfs @ 12.37 hrs, Volume= 0.011 af
Primary = 0.1 cfs @ 12.37 hrs, Volume= 0.011 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.6: Wetland 18

Inflow Area = 17.390 ac, 1.61% Impervious, Inflow Depth = 0.09" for 10-year event
Inflow = 0.9 cfs @ 12.29 hrs, Volume= 0.125 af
Primary = 0.9 cfs @ 12.29 hrs, Volume= 0.125 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.7: Wetland 19

Inflow Area = 9.603 ac, 0.00% Impervious, Inflow Depth = 0.01" for 10-year event
Inflow = 0.0 cfs @ 24.07 hrs, Volume= 0.006 af
Primary = 0.0 cfs @ 24.07 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.8: Wetland 45

Inflow Area = 8.177 ac, 2.50% Impervious, Inflow Depth = 0.11" for 10-year event
Inflow = 0.6 cfs @ 12.35 hrs, Volume= 0.077 af
Primary = 0.6 cfs @ 12.35 hrs, Volume= 0.077 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.9: Low Point

Inflow Area = 4.330 ac, 0.00% Impervious, Inflow Depth = 0.01" for 10-year event
Inflow = 0.0 cfs @ 23.36 hrs, Volume= 0.003 af
Primary = 0.0 cfs @ 23.36 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentPR-5.10: Subcat PR-5.10 Runoff Area=1.619 ac 2.51% Impervious Runoff Depth=0.25"
Flow Length=670' Tc=50.3 min CN=30/98 Runoff=0.1 cfs 0.033 af

SubcatchmentPR-5.11: Subcat PR-5.11 Runoff Area=4.623 ac 0.00% Impervious Runoff Depth=0.10"
Flow Length=870' Tc=71.5 min CN=30/0 Runoff=0.1 cfs 0.038 af

SubcatchmentPR-5.12: Subcat PR-5.12 Runoff Area=7.868 ac 0.20% Impervious Runoff Depth=0.91"
Flow Length=2,528' Tc=84.9 min CN=45/98 Runoff=1.9 cfs 0.594 af

SubcatchmentPR-5.13: Subcat PR-5.13 Runoff Area=34.599 ac 1.84% Impervious Runoff Depth=0.36"
Flow Length=3,005' Tc=217.6 min CN=34/98 Runoff=1.3 cfs 1.034 af

SubcatchmentPR-5.14A: Subcat PR-5.14A Runoff Area=13.677 ac 0.90% Impervious Runoff Depth=1.01"
Flow Length=290' Tc=13.2 min CN=46/98 Runoff=8.8 cfs 1.151 af

SubcatchmentPR-5.14B: Subcat PR-5.14B Runoff Area=0.413 ac 13.05% Impervious Runoff Depth=0.90"
Flow Length=235' Tc=6.9 min CN=31/98 Runoff=0.3 cfs 0.031 af

SubcatchmentPR-5.15: Subcat PR-5.15 Runoff Area=10.495 ac 0.14% Impervious Runoff Depth=0.64"
Flow Length=608' Tc=34.8 min CN=41/98 Runoff=2.3 cfs 0.560 af

SubcatchmentPR-5.16: Subcat PR-5.16 Runoff Area=8.640 ac 0.00% Impervious Runoff Depth=1.26"
Flow Length=215' Tc=22.6 min CN=50/0 Runoff=6.6 cfs 0.905 af

SubcatchmentPR-5.17: Subcat PR-5.17 Runoff Area=18.452 ac 0.00% Impervious Runoff Depth=1.41"
Flow Length=75' Tc=6.4 min CN=52/0 Runoff=25.7 cfs 2.171 af

SubcatchmentPR-5.18A: Subcat PR-5.18A Runoff Area=10.467 ac 1.14% Impervious Runoff Depth=0.76"
Flow Length=590' Tc=75.8 min CN=42/98 Runoff=2.0 cfs 0.660 af

SubcatchmentPR-5.18B: Subcat PR-5.18B Runoff Area=0.066 ac 22.91% Impervious Runoff Depth=1.47"
Flow Length=94' Tc=6.0 min CN=31/98 Runoff=0.1 cfs 0.008 af

SubcatchmentPR-5.19: Subcat PR-5.19 Runoff Area=0.653 ac 0.00% Impervious Runoff Depth=0.13"
Flow Length=190' Tc=21.0 min CN=31/0 Runoff=0.0 cfs 0.007 af

SubcatchmentPR-5.20: Subcat PR-5.20 Runoff Area=1.246 ac 10.55% Impervious Runoff Depth=0.72"
Flow Length=147' Tc=20.3 min CN=30/98 Runoff=0.5 cfs 0.075 af

SubcatchmentPR-5.21: Subcat PR-5.21 Runoff Area=5.589 ac 0.32% Impervious Runoff Depth=0.12"
Flow Length=633' Tc=28.2 min CN=30/98 Runoff=0.1 cfs 0.055 af

SubcatchmentPR-5.6: Subcat PR-5.6 Runoff Area=17.390 ac 1.61% Impervious Runoff Depth=0.19"
Flow Length=905' Tc=22.8 min CN=30/98 Runoff=1.1 cfs 0.280 af

SubcatchmentPR-5.7: Subcat PR-5.7 Runoff Area=9.603 ac 0.00% Impervious Runoff Depth=0.10"
Flow Length=369' Tc=63.9 min CN=30/0 Runoff=0.1 cfs 0.079 af

Subcatchment PR-5.8A: Subcat PR-5.8A Runoff Area=8.023 ac 1.97% Impervious Runoff Depth=0.21"
Flow Length=773' Tc=30.8 min CN=30/98 Runoff=0.5 cfs 0.143 af

Subcatchment PR-5.8B: Subcat PR-5.8B Runoff Area=0.153 ac 29.90% Impervious Runoff Depth=1.91"
Flow Length=198' Tc=11.8 min CN=32/98 Runoff=0.2 cfs 0.024 af

Subcatchment PR-5.9: Subcat PR-5.9 Runoff Area=4.330 ac 0.00% Impervious Runoff Depth=0.10"
Flow Length=449' Tc=13.4 min CN=30/0 Runoff=0.1 cfs 0.035 af

Pond L-5.8B: Linear Infiltration Basin Peak Elev=200.66' Storage=284 cf Inflow=0.2 cfs 0.024 af
Discarded=0.0 cfs 0.012 af Primary=0.2 cfs 0.012 af Outflow=0.2 cfs 0.024 af

Pond P5.11: Low Point Peak Elev=174.78' Storage=1,647 cf Inflow=0.1 cfs 0.038 af
Outflow=0.0 cfs 0.000 af

Pond P5.14B: Linear Infiltration Basin Peak Elev=171.35' Storage=233 cf Inflow=0.3 cfs 0.031 af
Discarded=0.0 cfs 0.021 af Primary=0.3 cfs 0.010 af Outflow=0.3 cfs 0.031 af

Pond P5.18B: Linear Infiltration Basin Peak Elev=172.92' Storage=51 cf Inflow=0.1 cfs 0.008 af
Discarded=0.0 cfs 0.002 af Primary=0.1 cfs 0.006 af Outflow=0.1 cfs 0.008 af

Link DP-5.10: Low Point Inflow=0.1 cfs 0.033 af
Primary=0.1 cfs 0.033 af

Link DP-5.11: Off-site Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP-5.12: Wetland 44 Inflow=1.9 cfs 0.594 af
Primary=1.9 cfs 0.594 af

Link DP-5.13: Wetland 44 Inflow=1.3 cfs 1.034 af
Primary=1.3 cfs 1.034 af

Link DP-5.14: Wetland 44 Inflow=9.0 cfs 1.161 af
Primary=9.0 cfs 1.161 af

Link DP-5.15: Wetland 44 Inflow=2.3 cfs 0.560 af
Primary=2.3 cfs 0.560 af

Link DP-5.16: Off-site Wetland Inflow=6.6 cfs 0.905 af
Primary=6.6 cfs 0.905 af

Link DP-5.17: Wetland 41&43/Vernal Pool 11&13 Inflow=25.7 cfs 2.171 af
Primary=25.7 cfs 2.171 af

Link DP-5.18: Wetland 42/Vernal Pool 11 Inflow=2.0 cfs 0.666 af
Primary=2.0 cfs 0.666 af

Link DP-5.19: Wetland 40/Vernal Pool 10 Inflow=0.0 cfs 0.007 af
Primary=0.0 cfs 0.007 af

Link DP-5.20: Off-site to Dutton Road Inflow=0.5 cfs 0.075 af
Primary=0.5 cfs 0.075 af

Link DP-5.21: Wetland 39/Vernal Pool 9 Inflow=0.1 cfs 0.055 af
Primary=0.1 cfs 0.055 af

Link DP-5.6: Wetland 18 Inflow=1.1 cfs 0.280 af
Primary=1.1 cfs 0.280 af

Link DP-5.7: Wetland 19 Inflow=0.1 cfs 0.079 af
Primary=0.1 cfs 0.079 af

Link DP-5.8: Wetland 45 Inflow=0.7 cfs 0.155 af
Primary=0.7 cfs 0.155 af

Link DP-5.9: Low Point Inflow=0.1 cfs 0.035 af
Primary=0.1 cfs 0.035 af

Total Runoff Area = 157.906 ac Runoff Volume = 7.883 af Average Runoff Depth = 0.60"
98.95% Pervious = 156.254 ac 1.05% Impervious = 1.652 ac

Summary for Subcatchment PR-5.10: Subcat PR-5.10

Runoff = 0.1 cfs @ 12.68 hrs, Volume= 0.033 af, Depth= 0.25"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.016	39	>75% Grass cover, Good, HSG A
0.041	98	Paved parking, HSG A
1.563	30	Woods, Good, HSG A
1.619	32	Weighted Average
1.579	30	97.49% Pervious Area
0.041	98	2.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
29.2	620	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
50.3	670	Total			

Summary for Subcatchment PR-5.11: Subcat PR-5.11

Runoff = 0.1 cfs @ 16.29 hrs, Volume= 0.038 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
4.623	30	Woods, Good, HSG A
4.623	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.9	50	0.0110	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
44.6	820	0.0150	0.31		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
71.5	870	Total			

Summary for Subcatchment PR-5.12: Subcat PR-5.12

Runoff = 1.9 cfs @ 13.39 hrs, Volume= 0.594 af, Depth= 0.91"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.007	39	>75% Grass cover, Good, HSG A
0.018	91	Gravel roads, HSG D
0.016	98	Water Surface, HSG D
5.366	30	Woods, Good, HSG A
2.463	77	Woods, Good, HSG D
7.868	45	Weighted Average
7.852	45	99.80% Pervious Area
0.016	98	0.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.8	50	0.0270	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
9.5	132	0.0086	0.23		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.2	128	0.0004	0.14		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.5	325	0.0065	1.21		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
32.4	1,427	0.0110	0.73		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.9	401	0.0130	1.71		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.6	65	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
84.9	2,528	Total			

Summary for Subcatchment PR-5.13: Subcat PR-5.13

Runoff = 1.3 cfs @ 16.20 hrs, Volume= 1.034 af, Depth= 0.36"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.217	39	>75% Grass cover, Good, HSG A
0.019	80	>75% Grass cover, Good, HSG D
0.069	76	Gravel roads, HSG A
0.002	91	Gravel roads, HSG D
0.560	98	Paved parking, HSG A
0.053	98	Paved parking, HSG D
0.023	98	Water Surface, HSG D
30.814	30	Woods, Good, HSG A
2.842	77	Woods, Good, HSG D
34.599	35	Weighted Average
33.963	34	98.16% Pervious Area
0.635	98	1.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.8	50	0.0085	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
187.8	2,955	0.0110	0.26		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
217.6	3,005	Total			

Summary for Subcatchment PR-5.14A: Subcat PR-5.14A

Runoff = 8.8 cfs @ 12.23 hrs, Volume= 1.151 af, Depth= 1.01"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.024	39	>75% Grass cover, Good, HSG A
0.013	80	>75% Grass cover, Good, HSG D
0.006	91	Gravel roads, HSG D
0.060	98	Paved parking, HSG A
0.036	98	Paved parking, HSG D
0.027	98	Water Surface, HSG D
7.420	30	Woods, Good, HSG A
3.269	55	Woods, Good, HSG B
2.824	77	Woods, Good, HSG D
13.677	46	Weighted Average
13.554	46	99.10% Pervious Area
0.123	98	0.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	50	0.0080	0.10		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.8	143	0.0146	0.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.4	97	0.0730	0.68		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.2	290	Total			

Summary for Subcatchment PR-5.14B: Subcat PR-5.14B

Runoff = 0.3 cfs @ 12.09 hrs, Volume= 0.031 af, Depth= 0.90"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.022	39	>75% Grass cover, Good, HSG A
0.054	98	Paved parking, HSG A
0.337	30	Woods, Good, HSG A
0.413	39	Weighted Average
0.359	31	86.95% Pervious Area
0.054	98	13.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	50	0.0262	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
1.9	185	0.0119	1.64		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
6.9	235	Total			

Summary for Subcatchment PR-5.15: Subcat PR-5.15

Runoff = 2.3 cfs @ 12.69 hrs, Volume= 0.560 af, Depth= 0.64"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.006	91	Gravel roads, HSG D
0.015	98	Water Surface, HSG D
8.088	30	Woods, Good, HSG A
2.387	77	Woods, Good, HSG D
10.495	41	Weighted Average
10.481	41	99.86% Pervious Area
0.015	98	0.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	50	0.0700	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
11.3	434	0.0650	0.64		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
10.7	124	0.0060	0.19		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
34.8	608	Total			

Summary for Subcatchment PR-5.16: Subcat PR-5.16

Runoff = 6.6 cfs @ 12.38 hrs, Volume= 0.905 af, Depth= 1.26"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
4.940	30	Woods, Good, HSG A
3.700	77	Woods, Good, HSG D
8.640	50	Weighted Average
8.640	50	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.9	165	0.0194	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
22.6	215	Total			

Summary for Subcatchment PR-5.17: Subcat PR-5.17

Runoff = 25.7 cfs @ 12.11 hrs, Volume= 2.171 af, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.002	76	Gravel roads, HSG A
9.857	30	Woods, Good, HSG A
8.593	77	Woods, Good, HSG D
18.452	52	Weighted Average
18.452	52	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	30	0.1500	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.1	45	0.1600	6.44		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
6.4	75	Total			

Summary for Subcatchment PR-5.18A: Subcat PR-5.18A

Runoff = 2.0 cfs @ 13.30 hrs, Volume= 0.660 af, Depth= 0.76"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.014	39	>75% Grass cover, Good, HSG A
0.034	80	>75% Grass cover, Good, HSG D
0.034	98	Paved parking, HSG A
0.085	98	Paved parking, HSG D
7.754	30	Woods, Good, HSG A
2.545	77	Woods, Good, HSG D
10.467	42	Weighted Average
10.347	42	98.86% Pervious Area
0.119	98	1.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.1260	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
65.7	540	0.0030	0.14		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
75.8	590	Total			

Summary for Subcatchment PR-5.18B: Subcat PR-5.18B

Runoff = 0.1 cfs @ 12.08 hrs, Volume= 0.008 af, Depth= 1.47"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.006	39	>75% Grass cover, Good, HSG A
0.015	98	Paved parking, HSG A
0.045	30	Woods, Good, HSG A
0.066	46	Weighted Average
0.051	31	77.09% Pervious Area
0.015	98	22.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	29	0.3030	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	65	0.0292	2.56		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
5.0	94	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment PR-5.19: Subcat PR-5.19

Runoff = 0.0 cfs @ 15.10 hrs, Volume= 0.007 af, Depth= 0.13"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.632	30	Woods, Good, HSG A
0.021	77	Woods, Good, HSG D
0.653	31	Weighted Average
0.653	31	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	50	0.0750	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.2	110	0.0020	0.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	30	0.1300	1.80		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
21.0	190	Total			

Summary for Subcatchment PR-5.20: Subcat PR-5.20

Runoff = 0.5 cfs @ 12.26 hrs, Volume= 0.075 af, Depth= 0.72"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.038	39	>75% Grass cover, Good, HSG A
0.132	98	Paved parking, HSG A
1.077	30	Woods, Good, HSG A
1.246	37	Weighted Average
1.115	30	89.45% Pervious Area
0.132	98	10.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.0	50	0.0300	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	97	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.3	147	Total			

Summary for Subcatchment PR-5.21: Subcat PR-5.21

Runoff = 0.1 cfs @ 15.51 hrs, Volume= 0.055 af, Depth= 0.12"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.018	98	Paved parking, HSG A
5.571	30	Woods, Good, HSG A
5.589	30	Weighted Average
5.571	30	99.68% Pervious Area
0.018	98	0.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.1800	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
19.4	583	0.0400	0.50		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
28.2	633	Total			

Summary for Subcatchment PR-5.6: Subcat PR-5.6

Runoff = 1.1 cfs @ 12.29 hrs, Volume= 0.280 af, Depth= 0.19"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.135	39	>75% Grass cover, Good, HSG A
0.281	98	Paved parking, HSG A
16.975	30	Woods, Good, HSG A
17.390	31	Weighted Average
17.110	30	98.39% Pervious Area
0.281	98	1.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	15	0.0660	1.54		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
2.9	306	0.0140	1.77		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
7.1	285	0.0091	0.67		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
12.6	299	0.0250	0.40		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
22.8	905	Total			

Summary for Subcatchment PR-5.7: Subcat PR-5.7

Runoff = 0.1 cfs @ 16.12 hrs, Volume= 0.079 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
9.603	30	Woods, Good, HSG A
9.603	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
45.2	50	0.0030	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
18.7	319	0.0130	0.29		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
63.9	369	Total			

Summary for Subcatchment PR-5.8A: Subcat PR-5.8A

Runoff = 0.5 cfs @ 12.42 hrs, Volume= 0.143 af, Depth= 0.21"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.063	39	>75% Grass cover, Good, HSG A
0.158	98	Paved parking, HSG A
7.802	30	Woods, Good, HSG A
8.023	31	Weighted Average
7.865	30	98.03% Pervious Area
0.158	98	1.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.7	50	0.0240	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.4	490	0.0340	1.84		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
6.7	233	0.0530	0.58		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
30.8	773	Total			

Summary for Subcatchment PR-5.8B: Subcat PR-5.8B

Runoff = 0.2 cfs @ 12.15 hrs, Volume= 0.024 af, Depth= 1.91"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
0.018	39	>75% Grass cover, Good, HSG A
0.046	98	Paved parking, HSG A
0.089	30	Woods, Good, HSG A
0.153	51	Weighted Average
0.107	32	70.10% Pervious Area
0.046	98	29.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	50	0.0060	0.09		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.8	148	0.0034	0.87		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
11.8	198	Total			

Summary for Subcatchment PR-5.9: Subcat PR-5.9

Runoff = 0.1 cfs @ 15.32 hrs, Volume= 0.035 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-year Rainfall=6.23"

Area (ac)	CN	Description
4.330	30	Woods, Good, HSG A
4.330	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	25	0.2200	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.0	142	0.0063	1.19		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
1.8	148	0.0372	1.35		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.9	134	0.0335	0.46		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.4	449	Total			

Summary for Pond L-5.8B: Linear Infiltration Basin

Inflow Area = 0.153 ac, 29.90% Impervious, Inflow Depth = 1.91" for 25-year event
Inflow = 0.2 cfs @ 12.15 hrs, Volume= 0.024 af
Outflow = 0.2 cfs @ 12.21 hrs, Volume= 0.024 af, Atten= 8%, Lag= 3.1 min
Discarded = 0.0 cfs @ 12.21 hrs, Volume= 0.012 af
Primary = 0.2 cfs @ 12.21 hrs, Volume= 0.012 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 200.66' @ 12.21 hrs Surf.Area= 998 sf Storage= 284 cf

Plug-Flow detention time= 269.4 min calculated for 0.024 af (100% of inflow)
Center-of-Mass det. time= 269.6 min (1,038.1 - 768.6)

Volume	Invert	Avail.Storage	Storage Description
#1	200.10'	869 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
200.10	0	0	0
200.60	902	226	226
201.10	1,673	644	869

Device	Routing	Invert	Outlet Devices
#1	Primary	200.60'	**5.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	200.10'	**0.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.21 hrs HW=200.66' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.2 cfs @ 12.21 hrs HW=200.66' TW=0.00' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.2 cfs @ 0.67 fps)

Summary for Pond P5.11: Low Point

Inflow Area = 4.623 ac, 0.00% Impervious, Inflow Depth = 0.10" for 25-year event
Inflow = 0.1 cfs @ 16.29 hrs, Volume= 0.038 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 174.78' @ 28.13 hrs Surf.Area= 5,976 sf Storage= 1,647 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	174.50'	9,900 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
174.50	5,600	0	0
175.00	6,260	2,965	2,965
175.50	6,930	3,298	6,263
176.00	7,620	3,638	9,900

Device	Routing	Invert	Outlet Devices
#1	Primary	175.50'	**30.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=174.50' TW=0.00' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P5.14B: Linear Infiltration Basin

Inflow Area = 0.413 ac, 13.05% Impervious, Inflow Depth = 0.90" for 25-year event
Inflow = 0.3 cfs @ 12.09 hrs, Volume= 0.031 af
Outflow = 0.3 cfs @ 12.12 hrs, Volume= 0.031 af, Atten= 5%, Lag= 1.7 min
Discarded = 0.0 cfs @ 12.12 hrs, Volume= 0.021 af
Primary = 0.3 cfs @ 12.12 hrs, Volume= 0.010 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 171.35' @ 12.12 hrs Surf.Area= 886 sf Storage= 233 cf

Plug-Flow detention time= 91.2 min calculated for 0.031 af (100% of inflow)
Center-of-Mass det. time= 91.2 min (877.9 - 786.7)

Volume	Invert	Avail.Storage	Storage Description
#1	170.80'	869 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
170.80	0	0	0
171.30	765	191	191
171.80	1,945	678	869

Device	Routing	Invert	Outlet Devices
#1	Primary	171.30'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	170.80'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.12 hrs HW=171.35' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.3 cfs @ 12.12 hrs HW=171.35' TW=0.00' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.3 cfs @ 0.55 fps)

Summary for Pond P5.18B: Linear Infiltration Basin

Inflow Area = 0.066 ac, 22.91% Impervious, Inflow Depth = 1.47" for 25-year event
Inflow = 0.1 cfs @ 12.08 hrs, Volume= 0.008 af
Outflow = 0.1 cfs @ 12.09 hrs, Volume= 0.008 af, Atten= 1%, Lag= 0.6 min
Discarded = 0.0 cfs @ 12.09 hrs, Volume= 0.002 af
Primary = 0.1 cfs @ 12.09 hrs, Volume= 0.006 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 172.92' @ 12.09 hrs Surf.Area= 197 sf Storage= 51 cf

Plug-Flow detention time= 224.7 min calculated for 0.008 af (100% of inflow)
Center-of-Mass det. time= 224.9 min (991.8 - 766.8)

Volume	Invert	Avail.Storage	Storage Description
#1	172.40'	200 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
172.40	0	0	0
172.90	185	46	46
173.40	429	154	200

Device	Routing	Invert	Outlet Devices
#1	Primary	172.90'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	172.40'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.09 hrs HW=172.92' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.1 cfs @ 12.09 hrs HW=172.92' TW=0.00' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.1 cfs @ 0.38 fps)

Summary for Link DP-5.10: Low Point

Inflow Area = 1.619 ac, 2.51% Impervious, Inflow Depth = 0.25" for 25-year event
Inflow = 0.1 cfs @ 12.68 hrs, Volume= 0.033 af
Primary = 0.1 cfs @ 12.68 hrs, Volume= 0.033 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.11: Off-site

Inflow Area = 4.623 ac, 0.00% Impervious, Inflow Depth = 0.00" for 25-year event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.12: Wetland 44

Inflow Area = 7.868 ac, 0.20% Impervious, Inflow Depth = 0.91" for 25-year event
Inflow = 1.9 cfs @ 13.39 hrs, Volume= 0.594 af
Primary = 1.9 cfs @ 13.39 hrs, Volume= 0.594 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.13: Wetland 44

Inflow Area = 34.599 ac, 1.84% Impervious, Inflow Depth = 0.36" for 25-year event
Inflow = 1.3 cfs @ 16.20 hrs, Volume= 1.034 af
Primary = 1.3 cfs @ 16.20 hrs, Volume= 1.034 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.14: Wetland 44

Inflow Area = 14.090 ac, 1.25% Impervious, Inflow Depth = 0.99" for 25-year event
Inflow = 9.0 cfs @ 12.23 hrs, Volume= 1.161 af
Primary = 9.0 cfs @ 12.23 hrs, Volume= 1.161 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.15: Wetland 44

Inflow Area = 10.495 ac, 0.14% Impervious, Inflow Depth = 0.64" for 25-year event
Inflow = 2.3 cfs @ 12.69 hrs, Volume= 0.560 af
Primary = 2.3 cfs @ 12.69 hrs, Volume= 0.560 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.16: Off-site Wetland

Inflow Area = 8.640 ac, 0.00% Impervious, Inflow Depth = 1.26" for 25-year event
Inflow = 6.6 cfs @ 12.38 hrs, Volume= 0.905 af
Primary = 6.6 cfs @ 12.38 hrs, Volume= 0.905 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.17: Wetland 41&43/Vernal Pool 11&13

Inflow Area = 18.452 ac, 0.00% Impervious, Inflow Depth = 1.41" for 25-year event
Inflow = 25.7 cfs @ 12.11 hrs, Volume= 2.171 af
Primary = 25.7 cfs @ 12.11 hrs, Volume= 2.171 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.18: Wetland 42/Vernal Pool 11

Inflow Area = 10.532 ac, 1.28% Impervious, Inflow Depth = 0.76" for 25-year event
Inflow = 2.0 cfs @ 13.30 hrs, Volume= 0.666 af
Primary = 2.0 cfs @ 13.30 hrs, Volume= 0.666 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.19: Wetland 40/Vernal Pool 10

Inflow Area = 0.653 ac, 0.00% Impervious, Inflow Depth = 0.13" for 25-year event
Inflow = 0.0 cfs @ 15.10 hrs, Volume= 0.007 af
Primary = 0.0 cfs @ 15.10 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.20: Off-site to Dutton Road

Inflow Area = 1.246 ac, 10.55% Impervious, Inflow Depth = 0.72" for 25-year event
Inflow = 0.5 cfs @ 12.26 hrs, Volume= 0.075 af
Primary = 0.5 cfs @ 12.26 hrs, Volume= 0.075 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.21: Wetland 39/Vernal Pool 9

Inflow Area = 5.589 ac, 0.32% Impervious, Inflow Depth = 0.12" for 25-year event
Inflow = 0.1 cfs @ 15.51 hrs, Volume= 0.055 af
Primary = 0.1 cfs @ 15.51 hrs, Volume= 0.055 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.6: Wetland 18

Inflow Area = 17.390 ac, 1.61% Impervious, Inflow Depth = 0.19" for 25-year event
Inflow = 1.1 cfs @ 12.29 hrs, Volume= 0.280 af
Primary = 1.1 cfs @ 12.29 hrs, Volume= 0.280 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.7: Wetland 19

Inflow Area = 9.603 ac, 0.00% Impervious, Inflow Depth = 0.10" for 25-year event
Inflow = 0.1 cfs @ 16.12 hrs, Volume= 0.079 af
Primary = 0.1 cfs @ 16.12 hrs, Volume= 0.079 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.8: Wetland 45

Inflow Area = 8.177 ac, 2.50% Impervious, Inflow Depth = 0.23" for 25-year event
Inflow = 0.7 cfs @ 12.35 hrs, Volume= 0.155 af
Primary = 0.7 cfs @ 12.35 hrs, Volume= 0.155 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.9: Low Point

Inflow Area = 4.330 ac, 0.00% Impervious, Inflow Depth = 0.10" for 25-year event
Inflow = 0.1 cfs @ 15.32 hrs, Volume= 0.035 af
Primary = 0.1 cfs @ 15.32 hrs, Volume= 0.035 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv.
Reach routing by Dyn-Stor-Ind method - Pond routing by Dyn-Stor-Ind method

SubcatchmentPR-5.10: Subcat PR-5.10 Runoff Area=1.619 ac 2.51% Impervious Runoff Depth=0.76"
Flow Length=670' Tc=50.3 min CN=30/98 Runoff=0.3 cfs 0.103 af

SubcatchmentPR-5.11: Subcat PR-5.11 Runoff Area=4.623 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=870' Tc=71.5 min CN=30/0 Runoff=0.5 cfs 0.219 af

SubcatchmentPR-5.12: Subcat PR-5.12 Runoff Area=7.868 ac 0.20% Impervious Runoff Depth=2.07"
Flow Length=2,528' Tc=84.9 min CN=45/98 Runoff=5.2 cfs 1.360 af

SubcatchmentPR-5.13: Subcat PR-5.13 Runoff Area=34.599 ac 1.84% Impervious Runoff Depth=1.06"
Flow Length=3,005' Tc=217.6 min CN=34/98 Runoff=5.1 cfs 3.053 af

SubcatchmentPR-5.14A: Subcat PR-5.14A Runoff Area=13.677 ac 0.90% Impervious Runoff Depth=2.23"
Flow Length=290' Tc=13.2 min CN=46/98 Runoff=24.8 cfs 2.540 af

SubcatchmentPR-5.14B: Subcat PR-5.14B Runoff Area=0.413 ac 13.05% Impervious Runoff Depth=1.66"
Flow Length=235' Tc=6.9 min CN=31/98 Runoff=0.5 cfs 0.057 af

SubcatchmentPR-5.15: Subcat PR-5.15 Runoff Area=10.495 ac 0.14% Impervious Runoff Depth=1.64"
Flow Length=608' Tc=34.8 min CN=41/98 Runoff=8.5 cfs 1.432 af

SubcatchmentPR-5.16: Subcat PR-5.16 Runoff Area=8.640 ac 0.00% Impervious Runoff Depth=2.62"
Flow Length=215' Tc=22.6 min CN=50/0 Runoff=15.8 cfs 1.889 af

SubcatchmentPR-5.17: Subcat PR-5.17 Runoff Area=18.452 ac 0.00% Impervious Runoff Depth=2.85"
Flow Length=75' Tc=6.4 min CN=52/0 Runoff=57.9 cfs 4.388 af

SubcatchmentPR-5.18A: Subcat PR-5.18A Runoff Area=10.467 ac 1.14% Impervious Runoff Depth=1.81"
Flow Length=590' Tc=75.8 min CN=42/98 Runoff=6.1 cfs 1.579 af

SubcatchmentPR-5.18B: Subcat PR-5.18B Runoff Area=0.066 ac 22.91% Impervious Runoff Depth=2.42"
Flow Length=94' Tc=6.0 min CN=31/98 Runoff=0.1 cfs 0.013 af

SubcatchmentPR-5.19: Subcat PR-5.19 Runoff Area=0.653 ac 0.00% Impervious Runoff Depth=0.65"
Flow Length=190' Tc=21.0 min CN=31/0 Runoff=0.1 cfs 0.035 af

SubcatchmentPR-5.20: Subcat PR-5.20 Runoff Area=1.246 ac 10.55% Impervious Runoff Depth=1.39"
Flow Length=147' Tc=20.3 min CN=30/98 Runoff=0.8 cfs 0.144 af

SubcatchmentPR-5.21: Subcat PR-5.21 Runoff Area=5.589 ac 0.32% Impervious Runoff Depth=0.59"
Flow Length=633' Tc=28.2 min CN=30/98 Runoff=0.9 cfs 0.276 af

SubcatchmentPR-5.6: Subcat PR-5.6 Runoff Area=17.390 ac 1.61% Impervious Runoff Depth=0.69"
Flow Length=905' Tc=22.8 min CN=30/98 Runoff=3.6 cfs 1.004 af

SubcatchmentPR-5.7: Subcat PR-5.7 Runoff Area=9.603 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=369' Tc=63.9 min CN=30/0 Runoff=1.0 cfs 0.454 af

Subcatchment PR-5.8A: Subcat PR-5.8A Runoff Area=8.023 ac 1.97% Impervious Runoff Depth=0.72"
Flow Length=773' Tc=30.8 min CN=30/98 Runoff=1.6 cfs 0.482 af

Subcatchment PR-5.8B: Subcat PR-5.8B Runoff Area=0.153 ac 29.90% Impervious Runoff Depth=3.02"
Flow Length=198' Tc=11.8 min CN=32/98 Runoff=0.3 cfs 0.039 af

Subcatchment PR-5.9: Subcat PR-5.9 Runoff Area=4.330 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=449' Tc=13.4 min CN=30/0 Runoff=0.8 cfs 0.205 af

Pond L-5.8B: Linear Infiltration Basin Peak Elev=200.68' Storage=303 cf Inflow=0.3 cfs 0.039 af
Discarded=0.0 cfs 0.014 af Primary=0.3 cfs 0.025 af Outflow=0.3 cfs 0.039 af

Pond P5.11: Low Point Peak Elev=175.52' Storage=6,376 cf Inflow=0.5 cfs 0.219 af
Outflow=0.2 cfs 0.075 af

Pond P5.14B: Linear Infiltration Basin Peak Elev=171.37' Storage=248 cf Inflow=0.5 cfs 0.057 af
Discarded=0.0 cfs 0.028 af Primary=0.4 cfs 0.029 af Outflow=0.4 cfs 0.057 af

Pond P5.18B: Linear Infiltration Basin Peak Elev=172.93' Storage=52 cf Inflow=0.1 cfs 0.013 af
Discarded=0.0 cfs 0.002 af Primary=0.1 cfs 0.011 af Outflow=0.1 cfs 0.013 af

Link DP-5.10: Low Point Inflow=0.3 cfs 0.103 af
Primary=0.3 cfs 0.103 af

Link DP-5.11: Off-site Inflow=0.2 cfs 0.075 af
Primary=0.2 cfs 0.075 af

Link DP-5.12: Wetland 44 Inflow=5.2 cfs 1.360 af
Primary=5.2 cfs 1.360 af

Link DP-5.13: Wetland 44 Inflow=5.1 cfs 3.053 af
Primary=5.1 cfs 3.053 af

Link DP-5.14: Wetland 44 Inflow=25.2 cfs 2.568 af
Primary=25.2 cfs 2.568 af

Link DP-5.15: Wetland 44 Inflow=8.5 cfs 1.432 af
Primary=8.5 cfs 1.432 af

Link DP-5.16: Off-site Wetland Inflow=15.8 cfs 1.889 af
Primary=15.8 cfs 1.889 af

Link DP-5.17: Wetland 41&43/Vernal Pool 11&13 Inflow=57.9 cfs 4.388 af
Primary=57.9 cfs 4.388 af

Link DP-5.18: Wetland 42/Vernal Pool 11 Inflow=6.2 cfs 1.590 af
Primary=6.2 cfs 1.590 af

Link DP-5.19: Wetland 40/Vernal Pool 10 Inflow=0.1 cfs 0.035 af
Primary=0.1 cfs 0.035 af

Link DP-5.20: Off-site to Dutton Road Inflow=0.8 cfs 0.144 af
Primary=0.8 cfs 0.144 af

Link DP-5.21: Wetland 39/Vernal Pool 9 Inflow=0.9 cfs 0.276 af
Primary=0.9 cfs 0.276 af

Link DP-5.6: Wetland 18 Inflow=3.6 cfs 1.004 af
Primary=3.6 cfs 1.004 af

Link DP-5.7: Wetland 19 Inflow=1.0 cfs 0.454 af
Primary=1.0 cfs 0.454 af

Link DP-5.8: Wetland 45 Inflow=1.7 cfs 0.507 af
Primary=1.7 cfs 0.507 af

Link DP-5.9: Low Point Inflow=0.8 cfs 0.205 af
Primary=0.8 cfs 0.205 af

Total Runoff Area = 157.906 ac Runoff Volume = 19.273 af Average Runoff Depth = 1.46"
98.95% Pervious = 156.254 ac 1.05% Impervious = 1.652 ac

Summary for Subcatchment PR-5.10: Subcat PR-5.10

Runoff = 0.3 cfs @ 12.91 hrs, Volume= 0.103 af, Depth= 0.76"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.016	39	>75% Grass cover, Good, HSG A
0.041	98	Paved parking, HSG A
1.563	30	Woods, Good, HSG A
1.619	32	Weighted Average
1.579	30	97.49% Pervious Area
0.041	98	2.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
29.2	620	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
50.3	670	Total			

Summary for Subcatchment PR-5.11: Subcat PR-5.11

Runoff = 0.5 cfs @ 13.50 hrs, Volume= 0.219 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
4.623	30	Woods, Good, HSG A
4.623	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
26.9	50	0.0110	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
44.6	820	0.0150	0.31		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
71.5	870	Total			

Summary for Subcatchment PR-5.12: Subcat PR-5.12

Runoff = 5.2 cfs @ 13.30 hrs, Volume= 1.360 af, Depth= 2.07"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.007	39	>75% Grass cover, Good, HSG A
0.018	91	Gravel roads, HSG D
0.016	98	Water Surface, HSG D
5.366	30	Woods, Good, HSG A
2.463	77	Woods, Good, HSG D
7.868	45	Weighted Average
7.852	45	99.80% Pervious Area
0.016	98	0.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.8	50	0.0270	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
9.5	132	0.0086	0.23		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.2	128	0.0004	0.14		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.5	325	0.0065	1.21		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
32.4	1,427	0.0110	0.73		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.9	401	0.0130	1.71		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
0.6	65	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
84.9	2,528	Total			

Summary for Subcatchment PR-5.13: Subcat PR-5.13

Runoff = 5.1 cfs @ 15.71 hrs, Volume= 3.053 af, Depth= 1.06"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.217	39	>75% Grass cover, Good, HSG A
0.019	80	>75% Grass cover, Good, HSG D
0.069	76	Gravel roads, HSG A
0.002	91	Gravel roads, HSG D
0.560	98	Paved parking, HSG A
0.053	98	Paved parking, HSG D
0.023	98	Water Surface, HSG D
30.814	30	Woods, Good, HSG A
2.842	77	Woods, Good, HSG D
34.599	35	Weighted Average
33.963	34	98.16% Pervious Area
0.635	98	1.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
29.8	50	0.0085	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
187.8	2,955	0.0110	0.26		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
217.6	3,005	Total			

Summary for Subcatchment PR-5.14A: Subcat PR-5.14A

Runoff = 24.8 cfs @ 12.20 hrs, Volume= 2.540 af, Depth= 2.23"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.024	39	>75% Grass cover, Good, HSG A
0.013	80	>75% Grass cover, Good, HSG D
0.006	91	Gravel roads, HSG D
0.060	98	Paved parking, HSG A
0.036	98	Paved parking, HSG D
0.027	98	Water Surface, HSG D
7.420	30	Woods, Good, HSG A
3.269	55	Woods, Good, HSG B
2.824	77	Woods, Good, HSG D
13.677	46	Weighted Average
13.554	46	99.10% Pervious Area
0.123	98	0.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.0	50	0.0080	0.10		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.8	143	0.0146	0.85		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.4	97	0.0730	0.68		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.2	290	Total			

Summary for Subcatchment PR-5.14B: Subcat PR-5.14B

Runoff = 0.5 cfs @ 12.11 hrs, Volume= 0.057 af, Depth= 1.66"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.022	39	>75% Grass cover, Good, HSG A
0.054	98	Paved parking, HSG A
0.337	30	Woods, Good, HSG A
0.413	39	Weighted Average
0.359	31	86.95% Pervious Area
0.054	98	13.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.0	50	0.0262	0.17		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
1.9	185	0.0119	1.64		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
6.9	235	Total			

Summary for Subcatchment PR-5.15: Subcat PR-5.15

Runoff = 8.5 cfs @ 12.57 hrs, Volume= 1.432 af, Depth= 1.64"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.006	91	Gravel roads, HSG D
0.015	98	Water Surface, HSG D
8.088	30	Woods, Good, HSG A
2.387	77	Woods, Good, HSG D
10.495	41	Weighted Average
10.481	41	99.86% Pervious Area
0.015	98	0.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.8	50	0.0700	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
11.3	434	0.0650	0.64		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
10.7	124	0.0060	0.19		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
34.8	608	Total			

Summary for Subcatchment PR-5.16: Subcat PR-5.16

Runoff = 15.8 cfs @ 12.34 hrs, Volume= 1.889 af, Depth= 2.62"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
4.940	30	Woods, Good, HSG A
3.700	77	Woods, Good, HSG D
8.640	50	Weighted Average
8.640	50	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.9	165	0.0194	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
22.6	215	Total			

Summary for Subcatchment PR-5.17: Subcat PR-5.17

Runoff = 57.9 cfs @ 12.10 hrs, Volume= 4.388 af, Depth= 2.85"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.002	76	Gravel roads, HSG A
9.857	30	Woods, Good, HSG A
8.593	77	Woods, Good, HSG D
18.452	52	Weighted Average
18.452	52	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	30	0.1500	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.1	45	0.1600	6.44		**Shallow Concentrated Flow,** Unpaved Kv= 16.1 fps
6.4	75	Total			

Summary for Subcatchment PR-5.18A: Subcat PR-5.18A

Runoff = 6.1 cfs @ 13.14 hrs, Volume= 1.579 af, Depth= 1.81"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.014	39	>75% Grass cover, Good, HSG A
0.034	80	>75% Grass cover, Good, HSG D
0.034	98	Paved parking, HSG A
0.085	98	Paved parking, HSG D
7.754	30	Woods, Good, HSG A
2.545	77	Woods, Good, HSG D
10.467	42	Weighted Average
10.347	42	98.86% Pervious Area
0.119	98	1.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.1260	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
65.7	540	0.0030	0.14		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
75.8	590	Total			

Summary for Subcatchment PR-5.18B: Subcat PR-5.18B

Runoff = 0.1 cfs @ 12.09 hrs, Volume= 0.013 af, Depth= 2.42"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.006	39	>75% Grass cover, Good, HSG A
0.015	98	Paved parking, HSG A
0.045	30	Woods, Good, HSG A
0.066	46	Weighted Average
0.051	31	77.09% Pervious Area
0.015	98	22.91% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	29	0.3030	0.10		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	65	0.0292	2.56		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
5.0	94	Total, Increased to minimum Tc = 6.0 min			

Summary for Subcatchment PR-5.19: Subcat PR-5.19

Runoff = 0.1 cfs @ 12.57 hrs, Volume= 0.035 af, Depth= 0.65"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.632	30	Woods, Good, HSG A
0.021	77	Woods, Good, HSG D
0.653	31	Weighted Average
0.653	31	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.5	50	0.0750	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.2	110	0.0020	0.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	30	0.1300	1.80		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
21.0	190	Total			

Summary for Subcatchment PR-5.20: Subcat PR-5.20

Runoff = 0.8 cfs @ 12.29 hrs, Volume= 0.144 af, Depth= 1.39"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.038	39	>75% Grass cover, Good, HSG A
0.132	98	Paved parking, HSG A
1.077	30	Woods, Good, HSG A
1.246	37	Weighted Average
1.115	30	89.45% Pervious Area
0.132	98	10.55% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.0	50	0.0300	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	97	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.3	147	Total			

Summary for Subcatchment PR-5.21: Subcat PR-5.21

Runoff = 0.9 cfs @ 12.69 hrs, Volume= 0.276 af, Depth= 0.59"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.018	98	Paved parking, HSG A
5.571	30	Woods, Good, HSG A
5.589	30	Weighted Average
5.571	30	99.68% Pervious Area
0.018	98	0.32% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
8.8	50	0.1800	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
19.4	583	0.0400	0.50		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
28.2	633	Total			

Summary for Subcatchment PR-5.6: Subcat PR-5.6

Runoff = 3.6 cfs @ 12.57 hrs, Volume= 1.004 af, Depth= 0.69"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.135	39	>75% Grass cover, Good, HSG A
0.281	98	Paved parking, HSG A
16.975	30	Woods, Good, HSG A
17.390	31	Weighted Average
17.110	30	98.39% Pervious Area
0.281	98	1.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.2	15	0.0660	1.54		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
2.9	306	0.0140	1.77		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
7.1	285	0.0091	0.67		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
12.6	299	0.0250	0.40		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
22.8	905	Total			

Summary for Subcatchment PR-5.7: Subcat PR-5.7

Runoff = 1.0 cfs @ 13.35 hrs, Volume= 0.454 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
9.603	30	Woods, Good, HSG A
9.603	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
45.2	50	0.0030	0.02		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
18.7	319	0.0130	0.29		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
63.9	369	Total			

Summary for Subcatchment PR-5.8A: Subcat PR-5.8A

Runoff = 1.6 cfs @ 12.66 hrs, Volume= 0.482 af, Depth= 0.72"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.063	39	>75% Grass cover, Good, HSG A
0.158	98	Paved parking, HSG A
7.802	30	Woods, Good, HSG A
8.023	31	Weighted Average
7.865	30	98.03% Pervious Area
0.158	98	1.97% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.7	50	0.0240	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.4	490	0.0340	1.84		**Shallow Concentrated Flow,** Nearly Bare & Untilled Kv= 10.0 fps
6.7	233	0.0530	0.58		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
30.8	773	Total			

Summary for Subcatchment PR-5.8B: Subcat PR-5.8B

Runoff = 0.3 cfs @ 12.16 hrs, Volume= 0.039 af, Depth= 3.02"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
0.018	39	>75% Grass cover, Good, HSG A
0.046	98	Paved parking, HSG A
0.089	30	Woods, Good, HSG A
0.153	51	Weighted Average
0.107	32	70.10% Pervious Area
0.046	98	29.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.0	50	0.0060	0.09		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.8	148	0.0034	0.87		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
11.8	198	Total			

Summary for Subcatchment PR-5.9: Subcat PR-5.9

Runoff = 0.8 cfs @ 12.49 hrs, Volume= 0.205 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Split Pervious/Imperv., Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-year Rainfall=8.60"

Area (ac)	CN	Description
4.330	30	Woods, Good, HSG A
4.330	30	100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	25	0.2200	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.0	142	0.0063	1.19		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
1.8	148	0.0372	1.35		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.9	134	0.0335	0.46		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.4	449	Total			

Summary for Pond L-5.8B: Linear Infiltration Basin

Inflow Area = 0.153 ac, 29.90% Impervious, Inflow Depth = 3.02" for 100-year event
Inflow = 0.3 cfs @ 12.16 hrs, Volume= 0.039 af
Outflow = 0.3 cfs @ 12.21 hrs, Volume= 0.039 af, Atten= 7%, Lag= 2.9 min
Discarded = 0.0 cfs @ 12.21 hrs, Volume= 0.014 af
Primary = 0.3 cfs @ 12.21 hrs, Volume= 0.025 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Peak Elev= 200.68' @ 12.21 hrs Surf.Area= 1,026 sf Storage= 303 cf

Plug-Flow detention time= 192.0 min calculated for 0.039 af (100% of inflow)
Center-of-Mass det. time= 192.1 min (973.6 - 781.4)

Volume	Invert	Avail.Storage	Storage Description
#1	200.10'	869 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
200.10	0	0	0
200.60	902	226	226
201.10	1,673	644	869

Device	Routing	Invert	Outlet Devices
#1	Primary	200.60'	**5.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	200.10'	**0.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.21 hrs HW=200.68' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.3 cfs @ 12.21 hrs HW=200.68' TW=0.00' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.3 cfs @ 0.76 fps)

Summary for Pond P5.11: Low Point

Inflow Area = 4.623 ac, 0.00% Impervious, Inflow Depth = 0.57" for 100-year event
Inflow = 0.5 cfs @ 13.50 hrs, Volume= 0.219 af
Outflow = 0.2 cfs @ 18.61 hrs, Volume= 0.075 af, Atten= 64%, Lag= 306.7 min
Primary = 0.2 cfs @ 18.61 hrs, Volume= 0.075 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 175.52' @ 18.61 hrs Surf.Area= 6,953 sf Storage= 6,376 cf

Plug-Flow detention time= 456.4 min calculated for 0.075 af (34% of inflow)
Center-of-Mass det. time= 257.2 min (1,286.8 - 1,029.5)

Volume	Invert	Avail.Storage	Storage Description
#1	174.50'	9,900 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
174.50	5,600	0	0
175.00	6,260	2,965	2,965
175.50	6,930	3,298	6,263
176.00	7,620	3,638	9,900

Device	Routing	Invert	Outlet Devices
#1	Primary	175.50'	**30.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.2 cfs @ 18.61 hrs HW=175.52' TW=0.00' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.2 cfs @ 0.34 fps)

Summary for Pond P5.14B: Linear Infiltration Basin

Inflow Area = 0.413 ac, 13.05% Impervious, Inflow Depth = 1.66" for 100-year event
Inflow = 0.5 cfs @ 12.11 hrs, Volume= 0.057 af
Outflow = 0.4 cfs @ 12.13 hrs, Volume= 0.057 af, Atten= 3%, Lag= 1.6 min
Discarded = 0.0 cfs @ 12.13 hrs, Volume= 0.028 af
Primary = 0.4 cfs @ 12.13 hrs, Volume= 0.029 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 171.37' @ 12.13 hrs Surf.Area= 922 sf Storage= 248 cf

Plug-Flow detention time= 74.0 min calculated for 0.057 af (100% of inflow)
Center-of-Mass det. time= 74.0 min (889.6 - 815.6)

Volume	Invert	Avail.Storage	Storage Description
#1	170.80'	869 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
170.80	0	0	0
171.30	765	191	191
171.80	1,945	678	869

Device	Routing	Invert	Outlet Devices
#1	Primary	171.30'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	170.80'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.13 hrs HW=171.37' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.4 cfs @ 12.13 hrs HW=171.37' TW=0.00' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.4 cfs @ 0.63 fps)

Summary for Pond P5.18B: Linear Infiltration Basin

Inflow Area = 0.066 ac, 22.91% Impervious, Inflow Depth = 2.42" for 100-year event
Inflow = 0.1 cfs @ 12.09 hrs, Volume= 0.013 af
Outflow = 0.1 cfs @ 12.10 hrs, Volume= 0.013 af, Atten= 1%, Lag= 0.5 min
Discarded = 0.0 cfs @ 12.10 hrs, Volume= 0.002 af
Primary = 0.1 cfs @ 12.10 hrs, Volume= 0.011 af

Routing by Dyn-Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 172.93' @ 12.10 hrs Surf.Area= 200 sf Storage= 52 cf

Plug-Flow detention time= 143.9 min calculated for 0.013 af (100% of inflow)
Center-of-Mass det. time= 144.2 min (929.7 - 785.6)

Volume	Invert	Avail.Storage	Storage Description
#1	172.40'	200 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
172.40	0	0	0
172.90	185	46	46
173.40	429	154	200

Device	Routing	Invert	Outlet Devices
#1	Primary	172.90'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	172.40'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.10 hrs HW=172.93' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.1 cfs @ 12.10 hrs HW=172.93' TW=0.00' (Dynamic Tailwater)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.1 cfs @ 0.42 fps)

Summary for Link DP-5.10: Low Point

Inflow Area = 1.619 ac, 2.51% Impervious, Inflow Depth = 0.76" for 100-year event
Inflow = 0.3 cfs @ 12.91 hrs, Volume= 0.103 af
Primary = 0.3 cfs @ 12.91 hrs, Volume= 0.103 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.11: Off-site

Inflow Area = 4.623 ac, 0.00% Impervious, Inflow Depth = 0.19" for 100-year event
Inflow = 0.2 cfs @ 18.61 hrs, Volume= 0.075 af
Primary = 0.2 cfs @ 18.61 hrs, Volume= 0.075 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.12: Wetland 44

Inflow Area = 7.868 ac, 0.20% Impervious, Inflow Depth = 2.07" for 100-year event
Inflow = 5.2 cfs @ 13.30 hrs, Volume= 1.360 af
Primary = 5.2 cfs @ 13.30 hrs, Volume= 1.360 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.13: Wetland 44

Inflow Area = 34.599 ac, 1.84% Impervious, Inflow Depth = 1.06" for 100-year event
Inflow = 5.1 cfs @ 15.71 hrs, Volume= 3.053 af
Primary = 5.1 cfs @ 15.71 hrs, Volume= 3.053 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.14: Wetland 44

Inflow Area = 14.090 ac, 1.25% Impervious, Inflow Depth = 2.19" for 100-year event
Inflow = 25.2 cfs @ 12.20 hrs, Volume= 2.568 af
Primary = 25.2 cfs @ 12.20 hrs, Volume= 2.568 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.15: Wetland 44

Inflow Area = 10.495 ac, 0.14% Impervious, Inflow Depth = 1.64" for 100-year event
Inflow = 8.5 cfs @ 12.57 hrs, Volume= 1.432 af
Primary = 8.5 cfs @ 12.57 hrs, Volume= 1.432 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.16: Off-site Wetland

Inflow Area = 8.640 ac, 0.00% Impervious, Inflow Depth = 2.62" for 100-year event
Inflow = 15.8 cfs @ 12.34 hrs, Volume= 1.889 af
Primary = 15.8 cfs @ 12.34 hrs, Volume= 1.889 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.17: Wetland 41&43/Vernal Pool 11&13

Inflow Area = 18.452 ac, 0.00% Impervious, Inflow Depth = 2.85" for 100-year event
Inflow = 57.9 cfs @ 12.10 hrs, Volume= 4.388 af
Primary = 57.9 cfs @ 12.10 hrs, Volume= 4.388 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.18: Wetland 42/Vernal Pool 11

Inflow Area = 10.532 ac, 1.28% Impervious, Inflow Depth = 1.81" for 100-year event
Inflow = 6.2 cfs @ 13.14 hrs, Volume= 1.590 af
Primary = 6.2 cfs @ 13.14 hrs, Volume= 1.590 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.19: Wetland 40/Vernal Pool 10

Inflow Area = 0.653 ac, 0.00% Impervious, Inflow Depth = 0.65" for 100-year event
Inflow = 0.1 cfs @ 12.57 hrs, Volume= 0.035 af
Primary = 0.1 cfs @ 12.57 hrs, Volume= 0.035 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.20: Off-site to Dutton Road

Inflow Area = 1.246 ac, 10.55% Impervious, Inflow Depth = 1.39" for 100-year event
Inflow = 0.8 cfs @ 12.29 hrs, Volume= 0.144 af
Primary = 0.8 cfs @ 12.29 hrs, Volume= 0.144 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.21: Wetland 39/Vernal Pool 9

Inflow Area = 5.589 ac, 0.32% Impervious, Inflow Depth = 0.59" for 100-year event
Inflow = 0.9 cfs @ 12.69 hrs, Volume= 0.276 af
Primary = 0.9 cfs @ 12.69 hrs, Volume= 0.276 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.6: Wetland 18

Inflow Area = 17.390 ac, 1.61% Impervious, Inflow Depth = 0.69" for 100-year event
Inflow = 3.6 cfs @ 12.57 hrs, Volume= 1.004 af
Primary = 3.6 cfs @ 12.57 hrs, Volume= 1.004 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.7: Wetland 19

Inflow Area = 9.603 ac, 0.00% Impervious, Inflow Depth = 0.57" for 100-year event
Inflow = 1.0 cfs @ 13.35 hrs, Volume= 0.454 af
Primary = 1.0 cfs @ 13.35 hrs, Volume= 0.454 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.8: Wetland 45

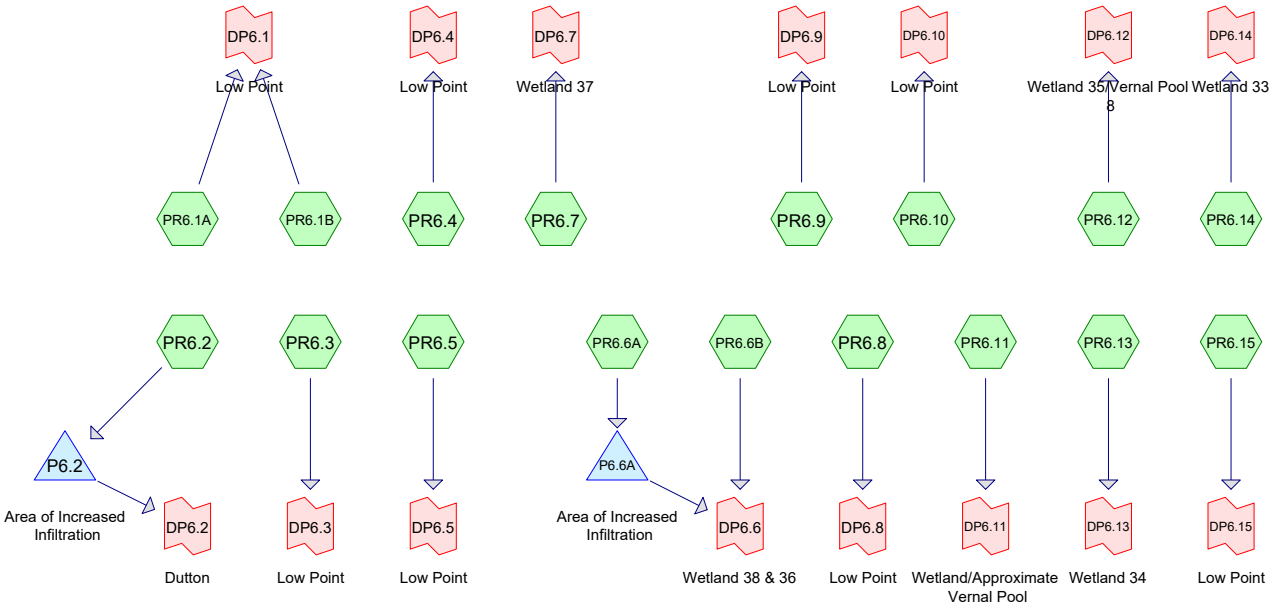
Inflow Area = 8.177 ac, 2.50% Impervious, Inflow Depth = 0.74" for 100-year event
Inflow = 1.7 cfs @ 12.63 hrs, Volume= 0.507 af
Primary = 1.7 cfs @ 12.63 hrs, Volume= 0.507 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP-5.9: Low Point

Inflow Area = 4.330 ac, 0.00% Impervious, Inflow Depth = 0.57" for 100-year event
Inflow = 0.8 cfs @ 12.49 hrs, Volume= 0.205 af
Primary = 0.8 cfs @ 12.49 hrs, Volume= 0.205 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs



Subcat Reach Pond Link

Routing Diagram for 14009.00-PR-Segment 6_ResponsetoComments
Prepared by VHB, Printed 7/10/2020

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentPR6.10: Runoff Area=3.911 ac 18.43% Impervious Runoff Depth=0.00"
Flow Length=495' Tc=16.1 min CN=44 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.11: Runoff Area=0.774 ac 2.54% Impervious Runoff Depth=0.00"
Flow Length=128' Tc=12.0 min CN=33 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.12: Runoff Area=0.598 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=117' Tc=14.2 min CN=32 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.13: Runoff Area=3.163 ac 11.92% Impervious Runoff Depth=0.00"
Flow Length=300' Tc=20.6 min CN=52 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.14: Runoff Area=5.164 ac 12.90% Impervious Runoff Depth=0.00"
Flow Length=639' Tc=30.8 min CN=62 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.15: Runoff Area=0.079 ac 79.83% Impervious Runoff Depth=0.15"
Tc=6.0 min CN=84 Runoff=0.0 cfs 0.001 af

SubcatchmentPR6.1A: Runoff Area=0.108 ac 19.20% Impervious Runoff Depth=0.00"
Flow Length=153' Tc=15.7 min CN=43 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.1B: Runoff Area=0.595 ac 2.64% Impervious Runoff Depth=0.00"
Flow Length=455' Tc=12.0 min CN=35 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.2: Runoff Area=0.998 ac 19.44% Impervious Runoff Depth=0.00"
Flow Length=645' Tc=24.9 min CN=43 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.3: Runoff Area=0.750 ac 17.88% Impervious Runoff Depth=0.00"
Flow Length=155' Tc=15.0 min CN=42 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.4: Runoff Area=2.872 ac 21.72% Impervious Runoff Depth=0.00"
Flow Length=877' Tc=27.4 min CN=50 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.5: Runoff Area=16.865 ac 7.05% Impervious Runoff Depth=0.00"
Flow Length=836' Tc=36.0 min CN=36 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.6A: Runoff Area=0.554 ac 32.02% Impervious Runoff Depth=0.00"
Flow Length=785' Tc=10.7 min CN=52 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.6B: Runoff Area=6.574 ac 18.26% Impervious Runoff Depth=0.00"
Flow Length=244' Tc=21.7 min CN=44 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.7: Runoff Area=7.006 ac 9.60% Impervious Runoff Depth=0.00"
Flow Length=875' Tc=16.2 min CN=38 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.8: Runoff Area=4.917 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=603' Tc=34.1 min CN=32 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.9: Runoff Area=0.893 ac 12.04% Impervious Runoff Depth=0.00"
Flow Length=230' Slope=0.0500 '/' Tc=17.4 min CN=41 Runoff=0.0 cfs 0.000 af

Pond P6.2: Area of Increased Infiltration Peak Elev=181.50' Storage=0 cf Inflow=0.0 cfs 0.000 af
Discarded=0.0 cfs 0.000 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Pond P6.6A: Area of Increased Infiltration Peak Elev=178.90' Storage=0 cf Inflow=0.0 cfs 0.000 af
Discarded=0.0 cfs 0.000 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Link DP6.1: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.10: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.11: Wetland/ApproximateVernal Pool Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.12: Wetland 35/Vernal Pool 8 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.13: Wetland 34 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.14: Wetland 33 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.15: Low Point Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP6.2: Dutton Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.3: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.4: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.5: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.6: Wetland 38 & 36 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.7: Wetland 37 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.8: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.9: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Total Runoff Area = 55.822 ac Runoff Volume = 0.001 af Average Runoff Depth = 0.00"
88.93% Pervious = 49.639 ac 11.07% Impervious = 6.182 ac

Summary for Subcatchment PR6.10:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.585	39	>75% Grass cover, Good, HSG A
0.093	30	Meadow, non-grazed, HSG A
0.721	98	Paved parking, HSG A
2.506	30	Woods, Good, HSG A
0.007	77	Woods, Good, HSG D
3.911	44	Weighted Average
3.190		81.57% Pervious Area
0.721		18.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
3.0	185	0.0430	1.04		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.9	80	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.9	180	0.0240	0.77		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.1	495	Total			

Summary for Subcatchment PR6.11:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.077	39	>75% Grass cover, Good, HSG A
0.001	30	Meadow, non-grazed, HSG A
0.020	98	Paved parking, HSG A
0.677	30	Woods, Good, HSG A
0.774	33	Weighted Average
0.754		97.46% Pervious Area
0.020		2.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	50	0.1300	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.0	78	0.0700	0.66		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
12.0	128	Total			

Summary for Subcatchment PR6.12:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.122	39	>75% Grass cover, Good, HSG A
0.032	30	Meadow, non-grazed, HSG A
0.444	30	Woods, Good, HSG A
0.598	32	Weighted Average
0.598		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	47	0.0680	1.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	20	0.0900	1.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.2	117	Total			

Summary for Subcatchment PR6.13:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.341	39	>75% Grass cover, Good, HSG A
0.188	80	>75% Grass cover, Good, HSG D
0.106	30	Meadow, non-grazed, HSG A
0.255	98	Paved parking, HSG A
0.122	98	Paved parking, HSG D
1.492	30	Woods, Good, HSG A
0.660	77	Woods, Good, HSG D
3.163	52	Weighted Average
2.786		88.08% Pervious Area
0.377		11.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.7	50	0.0360	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.9	250	0.0450	1.06		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.6	300	Total			

Summary for Subcatchment PR6.14:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.335	80	>75% Grass cover, Good, HSG D
0.085	30	Meadow, non-grazed, HSG A
0.399	98	Paved parking, HSG A
0.267	98	Paved parking, HSG D
1.827	30	Woods, Good, HSG A
0.594	70	Woods, Good, HSG C
1.657	77	Woods, Good, HSG D
5.164	62	Weighted Average
4.498		87.10% Pervious Area
0.666		12.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	50	0.1000	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.8	129	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.8	257	0.0747	5.55		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
15.1	203	0.0080	0.22		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
30.8	639	Total			

Summary for Subcatchment PR6.15:

Runoff = 0.0 cfs @ 12.12 hrs, Volume= 0.001 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.000	30	Meadow, non-grazed, HSG A
0.063	98	Paved parking, HSG A
0.015	30	Woods, Good, HSG A
0.079	84	Weighted Average
0.016		20.17% Pervious Area
0.063		79.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PR6.1A:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.000	30	Meadow, non-grazed, HSG A
0.021	98	Paved parking, HSG A
0.087	30	Woods, Good, HSG A
0.108	43	Weighted Average
0.087		80.80% Pervious Area
0.021		19.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	50	0.0820	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.7	103	0.0350	0.47		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.7	153	Total			

Summary for Subcatchment PR6.1B:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.185	39	>75% Grass cover, Good, HSG A
0.168	30	Meadow, non-grazed, HSG A
0.016	98	Paved parking, HSG A
0.227	30	Woods, Good, HSG A
0.595	35	Weighted Average
0.580		97.36% Pervious Area
0.016		2.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	50	0.0140	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.8	63	0.0220	0.37		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
2.8	342	0.0180	2.01		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
12.0	455	Total			

Summary for Subcatchment PR6.2:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.218	30	Meadow, non-grazed, HSG A
0.194	98	Paved parking, HSG A
0.586	30	Woods, Good, HSG A
0.998	43	Weighted Average
0.804		80.56% Pervious Area
0.194		19.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.4	50	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.1	72	0.1940	1.10		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
4.9	236	0.0130	0.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	112	0.0180	2.01		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
2.6	175	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
24.9	645	Total			

Summary for Subcatchment PR6.3:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.134	98	Paved parking, HSG A
0.616	30	Woods, Good, HSG A
0.750	42	Weighted Average
0.616		82.12% Pervious Area
0.134		17.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.4	50	0.0620	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.6	105	0.0240	1.08		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.0	155	Total			

Summary for Subcatchment PR6.4:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
1.721	39	>75% Grass cover, Good, HSG A
0.624	98	Paved parking, HSG A
0.527	30	Woods, Good, HSG A
2.872	50	Weighted Average
2.249		78.28% Pervious Area
0.624		21.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	50	0.0800	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.7	74	0.0860	0.73		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.1	360	0.0286	1.18		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	23	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.9	135	0.0030	0.38		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	65	0.0230	3.08		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.1	170	0.0380	1.36		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
27.4	877	Total			

Summary for Subcatchment PR6.5:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
2.733	39	>75% Grass cover, Good, HSG A
1.189	98	Paved parking, HSG A
12.942	30	Woods, Good, HSG A
16.865	36	Weighted Average
15.675		92.95% Pervious Area
1.189		7.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.5	150	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
10.8	341	0.0110	0.52		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	66	0.0150	0.86		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.9	145	0.0280	0.84		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	16	0.0400	4.06		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.7	68	0.0170	0.65		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
36.0	836	Total			

Summary for Subcatchment PR6.6A:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.167	30	Meadow, non-grazed, HSG A
0.177	98	Paved parking, HSG A
0.209	30	Woods, Good, HSG A
0.554	52	Weighted Average
0.376		67.98% Pervious Area
0.177		32.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	28	0.4460	0.12		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.4	20	0.0950	0.23		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
5.5	737	0.0220	2.22		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
10.7	785	Total			

Summary for Subcatchment PR6.6B:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
1.208	39	>75% Grass cover, Good, HSG A
0.113	30	Meadow, non-grazed, HSG A
1.201	98	Paved parking, HSG A
4.052	30	Woods, Good, HSG A
6.574	44	Weighted Average
5.373		81.74% Pervious Area
1.201		18.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	50	0.0420	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
6.0	194	0.0460	0.54		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
21.7	244	Total			

Summary for Subcatchment PR6.7:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
1.418	39	>75% Grass cover, Good, HSG A
0.244	30	Meadow, non-grazed, HSG A
0.672	98	Paved parking, HSG A
4.672	30	Woods, Good, HSG A
7.006	38	Weighted Average
6.334		90.40% Pervious Area
0.672		9.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	50	0.3080	0.12		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.4	733	0.0230	2.27		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
3.7	92	0.0270	0.41		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
16.2	875	Total			

Summary for Subcatchment PR6.8:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
1.052	39	>75% Grass cover, Good, HSG A
0.000	30	Meadow, non-grazed, HSG A
3.865	30	Woods, Good, HSG A
4.917	32	Weighted Average
4.917		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	50	0.0400	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
12.2	370	0.0410	0.51		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.9	183	0.0430	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
34.1	603	Total			

Summary for Subcatchment PR6.9:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.259	39	>75% Grass cover, Good, HSG A
0.040	30	Meadow, non-grazed, HSG A
0.108	98	Paved parking, HSG A
0.487	30	Woods, Good, HSG A
0.893	41	Weighted Average
0.785		87.96% Pervious Area
0.108		12.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.7	180	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.4	230	Total			

Summary for Pond P6.2: Area of Increased Infiltration

Inflow Area = 0.998 ac, 19.44% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 181.50' @ 0.00 hrs Surf.Area= 431 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	181.50'	677 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
181.50	431	0	0
182.00	559	248	248
182.50	1,157	429	677

Device	Routing	Invert	Outlet Devices
#1	Primary	182.30'	**8.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#2	Discarded	181.50'	**2.410 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 0.00 hrs HW=181.50' (Free Discharge)
↑—**2=Exfiltration** (Passes 0.0 cfs of 0.0 cfs potential flow)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=181.50' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P6.6A: Area of Increased Infiltration

Inflow Area = 0.554 ac, 32.02% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 178.90' @ 0.00 hrs Surf.Area= 0 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	178.90'	2,928 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
178.90	0	0	0
179.40	1,650	413	413
179.90	8,410	2,515	2,928

Device	Routing	Invert	Outlet Devices
#1	Primary	179.40'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	178.90'	**0.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 0.00 hrs HW=178.90' (Free Discharge)
↑—**2=Exfiltration** (Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=178.90' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link DP6.1: Low Point

Inflow Area = 0.703 ac, 5.18% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.10: Low Point

Inflow Area = 3.911 ac, 18.43% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.11: Wetland/Approximate Vernal Pool

Inflow Area = 0.774 ac, 2.54% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.12: Wetland 35/Vernal Pool 8

Inflow Area = 0.598 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.13: Wetland 34

Inflow Area = 3.163 ac, 11.92% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.14: Wetland 33

Inflow Area = 5.164 ac, 12.90% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.15: Low Point

Inflow Area = 0.079 ac, 79.83% Impervious, Inflow Depth = 0.15" for 1" event
Inflow = 0.0 cfs @ 12.12 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 12.12 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.2: Dutton

Inflow Area = 0.998 ac, 19.44% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.3: Low Point

Inflow Area = 0.750 ac, 17.88% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.4: Low Point

Inflow Area = 2.872 ac, 21.72% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.5: Low Point

Inflow Area = 16.865 ac, 7.05% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.6: Wetland 38 & 36

Inflow Area = 7.128 ac, 19.33% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.7: Wetland 37

Inflow Area = 7.006 ac, 9.60% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.8: Low Point

Inflow Area = 4.917 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.9: Low Point

Inflow Area = 0.893 ac, 12.04% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentPR6.10: Runoff Area=3.911 ac 18.43% Impervious Runoff Depth=0.04"
Flow Length=495' Tc=16.1 min CN=44 Runoff=0.0 cfs 0.014 af

SubcatchmentPR6.11: Runoff Area=0.774 ac 2.54% Impervious Runoff Depth=0.00"
Flow Length=128' Tc=12.0 min CN=33 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.12: Runoff Area=0.598 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=117' Tc=14.2 min CN=32 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.13: Runoff Area=3.163 ac 11.92% Impervious Runoff Depth=0.20"
Flow Length=300' Tc=20.6 min CN=52 Runoff=0.2 cfs 0.052 af

SubcatchmentPR6.14: Runoff Area=5.164 ac 12.90% Impervious Runoff Depth=0.52"
Flow Length=639' Tc=30.8 min CN=62 Runoff=1.3 cfs 0.226 af

SubcatchmentPR6.15: Runoff Area=0.079 ac 79.83% Impervious Runoff Depth=1.77"
Tc=6.0 min CN=84 Runoff=0.2 cfs 0.012 af

SubcatchmentPR6.1A: Runoff Area=0.108 ac 19.20% Impervious Runoff Depth=0.03"
Flow Length=153' Tc=15.7 min CN=43 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.1B: Runoff Area=0.595 ac 2.64% Impervious Runoff Depth=0.00"
Flow Length=455' Tc=12.0 min CN=35 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.2: Runoff Area=0.998 ac 19.44% Impervious Runoff Depth=0.03"
Flow Length=645' Tc=24.9 min CN=43 Runoff=0.0 cfs 0.003 af

SubcatchmentPR6.3: Runoff Area=0.750 ac 17.88% Impervious Runoff Depth=0.02"
Flow Length=155' Tc=15.0 min CN=42 Runoff=0.0 cfs 0.001 af

SubcatchmentPR6.4: Runoff Area=2.872 ac 21.72% Impervious Runoff Depth=0.15"
Flow Length=877' Tc=27.4 min CN=50 Runoff=0.1 cfs 0.036 af

SubcatchmentPR6.5: Runoff Area=16.865 ac 7.05% Impervious Runoff Depth=0.00"
Flow Length=836' Tc=36.0 min CN=36 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.6A: Runoff Area=0.554 ac 32.02% Impervious Runoff Depth=0.20"
Flow Length=785' Tc=10.7 min CN=52 Runoff=0.0 cfs 0.009 af

SubcatchmentPR6.6B: Runoff Area=6.574 ac 18.26% Impervious Runoff Depth=0.04"
Flow Length=244' Tc=21.7 min CN=44 Runoff=0.0 cfs 0.023 af

SubcatchmentPR6.7: Runoff Area=7.006 ac 9.60% Impervious Runoff Depth=0.00"
Flow Length=875' Tc=16.2 min CN=38 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.8: Runoff Area=4.917 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=603' Tc=34.1 min CN=32 Runoff=0.0 cfs 0.000 af

SubcatchmentPR6.9: Runoff Area=0.893 ac 12.04% Impervious Runoff Depth=0.01"
Flow Length=230' Slope=0.0500 '/' Tc=17.4 min CN=41 Runoff=0.0 cfs 0.001 af

Pond P6.2: Area of Increased Infiltration Peak Elev=181.50' Storage=1 cf Inflow=0.0 cfs 0.003 af
Discarded=0.0 cfs 0.003 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.003 af

Pond P6.6A: Area of Increased Infiltration Peak Elev=179.22' Storage=167 cf Inflow=0.0 cfs 0.009 af
Discarded=0.0 cfs 0.008 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.008 af

Link DP6.1: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.10: Low Point Inflow=0.0 cfs 0.014 af
Primary=0.0 cfs 0.014 af

Link DP6.11: Wetland/ApproximateVernal Pool Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.12: Wetland 35/Vernal Pool 8 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.13: Wetland 34 Inflow=0.2 cfs 0.052 af
Primary=0.2 cfs 0.052 af

Link DP6.14: Wetland 33 Inflow=1.3 cfs 0.226 af
Primary=1.3 cfs 0.226 af

Link DP6.15: Low Point Inflow=0.2 cfs 0.012 af
Primary=0.2 cfs 0.012 af

Link DP6.2: Dutton Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.3: Low Point Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP6.4: Low Point Inflow=0.1 cfs 0.036 af
Primary=0.1 cfs 0.036 af

Link DP6.5: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.6: Wetland 38 & 36 Inflow=0.0 cfs 0.023 af
Primary=0.0 cfs 0.023 af

Link DP6.7: Wetland 37 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.8: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.9: Low Point

Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Total Runoff Area = 55.822 ac Runoff Volume = 0.376 af Average Runoff Depth = 0.08"
88.93% Pervious = 49.639 ac 11.07% Impervious = 6.182 ac

Summary for Subcatchment PR6.10:

Runoff = 0.0 cfs @ 15.59 hrs, Volume= 0.014 af, Depth= 0.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.585	39	>75% Grass cover, Good, HSG A
0.093	30	Meadow, non-grazed, HSG A
0.721	98	Paved parking, HSG A
2.506	30	Woods, Good, HSG A
0.007	77	Woods, Good, HSG D
3.911	44	Weighted Average
3.190		81.57% Pervious Area
0.721		18.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
3.0	185	0.0430	1.04		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.9	80	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.9	180	0.0240	0.77		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.1	495	Total			

Summary for Subcatchment PR6.11:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.077	39	>75% Grass cover, Good, HSG A
0.001	30	Meadow, non-grazed, HSG A
0.020	98	Paved parking, HSG A
0.677	30	Woods, Good, HSG A
0.774	33	Weighted Average
0.754		97.46% Pervious Area
0.020		2.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	50	0.1300	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.0	78	0.0700	0.66		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
12.0	128	Total			

Summary for Subcatchment PR6.12:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.122	39	>75% Grass cover, Good, HSG A
0.032	30	Meadow, non-grazed, HSG A
0.444	30	Woods, Good, HSG A
0.598	32	Weighted Average
0.598		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	47	0.0680	1.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	20	0.0900	1.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.2	117	Total			

Summary for Subcatchment PR6.13:

Runoff = 0.2 cfs @ 12.61 hrs, Volume= 0.052 af, Depth= 0.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.341	39	>75% Grass cover, Good, HSG A
0.188	80	>75% Grass cover, Good, HSG D
0.106	30	Meadow, non-grazed, HSG A
0.255	98	Paved parking, HSG A
0.122	98	Paved parking, HSG D
1.492	30	Woods, Good, HSG A
0.660	77	Woods, Good, HSG D
3.163	52	Weighted Average
2.786		88.08% Pervious Area
0.377		11.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.7	50	0.0360	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.9	250	0.0450	1.06		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.6	300	Total			

Summary for Subcatchment PR6.14:

Runoff = 1.3 cfs @ 12.55 hrs, Volume= 0.226 af, Depth= 0.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.335	80	>75% Grass cover, Good, HSG D
0.085	30	Meadow, non-grazed, HSG A
0.399	98	Paved parking, HSG A
0.267	98	Paved parking, HSG D
1.827	30	Woods, Good, HSG A
0.594	70	Woods, Good, HSG C
1.657	77	Woods, Good, HSG D
5.164	62	Weighted Average
4.498		87.10% Pervious Area
0.666		12.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	50	0.1000	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.8	129	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.8	257	0.0747	5.55		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
15.1	203	0.0080	0.22		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
30.8	639	Total			

Summary for Subcatchment PR6.15:

Runoff = 0.2 cfs @ 12.09 hrs, Volume= 0.012 af, Depth= 1.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.000	30	Meadow, non-grazed, HSG A
0.063	98	Paved parking, HSG A
0.015	30	Woods, Good, HSG A
0.079	84	Weighted Average
0.016		20.17% Pervious Area
0.063		79.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PR6.1A:

Runoff = 0.0 cfs @ 16.93 hrs, Volume= 0.000 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.000	30	Meadow, non-grazed, HSG A
0.021	98	Paved parking, HSG A
0.087	30	Woods, Good, HSG A
0.108	43	Weighted Average
0.087		80.80% Pervious Area
0.021		19.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	50	0.0820	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.7	103	0.0350	0.47		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.7	153	Total			

Summary for Subcatchment PR6.1B:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.185	39	>75% Grass cover, Good, HSG A
0.168	30	Meadow, non-grazed, HSG A
0.016	98	Paved parking, HSG A
0.227	30	Woods, Good, HSG A
0.595	35	Weighted Average
0.580		97.36% Pervious Area
0.016		2.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	50	0.0140	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.8	63	0.0220	0.37		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
2.8	342	0.0180	2.01		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
12.0	455	Total			

Summary for Subcatchment PR6.2:

Runoff = 0.0 cfs @ 17.04 hrs, Volume= 0.003 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.218	30	Meadow, non-grazed, HSG A
0.194	98	Paved parking, HSG A
0.586	30	Woods, Good, HSG A
0.998	43	Weighted Average
0.804		80.56% Pervious Area
0.194		19.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.4	50	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.1	72	0.1940	1.10		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
4.9	236	0.0130	0.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	112	0.0180	2.01		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
2.6	175	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
24.9	645	Total			

Summary for Subcatchment PR6.3:

Runoff = 0.0 cfs @ 20.90 hrs, Volume= 0.001 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.134	98	Paved parking, HSG A
0.616	30	Woods, Good, HSG A
0.750	42	Weighted Average
0.616		82.12% Pervious Area
0.134		17.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.4	50	0.0620	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.6	105	0.0240	1.08		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.0	155	Total			

Summary for Subcatchment PR6.4:

Runoff = 0.1 cfs @ 12.86 hrs, Volume= 0.036 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
1.721	39	>75% Grass cover, Good, HSG A
0.624	98	Paved parking, HSG A
0.527	30	Woods, Good, HSG A
2.872	50	Weighted Average
2.249		78.28% Pervious Area
0.624		21.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	50	0.0800	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.7	74	0.0860	0.73		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.1	360	0.0286	1.18		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	23	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.9	135	0.0030	0.38		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	65	0.0230	3.08		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.1	170	0.0380	1.36		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
27.4	877	Total			

Summary for Subcatchment PR6.5:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
2.733	39	>75% Grass cover, Good, HSG A
1.189	98	Paved parking, HSG A
12.942	30	Woods, Good, HSG A
16.865	36	Weighted Average
15.675		92.95% Pervious Area
1.189		7.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.5	150	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
10.8	341	0.0110	0.52		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	66	0.0150	0.86		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.9	145	0.0280	0.84		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	16	0.0400	4.06		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.7	68	0.0170	0.65		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
36.0	836	Total			

Summary for Subcatchment PR6.6A:

Runoff = 0.0 cfs @ 12.46 hrs, Volume= 0.009 af, Depth= 0.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.167	30	Meadow, non-grazed, HSG A
0.177	98	Paved parking, HSG A
0.209	30	Woods, Good, HSG A
0.554	52	Weighted Average
0.376		67.98% Pervious Area
0.177		32.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	28	0.4460	0.12		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.4	20	0.0950	0.23		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
5.5	737	0.0220	2.22		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
10.7	785	Total			

Summary for Subcatchment PR6.6B:

Runoff = 0.0 cfs @ 15.68 hrs, Volume= 0.023 af, Depth= 0.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
1.208	39	>75% Grass cover, Good, HSG A
0.113	30	Meadow, non-grazed, HSG A
1.201	98	Paved parking, HSG A
4.052	30	Woods, Good, HSG A
6.574	44	Weighted Average
5.373		81.74% Pervious Area
1.201		18.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	50	0.0420	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
6.0	194	0.0460	0.54		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
21.7	244	Total			

Summary for Subcatchment PR6.7:

Runoff = 0.0 cfs @ 24.06 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
1.418	39	>75% Grass cover, Good, HSG A
0.244	30	Meadow, non-grazed, HSG A
0.672	98	Paved parking, HSG A
4.672	30	Woods, Good, HSG A
7.006	38	Weighted Average
6.334		90.40% Pervious Area
0.672		9.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	50	0.3080	0.12		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.4	733	0.0230	2.27		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
3.7	92	0.0270	0.41		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
16.2	875	Total			

Summary for Subcatchment PR6.8:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
1.052	39	>75% Grass cover, Good, HSG A
0.000	30	Meadow, non-grazed, HSG A
3.865	30	Woods, Good, HSG A
4.917	32	Weighted Average
4.917		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	50	0.0400	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
12.2	370	0.0410	0.51		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.9	183	0.0430	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
34.1	603	Total			

Summary for Subcatchment PR6.9:

Runoff = 0.0 cfs @ 22.00 hrs, Volume= 0.001 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.259	39	>75% Grass cover, Good, HSG A
0.040	30	Meadow, non-grazed, HSG A
0.108	98	Paved parking, HSG A
0.487	30	Woods, Good, HSG A
0.893	41	Weighted Average
0.785		87.96% Pervious Area
0.108		12.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.7	180	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.4	230	Total			

Summary for Pond P6.2: Area of Increased Infiltration

Inflow Area = 0.998 ac, 19.44% Impervious, Inflow Depth = 0.03" for 2-yr event
Inflow = 0.0 cfs @ 17.04 hrs, Volume= 0.003 af
Outflow = 0.0 cfs @ 17.09 hrs, Volume= 0.003 af, Atten= 0%, Lag= 3.0 min
Discarded = 0.0 cfs @ 17.09 hrs, Volume= 0.003 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 181.50' @ 17.09 hrs Surf.Area= 431 sf Storage= 1 cf

Plug-Flow detention time= 3.0 min calculated for 0.003 af (100% of inflow)
Center-of-Mass det. time= 3.0 min (1,164.2 - 1,161.3)

Volume	Invert	Avail.Storage	Storage Description
#1	181.50'	677 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
181.50	431	0	0
182.00	559	248	248
182.50	1,157	429	677

Device	Routing	Invert	Outlet Devices
#1	Primary	182.30'	**8.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#2	Discarded	181.50'	**2.410 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 17.09 hrs HW=181.50' (Free Discharge)
↑**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=181.50' (Free Discharge)
↑**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P6.6A: Area of Increased Infiltration

Inflow Area = 0.554 ac, 32.02% Impervious, Inflow Depth = 0.20" for 2-yr event
Inflow = 0.0 cfs @ 12.46 hrs, Volume= 0.009 af
Outflow = 0.0 cfs @ 18.12 hrs, Volume= 0.008 af, Atten= 81%, Lag= 339.2 min
Discarded = 0.0 cfs @ 18.12 hrs, Volume= 0.008 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 179.22' @ 18.12 hrs Surf.Area= 1,051 sf Storage= 167 cf

Plug-Flow detention time= 318.7 min calculated for 0.008 af (89% of inflow)
Center-of-Mass det. time= 271.4 min (1,252.2 - 980.8)

Volume	Invert	Avail.Storage	Storage Description
#1	178.90'	2,928 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
178.90	0	0	0
179.40	1,650	413	413
179.90	8,410	2,515	2,928

Device	Routing	Invert	Outlet Devices
#1	Primary	179.40'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	178.90'	**0.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 18.12 hrs HW=179.22' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=178.90' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link DP6.1: Low Point

Inflow Area = 0.703 ac, 5.18% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 16.93 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 16.93 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.10: Low Point

Inflow Area = 3.911 ac, 18.43% Impervious, Inflow Depth = 0.04" for 2-yr event
Inflow = 0.0 cfs @ 15.59 hrs, Volume= 0.014 af
Primary = 0.0 cfs @ 15.59 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.11: Wetland/Approximate Vernal Pool

Inflow Area = 0.774 ac, 2.54% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.12: Wetland 35/Vernal Pool 8

Inflow Area = 0.598 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.13: Wetland 34

Inflow Area = 3.163 ac, 11.92% Impervious, Inflow Depth = 0.20" for 2-yr event
Inflow = 0.2 cfs @ 12.61 hrs, Volume= 0.052 af
Primary = 0.2 cfs @ 12.61 hrs, Volume= 0.052 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.14: Wetland 33

Inflow Area = 5.164 ac, 12.90% Impervious, Inflow Depth = 0.52" for 2-yr event
Inflow = 1.3 cfs @ 12.55 hrs, Volume= 0.226 af
Primary = 1.3 cfs @ 12.55 hrs, Volume= 0.226 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.15: Low Point

Inflow Area = 0.079 ac, 79.83% Impervious, Inflow Depth = 1.77" for 2-yr event
Inflow = 0.2 cfs @ 12.09 hrs, Volume= 0.012 af
Primary = 0.2 cfs @ 12.09 hrs, Volume= 0.012 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.2: Dutton

Inflow Area = 0.998 ac, 19.44% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.3: Low Point

Inflow Area = 0.750 ac, 17.88% Impervious, Inflow Depth = 0.02" for 2-yr event
Inflow = 0.0 cfs @ 20.90 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 20.90 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.4: Low Point

Inflow Area = 2.872 ac, 21.72% Impervious, Inflow Depth = 0.15" for 2-yr event
Inflow = 0.1 cfs @ 12.86 hrs, Volume= 0.036 af
Primary = 0.1 cfs @ 12.86 hrs, Volume= 0.036 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.5: Low Point

Inflow Area = 16.865 ac, 7.05% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.6: Wetland 38 & 36

Inflow Area = 7.128 ac, 19.33% Impervious, Inflow Depth = 0.04" for 2-yr event
Inflow = 0.0 cfs @ 15.68 hrs, Volume= 0.023 af
Primary = 0.0 cfs @ 15.68 hrs, Volume= 0.023 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.7: Wetland 37

Inflow Area = 7.006 ac, 9.60% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 24.06 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 24.06 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.8: Low Point

Inflow Area = 4.917 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.9: Low Point

Inflow Area = 0.893 ac, 12.04% Impervious, Inflow Depth = 0.01" for 2-yr event
Inflow = 0.0 cfs @ 22.00 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 22.00 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentPR6.10: Runoff Area=3.911 ac 18.43% Impervious Runoff Depth=0.43"
Flow Length=495' Tc=16.1 min CN=44 Runoff=0.6 cfs 0.139 af

SubcatchmentPR6.11: Runoff Area=0.774 ac 2.54% Impervious Runoff Depth=0.05"
Flow Length=128' Tc=12.0 min CN=33 Runoff=0.0 cfs 0.003 af

SubcatchmentPR6.12: Runoff Area=0.598 ac 0.00% Impervious Runoff Depth=0.03"
Flow Length=117' Tc=14.2 min CN=32 Runoff=0.0 cfs 0.002 af

SubcatchmentPR6.13: Runoff Area=3.163 ac 11.92% Impervious Runoff Depth=0.85"
Flow Length=300' Tc=20.6 min CN=52 Runoff=1.5 cfs 0.224 af

SubcatchmentPR6.14: Runoff Area=5.164 ac 12.90% Impervious Runoff Depth=1.50"
Flow Length=639' Tc=30.8 min CN=62 Runoff=4.7 cfs 0.646 af

SubcatchmentPR6.15: Runoff Area=0.079 ac 79.83% Impervious Runoff Depth=3.36"
Tc=6.0 min CN=84 Runoff=0.3 cfs 0.022 af

SubcatchmentPR6.1A: Runoff Area=0.108 ac 19.20% Impervious Runoff Depth=0.38"
Flow Length=153' Tc=15.7 min CN=43 Runoff=0.0 cfs 0.003 af

SubcatchmentPR6.1B: Runoff Area=0.595 ac 2.64% Impervious Runoff Depth=0.10"
Flow Length=455' Tc=12.0 min CN=35 Runoff=0.0 cfs 0.005 af

SubcatchmentPR6.2: Runoff Area=0.998 ac 19.44% Impervious Runoff Depth=0.38"
Flow Length=645' Tc=24.9 min CN=43 Runoff=0.1 cfs 0.032 af

SubcatchmentPR6.3: Runoff Area=0.750 ac 17.88% Impervious Runoff Depth=0.34"
Flow Length=155' Tc=15.0 min CN=42 Runoff=0.1 cfs 0.021 af

SubcatchmentPR6.4: Runoff Area=2.872 ac 21.72% Impervious Runoff Depth=0.73"
Flow Length=877' Tc=27.4 min CN=50 Runoff=1.0 cfs 0.176 af

SubcatchmentPR6.5: Runoff Area=16.865 ac 7.05% Impervious Runoff Depth=0.12"
Flow Length=836' Tc=36.0 min CN=36 Runoff=0.3 cfs 0.173 af

SubcatchmentPR6.6A: Runoff Area=0.554 ac 32.02% Impervious Runoff Depth=0.85"
Flow Length=785' Tc=10.7 min CN=52 Runoff=0.3 cfs 0.039 af

SubcatchmentPR6.6B: Runoff Area=6.574 ac 18.26% Impervious Runoff Depth=0.43"
Flow Length=244' Tc=21.7 min CN=44 Runoff=1.0 cfs 0.234 af

SubcatchmentPR6.7: Runoff Area=7.006 ac 9.60% Impervious Runoff Depth=0.19"
Flow Length=875' Tc=16.2 min CN=38 Runoff=0.2 cfs 0.109 af

SubcatchmentPR6.8: Runoff Area=4.917 ac 0.00% Impervious Runoff Depth=0.03"
Flow Length=603' Tc=34.1 min CN=32 Runoff=0.0 cfs 0.013 af

SubcatchmentPR6.9: Runoff Area=0.893 ac 12.04% Impervious Runoff Depth=0.30"
Flow Length=230' Slope=0.0500 '/' Tc=17.4 min CN=41 Runoff=0.1 cfs 0.022 af

Pond P6.2: Area of Increased Infiltration Peak Elev=182.13' Storage=328 cf Inflow=0.1 cfs 0.032 af
Discarded=0.0 cfs 0.032 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.032 af

Pond P6.6A: Area of Increased Infiltration Peak Elev=179.43' Storage=464 cf Inflow=0.3 cfs 0.039 af
Discarded=0.0 cfs 0.015 af Primary=0.1 cfs 0.019 af Outflow=0.1 cfs 0.034 af

Link DP6.1: Low Point Inflow=0.0 cfs 0.008 af
Primary=0.0 cfs 0.008 af

Link DP6.10: Low Point Inflow=0.6 cfs 0.139 af
Primary=0.6 cfs 0.139 af

Link DP6.11: Wetland/ApproximateVernal Pool Inflow=0.0 cfs 0.003 af
Primary=0.0 cfs 0.003 af

Link DP6.12: Wetland 35/Vernal Pool 8 Inflow=0.0 cfs 0.002 af
Primary=0.0 cfs 0.002 af

Link DP6.13: Wetland 34 Inflow=1.5 cfs 0.224 af
Primary=1.5 cfs 0.224 af

Link DP6.14: Wetland 33 Inflow=4.7 cfs 0.646 af
Primary=4.7 cfs 0.646 af

Link DP6.15: Low Point Inflow=0.3 cfs 0.022 af
Primary=0.3 cfs 0.022 af

Link DP6.2: Dutton Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP6.3: Low Point Inflow=0.1 cfs 0.021 af
Primary=0.1 cfs 0.021 af

Link DP6.4: Low Point Inflow=1.0 cfs 0.176 af
Primary=1.0 cfs 0.176 af

Link DP6.5: Low Point Inflow=0.3 cfs 0.173 af
Primary=0.3 cfs 0.173 af

Link DP6.6: Wetland 38 & 36 Inflow=1.1 cfs 0.253 af
Primary=1.1 cfs 0.253 af

Link DP6.7: Wetland 37 Inflow=0.2 cfs 0.109 af
Primary=0.2 cfs 0.109 af

Link DP6.8: Low Point Inflow=0.0 cfs 0.013 af
Primary=0.0 cfs 0.013 af

Link DP6.9: Low Point

Inflow=0.1 cfs 0.022 af
Primary=0.1 cfs 0.022 af

Total Runoff Area = 55.822 ac Runoff Volume = 1.863 af Average Runoff Depth = 0.40"
88.93% Pervious = 49.639 ac 11.07% Impervious = 6.182 ac

Summary for Subcatchment PR6.10:

Runoff = 0.6 cfs @ 12.47 hrs, Volume= 0.139 af, Depth= 0.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.585	39	>75% Grass cover, Good, HSG A
0.093	30	Meadow, non-grazed, HSG A
0.721	98	Paved parking, HSG A
2.506	30	Woods, Good, HSG A
0.007	77	Woods, Good, HSG D
3.911	44	Weighted Average
3.190		81.57% Pervious Area
0.721		18.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
3.0	185	0.0430	1.04		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.9	80	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.9	180	0.0240	0.77		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.1	495	Total			

Summary for Subcatchment PR6.11:

Runoff = 0.0 cfs @ 15.79 hrs, Volume= 0.003 af, Depth= 0.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.077	39	>75% Grass cover, Good, HSG A
0.001	30	Meadow, non-grazed, HSG A
0.020	98	Paved parking, HSG A
0.677	30	Woods, Good, HSG A
0.774	33	Weighted Average
0.754		97.46% Pervious Area
0.020		2.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	50	0.1300	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.0	78	0.0700	0.66		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
12.0	128	Total			

Summary for Subcatchment PR6.12:

Runoff = 0.0 cfs @ 17.37 hrs, Volume= 0.002 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.122	39	>75% Grass cover, Good, HSG A
0.032	30	Meadow, non-grazed, HSG A
0.444	30	Woods, Good, HSG A
0.598	32	Weighted Average
0.598		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	47	0.0680	1.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	20	0.0900	1.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.2	117	Total			

Summary for Subcatchment PR6.13:

Runoff = 1.5 cfs @ 12.37 hrs, Volume= 0.224 af, Depth= 0.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.341	39	>75% Grass cover, Good, HSG A
0.188	80	>75% Grass cover, Good, HSG D
0.106	30	Meadow, non-grazed, HSG A
0.255	98	Paved parking, HSG A
0.122	98	Paved parking, HSG D
1.492	30	Woods, Good, HSG A
0.660	77	Woods, Good, HSG D
3.163	52	Weighted Average
2.786		88.08% Pervious Area
0.377		11.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.7	50	0.0360	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.9	250	0.0450	1.06		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.6	300	Total			

Summary for Subcatchment PR6.14:

Runoff = 4.7 cfs @ 12.48 hrs, Volume= 0.646 af, Depth= 1.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.335	80	>75% Grass cover, Good, HSG D
0.085	30	Meadow, non-grazed, HSG A
0.399	98	Paved parking, HSG A
0.267	98	Paved parking, HSG D
1.827	30	Woods, Good, HSG A
0.594	70	Woods, Good, HSG C
1.657	77	Woods, Good, HSG D
5.164	62	Weighted Average
4.498		87.10% Pervious Area
0.666		12.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	50	0.1000	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.8	129	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.8	257	0.0747	5.55		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
15.1	203	0.0080	0.22		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
30.8	639	Total			

Summary for Subcatchment PR6.15:

Runoff = 0.3 cfs @ 12.09 hrs, Volume= 0.022 af, Depth= 3.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.000	30	Meadow, non-grazed, HSG A
0.063	98	Paved parking, HSG A
0.015	30	Woods, Good, HSG A
0.079	84	Weighted Average
0.016		20.17% Pervious Area
0.063		79.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PR6.1A:

Runoff = 0.0 cfs @ 12.49 hrs, Volume= 0.003 af, Depth= 0.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.000	30	Meadow, non-grazed, HSG A
0.021	98	Paved parking, HSG A
0.087	30	Woods, Good, HSG A
0.108	43	Weighted Average
0.087		80.80% Pervious Area
0.021		19.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	50	0.0820	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.7	103	0.0350	0.47		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.7	153	Total			

Summary for Subcatchment PR6.1B:

Runoff = 0.0 cfs @ 15.10 hrs, Volume= 0.005 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.185	39	>75% Grass cover, Good, HSG A
0.168	30	Meadow, non-grazed, HSG A
0.016	98	Paved parking, HSG A
0.227	30	Woods, Good, HSG A
0.595	35	Weighted Average
0.580		97.36% Pervious Area
0.016		2.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	50	0.0140	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.8	63	0.0220	0.37		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
2.8	342	0.0180	2.01		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
12.0	455	Total			

Summary for Subcatchment PR6.2:

Runoff = 0.1 cfs @ 12.62 hrs, Volume= 0.032 af, Depth= 0.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.218	30	Meadow, non-grazed, HSG A
0.194	98	Paved parking, HSG A
0.586	30	Woods, Good, HSG A
0.998	43	Weighted Average
0.804		80.56% Pervious Area
0.194		19.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.4	50	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.1	72	0.1940	1.10		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
4.9	236	0.0130	0.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	112	0.0180	2.01		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
2.6	175	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
24.9	645	Total			

Summary for Subcatchment PR6.3:

Runoff = 0.1 cfs @ 12.51 hrs, Volume= 0.021 af, Depth= 0.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.134	98	Paved parking, HSG A
0.616	30	Woods, Good, HSG A
0.750	42	Weighted Average
0.616		82.12% Pervious Area
0.134		17.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.4	50	0.0620	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.6	105	0.0240	1.08		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.0	155	Total			

Summary for Subcatchment PR6.4:

Runoff = 1.0 cfs @ 12.52 hrs, Volume= 0.176 af, Depth= 0.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
1.721	39	>75% Grass cover, Good, HSG A
0.624	98	Paved parking, HSG A
0.527	30	Woods, Good, HSG A
2.872	50	Weighted Average
2.249		78.28% Pervious Area
0.624		21.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	50	0.0800	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.7	74	0.0860	0.73		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.1	360	0.0286	1.18		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	23	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.9	135	0.0030	0.38		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	65	0.0230	3.08		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.1	170	0.0380	1.36		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
27.4	877	Total			

Summary for Subcatchment PR6.5:

Runoff = 0.3 cfs @ 15.16 hrs, Volume= 0.173 af, Depth= 0.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
2.733	39	>75% Grass cover, Good, HSG A
1.189	98	Paved parking, HSG A
12.942	30	Woods, Good, HSG A
16.865	36	Weighted Average
15.675		92.95% Pervious Area
1.189		7.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.5	150	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
10.8	341	0.0110	0.52		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	66	0.0150	0.86		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.9	145	0.0280	0.84		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	16	0.0400	4.06		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.7	68	0.0170	0.65		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
36.0	836	Total			

Summary for Subcatchment PR6.6A:

Runoff = 0.3 cfs @ 12.20 hrs, Volume= 0.039 af, Depth= 0.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.167	30	Meadow, non-grazed, HSG A
0.177	98	Paved parking, HSG A
0.209	30	Woods, Good, HSG A
0.554	52	Weighted Average
0.376		67.98% Pervious Area
0.177		32.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	28	0.4460	0.12		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.4	20	0.0950	0.23		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
5.5	737	0.0220	2.22		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
10.7	785	Total			

Summary for Subcatchment PR6.6B:

Runoff = 1.0 cfs @ 12.55 hrs, Volume= 0.234 af, Depth= 0.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
1.208	39	>75% Grass cover, Good, HSG A
0.113	30	Meadow, non-grazed, HSG A
1.201	98	Paved parking, HSG A
4.052	30	Woods, Good, HSG A
6.574	44	Weighted Average
5.373		81.74% Pervious Area
1.201		18.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	50	0.0420	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
6.0	194	0.0460	0.54		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
21.7	244	Total			

Summary for Subcatchment PR6.7:

Runoff = 0.2 cfs @ 13.76 hrs, Volume= 0.109 af, Depth= 0.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
1.418	39	>75% Grass cover, Good, HSG A
0.244	30	Meadow, non-grazed, HSG A
0.672	98	Paved parking, HSG A
4.672	30	Woods, Good, HSG A
7.006	38	Weighted Average
6.334		90.40% Pervious Area
0.672		9.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	50	0.3080	0.12		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.4	733	0.0230	2.27		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
3.7	92	0.0270	0.41		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
16.2	875	Total			

Summary for Subcatchment PR6.8:

Runoff = 0.0 cfs @ 17.70 hrs, Volume= 0.013 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
1.052	39	>75% Grass cover, Good, HSG A
0.000	30	Meadow, non-grazed, HSG A
3.865	30	Woods, Good, HSG A
4.917	32	Weighted Average
4.917		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	50	0.0400	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
12.2	370	0.0410	0.51		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.9	183	0.0430	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
34.1	603	Total			

Summary for Subcatchment PR6.9:

Runoff = 0.1 cfs @ 12.57 hrs, Volume= 0.022 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.259	39	>75% Grass cover, Good, HSG A
0.040	30	Meadow, non-grazed, HSG A
0.108	98	Paved parking, HSG A
0.487	30	Woods, Good, HSG A
0.893	41	Weighted Average
0.785		87.96% Pervious Area
0.108		12.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.7	180	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.4	230	Total			

Summary for Pond P6.2: Area of Increased Infiltration

Inflow Area = 0.998 ac, 19.44% Impervious, Inflow Depth = 0.38" for 10-yr event
Inflow = 0.1 cfs @ 12.62 hrs, Volume= 0.032 af
Outflow = 0.0 cfs @ 15.57 hrs, Volume= 0.032 af, Atten= 66%, Lag= 176.6 min
Discarded = 0.0 cfs @ 15.57 hrs, Volume= 0.032 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 182.13' @ 15.57 hrs Surf.Area= 711 sf Storage= 328 cf

Plug-Flow detention time= 104.7 min calculated for 0.032 af (100% of inflow)
Center-of-Mass det. time= 104.6 min (1,081.0 - 976.4)

Volume	Invert	Avail.Storage	Storage Description
#1	181.50'	677 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
181.50	431	0	0
182.00	559	248	248
182.50	1,157	429	677

Device	Routing	Invert	Outlet Devices
#1	Primary	182.30'	**8.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#2	Discarded	181.50'	**2.410 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 15.57 hrs HW=182.13' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=181.50' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P6.6A: Area of Increased Infiltration

Inflow Area = 0.554 ac, 32.02% Impervious, Inflow Depth = 0.85" for 10-yr event
Inflow = 0.3 cfs @ 12.20 hrs, Volume= 0.039 af
Outflow = 0.1 cfs @ 12.64 hrs, Volume= 0.034 af, Atten= 61%, Lag= 26.6 min
Discarded = 0.0 cfs @ 12.64 hrs, Volume= 0.015 af
Primary = 0.1 cfs @ 12.64 hrs, Volume= 0.019 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 179.43' @ 12.64 hrs Surf.Area= 2,032 sf Storage= 464 cf

Plug-Flow detention time= 204.5 min calculated for 0.034 af (87% of inflow)
Center-of-Mass det. time= 144.0 min (1,051.4 - 907.3)

Volume	Invert	Avail.Storage	Storage Description
#1	178.90'	2,928 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
178.90	0	0	0
179.40	1,650	413	413
179.90	8,410	2,515	2,928

Device	Routing	Invert	Outlet Devices
#1	Primary	179.40'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	178.90'	**0.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.64 hrs HW=179.43' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.1 cfs @ 12.64 hrs HW=179.43' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.1 cfs @ 0.41 fps)

Summary for Link DP6.1: Low Point

Inflow Area = 0.703 ac, 5.18% Impervious, Inflow Depth = 0.14" for 10-yr event
Inflow = 0.0 cfs @ 12.49 hrs, Volume= 0.008 af
Primary = 0.0 cfs @ 12.49 hrs, Volume= 0.008 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.10: Low Point

Inflow Area = 3.911 ac, 18.43% Impervious, Inflow Depth = 0.43" for 10-yr event
Inflow = 0.6 cfs @ 12.47 hrs, Volume= 0.139 af
Primary = 0.6 cfs @ 12.47 hrs, Volume= 0.139 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.11: Wetland/Approximate Vernal Pool

Inflow Area = 0.774 ac, 2.54% Impervious, Inflow Depth = 0.05" for 10-yr event
Inflow = 0.0 cfs @ 15.79 hrs, Volume= 0.003 af
Primary = 0.0 cfs @ 15.79 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.12: Wetland 35/Vernal Pool 8

Inflow Area = 0.598 ac, 0.00% Impervious, Inflow Depth = 0.03" for 10-yr event
Inflow = 0.0 cfs @ 17.37 hrs, Volume= 0.002 af
Primary = 0.0 cfs @ 17.37 hrs, Volume= 0.002 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.13: Wetland 34

Inflow Area = 3.163 ac, 11.92% Impervious, Inflow Depth = 0.85" for 10-yr event
Inflow = 1.5 cfs @ 12.37 hrs, Volume= 0.224 af
Primary = 1.5 cfs @ 12.37 hrs, Volume= 0.224 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.14: Wetland 33

Inflow Area = 5.164 ac, 12.90% Impervious, Inflow Depth = 1.50" for 10-yr event
Inflow = 4.7 cfs @ 12.48 hrs, Volume= 0.646 af
Primary = 4.7 cfs @ 12.48 hrs, Volume= 0.646 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.15: Low Point

Inflow Area = 0.079 ac, 79.83% Impervious, Inflow Depth = 3.36" for 10-yr event
Inflow = 0.3 cfs @ 12.09 hrs, Volume= 0.022 af
Primary = 0.3 cfs @ 12.09 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.2: Dutton

Inflow Area = 0.998 ac, 19.44% Impervious, Inflow Depth = 0.00" for 10-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.3: Low Point

Inflow Area = 0.750 ac, 17.88% Impervious, Inflow Depth = 0.34" for 10-yr event
Inflow = 0.1 cfs @ 12.51 hrs, Volume= 0.021 af
Primary = 0.1 cfs @ 12.51 hrs, Volume= 0.021 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.4: Low Point

Inflow Area = 2.872 ac, 21.72% Impervious, Inflow Depth = 0.73" for 10-yr event
Inflow = 1.0 cfs @ 12.52 hrs, Volume= 0.176 af
Primary = 1.0 cfs @ 12.52 hrs, Volume= 0.176 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.5: Low Point

Inflow Area = 16.865 ac, 7.05% Impervious, Inflow Depth = 0.12" for 10-yr event
Inflow = 0.3 cfs @ 15.16 hrs, Volume= 0.173 af
Primary = 0.3 cfs @ 15.16 hrs, Volume= 0.173 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.6: Wetland 38 & 36

Inflow Area = 7.128 ac, 19.33% Impervious, Inflow Depth = 0.43" for 10-yr event
Inflow = 1.1 cfs @ 12.58 hrs, Volume= 0.253 af
Primary = 1.1 cfs @ 12.58 hrs, Volume= 0.253 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.7: Wetland 37

Inflow Area = 7.006 ac, 9.60% Impervious, Inflow Depth = 0.19" for 10-yr event
Inflow = 0.2 cfs @ 13.76 hrs, Volume= 0.109 af
Primary = 0.2 cfs @ 13.76 hrs, Volume= 0.109 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.8: Low Point

Inflow Area = 4.917 ac, 0.00% Impervious, Inflow Depth = 0.03" for 10-yr event
Inflow = 0.0 cfs @ 17.70 hrs, Volume= 0.013 af
Primary = 0.0 cfs @ 17.70 hrs, Volume= 0.013 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.9: Low Point

Inflow Area = 0.893 ac, 12.04% Impervious, Inflow Depth = 0.30" for 10-yr event
Inflow = 0.1 cfs @ 12.57 hrs, Volume= 0.022 af
Primary = 0.1 cfs @ 12.57 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentPR6.10: Runoff Area=3.911 ac 18.43% Impervious Runoff Depth=0.83"
Flow Length=495' Tc=16.1 min CN=44 Runoff=1.7 cfs 0.270 af

SubcatchmentPR6.11: Runoff Area=0.774 ac 2.54% Impervious Runoff Depth=0.21"
Flow Length=128' Tc=12.0 min CN=33 Runoff=0.0 cfs 0.014 af

SubcatchmentPR6.12: Runoff Area=0.598 ac 0.00% Impervious Runoff Depth=0.17"
Flow Length=117' Tc=14.2 min CN=32 Runoff=0.0 cfs 0.008 af

SubcatchmentPR6.13: Runoff Area=3.163 ac 11.92% Impervious Runoff Depth=1.41"
Flow Length=300' Tc=20.6 min CN=52 Runoff=2.9 cfs 0.372 af

SubcatchmentPR6.14: Runoff Area=5.164 ac 12.90% Impervious Runoff Depth=2.25"
Flow Length=639' Tc=30.8 min CN=62 Runoff=7.3 cfs 0.968 af

SubcatchmentPR6.15: Runoff Area=0.079 ac 79.83% Impervious Runoff Depth=4.41"
Tc=6.0 min CN=84 Runoff=0.4 cfs 0.029 af

SubcatchmentPR6.1A: Runoff Area=0.108 ac 19.20% Impervious Runoff Depth=0.76"
Flow Length=153' Tc=15.7 min CN=43 Runoff=0.0 cfs 0.007 af

SubcatchmentPR6.1B: Runoff Area=0.595 ac 2.64% Impervious Runoff Depth=0.30"
Flow Length=455' Tc=12.0 min CN=35 Runoff=0.0 cfs 0.015 af

SubcatchmentPR6.2: Runoff Area=0.998 ac 19.44% Impervious Runoff Depth=0.76"
Flow Length=645' Tc=24.9 min CN=43 Runoff=0.3 cfs 0.063 af

SubcatchmentPR6.3: Runoff Area=0.750 ac 17.88% Impervious Runoff Depth=0.70"
Flow Length=155' Tc=15.0 min CN=42 Runoff=0.3 cfs 0.043 af

SubcatchmentPR6.4: Runoff Area=2.872 ac 21.72% Impervious Runoff Depth=1.26"
Flow Length=877' Tc=27.4 min CN=50 Runoff=2.0 cfs 0.301 af

SubcatchmentPR6.5: Runoff Area=16.865 ac 7.05% Impervious Runoff Depth=0.35"
Flow Length=836' Tc=36.0 min CN=36 Runoff=1.2 cfs 0.491 af

SubcatchmentPR6.6A: Runoff Area=0.554 ac 32.02% Impervious Runoff Depth=1.41"
Flow Length=785' Tc=10.7 min CN=52 Runoff=0.7 cfs 0.065 af

SubcatchmentPR6.6B: Runoff Area=6.574 ac 18.26% Impervious Runoff Depth=0.83"
Flow Length=244' Tc=21.7 min CN=44 Runoff=2.7 cfs 0.453 af

SubcatchmentPR6.7: Runoff Area=7.006 ac 9.60% Impervious Runoff Depth=0.46"
Flow Length=875' Tc=16.2 min CN=38 Runoff=1.1 cfs 0.267 af

SubcatchmentPR6.8: Runoff Area=4.917 ac 0.00% Impervious Runoff Depth=0.17"
Flow Length=603' Tc=34.1 min CN=32 Runoff=0.1 cfs 0.069 af

SubcatchmentPR6.9: Runoff Area=0.893 ac 12.04% Impervious Runoff Depth=0.63"
Flow Length=230' Slope=0.0500 '/' Tc=17.4 min CN=41 Runoff=0.2 cfs 0.047 af

Pond P6.2: Area of Increased Infiltration Peak Elev=182.34' Storage=509 cf Inflow=0.3 cfs 0.063 af
Discarded=0.1 cfs 0.049 af Primary=0.2 cfs 0.014 af Outflow=0.2 cfs 0.063 af

Pond P6.6A: Area of Increased Infiltration Peak Elev=179.47' Storage=554 cf Inflow=0.7 cfs 0.065 af
Discarded=0.0 cfs 0.016 af Primary=0.4 cfs 0.044 af Outflow=0.4 cfs 0.060 af

Link DP6.1: Low Point Inflow=0.1 cfs 0.022 af
Primary=0.1 cfs 0.022 af

Link DP6.10: Low Point Inflow=1.7 cfs 0.270 af
Primary=1.7 cfs 0.270 af

Link DP6.11: Wetland/ApproximateVernal Pool Inflow=0.0 cfs 0.014 af
Primary=0.0 cfs 0.014 af

Link DP6.12: Wetland 35/Vernal Pool 8 Inflow=0.0 cfs 0.008 af
Primary=0.0 cfs 0.008 af

Link DP6.13: Wetland 34 Inflow=2.9 cfs 0.372 af
Primary=2.9 cfs 0.372 af

Link DP6.14: Wetland 33 Inflow=7.3 cfs 0.968 af
Primary=7.3 cfs 0.968 af

Link DP6.15: Low Point Inflow=0.4 cfs 0.029 af
Primary=0.4 cfs 0.029 af

Link DP6.2: Dutton Inflow=0.2 cfs 0.014 af
Primary=0.2 cfs 0.014 af

Link DP6.3: Low Point Inflow=0.3 cfs 0.043 af
Primary=0.3 cfs 0.043 af

Link DP6.4: Low Point Inflow=2.0 cfs 0.301 af
Primary=2.0 cfs 0.301 af

Link DP6.5: Low Point Inflow=1.2 cfs 0.491 af
Primary=1.2 cfs 0.491 af

Link DP6.6: Wetland 38 & 36 Inflow=3.1 cfs 0.497 af
Primary=3.1 cfs 0.497 af

Link DP6.7: Wetland 37 Inflow=1.1 cfs 0.267 af
Primary=1.1 cfs 0.267 af

Link DP6.8: Low Point Inflow=0.1 cfs 0.069 af
Primary=0.1 cfs 0.069 af

Link DP6.9: Low Point

Inflow=0.2 cfs 0.047 af
Primary=0.2 cfs 0.047 af

Total Runoff Area = 55.822 ac Runoff Volume = 3.483 af Average Runoff Depth = 0.75"
88.93% Pervious = 49.639 ac 11.07% Impervious = 6.182 ac

Summary for Subcatchment PR6.10:

Runoff = 1.7 cfs @ 12.34 hrs, Volume= 0.270 af, Depth= 0.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.585	39	>75% Grass cover, Good, HSG A
0.093	30	Meadow, non-grazed, HSG A
0.721	98	Paved parking, HSG A
2.506	30	Woods, Good, HSG A
0.007	77	Woods, Good, HSG D
3.911	44	Weighted Average
3.190		81.57% Pervious Area
0.721		18.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
3.0	185	0.0430	1.04		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.9	80	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.9	180	0.0240	0.77		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.1	495	Total			

Summary for Subcatchment PR6.11:

Runoff = 0.0 cfs @ 13.77 hrs, Volume= 0.014 af, Depth= 0.21"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.077	39	>75% Grass cover, Good, HSG A
0.001	30	Meadow, non-grazed, HSG A
0.020	98	Paved parking, HSG A
0.677	30	Woods, Good, HSG A
0.774	33	Weighted Average
0.754		97.46% Pervious Area
0.020		2.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	50	0.1300	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.0	78	0.0700	0.66		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
12.0	128	Total			

Summary for Subcatchment PR6.12:

Runoff = 0.0 cfs @ 14.71 hrs, Volume= 0.008 af, Depth= 0.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.122	39	>75% Grass cover, Good, HSG A
0.032	30	Meadow, non-grazed, HSG A
0.444	30	Woods, Good, HSG A
0.598	32	Weighted Average
0.598		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	47	0.0680	1.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	20	0.0900	1.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.2	117	Total			

Summary for Subcatchment PR6.13:

Runoff = 2.9 cfs @ 12.34 hrs, Volume= 0.372 af, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.341	39	>75% Grass cover, Good, HSG A
0.188	80	>75% Grass cover, Good, HSG D
0.106	30	Meadow, non-grazed, HSG A
0.255	98	Paved parking, HSG A
0.122	98	Paved parking, HSG D
1.492	30	Woods, Good, HSG A
0.660	77	Woods, Good, HSG D
3.163	52	Weighted Average
2.786		88.08% Pervious Area
0.377		11.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.7	50	0.0360	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.9	250	0.0450	1.06		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.6	300	Total			

Summary for Subcatchment PR6.14:

Runoff = 7.3 cfs @ 12.46 hrs, Volume= 0.968 af, Depth= 2.25"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.335	80	>75% Grass cover, Good, HSG D
0.085	30	Meadow, non-grazed, HSG A
0.399	98	Paved parking, HSG A
0.267	98	Paved parking, HSG D
1.827	30	Woods, Good, HSG A
0.594	70	Woods, Good, HSG C
1.657	77	Woods, Good, HSG D
5.164	62	Weighted Average
4.498		87.10% Pervious Area
0.666		12.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	50	0.1000	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.8	129	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.8	257	0.0747	5.55		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
15.1	203	0.0080	0.22		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
30.8	639	Total			

Summary for Subcatchment PR6.15:

Runoff = 0.4 cfs @ 12.09 hrs, Volume= 0.029 af, Depth= 4.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.000	30	Meadow, non-grazed, HSG A
0.063	98	Paved parking, HSG A
0.015	30	Woods, Good, HSG A
0.079	84	Weighted Average
0.016		20.17% Pervious Area
0.063		79.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PR6.1A:

Runoff = 0.0 cfs @ 12.36 hrs, Volume= 0.007 af, Depth= 0.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.000	30	Meadow, non-grazed, HSG A
0.021	98	Paved parking, HSG A
0.087	30	Woods, Good, HSG A
0.108	43	Weighted Average
0.087		80.80% Pervious Area
0.021		19.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	50	0.0820	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.7	103	0.0350	0.47		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.7	153	Total			

Summary for Subcatchment PR6.1B:

Runoff = 0.0 cfs @ 12.53 hrs, Volume= 0.015 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.185	39	>75% Grass cover, Good, HSG A
0.168	30	Meadow, non-grazed, HSG A
0.016	98	Paved parking, HSG A
0.227	30	Woods, Good, HSG A
0.595	35	Weighted Average
0.580		97.36% Pervious Area
0.016		2.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	50	0.0140	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.8	63	0.0220	0.37		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
2.8	342	0.0180	2.01		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
12.0	455	Total			

Summary for Subcatchment PR6.2:

Runoff = 0.3 cfs @ 12.51 hrs, Volume= 0.063 af, Depth= 0.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.218	30	Meadow, non-grazed, HSG A
0.194	98	Paved parking, HSG A
0.586	30	Woods, Good, HSG A
0.998	43	Weighted Average
0.804		80.56% Pervious Area
0.194		19.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.4	50	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.1	72	0.1940	1.10		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
4.9	236	0.0130	0.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	112	0.0180	2.01		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
2.6	175	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
24.9	645	Total			

Summary for Subcatchment PR6.3:

Runoff = 0.3 cfs @ 12.38 hrs, Volume= 0.043 af, Depth= 0.70"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.134	98	Paved parking, HSG A
0.616	30	Woods, Good, HSG A
0.750	42	Weighted Average
0.616		82.12% Pervious Area
0.134		17.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.4	50	0.0620	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.6	105	0.0240	1.08		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.0	155	Total			

Summary for Subcatchment PR6.4:

Runoff = 2.0 cfs @ 12.46 hrs, Volume= 0.301 af, Depth= 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
1.721	39	>75% Grass cover, Good, HSG A
0.624	98	Paved parking, HSG A
0.527	30	Woods, Good, HSG A
2.872	50	Weighted Average
2.249		78.28% Pervious Area
0.624		21.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	50	0.0800	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.7	74	0.0860	0.73		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.1	360	0.0286	1.18		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	23	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.9	135	0.0030	0.38		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	65	0.0230	3.08		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.1	170	0.0380	1.36		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
27.4	877	Total			

Summary for Subcatchment PR6.5:

Runoff = 1.2 cfs @ 12.90 hrs, Volume= 0.491 af, Depth= 0.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
2.733	39	>75% Grass cover, Good, HSG A
1.189	98	Paved parking, HSG A
12.942	30	Woods, Good, HSG A
16.865	36	Weighted Average
15.675		92.95% Pervious Area
1.189		7.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.5	150	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
10.8	341	0.0110	0.52		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	66	0.0150	0.86		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.9	145	0.0280	0.84		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	16	0.0400	4.06		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.7	68	0.0170	0.65		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
36.0	836	Total			

Summary for Subcatchment PR6.6A:

Runoff = 0.7 cfs @ 12.17 hrs, Volume= 0.065 af, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.167	30	Meadow, non-grazed, HSG A
0.177	98	Paved parking, HSG A
0.209	30	Woods, Good, HSG A
0.554	52	Weighted Average
0.376		67.98% Pervious Area
0.177		32.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	28	0.4460	0.12		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.4	20	0.0950	0.23		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
5.5	737	0.0220	2.22		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
10.7	785	Total			

Summary for Subcatchment PR6.6B:

Runoff = 2.7 cfs @ 12.44 hrs, Volume= 0.453 af, Depth= 0.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
1.208	39	>75% Grass cover, Good, HSG A
0.113	30	Meadow, non-grazed, HSG A
1.201	98	Paved parking, HSG A
4.052	30	Woods, Good, HSG A
6.574	44	Weighted Average
5.373		81.74% Pervious Area
1.201		18.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	50	0.0420	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
6.0	194	0.0460	0.54		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
21.7	244	Total			

Summary for Subcatchment PR6.7:

Runoff = 1.1 cfs @ 12.50 hrs, Volume= 0.267 af, Depth= 0.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
1.418	39	>75% Grass cover, Good, HSG A
0.244	30	Meadow, non-grazed, HSG A
0.672	98	Paved parking, HSG A
4.672	30	Woods, Good, HSG A
7.006	38	Weighted Average
6.334		90.40% Pervious Area
0.672		9.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	50	0.3080	0.12		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.4	733	0.0230	2.27		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
3.7	92	0.0270	0.41		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
16.2	875	Total			

Summary for Subcatchment PR6.8:

Runoff = 0.1 cfs @ 15.05 hrs, Volume= 0.069 af, Depth= 0.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
1.052	39	>75% Grass cover, Good, HSG A
0.000	30	Meadow, non-grazed, HSG A
3.865	30	Woods, Good, HSG A
4.917	32	Weighted Average
4.917		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	50	0.0400	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
12.2	370	0.0410	0.51		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.9	183	0.0430	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
34.1	603	Total			

Summary for Subcatchment PR6.9:

Runoff = 0.2 cfs @ 12.45 hrs, Volume= 0.047 af, Depth= 0.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.259	39	>75% Grass cover, Good, HSG A
0.040	30	Meadow, non-grazed, HSG A
0.108	98	Paved parking, HSG A
0.487	30	Woods, Good, HSG A
0.893	41	Weighted Average
0.785		87.96% Pervious Area
0.108		12.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.7	180	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.4	230	Total			

Summary for Pond P6.2: Area of Increased Infiltration

Inflow Area = 0.998 ac, 19.44% Impervious, Inflow Depth = 0.76" for 25-yr event
Inflow = 0.3 cfs @ 12.51 hrs, Volume= 0.063 af
Outflow = 0.2 cfs @ 12.86 hrs, Volume= 0.063 af, Atten= 35%, Lag= 20.8 min
Discarded = 0.1 cfs @ 12.86 hrs, Volume= 0.049 af
Primary = 0.2 cfs @ 12.86 hrs, Volume= 0.014 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 182.34' @ 12.86 hrs Surf.Area= 969 sf Storage= 509 cf

Plug-Flow detention time= 105.6 min calculated for 0.063 af (100% of inflow)
Center-of-Mass det. time= 105.6 min (1,046.5 - 940.9)

Volume	Invert	Avail.Storage	Storage Description
#1	181.50'	677 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
181.50	431	0	0
182.00	559	248	248
182.50	1,157	429	677

Device	Routing	Invert	Outlet Devices
#1	Primary	182.30'	**8.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#2	Discarded	181.50'	**2.410 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.1 cfs @ 12.86 hrs HW=182.34' (Free Discharge)
2=Exfiltration (Exfiltration Controls 0.1 cfs)

Primary OutFlow Max=0.2 cfs @ 12.86 hrs HW=182.34' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 0.2 cfs @ 0.48 fps)

Summary for Pond P6.6A: Area of Increased Infiltration

Inflow Area = 0.554 ac, 32.02% Impervious, Inflow Depth = 1.41" for 25-yr event
Inflow = 0.7 cfs @ 12.17 hrs, Volume= 0.065 af
Outflow = 0.4 cfs @ 12.38 hrs, Volume= 0.060 af, Atten= 33%, Lag= 12.3 min
Discarded = 0.0 cfs @ 12.38 hrs, Volume= 0.016 af
Primary = 0.4 cfs @ 12.38 hrs, Volume= 0.044 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 179.47' @ 12.38 hrs Surf.Area= 2,560 sf Storage= 554 cf

Plug-Flow detention time= 123.8 min calculated for 0.060 af (92% of inflow)
Center-of-Mass det. time= 84.1 min (972.2 - 888.1)

Volume	Invert	Avail.Storage	Storage Description
#1	178.90'	2,928 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
178.90	0	0	0
179.40	1,650	413	413
179.90	8,410	2,515	2,928

Device	Routing	Invert	Outlet Devices
#1	Primary	179.40'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	178.90'	**0.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.38 hrs HW=179.47' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.4 cfs @ 12.38 hrs HW=179.47' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.4 cfs @ 0.63 fps)

Summary for Link DP6.1: Low Point

Inflow Area = 0.703 ac, 5.18% Impervious, Inflow Depth = 0.37" for 25-yr event
Inflow = 0.1 cfs @ 12.49 hrs, Volume= 0.022 af
Primary = 0.1 cfs @ 12.49 hrs, Volume= 0.022 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.10: Low Point

Inflow Area = 3.911 ac, 18.43% Impervious, Inflow Depth = 0.83" for 25-yr event
Inflow = 1.7 cfs @ 12.34 hrs, Volume= 0.270 af
Primary = 1.7 cfs @ 12.34 hrs, Volume= 0.270 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.11: Wetland/Approximate Vernal Pool

Inflow Area = 0.774 ac, 2.54% Impervious, Inflow Depth = 0.21" for 25-yr event
Inflow = 0.0 cfs @ 13.77 hrs, Volume= 0.014 af
Primary = 0.0 cfs @ 13.77 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.12: Wetland 35/Vernal Pool 8

Inflow Area = 0.598 ac, 0.00% Impervious, Inflow Depth = 0.17" for 25-yr event
Inflow = 0.0 cfs @ 14.71 hrs, Volume= 0.008 af
Primary = 0.0 cfs @ 14.71 hrs, Volume= 0.008 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.13: Wetland 34

Inflow Area = 3.163 ac, 11.92% Impervious, Inflow Depth = 1.41" for 25-yr event
Inflow = 2.9 cfs @ 12.34 hrs, Volume= 0.372 af
Primary = 2.9 cfs @ 12.34 hrs, Volume= 0.372 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.14: Wetland 33

Inflow Area = 5.164 ac, 12.90% Impervious, Inflow Depth = 2.25" for 25-yr event
Inflow = 7.3 cfs @ 12.46 hrs, Volume= 0.968 af
Primary = 7.3 cfs @ 12.46 hrs, Volume= 0.968 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.15: Low Point

Inflow Area = 0.079 ac, 79.83% Impervious, Inflow Depth = 4.41" for 25-yr event
Inflow = 0.4 cfs @ 12.09 hrs, Volume= 0.029 af
Primary = 0.4 cfs @ 12.09 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.2: Dutton

Inflow Area = 0.998 ac, 19.44% Impervious, Inflow Depth = 0.17" for 25-yr event
Inflow = 0.2 cfs @ 12.86 hrs, Volume= 0.014 af
Primary = 0.2 cfs @ 12.86 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.3: Low Point

Inflow Area = 0.750 ac, 17.88% Impervious, Inflow Depth = 0.70" for 25-yr event
Inflow = 0.3 cfs @ 12.38 hrs, Volume= 0.043 af
Primary = 0.3 cfs @ 12.38 hrs, Volume= 0.043 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.4: Low Point

Inflow Area = 2.872 ac, 21.72% Impervious, Inflow Depth = 1.26" for 25-yr event
Inflow = 2.0 cfs @ 12.46 hrs, Volume= 0.301 af
Primary = 2.0 cfs @ 12.46 hrs, Volume= 0.301 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.5: Low Point

Inflow Area = 16.865 ac, 7.05% Impervious, Inflow Depth = 0.35" for 25-yr event
Inflow = 1.2 cfs @ 12.90 hrs, Volume= 0.491 af
Primary = 1.2 cfs @ 12.90 hrs, Volume= 0.491 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.6: Wetland 38 & 36

Inflow Area = 7.128 ac, 19.33% Impervious, Inflow Depth = 0.84" for 25-yr event
Inflow = 3.1 cfs @ 12.43 hrs, Volume= 0.497 af
Primary = 3.1 cfs @ 12.43 hrs, Volume= 0.497 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.7: Wetland 37

Inflow Area = 7.006 ac, 9.60% Impervious, Inflow Depth = 0.46" for 25-yr event
Inflow = 1.1 cfs @ 12.50 hrs, Volume= 0.267 af
Primary = 1.1 cfs @ 12.50 hrs, Volume= 0.267 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.8: Low Point

Inflow Area = 4.917 ac, 0.00% Impervious, Inflow Depth = 0.17" for 25-yr event
Inflow = 0.1 cfs @ 15.05 hrs, Volume= 0.069 af
Primary = 0.1 cfs @ 15.05 hrs, Volume= 0.069 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.9: Low Point

Inflow Area = 0.893 ac, 12.04% Impervious, Inflow Depth = 0.63" for 25-yr event
Inflow = 0.2 cfs @ 12.45 hrs, Volume= 0.047 af
Primary = 0.2 cfs @ 12.45 hrs, Volume= 0.047 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Time span=0.00-30.00 hrs, dt=0.05 hrs, 601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentPR6.10: Runoff Area=3.911 ac 18.43% Impervious Runoff Depth=1.95"
Flow Length=495' Tc=16.1 min CN=44 Runoff=5.5 cfs 0.636 af

SubcatchmentPR6.11: Runoff Area=0.774 ac 2.54% Impervious Runoff Depth=0.83"
Flow Length=128' Tc=12.0 min CN=33 Runoff=0.3 cfs 0.053 af

SubcatchmentPR6.12: Runoff Area=0.598 ac 0.00% Impervious Runoff Depth=0.74"
Flow Length=117' Tc=14.2 min CN=32 Runoff=0.2 cfs 0.037 af

SubcatchmentPR6.13: Runoff Area=3.163 ac 11.92% Impervious Runoff Depth=2.85"
Flow Length=300' Tc=20.6 min CN=52 Runoff=6.7 cfs 0.752 af

SubcatchmentPR6.14: Runoff Area=5.164 ac 12.90% Impervious Runoff Depth=4.03"
Flow Length=639' Tc=30.8 min CN=62 Runoff=13.5 cfs 1.733 af

SubcatchmentPR6.15: Runoff Area=0.079 ac 79.83% Impervious Runoff Depth=6.67"
Tc=6.0 min CN=84 Runoff=0.6 cfs 0.044 af

SubcatchmentPR6.1A: Runoff Area=0.108 ac 19.20% Impervious Runoff Depth=1.84"
Flow Length=153' Tc=15.7 min CN=43 Runoff=0.1 cfs 0.017 af

SubcatchmentPR6.1B: Runoff Area=0.595 ac 2.64% Impervious Runoff Depth=1.02"
Flow Length=455' Tc=12.0 min CN=35 Runoff=0.3 cfs 0.050 af

SubcatchmentPR6.2: Runoff Area=0.998 ac 19.44% Impervious Runoff Depth=1.84"
Flow Length=645' Tc=24.9 min CN=43 Runoff=1.1 cfs 0.153 af

SubcatchmentPR6.3: Runoff Area=0.750 ac 17.88% Impervious Runoff Depth=1.73"
Flow Length=155' Tc=15.0 min CN=42 Runoff=0.9 cfs 0.108 af

SubcatchmentPR6.4: Runoff Area=2.872 ac 21.72% Impervious Runoff Depth=2.62"
Flow Length=877' Tc=27.4 min CN=50 Runoff=4.8 cfs 0.628 af

SubcatchmentPR6.5: Runoff Area=16.865 ac 7.05% Impervious Runoff Depth=1.11"
Flow Length=836' Tc=36.0 min CN=36 Runoff=7.5 cfs 1.567 af

SubcatchmentPR6.6A: Runoff Area=0.554 ac 32.02% Impervious Runoff Depth=2.85"
Flow Length=785' Tc=10.7 min CN=52 Runoff=1.5 cfs 0.132 af

SubcatchmentPR6.6B: Runoff Area=6.574 ac 18.26% Impervious Runoff Depth=1.95"
Flow Length=244' Tc=21.7 min CN=44 Runoff=8.3 cfs 1.069 af

SubcatchmentPR6.7: Runoff Area=7.006 ac 9.60% Impervious Runoff Depth=1.32"
Flow Length=875' Tc=16.2 min CN=38 Runoff=5.4 cfs 0.768 af

SubcatchmentPR6.8: Runoff Area=4.917 ac 0.00% Impervious Runoff Depth=0.74"
Flow Length=603' Tc=34.1 min CN=32 Runoff=1.1 cfs 0.303 af

SubcatchmentPR6.9: Runoff Area=0.893 ac 12.04% Impervious Runoff Depth=1.63"
Flow Length=230' Slope=0.0500 '/' Tc=17.4 min CN=41 Runoff=0.9 cfs 0.121 af

Pond P6.2: Area of Increased Infiltration Peak Elev=182.45' Storage=615 cf Inflow=1.1 cfs 0.153 af
Discarded=0.1 cfs 0.063 af Primary=1.0 cfs 0.090 af Outflow=1.1 cfs 0.153 af

Pond P6.6A: Area of Increased Infiltration Peak Elev=179.54' Storage=773 cf Inflow=1.5 cfs 0.132 af
Discarded=0.0 cfs 0.017 af Primary=1.3 cfs 0.109 af Outflow=1.3 cfs 0.126 af

Link DP6.1: Low Point Inflow=0.5 cfs 0.067 af
Primary=0.5 cfs 0.067 af

Link DP6.10: Low Point Inflow=5.5 cfs 0.636 af
Primary=5.5 cfs 0.636 af

Link DP6.11: Wetland/ApproximateVernal Pool Inflow=0.3 cfs 0.053 af
Primary=0.3 cfs 0.053 af

Link DP6.12: Wetland 35/Vernal Pool 8 Inflow=0.2 cfs 0.037 af
Primary=0.2 cfs 0.037 af

Link DP6.13: Wetland 34 Inflow=6.7 cfs 0.752 af
Primary=6.7 cfs 0.752 af

Link DP6.14: Wetland 33 Inflow=13.5 cfs 1.733 af
Primary=13.5 cfs 1.733 af

Link DP6.15: Low Point Inflow=0.6 cfs 0.044 af
Primary=0.6 cfs 0.044 af

Link DP6.2: Dutton Inflow=1.0 cfs 0.090 af
Primary=1.0 cfs 0.090 af

Link DP6.3: Low Point Inflow=0.9 cfs 0.108 af
Primary=0.9 cfs 0.108 af

Link DP6.4: Low Point Inflow=4.8 cfs 0.628 af
Primary=4.8 cfs 0.628 af

Link DP6.5: Low Point Inflow=7.5 cfs 1.567 af
Primary=7.5 cfs 1.567 af

Link DP6.6: Wetland 38 & 36 Inflow=9.4 cfs 1.179 af
Primary=9.4 cfs 1.179 af

Link DP6.7: Wetland 37 Inflow=5.4 cfs 0.768 af
Primary=5.4 cfs 0.768 af

Link DP6.8: Low Point Inflow=1.1 cfs 0.303 af
Primary=1.1 cfs 0.303 af

Link DP6.9: Low Point

Inflow=0.9 cfs 0.121 af
Primary=0.9 cfs 0.121 af

Total Runoff Area = 55.822 ac Runoff Volume = 8.172 af Average Runoff Depth = 1.76"
88.93% Pervious = 49.639 ac 11.07% Impervious = 6.182 ac

Summary for Subcatchment PR6.10:

Runoff = 5.5 cfs @ 12.26 hrs, Volume= 0.636 af, Depth= 1.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.585	39	>75% Grass cover, Good, HSG A
0.093	30	Meadow, non-grazed, HSG A
0.721	98	Paved parking, HSG A
2.506	30	Woods, Good, HSG A
0.007	77	Woods, Good, HSG D
3.911	44	Weighted Average
3.190		81.57% Pervious Area
0.721		18.43% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
3.0	185	0.0430	1.04		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.9	80	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.9	180	0.0240	0.77		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
16.1	495	Total			

Summary for Subcatchment PR6.11:

Runoff = 0.3 cfs @ 12.38 hrs, Volume= 0.053 af, Depth= 0.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.077	39	>75% Grass cover, Good, HSG A
0.001	30	Meadow, non-grazed, HSG A
0.020	98	Paved parking, HSG A
0.677	30	Woods, Good, HSG A
0.774	33	Weighted Average
0.754		97.46% Pervious Area
0.020		2.54% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.0	50	0.1300	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.0	78	0.0700	0.66		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
12.0	128	Total			

Summary for Subcatchment PR6.12:

Runoff = 0.2 cfs @ 12.44 hrs, Volume= 0.037 af, Depth= 0.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.122	39	>75% Grass cover, Good, HSG A
0.032	30	Meadow, non-grazed, HSG A
0.444	30	Woods, Good, HSG A
0.598	32	Weighted Average
0.598		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.4	47	0.0680	1.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	20	0.0900	1.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.2	117	Total			

Summary for Subcatchment PR6.13:

Runoff = 6.7 cfs @ 12.31 hrs, Volume= 0.752 af, Depth= 2.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.341	39	>75% Grass cover, Good, HSG A
0.188	80	>75% Grass cover, Good, HSG D
0.106	30	Meadow, non-grazed, HSG A
0.255	98	Paved parking, HSG A
0.122	98	Paved parking, HSG D
1.492	30	Woods, Good, HSG A
0.660	77	Woods, Good, HSG D
3.163	52	Weighted Average
2.786		88.08% Pervious Area
0.377		11.92% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.7	50	0.0360	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.9	250	0.0450	1.06		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
20.6	300	Total			

Summary for Subcatchment PR6.14:

Runoff = 13.5 cfs @ 12.44 hrs, Volume= 1.733 af, Depth= 4.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.335	80	>75% Grass cover, Good, HSG D
0.085	30	Meadow, non-grazed, HSG A
0.399	98	Paved parking, HSG A
0.267	98	Paved parking, HSG D
1.827	30	Woods, Good, HSG A
0.594	70	Woods, Good, HSG C
1.657	77	Woods, Good, HSG D
5.164	62	Weighted Average
4.498		87.10% Pervious Area
0.666		12.90% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	50	0.1000	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.8	129	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.8	257	0.0747	5.55		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
15.1	203	0.0080	0.22		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
30.8	639	Total			

Summary for Subcatchment PR6.15:

Runoff = 0.6 cfs @ 12.09 hrs, Volume= 0.044 af, Depth= 6.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.000	30	Meadow, non-grazed, HSG A
0.063	98	Paved parking, HSG A
0.015	30	Woods, Good, HSG A
0.079	84	Weighted Average
0.016		20.17% Pervious Area
0.063		79.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PR6.1A:

Runoff = 0.1 cfs @ 12.26 hrs, Volume= 0.017 af, Depth= 1.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.000	30	Meadow, non-grazed, HSG A
0.021	98	Paved parking, HSG A
0.087	30	Woods, Good, HSG A
0.108	43	Weighted Average
0.087		80.80% Pervious Area
0.021		19.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.0	50	0.0820	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.7	103	0.0350	0.47		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.7	153	Total			

Summary for Subcatchment PR6.1B:

Runoff = 0.3 cfs @ 12.29 hrs, Volume= 0.050 af, Depth= 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.185	39	>75% Grass cover, Good, HSG A
0.168	30	Meadow, non-grazed, HSG A
0.016	98	Paved parking, HSG A
0.227	30	Woods, Good, HSG A
0.595	35	Weighted Average
0.580		97.36% Pervious Area
0.016		2.64% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.4	50	0.0140	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.8	63	0.0220	0.37		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
2.8	342	0.0180	2.01		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
12.0	455	Total			

Summary for Subcatchment PR6.2:

Runoff = 1.1 cfs @ 12.41 hrs, Volume= 0.153 af, Depth= 1.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.218	30	Meadow, non-grazed, HSG A
0.194	98	Paved parking, HSG A
0.586	30	Woods, Good, HSG A
0.998	43	Weighted Average
0.804		80.56% Pervious Area
0.194		19.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.4	50	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.1	72	0.1940	1.10		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
4.9	236	0.0130	0.80		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	112	0.0180	2.01		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
2.6	175	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
24.9	645	Total			

Summary for Subcatchment PR6.3:

Runoff = 0.9 cfs @ 12.25 hrs, Volume= 0.108 af, Depth= 1.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.134	98	Paved parking, HSG A
0.616	30	Woods, Good, HSG A
0.750	42	Weighted Average
0.616		82.12% Pervious Area
0.134		17.88% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.4	50	0.0620	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.6	105	0.0240	1.08		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.0	155	Total			

Summary for Subcatchment PR6.4:

Runoff = 4.8 cfs @ 12.42 hrs, Volume= 0.628 af, Depth= 2.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
1.721	39	>75% Grass cover, Good, HSG A
0.624	98	Paved parking, HSG A
0.527	30	Woods, Good, HSG A
2.872	50	Weighted Average
2.249		78.28% Pervious Area
0.624		21.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.1	50	0.0800	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.7	74	0.0860	0.73		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.1	360	0.0286	1.18		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	23	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.9	135	0.0030	0.38		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	65	0.0230	3.08		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.1	170	0.0380	1.36		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
27.4	877	Total			

Summary for Subcatchment PR6.5:

Runoff = 7.5 cfs @ 12.67 hrs, Volume= 1.567 af, Depth= 1.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
2.733	39	>75% Grass cover, Good, HSG A
1.189	98	Paved parking, HSG A
12.942	30	Woods, Good, HSG A
16.865	36	Weighted Average
15.675		92.95% Pervious Area
1.189		7.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.5	150	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
10.8	341	0.0110	0.52		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.3	66	0.0150	0.86		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.9	145	0.0280	0.84		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.1	16	0.0400	4.06		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.7	68	0.0170	0.65		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
36.0	836	Total			

Summary for Subcatchment PR6.6A:

Runoff = 1.5 cfs @ 12.16 hrs, Volume= 0.132 af, Depth= 2.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.167	30	Meadow, non-grazed, HSG A
0.177	98	Paved parking, HSG A
0.209	30	Woods, Good, HSG A
0.554	52	Weighted Average
0.376		67.98% Pervious Area
0.177		32.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	28	0.4460	0.12		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.4	20	0.0950	0.23		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
5.5	737	0.0220	2.22		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
10.7	785	Total			

Summary for Subcatchment PR6.6B:

Runoff = 8.3 cfs @ 12.36 hrs, Volume= 1.069 af, Depth= 1.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
1.208	39	>75% Grass cover, Good, HSG A
0.113	30	Meadow, non-grazed, HSG A
1.201	98	Paved parking, HSG A
4.052	30	Woods, Good, HSG A
6.574	44	Weighted Average
5.373		81.74% Pervious Area
1.201		18.26% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.7	50	0.0420	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
6.0	194	0.0460	0.54		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
21.7	244	Total			

Summary for Subcatchment PR6.7:

Runoff = 5.4 cfs @ 12.31 hrs, Volume= 0.768 af, Depth= 1.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
1.418	39	>75% Grass cover, Good, HSG A
0.244	30	Meadow, non-grazed, HSG A
0.672	98	Paved parking, HSG A
4.672	30	Woods, Good, HSG A
7.006	38	Weighted Average
6.334		90.40% Pervious Area
0.672		9.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.1	50	0.3080	0.12		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.4	733	0.0230	2.27		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
3.7	92	0.0270	0.41		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
16.2	875	Total			

Summary for Subcatchment PR6.8:

Runoff = 1.1 cfs @ 12.72 hrs, Volume= 0.303 af, Depth= 0.74"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
1.052	39	>75% Grass cover, Good, HSG A
0.000	30	Meadow, non-grazed, HSG A
3.865	30	Woods, Good, HSG A
4.917	32	Weighted Average
4.917		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
16.0	50	0.0400	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
12.2	370	0.0410	0.51		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
5.9	183	0.0430	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
34.1	603	Total			

Summary for Subcatchment PR6.9:

Runoff = 0.9 cfs @ 12.30 hrs, Volume= 0.121 af, Depth= 1.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.259	39	>75% Grass cover, Good, HSG A
0.040	30	Meadow, non-grazed, HSG A
0.108	98	Paved parking, HSG A
0.487	30	Woods, Good, HSG A
0.893	41	Weighted Average
0.785		87.96% Pervious Area
0.108		12.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.7	50	0.0500	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.7	180	0.0500	1.12		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.4	230	Total			

Summary for Pond P6.2: Area of Increased Infiltration

Inflow Area = 0.998 ac, 19.44% Impervious, Inflow Depth = 1.84" for 100-yr event
Inflow = 1.1 cfs @ 12.41 hrs, Volume= 0.153 af
Outflow = 1.1 cfs @ 12.45 hrs, Volume= 0.153 af, Atten= 1%, Lag= 2.3 min
Discarded = 0.1 cfs @ 12.45 hrs, Volume= 0.063 af
Primary = 1.0 cfs @ 12.45 hrs, Volume= 0.090 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 182.45' @ 12.45 hrs Surf.Area= 1,091 sf Storage= 615 cf

Plug-Flow detention time= 59.2 min calculated for 0.153 af (100% of inflow)
Center-of-Mass det. time= 59.4 min (964.1 - 904.7)

Volume	Invert	Avail.Storage	Storage Description
#1	181.50'	677 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
181.50	431	0	0
182.00	559	248	248
182.50	1,157	429	677

Device	Routing	Invert	Outlet Devices
#1	Primary	182.30'	**8.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88
#2	Discarded	181.50'	**2.410 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.1 cfs @ 12.45 hrs HW=182.45' (Free Discharge)
↑**2=Exfiltration** (Exfiltration Controls 0.1 cfs)

Primary OutFlow Max=1.0 cfs @ 12.45 hrs HW=182.45' (Free Discharge)
↑**1=Broad-Crested Rectangular Weir** (Weir Controls 1.0 cfs @ 0.89 fps)

Summary for Pond P6.6A: Area of Increased Infiltration

Inflow Area = 0.554 ac, 32.02% Impervious, Inflow Depth = 2.85" for 100-yr event
Inflow = 1.5 cfs @ 12.16 hrs, Volume= 0.132 af
Outflow = 1.3 cfs @ 12.24 hrs, Volume= 0.126 af, Atten= 13%, Lag= 4.6 min
Discarded = 0.0 cfs @ 12.24 hrs, Volume= 0.017 af
Primary = 1.3 cfs @ 12.24 hrs, Volume= 0.109 af

Routing by Stor-Ind method, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs
Peak Elev= 179.54' @ 12.24 hrs Surf.Area= 3,530 sf Storage= 773 cf

Plug-Flow detention time= 64.7 min calculated for 0.126 af (96% of inflow)
Center-of-Mass det. time= 43.1 min (908.1 - 865.0)

Volume	Invert	Avail.Storage	Storage Description
#1	178.90'	2,928 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
178.90	0	0	0
179.40	1,650	413	413
179.90	8,410	2,515	2,928

Device	Routing	Invert	Outlet Devices
#1	Primary	179.40'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	178.90'	**0.270 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.24 hrs HW=179.54' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=1.3 cfs @ 12.24 hrs HW=179.54' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 1.3 cfs @ 0.91 fps)

Summary for Link DP6.1: Low Point

Inflow Area = 0.703 ac, 5.18% Impervious, Inflow Depth = 1.14" for 100-yr event
Inflow = 0.5 cfs @ 12.27 hrs, Volume= 0.067 af
Primary = 0.5 cfs @ 12.27 hrs, Volume= 0.067 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.10: Low Point

Inflow Area = 3.911 ac, 18.43% Impervious, Inflow Depth = 1.95" for 100-yr event
Inflow = 5.5 cfs @ 12.26 hrs, Volume= 0.636 af
Primary = 5.5 cfs @ 12.26 hrs, Volume= 0.636 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.11: Wetland/Approximate Vernal Pool

Inflow Area = 0.774 ac, 2.54% Impervious, Inflow Depth = 0.83" for 100-yr event
Inflow = 0.3 cfs @ 12.38 hrs, Volume= 0.053 af
Primary = 0.3 cfs @ 12.38 hrs, Volume= 0.053 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.12: Wetland 35/Vernal Pool 8

Inflow Area = 0.598 ac, 0.00% Impervious, Inflow Depth = 0.74" for 100-yr event
Inflow = 0.2 cfs @ 12.44 hrs, Volume= 0.037 af
Primary = 0.2 cfs @ 12.44 hrs, Volume= 0.037 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.13: Wetland 34

Inflow Area = 3.163 ac, 11.92% Impervious, Inflow Depth = 2.85" for 100-yr event
Inflow = 6.7 cfs @ 12.31 hrs, Volume= 0.752 af
Primary = 6.7 cfs @ 12.31 hrs, Volume= 0.752 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.14: Wetland 33

Inflow Area = 5.164 ac, 12.90% Impervious, Inflow Depth = 4.03" for 100-yr event
Inflow = 13.5 cfs @ 12.44 hrs, Volume= 1.733 af
Primary = 13.5 cfs @ 12.44 hrs, Volume= 1.733 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.15: Low Point

Inflow Area = 0.079 ac, 79.83% Impervious, Inflow Depth = 6.67" for 100-yr event
Inflow = 0.6 cfs @ 12.09 hrs, Volume= 0.044 af
Primary = 0.6 cfs @ 12.09 hrs, Volume= 0.044 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.2: Dutton

Inflow Area = 0.998 ac, 19.44% Impervious, Inflow Depth = 1.09" for 100-yr event
Inflow = 1.0 cfs @ 12.45 hrs, Volume= 0.090 af
Primary = 1.0 cfs @ 12.45 hrs, Volume= 0.090 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.3: Low Point

Inflow Area = 0.750 ac, 17.88% Impervious, Inflow Depth = 1.73" for 100-yr event
Inflow = 0.9 cfs @ 12.25 hrs, Volume= 0.108 af
Primary = 0.9 cfs @ 12.25 hrs, Volume= 0.108 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.4: Low Point

Inflow Area = 2.872 ac, 21.72% Impervious, Inflow Depth = 2.62" for 100-yr event
Inflow = 4.8 cfs @ 12.42 hrs, Volume= 0.628 af
Primary = 4.8 cfs @ 12.42 hrs, Volume= 0.628 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.5: Low Point

Inflow Area = 16.865 ac, 7.05% Impervious, Inflow Depth = 1.11" for 100-yr event
Inflow = 7.5 cfs @ 12.67 hrs, Volume= 1.567 af
Primary = 7.5 cfs @ 12.67 hrs, Volume= 1.567 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.6: Wetland 38 & 36

Inflow Area = 7.128 ac, 19.33% Impervious, Inflow Depth = 1.98" for 100-yr event
Inflow = 9.4 cfs @ 12.34 hrs, Volume= 1.179 af
Primary = 9.4 cfs @ 12.34 hrs, Volume= 1.179 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.7: Wetland 37

Inflow Area = 7.006 ac, 9.60% Impervious, Inflow Depth = 1.32" for 100-yr event
Inflow = 5.4 cfs @ 12.31 hrs, Volume= 0.768 af
Primary = 5.4 cfs @ 12.31 hrs, Volume= 0.768 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.8: Low Point

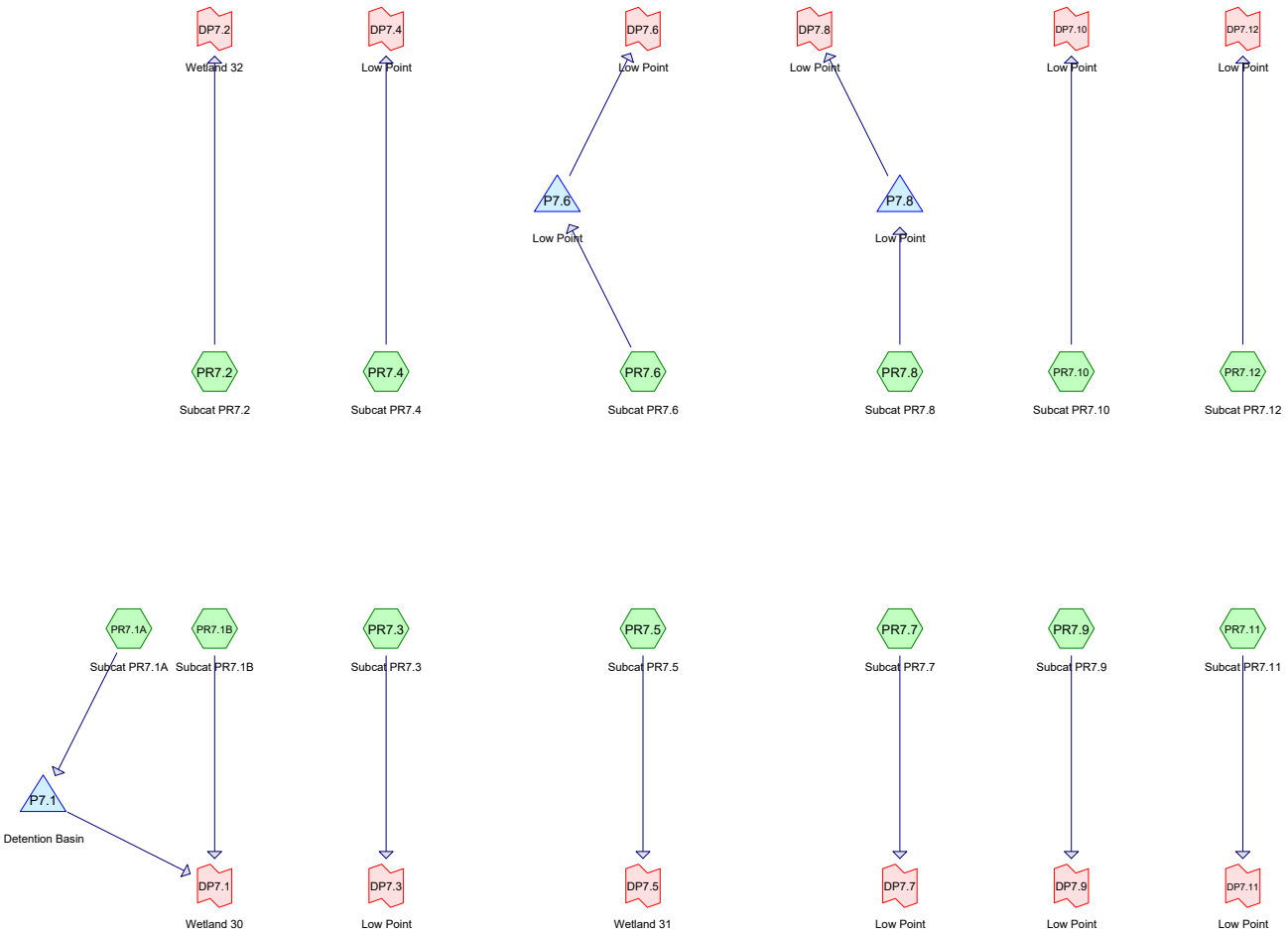
Inflow Area = 4.917 ac, 0.00% Impervious, Inflow Depth = 0.74" for 100-yr event
Inflow = 1.1 cfs @ 12.72 hrs, Volume= 0.303 af
Primary = 1.1 cfs @ 12.72 hrs, Volume= 0.303 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs

Summary for Link DP6.9: Low Point

Inflow Area = 0.893 ac, 12.04% Impervious, Inflow Depth = 1.63" for 100-yr event
Inflow = 0.9 cfs @ 12.30 hrs, Volume= 0.121 af
Primary = 0.9 cfs @ 12.30 hrs, Volume= 0.121 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-30.00 hrs, dt= 0.05 hrs



Subcat Reach Pond Link

Routing Diagram for 14009.00-PR-Segment 7_ResponsetoComments
Prepared by VHB, Printed 7/10/2020

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR7.10: Subcat PR7.10 Runoff Area=0.262 ac 1.68% Impervious Runoff Depth=0.00"
Flow Length=432' Tc=24.1 min CN=31 Runoff=0.0 cfs 0.000 af

Subcatchment PR7.11: Subcat PR7.11 Runoff Area=1.587 ac 17.29% Impervious Runoff Depth=0.00"
Flow Length=443' Tc=17.6 min CN=45 Runoff=0.0 cfs 0.000 af

Subcatchment PR7.12: Subcat PR7.12 Runoff Area=1.240 ac 20.02% Impervious Runoff Depth=0.00"
Flow Length=295' Tc=19.3 min CN=46 Runoff=0.0 cfs 0.000 af

Subcatchment PR7.1A: Subcat PR7.1A Runoff Area=0.216 ac 36.08% Impervious Runoff Depth=0.00"
Flow Length=157' Tc=5.3 min CN=55 Runoff=0.0 cfs 0.000 af

Subcatchment PR7.1B: Subcat PR7.1B Runoff Area=8.910 ac 19.02% Impervious Runoff Depth=0.00"
Flow Length=968' Tc=44.3 min CN=57 Runoff=0.0 cfs 0.000 af

Subcatchment PR7.2: Subcat PR7.2 Runoff Area=2.620 ac 7.80% Impervious Runoff Depth=0.00"
Flow Length=485' Tc=25.2 min CN=35 Runoff=0.0 cfs 0.000 af

Subcatchment PR7.3: Subcat PR7.3 Runoff Area=3.640 ac 12.38% Impervious Runoff Depth=0.00"
Flow Length=738' Tc=35.2 min CN=41 Runoff=0.0 cfs 0.000 af

Subcatchment PR7.4: Subcat PR7.4 Runoff Area=8.963 ac 12.51% Impervious Runoff Depth=0.00"
Flow Length=900' Tc=39.3 min CN=52 Runoff=0.0 cfs 0.000 af

Subcatchment PR7.5: Subcat PR7.5 Runoff Area=23.079 ac 12.93% Impervious Runoff Depth=0.00"
Flow Length=843' Tc=34.6 min CN=52 Runoff=0.0 cfs 0.000 af

Subcatchment PR7.6: Subcat PR7.6 Runoff Area=0.906 ac 16.03% Impervious Runoff Depth=0.00"
Flow Length=610' Tc=17.7 min CN=41 Runoff=0.0 cfs 0.000 af

Subcatchment PR7.7: Subcat PR7.7 Runoff Area=0.646 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=488' Tc=13.3 min CN=30 Runoff=0.0 cfs 0.000 af

Subcatchment PR7.8: Subcat PR7.8 Runoff Area=1.274 ac 11.05% Impervious Runoff Depth=0.00"
Flow Length=570' Tc=30.0 min CN=40 Runoff=0.0 cfs 0.000 af

Subcatchment PR7.9: Subcat PR7.9 Runoff Area=5.740 ac 14.60% Impervious Runoff Depth=0.00"
Flow Length=610' Tc=18.2 min CN=43 Runoff=0.0 cfs 0.000 af

Pond P7.1: Detention Basin Peak Elev=159.50' Storage=0 cf Inflow=0.0 cfs 0.000 af
Discarded=0.0 cfs 0.000 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Pond P7.6: Low Point Peak Elev=132.00' Storage=0 cf Inflow=0.0 cfs 0.000 af
Outflow=0.0 cfs 0.000 af

Pond P7.8: Low Point Peak Elev=168.00' Storage=0 cf Inflow=0.0 cfs 0.000 af
Outflow=0.0 cfs 0.000 af

Link DP7.1: Wetland 30 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.10: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.11: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.12: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.2: Wetland 32 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.3: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.4: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.5: Wetland 31 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.6: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.7: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.8: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.9: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Total Runoff Area = 59.083 ac Runoff Volume = 0.000 af Average Runoff Depth = 0.00"
86.15% Pervious = 50.899 ac 13.85% Impervious = 8.184 ac

Summary for Subcatchment PR7.10: Subcat PR7.10

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.105	30	Meadow, non-grazed, HSG A
0.004	98	Paved parking, HSG A
0.153	30	Woods, Good, HSG A
0.262	31	Weighted Average
0.258		98.32% Pervious Area
0.004		1.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6	28	0.1357	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
20.5	404	0.0022	0.33		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
24.1	432	Total			

Summary for Subcatchment PR7.11: Subcat PR7.11

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.624	39	>75% Grass cover, Good, HSG A
0.087	98	Paved parking, HSG A
0.149	98	Paved roads w/curbs & sewers, HSG A
0.038	98	Roofs, HSG A
0.689	30	Woods, Good, HSG A
1.587	45	Weighted Average
1.313		82.71% Pervious Area
0.274		17.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.0270	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
4.2	180	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.0	118	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	95	0.0170	2.65		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
17.6	443	Total			

Summary for Subcatchment PR7.12: Subcat PR7.12

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.321	39	>75% Grass cover, Good, HSG A
0.084	98	Paved parking, HSG A
0.141	98	Paved roads w/curbs & sewers, HSG A
0.023	98	Roofs, HSG A
0.670	30	Woods, Good, HSG A
1.240	46	Weighted Average
0.991		79.98% Pervious Area
0.248		20.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	50	0.0140	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.6	66	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.1	50	0.0120	0.77		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	104	0.0230	0.76		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	25	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
19.3	295	Total			

Summary for Subcatchment PR7.1A: Subcat PR7.1A

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.043	30	Meadow, non-grazed, HSG A
0.078	98	Paved parking, HSG A
0.096	30	Woods, Good, HSG A
0.216	55	Weighted Average
0.138		63.92% Pervious Area
0.078		36.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	29	0.1190	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.5	128	0.0440	1.47		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.3	157	Total			

Summary for Subcatchment PR7.1B: Subcat PR7.1B

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
1.866	39	>75% Grass cover, Good, HSG A
0.506	80	>75% Grass cover, Good, HSG D
0.089	30	Meadow, non-grazed, HSG A
0.051	78	Meadow, non-grazed, HSG D
0.677	98	Paved parking, HSG A
0.274	98	Paved parking, HSG D
0.480	98	Paved roads w/curbs & sewers, HSG A
0.122	98	Paved roads w/curbs & sewers, HSG D
0.141	98	Roofs, HSG A
3.019	30	Woods, Good, HSG A
1.684	77	Woods, Good, HSG D
8.910	57	Weighted Average
7.215		80.98% Pervious Area
1.695		19.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.9	50	0.0100	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.2	130	0.0070	0.42		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.7	263	0.0280	1.17		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	27	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.9	68	0.0330	1.27		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.1	320	0.0340	1.29		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.4	110	0.0230	0.76		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
44.3	968	Total			

Summary for Subcatchment PR7.2: Subcat PR7.2

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.172	30	Meadow, non-grazed, HSG A
0.001	78	Meadow, non-grazed, HSG D
0.057	98	Paved parking, HSG A
0.079	98	Paved roads w/curbs & sewers, HSG A
0.068	98	Roofs, HSG A
2.242	30	Woods, Good, HSG A
2.620	35	Weighted Average
2.416		92.20% Pervious Area
0.204		7.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3	50	0.0450	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.8	106	0.0620	0.62		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.1	46	0.1700	8.37		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.0	283	0.0720	0.67		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
25.2	485	Total			

Summary for Subcatchment PR7.3: Subcat PR7.3

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.850	39	>75% Grass cover, Good, HSG A
0.001	30	Meadow, non-grazed, HSG A
0.033	98	Paved parking, HSG A
0.235	98	Paved roads w/curbs & sewers, HSG A
0.182	98	Roofs, HSG A
2.337	30	Woods, Good, HSG A
3.640	41	Weighted Average
3.189		87.62% Pervious Area
0.450		12.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.8	36	0.0833	0.72		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	48	0.0410	1.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.6	286	0.0490	0.55		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.4	68	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.0	135	0.0259	1.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.2	115	0.0070	0.21		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
35.2	738	Total			

Summary for Subcatchment PR7.4: Subcat PR7.4

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
1.571	39	>75% Grass cover, Good, HSG A
0.034	80	>75% Grass cover, Good, HSG D
0.000	30	Meadow, non-grazed, HSG A
0.390	98	Paved parking, HSG A
0.104	98	Paved parking, HSG D
0.222	98	Paved roads w/curbs & sewers, HSG A
0.115	98	Paved roads w/curbs & sewers, HSG D
0.288	98	Roofs, HSG A
0.002	98	Roofs, HSG D
4.035	30	Woods, Good, HSG A
2.201	77	Woods, Good, HSG D
8.963	52	Weighted Average
7.842		87.49% Pervious Area
1.121		12.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	50	0.1000	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.8	156	0.0750	0.68		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.6	132	0.0370	1.35		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
22.8	562	0.0269	0.41		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
39.3	900	Total			

Summary for Subcatchment PR7.5: Subcat PR7.5

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
3.909	39	>75% Grass cover, Good, HSG A
0.638	80	>75% Grass cover, Good, HSG D
0.056	30	Meadow, non-grazed, HSG A
0.098	78	Meadow, non-grazed, HSG D
0.666	98	Paved parking, HSG A
0.079	98	Paved parking, HSG D
1.090	98	Paved roads w/curbs & sewers, HSG A
0.990	98	Roofs, HSG A
0.161	98	Roofs, HSG D
10.494	30	Woods, Good, HSG A
4.899	77	Woods, Good, HSG D
23.079	52	Weighted Average
20.095		87.07% Pervious Area
2.984		12.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.4	50	0.0220	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.9	59	0.0430	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.9	36	0.0020	0.31		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	33	0.0280	3.40		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.5	54	0.0680	1.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	118	0.0530	4.67		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.7	95	0.0070	0.59		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.4	225	0.0190	0.69		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	115	0.0290	3.46		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.6	58	0.0900	1.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
34.6	843	Total			

Summary for Subcatchment PR7.6: Subcat PR7.6

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.112	30	Meadow, non-grazed, HSG A
0.145	98	Paved parking, HSG A
0.649	30	Woods, Good, HSG A
0.906	41	Weighted Average
0.761		83.97% Pervious Area
0.145		16.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	41	0.1340	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
12.9	569	0.0110	0.73		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.7	610	Total			

Summary for Subcatchment PR7.7: Subcat PR7.7

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.176	30	Meadow, non-grazed, HSG A
0.470	30	Woods, Good, HSG A
0.646	30	Weighted Average
0.646		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	30	0.1100	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
9.2	458	0.0140	0.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
13.3	488	Total			

Summary for Subcatchment PR7.8: Subcat PR7.8

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.287	39	>75% Grass cover, Good, HSG A
0.063	30	Meadow, non-grazed, HSG A
0.120	98	Paved parking, HSG A
0.021	98	Roofs, HSG A
0.784	30	Woods, Good, HSG A
1.274	40	Weighted Average
1.134		88.95% Pervious Area
0.141		11.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.5	50	0.0280	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.8	223	0.0197	0.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	14	0.0214	1.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.5	283	0.0081	0.63		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
30.0	570	Total			

Summary for Subcatchment PR7.9: Subcat PR7.9

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
1.941	39	>75% Grass cover, Good, HSG A
0.258	98	Paved parking, HSG A
0.216	98	Paved roads w/curbs & sewers, HSG A
0.364	98	Roofs, HSG A
2.961	30	Woods, Good, HSG A
5.740	43	Weighted Average
4.902		85.40% Pervious Area
0.838		14.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	50	0.0400	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
3.3	87	0.0310	0.44		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.7	43	0.0230	1.06		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	167	0.0320	3.63		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.3	80	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.9	183	0.0450	1.06		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.2	610	Total			

Summary for Pond P7.1: Detention Basin

Inflow Area = 0.216 ac, 36.08% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 159.50' @ 0.00 hrs Surf.Area= 162 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	159.50'	254 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
159.50	162	0	0
160.00	252	104	104
160.50	350	151	254

Device	Routing	Invert	Outlet Devices
#1	Primary	160.00'	**5.5' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	159.50'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 0.00 hrs HW=159.50' (Free Discharge)
↑—**2=Exfiltration** (Passes 0.0 cfs of 0.0 cfs potential flow)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=159.50' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P7.6: Low Point

Inflow Area = 0.906 ac, 16.03% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 132.00' @ 0.00 hrs Surf.Area= 250 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	132.00'	6,580 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
132.00	250	0	0
133.00	2,120	1,185	1,185
134.00	2,690	2,405	3,590
135.00	3,290	2,990	6,580

Device	Routing	Invert	Outlet Devices
#1	Primary	134.50'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=132.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.0 cfs)

Summary for Pond P7.8: Low Point

Inflow Area = 1.274 ac, 11.05% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 168.00' @ 0.00 hrs Surf.Area= 300 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	168.00'	1,500 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
168.00	300	0	0
169.00	750	525	525
170.00	1,200	975	1,500

Device	Routing	Invert	Outlet Devices
#1	Primary	169.00'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=168.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.0 cfs)

Summary for Link DP7.1: Wetland 30

Inflow Area = 9.126 ac, 19.43% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.10: Low Point

Inflow Area = 0.262 ac, 1.68% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.11: Low Point

Inflow Area = 1.587 ac, 17.29% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.12: Low Point

Inflow Area = 1.240 ac, 20.02% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.2: Wetland 32

Inflow Area = 2.620 ac, 7.80% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.3: Low Point

Inflow Area = 3.640 ac, 12.38% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.4: Low Point

Inflow Area = 8.963 ac, 12.51% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.5: Wetland 31

Inflow Area = 23.079 ac, 12.93% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.6: Low Point

Inflow Area = 0.906 ac, 16.03% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.7: Low Point

Inflow Area = 0.646 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.8: Low Point

Inflow Area = 1.274 ac, 11.05% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.9: Low Point

Inflow Area = 5.740 ac, 14.60% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR7.10: Subcat PR7.10 Runoff Area=0.262 ac 1.68% Impervious Runoff Depth=0.00"
Flow Length=432' Tc=24.1 min CN=31 Runoff=0.0 cfs 0.000 af

Subcatchment PR7.11: Subcat PR7.11 Runoff Area=1.587 ac 17.29% Impervious Runoff Depth=0.06"
Flow Length=443' Tc=17.6 min CN=45 Runoff=0.0 cfs 0.007 af

Subcatchment PR7.12: Subcat PR7.12 Runoff Area=1.240 ac 20.02% Impervious Runoff Depth=0.07"
Flow Length=295' Tc=19.3 min CN=46 Runoff=0.0 cfs 0.007 af

Subcatchment PR7.1A: Subcat PR7.1A Runoff Area=0.216 ac 36.08% Impervious Runoff Depth=0.28"
Flow Length=157' Tc=5.3 min CN=55 Runoff=0.0 cfs 0.005 af

Subcatchment PR7.1B: Subcat PR7.1B Runoff Area=8.910 ac 19.02% Impervious Runoff Depth=0.34"
Flow Length=968' Tc=44.3 min CN=57 Runoff=1.0 cfs 0.255 af

Subcatchment PR7.2: Subcat PR7.2 Runoff Area=2.620 ac 7.80% Impervious Runoff Depth=0.00"
Flow Length=485' Tc=25.2 min CN=35 Runoff=0.0 cfs 0.000 af

Subcatchment PR7.3: Subcat PR7.3 Runoff Area=3.640 ac 12.38% Impervious Runoff Depth=0.01"
Flow Length=738' Tc=35.2 min CN=41 Runoff=0.0 cfs 0.004 af

Subcatchment PR7.4: Subcat PR7.4 Runoff Area=8.963 ac 12.51% Impervious Runoff Depth=0.20"
Flow Length=900' Tc=39.3 min CN=52 Runoff=0.4 cfs 0.148 af

Subcatchment PR7.5: Subcat PR7.5 Runoff Area=23.079 ac 12.93% Impervious Runoff Depth=0.20"
Flow Length=843' Tc=34.6 min CN=52 Runoff=1.0 cfs 0.380 af

Subcatchment PR7.6: Subcat PR7.6 Runoff Area=0.906 ac 16.03% Impervious Runoff Depth=0.01"
Flow Length=610' Tc=17.7 min CN=41 Runoff=0.0 cfs 0.001 af

Subcatchment PR7.7: Subcat PR7.7 Runoff Area=0.646 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=488' Tc=13.3 min CN=30 Runoff=0.0 cfs 0.000 af

Subcatchment PR7.8: Subcat PR7.8 Runoff Area=1.274 ac 11.05% Impervious Runoff Depth=0.01"
Flow Length=570' Tc=30.0 min CN=40 Runoff=0.0 cfs 0.001 af

Subcatchment PR7.9: Subcat PR7.9 Runoff Area=5.740 ac 14.60% Impervious Runoff Depth=0.03"
Flow Length=610' Tc=18.2 min CN=43 Runoff=0.0 cfs 0.014 af

Pond P7.1: Detention Basin Peak Elev=160.00' Storage=104 cf Inflow=0.0 cfs 0.005 af
Discarded=0.0 cfs 0.003 af Primary=0.0 cfs 0.002 af Outflow=0.0 cfs 0.005 af

Pond P7.6: Low Point Peak Elev=132.11' Storage=39 cf Inflow=0.0 cfs 0.001 af
Outflow=0.0 cfs 0.000 af

Pond P7.8: Low Point Peak Elev=168.09' Storage=27 cf Inflow=0.0 cfs 0.001 af
Outflow=0.0 cfs 0.000 af

Link DP7.1: Wetland 30 Inflow=1.0 cfs 0.257 af
Primary=1.0 cfs 0.257 af

Link DP7.10: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.11: Low Point Inflow=0.0 cfs 0.007 af
Primary=0.0 cfs 0.007 af

Link DP7.12: Low Point Inflow=0.0 cfs 0.007 af
Primary=0.0 cfs 0.007 af

Link DP7.2: Wetland 32 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.3: Low Point Inflow=0.0 cfs 0.004 af
Primary=0.0 cfs 0.004 af

Link DP7.4: Low Point Inflow=0.4 cfs 0.148 af
Primary=0.4 cfs 0.148 af

Link DP7.5: Wetland 31 Inflow=1.0 cfs 0.380 af
Primary=1.0 cfs 0.380 af

Link DP7.6: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.7: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.8: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.9: Low Point Inflow=0.0 cfs 0.014 af
Primary=0.0 cfs 0.014 af

Total Runoff Area = 59.083 ac Runoff Volume = 0.823 af Average Runoff Depth = 0.17"
86.15% Pervious = 50.899 ac 13.85% Impervious = 8.184 ac

Summary for Subcatchment PR7.10: Subcat PR7.10

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.105	30	Meadow, non-grazed, HSG A
0.004	98	Paved parking, HSG A
0.153	30	Woods, Good, HSG A
0.262	31	Weighted Average
0.258		98.32% Pervious Area
0.004		1.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6	28	0.1357	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
20.5	404	0.0022	0.33		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
24.1	432	Total			

Summary for Subcatchment PR7.11: Subcat PR7.11

Runoff = 0.0 cfs @ 15.31 hrs, Volume= 0.007 af, Depth= 0.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.624	39	>75% Grass cover, Good, HSG A
0.087	98	Paved parking, HSG A
0.149	98	Paved roads w/curbs & sewers, HSG A
0.038	98	Roofs, HSG A
0.689	30	Woods, Good, HSG A
1.587	45	Weighted Average
1.313		82.71% Pervious Area
0.274		17.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.0270	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
4.2	180	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.0	118	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	95	0.0170	2.65		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
17.6	443	Total			

Summary for Subcatchment PR7.12: Subcat PR7.12

Runoff = 0.0 cfs @ 15.03 hrs, Volume= 0.007 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.321	39	>75% Grass cover, Good, HSG A
0.084	98	Paved parking, HSG A
0.141	98	Paved roads w/curbs & sewers, HSG A
0.023	98	Roofs, HSG A
0.670	30	Woods, Good, HSG A
1.240	46	Weighted Average
0.991		79.98% Pervious Area
0.248		20.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	50	0.0140	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.6	66	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.1	50	0.0120	0.77		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	104	0.0230	0.76		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	25	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
19.3	295	Total			

Summary for Subcatchment PR7.1A: Subcat PR7.1A

Runoff = 0.0 cfs @ 12.30 hrs, Volume= 0.005 af, Depth= 0.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.043	30	Meadow, non-grazed, HSG A
0.078	98	Paved parking, HSG A
0.096	30	Woods, Good, HSG A
0.216	55	Weighted Average
0.138		63.92% Pervious Area
0.078		36.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	29	0.1190	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.5	128	0.0440	1.47		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.3	157	Total			

Summary for Subcatchment PR7.1B: Subcat PR7.1B

Runoff = 1.0 cfs @ 12.85 hrs, Volume= 0.255 af, Depth= 0.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
1.866	39	>75% Grass cover, Good, HSG A
0.506	80	>75% Grass cover, Good, HSG D
0.089	30	Meadow, non-grazed, HSG A
0.051	78	Meadow, non-grazed, HSG D
0.677	98	Paved parking, HSG A
0.274	98	Paved parking, HSG D
0.480	98	Paved roads w/curbs & sewers, HSG A
0.122	98	Paved roads w/curbs & sewers, HSG D
0.141	98	Roofs, HSG A
3.019	30	Woods, Good, HSG A
1.684	77	Woods, Good, HSG D
8.910	57	Weighted Average
7.215		80.98% Pervious Area
1.695		19.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.9	50	0.0100	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.2	130	0.0070	0.42		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.7	263	0.0280	1.17		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	27	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.9	68	0.0330	1.27		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.1	320	0.0340	1.29		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.4	110	0.0230	0.76		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
44.3	968	Total			

Summary for Subcatchment PR7.2: Subcat PR7.2

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.172	30	Meadow, non-grazed, HSG A
0.001	78	Meadow, non-grazed, HSG D
0.057	98	Paved parking, HSG A
0.079	98	Paved roads w/curbs & sewers, HSG A
0.068	98	Roofs, HSG A
2.242	30	Woods, Good, HSG A
2.620	35	Weighted Average
2.416		92.20% Pervious Area
0.204		7.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3	50	0.0450	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.8	106	0.0620	0.62		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.1	46	0.1700	8.37		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.0	283	0.0720	0.67		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
25.2	485	Total			

Summary for Subcatchment PR7.3: Subcat PR7.3

Runoff = 0.0 cfs @ 22.25 hrs, Volume= 0.004 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.850	39	>75% Grass cover, Good, HSG A
0.001	30	Meadow, non-grazed, HSG A
0.033	98	Paved parking, HSG A
0.235	98	Paved roads w/curbs & sewers, HSG A
0.182	98	Roofs, HSG A
2.337	30	Woods, Good, HSG A
3.640	41	Weighted Average
3.189		87.62% Pervious Area
0.450		12.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.8	36	0.0833	0.72		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	48	0.0410	1.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.6	286	0.0490	0.55		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.4	68	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.0	135	0.0259	1.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.2	115	0.0070	0.21		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
35.2	738	Total			

Summary for Subcatchment PR7.4: Subcat PR7.4

Runoff = 0.4 cfs @ 12.93 hrs, Volume= 0.148 af, Depth= 0.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
1.571	39	>75% Grass cover, Good, HSG A
0.034	80	>75% Grass cover, Good, HSG D
0.000	30	Meadow, non-grazed, HSG A
0.390	98	Paved parking, HSG A
0.104	98	Paved parking, HSG D
0.222	98	Paved roads w/curbs & sewers, HSG A
0.115	98	Paved roads w/curbs & sewers, HSG D
0.288	98	Roofs, HSG A
0.002	98	Roofs, HSG D
4.035	30	Woods, Good, HSG A
2.201	77	Woods, Good, HSG D
8.963	52	Weighted Average
7.842		87.49% Pervious Area
1.121		12.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	50	0.1000	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.8	156	0.0750	0.68		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.6	132	0.0370	1.35		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
22.8	562	0.0269	0.41		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
39.3	900	Total			

Summary for Subcatchment PR7.5: Subcat PR7.5

Runoff = 1.0 cfs @ 12.84 hrs, Volume= 0.380 af, Depth= 0.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
3.909	39	>75% Grass cover, Good, HSG A
0.638	80	>75% Grass cover, Good, HSG D
0.056	30	Meadow, non-grazed, HSG A
0.098	78	Meadow, non-grazed, HSG D
0.666	98	Paved parking, HSG A
0.079	98	Paved parking, HSG D
1.090	98	Paved roads w/curbs & sewers, HSG A
0.990	98	Roofs, HSG A
0.161	98	Roofs, HSG D
10.494	30	Woods, Good, HSG A
4.899	77	Woods, Good, HSG D
23.079	52	Weighted Average
20.095		87.07% Pervious Area
2.984		12.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.4	50	0.0220	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.9	59	0.0430	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.9	36	0.0020	0.31		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	33	0.0280	3.40		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.5	54	0.0680	1.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	118	0.0530	4.67		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.7	95	0.0070	0.59		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.4	225	0.0190	0.69		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	115	0.0290	3.46		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.6	58	0.0900	1.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
34.6	843	Total			

Summary for Subcatchment PR7.6: Subcat PR7.6

Runoff = 0.0 cfs @ 21.97 hrs, Volume= 0.001 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.112	30	Meadow, non-grazed, HSG A
0.145	98	Paved parking, HSG A
0.649	30	Woods, Good, HSG A
0.906	41	Weighted Average
0.761		83.97% Pervious Area
0.145		16.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	41	0.1340	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
12.9	569	0.0110	0.73		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.7	610	Total			

Summary for Subcatchment PR7.7: Subcat PR7.7

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.176	30	Meadow, non-grazed, HSG A
0.470	30	Woods, Good, HSG A
0.646	30	Weighted Average
0.646		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	30	0.1100	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
9.2	458	0.0140	0.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
13.3	488	Total			

Summary for Subcatchment PR7.8: Subcat PR7.8

Runoff = 0.0 cfs @ 23.43 hrs, Volume= 0.001 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.287	39	>75% Grass cover, Good, HSG A
0.063	30	Meadow, non-grazed, HSG A
0.120	98	Paved parking, HSG A
0.021	98	Roofs, HSG A
0.784	30	Woods, Good, HSG A
1.274	40	Weighted Average
1.134		88.95% Pervious Area
0.141		11.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.5	50	0.0280	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.8	223	0.0197	0.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	14	0.0214	1.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.5	283	0.0081	0.63		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
30.0	570	Total			

Summary for Subcatchment PR7.9: Subcat PR7.9

Runoff = 0.0 cfs @ 16.97 hrs, Volume= 0.014 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
1.941	39	>75% Grass cover, Good, HSG A
0.258	98	Paved parking, HSG A
0.216	98	Paved roads w/curbs & sewers, HSG A
0.364	98	Roofs, HSG A
2.961	30	Woods, Good, HSG A
5.740	43	Weighted Average
4.902		85.40% Pervious Area
0.838		14.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	50	0.0400	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
3.3	87	0.0310	0.44		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.7	43	0.0230	1.06		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	167	0.0320	3.63		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.3	80	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.9	183	0.0450	1.06		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.2	610	Total			

Summary for Pond P7.1: Detention Basin

Inflow Area = 0.216 ac, 36.08% Impervious, Inflow Depth = 0.28" for 2-yr event
Inflow = 0.0 cfs @ 12.30 hrs, Volume= 0.005 af
Outflow = 0.0 cfs @ 15.08 hrs, Volume= 0.005 af, Atten= 76%, Lag= 166.7 min
Discarded = 0.0 cfs @ 15.08 hrs, Volume= 0.003 af
Primary = 0.0 cfs @ 15.08 hrs, Volume= 0.002 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 160.00' @ 15.08 hrs Surf.Area= 253 sf Storage= 104 cf

Plug-Flow detention time= 771.5 min calculated for 0.005 af (100% of inflow)
Center-of-Mass det. time= 771.7 min (1,720.2 - 948.5)

Volume	Invert	Avail.Storage	Storage Description
#1	159.50'	254 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
159.50	162	0	0
160.00	252	104	104
160.50	350	151	254

Device	Routing	Invert	Outlet Devices
#1	Primary	160.00'	**5.5' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	159.50'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 15.08 hrs HW=160.00' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 15.08 hrs HW=160.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.0 cfs @ 0.16 fps)

Summary for Pond P7.6: Low Point

Inflow Area = 0.906 ac, 16.03% Impervious, Inflow Depth = 0.01" for 2-yr event
Inflow = 0.0 cfs @ 21.97 hrs, Volume= 0.001 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 132.11' @ 25.03 hrs Surf.Area= 458 sf Storage= 39 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	132.00'	6,580 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
132.00	250	0	0
133.00	2,120	1,185	1,185
134.00	2,690	2,405	3,590
135.00	3,290	2,990	6,580

Device	Routing	Invert	Outlet Devices
#1	Primary	134.50'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=132.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P7.8: Low Point

Inflow Area = 1.274 ac, 11.05% Impervious, Inflow Depth = 0.01" for 2-yr event
Inflow = 0.0 cfs @ 23.43 hrs, Volume= 0.001 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 168.09' @ 25.68 hrs Surf.Area= 338 sf Storage= 27 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	168.00'	1,500 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
168.00	300	0	0
169.00	750	525	525
170.00	1,200	975	1,500

Device	Routing	Invert	Outlet Devices
#1	Primary	169.00'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=168.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link DP7.1: Wetland 30

Inflow Area = 9.126 ac, 19.43% Impervious, Inflow Depth = 0.34" for 2-yr event
Inflow = 1.0 cfs @ 12.85 hrs, Volume= 0.257 af
Primary = 1.0 cfs @ 12.85 hrs, Volume= 0.257 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.10: Low Point

Inflow Area = 0.262 ac, 1.68% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.11: Low Point

Inflow Area = 1.587 ac, 17.29% Impervious, Inflow Depth = 0.06" for 2-yr event
Inflow = 0.0 cfs @ 15.31 hrs, Volume= 0.007 af
Primary = 0.0 cfs @ 15.31 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.12: Low Point

Inflow Area = 1.240 ac, 20.02% Impervious, Inflow Depth = 0.07" for 2-yr event
Inflow = 0.0 cfs @ 15.03 hrs, Volume= 0.007 af
Primary = 0.0 cfs @ 15.03 hrs, Volume= 0.007 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.2: Wetland 32

Inflow Area = 2.620 ac, 7.80% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.3: Low Point

Inflow Area = 3.640 ac, 12.38% Impervious, Inflow Depth = 0.01" for 2-yr event
Inflow = 0.0 cfs @ 22.25 hrs, Volume= 0.004 af
Primary = 0.0 cfs @ 22.25 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.4: Low Point

Inflow Area = 8.963 ac, 12.51% Impervious, Inflow Depth = 0.20" for 2-yr event
Inflow = 0.4 cfs @ 12.93 hrs, Volume= 0.148 af
Primary = 0.4 cfs @ 12.93 hrs, Volume= 0.148 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.5: Wetland 31

Inflow Area = 23.079 ac, 12.93% Impervious, Inflow Depth = 0.20" for 2-yr event
Inflow = 1.0 cfs @ 12.84 hrs, Volume= 0.380 af
Primary = 1.0 cfs @ 12.84 hrs, Volume= 0.380 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.6: Low Point

Inflow Area = 0.906 ac, 16.03% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.7: Low Point

Inflow Area = 0.646 ac, 0.00% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.8: Low Point

Inflow Area = 1.274 ac, 11.05% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.9: Low Point

Inflow Area = 5.740 ac, 14.60% Impervious, Inflow Depth = 0.03" for 2-yr event
Inflow = 0.0 cfs @ 16.97 hrs, Volume= 0.014 af
Primary = 0.0 cfs @ 16.97 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentPR7.10: Subcat PR7.10 Runoff Area=0.262 ac 1.68% Impervious Runoff Depth=0.02"
Flow Length=432' Tc=24.1 min CN=31 Runoff=0.0 cfs 0.000 af

SubcatchmentPR7.11: Subcat PR7.11 Runoff Area=1.587 ac 17.29% Impervious Runoff Depth=0.47"
Flow Length=443' Tc=17.6 min CN=45 Runoff=0.3 cfs 0.063 af

SubcatchmentPR7.12: Subcat PR7.12 Runoff Area=1.240 ac 20.02% Impervious Runoff Depth=0.52"
Flow Length=295' Tc=19.3 min CN=46 Runoff=0.3 cfs 0.054 af

SubcatchmentPR7.1A: Subcat PR7.1A Runoff Area=0.216 ac 36.08% Impervious Runoff Depth=1.03"
Flow Length=157' Tc=5.3 min CN=55 Runoff=0.2 cfs 0.019 af

SubcatchmentPR7.1B: Subcat PR7.1B Runoff Area=8.910 ac 19.02% Impervious Runoff Depth=1.16"
Flow Length=968' Tc=44.3 min CN=57 Runoff=4.8 cfs 0.860 af

SubcatchmentPR7.2: Subcat PR7.2 Runoff Area=2.620 ac 7.80% Impervious Runoff Depth=0.10"
Flow Length=485' Tc=25.2 min CN=35 Runoff=0.0 cfs 0.021 af

SubcatchmentPR7.3: Subcat PR7.3 Runoff Area=3.640 ac 12.38% Impervious Runoff Depth=0.30"
Flow Length=738' Tc=35.2 min CN=41 Runoff=0.2 cfs 0.090 af

SubcatchmentPR7.4: Subcat PR7.4 Runoff Area=8.963 ac 12.51% Impervious Runoff Depth=0.85"
Flow Length=900' Tc=39.3 min CN=52 Runoff=3.3 cfs 0.633 af

SubcatchmentPR7.5: Subcat PR7.5 Runoff Area=23.079 ac 12.93% Impervious Runoff Depth=0.85"
Flow Length=843' Tc=34.6 min CN=52 Runoff=9.2 cfs 1.631 af

SubcatchmentPR7.6: Subcat PR7.6 Runoff Area=0.906 ac 16.03% Impervious Runoff Depth=0.30"
Flow Length=610' Tc=17.7 min CN=41 Runoff=0.1 cfs 0.022 af

SubcatchmentPR7.7: Subcat PR7.7 Runoff Area=0.646 ac 0.00% Impervious Runoff Depth=0.01"
Flow Length=488' Tc=13.3 min CN=30 Runoff=0.0 cfs 0.000 af

SubcatchmentPR7.8: Subcat PR7.8 Runoff Area=1.274 ac 11.05% Impervious Runoff Depth=0.26"
Flow Length=570' Tc=30.0 min CN=40 Runoff=0.1 cfs 0.027 af

SubcatchmentPR7.9: Subcat PR7.9 Runoff Area=5.740 ac 14.60% Impervious Runoff Depth=0.38"
Flow Length=610' Tc=18.2 min CN=43 Runoff=0.8 cfs 0.183 af

Pond P7.1: Detention Basin Peak Elev=160.05' Storage=116 cf Inflow=0.2 cfs 0.019 af
Discarded=0.0 cfs 0.003 af Primary=0.2 cfs 0.015 af Outflow=0.2 cfs 0.019 af

Pond P7.6: Low Point Peak Elev=132.90' Storage=977 cf Inflow=0.1 cfs 0.022 af
Outflow=0.0 cfs 0.000 af

Pond P7.8: Low Point Peak Elev=169.01' Storage=533 cf Inflow=0.1 cfs 0.027 af
Outflow=0.0 cfs 0.015 af

Link DP7.1: Wetland 30 Inflow=4.9 cfs 0.875 af
Primary=4.9 cfs 0.875 af

Link DP7.10: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.11: Low Point Inflow=0.3 cfs 0.063 af
Primary=0.3 cfs 0.063 af

Link DP7.12: Low Point Inflow=0.3 cfs 0.054 af
Primary=0.3 cfs 0.054 af

Link DP7.2: Wetland 32 Inflow=0.0 cfs 0.021 af
Primary=0.0 cfs 0.021 af

Link DP7.3: Low Point Inflow=0.2 cfs 0.090 af
Primary=0.2 cfs 0.090 af

Link DP7.4: Low Point Inflow=3.3 cfs 0.633 af
Primary=3.3 cfs 0.633 af

Link DP7.5: Wetland 31 Inflow=9.2 cfs 1.631 af
Primary=9.2 cfs 1.631 af

Link DP7.6: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.7: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.8: Low Point Inflow=0.0 cfs 0.015 af
Primary=0.0 cfs 0.015 af

Link DP7.9: Low Point Inflow=0.8 cfs 0.183 af
Primary=0.8 cfs 0.183 af

Total Runoff Area = 59.083 ac Runoff Volume = 3.604 af Average Runoff Depth = 0.73"
86.15% Pervious = 50.899 ac 13.85% Impervious = 8.184 ac

Summary for Subcatchment PR7.10: Subcat PR7.10

Runoff = 0.0 cfs @ 22.09 hrs, Volume= 0.000 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.105	30	Meadow, non-grazed, HSG A
0.004	98	Paved parking, HSG A
0.153	30	Woods, Good, HSG A
0.262	31	Weighted Average
0.258		98.32% Pervious Area
0.004		1.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6	28	0.1357	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
20.5	404	0.0022	0.33		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
24.1	432	Total			

Summary for Subcatchment PR7.11: Subcat PR7.11

Runoff = 0.3 cfs @ 12.47 hrs, Volume= 0.063 af, Depth= 0.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.624	39	>75% Grass cover, Good, HSG A
0.087	98	Paved parking, HSG A
0.149	98	Paved roads w/curbs & sewers, HSG A
0.038	98	Roofs, HSG A
0.689	30	Woods, Good, HSG A
1.587	45	Weighted Average
1.313		82.71% Pervious Area
0.274		17.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.0270	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
4.2	180	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.0	118	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	95	0.0170	2.65		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
17.6	443	Total			

Summary for Subcatchment PR7.12: Subcat PR7.12

Runoff = 0.3 cfs @ 12.47 hrs, Volume= 0.054 af, Depth= 0.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.321	39	>75% Grass cover, Good, HSG A
0.084	98	Paved parking, HSG A
0.141	98	Paved roads w/curbs & sewers, HSG A
0.023	98	Roofs, HSG A
0.670	30	Woods, Good, HSG A
1.240	46	Weighted Average
0.991		79.98% Pervious Area
0.248		20.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	50	0.0140	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.6	66	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.1	50	0.0120	0.77		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	104	0.0230	0.76		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	25	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
19.3	295	Total			

Summary for Subcatchment PR7.1A: Subcat PR7.1A

Runoff = 0.2 cfs @ 12.10 hrs, Volume= 0.019 af, Depth= 1.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.043	30	Meadow, non-grazed, HSG A
0.078	98	Paved parking, HSG A
0.096	30	Woods, Good, HSG A
0.216	55	Weighted Average
0.138		63.92% Pervious Area
0.078		36.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	29	0.1190	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.5	128	0.0440	1.47		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.3	157	Total			

Summary for Subcatchment PR7.1B: Subcat PR7.1B

Runoff = 4.8 cfs @ 12.70 hrs, Volume= 0.860 af, Depth= 1.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
1.866	39	>75% Grass cover, Good, HSG A
0.506	80	>75% Grass cover, Good, HSG D
0.089	30	Meadow, non-grazed, HSG A
0.051	78	Meadow, non-grazed, HSG D
0.677	98	Paved parking, HSG A
0.274	98	Paved parking, HSG D
0.480	98	Paved roads w/curbs & sewers, HSG A
0.122	98	Paved roads w/curbs & sewers, HSG D
0.141	98	Roofs, HSG A
3.019	30	Woods, Good, HSG A
1.684	77	Woods, Good, HSG D
8.910	57	Weighted Average
7.215		80.98% Pervious Area
1.695		19.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.9	50	0.0100	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.2	130	0.0070	0.42		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.7	263	0.0280	1.17		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	27	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.9	68	0.0330	1.27		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.1	320	0.0340	1.29		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.4	110	0.0230	0.76		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
44.3	968	Total			

Summary for Subcatchment PR7.2: Subcat PR7.2

Runoff = 0.0 cfs @ 15.32 hrs, Volume= 0.021 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.172	30	Meadow, non-grazed, HSG A
0.001	78	Meadow, non-grazed, HSG D
0.057	98	Paved parking, HSG A
0.079	98	Paved roads w/curbs & sewers, HSG A
0.068	98	Roofs, HSG A
2.242	30	Woods, Good, HSG A
2.620	35	Weighted Average
2.416		92.20% Pervious Area
0.204		7.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3	50	0.0450	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.8	106	0.0620	0.62		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.1	46	0.1700	8.37		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.0	283	0.0720	0.67		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
25.2	485	Total			

Summary for Subcatchment PR7.3: Subcat PR7.3

Runoff = 0.2 cfs @ 12.87 hrs, Volume= 0.090 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.850	39	>75% Grass cover, Good, HSG A
0.001	30	Meadow, non-grazed, HSG A
0.033	98	Paved parking, HSG A
0.235	98	Paved roads w/curbs & sewers, HSG A
0.182	98	Roofs, HSG A
2.337	30	Woods, Good, HSG A
3.640	41	Weighted Average
3.189		87.62% Pervious Area
0.450		12.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.8	36	0.0833	0.72		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	48	0.0410	1.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.6	286	0.0490	0.55		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.4	68	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.0	135	0.0259	1.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.2	115	0.0070	0.21		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
35.2	738	Total			

Summary for Subcatchment PR7.4: Subcat PR7.4

Runoff = 3.3 cfs @ 12.67 hrs, Volume= 0.633 af, Depth= 0.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
1.571	39	>75% Grass cover, Good, HSG A
0.034	80	>75% Grass cover, Good, HSG D
0.000	30	Meadow, non-grazed, HSG A
0.390	98	Paved parking, HSG A
0.104	98	Paved parking, HSG D
0.222	98	Paved roads w/curbs & sewers, HSG A
0.115	98	Paved roads w/curbs & sewers, HSG D
0.288	98	Roofs, HSG A
0.002	98	Roofs, HSG D
4.035	30	Woods, Good, HSG A
2.201	77	Woods, Good, HSG D
8.963	52	Weighted Average
7.842		87.49% Pervious Area
1.121		12.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	50	0.1000	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.8	156	0.0750	0.68		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.6	132	0.0370	1.35		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
22.8	562	0.0269	0.41		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
39.3	900	Total			

Summary for Subcatchment PR7.5: Subcat PR7.5

Runoff = 9.2 cfs @ 12.61 hrs, Volume= 1.631 af, Depth= 0.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
3.909	39	>75% Grass cover, Good, HSG A
0.638	80	>75% Grass cover, Good, HSG D
0.056	30	Meadow, non-grazed, HSG A
0.098	78	Meadow, non-grazed, HSG D
0.666	98	Paved parking, HSG A
0.079	98	Paved parking, HSG D
1.090	98	Paved roads w/curbs & sewers, HSG A
0.990	98	Roofs, HSG A
0.161	98	Roofs, HSG D
10.494	30	Woods, Good, HSG A
4.899	77	Woods, Good, HSG D
23.079	52	Weighted Average
20.095		87.07% Pervious Area
2.984		12.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.4	50	0.0220	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.9	59	0.0430	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.9	36	0.0020	0.31		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	33	0.0280	3.40		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.5	54	0.0680	1.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	118	0.0530	4.67		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.7	95	0.0070	0.59		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.4	225	0.0190	0.69		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	115	0.0290	3.46		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.6	58	0.0900	1.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
34.6	843	Total			

Summary for Subcatchment PR7.6: Subcat PR7.6

Runoff = 0.1 cfs @ 12.57 hrs, Volume= 0.022 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.112	30	Meadow, non-grazed, HSG A
0.145	98	Paved parking, HSG A
0.649	30	Woods, Good, HSG A
0.906	41	Weighted Average
0.761		83.97% Pervious Area
0.145		16.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	41	0.1340	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
12.9	569	0.0110	0.73		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.7	610	Total			

Summary for Subcatchment PR7.7: Subcat PR7.7

Runoff = 0.0 cfs @ 23.39 hrs, Volume= 0.000 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.176	30	Meadow, non-grazed, HSG A
0.470	30	Woods, Good, HSG A
0.646	30	Weighted Average
0.646		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	30	0.1100	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
9.2	458	0.0140	0.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
13.3	488	Total			

Summary for Subcatchment PR7.8: Subcat PR7.8

Runoff = 0.1 cfs @ 12.83 hrs, Volume= 0.027 af, Depth= 0.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.287	39	>75% Grass cover, Good, HSG A
0.063	30	Meadow, non-grazed, HSG A
0.120	98	Paved parking, HSG A
0.021	98	Roofs, HSG A
0.784	30	Woods, Good, HSG A
1.274	40	Weighted Average
1.134		88.95% Pervious Area
0.141		11.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.5	50	0.0280	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.8	223	0.0197	0.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	14	0.0214	1.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.5	283	0.0081	0.63		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
30.0	570	Total			

Summary for Subcatchment PR7.9: Subcat PR7.9

Runoff = 0.8 cfs @ 12.52 hrs, Volume= 0.183 af, Depth= 0.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
1.941	39	>75% Grass cover, Good, HSG A
0.258	98	Paved parking, HSG A
0.216	98	Paved roads w/curbs & sewers, HSG A
0.364	98	Roofs, HSG A
2.961	30	Woods, Good, HSG A
5.740	43	Weighted Average
4.902		85.40% Pervious Area
0.838		14.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	50	0.0400	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
3.3	87	0.0310	0.44		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.7	43	0.0230	1.06		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	167	0.0320	3.63		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.3	80	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.9	183	0.0450	1.06		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.2	610	Total			

Summary for Pond P7.1: Detention Basin

Inflow Area = 0.216 ac, 36.08% Impervious, Inflow Depth = 1.03" for 10-yr event
Inflow = 0.2 cfs @ 12.10 hrs, Volume= 0.019 af
Outflow = 0.2 cfs @ 12.17 hrs, Volume= 0.019 af, Atten= 23%, Lag= 4.3 min
Discarded = 0.0 cfs @ 12.17 hrs, Volume= 0.003 af
Primary = 0.2 cfs @ 12.17 hrs, Volume= 0.015 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 160.05' @ 12.17 hrs Surf.Area= 262 sf Storage= 116 cf

Plug-Flow detention time= 220.5 min calculated for 0.019 af (100% of inflow)
Center-of-Mass det. time= 220.8 min (1,111.0 - 890.1)

Volume	Invert	Avail.Storage	Storage Description
#1	159.50'	254 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
159.50	162	0	0
160.00	252	104	104
160.50	350	151	254

Device	Routing	Invert	Outlet Devices
#1	Primary	160.00'	**5.5' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	159.50'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.17 hrs HW=160.05' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.2 cfs @ 12.17 hrs HW=160.05' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.2 cfs @ 0.60 fps)

Summary for Pond P7.6: Low Point

Inflow Area = 0.906 ac, 16.03% Impervious, Inflow Depth = 0.30" for 10-yr event
Inflow = 0.1 cfs @ 12.57 hrs, Volume= 0.022 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 132.90' @ 25.03 hrs Surf.Area= 1,928 sf Storage= 977 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	132.00'	6,580 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
132.00	250	0	0
133.00	2,120	1,185	1,185
134.00	2,690	2,405	3,590
135.00	3,290	2,990	6,580

Device	Routing	Invert	Outlet Devices
#1	Primary	134.50'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=132.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.0 cfs)

Summary for Pond P7.8: Low Point

Inflow Area = 1.274 ac, 11.05% Impervious, Inflow Depth = 0.26" for 10-yr event
Inflow = 0.1 cfs @ 12.83 hrs, Volume= 0.027 af
Outflow = 0.0 cfs @ 15.77 hrs, Volume= 0.015 af, Atten= 41%, Lag= 176.5 min
Primary = 0.0 cfs @ 15.77 hrs, Volume= 0.015 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 169.01' @ 15.77 hrs Surf.Area= 755 sf Storage= 533 cf

Plug-Flow detention time= 296.5 min calculated for 0.015 af (56% of inflow)
Center-of-Mass det. time= 144.9 min (1,157.6 - 1,012.7)

Volume	Invert	Avail.Storage	Storage Description
#1	168.00'	1,500 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
168.00	300	0	0
169.00	750	525	525
170.00	1,200	975	1,500

Device	Routing	Invert	Outlet Devices
#1	Primary	169.00'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.0 cfs @ 15.77 hrs HW=169.01' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 0.0 cfs @ 0.25 fps)

Summary for Link DP7.1: Wetland 30

Inflow Area = 9.126 ac, 19.43% Impervious, Inflow Depth = 1.15" for 10-yr event
Inflow = 4.9 cfs @ 12.70 hrs, Volume= 0.875 af
Primary = 4.9 cfs @ 12.70 hrs, Volume= 0.875 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.10: Low Point

Inflow Area = 0.262 ac, 1.68% Impervious, Inflow Depth = 0.02" for 10-yr event
Inflow = 0.0 cfs @ 22.09 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 22.09 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.11: Low Point

Inflow Area = 1.587 ac, 17.29% Impervious, Inflow Depth = 0.47" for 10-yr event
Inflow = 0.3 cfs @ 12.47 hrs, Volume= 0.063 af
Primary = 0.3 cfs @ 12.47 hrs, Volume= 0.063 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.12: Low Point

Inflow Area = 1.240 ac, 20.02% Impervious, Inflow Depth = 0.52" for 10-yr event
Inflow = 0.3 cfs @ 12.47 hrs, Volume= 0.054 af
Primary = 0.3 cfs @ 12.47 hrs, Volume= 0.054 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.2: Wetland 32

Inflow Area = 2.620 ac, 7.80% Impervious, Inflow Depth = 0.10" for 10-yr event
Inflow = 0.0 cfs @ 15.32 hrs, Volume= 0.021 af
Primary = 0.0 cfs @ 15.32 hrs, Volume= 0.021 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.3: Low Point

Inflow Area = 3.640 ac, 12.38% Impervious, Inflow Depth = 0.30" for 10-yr event
Inflow = 0.2 cfs @ 12.87 hrs, Volume= 0.090 af
Primary = 0.2 cfs @ 12.87 hrs, Volume= 0.090 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.4: Low Point

Inflow Area = 8.963 ac, 12.51% Impervious, Inflow Depth = 0.85" for 10-yr event
Inflow = 3.3 cfs @ 12.67 hrs, Volume= 0.633 af
Primary = 3.3 cfs @ 12.67 hrs, Volume= 0.633 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.5: Wetland 31

Inflow Area = 23.079 ac, 12.93% Impervious, Inflow Depth = 0.85" for 10-yr event
Inflow = 9.2 cfs @ 12.61 hrs, Volume= 1.631 af
Primary = 9.2 cfs @ 12.61 hrs, Volume= 1.631 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.6: Low Point

Inflow Area = 0.906 ac, 16.03% Impervious, Inflow Depth = 0.00" for 10-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.7: Low Point

Inflow Area = 0.646 ac, 0.00% Impervious, Inflow Depth = 0.01" for 10-yr event
Inflow = 0.0 cfs @ 23.39 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 23.39 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.8: Low Point

Inflow Area = 1.274 ac, 11.05% Impervious, Inflow Depth = 0.14" for 10-yr event
Inflow = 0.0 cfs @ 15.77 hrs, Volume= 0.015 af
Primary = 0.0 cfs @ 15.77 hrs, Volume= 0.015 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.9: Low Point

Inflow Area = 5.740 ac, 14.60% Impervious, Inflow Depth = 0.38" for 10-yr event
Inflow = 0.8 cfs @ 12.52 hrs, Volume= 0.183 af
Primary = 0.8 cfs @ 12.52 hrs, Volume= 0.183 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR7.10: Subcat PR7.10 Runoff Area=0.262 ac 1.68% Impervious Runoff Depth=0.13"
Flow Length=432' Tc=24.1 min CN=31 Runoff=0.0 cfs 0.003 af

Subcatchment PR7.11: Subcat PR7.11 Runoff Area=1.587 ac 17.29% Impervious Runoff Depth=0.90"
Flow Length=443' Tc=17.6 min CN=45 Runoff=0.8 cfs 0.118 af

Subcatchment PR7.12: Subcat PR7.12 Runoff Area=1.240 ac 20.02% Impervious Runoff Depth=0.96"
Flow Length=295' Tc=19.3 min CN=46 Runoff=0.7 cfs 0.100 af

Subcatchment PR7.1A: Subcat PR7.1A Runoff Area=0.216 ac 36.08% Impervious Runoff Depth=1.65"
Flow Length=157' Tc=5.3 min CN=55 Runoff=0.4 cfs 0.030 af

Subcatchment PR7.1B: Subcat PR7.1B Runoff Area=8.910 ac 19.02% Impervious Runoff Depth=1.82"
Flow Length=968' Tc=44.3 min CN=57 Runoff=8.2 cfs 1.349 af

Subcatchment PR7.2: Subcat PR7.2 Runoff Area=2.620 ac 7.80% Impervious Runoff Depth=0.30"
Flow Length=485' Tc=25.2 min CN=35 Runoff=0.1 cfs 0.066 af

Subcatchment PR7.3: Subcat PR7.3 Runoff Area=3.640 ac 12.38% Impervious Runoff Depth=0.63"
Flow Length=738' Tc=35.2 min CN=41 Runoff=0.8 cfs 0.192 af

Subcatchment PR7.4: Subcat PR7.4 Runoff Area=8.963 ac 12.51% Impervious Runoff Depth=1.41"
Flow Length=900' Tc=39.3 min CN=52 Runoff=6.3 cfs 1.054 af

Subcatchment PR7.5: Subcat PR7.5 Runoff Area=23.079 ac 12.93% Impervious Runoff Depth=1.41"
Flow Length=843' Tc=34.6 min CN=52 Runoff=17.4 cfs 2.715 af

Subcatchment PR7.6: Subcat PR7.6 Runoff Area=0.906 ac 16.03% Impervious Runoff Depth=0.63"
Flow Length=610' Tc=17.7 min CN=41 Runoff=0.3 cfs 0.048 af

Subcatchment PR7.7: Subcat PR7.7 Runoff Area=0.646 ac 0.00% Impervious Runoff Depth=0.10"
Flow Length=488' Tc=13.3 min CN=30 Runoff=0.0 cfs 0.005 af

Subcatchment PR7.8: Subcat PR7.8 Runoff Area=1.274 ac 11.05% Impervious Runoff Depth=0.57"
Flow Length=570' Tc=30.0 min CN=40 Runoff=0.2 cfs 0.061 af

Subcatchment PR7.9: Subcat PR7.9 Runoff Area=5.740 ac 14.60% Impervious Runoff Depth=0.76"
Flow Length=610' Tc=18.2 min CN=43 Runoff=2.1 cfs 0.364 af

Pond P7.1: Detention Basin Peak Elev=160.09' Storage=126 cf Inflow=0.4 cfs 0.030 af
Discarded=0.0 cfs 0.003 af Primary=0.4 cfs 0.026 af Outflow=0.4 cfs 0.030 af

Pond P7.6: Low Point Peak Elev=133.40' Storage=2,083 cf Inflow=0.3 cfs 0.048 af
Outflow=0.0 cfs 0.000 af

Pond P7.8: Low Point Peak Elev=169.03' Storage=551 cf Inflow=0.2 cfs 0.061 af
Outflow=0.2 cfs 0.049 af

Link DP7.1: Wetland 30 Inflow=8.3 cfs 1.376 af
Primary=8.3 cfs 1.376 af

Link DP7.10: Low Point Inflow=0.0 cfs 0.003 af
Primary=0.0 cfs 0.003 af

Link DP7.11: Low Point Inflow=0.8 cfs 0.118 af
Primary=0.8 cfs 0.118 af

Link DP7.12: Low Point Inflow=0.7 cfs 0.100 af
Primary=0.7 cfs 0.100 af

Link DP7.2: Wetland 32 Inflow=0.1 cfs 0.066 af
Primary=0.1 cfs 0.066 af

Link DP7.3: Low Point Inflow=0.8 cfs 0.192 af
Primary=0.8 cfs 0.192 af

Link DP7.4: Low Point Inflow=6.3 cfs 1.054 af
Primary=6.3 cfs 1.054 af

Link DP7.5: Wetland 31 Inflow=17.4 cfs 2.715 af
Primary=17.4 cfs 2.715 af

Link DP7.6: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP7.7: Low Point Inflow=0.0 cfs 0.005 af
Primary=0.0 cfs 0.005 af

Link DP7.8: Low Point Inflow=0.2 cfs 0.049 af
Primary=0.2 cfs 0.049 af

Link DP7.9: Low Point Inflow=2.1 cfs 0.364 af
Primary=2.1 cfs 0.364 af

Total Runoff Area = 59.083 ac Runoff Volume = 6.105 af Average Runoff Depth = 1.24"
86.15% Pervious = 50.899 ac 13.85% Impervious = 8.184 ac

Summary for Subcatchment PR7.10: Subcat PR7.10

Runoff = 0.0 cfs @ 15.18 hrs, Volume= 0.003 af, Depth= 0.13"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.105	30	Meadow, non-grazed, HSG A
0.004	98	Paved parking, HSG A
0.153	30	Woods, Good, HSG A
0.262	31	Weighted Average
0.258		98.32% Pervious Area
0.004		1.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6	28	0.1357	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
20.5	404	0.0022	0.33		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
24.1	432	Total			

Summary for Subcatchment PR7.11: Subcat PR7.11

Runoff = 0.8 cfs @ 12.34 hrs, Volume= 0.118 af, Depth= 0.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.624	39	>75% Grass cover, Good, HSG A
0.087	98	Paved parking, HSG A
0.149	98	Paved roads w/curbs & sewers, HSG A
0.038	98	Roofs, HSG A
0.689	30	Woods, Good, HSG A
1.587	45	Weighted Average
1.313		82.71% Pervious Area
0.274		17.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.0270	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
4.2	180	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.0	118	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	95	0.0170	2.65		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
17.6	443	Total			

Summary for Subcatchment PR7.12: Subcat PR7.12

Runoff = 0.7 cfs @ 12.37 hrs, Volume= 0.100 af, Depth= 0.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.321	39	>75% Grass cover, Good, HSG A
0.084	98	Paved parking, HSG A
0.141	98	Paved roads w/curbs & sewers, HSG A
0.023	98	Roofs, HSG A
0.670	30	Woods, Good, HSG A
1.240	46	Weighted Average
0.991		79.98% Pervious Area
0.248		20.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	50	0.0140	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.6	66	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.1	50	0.0120	0.77		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	104	0.0230	0.76		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	25	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
19.3	295	Total			

Summary for Subcatchment PR7.1A: Subcat PR7.1A

Runoff = 0.4 cfs @ 12.09 hrs, Volume= 0.030 af, Depth= 1.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.043	30	Meadow, non-grazed, HSG A
0.078	98	Paved parking, HSG A
0.096	30	Woods, Good, HSG A
0.216	55	Weighted Average
0.138		63.92% Pervious Area
0.078		36.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	29	0.1190	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.5	128	0.0440	1.47		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.3	157	Total			

Summary for Subcatchment PR7.1B: Subcat PR7.1B

Runoff = 8.2 cfs @ 12.65 hrs, Volume= 1.349 af, Depth= 1.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
1.866	39	>75% Grass cover, Good, HSG A
0.506	80	>75% Grass cover, Good, HSG D
0.089	30	Meadow, non-grazed, HSG A
0.051	78	Meadow, non-grazed, HSG D
0.677	98	Paved parking, HSG A
0.274	98	Paved parking, HSG D
0.480	98	Paved roads w/curbs & sewers, HSG A
0.122	98	Paved roads w/curbs & sewers, HSG D
0.141	98	Roofs, HSG A
3.019	30	Woods, Good, HSG A
1.684	77	Woods, Good, HSG D
8.910	57	Weighted Average
7.215		80.98% Pervious Area
1.695		19.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.9	50	0.0100	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.2	130	0.0070	0.42		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.7	263	0.0280	1.17		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	27	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.9	68	0.0330	1.27		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.1	320	0.0340	1.29		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.4	110	0.0230	0.76		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
44.3	968	Total			

Summary for Subcatchment PR7.2: Subcat PR7.2

Runoff = 0.1 cfs @ 12.74 hrs, Volume= 0.066 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.172	30	Meadow, non-grazed, HSG A
0.001	78	Meadow, non-grazed, HSG D
0.057	98	Paved parking, HSG A
0.079	98	Paved roads w/curbs & sewers, HSG A
0.068	98	Roofs, HSG A
2.242	30	Woods, Good, HSG A
2.620	35	Weighted Average
2.416		92.20% Pervious Area
0.204		7.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3	50	0.0450	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.8	106	0.0620	0.62		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.1	46	0.1700	8.37		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.0	283	0.0720	0.67		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
25.2	485	Total			

Summary for Subcatchment PR7.3: Subcat PR7.3

Runoff = 0.8 cfs @ 12.71 hrs, Volume= 0.192 af, Depth= 0.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.850	39	>75% Grass cover, Good, HSG A
0.001	30	Meadow, non-grazed, HSG A
0.033	98	Paved parking, HSG A
0.235	98	Paved roads w/curbs & sewers, HSG A
0.182	98	Roofs, HSG A
2.337	30	Woods, Good, HSG A
3.640	41	Weighted Average
3.189		87.62% Pervious Area
0.450		12.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.8	36	0.0833	0.72		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	48	0.0410	1.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.6	286	0.0490	0.55		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.4	68	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.0	135	0.0259	1.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.2	115	0.0070	0.21		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
35.2	738	Total			

Summary for Subcatchment PR7.4: Subcat PR7.4

Runoff = 6.3 cfs @ 12.62 hrs, Volume= 1.054 af, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
1.571	39	>75% Grass cover, Good, HSG A
0.034	80	>75% Grass cover, Good, HSG D
0.000	30	Meadow, non-grazed, HSG A
0.390	98	Paved parking, HSG A
0.104	98	Paved parking, HSG D
0.222	98	Paved roads w/curbs & sewers, HSG A
0.115	98	Paved roads w/curbs & sewers, HSG D
0.288	98	Roofs, HSG A
0.002	98	Roofs, HSG D
4.035	30	Woods, Good, HSG A
2.201	77	Woods, Good, HSG D
8.963	52	Weighted Average
7.842		87.49% Pervious Area
1.121		12.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	50	0.1000	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.8	156	0.0750	0.68		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.6	132	0.0370	1.35		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
22.8	562	0.0269	0.41		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
39.3	900	Total			

Summary for Subcatchment PR7.5: Subcat PR7.5

Runoff = 17.4 cfs @ 12.57 hrs, Volume= 2.715 af, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
3.909	39	>75% Grass cover, Good, HSG A
0.638	80	>75% Grass cover, Good, HSG D
0.056	30	Meadow, non-grazed, HSG A
0.098	78	Meadow, non-grazed, HSG D
0.666	98	Paved parking, HSG A
0.079	98	Paved parking, HSG D
1.090	98	Paved roads w/curbs & sewers, HSG A
0.990	98	Roofs, HSG A
0.161	98	Roofs, HSG D
10.494	30	Woods, Good, HSG A
4.899	77	Woods, Good, HSG D
23.079	52	Weighted Average
20.095		87.07% Pervious Area
2.984		12.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.4	50	0.0220	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.9	59	0.0430	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.9	36	0.0020	0.31		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	33	0.0280	3.40		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.5	54	0.0680	1.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	118	0.0530	4.67		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.7	95	0.0070	0.59		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.4	225	0.0190	0.69		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	115	0.0290	3.46		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.6	58	0.0900	1.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
34.6	843	Total			

Summary for Subcatchment PR7.6: Subcat PR7.6

Runoff = 0.3 cfs @ 12.45 hrs, Volume= 0.048 af, Depth= 0.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.112	30	Meadow, non-grazed, HSG A
0.145	98	Paved parking, HSG A
0.649	30	Woods, Good, HSG A
0.906	41	Weighted Average
0.761		83.97% Pervious Area
0.145		16.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	41	0.1340	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
12.9	569	0.0110	0.73		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.7	610	Total			

Summary for Subcatchment PR7.7: Subcat PR7.7

Runoff = 0.0 cfs @ 15.32 hrs, Volume= 0.005 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.176	30	Meadow, non-grazed, HSG A
0.470	30	Woods, Good, HSG A
0.646	30	Weighted Average
0.646		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	30	0.1100	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
9.2	458	0.0140	0.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
13.3	488	Total			

Summary for Subcatchment PR7.8: Subcat PR7.8

Runoff = 0.2 cfs @ 12.64 hrs, Volume= 0.061 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.287	39	>75% Grass cover, Good, HSG A
0.063	30	Meadow, non-grazed, HSG A
0.120	98	Paved parking, HSG A
0.021	98	Roofs, HSG A
0.784	30	Woods, Good, HSG A
1.274	40	Weighted Average
1.134		88.95% Pervious Area
0.141		11.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.5	50	0.0280	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.8	223	0.0197	0.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	14	0.0214	1.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.5	283	0.0081	0.63		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
30.0	570	Total			

Summary for Subcatchment PR7.9: Subcat PR7.9

Runoff = 2.1 cfs @ 12.40 hrs, Volume= 0.364 af, Depth= 0.76"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
1.941	39	>75% Grass cover, Good, HSG A
0.258	98	Paved parking, HSG A
0.216	98	Paved roads w/curbs & sewers, HSG A
0.364	98	Roofs, HSG A
2.961	30	Woods, Good, HSG A
5.740	43	Weighted Average
4.902		85.40% Pervious Area
0.838		14.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	50	0.0400	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
3.3	87	0.0310	0.44		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.7	43	0.0230	1.06		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	167	0.0320	3.63		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.3	80	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.9	183	0.0450	1.06		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.2	610	Total			

Summary for Pond P7.1: Detention Basin

Inflow Area = 0.216 ac, 36.08% Impervious, Inflow Depth = 1.65" for 25-yr event
Inflow = 0.4 cfs @ 12.09 hrs, Volume= 0.030 af
Outflow = 0.4 cfs @ 12.10 hrs, Volume= 0.030 af, Atten= 1%, Lag= 0.7 min
Discarded = 0.0 cfs @ 12.10 hrs, Volume= 0.003 af
Primary = 0.4 cfs @ 12.10 hrs, Volume= 0.026 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 160.09' @ 12.10 hrs Surf.Area= 269 sf Storage= 126 cf

Plug-Flow detention time= 138.8 min calculated for 0.030 af (100% of inflow)
Center-of-Mass det. time= 139.1 min (1,012.7 - 873.6)

Volume	Invert	Avail.Storage	Storage Description
#1	159.50'	254 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
159.50	162	0	0
160.00	252	104	104
160.50	350	151	254

Device	Routing	Invert	Outlet Devices
#1	Primary	160.00'	**5.5' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	159.50'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.10 hrs HW=160.09' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.4 cfs @ 12.10 hrs HW=160.09' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.4 cfs @ 0.79 fps)

Summary for Pond P7.6: Low Point

Inflow Area = 0.906 ac, 16.03% Impervious, Inflow Depth = 0.63" for 25-yr event
Inflow = 0.3 cfs @ 12.45 hrs, Volume= 0.048 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 133.40' @ 25.03 hrs Surf.Area= 2,349 sf Storage= 2,083 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	132.00'	6,580 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
132.00	250	0	0
133.00	2,120	1,185	1,185
134.00	2,690	2,405	3,590
135.00	3,290	2,990	6,580

Device	Routing	Invert	Outlet Devices
#1	Primary	134.50'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=132.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P7.8: Low Point

Inflow Area = 1.274 ac, 11.05% Impervious, Inflow Depth = 0.57" for 25-yr event
Inflow = 0.2 cfs @ 12.64 hrs, Volume= 0.061 af
Outflow = 0.2 cfs @ 13.13 hrs, Volume= 0.049 af, Atten= 38%, Lag= 29.4 min
Primary = 0.2 cfs @ 13.13 hrs, Volume= 0.049 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 169.03' @ 13.13 hrs Surf.Area= 766 sf Storage= 551 cf

Plug-Flow detention time= 137.9 min calculated for 0.049 af (80% of inflow)
Center-of-Mass det. time= 54.6 min (1,020.4 - 965.8)

Volume	Invert	Avail.Storage	Storage Description
#1	168.00'	1,500 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
168.00	300	0	0
169.00	750	525	525
170.00	1,200	975	1,500

Device	Routing	Invert	Outlet Devices
#1	Primary	169.00'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.2 cfs @ 13.13 hrs HW=169.03' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.2 cfs @ 0.44 fps)

Summary for Link DP7.1: Wetland 30

Inflow Area = 9.126 ac, 19.43% Impervious, Inflow Depth = 1.81" for 25-yr event
Inflow = 8.3 cfs @ 12.65 hrs, Volume= 1.376 af
Primary = 8.3 cfs @ 12.65 hrs, Volume= 1.376 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.10: Low Point

Inflow Area = 0.262 ac, 1.68% Impervious, Inflow Depth = 0.13" for 25-yr event
Inflow = 0.0 cfs @ 15.18 hrs, Volume= 0.003 af
Primary = 0.0 cfs @ 15.18 hrs, Volume= 0.003 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.11: Low Point

Inflow Area = 1.587 ac, 17.29% Impervious, Inflow Depth = 0.90" for 25-yr event
Inflow = 0.8 cfs @ 12.34 hrs, Volume= 0.118 af
Primary = 0.8 cfs @ 12.34 hrs, Volume= 0.118 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.12: Low Point

Inflow Area = 1.240 ac, 20.02% Impervious, Inflow Depth = 0.96" for 25-yr event
Inflow = 0.7 cfs @ 12.37 hrs, Volume= 0.100 af
Primary = 0.7 cfs @ 12.37 hrs, Volume= 0.100 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.2: Wetland 32

Inflow Area = 2.620 ac, 7.80% Impervious, Inflow Depth = 0.30" for 25-yr event
Inflow = 0.1 cfs @ 12.74 hrs, Volume= 0.066 af
Primary = 0.1 cfs @ 12.74 hrs, Volume= 0.066 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.3: Low Point

Inflow Area = 3.640 ac, 12.38% Impervious, Inflow Depth = 0.63" for 25-yr event
Inflow = 0.8 cfs @ 12.71 hrs, Volume= 0.192 af
Primary = 0.8 cfs @ 12.71 hrs, Volume= 0.192 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.4: Low Point

Inflow Area = 8.963 ac, 12.51% Impervious, Inflow Depth = 1.41" for 25-yr event
Inflow = 6.3 cfs @ 12.62 hrs, Volume= 1.054 af
Primary = 6.3 cfs @ 12.62 hrs, Volume= 1.054 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.5: Wetland 31

Inflow Area = 23.079 ac, 12.93% Impervious, Inflow Depth = 1.41" for 25-yr event
Inflow = 17.4 cfs @ 12.57 hrs, Volume= 2.715 af
Primary = 17.4 cfs @ 12.57 hrs, Volume= 2.715 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.6: Low Point

Inflow Area = 0.906 ac, 16.03% Impervious, Inflow Depth = 0.00" for 25-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.7: Low Point

Inflow Area = 0.646 ac, 0.00% Impervious, Inflow Depth = 0.10" for 25-yr event
Inflow = 0.0 cfs @ 15.32 hrs, Volume= 0.005 af
Primary = 0.0 cfs @ 15.32 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.8: Low Point

Inflow Area = 1.274 ac, 11.05% Impervious, Inflow Depth = 0.46" for 25-yr event
Inflow = 0.2 cfs @ 13.13 hrs, Volume= 0.049 af
Primary = 0.2 cfs @ 13.13 hrs, Volume= 0.049 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.9: Low Point

Inflow Area = 5.740 ac, 14.60% Impervious, Inflow Depth = 0.76" for 25-yr event
Inflow = 2.1 cfs @ 12.40 hrs, Volume= 0.364 af
Primary = 2.1 cfs @ 12.40 hrs, Volume= 0.364 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment PR7.10: Subcat PR7.10 Runoff Area=0.262 ac 1.68% Impervious Runoff Depth=0.65"
Flow Length=432' Tc=24.1 min CN=31 Runoff=0.1 cfs 0.014 af

Subcatchment PR7.11: Subcat PR7.11 Runoff Area=1.587 ac 17.29% Impervious Runoff Depth=2.06"
Flow Length=443' Tc=17.6 min CN=45 Runoff=2.3 cfs 0.273 af

Subcatchment PR7.12: Subcat PR7.12 Runoff Area=1.240 ac 20.02% Impervious Runoff Depth=2.17"
Flow Length=295' Tc=19.3 min CN=46 Runoff=1.9 cfs 0.224 af

Subcatchment PR7.1A: Subcat PR7.1A Runoff Area=0.216 ac 36.08% Impervious Runoff Depth=3.20"
Flow Length=157' Tc=5.3 min CN=55 Runoff=0.8 cfs 0.058 af

Subcatchment PR7.1B: Subcat PR7.1B Runoff Area=8.910 ac 19.02% Impervious Runoff Depth=3.44"
Flow Length=968' Tc=44.3 min CN=57 Runoff=16.4 cfs 2.551 af

Subcatchment PR7.2: Subcat PR7.2 Runoff Area=2.620 ac 7.80% Impervious Runoff Depth=1.02"
Flow Length=485' Tc=25.2 min CN=35 Runoff=1.2 cfs 0.222 af

Subcatchment PR7.3: Subcat PR7.3 Runoff Area=3.640 ac 12.38% Impervious Runoff Depth=1.63"
Flow Length=738' Tc=35.2 min CN=41 Runoff=2.9 cfs 0.494 af

Subcatchment PR7.4: Subcat PR7.4 Runoff Area=8.963 ac 12.51% Impervious Runoff Depth=2.85"
Flow Length=900' Tc=39.3 min CN=52 Runoff=14.1 cfs 2.132 af

Subcatchment PR7.5: Subcat PR7.5 Runoff Area=23.079 ac 12.93% Impervious Runoff Depth=2.85"
Flow Length=843' Tc=34.6 min CN=52 Runoff=38.8 cfs 5.488 af

Subcatchment PR7.6: Subcat PR7.6 Runoff Area=0.906 ac 16.03% Impervious Runoff Depth=1.63"
Flow Length=610' Tc=17.7 min CN=41 Runoff=1.0 cfs 0.123 af

Subcatchment PR7.7: Subcat PR7.7 Runoff Area=0.646 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=488' Tc=13.3 min CN=30 Runoff=0.1 cfs 0.031 af

Subcatchment PR7.8: Subcat PR7.8 Runoff Area=1.274 ac 11.05% Impervious Runoff Depth=1.52"
Flow Length=570' Tc=30.0 min CN=40 Runoff=1.0 cfs 0.162 af

Subcatchment PR7.9: Subcat PR7.9 Runoff Area=5.740 ac 14.60% Impervious Runoff Depth=1.84"
Flow Length=610' Tc=18.2 min CN=43 Runoff=7.2 cfs 0.881 af

Pond P7.1: Detention Basin Peak Elev=160.14' Storage=142 cf Inflow=0.8 cfs 0.058 af
Discarded=0.0 cfs 0.004 af Primary=0.8 cfs 0.054 af Outflow=0.8 cfs 0.058 af

Pond P7.6: Low Point Peak Elev=134.51' Storage=5,045 cf Inflow=1.0 cfs 0.123 af
Outflow=0.0 cfs 0.008 af

Pond P7.8: Low Point Peak Elev=169.12' Storage=620 cf Inflow=1.0 cfs 0.162 af
Outflow=1.0 cfs 0.150 af

Link DP7.1: Wetland 30 Inflow=16.5 cfs 2.605 af
Primary=16.5 cfs 2.605 af

Link DP7.10: Low Point Inflow=0.1 cfs 0.014 af
Primary=0.1 cfs 0.014 af

Link DP7.11: Low Point Inflow=2.3 cfs 0.273 af
Primary=2.3 cfs 0.273 af

Link DP7.12: Low Point Inflow=1.9 cfs 0.224 af
Primary=1.9 cfs 0.224 af

Link DP7.2: Wetland 32 Inflow=1.2 cfs 0.222 af
Primary=1.2 cfs 0.222 af

Link DP7.3: Low Point Inflow=2.9 cfs 0.494 af
Primary=2.9 cfs 0.494 af

Link DP7.4: Low Point Inflow=14.1 cfs 2.132 af
Primary=14.1 cfs 2.132 af

Link DP7.5: Wetland 31 Inflow=38.8 cfs 5.488 af
Primary=38.8 cfs 5.488 af

Link DP7.6: Low Point Inflow=0.0 cfs 0.008 af
Primary=0.0 cfs 0.008 af

Link DP7.7: Low Point Inflow=0.1 cfs 0.031 af
Primary=0.1 cfs 0.031 af

Link DP7.8: Low Point Inflow=1.0 cfs 0.150 af
Primary=1.0 cfs 0.150 af

Link DP7.9: Low Point Inflow=7.2 cfs 0.881 af
Primary=7.2 cfs 0.881 af

Total Runoff Area = 59.083 ac Runoff Volume = 12.652 af Average Runoff Depth = 2.57"
86.15% Pervious = 50.899 ac 13.85% Impervious = 8.184 ac

Summary for Subcatchment PR7.10: Subcat PR7.10

Runoff = 0.1 cfs @ 12.61 hrs, Volume= 0.014 af, Depth= 0.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.105	30	Meadow, non-grazed, HSG A
0.004	98	Paved parking, HSG A
0.153	30	Woods, Good, HSG A
0.262	31	Weighted Average
0.258		98.32% Pervious Area
0.004		1.68% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.6	28	0.1357	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
20.5	404	0.0022	0.33		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
24.1	432	Total			

Summary for Subcatchment PR7.11: Subcat PR7.11

Runoff = 2.3 cfs @ 12.28 hrs, Volume= 0.273 af, Depth= 2.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.624	39	>75% Grass cover, Good, HSG A
0.087	98	Paved parking, HSG A
0.149	98	Paved roads w/curbs & sewers, HSG A
0.038	98	Roofs, HSG A
0.689	30	Woods, Good, HSG A
1.587	45	Weighted Average
1.313		82.71% Pervious Area
0.274		17.29% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.0270	0.08		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
4.2	180	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
2.0	118	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	95	0.0170	2.65		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
17.6	443	Total			

Summary for Subcatchment PR7.12: Subcat PR7.12

Runoff = 1.9 cfs @ 12.30 hrs, Volume= 0.224 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.321	39	>75% Grass cover, Good, HSG A
0.084	98	Paved parking, HSG A
0.141	98	Paved roads w/curbs & sewers, HSG A
0.023	98	Roofs, HSG A
0.670	30	Woods, Good, HSG A
1.240	46	Weighted Average
0.991		79.98% Pervious Area
0.248		20.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
14.0	50	0.0140	0.06		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.6	66	0.0200	0.71		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
1.1	50	0.0120	0.77		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	104	0.0230	0.76		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.3	25	0.0050	1.44		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
19.3	295	Total			

Summary for Subcatchment PR7.1A: Subcat PR7.1A

Runoff = 0.8 cfs @ 12.08 hrs, Volume= 0.058 af, Depth= 3.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.043	30	Meadow, non-grazed, HSG A
0.078	98	Paved parking, HSG A
0.096	30	Woods, Good, HSG A
0.216	55	Weighted Average
0.138		63.92% Pervious Area
0.078		36.08% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	29	0.1190	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.5	128	0.0440	1.47		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.3	157	Total			

Summary for Subcatchment PR7.1B: Subcat PR7.1B

Runoff = 16.4 cfs @ 12.65 hrs, Volume= 2.551 af, Depth= 3.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
1.866	39	>75% Grass cover, Good, HSG A
0.506	80	>75% Grass cover, Good, HSG D
0.089	30	Meadow, non-grazed, HSG A
0.051	78	Meadow, non-grazed, HSG D
0.677	98	Paved parking, HSG A
0.274	98	Paved parking, HSG D
0.480	98	Paved roads w/curbs & sewers, HSG A
0.122	98	Paved roads w/curbs & sewers, HSG D
0.141	98	Roofs, HSG A
3.019	30	Woods, Good, HSG A
1.684	77	Woods, Good, HSG D
8.910	57	Weighted Average
7.215		80.98% Pervious Area
1.695		19.02% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
27.9	50	0.0100	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.2	130	0.0070	0.42		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.7	263	0.0280	1.17		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	27	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.9	68	0.0330	1.27		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.1	320	0.0340	1.29		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.4	110	0.0230	0.76		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
44.3	968	Total			

Summary for Subcatchment PR7.2: Subcat PR7.2

Runoff = 1.2 cfs @ 12.52 hrs, Volume= 0.222 af, Depth= 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.172	30	Meadow, non-grazed, HSG A
0.001	78	Meadow, non-grazed, HSG D
0.057	98	Paved parking, HSG A
0.079	98	Paved roads w/curbs & sewers, HSG A
0.068	98	Roofs, HSG A
2.242	30	Woods, Good, HSG A
2.620	35	Weighted Average
2.416		92.20% Pervious Area
0.204		7.80% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
15.3	50	0.0450	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.8	106	0.0620	0.62		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.1	46	0.1700	8.37		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
7.0	283	0.0720	0.67		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
25.2	485	Total			

Summary for Subcatchment PR7.3: Subcat PR7.3

Runoff = 2.9 cfs @ 12.59 hrs, Volume= 0.494 af, Depth= 1.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.850	39	>75% Grass cover, Good, HSG A
0.001	30	Meadow, non-grazed, HSG A
0.033	98	Paved parking, HSG A
0.235	98	Paved roads w/curbs & sewers, HSG A
0.182	98	Roofs, HSG A
2.337	30	Woods, Good, HSG A
3.640	41	Weighted Average
3.189		87.62% Pervious Area
0.450		12.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
13.6	50	0.0600	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.8	36	0.0833	0.72		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	48	0.0410	1.42		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.6	286	0.0490	0.55		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.4	68	0.0250	3.21		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.0	135	0.0259	1.13		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.2	115	0.0070	0.21		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
35.2	738	Total			

Summary for Subcatchment PR7.4: Subcat PR7.4

Runoff = 14.1 cfs @ 12.58 hrs, Volume= 2.132 af, Depth= 2.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
1.571	39	>75% Grass cover, Good, HSG A
0.034	80	>75% Grass cover, Good, HSG D
0.000	30	Meadow, non-grazed, HSG A
0.390	98	Paved parking, HSG A
0.104	98	Paved parking, HSG D
0.222	98	Paved roads w/curbs & sewers, HSG A
0.115	98	Paved roads w/curbs & sewers, HSG D
0.288	98	Roofs, HSG A
0.002	98	Roofs, HSG D
4.035	30	Woods, Good, HSG A
2.201	77	Woods, Good, HSG D
8.963	52	Weighted Average
7.842		87.49% Pervious Area
1.121		12.51% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.1	50	0.1000	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.8	156	0.0750	0.68		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.6	132	0.0370	1.35		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
22.8	562	0.0269	0.41		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
39.3	900	Total			

Summary for Subcatchment PR7.5: Subcat PR7.5

Runoff = 38.8 cfs @ 12.53 hrs, Volume= 5.488 af, Depth= 2.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
3.909	39	>75% Grass cover, Good, HSG A
0.638	80	>75% Grass cover, Good, HSG D
0.056	30	Meadow, non-grazed, HSG A
0.098	78	Meadow, non-grazed, HSG D
0.666	98	Paved parking, HSG A
0.079	98	Paved parking, HSG D
1.090	98	Paved roads w/curbs & sewers, HSG A
0.990	98	Roofs, HSG A
0.161	98	Roofs, HSG D
10.494	30	Woods, Good, HSG A
4.899	77	Woods, Good, HSG D
23.079	52	Weighted Average
20.095		87.07% Pervious Area
2.984		12.93% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
20.4	50	0.0220	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.9	59	0.0430	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.9	36	0.0020	0.31		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	33	0.0280	3.40		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.5	54	0.0680	1.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.4	118	0.0530	4.67		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.7	95	0.0070	0.59		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
5.4	225	0.0190	0.69		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.6	115	0.0290	3.46		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.6	58	0.0900	1.50		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
34.6	843	Total			

Summary for Subcatchment PR7.6: Subcat PR7.6

Runoff = 1.0 cfs @ 12.30 hrs, Volume= 0.123 af, Depth= 1.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.112	30	Meadow, non-grazed, HSG A
0.145	98	Paved parking, HSG A
0.649	30	Woods, Good, HSG A
0.906	41	Weighted Average
0.761		83.97% Pervious Area
0.145		16.03% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.8	41	0.1340	0.14		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
12.9	569	0.0110	0.73		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.7	610	Total			

Summary for Subcatchment PR7.7: Subcat PR7.7

Runoff = 0.1 cfs @ 12.48 hrs, Volume= 0.031 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.176	30	Meadow, non-grazed, HSG A
0.470	30	Woods, Good, HSG A
0.646	30	Weighted Average
0.646		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.1	30	0.1100	0.12		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
9.2	458	0.0140	0.83		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
13.3	488	Total			

Summary for Subcatchment PR7.8: Subcat PR7.8

Runoff = 1.0 cfs @ 12.52 hrs, Volume= 0.162 af, Depth= 1.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.287	39	>75% Grass cover, Good, HSG A
0.063	30	Meadow, non-grazed, HSG A
0.120	98	Paved parking, HSG A
0.021	98	Roofs, HSG A
0.784	30	Woods, Good, HSG A
1.274	40	Weighted Average
1.134		88.95% Pervious Area
0.141		11.05% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
18.5	50	0.0280	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
3.8	223	0.0197	0.98		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.2	14	0.0214	1.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
7.5	283	0.0081	0.63		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
30.0	570	Total			

Summary for Subcatchment PR7.9: Subcat PR7.9

Runoff = 7.2 cfs @ 12.30 hrs, Volume= 0.881 af, Depth= 1.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
1.941	39	>75% Grass cover, Good, HSG A
0.258	98	Paved parking, HSG A
0.216	98	Paved roads w/curbs & sewers, HSG A
0.364	98	Roofs, HSG A
2.961	30	Woods, Good, HSG A
5.740	43	Weighted Average
4.902		85.40% Pervious Area
0.838		14.60% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.2	50	0.0400	0.09		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
3.3	87	0.0310	0.44		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.7	43	0.0230	1.06		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.8	167	0.0320	3.63		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.3	80	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.9	183	0.0450	1.06		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
18.2	610	Total			

Summary for Pond P7.1: Detention Basin

Inflow Area = 0.216 ac, 36.08% Impervious, Inflow Depth = 3.20" for 100-yr event
Inflow = 0.8 cfs @ 12.08 hrs, Volume= 0.058 af
Outflow = 0.8 cfs @ 12.09 hrs, Volume= 0.058 af, Atten= 1%, Lag= 0.6 min
Discarded = 0.0 cfs @ 12.09 hrs, Volume= 0.004 af
Primary = 0.8 cfs @ 12.09 hrs, Volume= 0.054 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 160.14' @ 12.09 hrs Surf.Area= 280 sf Storage= 142 cf

Plug-Flow detention time= 73.8 min calculated for 0.058 af (100% of inflow)
Center-of-Mass det. time= 73.8 min (926.6 - 852.8)

Volume	Invert	Avail.Storage	Storage Description
#1	159.50'	254 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
159.50	162	0	0
160.00	252	104	104
160.50	350	151	254

Device	Routing	Invert	Outlet Devices
#1	Primary	160.00'	**5.5' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32
#2	Discarded	159.50'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.09 hrs HW=160.14' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.8 cfs @ 12.09 hrs HW=160.14' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.8 cfs @ 1.02 fps)

Summary for Pond P7.6: Low Point

Inflow Area = 0.906 ac, 16.03% Impervious, Inflow Depth = 1.63" for 100-yr event
Inflow = 1.0 cfs @ 12.30 hrs, Volume= 0.123 af
Outflow = 0.0 cfs @ 22.69 hrs, Volume= 0.008 af, Atten= 96%, Lag= 623.5 min
Primary = 0.0 cfs @ 22.69 hrs, Volume= 0.008 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 134.51' @ 22.69 hrs Surf.Area= 2,997 sf Storage= 5,045 cf

Plug-Flow detention time= 664.7 min calculated for 0.008 af (6% of inflow)
Center-of-Mass det. time= 486.5 min (1,392.1 - 905.7)

Volume	Invert	Avail.Storage	Storage Description
#1	132.00'	6,580 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
132.00	250	0	0
133.00	2,120	1,185	1,185
134.00	2,690	2,405	3,590
135.00	3,290	2,990	6,580

Device	Routing	Invert	Outlet Devices
#1	Primary	134.50'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=0.0 cfs @ 22.69 hrs HW=134.51' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.0 cfs @ 0.25 fps)

Summary for Pond P7.8: Low Point

Inflow Area = 1.274 ac, 11.05% Impervious, Inflow Depth = 1.52" for 100-yr event
Inflow = 1.0 cfs @ 12.52 hrs, Volume= 0.162 af
Outflow = 1.0 cfs @ 12.54 hrs, Volume= 0.150 af, Atten= 0%, Lag= 1.3 min
Primary = 1.0 cfs @ 12.54 hrs, Volume= 0.150 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 169.12' @ 12.54 hrs Surf.Area= 805 sf Storage= 620 cf

Plug-Flow detention time= 54.4 min calculated for 0.150 af (93% of inflow)
Center-of-Mass det. time= 17.5 min (938.8 - 921.3)

Volume	Invert	Avail.Storage	Storage Description
#1	168.00'	1,500 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
168.00	300	0	0
169.00	750	525	525
170.00	1,200	975	1,500

Device	Routing	Invert	Outlet Devices
#1	Primary	169.00'	**10.0' long x 5.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 5.00 5.50 Coef. (English) 2.34 2.50 2.70 2.68 2.68 2.66 2.65 2.65 2.65 2.65 2.67 2.66 2.68 2.70 2.74 2.79 2.88

Primary OutFlow Max=1.0 cfs @ 12.54 hrs HW=169.12' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 1.0 cfs @ 0.82 fps)

Summary for Link DP7.1: Wetland 30

Inflow Area = 9.126 ac, 19.43% Impervious, Inflow Depth = 3.43" for 100-yr event
Inflow = 16.5 cfs @ 12.65 hrs, Volume= 2.605 af
Primary = 16.5 cfs @ 12.65 hrs, Volume= 2.605 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.10: Low Point

Inflow Area = 0.262 ac, 1.68% Impervious, Inflow Depth = 0.65" for 100-yr event
Inflow = 0.1 cfs @ 12.61 hrs, Volume= 0.014 af
Primary = 0.1 cfs @ 12.61 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.11: Low Point

Inflow Area = 1.587 ac, 17.29% Impervious, Inflow Depth = 2.06" for 100-yr event
Inflow = 2.3 cfs @ 12.28 hrs, Volume= 0.273 af
Primary = 2.3 cfs @ 12.28 hrs, Volume= 0.273 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.12: Low Point

Inflow Area = 1.240 ac, 20.02% Impervious, Inflow Depth = 2.17" for 100-yr event
Inflow = 1.9 cfs @ 12.30 hrs, Volume= 0.224 af
Primary = 1.9 cfs @ 12.30 hrs, Volume= 0.224 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.2: Wetland 32

Inflow Area = 2.620 ac, 7.80% Impervious, Inflow Depth = 1.02" for 100-yr event
Inflow = 1.2 cfs @ 12.52 hrs, Volume= 0.222 af
Primary = 1.2 cfs @ 12.52 hrs, Volume= 0.222 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.3: Low Point

Inflow Area = 3.640 ac, 12.38% Impervious, Inflow Depth = 1.63" for 100-yr event
Inflow = 2.9 cfs @ 12.59 hrs, Volume= 0.494 af
Primary = 2.9 cfs @ 12.59 hrs, Volume= 0.494 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.4: Low Point

Inflow Area = 8.963 ac, 12.51% Impervious, Inflow Depth = 2.85" for 100-yr event
Inflow = 14.1 cfs @ 12.58 hrs, Volume= 2.132 af
Primary = 14.1 cfs @ 12.58 hrs, Volume= 2.132 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.5: Wetland 31

Inflow Area = 23.079 ac, 12.93% Impervious, Inflow Depth = 2.85" for 100-yr event
Inflow = 38.8 cfs @ 12.53 hrs, Volume= 5.488 af
Primary = 38.8 cfs @ 12.53 hrs, Volume= 5.488 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.6: Low Point

Inflow Area = 0.906 ac, 16.03% Impervious, Inflow Depth = 0.10" for 100-yr event
Inflow = 0.0 cfs @ 22.69 hrs, Volume= 0.008 af
Primary = 0.0 cfs @ 22.69 hrs, Volume= 0.008 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.7: Low Point

Inflow Area = 0.646 ac, 0.00% Impervious, Inflow Depth = 0.57" for 100-yr event
Inflow = 0.1 cfs @ 12.48 hrs, Volume= 0.031 af
Primary = 0.1 cfs @ 12.48 hrs, Volume= 0.031 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.8: Low Point

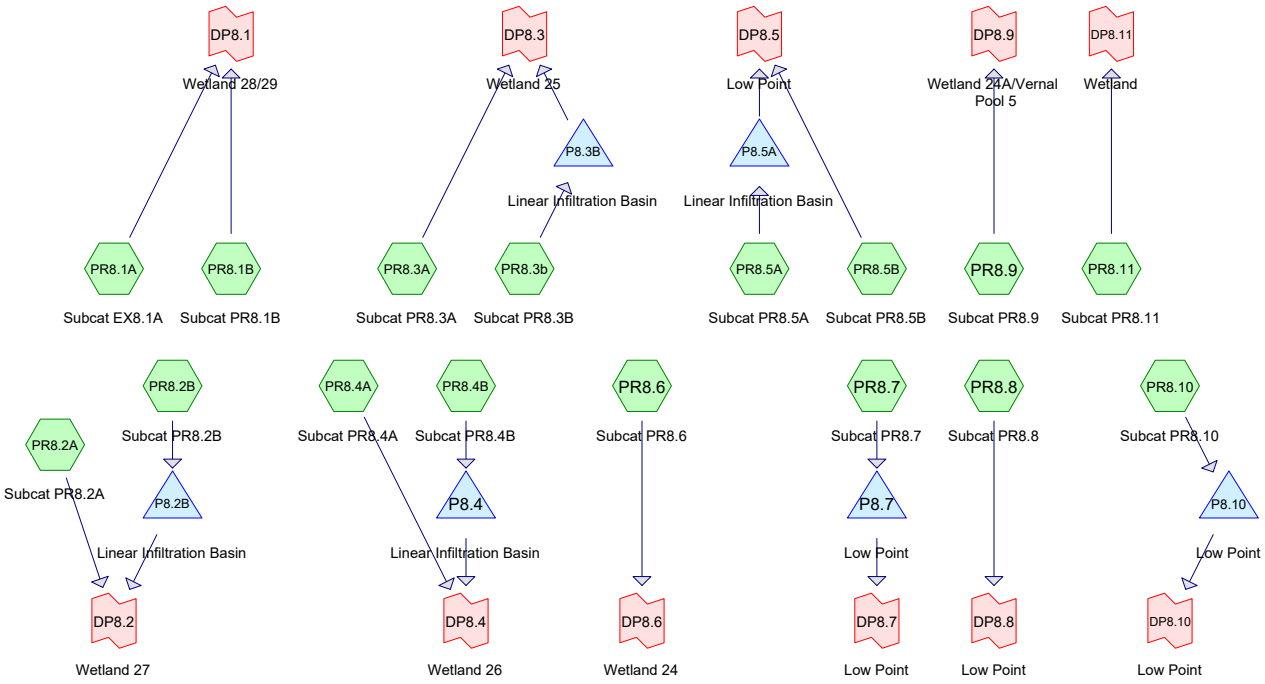
Inflow Area = 1.274 ac, 11.05% Impervious, Inflow Depth = 1.41" for 100-yr event
Inflow = 1.0 cfs @ 12.54 hrs, Volume= 0.150 af
Primary = 1.0 cfs @ 12.54 hrs, Volume= 0.150 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP7.9: Low Point

Inflow Area = 5.740 ac, 14.60% Impervious, Inflow Depth = 1.84" for 100-yr event
Inflow = 7.2 cfs @ 12.30 hrs, Volume= 0.881 af
Primary = 7.2 cfs @ 12.30 hrs, Volume= 0.881 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs



Subcat Reach Pond Link

Routing Diagram for 14009.00-PR-Segment 8_ResponsetoComments
Prepared by VHB, Printed 7/10/2020
HydroCAD® 10.00-25 s/n 01038 © 2019 HydroCAD Software Solutions LLC

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentPR8.10: Subcat PR8.10 Runoff Area=3.569 ac 68.47% Impervious Runoff Depth=0.36"
Flow Length=497' Tc=14.1 min CN=91 Runoff=1.1 cfs 0.107 af

SubcatchmentPR8.11: Subcat PR8.11 Runoff Area=0.928 ac 38.94% Impervious Runoff Depth=0.17"
Flow Length=145' Tc=8.9 min CN=85 Runoff=0.1 cfs 0.013 af

SubcatchmentPR8.1A: Subcat EX8.1A Runoff Area=19.801 ac 16.12% Impervious Runoff Depth=0.00"
Flow Length=356' Tc=17.5 min CN=56 Runoff=0.0 cfs 0.000 af

SubcatchmentPR8.1B: Subcat PR8.1B Runoff Area=0.280 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=363' Tc=33.1 min CN=30 Runoff=0.0 cfs 0.000 af

SubcatchmentPR8.2A: Subcat PR8.2A Runoff Area=14.943 ac 3.94% Impervious Runoff Depth=0.00"
Flow Length=911' Tc=49.4 min CN=44 Runoff=0.0 cfs 0.000 af

SubcatchmentPR8.2B: Subcat PR8.2B Runoff Area=1.374 ac 7.22% Impervious Runoff Depth=0.00"
Flow Length=534' Tc=42.5 min CN=35 Runoff=0.0 cfs 0.000 af

SubcatchmentPR8.3A: Subcat PR8.3A Runoff Area=13.448 ac 7.45% Impervious Runoff Depth=0.00"
Flow Length=714' Tc=36.5 min CN=57 Runoff=0.0 cfs 0.000 af

SubcatchmentPR8.3b: Subcat PR8.3B Runoff Area=97,971 sf 8.83% Impervious Runoff Depth=0.00"
Flow Length=578' Tc=47.7 min CN=36 Runoff=0.0 cfs 0.000 af

SubcatchmentPR8.4A: Subcat PR8.4A Runoff Area=0.371 ac 32.11% Impervious Runoff Depth=0.00"
Flow Length=203' Tc=14.0 min CN=52 Runoff=0.0 cfs 0.000 af

SubcatchmentPR8.4B: Subcat PR8.4B Runoff Area=0.731 ac 21.83% Impervious Runoff Depth=0.00"
Flow Length=724' Tc=18.8 min CN=46 Runoff=0.0 cfs 0.000 af

SubcatchmentPR8.5A: Subcat PR8.5A Runoff Area=0.715 ac 28.76% Impervious Runoff Depth=0.00"
Flow Length=891' Tc=19.4 min CN=50 Runoff=0.0 cfs 0.000 af

SubcatchmentPR8.5B: Subcat PR8.5B Runoff Area=3.469 ac 51.20% Impervious Runoff Depth=0.05"
Flow Length=188' Tc=15.3 min CN=77 Runoff=0.0 cfs 0.014 af

SubcatchmentPR8.6: Subcat PR8.6 Runoff Area=24.708 ac 0.59% Impervious Runoff Depth=0.00"
Flow Length=1,434' Tc=62.4 min CN=65 Runoff=0.0 cfs 0.000 af

SubcatchmentPR8.7: Subcat PR8.7 Runoff Area=0.768 ac 49.40% Impervious Runoff Depth=0.03"
Flow Length=87' Tc=17.8 min CN=75 Runoff=0.0 cfs 0.002 af

SubcatchmentPR8.8: Subcat PR8.8 Runoff Area=0.937 ac 65.74% Impervious Runoff Depth=0.07"
Flow Length=418' Tc=34.8 min CN=79 Runoff=0.0 cfs 0.005 af

SubcatchmentPR8.9: Subcat PR8.9 Runoff Area=0.939 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=147' Tc=30.3 min CN=40 Runoff=0.0 cfs 0.000 af

Pond P8.10: Low Point Peak Elev=134.17' Storage=4,654 cf Inflow=1.1 cfs 0.107 af
Outflow=0.0 cfs 0.000 af

Pond P8.2B: Linear Infiltration Basin Peak Elev=162.00' Storage=0 cf Inflow=0.0 cfs 0.000 af
Discarded=0.0 cfs 0.000 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Pond P8.3B: Linear Infiltration Basin Peak Elev=158.50' Storage=0 cf Inflow=0.0 cfs 0.000 af
Discarded=0.0 cfs 0.000 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Pond P8.4: Linear Infiltration Basin Peak Elev=159.40' Storage=0 cf Inflow=0.0 cfs 0.000 af
Discarded=0.0 cfs 0.000 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Pond P8.5A: Linear Infiltration Basin Peak Elev=147.70' Storage=0 cf Inflow=0.0 cfs 0.000 af
Discarded=0.0 cfs 0.000 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Pond P8.7: Low Point Peak Elev=135.16' Storage=85 cf Inflow=0.0 cfs 0.002 af
Outflow=0.0 cfs 0.000 af

Link DP8.1: Wetland 28/29 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.10: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.11: Wetland Inflow=0.1 cfs 0.013 af
Primary=0.1 cfs 0.013 af

Link DP8.2: Wetland 27 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.3: Wetland 25 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.4: Wetland 26 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.5: Low Point Inflow=0.0 cfs 0.014 af
Primary=0.0 cfs 0.014 af

Link DP8.6: Wetland 24 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.7: Low Point Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP8.8: Low Point Inflow=0.0 cfs 0.005 af
Primary=0.0 cfs 0.005 af

Link DP8.9: Wetland 24A/Vernal Pool 5 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Total Runoff Area = 89.229 ac Runoff Volume = 0.142 af Average Runoff Depth = 0.02"
87.35% Pervious = 77.944 ac 12.65% Impervious = 11.285 ac

Summary for Subcatchment PR8.10: Subcat PR8.10

Runoff = 1.1 cfs @ 12.20 hrs, Volume= 0.107 af, Depth= 0.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.037	78	Meadow, non-grazed, HSG D
1.401	98	Paved parking, HSG D
0.269	98	Paved roads w/curbs & sewers, HSG D
0.775	98	Roofs, HSG D
1.088	77	Woods, Good, HSG D
3.569	91	Weighted Average
1.125		31.53% Pervious Area
2.444		68.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.22		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
1.0	184	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
12.4	263	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.1	497	Total			

Summary for Subcatchment PR8.11: Subcat PR8.11

Runoff = 0.1 cfs @ 12.15 hrs, Volume= 0.013 af, Depth= 0.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.013	78	Meadow, non-grazed, HSG D
0.313	98	Paved parking, HSG D
0.028	98	Paved roads w/curbs & sewers, HSG D
0.020	98	Roofs, HSG D
0.554	77	Woods, Good, HSG D
0.928	85	Weighted Average
0.567		61.06% Pervious Area
0.362		38.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	16	0.0625	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.6	34	0.0120	0.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
2.9	95	0.0120	0.55		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
8.9	145	Total			

Summary for Subcatchment PR8.1A: Subcat EX8.1A

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
1.938	39	>75% Grass cover, Good, HSG A
0.003	80	>75% Grass cover, Good, HSG D
0.127	30	Meadow, non-grazed, HSG A
0.080	78	Meadow, non-grazed, HSG D
1.226	98	Paved parking, HSG A
0.788	98	Paved roads w/curbs & sewers, HSG A
1.177	98	Roofs, HSG A
8.427	30	Woods, Good, HSG A
0.000	70	Woods, Good, HSG C
6.034	77	Woods, Good, HSG D
19.801	56	Weighted Average
16.610		83.88% Pervious Area
3.191		16.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	22	0.0138	0.89		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
6.6	28	0.0040	0.07		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
10.5	306	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
17.5	356	Total			

Summary for Subcatchment PR8.1B: Subcat PR8.1B

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.095	30	Meadow, non-grazed, HSG A
0.186	30	Woods, Good, HSG A
0.280	30	Weighted Average
0.280		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	50	0.1460	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
23.6	313	0.0010	0.22		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
33.1	363	Total			

Summary for Subcatchment PR8.2A: Subcat PR8.2A

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.061	30	Meadow, non-grazed, HSG A
0.049	78	Meadow, non-grazed, HSG D
0.209	98	Paved parking, HSG A
0.095	98	Paved parking, HSG D
0.227	98	Paved roads w/curbs & sewers, HSG A
0.058	98	Roofs, HSG A
10.640	30	Woods, Good, HSG A
3.604	77	Woods, Good, HSG D
14.943	44	Weighted Average
14.354		96.06% Pervious Area
0.589		3.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.1	50	0.0160	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.8	500	0.0184	0.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.5	361	0.0190	0.34		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
49.4	911	Total			

Summary for Subcatchment PR8.2B: Subcat PR8.2B

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.110	30	Meadow, non-grazed, HSG A
0.099	98	Paved parking, HSG A
1.165	30	Woods, Good, HSG A
1.374	35	Weighted Average
1.275		92.78% Pervious Area
0.099		7.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.5	50	0.0080	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
6.0	187	0.0430	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
6.0	297	0.0030	0.82		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
42.5	534	Total			

Summary for Subcatchment PR8.3A: Subcat PR8.3A

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.261	39	>75% Grass cover, Good, HSG A
0.491	91	Gravel roads, HSG D
0.044	30	Meadow, non-grazed, HSG A
0.018	78	Meadow, non-grazed, HSG D
0.465	98	Paved parking, HSG A
0.254	98	Paved roads w/curbs & sewers, HSG A
0.283	98	Roofs, HSG A
6.056	30	Woods, Good, HSG A
5.576	77	Woods, Good, HSG D
13.448	57	Weighted Average
12.446		92.55% Pervious Area
1.002		7.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	50	0.0080	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.3	31	0.0030	0.38		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	89	0.0060	1.57		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.8	93	0.0160	0.89		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.0	451	0.0400	0.50		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
36.5	714	Total			

Summary for Subcatchment PR8.3b: Subcat PR8.3B

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (sf)	CN	Description
10,143	30	Meadow, non-grazed, HSG A
2,301	98	Paved parking, HSG A
6,348	98	Roofs, HSG A
79,179	30	Woods, Good, HSG A
97,971	36	Weighted Average
89,322		91.17% Pervious Area
8,649		8.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
25.8	424	0.0120	0.27		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.8	104	0.0230	2.27		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
47.7	578	Total			

Summary for Subcatchment PR8.4A: Subcat PR8.4A

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.035	30	Meadow, non-grazed, HSG A
0.000	78	Meadow, non-grazed, HSG D
0.114	98	Paved parking, HSG A
0.005	98	Paved parking, HSG D
0.217	30	Woods, Good, HSG A
0.371	52	Weighted Average
0.252		67.89% Pervious Area
0.119		32.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	50	0.0860	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.2	153	0.0540	1.16		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.0	203	Total			

Summary for Subcatchment PR8.4B: Subcat PR8.4B

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.175	30	Meadow, non-grazed, HSG A
0.160	98	Paved parking, HSG A
0.384	30	Woods, Good, HSG A
0.013	77	Woods, Good, HSG D
0.731	46	Weighted Average
0.571		78.17% Pervious Area
0.160		21.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.9	50	0.1040	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.9	674	0.0090	1.42		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
18.8	724	Total			

Summary for Subcatchment PR8.5A: Subcat PR8.5A

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.198	30	Meadow, non-grazed, HSG A
0.206	98	Paved parking, HSG A
0.312	30	Woods, Good, HSG A
0.715	50	Weighted Average
0.509		71.24% Pervious Area
0.206		28.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	50	0.0980	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.2	841	0.0130	1.71		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
19.4	891	Total			

Summary for Subcatchment PR8.5B: Subcat PR8.5B

Runoff = 0.0 cfs @ 12.58 hrs, Volume= 0.014 af, Depth= 0.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.064	30	Meadow, non-grazed, HSG A
0.117	98	Paved parking, HSG A
0.344	98	Paved parking, HSG D
1.314	98	Roofs, HSG D
0.719	30	Woods, Good, HSG A
0.909	77	Woods, Good, HSG D
3.469	77	Weighted Average
1.693		48.80% Pervious Area
1.776		51.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	50	0.0980	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.1	138	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.3	188	Total			

Summary for Subcatchment PR8.6: Subcat PR8.6

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.328	76	Gravel roads, HSG A
0.031	91	Gravel roads, HSG D
0.397	30	Meadow, non-grazed, HSG A
0.145	98	Paved parking, HSG D
5.887	30	Woods, Good, HSG A
17.920	77	Woods, Good, HSG D
24.708	65	Weighted Average
24.563		99.41% Pervious Area
0.145		0.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.9	50	0.0120	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
36.5	1,384	0.0160	0.63		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
62.4	1,434	Total			

Summary for Subcatchment PR8.7: Subcat PR8.7

Runoff = 0.0 cfs @ 13.94 hrs, Volume= 0.002 af, Depth= 0.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.024	30	Meadow, non-grazed, HSG A
0.044	98	Paved parking, HSG A
0.232	98	Paved parking, HSG D
0.104	98	Roofs, HSG D
0.179	30	Woods, Good, HSG A
0.186	77	Woods, Good, HSG D
0.768	75	Weighted Average
0.389		50.60% Pervious Area
0.380		49.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	50	0.0320	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.3	37	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.8	87	Total			

Summary for Subcatchment PR8.8: Subcat PR8.8

Runoff = 0.0 cfs @ 12.80 hrs, Volume= 0.005 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.057	30	Meadow, non-grazed, HSG A
0.022	78	Meadow, non-grazed, HSG D
0.339	98	Paved parking, HSG A
0.198	98	Paved parking, HSG D
0.079	98	Roofs, HSG D
0.189	30	Woods, Good, HSG A
0.053	77	Woods, Good, HSG D
0.937	79	Weighted Average
0.321		34.26% Pervious Area
0.616		65.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
13.7	368	0.0080	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
34.8	418	Total			

Summary for Subcatchment PR8.9: Subcat PR8.9

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.076	30	Meadow, non-grazed, HSG A
0.019	78	Meadow, non-grazed, HSG D
0.665	30	Woods, Good, HSG A
0.178	77	Woods, Good, HSG D
0.939	40	Weighted Average
0.939		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.4	50	0.0140	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.9	97	0.0120	0.27		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
30.3	147	Total			

Summary for Pond P8.10: Low Point

Inflow Area = 3.569 ac, 68.47% Impervious, Inflow Depth = 0.36" for 1" event
Inflow = 1.1 cfs @ 12.20 hrs, Volume= 0.107 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 134.17' @ 24.79 hrs Surf.Area= 5,061 sf Storage= 4,654 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	133.00'	9,535 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
133.00	2,935	0	0
134.00	4,745	3,840	3,840
135.00	6,645	5,695	9,535

Device	Routing	Invert	Outlet Devices
#1	Primary	134.60'	**25.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=133.00' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.0 cfs)

Summary for Pond P8.2B: Linear Infiltration Basin

Inflow Area = 1.374 ac, 7.22% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 162.00' @ 0.00 hrs Surf.Area= 0 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	162.00'	2,141 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
162.00	0	0	0
162.50	2,312	578	578
163.00	3,938	1,563	2,141

Device	Routing	Invert	Outlet Devices
#1	Primary	162.50'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	162.00'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 0.00 hrs HW=162.00' (Free Discharge)
↑—**2=Exfiltration** (Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=162.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P8.3B: Linear Infiltration Basin

Inflow Area = 2.249 ac, 8.83% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 158.50' @ 0.00 hrs Surf.Area= 0 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	158.50'	4,555 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
158.50	0	0	0
159.00	5,048	1,262	1,262
159.50	8,124	3,293	4,555

Device	Routing	Invert	Outlet Devices
#1	Primary	159.00'	**30.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	158.50'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 0.00 hrs HW=158.50' (Free Discharge)
↑**2=Exfiltration** (Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=158.50' (Free Discharge)
↑**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P8.4: Linear Infiltration Basin

Inflow Area = 0.731 ac, 21.83% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 159.40' @ 0.00 hrs Surf.Area= 0 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	159.40'	2,377 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
159.40	0	0	0
159.90	2,313	578	578
160.40	4,882	1,799	2,377

Device	Routing	Invert	Outlet Devices
#1	Primary	159.40'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	159.40'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 0.00 hrs HW=159.40' (Free Discharge)
↑**2=Exfiltration** (Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=159.40' (Free Discharge)
↑**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P8.5A: Linear Infiltration Basin

Inflow Area = 0.715 ac, 28.76% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 147.70' @ 0.00 hrs Surf.Area= 0 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	147.70'	3,440 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
147.70	0	0	0
148.20	3,262	816	816
148.70	7,236	2,625	3,440

Device	Routing	Invert	Outlet Devices
#1	Primary	148.20'	**1.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	147.70'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 0.00 hrs HW=147.70' (Free Discharge)
↑—**2=Exfiltration** (Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=147.70' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P8.7: Low Point

Inflow Area = 0.768 ac, 49.40% Impervious, Inflow Depth = 0.03" for 1" event
Inflow = 0.0 cfs @ 13.94 hrs, Volume= 0.002 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 100%, Lag= 0.0 min
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 135.16' @ 25.01 hrs Surf.Area= 578 sf Storage= 85 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no outflow)

Volume	Invert	Avail.Storage	Storage Description
#1	135.00'	2,343 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
135.00	460	0	0
136.00	1,185	823	823
137.00	1,855	1,520	2,343

Device	Routing	Invert	Outlet Devices
#1	Primary	136.80'	**5.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=135.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Link DP8.1: Wetland 28/29

Inflow Area = 20.081 ac, 15.89% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.10: Low Point

Inflow Area = 3.569 ac, 68.47% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.11: Wetland

Inflow Area = 0.928 ac, 38.94% Impervious, Inflow Depth = 0.17" for 1" event
Inflow = 0.1 cfs @ 12.15 hrs, Volume= 0.013 af
Primary = 0.1 cfs @ 12.15 hrs, Volume= 0.013 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.2: Wetland 27

Inflow Area = 16.317 ac, 4.22% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.3: Wetland 25

Inflow Area = 15.697 ac, 7.65% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.4: Wetland 26

Inflow Area = 1.102 ac, 25.29% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.5: Low Point

Inflow Area = 4.184 ac, 47.36% Impervious, Inflow Depth = 0.04" for 1" event
Inflow = 0.0 cfs @ 12.58 hrs, Volume= 0.014 af
Primary = 0.0 cfs @ 12.58 hrs, Volume= 0.014 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.6: Wetland 24

Inflow Area = 24.708 ac, 0.59% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.7: Low Point

Inflow Area = 0.768 ac, 49.40% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.8: Low Point

Inflow Area = 0.937 ac, 65.74% Impervious, Inflow Depth = 0.07" for 1" event
Inflow = 0.0 cfs @ 12.80 hrs, Volume= 0.005 af
Primary = 0.0 cfs @ 12.80 hrs, Volume= 0.005 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.9: Wetland 24A/Vernal Pool 5

Inflow Area = 0.939 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentPR8.10: Subcat PR8.10 Runoff Area=3.569 ac 68.47% Impervious Runoff Depth=2.35"
Flow Length=497' Tc=14.1 min CN=91 Runoff=7.5 cfs 0.700 af

SubcatchmentPR8.11: Subcat PR8.11 Runoff Area=0.928 ac 38.94% Impervious Runoff Depth=1.84"
Flow Length=145' Tc=8.9 min CN=85 Runoff=1.8 cfs 0.143 af

SubcatchmentPR8.1A: Subcat EX8.1A Runoff Area=19.801 ac 16.12% Impervious Runoff Depth=0.31"
Flow Length=356' Tc=17.5 min CN=56 Runoff=2.6 cfs 0.514 af

SubcatchmentPR8.1B: Subcat PR8.1B Runoff Area=0.280 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=363' Tc=33.1 min CN=30 Runoff=0.0 cfs 0.000 af

SubcatchmentPR8.2A: Subcat PR8.2A Runoff Area=14.943 ac 3.94% Impervious Runoff Depth=0.04"
Flow Length=911' Tc=49.4 min CN=44 Runoff=0.1 cfs 0.053 af

SubcatchmentPR8.2B: Subcat PR8.2B Runoff Area=1.374 ac 7.22% Impervious Runoff Depth=0.00"
Flow Length=534' Tc=42.5 min CN=35 Runoff=0.0 cfs 0.000 af

SubcatchmentPR8.3A: Subcat PR8.3A Runoff Area=13.448 ac 7.45% Impervious Runoff Depth=0.34"
Flow Length=714' Tc=36.5 min CN=57 Runoff=1.6 cfs 0.385 af

SubcatchmentPR8.3b: Subcat PR8.3B Runoff Area=97,971 sf 8.83% Impervious Runoff Depth=0.00"
Flow Length=578' Tc=47.7 min CN=36 Runoff=0.0 cfs 0.000 af

SubcatchmentPR8.4A: Subcat PR8.4A Runoff Area=0.371 ac 32.11% Impervious Runoff Depth=0.20"
Flow Length=203' Tc=14.0 min CN=52 Runoff=0.0 cfs 0.006 af

SubcatchmentPR8.4B: Subcat PR8.4B Runoff Area=0.731 ac 21.83% Impervious Runoff Depth=0.07"
Flow Length=724' Tc=18.8 min CN=46 Runoff=0.0 cfs 0.004 af

SubcatchmentPR8.5A: Subcat PR8.5A Runoff Area=0.715 ac 28.76% Impervious Runoff Depth=0.15"
Flow Length=891' Tc=19.4 min CN=50 Runoff=0.0 cfs 0.009 af

SubcatchmentPR8.5B: Subcat PR8.5B Runoff Area=3.469 ac 51.20% Impervious Runoff Depth=1.28"
Flow Length=188' Tc=15.3 min CN=77 Runoff=3.8 cfs 0.371 af

SubcatchmentPR8.6: Subcat PR8.6 Runoff Area=24.708 ac 0.59% Impervious Runoff Depth=0.65"
Flow Length=1,434' Tc=62.4 min CN=65 Runoff=5.8 cfs 1.338 af

SubcatchmentPR8.7: Subcat PR8.7 Runoff Area=0.768 ac 49.40% Impervious Runoff Depth=1.16"
Flow Length=87' Tc=17.8 min CN=75 Runoff=0.7 cfs 0.074 af

SubcatchmentPR8.8: Subcat PR8.8 Runoff Area=0.937 ac 65.74% Impervious Runoff Depth=1.41"
Flow Length=418' Tc=34.8 min CN=79 Runoff=0.8 cfs 0.110 af

SubcatchmentPR8.9: Subcat PR8.9 Runoff Area=0.939 ac 0.00% Impervious Runoff Depth=0.01"
Flow Length=147' Tc=30.3 min CN=40 Runoff=0.0 cfs 0.000 af

Pond P8.10: Low Point Peak Elev=134.83' Storage=8,405 cf Inflow=7.5 cfs 0.700 af
Outflow=7.2 cfs 0.538 af

Pond P8.2B: Linear Infiltration Basin Peak Elev=162.00' Storage=0 cf Inflow=0.0 cfs 0.000 af
Discarded=0.0 cfs 0.000 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Pond P8.3B: Linear Infiltration Basin Peak Elev=158.50' Storage=0 cf Inflow=0.0 cfs 0.000 af
Discarded=0.0 cfs 0.000 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Pond P8.4: Linear Infiltration Basin Peak Elev=159.40' Storage=0 cf Inflow=0.0 cfs 0.004 af
Discarded=0.0 cfs 0.000 af Primary=0.0 cfs 0.004 af Outflow=0.0 cfs 0.004 af

Pond P8.5A: Linear Infiltration Basin Peak Elev=147.93' Storage=173 cf Inflow=0.0 cfs 0.009 af
Discarded=0.0 cfs 0.009 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.009 af

Pond P8.7: Low Point Peak Elev=136.83' Storage=2,038 cf Inflow=0.7 cfs 0.074 af
Outflow=0.1 cfs 0.029 af

Link DP8.1: Wetland 28/29 Inflow=2.6 cfs 0.514 af
Primary=2.6 cfs 0.514 af

Link DP8.10: Low Point Inflow=7.2 cfs 0.538 af
Primary=7.2 cfs 0.538 af

Link DP8.11: Wetland Inflow=1.8 cfs 0.143 af
Primary=1.8 cfs 0.143 af

Link DP8.2: Wetland 27 Inflow=0.1 cfs 0.053 af
Primary=0.1 cfs 0.053 af

Link DP8.3: Wetland 25 Inflow=1.6 cfs 0.385 af
Primary=1.6 cfs 0.385 af

Link DP8.4: Wetland 26 Inflow=0.0 cfs 0.010 af
Primary=0.0 cfs 0.010 af

Link DP8.5: Low Point Inflow=3.8 cfs 0.371 af
Primary=3.8 cfs 0.371 af

Link DP8.6: Wetland 24 Inflow=5.8 cfs 1.338 af
Primary=5.8 cfs 1.338 af

Link DP8.7: Low Point Inflow=0.1 cfs 0.029 af
Primary=0.1 cfs 0.029 af

Link DP8.8: Low Point Inflow=0.8 cfs 0.110 af
Primary=0.8 cfs 0.110 af

Link DP8.9: Wetland 24A/Vernal Pool 5 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Total Runoff Area = 89.229 ac Runoff Volume = 3.707 af Average Runoff Depth = 0.50"
87.35% Pervious = 77.944 ac 12.65% Impervious = 11.285 ac

Summary for Subcatchment PR8.10: Subcat PR8.10

Runoff = 7.5 cfs @ 12.19 hrs, Volume= 0.700 af, Depth= 2.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.037	78	Meadow, non-grazed, HSG D
1.401	98	Paved parking, HSG D
0.269	98	Paved roads w/curbs & sewers, HSG D
0.775	98	Roofs, HSG D
1.088	77	Woods, Good, HSG D
3.569	91	Weighted Average
1.125		31.53% Pervious Area
2.444		68.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.22		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
1.0	184	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
12.4	263	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.1	497	Total			

Summary for Subcatchment PR8.11: Subcat PR8.11

Runoff = 1.8 cfs @ 12.13 hrs, Volume= 0.143 af, Depth= 1.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.013	78	Meadow, non-grazed, HSG D
0.313	98	Paved parking, HSG D
0.028	98	Paved roads w/curbs & sewers, HSG D
0.020	98	Roofs, HSG D
0.554	77	Woods, Good, HSG D
0.928	85	Weighted Average
0.567		61.06% Pervious Area
0.362		38.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	16	0.0625	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.6	34	0.0120	0.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
2.9	95	0.0120	0.55		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
8.9	145	Total			

Summary for Subcatchment PR8.1A: Subcat EX8.1A

Runoff = 2.6 cfs @ 12.47 hrs, Volume= 0.514 af, Depth= 0.31"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
1.938	39	>75% Grass cover, Good, HSG A
0.003	80	>75% Grass cover, Good, HSG D
0.127	30	Meadow, non-grazed, HSG A
0.080	78	Meadow, non-grazed, HSG D
1.226	98	Paved parking, HSG A
0.788	98	Paved roads w/curbs & sewers, HSG A
1.177	98	Roofs, HSG A
8.427	30	Woods, Good, HSG A
0.000	70	Woods, Good, HSG C
6.034	77	Woods, Good, HSG D
19.801	56	Weighted Average
16.610		83.88% Pervious Area
3.191		16.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	22	0.0138	0.89		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
6.6	28	0.0040	0.07		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
10.5	306	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
17.5	356	Total			

Summary for Subcatchment PR8.1B: Subcat PR8.1B

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.095	30	Meadow, non-grazed, HSG A
0.186	30	Woods, Good, HSG A
0.280	30	Weighted Average
0.280		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	50	0.1460	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
23.6	313	0.0010	0.22		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
33.1	363	Total			

Summary for Subcatchment PR8.2A: Subcat PR8.2A

Runoff = 0.1 cfs @ 16.08 hrs, Volume= 0.053 af, Depth= 0.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.061	30	Meadow, non-grazed, HSG A
0.049	78	Meadow, non-grazed, HSG D
0.209	98	Paved parking, HSG A
0.095	98	Paved parking, HSG D
0.227	98	Paved roads w/curbs & sewers, HSG A
0.058	98	Roofs, HSG A
10.640	30	Woods, Good, HSG A
3.604	77	Woods, Good, HSG D
14.943	44	Weighted Average
14.354		96.06% Pervious Area
0.589		3.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.1	50	0.0160	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.8	500	0.0184	0.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.5	361	0.0190	0.34		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
49.4	911	Total			

Summary for Subcatchment PR8.2B: Subcat PR8.2B

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.110	30	Meadow, non-grazed, HSG A
0.099	98	Paved parking, HSG A
1.165	30	Woods, Good, HSG A
1.374	35	Weighted Average
1.275		92.78% Pervious Area
0.099		7.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.5	50	0.0080	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
6.0	187	0.0430	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
6.0	297	0.0030	0.82		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
42.5	534	Total			

Summary for Subcatchment PR8.3A: Subcat PR8.3A

Runoff = 1.6 cfs @ 12.70 hrs, Volume= 0.385 af, Depth= 0.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.261	39	>75% Grass cover, Good, HSG A
0.491	91	Gravel roads, HSG D
0.044	30	Meadow, non-grazed, HSG A
0.018	78	Meadow, non-grazed, HSG D
0.465	98	Paved parking, HSG A
0.254	98	Paved roads w/curbs & sewers, HSG A
0.283	98	Roofs, HSG A
6.056	30	Woods, Good, HSG A
5.576	77	Woods, Good, HSG D
13.448	57	Weighted Average
12.446		92.55% Pervious Area
1.002		7.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	50	0.0080	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.3	31	0.0030	0.38		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	89	0.0060	1.57		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.8	93	0.0160	0.89		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.0	451	0.0400	0.50		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
36.5	714	Total			

Summary for Subcatchment PR8.3b: Subcat PR8.3B

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (sf)	CN	Description
10,143	30	Meadow, non-grazed, HSG A
2,301	98	Paved parking, HSG A
6,348	98	Roofs, HSG A
79,179	30	Woods, Good, HSG A
97,971	36	Weighted Average
89,322		91.17% Pervious Area
8,649		8.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
25.8	424	0.0120	0.27		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.8	104	0.0230	2.27		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
47.7	578	Total			

Summary for Subcatchment PR8.4A: Subcat PR8.4A

Runoff = 0.0 cfs @ 12.51 hrs, Volume= 0.006 af, Depth= 0.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.035	30	Meadow, non-grazed, HSG A
0.000	78	Meadow, non-grazed, HSG D
0.114	98	Paved parking, HSG A
0.005	98	Paved parking, HSG D
0.217	30	Woods, Good, HSG A
0.371	52	Weighted Average
0.252		67.89% Pervious Area
0.119		32.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	50	0.0860	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.2	153	0.0540	1.16		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.0	203	Total			

Summary for Subcatchment PR8.4B: Subcat PR8.4B

Runoff = 0.0 cfs @ 15.06 hrs, Volume= 0.004 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.175	30	Meadow, non-grazed, HSG A
0.160	98	Paved parking, HSG A
0.384	30	Woods, Good, HSG A
0.013	77	Woods, Good, HSG D
0.731	46	Weighted Average
0.571		78.17% Pervious Area
0.160		21.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.9	50	0.1040	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.9	674	0.0090	1.42		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
18.8	724	Total			

Summary for Subcatchment PR8.5A: Subcat PR8.5A

Runoff = 0.0 cfs @ 12.66 hrs, Volume= 0.009 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.198	30	Meadow, non-grazed, HSG A
0.206	98	Paved parking, HSG A
0.312	30	Woods, Good, HSG A
0.715	50	Weighted Average
0.509		71.24% Pervious Area
0.206		28.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	50	0.0980	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.2	841	0.0130	1.71		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
19.4	891	Total			

Summary for Subcatchment PR8.5B: Subcat PR8.5B

Runoff = 3.8 cfs @ 12.22 hrs, Volume= 0.371 af, Depth= 1.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.064	30	Meadow, non-grazed, HSG A
0.117	98	Paved parking, HSG A
0.344	98	Paved parking, HSG D
1.314	98	Roofs, HSG D
0.719	30	Woods, Good, HSG A
0.909	77	Woods, Good, HSG D
3.469	77	Weighted Average
1.693		48.80% Pervious Area
1.776		51.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	50	0.0980	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.1	138	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.3	188	Total			

Summary for Subcatchment PR8.6: Subcat PR8.6

Runoff = 5.8 cfs @ 12.97 hrs, Volume= 1.338 af, Depth= 0.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.328	76	Gravel roads, HSG A
0.031	91	Gravel roads, HSG D
0.397	30	Meadow, non-grazed, HSG A
0.145	98	Paved parking, HSG D
5.887	30	Woods, Good, HSG A
17.920	77	Woods, Good, HSG D
24.708	65	Weighted Average
24.563		99.41% Pervious Area
0.145		0.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.9	50	0.0120	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
36.5	1,384	0.0160	0.63		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
62.4	1,434	Total			

Summary for Subcatchment PR8.7: Subcat PR8.7

Runoff = 0.7 cfs @ 12.26 hrs, Volume= 0.074 af, Depth= 1.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.024	30	Meadow, non-grazed, HSG A
0.044	98	Paved parking, HSG A
0.232	98	Paved parking, HSG D
0.104	98	Roofs, HSG D
0.179	30	Woods, Good, HSG A
0.186	77	Woods, Good, HSG D
0.768	75	Weighted Average
0.389		50.60% Pervious Area
0.380		49.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	50	0.0320	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.3	37	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.8	87	Total			

Summary for Subcatchment PR8.8: Subcat PR8.8

Runoff = 0.8 cfs @ 12.49 hrs, Volume= 0.110 af, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.057	30	Meadow, non-grazed, HSG A
0.022	78	Meadow, non-grazed, HSG D
0.339	98	Paved parking, HSG A
0.198	98	Paved parking, HSG D
0.079	98	Roofs, HSG D
0.189	30	Woods, Good, HSG A
0.053	77	Woods, Good, HSG D
0.937	79	Weighted Average
0.321		34.26% Pervious Area
0.616		65.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
13.7	368	0.0080	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
34.8	418	Total			

Summary for Subcatchment PR8.9: Subcat PR8.9

Runoff = 0.0 cfs @ 23.40 hrs, Volume= 0.000 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.076	30	Meadow, non-grazed, HSG A
0.019	78	Meadow, non-grazed, HSG D
0.665	30	Woods, Good, HSG A
0.178	77	Woods, Good, HSG D
0.939	40	Weighted Average
0.939		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.4	50	0.0140	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.9	97	0.0120	0.27		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
30.3	147	Total			

Summary for Pond P8.10: Low Point

Inflow Area = 3.569 ac, 68.47% Impervious, Inflow Depth = 2.35" for 2-yr event
Inflow = 7.5 cfs @ 12.19 hrs, Volume= 0.700 af
Outflow = 7.2 cfs @ 12.23 hrs, Volume= 0.538 af, Atten= 4%, Lag= 2.4 min
Primary = 7.2 cfs @ 12.23 hrs, Volume= 0.538 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 134.83' @ 12.23 hrs Surf.Area= 6,314 sf Storage= 8,405 cf

Plug-Flow detention time= 134.5 min calculated for 0.538 af (77% of inflow)
Center-of-Mass det. time= 52.7 min (861.5 - 808.8)

Volume	Invert	Avail.Storage	Storage Description
#1	133.00'	9,535 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
133.00	2,935	0	0
134.00	4,745	3,840	3,840
135.00	6,645	5,695	9,535

Device	Routing	Invert	Outlet Devices
#1	Primary	134.60'	**25.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=7.2 cfs @ 12.23 hrs HW=134.83' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 7.2 cfs @ 1.28 fps)

Summary for Pond P8.2B: Linear Infiltration Basin

Inflow Area = 1.374 ac, 7.22% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 162.00' @ 0.00 hrs Surf.Area= 0 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	162.00'	2,141 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
162.00	0	0	0
162.50	2,312	578	578
163.00	3,938	1,563	2,141

Device	Routing	Invert	Outlet Devices
#1	Primary	162.50'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	162.00'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 0.00 hrs HW=162.00' (Free Discharge)
↑—**2=Exfiltration** (Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=162.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P8.3B: Linear Infiltration Basin

Inflow Area = 2.249 ac, 8.83% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 158.50' @ 0.00 hrs Surf.Area= 0 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	158.50'	4,555 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
158.50	0	0	0
159.00	5,048	1,262	1,262
159.50	8,124	3,293	4,555

Device	Routing	Invert	Outlet Devices
#1	Primary	159.00'	**30.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	158.50'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 0.00 hrs HW=158.50' (Free Discharge)
2=Exfiltration (Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=158.50' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.0 cfs)

Summary for Pond P8.4: Linear Infiltration Basin

Inflow Area = 0.731 ac, 21.83% Impervious, Inflow Depth = 0.07" for 2-yr event
Inflow = 0.0 cfs @ 15.06 hrs, Volume= 0.004 af
Outflow = 0.0 cfs @ 15.06 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.2 min
Discarded = 0.0 cfs @ 15.06 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 15.06 hrs, Volume= 0.004 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 159.40' @ 15.06 hrs Surf.Area= 13 sf Storage= 0 cf

Plug-Flow detention time= 0.2 min calculated for 0.004 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (1,077.4 - 1,077.3)

Volume	Invert	Avail.Storage	Storage Description
#1	159.40'	2,377 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
159.40	0	0	0
159.90	2,313	578	578
160.40	4,882	1,799	2,377

Device	Routing	Invert	Outlet Devices
#1	Primary	159.40'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	159.40'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 15.06 hrs HW=159.40' (Free Discharge)
2=Exfiltration (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 15.06 hrs HW=159.40' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 0.0 cfs @ 0.13 fps)

Summary for Pond P8.5A: Linear Infiltration Basin

Inflow Area = 0.715 ac, 28.76% Impervious, Inflow Depth = 0.15" for 2-yr event
Inflow = 0.0 cfs @ 12.66 hrs, Volume= 0.009 af
Outflow = 0.0 cfs @ 20.81 hrs, Volume= 0.009 af, Atten= 70%, Lag= 488.9 min
Discarded = 0.0 cfs @ 20.81 hrs, Volume= 0.009 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 147.93' @ 20.81 hrs Surf.Area= 1,502 sf Storage= 173 cf

Plug-Flow detention time= 393.8 min calculated for 0.009 af (100% of inflow)
Center-of-Mass det. time= 393.9 min (1,406.0 - 1,012.1)

Volume	Invert	Avail.Storage	Storage Description
#1	147.70'	3,440 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
147.70	0	0	0
148.20	3,262	816	816
148.70	7,236	2,625	3,440

Device	Routing	Invert	Outlet Devices
#1	Primary	148.20'	**1.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	147.70'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 20.81 hrs HW=147.93' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=147.70' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P8.7: Low Point

Inflow Area = 0.768 ac, 49.40% Impervious, Inflow Depth = 1.16" for 2-yr event
Inflow = 0.7 cfs @ 12.26 hrs, Volume= 0.074 af
Outflow = 0.1 cfs @ 14.39 hrs, Volume= 0.029 af, Atten= 89%, Lag= 128.0 min
Primary = 0.1 cfs @ 14.39 hrs, Volume= 0.029 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 136.83' @ 14.39 hrs Surf.Area= 1,742 sf Storage= 2,038 cf

Plug-Flow detention time= 334.5 min calculated for 0.029 af (39% of inflow)
Center-of-Mass det. time= 198.9 min (1,066.8 - 867.9)

Volume	Invert	Avail.Storage	Storage Description
#1	135.00'	2,343 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
135.00	460	0	0
136.00	1,185	823	823
137.00	1,855	1,520	2,343

Device	Routing	Invert	Outlet Devices
#1	Primary	136.80'	**5.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=0.1 cfs @ 14.39 hrs HW=136.83' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.1 cfs @ 0.47 fps)

Summary for Link DP8.1: Wetland 28/29

Inflow Area = 20.081 ac, 15.89% Impervious, Inflow Depth = 0.31" for 2-yr event
Inflow = 2.6 cfs @ 12.47 hrs, Volume= 0.514 af
Primary = 2.6 cfs @ 12.47 hrs, Volume= 0.514 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.10: Low Point

Inflow Area = 3.569 ac, 68.47% Impervious, Inflow Depth = 1.81" for 2-yr event
Inflow = 7.2 cfs @ 12.23 hrs, Volume= 0.538 af
Primary = 7.2 cfs @ 12.23 hrs, Volume= 0.538 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.11: Wetland

Inflow Area = 0.928 ac, 38.94% Impervious, Inflow Depth = 1.84" for 2-yr event
Inflow = 1.8 cfs @ 12.13 hrs, Volume= 0.143 af
Primary = 1.8 cfs @ 12.13 hrs, Volume= 0.143 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.2: Wetland 27

Inflow Area = 16.317 ac, 4.22% Impervious, Inflow Depth = 0.04" for 2-yr event
Inflow = 0.1 cfs @ 16.08 hrs, Volume= 0.053 af
Primary = 0.1 cfs @ 16.08 hrs, Volume= 0.053 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.3: Wetland 25

Inflow Area = 15.697 ac, 7.65% Impervious, Inflow Depth = 0.29" for 2-yr event
Inflow = 1.6 cfs @ 12.70 hrs, Volume= 0.385 af
Primary = 1.6 cfs @ 12.70 hrs, Volume= 0.385 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.4: Wetland 26

Inflow Area = 1.102 ac, 25.29% Impervious, Inflow Depth = 0.11" for 2-yr event
Inflow = 0.0 cfs @ 12.51 hrs, Volume= 0.010 af
Primary = 0.0 cfs @ 12.51 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.5: Low Point

Inflow Area = 4.184 ac, 47.36% Impervious, Inflow Depth = 1.06" for 2-yr event
Inflow = 3.8 cfs @ 12.22 hrs, Volume= 0.371 af
Primary = 3.8 cfs @ 12.22 hrs, Volume= 0.371 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.6: Wetland 24

Inflow Area = 24.708 ac, 0.59% Impervious, Inflow Depth = 0.65" for 2-yr event
Inflow = 5.8 cfs @ 12.97 hrs, Volume= 1.338 af
Primary = 5.8 cfs @ 12.97 hrs, Volume= 1.338 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.7: Low Point

Inflow Area = 0.768 ac, 49.40% Impervious, Inflow Depth = 0.45" for 2-yr event
Inflow = 0.1 cfs @ 14.39 hrs, Volume= 0.029 af
Primary = 0.1 cfs @ 14.39 hrs, Volume= 0.029 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.8: Low Point

Inflow Area = 0.937 ac, 65.74% Impervious, Inflow Depth = 1.41" for 2-yr event
Inflow = 0.8 cfs @ 12.49 hrs, Volume= 0.110 af
Primary = 0.8 cfs @ 12.49 hrs, Volume= 0.110 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.9: Wetland 24A/Vernal Pool 5

Inflow Area = 0.939 ac, 0.00% Impervious, Inflow Depth = 0.01" for 2-yr event
Inflow = 0.0 cfs @ 23.40 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 23.40 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentPR8.10: Subcat PR8.10 Runoff Area=3.569 ac 68.47% Impervious Runoff Depth=4.08"
Flow Length=497' Tc=14.1 min CN=91 Runoff=12.7 cfs 1.213 af

SubcatchmentPR8.11: Subcat PR8.11 Runoff Area=0.928 ac 38.94% Impervious Runoff Depth=3.46"
Flow Length=145' Tc=8.9 min CN=85 Runoff=3.4 cfs 0.268 af

SubcatchmentPR8.1A: Subcat EX8.1A Runoff Area=19.801 ac 16.12% Impervious Runoff Depth=1.09"
Flow Length=356' Tc=17.5 min CN=56 Runoff=14.9 cfs 1.804 af

SubcatchmentPR8.1B: Subcat PR8.1B Runoff Area=0.280 ac 0.00% Impervious Runoff Depth=0.01"
Flow Length=363' Tc=33.1 min CN=30 Runoff=0.0 cfs 0.000 af

SubcatchmentPR8.2A: Subcat PR8.2A Runoff Area=14.943 ac 3.94% Impervious Runoff Depth=0.43"
Flow Length=911' Tc=49.4 min CN=44 Runoff=1.6 cfs 0.532 af

SubcatchmentPR8.2B: Subcat PR8.2B Runoff Area=1.374 ac 7.22% Impervious Runoff Depth=0.10"
Flow Length=534' Tc=42.5 min CN=35 Runoff=0.0 cfs 0.011 af

SubcatchmentPR8.3A: Subcat PR8.3A Runoff Area=13.448 ac 7.45% Impervious Runoff Depth=1.16"
Flow Length=714' Tc=36.5 min CN=57 Runoff=8.1 cfs 1.298 af

SubcatchmentPR8.3b: Subcat PR8.3B Runoff Area=97,971 sf 8.83% Impervious Runoff Depth=0.12"
Flow Length=578' Tc=47.7 min CN=36 Runoff=0.0 cfs 0.023 af

SubcatchmentPR8.4A: Subcat PR8.4A Runoff Area=0.371 ac 32.11% Impervious Runoff Depth=0.85"
Flow Length=203' Tc=14.0 min CN=52 Runoff=0.2 cfs 0.026 af

SubcatchmentPR8.4B: Subcat PR8.4B Runoff Area=0.731 ac 21.83% Impervious Runoff Depth=0.52"
Flow Length=724' Tc=18.8 min CN=46 Runoff=0.2 cfs 0.032 af

SubcatchmentPR8.5A: Subcat PR8.5A Runoff Area=0.715 ac 28.76% Impervious Runoff Depth=0.73"
Flow Length=891' Tc=19.4 min CN=50 Runoff=0.3 cfs 0.044 af

SubcatchmentPR8.5B: Subcat PR8.5B Runoff Area=3.469 ac 51.20% Impervious Runoff Depth=2.71"
Flow Length=188' Tc=15.3 min CN=77 Runoff=8.3 cfs 0.782 af

SubcatchmentPR8.6: Subcat PR8.6 Runoff Area=24.708 ac 0.59% Impervious Runoff Depth=1.72"
Flow Length=1,434' Tc=62.4 min CN=65 Runoff=18.1 cfs 3.542 af

SubcatchmentPR8.7: Subcat PR8.7 Runoff Area=0.768 ac 49.40% Impervious Runoff Depth=2.53"
Flow Length=87' Tc=17.8 min CN=75 Runoff=1.6 cfs 0.162 af

SubcatchmentPR8.8: Subcat PR8.8 Runoff Area=0.937 ac 65.74% Impervious Runoff Depth=2.89"
Flow Length=418' Tc=34.8 min CN=79 Runoff=1.7 cfs 0.225 af

SubcatchmentPR8.9: Subcat PR8.9 Runoff Area=0.939 ac 0.00% Impervious Runoff Depth=0.26"
Flow Length=147' Tc=30.3 min CN=40 Runoff=0.0 cfs 0.020 af

Pond P8.10: Low Point Peak Elev=134.92' Storage=9,025 cf Inflow=12.7 cfs 1.213 af
Outflow=12.4 cfs 1.052 af

Pond P8.2B: Linear Infiltration Basin Peak Elev=162.35' Storage=282 cf Inflow=0.0 cfs 0.011 af
Discarded=0.0 cfs 0.011 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.011 af

Pond P8.3B: Linear Infiltration Basin Peak Elev=158.84' Storage=568 cf Inflow=0.0 cfs 0.023 af
Discarded=0.0 cfs 0.023 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.023 af

Pond P8.4: Linear Infiltration Basin Peak Elev=159.44' Storage=3 cf Inflow=0.2 cfs 0.032 af
Discarded=0.0 cfs 0.000 af Primary=0.2 cfs 0.032 af Outflow=0.2 cfs 0.032 af

Pond P8.5A: Linear Infiltration Basin Peak Elev=148.25' Storage=979 cf Inflow=0.3 cfs 0.044 af
Discarded=0.0 cfs 0.033 af Primary=0.0 cfs 0.011 af Outflow=0.0 cfs 0.044 af

Pond P8.7: Low Point Peak Elev=137.00' Storage=2,336 cf Inflow=1.6 cfs 0.162 af
Outflow=1.2 cfs 0.116 af

Link DP8.1: Wetland 28/29 Inflow=14.9 cfs 1.805 af
Primary=14.9 cfs 1.805 af

Link DP8.10: Low Point Inflow=12.4 cfs 1.052 af
Primary=12.4 cfs 1.052 af

Link DP8.11: Wetland Inflow=3.4 cfs 0.268 af
Primary=3.4 cfs 0.268 af

Link DP8.2: Wetland 27 Inflow=1.6 cfs 0.532 af
Primary=1.6 cfs 0.532 af

Link DP8.3: Wetland 25 Inflow=8.1 cfs 1.298 af
Primary=8.1 cfs 1.298 af

Link DP8.4: Wetland 26 Inflow=0.3 cfs 0.058 af
Primary=0.3 cfs 0.058 af

Link DP8.5: Low Point Inflow=8.3 cfs 0.793 af
Primary=8.3 cfs 0.793 af

Link DP8.6: Wetland 24 Inflow=18.1 cfs 3.542 af
Primary=18.1 cfs 3.542 af

Link DP8.7: Low Point Inflow=1.2 cfs 0.116 af
Primary=1.2 cfs 0.116 af

Link DP8.8: Low Point Inflow=1.7 cfs 0.225 af
Primary=1.7 cfs 0.225 af

Link DP8.9: Wetland 24A/Vernal Pool 5 Inflow=0.0 cfs 0.020 af
Primary=0.0 cfs 0.020 af

Total Runoff Area = 89.229 ac Runoff Volume = 9.984 af Average Runoff Depth = 1.34"
87.35% Pervious = 77.944 ac 12.65% Impervious = 11.285 ac

Summary for Subcatchment PR8.10: Subcat PR8.10

Runoff = 12.7 cfs @ 12.19 hrs, Volume= 1.213 af, Depth= 4.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.037	78	Meadow, non-grazed, HSG D
1.401	98	Paved parking, HSG D
0.269	98	Paved roads w/curbs & sewers, HSG D
0.775	98	Roofs, HSG D
1.088	77	Woods, Good, HSG D
3.569	91	Weighted Average
1.125		31.53% Pervious Area
2.444		68.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.22		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
1.0	184	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
12.4	263	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.1	497	Total			

Summary for Subcatchment PR8.11: Subcat PR8.11

Runoff = 3.4 cfs @ 12.12 hrs, Volume= 0.268 af, Depth= 3.46"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.013	78	Meadow, non-grazed, HSG D
0.313	98	Paved parking, HSG D
0.028	98	Paved roads w/curbs & sewers, HSG D
0.020	98	Roofs, HSG D
0.554	77	Woods, Good, HSG D
0.928	85	Weighted Average
0.567		61.06% Pervious Area
0.362		38.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	16	0.0625	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.6	34	0.0120	0.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
2.9	95	0.0120	0.55		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
8.9	145	Total			

Summary for Subcatchment PR8.1A: Subcat EX8.1A

Runoff = 14.9 cfs @ 12.28 hrs, Volume= 1.804 af, Depth= 1.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
1.938	39	>75% Grass cover, Good, HSG A
0.003	80	>75% Grass cover, Good, HSG D
0.127	30	Meadow, non-grazed, HSG A
0.080	78	Meadow, non-grazed, HSG D
1.226	98	Paved parking, HSG A
0.788	98	Paved roads w/curbs & sewers, HSG A
1.177	98	Roofs, HSG A
8.427	30	Woods, Good, HSG A
0.000	70	Woods, Good, HSG C
6.034	77	Woods, Good, HSG D
19.801	56	Weighted Average
16.610		83.88% Pervious Area
3.191		16.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	22	0.0138	0.89		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
6.6	28	0.0040	0.07		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
10.5	306	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
17.5	356	Total			

Summary for Subcatchment PR8.1B: Subcat PR8.1B

Runoff = 0.0 cfs @ 23.65 hrs, Volume= 0.000 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.095	30	Meadow, non-grazed, HSG A
0.186	30	Woods, Good, HSG A
0.280	30	Weighted Average
0.280		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	50	0.1460	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
23.6	313	0.0010	0.22		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
33.1	363	Total			

Summary for Subcatchment PR8.2A: Subcat PR8.2A

Runoff = 1.6 cfs @ 13.00 hrs, Volume= 0.532 af, Depth= 0.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.061	30	Meadow, non-grazed, HSG A
0.049	78	Meadow, non-grazed, HSG D
0.209	98	Paved parking, HSG A
0.095	98	Paved parking, HSG D
0.227	98	Paved roads w/curbs & sewers, HSG A
0.058	98	Roofs, HSG A
10.640	30	Woods, Good, HSG A
3.604	77	Woods, Good, HSG D
14.943	44	Weighted Average
14.354		96.06% Pervious Area
0.589		3.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.1	50	0.0160	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.8	500	0.0184	0.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.5	361	0.0190	0.34		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
49.4	911	Total			

Summary for Subcatchment PR8.2B: Subcat PR8.2B

Runoff = 0.0 cfs @ 15.54 hrs, Volume= 0.011 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.110	30	Meadow, non-grazed, HSG A
0.099	98	Paved parking, HSG A
1.165	30	Woods, Good, HSG A
1.374	35	Weighted Average
1.275		92.78% Pervious Area
0.099		7.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.5	50	0.0080	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
6.0	187	0.0430	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
6.0	297	0.0030	0.82		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
42.5	534	Total			

Summary for Subcatchment PR8.3A: Subcat PR8.3A

Runoff = 8.1 cfs @ 12.58 hrs, Volume= 1.298 af, Depth= 1.16"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.261	39	>75% Grass cover, Good, HSG A
0.491	91	Gravel roads, HSG D
0.044	30	Meadow, non-grazed, HSG A
0.018	78	Meadow, non-grazed, HSG D
0.465	98	Paved parking, HSG A
0.254	98	Paved roads w/curbs & sewers, HSG A
0.283	98	Roofs, HSG A
6.056	30	Woods, Good, HSG A
5.576	77	Woods, Good, HSG D
13.448	57	Weighted Average
12.446		92.55% Pervious Area
1.002		7.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	50	0.0080	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.3	31	0.0030	0.38		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	89	0.0060	1.57		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.8	93	0.0160	0.89		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.0	451	0.0400	0.50		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
36.5	714	Total			

Summary for Subcatchment PR8.3b: Subcat PR8.3B

Runoff = 0.0 cfs @ 15.32 hrs, Volume= 0.023 af, Depth= 0.12"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (sf)	CN	Description
10,143	30	Meadow, non-grazed, HSG A
2,301	98	Paved parking, HSG A
6,348	98	Roofs, HSG A
79,179	30	Woods, Good, HSG A
97,971	36	Weighted Average
89,322		91.17% Pervious Area
8,649		8.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
25.8	424	0.0120	0.27		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.8	104	0.0230	2.27		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
47.7	578	Total			

Summary for Subcatchment PR8.4A: Subcat PR8.4A

Runoff = 0.2 cfs @ 12.24 hrs, Volume= 0.026 af, Depth= 0.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.035	30	Meadow, non-grazed, HSG A
0.000	78	Meadow, non-grazed, HSG D
0.114	98	Paved parking, HSG A
0.005	98	Paved parking, HSG D
0.217	30	Woods, Good, HSG A
0.371	52	Weighted Average
0.252		67.89% Pervious Area
0.119		32.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	50	0.0860	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.2	153	0.0540	1.16		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.0	203	Total			

Summary for Subcatchment PR8.4B: Subcat PR8.4B

Runoff = 0.2 cfs @ 12.47 hrs, Volume= 0.032 af, Depth= 0.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.175	30	Meadow, non-grazed, HSG A
0.160	98	Paved parking, HSG A
0.384	30	Woods, Good, HSG A
0.013	77	Woods, Good, HSG D
0.731	46	Weighted Average
0.571		78.17% Pervious Area
0.160		21.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.9	50	0.1040	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.9	674	0.0090	1.42		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
18.8	724	Total			

Summary for Subcatchment PR8.5A: Subcat PR8.5A

Runoff = 0.3 cfs @ 12.38 hrs, Volume= 0.044 af, Depth= 0.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.198	30	Meadow, non-grazed, HSG A
0.206	98	Paved parking, HSG A
0.312	30	Woods, Good, HSG A
0.715	50	Weighted Average
0.509		71.24% Pervious Area
0.206		28.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	50	0.0980	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.2	841	0.0130	1.71		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
19.4	891	Total			

Summary for Subcatchment PR8.5B: Subcat PR8.5B

Runoff = 8.3 cfs @ 12.21 hrs, Volume= 0.782 af, Depth= 2.71"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.064	30	Meadow, non-grazed, HSG A
0.117	98	Paved parking, HSG A
0.344	98	Paved parking, HSG D
1.314	98	Roofs, HSG D
0.719	30	Woods, Good, HSG A
0.909	77	Woods, Good, HSG D
3.469	77	Weighted Average
1.693		48.80% Pervious Area
1.776		51.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	50	0.0980	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.1	138	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.3	188	Total			

Summary for Subcatchment PR8.6: Subcat PR8.6

Runoff = 18.1 cfs @ 12.90 hrs, Volume= 3.542 af, Depth= 1.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.328	76	Gravel roads, HSG A
0.031	91	Gravel roads, HSG D
0.397	30	Meadow, non-grazed, HSG A
0.145	98	Paved parking, HSG D
5.887	30	Woods, Good, HSG A
17.920	77	Woods, Good, HSG D
24.708	65	Weighted Average
24.563		99.41% Pervious Area
0.145		0.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.9	50	0.0120	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
36.5	1,384	0.0160	0.63		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
62.4	1,434	Total			

Summary for Subcatchment PR8.7: Subcat PR8.7

Runoff = 1.6 cfs @ 12.24 hrs, Volume= 0.162 af, Depth= 2.53"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.024	30	Meadow, non-grazed, HSG A
0.044	98	Paved parking, HSG A
0.232	98	Paved parking, HSG D
0.104	98	Roofs, HSG D
0.179	30	Woods, Good, HSG A
0.186	77	Woods, Good, HSG D
0.768	75	Weighted Average
0.389		50.60% Pervious Area
0.380		49.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	50	0.0320	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.3	37	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.8	87	Total			

Summary for Subcatchment PR8.8: Subcat PR8.8

Runoff = 1.7 cfs @ 12.49 hrs, Volume= 0.225 af, Depth= 2.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.057	30	Meadow, non-grazed, HSG A
0.022	78	Meadow, non-grazed, HSG D
0.339	98	Paved parking, HSG A
0.198	98	Paved parking, HSG D
0.079	98	Roofs, HSG D
0.189	30	Woods, Good, HSG A
0.053	77	Woods, Good, HSG D
0.937	79	Weighted Average
0.321		34.26% Pervious Area
0.616		65.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
13.7	368	0.0080	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
34.8	418	Total			

Summary for Subcatchment PR8.9: Subcat PR8.9

Runoff = 0.0 cfs @ 12.83 hrs, Volume= 0.020 af, Depth= 0.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.076	30	Meadow, non-grazed, HSG A
0.019	78	Meadow, non-grazed, HSG D
0.665	30	Woods, Good, HSG A
0.178	77	Woods, Good, HSG D
0.939	40	Weighted Average
0.939		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.4	50	0.0140	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.9	97	0.0120	0.27		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
30.3	147	Total			

Summary for Pond P8.10: Low Point

Inflow Area = 3.569 ac, 68.47% Impervious, Inflow Depth = 4.08" for 10-yr event
Inflow = 12.7 cfs @ 12.19 hrs, Volume= 1.213 af
Outflow = 12.4 cfs @ 12.22 hrs, Volume= 1.052 af, Atten= 3%, Lag= 1.9 min
Primary = 12.4 cfs @ 12.22 hrs, Volume= 1.052 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 134.92' @ 12.22 hrs Surf.Area= 6,497 sf Storage= 9,025 cf

Plug-Flow detention time= 99.2 min calculated for 1.052 af (87% of inflow)
Center-of-Mass det. time= 40.2 min (833.9 - 793.7)

Volume	Invert	Avail.Storage	Storage Description
#1	133.00'	9,535 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
133.00	2,935	0	0
134.00	4,745	3,840	3,840
135.00	6,645	5,695	9,535

Device	Routing	Invert	Outlet Devices
#1	Primary	134.60'	**25.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=12.4 cfs @ 12.22 hrs HW=134.92' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 12.4 cfs @ 1.54 fps)

Summary for Pond P8.2B: Linear Infiltration Basin

Inflow Area = 1.374 ac, 7.22% Impervious, Inflow Depth = 0.10" for 10-yr event
Inflow = 0.0 cfs @ 15.54 hrs, Volume= 0.011 af
Outflow = 0.0 cfs @ 24.43 hrs, Volume= 0.011 af, Atten= 63%, Lag= 533.5 min
Discarded = 0.0 cfs @ 24.43 hrs, Volume= 0.011 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 162.35' @ 24.43 hrs Surf.Area= 1,614 sf Storage= 282 cf

Plug-Flow detention time= 545.5 min calculated for 0.011 af (100% of inflow)
Center-of-Mass det. time= 545.6 min (1,657.5 - 1,111.9)

Volume	Invert	Avail.Storage	Storage Description
#1	162.00'	2,141 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
162.00	0	0	0
162.50	2,312	578	578
163.00	3,938	1,563	2,141

Device	Routing	Invert	Outlet Devices
#1	Primary	162.50'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	162.00'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 24.43 hrs HW=162.35' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=162.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P8.3B: Linear Infiltration Basin

Inflow Area = 2.249 ac, 8.83% Impervious, Inflow Depth = 0.12" for 10-yr event
Inflow = 0.0 cfs @ 15.32 hrs, Volume= 0.023 af
Outflow = 0.0 cfs @ 24.41 hrs, Volume= 0.023 af, Atten= 64%, Lag= 545.5 min
Discarded = 0.0 cfs @ 24.41 hrs, Volume= 0.023 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 158.84' @ 24.41 hrs Surf.Area= 3,385 sf Storage= 568 cf

Plug-Flow detention time= 532.3 min calculated for 0.023 af (100% of inflow)
Center-of-Mass det. time= 532.4 min (1,626.3 - 1,093.9)

Volume	Invert	Avail.Storage	Storage Description
#1	158.50'	4,555 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
158.50	0	0	0
159.00	5,048	1,262	1,262
159.50	8,124	3,293	4,555

Device	Routing	Invert	Outlet Devices
#1	Primary	159.00'	**30.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	158.50'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 24.41 hrs HW=158.84' (Free Discharge)
2=Exfiltration (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=158.50' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.0 cfs)

Summary for Pond P8.4: Linear Infiltration Basin

Inflow Area = 0.731 ac, 21.83% Impervious, Inflow Depth = 0.52" for 10-yr event
Inflow = 0.2 cfs @ 12.47 hrs, Volume= 0.032 af
Outflow = 0.2 cfs @ 12.48 hrs, Volume= 0.032 af, Atten= 0%, Lag= 0.4 min
Discarded = 0.0 cfs @ 12.48 hrs, Volume= 0.000 af
Primary = 0.2 cfs @ 12.48 hrs, Volume= 0.032 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 159.44' @ 12.48 hrs Surf.Area= 164 sf Storage= 3 cf

Plug-Flow detention time= 0.2 min calculated for 0.032 af (100% of inflow)
Center-of-Mass det. time= 0.2 min (947.7 - 947.5)

Volume	Invert	Avail.Storage	Storage Description
#1	159.40'	2,377 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
159.40	0	0	0
159.90	2,313	578	578
160.40	4,882	1,799	2,377

Device	Routing	Invert	Outlet Devices
#1	Primary	159.40'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	159.40'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.48 hrs HW=159.44' (Free Discharge)
2=Exfiltration (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.2 cfs @ 12.48 hrs HW=159.44' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 0.2 cfs @ 0.46 fps)

Summary for Pond P8.5A: Linear Infiltration Basin

Inflow Area = 0.715 ac, 28.76% Impervious, Inflow Depth = 0.73" for 10-yr event
Inflow = 0.3 cfs @ 12.38 hrs, Volume= 0.044 af
Outflow = 0.0 cfs @ 15.93 hrs, Volume= 0.044 af, Atten= 86%, Lag= 213.0 min
Discarded = 0.0 cfs @ 15.93 hrs, Volume= 0.033 af
Primary = 0.0 cfs @ 15.93 hrs, Volume= 0.011 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 148.25' @ 15.93 hrs Surf.Area= 3,639 sf Storage= 979 cf

Plug-Flow detention time= 649.8 min calculated for 0.044 af (100% of inflow)
Center-of-Mass det. time= 650.0 min (1,574.8 - 924.8)

Volume	Invert	Avail.Storage	Storage Description
#1	147.70'	3,440 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
147.70	0	0	0
148.20	3,262	816	816
148.70	7,236	2,625	3,440

Device	Routing	Invert	Outlet Devices
#1	Primary	148.20'	**1.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	147.70'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 15.93 hrs HW=148.25' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 15.93 hrs HW=148.25' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.0 cfs @ 0.53 fps)

Summary for Pond P8.7: Low Point

Inflow Area = 0.768 ac, 49.40% Impervious, Inflow Depth = 2.53" for 10-yr event
Inflow = 1.6 cfs @ 12.24 hrs, Volume= 0.162 af
Outflow = 1.2 cfs @ 12.43 hrs, Volume= 0.116 af, Atten= 27%, Lag= 11.3 min
Primary = 1.2 cfs @ 12.43 hrs, Volume= 0.116 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 137.00' @ 12.43 hrs Surf.Area= 1,853 sf Storage= 2,336 cf

Plug-Flow detention time= 156.9 min calculated for 0.116 af (72% of inflow)
Center-of-Mass det. time= 61.8 min (906.7 - 844.9)

Volume	Invert	Avail.Storage	Storage Description
#1	135.00'	2,343 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
135.00	460	0	0
136.00	1,185	823	823
137.00	1,855	1,520	2,343

Device	Routing	Invert	Outlet Devices
#1	Primary	136.80'	**5.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=1.2 cfs @ 12.43 hrs HW=137.00' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 1.2 cfs @ 1.19 fps)

Summary for Link DP8.1: Wetland 28/29

Inflow Area = 20.081 ac, 15.89% Impervious, Inflow Depth = 1.08" for 10-yr event
Inflow = 14.9 cfs @ 12.28 hrs, Volume= 1.805 af
Primary = 14.9 cfs @ 12.28 hrs, Volume= 1.805 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.10: Low Point

Inflow Area = 3.569 ac, 68.47% Impervious, Inflow Depth = 3.54" for 10-yr event
Inflow = 12.4 cfs @ 12.22 hrs, Volume= 1.052 af
Primary = 12.4 cfs @ 12.22 hrs, Volume= 1.052 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.11: Wetland

Inflow Area = 0.928 ac, 38.94% Impervious, Inflow Depth = 3.46" for 10-yr event
Inflow = 3.4 cfs @ 12.12 hrs, Volume= 0.268 af
Primary = 3.4 cfs @ 12.12 hrs, Volume= 0.268 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.2: Wetland 27

Inflow Area = 16.317 ac, 4.22% Impervious, Inflow Depth = 0.39" for 10-yr event
Inflow = 1.6 cfs @ 13.00 hrs, Volume= 0.532 af
Primary = 1.6 cfs @ 13.00 hrs, Volume= 0.532 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.3: Wetland 25

Inflow Area = 15.697 ac, 7.65% Impervious, Inflow Depth = 0.99" for 10-yr event
Inflow = 8.1 cfs @ 12.58 hrs, Volume= 1.298 af
Primary = 8.1 cfs @ 12.58 hrs, Volume= 1.298 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.4: Wetland 26

Inflow Area = 1.102 ac, 25.29% Impervious, Inflow Depth = 0.63" for 10-yr event
Inflow = 0.3 cfs @ 12.39 hrs, Volume= 0.058 af
Primary = 0.3 cfs @ 12.39 hrs, Volume= 0.058 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.5: Low Point

Inflow Area = 4.184 ac, 47.36% Impervious, Inflow Depth = 2.28" for 10-yr event
Inflow = 8.3 cfs @ 12.21 hrs, Volume= 0.793 af
Primary = 8.3 cfs @ 12.21 hrs, Volume= 0.793 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.6: Wetland 24

Inflow Area = 24.708 ac, 0.59% Impervious, Inflow Depth = 1.72" for 10-yr event
Inflow = 18.1 cfs @ 12.90 hrs, Volume= 3.542 af
Primary = 18.1 cfs @ 12.90 hrs, Volume= 3.542 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.7: Low Point

Inflow Area = 0.768 ac, 49.40% Impervious, Inflow Depth = 1.82" for 10-yr event
Inflow = 1.2 cfs @ 12.43 hrs, Volume= 0.116 af
Primary = 1.2 cfs @ 12.43 hrs, Volume= 0.116 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.8: Low Point

Inflow Area = 0.937 ac, 65.74% Impervious, Inflow Depth = 2.89" for 10-yr event
Inflow = 1.7 cfs @ 12.49 hrs, Volume= 0.225 af
Primary = 1.7 cfs @ 12.49 hrs, Volume= 0.225 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.9: Wetland 24A/Vernal Pool 5

Inflow Area = 0.939 ac, 0.00% Impervious, Inflow Depth = 0.26" for 10-yr event
Inflow = 0.0 cfs @ 12.83 hrs, Volume= 0.020 af
Primary = 0.0 cfs @ 12.83 hrs, Volume= 0.020 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentPR8.10: Subcat PR8.10 Runoff Area=3.569 ac 68.47% Impervious Runoff Depth=5.18"
Flow Length=497' Tc=14.1 min CN=91 Runoff=15.9 cfs 1.541 af

SubcatchmentPR8.11: Subcat PR8.11 Runoff Area=0.928 ac 38.94% Impervious Runoff Depth=4.52"
Flow Length=145' Tc=8.9 min CN=85 Runoff=4.4 cfs 0.350 af

SubcatchmentPR8.1A: Subcat EX8.1A Runoff Area=19.801 ac 16.12% Impervious Runoff Depth=1.73"
Flow Length=356' Tc=17.5 min CN=56 Runoff=26.0 cfs 2.861 af

SubcatchmentPR8.1B: Subcat PR8.1B Runoff Area=0.280 ac 0.00% Impervious Runoff Depth=0.10"
Flow Length=363' Tc=33.1 min CN=30 Runoff=0.0 cfs 0.002 af

SubcatchmentPR8.2A: Subcat PR8.2A Runoff Area=14.943 ac 3.94% Impervious Runoff Depth=0.83"
Flow Length=911' Tc=49.4 min CN=44 Runoff=4.3 cfs 1.030 af

SubcatchmentPR8.2B: Subcat PR8.2B Runoff Area=1.374 ac 7.22% Impervious Runoff Depth=0.30"
Flow Length=534' Tc=42.5 min CN=35 Runoff=0.1 cfs 0.034 af

SubcatchmentPR8.3A: Subcat PR8.3A Runoff Area=13.448 ac 7.45% Impervious Runoff Depth=1.82"
Flow Length=714' Tc=36.5 min CN=57 Runoff=13.6 cfs 2.037 af

SubcatchmentPR8.3b: Subcat PR8.3B Runoff Area=97,971 sf 8.83% Impervious Runoff Depth=0.35"
Flow Length=578' Tc=47.7 min CN=36 Runoff=0.1 cfs 0.066 af

SubcatchmentPR8.4A: Subcat PR8.4A Runoff Area=0.371 ac 32.11% Impervious Runoff Depth=1.41"
Flow Length=203' Tc=14.0 min CN=52 Runoff=0.4 cfs 0.044 af

SubcatchmentPR8.4B: Subcat PR8.4B Runoff Area=0.731 ac 21.83% Impervious Runoff Depth=0.96"
Flow Length=724' Tc=18.8 min CN=46 Runoff=0.4 cfs 0.059 af

SubcatchmentPR8.5A: Subcat PR8.5A Runoff Area=0.715 ac 28.76% Impervious Runoff Depth=1.26"
Flow Length=891' Tc=19.4 min CN=50 Runoff=0.6 cfs 0.075 af

SubcatchmentPR8.5B: Subcat PR8.5B Runoff Area=3.469 ac 51.20% Impervious Runoff Depth=3.68"
Flow Length=188' Tc=15.3 min CN=77 Runoff=11.2 cfs 1.064 af

SubcatchmentPR8.6: Subcat PR8.6 Runoff Area=24.708 ac 0.59% Impervious Runoff Depth=2.52"
Flow Length=1,434' Tc=62.4 min CN=65 Runoff=27.3 cfs 5.189 af

SubcatchmentPR8.7: Subcat PR8.7 Runoff Area=0.768 ac 49.40% Impervious Runoff Depth=3.48"
Flow Length=87' Tc=17.8 min CN=75 Runoff=2.2 cfs 0.223 af

SubcatchmentPR8.8: Subcat PR8.8 Runoff Area=0.937 ac 65.74% Impervious Runoff Depth=3.89"
Flow Length=418' Tc=34.8 min CN=79 Runoff=2.3 cfs 0.303 af

SubcatchmentPR8.9: Subcat PR8.9 Runoff Area=0.939 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=147' Tc=30.3 min CN=40 Runoff=0.2 cfs 0.045 af

Pond P8.10: Low Point Peak Elev=134.97' Storage=9,369 cf Inflow=15.9 cfs 1.541 af
Outflow=15.6 cfs 1.380 af

Pond P8.2B: Linear Infiltration Basin Peak Elev=162.51' Storage=606 cf Inflow=0.1 cfs 0.034 af
Discarded=0.0 cfs 0.022 af Primary=0.0 cfs 0.012 af Outflow=0.0 cfs 0.034 af

Pond P8.3B: Linear Infiltration Basin Peak Elev=159.01' Storage=1,297 cf Inflow=0.1 cfs 0.066 af
Discarded=0.0 cfs 0.048 af Primary=0.1 cfs 0.018 af Outflow=0.1 cfs 0.066 af

Pond P8.4: Linear Infiltration Basin Peak Elev=159.46' Storage=10 cf Inflow=0.4 cfs 0.059 af
Discarded=0.0 cfs 0.000 af Primary=0.4 cfs 0.058 af Outflow=0.4 cfs 0.059 af

Pond P8.5A: Linear Infiltration Basin Peak Elev=148.32' Storage=1,246 cf Inflow=0.6 cfs 0.075 af
Discarded=0.0 cfs 0.035 af Primary=0.1 cfs 0.040 af Outflow=0.1 cfs 0.075 af

Pond P8.7: Low Point Peak Elev=137.14' Storage=2,343 cf Inflow=2.2 cfs 0.223 af
Outflow=2.7 cfs 0.177 af

Link DP8.1: Wetland 28/29 Inflow=26.0 cfs 2.864 af
Primary=26.0 cfs 2.864 af

Link DP8.10: Low Point Inflow=15.6 cfs 1.380 af
Primary=15.6 cfs 1.380 af

Link DP8.11: Wetland Inflow=4.4 cfs 0.350 af
Primary=4.4 cfs 0.350 af

Link DP8.2: Wetland 27 Inflow=4.3 cfs 1.043 af
Primary=4.3 cfs 1.043 af

Link DP8.3: Wetland 25 Inflow=13.6 cfs 2.055 af
Primary=13.6 cfs 2.055 af

Link DP8.4: Wetland 26 Inflow=0.7 cfs 0.102 af
Primary=0.7 cfs 0.102 af

Link DP8.5: Low Point Inflow=11.2 cfs 1.104 af
Primary=11.2 cfs 1.104 af

Link DP8.6: Wetland 24 Inflow=27.3 cfs 5.189 af
Primary=27.3 cfs 5.189 af

Link DP8.7: Low Point Inflow=2.7 cfs 0.177 af
Primary=2.7 cfs 0.177 af

Link DP8.8: Low Point Inflow=2.3 cfs 0.303 af
Primary=2.3 cfs 0.303 af

Link DP8.9: Wetland 24A/Vernal Pool 5 Inflow=0.2 cfs 0.045 af
Primary=0.2 cfs 0.045 af

Total Runoff Area = 89.229 ac Runoff Volume = 14.922 af Average Runoff Depth = 2.01"
87.35% Pervious = 77.944 ac 12.65% Impervious = 11.285 ac

Summary for Subcatchment PR8.10: Subcat PR8.10

Runoff = 15.9 cfs @ 12.19 hrs, Volume= 1.541 af, Depth= 5.18"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.037	78	Meadow, non-grazed, HSG D
1.401	98	Paved parking, HSG D
0.269	98	Paved roads w/curbs & sewers, HSG D
0.775	98	Roofs, HSG D
1.088	77	Woods, Good, HSG D
3.569	91	Weighted Average
1.125		31.53% Pervious Area
2.444		68.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.22		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
1.0	184	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
12.4	263	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.1	497	Total			

Summary for Subcatchment PR8.11: Subcat PR8.11

Runoff = 4.4 cfs @ 12.12 hrs, Volume= 0.350 af, Depth= 4.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.013	78	Meadow, non-grazed, HSG D
0.313	98	Paved parking, HSG D
0.028	98	Paved roads w/curbs & sewers, HSG D
0.020	98	Roofs, HSG D
0.554	77	Woods, Good, HSG D
0.928	85	Weighted Average
0.567		61.06% Pervious Area
0.362		38.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	16	0.0625	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.6	34	0.0120	0.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
2.9	95	0.0120	0.55		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
8.9	145	Total			

Summary for Subcatchment PR8.1A: Subcat EX8.1A

Runoff = 26.0 cfs @ 12.27 hrs, Volume= 2.861 af, Depth= 1.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
1.938	39	>75% Grass cover, Good, HSG A
0.003	80	>75% Grass cover, Good, HSG D
0.127	30	Meadow, non-grazed, HSG A
0.080	78	Meadow, non-grazed, HSG D
1.226	98	Paved parking, HSG A
0.788	98	Paved roads w/curbs & sewers, HSG A
1.177	98	Roofs, HSG A
8.427	30	Woods, Good, HSG A
0.000	70	Woods, Good, HSG C
6.034	77	Woods, Good, HSG D
19.801	56	Weighted Average
16.610		83.88% Pervious Area
3.191		16.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	22	0.0138	0.89		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
6.6	28	0.0040	0.07		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
10.5	306	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
17.5	356	Total			

Summary for Subcatchment PR8.1B: Subcat PR8.1B

Runoff = 0.0 cfs @ 15.63 hrs, Volume= 0.002 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.095	30	Meadow, non-grazed, HSG A
0.186	30	Woods, Good, HSG A
0.280	30	Weighted Average
0.280		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	50	0.1460	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
23.6	313	0.0010	0.22		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
33.1	363	Total			

Summary for Subcatchment PR8.2A: Subcat PR8.2A

Runoff = 4.3 cfs @ 12.85 hrs, Volume= 1.030 af, Depth= 0.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.061	30	Meadow, non-grazed, HSG A
0.049	78	Meadow, non-grazed, HSG D
0.209	98	Paved parking, HSG A
0.095	98	Paved parking, HSG D
0.227	98	Paved roads w/curbs & sewers, HSG A
0.058	98	Roofs, HSG A
10.640	30	Woods, Good, HSG A
3.604	77	Woods, Good, HSG D
14.943	44	Weighted Average
14.354		96.06% Pervious Area
0.589		3.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.1	50	0.0160	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.8	500	0.0184	0.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.5	361	0.0190	0.34		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
49.4	911	Total			

Summary for Subcatchment PR8.2B: Subcat PR8.2B

Runoff = 0.1 cfs @ 13.17 hrs, Volume= 0.034 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.110	30	Meadow, non-grazed, HSG A
0.099	98	Paved parking, HSG A
1.165	30	Woods, Good, HSG A
1.374	35	Weighted Average
1.275		92.78% Pervious Area
0.099		7.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.5	50	0.0080	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
6.0	187	0.0430	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
6.0	297	0.0030	0.82		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
42.5	534	Total			

Summary for Subcatchment PR8.3A: Subcat PR8.3A

Runoff = 13.6 cfs @ 12.57 hrs, Volume= 2.037 af, Depth= 1.82"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.261	39	>75% Grass cover, Good, HSG A
0.491	91	Gravel roads, HSG D
0.044	30	Meadow, non-grazed, HSG A
0.018	78	Meadow, non-grazed, HSG D
0.465	98	Paved parking, HSG A
0.254	98	Paved roads w/curbs & sewers, HSG A
0.283	98	Roofs, HSG A
6.056	30	Woods, Good, HSG A
5.576	77	Woods, Good, HSG D
13.448	57	Weighted Average
12.446		92.55% Pervious Area
1.002		7.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	50	0.0080	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.3	31	0.0030	0.38		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	89	0.0060	1.57		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.8	93	0.0160	0.89		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.0	451	0.0400	0.50		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
36.5	714	Total			

Summary for Subcatchment PR8.3b: Subcat PR8.3B

Runoff = 0.1 cfs @ 13.14 hrs, Volume= 0.066 af, Depth= 0.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (sf)	CN	Description
10,143	30	Meadow, non-grazed, HSG A
2,301	98	Paved parking, HSG A
6,348	98	Roofs, HSG A
79,179	30	Woods, Good, HSG A
97,971	36	Weighted Average
89,322		91.17% Pervious Area
8,649		8.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
25.8	424	0.0120	0.27		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.8	104	0.0230	2.27		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
47.7	578	Total			

Summary for Subcatchment PR8.4A: Subcat PR8.4A

Runoff = 0.4 cfs @ 12.22 hrs, Volume= 0.044 af, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.035	30	Meadow, non-grazed, HSG A
0.000	78	Meadow, non-grazed, HSG D
0.114	98	Paved parking, HSG A
0.005	98	Paved parking, HSG D
0.217	30	Woods, Good, HSG A
0.371	52	Weighted Average
0.252		67.89% Pervious Area
0.119		32.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	50	0.0860	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.2	153	0.0540	1.16		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.0	203	Total			

Summary for Subcatchment PR8.4B: Subcat PR8.4B

Runoff = 0.4 cfs @ 12.35 hrs, Volume= 0.059 af, Depth= 0.96"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.175	30	Meadow, non-grazed, HSG A
0.160	98	Paved parking, HSG A
0.384	30	Woods, Good, HSG A
0.013	77	Woods, Good, HSG D
0.731	46	Weighted Average
0.571		78.17% Pervious Area
0.160		21.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.9	50	0.1040	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.9	674	0.0090	1.42		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
18.8	724	Total			

Summary for Subcatchment PR8.5A: Subcat PR8.5A

Runoff = 0.6 cfs @ 12.32 hrs, Volume= 0.075 af, Depth= 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.198	30	Meadow, non-grazed, HSG A
0.206	98	Paved parking, HSG A
0.312	30	Woods, Good, HSG A
0.715	50	Weighted Average
0.509		71.24% Pervious Area
0.206		28.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	50	0.0980	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.2	841	0.0130	1.71		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
19.4	891	Total			

Summary for Subcatchment PR8.5B: Subcat PR8.5B

Runoff = 11.2 cfs @ 12.21 hrs, Volume= 1.064 af, Depth= 3.68"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.064	30	Meadow, non-grazed, HSG A
0.117	98	Paved parking, HSG A
0.344	98	Paved parking, HSG D
1.314	98	Roofs, HSG D
0.719	30	Woods, Good, HSG A
0.909	77	Woods, Good, HSG D
3.469	77	Weighted Average
1.693		48.80% Pervious Area
1.776		51.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	50	0.0980	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.1	138	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.3	188	Total			

Summary for Subcatchment PR8.6: Subcat PR8.6

Runoff = 27.3 cfs @ 12.89 hrs, Volume= 5.189 af, Depth= 2.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.328	76	Gravel roads, HSG A
0.031	91	Gravel roads, HSG D
0.397	30	Meadow, non-grazed, HSG A
0.145	98	Paved parking, HSG D
5.887	30	Woods, Good, HSG A
17.920	77	Woods, Good, HSG D
24.708	65	Weighted Average
24.563		99.41% Pervious Area
0.145		0.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.9	50	0.0120	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
36.5	1,384	0.0160	0.63		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
62.4	1,434	Total			

Summary for Subcatchment PR8.7: Subcat PR8.7

Runoff = 2.2 cfs @ 12.24 hrs, Volume= 0.223 af, Depth= 3.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.024	30	Meadow, non-grazed, HSG A
0.044	98	Paved parking, HSG A
0.232	98	Paved parking, HSG D
0.104	98	Roofs, HSG D
0.179	30	Woods, Good, HSG A
0.186	77	Woods, Good, HSG D
0.768	75	Weighted Average
0.389		50.60% Pervious Area
0.380		49.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	50	0.0320	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.3	37	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.8	87	Total			

Summary for Subcatchment PR8.8: Subcat PR8.8

Runoff = 2.3 cfs @ 12.49 hrs, Volume= 0.303 af, Depth= 3.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.057	30	Meadow, non-grazed, HSG A
0.022	78	Meadow, non-grazed, HSG D
0.339	98	Paved parking, HSG A
0.198	98	Paved parking, HSG D
0.079	98	Roofs, HSG D
0.189	30	Woods, Good, HSG A
0.053	77	Woods, Good, HSG D
0.937	79	Weighted Average
0.321		34.26% Pervious Area
0.616		65.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
13.7	368	0.0080	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
34.8	418	Total			

Summary for Subcatchment PR8.9: Subcat PR8.9

Runoff = 0.2 cfs @ 12.66 hrs, Volume= 0.045 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.076	30	Meadow, non-grazed, HSG A
0.019	78	Meadow, non-grazed, HSG D
0.665	30	Woods, Good, HSG A
0.178	77	Woods, Good, HSG D
0.939	40	Weighted Average
0.939		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.4	50	0.0140	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.9	97	0.0120	0.27		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
30.3	147	Total			

Summary for Pond P8.10: Low Point

Inflow Area = 3.569 ac, 68.47% Impervious, Inflow Depth = 5.18" for 25-yr event
Inflow = 15.9 cfs @ 12.19 hrs, Volume= 1.541 af
Outflow = 15.6 cfs @ 12.22 hrs, Volume= 1.380 af, Atten= 2%, Lag= 1.8 min
Primary = 15.6 cfs @ 12.22 hrs, Volume= 1.380 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 134.97' @ 12.22 hrs Surf.Area= 6,597 sf Storage= 9,369 cf

Plug-Flow detention time= 86.7 min calculated for 1.380 af (90% of inflow)
Center-of-Mass det. time= 36.3 min (823.7 - 787.4)

Volume	Invert	Avail.Storage	Storage Description
#1	133.00'	9,535 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
133.00	2,935	0	0
134.00	4,745	3,840	3,840
135.00	6,645	5,695	9,535

Device	Routing	Invert	Outlet Devices
#1	Primary	134.60'	**25.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=15.6 cfs @ 12.22 hrs HW=134.97' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 15.6 cfs @ 1.66 fps)

Summary for Pond P8.2B: Linear Infiltration Basin

Inflow Area = 1.374 ac, 7.22% Impervious, Inflow Depth = 0.30" for 25-yr event
Inflow = 0.1 cfs @ 13.17 hrs, Volume= 0.034 af
Outflow = 0.0 cfs @ 16.31 hrs, Volume= 0.034 af, Atten= 37%, Lag= 188.1 min
Discarded = 0.0 cfs @ 16.31 hrs, Volume= 0.022 af
Primary = 0.0 cfs @ 16.31 hrs, Volume= 0.012 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 162.51' @ 16.31 hrs Surf.Area= 2,351 sf Storage= 606 cf

Plug-Flow detention time= 530.3 min calculated for 0.034 af (100% of inflow)
Center-of-Mass det. time= 530.2 min (1,558.5 - 1,028.3)

Volume	Invert	Avail.Storage	Storage Description
#1	162.00'	2,141 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
162.00	0	0	0
162.50	2,312	578	578
163.00	3,938	1,563	2,141

Device	Routing	Invert	Outlet Devices
#1	Primary	162.50'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	162.00'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 16.31 hrs HW=162.51' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 16.31 hrs HW=162.51' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.0 cfs @ 0.27 fps)

Summary for Pond P8.3B: Linear Infiltration Basin

Inflow Area = 2.249 ac, 8.83% Impervious, Inflow Depth = 0.35" for 25-yr event
Inflow = 0.1 cfs @ 13.14 hrs, Volume= 0.066 af
Outflow = 0.1 cfs @ 16.78 hrs, Volume= 0.066 af, Atten= 51%, Lag= 218.8 min
Discarded = 0.0 cfs @ 16.78 hrs, Volume= 0.048 af
Primary = 0.1 cfs @ 16.78 hrs, Volume= 0.018 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 159.01' @ 16.78 hrs Surf.Area= 5,091 sf Storage= 1,297 cf

Plug-Flow detention time= 600.1 min calculated for 0.066 af (100% of inflow)
Center-of-Mass det. time= 600.1 min (1,620.6 - 1,020.4)

Volume	Invert	Avail.Storage	Storage Description
#1	158.50'	4,555 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
158.50	0	0	0
159.00	5,048	1,262	1,262
159.50	8,124	3,293	4,555

Device	Routing	Invert	Outlet Devices
#1	Primary	159.00'	**30.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	158.50'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 16.78 hrs HW=159.01' (Free Discharge)
2=Exfiltration (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 16.78 hrs HW=159.01' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 0.0 cfs @ 0.20 fps)

Summary for Pond P8.4: Linear Infiltration Basin

Inflow Area = 0.731 ac, 21.83% Impervious, Inflow Depth = 0.96" for 25-yr event
Inflow = 0.4 cfs @ 12.35 hrs, Volume= 0.059 af
Outflow = 0.4 cfs @ 12.36 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.6 min
Discarded = 0.0 cfs @ 12.36 hrs, Volume= 0.000 af
Primary = 0.4 cfs @ 12.36 hrs, Volume= 0.058 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 159.46' @ 12.36 hrs Surf.Area= 297 sf Storage= 10 cf

Plug-Flow detention time= 0.3 min calculated for 0.059 af (100% of inflow)
Center-of-Mass det. time= 0.3 min (919.7 - 919.4)

Volume	Invert	Avail.Storage	Storage Description
#1	159.40'	2,377 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
159.40	0	0	0
159.90	2,313	578	578
160.40	4,882	1,799	2,377

Device	Routing	Invert	Outlet Devices
#1	Primary	159.40'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	159.40'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.36 hrs HW=159.46' (Free Discharge)
2=Exfiltration (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.4 cfs @ 12.36 hrs HW=159.46' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 0.4 cfs @ 0.62 fps)

Summary for Pond P8.5A: Linear Infiltration Basin

Inflow Area = 0.715 ac, 28.76% Impervious, Inflow Depth = 1.26" for 25-yr event
Inflow = 0.6 cfs @ 12.32 hrs, Volume= 0.075 af
Outflow = 0.1 cfs @ 13.69 hrs, Volume= 0.075 af, Atten= 81%, Lag= 82.1 min
Discarded = 0.0 cfs @ 13.69 hrs, Volume= 0.035 af
Primary = 0.1 cfs @ 13.69 hrs, Volume= 0.040 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 148.32' @ 13.69 hrs Surf.Area= 4,182 sf Storage= 1,246 cf

Plug-Flow detention time= 425.2 min calculated for 0.075 af (100% of inflow)
Center-of-Mass det. time= 425.1 min (1,328.4 - 903.3)

Volume	Invert	Avail.Storage	Storage Description
#1	147.70'	3,440 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
147.70	0	0	0
148.20	3,262	816	816
148.70	7,236	2,625	3,440

Device	Routing	Invert	Outlet Devices
#1	Primary	148.20'	**1.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	147.70'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 13.69 hrs HW=148.32' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.1 cfs @ 13.69 hrs HW=148.32' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.1 cfs @ 0.83 fps)

Summary for Pond P8.7: Low Point

Inflow Area = 0.768 ac, 49.40% Impervious, Inflow Depth = 3.48" for 25-yr event
Inflow = 2.2 cfs @ 12.24 hrs, Volume= 0.223 af
Outflow = 2.7 cfs @ 12.24 hrs, Volume= 0.177 af, Atten= 0%, Lag= 0.0 min
Primary = 2.7 cfs @ 12.24 hrs, Volume= 0.177 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 137.14' @ 12.24 hrs Surf.Area= 1,855 sf Storage= 2,343 cf

Plug-Flow detention time= 123.8 min calculated for 0.177 af (80% of inflow)
Center-of-Mass det. time= 45.1 min (880.8 - 835.7)

Volume	Invert	Avail.Storage	Storage Description
#1	135.00'	2,343 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
135.00	460	0	0
136.00	1,185	823	823
137.00	1,855	1,520	2,343

Device	Routing	Invert	Outlet Devices
#1	Primary	136.80'	**5.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=2.7 cfs @ 12.24 hrs HW=137.14' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 2.7 cfs @ 1.57 fps)

Summary for Link DP8.1: Wetland 28/29

Inflow Area = 20.081 ac, 15.89% Impervious, Inflow Depth = 1.71" for 25-yr event
Inflow = 26.0 cfs @ 12.27 hrs, Volume= 2.864 af
Primary = 26.0 cfs @ 12.27 hrs, Volume= 2.864 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.10: Low Point

Inflow Area = 3.569 ac, 68.47% Impervious, Inflow Depth = 4.64" for 25-yr event
Inflow = 15.6 cfs @ 12.22 hrs, Volume= 1.380 af
Primary = 15.6 cfs @ 12.22 hrs, Volume= 1.380 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.11: Wetland

Inflow Area = 0.928 ac, 38.94% Impervious, Inflow Depth = 4.52" for 25-yr event
Inflow = 4.4 cfs @ 12.12 hrs, Volume= 0.350 af
Primary = 4.4 cfs @ 12.12 hrs, Volume= 0.350 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.2: Wetland 27

Inflow Area = 16.317 ac, 4.22% Impervious, Inflow Depth = 0.77" for 25-yr event
Inflow = 4.3 cfs @ 12.85 hrs, Volume= 1.043 af
Primary = 4.3 cfs @ 12.85 hrs, Volume= 1.043 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.3: Wetland 25

Inflow Area = 15.697 ac, 7.65% Impervious, Inflow Depth = 1.57" for 25-yr event
Inflow = 13.6 cfs @ 12.57 hrs, Volume= 2.055 af
Primary = 13.6 cfs @ 12.57 hrs, Volume= 2.055 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.4: Wetland 26

Inflow Area = 1.102 ac, 25.29% Impervious, Inflow Depth = 1.11" for 25-yr event
Inflow = 0.7 cfs @ 12.30 hrs, Volume= 0.102 af
Primary = 0.7 cfs @ 12.30 hrs, Volume= 0.102 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.5: Low Point

Inflow Area = 4.184 ac, 47.36% Impervious, Inflow Depth = 3.17" for 25-yr event
Inflow = 11.2 cfs @ 12.21 hrs, Volume= 1.104 af
Primary = 11.2 cfs @ 12.21 hrs, Volume= 1.104 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.6: Wetland 24

Inflow Area = 24.708 ac, 0.59% Impervious, Inflow Depth = 2.52" for 25-yr event
Inflow = 27.3 cfs @ 12.89 hrs, Volume= 5.189 af
Primary = 27.3 cfs @ 12.89 hrs, Volume= 5.189 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.7: Low Point

Inflow Area = 0.768 ac, 49.40% Impervious, Inflow Depth = 2.77" for 25-yr event
Inflow = 2.7 cfs @ 12.24 hrs, Volume= 0.177 af
Primary = 2.7 cfs @ 12.24 hrs, Volume= 0.177 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.8: Low Point

Inflow Area = 0.937 ac, 65.74% Impervious, Inflow Depth = 3.89" for 25-yr event
Inflow = 2.3 cfs @ 12.49 hrs, Volume= 0.303 af
Primary = 2.3 cfs @ 12.49 hrs, Volume= 0.303 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.9: Wetland 24A/Vernal Pool 5

Inflow Area = 0.939 ac, 0.00% Impervious, Inflow Depth = 0.57" for 25-yr event
Inflow = 0.2 cfs @ 12.66 hrs, Volume= 0.045 af
Primary = 0.2 cfs @ 12.66 hrs, Volume= 0.045 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentPR8.10: Subcat PR8.10 Runoff Area=3.569 ac 68.47% Impervious Runoff Depth=7.52"
Flow Length=497' Tc=14.1 min CN=91 Runoff=22.7 cfs 2.236 af

SubcatchmentPR8.11: Subcat PR8.11 Runoff Area=0.928 ac 38.94% Impervious Runoff Depth=6.79"
Flow Length=145' Tc=8.9 min CN=85 Runoff=6.4 cfs 0.526 af

SubcatchmentPR8.1A: Subcat EX8.1A Runoff Area=19.801 ac 16.12% Impervious Runoff Depth=3.32"
Flow Length=356' Tc=17.5 min CN=56 Runoff=53.2 cfs 5.476 af

SubcatchmentPR8.1B: Subcat PR8.1B Runoff Area=0.280 ac 0.00% Impervious Runoff Depth=0.57"
Flow Length=363' Tc=33.1 min CN=30 Runoff=0.0 cfs 0.013 af

SubcatchmentPR8.2A: Subcat PR8.2A Runoff Area=14.943 ac 3.94% Impervious Runoff Depth=1.95"
Flow Length=911' Tc=49.4 min CN=44 Runoff=12.9 cfs 2.430 af

SubcatchmentPR8.2B: Subcat PR8.2B Runoff Area=1.374 ac 7.22% Impervious Runoff Depth=1.02"
Flow Length=534' Tc=42.5 min CN=35 Runoff=0.5 cfs 0.117 af

SubcatchmentPR8.3A: Subcat PR8.3A Runoff Area=13.448 ac 7.45% Impervious Runoff Depth=3.44"
Flow Length=714' Tc=36.5 min CN=57 Runoff=27.3 cfs 3.850 af

SubcatchmentPR8.3b: Subcat PR8.3B Runoff Area=97,971 sf 8.83% Impervious Runoff Depth=1.11"
Flow Length=578' Tc=47.7 min CN=36 Runoff=0.9 cfs 0.209 af

SubcatchmentPR8.4A: Subcat PR8.4A Runoff Area=0.371 ac 32.11% Impervious Runoff Depth=2.85"
Flow Length=203' Tc=14.0 min CN=52 Runoff=0.9 cfs 0.088 af

SubcatchmentPR8.4B: Subcat PR8.4B Runoff Area=0.731 ac 21.83% Impervious Runoff Depth=2.17"
Flow Length=724' Tc=18.8 min CN=46 Runoff=1.1 cfs 0.132 af

SubcatchmentPR8.5A: Subcat PR8.5A Runoff Area=0.715 ac 28.76% Impervious Runoff Depth=2.62"
Flow Length=891' Tc=19.4 min CN=50 Runoff=1.4 cfs 0.156 af

SubcatchmentPR8.5B: Subcat PR8.5B Runoff Area=3.469 ac 51.20% Impervious Runoff Depth=5.83"
Flow Length=188' Tc=15.3 min CN=77 Runoff=17.6 cfs 1.684 af

SubcatchmentPR8.6: Subcat PR8.6 Runoff Area=24.708 ac 0.59% Impervious Runoff Depth=4.38"
Flow Length=1,434' Tc=62.4 min CN=65 Runoff=48.7 cfs 9.028 af

SubcatchmentPR8.7: Subcat PR8.7 Runoff Area=0.768 ac 49.40% Impervious Runoff Depth=5.59"
Flow Length=87' Tc=17.8 min CN=75 Runoff=3.6 cfs 0.358 af

SubcatchmentPR8.8: Subcat PR8.8 Runoff Area=0.937 ac 65.74% Impervious Runoff Depth=6.07"
Flow Length=418' Tc=34.8 min CN=79 Runoff=3.5 cfs 0.474 af

SubcatchmentPR8.9: Subcat PR8.9 Runoff Area=0.939 ac 0.00% Impervious Runoff Depth=1.52"
Flow Length=147' Tc=30.3 min CN=40 Runoff=0.7 cfs 0.119 af

Pond P8.10: Low Point Peak Elev=135.09' Storage=9,535 cf Inflow=22.7 cfs 2.236 af
Outflow=23.2 cfs 2.074 af

Pond P8.2B: Linear Infiltration Basin Peak Elev=162.57' Storage=735 cf Inflow=0.5 cfs 0.117 af
Discarded=0.0 cfs 0.023 af Primary=0.4 cfs 0.093 af Outflow=0.4 cfs 0.117 af

Pond P8.3B: Linear Infiltration Basin Peak Elev=159.05' Storage=1,499 cf Inflow=0.9 cfs 0.209 af
Discarded=0.0 cfs 0.050 af Primary=0.7 cfs 0.159 af Outflow=0.7 cfs 0.209 af

Pond P8.4: Linear Infiltration Basin Peak Elev=159.53' Storage=38 cf Inflow=1.1 cfs 0.132 af
Discarded=0.0 cfs 0.000 af Primary=1.1 cfs 0.132 af Outflow=1.1 cfs 0.132 af

Pond P8.5A: Linear Infiltration Basin Peak Elev=148.52' Storage=2,268 cf Inflow=1.4 cfs 0.156 af
Discarded=0.0 cfs 0.038 af Primary=0.5 cfs 0.118 af Outflow=0.5 cfs 0.156 af

Pond P8.7: Low Point Peak Elev=137.22' Storage=2,343 cf Inflow=3.6 cfs 0.358 af
Outflow=3.7 cfs 0.312 af

Link DP8.1: Wetland 28/29 Inflow=53.2 cfs 5.489 af
Primary=53.2 cfs 5.489 af

Link DP8.10: Low Point Inflow=23.2 cfs 2.074 af
Primary=23.2 cfs 2.074 af

Link DP8.11: Wetland Inflow=6.4 cfs 0.526 af
Primary=6.4 cfs 0.526 af

Link DP8.2: Wetland 27 Inflow=12.9 cfs 2.524 af
Primary=12.9 cfs 2.524 af

Link DP8.3: Wetland 25 Inflow=27.3 cfs 4.009 af
Primary=27.3 cfs 4.009 af

Link DP8.4: Wetland 26 Inflow=1.9 cfs 0.220 af
Primary=1.9 cfs 0.220 af

Link DP8.5: Low Point Inflow=17.6 cfs 1.803 af
Primary=17.6 cfs 1.803 af

Link DP8.6: Wetland 24 Inflow=48.7 cfs 9.028 af
Primary=48.7 cfs 9.028 af

Link DP8.7: Low Point Inflow=3.7 cfs 0.312 af
Primary=3.7 cfs 0.312 af

Link DP8.8: Low Point Inflow=3.5 cfs 0.474 af
Primary=3.5 cfs 0.474 af

Link DP8.9: Wetland 24A/Vernal Pool 5 Inflow=0.7 cfs 0.119 af
Primary=0.7 cfs 0.119 af

Total Runoff Area = 89.229 ac Runoff Volume = 26.897 af Average Runoff Depth = 3.62"
87.35% Pervious = 77.944 ac 12.65% Impervious = 11.285 ac

Summary for Subcatchment PR8.10: Subcat PR8.10

Runoff = 22.7 cfs @ 12.18 hrs, Volume= 2.236 af, Depth= 7.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.037	78	Meadow, non-grazed, HSG D
1.401	98	Paved parking, HSG D
0.269	98	Paved roads w/curbs & sewers, HSG D
0.775	98	Roofs, HSG D
1.088	77	Woods, Good, HSG D
3.569	91	Weighted Average
1.125		31.53% Pervious Area
2.444		68.47% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	50	0.0200	1.22		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
1.0	184	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
12.4	263	0.0050	0.35		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.1	497	Total			

Summary for Subcatchment PR8.11: Subcat PR8.11

Runoff = 6.4 cfs @ 12.12 hrs, Volume= 0.526 af, Depth= 6.79"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.013	78	Meadow, non-grazed, HSG D
0.313	98	Paved parking, HSG D
0.028	98	Paved roads w/curbs & sewers, HSG D
0.020	98	Roofs, HSG D
0.554	77	Woods, Good, HSG D
0.928	85	Weighted Average
0.567		61.06% Pervious Area
0.362		38.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.4	16	0.0625	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.6	34	0.0120	0.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
2.9	95	0.0120	0.55		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
8.9	145	Total			

Summary for Subcatchment PR8.1A: Subcat EX8.1A

Runoff = 53.2 cfs @ 12.25 hrs, Volume= 5.476 af, Depth= 3.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
1.938	39	>75% Grass cover, Good, HSG A
0.003	80	>75% Grass cover, Good, HSG D
0.127	30	Meadow, non-grazed, HSG A
0.080	78	Meadow, non-grazed, HSG D
1.226	98	Paved parking, HSG A
0.788	98	Paved roads w/curbs & sewers, HSG A
1.177	98	Roofs, HSG A
8.427	30	Woods, Good, HSG A
0.000	70	Woods, Good, HSG C
6.034	77	Woods, Good, HSG D
19.801	56	Weighted Average
16.610		83.88% Pervious Area
3.191		16.12% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	22	0.0138	0.89		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
6.6	28	0.0040	0.07		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
10.5	306	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
17.5	356	Total			

Summary for Subcatchment PR8.1B: Subcat PR8.1B

Runoff = 0.0 cfs @ 12.77 hrs, Volume= 0.013 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.095	30	Meadow, non-grazed, HSG A
0.186	30	Woods, Good, HSG A
0.280	30	Weighted Average
0.280		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	50	0.1460	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
23.6	313	0.0010	0.22		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
33.1	363	Total			

Summary for Subcatchment PR8.2A: Subcat PR8.2A

Runoff = 12.9 cfs @ 12.79 hrs, Volume= 2.430 af, Depth= 1.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.061	30	Meadow, non-grazed, HSG A
0.049	78	Meadow, non-grazed, HSG D
0.209	98	Paved parking, HSG A
0.095	98	Paved parking, HSG D
0.227	98	Paved roads w/curbs & sewers, HSG A
0.058	98	Roofs, HSG A
10.640	30	Woods, Good, HSG A
3.604	77	Woods, Good, HSG D
14.943	44	Weighted Average
14.354		96.06% Pervious Area
0.589		3.94% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
23.1	50	0.0160	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.8	500	0.0184	0.95		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
17.5	361	0.0190	0.34		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
49.4	911	Total			

Summary for Subcatchment PR8.2B: Subcat PR8.2B

Runoff = 0.5 cfs @ 12.79 hrs, Volume= 0.117 af, Depth= 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.110	30	Meadow, non-grazed, HSG A
0.099	98	Paved parking, HSG A
1.165	30	Woods, Good, HSG A
1.374	35	Weighted Average
1.275		92.78% Pervious Area
0.099		7.22% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
30.5	50	0.0080	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
6.0	187	0.0430	0.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
6.0	297	0.0030	0.82		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
42.5	534	Total			

Summary for Subcatchment PR8.3A: Subcat PR8.3A

Runoff = 27.3 cfs @ 12.53 hrs, Volume= 3.850 af, Depth= 3.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.261	39	>75% Grass cover, Good, HSG A
0.491	91	Gravel roads, HSG D
0.044	30	Meadow, non-grazed, HSG A
0.018	78	Meadow, non-grazed, HSG D
0.465	98	Paved parking, HSG A
0.254	98	Paved roads w/curbs & sewers, HSG A
0.283	98	Roofs, HSG A
6.056	30	Woods, Good, HSG A
5.576	77	Woods, Good, HSG D
13.448	57	Weighted Average
12.446		92.55% Pervious Area
1.002		7.45% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	50	0.0080	0.05		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
1.3	31	0.0030	0.38		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.9	89	0.0060	1.57		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.8	93	0.0160	0.89		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
15.0	451	0.0400	0.50		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
36.5	714	Total			

Summary for Subcatchment PR8.3b: Subcat PR8.3B

Runoff = 0.9 cfs @ 12.83 hrs, Volume= 0.209 af, Depth= 1.11"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (sf)	CN	Description
10,143	30	Meadow, non-grazed, HSG A
2,301	98	Paved parking, HSG A
6,348	98	Roofs, HSG A
79,179	30	Woods, Good, HSG A
97,971	36	Weighted Average
89,322		91.17% Pervious Area
8,649		8.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
25.8	424	0.0120	0.27		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.8	104	0.0230	2.27		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
47.7	578	Total			

Summary for Subcatchment PR8.4A: Subcat PR8.4A

Runoff = 0.9 cfs @ 12.21 hrs, Volume= 0.088 af, Depth= 2.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.035	30	Meadow, non-grazed, HSG A
0.000	78	Meadow, non-grazed, HSG D
0.114	98	Paved parking, HSG A
0.005	98	Paved parking, HSG D
0.217	30	Woods, Good, HSG A
0.371	52	Weighted Average
0.252		67.89% Pervious Area
0.119		32.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.8	50	0.0860	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.2	153	0.0540	1.16		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
14.0	203	Total			

Summary for Subcatchment PR8.4B: Subcat PR8.4B

Runoff = 1.1 cfs @ 12.30 hrs, Volume= 0.132 af, Depth= 2.17"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.175	30	Meadow, non-grazed, HSG A
0.160	98	Paved parking, HSG A
0.384	30	Woods, Good, HSG A
0.013	77	Woods, Good, HSG D
0.731	46	Weighted Average
0.571		78.17% Pervious Area
0.160		21.83% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.9	50	0.1040	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
7.9	674	0.0090	1.42		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
18.8	724	Total			

Summary for Subcatchment PR8.5A: Subcat PR8.5A

Runoff = 1.4 cfs @ 12.29 hrs, Volume= 0.156 af, Depth= 2.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.198	30	Meadow, non-grazed, HSG A
0.206	98	Paved parking, HSG A
0.312	30	Woods, Good, HSG A
0.715	50	Weighted Average
0.509		71.24% Pervious Area
0.206		28.76% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	50	0.0980	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
8.2	841	0.0130	1.71		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
19.4	891	Total			

Summary for Subcatchment PR8.5B: Subcat PR8.5B

Runoff = 17.6 cfs @ 12.21 hrs, Volume= 1.684 af, Depth= 5.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.064	30	Meadow, non-grazed, HSG A
0.117	98	Paved parking, HSG A
0.344	98	Paved parking, HSG D
1.314	98	Roofs, HSG D
0.719	30	Woods, Good, HSG A
0.909	77	Woods, Good, HSG D
3.469	77	Weighted Average
1.693		48.80% Pervious Area
1.776		51.20% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.2	50	0.0980	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
4.1	138	0.0500	0.56		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
15.3	188	Total			

Summary for Subcatchment PR8.6: Subcat PR8.6

Runoff = 48.7 cfs @ 12.83 hrs, Volume= 9.028 af, Depth= 4.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.328	76	Gravel roads, HSG A
0.031	91	Gravel roads, HSG D
0.397	30	Meadow, non-grazed, HSG A
0.145	98	Paved parking, HSG D
5.887	30	Woods, Good, HSG A
17.920	77	Woods, Good, HSG D
24.708	65	Weighted Average
24.563		99.41% Pervious Area
0.145		0.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
25.9	50	0.0120	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
36.5	1,384	0.0160	0.63		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
62.4	1,434	Total			

Summary for Subcatchment PR8.7: Subcat PR8.7

Runoff = 3.6 cfs @ 12.24 hrs, Volume= 0.358 af, Depth= 5.59"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.024	30	Meadow, non-grazed, HSG A
0.044	98	Paved parking, HSG A
0.232	98	Paved parking, HSG D
0.104	98	Roofs, HSG D
0.179	30	Woods, Good, HSG A
0.186	77	Woods, Good, HSG D
0.768	75	Weighted Average
0.389		50.60% Pervious Area
0.380		49.40% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
17.5	50	0.0320	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.3	37	0.1500	1.94		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
17.8	87	Total			

Summary for Subcatchment PR8.8: Subcat PR8.8

Runoff = 3.5 cfs @ 12.48 hrs, Volume= 0.474 af, Depth= 6.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.057	30	Meadow, non-grazed, HSG A
0.022	78	Meadow, non-grazed, HSG D
0.339	98	Paved parking, HSG A
0.198	98	Paved parking, HSG D
0.079	98	Roofs, HSG D
0.189	30	Woods, Good, HSG A
0.053	77	Woods, Good, HSG D
0.937	79	Weighted Average
0.321		34.26% Pervious Area
0.616		65.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
13.7	368	0.0080	0.45		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
34.8	418	Total			

Summary for Subcatchment PR8.9: Subcat PR8.9

Runoff = 0.7 cfs @ 12.53 hrs, Volume= 0.119 af, Depth= 1.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.076	30	Meadow, non-grazed, HSG A
0.019	78	Meadow, non-grazed, HSG D
0.665	30	Woods, Good, HSG A
0.178	77	Woods, Good, HSG D
0.939	40	Weighted Average
0.939		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
24.4	50	0.0140	0.03		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.9	97	0.0120	0.27		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
30.3	147	Total			

Summary for Pond P8.10: Low Point

Inflow Area = 3.569 ac, 68.47% Impervious, Inflow Depth = 7.52" for 100-yr event
Inflow = 22.7 cfs @ 12.18 hrs, Volume= 2.236 af
Outflow = 23.2 cfs @ 12.19 hrs, Volume= 2.074 af, Atten= 0%, Lag= 0.3 min
Primary = 23.2 cfs @ 12.19 hrs, Volume= 2.074 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 135.09' @ 12.19 hrs Surf.Area= 6,645 sf Storage= 9,535 cf

Plug-Flow detention time= 69.2 min calculated for 2.074 af (93% of inflow)
Center-of-Mass det. time= 30.6 min (808.7 - 778.1)

Volume	Invert	Avail.Storage	Storage Description
#1	133.00'	9,535 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
133.00	2,935	0	0
134.00	4,745	3,840	3,840
135.00	6,645	5,695	9,535

Device	Routing	Invert	Outlet Devices
#1	Primary	134.60'	**25.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=23.1 cfs @ 12.19 hrs HW=135.09' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 23.1 cfs @ 1.91 fps)

Summary for Pond P8.2B: Linear Infiltration Basin

Inflow Area = 1.374 ac, 7.22% Impervious, Inflow Depth = 1.02" for 100-yr event
Inflow = 0.5 cfs @ 12.79 hrs, Volume= 0.117 af
Outflow = 0.4 cfs @ 13.02 hrs, Volume= 0.117 af, Atten= 15%, Lag= 13.8 min
Discarded = 0.0 cfs @ 13.02 hrs, Volume= 0.023 af
Primary = 0.4 cfs @ 13.02 hrs, Volume= 0.093 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 162.57' @ 13.02 hrs Surf.Area= 2,523 sf Storage= 735 cf

Plug-Flow detention time= 174.7 min calculated for 0.117 af (100% of inflow)
Center-of-Mass det. time= 174.7 min (1,134.0 - 959.4)

Volume	Invert	Avail.Storage	Storage Description
#1	162.00'	2,141 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
162.00	0	0	0
162.50	2,312	578	578
163.00	3,938	1,563	2,141

Device	Routing	Invert	Outlet Devices
#1	Primary	162.50'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	162.00'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 13.02 hrs HW=162.57' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.4 cfs @ 13.02 hrs HW=162.57' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.4 cfs @ 0.62 fps)

Summary for Pond P8.3B: Linear Infiltration Basin

Inflow Area = 2.249 ac, 8.83% Impervious, Inflow Depth = 1.11" for 100-yr event
Inflow = 0.9 cfs @ 12.83 hrs, Volume= 0.209 af
Outflow = 0.7 cfs @ 13.10 hrs, Volume= 0.209 af, Atten= 15%, Lag= 16.1 min
Discarded = 0.0 cfs @ 13.10 hrs, Volume= 0.050 af
Primary = 0.7 cfs @ 13.10 hrs, Volume= 0.159 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 159.05' @ 13.10 hrs Surf.Area= 5,329 sf Storage= 1,499 cf

Plug-Flow detention time= 208.6 min calculated for 0.209 af (100% of inflow)
Center-of-Mass det. time= 208.9 min (1,166.8 - 958.0)

Volume	Invert	Avail.Storage	Storage Description
#1	158.50'	4,555 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
158.50	0	0	0
159.00	5,048	1,262	1,262
159.50	8,124	3,293	4,555

Device	Routing	Invert	Outlet Devices
#1	Primary	159.00'	**30.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	158.50'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 13.10 hrs HW=159.05' (Free Discharge)
2=Exfiltration (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.7 cfs @ 13.10 hrs HW=159.05' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 0.7 cfs @ 0.52 fps)

Summary for Pond P8.4: Linear Infiltration Basin

Inflow Area = 0.731 ac, 21.83% Impervious, Inflow Depth = 2.17" for 100-yr event
Inflow = 1.1 cfs @ 12.30 hrs, Volume= 0.132 af
Outflow = 1.1 cfs @ 12.31 hrs, Volume= 0.132 af, Atten= 0%, Lag= 0.6 min
Discarded = 0.0 cfs @ 12.31 hrs, Volume= 0.000 af
Primary = 1.1 cfs @ 12.31 hrs, Volume= 0.132 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 159.53' @ 12.31 hrs Surf.Area= 596 sf Storage= 38 cf

Plug-Flow detention time= 0.4 min calculated for 0.132 af (100% of inflow)
Center-of-Mass det. time= 0.4 min (889.4 - 889.1)

Volume	Invert	Avail.Storage	Storage Description
#1	159.40'	2,377 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
159.40	0	0	0
159.90	2,313	578	578
160.40	4,882	1,799	2,377

Device	Routing	Invert	Outlet Devices
#1	Primary	159.40'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	159.40'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.31 hrs HW=159.53' (Free Discharge)
2=Exfiltration (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=1.1 cfs @ 12.31 hrs HW=159.53' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 1.1 cfs @ 0.88 fps)

Summary for Pond P8.5A: Linear Infiltration Basin

Inflow Area = 0.715 ac, 28.76% Impervious, Inflow Depth = 2.62" for 100-yr event
Inflow = 1.4 cfs @ 12.29 hrs, Volume= 0.156 af
Outflow = 0.5 cfs @ 12.80 hrs, Volume= 0.156 af, Atten= 65%, Lag= 30.5 min
Discarded = 0.0 cfs @ 12.80 hrs, Volume= 0.038 af
Primary = 0.5 cfs @ 12.80 hrs, Volume= 0.118 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 148.52' @ 12.80 hrs Surf.Area= 5,808 sf Storage= 2,268 cf

Plug-Flow detention time= 239.2 min calculated for 0.156 af (100% of inflow)
Center-of-Mass det. time= 239.2 min (1,117.4 - 878.2)

Volume	Invert	Avail.Storage	Storage Description
#1	147.70'	3,440 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
147.70	0	0	0
148.20	3,262	816	816
148.70	7,236	2,625	3,440

Device	Routing	Invert	Outlet Devices
#1	Primary	148.20'	**1.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	147.70'	**0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.80 hrs HW=148.52' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.5 cfs @ 12.80 hrs HW=148.52' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.5 cfs @ 1.43 fps)

Summary for Pond P8.7: Low Point

Inflow Area = 0.768 ac, 49.40% Impervious, Inflow Depth = 5.59" for 100-yr event
Inflow = 3.6 cfs @ 12.24 hrs, Volume= 0.358 af
Outflow = 3.7 cfs @ 12.24 hrs, Volume= 0.312 af, Atten= 0%, Lag= 0.0 min
Primary = 3.7 cfs @ 12.24 hrs, Volume= 0.312 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 137.22' @ 12.24 hrs Surf.Area= 1,855 sf Storage= 2,343 cf

Plug-Flow detention time= 90.4 min calculated for 0.312 af (87% of inflow)
Center-of-Mass det. time= 32.7 min (854.9 - 822.2)

Volume	Invert	Avail.Storage	Storage Description
#1	135.00'	2,343 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
135.00	460	0	0
136.00	1,185	823	823
137.00	1,855	1,520	2,343

Device	Routing	Invert	Outlet Devices
#1	Primary	136.80'	**5.0' long x 1.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 Coef. (English) 2.69 2.72 2.75 2.85 2.98 3.08 3.20 3.28 3.31 3.30 3.31 3.32

Primary OutFlow Max=3.7 cfs @ 12.24 hrs HW=137.22' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 3.7 cfs @ 1.77 fps)

Summary for Link DP8.1: Wetland 28/29

Inflow Area = 20.081 ac, 15.89% Impervious, Inflow Depth = 3.28" for 100-yr event
Inflow = 53.2 cfs @ 12.25 hrs, Volume= 5.489 af
Primary = 53.2 cfs @ 12.25 hrs, Volume= 5.489 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.10: Low Point

Inflow Area = 3.569 ac, 68.47% Impervious, Inflow Depth = 6.97" for 100-yr event
Inflow = 23.2 cfs @ 12.19 hrs, Volume= 2.074 af
Primary = 23.2 cfs @ 12.19 hrs, Volume= 2.074 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.11: Wetland

Inflow Area = 0.928 ac, 38.94% Impervious, Inflow Depth = 6.79" for 100-yr event
Inflow = 6.4 cfs @ 12.12 hrs, Volume= 0.526 af
Primary = 6.4 cfs @ 12.12 hrs, Volume= 0.526 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.2: Wetland 27

Inflow Area = 16.317 ac, 4.22% Impervious, Inflow Depth = 1.86" for 100-yr event
Inflow = 12.9 cfs @ 12.79 hrs, Volume= 2.524 af
Primary = 12.9 cfs @ 12.79 hrs, Volume= 2.524 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.3: Wetland 25

Inflow Area = 15.697 ac, 7.65% Impervious, Inflow Depth = 3.07" for 100-yr event
Inflow = 27.3 cfs @ 12.53 hrs, Volume= 4.009 af
Primary = 27.3 cfs @ 12.53 hrs, Volume= 4.009 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.4: Wetland 26

Inflow Area = 1.102 ac, 25.29% Impervious, Inflow Depth = 2.40" for 100-yr event
Inflow = 1.9 cfs @ 12.26 hrs, Volume= 0.220 af
Primary = 1.9 cfs @ 12.26 hrs, Volume= 0.220 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.5: Low Point

Inflow Area = 4.184 ac, 47.36% Impervious, Inflow Depth = 5.17" for 100-yr event
Inflow = 17.6 cfs @ 12.21 hrs, Volume= 1.803 af
Primary = 17.6 cfs @ 12.21 hrs, Volume= 1.803 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.6: Wetland 24

Inflow Area = 24.708 ac, 0.59% Impervious, Inflow Depth = 4.38" for 100-yr event
Inflow = 48.7 cfs @ 12.83 hrs, Volume= 9.028 af
Primary = 48.7 cfs @ 12.83 hrs, Volume= 9.028 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.7: Low Point

Inflow Area = 0.768 ac, 49.40% Impervious, Inflow Depth = 4.87" for 100-yr event
Inflow = 3.7 cfs @ 12.24 hrs, Volume= 0.312 af
Primary = 3.7 cfs @ 12.24 hrs, Volume= 0.312 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.8: Low Point

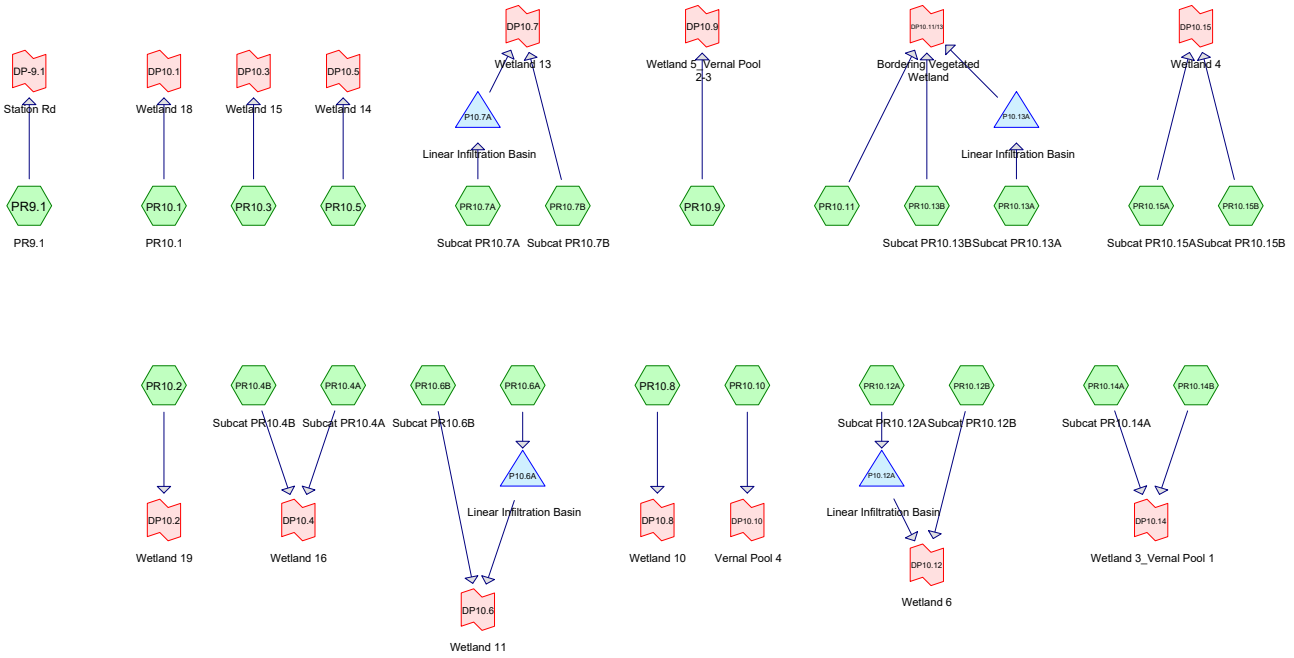
Inflow Area = 0.937 ac, 65.74% Impervious, Inflow Depth = 6.07" for 100-yr event
Inflow = 3.5 cfs @ 12.48 hrs, Volume= 0.474 af
Primary = 3.5 cfs @ 12.48 hrs, Volume= 0.474 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP8.9: Wetland 24A/Vernal Pool 5

Inflow Area = 0.939 ac, 0.00% Impervious, Inflow Depth = 1.52" for 100-yr event
Inflow = 0.7 cfs @ 12.53 hrs, Volume= 0.119 af
Primary = 0.7 cfs @ 12.53 hrs, Volume= 0.119 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs



Subcat Reach Pond Link

Routing Diagram for PR_Segment_9-10_ResponsetoComments
Prepared by VHB, Printed 7/10/2020
HydroCAD® 10.00-25 s/n 01038 © 2019 HydroCAD Software Solutions LLC

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentPR10.1: PR10.1 Runoff Area=1.200 ac 12.87% Impervious Runoff Depth=0.08"
Flow Length=250' Tc=19.0 min CN=80 Runoff=0.0 cfs 0.008 af

SubcatchmentPR10.10: Runoff Area=0.084 ac 18.11% Impervious Runoff Depth=0.08"
Tc=6.0 min CN=80 Runoff=0.0 cfs 0.001 af

SubcatchmentPR10.11: Runoff Area=1.132 ac 5.57% Impervious Runoff Depth=0.00"
Flow Length=38' Slope=0.0630 '/' Tc=10.7 min CN=52 Runoff=0.0 cfs 0.000 af

SubcatchmentPR10.12A: Subcat PR10.12A Runoff Area=0.304 ac 15.34% Impervious Runoff Depth=0.00"
Flow Length=356' Tc=12.4 min CN=41 Runoff=0.0 cfs 0.000 af

SubcatchmentPR10.12B: Subcat PR10.12B Runoff Area=0.850 ac 15.61% Impervious Runoff Depth=0.00"
Flow Length=250' Tc=14.7 min CN=58 Runoff=0.0 cfs 0.000 af

SubcatchmentPR10.13A: Subcat PR10.13A Runoff Area=1.350 ac 43.38% Impervious Runoff Depth=0.02"
Flow Length=590' Tc=6.9 min CN=73 Runoff=0.0 cfs 0.002 af

SubcatchmentPR10.13B: Subcat PR10.13B Runoff Area=0.373 ac 64.59% Impervious Runoff Depth=0.02"
Tc=6.0 min CN=74 Runoff=0.0 cfs 0.001 af

SubcatchmentPR10.14A: Subcat PR10.14A Runoff Area=4.071 ac 13.44% Impervious Runoff Depth=0.00"
Flow Length=378' Tc=7.5 min CN=66 Runoff=0.0 cfs 0.000 af

SubcatchmentPR10.14B: Runoff Area=2.916 ac 33.15% Impervious Runoff Depth=0.15"
Flow Length=824' Tc=19.4 min CN=84 Runoff=0.2 cfs 0.037 af

SubcatchmentPR10.15A: Subcat PR10.15A Runoff Area=4.280 ac 9.69% Impervious Runoff Depth=0.00"
Flow Length=681' Tc=20.3 min CN=44 Runoff=0.0 cfs 0.000 af

SubcatchmentPR10.15B: Subcat PR10.15B Runoff Area=0.149 ac 28.50% Impervious Runoff Depth=0.00"
Flow Length=155' Tc=12.2 min CN=50 Runoff=0.0 cfs 0.000 af

SubcatchmentPR10.2: Runoff Area=4.075 ac 18.36% Impervious Runoff Depth=0.00"
Flow Length=342' Tc=14.0 min CN=69 Runoff=0.0 cfs 0.001 af

SubcatchmentPR10.3: Runoff Area=0.985 ac 6.46% Impervious Runoff Depth=0.07"
Flow Length=61' Tc=10.1 min CN=79 Runoff=0.0 cfs 0.006 af

SubcatchmentPR10.4A: Subcat PR10.4A Runoff Area=1.814 ac 8.48% Impervious Runoff Depth=0.00"
Flow Length=411' Tc=11.3 min CN=63 Runoff=0.0 cfs 0.000 af

SubcatchmentPR10.4B: Subcat PR10.4B Runoff Area=3.037 ac 15.14% Impervious Runoff Depth=0.00"
Flow Length=516' Tc=13.4 min CN=63 Runoff=0.0 cfs 0.000 af

SubcatchmentPR10.5: Runoff Area=0.836 ac 5.84% Impervious Runoff Depth=0.06"
Flow Length=118' Tc=23.4 min CN=78 Runoff=0.0 cfs 0.004 af

SubcatchmentPR10.6A: Runoff Area=1.526 ac 5.07% Impervious Runoff Depth=0.00"
Flow Length=374' Tc=10.3 min CN=35 Runoff=0.0 cfs 0.000 af

SubcatchmentPR10.6B: Subcat PR10.6B Runoff Area=4.482 ac 7.24% Impervious Runoff Depth=0.00"
Flow Length=363' Tc=9.9 min CN=52 Runoff=0.0 cfs 0.000 af

SubcatchmentPR10.7A: Subcat PR10.7A Runoff Area=0.835 ac 8.41% Impervious Runoff Depth=0.00"
Flow Length=502' Tc=17.3 min CN=47 Runoff=0.0 cfs 0.000 af

SubcatchmentPR10.7B: Subcat PR10.7B Runoff Area=0.083 ac 12.04% Impervious Runoff Depth=0.07"
Flow Length=136' Tc=11.8 min CN=79 Runoff=0.0 cfs 0.000 af

SubcatchmentPR10.8: Runoff Area=0.901 ac 0.00% Impervious Runoff Depth=0.00"
Flow Length=433' Tc=7.3 min CN=50 Runoff=0.0 cfs 0.000 af

SubcatchmentPR10.9: Runoff Area=2.822 ac 0.77% Impervious Runoff Depth=0.00"
Flow Length=384' Tc=7.6 min CN=65 Runoff=0.0 cfs 0.000 af

SubcatchmentPR9.1: PR9.1 Runoff Area=2.211 ac 60.74% Impervious Runoff Depth=0.32"
Flow Length=727' Tc=29.7 min CN=90 Runoff=0.4 cfs 0.059 af

Pond P10.12A: Linear Infiltration Basin Peak Elev=136.50' Storage=0 cf Inflow=0.0 cfs 0.000 af
Discarded=0.0 cfs 0.000 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Pond P10.13A: Linear Infiltration Basin Peak Elev=136.65' Storage=3 cf Inflow=0.0 cfs 0.002 af
Discarded=0.0 cfs 0.002 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.002 af

Pond P10.6A: Linear Infiltration Basin Peak Elev=128.90' Storage=0 cf Inflow=0.0 cfs 0.000 af
Discarded=0.0 cfs 0.000 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Pond P10.7A: Linear Infiltration Basin Peak Elev=127.20' Storage=0 cf Inflow=0.0 cfs 0.000 af
Discarded=0.0 cfs 0.000 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Link DP-9.1: Station Rd Inflow=0.4 cfs 0.059 af
Primary=0.4 cfs 0.059 af

Link DP10.1: Wetland 18 Inflow=0.0 cfs 0.008 af
Primary=0.0 cfs 0.008 af

Link DP10.10: Vernal Pool 4 Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP10.11/13: Bordering Vegetated Wetland Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP10.12: Wetland 6 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP10.14: Wetland 3_Vernal Pool 1 Inflow=0.2 cfs 0.037 af
Primary=0.2 cfs 0.037 af

Link DP10.15: Wetland 4 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP10.2: Wetland 19 Inflow=0.0 cfs 0.001 af
Primary=0.0 cfs 0.001 af

Link DP10.3: Wetland 15 Inflow=0.0 cfs 0.006 af
Primary=0.0 cfs 0.006 af

Link DP10.4: Wetland 16 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP10.5: Wetland 14 Inflow=0.0 cfs 0.004 af
Primary=0.0 cfs 0.004 af

Link DP10.6: Wetland 11 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP10.7: Wetland 13 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP10.8: Wetland 10 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Link DP10.9: Wetland 5_Vernal Pool 2-3 Inflow=0.0 cfs 0.000 af
Primary=0.0 cfs 0.000 af

Total Runoff Area = 40.319 ac Runoff Volume = 0.119 af Average Runoff Depth = 0.04"
83.80% Pervious = 33.788 ac 16.20% Impervious = 6.531 ac

Summary for Subcatchment PR10.1: PR10.1

Runoff = 0.0 cfs @ 12.52 hrs, Volume= 0.008 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.056	80	>75% Grass cover, Good, HSG D
0.064	78	Meadow, non-grazed, HSG D
0.154	98	Paved parking, HSG D
0.925	77	Woods, Good, HSG D
1.200	80	Weighted Average
1.046		87.13% Pervious Area
0.154		12.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	25	0.0040	0.56		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
8.9	25	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
9.4	200	0.0200	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.0	250	Total			

Summary for Subcatchment PR10.10:

Runoff = 0.0 cfs @ 12.32 hrs, Volume= 0.001 af, Depth= 0.08"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.002	74	>75% Grass cover, Good, HSG C
0.002	80	>75% Grass cover, Good, HSG D
0.002	71	Meadow, non-grazed, HSG C
0.003	78	Meadow, non-grazed, HSG D
0.010	98	Paved parking, HSG C
0.005	98	Paved parking, HSG D
0.007	70	Woods, Good, HSG C
0.054	77	Woods, Good, HSG D
0.084	80	Weighted Average
0.069		81.89% Pervious Area
0.015		18.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PR10.11:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.005	39	>75% Grass cover, Good, HSG A
0.017	80	>75% Grass cover, Good, HSG D
0.020	30	Meadow, non-grazed, HSG A
0.051	78	Meadow, non-grazed, HSG D
0.044	98	Paved parking, HSG A
0.019	98	Paved parking, HSG D
0.600	30	Woods, Good, HSG A
0.375	77	Woods, Good, HSG D
1.132	52	Weighted Average
1.069		94.43% Pervious Area
0.063		5.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	38	0.0630	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment PR10.12A: Subcat PR10.12A

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.017	39	>75% Grass cover, Good, HSG A
0.058	30	Meadow, non-grazed, HSG A
0.047	98	Paved parking, HSG A
0.182	30	Woods, Good, HSG A
0.304	41	Weighted Average
0.257		84.66% Pervious Area
0.047		15.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.1280	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	306	0.0210	2.17		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
12.4	356	Total			

Summary for Subcatchment PR10.12B: Subcat PR10.12B

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.011	39	>75% Grass cover, Good, HSG A
0.026	80	>75% Grass cover, Good, HSG D
0.045	30	Meadow, non-grazed, HSG A
0.032	78	Meadow, non-grazed, HSG D
0.034	98	Paved parking, HSG A
0.098	98	Paved parking, HSG D
0.344	30	Woods, Good, HSG A
0.260	77	Woods, Good, HSG D
0.850	58	Weighted Average
0.717		84.39% Pervious Area
0.133		15.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	50	0.1460	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.2	200	0.0670	0.65		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
14.7	250	Total			

Summary for Subcatchment PR10.13A: Subcat PR10.13A

Runoff = 0.0 cfs @ 15.11 hrs, Volume= 0.002 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.012	39	>75% Grass cover, Good, HSG A
0.095	76	Gravel roads, HSG A
0.197	91	Gravel roads, HSG D
0.065	30	Meadow, non-grazed, HSG A
0.275	98	Paved parking, HSG A
0.311	98	Paved parking, HSG D
0.351	30	Woods, Good, HSG A
0.044	77	Woods, Good, HSG D
1.350	73	Weighted Average
0.764		56.62% Pervious Area
0.586		43.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	50	0.0100	0.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
2.0	104	0.1180	0.86		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
4.0	436	0.0150	1.84		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
6.9	590	Total			

Summary for Subcatchment PR10.13B: Subcat PR10.13B

Runoff = 0.0 cfs @ 14.78 hrs, Volume= 0.001 af, Depth= 0.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.006	39	>75% Grass cover, Good, HSG A
0.039	30	Meadow, non-grazed, HSG A
0.223	98	Paved parking, HSG A
0.018	98	Paved parking, HSG D
0.087	30	Woods, Good, HSG A
0.000	77	Woods, Good, HSG D
0.373	74	Weighted Average
0.132		35.41% Pervious Area
0.241		64.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PR10.14A: Subcat PR10.14A

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.005	39	>75% Grass cover, Good, HSG A
0.386	80	>75% Grass cover, Good, HSG D
0.031	30	Meadow, non-grazed, HSG A
0.005	98	Paved parking, HSG A
0.542	98	Paved parking, HSG D
1.158	30	Woods, Good, HSG A
1.943	77	Woods, Good, HSG D
4.071	66	Weighted Average
3.524		86.56% Pervious Area
0.547		13.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	50	0.0960	2.28		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
0.1	60	0.1600	8.12		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.2	144	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.8	124	0.0300	0.43		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.5	378	Total			

Summary for Subcatchment PR10.14B:

Runoff = 0.2 cfs @ 12.36 hrs, Volume= 0.037 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.007	39	>75% Grass cover, Good, HSG A
0.865	80	>75% Grass cover, Good, HSG D
0.044	91	Gravel roads, HSG D
0.033	30	Meadow, non-grazed, HSG A
0.103	78	Meadow, non-grazed, HSG D
0.010	98	Paved parking, HSG A
0.957	98	Paved parking, HSG D
0.026	30	Woods, Good, HSG A
0.872	77	Woods, Good, HSG D
2.916	84	Weighted Average
1.950		66.85% Pervious Area
0.967		33.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
3.2	156	0.1060	0.81		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
8.9	618	0.0060	1.16		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
19.4	824	Total			

Summary for Subcatchment PR10.15A: Subcat PR10.15A

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.974	39	>75% Grass cover, Good, HSG A
0.023	80	>75% Grass cover, Good, HSG D
0.043	30	Meadow, non-grazed, HSG A
0.050	78	Meadow, non-grazed, HSG D
0.340	98	Paved parking, HSG A
0.075	98	Paved parking, HSG D
2.333	30	Woods, Good, HSG A
0.441	77	Woods, Good, HSG D
4.280	44	Weighted Average
3.865		90.31% Pervious Area
0.415		9.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0220	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
15.0	631	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.3	681	Total			

Summary for Subcatchment PR10.15B: Subcat PR10.15B

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.004	39	>75% Grass cover, Good, HSG A
0.000	80	>75% Grass cover, Good, HSG D
0.015	30	Meadow, non-grazed, HSG A
0.000	78	Meadow, non-grazed, HSG D
0.034	98	Paved parking, HSG A
0.009	98	Paved parking, HSG D
0.087	30	Woods, Good, HSG A
0.000	77	Woods, Good, HSG D
0.149	50	Weighted Average
0.107		71.50% Pervious Area
0.043		28.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.5	50	0.0920	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.7	105	0.0290	2.55		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
12.2	155	Total			

Summary for Subcatchment PR10.2:

Runoff = 0.0 cfs @ 22.79 hrs, Volume= 0.001 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.802	39	>75% Grass cover, Good, HSG A
0.617	80	>75% Grass cover, Good, HSG D
0.062	78	Meadow, non-grazed, HSG D
0.662	98	Paved parking, HSG A
0.087	98	Paved parking, HSG D
0.401	30	Woods, Good, HSG A
1.445	77	Woods, Good, HSG D
4.075	69	Weighted Average
3.327		81.64% Pervious Area
0.748		18.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0040	0.08		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
1.1	79	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.2	63	0.0870	5.99		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.7	92	0.0980	2.19		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.5	58	0.0630	0.63		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
14.0	342	Total			

Summary for Subcatchment PR10.3:

Runoff = 0.0 cfs @ 12.42 hrs, Volume= 0.006 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.031	80	>75% Grass cover, Good, HSG D
0.141	78	Meadow, non-grazed, HSG D
0.064	98	Paved parking, HSG D
0.750	77	Woods, Good, HSG D
0.985	79	Weighted Average
0.922		93.54% Pervious Area
0.064		6.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	11	0.1900	0.27		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
9.3	39	0.0940	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.1	11	0.1630	2.02		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.1	61	Total			

Summary for Subcatchment PR10.4A: Subcat PR10.4A

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.068	39	>75% Grass cover, Good, HSG A
0.101	80	>75% Grass cover, Good, HSG D
0.052	78	Meadow, non-grazed, HSG D
0.100	98	Paved parking, HSG A
0.054	98	Paved parking, HSG D
0.560	30	Woods, Good, HSG A
0.879	77	Woods, Good, HSG D
1.814	63	Weighted Average
1.661		91.52% Pervious Area
0.154		8.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	50	0.0940	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.6	95	0.1220	2.44		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	126	0.1310	0.90		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.9	140	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.3	411	Total			

Summary for Subcatchment PR10.4B: Subcat PR10.4B

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.463	39	>75% Grass cover, Good, HSG A
0.093	80	>75% Grass cover, Good, HSG D
0.052	78	Meadow, non-grazed, HSG D
0.404	98	Paved parking, HSG A
0.056	98	Paved parking, HSG D
0.746	30	Woods, Good, HSG A
1.223	77	Woods, Good, HSG D
3.037	63	Weighted Average
2.577		84.86% Pervious Area
0.460		15.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0720	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.2	21	0.0440	1.47		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	24	0.0750	5.56		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.4	124	0.0880	1.48		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	71	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.8	87	0.0650	1.78		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.2	139	0.0860	0.73		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.4	516	Total			

Summary for Subcatchment PR10.5:

Runoff = 0.0 cfs @ 12.66 hrs, Volume= 0.004 af, Depth= 0.06"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.017	80	>75% Grass cover, Good, HSG D
0.029	78	Meadow, non-grazed, HSG D
0.049	98	Paved parking, HSG D
0.741	77	Woods, Good, HSG D
0.836	78	Weighted Average
0.787		94.16% Pervious Area
0.049		5.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	68	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
23.4	118	Total			

Summary for Subcatchment PR10.6A:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.076	39	>75% Grass cover, Good, HSG A
0.004	80	>75% Grass cover, Good, HSG D
0.083	30	Meadow, non-grazed, HSG A
0.014	78	Meadow, non-grazed, HSG D
0.065	98	Paved parking, HSG A
0.012	98	Paved parking, HSG D
1.263	30	Woods, Good, HSG A
0.009	77	Woods, Good, HSG D
1.526	35	Weighted Average
1.449		94.93% Pervious Area
0.077		5.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0220	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
0.8	65	0.0740	1.36		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.9	221	0.1460	0.96		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.3	38	0.0260	2.42		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
10.3	374	Total			

Summary for Subcatchment PR10.6B: Subcat PR10.6B

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.023	39	>75% Grass cover, Good, HSG A
0.010	74	>75% Grass cover, Good, HSG C
0.076	80	>75% Grass cover, Good, HSG D
0.077	30	Meadow, non-grazed, HSG A
0.022	71	Meadow, non-grazed, HSG C
0.243	78	Meadow, non-grazed, HSG D
0.106	98	Paved parking, HSG A
0.042	98	Paved parking, HSG C
0.177	98	Paved parking, HSG D
2.405	30	Woods, Good, HSG A
0.062	70	Woods, Good, HSG C
1.243	77	Woods, Good, HSG D
4.482	52	Weighted Average
4.158		92.76% Pervious Area
0.325		7.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	50	0.0320	0.18		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
0.1	30	0.0333	3.70		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.2	283	0.1336	0.91		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
9.9	363	Total			

Summary for Subcatchment PR10.7A: Subcat PR10.7A

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.011	39	>75% Grass cover, Good, HSG A
0.010	80	>75% Grass cover, Good, HSG D
0.047	30	Meadow, non-grazed, HSG A
0.053	78	Meadow, non-grazed, HSG D
0.041	98	Paved parking, HSG A
0.029	98	Paved parking, HSG D
0.513	30	Woods, Good, HSG A
0.131	77	Woods, Good, HSG D
0.835	47	Weighted Average
0.765		91.59% Pervious Area
0.070		8.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.3	50	0.1200	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.3	35	0.5400	1.84		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
3.3	198	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.4	219	0.0050	1.06		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
17.3	502	Total			

Summary for Subcatchment PR10.7B: Subcat PR10.7B

Runoff = 0.0 cfs @ 12.44 hrs, Volume= 0.000 af, Depth= 0.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.003	80	>75% Grass cover, Good, HSG D
0.006	78	Meadow, non-grazed, HSG D
0.010	98	Paved parking, HSG D
0.002	30	Woods, Good, HSG A
0.062	77	Woods, Good, HSG D
0.083	79	Weighted Average
0.073		87.96% Pervious Area
0.010		12.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.1080	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.0	86	0.0850	1.46		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.8	136	Total			

Summary for Subcatchment PR10.8:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.147	39	>75% Grass cover, Good, HSG A
0.007	74	>75% Grass cover, Good, HSG C
0.296	80	>75% Grass cover, Good, HSG D
0.425	30	Woods, Good, HSG A
0.026	77	Woods, Good, HSG D
0.901	50	Weighted Average
0.901		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.0500	0.22		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.3	277	0.0830	2.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	47	0.2550	1.26		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	59	0.3700	1.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.3	433	Total			

Summary for Subcatchment PR10.9:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.239	39	>75% Grass cover, Good, HSG A
0.271	74	>75% Grass cover, Good, HSG C
0.151	80	>75% Grass cover, Good, HSG D
0.026	71	Meadow, non-grazed, HSG C
0.013	78	Meadow, non-grazed, HSG D
0.009	98	Paved parking, HSG C
0.013	98	Paved parking, HSG D
0.341	30	Woods, Good, HSG A
1.377	70	Woods, Good, HSG C
0.383	77	Woods, Good, HSG D
2.822	65	Weighted Average
2.801		99.23% Pervious Area
0.022		0.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	50	0.4600	0.24		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
2.2	194	0.0460	1.50		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	140	0.2400	1.22		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.6	384	Total			

Summary for Subcatchment PR9.1: PR9.1

Runoff = 0.4 cfs @ 12.44 hrs, Volume= 0.059 af, Depth= 0.32"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 1" Rainfall=1.00"

Area (ac)	CN	Description
0.109	80	>75% Grass cover, Good, HSG D
0.184	78	Meadow, non-grazed, HSG D
1.343	98	Paved parking, HSG D
0.575	77	Woods, Good, HSG D
2.211	90	Weighted Average
0.868		39.26% Pervious Area
1.343		60.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	50	0.0500	1.75		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
0.4	100	0.0360	3.85		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
28.7	540	0.0020	0.31		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	37	0.0030	4.66	14.64	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
29.7	727	Total			

Summary for Pond P10.12A: Linear Infiltration Basin

Inflow Area = 0.304 ac, 15.34% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 136.50' @ 0.00 hrs Surf.Area= 0 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	136.50'	1,079 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
136.50	0	0	0
137.00	1,030	258	258
137.50	2,255	821	1,079

Device	Routing	Invert	Outlet Devices
#1	Primary	137.00'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	136.50'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 0.00 hrs HW=136.50' (Free Discharge)
↑**2=Exfiltration** (Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=136.50' (Free Discharge)
↑**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P10.13A: Linear Infiltration Basin

Inflow Area = 1.350 ac, 43.38% Impervious, Inflow Depth = 0.02" for 1" event
Inflow = 0.0 cfs @ 15.11 hrs, Volume= 0.002 af
Outflow = 0.0 cfs @ 15.63 hrs, Volume= 0.002 af, Atten= 3%, Lag= 31.2 min
Discarded = 0.0 cfs @ 15.63 hrs, Volume= 0.002 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 136.65' @ 15.63 hrs Surf.Area= 123 sf Storage= 3 cf

Plug-Flow detention time= 13.0 min calculated for 0.002 af (100% of inflow)
Center-of-Mass det. time= 13.0 min (1,100.8 - 1,087.8)

Volume	Invert	Avail.Storage	Storage Description
#1	136.60'	1,323 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
136.60	0	0	0
137.10	1,280	320	320
137.60	2,730	1,003	1,323

Device	Routing	Invert	Outlet Devices
#1	Primary	137.10'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	136.60'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 15.63 hrs HW=136.65' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=136.60' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P10.6A: Linear Infiltration Basin

Inflow Area = 1.526 ac, 5.07% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 128.90' @ 0.00 hrs Surf.Area= 0 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	128.90'	2,315 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
128.90	0	0	0
129.40	2,611	653	653
129.90	4,039	1,663	2,315

Device	Routing	Invert	Outlet Devices
#1	Primary	129.40'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	128.90'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 0.00 hrs HW=128.90' (Free Discharge)
↑—**2=Exfiltration** (Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=128.90' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P10.7A: Linear Infiltration Basin

Inflow Area = 0.835 ac, 8.41% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 127.20' @ 0.00 hrs Surf.Area= 0 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	127.20'	751 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
127.20	0	0	0
127.70	793	198	198
128.20	1,419	553	751

Device	Routing	Invert	Outlet Devices
#1	Primary	127.70'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68

2.72 2.81 2.92 2.97 3.07 3.32
#2 Discarded 127.20' **0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 0.00 hrs HW=127.20' (Free Discharge)
2=Exfiltration (Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=127.20' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.0 cfs)

Summary for Link DP-9.1: Station Rd

Inflow Area = 2.211 ac, 60.74% Impervious, Inflow Depth = 0.32" for 1" event
Inflow = 0.4 cfs @ 12.44 hrs, Volume= 0.059 af
Primary = 0.4 cfs @ 12.44 hrs, Volume= 0.059 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.1: Wetland 18

Inflow Area = 1.200 ac, 12.87% Impervious, Inflow Depth = 0.08" for 1" event
Inflow = 0.0 cfs @ 12.52 hrs, Volume= 0.008 af
Primary = 0.0 cfs @ 12.52 hrs, Volume= 0.008 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.10: Vernal Pool 4

Inflow Area = 0.084 ac, 18.11% Impervious, Inflow Depth = 0.08" for 1" event
Inflow = 0.0 cfs @ 12.32 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 12.32 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.11/13: Bordering Vegetated Wetland

Inflow Area = 2.855 ac, 31.16% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 14.78 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 14.78 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.12: Wetland 6

Inflow Area = 1.153 ac, 15.54% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.14: Wetland 3_Vernal Pool 1

Inflow Area = 6.987 ac, 21.67% Impervious, Inflow Depth = 0.06" for 1" event
Inflow = 0.2 cfs @ 12.36 hrs, Volume= 0.037 af
Primary = 0.2 cfs @ 12.36 hrs, Volume= 0.037 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.15: Wetland 4

Inflow Area = 4.429 ac, 10.32% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.2: Wetland 19

Inflow Area = 4.075 ac, 18.36% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 22.79 hrs, Volume= 0.001 af
Primary = 0.0 cfs @ 22.79 hrs, Volume= 0.001 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.3: Wetland 15

Inflow Area = 0.985 ac, 6.46% Impervious, Inflow Depth = 0.07" for 1" event
Inflow = 0.0 cfs @ 12.42 hrs, Volume= 0.006 af
Primary = 0.0 cfs @ 12.42 hrs, Volume= 0.006 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.4: Wetland 16

Inflow Area = 4.851 ac, 12.65% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.5: Wetland 14

Inflow Area = 0.836 ac, 5.84% Impervious, Inflow Depth = 0.06" for 1" event
Inflow = 0.0 cfs @ 12.66 hrs, Volume= 0.004 af
Primary = 0.0 cfs @ 12.66 hrs, Volume= 0.004 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.6: Wetland 11

Inflow Area = 6.009 ac, 6.69% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.7: Wetland 13

Inflow Area = 0.918 ac, 8.74% Impervious, Inflow Depth = 0.01" for 1" event
Inflow = 0.0 cfs @ 12.44 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 12.44 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.8: Wetland 10

Inflow Area = 0.901 ac, 0.00% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.9: Wetland 5_Vernal Pool 2-3

Inflow Area = 2.822 ac, 0.77% Impervious, Inflow Depth = 0.00" for 1" event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentPR10.1: PR10.1 Runoff Area=1.200 ac 12.87% Impervious Runoff Depth=1.48"
Flow Length=250' Tc=19.0 min CN=80 Runoff=1.4 cfs 0.148 af

SubcatchmentPR10.10: Runoff Area=0.084 ac 18.11% Impervious Runoff Depth=1.48"
Tc=6.0 min CN=80 Runoff=0.1 cfs 0.010 af

SubcatchmentPR10.11: Runoff Area=1.132 ac 5.57% Impervious Runoff Depth=0.20"
Flow Length=38' Slope=0.0630 '/' Tc=10.7 min CN=52 Runoff=0.1 cfs 0.019 af

SubcatchmentPR10.12A: Subcat PR10.12A Runoff Area=0.304 ac 15.34% Impervious Runoff Depth=0.01"
Flow Length=356' Tc=12.4 min CN=41 Runoff=0.0 cfs 0.000 af

SubcatchmentPR10.12B: Subcat PR10.12B Runoff Area=0.850 ac 15.61% Impervious Runoff Depth=0.38"
Flow Length=250' Tc=14.7 min CN=58 Runoff=0.2 cfs 0.027 af

SubcatchmentPR10.13A: Subcat PR10.13A Runoff Area=1.350 ac 43.38% Impervious Runoff Depth=1.05"
Flow Length=590' Tc=6.9 min CN=73 Runoff=1.5 cfs 0.118 af

SubcatchmentPR10.13B: Subcat PR10.13B Runoff Area=0.373 ac 64.59% Impervious Runoff Depth=1.10"
Tc=6.0 min CN=74 Runoff=0.5 cfs 0.034 af

SubcatchmentPR10.14A: Subcat PR10.14A Runoff Area=4.071 ac 13.44% Impervious Runoff Depth=0.69"
Flow Length=378' Tc=7.5 min CN=66 Runoff=2.6 cfs 0.235 af

SubcatchmentPR10.14B: Runoff Area=2.916 ac 33.15% Impervious Runoff Depth=1.77"
Flow Length=824' Tc=19.4 min CN=84 Runoff=4.1 cfs 0.429 af

SubcatchmentPR10.15A: Subcat PR10.15A Runoff Area=4.280 ac 9.69% Impervious Runoff Depth=0.04"
Flow Length=681' Tc=20.3 min CN=44 Runoff=0.0 cfs 0.015 af

SubcatchmentPR10.15B: Subcat PR10.15B Runoff Area=0.149 ac 28.50% Impervious Runoff Depth=0.15"
Flow Length=155' Tc=12.2 min CN=50 Runoff=0.0 cfs 0.002 af

SubcatchmentPR10.2: Runoff Area=4.075 ac 18.36% Impervious Runoff Depth=0.84"
Flow Length=342' Tc=14.0 min CN=69 Runoff=2.7 cfs 0.284 af

SubcatchmentPR10.3: Runoff Area=0.985 ac 6.46% Impervious Runoff Depth=1.41"
Flow Length=61' Tc=10.1 min CN=79 Runoff=1.4 cfs 0.116 af

SubcatchmentPR10.4A: Subcat PR10.4A Runoff Area=1.814 ac 8.48% Impervious Runoff Depth=0.56"
Flow Length=411' Tc=11.3 min CN=63 Runoff=0.7 cfs 0.085 af

SubcatchmentPR10.4B: Subcat PR10.4B Runoff Area=3.037 ac 15.14% Impervious Runoff Depth=0.56"
Flow Length=516' Tc=13.4 min CN=63 Runoff=1.2 cfs 0.143 af

SubcatchmentPR10.5: Runoff Area=0.836 ac 5.84% Impervious Runoff Depth=1.35"
Flow Length=118' Tc=23.4 min CN=78 Runoff=0.8 cfs 0.094 af

SubcatchmentPR10.6A: Runoff Area=1.526 ac 5.07% Impervious Runoff Depth=0.00"
Flow Length=374' Tc=10.3 min CN=35 Runoff=0.0 cfs 0.000 af

SubcatchmentPR10.6B: Subcat PR10.6B Runoff Area=4.482 ac 7.24% Impervious Runoff Depth=0.20"
Flow Length=363' Tc=9.9 min CN=52 Runoff=0.3 cfs 0.074 af

SubcatchmentPR10.7A: Subcat PR10.7A Runoff Area=0.835 ac 8.41% Impervious Runoff Depth=0.09"
Flow Length=502' Tc=17.3 min CN=47 Runoff=0.0 cfs 0.006 af

SubcatchmentPR10.7B: Subcat PR10.7B Runoff Area=0.083 ac 12.04% Impervious Runoff Depth=1.41"
Flow Length=136' Tc=11.8 min CN=79 Runoff=0.1 cfs 0.010 af

SubcatchmentPR10.8: Runoff Area=0.901 ac 0.00% Impervious Runoff Depth=0.15"
Flow Length=433' Tc=7.3 min CN=50 Runoff=0.0 cfs 0.011 af

SubcatchmentPR10.9: Runoff Area=2.822 ac 0.77% Impervious Runoff Depth=0.65"
Flow Length=384' Tc=7.6 min CN=65 Runoff=1.6 cfs 0.153 af

SubcatchmentPR9.1: PR9.1 Runoff Area=2.211 ac 60.74% Impervious Runoff Depth=2.26"
Flow Length=727' Tc=29.7 min CN=90 Runoff=3.3 cfs 0.417 af

Pond P10.12A: Linear Infiltration Basin Peak Elev=136.51' Storage=0 cf Inflow=0.0 cfs 0.000 af
Discarded=0.0 cfs 0.000 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Pond P10.13A: Linear Infiltration Basin Peak Elev=137.25' Storage=539 cf Inflow=1.5 cfs 0.118 af
Discarded=0.0 cfs 0.039 af Primary=1.4 cfs 0.078 af Outflow=1.4 cfs 0.118 af

Pond P10.6A: Linear Infiltration Basin Peak Elev=128.90' Storage=0 cf Inflow=0.0 cfs 0.000 af
Discarded=0.0 cfs 0.000 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.000 af

Pond P10.7A: Linear Infiltration Basin Peak Elev=127.67' Storage=173 cf Inflow=0.0 cfs 0.006 af
Discarded=0.0 cfs 0.006 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.006 af

Link DP-9.1: Station Rd Inflow=3.3 cfs 0.417 af
Primary=3.3 cfs 0.417 af

Link DP10.1: Wetland 18 Inflow=1.4 cfs 0.148 af
Primary=1.4 cfs 0.148 af

Link DP10.10: Vernal Pool 4 Inflow=0.1 cfs 0.010 af
Primary=0.1 cfs 0.010 af

Link DP10.11/13: Bordering Vegetated Wetland Inflow=1.8 cfs 0.131 af
Primary=1.8 cfs 0.131 af

Link DP10.12: Wetland 6 Inflow=0.2 cfs 0.027 af
Primary=0.2 cfs 0.027 af

Link DP10.14: Wetland 3_Vernal Pool 1 Inflow=5.9 cfs 0.665 af
Primary=5.9 cfs 0.665 af

Link DP10.15: Wetland 4 Inflow=0.0 cfs 0.017 af
Primary=0.0 cfs 0.017 af

Link DP10.2: Wetland 19 Inflow=2.7 cfs 0.284 af
Primary=2.7 cfs 0.284 af

Link DP10.3: Wetland 15 Inflow=1.4 cfs 0.116 af
Primary=1.4 cfs 0.116 af

Link DP10.4: Wetland 16 Inflow=1.9 cfs 0.228 af
Primary=1.9 cfs 0.228 af

Link DP10.5: Wetland 14 Inflow=0.8 cfs 0.094 af
Primary=0.8 cfs 0.094 af

Link DP10.6: Wetland 11 Inflow=0.3 cfs 0.074 af
Primary=0.3 cfs 0.074 af

Link DP10.7: Wetland 13 Inflow=0.1 cfs 0.010 af
Primary=0.1 cfs 0.010 af

Link DP10.8: Wetland 10 Inflow=0.0 cfs 0.011 af
Primary=0.0 cfs 0.011 af

Link DP10.9: Wetland 5_Vernal Pool 2-3 Inflow=1.6 cfs 0.153 af
Primary=1.6 cfs 0.153 af

Total Runoff Area = 40.319 ac Runoff Volume = 2.431 af Average Runoff Depth = 0.72"
83.80% Pervious = 33.788 ac 16.20% Impervious = 6.531 ac

Summary for Subcatchment PR10.1: PR10.1

Runoff = 1.4 cfs @ 12.27 hrs, Volume= 0.148 af, Depth= 1.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.056	80	>75% Grass cover, Good, HSG D
0.064	78	Meadow, non-grazed, HSG D
0.154	98	Paved parking, HSG D
0.925	77	Woods, Good, HSG D
1.200	80	Weighted Average
1.046		87.13% Pervious Area
0.154		12.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	25	0.0040	0.56		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
8.9	25	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
9.4	200	0.0200	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.0	250	Total			

Summary for Subcatchment PR10.10:

Runoff = 0.1 cfs @ 12.09 hrs, Volume= 0.010 af, Depth= 1.48"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.002	74	>75% Grass cover, Good, HSG C
0.002	80	>75% Grass cover, Good, HSG D
0.002	71	Meadow, non-grazed, HSG C
0.003	78	Meadow, non-grazed, HSG D
0.010	98	Paved parking, HSG C
0.005	98	Paved parking, HSG D
0.007	70	Woods, Good, HSG C
0.054	77	Woods, Good, HSG D
0.084	80	Weighted Average
0.069		81.89% Pervious Area
0.015		18.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PR10.11:

Runoff = 0.1 cfs @ 12.47 hrs, Volume= 0.019 af, Depth= 0.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.005	39	>75% Grass cover, Good, HSG A
0.017	80	>75% Grass cover, Good, HSG D
0.020	30	Meadow, non-grazed, HSG A
0.051	78	Meadow, non-grazed, HSG D
0.044	98	Paved parking, HSG A
0.019	98	Paved parking, HSG D
0.600	30	Woods, Good, HSG A
0.375	77	Woods, Good, HSG D
1.132	52	Weighted Average
1.069		94.43% Pervious Area
0.063		5.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	38	0.0630	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment PR10.12A: Subcat PR10.12A

Runoff = 0.0 cfs @ 21.92 hrs, Volume= 0.000 af, Depth= 0.01"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.017	39	>75% Grass cover, Good, HSG A
0.058	30	Meadow, non-grazed, HSG A
0.047	98	Paved parking, HSG A
0.182	30	Woods, Good, HSG A
0.304	41	Weighted Average
0.257		84.66% Pervious Area
0.047		15.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.1280	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	306	0.0210	2.17		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
12.4	356	Total			

Summary for Subcatchment PR10.12B: Subcat PR10.12B

Runoff = 0.2 cfs @ 12.37 hrs, Volume= 0.027 af, Depth= 0.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.011	39	>75% Grass cover, Good, HSG A
0.026	80	>75% Grass cover, Good, HSG D
0.045	30	Meadow, non-grazed, HSG A
0.032	78	Meadow, non-grazed, HSG D
0.034	98	Paved parking, HSG A
0.098	98	Paved parking, HSG D
0.344	30	Woods, Good, HSG A
0.260	77	Woods, Good, HSG D
0.850	58	Weighted Average
0.717		84.39% Pervious Area
0.133		15.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	50	0.1460	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.2	200	0.0670	0.65		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
14.7	250	Total			

Summary for Subcatchment PR10.13A: Subcat PR10.13A

Runoff = 1.5 cfs @ 12.11 hrs, Volume= 0.118 af, Depth= 1.05"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.012	39	>75% Grass cover, Good, HSG A
0.095	76	Gravel roads, HSG A
0.197	91	Gravel roads, HSG D
0.065	30	Meadow, non-grazed, HSG A
0.275	98	Paved parking, HSG A
0.311	98	Paved parking, HSG D
0.351	30	Woods, Good, HSG A
0.044	77	Woods, Good, HSG D
1.350	73	Weighted Average
0.764		56.62% Pervious Area
0.586		43.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	50	0.0100	0.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
2.0	104	0.1180	0.86		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
4.0	436	0.0150	1.84		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
6.9	590	Total			

Summary for Subcatchment PR10.13B: Subcat PR10.13B

Runoff = 0.5 cfs @ 12.10 hrs, Volume= 0.034 af, Depth= 1.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.006	39	>75% Grass cover, Good, HSG A
0.039	30	Meadow, non-grazed, HSG A
0.223	98	Paved parking, HSG A
0.018	98	Paved parking, HSG D
0.087	30	Woods, Good, HSG A
0.000	77	Woods, Good, HSG D
0.373	74	Weighted Average
0.132		35.41% Pervious Area
0.241		64.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PR10.14A: Subcat PR10.14A

Runoff = 2.6 cfs @ 12.13 hrs, Volume= 0.235 af, Depth= 0.69"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.005	39	>75% Grass cover, Good, HSG A
0.386	80	>75% Grass cover, Good, HSG D
0.031	30	Meadow, non-grazed, HSG A
0.005	98	Paved parking, HSG A
0.542	98	Paved parking, HSG D
1.158	30	Woods, Good, HSG A
1.943	77	Woods, Good, HSG D
4.071	66	Weighted Average
3.524		86.56% Pervious Area
0.547		13.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	50	0.0960	2.28		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
0.1	60	0.1600	8.12		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.2	144	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.8	124	0.0300	0.43		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.5	378	Total			

Summary for Subcatchment PR10.14B:

Runoff = 4.1 cfs @ 12.27 hrs, Volume= 0.429 af, Depth= 1.77"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.007	39	>75% Grass cover, Good, HSG A
0.865	80	>75% Grass cover, Good, HSG D
0.044	91	Gravel roads, HSG D
0.033	30	Meadow, non-grazed, HSG A
0.103	78	Meadow, non-grazed, HSG D
0.010	98	Paved parking, HSG A
0.957	98	Paved parking, HSG D
0.026	30	Woods, Good, HSG A
0.872	77	Woods, Good, HSG D
2.916	84	Weighted Average
1.950		66.85% Pervious Area
0.967		33.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
3.2	156	0.1060	0.81		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
8.9	618	0.0060	1.16		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
19.4	824	Total			

Summary for Subcatchment PR10.15A: Subcat PR10.15A

Runoff = 0.0 cfs @ 15.63 hrs, Volume= 0.015 af, Depth= 0.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.974	39	>75% Grass cover, Good, HSG A
0.023	80	>75% Grass cover, Good, HSG D
0.043	30	Meadow, non-grazed, HSG A
0.050	78	Meadow, non-grazed, HSG D
0.340	98	Paved parking, HSG A
0.075	98	Paved parking, HSG D
2.333	30	Woods, Good, HSG A
0.441	77	Woods, Good, HSG D
4.280	44	Weighted Average
3.865		90.31% Pervious Area
0.415		9.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0220	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
15.0	631	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.3	681	Total			

Summary for Subcatchment PR10.15B: Subcat PR10.15B

Runoff = 0.0 cfs @ 12.54 hrs, Volume= 0.002 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.004	39	>75% Grass cover, Good, HSG A
0.000	80	>75% Grass cover, Good, HSG D
0.015	30	Meadow, non-grazed, HSG A
0.000	78	Meadow, non-grazed, HSG D
0.034	98	Paved parking, HSG A
0.009	98	Paved parking, HSG D
0.087	30	Woods, Good, HSG A
0.000	77	Woods, Good, HSG D
0.149	50	Weighted Average
0.107		71.50% Pervious Area
0.043		28.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.5	50	0.0920	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.7	105	0.0290	2.55		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
12.2	155	Total			

Summary for Subcatchment PR10.2:

Runoff = 2.7 cfs @ 12.21 hrs, Volume= 0.284 af, Depth= 0.84"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.802	39	>75% Grass cover, Good, HSG A
0.617	80	>75% Grass cover, Good, HSG D
0.062	78	Meadow, non-grazed, HSG D
0.662	98	Paved parking, HSG A
0.087	98	Paved parking, HSG D
0.401	30	Woods, Good, HSG A
1.445	77	Woods, Good, HSG D
4.075	69	Weighted Average
3.327		81.64% Pervious Area
0.748		18.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0040	0.08		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
1.1	79	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.2	63	0.0870	5.99		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.7	92	0.0980	2.19		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.5	58	0.0630	0.63		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
14.0	342	Total			

Summary for Subcatchment PR10.3:

Runoff = 1.4 cfs @ 12.15 hrs, Volume= 0.116 af, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.031	80	>75% Grass cover, Good, HSG D
0.141	78	Meadow, non-grazed, HSG D
0.064	98	Paved parking, HSG D
0.750	77	Woods, Good, HSG D
0.985	79	Weighted Average
0.922		93.54% Pervious Area
0.064		6.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	11	0.1900	0.27		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
9.3	39	0.0940	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.1	11	0.1630	2.02		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.1	61	Total			

Summary for Subcatchment PR10.4A: Subcat PR10.4A

Runoff = 0.7 cfs @ 12.19 hrs, Volume= 0.085 af, Depth= 0.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.068	39	>75% Grass cover, Good, HSG A
0.101	80	>75% Grass cover, Good, HSG D
0.052	78	Meadow, non-grazed, HSG D
0.100	98	Paved parking, HSG A
0.054	98	Paved parking, HSG D
0.560	30	Woods, Good, HSG A
0.879	77	Woods, Good, HSG D
1.814	63	Weighted Average
1.661		91.52% Pervious Area
0.154		8.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	50	0.0940	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.6	95	0.1220	2.44		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	126	0.1310	0.90		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.9	140	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.3	411	Total			

Summary for Subcatchment PR10.4B: Subcat PR10.4B

Runoff = 1.2 cfs @ 12.23 hrs, Volume= 0.143 af, Depth= 0.56"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.463	39	>75% Grass cover, Good, HSG A
0.093	80	>75% Grass cover, Good, HSG D
0.052	78	Meadow, non-grazed, HSG D
0.404	98	Paved parking, HSG A
0.056	98	Paved parking, HSG D
0.746	30	Woods, Good, HSG A
1.223	77	Woods, Good, HSG D
3.037	63	Weighted Average
2.577		84.86% Pervious Area
0.460		15.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0720	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.2	21	0.0440	1.47		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	24	0.0750	5.56		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.4	124	0.0880	1.48		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	71	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.8	87	0.0650	1.78		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.2	139	0.0860	0.73		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.4	516	Total			

Summary for Subcatchment PR10.5:

Runoff = 0.8 cfs @ 12.35 hrs, Volume= 0.094 af, Depth= 1.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.017	80	>75% Grass cover, Good, HSG D
0.029	78	Meadow, non-grazed, HSG D
0.049	98	Paved parking, HSG D
0.741	77	Woods, Good, HSG D
0.836	78	Weighted Average
0.787		94.16% Pervious Area
0.049		5.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	68	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
23.4	118	Total			

Summary for Subcatchment PR10.6A:

Runoff = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Depth= 0.00"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.076	39	>75% Grass cover, Good, HSG A
0.004	80	>75% Grass cover, Good, HSG D
0.083	30	Meadow, non-grazed, HSG A
0.014	78	Meadow, non-grazed, HSG D
0.065	98	Paved parking, HSG A
0.012	98	Paved parking, HSG D
1.263	30	Woods, Good, HSG A
0.009	77	Woods, Good, HSG D
1.526	35	Weighted Average
1.449		94.93% Pervious Area
0.077		5.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0220	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
0.8	65	0.0740	1.36		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.9	221	0.1460	0.96		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.3	38	0.0260	2.42		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
10.3	374	Total			

Summary for Subcatchment PR10.6B: Subcat PR10.6B

Runoff = 0.3 cfs @ 12.45 hrs, Volume= 0.074 af, Depth= 0.20"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.023	39	>75% Grass cover, Good, HSG A
0.010	74	>75% Grass cover, Good, HSG C
0.076	80	>75% Grass cover, Good, HSG D
0.077	30	Meadow, non-grazed, HSG A
0.022	71	Meadow, non-grazed, HSG C
0.243	78	Meadow, non-grazed, HSG D
0.106	98	Paved parking, HSG A
0.042	98	Paved parking, HSG C
0.177	98	Paved parking, HSG D
2.405	30	Woods, Good, HSG A
0.062	70	Woods, Good, HSG C
1.243	77	Woods, Good, HSG D
4.482	52	Weighted Average
4.158		92.76% Pervious Area
0.325		7.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	50	0.0320	0.18		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
0.1	30	0.0333	3.70		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.2	283	0.1336	0.91		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
9.9	363	Total			

Summary for Subcatchment PR10.7A: Subcat PR10.7A

Runoff = 0.0 cfs @ 14.78 hrs, Volume= 0.006 af, Depth= 0.09"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.011	39	>75% Grass cover, Good, HSG A
0.010	80	>75% Grass cover, Good, HSG D
0.047	30	Meadow, non-grazed, HSG A
0.053	78	Meadow, non-grazed, HSG D
0.041	98	Paved parking, HSG A
0.029	98	Paved parking, HSG D
0.513	30	Woods, Good, HSG A
0.131	77	Woods, Good, HSG D
0.835	47	Weighted Average
0.765		91.59% Pervious Area
0.070		8.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.3	50	0.1200	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.3	35	0.5400	1.84		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
3.3	198	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.4	219	0.0050	1.06		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
17.3	502	Total			

Summary for Subcatchment PR10.7B: Subcat PR10.7B

Runoff = 0.1 cfs @ 12.17 hrs, Volume= 0.010 af, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.003	80	>75% Grass cover, Good, HSG D
0.006	78	Meadow, non-grazed, HSG D
0.010	98	Paved parking, HSG D
0.002	30	Woods, Good, HSG A
0.062	77	Woods, Good, HSG D
0.083	79	Weighted Average
0.073		87.96% Pervious Area
0.010		12.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.1080	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.0	86	0.0850	1.46		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.8	136	Total			

Summary for Subcatchment PR10.8:

Runoff = 0.0 cfs @ 12.47 hrs, Volume= 0.011 af, Depth= 0.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.147	39	>75% Grass cover, Good, HSG A
0.007	74	>75% Grass cover, Good, HSG C
0.296	80	>75% Grass cover, Good, HSG D
0.425	30	Woods, Good, HSG A
0.026	77	Woods, Good, HSG D
0.901	50	Weighted Average
0.901		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.0500	0.22		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.3	277	0.0830	2.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	47	0.2550	1.26		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	59	0.3700	1.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.3	433	Total			

Summary for Subcatchment PR10.9:

Runoff = 1.6 cfs @ 12.13 hrs, Volume= 0.153 af, Depth= 0.65"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.239	39	>75% Grass cover, Good, HSG A
0.271	74	>75% Grass cover, Good, HSG C
0.151	80	>75% Grass cover, Good, HSG D
0.026	71	Meadow, non-grazed, HSG C
0.013	78	Meadow, non-grazed, HSG D
0.009	98	Paved parking, HSG C
0.013	98	Paved parking, HSG D
0.341	30	Woods, Good, HSG A
1.377	70	Woods, Good, HSG C
0.383	77	Woods, Good, HSG D
2.822	65	Weighted Average
2.801		99.23% Pervious Area
0.022		0.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	50	0.4600	0.24		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
2.2	194	0.0460	1.50		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	140	0.2400	1.22		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.6	384	Total			

Summary for Subcatchment PR9.1: PR9.1

Runoff = 3.3 cfs @ 12.40 hrs, Volume= 0.417 af, Depth= 2.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 2-yr Rainfall=3.30"

Area (ac)	CN	Description
0.109	80	>75% Grass cover, Good, HSG D
0.184	78	Meadow, non-grazed, HSG D
1.343	98	Paved parking, HSG D
0.575	77	Woods, Good, HSG D
2.211	90	Weighted Average
0.868		39.26% Pervious Area
1.343		60.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	50	0.0500	1.75		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
0.4	100	0.0360	3.85		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
28.7	540	0.0020	0.31		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	37	0.0030	4.66	14.64	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
29.7	727	Total			

Summary for Pond P10.12A: Linear Infiltration Basin

Inflow Area = 0.304 ac, 15.34% Impervious, Inflow Depth = 0.01" for 2-yr event
Inflow = 0.0 cfs @ 21.92 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 22.07 hrs, Volume= 0.000 af, Atten= 0%, Lag= 8.8 min
Discarded = 0.0 cfs @ 22.07 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 136.51' @ 22.07 hrs Surf.Area= 22 sf Storage= 0 cf

Plug-Flow detention time= 3.7 min calculated for 0.000 af (100% of inflow)
Center-of-Mass det. time= 3.7 min (1,232.4 - 1,228.7)

Volume	Invert	Avail.Storage	Storage Description
#1	136.50'	1,079 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
136.50	0	0	0
137.00	1,030	258	258
137.50	2,255	821	1,079

Device	Routing	Invert	Outlet Devices
#1	Primary	137.00'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	136.50'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 22.07 hrs HW=136.51' (Free Discharge)
↑**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=136.50' (Free Discharge)
↑**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P10.13A: Linear Infiltration Basin

Inflow Area = 1.350 ac, 43.38% Impervious, Inflow Depth = 1.05" for 2-yr event
Inflow = 1.5 cfs @ 12.11 hrs, Volume= 0.118 af
Outflow = 1.4 cfs @ 12.14 hrs, Volume= 0.118 af, Atten= 7%, Lag= 2.0 min
Discarded = 0.0 cfs @ 12.14 hrs, Volume= 0.039 af
Primary = 1.4 cfs @ 12.14 hrs, Volume= 0.078 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 137.25' @ 12.14 hrs Surf.Area= 1,706 sf Storage= 539 cf

Plug-Flow detention time= 55.9 min calculated for 0.118 af (100% of inflow)
Center-of-Mass det. time= 55.9 min (920.1 - 864.2)

Volume	Invert	Avail.Storage	Storage Description
#1	136.60'	1,323 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
136.60	0	0	0
137.10	1,280	320	320
137.60	2,730	1,003	1,323

Device	Routing	Invert	Outlet Devices
#1	Primary	137.10'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	136.60'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.14 hrs HW=137.25' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=1.4 cfs @ 12.14 hrs HW=137.25' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 1.4 cfs @ 0.93 fps)

Summary for Pond P10.6A: Linear Infiltration Basin

Inflow Area = 1.526 ac, 5.07% Impervious, Inflow Depth = 0.00" for 2-yr event
Inflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Outflow = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af, Atten= 0%, Lag= 0.0 min
Discarded = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 128.90' @ 0.00 hrs Surf.Area= 0 sf Storage= 0 cf

Plug-Flow detention time= (not calculated: initial storage exceeds outflow)
Center-of-Mass det. time= (not calculated: no inflow)

Volume	Invert	Avail.Storage	Storage Description
#1	128.90'	2,315 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
128.90	0	0	0
129.40	2,611	653	653
129.90	4,039	1,663	2,315

Device	Routing	Invert	Outlet Devices
#1	Primary	129.40'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	128.90'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 0.00 hrs HW=128.90' (Free Discharge)
↑—**2=Exfiltration** (Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=128.90' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P10.7A: Linear Infiltration Basin

Inflow Area = 0.835 ac, 8.41% Impervious, Inflow Depth = 0.09" for 2-yr event
Inflow = 0.0 cfs @ 14.78 hrs, Volume= 0.006 af
Outflow = 0.0 cfs @ 24.18 hrs, Volume= 0.006 af, Atten= 71%, Lag= 563.8 min
Discarded = 0.0 cfs @ 24.18 hrs, Volume= 0.006 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 127.67' @ 24.18 hrs Surf.Area= 741 sf Storage= 173 cf

Plug-Flow detention time= 723.7 min calculated for 0.006 af (100% of inflow)
Center-of-Mass det. time= 723.7 min (1,780.0 - 1,056.3)

Volume	Invert	Avail.Storage	Storage Description
#1	127.20'	751 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
127.20	0	0	0
127.70	793	198	198
128.20	1,419	553	751

Device	Routing	Invert	Outlet Devices
#1	Primary	127.70'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68

2.72 2.81 2.92 2.97 3.07 3.32
#2 Discarded 127.20' **0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 24.18 hrs HW=127.67' (Free Discharge)
2=Exfiltration (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=127.20' (Free Discharge)
1=Broad-Crested Rectangular Weir (Controls 0.0 cfs)

Summary for Link DP-9.1: Station Rd

Inflow Area = 2.211 ac, 60.74% Impervious, Inflow Depth = 2.26" for 2-yr event
Inflow = 3.3 cfs @ 12.40 hrs, Volume= 0.417 af
Primary = 3.3 cfs @ 12.40 hrs, Volume= 0.417 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.1: Wetland 18

Inflow Area = 1.200 ac, 12.87% Impervious, Inflow Depth = 1.48" for 2-yr event
Inflow = 1.4 cfs @ 12.27 hrs, Volume= 0.148 af
Primary = 1.4 cfs @ 12.27 hrs, Volume= 0.148 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.10: Vernal Pool 4

Inflow Area = 0.084 ac, 18.11% Impervious, Inflow Depth = 1.48" for 2-yr event
Inflow = 0.1 cfs @ 12.09 hrs, Volume= 0.010 af
Primary = 0.1 cfs @ 12.09 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.11/13: Bordering Vegetated Wetland

Inflow Area = 2.855 ac, 31.16% Impervious, Inflow Depth = 0.55" for 2-yr event
Inflow = 1.8 cfs @ 12.13 hrs, Volume= 0.131 af
Primary = 1.8 cfs @ 12.13 hrs, Volume= 0.131 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.12: Wetland 6

Inflow Area = 1.153 ac, 15.54% Impervious, Inflow Depth = 0.28" for 2-yr event
Inflow = 0.2 cfs @ 12.37 hrs, Volume= 0.027 af
Primary = 0.2 cfs @ 12.37 hrs, Volume= 0.027 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.14: Wetland 3_Vernal Pool 1

Inflow Area = 6.987 ac, 21.67% Impervious, Inflow Depth = 1.14" for 2-yr event
Inflow = 5.9 cfs @ 12.22 hrs, Volume= 0.665 af
Primary = 5.9 cfs @ 12.22 hrs, Volume= 0.665 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.15: Wetland 4

Inflow Area = 4.429 ac, 10.32% Impervious, Inflow Depth = 0.05" for 2-yr event
Inflow = 0.0 cfs @ 15.59 hrs, Volume= 0.017 af
Primary = 0.0 cfs @ 15.59 hrs, Volume= 0.017 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.2: Wetland 19

Inflow Area = 4.075 ac, 18.36% Impervious, Inflow Depth = 0.84" for 2-yr event
Inflow = 2.7 cfs @ 12.21 hrs, Volume= 0.284 af
Primary = 2.7 cfs @ 12.21 hrs, Volume= 0.284 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.3: Wetland 15

Inflow Area = 0.985 ac, 6.46% Impervious, Inflow Depth = 1.41" for 2-yr event
Inflow = 1.4 cfs @ 12.15 hrs, Volume= 0.116 af
Primary = 1.4 cfs @ 12.15 hrs, Volume= 0.116 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.4: Wetland 16

Inflow Area = 4.851 ac, 12.65% Impervious, Inflow Depth = 0.56" for 2-yr event
Inflow = 1.9 cfs @ 12.22 hrs, Volume= 0.228 af
Primary = 1.9 cfs @ 12.22 hrs, Volume= 0.228 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.5: Wetland 14

Inflow Area = 0.836 ac, 5.84% Impervious, Inflow Depth = 1.35" for 2-yr event
Inflow = 0.8 cfs @ 12.35 hrs, Volume= 0.094 af
Primary = 0.8 cfs @ 12.35 hrs, Volume= 0.094 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.6: Wetland 11

Inflow Area = 6.009 ac, 6.69% Impervious, Inflow Depth = 0.15" for 2-yr event
Inflow = 0.3 cfs @ 12.45 hrs, Volume= 0.074 af
Primary = 0.3 cfs @ 12.45 hrs, Volume= 0.074 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.7: Wetland 13

Inflow Area = 0.918 ac, 8.74% Impervious, Inflow Depth = 0.13" for 2-yr event
Inflow = 0.1 cfs @ 12.17 hrs, Volume= 0.010 af
Primary = 0.1 cfs @ 12.17 hrs, Volume= 0.010 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.8: Wetland 10

Inflow Area = 0.901 ac, 0.00% Impervious, Inflow Depth = 0.15" for 2-yr event
Inflow = 0.0 cfs @ 12.47 hrs, Volume= 0.011 af
Primary = 0.0 cfs @ 12.47 hrs, Volume= 0.011 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.9: Wetland 5_Vernal Pool 2-3

Inflow Area = 2.822 ac, 0.77% Impervious, Inflow Depth = 0.65" for 2-yr event
Inflow = 1.6 cfs @ 12.13 hrs, Volume= 0.153 af
Primary = 1.6 cfs @ 12.13 hrs, Volume= 0.153 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentPR10.1: PR10.1 Runoff Area=1.200 ac 12.87% Impervious Runoff Depth=2.98"
Flow Length=250' Tc=19.0 min CN=80 Runoff=2.9 cfs 0.298 af

SubcatchmentPR10.10: Runoff Area=0.084 ac 18.11% Impervious Runoff Depth=2.98"
Tc=6.0 min CN=80 Runoff=0.3 cfs 0.021 af

SubcatchmentPR10.11: Runoff Area=1.132 ac 5.57% Impervious Runoff Depth=0.85"
Flow Length=38' Slope=0.0630 '/' Tc=10.7 min CN=52 Runoff=0.7 cfs 0.080 af

SubcatchmentPR10.12A: Subcat PR10.12A Runoff Area=0.304 ac 15.34% Impervious Runoff Depth=0.30"
Flow Length=356' Tc=12.4 min CN=41 Runoff=0.0 cfs 0.008 af

SubcatchmentPR10.12B: Subcat PR10.12B Runoff Area=0.850 ac 15.61% Impervious Runoff Depth=1.22"
Flow Length=250' Tc=14.7 min CN=58 Runoff=0.8 cfs 0.087 af

SubcatchmentPR10.13A: Subcat PR10.13A Runoff Area=1.350 ac 43.38% Impervious Runoff Depth=2.36"
Flow Length=590' Tc=6.9 min CN=73 Runoff=3.6 cfs 0.265 af

SubcatchmentPR10.13B: Subcat PR10.13B Runoff Area=0.373 ac 64.59% Impervious Runoff Depth=2.44"
Tc=6.0 min CN=74 Runoff=1.1 cfs 0.076 af

SubcatchmentPR10.14A: Subcat PR10.14A Runoff Area=4.071 ac 13.44% Impervious Runoff Depth=1.80"
Flow Length=378' Tc=7.5 min CN=66 Runoff=7.8 cfs 0.609 af

SubcatchmentPR10.14B: Runoff Area=2.916 ac 33.15% Impervious Runoff Depth=3.36"
Flow Length=824' Tc=19.4 min CN=84 Runoff=7.8 cfs 0.817 af

SubcatchmentPR10.15A: Subcat PR10.15A Runoff Area=4.280 ac 9.69% Impervious Runoff Depth=0.43"
Flow Length=681' Tc=20.3 min CN=44 Runoff=0.7 cfs 0.152 af

SubcatchmentPR10.15B: Subcat PR10.15B Runoff Area=0.149 ac 28.50% Impervious Runoff Depth=0.73"
Flow Length=155' Tc=12.2 min CN=50 Runoff=0.1 cfs 0.009 af

SubcatchmentPR10.2: Runoff Area=4.075 ac 18.36% Impervious Runoff Depth=2.03"
Flow Length=342' Tc=14.0 min CN=69 Runoff=7.3 cfs 0.689 af

SubcatchmentPR10.3: Runoff Area=0.985 ac 6.46% Impervious Runoff Depth=2.89"
Flow Length=61' Tc=10.1 min CN=79 Runoff=2.9 cfs 0.237 af

SubcatchmentPR10.4A: Subcat PR10.4A Runoff Area=1.814 ac 8.48% Impervious Runoff Depth=1.57"
Flow Length=411' Tc=11.3 min CN=63 Runoff=2.6 cfs 0.238 af

SubcatchmentPR10.4B: Subcat PR10.4B Runoff Area=3.037 ac 15.14% Impervious Runoff Depth=1.57"
Flow Length=516' Tc=13.4 min CN=63 Runoff=4.1 cfs 0.398 af

SubcatchmentPR10.5: Runoff Area=0.836 ac 5.84% Impervious Runoff Depth=2.80"
Flow Length=118' Tc=23.4 min CN=78 Runoff=1.7 cfs 0.195 af

SubcatchmentPR10.6A: Runoff Area=1.526 ac 5.07% Impervious Runoff Depth=0.10"
Flow Length=374' Tc=10.3 min CN=35 Runoff=0.0 cfs 0.012 af

SubcatchmentPR10.6B: Subcat PR10.6B Runoff Area=4.482 ac 7.24% Impervious Runoff Depth=0.85"
Flow Length=363' Tc=9.9 min CN=52 Runoff=2.8 cfs 0.317 af

SubcatchmentPR10.7A: Subcat PR10.7A Runoff Area=0.835 ac 8.41% Impervious Runoff Depth=0.57"
Flow Length=502' Tc=17.3 min CN=47 Runoff=0.2 cfs 0.040 af

SubcatchmentPR10.7B: Subcat PR10.7B Runoff Area=0.083 ac 12.04% Impervious Runoff Depth=2.89"
Flow Length=136' Tc=11.8 min CN=79 Runoff=0.2 cfs 0.020 af

SubcatchmentPR10.8: Runoff Area=0.901 ac 0.00% Impervious Runoff Depth=0.73"
Flow Length=433' Tc=7.3 min CN=50 Runoff=0.5 cfs 0.055 af

SubcatchmentPR10.9: Runoff Area=2.822 ac 0.77% Impervious Runoff Depth=1.72"
Flow Length=384' Tc=7.6 min CN=65 Runoff=5.1 cfs 0.405 af

SubcatchmentPR9.1: PR9.1 Runoff Area=2.211 ac 60.74% Impervious Runoff Depth=3.97"
Flow Length=727' Tc=29.7 min CN=90 Runoff=5.7 cfs 0.732 af

Pond P10.12A: Linear Infiltration Basin Peak Elev=136.72' Storage=52 cf Inflow=0.0 cfs 0.008 af
Discarded=0.0 cfs 0.008 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.008 af

Pond P10.13A: Linear Infiltration Basin Peak Elev=137.36' Storage=760 cf Inflow=3.6 cfs 0.265 af
Discarded=0.0 cfs 0.044 af Primary=3.4 cfs 0.221 af Outflow=3.4 cfs 0.265 af

Pond P10.6A: Linear Infiltration Basin Peak Elev=129.04' Storage=48 cf Inflow=0.0 cfs 0.012 af
Discarded=0.0 cfs 0.012 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.012 af

Pond P10.7A: Linear Infiltration Basin Peak Elev=127.74' Storage=231 cf Inflow=0.2 cfs 0.040 af
Discarded=0.0 cfs 0.008 af Primary=0.2 cfs 0.032 af Outflow=0.2 cfs 0.040 af

Link DP-9.1: Station Rd Inflow=5.7 cfs 0.732 af
Primary=5.7 cfs 0.732 af

Link DP10.1: Wetland 18 Inflow=2.9 cfs 0.298 af
Primary=2.9 cfs 0.298 af

Link DP10.10: Vernal Pool 4 Inflow=0.3 cfs 0.021 af
Primary=0.3 cfs 0.021 af

Link DP10.11/13: Bordering Vegetated Wetland Inflow=4.9 cfs 0.377 af
Primary=4.9 cfs 0.377 af

Link DP10.12: Wetland 6 Inflow=0.8 cfs 0.087 af
Primary=0.8 cfs 0.087 af

Link DP10.14: Wetland 3_Vernal Pool 1 Inflow=13.5 cfs 1.426 af
Primary=13.5 cfs 1.426 af

Link DP10.15: Wetland 4 Inflow=0.7 cfs 0.161 af
Primary=0.7 cfs 0.161 af

Link DP10.2: Wetland 19 Inflow=7.3 cfs 0.689 af
Primary=7.3 cfs 0.689 af

Link DP10.3: Wetland 15 Inflow=2.9 cfs 0.237 af
Primary=2.9 cfs 0.237 af

Link DP10.4: Wetland 16 Inflow=6.7 cfs 0.636 af
Primary=6.7 cfs 0.636 af

Link DP10.5: Wetland 14 Inflow=1.7 cfs 0.195 af
Primary=1.7 cfs 0.195 af

Link DP10.6: Wetland 11 Inflow=2.8 cfs 0.317 af
Primary=2.8 cfs 0.317 af

Link DP10.7: Wetland 13 Inflow=0.3 cfs 0.052 af
Primary=0.3 cfs 0.052 af

Link DP10.8: Wetland 10 Inflow=0.5 cfs 0.055 af
Primary=0.5 cfs 0.055 af

Link DP10.9: Wetland 5_Vernal Pool 2-3 Inflow=5.1 cfs 0.405 af
Primary=5.1 cfs 0.405 af

Total Runoff Area = 40.319 ac Runoff Volume = 5.760 af Average Runoff Depth = 1.71"
83.80% Pervious = 33.788 ac 16.20% Impervious = 6.531 ac

Summary for Subcatchment PR10.1: PR10.1

Runoff = 2.9 cfs @ 12.26 hrs, Volume= 0.298 af, Depth= 2.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.056	80	>75% Grass cover, Good, HSG D
0.064	78	Meadow, non-grazed, HSG D
0.154	98	Paved parking, HSG D
0.925	77	Woods, Good, HSG D
1.200	80	Weighted Average
1.046		87.13% Pervious Area
0.154		12.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	25	0.0040	0.56		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
8.9	25	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
9.4	200	0.0200	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.0	250	Total			

Summary for Subcatchment PR10.10:

Runoff = 0.3 cfs @ 12.09 hrs, Volume= 0.021 af, Depth= 2.98"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.002	74	>75% Grass cover, Good, HSG C
0.002	80	>75% Grass cover, Good, HSG D
0.002	71	Meadow, non-grazed, HSG C
0.003	78	Meadow, non-grazed, HSG D
0.010	98	Paved parking, HSG C
0.005	98	Paved parking, HSG D
0.007	70	Woods, Good, HSG C
0.054	77	Woods, Good, HSG D
0.084	80	Weighted Average
0.069		81.89% Pervious Area
0.015		18.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PR10.11:

Runoff = 0.7 cfs @ 12.19 hrs, Volume= 0.080 af, Depth= 0.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.005	39	>75% Grass cover, Good, HSG A
0.017	80	>75% Grass cover, Good, HSG D
0.020	30	Meadow, non-grazed, HSG A
0.051	78	Meadow, non-grazed, HSG D
0.044	98	Paved parking, HSG A
0.019	98	Paved parking, HSG D
0.600	30	Woods, Good, HSG A
0.375	77	Woods, Good, HSG D
1.132	52	Weighted Average
1.069		94.43% Pervious Area
0.063		5.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	38	0.0630	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment PR10.12A: Subcat PR10.12A

Runoff = 0.0 cfs @ 12.49 hrs, Volume= 0.008 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.017	39	>75% Grass cover, Good, HSG A
0.058	30	Meadow, non-grazed, HSG A
0.047	98	Paved parking, HSG A
0.182	30	Woods, Good, HSG A
0.304	41	Weighted Average
0.257		84.66% Pervious Area
0.047		15.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.1280	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	306	0.0210	2.17		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
12.4	356	Total			

Summary for Subcatchment PR10.12B: Subcat PR10.12B

Runoff = 0.8 cfs @ 12.23 hrs, Volume= 0.087 af, Depth= 1.22"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.011	39	>75% Grass cover, Good, HSG A
0.026	80	>75% Grass cover, Good, HSG D
0.045	30	Meadow, non-grazed, HSG A
0.032	78	Meadow, non-grazed, HSG D
0.034	98	Paved parking, HSG A
0.098	98	Paved parking, HSG D
0.344	30	Woods, Good, HSG A
0.260	77	Woods, Good, HSG D
0.850	58	Weighted Average
0.717		84.39% Pervious Area
0.133		15.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	50	0.1460	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.2	200	0.0670	0.65		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
14.7	250	Total			

Summary for Subcatchment PR10.13A: Subcat PR10.13A

Runoff = 3.6 cfs @ 12.10 hrs, Volume= 0.265 af, Depth= 2.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.012	39	>75% Grass cover, Good, HSG A
0.095	76	Gravel roads, HSG A
0.197	91	Gravel roads, HSG D
0.065	30	Meadow, non-grazed, HSG A
0.275	98	Paved parking, HSG A
0.311	98	Paved parking, HSG D
0.351	30	Woods, Good, HSG A
0.044	77	Woods, Good, HSG D
1.350	73	Weighted Average
0.764		56.62% Pervious Area
0.586		43.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	50	0.0100	0.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
2.0	104	0.1180	0.86		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
4.0	436	0.0150	1.84		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
6.9	590	Total			

Summary for Subcatchment PR10.13B: Subcat PR10.13B

Runoff = 1.1 cfs @ 12.09 hrs, Volume= 0.076 af, Depth= 2.44"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.006	39	>75% Grass cover, Good, HSG A
0.039	30	Meadow, non-grazed, HSG A
0.223	98	Paved parking, HSG A
0.018	98	Paved parking, HSG D
0.087	30	Woods, Good, HSG A
0.000	77	Woods, Good, HSG D
0.373	74	Weighted Average
0.132		35.41% Pervious Area
0.241		64.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PR10.14A: Subcat PR10.14A

Runoff = 7.8 cfs @ 12.11 hrs, Volume= 0.609 af, Depth= 1.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.005	39	>75% Grass cover, Good, HSG A
0.386	80	>75% Grass cover, Good, HSG D
0.031	30	Meadow, non-grazed, HSG A
0.005	98	Paved parking, HSG A
0.542	98	Paved parking, HSG D
1.158	30	Woods, Good, HSG A
1.943	77	Woods, Good, HSG D
4.071	66	Weighted Average
3.524		86.56% Pervious Area
0.547		13.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	50	0.0960	2.28		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
0.1	60	0.1600	8.12		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.2	144	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.8	124	0.0300	0.43		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.5	378	Total			

Summary for Subcatchment PR10.14B:

Runoff = 7.8 cfs @ 12.26 hrs, Volume= 0.817 af, Depth= 3.36"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.007	39	>75% Grass cover, Good, HSG A
0.865	80	>75% Grass cover, Good, HSG D
0.044	91	Gravel roads, HSG D
0.033	30	Meadow, non-grazed, HSG A
0.103	78	Meadow, non-grazed, HSG D
0.010	98	Paved parking, HSG A
0.957	98	Paved parking, HSG D
0.026	30	Woods, Good, HSG A
0.872	77	Woods, Good, HSG D
2.916	84	Weighted Average
1.950		66.85% Pervious Area
0.967		33.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
3.2	156	0.1060	0.81		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
8.9	618	0.0060	1.16		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
19.4	824	Total			

Summary for Subcatchment PR10.15A: Subcat PR10.15A

Runoff = 0.7 cfs @ 12.53 hrs, Volume= 0.152 af, Depth= 0.43"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.974	39	>75% Grass cover, Good, HSG A
0.023	80	>75% Grass cover, Good, HSG D
0.043	30	Meadow, non-grazed, HSG A
0.050	78	Meadow, non-grazed, HSG D
0.340	98	Paved parking, HSG A
0.075	98	Paved parking, HSG D
2.333	30	Woods, Good, HSG A
0.441	77	Woods, Good, HSG D
4.280	44	Weighted Average
3.865		90.31% Pervious Area
0.415		9.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0220	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
15.0	631	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.3	681	Total			

Summary for Subcatchment PR10.15B: Subcat PR10.15B

Runoff = 0.1 cfs @ 12.23 hrs, Volume= 0.009 af, Depth= 0.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.004	39	>75% Grass cover, Good, HSG A
0.000	80	>75% Grass cover, Good, HSG D
0.015	30	Meadow, non-grazed, HSG A
0.000	78	Meadow, non-grazed, HSG D
0.034	98	Paved parking, HSG A
0.009	98	Paved parking, HSG D
0.087	30	Woods, Good, HSG A
0.000	77	Woods, Good, HSG D
0.149	50	Weighted Average
0.107		71.50% Pervious Area
0.043		28.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.5	50	0.0920	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.7	105	0.0290	2.55		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
12.2	155	Total			

Summary for Subcatchment PR10.2:

Runoff = 7.3 cfs @ 12.20 hrs, Volume= 0.689 af, Depth= 2.03"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.802	39	>75% Grass cover, Good, HSG A
0.617	80	>75% Grass cover, Good, HSG D
0.062	78	Meadow, non-grazed, HSG D
0.662	98	Paved parking, HSG A
0.087	98	Paved parking, HSG D
0.401	30	Woods, Good, HSG A
1.445	77	Woods, Good, HSG D
4.075	69	Weighted Average
3.327		81.64% Pervious Area
0.748		18.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0040	0.08		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
1.1	79	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.2	63	0.0870	5.99		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.7	92	0.0980	2.19		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.5	58	0.0630	0.63		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
14.0	342	Total			

Summary for Subcatchment PR10.3:

Runoff = 2.9 cfs @ 12.14 hrs, Volume= 0.237 af, Depth= 2.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.031	80	>75% Grass cover, Good, HSG D
0.141	78	Meadow, non-grazed, HSG D
0.064	98	Paved parking, HSG D
0.750	77	Woods, Good, HSG D
0.985	79	Weighted Average
0.922		93.54% Pervious Area
0.064		6.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	11	0.1900	0.27		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
9.3	39	0.0940	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.1	11	0.1630	2.02		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.1	61	Total			

Summary for Subcatchment PR10.4A: Subcat PR10.4A

Runoff = 2.6 cfs @ 12.17 hrs, Volume= 0.238 af, Depth= 1.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.068	39	>75% Grass cover, Good, HSG A
0.101	80	>75% Grass cover, Good, HSG D
0.052	78	Meadow, non-grazed, HSG D
0.100	98	Paved parking, HSG A
0.054	98	Paved parking, HSG D
0.560	30	Woods, Good, HSG A
0.879	77	Woods, Good, HSG D
1.814	63	Weighted Average
1.661		91.52% Pervious Area
0.154		8.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	50	0.0940	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.6	95	0.1220	2.44		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	126	0.1310	0.90		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.9	140	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.3	411	Total			

Summary for Subcatchment PR10.4B: Subcat PR10.4B

Runoff = 4.1 cfs @ 12.20 hrs, Volume= 0.398 af, Depth= 1.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.463	39	>75% Grass cover, Good, HSG A
0.093	80	>75% Grass cover, Good, HSG D
0.052	78	Meadow, non-grazed, HSG D
0.404	98	Paved parking, HSG A
0.056	98	Paved parking, HSG D
0.746	30	Woods, Good, HSG A
1.223	77	Woods, Good, HSG D
3.037	63	Weighted Average
2.577		84.86% Pervious Area
0.460		15.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0720	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.2	21	0.0440	1.47		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	24	0.0750	5.56		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.4	124	0.0880	1.48		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	71	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.8	87	0.0650	1.78		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.2	139	0.0860	0.73		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.4	516	Total			

Summary for Subcatchment PR10.5:

Runoff = 1.7 cfs @ 12.32 hrs, Volume= 0.195 af, Depth= 2.80"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.017	80	>75% Grass cover, Good, HSG D
0.029	78	Meadow, non-grazed, HSG D
0.049	98	Paved parking, HSG D
0.741	77	Woods, Good, HSG D
0.836	78	Weighted Average
0.787		94.16% Pervious Area
0.049		5.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	68	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
23.4	118	Total			

Summary for Subcatchment PR10.6A:

Runoff = 0.0 cfs @ 15.05 hrs, Volume= 0.012 af, Depth= 0.10"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.076	39	>75% Grass cover, Good, HSG A
0.004	80	>75% Grass cover, Good, HSG D
0.083	30	Meadow, non-grazed, HSG A
0.014	78	Meadow, non-grazed, HSG D
0.065	98	Paved parking, HSG A
0.012	98	Paved parking, HSG D
1.263	30	Woods, Good, HSG A
0.009	77	Woods, Good, HSG D
1.526	35	Weighted Average
1.449		94.93% Pervious Area
0.077		5.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0220	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
0.8	65	0.0740	1.36		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.9	221	0.1460	0.96		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.3	38	0.0260	2.42		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
10.3	374	Total			

Summary for Subcatchment PR10.6B: Subcat PR10.6B

Runoff = 2.8 cfs @ 12.17 hrs, Volume= 0.317 af, Depth= 0.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.023	39	>75% Grass cover, Good, HSG A
0.010	74	>75% Grass cover, Good, HSG C
0.076	80	>75% Grass cover, Good, HSG D
0.077	30	Meadow, non-grazed, HSG A
0.022	71	Meadow, non-grazed, HSG C
0.243	78	Meadow, non-grazed, HSG D
0.106	98	Paved parking, HSG A
0.042	98	Paved parking, HSG C
0.177	98	Paved parking, HSG D
2.405	30	Woods, Good, HSG A
0.062	70	Woods, Good, HSG C
1.243	77	Woods, Good, HSG D
4.482	52	Weighted Average
4.158		92.76% Pervious Area
0.325		7.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	50	0.0320	0.18		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
0.1	30	0.0333	3.70		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.2	283	0.1336	0.91		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
9.9	363	Total			

Summary for Subcatchment PR10.7A: Subcat PR10.7A

Runoff = 0.2 cfs @ 12.42 hrs, Volume= 0.040 af, Depth= 0.57"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.011	39	>75% Grass cover, Good, HSG A
0.010	80	>75% Grass cover, Good, HSG D
0.047	30	Meadow, non-grazed, HSG A
0.053	78	Meadow, non-grazed, HSG D
0.041	98	Paved parking, HSG A
0.029	98	Paved parking, HSG D
0.513	30	Woods, Good, HSG A
0.131	77	Woods, Good, HSG D
0.835	47	Weighted Average
0.765		91.59% Pervious Area
0.070		8.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.3	50	0.1200	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.3	35	0.5400	1.84		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
3.3	198	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.4	219	0.0050	1.06		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
17.3	502	Total			

Summary for Subcatchment PR10.7B: Subcat PR10.7B

Runoff = 0.2 cfs @ 12.16 hrs, Volume= 0.020 af, Depth= 2.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.003	80	>75% Grass cover, Good, HSG D
0.006	78	Meadow, non-grazed, HSG D
0.010	98	Paved parking, HSG D
0.002	30	Woods, Good, HSG A
0.062	77	Woods, Good, HSG D
0.083	79	Weighted Average
0.073		87.96% Pervious Area
0.010		12.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.1080	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.0	86	0.0850	1.46		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.8	136	Total			

Summary for Subcatchment PR10.8:

Runoff = 0.5 cfs @ 12.14 hrs, Volume= 0.055 af, Depth= 0.73"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.147	39	>75% Grass cover, Good, HSG A
0.007	74	>75% Grass cover, Good, HSG C
0.296	80	>75% Grass cover, Good, HSG D
0.425	30	Woods, Good, HSG A
0.026	77	Woods, Good, HSG D
0.901	50	Weighted Average
0.901		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.0500	0.22		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.3	277	0.0830	2.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	47	0.2550	1.26		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	59	0.3700	1.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.3	433	Total			

Summary for Subcatchment PR10.9:

Runoff = 5.1 cfs @ 12.12 hrs, Volume= 0.405 af, Depth= 1.72"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.239	39	>75% Grass cover, Good, HSG A
0.271	74	>75% Grass cover, Good, HSG C
0.151	80	>75% Grass cover, Good, HSG D
0.026	71	Meadow, non-grazed, HSG C
0.013	78	Meadow, non-grazed, HSG D
0.009	98	Paved parking, HSG C
0.013	98	Paved parking, HSG D
0.341	30	Woods, Good, HSG A
1.377	70	Woods, Good, HSG C
0.383	77	Woods, Good, HSG D
2.822	65	Weighted Average
2.801		99.23% Pervious Area
0.022		0.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	50	0.4600	0.24		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
2.2	194	0.0460	1.50		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	140	0.2400	1.22		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.6	384	Total			

Summary for Subcatchment PR9.1: PR9.1

Runoff = 5.7 cfs @ 12.38 hrs, Volume= 0.732 af, Depth= 3.97"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 10-yr Rainfall=5.10"

Area (ac)	CN	Description
0.109	80	>75% Grass cover, Good, HSG D
0.184	78	Meadow, non-grazed, HSG D
1.343	98	Paved parking, HSG D
0.575	77	Woods, Good, HSG D
2.211	90	Weighted Average
0.868		39.26% Pervious Area
1.343		60.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	50	0.0500	1.75		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
0.4	100	0.0360	3.85		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
28.7	540	0.0020	0.31		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	37	0.0030	4.66	14.64	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
29.7	727	Total			

Summary for Pond P10.12A: Linear Infiltration Basin

Inflow Area = 0.304 ac, 15.34% Impervious, Inflow Depth = 0.30" for 10-yr event
Inflow = 0.0 cfs @ 12.49 hrs, Volume= 0.008 af
Outflow = 0.0 cfs @ 14.93 hrs, Volume= 0.008 af, Atten= 59%, Lag= 146.2 min
Discarded = 0.0 cfs @ 14.93 hrs, Volume= 0.008 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 136.72' @ 14.93 hrs Surf.Area= 461 sf Storage= 52 cf

Plug-Flow detention time= 59.7 min calculated for 0.008 af (100% of inflow)
Center-of-Mass det. time= 59.7 min (1,044.3 - 984.7)

Volume	Invert	Avail.Storage	Storage Description
#1	136.50'	1,079 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
136.50	0	0	0
137.00	1,030	258	258
137.50	2,255	821	1,079

Device	Routing	Invert	Outlet Devices
#1	Primary	137.00'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	136.50'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 14.93 hrs HW=136.72' (Free Discharge)
↑**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=136.50' (Free Discharge)
↑**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P10.13A: Linear Infiltration Basin

Inflow Area = 1.350 ac, 43.38% Impervious, Inflow Depth = 2.36" for 10-yr event
Inflow = 3.6 cfs @ 12.10 hrs, Volume= 0.265 af
Outflow = 3.4 cfs @ 12.13 hrs, Volume= 0.265 af, Atten= 5%, Lag= 1.6 min
Discarded = 0.0 cfs @ 12.13 hrs, Volume= 0.044 af
Primary = 3.4 cfs @ 12.13 hrs, Volume= 0.221 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 137.36' @ 12.13 hrs Surf.Area= 2,047 sf Storage= 760 cf

Plug-Flow detention time= 28.7 min calculated for 0.265 af (100% of inflow)
Center-of-Mass det. time= 28.7 min (868.6 - 839.8)

Volume	Invert	Avail.Storage	Storage Description
#1	136.60'	1,323 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
136.60	0	0	0
137.10	1,280	320	320
137.60	2,730	1,003	1,323

Device	Routing	Invert	Outlet Devices
#1	Primary	137.10'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	136.60'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.13 hrs HW=137.36' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=3.4 cfs @ 12.13 hrs HW=137.36' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 3.4 cfs @ 1.28 fps)

Summary for Pond P10.6A: Linear Infiltration Basin

Inflow Area = 1.526 ac, 5.07% Impervious, Inflow Depth = 0.10" for 10-yr event
Inflow = 0.0 cfs @ 15.05 hrs, Volume= 0.012 af
Outflow = 0.0 cfs @ 16.17 hrs, Volume= 0.012 af, Atten= 14%, Lag= 67.0 min
Discarded = 0.0 cfs @ 16.17 hrs, Volume= 0.012 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 129.04' @ 16.17 hrs Surf.Area= 707 sf Storage= 48 cf

Plug-Flow detention time= 38.2 min calculated for 0.012 af (100% of inflow)
Center-of-Mass det. time= 38.2 min (1,120.2 - 1,082.0)

Volume	Invert	Avail.Storage	Storage Description
#1	128.90'	2,315 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
128.90	0	0	0
129.40	2,611	653	653
129.90	4,039	1,663	2,315

Device	Routing	Invert	Outlet Devices
#1	Primary	129.40'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	128.90'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 16.17 hrs HW=129.04' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=128.90' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P10.7A: Linear Infiltration Basin

Inflow Area = 0.835 ac, 8.41% Impervious, Inflow Depth = 0.57" for 10-yr event
Inflow = 0.2 cfs @ 12.42 hrs, Volume= 0.040 af
Outflow = 0.2 cfs @ 12.56 hrs, Volume= 0.040 af, Atten= 11%, Lag= 8.4 min
Discarded = 0.0 cfs @ 12.56 hrs, Volume= 0.008 af
Primary = 0.2 cfs @ 12.56 hrs, Volume= 0.032 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 127.74' @ 12.56 hrs Surf.Area= 843 sf Storage= 231 cf

Plug-Flow detention time= 167.2 min calculated for 0.040 af (100% of inflow)
Center-of-Mass det. time= 167.5 min (1,107.1 - 939.6)

Volume	Invert	Avail.Storage	Storage Description
#1	127.20'	751 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
127.20	0	0	0
127.70	793	198	198
128.20	1,419	553	751

Device	Routing	Invert	Outlet Devices
#1	Primary	127.70'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68

2.72 2.81 2.92 2.97 3.07 3.32
#2 Discarded 127.20' **0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.56 hrs HW=127.74' (Free Discharge)
2=Exfiltration (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.2 cfs @ 12.56 hrs HW=127.74' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 0.2 cfs @ 0.49 fps)

Summary for Link DP-9.1: Station Rd

Inflow Area = 2.211 ac, 60.74% Impervious, Inflow Depth = 3.97" for 10-yr event
Inflow = 5.7 cfs @ 12.38 hrs, Volume= 0.732 af
Primary = 5.7 cfs @ 12.38 hrs, Volume= 0.732 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.1: Wetland 18

Inflow Area = 1.200 ac, 12.87% Impervious, Inflow Depth = 2.98" for 10-yr event
Inflow = 2.9 cfs @ 12.26 hrs, Volume= 0.298 af
Primary = 2.9 cfs @ 12.26 hrs, Volume= 0.298 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.10: Vernal Pool 4

Inflow Area = 0.084 ac, 18.11% Impervious, Inflow Depth = 2.98" for 10-yr event
Inflow = 0.3 cfs @ 12.09 hrs, Volume= 0.021 af
Primary = 0.3 cfs @ 12.09 hrs, Volume= 0.021 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.11/13: Bordering Vegetated Wetland

Inflow Area = 2.855 ac, 31.16% Impervious, Inflow Depth = 1.58" for 10-yr event
Inflow = 4.9 cfs @ 12.13 hrs, Volume= 0.377 af
Primary = 4.9 cfs @ 12.13 hrs, Volume= 0.377 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.12: Wetland 6

Inflow Area = 1.153 ac, 15.54% Impervious, Inflow Depth = 0.90" for 10-yr event
Inflow = 0.8 cfs @ 12.23 hrs, Volume= 0.087 af
Primary = 0.8 cfs @ 12.23 hrs, Volume= 0.087 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.14: Wetland 3_Vernal Pool 1

Inflow Area = 6.987 ac, 21.67% Impervious, Inflow Depth = 2.45" for 10-yr event
Inflow = 13.5 cfs @ 12.15 hrs, Volume= 1.426 af
Primary = 13.5 cfs @ 12.15 hrs, Volume= 1.426 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.15: Wetland 4

Inflow Area = 4.429 ac, 10.32% Impervious, Inflow Depth = 0.44" for 10-yr event
Inflow = 0.7 cfs @ 12.52 hrs, Volume= 0.161 af
Primary = 0.7 cfs @ 12.52 hrs, Volume= 0.161 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.2: Wetland 19

Inflow Area = 4.075 ac, 18.36% Impervious, Inflow Depth = 2.03" for 10-yr event
Inflow = 7.3 cfs @ 12.20 hrs, Volume= 0.689 af
Primary = 7.3 cfs @ 12.20 hrs, Volume= 0.689 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.3: Wetland 15

Inflow Area = 0.985 ac, 6.46% Impervious, Inflow Depth = 2.89" for 10-yr event
Inflow = 2.9 cfs @ 12.14 hrs, Volume= 0.237 af
Primary = 2.9 cfs @ 12.14 hrs, Volume= 0.237 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.4: Wetland 16

Inflow Area = 4.851 ac, 12.65% Impervious, Inflow Depth = 1.57" for 10-yr event
Inflow = 6.7 cfs @ 12.19 hrs, Volume= 0.636 af
Primary = 6.7 cfs @ 12.19 hrs, Volume= 0.636 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.5: Wetland 14

Inflow Area = 0.836 ac, 5.84% Impervious, Inflow Depth = 2.80" for 10-yr event
Inflow = 1.7 cfs @ 12.32 hrs, Volume= 0.195 af
Primary = 1.7 cfs @ 12.32 hrs, Volume= 0.195 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.6: Wetland 11

Inflow Area = 6.009 ac, 6.69% Impervious, Inflow Depth = 0.63" for 10-yr event
Inflow = 2.8 cfs @ 12.17 hrs, Volume= 0.317 af
Primary = 2.8 cfs @ 12.17 hrs, Volume= 0.317 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.7: Wetland 13

Inflow Area = 0.918 ac, 8.74% Impervious, Inflow Depth = 0.68" for 10-yr event
Inflow = 0.3 cfs @ 12.54 hrs, Volume= 0.052 af
Primary = 0.3 cfs @ 12.54 hrs, Volume= 0.052 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.8: Wetland 10

Inflow Area = 0.901 ac, 0.00% Impervious, Inflow Depth = 0.73" for 10-yr event
Inflow = 0.5 cfs @ 12.14 hrs, Volume= 0.055 af
Primary = 0.5 cfs @ 12.14 hrs, Volume= 0.055 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.9: Wetland 5_Vernal Pool 2-3

Inflow Area = 2.822 ac, 0.77% Impervious, Inflow Depth = 1.72" for 10-yr event
Inflow = 5.1 cfs @ 12.12 hrs, Volume= 0.405 af
Primary = 5.1 cfs @ 12.12 hrs, Volume= 0.405 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentPR10.1: PR10.1 Runoff Area=1.200 ac 12.87% Impervious Runoff Depth=3.99"
Flow Length=250' Tc=19.0 min CN=80 Runoff=3.9 cfs 0.399 af

SubcatchmentPR10.10: Runoff Area=0.084 ac 18.11% Impervious Runoff Depth=3.99"
Tc=6.0 min CN=80 Runoff=0.4 cfs 0.028 af

SubcatchmentPR10.11: Runoff Area=1.132 ac 5.57% Impervious Runoff Depth=1.41"
Flow Length=38' Slope=0.0630 '/' Tc=10.7 min CN=52 Runoff=1.4 cfs 0.133 af

SubcatchmentPR10.12A: Subcat PR10.12A Runoff Area=0.304 ac 15.34% Impervious Runoff Depth=0.63"
Flow Length=356' Tc=12.4 min CN=41 Runoff=0.1 cfs 0.016 af

SubcatchmentPR10.12B: Subcat PR10.12B Runoff Area=0.850 ac 15.61% Impervious Runoff Depth=1.90"
Flow Length=250' Tc=14.7 min CN=58 Runoff=1.3 cfs 0.135 af

SubcatchmentPR10.13A: Subcat PR10.13A Runoff Area=1.350 ac 43.38% Impervious Runoff Depth=3.28"
Flow Length=590' Tc=6.9 min CN=73 Runoff=5.0 cfs 0.369 af

SubcatchmentPR10.13B: Subcat PR10.13B Runoff Area=0.373 ac 64.59% Impervious Runoff Depth=3.38"
Tc=6.0 min CN=74 Runoff=1.5 cfs 0.105 af

SubcatchmentPR10.14A: Subcat PR10.14A Runoff Area=4.071 ac 13.44% Impervious Runoff Depth=2.61"
Flow Length=378' Tc=7.5 min CN=66 Runoff=11.7 cfs 0.886 af

SubcatchmentPR10.14B: Runoff Area=2.916 ac 33.15% Impervious Runoff Depth=4.41"
Flow Length=824' Tc=19.4 min CN=84 Runoff=10.2 cfs 1.072 af

SubcatchmentPR10.15A: Subcat PR10.15A Runoff Area=4.280 ac 9.69% Impervious Runoff Depth=0.83"
Flow Length=681' Tc=20.3 min CN=44 Runoff=1.8 cfs 0.295 af

SubcatchmentPR10.15B: Subcat PR10.15B Runoff Area=0.149 ac 28.50% Impervious Runoff Depth=1.26"
Flow Length=155' Tc=12.2 min CN=50 Runoff=0.1 cfs 0.016 af

SubcatchmentPR10.2: Runoff Area=4.075 ac 18.36% Impervious Runoff Depth=2.89"
Flow Length=342' Tc=14.0 min CN=69 Runoff=10.6 cfs 0.983 af

SubcatchmentPR10.3: Runoff Area=0.985 ac 6.46% Impervious Runoff Depth=3.89"
Flow Length=61' Tc=10.1 min CN=79 Runoff=3.9 cfs 0.319 af

SubcatchmentPR10.4A: Subcat PR10.4A Runoff Area=1.814 ac 8.48% Impervious Runoff Depth=2.34"
Flow Length=411' Tc=11.3 min CN=63 Runoff=4.0 cfs 0.354 af

SubcatchmentPR10.4B: Subcat PR10.4B Runoff Area=3.037 ac 15.14% Impervious Runoff Depth=2.34"
Flow Length=516' Tc=13.4 min CN=63 Runoff=6.4 cfs 0.592 af

SubcatchmentPR10.5: Runoff Area=0.836 ac 5.84% Impervious Runoff Depth=3.78"
Flow Length=118' Tc=23.4 min CN=78 Runoff=2.3 cfs 0.264 af

SubcatchmentPR10.6A: Runoff Area=1.526 ac 5.07% Impervious Runoff Depth=0.30"
Flow Length=374' Tc=10.3 min CN=35 Runoff=0.1 cfs 0.038 af

SubcatchmentPR10.6B: Subcat PR10.6B Runoff Area=4.482 ac 7.24% Impervious Runoff Depth=1.41"
Flow Length=363' Tc=9.9 min CN=52 Runoff=5.5 cfs 0.527 af

SubcatchmentPR10.7A: Subcat PR10.7A Runoff Area=0.835 ac 8.41% Impervious Runoff Depth=1.04"
Flow Length=502' Tc=17.3 min CN=47 Runoff=0.5 cfs 0.072 af

SubcatchmentPR10.7B: Subcat PR10.7B Runoff Area=0.083 ac 12.04% Impervious Runoff Depth=3.89"
Flow Length=136' Tc=11.8 min CN=79 Runoff=0.3 cfs 0.027 af

SubcatchmentPR10.8: Runoff Area=0.901 ac 0.00% Impervious Runoff Depth=1.26"
Flow Length=433' Tc=7.3 min CN=50 Runoff=1.0 cfs 0.094 af

SubcatchmentPR10.9: Runoff Area=2.822 ac 0.77% Impervious Runoff Depth=2.52"
Flow Length=384' Tc=7.6 min CN=65 Runoff=7.7 cfs 0.593 af

SubcatchmentPR9.1: PR9.1 Runoff Area=2.211 ac 60.74% Impervious Runoff Depth=5.07"
Flow Length=727' Tc=29.7 min CN=90 Runoff=7.2 cfs 0.934 af

Pond P10.12A: Linear Infiltration Basin Peak Elev=136.93' Storage=187 cf Inflow=0.1 cfs 0.016 af
Discarded=0.0 cfs 0.016 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.016 af

Pond P10.13A: Linear Infiltration Basin Peak Elev=137.43' Storage=897 cf Inflow=5.0 cfs 0.369 af
Discarded=0.1 cfs 0.047 af Primary=4.8 cfs 0.322 af Outflow=4.8 cfs 0.369 af

Pond P10.6A: Linear Infiltration Basin Peak Elev=129.27' Storage=359 cf Inflow=0.1 cfs 0.038 af
Discarded=0.0 cfs 0.038 af Primary=0.0 cfs 0.000 af Outflow=0.0 cfs 0.038 af

Pond P10.7A: Linear Infiltration Basin Peak Elev=127.78' Storage=262 cf Inflow=0.5 cfs 0.072 af
Discarded=0.0 cfs 0.008 af Primary=0.5 cfs 0.064 af Outflow=0.5 cfs 0.072 af

Link DP-9.1: Station Rd Inflow=7.2 cfs 0.934 af
Primary=7.2 cfs 0.934 af

Link DP10.1: Wetland 18 Inflow=3.9 cfs 0.399 af
Primary=3.9 cfs 0.399 af

Link DP10.10: Vernal Pool 4 Inflow=0.4 cfs 0.028 af
Primary=0.4 cfs 0.028 af

Link DP10.11/13: Bordering Vegetated Wetland Inflow=7.4 cfs 0.560 af
Primary=7.4 cfs 0.560 af

Link DP10.12: Wetland 6 Inflow=1.3 cfs 0.135 af
Primary=1.3 cfs 0.135 af

Link DP10.14: Wetland 3_Vernal Pool 1 Inflow=19.0 cfs 1.958 af
Primary=19.0 cfs 1.958 af

Link DP10.15: Wetland 4 Inflow=1.9 cfs 0.311 af
Primary=1.9 cfs 0.311 af

Link DP10.2: Wetland 19 Inflow=10.6 cfs 0.983 af
Primary=10.6 cfs 0.983 af

Link DP10.3: Wetland 15 Inflow=3.9 cfs 0.319 af
Primary=3.9 cfs 0.319 af

Link DP10.4: Wetland 16 Inflow=10.3 cfs 0.945 af
Primary=10.3 cfs 0.945 af

Link DP10.5: Wetland 14 Inflow=2.3 cfs 0.264 af
Primary=2.3 cfs 0.264 af

Link DP10.6: Wetland 11 Inflow=5.5 cfs 0.527 af
Primary=5.5 cfs 0.527 af

Link DP10.7: Wetland 13 Inflow=0.7 cfs 0.091 af
Primary=0.7 cfs 0.091 af

Link DP10.8: Wetland 10 Inflow=1.0 cfs 0.094 af
Primary=1.0 cfs 0.094 af

Link DP10.9: Wetland 5_Vernal Pool 2-3 Inflow=7.7 cfs 0.593 af
Primary=7.7 cfs 0.593 af

Total Runoff Area = 40.319 ac Runoff Volume = 8.251 af Average Runoff Depth = 2.46"
83.80% Pervious = 33.788 ac 16.20% Impervious = 6.531 ac

Summary for Subcatchment PR10.1: PR10.1

Runoff = 3.9 cfs @ 12.26 hrs, Volume= 0.399 af, Depth= 3.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.056	80	>75% Grass cover, Good, HSG D
0.064	78	Meadow, non-grazed, HSG D
0.154	98	Paved parking, HSG D
0.925	77	Woods, Good, HSG D
1.200	80	Weighted Average
1.046		87.13% Pervious Area
0.154		12.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	25	0.0040	0.56		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
8.9	25	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
9.4	200	0.0200	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.0	250	Total			

Summary for Subcatchment PR10.10:

Runoff = 0.4 cfs @ 12.09 hrs, Volume= 0.028 af, Depth= 3.99"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.002	74	>75% Grass cover, Good, HSG C
0.002	80	>75% Grass cover, Good, HSG D
0.002	71	Meadow, non-grazed, HSG C
0.003	78	Meadow, non-grazed, HSG D
0.010	98	Paved parking, HSG C
0.005	98	Paved parking, HSG D
0.007	70	Woods, Good, HSG C
0.054	77	Woods, Good, HSG D
0.084	80	Weighted Average
0.069		81.89% Pervious Area
0.015		18.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PR10.11:

Runoff = 1.4 cfs @ 12.17 hrs, Volume= 0.133 af, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.005	39	>75% Grass cover, Good, HSG A
0.017	80	>75% Grass cover, Good, HSG D
0.020	30	Meadow, non-grazed, HSG A
0.051	78	Meadow, non-grazed, HSG D
0.044	98	Paved parking, HSG A
0.019	98	Paved parking, HSG D
0.600	30	Woods, Good, HSG A
0.375	77	Woods, Good, HSG D
1.132	52	Weighted Average
1.069		94.43% Pervious Area
0.063		5.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	38	0.0630	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment PR10.12A: Subcat PR10.12A

Runoff = 0.1 cfs @ 12.36 hrs, Volume= 0.016 af, Depth= 0.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.017	39	>75% Grass cover, Good, HSG A
0.058	30	Meadow, non-grazed, HSG A
0.047	98	Paved parking, HSG A
0.182	30	Woods, Good, HSG A
0.304	41	Weighted Average
0.257		84.66% Pervious Area
0.047		15.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.1280	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	306	0.0210	2.17		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
12.4	356	Total			

Summary for Subcatchment PR10.12B: Subcat PR10.12B

Runoff = 1.3 cfs @ 12.22 hrs, Volume= 0.135 af, Depth= 1.90"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.011	39	>75% Grass cover, Good, HSG A
0.026	80	>75% Grass cover, Good, HSG D
0.045	30	Meadow, non-grazed, HSG A
0.032	78	Meadow, non-grazed, HSG D
0.034	98	Paved parking, HSG A
0.098	98	Paved parking, HSG D
0.344	30	Woods, Good, HSG A
0.260	77	Woods, Good, HSG D
0.850	58	Weighted Average
0.717		84.39% Pervious Area
0.133		15.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	50	0.1460	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.2	200	0.0670	0.65		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
14.7	250	Total			

Summary for Subcatchment PR10.13A: Subcat PR10.13A

Runoff = 5.0 cfs @ 12.10 hrs, Volume= 0.369 af, Depth= 3.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.012	39	>75% Grass cover, Good, HSG A
0.095	76	Gravel roads, HSG A
0.197	91	Gravel roads, HSG D
0.065	30	Meadow, non-grazed, HSG A
0.275	98	Paved parking, HSG A
0.311	98	Paved parking, HSG D
0.351	30	Woods, Good, HSG A
0.044	77	Woods, Good, HSG D
1.350	73	Weighted Average
0.764		56.62% Pervious Area
0.586		43.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	50	0.0100	0.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
2.0	104	0.1180	0.86		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
4.0	436	0.0150	1.84		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
6.9	590	Total			

Summary for Subcatchment PR10.13B: Subcat PR10.13B

Runoff = 1.5 cfs @ 12.09 hrs, Volume= 0.105 af, Depth= 3.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.006	39	>75% Grass cover, Good, HSG A
0.039	30	Meadow, non-grazed, HSG A
0.223	98	Paved parking, HSG A
0.018	98	Paved parking, HSG D
0.087	30	Woods, Good, HSG A
0.000	77	Woods, Good, HSG D
0.373	74	Weighted Average
0.132		35.41% Pervious Area
0.241		64.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PR10.14A: Subcat PR10.14A

Runoff = 11.7 cfs @ 12.11 hrs, Volume= 0.886 af, Depth= 2.61"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.005	39	>75% Grass cover, Good, HSG A
0.386	80	>75% Grass cover, Good, HSG D
0.031	30	Meadow, non-grazed, HSG A
0.005	98	Paved parking, HSG A
0.542	98	Paved parking, HSG D
1.158	30	Woods, Good, HSG A
1.943	77	Woods, Good, HSG D
4.071	66	Weighted Average
3.524		86.56% Pervious Area
0.547		13.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	50	0.0960	2.28		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
0.1	60	0.1600	8.12		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.2	144	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.8	124	0.0300	0.43		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.5	378	Total			

Summary for Subcatchment PR10.14B:

Runoff = 10.2 cfs @ 12.26 hrs, Volume= 1.072 af, Depth= 4.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.007	39	>75% Grass cover, Good, HSG A
0.865	80	>75% Grass cover, Good, HSG D
0.044	91	Gravel roads, HSG D
0.033	30	Meadow, non-grazed, HSG A
0.103	78	Meadow, non-grazed, HSG D
0.010	98	Paved parking, HSG A
0.957	98	Paved parking, HSG D
0.026	30	Woods, Good, HSG A
0.872	77	Woods, Good, HSG D
2.916	84	Weighted Average
1.950		66.85% Pervious Area
0.967		33.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
3.2	156	0.1060	0.81		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
8.9	618	0.0060	1.16		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
19.4	824	Total			

Summary for Subcatchment PR10.15A: Subcat PR10.15A

Runoff = 1.8 cfs @ 12.42 hrs, Volume= 0.295 af, Depth= 0.83"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.974	39	>75% Grass cover, Good, HSG A
0.023	80	>75% Grass cover, Good, HSG D
0.043	30	Meadow, non-grazed, HSG A
0.050	78	Meadow, non-grazed, HSG D
0.340	98	Paved parking, HSG A
0.075	98	Paved parking, HSG D
2.333	30	Woods, Good, HSG A
0.441	77	Woods, Good, HSG D
4.280	44	Weighted Average
3.865		90.31% Pervious Area
0.415		9.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0220	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
15.0	631	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.3	681	Total			

Summary for Subcatchment PR10.15B: Subcat PR10.15B

Runoff = 0.1 cfs @ 12.20 hrs, Volume= 0.016 af, Depth= 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.004	39	>75% Grass cover, Good, HSG A
0.000	80	>75% Grass cover, Good, HSG D
0.015	30	Meadow, non-grazed, HSG A
0.000	78	Meadow, non-grazed, HSG D
0.034	98	Paved parking, HSG A
0.009	98	Paved parking, HSG D
0.087	30	Woods, Good, HSG A
0.000	77	Woods, Good, HSG D
0.149	50	Weighted Average
0.107		71.50% Pervious Area
0.043		28.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.5	50	0.0920	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.7	105	0.0290	2.55		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
12.2	155	Total			

Summary for Subcatchment PR10.2:

Runoff = 10.6 cfs @ 12.20 hrs, Volume= 0.983 af, Depth= 2.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.802	39	>75% Grass cover, Good, HSG A
0.617	80	>75% Grass cover, Good, HSG D
0.062	78	Meadow, non-grazed, HSG D
0.662	98	Paved parking, HSG A
0.087	98	Paved parking, HSG D
0.401	30	Woods, Good, HSG A
1.445	77	Woods, Good, HSG D
4.075	69	Weighted Average
3.327		81.64% Pervious Area
0.748		18.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0040	0.08		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
1.1	79	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.2	63	0.0870	5.99		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.7	92	0.0980	2.19		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.5	58	0.0630	0.63		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
14.0	342	Total			

Summary for Subcatchment PR10.3:

Runoff = 3.9 cfs @ 12.14 hrs, Volume= 0.319 af, Depth= 3.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.031	80	>75% Grass cover, Good, HSG D
0.141	78	Meadow, non-grazed, HSG D
0.064	98	Paved parking, HSG D
0.750	77	Woods, Good, HSG D
0.985	79	Weighted Average
0.922		93.54% Pervious Area
0.064		6.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	11	0.1900	0.27		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
9.3	39	0.0940	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.1	11	0.1630	2.02		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.1	61	Total			

Summary for Subcatchment PR10.4A: Subcat PR10.4A

Runoff = 4.0 cfs @ 12.17 hrs, Volume= 0.354 af, Depth= 2.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.068	39	>75% Grass cover, Good, HSG A
0.101	80	>75% Grass cover, Good, HSG D
0.052	78	Meadow, non-grazed, HSG D
0.100	98	Paved parking, HSG A
0.054	98	Paved parking, HSG D
0.560	30	Woods, Good, HSG A
0.879	77	Woods, Good, HSG D
1.814	63	Weighted Average
1.661		91.52% Pervious Area
0.154		8.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	50	0.0940	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.6	95	0.1220	2.44		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	126	0.1310	0.90		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.9	140	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.3	411	Total			

Summary for Subcatchment PR10.4B: Subcat PR10.4B

Runoff = 6.4 cfs @ 12.19 hrs, Volume= 0.592 af, Depth= 2.34"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.463	39	>75% Grass cover, Good, HSG A
0.093	80	>75% Grass cover, Good, HSG D
0.052	78	Meadow, non-grazed, HSG D
0.404	98	Paved parking, HSG A
0.056	98	Paved parking, HSG D
0.746	30	Woods, Good, HSG A
1.223	77	Woods, Good, HSG D
3.037	63	Weighted Average
2.577		84.86% Pervious Area
0.460		15.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0720	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.2	21	0.0440	1.47		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	24	0.0750	5.56		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.4	124	0.0880	1.48		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	71	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.8	87	0.0650	1.78		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.2	139	0.0860	0.73		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.4	516	Total			

Summary for Subcatchment PR10.5:

Runoff = 2.3 cfs @ 12.32 hrs, Volume= 0.264 af, Depth= 3.78"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.017	80	>75% Grass cover, Good, HSG D
0.029	78	Meadow, non-grazed, HSG D
0.049	98	Paved parking, HSG D
0.741	77	Woods, Good, HSG D
0.836	78	Weighted Average
0.787		94.16% Pervious Area
0.049		5.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	68	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
23.4	118	Total			

Summary for Subcatchment PR10.6A:

Runoff = 0.1 cfs @ 12.50 hrs, Volume= 0.038 af, Depth= 0.30"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.076	39	>75% Grass cover, Good, HSG A
0.004	80	>75% Grass cover, Good, HSG D
0.083	30	Meadow, non-grazed, HSG A
0.014	78	Meadow, non-grazed, HSG D
0.065	98	Paved parking, HSG A
0.012	98	Paved parking, HSG D
1.263	30	Woods, Good, HSG A
0.009	77	Woods, Good, HSG D
1.526	35	Weighted Average
1.449		94.93% Pervious Area
0.077		5.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0220	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
0.8	65	0.0740	1.36		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.9	221	0.1460	0.96		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.3	38	0.0260	2.42		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
10.3	374	Total			

Summary for Subcatchment PR10.6B: Subcat PR10.6B

Runoff = 5.5 cfs @ 12.16 hrs, Volume= 0.527 af, Depth= 1.41"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.023	39	>75% Grass cover, Good, HSG A
0.010	74	>75% Grass cover, Good, HSG C
0.076	80	>75% Grass cover, Good, HSG D
0.077	30	Meadow, non-grazed, HSG A
0.022	71	Meadow, non-grazed, HSG C
0.243	78	Meadow, non-grazed, HSG D
0.106	98	Paved parking, HSG A
0.042	98	Paved parking, HSG C
0.177	98	Paved parking, HSG D
2.405	30	Woods, Good, HSG A
0.062	70	Woods, Good, HSG C
1.243	77	Woods, Good, HSG D
4.482	52	Weighted Average
4.158		92.76% Pervious Area
0.325		7.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	50	0.0320	0.18		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
0.1	30	0.0333	3.70		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.2	283	0.1336	0.91		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
9.9	363	Total			

Summary for Subcatchment PR10.7A: Subcat PR10.7A

Runoff = 0.5 cfs @ 12.32 hrs, Volume= 0.072 af, Depth= 1.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.011	39	>75% Grass cover, Good, HSG A
0.010	80	>75% Grass cover, Good, HSG D
0.047	30	Meadow, non-grazed, HSG A
0.053	78	Meadow, non-grazed, HSG D
0.041	98	Paved parking, HSG A
0.029	98	Paved parking, HSG D
0.513	30	Woods, Good, HSG A
0.131	77	Woods, Good, HSG D
0.835	47	Weighted Average
0.765		91.59% Pervious Area
0.070		8.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.3	50	0.1200	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.3	35	0.5400	1.84		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
3.3	198	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.4	219	0.0050	1.06		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
17.3	502	Total			

Summary for Subcatchment PR10.7B: Subcat PR10.7B

Runoff = 0.3 cfs @ 12.16 hrs, Volume= 0.027 af, Depth= 3.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.003	80	>75% Grass cover, Good, HSG D
0.006	78	Meadow, non-grazed, HSG D
0.010	98	Paved parking, HSG D
0.002	30	Woods, Good, HSG A
0.062	77	Woods, Good, HSG D
0.083	79	Weighted Average
0.073		87.96% Pervious Area
0.010		12.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.1080	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.0	86	0.0850	1.46		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.8	136	Total			

Summary for Subcatchment PR10.8:

Runoff = 1.0 cfs @ 12.12 hrs, Volume= 0.094 af, Depth= 1.26"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.147	39	>75% Grass cover, Good, HSG A
0.007	74	>75% Grass cover, Good, HSG C
0.296	80	>75% Grass cover, Good, HSG D
0.425	30	Woods, Good, HSG A
0.026	77	Woods, Good, HSG D
0.901	50	Weighted Average
0.901		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.0500	0.22		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.3	277	0.0830	2.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	47	0.2550	1.26		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	59	0.3700	1.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.3	433	Total			

Summary for Subcatchment PR10.9:

Runoff = 7.7 cfs @ 12.11 hrs, Volume= 0.593 af, Depth= 2.52"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.239	39	>75% Grass cover, Good, HSG A
0.271	74	>75% Grass cover, Good, HSG C
0.151	80	>75% Grass cover, Good, HSG D
0.026	71	Meadow, non-grazed, HSG C
0.013	78	Meadow, non-grazed, HSG D
0.009	98	Paved parking, HSG C
0.013	98	Paved parking, HSG D
0.341	30	Woods, Good, HSG A
1.377	70	Woods, Good, HSG C
0.383	77	Woods, Good, HSG D
2.822	65	Weighted Average
2.801		99.23% Pervious Area
0.022		0.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	50	0.4600	0.24		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
2.2	194	0.0460	1.50		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	140	0.2400	1.22		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.6	384	Total			

Summary for Subcatchment PR9.1: PR9.1

Runoff = 7.2 cfs @ 12.38 hrs, Volume= 0.934 af, Depth= 5.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 25-yr Rainfall=6.23"

Area (ac)	CN	Description
0.109	80	>75% Grass cover, Good, HSG D
0.184	78	Meadow, non-grazed, HSG D
1.343	98	Paved parking, HSG D
0.575	77	Woods, Good, HSG D
2.211	90	Weighted Average
0.868		39.26% Pervious Area
1.343		60.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	50	0.0500	1.75		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
0.4	100	0.0360	3.85		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
28.7	540	0.0020	0.31		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	37	0.0030	4.66	14.64	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
29.7	727	Total			

Summary for Pond P10.12A: Linear Infiltration Basin

Inflow Area = 0.304 ac, 15.34% Impervious, Inflow Depth = 0.63" for 25-yr event
Inflow = 0.1 cfs @ 12.36 hrs, Volume= 0.016 af
Outflow = 0.0 cfs @ 14.84 hrs, Volume= 0.016 af, Atten= 77%, Lag= 148.3 min
Discarded = 0.0 cfs @ 14.84 hrs, Volume= 0.016 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 136.93' @ 14.84 hrs Surf.Area= 878 sf Storage= 187 cf

Plug-Flow detention time= 117.8 min calculated for 0.016 af (100% of inflow)
Center-of-Mass det. time= 117.8 min (1,059.9 - 942.1)

Volume	Invert	Avail.Storage	Storage Description
#1	136.50'	1,079 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
136.50	0	0	0
137.00	1,030	258	258
137.50	2,255	821	1,079

Device	Routing	Invert	Outlet Devices
#1	Primary	137.00'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	136.50'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 14.84 hrs HW=136.93' (Free Discharge)
↑**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=136.50' (Free Discharge)
↑**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P10.13A: Linear Infiltration Basin

Inflow Area = 1.350 ac, 43.38% Impervious, Inflow Depth = 3.28" for 25-yr event
Inflow = 5.0 cfs @ 12.10 hrs, Volume= 0.369 af
Outflow = 4.8 cfs @ 12.13 hrs, Volume= 0.369 af, Atten= 4%, Lag= 1.6 min
Discarded = 0.1 cfs @ 12.13 hrs, Volume= 0.047 af
Primary = 4.8 cfs @ 12.13 hrs, Volume= 0.322 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 137.43' @ 12.13 hrs Surf.Area= 2,233 sf Storage= 897 cf

Plug-Flow detention time= 22.3 min calculated for 0.369 af (100% of inflow)
Center-of-Mass det. time= 22.3 min (852.6 - 830.3)

Volume	Invert	Avail.Storage	Storage Description
#1	136.60'	1,323 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
136.60	0	0	0
137.10	1,280	320	320
137.60	2,730	1,003	1,323

Device	Routing	Invert	Outlet Devices
#1	Primary	137.10'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	136.60'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.1 cfs @ 12.13 hrs HW=137.43' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.1 cfs)

Primary OutFlow Max=4.8 cfs @ 12.13 hrs HW=137.43' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 4.8 cfs @ 1.45 fps)

Summary for Pond P10.6A: Linear Infiltration Basin

Inflow Area = 1.526 ac, 5.07% Impervious, Inflow Depth = 0.30" for 25-yr event
Inflow = 0.1 cfs @ 12.50 hrs, Volume= 0.038 af
Outflow = 0.0 cfs @ 15.92 hrs, Volume= 0.038 af, Atten= 58%, Lag= 205.1 min
Discarded = 0.0 cfs @ 15.92 hrs, Volume= 0.038 af
Primary = 0.0 cfs @ 0.00 hrs, Volume= 0.000 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 129.27' @ 15.92 hrs Surf.Area= 1,937 sf Storage= 359 cf

Plug-Flow detention time= 104.9 min calculated for 0.038 af (100% of inflow)
Center-of-Mass det. time= 104.9 min (1,103.4 - 998.5)

Volume	Invert	Avail.Storage	Storage Description
#1	128.90'	2,315 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
128.90	0	0	0
129.40	2,611	653	653
129.90	4,039	1,663	2,315

Device	Routing	Invert	Outlet Devices
#1	Primary	129.40'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	128.90'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 15.92 hrs HW=129.27' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.0 cfs @ 0.00 hrs HW=128.90' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Controls 0.0 cfs)

Summary for Pond P10.7A: Linear Infiltration Basin

Inflow Area = 0.835 ac, 8.41% Impervious, Inflow Depth = 1.04" for 25-yr event
Inflow = 0.5 cfs @ 12.32 hrs, Volume= 0.072 af
Outflow = 0.5 cfs @ 12.36 hrs, Volume= 0.072 af, Atten= 2%, Lag= 2.7 min
Discarded = 0.0 cfs @ 12.36 hrs, Volume= 0.008 af
Primary = 0.5 cfs @ 12.36 hrs, Volume= 0.064 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 127.78' @ 12.36 hrs Surf.Area= 888 sf Storage= 262 cf

Plug-Flow detention time= 94.4 min calculated for 0.072 af (100% of inflow)
Center-of-Mass det. time= 94.7 min (1,008.1 - 913.5)

Volume	Invert	Avail.Storage	Storage Description
#1	127.20'	751 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
127.20	0	0	0
127.70	793	198	198
128.20	1,419	553	751

Device	Routing	Invert	Outlet Devices
#1	Primary	127.70'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68

2.72 2.81 2.92 2.97 3.07 3.32
#2 Discarded 127.20' **0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.36 hrs HW=127.78' (Free Discharge)
2=Exfiltration (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.5 cfs @ 12.36 hrs HW=127.78' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 0.5 cfs @ 0.67 fps)

Summary for Link DP-9.1: Station Rd

Inflow Area = 2.211 ac, 60.74% Impervious, Inflow Depth = 5.07" for 25-yr event
Inflow = 7.2 cfs @ 12.38 hrs, Volume= 0.934 af
Primary = 7.2 cfs @ 12.38 hrs, Volume= 0.934 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.1: Wetland 18

Inflow Area = 1.200 ac, 12.87% Impervious, Inflow Depth = 3.99" for 25-yr event
Inflow = 3.9 cfs @ 12.26 hrs, Volume= 0.399 af
Primary = 3.9 cfs @ 12.26 hrs, Volume= 0.399 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.10: Vernal Pool 4

Inflow Area = 0.084 ac, 18.11% Impervious, Inflow Depth = 3.99" for 25-yr event
Inflow = 0.4 cfs @ 12.09 hrs, Volume= 0.028 af
Primary = 0.4 cfs @ 12.09 hrs, Volume= 0.028 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.11/13: Bordering Vegetated Wetland

Inflow Area = 2.855 ac, 31.16% Impervious, Inflow Depth = 2.35" for 25-yr event
Inflow = 7.4 cfs @ 12.13 hrs, Volume= 0.560 af
Primary = 7.4 cfs @ 12.13 hrs, Volume= 0.560 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.12: Wetland 6

Inflow Area = 1.153 ac, 15.54% Impervious, Inflow Depth = 1.40" for 25-yr event
Inflow = 1.3 cfs @ 12.22 hrs, Volume= 0.135 af
Primary = 1.3 cfs @ 12.22 hrs, Volume= 0.135 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.14: Wetland 3_Vernal Pool 1

Inflow Area = 6.987 ac, 21.67% Impervious, Inflow Depth = 3.36" for 25-yr event
Inflow = 19.0 cfs @ 12.14 hrs, Volume= 1.958 af
Primary = 19.0 cfs @ 12.14 hrs, Volume= 1.958 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.15: Wetland 4

Inflow Area = 4.429 ac, 10.32% Impervious, Inflow Depth = 0.84" for 25-yr event
Inflow = 1.9 cfs @ 12.41 hrs, Volume= 0.311 af
Primary = 1.9 cfs @ 12.41 hrs, Volume= 0.311 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.2: Wetland 19

Inflow Area = 4.075 ac, 18.36% Impervious, Inflow Depth = 2.89" for 25-yr event
Inflow = 10.6 cfs @ 12.20 hrs, Volume= 0.983 af
Primary = 10.6 cfs @ 12.20 hrs, Volume= 0.983 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.3: Wetland 15

Inflow Area = 0.985 ac, 6.46% Impervious, Inflow Depth = 3.89" for 25-yr event
Inflow = 3.9 cfs @ 12.14 hrs, Volume= 0.319 af
Primary = 3.9 cfs @ 12.14 hrs, Volume= 0.319 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.4: Wetland 16

Inflow Area = 4.851 ac, 12.65% Impervious, Inflow Depth = 2.34" for 25-yr event
Inflow = 10.3 cfs @ 12.18 hrs, Volume= 0.945 af
Primary = 10.3 cfs @ 12.18 hrs, Volume= 0.945 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.5: Wetland 14

Inflow Area = 0.836 ac, 5.84% Impervious, Inflow Depth = 3.78" for 25-yr event
Inflow = 2.3 cfs @ 12.32 hrs, Volume= 0.264 af
Primary = 2.3 cfs @ 12.32 hrs, Volume= 0.264 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.6: Wetland 11

Inflow Area = 6.009 ac, 6.69% Impervious, Inflow Depth = 1.05" for 25-yr event
Inflow = 5.5 cfs @ 12.16 hrs, Volume= 0.527 af
Primary = 5.5 cfs @ 12.16 hrs, Volume= 0.527 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.7: Wetland 13

Inflow Area = 0.918 ac, 8.74% Impervious, Inflow Depth = 1.19" for 25-yr event
Inflow = 0.7 cfs @ 12.34 hrs, Volume= 0.091 af
Primary = 0.7 cfs @ 12.34 hrs, Volume= 0.091 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.8: Wetland 10

Inflow Area = 0.901 ac, 0.00% Impervious, Inflow Depth = 1.26" for 25-yr event
Inflow = 1.0 cfs @ 12.12 hrs, Volume= 0.094 af
Primary = 1.0 cfs @ 12.12 hrs, Volume= 0.094 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.9: Wetland 5_Vernal Pool 2-3

Inflow Area = 2.822 ac, 0.77% Impervious, Inflow Depth = 2.52" for 25-yr event
Inflow = 7.7 cfs @ 12.11 hrs, Volume= 0.593 af
Primary = 7.7 cfs @ 12.11 hrs, Volume= 0.593 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Time span=0.00-72.00 hrs, dt=0.01 hrs, 7201 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

SubcatchmentPR10.1: PR10.1 Runoff Area=1.200 ac 12.87% Impervious Runoff Depth=6.19"
Flow Length=250' Tc=19.0 min CN=80 Runoff=5.9 cfs 0.619 af

SubcatchmentPR10.10: Runoff Area=0.084 ac 18.11% Impervious Runoff Depth=6.19"
Tc=6.0 min CN=80 Runoff=0.6 cfs 0.043 af

SubcatchmentPR10.11: Runoff Area=1.132 ac 5.57% Impervious Runoff Depth=2.85"
Flow Length=38' Slope=0.0630 '/' Tc=10.7 min CN=52 Runoff=3.1 cfs 0.269 af

SubcatchmentPR10.12A: Subcat PR10.12A Runoff Area=0.304 ac 15.34% Impervious Runoff Depth=1.63"
Flow Length=356' Tc=12.4 min CN=41 Runoff=0.4 cfs 0.041 af

SubcatchmentPR10.12B: Subcat PR10.12B Runoff Area=0.850 ac 15.61% Impervious Runoff Depth=3.55"
Flow Length=250' Tc=14.7 min CN=58 Runoff=2.6 cfs 0.252 af

SubcatchmentPR10.13A: Subcat PR10.13A Runoff Area=1.350 ac 43.38% Impervious Runoff Depth=5.35"
Flow Length=590' Tc=6.9 min CN=73 Runoff=8.2 cfs 0.601 af

SubcatchmentPR10.13B: Subcat PR10.13B Runoff Area=0.373 ac 64.59% Impervious Runoff Depth=5.47"
Tc=6.0 min CN=74 Runoff=2.4 cfs 0.170 af

SubcatchmentPR10.14A: Subcat PR10.14A Runoff Area=4.071 ac 13.44% Impervious Runoff Depth=4.50"
Flow Length=378' Tc=7.5 min CN=66 Runoff=20.4 cfs 1.528 af

SubcatchmentPR10.14B: Runoff Area=2.916 ac 33.15% Impervious Runoff Depth=6.67"
Flow Length=824' Tc=19.4 min CN=84 Runoff=15.1 cfs 1.622 af

SubcatchmentPR10.15A: Subcat PR10.15A Runoff Area=4.280 ac 9.69% Impervious Runoff Depth=1.95"
Flow Length=681' Tc=20.3 min CN=44 Runoff=5.6 cfs 0.696 af

SubcatchmentPR10.15B: Subcat PR10.15B Runoff Area=0.149 ac 28.50% Impervious Runoff Depth=2.62"
Flow Length=155' Tc=12.2 min CN=50 Runoff=0.3 cfs 0.033 af

SubcatchmentPR10.2: Runoff Area=4.075 ac 18.36% Impervious Runoff Depth=4.86"
Flow Length=342' Tc=14.0 min CN=69 Runoff=18.0 cfs 1.652 af

SubcatchmentPR10.3: Runoff Area=0.985 ac 6.46% Impervious Runoff Depth=6.07"
Flow Length=61' Tc=10.1 min CN=79 Runoff=6.0 cfs 0.498 af

SubcatchmentPR10.4A: Subcat PR10.4A Runoff Area=1.814 ac 8.48% Impervious Runoff Depth=4.15"
Flow Length=411' Tc=11.3 min CN=63 Runoff=7.4 cfs 0.627 af

SubcatchmentPR10.4B: Subcat PR10.4B Runoff Area=3.037 ac 15.14% Impervious Runoff Depth=4.15"
Flow Length=516' Tc=13.4 min CN=63 Runoff=11.6 cfs 1.049 af

SubcatchmentPR10.5: Runoff Area=0.836 ac 5.84% Impervious Runoff Depth=5.95"
Flow Length=118' Tc=23.4 min CN=78 Runoff=3.6 cfs 0.415 af

SubcatchmentPR10.6A: Runoff Area=1.526 ac 5.07% Impervious Runoff Depth=1.02"
Flow Length=374' Tc=10.3 min CN=35 Runoff=0.8 cfs 0.129 af

SubcatchmentPR10.6B: Subcat PR10.6B Runoff Area=4.482 ac 7.24% Impervious Runoff Depth=2.85"
Flow Length=363' Tc=9.9 min CN=52 Runoff=12.4 cfs 1.066 af

SubcatchmentPR10.7A: Subcat PR10.7A Runoff Area=0.835 ac 8.41% Impervious Runoff Depth=2.28"
Flow Length=502' Tc=17.3 min CN=47 Runoff=1.4 cfs 0.159 af

SubcatchmentPR10.7B: Subcat PR10.7B Runoff Area=0.083 ac 12.04% Impervious Runoff Depth=6.07"
Flow Length=136' Tc=11.8 min CN=79 Runoff=0.5 cfs 0.042 af

SubcatchmentPR10.8: Runoff Area=0.901 ac 0.00% Impervious Runoff Depth=2.62"
Flow Length=433' Tc=7.3 min CN=50 Runoff=2.5 cfs 0.197 af

SubcatchmentPR10.9: Runoff Area=2.822 ac 0.77% Impervious Runoff Depth=4.38"
Flow Length=384' Tc=7.6 min CN=65 Runoff=13.7 cfs 1.031 af

SubcatchmentPR9.1: PR9.1 Runoff Area=2.211 ac 60.74% Impervious Runoff Depth=7.40"
Flow Length=727' Tc=29.7 min CN=90 Runoff=10.3 cfs 1.363 af

Pond P10.12A: Linear Infiltration Basin Peak Elev=137.05' Storage=308 cf Inflow=0.4 cfs 0.041 af
Discarded=0.0 cfs 0.026 af Primary=0.2 cfs 0.016 af Outflow=0.3 cfs 0.041 af

Pond P10.13A: Linear Infiltration Basin Peak Elev=137.55' Storage=1,184 cf Inflow=8.2 cfs 0.601 af
Discarded=0.1 cfs 0.052 af Primary=7.8 cfs 0.549 af Outflow=7.9 cfs 0.601 af

Pond P10.6A: Linear Infiltration Basin Peak Elev=129.48' Storage=864 cf Inflow=0.8 cfs 0.129 af
Discarded=0.1 cfs 0.074 af Primary=0.5 cfs 0.056 af Outflow=0.6 cfs 0.129 af

Pond P10.7A: Linear Infiltration Basin Peak Elev=127.85' Storage=331 cf Inflow=1.4 cfs 0.159 af
Discarded=0.0 cfs 0.008 af Primary=1.4 cfs 0.151 af Outflow=1.4 cfs 0.159 af

Link DP-9.1: Station Rd Inflow=10.3 cfs 1.363 af
Primary=10.3 cfs 1.363 af

Link DP10.1: Wetland 18 Inflow=5.9 cfs 0.619 af
Primary=5.9 cfs 0.619 af

Link DP10.10: Vernal Pool 4 Inflow=0.6 cfs 0.043 af
Primary=0.6 cfs 0.043 af

Link DP10.11/13: Bordering Vegetated Wetland Inflow=12.9 cfs 0.989 af
Primary=12.9 cfs 0.989 af

Link DP10.12: Wetland 6 Inflow=2.6 cfs 0.267 af
Primary=2.6 cfs 0.267 af

Link DP10.14: Wetland 3_Vernal Pool 1 Inflow=31.2 cfs 3.150 af
Primary=31.2 cfs 3.150 af

Link DP10.15: Wetland 4 Inflow=5.8 cfs 0.729 af
Primary=5.8 cfs 0.729 af

Link DP10.2: Wetland 19 Inflow=18.0 cfs 1.652 af
Primary=18.0 cfs 1.652 af

Link DP10.3: Wetland 15 Inflow=6.0 cfs 0.498 af
Primary=6.0 cfs 0.498 af

Link DP10.4: Wetland 16 Inflow=18.8 cfs 1.676 af
Primary=18.8 cfs 1.676 af

Link DP10.5: Wetland 14 Inflow=3.6 cfs 0.415 af
Primary=3.6 cfs 0.415 af

Link DP10.6: Wetland 11 Inflow=12.4 cfs 1.122 af
Primary=12.4 cfs 1.122 af

Link DP10.7: Wetland 13 Inflow=1.8 cfs 0.193 af
Primary=1.8 cfs 0.193 af

Link DP10.8: Wetland 10 Inflow=2.5 cfs 0.197 af
Primary=2.5 cfs 0.197 af

Link DP10.9: Wetland 5_Vernal Pool 2-3 Inflow=13.7 cfs 1.031 af
Primary=13.7 cfs 1.031 af

Total Runoff Area = 40.319 ac Runoff Volume = 14.103 af Average Runoff Depth = 4.20"
83.80% Pervious = 33.788 ac 16.20% Impervious = 6.531 ac

Summary for Subcatchment PR10.1: PR10.1

Runoff = 5.9 cfs @ 12.26 hrs, Volume= 0.619 af, Depth= 6.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.056	80	>75% Grass cover, Good, HSG D
0.064	78	Meadow, non-grazed, HSG D
0.154	98	Paved parking, HSG D
0.925	77	Woods, Good, HSG D
1.200	80	Weighted Average
1.046		87.13% Pervious Area
0.154		12.87% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	25	0.0040	0.56		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
8.9	25	0.0440	0.05		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
9.4	200	0.0200	0.35		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
19.0	250	Total			

Summary for Subcatchment PR10.10:

Runoff = 0.6 cfs @ 12.09 hrs, Volume= 0.043 af, Depth= 6.19"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.002	74	>75% Grass cover, Good, HSG C
0.002	80	>75% Grass cover, Good, HSG D
0.002	71	Meadow, non-grazed, HSG C
0.003	78	Meadow, non-grazed, HSG D
0.010	98	Paved parking, HSG C
0.005	98	Paved parking, HSG D
0.007	70	Woods, Good, HSG C
0.054	77	Woods, Good, HSG D
0.084	80	Weighted Average
0.069		81.89% Pervious Area
0.015		18.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PR10.11:

Runoff = 3.1 cfs @ 12.16 hrs, Volume= 0.269 af, Depth= 2.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.005	39	>75% Grass cover, Good, HSG A
0.017	80	>75% Grass cover, Good, HSG D
0.020	30	Meadow, non-grazed, HSG A
0.051	78	Meadow, non-grazed, HSG D
0.044	98	Paved parking, HSG A
0.019	98	Paved parking, HSG D
0.600	30	Woods, Good, HSG A
0.375	77	Woods, Good, HSG D
1.132	52	Weighted Average
1.069		94.43% Pervious Area
0.063		5.57% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.7	38	0.0630	0.06		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"

Summary for Subcatchment PR10.12A: Subcat PR10.12A

Runoff = 0.4 cfs @ 12.20 hrs, Volume= 0.041 af, Depth= 1.63"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.017	39	>75% Grass cover, Good, HSG A
0.058	30	Meadow, non-grazed, HSG A
0.047	98	Paved parking, HSG A
0.182	30	Woods, Good, HSG A
0.304	41	Weighted Average
0.257		84.66% Pervious Area
0.047		15.34% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.1	50	0.1280	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	306	0.0210	2.17		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
12.4	356	Total			

Summary for Subcatchment PR10.12B: Subcat PR10.12B

Runoff = 2.6 cfs @ 12.21 hrs, Volume= 0.252 af, Depth= 3.55"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.011	39	>75% Grass cover, Good, HSG A
0.026	80	>75% Grass cover, Good, HSG D
0.045	30	Meadow, non-grazed, HSG A
0.032	78	Meadow, non-grazed, HSG D
0.034	98	Paved parking, HSG A
0.098	98	Paved parking, HSG D
0.344	30	Woods, Good, HSG A
0.260	77	Woods, Good, HSG D
0.850	58	Weighted Average
0.717		84.39% Pervious Area
0.133		15.61% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
9.5	50	0.1460	0.09		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
5.2	200	0.0670	0.65		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
14.7	250	Total			

Summary for Subcatchment PR10.13A: Subcat PR10.13A

Runoff = 8.2 cfs @ 12.10 hrs, Volume= 0.601 af, Depth= 5.35"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.012	39	>75% Grass cover, Good, HSG A
0.095	76	Gravel roads, HSG A
0.197	91	Gravel roads, HSG D
0.065	30	Meadow, non-grazed, HSG A
0.275	98	Paved parking, HSG A
0.311	98	Paved parking, HSG D
0.351	30	Woods, Good, HSG A
0.044	77	Woods, Good, HSG D
1.350	73	Weighted Average
0.764		56.62% Pervious Area
0.586		43.38% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.9	50	0.0100	0.92		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
2.0	104	0.1180	0.86		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
4.0	436	0.0150	1.84		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
6.9	590	Total			

Summary for Subcatchment PR10.13B: Subcat PR10.13B

Runoff = 2.4 cfs @ 12.09 hrs, Volume= 0.170 af, Depth= 5.47"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.006	39	>75% Grass cover, Good, HSG A
0.039	30	Meadow, non-grazed, HSG A
0.223	98	Paved parking, HSG A
0.018	98	Paved parking, HSG D
0.087	30	Woods, Good, HSG A
0.000	77	Woods, Good, HSG D
0.373	74	Weighted Average
0.132		35.41% Pervious Area
0.241		64.59% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Summary for Subcatchment PR10.14A: Subcat PR10.14A

Runoff = 20.4 cfs @ 12.11 hrs, Volume= 1.528 af, Depth= 4.50"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.005	39	>75% Grass cover, Good, HSG A
0.386	80	>75% Grass cover, Good, HSG D
0.031	30	Meadow, non-grazed, HSG A
0.005	98	Paved parking, HSG A
0.542	98	Paved parking, HSG D
1.158	30	Woods, Good, HSG A
1.943	77	Woods, Good, HSG D
4.071	66	Weighted Average
3.524		86.56% Pervious Area
0.547		13.44% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.4	50	0.0960	2.28		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
0.1	60	0.1600	8.12		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
2.2	144	0.0250	1.11		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
4.8	124	0.0300	0.43		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.5	378	Total			

Summary for Subcatchment PR10.14B:

Runoff = 15.1 cfs @ 12.26 hrs, Volume= 1.622 af, Depth= 6.67"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.007	39	>75% Grass cover, Good, HSG A
0.865	80	>75% Grass cover, Good, HSG D
0.044	91	Gravel roads, HSG D
0.033	30	Meadow, non-grazed, HSG A
0.103	78	Meadow, non-grazed, HSG D
0.010	98	Paved parking, HSG A
0.957	98	Paved parking, HSG D
0.026	30	Woods, Good, HSG A
0.872	77	Woods, Good, HSG D
2.916	84	Weighted Average
1.950		66.85% Pervious Area
0.967		33.15% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0100	0.11		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
3.2	156	0.1060	0.81		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
8.9	618	0.0060	1.16		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
19.4	824	Total			

Summary for Subcatchment PR10.15A: Subcat PR10.15A

Runoff = 5.6 cfs @ 12.33 hrs, Volume= 0.696 af, Depth= 1.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.974	39	>75% Grass cover, Good, HSG A
0.023	80	>75% Grass cover, Good, HSG D
0.043	30	Meadow, non-grazed, HSG A
0.050	78	Meadow, non-grazed, HSG D
0.340	98	Paved parking, HSG A
0.075	98	Paved parking, HSG D
2.333	30	Woods, Good, HSG A
0.441	77	Woods, Good, HSG D
4.280	44	Weighted Average
3.865		90.31% Pervious Area
0.415		9.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0220	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
15.0	631	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
20.3	681	Total			

Summary for Subcatchment PR10.15B: Subcat PR10.15B

Runoff = 0.3 cfs @ 12.18 hrs, Volume= 0.033 af, Depth= 2.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.004	39	>75% Grass cover, Good, HSG A
0.000	80	>75% Grass cover, Good, HSG D
0.015	30	Meadow, non-grazed, HSG A
0.000	78	Meadow, non-grazed, HSG D
0.034	98	Paved parking, HSG A
0.009	98	Paved parking, HSG D
0.087	30	Woods, Good, HSG A
0.000	77	Woods, Good, HSG D
0.149	50	Weighted Average
0.107		71.50% Pervious Area
0.043		28.50% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
11.5	50	0.0920	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.7	105	0.0290	2.55		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
12.2	155	Total			

Summary for Subcatchment PR10.2:

Runoff = 18.0 cfs @ 12.19 hrs, Volume= 1.652 af, Depth= 4.86"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.802	39	>75% Grass cover, Good, HSG A
0.617	80	>75% Grass cover, Good, HSG D
0.062	78	Meadow, non-grazed, HSG D
0.662	98	Paved parking, HSG A
0.087	98	Paved parking, HSG D
0.401	30	Woods, Good, HSG A
1.445	77	Woods, Good, HSG D
4.075	69	Weighted Average
3.327		81.64% Pervious Area
0.748		18.36% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.5	50	0.0040	0.08		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
1.1	79	0.0600	1.22		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.2	63	0.0870	5.99		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.7	92	0.0980	2.19		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.5	58	0.0630	0.63		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
14.0	342	Total			

Summary for Subcatchment PR10.3:

Runoff = 6.0 cfs @ 12.14 hrs, Volume= 0.498 af, Depth= 6.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.031	80	>75% Grass cover, Good, HSG D
0.141	78	Meadow, non-grazed, HSG D
0.064	98	Paved parking, HSG D
0.750	77	Woods, Good, HSG D
0.985	79	Weighted Average
0.922		93.54% Pervious Area
0.064		6.46% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.7	11	0.1900	0.27		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
9.3	39	0.0940	0.07		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.1	11	0.1630	2.02		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
10.1	61	Total			

Summary for Subcatchment PR10.4A: Subcat PR10.4A

Runoff = 7.4 cfs @ 12.16 hrs, Volume= 0.627 af, Depth= 4.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.068	39	>75% Grass cover, Good, HSG A
0.101	80	>75% Grass cover, Good, HSG D
0.052	78	Meadow, non-grazed, HSG D
0.100	98	Paved parking, HSG A
0.054	98	Paved parking, HSG D
0.560	30	Woods, Good, HSG A
0.879	77	Woods, Good, HSG D
1.814	63	Weighted Average
1.661		91.52% Pervious Area
0.154		8.48% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.5	50	0.0940	0.13		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.6	95	0.1220	2.44		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
2.3	126	0.1310	0.90		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
1.9	140	0.0300	1.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
11.3	411	Total			

Summary for Subcatchment PR10.4B: Subcat PR10.4B

Runoff = 11.6 cfs @ 12.19 hrs, Volume= 1.049 af, Depth= 4.15"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.463	39	>75% Grass cover, Good, HSG A
0.093	80	>75% Grass cover, Good, HSG D
0.052	78	Meadow, non-grazed, HSG D
0.404	98	Paved parking, HSG A
0.056	98	Paved parking, HSG D
0.746	30	Woods, Good, HSG A
1.223	77	Woods, Good, HSG D
3.037	63	Weighted Average
2.577		84.86% Pervious Area
0.460		15.14% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
7.3	50	0.0720	0.11		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
0.2	21	0.0440	1.47		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	24	0.0750	5.56		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
1.4	124	0.0880	1.48		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
0.4	71	0.0210	2.94		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
0.8	87	0.0650	1.78		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.2	139	0.0860	0.73		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
13.4	516	Total			

Summary for Subcatchment PR10.5:

Runoff = 3.6 cfs @ 12.31 hrs, Volume= 0.415 af, Depth= 5.95"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.017	80	>75% Grass cover, Good, HSG D
0.029	78	Meadow, non-grazed, HSG D
0.049	98	Paved parking, HSG D
0.741	77	Woods, Good, HSG D
0.836	78	Weighted Average
0.787		94.16% Pervious Area
0.049		5.84% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
21.1	50	0.0200	0.04		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
2.3	68	0.0380	0.49		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
23.4	118	Total			

Summary for Subcatchment PR10.6A:

Runoff = 0.8 cfs @ 12.23 hrs, Volume= 0.129 af, Depth= 1.02"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.076	39	>75% Grass cover, Good, HSG A
0.004	80	>75% Grass cover, Good, HSG D
0.083	30	Meadow, non-grazed, HSG A
0.014	78	Meadow, non-grazed, HSG D
0.065	98	Paved parking, HSG A
0.012	98	Paved parking, HSG D
1.263	30	Woods, Good, HSG A
0.009	77	Woods, Good, HSG D
1.526	35	Weighted Average
1.449		94.93% Pervious Area
0.077		5.07% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.3	50	0.0220	0.16		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
0.8	65	0.0740	1.36		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
3.9	221	0.1460	0.96		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.3	38	0.0260	2.42		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
10.3	374	Total			

Summary for Subcatchment PR10.6B: Subcat PR10.6B

Runoff = 12.4 cfs @ 12.15 hrs, Volume= 1.066 af, Depth= 2.85"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.023	39	>75% Grass cover, Good, HSG A
0.010	74	>75% Grass cover, Good, HSG C
0.076	80	>75% Grass cover, Good, HSG D
0.077	30	Meadow, non-grazed, HSG A
0.022	71	Meadow, non-grazed, HSG C
0.243	78	Meadow, non-grazed, HSG D
0.106	98	Paved parking, HSG A
0.042	98	Paved parking, HSG C
0.177	98	Paved parking, HSG D
2.405	30	Woods, Good, HSG A
0.062	70	Woods, Good, HSG C
1.243	77	Woods, Good, HSG D
4.482	52	Weighted Average
4.158		92.76% Pervious Area
0.325		7.24% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	50	0.0320	0.18		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
0.1	30	0.0333	3.70		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
5.2	283	0.1336	0.91		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
9.9	363	Total			

Summary for Subcatchment PR10.7A: Subcat PR10.7A

Runoff = 1.4 cfs @ 12.27 hrs, Volume= 0.159 af, Depth= 2.28"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.011	39	>75% Grass cover, Good, HSG A
0.010	80	>75% Grass cover, Good, HSG D
0.047	30	Meadow, non-grazed, HSG A
0.053	78	Meadow, non-grazed, HSG D
0.041	98	Paved parking, HSG A
0.029	98	Paved parking, HSG D
0.513	30	Woods, Good, HSG A
0.131	77	Woods, Good, HSG D
0.835	47	Weighted Average
0.765		91.59% Pervious Area
0.070		8.41% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.3	50	0.1200	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
0.3	35	0.5400	1.84		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
3.3	198	0.0200	0.99		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
3.4	219	0.0050	1.06		**Shallow Concentrated Flow,** Grassed Waterway Kv= 15.0 fps
17.3	502	Total			

Summary for Subcatchment PR10.7B: Subcat PR10.7B

Runoff = 0.5 cfs @ 12.16 hrs, Volume= 0.042 af, Depth= 6.07"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.003	80	>75% Grass cover, Good, HSG D
0.006	78	Meadow, non-grazed, HSG D
0.010	98	Paved parking, HSG D
0.002	30	Woods, Good, HSG A
0.062	77	Woods, Good, HSG D
0.083	79	Weighted Average
0.073		87.96% Pervious Area
0.010		12.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
10.8	50	0.1080	0.08		**Sheet Flow,** Woods: Dense underbrush n= 0.800 P2= 3.30"
1.0	86	0.0850	1.46		**Shallow Concentrated Flow,** Woodland Kv= 5.0 fps
11.8	136	Total			

Summary for Subcatchment PR10.8:

Runoff = 2.5 cfs @ 12.11 hrs, Volume= 0.197 af, Depth= 2.62"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.147	39	>75% Grass cover, Good, HSG A
0.007	74	>75% Grass cover, Good, HSG C
0.296	80	>75% Grass cover, Good, HSG D
0.425	30	Woods, Good, HSG A
0.026	77	Woods, Good, HSG D
0.901	50	Weighted Average
0.901		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.8	50	0.0500	0.22		**Sheet Flow,** Grass: Short n= 0.150 P2= 3.30"
2.3	277	0.0830	2.02		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.6	47	0.2550	1.26		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
0.6	59	0.3700	1.52		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.3	433	Total			

Summary for Subcatchment PR10.9:

Runoff = 13.7 cfs @ 12.11 hrs, Volume= 1.031 af, Depth= 4.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.239	39	>75% Grass cover, Good, HSG A
0.271	74	>75% Grass cover, Good, HSG C
0.151	80	>75% Grass cover, Good, HSG D
0.026	71	Meadow, non-grazed, HSG C
0.013	78	Meadow, non-grazed, HSG D
0.009	98	Paved parking, HSG C
0.013	98	Paved parking, HSG D
0.341	30	Woods, Good, HSG A
1.377	70	Woods, Good, HSG C
0.383	77	Woods, Good, HSG D
2.822	65	Weighted Average
2.801		99.23% Pervious Area
0.022		0.77% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
3.5	50	0.4600	0.24		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 3.30"
2.2	194	0.0460	1.50		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.9	140	0.2400	1.22		**Shallow Concentrated Flow,** Forest w/Heavy Litter Kv= 2.5 fps
7.6	384	Total			

Summary for Subcatchment PR9.1: PR9.1

Runoff = 10.3 cfs @ 12.38 hrs, Volume= 1.363 af, Depth= 7.40"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Type III 24-hr 100-yr Rainfall=8.60"

Area (ac)	CN	Description
0.109	80	>75% Grass cover, Good, HSG D
0.184	78	Meadow, non-grazed, HSG D
1.343	98	Paved parking, HSG D
0.575	77	Woods, Good, HSG D
2.211	90	Weighted Average
0.868		39.26% Pervious Area
1.343		60.74% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
0.5	50	0.0500	1.75		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 3.30"
0.4	100	0.0360	3.85		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
28.7	540	0.0020	0.31		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.1	37	0.0030	4.66	14.64	**Pipe Channel,** 24.0" Round Area= 3.1 sf Perim= 6.3' r= 0.50' n= 0.011 Concrete pipe, straight & clean
29.7	727	Total			

Summary for Pond P10.12A: Linear Infiltration Basin

Inflow Area = 0.304 ac, 15.34% Impervious, Inflow Depth = 1.63" for 100-yr event
Inflow = 0.4 cfs @ 12.20 hrs, Volume= 0.041 af
Outflow = 0.3 cfs @ 12.41 hrs, Volume= 0.041 af, Atten= 25%, Lag= 12.0 min
Discarded = 0.0 cfs @ 12.41 hrs, Volume= 0.026 af
Primary = 0.2 cfs @ 12.41 hrs, Volume= 0.016 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 137.05' @ 12.41 hrs Surf.Area= 1,144 sf Storage= 308 cf

Plug-Flow detention time= 97.3 min calculated for 0.041 af (100% of inflow)
Center-of-Mass det. time= 97.3 min (998.1 - 900.7)

Volume	Invert	Avail.Storage	Storage Description
#1	136.50'	1,079 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
136.50	0	0	0
137.00	1,030	258	258
137.50	2,255	821	1,079

Device	Routing	Invert	Outlet Devices
#1	Primary	137.00'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	136.50'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.41 hrs HW=137.05' (Free Discharge)
↑**2=Exfiltration** (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=0.2 cfs @ 12.41 hrs HW=137.05' (Free Discharge)
↑**1=Broad-Crested Rectangular Weir** (Weir Controls 0.2 cfs @ 0.53 fps)

Summary for Pond P10.13A: Linear Infiltration Basin

Inflow Area = 1.350 ac, 43.38% Impervious, Inflow Depth = 5.35" for 100-yr event
Inflow = 8.2 cfs @ 12.10 hrs, Volume= 0.601 af
Outflow = 7.9 cfs @ 12.12 hrs, Volume= 0.601 af, Atten= 4%, Lag= 1.5 min
Discarded = 0.1 cfs @ 12.12 hrs, Volume= 0.052 af
Primary = 7.8 cfs @ 12.12 hrs, Volume= 0.549 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 137.55' @ 12.12 hrs Surf.Area= 2,578 sf Storage= 1,184 cf

Plug-Flow detention time= 15.6 min calculated for 0.601 af (100% of inflow)
Center-of-Mass det. time= 15.6 min (831.9 - 816.3)

Volume	Invert	Avail.Storage	Storage Description
#1	136.60'	1,323 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
136.60	0	0	0
137.10	1,280	320	320
137.60	2,730	1,003	1,323

Device	Routing	Invert	Outlet Devices
#1	Primary	137.10'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	136.60'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.1 cfs @ 12.12 hrs HW=137.55' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.1 cfs)

Primary OutFlow Max=7.8 cfs @ 12.12 hrs HW=137.55' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 7.8 cfs @ 1.74 fps)

Summary for Pond P10.6A: Linear Infiltration Basin

Inflow Area = 1.526 ac, 5.07% Impervious, Inflow Depth = 1.02" for 100-yr event
Inflow = 0.8 cfs @ 12.23 hrs, Volume= 0.129 af
Outflow = 0.6 cfs @ 12.52 hrs, Volume= 0.129 af, Atten= 28%, Lag= 17.7 min
Discarded = 0.1 cfs @ 12.52 hrs, Volume= 0.074 af
Primary = 0.5 cfs @ 12.52 hrs, Volume= 0.056 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 129.48' @ 12.52 hrs Surf.Area= 2,833 sf Storage= 864 cf

Plug-Flow detention time= 95.8 min calculated for 0.129 af (100% of inflow)
Center-of-Mass det. time= 95.8 min (1,025.3 - 929.5)

Volume	Invert	Avail.Storage	Storage Description
#1	128.90'	2,315 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
128.90	0	0	0
129.40	2,611	653	653
129.90	4,039	1,663	2,315

Device	Routing	Invert	Outlet Devices
#1	Primary	129.40'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68 2.72 2.81 2.92 2.97 3.07 3.32
#2	Discarded	128.90'	**1.020 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.1 cfs @ 12.52 hrs HW=129.48' (Free Discharge)
↑—**2=Exfiltration** (Exfiltration Controls 0.1 cfs)

Primary OutFlow Max=0.5 cfs @ 12.52 hrs HW=129.48' (Free Discharge)
↑—**1=Broad-Crested Rectangular Weir** (Weir Controls 0.5 cfs @ 0.68 fps)

Summary for Pond P10.7A: Linear Infiltration Basin

Inflow Area = 0.835 ac, 8.41% Impervious, Inflow Depth = 2.28" for 100-yr event
Inflow = 1.4 cfs @ 12.27 hrs, Volume= 0.159 af
Outflow = 1.4 cfs @ 12.29 hrs, Volume= 0.159 af, Atten= 1%, Lag= 1.2 min
Discarded = 0.0 cfs @ 12.29 hrs, Volume= 0.008 af
Primary = 1.4 cfs @ 12.29 hrs, Volume= 0.151 af

Routing by Stor-Ind method, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs
Peak Elev= 127.85' @ 12.29 hrs Surf.Area= 981 sf Storage= 331 cf

Plug-Flow detention time= 44.4 min calculated for 0.159 af (100% of inflow)
Center-of-Mass det. time= 44.6 min (929.3 - 884.6)

Volume	Invert	Avail.Storage	Storage Description
#1	127.20'	751 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
127.20	0	0	0
127.70	793	198	198
128.20	1,419	553	751

Device	Routing	Invert	Outlet Devices
#1	Primary	127.70'	**10.0' long x 3.0' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 1.20 1.40 1.60 1.80 2.00 2.50 3.00 3.50 4.00 4.50 Coef. (English) 2.44 2.58 2.68 2.67 2.65 2.64 2.64 2.68 2.68

2.72 2.81 2.92 2.97 3.07 3.32
#2 Discarded 127.20' **0.170 in/hr Exfiltration over Surface area**

Discarded OutFlow Max=0.0 cfs @ 12.29 hrs HW=127.85' (Free Discharge)
2=Exfiltration (Exfiltration Controls 0.0 cfs)

Primary OutFlow Max=1.4 cfs @ 12.29 hrs HW=127.85' (Free Discharge)
1=Broad-Crested Rectangular Weir (Weir Controls 1.4 cfs @ 0.94 fps)

Summary for Link DP-9.1: Station Rd

Inflow Area = 2.211 ac, 60.74% Impervious, Inflow Depth = 7.40" for 100-yr event
Inflow = 10.3 cfs @ 12.38 hrs, Volume= 1.363 af
Primary = 10.3 cfs @ 12.38 hrs, Volume= 1.363 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.1: Wetland 18

Inflow Area = 1.200 ac, 12.87% Impervious, Inflow Depth = 6.19" for 100-yr event
Inflow = 5.9 cfs @ 12.26 hrs, Volume= 0.619 af
Primary = 5.9 cfs @ 12.26 hrs, Volume= 0.619 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.10: Vernal Pool 4

Inflow Area = 0.084 ac, 18.11% Impervious, Inflow Depth = 6.19" for 100-yr event
Inflow = 0.6 cfs @ 12.09 hrs, Volume= 0.043 af
Primary = 0.6 cfs @ 12.09 hrs, Volume= 0.043 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.11/13: Bordering Vegetated Wetland

Inflow Area = 2.855 ac, 31.16% Impervious, Inflow Depth = 4.16" for 100-yr event
Inflow = 12.9 cfs @ 12.12 hrs, Volume= 0.989 af
Primary = 12.9 cfs @ 12.12 hrs, Volume= 0.989 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.12: Wetland 6

Inflow Area = 1.153 ac, 15.54% Impervious, Inflow Depth = 2.78" for 100-yr event
Inflow = 2.6 cfs @ 12.21 hrs, Volume= 0.267 af
Primary = 2.6 cfs @ 12.21 hrs, Volume= 0.267 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.14: Wetland 3_Vernal Pool 1

Inflow Area = 6.987 ac, 21.67% Impervious, Inflow Depth = 5.41" for 100-yr event
Inflow = 31.2 cfs @ 12.13 hrs, Volume= 3.150 af
Primary = 31.2 cfs @ 12.13 hrs, Volume= 3.150 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.15: Wetland 4

Inflow Area = 4.429 ac, 10.32% Impervious, Inflow Depth = 1.97" for 100-yr event
Inflow = 5.8 cfs @ 12.33 hrs, Volume= 0.729 af
Primary = 5.8 cfs @ 12.33 hrs, Volume= 0.729 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.2: Wetland 19

Inflow Area = 4.075 ac, 18.36% Impervious, Inflow Depth = 4.86" for 100-yr event
Inflow = 18.0 cfs @ 12.19 hrs, Volume= 1.652 af
Primary = 18.0 cfs @ 12.19 hrs, Volume= 1.652 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.3: Wetland 15

Inflow Area = 0.985 ac, 6.46% Impervious, Inflow Depth = 6.07" for 100-yr event
Inflow = 6.0 cfs @ 12.14 hrs, Volume= 0.498 af
Primary = 6.0 cfs @ 12.14 hrs, Volume= 0.498 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.4: Wetland 16

Inflow Area = 4.851 ac, 12.65% Impervious, Inflow Depth = 4.15" for 100-yr event
Inflow = 18.8 cfs @ 12.17 hrs, Volume= 1.676 af
Primary = 18.8 cfs @ 12.17 hrs, Volume= 1.676 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.5: Wetland 14

Inflow Area = 0.836 ac, 5.84% Impervious, Inflow Depth = 5.95" for 100-yr event
Inflow = 3.6 cfs @ 12.31 hrs, Volume= 0.415 af
Primary = 3.6 cfs @ 12.31 hrs, Volume= 0.415 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.6: Wetland 11

Inflow Area = 6.009 ac, 6.69% Impervious, Inflow Depth = 2.24" for 100-yr event
Inflow = 12.4 cfs @ 12.15 hrs, Volume= 1.122 af
Primary = 12.4 cfs @ 12.15 hrs, Volume= 1.122 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.7: Wetland 13

Inflow Area = 0.918 ac, 8.74% Impervious, Inflow Depth = 2.52" for 100-yr event
Inflow = 1.8 cfs @ 12.26 hrs, Volume= 0.193 af
Primary = 1.8 cfs @ 12.26 hrs, Volume= 0.193 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.8: Wetland 10

Inflow Area = 0.901 ac, 0.00% Impervious, Inflow Depth = 2.62" for 100-yr event
Inflow = 2.5 cfs @ 12.11 hrs, Volume= 0.197 af
Primary = 2.5 cfs @ 12.11 hrs, Volume= 0.197 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Summary for Link DP10.9: Wetland 5_Vernal Pool 2-3

Inflow Area = 2.822 ac, 0.77% Impervious, Inflow Depth = 4.38" for 100-yr event
Inflow = 13.7 cfs @ 12.11 hrs, Volume= 1.031 af
Primary = 13.7 cfs @ 12.11 hrs, Volume= 1.031 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-72.00 hrs, dt= 0.01 hrs

Appendix C – Standard 3 Computations and Supporting Information

Soil Evaluation and Analysis

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for Middlesex County, Massachusetts

February 26, 2019

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

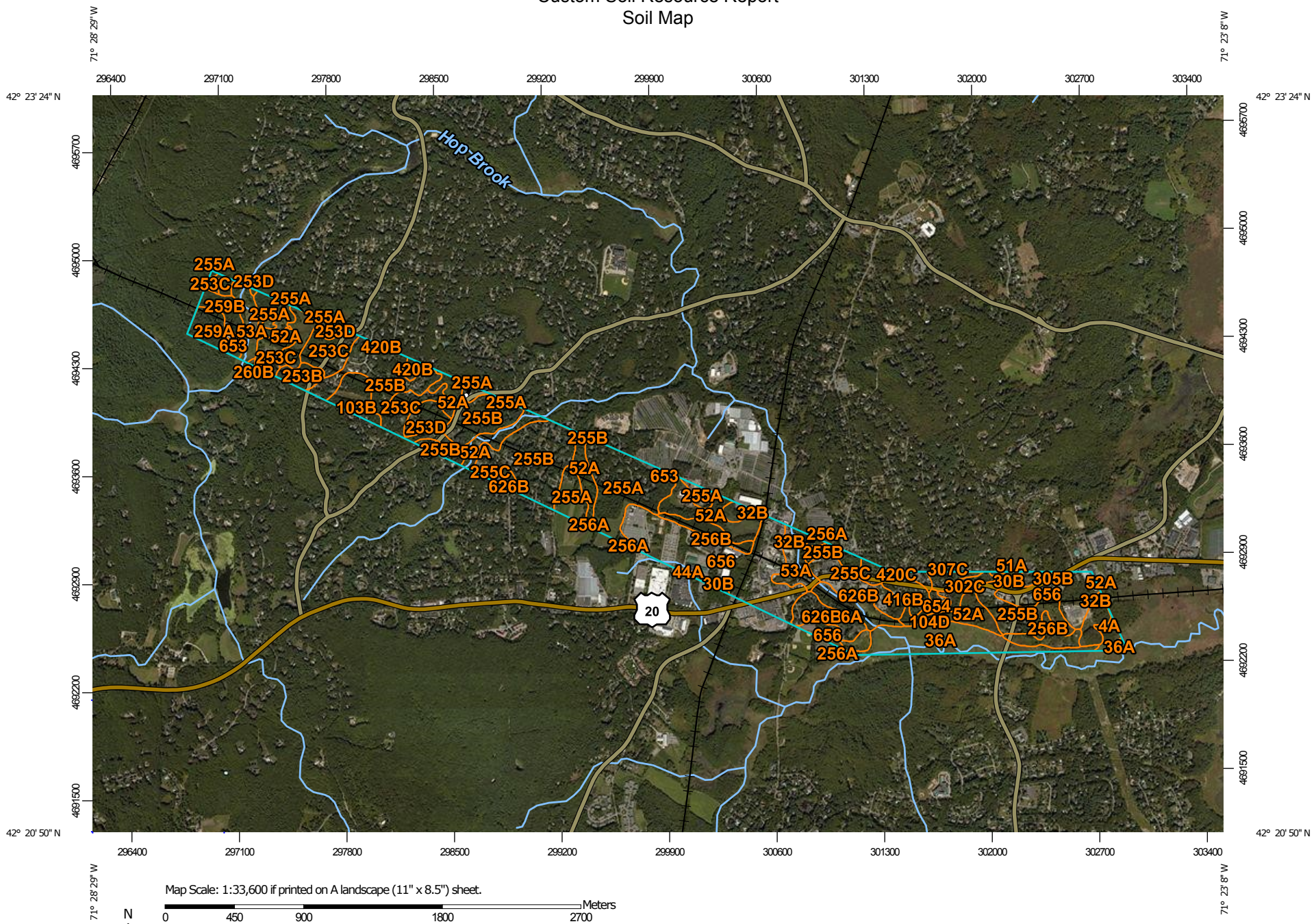
After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map



MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:25,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Middlesex County, Massachusetts
Survey Area Data: Version 18, Sep 7, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 12, 2014—Sep 28, 2014

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
1	Water	2.4	0.3%
4A	Rippowam fine sandy loam, 0 to 3 percent slopes	5.2	0.6%
6A	Scarboro mucky fine sandy loam, 0 to 3 percent slopes	17.9	2.2%
30B	Raynham silt loam, 0 to 5 percent slopes	6.1	0.7%
32B	Wareham loamy fine sand, 0 to 5 percent slopes	15.5	1.9%
36A	Saco mucky silt loam, 0 to 1 percent slopes	46.4	5.7%
44A	Birdsall mucky silt loam, 0 to 1 percent slopes	1.5	0.2%
51A	Swansea muck, 0 to 1 percent slopes	6.3	0.8%
52A	Freetown muck, 0 to 1 percent slopes	87.6	10.7%
53A	Freetown muck, ponded, 0 to 1 percent slopes	31.6	3.9%
103B	Charlton-Hollis-Rock outcrop complex, 3 to 8 percent slopes	15.6	1.9%
104D	Hollis-Rock outcrop-Charlton complex, 15 to 25 percent slopes	5.8	0.7%
253B	Hinckley loamy sand, 3 to 8 percent slopes	8.7	1.1%
253C	Hinckley loamy sand, 8 to 15 percent slopes	43.3	5.3%
253D	Hinckley loamy sand, 15 to 25 percent slopes	15.2	1.9%
255A	Windsor loamy sand, 0 to 3 percent slopes	83.2	10.2%
255B	Windsor loamy sand, 3 to 8 percent slopes	155.5	19.0%
255C	Windsor loamy sand, 8 to 15 percent slopes	6.2	0.8%
256A	Deerfield loamy fine sand, 0 to 3 percent slopes	1.0	0.1%
256B	Deerfield loamy fine sand, 3 to 8 percent slopes	21.6	2.6%
259A	Carver loamy coarse sand, 0 to 3 percent slopes	14.6	1.8%
259B	Carver loamy coarse sand, 3 to 8 percent slopes	10.0	1.2%

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
260B	Sudbury fine sandy loam, 3 to 8 percent slopes	0.4	0.0%
302C	Montauk fine sandy loam, 8 to 15 percent slopes, extremely stony	8.5	1.0%
305B	Paxton fine sandy loam, 3 to 8 percent slopes	2.5	0.3%
307C	Paxton fine sandy loam, 8 to 15 percent slopes, extremely stony	6.2	0.8%
416B	Narragansett silt loam, 3 to 8 percent slopes, very stony	11.5	1.4%
420B	Canton fine sandy loam, 3 to 8 percent slopes	3.7	0.5%
420C	Canton fine sandy loam, 8 to 15 percent slopes	9.1	1.1%
626B	Merrimac-Urban land complex, 0 to 8 percent slopes	37.9	4.6%
653	Udorthents, sandy	2.0	0.2%
654	Udorthents, loamy	1.4	0.2%
656	Udorthents-Urban land complex	133.4	16.3%
Totals for Area of Interest		**817.8**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas

are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Middlesex County, Massachusetts

1—Water

Map Unit Setting

National map unit symbol: 996p
Frost-free period: 110 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Water

Setting

Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Linear

4A—Rippowam fine sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 993n
Elevation: 50 to 500 feet
Mean annual precipitation: 45 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Rippowam and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rippowam

Setting

Landform: Alluvial flats
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Loamy alluvium over sandy and gravelly alluvium derived from granite and gneiss

Typical profile

H1 - 0 to 7 inches: fine sandy loam
H2 - 7 to 18 inches: fine sandy loam, sandy loam
H2 - 7 to 18 inches: sandy loam

H3 - 18 to 40 inches: stratified sand to fine sand
H4 - 40 to 65 inches:

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Available water storage in profile: Moderate (about 8.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Hydric soil rating: Yes

Minor Components

Saco

Percent of map unit: 10 percent
Landform: Alluvial flats, terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: Yes

Pootatuck

Percent of map unit: 5 percent
Landform: Flood plains
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

Limerick

Percent of map unit: 5 percent
Landform: Alluvial flats, terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: Yes

6A—Scarboro mucky fine sandy loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2svky
Elevation: 0 to 1,320 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 250 days
Farmland classification: Not prime farmland

Map Unit Composition

Scarboro and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Scarboro

Setting

Landform: Outwash terraces, outwash deltas, drainageways, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Sandy glaciofluvial deposits derived from schist and/or sandy glaciofluvial deposits derived from gneiss and/or sandy glaciofluvial deposits derived from granite

Typical profile

Oe - 0 to 3 inches: mucky peat
A - 3 to 11 inches: mucky fine sandy loam
Cg1 - 11 to 21 inches: sand
Cg2 - 21 to 65 inches: gravelly coarse sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (1.42 to 14.17 in/hr)
Depth to water table: About 0 to 2 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water storage in profile: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: A/D

Hydric soil rating: Yes

Minor Components

Swansea

Percent of map unit: 10 percent
Landform: Swamps, bogs
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Wareham

Percent of map unit: 5 percent
Landform: Depressions
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Walpole

Percent of map unit: 5 percent
Landform: Depressions, deltas, outwash plains, depressions, outwash terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip, talf
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

30B—Raynham silt loam, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: 991x
Elevation: 50 to 1,000 feet
Mean annual precipitation: 45 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Raynham and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Raynham

Setting

Landform: Depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave

Parent material: Loamy glaciolacustrine deposits and/or silty glaciolacustrine deposits

Typical profile

H1 - 0 to 8 inches: silt loam
H2 - 8 to 33 inches: silt loam
H3 - 33 to 65 inches: silt

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Available water storage in profile: High (about 11.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: C/D
Hydric soil rating: Yes

Minor Components

Birdsall

Percent of map unit: 10 percent
Landform: Flats, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: Yes

Raypol

Percent of map unit: 5 percent
Landform: Depressions, terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Wareham

Percent of map unit: 5 percent
Landform: Terraces, depressions, deltas
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

32B—Wareham loamy fine sand, 0 to 5 percent slopes

Map Unit Setting

National map unit symbol: vqnd
Elevation: 0 to 2,100 feet
Mean annual precipitation: 45 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Wareham and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Wareham

Setting

Landform: Depressions, deltas, terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Loose sandy glaciofluvial deposits

Typical profile

H1 - 0 to 10 inches: loamy fine sand
H2 - 10 to 24 inches: loamy sand
H3 - 24 to 34 inches: stratified sand to fine sand
H4 - 34 to 65 inches: stratified coarse sand to sand

Properties and qualities

Slope: 0 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Poorly drained
Capacity of the most limiting layer to transmit water (Ksat): High to very high (6.00 to 20.00 in/hr)
Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4w
Hydrologic Soil Group: A/D
Hydric soil rating: Yes

Minor Components

Sudbury

Percent of map unit: 10 percent
Landform: Terraces, plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

Scarboro

Percent of map unit: 5 percent
Landform: Terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

Deerfield

Percent of map unit: 5 percent
Landform: Stream terraces, depressions, deltas
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

36A—Saco mucky silt loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: vzt3
Elevation: 50 to 500 feet
Mean annual precipitation: 45 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Saco and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Saco

Setting

Landform: Alluvial flats, terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip

Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Silty alluvium

Typical profile

H1 - 0 to 13 inches: mucky silt loam
H2 - 13 to 30 inches: silt loam
H3 - 30 to 45 inches: silt loam
H4 - 45 to 65 inches: loamy sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 2.00 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: Frequent
Frequency of ponding: None
Available water storage in profile: High (about 11.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6w
Hydrologic Soil Group: B/D
Hydric soil rating: Yes

Minor Components

Freetown

Percent of map unit: 8 percent
Landform: Depressions, bogs
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Swansea

Percent of map unit: 8 percent
Landform: Bogs, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Limerick

Percent of map unit: 4 percent
Landform: Alluvial flats, terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: Yes

44A—Birdsall mucky silt loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: vzt4
Elevation: 0 to 2,100 feet
Mean annual precipitation: 45 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Birdsall and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Birdsall

Setting

Landform: Depressions, flats
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Silty eolian deposits and/or loamy eolian deposits over glaciofluvial deposits and/or ablation till

Typical profile

H1 - 0 to 15 inches: mucky silt loam
H2 - 15 to 30 inches: silt loam
H3 - 30 to 65 inches: silt loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: None
Frequency of ponding: Frequent
Available water storage in profile: Very high (about 13.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: C/D
Hydric soil rating: Yes

Minor Components

Wareham

Percent of map unit: 4 percent
Landform: Deltas, terraces, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Swansea

Percent of map unit: 2 percent
Landform: Bogs, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Raypol

Percent of map unit: 2 percent
Landform: Terraces, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Scarboro

Percent of map unit: 2 percent
Landform: Terraces
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

51A—Swansea muck, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2trl2
Elevation: 0 to 1,140 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of unique importance

Map Unit Composition

Swansea and similar soils: 80 percent

Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Swansea

Setting

Landform: Bogs, swamps
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Highly decomposed organic material over loose sandy and gravelly glaciofluvial deposits

Typical profile

Oa1 - 0 to 24 inches: muck
Oa2 - 24 to 34 inches: muck
Cg - 34 to 79 inches: coarse sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: Rare
Frequency of ponding: Frequent
Available water storage in profile: Very high (about 16.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8w
Hydrologic Soil Group: B/D
Hydric soil rating: Yes

Minor Components

Freetown

Percent of map unit: 10 percent
Landform: Bogs, swamps
Landform position (three-dimensional): Dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Scarboro

Percent of map unit: 5 percent
Landform: Depressions, drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Whitman

Percent of map unit: 5 percent
Landform: Depressions, drainageways

Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

52A—Freetown muck, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 2t2q9
Elevation: 0 to 1,110 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of unique importance

Map Unit Composition

Freetown and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Freetown

Setting

Landform: Swamps, depressions, depressions, bogs, marshes, kettles
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Highly decomposed organic material

Typical profile

Oe - 0 to 2 inches: mucky peat
Oa - 2 to 79 inches: muck

Properties and qualities

Slope: 0 to 1 percent
Percent of area covered with surface fragments: 0.0 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: Rare
Frequency of ponding: Frequent
Available water storage in profile: Very high (about 19.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w

Hydrologic Soil Group: B/D
Hydric soil rating: Yes

Minor Components

Scarboro
Percent of map unit: 5 percent
Landform: Drainageways, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Swansea
Percent of map unit: 5 percent
Landform: Bogs, kettles, depressions, depressions, marshes, swamps
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Whitman
Percent of map unit: 5 percent
Landform: Depressions, drainageways
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

53A—Freetown muck, ponded, 0 to 1 percent slopes

Map Unit Setting
National map unit symbol: 2t2qc
Elevation: 0 to 1,140 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of unique importance

Map Unit Composition
Freetown, ponded, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Freetown, Ponded

Setting
Landform: Bogs, swamps, kettles, marshes, depressions, depressions

Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Highly decomposed organic material

Typical profile

Oe - 0 to 2 inches: mucky peat
Oa - 2 to 79 inches: muck

Properties and qualities

Slope: 0 to 1 percent
Percent of area covered with surface fragments: 0.0 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Very poorly drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: About 0 to 6 inches
Frequency of flooding: Rare
Frequency of ponding: Frequent
Available water storage in profile: Very high (about 19.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 5w
Hydrologic Soil Group: B/D
Hydric soil rating: Yes

Minor Components

Scarboro

Percent of map unit: 5 percent
Landform: Drainageways, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope, tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Whitman, ponded

Percent of map unit: 5 percent
Landform: Depressions on ground moraines
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Swansea, ponded

Percent of map unit: 5 percent
Landform: Depressions, kettles, bogs, swamps, marshes, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

103B—Charlton-Hollis-Rock outcrop complex, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 98yc
Elevation: 0 to 1,000 feet
Mean annual precipitation: 45 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 110 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Charlton and similar soils: 50 percent
Hollis and similar soils: 25 percent
Rock outcrop: 15 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Charlton

Setting

Landform: Ground moraines, drumlins
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Friable loamy eolian deposits over friable loamy basal till derived from granite and gneiss

Typical profile

H1 - 0 to 5 inches: fine sandy loam
H2 - 5 to 22 inches: sandy loam
H3 - 22 to 65 inches: gravelly sandy loam

Properties and qualities

Slope: 3 to 8 percent
Percent of area covered with surface fragments: 9.0 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 7.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Hydric soil rating: No

Description of Hollis

Setting

Landform: Hills, ridges
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Crest
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Friable, shallow loamy basal till over granite and gneiss

Typical profile

H1 - 0 to 2 inches: fine sandy loam
H2 - 2 to 14 inches: fine sandy loam
H3 - 14 to 18 inches: unweathered bedrock

Properties and qualities

Slope: 3 to 8 percent
Percent of area covered with surface fragments: 9.0 percent
Depth to restrictive feature: 8 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Hydric soil rating: No

Description of Rock Outcrop

Setting

Landform: Ledges
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Head slope
Down-slope shape: Concave
Across-slope shape: Concave
Parent material: Granite and gneiss

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 0 inches to lithic bedrock

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s

Minor Components

Canton

Percent of map unit: 2 percent
Landform: Hills
Landform position (two-dimensional): Summit, shoulder

Landform position (three-dimensional): Head slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Narragansett

Percent of map unit: 2 percent
Landform: Ridges, hills
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Woodbridge

Percent of map unit: 2 percent
Landform: Hillslopes
Landform position (two-dimensional): Shoulder, toeslope, summit
Landform position (three-dimensional): Head slope, base slope, nose slope
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

Scituate

Percent of map unit: 2 percent
Landform: Hillslopes, depressions
Landform position (two-dimensional): Toeslope, summit
Landform position (three-dimensional): Head slope, base slope
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

Unnamed

Percent of map unit: 1 percent

Montauk

Percent of map unit: 1 percent
Landform: Hillslopes
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Head slope, nose slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

104D—Hollis-Rock outcrop-Charlton complex, 15 to 25 percent slopes

Map Unit Setting

National map unit symbol: 98yh
Elevation: 0 to 1,000 feet

Mean annual precipitation: 45 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 110 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Hollis and similar soils: 30 percent
Rock outcrop: 30 percent
Charlton and similar soils: 25 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hollis

Setting

Landform: Ridges, hills
Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Crest, head slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Friable, shallow loamy basal till over granite and gneiss

Typical profile

H1 - 0 to 2 inches: fine sandy loam
H2 - 2 to 14 inches: fine sandy loam
H3 - 14 to 18 inches: unweathered bedrock

Properties and qualities

Slope: 15 to 25 percent
Percent of area covered with surface fragments: 9.0 percent
Depth to restrictive feature: 8 to 20 inches to lithic bedrock
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: D
Hydric soil rating: No

Description of Rock Outcrop

Setting

Parent material: Granite and gneiss

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: 0 inches to lithic bedrock

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s

Description of Charlton

Setting

Landform: Hills
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Friable loamy eolian deposits over friable loamy basal till derived from granite and gneiss

Typical profile

H1 - 0 to 5 inches: fine sandy loam
H2 - 5 to 22 inches: sandy loam
H3 - 22 to 65 inches: gravelly sandy loam

Properties and qualities

Slope: 15 to 25 percent
Percent of area covered with surface fragments: 9.0 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 7.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Canton

Percent of map unit: 10 percent
Landform: Hills
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Head slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Montauk

Percent of map unit: 3 percent
Landform: Hillslopes
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Nose slope, head slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Unnamed

Percent of map unit: 2 percent

253B—Hinckley loamy sand, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2svm8
Elevation: 0 to 1,430 feet
Mean annual precipitation: 36 to 53 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 250 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Hinckley and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hinckley

Setting

Landform: Outwash terraces, outwash deltas, outwash plains, eskers, moraines, kame terraces, kames
Landform position (two-dimensional): Summit, shoulder, backslope, footslope
Landform position (three-dimensional): Nose slope, side slope, base slope, crest, riser, tread
Down-slope shape: Linear, convex, concave
Across-slope shape: Convex, linear, concave
Parent material: Sandy and gravelly glaciofluvial deposits derived from gneiss and/or granite and/or schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 8 inches: loamy sand
Bw1 - 8 to 11 inches: gravelly loamy sand
Bw2 - 11 to 16 inches: gravelly loamy sand
BC - 16 to 19 inches: very gravelly loamy sand
C - 19 to 65 inches: very gravelly sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)

Available water storage in profile: Very low (about 3.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Windsor

Percent of map unit: 8 percent
Landform: Moraines, outwash terraces, outwash deltas, kame terraces, outwash plains, kames, eskers
Landform position (two-dimensional): Summit, shoulder, backslope, footslope
Landform position (three-dimensional): Nose slope, side slope, base slope, crest, riser, tread
Down-slope shape: Linear, convex, concave
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

Sudbury

Percent of map unit: 5 percent
Landform: Outwash deltas, kame terraces, outwash plains, moraines, outwash terraces
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Side slope, base slope, head slope, tread
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Hydric soil rating: No

Agawam

Percent of map unit: 2 percent
Landform: Outwash terraces, outwash deltas, kame terraces, outwash plains, kames, eskers, moraines
Landform position (two-dimensional): Summit, shoulder, backslope, footslope
Landform position (three-dimensional): Nose slope, side slope, base slope, crest, riser, tread
Down-slope shape: Linear, convex, concave
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

253C—Hinckley loamy sand, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2svm9
Elevation: 0 to 1,480 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Hinckley and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hinckley

Setting

Landform: Moraines, outwash terraces, outwash deltas, kame terraces, outwash plains, kames, eskers
Landform position (two-dimensional): Shoulder, toeslope, footslope, backslope
Landform position (three-dimensional): Nose slope, side slope, crest, head slope, riser
Down-slope shape: Convex, linear, concave
Across-slope shape: Linear, convex, concave
Parent material: Sandy and gravelly glaciofluvial deposits derived from gneiss and/or granite and/or schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 8 inches: loamy sand
Bw1 - 8 to 11 inches: gravelly loamy sand
Bw2 - 11 to 16 inches: gravelly loamy sand
BC - 16 to 19 inches: very gravelly loamy sand
C - 19 to 65 inches: very gravelly sand

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water storage in profile: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Sudbury

Percent of map unit: 5 percent
Landform: Moraines, outwash deltas, outwash terraces, kame terraces, outwash plains
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Base slope, tread
Down-slope shape: Concave, linear
Across-slope shape: Linear, concave
Hydric soil rating: No

Merrimac

Percent of map unit: 5 percent
Landform: Outwash plains, kames, eskers, moraines, outwash terraces
Landform position (two-dimensional): Shoulder, backslope, footslope, toeslope
Landform position (three-dimensional): Side slope, crest, head slope, nose slope, riser
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Windsor

Percent of map unit: 5 percent
Landform: Kames, eskers, moraines, kame terraces, outwash plains, outwash terraces, outwash deltas
Landform position (two-dimensional): Shoulder, backslope, footslope, toeslope
Landform position (three-dimensional): Nose slope, side slope, crest, head slope, riser
Down-slope shape: Linear, concave, convex
Across-slope shape: Convex, linear, concave
Hydric soil rating: No

253D—Hinckley loamy sand, 15 to 25 percent slopes

Map Unit Setting

National map unit symbol: 2svmc
Elevation: 0 to 1,460 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Hinckley and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hinckley

Setting

Landform: Outwash terraces, outwash deltas, kame terraces, kames, outwash plains, eskers, moraines
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Nose slope, side slope, crest, head slope, riser
Down-slope shape: Linear, concave, convex
Across-slope shape: Convex, linear, concave
Parent material: Sandy and gravelly glaciofluvial deposits derived from gneiss and/or granite and/or schist

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 8 inches: loamy sand
Bw1 - 8 to 11 inches: gravelly loamy sand
Bw2 - 11 to 16 inches: gravelly loamy sand
BC - 16 to 19 inches: very gravelly loamy sand
C - 19 to 65 inches: very gravelly sand

Properties and qualities

Slope: 15 to 25 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water storage in profile: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6e
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Merrimac

Percent of map unit: 8 percent
Landform: Kames, outwash terraces, eskers, moraines, outwash plains
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope, crest, head slope, nose slope, riser
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Windsor

Percent of map unit: 5 percent
Landform: Eskers, moraines, kame terraces, kames, outwash plains, outwash terraces, outwash deltas
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope, crest, head slope, nose slope, riser
Down-slope shape: Convex, concave, linear
Across-slope shape: Concave, linear, convex
Hydric soil rating: No

Sudbury

Percent of map unit: 2 percent
Landform: Outwash deltas, kame terraces, eskers, outwash terraces, outwash plains, moraines
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Base slope, tread

Down-slope shape: Concave, linear, convex
Across-slope shape: Concave, linear, convex
Hydric soil rating: No

255A—Windsor loamy sand, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2svkg
Elevation: 0 to 990 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Windsor, loamy sand, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windsor, Loamy Sand

Setting

Landform: Dunes, deltas, outwash terraces, outwash plains
Landform position (three-dimensional): Tread, riser
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Loose sandy glaciofluvial deposits derived from granite and/or loose sandy glaciofluvial deposits derived from schist and/or loose sandy glaciofluvial deposits derived from gneiss

Typical profile

O - 0 to 1 inches: moderately decomposed plant material
A - 1 to 3 inches: loamy sand
Bw - 3 to 25 inches: loamy sand
C - 25 to 65 inches: sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water storage in profile: Low (about 3.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Deerfield, loamy sand
Percent of map unit: 10 percent
Landform: Deltas, outwash plains, terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Hinckley, loamy sand
Percent of map unit: 5 percent
Landform: Outwash plains, eskers, kames, deltas
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Nose slope, side slope, crest, head slope, rise
Down-slope shape: Convex
Across-slope shape: Linear, convex
Hydric soil rating: No

255B—Windsor loamy sand, 3 to 8 percent slopes

Map Unit Setting
National map unit symbol: 2svkf
Elevation: 0 to 1,210 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition
Windsor, loamy sand, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windsor, Loamy Sand

Setting
Landform: Outwash terraces, deltas, outwash plains, dunes
Landform position (three-dimensional): Tread, riser
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Parent material: Loose sandy glaciofluvial deposits derived from granite and/or loose sandy glaciofluvial deposits derived from schist and/or loose sandy glaciofluvial deposits derived from gneiss

Typical profile

O - 0 to 1 inches: moderately decomposed plant material
A - 1 to 3 inches: loamy sand
Bw - 3 to 25 inches: loamy sand
C - 25 to 65 inches: sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water storage in profile: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Hinckley, loamy sand

Percent of map unit: 10 percent
Landform: Outwash plains, eskers, kames, deltas
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Nose slope, side slope, crest, head slope, rise
Down-slope shape: Convex
Across-slope shape: Linear, convex
Hydric soil rating: No

Deerfield, loamy sand

Percent of map unit: 5 percent
Landform: Terraces, deltas, outwash plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

255C—Windsor loamy sand, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2svkq

Elevation: 0 to 1,260 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Windsor and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Windsor

Setting

Landform: — error in exists on —
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Side slope, riser
Down-slope shape: Convex
Across-slope shape: Linear, convex
Parent material: Loose sandy glaciofluvial deposits derived from granite and/or loose sandy glaciofluvial deposits derived from schist and/or loose sandy glaciofluvial deposits derived from gneiss

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
Ap - 1 to 11 inches: loamy sand
Bw - 11 to 31 inches: loamy sand
C - 31 to 65 inches: sand

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water storage in profile: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Hinckley

Percent of map unit: 10 percent
Landform: Outwash plains, eskers, kames, deltas
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Crest, head slope, nose slope, side slope, rise
Down-slope shape: Convex

Across-slope shape: Linear, convex
Hydric soil rating: No

Deerfield

Percent of map unit: 5 percent
Landform: Terraces, deltas, outwash plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

256A—Deerfield loamy fine sand, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 2xfg8
Elevation: 0 to 1,100 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Deerfield and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Deerfield

Setting

Landform: Outwash terraces, outwash deltas, outwash plains, kame terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex, linear, concave
Across-slope shape: Concave, linear, convex
Parent material: Sandy outwash derived from granite, gneiss, and/or quartzite

Typical profile

Ap - 0 to 9 inches: loamy fine sand
Bw - 9 to 25 inches: loamy fine sand
BC - 25 to 33 inches: fine sand
Cg - 33 to 60 inches: sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: About 15 to 37 inches
Frequency of flooding: None

Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 11.0
Available water storage in profile: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Windsor

Percent of map unit: 7 percent
Landform: Outwash terraces, kame terraces, outwash deltas, outwash plains
Landform position (three-dimensional): Tread
Down-slope shape: Linear, convex, concave
Across-slope shape: Concave, linear, convex
Hydric soil rating: No

Wareham

Percent of map unit: 5 percent
Landform: Drainageways, depressions
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Sudbury

Percent of map unit: 2 percent
Landform: Kame terraces, outwash deltas, outwash terraces, outwash plains
Landform position (three-dimensional): Tread
Down-slope shape: Convex, linear, concave
Across-slope shape: Concave, linear, convex
Hydric soil rating: No

Ninigret

Percent of map unit: 1 percent
Landform: Kame terraces, outwash plains, outwash terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex, linear
Across-slope shape: Convex, concave
Hydric soil rating: No

256B—Deerfield loamy fine sand, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2xfg9
Elevation: 0 to 1,190 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F

Frost-free period: 145 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Deerfield and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Deerfield

Setting

Landform: Outwash deltas, outwash terraces, outwash plains, kame terraces
Landform position (three-dimensional): Tread
Down-slope shape: Concave, convex, linear
Across-slope shape: Linear, convex, concave
Parent material: Sandy outwash derived from granite, gneiss, and/or quartzite

Typical profile

Ap - 0 to 9 inches: loamy fine sand
Bw - 9 to 25 inches: loamy fine sand
BC - 25 to 33 inches: fine sand
Cg - 33 to 60 inches: sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: About 15 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 11.0
Available water storage in profile: Moderate (about 6.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Windsor

Percent of map unit: 7 percent
Landform: Outwash deltas, outwash terraces, outwash plains, kame terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear, concave, convex
Across-slope shape: Concave, linear, convex
Hydric soil rating: No

Wareham

Percent of map unit: 5 percent
Landform: Drainageways, depressions
Down-slope shape: Concave

Across-slope shape: Concave
Hydric soil rating: Yes

Sudbury

Percent of map unit: 2 percent
Landform: Outwash plains, kame terraces, outwash deltas, outwash terraces
Landform position (three-dimensional): Tread
Down-slope shape: Linear, convex, concave
Across-slope shape: Concave, linear, convex
Hydric soil rating: No

Ninigret

Percent of map unit: 1 percent
Landform: Outwash plains, outwash terraces, kame terraces
Landform position (three-dimensional): Tread
Down-slope shape: Convex, linear
Across-slope shape: Convex, concave
Hydric soil rating: No

259A—Carver loamy coarse sand, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 9911
Elevation: 0 to 1,000 feet
Mean annual precipitation: 45 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Carver and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Carver

Setting

Landform: Deltas, plains, terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, rise
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loose sandy glaciofluvial deposits

Typical profile

H1 - 0 to 7 inches: loamy coarse sand
H2 - 7 to 13 inches: loamy coarse sand
H3 - 13 to 21 inches: coarse sand
H4 - 21 to 35 inches: gravelly coarse sand
H5 - 35 to 65 inches: coarse sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Very high (20.00 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Windsor

Percent of map unit: 8 percent
Landform: Deltas, flats, terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, rise
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Hinckley

Percent of map unit: 3 percent
Landform: Ridges, terraces, eskers
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Quonset

Percent of map unit: 2 percent
Landform: Kames, terraces, eskers
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Nose slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Deerfield

Percent of map unit: 2 percent
Landform: Deltas, stream terraces, depressions
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

259B—Carver loamy coarse sand, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: vqpv
Elevation: 0 to 1,000 feet
Mean annual precipitation: 45 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Carver and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Carver

Setting

Landform: Plains, deltas, terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, rise
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loose sandy glaciofluvial deposits

Typical profile

H1 - 0 to 7 inches: loamy coarse sand
H2 - 7 to 13 inches: loamy coarse sand
H3 - 13 to 21 inches: coarse sand
H4 - 21 to 35 inches: gravelly coarse sand
H5 - 35 to 65 inches: coarse sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Excessively drained
Capacity of the most limiting layer to transmit water (Ksat): Very high (20.00 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 3.3 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4s
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Windsor

Percent of map unit: 8 percent
Landform: Flats, terraces, deltas
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, rise
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Hinckley

Percent of map unit: 3 percent
Landform: Ridges, terraces, eskers
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Deerfield

Percent of map unit: 2 percent
Landform: Stream terraces, depressions, deltas
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: No

Quonset

Percent of map unit: 2 percent
Landform: Eskers, kames, terraces
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Nose slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

260B—Sudbury fine sandy loam, 3 to 8 percent slopes

Map Unit Setting

National map unit symbol: 9915
Elevation: 0 to 2,100 feet
Mean annual precipitation: 45 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 145 to 240 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Sudbury and similar soils: 85 percent

Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sudbury

Setting

Landform: Plains, terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Linear
Across-slope shape: Concave
Parent material: Friable loamy eolian deposits over loose sandy glaciofluvial deposits

Typical profile

H1 - 0 to 8 inches: fine sandy loam
H2 - 8 to 20 inches: fine sandy loam
H3 - 20 to 27 inches: loamy sand
H4 - 27 to 65 inches: stratified gravelly coarse sand to sand

Properties and qualities

Slope: 2 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Moderately well drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: About 18 to 36 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Low (about 4.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Merrimac

Percent of map unit: 8 percent
Landform: Plains, terraces
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Tread, rise
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Wareham

Percent of map unit: 4 percent
Landform: Depressions, terraces, deltas
Landform position (two-dimensional): Toeslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Windsor

Percent of map unit: 2 percent
Landform: Terraces, deltas, flats
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, rise
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Unnamed

Percent of map unit: 1 percent

302C—Montauk fine sandy loam, 8 to 15 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: 2w80s
Elevation: 0 to 1,080 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Montauk, extremely stony, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Montauk, Extremely Stony

Setting

Landform: Hills, recessionial moraines, ground moraines, drumlins
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 6 inches: fine sandy loam
Bw1 - 6 to 28 inches: fine sandy loam
Bw2 - 28 to 36 inches: sandy loam
2Cd - 36 to 74 inches: gravelly loamy sand

Properties and qualities

Slope: 8 to 15 percent
Percent of area covered with surface fragments: 9.0 percent
Depth to restrictive feature: 20 to 43 inches to densic material

Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately high (0.00 to 1.42 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water storage in profile: Low (about 5.6 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Scituate, extremely stony
Percent of map unit: 8 percent
Landform: Drumlins, ground moraines, hills
Landform position (two-dimensional): Footslope, backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear, convex
Across-slope shape: Convex
Hydric soil rating: No

Canton, extremely stony
Percent of map unit: 5 percent
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Ridgebury, extremely stony
Percent of map unit: 2 percent
Landform: Ground moraines, hills, drainageways, depressions
Landform position (two-dimensional): Footslope, toeslope
Landform position (three-dimensional): Base slope, head slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

305B—Paxton fine sandy loam, 3 to 8 percent slopes

Map Unit Setting
National map unit symbol: 2t2qp
Elevation: 0 to 1,570 feet
Mean annual precipitation: 36 to 71 inches

Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Paxton and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Paxton

Setting

Landform: Hills, drumlins, ground moraines
Landform position (two-dimensional): Backslope, summit, shoulder
Landform position (three-dimensional): Side slope, crest, nose slope
Down-slope shape: Linear, convex
Across-slope shape: Convex
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Ap - 0 to 8 inches: fine sandy loam
Bw1 - 8 to 15 inches: fine sandy loam
Bw2 - 15 to 26 inches: fine sandy loam
Cd - 26 to 65 inches: gravelly fine sandy loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 18 to 39 inches to densic material
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water storage in profile: Low (about 3.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Woodbridge

Percent of map unit: 9 percent
Landform: Hills, drumlins, ground moraines
Landform position (two-dimensional): Backslope, footslope, summit
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Ridgebury

Percent of map unit: 6 percent
Landform: Drainageways, hills, ground moraines, depressions
Landform position (two-dimensional): Backslope, footslope, toeslope
Landform position (three-dimensional): Head slope, base slope, dip
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

Charlton

Percent of map unit: 5 percent
Landform: Hills
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

307C—Paxton fine sandy loam, 8 to 15 percent slopes, extremely stony

Map Unit Setting

National map unit symbol: 2w676
Elevation: 0 to 1,490 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Paxton, extremely stony, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Paxton, Extremely Stony

Setting

Landform: Drumlins, hills, ground moraines
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear, convex
Across-slope shape: Convex, linear
Parent material: Coarse-loamy lodgment till derived from gneiss, granite, and/or schist

Typical profile

Oe - 0 to 2 inches: moderately decomposed plant material
A - 2 to 10 inches: fine sandy loam
Bw1 - 10 to 17 inches: fine sandy loam
Bw2 - 17 to 28 inches: fine sandy loam
Cd - 28 to 67 inches: gravelly fine sandy loam

Properties and qualities

Slope: 8 to 15 percent
Percent of area covered with surface fragments: 9.0 percent
Depth to restrictive feature: 20 to 43 inches to densic material
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Very low to moderately low (0.00 to 0.14 in/hr)
Depth to water table: About 18 to 37 inches
Frequency of flooding: None
Frequency of ponding: None
Salinity, maximum in profile: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water storage in profile: Low (about 4.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Hydric soil rating: No

Minor Components

Charlton, extremely stony

Percent of map unit: 8 percent
Landform: Hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Woodbridge, extremely stony

Percent of map unit: 6 percent
Landform: Ground moraines, drumlins, hills
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Ridgebury, extremely stony

Percent of map unit: 1 percent
Landform: Ground moraines, depressions, drumlins, drainageways, hills
Landform position (two-dimensional): Toeslope, footslope
Landform position (three-dimensional): Head slope, base slope
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

416B—Narragansett silt loam, 3 to 8 percent slopes, very stony

Map Unit Setting

National map unit symbol: 9940
Elevation: 0 to 1,000 feet
Mean annual precipitation: 45 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 145 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Narragansett and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Narragansett

Setting

Landform: Ground moraines
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Friable loamy eolian deposits and/or friable silty eolian deposits over loose sandy glaciofluvial deposits derived from metamorphic rock and/or friable sandy basal till derived from metamorphic rock

Typical profile

H1 - 0 to 2 inches: slightly decomposed plant material
H2 - 2 to 7 inches: silt loam
H3 - 7 to 35 inches: silt loam
H4 - 35 to 60 inches: very gravelly loamy sand
H5 - 60 to 65 inches: very gravelly loamy sand

Properties and qualities

Slope: 3 to 8 percent
Percent of area covered with surface fragments: 1.6 percent
Depth to restrictive feature: 18 to 35 inches to strongly contrasting textural stratification
Natural drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.60 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Moderate (about 6.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s

Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Haven
Percent of map unit: 10 percent
Landform: Terraces, plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, rise
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Canton
Percent of map unit: 5 percent
Landform: Hills
Landform position (two-dimensional): Backslope, toeslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Scituate
Percent of map unit: 5 percent
Landform: Depressions, hillslopes
Landform position (two-dimensional): Toeslope, summit
Landform position (three-dimensional): Base slope, head slope
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

420B—Canton fine sandy loam, 3 to 8 percent slopes

Map Unit Setting
National map unit symbol: 2w81b
Elevation: 0 to 1,180 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: All areas are prime farmland

Map Unit Composition
Canton and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Canton

Setting
Landform: Hills, moraines, ridges

Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope, crest, nose slope
Down-slope shape: Linear, convex
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Ap - 0 to 7 inches: fine sandy loam
Bw1 - 7 to 15 inches: fine sandy loam
Bw2 - 15 to 26 inches: gravelly fine sandy loam
2C - 26 to 65 inches: gravelly loamy sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: 19 to 39 inches to strongly contrasting textural stratification
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2s
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Scituate

Percent of map unit: 10 percent
Landform: Hills, drumlins, ground moraines
Landform position (two-dimensional): Backslope, footslope, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Convex, linear
Across-slope shape: Convex
Hydric soil rating: No

Montauk

Percent of map unit: 5 percent
Landform: Moraines, ground moraines, hills, drumlins
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Side slope, crest
Down-slope shape: Linear, convex
Across-slope shape: Convex
Hydric soil rating: No

Charlton

Percent of map unit: 4 percent
Landform: Hills, ridges, ground moraines
Landform position (two-dimensional): Backslope, shoulder, summit
Landform position (three-dimensional): Crest, side slope

Down-slope shape: Linear, convex
Across-slope shape: Convex
Hydric soil rating: No

Swansea

Percent of map unit: 1 percent
Landform: Bogs, swamps, kettles, marshes, depressions
Down-slope shape: Concave
Across-slope shape: Concave
Hydric soil rating: Yes

420C—Canton fine sandy loam, 8 to 15 percent slopes

Map Unit Setting

National map unit symbol: 2w817
Elevation: 0 to 1,330 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Canton and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Canton

Setting

Landform: Ridges, hills, moraines
Landform position (two-dimensional): Backslope, summit, shoulder
Landform position (three-dimensional): Side slope, crest, nose slope
Down-slope shape: Convex, linear
Across-slope shape: Convex
Parent material: Coarse-loamy over sandy melt-out till derived from gneiss, granite, and/or schist

Typical profile

Ap - 0 to 7 inches: fine sandy loam
Bw1 - 7 to 15 inches: fine sandy loam
Bw2 - 15 to 26 inches: gravelly fine sandy loam
2C - 26 to 65 inches: gravelly loamy sand

Properties and qualities

Slope: 8 to 15 percent
Depth to restrictive feature: 19 to 39 inches to strongly contrasting textural stratification
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to high (0.14 to 14.17 in/hr)

Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water storage in profile: Very low (about 2.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3e
Hydrologic Soil Group: B
Hydric soil rating: No

Minor Components

Montauk

Percent of map unit: 6 percent
Landform: Hills, drumlins, moraines, ground moraines
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear, convex
Across-slope shape: Convex
Hydric soil rating: No

Scituate

Percent of map unit: 6 percent
Landform: Ground moraines, hills, drumlins
Landform position (two-dimensional): Backslope, footslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear, convex
Across-slope shape: Convex
Hydric soil rating: No

Charlton

Percent of map unit: 4 percent
Landform: Ridges, ground moraines, hills
Landform position (two-dimensional): Backslope
Landform position (three-dimensional): Side slope
Down-slope shape: Linear, convex
Across-slope shape: Convex
Hydric soil rating: No

Newfields

Percent of map unit: 4 percent
Landform: Ground moraines, hills, moraines
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Concave
Hydric soil rating: No

626B—Merrimac-Urban land complex, 0 to 8 percent slopes

Map Unit Setting

National map unit symbol: 2tyr9
Elevation: 0 to 820 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 250 days
Farmland classification: Not prime farmland

Map Unit Composition

Merrimac and similar soils: 45 percent
Urban land: 40 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Merrimac

Setting

Landform: Kames, eskers, moraines, outwash terraces, outwash plains
Landform position (two-dimensional): Backslope, footslope, shoulder, summit
Landform position (three-dimensional): Side slope, crest, riser, tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy glaciofluvial deposits derived from granite, schist, and gneiss over sandy and gravelly glaciofluvial deposits derived from granite, schist, and gneiss

Typical profile

Ap - 0 to 10 inches: fine sandy loam
Bw1 - 10 to 22 inches: fine sandy loam
Bw2 - 22 to 26 inches: stratified gravel to gravelly loamy sand
2C - 26 to 65 inches: stratified gravel to very gravelly sand

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 2 percent
Salinity, maximum in profile: Nonsaline (0.0 to 1.4 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 1.0
Available water storage in profile: Low (about 4.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: A
Hydric soil rating: No

Description of Urban Land

Typical profile

M - 0 to 10 inches: cemented material

Properties and qualities

Slope: 0 to 8 percent
Depth to restrictive feature: 0 inches to manufactured layer
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Very low (0.00 to 0.00 in/hr)
Available water storage in profile: Very low (about 0.0 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydrologic Soil Group: D
Hydric soil rating: Unranked

Minor Components

Sudbury

Percent of map unit: 5 percent
Landform: Outwash plains, terraces, deltas
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Tread, dip
Down-slope shape: Concave
Across-slope shape: Linear
Hydric soil rating: No

Hinckley

Percent of map unit: 5 percent
Landform: Deltas, outwash plains, eskers, kames
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Nose slope, crest, head slope, side slope, rise
Down-slope shape: Convex
Across-slope shape: Convex, linear
Hydric soil rating: No

Windsor

Percent of map unit: 5 percent
Landform: Deltas, outwash plains, dunes, outwash terraces
Landform position (three-dimensional): Riser, tread
Down-slope shape: Linear, convex
Across-slope shape: Linear, convex
Hydric soil rating: No

653—Udorthents, sandy

Map Unit Setting

National map unit symbol: vr1k
Elevation: 0 to 3,000 feet
Mean annual precipitation: 32 to 50 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 110 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Udorthents, sandy, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents, Sandy

Setting

Parent material: Loamy alluvium and/or sandy glaciofluvial deposits and/or loamy glaciolacustrine deposits and/or loamy marine deposits and/or loamy basal till and/or loamy lodgment till

Properties and qualities

Slope: 0 to 25 percent
Depth to restrictive feature: More than 80 inches
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Minor Components

Urban land

Percent of map unit: 5 percent
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear

Udorthents, loamy

Percent of map unit: 5 percent
Hydric soil rating: No

Unnamed

Percent of map unit: 5 percent

654—Udorthents, loamy

Map Unit Setting

National map unit symbol: vr1l
Elevation: 0 to 3,000 feet
Mean annual precipitation: 32 to 50 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 110 to 200 days
Farmland classification: Not prime farmland

Map Unit Composition

Udorthents, loamy, and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents, Loamy

Setting

Parent material: Loamy alluvium and/or sandy glaciofluvial deposits and/or loamy glaciolacustrine deposits and/or loamy marine deposits and/or loamy basal till and/or loamy lodgment till

Properties and qualities

Depth to restrictive feature: More than 80 inches
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Minor Components

Udorthents, sandy

Percent of map unit: 10 percent
Hydric soil rating: No

Udorthents, wet substratum

Percent of map unit: 5 percent
Hydric soil rating: Yes

Urban land

Percent of map unit: 5 percent
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear

656—Udorthents-Urban land complex

Map Unit Setting

National map unit symbol: 995k
Elevation: 0 to 3,000 feet
Mean annual precipitation: 32 to 54 inches
Mean annual air temperature: 43 to 54 degrees F
Frost-free period: 110 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

Udorthents and similar soils: 40 percent
Urban land: 40 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Udorthents

Setting

Parent material: Loamy alluvium and/or sandy glaciofluvial deposits and/or loamy glaciolacustrine deposits and/or loamy marine deposits and/or loamy basal till and/or loamy lodgment till

Properties and qualities

Slope: 0 to 15 percent
Depth to restrictive feature: More than 80 inches
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None

Description of Urban Land

Setting

Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Base slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Excavated and filled land

Minor Components

Canton

Percent of map unit: 10 percent
Landform: Hills
Landform position (two-dimensional): Backslope, toeslope
Landform position (three-dimensional): Side slope, base slope
Down-slope shape: Linear
Across-slope shape: Convex
Hydric soil rating: No

Paxton

Percent of map unit: 5 percent
Landform: Hillslopes
Landform position (two-dimensional): Backslope, summit
Landform position (three-dimensional): Head slope, side slope
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Merrimac

Percent of map unit: 5 percent
Landform: Terraces, plains
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Tread, rise
Down-slope shape: Convex
Across-slope shape: Convex
Hydric soil rating: No

Soil Information for All Uses

Soil Properties and Qualities

The Soil Properties and Qualities section includes various soil properties and qualities displayed as thematic maps with a summary table for the soil map units in the selected area of interest. A single value or rating for each map unit is generated by aggregating the interpretive ratings of individual map unit components. This aggregation process is defined for each property or quality.

Soil Qualities and Features

Soil qualities are behavior and performance attributes that are not directly measured, but are inferred from observations of dynamic conditions and from soil properties. Example soil qualities include natural drainage, and frost action. Soil features are attributes that are not directly part of the soil. Example soil features include slope and depth to restrictive layer. These features can greatly impact the use and management of the soil.

Hydrologic Soil Group

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

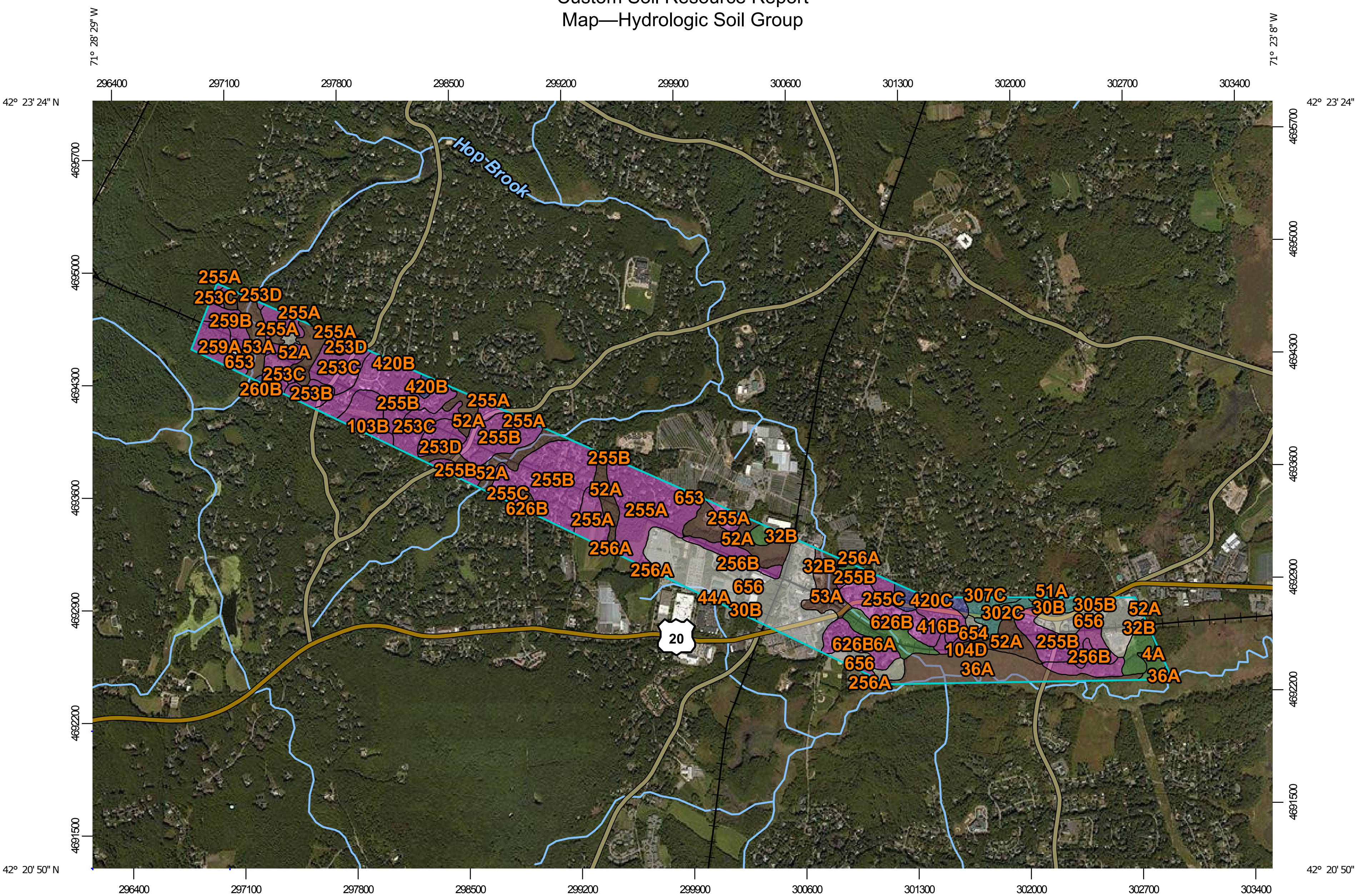
Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Map—Hydrologic Soil Group



Map Scale: 1:33,600 if printed on A landscape (11" x 8.5") sheet.

Meters: 0, 450, 900, 1800, 2700

Feet: 0, 1500, 3000, 6000, 9000

N

Map projection: Web Mercator   Corner coordinates: WGS84   Edge tics: UTM Zone 19N WGS84

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

Soil Rating Polygons

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points

- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:25,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Middlesex County, Massachusetts
Survey Area Data: Version 18, Sep 7, 2018

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Sep 12, 2014—Sep 28, 2014

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Table—Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
1	Water		2.4	0.3%
4A	Rippowam fine sandy loam, 0 to 3 percent slopes	A/D	5.2	0.6%
6A	Scarboro mucky fine sandy loam, 0 to 3 percent slopes	A/D	17.9	2.2%
30B	Raynham silt loam, 0 to 5 percent slopes	C/D	6.1	0.7%
32B	Wareham loamy fine sand, 0 to 5 percent slopes	A/D	15.5	1.9%
36A	Saco mucky silt loam, 0 to 1 percent slopes	B/D	46.4	5.7%
44A	Birdsall mucky silt loam, 0 to 1 percent slopes	C/D	1.5	0.2%
51A	Swansea muck, 0 to 1 percent slopes	B/D	6.3	0.8%
52A	Freetown muck, 0 to 1 percent slopes	B/D	87.6	10.7%
53A	Freetown muck, ponded, 0 to 1 percent slopes	B/D	31.6	3.9%
103B	Charlton-Hollis-Rock outcrop complex, 3 to 8 percent slopes	A	15.6	1.9%
104D	Hollis-Rock outcrop-Charlton complex, 15 to 25 percent slopes	A	5.8	0.7%
253B	Hinckley loamy sand, 3 to 8 percent slopes	A	8.7	1.1%
253C	Hinckley loamy sand, 8 to 15 percent slopes	A	43.3	5.3%
253D	Hinckley loamy sand, 15 to 25 percent slopes	A	15.2	1.9%
255A	Windsor loamy sand, 0 to 3 percent slopes	A	83.2	10.2%
255B	Windsor loamy sand, 3 to 8 percent slopes	A	155.5	19.0%
255C	Windsor loamy sand, 8 to 15 percent slopes	A	6.2	0.8%
256A	Deerfield loamy fine sand, 0 to 3 percent slopes	A	1.0	0.1%
256B	Deerfield loamy fine sand, 3 to 8 percent slopes	A	21.6	2.6%

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
259A	Carver loamy coarse sand, 0 to 3 percent slopes	A	14.6	1.8%
259B	Carver loamy coarse sand, 3 to 8 percent slopes	A	10.0	1.2%
260B	Sudbury fine sandy loam, 3 to 8 percent slopes	B	0.4	0.0%
302C	Montauk fine sandy loam, 8 to 15 percent slopes, extremely stony	C	8.5	1.0%
305B	Paxton fine sandy loam, 3 to 8 percent slopes	C	2.5	0.3%
307C	Paxton fine sandy loam, 8 to 15 percent slopes, extremely stony	C	6.2	0.8%
416B	Narragansett silt loam, 3 to 8 percent slopes, very stony	A	11.5	1.4%
420B	Canton fine sandy loam, 3 to 8 percent slopes	B	3.7	0.5%
420C	Canton fine sandy loam, 8 to 15 percent slopes	B	9.1	1.1%
626B	Merrimac-Urban land complex, 0 to 8 percent slopes	A	37.9	4.6%
653	Udorthents, sandy		2.0	0.2%
654	Udorthents, loamy		1.4	0.2%
656	Udorthents-Urban land complex		133.4	16.3%
Totals for Area of Interest			**817.8**	**100.0%**

Rating Options—Hydrologic Soil Group

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

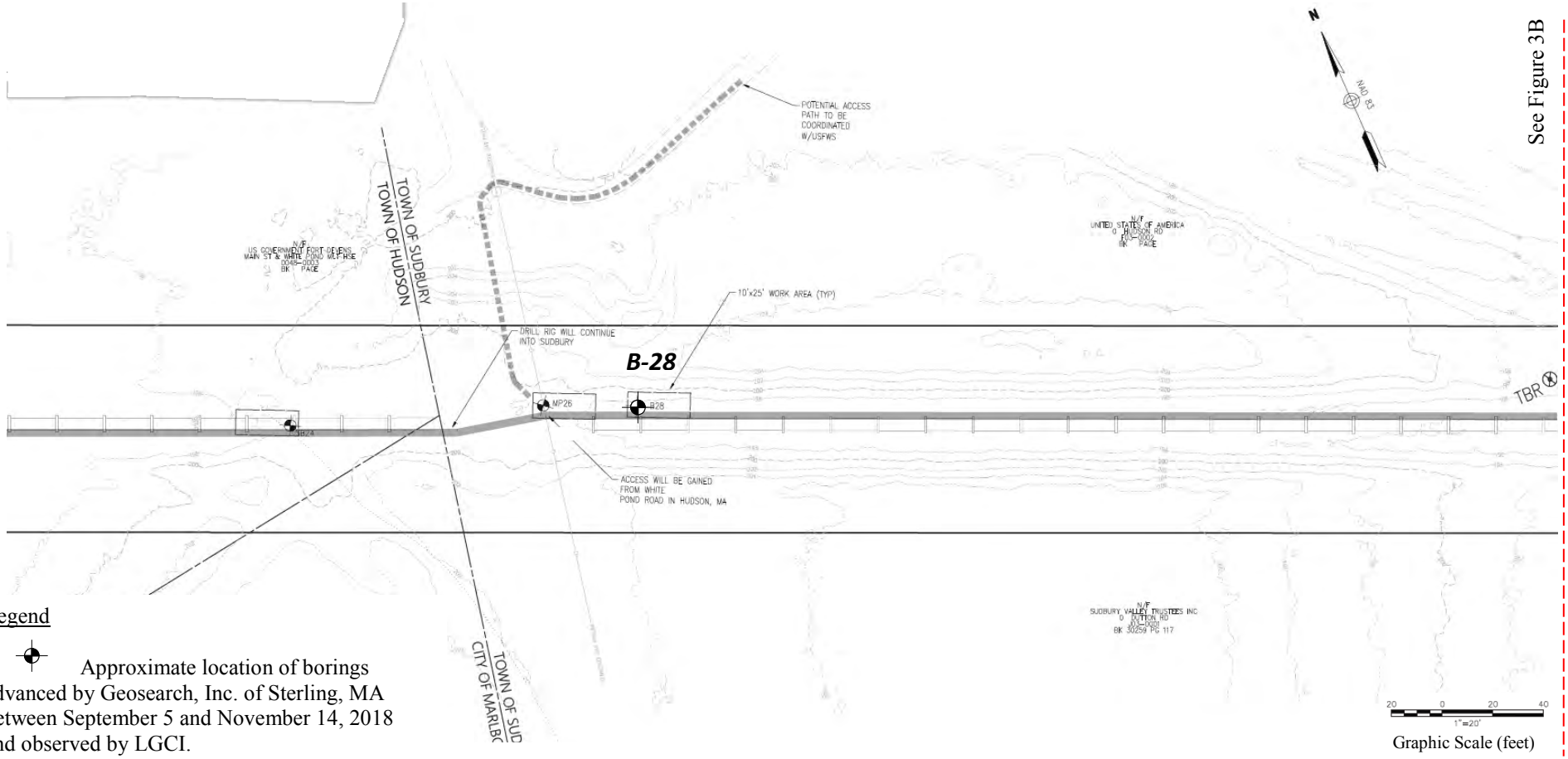
United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf



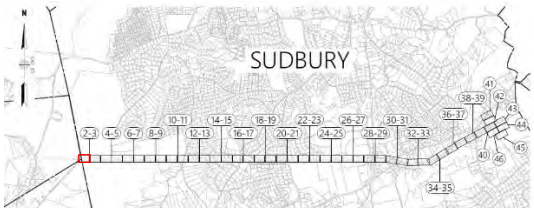
Legend

Approximate location of borings advanced by Geosearch, Inc. of Sterling, MA between September 5 and November 14, 2018 and observed by LGCI.

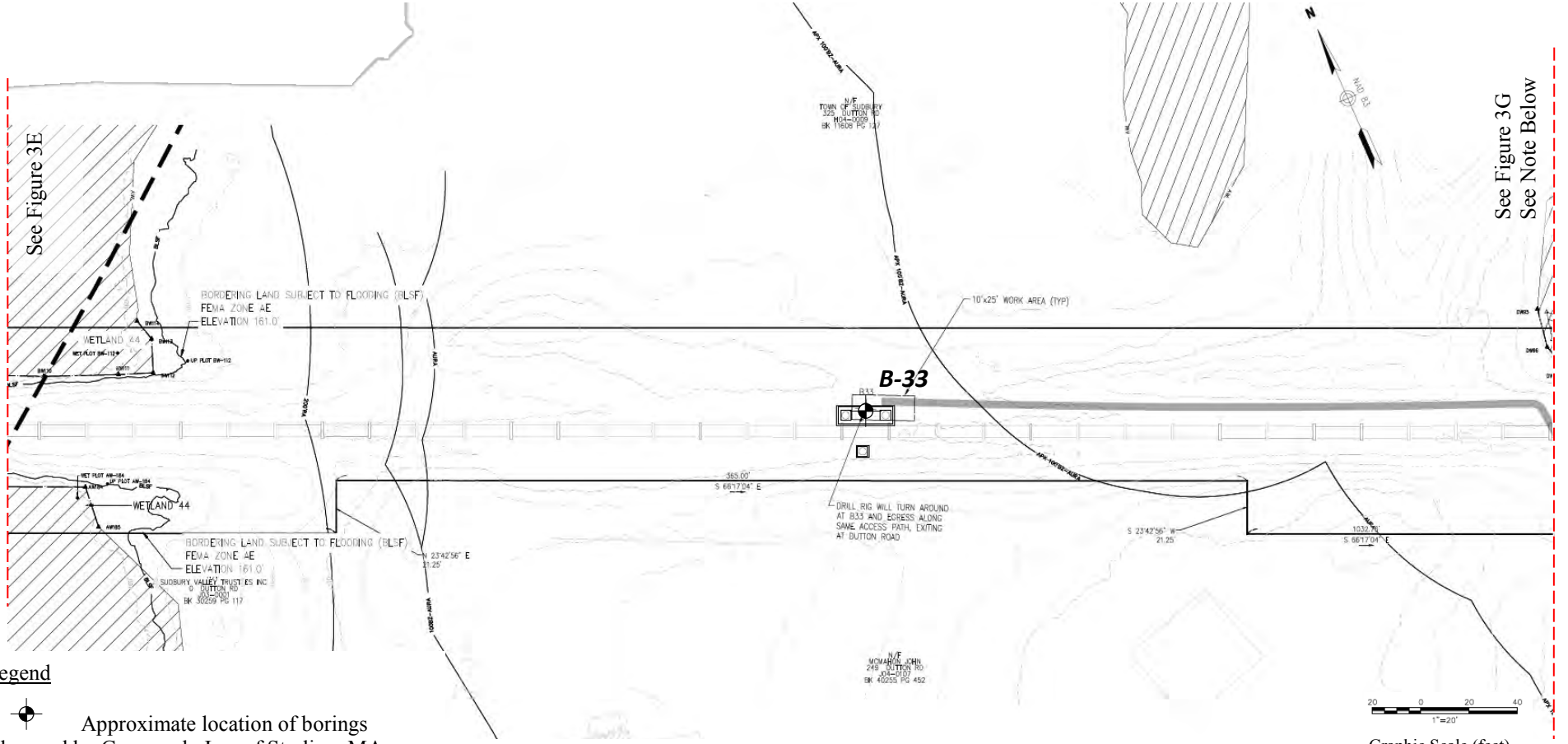
Note

Figure based on Sheets 1 to 42 of a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by Vanasse Hangen Brustlin, Inc., and dated February 5, 2018. Dashed lines are not match lines.

Key Plan



Client: Vanasse Hangen Brustlin, Inc.	Project: Proposed Transmission Power Line Borings	Figure 3A – Boring Location Plan	
LGCI Lahlaf Geotechnical Consulting, Inc.	Project Location: Sudbury, MA	LGCI Project No.: 1836	Date: December 2018



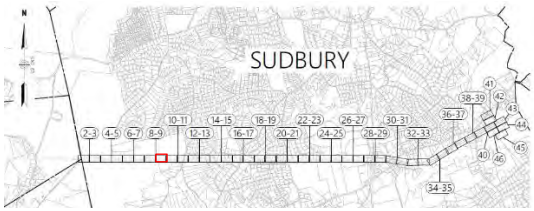
Legend

Approximate location of borings advanced by Geosearch, Inc. of Sterling, MA between September 5 and November 14, 2018 and observed by LGCI.

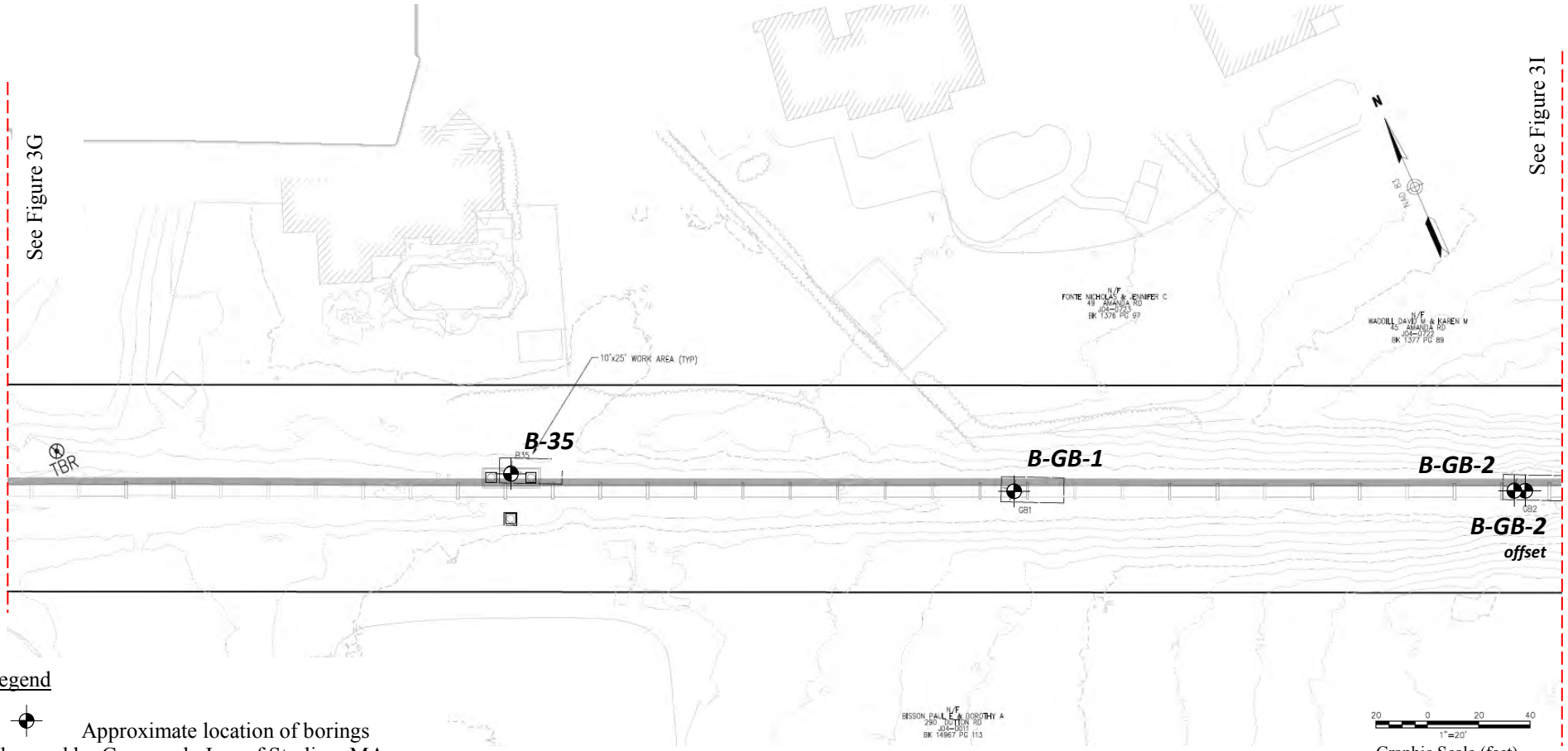
Note

Figure based on Sheets 1 to 42 of a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by Vanasse Hangen Brustlin, Inc., and dated February 5, 2018. Dashed lines are not match lines. The subsequent sheet (Sheet 10) was skipped because the geotechnical boring shown on it is also shown within the area shown on Sheet 11.

Key Plan



Client: Vanasse Hangen Brustlin, Inc.	Project: Proposed Transmission Power Line Borings	Figure 3F – Boring Location Plan	
LGCI Lahlaf Geotechnical Consulting, Inc.	Project Location: Sudbury, MA	LGCI Project No.: 1836	Date: December 2018



Graphic Scale (feet)

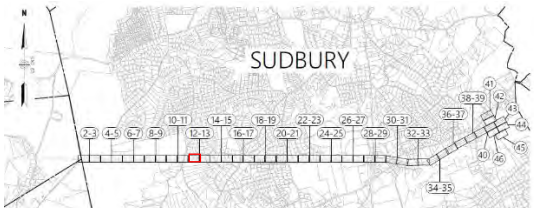
Legend

Approximate location of borings advanced by Geosearch, Inc. of Sterling, MA between September 5 and November 14, 2018 and observed by LGCI.

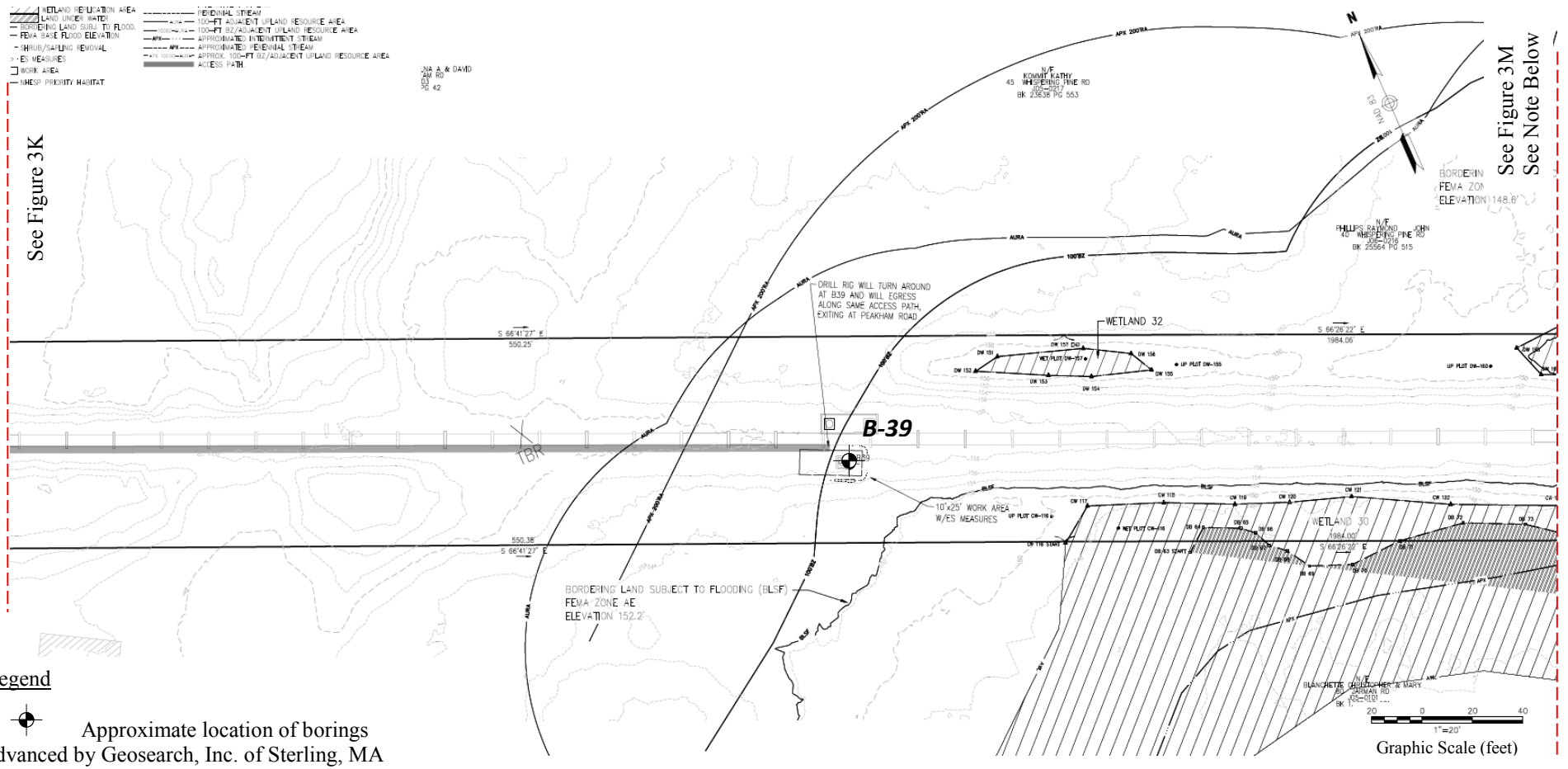
Note

Figure based on Sheets 1 to 42 of a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by Vanasse Hangen Brustlin, Inc., and dated February 5, 2018. Dashed lines are not match lines.

Key Plan



Client: Vanasse Hangen Brustlin, Inc.	Project: Proposed Transmission Power Line Borings	Figure 3H – Boring Location Plan	
Lahlaf Geotechnical Consulting, Inc.	Project Location: Sudbury, MA	LGCI Project No.: 1836	Date: December 2018



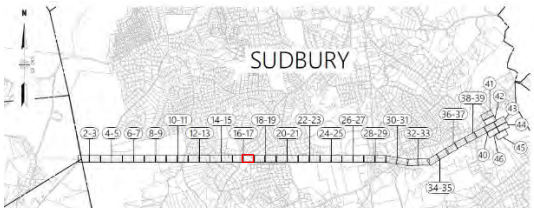
Legend

Approximate location of borings advanced by Geosearch, Inc. of Sterling, MA between September 5 and November 14, 2018 and observed by LGCI.

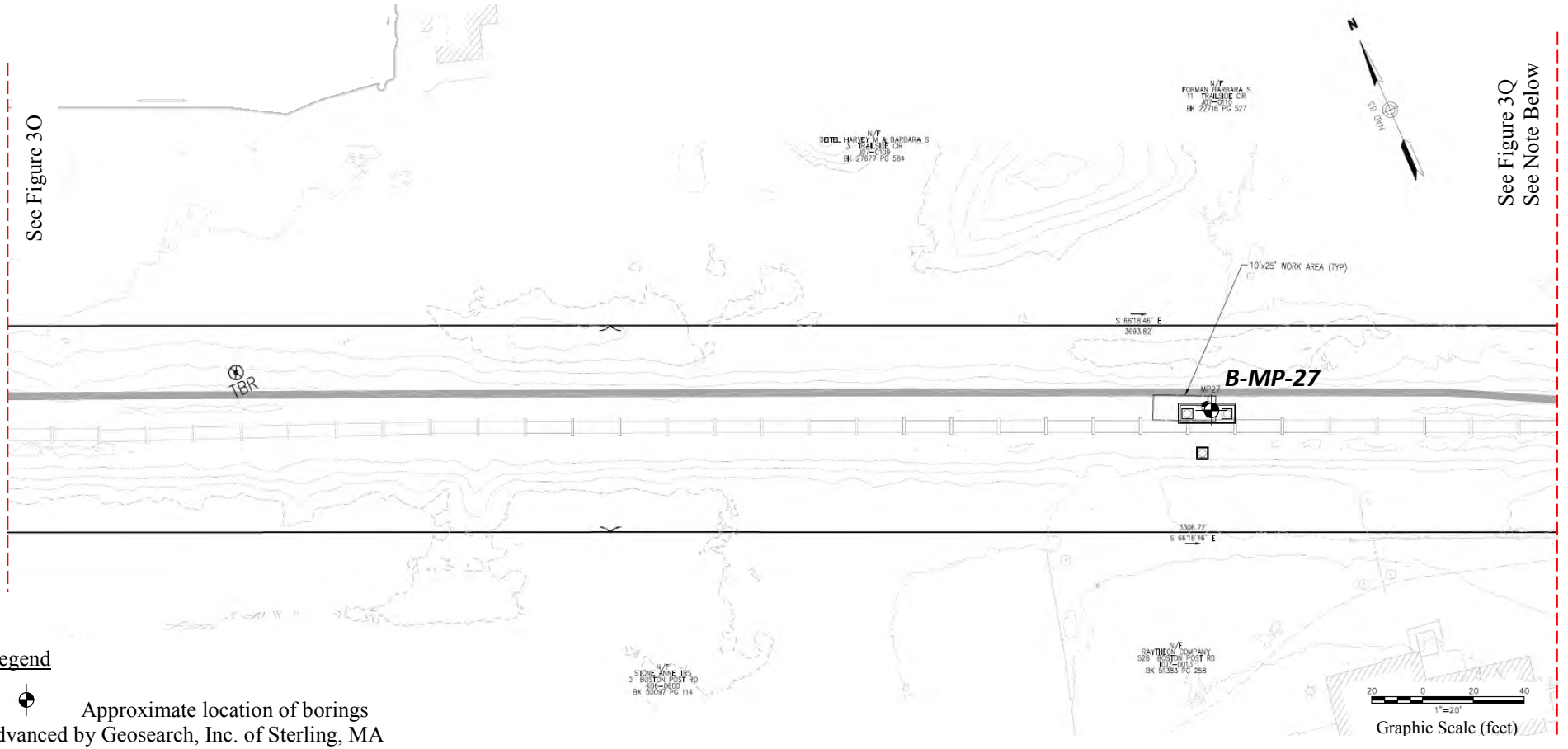
Note

Figure based on Sheets 1 to 42 of a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by Vanasse Hangen Brustlin, Inc., and dated February 5, 2018. Dashed lines are not match lines. The subsequent sheet (Sheet 18) was skipped because no geotechnical borings are located within the area shown on Sheet 18.

Key Plan



Client:	Project:	Figure 3L – Boring Location Plan	
Vanasse Hangen Brustlin, Inc.	Proposed Transmission Power Line Borings		
LGCI Lahlaf Geotechnical Consulting, Inc.	Project Location: Sudbury, MA	LGCI Project No.: 1836	Date: December 2018



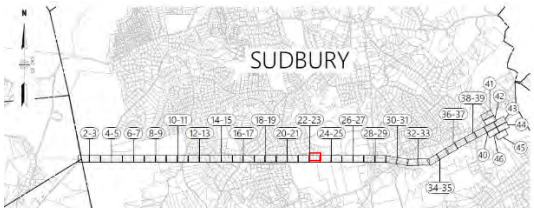
Legend

Approximate location of borings advanced by Geosearch, Inc. of Sterling, MA between September 5 and November 14, 2018 and observed by LGCI.

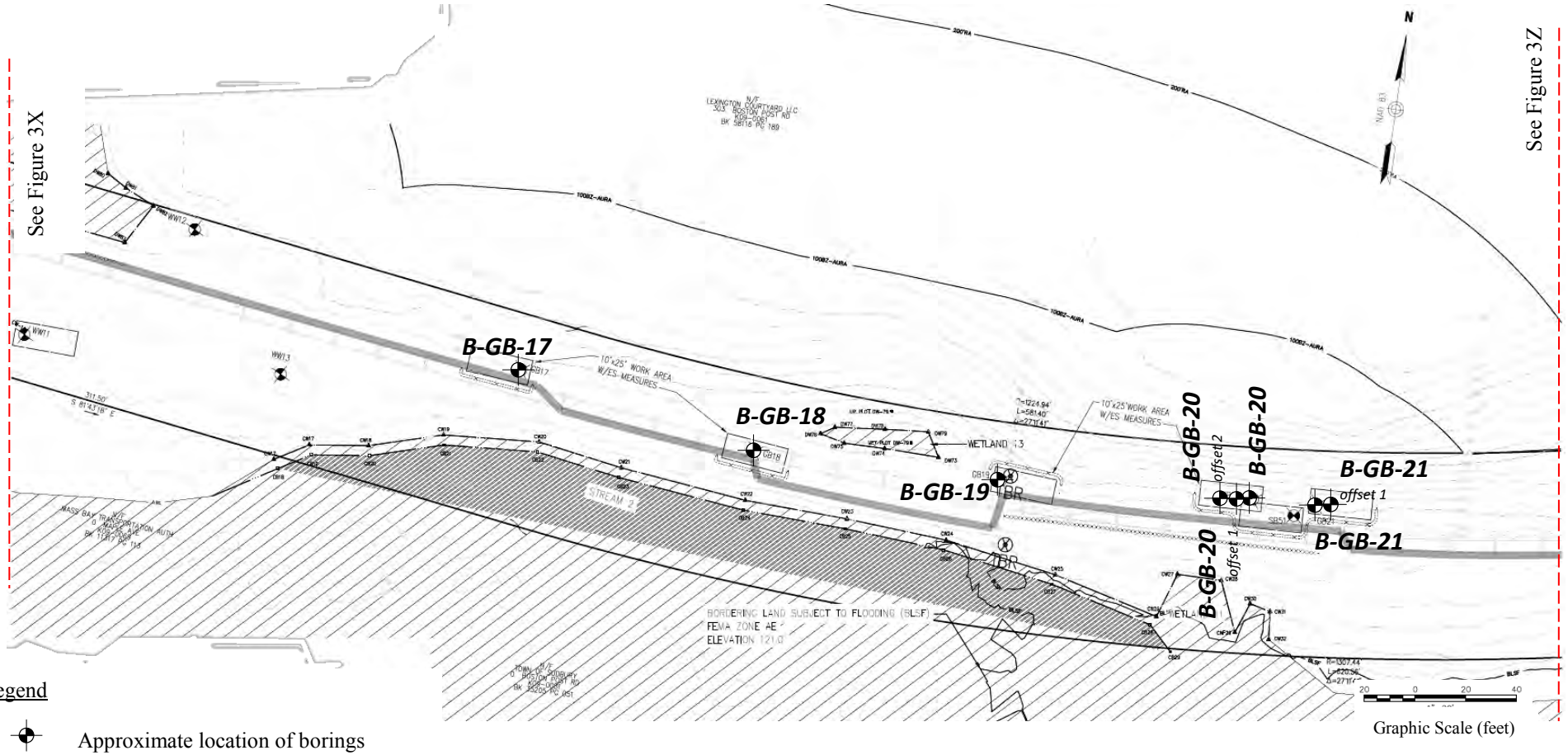
Note

Figure based on Sheets 1 to 42 of a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by Vanasse Hangen Brustlin, Inc., and dated February 5, 2018. Dashed lines are not match lines. The subsequent sheet (Sheet 24) was skipped because no geotechnical borings are located within the area shown on Sheet 24.

Key Plan



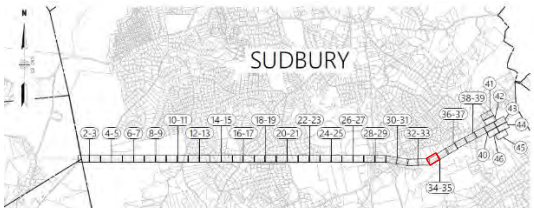
Client: Vanasse Hangen Brustlin, Inc.	Project: Proposed Transmission Power Line Borings	Figure 3P – Boring Location Plan	
LGCI Lahlaf Geotechnical Consulting, Inc.	Project Location: Sudbury, MA	LGCI Project No.: 1836	Date: December 2018



Legend

Approximate location of borings advanced by Geosearch, Inc. of Sterling, MA between September 5 and November 14, 2018 and observed by LGCI.

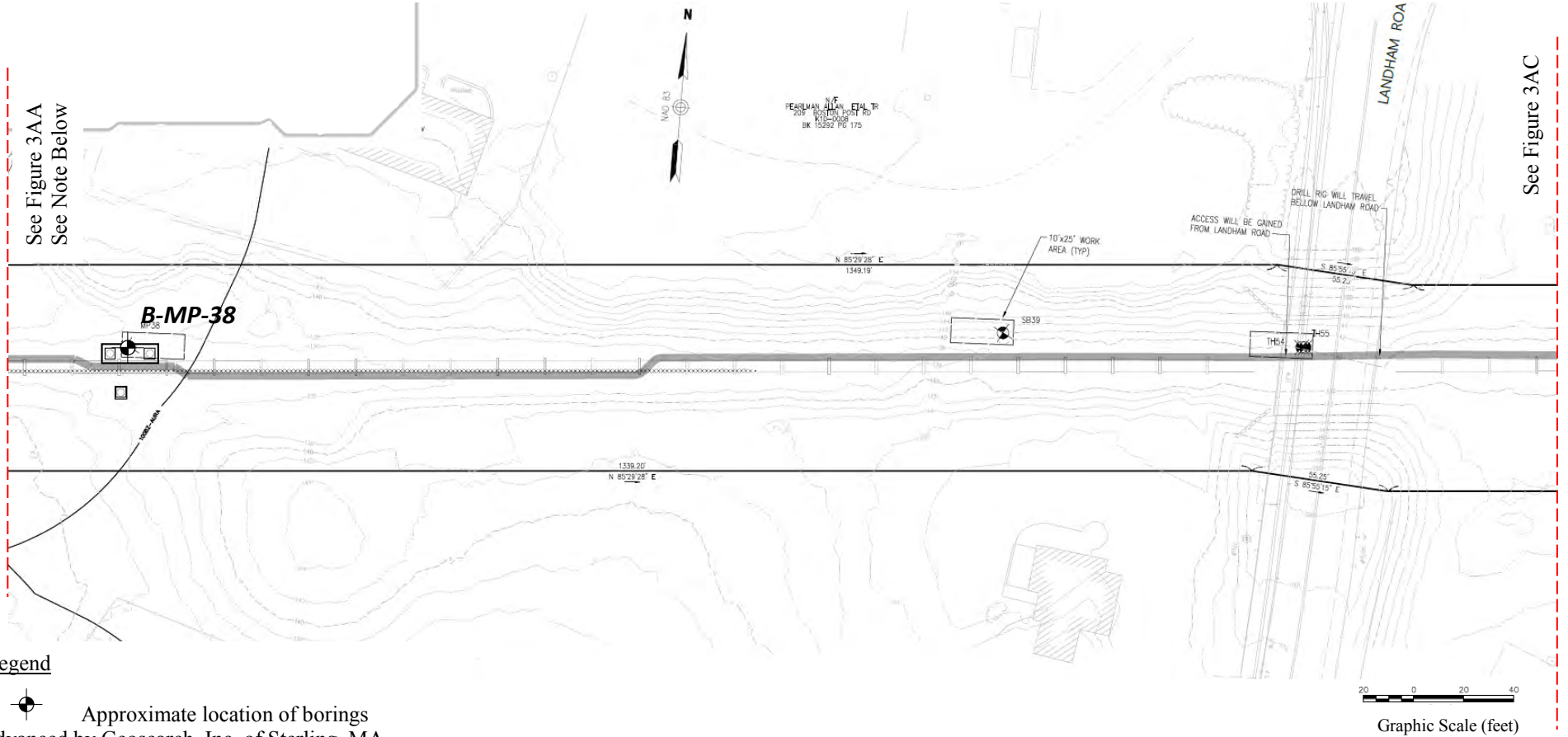
Key Plan



Note

Figure based on Sheets 1 to 42 of a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by Vanasse Hangen Brustlin, Inc., and dated February 5, 2018. Dashed lines are not match lines.

Client: Vanasse Hangen Brustlin, Inc.	Project: Proposed Transmission Power Line Borings	Figure 3Y – Boring Location Plan	
LGCI Lahlaf Geotechnical Consulting, Inc.	Project Location: Sudbury, MA	LGCI Project No.: 1836	Date: December 2018



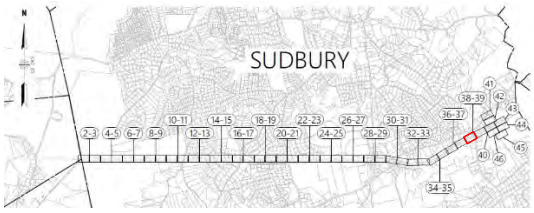
Legend

Approximate location of borings advanced by Geosearch, Inc. of Sterling, MA between September 5 and November 14, 2018 and observed by LGCI.

Note

Figure based on Sheets 1 to 42 of a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by Vanasse Hangen Brustlin, Inc., and dated February 5, 2018. Dashed lines are not match lines. The previous sheet (Sheet 37) were skipped because no geotechnical borings are located within the area shown on Sheet 37.

Key Plan



Client: Vanasse Hangen Brustlin, Inc.	Project: Proposed Transmission Power Line Borings	Figure 3AB – Boring Location Plan	
LGCI Lahlaf Geotechnical Consulting, Inc.	Project Location: Sudbury, MA	LGCI Project No.: 1836	Date: December 2018

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BORING LOG

B-28

CLIENT: Vanasse Hangen Brustlin, Inc.
PROJECT NAME: Proposed Transmission Power Lines
LGCI PROJECT NUMBER: 1836
PROJECT LOCATION: Sudbury, Massachusetts

DATE STARTED: 11/13/18 **DATE COMPLETED:** 11/13/18
BORING LOCATION: MBTA ROW
COORDINATES: NA
SURFACE El.: 198 ft. (see note 1) **TOTAL DEPTH:** 10 ft.
WEATHER: 50s / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: -
AT END OF DRILLING: 5.4 ft. / El. 192.6 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Geosearch, Inc.
DRILLING FOREMAN: Kenny Bylund
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: CME 55 LC ATV
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: KD **CHECKED BY:** MC

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El. (ft.)	Material Description
		0					Forest Mat	0.0 / 197.8	S1 - Encountered ~2 inches of forest mat material
			S1	3-2-7-2 (9)	24/17		Fill		Top 8": Silty SAND (SM), fine, trace medium, 25-30% fines, trace fine gravel, trace organic fines, trace coal ash, dark brown, moist
		2						2.0 / 196.0	Bot. 7": Silty SAND (SM), fine, trace medium, ~20% fines, ~5% fine subangular gravel, trace organic fines, light brown, moist
	195.0		S2	19-33-62-59 (95)	24/20				S2 - Silty SAND (SM), fine, trace medium to coarse, ~20% fines, 0-5% fine gravel, light brown, moist
		4							
5			S3	15-50-64-71 (114)	24/21				S3 - Similar to S2
		6					Sand		
			S4	58-61-72	18/6				S4 - Silty SAND (SM), fine, trace medium to coarse, ~15% fines, ~5% fine gravel, light brown, moist
	190.0	7.5							
		8	S5	13-26-18-14 (44)	24/10				S5 - Well Graded SAND with Silt and Gravel (SW-SM), fine to medium, trace coarse, 10-15% fines, ~15% fine to coarse gravel, light brown, wet
10		10						10.0	Bottom of borehole at 10.0 feet. Backfilled borehole with drill cuttings.
	185.0								
15									
	180.0								
20									
	175.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot based on a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by VHB and dated February 5, 2018.

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BORING LOG

B-33

CLIENT: Vanasse Hangen Brustlin, Inc.
PROJECT NAME: Proposed Transmission Power Lines
LGCI PROJECT NUMBER: 1836
PROJECT LOCATION: Sudbury, Massachusetts

DATE STARTED: 11/08/18 **DATE COMPLETED:** 11/08/18
BORING LOCATION: MBTA ROW, West of Dutton Road
COORDINATES: NA
SURFACE El.: 170 ft. (see note 1) **TOTAL DEPTH:** 17 ft.
WEATHER: 50s / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: -
AT END OF DRILLING: 12.5 ft. / El. 157.5 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Geosearch, Inc.
DRILLING FOREMAN: Kenny Bylund
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: CME 55 LC ATV
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: KD **CHECKED BY:** MC

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El. (ft.)	Material Description
		0					Forest Mat / Topsoil	0.5 / 169.5	S1 - Encountered ~1 inches of forest mat material at ground surface Top 5": Silty SAND (SM), fine to medium, 25-30% fines, trace coal ash, trace organic fines, trace roots, dark brown, moist
		2	S1	2-10-42-28 (52)	24/15	1	Fill		Mid. 4": Silty SAND with Gravel (SM), fine to coarse, 20-25% fines, ~15% fine to coarse subangular gravel, trace organic fines, trace roots, brown, moist Bot. 5": Angular stone fragments REMARK 1: Hevay auger chatter from 2 feet to 4 feet.
		4	S2	16-14-10-11 (24)	24/12	2			S2 - Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, 5-10% fines, 15-20% fine to coarse subangular gravel, trace organic fines, brown, moist
5	165.0		S3	4-13-12-15 (25)	24/18			4.9 / 165.1	REMARK 2: Heavy auger chatter 4 feet to 8 feet. S3 - Top 5": Silty SAND (SM), fine to medium, 25-30% fines, 5-10% fine gravel, trace coal ash, trace organic fines, trace roots, dark brown, moist (Buried Topsoil) Mid. 6": Poorly Graded SAND with Silt and Gravel (SP-SM), fine, trace medium, 5-10% fines, 30-35% fine to coarse subangular gravel, trace organic fines, brown, moist
		6	S4	28-27-24-20 (51)	24/19				Bot. 7": Silty SAND (SM), fine, trace medium, 30-35% slightly plastic fines, trace fine subangular gravel, trace stone fragments, light brown, moist S4 - Silty SAND (SM), fine to medium, trace coarse, ~20% fines, 30-35% fine to coarse subangular gravel, brown, moist
		8	S5	10-12-17-18 (29)	24/12				S5 - Silty GRAVEL with Sand (GM), fine to coarse, angular, ~25% fines, ~35% fine to coarse sand, light brown, wet
10	160.0	10	S6	8-15-20-19 (35)	24/16	3	Sand		REMARK 3: Heavy auger chatter from 10 feet to 15 feet. S6 - Silty SAND with Gravel (SM), fine to medium, ~25% fines, ~15% fine subangular gravel, light brown, wet
		12							
15	155.0	15	S7	11-21-15-17 (36)	24/16				S7 - Similar to S6, fine to coarse, 20-25% fines
		17						17.0	Bottom of borehole at 17.0 feet. Backfilled borehole with drill cuttings.
20	150.0								
25	145.0								

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot based on a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by VHB and dated February 5, 2018.

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BORING LOG

B-35

CLIENT: Vanasse Hangen Brustlin, Inc.
PROJECT NAME: Proposed Transmission Power Lines
LGCI PROJECT NUMBER: 1836
PROJECT LOCATION: Sudbury, Massachusetts

DATE STARTED: 09/06/18 **DATE COMPLETED:** 09/06/18
BORING LOCATION: MBTA ROW
COORDINATES: NA
SURFACE El.: 182 ft. (see note 1) **TOTAL DEPTH:** 8 ft.
WEATHER: 90s / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: -
AT END OF DRILLING: Not Encountered
OTHER: -

DRILLING SUBCONTRACTOR: Geosearch, Inc.
DRILLING FOREMAN: Kenny Bylund
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: CME 55 LC ATV
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: TS **CHECKED BY:** NB

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0	S1	6-5-17-42 (22)	24/24		Fill	1.3	S1 - Top 15": Silty SAND (SM), fine to medium, trace coarse, 15-20% fines, ~5% fine subrounded gravel, trace organic fines, trace roots, trace coal, brown to orange, moist
	180.0	2	S2	33-43-26-22 (69)	24/16		Sand	180.7	Bot. 9": Poorly Graded SAND with Silt and Gravel (SP-SM), fine to coarse, ~10% fines, ~25% fine to coarse subrounded to subangular gravel, light brown, moist S2 - Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, ~10% fines, 15-20% fine to coarse subangular gravel, light brown to orange, moist
5		4	S3	6-16-38-78 (54)	24/12				S3 - Similar to S2, 10-15% fines
	175.0	6	S4	36-84	12/8	1			S4 - Silty SAND with Gravel (SM), fine to coarse, ~15% fines, ~20% fine to coarse subangular gravel, angular stone fragments, gray, moist REMARK 1: Heavy drill chatter from 7 feet to 8 feet.
		7				2		8.0	REMARK 2: Encountered auger refusal at 8 feet. Bottom of borehole at 8.0 feet. Backfilled borehole with drill cuttings.
10									
	170.0								
15									
	165.0								
20									
	160.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot based on a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by VHB and dated February 5, 2018.

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BORING LOG

B-GB-1

CLIENT: Vanasse Hangen Brustlin, Inc.
PROJECT NAME: Proposed Transmission Power Lines
LGCI PROJECT NUMBER: 1836
PROJECT LOCATION: Sudbury, Massachusetts

DATE STARTED: 09/05/18 **DATE COMPLETED:** 09/05/18
BORING LOCATION: MBTA ROW
COORDINATES: NA
SURFACE El.: 180 ft. (see note 1) **TOTAL DEPTH:** 6 ft.
WEATHER: 90s / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: -
AT END OF DRILLING: Not encountered (NE)
OTHER: -

DRILLING SUBCONTRACTOR: Geosearch, Inc.
DRILLING FOREMAN: Kenny Bylund
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: CME 55 LC ATV
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: TS **CHECKED BY:** NB

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
0							Fill	0.8	S1 - Top 9": Silty SAND (SM), fine to coarse, ~25% fines, 10-15% fine to coarse subangular gravel, trace organic fines, trace roots, trace coal, dark brown, moist
		0-2	S1	5-5-20-31 (25)	24/15				Bot. 6": Silty SAND (SM), fine to medium, trace coarse, ~15% fines, 5-10% fine subangular gravel, light brown, moist
2		2-4	S2	40-46-47-48 (93)	24/19		Sand		S2 - Silty SAND (SM), fine to coarse, 15-20% fines, 10-15% fine subangular gravel, angular stone fragments, light brown, moist
4		4-6	S3	26-52-60-53 (112)	24/11				S3 - Similar to S2
5	175.0							6.0	
6									Bottom of borehole at 6.0 feet. Backfilled borehole with drill cuttings.
10	170.0								
15	165.0								
20	160.0								
25	155.0								

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot based on a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by VHB and dated February 5, 2018.

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BORING LOG

B-GB-17

CLIENT: Vanasse Hangen Brustlin, Inc.
PROJECT NAME: Proposed Transmission Power Lines
LGCI PROJECT NUMBER: 1836
PROJECT LOCATION: Sudbury, Massachusetts

DATE STARTED: 10/17/18 **DATE COMPLETED:** 10/17/18
BORING LOCATION: MBTA ROW
COORDINATES: NA
SURFACE El.: 128 ft. (see note 1) **TOTAL DEPTH:** 20 ft.
WEATHER: 60s / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: -
AT END OF DRILLING: 6.8 ft. / El. 121.2 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Geosearch, Inc.
DRILLING FOREMAN: Kenny Bylund
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: CME 55 LC ATV
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: KD **CHECKED BY:** NB

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0.1					Forest Mat	0.3 / 127.7	Encountered ~4 inches of forest mat material. S1 - Top 5": Silty SAND (SM), fine to medium, trace coarse, ~30% fines, 5-10% coal ash, trace fine subangular gravel, trace organic fines, trace roots, trace wood, dark brown, moist
		2.1	S1	3-3-2-1 (5)	24/13				Bot. 8": Silty SAND (SM), fine to medium, trace coarse, ~15% fines, trace organic fines, trace roots, trace coal ash, brown, moist
	125.0	2	S2	2-1-3-5 (4)	24/21		Fill		S2 - Silty SAND (SM), fine, 25-30% fines, 5-10% fine subangular gravel, trace organic fines, trace roots, light brown, moist
		4	S3	2-3-5-7 (8)	24/17				S3 - Silty SAND (SM), fine, ~25% fines, 5-10% fine subangular gravel, trace organic fines, trace roots, light brown to orange, moist
5		6	S4	2-36-27-26 (63)	24/13			6.4 / 121.6	S4 - Top 5": Silty SAND (SM), fine to coarse, ~25% fines, ~5% fine subangular gravel, trace organic fines, trace roots, trace peat fibers, trace wood, dark brown, moist
	120.0	8	S5	3-6-8-6 (14)	24/20				Bot. 8": Silty SAND with Gravel (SM), fine to coarse, ~20% fines, 15-20% fine to coarse subangular gravel, brown to orange, wet S5 - Silty SAND (SM), fine, trace medium, 25-30% fines, trace fine subangular gravel, light brown with orange mottles, wet
10		10							
	115.0	13	S6	3-4-10-8 (14)	24/24		Sand		S6 - Top 18": SILT with Sand (ML), nonplastic, ~15% fine sand, light brown, wet
15		15							Bot. 6": Silty SAND (SM), fine, trace medium to coarse, ~35% fines, trace fine subangular gravel, light brown, wet
	110.0	18	S7	4-3-5-6 (8)	24/22				S7 - Top 10": Silty SAND (SM), fine to coarse, 35-40% fines, trace fine subangular gravel, light brown, wet Bot. 12": SILT with Sand (ML), nonplastic, ~15% fine sand, light brown, wet
20		20						20.0	
	105.0								Bottom of borehole at 20.0 feet. Backfilled borehole with drill cuttings.
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot based on a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by VHB and dated February 5, 2018.

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BORING LOG

B-GB-21

CLIENT: Vanasse Hangen Brustlin, Inc.
PROJECT NAME: Proposed Transmission Power Lines
LGCI PROJECT NUMBER: 1836
PROJECT LOCATION: Sudbury, Massachusetts

DATE STARTED: 10/23/18 **DATE COMPLETED:** 10/24/18
BORING LOCATION: MBTA ROW
COORDINATES: NA
SURFACE El.: 132 ft. (see note 1) **TOTAL DEPTH:** 20 ft.
WEATHER: 50s / Rainy
GROUNDWATER LEVELS:
DURING DRILLING: 4.2 ft. / El. 127.8 ft. at end of drilling on 10/23/18
AT END OF DRILLING: 3.0 ft. / El. 129.0 ft. before drilling on 10/24/18
OTHER: -

DRILLING SUBCONTRACTOR: Geosearch, Inc.
DRILLING FOREMAN: Kenny Bylund
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: CME 55 LC ATV
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: KD **CHECKED BY:** MC

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0.3					Forest Mat	0.3 / 131.7	Encountered ~3 inches of forest mat material.
	130.0	2.3	S1	6-10-14-17 (24)	24/19				S1 - Top 9": Coal ash, trace organic fines, trace roots, dark brown, moist Bot. 10": Silty SAND (SM), fine, trace medium to coarse, 15-20% fines, trace fine subangular gravel, trace organic fines, trace roots, brown, moist
		2	S2	17-21-22-9 (43)	24/18				S2 - Top 13": Silty SAND (SM), fine to medium, ~20% fines, 5-10% fine angular gravel, trace organic fines, brown, moist Bot. 5": Silty SAND with Gravel (SM), fine, 25-30% fines, 35-40% fine to coarse subangular gravel, trace organic fines, trace roots, brown, moist
5		4	S3	9-6-7-11 (13)	24/19		Fill		S3 - Top 4": Silty SAND (SM), fine to coarse, ~15% fines, trace fine subangular gravel, trace coal ash, dark brown, moist Bot. 15": Silty SAND (SM), fine, 30-35% fines, trace organic fines, brown, wet
	125.0	6	S4	5-77-29-13 (106)	24/20				S4 - Top 11": SILT with Sand (ML), slightly plastic, ~20% fine sand, trace organic fines, trace roots, orange to brown, wet Bot. 9": Silty SAND with Gravel (SM), fine to coarse, ~20% fines, ~15% fine subangular gravel, angular stone fragments, trace organic fines, brown, wet
		8	S5	60-29-29-47 (58)	24/9				S5 - Silty SAND with Gravel (SM), fine to coarse, ~20% fines, 25-30% fine to coarse subangular gravel, angular stone fragments, trace organic fines, brown, wet
10		10	S6	29-28-25-18 (53)	24/8			10.0 / 122.0	S6 - Silty SAND with Gravel (SM), fine to medium, trace coarse, ~20% fines, ~25% fine to coarse subangular gravel, brown, wet
	120.0	12	S7	55-48-30-11 (78)	24/16				S7 - Similar to S6, 30-35% fine to coarse subangular gravel
		14	S8	22-15-37-43 (52)	24/9		Sand		S8 - Similar to S6, fine to coarse sand
15		16	S9	25-25-25-17 (50)	24/8				S9 - Silty SAND with Gravel (SM), fine to coarse, ~15% fines, 35-40% fine to coarse subangular gravel, angular stone fragments, brown, wet
	115.0	18	S10	27-110-72-80 (182)	24/15	1			REMARK 1: Casing broke at 18 feet. Offset borehole ~5 feet west form original boring location. Advanced augers to 16 feet and encountered rock. Offset borehole ~7 feet east of original boring location and advanced augers to 18 feet.
20		20				2		20.0	S10 - Well Graded SAND with Silt and Gravel (SW-SM), fine to coarse, ~10% fines, 30-35% fine to coarse subangular gravel, trace organic fines, trace roots, brown, wet REMARK 2: Encountered spoon bouncing on hardcobstruction at ~ 20 feet, terminated boring. Bottom of borehole at 20.0 feet. Backfilled borehole with drill cuttings.
	110.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot based on a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by VHB and dated February 5, 2018.

LGCI Lahlaf Geotechnical Consulting, Inc.
100 Chelmsford Road, Suite 2
Billerica, MA 01862
Telephone: (978) 330-5912
Fax: (978) 330-5056

BORING LOG

B-MP-27

CLIENT: Vanasse Hangen Brustlin, Inc.
PROJECT NAME: Proposed Transmission Power Lines
LGCI PROJECT NUMBER: 1836
PROJECT LOCATION: Sudbury, Massachusetts

DATE STARTED: 11/05/18 **DATE COMPLETED:** 11/05/18
BORING LOCATION: MBTA ROW
COORDINATES: NA
SURFACE El.: 162 ft. (see note 1) **TOTAL DEPTH:** 15 ft.
WEATHER: 50s / Sunny
GROUNDWATER LEVELS:
DURING DRILLING: -
AT END OF DRILLING: 10.5 ft. / El. 151.5 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Geosearch, Inc.
DRILLING FOREMAN: Kenny Bylund
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: CME 55 LC ATV
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: KD **CHECKED BY:** MC

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El.(ft.)	Material Description
		0					Forest Mat	0.6	S1 - Encountered ~2 inches of forest mat material at ground surface
							Topsoil	161.4	Top 6": Silty SAND (SM), fine, trace medium, 25-30% fines, ~5% fine gravel, trace coal ash, trace organic fines, trace roots, dark brown, moist
	160.0	2	S1	3-3-5-6 (8)	24/24				Bot. 16": Poorly Graded SAND with Silt (SP-SM), fine, trace medium to coarse, ~5% fines, light brown to orange, moist
		4	S2	7-7-7-7 (14)	24/20				S2 - Poorly Graded SAND (SP), fine, trace medium, ~5% fines, light brown to orange, moist
5		6	S3	3-5-6-5 (11)	24/16				S3 - Similar to S2, trace fine gravel, orange, moist
	155.0	8	S4	4-5-5-5 (10)	24/20		Sand		S4 - Similar to S2, light brown, wet
10									
	150.0	13	S5	3-4-7-3 (11)	24/18				S5 - Poorly Graded SAND with Silt (SP-SM), fine, trace medium, 5-10% fines, light brown, wet
15		15						15.0	Bottom of borehole at 15.0 feet. Backfilled borehole with drill cuttings.
	145.0								
20									
	140.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot based on a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by VHB and dated February 5, 2018.

LGCI
Lahlaf Geotechnical Consulting, Inc.
100 Chelmsford Road, Suite 2
Billerica, MA 01862
Telephone: (978) 330-5912
Fax: (978) 330-5056

BORING LOG

B-MP-38

CLIENT: Vanasse Hangen Brustlin, Inc.
PROJECT NAME: Proposed Transmission Power Lines
LGCI PROJECT NUMBER: 1836
PROJECT LOCATION: Sudbury, Massachusetts

DATE STARTED: 10/26/18 **DATE COMPLETED:** 10/26/18
BORING LOCATION: MBTA ROW, western side of Landham Road
COORDINATES: NA
SURFACE El.: 136 ft. (see note 1) **TOTAL DEPTH:** 16.5 ft.
WEATHER: 40s / Partly Cloudy
GROUNDWATER LEVELS:
DURING DRILLING: -
AT END OF DRILLING: 5.0 ft. / El. 131.0 ft.
OTHER: -

DRILLING SUBCONTRACTOR: Geosearch, Inc.
DRILLING FOREMAN: Kenny Bylund
DRILLING METHOD: Hollow Stem Auger (4-1/4" I.D.)
DRILL RIG TYPE/MODEL: CME 55 LC ATV
HAMMER TYPE: Automatic
HAMMER WEIGHT: 140 lb. **HAMMER DROP:** 30 in.
SPLIT SPOON DIA.: 1.375 in. I.D., 2 in. O.D.
CORE BARREL SIZE: NA
LOGGED BY: KD **CHECKED BY:** MC

Depth (ft.)	El. (ft.)	Sample Interval (ft.)	Sample Number	Blow Counts (N Value)	Pen./Rec. (in.)	Remark	Strata	Depth El. (ft.)	Material Description
		0.1					Forest Mat	0.1 / 135.9	Encountered ~1 inch of forest mat material.
	135.0	2.1	S1	4-6-10-8 (16)	24/16		Fill		S1 - Top 5": Silty SAND (SM), fine to medium, trace coarse, 20-25% fines, coal ash, trace organic fines, trace roots, dark brown, moist Bot. 10": Poorly Graded SAND with Silt (SP-SM), fine, trace medium, ~10% fines, trace fine subangular gravel, trace organic fines, light brown, moist
		2	S2	6-5-10-7 (15)	24/5				S2 - Silty SAND with Gravel (SM), fine to medium, trace coarse, 25-30% fines, ~30% fine to coarse subangular gravel, trace organic fines, trace roots, dark brown, moist
		4	S3	6-15-14-15 (29)	24/24				S3 - Silty SAND (SM), fine to medium, trace coarse, ~20% fines, 10-15% fine angular gravel, trace organic fines, trace roots, brown, moist
5	130.0	6	S4	17-20-21-21 (41)	24/20			6.4 / 129.6	S4 - Top 5": Similar to S3 Bot. 15": Silty SAND with Gravel (SM), fine to medium, 20-25% fines, ~15% fine subangular gravel, angular stone fragments, light brown to gray, moist
		8	S5	9-12-20-15 (32)	24/18				S5 - Similar to Bot. 15" of S4, ~20% fine subangular gravel
10	125.0	10	S6	26-20-11-18 (31)	24/10		Sand		S6 - Silty SAND with Gravel (SM), fine to medium, ~20% fines, ~20% fine subangular gravel, light brown, wet
15	120.0	15	S7	25-29-14-120/0" (43)	18/10				S7 - Similar to S6, ~25% fines, 25-30% fine to coarse subangular gravel
		16.5				1		16.5	REMARK 1: Encountered spoon refusal at 16.5 feet. Bottom of borehole at 16.5 feet. Backfilled borehole with drill cuttings.
20	115.0								
25									

GENERAL NOTES:

1. The ground surface elevation was interpolated to the nearest foot based on a drawing titled: "Proposed Conditions Plans for Notice of Intent Submittal, Sudbury-Hudson Transmission Reliability Project, Sudbury, Massachusetts," prepared by VHB and dated February 5, 2018.

Required and Provided Recharge Volumes

Recharge Calculations

Project Name:	Sudbury-Hudson	**Proj. No.:**	14009.00
		Date:	July 2020
Project Location:	Sudbury, MA	**Calculated by:**	AHF
		Checked by:	KSS

Proposed Impervious Surface Summary

Net Proposed Impervious Areas by Hydrologic Soil Group (HSG) in square feet

Subcatchment	HSG A	HSG B	HSG C	HSG D	Total Area (SF)
All	169,274	0	2,657	54,232	226,164
TOTAL	**169,274**	**0**	**2,657**	**54,232**	**226,164**

Required Recharge Volume (Cubic Feet)

HSG	Area (SF)	Recharge Depth* (in.)	Volume (c.f.)
A	169,274	0.60	8,464
B	0	0.35	0
C	2,657	0.25	55
D	54,232	0.10	452
TOTAL			**8,971**

Assumptions:

* Massachusetts DEP Infiltration requirement: HSG A = 0.60 in; HSG B = 0.35 in; HSG C = 0.25 in; HSG D = 0.10 in.

Capture Area Adjustment

Required Recharge Volume	8,971	c.f.
Total Site Net Impervious Area	5.2	acres
Total Site Impervious Area Draining to Recharge Facilities	2.2	acres
Capture Area Adjustment Factor	2.35	-
Adjusted Required Recharge Volume:	**21,121**	**c.f.**

Provided Recharge Volume Summary

Basin	Volume
Area of Increased Infiltration P-5.8B	226 c.f.
Area of Increased Infiltration P-5.14B	191 c.f.
Area of Increased Infiltration P-5.18B	46 c.f.
Surface Basin Area of Increased Infiltration P-6.2	473 c.f.
Area of Increased Infiltration P-6.6A	413 c.f.
Surface Basin Area of Increased Infiltration P-7.1	104 c.f.
Area of Increased Infiltration P-8.2B	578 c.f.
Area of Increased Infiltration P-8.3B	1,262 c.f.
Area of Increased Infiltration P-8.4B	578 c.f.
Area of Increased Infiltration P-8.5A	816 c.f.
Area of Increased Infiltration P-10.6A	653 c.f.
Area of Increased Infiltration P-10.7A	198 c.f.
Area of Increased Infiltration P-10.12A	258 c.f.
Area of Increased Infiltration P-10.13A	320 c.f.
Total Recharge Volume Provided:	**6,116 c.f.**

Required Recharge Volume: **21,121 c.f.**

Appendix D – Standard 4 Computations and Supporting Information

Water Quality Volume Calculations

Water Quality Volume Calculations

Project Name: Sudbury-Hudson **Proj. No.:** 14009.00

Project Location: Sudbury, MA **Date:** July 2020

Calculated by: AHF

Checked by: KSS

Total Proposed Impervious Area = 5.2 Acres

Required:

	Runoff Depth to be Treated (in.)	Required Volume (c.f.)
Water Quality Volume	1	18,847

Areas of Increased Infiltration P-5.8B

Provided:

Infiltration Basin	Elevation	Area (s.f.)	Cumulative Volume (c.f.)
.	200.1	0	0
	200.6	902	226

Drawdown Calculation

Recharge Rate: 0.27 in/hr*

Drawdown Time: 22.2 hours

* Rawls Rate per site specific soil samples

Based upon the Massachusetts Stormwater Handbook: Volume 3: Drawdown Simple Method. The bottom area of the recharge has been approximated using the average surface area.

Areas of Increased Infiltration P-5.14B

Provided:

Infiltration Basin	Elevation	Area (s.f.)	Cumulative Volume (c.f.)
.	170.8	0	0
	171.3	765	191

Drawdown Calculation

Recharge Rate: 1.02 in/hr*

Drawdown Time: 5.9 hours

* Rawls Rate per site specific soil samples

Based upon the Massachusetts Stormwater Handbook: Volume 3: Drawdown Simple Method. The bottom area of the recharge has been approximated using the average surface area.

Areas of Increased Infiltration P-5.18B

Provided:

Infiltration Basin	Elevation	Area (s.f.)	Cumulative Volume (c.f.)
.	172.4		0
	172.9	185	46

Drawdown Calculation

Recharge Rate: 0.17 in/hr*

Drawdown Time: 17.6 hours

* Rawls Rate per site specific soil samples

Based upon the Massachusetts Stormwater Handbook:

Volume 3: Drawdown Simple Method. The bottom area of the recharge has been approximated using the average surface area.

Surface Basin Area of Increased Infiltration P-6.2

Provided:

Infiltration Basin	Elevation	Area (s.f.)	Cumulative Volume (c.f.)
.	181.5	431	0
	182.0	559	248
	182.3	946	473

Drawdown Calculation

Recharge Rate: 2.41 in/hr* * Rawls Rate per site specific soil samples

Drawdown Time: 3.1 hours Based upon the Massachusetts Stormwater Handbook:

Volume 3: Drawdown Simple Method. The bottom area of the recharge has been approximated using the average surface area.

Areas of Increased Infiltration P-6.6A

Provided:

Infiltration Basin	Elevation	Area (s.f.)	Cumulative Volume (c.f.)
.	178.9	0	0
	179.4	1,650	413

Drawdown Calculation

Recharge Rate: 0.27 in/hr* * Rawls Rate per site specific soil samples

Drawdown Time: 22.2 hours Based upon the Massachusetts Stormwater Handbook: Volume 3: Drawdown Simple Method. The bottom area of the recharge has been approximated using the average surface area.

Surface Basin Area of Increased Infiltration P-7.1

Provided:

Infiltration Basin	Elevation	Area (s.f.)	Cumulative Volume (c.f.)
.	159.5	162	0
	160.0	252	104

Drawdown Calculation

Recharge Rate: 0.17 in/hr* * Rawls Rate per site specific soil samples

Drawdown Time: 35.3 hours Based upon the Massachusetts Stormwater Handbook: Volume 3: Drawdown Simple Method. The bottom area of the recharge has been approximated using the average surface area.

Areas of Increased Infiltration P-8.2B

Provided:

Infiltration Basin	Elevation	Area (s.f.)	Cumulative Volume (c.f.)
.	162.0	0	0
	162.5	2,312	578

Drawdown Calculation

Recharge Rate: 0.17 in/hr* * Rawls Rate per site specific soil samples

Drawdown Time: 35.3 hours Based upon the Massachusetts Stormwater Handbook: Volume 3: Drawdown Simple Method. The bottom area of the recharge has been approximated using the average surface area.

Areas of Increased Infiltration P-8.3B

Provided:

Infiltration Basin	Elevation	Area (s.f.)	Cumulative Volume (c.f.)
.	158.5	0	0
	159.0	5,048	1,262

Drawdown Calculation

Recharge Rate: 0.17 in/hr* * Rawls Rate per site specific soil samples

Drawdown Time: 35.3 hours Based upon the Massachusetts Stormwater Handbook:

Volume 3: Drawdown Simple Method. The bottom area of the recharge has been approximated using the average surface area.

Areas of Increased Infiltration P-8.4B

Provided:

Infiltration Basin	Elevation	Area (s.f.)	Cumulative Volume (c.f.)
.	159.4	0	0
	159.9	2,313	578

Drawdown Calculation

Recharge Rate: 0.17 in/hr* * Rawls Rate per site specific soil samples

Drawdown Time: 35.3 hours Based upon the Massachusetts Stormwater Handbook: Volume 3: Drawdown Simple Method. The bottom area of the recharge has been approximated using the average surface area.

Areas of Increased Infiltration P-8.5A

Provided:

Infiltration Basin	Elevation	Area (s.f.)	Cumulative Volume (c.f.)
.	147.7	0	0
	148.2	3,262	816

Drawdown Calculation

Recharge Rate: 0.17 in/hr* * Rawls Rate per site specific soil samples

Drawdown Time: 35.3 hours Based upon the Massachusetts Stormwater Handbook: Volume 3: Drawdown Simple Method. The bottom area of the recharge has been approximated using the average surface area.

Areas of Increased Infiltration P-10.6A

Provided:

Infiltration Basin	Elevation	Area (s.f.)	Cumulative Volume (c.f.)
.	128.9	0	0
	129.4	2,611	653

Drawdown Calculation

Recharge Rate: 1.02 in/hr* * Rawls Rate per site specific soil samples

Drawdown Time: 5.9 hours Based upon the Massachusetts Stormwater Handbook: Volume 3: Drawdown Simple Method. The bottom area of the recharge has been approximated using the average surface area.

Areas of Increased Infiltration P-10.7A

Provided:

Infiltration Basin	Elevation	Area (s.f.)	Cumulative Volume (c.f.)
.	127.2	0	0
	127.7	793	198

Drawdown Calculation

Recharge Rate: 0.17 in/hr* * Rawls Rate per site specific soil samples

Drawdown Time: 35.3 hours Based upon the Massachusetts Stormwater Handbook: Volume 3: Drawdown Simple Method. The bottom area of the recharge has been approximated using the average surface area.

Areas of Increased Infiltration P-10.12A

Provided:

Infiltration Basin	Elevation	Area (s.f.)	Cumulative Volume (c.f.)
.	136.5	0	0
	137.0	1,030	258

Drawdown Calculation

Recharge Rate: 1.02 in/hr* * Rawls Rate per site specific soil samples

Drawdown Time: 5.9 hours Based upon the Massachusetts Stormwater Handbook:

Volume 3: Drawdown Simple Method. The bottom area of the recharge has been approximated using the average surface area.

Areas of Increased Infiltration P-10.13A

Provided:

Infiltration Basin	Elevation	Area (s.f.)	Cumulative Volume (c.f.)
.	136.6	0	0
	137.1	1,280	320

Drawdown Calculation

Recharge Rate: 1.02 in/hr* * Rawls Rate per site specific soil samples

Drawdown Time: 5.9 hours Based upon the Massachusetts Stormwater Handbook: Volume 3: Drawdown Simple Method. The bottom area of the recharge has been approximated using the average surface area.

Provided Water Quality Volume Summary

Areas of Increased Infiltration P-5.8B	226	CF
Areas of Increased Infiltration P-5.14B	191	CF
Areas of Increased Infiltration P-5.18B	46	CF
Basin P-6.2	473	CF
Areas of Increased Infiltration P-6.6A	413	CF
Basin P-7.1	104	CF
Areas of Increased Infiltration P-8.2B	578	CF
Areas of Increased Infiltration P-8.3B	1,262	CF
Areas of Increased Infiltration P-8.4	578	CF
Areas of Increased Infiltration P-8.5A	816	CF
Areas of Increased Infiltration P-10.6A	653	CF
Areas of Increased Infiltration P-10.7A	198	CF
Areas of Increased Infiltration P-10.12A	258	CF
Areas of Increased Infiltration P-10.13A	320	CF
Total Water Quality Volume Provided:	**6,116**	CF
Total Water Quality Volume Required:	**18,847**	CF

TSS Removal Worksheet

TSS Removal Calculations

Proj. No.: 14009.00
Project Name: Sudbury Hudson Eversource
Date: July 2020
Calculated by: RPL
Project Location: Sudbury/Hudson, MA
Checked by: AHF

The Project is meeting Standard 4 to the maximum extent practicable. In order to demonstrate compliance to the extent practicable the EPA's Massachusetts MS4 General Permit BMP Performance Tables are used to estimate the TSS Removal at each of the Areas of Increased Infiltration. Infiltration Trenches were used to determine runoff reduction for Areas of Increased Infiltration and Infiltration Basins were used for the two Surface Basins with Areas of Increased Infiltration. The percent volume reduction of a BMP is conservatively assumed to be equivalent to the percent of total suspended solids removed from the stormwater runoff. The percent runoff reduction is based on the depth of impervious area runoff treated by the BMP. See table below for calculations. Refer to Attachment 3 in Appendix F of the MA MS4 General Permit for the Performance Curves/Tables.

BMP ID:	Water Quality Volume CF	Contributing Impervious Area* SF	Depth of Runoff Treated from Impervious Area inches	Infiltration Rate (IR) in/hr	Runoff Volume Reduction**/TSS Removal %
Areas of Increased Infiltration					
P-5.8B	226	2,004	1.4	0.27	93
P-5.14B	191	2,352	1.0	1.02	92
P-5.18B	46	654	0.8	0.17	75
P-6.6A	413	7,710	0.6	0.27	70
P-8.2B	578	4,323	1.6	0.17	95
P-8.3B	1262	8,668	1.7	0.17	95
P-8.4B	578	6,970	1.0	0.17	82
P-8.5A	816	8,973	1.1	0.17	84
P-10.6A	653	3,354	2.3	1.02	98
P-10.7A	198	3,049	0.8	0.17	75
P-10.12A	258	2,047	1.5	1.02	92
P-10.13A	320	34,107	0.1	1.02	15
Surface Basins Area of Increased Infiltration					
P-6.2	473	8,451	0.7	2.41	91
P-7.1	104	3,398	0.4	0.17	44

* These calculations conservatively include all impervious area contributing to the BMP, including existing impervious area

**Runoff Volume Reduction is determined from the EPA's Massachusetts MS4 General Permit Appendix F, Attachment 2, BMP Performance Tables for Infiltration Trenches (Tables 3-4 through 3-8), and Infiltration Basins (Tables 3-10 and 3-14). TSS Removal rates were conservatively assumed to equal reported runoff volumes

Appendix E – Standard 8 Supporting Information (Draft SWPPPs Manual)

Sudbury-Hudson Transmission Reliability Project

Sudbury, Marlborough, Stow, Hudson

CONSTRUCTION ACTIVITIES AT:
Inactive MBTA ROW
Sudbury, Marlborough, Stow, and Hudson; and
Wilkins Street and Forest Avenue in Hudson

PREPARED ON BEHALF OF:
NSTAR Electric d/b/a Eversource Energy
Eversource Energy
247 Station Drive
Westwood, MA 02090

PREPARED FOR:
Denise Bartone
Senior Environmental Engineer
247 Station Drive
Westwood, MA 02090
(781) 441-8174
Denise.Bartone@eversource.com

PREPARED BY:
Vanasse Hangen Brustlin, Inc.
101 Walnut Street
PO Box 9151
Watertown, MA 02471
(617) 924-1770

SWPPP Preparation Date: May 2020
Estimated Project Start Date: XX
Estimated Project End Date: XX

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1

Introduction

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This Stormwater Pollution Prevention Plan (SWPPP) manual has been prepared to address the requirements of the U.S. Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) for Stormwater Discharges from Construction Activity (2017, USEPA). A copy of the 2017 CGP is included in Attachment A.

The CGP gives **Project Operators** of construction activities that meet the eligibility requrements of Part 1.1 of the 2017 CGP, authorization to discharge:

- stormwater as defined in Part 1.2.1 of the 2017 CGP, and
- non-stormwater associated with some construction activities as defined in part 1.2.2 of the 2017 CGP provided that adequate measures are taken to prevent pollution to receiving waters.

This manual is specific to project sites in **Massachusetts**, where the EPA is the permitting authority for stormwater discharges from construction sites nationally.

How to Use this Manual

This manual does not become a CGP-compliant SWPPP until the Project Operators:

- finalize the SWPPP by completing the initial activities indicated on the following pages and
- by maintaining the SWPPP during the construction period in accordance with the 2017 CGP.

Before the project activities begin, the Project Operators must review this manual, fill out relevant information in the spaces provided (or attach additional pages as necessary) and update and/or revise as necessary.

What is a Project Operator?

The 2017 CGP provides permit coverage for Project Operators (Operator) to discharge stormwater from construction sites. An Operator is any party associated with a construction project that meets either of the following two criteria:

- The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or
- The party has day-to-day operational control of those activities at a project, which are necessary to ensure compliance with a SWPPP for the site or other permit conditions (e.g., they are authorized to direct workers at a site to carry out activities required by the SWPPP or comply with other permit conditions).

Operators are responsible for maintaining compliance with the terms of the 2017 CGP.

All operators who wish to obtain coverage to discharge stormwater under the 2017 CGP must submit and certify their own NOI to the Environmental Protection Agency (EPA).

Eversource adopts the role of the Project Operator. Contractors and subcontractors certify that they have reviewed and will follow the provisions of the SWPPP. See Attachment B.

Eligibility for Permit Coverage

To be covered under the 2017 CGP, a party must meet the eligibility conditions and follow the requirements for obtaining permit coverage. To be eligible for coverage:

- You must be an Operator of a construction site for which discharges will be covered under this permit.
- The project's construction activities:
  - will disturb one (1) or more acres of land, or less than one (1) acre of land if the project is part of a larger common plan that will ultimately disturb one (1) or more acres of land.
  - have been designated by EPA as needing permit coverage under 40 CFR 122.26(a)(1)(v) or 40 CFR 122.26(b)(15)(ii).
- Discharges from your site are not already covered by a different NPDES permit for the same discharge or in the process of having coverage under a different NPDES permit for the same discharge denied, terminated, or revoked.
- The project meets the requirements relevant to the Endangered Species Act (ESA) (Section 9.1).
- The project meets the requirements relevant to preservation of Historic Properties (Section 9.2).
- The project meets the requirements relevant to water quality impacts to designated waters (Section 3.2. Refer to Part 1.1.8 and 1.1.9 of the 2017 CGP).

Project Operators must file and certify an NOI at least fourteen (14) days prior to the start of project activities. https://www.epa.gov/compliance/npdes-ereporting

Compliance Requirements

Compliance with the 2017 CGP is achieved by:

- Developing a draft SWPPP (this document);
- Identifying project operators and responsible parties and obtaining authorization to perform permit compliance activities. (Section 2.1 and Attachment A);
- Submitting and certifying a Notice of Intent (NOI) to the Environmental Protection Agency (EPA) Construction General Permit Program;
- Installing a sign or other notice posted conspicuously at a safe, publicly accessible location, in close proximity to the project site. At a minimum, the notice shall include:
  - The NPDES Permit tracking number,
  - A contact name and phone number for obtaining additional project information,
  - The location where an EPA inspector or a member of the public may access a copy of the current SWPPP,
  - The statement: "If you observe indicators of stormwater pollutants in the discharge or in the receiving waterbodies, contact the EPA through the following website: https://www.epa.gov/enforcement/report-environmental-violations."
- Updating this SWPPP as necessary and maintaining compliance with the CGP and any and all Orders of Conditions during construction period activities; and
- Maintaining an updated copy of the SWPPP on the project site.

Document Control

A current copy of the following documents:

1. 2017 NPDES CGP,
2. the SWPPP and all attachments and insertions, and
3. EPA-issued authorizations must be kept **on site** at the Project field office so that they can be made available:
   - at the time of an on-site inspection by the EPA
   - upon request by EPA; a state; tribal; or local agency that approves stormwater management plans;
   - the operator of a storm sewer system receiving discharges from the site;
   - or representatives of the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS).

If an on-site location is unavailable for storing these documents, a notice of the plan's location must be posted near the main entrance of the construction site.

These documents may be made available to the general public by federal, state, or local agencies. These documents must be retained for at least 3 years from the date that the permit coverage expires or is terminated.

The SWPPP is a dynamic document, and must be continually updated by the Operator(s) throughout construction. It is the responsibility of the Operator(s) to update and complete this manual by including the following information and performing ongoing project activity logging as described in the remainder of this document.

Task Completed	Task	See Sections
☐	Designate and Provide Contact Information for the Responsible Parties	Section 1 Attachment B Section 8.8 Attachment N
☐	Provide documentation confirming EPA authorization of the Project	Attachment C
☐	Provide a construction schedule including dates of major earthwork, stabilization and/or erosion control installations.	Table 24 Appendix J
☐	Review the Erosion and Sediment Controls described in this manual and add or update as needed. Document the installation and maintenance of Erosion and Sediment Controls.	Section 7 Attachment E Attachment J Attachment O Attachment S
☐	Identify any chemical treatments that may be applied to the site and describe dosage, application techniques, and training for personnel.	Section 7.12 Attachment P
☐	Identify potential sources of pollution.	Table 48 Section 8.1
☐	Provide documentation of correspondence congruent with the Endangered Species Act	Section 9.1 Attachment F
☐	Provide documentation of correspondence with Massachusetts Historical Commission. Submit the Project Notification Form (PNF) to Massachusetts Historic Commission	Section 9.2 Attachment G
☐	Provide documentation of compliance with DEP regulations 310 CMR 27.00 (Underground Injection Wells)	Section 9.3 Attachment Q

The SWPPP must be kept up to date throughout the construction period until a Notice of Termination (NOT) Form has been submitted to the EPA. From the date of submital of the NOT form, the SWPPP documents must be maintained by the Operator(s) for a period of three years.

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2

Contact Information and Responsible Parties

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2.1 Operators(s)

Individuals identified in this section are designated responsible parties for each of the project Operators. Project Operators may include, but not be limited to the site Owner, the project owner, and the general contractor. Amend this Section during the construction period if any ownership changes or any temporary or permanent staff changes occur.

Table 1 Project Role: Owner

Company or Organization:	Eversource
Name:	Michael Hager
Address:	247 Station Drive
City, State, Zip	Westwood, MA 02090
Telephone:	(781) 441-8206
Fax/Email:	Michael.Hager@eversource.com
Title:	Project Manager

Table 2 Project Role: Owner

Company or Organization:	Eversource
Name:	Denise Bartone
Address:	247 Station Drive
City, State, Zip	Westwood, MA 02090
Telephone:	(781) 441-8174
Fax/Email:	Denise.Bartone@eversource.com
Title:	Manager, Licensing & Permitting

Table 3 Project Role: General Contractor

Company or Organization:	[TBD]
Name:	[enter]
Address:	[enter]
City, State, Zip	[enter]
Telephone:	[enter]
Fax/Email:	[enter]
Title:	[enter]

Table 4 Project Role: [Optional 2]

Company or Organization:	[enter]
Name:	[enter]
Address:	[enter]
City, State, Zip	[enter]
Telephone:	[enter]
Fax/Email:	[enter]
Title:	[enter]

Insert additional sheets as necessary.

2.2 24-hour Emergency Contact Information

The individuals identified in this Section will be available to respond to emergency conditions on the site 24 hours a day, 7 days a week. Amend this Section during the construction period if any temporary or permanent staff changes occur.

Table 5 24-hour Emergency Contact (Primary)

Company or Organization:	Eversource
Name:	TBD
Address:	247 Station Drive
City, State, Zip	Westwood, MA 02090
Telephone:	[enter]
Fax/Email:	[enter]
Title:	Construction Supervisor

Table 6 24-hour Emergency Contact (Secondary)

Company or Organization:	Eversource
Name:	Michael Hager
Address:	247 Station Drive
City, State, Zip	Westwood, MA 02090
Telephone:	(781) 441-8206
Fax/Email:	Michael.Hager@eversource.com
Title:	Project Manager

Attach additional sheets as necessary.

2.3 Delegation of Authority

The individual authorized to sign/certify the NOI is granted the authority to sign the

- SWPPP,
- Inspection Reports,
- Corrective Action Reports and
- other permit documents.

Alternatively, the individual may delegate this authority. A duly authorized representative may only sign the documents if:

- This authorization specifies either an individual or a position (e.g., Environmental Compliance Officer) who has the responsibility for the overall operation of the regulated area or who has overall responsibility for environmental matters.
- This SWPPP includes a signed, dated written authorization.

The duly authorized representative cannot be a subcontractor or a third party. A duly authorized third party may conduct inspections and corrective actions and may complete reports, but the NOI signer/certifier or duly authorized representative identified here must sign the reports.

Insert authorization signature pages into Attachment B. Amend this Section and add pages to Attachment B during the construction period if any temporary or permanent staff changes occur.

Table 7 Duly Authorized Representative or Position (Primary)

Company or Organization:	TBD
Name:	[enter]
Address:	[enter]
City, State, Zip	[enter]
Telephone:	[enter]
Fax/Email:	[enter]
Title:	[enter]

Table 8 Duly Authorized Representative or Position (Secondary, optional)

Company or Organization:	[enter]
Name:	[enter]
Address:	[enter]
City, State, Zip	[enter]
Telephone:	[enter]
Fax/Email:	[enter]
Title:	[enter]

Table 9 Duly Authorized Representative or Position (Tertiary, optional)

Company or Organization:	[enter]
Name:	[enter]
Address:	[enter]
City, State, Zip	[enter]
Telephone:	[enter]
Fax/Email:	[enter]
Title:	[enter]

Attach additional sheets as necessary.

2.4 Stormwater Team

The duties of these personnel include one or more of the following:

1. Prepare the Draft SWPPP
2. Finalize the SWPPP
3. Implement the SWPPP
4. Oversee maintenance practices identified as BMPs in the SWPPP
5. Conduct or provide for inspection and monitoring activities
6. Identify other potential pollutant sources and make sure that they are added to the plan
7. Identify any amendments to the SWPPP necessitated by field conditions and make sure they are implemented
8. Ensure that any design changes during construction are addressed in the SWPPP

All Operators and/or Subcontractors that will use this SWPPP for compliance with the terms of their CGP must provide a certification agreement to do so. The certification agreements are located in Attachment B.

Table 10 Stormwater Team 1

Company or Organization:	TBD
Name:	[enter]
Address:	[enter]
City, State, Zip	[enter]
Telephone:	[enter]
Fax/Email:	[enter]
Title:	[enter]

Continued on the next page

Table 11 Stormwater Team 2

Company or Organization:	[enter]
Name:	[enter]
Address:	[enter]
City, State, Zip	[enter]
Telephone:	[enter]
Fax/Email:	[enter]
Title:	[enter]

Table 12 Stormwater Team 3

Company or Organization:	**Eversource**
Name:	Denise Bartone
Address:	247 Station Drive
City, State, Zip	Westwood, MA 02090
Telephone:	(781) 441-8174
Fax/Email:	Denise.Bartone@eversource.com
Title:	Manager, Licensing & Permitting

Table 13 Stormwater Team 4

Company or Organization:	**Eversource**
Name:	Michael Hager
Address:	247 Station Drive
City, State, Zip	Westwood, MA 02090
Telephone:	(781) 441-8206
Fax/Email:	Michael.Hager@eversource.com
Title:	Project Manager

Attach additional pages as necessary.

2.5 Personnel Responsible for Inspections

Inspections are to be performed by "qualified personnel" as defined in Part 4.1 of the 2017 CGP and shall include all areas of the site disturbed by construction activity and areas used for materials storage that are exposed to precipitation. The Inspector must look for evidence of, or the potential for, pollutants entering the storm water system, inspect the BMPs installed as part of the Plan, inspect the site drainage outfalls, inspect the site egress points for tracking, and inspect material, waste, borrow, or equipment storage and maintenance areas. If, in the course of the inspection, the inspector identifies an eroded area or an area

impacted by sedimentation, additional erosion and sedimentation controls will be implemented, the discharge will be documented, and the SWPPP will be revised to include these changes.

Inspection forms are available in Attachment L. Amend this Section during the construction period if any temporary or permanent staff changes occur.

Table 14 Personnel Authorized to Perform Inspections

Name: Title:	
Name: Title:	
Name: Title:	
Name: Title:	
Name: Title:	
Name: Title:	

Attach additional sheets as necessary.

2.6 Personnel Responsible for Completing Corrective Actions

The following personnel are responsible for completing corrective action forms.

Insert authorization signature pages into Appendix K. Amend this Section during the construction period if any temporary or permanent staff changes occur.

Table 15 Personnel Responsible for Completing Corrective Actions (Primary)

Company or Organization:	
Name:	
Address:	
City, State, Zip	
Telephone:	
Fax/Email:	
Title:	

Table 16 Personnel Responsible for Completing Corrective Actions (Secondary, optional)

Company or Organization:	
Name:	
Address:	
City, State, Zip	
Telephone:	
Fax/Email:	
Title:	

Attach additional sheets as necessary

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3

Site Evaluation Assessment and Planning

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3.1 Project/Site Information

Table 17 Project Name and Address

Project/Site Name:	Sudbury-Hudson Transmission Reliability Project
Project Street/Location:	Inactive MBTA ROW in Sudbury, Marlborough, Stow, and Hudson; and Wilkins St and Forest Ave in Hudson
City:	Sudbury, Marlborough, Stow, Hudson
State:	Massachusetts
Zip:	Various
County:	Middlesex

Table 18 Project Coordinates - Sudbury

Type	Latitude		Longitude	
Subdury Substation	42.359997	N	71.397021	W
Hudson Substation	42.387273	N	71.556489	W

Table 19 Source for coordinate information

	Source
☐	USGS topographic map
☐	EPA Website
☐	GPS
☒	Other: (Maps.google.com)

Table 20 Horizontal Reference Datum

	Reference
☐	NAD 27
☒	NAD 83 or WGS 84
☐	Unknown
☐	Other:

3.1.1.1 Additional Information

Yes	No	
☐	☒	Is the project/site located on **Indian country lands,** or located on a property of religious or cultural significance to an Indian tribe? If yes, provide the name of the Indian tribe associated with the area of Indian country (including the name of Indian reservation if applicable), or if not in Indian country, provide the name of the Indian tribe associated with the property: n/a If you are conducting earth-disturbing activities in **response to a public emergency,** document the cause of the public emergency *(e.g., natural disaster, extreme flooding conditions)*, information substantiating its occurrence *(e.g., state disaster declaration)*, and a description of the construction necessary to reestablish effective public services: n/a
☐	☒	Are you applying for permit coverage as a "**federal operator**" as defined in Appendix A of the 2017 CGP?

3.2 Discharge Information

Yes	No	
☒	☐	Does your project/site discharge stormwater into a Municipal Separate Storm Sewer System (MS4)?
☒	☐	Are there any surface waters that are located within 50 feet of your construction disturbances?

3.2.1 Receiving Waters

Name(s) of the first surface water(s) that receive stormwater directly from your site and/or from the MS4 (note: multiple rows provided where your site has more than one point of discharge that flows to different surface waters)

Table 21 Receiving Waters

Number	Name
1	Assabet River
2	Fort Meadow Brook
3	Hop Brook
4	Unnamed Stream/Tributary
5	Dudley Brook
6	Hudson wetlands 1-21 (H1-H21)
7	Sudbury wetlands 1-45 (S1-S45)

3.2.2 Impaired Waters

Use the interactive map of the 2016 integrated list of waters to identify impaired waters in the vicinity of the project area. The interactive map is available online at: http://www.mass.gov/eea/agencies/massdep/water/watersheds/integrated-list-of-waters.html

Table 22 Impaired Receiving Waters

	Is this surface water listed as impaired?		If you answered yes, then answer the following:				
				Has a TMDL been completed?			
	Yes	No	What pollutants are causing the impairment?	Yes	No	Title of the TMDL document	Pollutant(s) for which there is a TMDL
Assabet River	☒	☐	(Debris/Floatables/Trash); (Non-Native Aquatic Plants); Aquatic Plants (Macrophytes); Escherichia coli; Excess Algal Growth; Fecal Coliform; Nutrient/ Eutrophication Biological Indicators; Oxygen, Dissolved; Phosphorus (Total); Taste and Odor.	☒	☐	Assabet River Total Maximum Daily Load for Total Phosphorus *(CN 201.0)*	Phosphorus
Fort Meadow Brook	☐	☒		☐	☒		

Is this surface water listed as impaired?			If you answered yes, then answer the following:				
Hop Brook	☒	☐	(Non-Native Aquatic Plants); Aquatic Plants (Macrophytes); Dissolved oxygen saturation; Escherichia coli; Excess Algal Growth; Oxygen, Dissolved; Phosphorus (Total); Turbidity. Oxygen, Dissolved; Phosphorus (Total.	☒	☐		
Unnamed Tributary	☒	☐	Dissolved oxygen saturation; Excess Algal Growth; Oxygen, Dissolved; Phosphorus (Total); Total Suspended Solids (TSS).	☒	☐		
Dudley Brook	☐	☒		☐	☐		

3.2.3 Tier 2, 2.5, or 3 Waters

In **Massachusetts**, Tier 2 waters are listed as "High Quality Waters." **All wetlands** that are not designated as an Outstanding Resource Water are considered a High Quality Water (Refer to antidegradation designations, link below).

In **Massachusetts,** Tier 2.5 waters are listed as Outstanding Resource Water, Public Water Supply, and/or Tributary to Public Water Supply, and all wetlands bordering Outstanding Resource Waters and all vernal pools.

In **Massachusetts,** Tier 3 waters are defined as Special Resource Waters. (As of February 2017, no waters are listed as Special Resource Waters).

Tier 2, Tier 2.5, and Tier 3 waters are identified and listed in the Massachusetts Water Quality Standards 314 CMR 4.00. See 314 CMR 4.06(1)(d)m for definitions. See the Tables and Figures associated with 314 CMR 4.06 available online at: https://www.mass.gov/regulations/314-CMR-4-the-massachusetts-surface-water-quality-standards

To determine applicability of specific antidegradation designations refer to: https://www.mass.gov/doc/antidegradation-implementation-procedures-0/download

Table 23 Special Receiving Waters (Tier 2, Tier 2.5 or Tier 3)

	Is this surface water designated as a Tier 2, Tier 2.5 or Tier 3 water?		If you answered yes, specify which Tier (2, 2.5, or 3) the surface water is designated as.
	Yes	No	
Assabet River	☒	☐	Tier 2. High quality water.
Hop Brook	☒	☐	Tier 2. High quality water.
Wetland H3	☒	☐	Tier 2. High quality water.
Wetland H12	☒	☐	Tier 2. High quality water.
Wetland S4	☒	☐	Tier 2. High quality water.
Wetland S12	☒	☐	Tier 2. High quality water.
Wetland S13	☒	☐	Tier 2. High quality water.
Wetland S14	☒	☐	Tier 2. High quality water.
Wetland S15	☒	☐	Tier 2. High quality water.
Wetland S16	☒	☐	Tier 2. High quality water.

3.3 Project Description

3.3.1 General Description

NSTAR Electric Company d/b/a Eversource Energy (Eversource) is proposing to construct, operate, and maintain an approximate 9-mile, 115-kilovolt (kV) underground transmission line extending from Eversource's Sudbury Substation on Boston Post Road (Route 20) in Sudbury, Massachusetts (Sudbury Substation) to Hudson Light & Power Department's (HLPD) substation at Forest Avenue in Hudson, Massachusetts (Hudson Substation). The new transmission line and related improvements at Sudbury Substation comprise the Sudbury-Hudson Transmission Reliability Project (the Project).

The Project will provide also base for and support construction of a portion of the Mass Central Rail Trail (MCRT). The Project will be installed primarily along an inactive railroad right-of-way (ROW) owned by the Massachusetts Bay Transportation Authority (MBTA). The Project originates at the Sudbury Substation and travels northwest along the MBTA ROW passing through short sections of Marlborough and Stow before entering Hudson, where it travels underground within public roadways for 1.3 miles after eciting the MBTA ROW, terminating at the Hudson Substation. The New Line will pass mostly through the Towns of Sudbury and Hudson and will cross short sections of the Town of Stow and the City of Marlborough.

The Project includes the following work activities:

- Installation of new equipment at Sudbury Substation
- Within MBTA ROW:
  - Vegetation removal within the limit of work (no stumping)
  - Installation of erosion and sediment controls with on-going monitoring and maintenance
  - Rail and tie removal
  - Grading to create construction platform
  - Installation of stormwater management features
  - Construction of wetland replication area
  - Construction of bridges and other crossings
  - Installation of manholes and duct bank
  - Installation of electrical and signal conduit for MCRT at road crossings
  - Final grading of the gravel base for MCRT
  - Cable pulling, splicing, testing, and commissioning
  - Loaming, seeding, and planting of disturbed areas
- Within Public Roadways:
  - Installation of sediment controls
  - Manhole installation
  - Roadway trench excavation, duct bank installation, and pavement restoration

- Cable pulling, splicing, and testing
- Final pavement restoration

3.3.2 Site Maps

Attachment D contains the Project Plans for this project.

Attachment E contains Site Maps including the:

› Site Location Map
› FEMA Flood Insurance Rate Map
› Soil Map

3.3.3 Size/Footprint of the Project

The project activities will occupy the footprint identified below.

Table 24 Footprint of the Project Area

Area Description	Area (acres)
Total property size	
Total area of construction disturbance	
Maximum area to be disturbed at any one time	

3.3.4 Construction Activities Sequencing and Logging

Construction activities, phasing, and sequencing are generally performed at the discretion of the General Contractor and may be determined or refined during the construction period. Project Operators are responsible for maintaining a construction log that address the following project activities.

3.3.4.1 Projected Construction Sequence

The projected construction sequence presented in this section is the best estimate of the construction sequence at the time that this SWPPP template was prepared. If the general sequence presented here changes during the course of the project, amend the SWPPP to include the revised project construction sequence.

Table 25 Projected Construction Sequence (Phase 1)

Phase 1 –

Area of Disturbance _____ acres

Action	Projected Date
Installation of new equipment at Sudbury Substation	
Within MBTA ROW:	
Vegetation removal within the limit of work (no stumping)	
Installation of erosion and sediment controls with on-going monitoring and maintenance	
Rail and tie removal	
Grading to create construction platform	
Installation of stormwater management features	
Construction of wetland replication area	
Construction of bridges and other crossings	
Installation of manholes and duct bank	
Installation of electrical and signal conduit for MCRT at road crossings	
Final grading of the gravel base for MCRT	
Cable pulling, splicing, testing, and commissioning	
Loaming, seeding, and planting of disturbed areas	
Within Public Roadways:	
Installation of sediment controls	
Manhole installation	
Roadway trench excavation, duct bank installation, and pavement restoration	
Cable pulling, splicing, and testing	
Final pavement restoration	

Refer to the Construction Activities Log for actual construction sequence performance.

3.3.4.2 Construction Activity Logging Requirements

For each phase of construction, document the dates for the following activities:

- Installation of stormwater controls, and when they will be made operational;
- Commencement and duration of earth-disturbing activities, including clearing, grubbing, mass grading, site preparation (i.e., excavating, cutting and filling), final grading, and creation of soil and vegetation stockpiles requiring stabilization;
- Cessation, temporarily or permanently, of construction activities on the site, or in designated portions of the site;
- Final or temporary stabilization of areas of exposed soil. The dates for stabilization must reflect the applicable deadlines to which you are subject to in Part 2.2.1; and
- Removal of temporary stormwater control measures, removal of construction equipment and vehicles, and cessation of any pollutant-generating activities.

Construction Activity logs are maintained in Attachment J.

3.3.5 Construction Support Activities

Construction support activities are generally performed at the discretion of the General Contractor and may be determined or refined during the construction period. Support activities that are not addressed in the Project Description (Section 0) must be identified here:

3.3.6 Allowable Non-Stormwater Discharges

Congruent with Section 1.2.2 of the 2017 CGP, the following non-stormwater discharges associated with construction activities are authorized under this permit provided that, with the exception of water used to control dust and to irrigate vegetation in stabilized areas, these discharges are not routed to areas of exposed soil on the site and the discharges also meet the requirements of Part 2 of the 2017 CGP.

Table 26 Allowable non-stormwater discharges likely occur at the Project Site

	Likely to be Present at the Site?	
Types of Allowable Non-Stormwater Discharges Present at the Site	**Yes**	**No**
Discharges from emergency fire-fighting activities	☐	☒
Fire hydrant flushings	☐	☒
Landscape irrigation	☐	☒
Waters used to wash vehicles and equipment	☒	☐
Water used to control dust	☒	☐
Potable water including uncontaminated water line flushings	☐	☒
Routine external building wash down	☐	☒
Pavement wash waters	☒	☐
Uncontaminated air conditioning or compressor condensate	☐	☒
Uncontaminated, non-turbid discharges of ground water or spring water	☒	☐
Foundation or footing drains	☐	☒
Construction dewatering water	☒	☐

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4

Inspections, Corrective Actions, and Amendments

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4.1 Inspection Schedule

Section 4.2 and Section 4.3 of the 2017 CGP specify minimum inspection frequencies. Section 4.2 specifies the minimum inspection frequency for a typical site. Section 4.3 specifies the minimum inspection frequency for locations on the site that discharge to sensitive waters. Sensitive waters are defined as sediment or nutrient-impaired waters or waters that are identified by the State, tribe or EPA as Tier 2, Tier 2.5, or Tier 3.

Table 27 Project Inspection Schedule

Does the project area discharge to sensitive waters?	Inspection Frequency
☒ Yes	Once every 7 calendar days AND Within 24 hours of an event 0.25 inches or greater
☐ No	Choose one option below:
	☐ Once every 7 calendar days
	☐ Once every 14 calendar days AND Within 24 hours of an event 0.25 inches or greater

To determine if a storm event of 0.25 inch or greater has occurred on the site, data will be obtained from the weather station at:

Blueberry Hill – KMASUDBU29 in Sudbury, MA.

For any day of rainfall during normal business hours that measures 0.25 inches or greater, the date and rainfall amount must be recorded in the Construction Activities Log (Section 3.3.4).

The Site Inspection Log and Inspection Forms are maintained in Attachment L.

Record daily rainfall that exceeds 0.25 inches in the Construction Activities Log (Section 3.3.4).

4.1.1 Reductions in Inspection Frequency

Inspection frequency may be reduced to once per month if:

› The stabilization of the contributing area was completed more than one month prior and the stabilization activities are documented in the Construction Activities and the Grading and Stabilization Logs.

› The project is experiencing frozen soil conditions.

Exceptions may also be made for drought-stricken areas, refer to Part 4.4.2 for additional information.

4.1.1.1 Suspension of Construction Activities due to Frozen Conditions

If the project will suspend construction activities due to frozen conditions, the project may temporarily suspend inspections on the site until thawing conditions begin to occur if:

› Runoff is unlikely due to continuous frozen conditions that are likely to continue at the site for at least 3 months based on historic seasonal averages. If unexpected weather conditions (such as above freezing temperatures or rain on snow events) make discharges likely, the contractor must immediately resume regular inspection frequency as described in Parts 4.2 or 4.3, if applicable;

› Land disturbances have been suspended; and

› All disturbed areas of the site have been temporarily or permanently stabilized in accordance with Part 2.2.14.a of the CGP.

4.1.1.2 Continuation of Construction Activities Despite Frozen Conditions

If the project will continue construction activities despite frozen conditions, the project may temporarily reduce inspections to once per month until thawing conditions begin to occur if:

› Runoff is unlikely due to continuous frozen conditions that are likely to continue at the site for at least 3 months based on historic seasonal averages. If unexpected weather conditions (such as above freezing temperatures or rain on snow events) make discharges likely, the contractor must immediately resume regular inspection frequency as described in Parts 4.2 or 4.3, if applicable;

› Land disturbances have been suspended; and

› All disturbed areas of the site have been temporarily or permanently stabilized in accordance with Part 2.2.14.a of the CGP.

Record changes in the inspection frequency in the Construction Activities Log (Section 3.3.4).

4.2 Corrective Action Directives

Project Operators must take corrective action to address any of the following conditions if they appear at the project site:

- A stormwater control needs repair or replacement
- A stormwater control necessary to comply with the permit was not installed, or was installed incorrectly
- A discharge from the project site is causing an exceedance of water quality standards to receiving waters
- A prohibited discharge has occurred (refer to Part 1.3 of the 2017 CGP)

4.2.1 Corrective Action Timelines

For any required corrective action (refer to part 5.1 of the 2017 CGP), project operators must:

- **Immediately** take all reasonable steps to address the condition, including cleaning up any contaminated surfaces so that the material will not discharge in subsequent storm events.
- When the problem does not require a new or replacement control or significant repair, the corrective action must be completed by the close of the **next business day.**
- When the problem requires a new or replacement control, or significant repair, install the new or modified control by **no later than 7 calendar days** from the time of discovery.
- If it is not possible to complete the action within 7 days, record the extenuating circumstances in detail on a Corrective Action Form (Attachment M).

4.2.2 Corrective Action Reports

For each corrective action taken, complete a corrective action report in accordance with the following (refer to Part 5.4 of the 2017 CGP):

- Within 24 hours of identifying the condition requiring corrective action, document the condition and the date/time it was identified.

  Within 24 hours of completing the corrective action, document the action taken and note whether any modifications to the SWPPP are required.

The Corrective Action Log and Corrective Action Report Forms are maintained in Attachment M.

4.3 Amendments

This SWPPP must be amended and the amendments must be recorded in the amendment log if any of the following conditions apply:

- Whenever new operators become active in construction activities on your site, or you make changes to your construction plans, stormwater controls, or other activities at your site that are no longer accurately reflected in your SWPPP. This includes changes made in response to corrective actions triggered under Part 5. You do not need to modify your SWPPP if the estimated dates in Part 7.2.3.f change during the course of construction;
- To reflect areas on your site map where operational control has been transferred (and the date of transfer) since initiating permit coverage;
- If inspections or investigations by EPA or its authorized representatives determine that SWPPP modifications are necessary for compliance with this permit;
- Where EPA determines it is necessary to impose additional requirements on your discharge, the following must be included in your SWPPP:
  - A copy of any correspondence describing such requirements; and
  - A description of the controls that will be used to meet such requirements.
- To reflect any revisions to applicable federal, state, tribal, or local requirements that affect the stormwater controls implemented at the site; and
- If applicable, if a change in chemical treatment systems or chemically enhanced stormwater control is made, including use of a different treatment chemical, different dosage rate, or different area of application.

The Amendment Log is maintained in Attachment I.

5

Staff Training

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5.1 Training

Each Operator or group of Operators must assemble a Stormwater Team to carry out compliance activities associated with the requirements of the 2017 CGP. Prior to the commencement of construction activities, the Operators must ensure that the personnel on the stormwater team understand the requirements of this permit and their specific responsibilities with respect to those requirements.

All of the personnel responsible for the following activities must be trained to understand the relevant requirements under the terms of the 2017 CGP including:

- The design, installation, maintenance, and/or repair of stormwater controls (and pollution prevention controls)
- Permits that include provisions for stormwater and erosion control management include:
  - Sudbury, Stow, and Hudson Orders of Conditions
  - Sudbury Stormwater Management Permit
  - USACE General Permits for Massachusetts authorization
- The application and storage of treatment chemicals (if applicable)
- Conducting and documenting inspections (Part 4 of the 2017 CGP)
- Performing and documenting corrective actions (Part 5 of the 2017 CGP)

Minimum training measures for the stormwater team must include:

- Permit deadlines associated with the installation, maintenance, and removal of stormwater controls and stabilization
- The location of all stormwater controls on the site required by this permit and how they must be maintained
- The proper procedures to follow with respect to the permit's pollution prevention requirements
- When and how to conduct inspections, record findings, and take corrective actions.

All members of the stormwater team must have easy access to an electronic or paper copy of the applicable portions of this permit, the most updated copy of the SWPPP, and other relevant documents associated with the SWPPP including logs and completed forms.

The Training Log and Attendance Records are maintained in Attachment H.

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6

Notifications

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6.1 Notice of Intent (NOI)

Following the completion of the draft SWPPP, project operators may submit their NOIs to the EPA.

Permit coverage does not begin until 14 calendar days from the date that the NOI is certified by a person authorized in accordance with Appendix I of the 2017 CGP.

Within 14 calendar days, the EPA may notify the Operator(s) that the authorization has been delayed or denied.

Project NOIs and authorizations are maintained in Attachment C.

6.2 Notice of Termination (NOT)

Operators are required to continue to comply with all conditions and requirements in the permit until coverage is terminated under this permit.

To terminate permit coverage, all Operators must submit a complete and accurate NOT to the EPA. The NOT certifies that an Operator has met the requirements for termination as listed in Part 8 of the CGP. Operators must use NPDES eReporting Tool (NeT) to electronically prepare and submit an NOT for the 2017 CGP.

https://www.epa.gov/npdes/stormwater-discharges-construction-activities#ereporting

Operators must submit the NOT within 30 calendar days after any of the triggering conditions listed in Part 8.2 of the CGP.

An Operator's authorization to discharge under the CGP terminates at midnight of the calendar day that a complete NOT is processed and posted on EPA's website.

Project NOTs and authorizations are maintained in Attachment C.

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7

Erosion and Sediment Controls

Stormwater controls have been designed, installed, and maintained in compliance with Part 2.1 of the 2017 CGP. If any stormwater controls must be designed (e.g., sediment basins or conveyance channels), the design documentation must be included in Attachment S.

Erosion and Sediment Controls must be implemented to address the requirements of Part 2.2 of the 2017 CGP.

This section of the SWPPP provides general guidance for compliance with the 2017 CGP. Ultimately the project Operators are responsible for making sure sufficient controls are implemented to effectively meet the conditions of the 2017 CGP.

The purpose of an erosion and sedimentation control program is to minimize the discharge of pollutants from earth-disturbing activities during the construction phase of the project. The program described in this SWPPP incorporates BMPs specified in guidelines developed by the DEP[1] and the U.S. Environmental Protection Agency[2] and complies with the requirements of the NPDES General Permit for Storm Water Discharges from Construction Activities.

Proper implementation of the erosion and sedimentation control program will:

- minimize exposed soil areas through temporary stabilization and construction sequencing;
- minimize sediment track-out from the site;
- minimize the generation of dust;
- minimize soil compaction;
- place structures to manage stormwater runoff and erosion; and
- establish permanent vegetative cover or other forms of stabilization in accordance with Part 2.2.14 of the Permit.

The Contractor will install stormwater controls prior to the commencement of each phase of earth-disturbing activities per Part 2.1.3 of the 2017 CGP. All manufactured control measures will be installed and maintained in accordance with the manufacturer's specifications. The site Contractor will inspect all erosion and sediment controls in accordance with the applicable requirements in Part 4, document findings in accordance with Part 4, and perform corrective actions in accordance with Part 5 of the 2017 CGP.

The following sections describe the erosion and sedimentation controls that may be used on this site. **The Contractor will implement, modify, and amend the stormwater controls identified in this section as necessary.** Please refer to the NSTAR BMP Manual located in Attachment N for specifications on installation and maintenance.

1 Massachusetts Department of Environmental Protection, 1993. *Massachusetts Nonpoint Source Management Manual, The Megamanual: A Guidance Document for Municipal Officials.*

2 United States Environmental Protection Agency, 1992. *Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices.*

7.1 Natural Buffers or Equivalent Sediment Controls

The requirements for natural buffers are described in Part 2.2.1 and Appendix G of the 2017 CGP. This section of the SWPPP describes project compliance activities to maintain natural buffers in compliance with the 2017 CGP.

Documentation of compliance with buffer requirements is located in Attachment O.

7.1.1.1 Buffer Compliance Alternatives

Are there any surface waters within 50 feet of the project's earth disturbances?

☒ YES ☐ NO

(Note: If no, no further documentation is required under Section 7.1 of this SWPPP Manual.)

If there are surface waters within 50 feet of the project's earth disturbances, continue below:

☐ The project will provide and maintain a 50-foot undisturbed natural buffer.

Note (1): The project must show the 50-foot boundary line of the natural buffer on the Site Map.

Note (2): The project must show on the Site Map how all discharges from the construction disturbances through the natural buffer area will first be treated by the site's erosion and sediment controls. Also, show on the site map any velocity dissipation devices used to prevent erosion within the natural buffer area.

☐ The project will provide and maintain an undisturbed natural buffer that is less than 50 feet and is supplemented by additional erosion and sediment controls, which in combination achieves the sediment load reduction equivalent to a 50-foot undisturbed natural buffer.

Note (1): The project must show the boundary line of the natural buffer on the site map.

Note (2): The project must show on the site map how all discharges from the construction disturbances through the natural buffer area will first be treated by the site's erosion and sediment controls. Also, show on the site map any velocity dissipation devices used to prevent erosion within the natural buffer area.

☐ It is infeasible to provide and maintain an undisturbed natural buffer of any size, therefore the project will implement erosion and sediment controls that achieve the sediment load reduction equivalent to a 50-foot undisturbed natural buffer.

☒ The project qualifies for one of the exceptions described in the 2017 CGP Appendix G, Part G.2. (If this box is checked, provide information on the applicable buffer exception that applies in Section 7.1.1.2.)

7.1.1.2 Buffer Exceptions

Indicate whether any of the following exceptions to the buffer requirements apply to the project site. Refer to Part 2.2.1 and Appendix G.2 of the 2017 CGP for more information.

☐ There is no discharge of stormwater to the surface water that is located 50 feet from my construction disturbances.

Note: If this exception applies, no further documentation is required under Section 7.1 of this SWPPP Manual.

☐ No natural buffer exists due to preexisting development disturbances that occurred prior to the initiation of planning for this project.

Note (1): If this exception applies, no further documentation is required to achieve compliance with Part 2.2.1.

Note (2): Where some natural buffer exists but portions of the area within 50 feet of the surface water are occupied by preexisting development disturbances, the project must comply with Part 2.2.1 and Appendix G.2.2 of the 2017 CGP.

☒ For a "linear project" (defined in Appendix A), site constraints (e.g., limited right-of-way) make it infeasible to implement one of the Part 2.2.1.a compliance alternatives provided that additional measures described in Appendix G.2.2 of the 2017 CGP are met.

☐ The project qualifies as "small residential lot" construction and meets the compliance alternatives described in Appendix G.3 of the 2017 CGP.

☐ Buffer disturbances are authorized under a CWA Section 404 permit.

Note (1): If this exception applies, no further documentation is required under Section 7.1 of this SWPPP Manual.

Note (2): This exception only applies to the limits of disturbance authorized under the Section 404 permit, and does not apply to any upland portion of the construction project.

☐ Buffer disturbances will occur for the construction of a water-dependent structure or water access area (e.g., pier, boat ramp, and trail).

Note (1): If this exception applies, no further documentation is required under Section 7.1 of this SWPPP Manual.

7.2 Perimeter Controls

Refer to Part 2.2.3 of the 2017 CGP for information on the requirements for perimeter controls. Some exceptions apply to linear projects.

7.2.1 General Perimeter Controls

Installation of perimeter controls must be completed prior to the commencement of earth-disturbance activities. This section of the SWPPP provides examples of perimeter controls that the General Contractor may use to effectively control stormwater on construction sites. The General Contractor may select and install perimeter controls at their discretion. The locations of perimeter controls should be clearly identified on the Site Map.

The General Contractor will record activities associated with perimeter controls in the following project logs:

Table 28 Recording Requirements: Perimeter Controls

Action	Recorded in
Installation	Construction Activities Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log

7.2.2 Specific Perimeter Controls

If the General Contractor elects to use controls that are not specified in this SWPPP manual, the contractor will prepare documentation describing the control installation, inspection, maintenance, and removal procedures and record the actions in the appropriate project logs.

7.2.2.1 Compost Filter Tube

Compost Filter Tubes consist of a jute mesh or other approved biodegradable material filled with compost and placed at the limit of work held in place with stakes. They are appropriate for use as perimeter controls.

The General Contractor will prepare and install compost filter tubes in accordance with manufacturer recommendations.

Inspection and Maintenance Requirements

Inspection and maintenance activities for compost filter tubes will include:

Table 29 Maintenance Requirements: Compost Filter Tubes

Inspection Item	Condition	Maintenance Activity
Condition	Torn outer fabric	Replace
Continuity	Break in continuous perimeter	Re-install existing -or- Install new to close any gaps
Sediment Build-up	Accumulated sediment at one-half the above ground height of the control	Remove the sediment and dispose properly

7.2.2.1 Syncopated silt-fence

Staked silt-fence erosion control devices are commonly used to intercept, filter, and reduce the velocity of stormwater run-off. They are appropriate for use as perimeter controls. Syncopated silt fence includes offset section of fencing to intentionally create gaps every 200 feet adequate for small wildlife to pass.

The General Contractor will place syncopated silt-fences at the downgradient edge of disturbed areas within 450 feet of a vernal pool, they are held in place by wooden stakes.

Inspection and Maintenance Requirements

Inspection and maintenance activities for syncopated silt fences will include:

Table 30 Maintenance Requirements: Syncopated Silt Fence

Inspection Item	Condition	Maintenance Activity
Condition	Rotted or torn	Replace
Continuity	Break in continuous perimeter or insufficient overlap between silt fence sections	Re-install existing -or- Install new to close any gaps
Sediment Build-up	Accumulated sediment at one-half the above ground height of the control	Remove the sediment and dispose properly
Placement	Silt fence not dug in to the ground to prevent underflow	Reset, repair and/or re-install

7.2.2.1 Turbidity Curtain

Floating turbidity curtain may be used in open water areas to intercept, filter, and reduce the spread of turbidity within open water as part of the bridge replace work. They are appropriate for use as perimeter controls.

The General Contractor will place turbidity curtain at the downgradient edge of disturbed areas within open water. They are held in place by weighted toes and securing ropes to the shoreline. To be used in open water conditions where water depth is adequate to allow proper extension of the turbidly curtain skirt.

Inspection and Maintenance Requirements

Inspection and maintenance activities for turbidity curtains will include:

Table 29 Maintenance Requirements: Turbidity Curtains

Inspection Item	Condition	Maintenance Activity
Condition	Torn, loss of floatation at top	Replace
Continuity	Break in continuous perimeter	Re-install existing -or- Install new to close any gaps
Sediment Build-up	Accumulated sediment at one-half the above ground height of the control	Remove the sediment and dispose properly
Placement	Place along shoreline only! **DO NOT install across flowing water.**	Reset, repair and/or re-install

7.2.2.1 Staked Tall Silt Fence

Staked tall silt fence erosion control devices are commonly used to intercept, filter, and reduce the spread of turbidity within open water as part of the bridge replace work. They are appropriate for use as perimeter controls. This is an alternative perimeter control to turbidity curtain in open water.

The General Contractor will place tall silt fence at the downgradient edge of disturbed areas within open water. They are held in place by driven stakes. To be used in open water conditions where water depth is adequate to allow installation of the silt fence proper but too shallow for installation of a turbidly curtain.

Inspection and Maintenance Requirements

Inspection and maintenance activities for staked tall silt fences will include:

Table 29 Maintenance Requirements: Staked Tall Silt Fence

Inspection Item	Condition	Maintenance Activity
Condition	Torn, fallen down stake	Replace, or reinstall
Continuity	Break in continuous perimeter	Re-install existing -or- Install new to close any gaps
Sediment Build-up	Accumulated sediment at one-half the above ground height of the control	Remove the sediment and dispose properly
Placement	Place along shoreline only! **DO NOT install across flowing water.**	Reset, repair and/or re-install

7.3 Sediment Track-out

Refer to Part 2.2.4 of the 2017 CGP for information on the requirements for sediment track-out controls. Some exceptions apply to linear projects.

7.3.1 General Track-out Controls

Sediment track-out controls may be structural or non-structural.

Non-structural controls including:

- Restricting vehicle use to properly designated exit points.
- Sweeping, shoveling, or vacuuming to manually remove sediment from public rights-of-way (hosing or sweeping sediment directly into a stormwater conveyance, storm drain inlet, or surface water is prohibited).

In the event that sediment is tracked-out of the site onto the surface of off-site streets, other paved areas, and sidewalks, the contractor will remove the deposited sediment by the end of

the same work day. If track-out occurs on a non-work day, the contractor will remove the sediment by the end of the next work day.

The General Contractor may select and install structural sediment track-out controls at their discretion. The General Contractor shall specify locations of structural controls on the Site Map.

The General Contractor will record activities associated with sediment track-out controls in the following project logs:

Table 31 Recording Requirements: Sediment Track-out Controls

Action	Recorded in
Installation	Construction Activities Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log

7.3.2 Specific Track-out Controls

If the General Contractor elects to use controls that are not specified in this SWPPP manual, the contractor will prepare documentation describing the control installation, inspection, maintenance, and removal procedures and record the actions in the appropriate project logs.

7.3.2.1 Stabilized Construction Entrance/Exit

The General Contractor will establish a stabilized construction entrance consisting of a stone pad at each access point off public roads. The construction entrance may include a cross-slope to direct runoff to a protected receiving area. If track-out is observed after construction begins, the General Contractor will take additional measures to address sediment track out.

Following completion of earth-disturbing activities, the General Contractor will remove the stabilized construction entrance/exit and installing final finishing materials.

Inspection and Maintenance Requirements

Inspection and maintenance activities for sediment track-out controls will include:

Table 32 Maintenance Requirements: Construction Entrance

Inspection Item	Condition	Maintenance Activity
Construction access routes adjacent to the disturbance area	Sediment present on vehicle travel surfaces	Sweep, shovel, or vacuum sediment from the surface, dispose of properly
Construction Entrance Condition	Muddy or sediment-laden	Add a top-dressing of stone or gravel

7.4 Stockpiled Sediment or Soil

Refer to Part 2.2.5 of the 2017 CGP for information on the requirements for stockpile controls.

The Contractor will provide cover or appropriate temporary stabilization to stockpiles that will remain inactive/unused for more than 14 days. Temporary stabilization may be performed using vegetative or non-vegetative stabilization practices. Refer to Section 7.13 for more information on stabilization practices.

7.4.1 General Stockpile Controls

In accordance with Part 2.2.5 of the 2017 CGP, the contractor must comply with the following requirements for any stockpiles or land clearing debris composed, in whole or in part, of sediment or soil:

- Locate the piles outside of any natural buffers established under Part 2.2.1 and physically separated from other stormwater conveyances, drain inlets, and areas where stormwater flows are concentrated.
- Protect from contact with stormwater (including run-on) using a temporary perimeter sediment barrier;
- Provide cover or appropriate temporary stabilization to avoid direct contact with precipitation or wind;
- Do not hose down or sweep soil or sediment accumulated on pavement or other impervious surfaces into any stormwater conveyance storm drain inlet, or water of the U.S.

Record activities associated with sediment stockpile controls in the following project logs:

Table 34 Recording Requirements: Stockpile Controls

Action	Recorded in
Installation	Construction Activities Log Grading and Stabilization Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log Grading and Stabilization Log

7.4.2 Specific Stockpile Controls

If the General Contractor elects to use controls that are not specified in this SWPPP manual, the contractor will prepare documentation describing the control installation, inspection, maintenance, and removal procedures and record the actions in the appropriate project logs.

7.4.2.1 Vegetative Stabilization

Vegetative stabilization practices may include seeding exposed surfaces with a seed mix containing a blend of rapid germinating grasses that are indigenous to the appropriate

region of Massachusetts. Once seeded, areas will be covered with a layer of straw mulch according to the recommendations provided by the manufacturer. Refer to Section 7.13.2.1 for more information.

7.4.2.2 Non-Vegetative Stabilization

Non-vegetative stabilization practices may include applying straw mulch or an erosion control blanket. Refer to Section 7.13.2.2 for more information.

7.5 Minimize Dust

Refer to Part 2.2.6 of the 2017 CGP for information on the requirements for minimizing dust.

The General Contractor will record activities associated with dust controls in the following project logs:

Table 34 Recording Requirements: Dust Controls

Action	Recorded in
Installation	Construction Activities Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log

Wetting the soil and/or spreading calcium chloride will be performed, as necessary, to minimize the movement of dust and fine-grained sediment. Fugitive dust created by movement of equipment or trucks along the project corridor or dust generated by wind warrant application of dust control measures. If water is used for dust control, it shall be applied as a fine spray to wet the upper 0.5 inch of soil.

7.6 Minimize the Disturbance of Steep Slopes

Refer to Part 2.2.7 of the 2017 CGP for information on the requirements for controls on steep slopes.

Where a state, tribe, local government, or industry technical manual (e.g., stormwater BMP manual) has defined what is to be considered a "steep slope", the 2017 CGP automatically adopts that definition. Where no such definition exists, steep slopes are automatically defined as those that are 15 percent or greater in grade.

The General Contractor will record activities associated with steep-slope controls in the following project logs:

Table 35 Recording Requirements: Steep Slope Stabilization Controls

Action	Recorded in
Installation	Construction Activities Log Grading and Stabilization Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log Grading and Stabilization Log

7.6.1 General Steep Slope Controls

During the design phase of the project, the design engineers minimized construction impacts to steep slopes to the maximum extent practicable.

Where disturbances to steep slopes are still required, the General Contractor will minimize disturbances through the implementation of erosion and sediment control practices designed for use on steep slopes.

Stabilization practices on steep slopes will occur within 14 days after grading or construction activities have temporarily or permanently ceased.

7.6.2 Specific Steep Slope Controls

If the General Contractor elects to use controls that are not specified in this SWPPP manual, the contractor will prepare documentation describing the control installation, inspection, maintenance, and removal procedures and record the actions in the appropriate project logs.

7.6.2.1 Vegetative controls

Vegetative slope stabilization practices will be used to minimize erosion on slopes of 3:1 or flatter. Temporary, rapid stabilization will be completed using annual grasses, such as annual rye. Permanent stabilization will be completed with the planting of perennial grasses or legumes.

A suitable topsoil, good seedbed preparation, soil amendments, and water will be provided for effective establishment of these vegetative stabilization methods. Vegetation may be applied via hydro seeding or sodding techniques. Mulch may also be applied following permanent seeding activities to protect soil from the impact of falling rain and to increase the capacity of the soil to absorb water.

Refer to Section 7.13.2.1 for inspection and maintenance activities for vegetative stabilization controls.

7.6.2.2 Erosion Control Blanket

Erosion control blankets may be combined with vegetative controls to minimize erosion on slopes 3:1 or steeper. Erosion control blankets shall consist of a non-woven bio-degradable material and shall be installed by anchoring the top of the blanket in a 6-inch deep trench. The trench shall be backfilled and compacted after the blanket is secured with staples. The erosion control blanket will be installed in the direction of potential flow. Edges of the blankets must be stapled with approximately 4 inches overlap where 2 or more strip widths are required.

Refer to Section 7.13.2.2 for inspection and maintenance activities for non-vegetative stabilization controls.

7.7 Topsoil

Refer to Part 2.2.8 of the 2017 CGP for information on the requirements for the preservation of topsoil.

The General Contractor will record activities associated with topsoil controls in the following project logs:

Table 36 Recording Requirements: Topsoil Controls

Action	Recorded in
Stockpiling	Construction Activities Log Grading and Stabilization Log
Disposal	Construction Activities Log Grading and Stabilization Log

Topsoil will be preserved to the maximum extent practicable. Where it is infeasible to preserve topsoil in place, it will be repurposed throughout the site or stockpiled and disposed of in accordance with local, state and federal regulations, as necessary.

7.8 Soil Compaction

Refer to Part 2.2.9 of the 2017 CGP for information on the requirements for the reduction of soil compaction.

To avoid soil compaction, the General Contractor will limit vehicle and equipment use in areas where final vegetative stabilization will occur or where infiltration practices will be installed.

Prior to seeding or planting of areas where final vegetative stabilization will occur or where infiltration practices will be installed the soil will be inspected to determine if compaction will hinder vegetative growth.

If compaction has occurred, techniques that condition soil to support vegetative growth will be implemented. Soil conditioning techniques shall be specified, as needed by the General Contractor.

7.9 Storm Drain Inlets

Refer to Part 2.2.10 of the 2017 CGP for information on the requirements for the protection of storm drain inlets.

The General Contractor will record activities associated with storm drain inlet protection in the following project logs:

Table 37 Recording Requirements: Stormdrain Inlet Controls

Action	Recorded in
Installation	Construction Activities Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log

7.9.1 General Storm Drain Inlet Controls

Prior to any earth-disturbing activities inlet protection measures will be installed. Storm drain inlet controls are required at all storm drain inlets that carry stormwater flow from the project site to a water of the U.S., even if they are located downgradient from a construction period stormwater BMP.

7.9.2 Specific Storm Drain Inlet Controls

If the General Contractor elects to use controls that are not specified in this SWPPP manual, the contractor will prepare documentation describing the control installation, inspection, maintenance, and removal procedures and record the actions in the appropriate project logs.

7.9.2.1 Siltsack Sediment Traps

The General Contractor may choose to use Siltsack sediment traps at the project site. They may be installed at the inlets of existing and proposed catch basins. At locations where silt sacks are used, the catch basin grates will be placed over the siltsack to secure it into place.

7.9.2.2 Straw Bale and Non-Woven Filter Fabric

The General Contractor may choose to use Straw bale barriers at the project site. They may be installed at the inlets of existing and proposed catch basins. At locations where straw bales are used, a layer of non-woven filter fabric will be placed beneath the grate of each catch basin to secure it into place.

7.9.2.3 Inspection and Maintenance Requirements

Inspection and maintenance activities for storm drain inlet controls includes:

Table 38 Maintenance Requirements: Storm Drain Inlet Controls

Inspection Item	Condition	Maintenance Activity
Sediment accumulation	Sediment buildup at filter layer	Sweep, shovel, or vacuum sediment from the filter surface, dispose of properly.
Continuity	Breaks in continuous barrier	Install new or re-install original barrier structure.
Clogging	Standing water	Sweep, shovel, or vacuum sediment from the filter surface, dispose of properly. Install new or re-install restored filter layer.

7.10 Constructed Stormwater Conveyance Channels

Refer to Part 2.2.11 of the 2017 CGP for information on the requirements for the constructed stormwater conveyance channels.

The General Contractor will record activities associated with constructed stormwater conveyance channels in the following project logs:

Table 39 Recording Requirements: Conveyance Channel Controls

Action	Recorded in
Installation	Construction Activities Log Grading and Stabilization Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log Grading and Stabilization Log

7.10.1 General Conveyance Controls

The General Contractor may select and install constructed stormwater conveyance channels at their discretion. The General Contractor shall specify locations of structural controls on the Site Map.

Constructed Stormwater Conveyance Channels may be used to collect runoff from construction areas and discharge to either sedimentation basins or protected catch basin inlets. The contractor may use erosion controls and velocity dissipation devices within and along the length of any stormwater conveyance channel and at any outlet to slow runoff down and to minimize erosion. Permanent infiltration BMPs shall not be used as temporary construction sedimentation basins without prior approval of the project engineer.

7.10.2 Specific Conveyance Controls

If the General Contractor elects to use controls that are not specified in this SWPPP manual, the contractor will prepare documentation describing the control installation, inspection, maintenance, and removal procedures and record the actions in the appropriate project logs.

7.10.2.1 Diversion Channels

Diversion channels may be used to collect runoff from construction areas and discharge to either sedimentation basins or protected catch basin inlets.

Inspection and Maintenance Requirement

Diversion channels will be inspected in accordance with the inspection schedule. If breakout or erosion is observed, the diversion channel shall be reinforced or protected by an erosion control blanket.

Inspection and maintenance activities for conveyance channel controls will include:

Table 40 Maintenance Requirements: Conveyance Channels

Inspection Item	Condition	Maintenance Activity
Surface	Erosion	Reinforce the surface using a vegetative or non-vegetative stabilization measure
Inlet/Outlet	Clogging	Remove Obstruction
Sediment Accumulation	Sediment occupies one half of the storage capacity of the basin	Sweep, shovel, or vacuum sediment from the basin sump and dispose of properly
Embankment/Berm	Cracking	Identify root cause of embankment failure and repair or reconstruct as needed
Embankment/Berm	Erosion	Reinforce the surface using a vegetative or non-vegetative stabilization measure
Embankment/Berm	Breakout	Identify root cause of embankment failure and repair or reconstruct as needed

7.11 Sediment Basins

Refer to Part 2.2.12 of the 2017 CGP for information on the requirements for construction period sediment basins.

If the General Contractor elects to use sediment basin controls, the General Contractor will update the Site Map to show their location on the project site.

The General Contractor will record activities associated with sediment basins in the following project logs:

Table 41 Recording Requirements: Sediment Basin Controls

Action	Recorded in
Installation	Construction Activities Log Grading and Stabilization Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log Grading and Stabilization Log

7.11.1 General Sediment Basin Controls

Constructed sediment basins may be used to collect runoff from construction areas to allow for suspended sediments to settle out of stormwater prior to discharge to points downstream. The following design criteria shall apply:

- Sediment basins must be placed outside any water of the U.S. and any natural buffer established under Part 2.2.1 of the 2017 CGP.
- Sediment basins must be designed and constructed to avoid collecting water from wetlands and waterbodies.
- Sediment basins must be designed and constructed to provide storage for either:
  - The volume of runoff generated from a 2-year, 24-hour design storm, or
  - 3,600 cubic feet per acre of contributing area.
- Outlet structures must be designed to withdraw water from the surface of the basin (not the invert), if feasible, see note below.
- Inlets and outlets must be constructed to dissipate velocity and prevent erosion.

Note: If the outlet structure must be designed to withdraw water from a place within the water column other than the surface, the basin must be designed to allow suspended soil particles to settle out of the water column prior to withdrawal.

Inspection and Maintenance Requirements

Inspection and maintenance activities for sediment basins will include:

Table 42 Maintenance Requirements: Sediment Basins

Inspection Item	Condition	Maintenance Activity
Surface	Erosion	Reinforce the surface using a vegetative or non-vegetative stabilization measure
Inlet/Outlet	Clogging	Remove Obstruction
Sediment accumulation	Sediment occupies one half of the storage capacity of the basin	Sweep, shovel, or vacuum sediment from the basin sump and dispose of properly
Embankment/Berm	Cracking	Identify root cause of embankment failure and repair or reconstruct as needed
Embankment/Berm	Erosion	Identify root cause of embankment failure and repair or reconstruct as needed
Embankment/Berm	Breakout	Identify root cause of embankment failure and repair or reconstruct as needed

7.12 Chemical Treatment

Refer to Part 2.2.13 of the 2017 CGP for information on the requirements for chemical treatment.

Record activities associated with chemical treatment in the following project logs:

Table 43 Recording Requirements: Chemical Treatment Controls

Action	Recorded in
Training	Training Log
Installation	Construction Activities Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log

7.12.1 General Chemical Treatment Controls

In general, chemical treatment may only be applied in the following situations:

- Chemicals may only be applied where the treated stormwater is directed to a sediment control (e.g., a sediment basin, perimeter control) prior to discharge.
- Chemicals must be appropriately suited to the types of soils likely to be exposed during construction and present in the discharges being treated.

- If chemicals will be stored on the project site, chemicals must be stored in leak-proof containers that are kept under storm-resistant cover and surrounded by secondary containment structures.
- Use of chemicals must comply with applicable state and local requirements affecting the use of the selected treatment chemicals.
- Use of the chemicals must be in accordance with good engineering practices and specifications of the chemical provider/supplier.
  - NOTE: Departures from provider/supplier specifications must be documented in this SWPPP.
- All personnel who handle and/or use treatment chemicals must be undergo appropriate, product-specific training
- There are additional restrictions for the use of cationic chemicals. Prior authorization is required (Part 1.1.9 of the 2017 CG) and authorization is conditioned on compliance with additional measures to ensure that the use of the chemicals will not cause and exceedance of the water quality standards.

7.12.2 Specific Chemical Treatment Controls

The General Contractor will list all treatment chemicals in the table below. If any of the chemicals are cationic, the General Contractor will indicate whether the authorization has been obtained from the Regional Office (EPA). Include correspondence and indicate whether a record of the authorization is included in this SWPPP in Attachment P.

Table 44 List of Treatment Chemicals and Dosage/Use to be used on Site

Chemical	Dosage and Application Details	Cationic Authorization in Attachment P
		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐

Table 45 Departures from Provider/Supplier Specifications

Chemical	Dosage and Application Notes

7.13 Site Stabilization

Refer to Part 2.2.14 of the 2017 CGP for information on the requirements for site stabilization.

The General Contractor will record activities associated with site stabilization in the following project logs:

Table 46 Recording Requirements: Site Stabilization Controls

Action	Recorded in
Installation	Construction Activities Log Grading and Stabilization Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log Grading and Stabilization Log

7.13.1 General Site Stabilization Controls

The contractor will implement and maintain stabilization measures that minimize erosion from exposed portions of the site in accordance with Parts 2.2.14a and 2.2.14b of the 2017 CGP.

- **Timeline**: Initiate stabilization measures **immediately** in any areas of exposed soil where construction activities have ceased and will not resume for 14 or more calendar days. The EPA may propose an accelerated schedule if site conditions warrant additional protection measures. Some exceptions for unforeseen circumstances apply, refer to Parts 2.2.14(a)(iii) of the 2017 CGP. Document any departures from the standard timeline in the construction activities log.
- **Timeline**: for discharges to sediment- or nutrient-impaired waters or to a water that is identified by Massachusetts or the EPA as a **Tier 2, Tier 2.5, or Tier 3** water, complete stabilization as soon as practicable but no later than 7 calendar days after stabilization has been initiated.

Site stabilization practices may be temporary or permanent, vegetative or non-vegetative.

7.13.2 Specific Site Stabilization Controls

This section of the SWPPP describes site stabilization practices that the contractor may use during the course of the work.

If the General Contractor elects to use controls that are not specified in this SWPPP manual, the contractor will prepare documentation describing the control installation, inspection, maintenance, and removal procedures and record the actions in the appropriate project logs.

7.13.2.1 Vegetative Stabilization

Temporary, rapid vegetative stabilization will be completed using annual grasses, such as annual rye. Permanent stabilization will be completed with the planting of perennial grasses or legumes. Permanent vegetative stabilization will provide uniform perennial cover with a density of 70 percent or more of the natural background cover.

The Contractor will provide a suitable topsoil, good seedbed preparation, soil amendments, and water for effective establishment of these vegetative stabilization methods. Vegetation may be applied via hydro seeding or sodding techniques.

Mulch may also be applied following permanent seeding activities to protect soil from the impact of falling rain and to increase the capacity of the soil to absorb water.

7.13.2.2 Non-Vegetative Stabilization

Non-vegetative stabilization practices may consist of the application of mulch or erosion control blankets.

Mulch Application

If application of mulch is necessary, mulch will be applied at a rate of 90 pounds per 1,000 square feet. The mulch will be anchored with a tacking coat (non tar) applied by a hydroseeder. Steeper slopes (greater than 10 percent) will be covered with a bonded fiber matrix.

Erosion Control Blanket

Erosion control blankets will consist of bio-degradable materials such as mats of woven jute and/or coconut fiber.

Erosion control blankets may be combined with vegetative controls. For permanent stabilization applications, erosion control blankets shall consist of a non-woven bio-degradable material and shall be installed by anchoring the top of the blanket in a 6-inch-deep trench. The trench shall be backfilled and compacted after the blanket is secured with staples. Edges of the blankets must be stapled with approximately 4 inches overlap where two or more strip widths are required.

Erosion control blankets are applied to the soil surface as a continuous sheet and are used to protect disturbed areas from erosion and to enhance seed growth, typically where moving water is likely to wash out new vegetative plantings and mulches are ineffective.

Inspection and Maintenance Requirements

Inspection and maintenance activities for site stabilization will include:

Table 47 Maintenance Requirements: Site Stabilization

Inspection Item	Condition	Maintenance Activity
Surface	Erosion	Reinforce the surface using a vegetative or non-vegetative stabilization measure
SWPPP		Maintain the SWPPP throughout the construction period in accordance with the terms of the 2017 CGP.

7.14 Dewatering Practices

Refer to Part 2.4 of the 2017 CGP for information on the requirements for dewatering.

7.14.1 General Dewatering Practices

If project activities require dewatering, the General Contractor will implement dewatering practices to comply with the following requirements. The General Contractor:

› Will treat dewatering discharges with controls to minimize discharges of pollutants

- Will not discharge visible floating solids or foam
- Will use an oil-water separator or suitable filtration device that is designed to remove oil, grease, or other products if dewatering water is found to contain these materials.
- Will discharge water to vegetated, upland areas of the site to promote infiltration.
- Will comply with velocity dissipation requirements of Part 2.2.11
- Will handle backwash water by either hauling it away or returning it to the beginning of the treatment process
- Will replace and clean the filter media used in the dewatering devices when the pressure differential equals or exceeds the manufacturer's specifications.

The General Contractor may select and install dewatering controls at their discretion. The General Contractor shall specify locations of structural controls on the Site Map.

The General Contractor will record activities associated with dewatering controls in the following project logs:

Table 48 Recording Requirements: Dewatering Controls

Action	Recorded in
Installation	Construction Activities Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log

7.14.2 Specific Dewatering Practices

If the General Contractor elects to use controls that are not specified in this SWPPP manual, the contractor will prepare documentation describing the control installation, inspection, maintenance, and removal procedures and record the actions in the appropriate project logs.

7.14.2.1 Dewatering Filter Bag

The dewatering filter bag consists of a non-woven geotextile filter fabric placed at the outlet of one (maximum diameter) six-inch discharge hose. If the dewatering filter bag will be used as a construction period dewatering control device, any bags will be placed on relatively flat terrain, free of brush and stumps. If rough ground conditions make punctures likely, a geotextile fabric will be placed beneath the filter bag. Unattended filter bags will be encircled with a straw bale and silt fence barrier.

Inspection and Maintenance Requirements

All dewatering structures will be placed as far away from wetland resources as practicable. Filter bags used during construction will be bundled and removed for proper disposal. Filter media shall be cleaned and replaced in all dewatering devices when the pressure differential equals or exceeds the manufacturer's specifications.

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Pollution Prevention

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8.1 Potential Sources of Pollution

The following list identifies pollutant generating activities that are likely to occur on the project site in accordance with Part 7.2.3.g of the 2017 CGP.

Table 49 Pollutant Generating Activities and Pollutants Located on Site

Pollutant-generating Activity	Pollutants or Pollutant Constituents (that could be discharged if exposed to stormwater)	Location on Site (or reference SWPPP site map where this is shown)
Vehicle Maintenance	Petroleum-based products	
Cleared & Graded Areas	Soil erosion	
Portable Toilets	Sewage	
Fuel Tanks	Fuel oil, gasoline, other fuels	
Storage Areas	Soil erosion, fuel oil, gasoline, concrete, vehicle fluids, paints, solvents, adhesives	

8.2 Fueling and Maintenance of Equipment or Vehicles

When fueling or maintaining equipment or vehicles, the contractor will adhere to the following requirements specified in Part 2.3.1 of the 2017 CGP:

- Provide an effective means of eliminating the discharge of spilled or leaked chemicals, including fuels and oils, from these activities.
- If applicable, comply with the Spill Prevention Control and Countermeasures (SPCC) requirements in 40 CFR 112 and Section 311 of the CWA;
- Ensure adequate supplies are available at all times to handle spills, leaks, and disposal of used liquids;
- Use drip pans and absorbents under or around leaky vehicles;
- Dispose of or recycle oil and oily wastes in accordance with other federal, state, tribal, or local requirements;
- Clean up spills or contaminated surfaces immediately, using dry clean up measures where possible, and eliminate the source of the spill to prevent a discharge or a furtherance of an ongoing discharge. **Do not clean surfaces by hosing the area down.**
- Whenever possible refueling shall take place at least 100 feet away from any vegetated wetland or open water areas.

8.3 Washing of Equipment and Vehicles

When washing equipment and/or vehicles, the contractor will adhere to the following requirements specified in part 2.3.2 of the 2017 CGP.

- Provide an effective means of minimizing the discharge of pollutants from equipment and vehicle washing, wheel wash water, and other types of washing.
- Ensure that there is no discharge of soaps, solvents, or detergents in equipment and vehicle wash water.
- For storage of soaps, detergents, or solvents, the contractor must provide either cover (e.g., plastic sheeting or temporary roofs) to prevent these detergents from coming into contact with rainwater, or a similarly effective means designed to prevent the discharge of pollutants from these areas.

Effective controls may include, but are not restricted to, locating activities away from surface waters and stormwater inlets or conveyances and directing wash waters to a sediment basin or sediments trap, using filtration devices, such as filter bags or sand filters, or using other similarly effective controls.

Refer to Part 2.3.4 of the 2017 CGP for additional requirements for handling wash water associated with concrete, paint, or stucco.

8.4 Storage, Handling, and Disposal of Construction Products, Materials, and Wastes

When storing, handling, and disposing of construction products, materials, and wastes, the contractor will adhere to the following good-housekeeping practices specified in part 2.3.3 of the 2017 CGP.

- An effort will be made to store only enough product required to do the job;
- All materials stored on-site will be stored in a neat, orderly manner in their appropriate containers, and (if possible) under a roof or other enclosure;
- Products will be kept in their original containers with the original manufacturer's label;
- Substances will not be mixed with one another unless recommended by the manufacturer;
- Whenever possible, all of a product will be used before disposing of the container;
- Manufacturer's recommendations for proper use and disposal will be followed; and
- The site superintendent will inspect the storage area daily to ensure proper use and disposal of materials on-site.

The following practices will reduce the risks associated with hazardous materials (e.g., petroleum products, solvents):

- A copy of all Material Safety Data Sheets (MSDS) for materials or products used during construction will be kept in the office trailer;
- Products will be kept in original containers unless they are not re-sealable;
- Original labels and material safety data (MSD sheets) will be retained; they contain important product information; and
- If surplus product must be disposed, manufacturer's or local- and state-recommended methods for proper disposal will be followed.

8.4.1 Building Products

In accordance with CGP Part 2.3.3.b, all containers will be tightly sealed and covered with plastic sheeting or a temporary roof when not required for use. Excess materials will be properly disposed according to manufacturer's instructions or state and local regulations and shall not be discharged to the storm sewer system. No storage will occur within 100 feet of a wetland or waterway.

8.4.2 Pesticides, Herbicides, Insecticides

Pesticides, herbicides, and insecticides will not be used at the Project Site.

8.4.3 Diesel Fuel, Oil, Hydraulic Fluids, Other Petroleum Products, and Other Chemicals

In accordance with CGP Part 2.3.3.c products stored on site will be contained in water-tight containers with either

- a cover to minimize the exposure of the container to precipitation and to stormwater or
- or a similarly effective means detained to minimize the discharge of pollutants from these areas such as secondary containment

All on-site vehicles will be monitored for leaks and will receive regular preventive maintenance to reduce the chance of leakage. Spills will be cleaned up immediately, using dry clean-up methods where possible. The source of the spill will be eliminated to prevent continuation of an on-going discharge.

No vehicle maintenance or handling of petroleum products will occur within 100 feet of a wetland or waterway.

Any asphalt substances used on-site will be applied according to manufacturer's recommendations. No petroleum-based or asphalt substances will be stored within 100 feet of a wetland or waterway.

8.4.4 Hazardous or Toxic Waste

In accordance with CGP Part 2.3.3.d, the contractor will:

- Separate hazardous or toxic waste from construction and domestic waste;
- Store waste in sealed containers, which are constructed of suitable materials to prevent leakage and corrosion, and which are labeled in accordance with applicable Resource Conservation and Recovery Act (RCRA) requirements and all other applicable federal, state, tribal, or local requirements;
- Store all containers that will be stored outside within appropriately sized secondary containment (e.g., spill berms, decks, spill containment pallets) to prevent spills from being discharged, or provide a similarly effective means designed to prevent the discharge of pollutants from these areas (e.g., storing chemicals in covered area or having a spill kit available on site); and

- Clean up spills immediately, using dry clean-up methods where possible, and dispose of used materials properly.
- Hosing will not be utilized as a method to clean surfaces or spills.
- Eliminate the source of the spill to prevent a discharge or a furtherance of an ongoing discharge.

All hazardous waste materials (e.g., petroleum products, solvents) will be disposed in the manner specified by local and state regulation, or by the manufacturer. Site personnel will be instructed in these practices, and the site construction supervisor will be responsible for seeing that these procedures are followed.

8.4.5 Construction and Domestic Waste

In accordance with CGP Part 2.3.3.e, the contractor will provide waste containers (e.g., dumpster or trash receptacle) of sufficient size and number to contain construction and domestic wastes. Waste containers will be covered to prevent precipitation from entering the container and becoming a source of pollution. Alternatively, the waste container will be kept in secondary containment to prevent discharges of contaminated stormwater.

Daily loose trash removal will prevent litter, construction debris, and construction chemicals exposed to stormwater from becoming a pollutant source for stormwater discharges. All loose trash will be placed in appropriate storage containers and will be disposed of properly.

The General Contractor will identify the areas to be used for storing dumpsters, compactors or other raw or waste materials on the Site Map.

8.4.6 Large Structures Built or Renovated prior to January 1980

In accordance with CGP Part 2.3.3.f, the contractor will implement controls to minimize the exposure of PCB-containing building materials including paint, caulk, and pre-1980s fluorescent light fixtures to precipitation and stormwater and ensure that disposal of such materials is performed in compliance with applicable state, federal and local laws.

8.4.7 Sanitary Waste

Portable toilets will be placed away from waters of the U.S., stormwater inlets and/or conveyances and will be secured in place so that they will tip or be knocked over. All sanitary waste will be collected from the portable units by a licensed contractor as required, and disposed in compliance with state and local regulations.

8.5 Washing of Applicators and Containers used for Paint, Concrete or Other Materials

In compliance with the prohibition in CGP Parts 2.3.4, the contractor must provide an effective means of eliminating the discharge of water from the washout and cleanout of stucco, paint, concrete, form release oils, curing compounds, and other construction materials. To comply with this requirement, the contractor must:

› Direct all washwater into a leak-proof container or leak-proof pit. The container or pit must be designed so that no overflows can occur due to inadequate sizing or precipitation;

› Handle washout or cleanout wastes as follows:

- Do not dump liquid wastes in storm sewers;
- Dispose of liquid wastes in accordance with applicable requirements in Part 2.3.3; and
- Remove and dispose of hardened concrete waste consistent with handling of other construction wastes in Part 2.3.3.

› Locate any washout or cleanout activities as far away as possible from surface waters and stormwater inlets or conveyances, and, to the extent practicable, designate areas to be used for these activities and conduct such activities only in these areas.

8.6 Pavement Sweeping

Pavement sweeping may be performed daily or as needed, when track-out has occurred. The sweeping program will remove sediments and contaminants directly from paved surfaces before their release into stormwater runoff. Pavement sweeping has been demonstrated to be an effective initial treatment for reducing pollutant loading into stormwater.

8.7 Spill Prevention and Response

The following practices will be followed for spill control, notification, and cleanup:

The General Contractor is responsible for the daily operations and is also responsible for coordinating spill prevention and cleanup coordination. The General Contractor will designate at least three other site personnel to receive spill prevention and cleanup training. These individuals will each become responsible for a particular phase of prevention and cleanup. The names of the responsible spill personnel will be posted in the material storage area and in the on-site office trailer.

› Spills of toxic or hazardous material in excess of reportable quantities, as established in the under 40 CFR 110, 40 CFR 117, or 40 CFR 302, will be reported to the following agencies as soon as the General Contractor has knowledge of the release:

Massachusetts Department of Environmental Protection Division of Hazardous Waste	(617) 292-5851 or (978) 661-7679
National Response Center	(800) 424-8802

› All spills will be cleaned up immediately after discovery;

› The spill area will be kept well ventilated and personnel will wear protective clothing to prevent injury from contact with a hazardous substance; and

› Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be informed of the procedures and the location of the information and cleanup supplies;

› Materials and equipment necessary for spill cleanup will be kept in the material storage area on-site. Equipment and materials will include, but will not be limited to the emergency response equipment listed herein;

A comprehensive Spill Prevention Control and Countermeasure (SPCC) plan will be developed and implemented by the General Contractor and other Operators. At a minimum the SPCC, will discuss:

› Spill prevention equipment;
› Spill prevention supplies provided on-site; and
› Spill prevention training to be provided by the Owner and/or Tenant to designated employees.

8.7.1 Initial Notification

In the event of a spill the notify the 24-hour Emergency Contact (Section 0) immediately.

The 24-hour Emergency Contact or their chosen delegate will immediately notify emergency response services and notify the local boards and commissions at the first possible opportunity:

› Fire Department (immediately)
› the Police Department, (immediately)
› the Board of Health (at first opportunity)
› and the Conservation Commission (at first opportunity)

8.7.2 Further Notification

Based on the assessment from the Fire Chief, additional notification to a cleanup contractor may be made. The Massachusetts Department of Environmental Protection (DEP) and the EPA may be notified depending upon the nature and severity of the spill. The Fire Chief will be responsible for determining the level of cleanup and notification required. The attached list of emergency phone numbers shall be posted in the main construction/facility office and readily accessible to all employees. A hazardous waste spill report shall be completed as necessary using the attached form.

8.7.3 Assessment - Initial Containment

The supervisor or manager will assess the incident and initiate containment control measures with the appropriate spill containment equipment included in the spill kit kept on-site. A list of recommended spill equipment to be kept on site is included on the following pages.

8.7.4 Reporting

A copy of the Spill Report Template is included in Attachment N.

Table 50 Emergency Notification Phone Numbers

1A	24-hour Contact	Eversource	T: (###) ###-###
1B	Alternate Contact		T: (###) ###-###
2	Fire and Police		911
3	Cleanup Contractor		T: (###) ###-###
4	MassDEP		T: (800) 340-1133
5A	National Response Center		T: (800) 424-8802
5B	USEPA		T: (800) 424-8802 T: (800) 424-8802
6A	Sudbury Board of Health		T: (978) 440-5479
6B	Marlborough Board of Health		T: (508) 460-3751
6C	Hudson Board of Health		T: (978) 562-2020
6D	Stow Board of Health		T: (978) 897-4592
7A	Sudbury Conservation Commission	Coordinator Lori Capone	T: (978) 440-5471
7B	Hudson Conservation Commission	Agent/Planner Pam Helinek	T: (978) 568-9641
7C	Stow Conservation Commission	Coordinator Kathy Sferra	T: (978) 897-8615

Post this list of emergency contact numbers in the main construction/facility office in a location that is readily accessible to all employees.

Emergency Response Equipment

The following is an example of an equipment and materials list that must be prepared by the Owner and Tenant. Equipment and Supplies on this list shall be maintained at all times and stored in a secure area for long-term emergency response need.

Table 51 Emergency Response Equipment

Supply	Quantity	Supplier
Sorbent Pillows (Pigs)	2	http://www.newpig.com
Sorbent Boom/Sock	25 feet	Item # KIT276 — mobile container with two pigs, 26 feet of sock
Sorbent Pads	50	50 pads, and five pounds of absorbent (or equivalent)
Lite-Dri® Absorbent	5 pounds	http://www.forestry-suppliers.com
Shovel	1	Item # 33934 — Shovel (or equivalent)
Pry Bar	1	Item # 43210 — Manhole cover pick (or equivalent)
Goggles	1 pair	Item # 23334 — Goggles (or equivalent)
Heavy Gloves	1 pair	Item # 90926 — Gloves (or equivalent)

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9

Compliance with Other Regulations

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9.1 Endangered Species

Appendix D of the 2017 CGP describes eligibility requirements with regard to the protection of threatened and endangered species and designated critical habitat.

9.1.1 Eligibility Criterion

Under which criterion listed in Appendix D of the 2017 CGP are you eligible for coverage under this permit?

☐ A ☐ B ☐ C ☐ D ☒ E

- **Criterion A.** No federally listed threatened or endangered species or their designated critical habitat(s) are likely to occur in your site's "action area" as defined in Appendix A of the 2017 CGP.
- **Criterion B.** The construction site's discharges and discharge-related activities were already addressed in another operator's valid certification of eligibility for your action area under eligibility Criterion A, C, D, E, or F and there is no reason to believe that federally-listed species or federally-designated critical habitat not considered in the prior certification may be present or located in the "action area". To certify your eligibility under this Criterion, there must be no lapse of NPDES permit coverage in the other operator's certification. By certifying eligibility under this Criterion, you agree to comply with any effluent limitations or conditions upon which the other operator's certification was based. You must include in your NOI the tracking number from the other operator's notification of authorization under this permit. If your certification is based on another operator's certification under Criterion C, you must provide EPA with the relevant supporting information required of existing dischargers in Criterion C in your NOI form.
- **Criterion C.** Federally listed threatened or endangered species or their designated critical habitat(s) are likely to occur in or near your site's "action area," and your site's discharges and discharge-related activities are not likely to adversely affect listed threatened or endangered species or critical habitat. This determination may include consideration of any stormwater controls and/or management practices you will adopt to ensure that your discharges and discharge-related activities are not likely to adversely affect listed species and critical habitat. To make this certification, you must include the following in your NOI: 1) any federally listed species and/or designated habitat located in your "action area"; and 2) the distance between your site and the listed species or designated critical habitat (in miles). You must also include a copy of your site map with your NOI.
- **Criterion D.** Coordination between you and the Services has been concluded. The coordination must have addressed the effects of your site's discharges and discharge-related activities on federally-listed threatened or endangered species and federally designated critical habitat, and must have resulted in a written concurrence from the relevant Service(s) that your site's discharges and discharge-related activities are not likely to adversely affect listed species or critical habitat. You must include copies of the correspondence between yourself and the Services in your SWPPP and your NOI.
- **Criterion E.** Consultation between a Federal Agency and the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service under Section 7 of the ESA has been concluded.

The consultation must have addressed the effects of the construction site's discharges and discharge-related activities on federally listed threatened or endangered species and federally-designated critical habitat. The result of this consultation must be either:

- a biological opinion that concludes that the action in question (taking into account the effects of your site's discharges and discharge-related activities) is not likely to jeopardize the continued existence of listed species, nor the destruction or adverse modification of critical habitat; or
- written concurrence from the applicable Service(s) with a finding that the site's discharges and discharge-related activities are not likely to adversely affect federally-listed species or federally designated habitat.

› You must include copies of the correspondence between yourself and the Services in your SWPPP and your NOI.

› **Criterion F.** Your construction activities are authorized through the issuance of a permit under Section 10 of the ESA, and this authorization addresses the effects of the site's discharges and discharge-related activities on federally-listed species and federally designated critical habitat. You must include copies of the correspondence between yourself and the Services in your SWPPP and your NOI.

› For reference purposes, the eligibility criteria listed in Appendix D of the 2017 CGP are as follows:

9.1.2 Supporting Documentation

Provide documentation for the applicable eligibility criterion you select in Appendix D of the 2017 CGP, as follows:

For criterion A, indicate the basis for your determination that no federally-listed threatened or endangered species or their designated critical habitat(s) are likely to occur in your site's action area (as defined in Appendix A of the 2017 CGP). Check the applicable source of information you relied upon:

☐ Specific communication with staff of the U.S. Fish & Wildlife Service or National Marine Fisheries Service.

☐ Publicly available species list.

☒ Other source: IPaC

For criterion B, provide the Tracking Number from the other operator's notification of permit authorization:

Provide a brief summary of the basis used by the other operator for selecting criterion A, B, C, D, E, or F:

For criterion C, provide the following information:

› Any federally listed species and/or designated habitat located in your "action area"

› The distance between your site and the listed species or designated critical habitat (in miles). You must also include a copy of your site with you NOI.

For criterion D, E, or F, attach copies of any letters or other communication between you and the U.S. Fish & Wildlife Service or National Marine Fisheries Service concluding consultation or coordination activities.

Supporting documentation related to project compliance with the Endangered Species Act is provided in Attachment F.

9.2 Historic Preservation

Appendix E of the 2017 CGP describes eligibility requirements with regard to the protection of historic properties, including tribal lands.

The Operator responsible for finalizing this SWPPP must:

- Fill out the answers to the questions below for
  - Appendix E, Step 2
  - Appendix E, Step 3
  - Appendix E, Step 4
- Insert copies of any correspondence with the Massachusetts Historical Commission into Attachment G.

9.2.1 Appendix E, Step 1

Do you plan on installing any of the following stormwater controls at your site? Check all that apply below, and proceed to Appendix E, Step 2.

- ☐ Dike
- ☐ Berm
- ☐ Catch Basin
- ☐ Pond (Bioretention Basin)
- ☒ Stormwater Conveyance Channel (e.g., ditch, trench, perimeter drain, swale, etc.)
- ☒ Culvert
- ☐ Other type of ground-disturbing stormwater control: Subsurface infiltration structures

(Note: If you will not be installing any ground-disturbing stormwater controls, no further documentation is required for this section of the SWPPP template.)

9.2.2 Appendix E, Step 2

If you answered yes in Step 1, have prior surveys or evaluations conducted on the site already determined that historic properties do not exist, or that prior disturbances at the site have precluded the existence of historic properties?

☐ YES ☒ NO

If yes, no further documentation is required for this section of the SWPPP template. If no, proceed to Appendix E, Step 3.

9.2.3 Appendix E, Step 3

If you answered no in Step 2, have you determined that your installation of subsurface earth-disturbing stormwater controls will have no effect on historic properties?

☐ YES ☒ NO

If yes, provide documentation of the basis for your determination. If no, proceed to Appendix E, Step 4.

9.2.4 Appendix E, Step 4

If you answered no in Step 3, did the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Office (THPO), or other tribal representative (whichever applies) respond to you within 15 calendar days to indicate whether the subsurface earth disturbances caused by the installation of stormwater controls affect historic properties?

☒ YES ☐ NO

If no, no further documentation is required for this section of the SWPPP template.

If yes, describe the nature of their response:

☐ Written indication that adverse effects to historic properties from the installation of stormwater controls can be mitigated by agreed upon actions.

INSERT COPIES OF LETTERS, EMAILS, OR OTHER COMMUNICATION BETWEEN YOU AND THE APPLICABLE SHPO, THPO, OR OTHER TRIBAL REPRESENTATIVE

☒ No agreement has been reached regarding measures to mitigate effects to historic properties from the installation of stormwater controls.

INSERT COPIES OF LETTERS, EMAILS, OR OTHER COMMUNICATION BETWEEN YOU AND THE APPLICABLE SHPO, THPO, OR OTHER TRIBAL REPRESENTATIVE

☐ Other: *Response from MHC indicating determination that the proposed project will have no adverse effect on significant historic or archaeological properties is included in Attachment G.*

Supporting documentation related to project compliance with the Historic Preservation is provided in Attachment G.

9.3 Safe Drinking Water Act Underground Injection Control Requirements

Do you plan to install any of the following controls? Check all that apply below.

- ☐ Infiltration trenches (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system)
- ☐ Commercially manufactured pre-cast or pre-built proprietary subsurface detention vaults, chambers, or other devices designed to capture and infiltrate stormwater flow
- ☐ Drywells, seepage pits, or improved sinkholes (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system)

All stormwater structures meeting the definition of Underground Injection Wells shall be registered in accordance with DEP regulations 310 CMR 27.00. Copies of correspondence with the MassDEP or the EPA Regional Office should be included in the SWPPP.

Supporting documentation related to project compliance with the Safe Drinking Water Act is provided in Attachment Q.

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Attachment A
2017 Construction General Permit

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Attachment B
Certifications

Refer to Section 1 of this SWPPP Manual for more information.

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Delegation of Authority

I, _____ (name), hereby designate the person or specifically described position below to be a duly authorized representative for the purpose of overseeing compliance with environmental requirements, including the Construction General Permit, at the _____ construction site. The designee is authorized to sign any reports, stormwater pollution prevention plans and all other documents required by the permit.

Name of person/position: _____

Company: _____

Address: _____

City, State, zip: _____

Phone: _____

By signing this authorization, I confirm that I meet the requirements to make such a designation as set forth in Appendix I of EPA's Construction General Permit (CGP), and that the designee above meets the definition of a "duly authorized representative" as set forth in Appendix I.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Name: _____

Company: _____

Title: _____

Signature: _____

Date: _____

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Signatories to the SWPPP

The signatories identified on this sheet are considered Operators of the project described in this SWPPP and will use, update, and maintain this SWPPP to comply with the terms of the 2017 EPA NPDES CGP.

Subcontractors who are not operators may sign the Subcontractor Certification Form.

OWNER	**CONTRACTOR**	**SUBCONTRACTOR (Operator status)**
Signature and Date	Signature and Date	Signature and Date
Title	Title	Title
Client Contact Client Company ### Street Address Town, State ##### T: (###) ###-#### name@address.com	Contractor Contact Contractor Company Address Town, State Zip T: (###) ###-#### name@address.com	Contractor Contact Contractor Company Address Town, State Zip T: (###) ###-#### name@address.com

Add additional sheets as necessary.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

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Signatories to the SWPPP

The signatories identified on this sheet are considered Operators of the project described in this SWPPP and will use, update, and maintain this SWPPP to comply with the terms of the 2017 EPA NPDES CGP.

Subcontractors who are not operators may sign the Subcontractor Certification Form.

SUBCONTRACTOR (Operator status)	**SUBCONTRACTOR (Operator status)**	**SUBCONTRACTOR (Operator status)**
Signature and Date	Signature and Date	Signature and Date
Title	Title	Title
Client Contact Client Company ### Street Address Town, State ##### T: (###) ###-#### name@address.com	Contractor Contact Contractor Company Address Town, State Zip T: (###) ###-#### name@address.com	Contractor Contact Contractor Company Address Town, State Zip T: (###) ###-#### name@address.com

Add additional sheets as necessary.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

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Subcontractor Certification (Non-Operator Status)

Stormwater Pollution Prevention Plan

Project Number: _____

Project Title: _____

Operator(s): _____

As a subcontractor, you are required to comply with the Stormwater Pollution Prevention Plan (SWPPP) for any work that you perform on-site. Any person or group who violates any condition of the SWPPP may be subject to substantial penalties or loss of contract. You are encouraged to advise each of your employees working on this project of the requirements of the SWPPP. A copy of the SWPPP is available for your review at the office trailer.

Each subcontractor engaged in activities at the construction site that could impact stormwater must be identified and sign the following certification statement:

"I certify under the penalty of law that I have read and understand the terms and conditions of the SWPPP for the above designated project and agree to follow the practices described in the SWPPP."

This certification is hereby signed in reference to the above named project:

Company: _____

Address: _____

Telephone Number: _____

Type of construction service to be provided: _____

Signature: _____

Title: _____

Date: _____

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Attachment C
EPA NOIs and EPA NOTs

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Attachment D
Project Plans

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Attachment E
Site Map

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Site Map Requirements (Part 7.2.4 of the 2017 CGP):

1. Boundaries of the area of disturbance
2. 50-foot buffer around the area of disturbance
3. Identify areas of steep slope
4. Locations of stockpiles
5. Locations of construction vehicle access
6. All stormwater discharge points from the area of disturbance (to waterbodies AND to storm drain inlets)
7. All surface waters that the area of disturbance discharges to
8. The location and nature of all erosion and sediment controls
   - Perimeter controls
   - Storm drain inlet controls
   - A note that indicates that the contractor will provide information for any other types of controls required.
9. Location of proposed, post-construction impervious surfaces and structures
10. Location of on-site and off-site construction support activity areas covered by this permit
11. Locations of all waters of the US within and one mile downstream of the site. Also identify if any are listed as impaired, or are identified as Tier 2, Tier 2.5, or Tier 3.
12. Areas of federally listed critical habitat within the site and/or at discharge locations
13. Type and extent of pre-construction cover on the site
14. Drainage patterns of stormwater and authorized non-stormwater before and after major grading activities.
15. Locations of all potential pollutant generating activities.

Locations where any chemicals will be used and stored.

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Attachment F
Endangered Species Act

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Attachment G
Historic Preservation

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Attachment H
Training Log and Attendance Forms

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Sudbury-Hudson Transmission Reliability Project, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Training Log

This log provides a table of contents for the training forms. Insert training attendance lists into the field binder.

Date of Inspection	Notes:	Initials

Attach additional sheets as necessary

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Sudbury-Hudson Transmission Reliability Project, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Stormwater Pollution Prevention Training Attendance Form

Date/Time of Training:	
Instructor (name/title):	
Training Location:	
Training Duration:	

Topics addressed in this training

- ☐ Sediment and Erosion Controls
- ☐ Stabilization Controls
- ☐ Pollution Prevention Measures
- ☐ Emergency Procedures
- ☐ Inspections/Corrective Actions
- ☐ Other: _____

Print Name of Attendee:	**Initials**

Attach additional sheets as necessary

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Attachment I
SWPPP Amendment Log

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Sudbury-Hudson Transmission Reliability Project, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Amendment Log

This log provides a table of contents for the amendments to the SWPPP. Insert supplemental materials (if applicable) into the field binder and note their location.

No.	Date of Amendment	Summarize the changes to the SWPPP and indicate any supplemental materials that have been added	Authorization[3] (Name and Signature)	All Other Operators Notified of the Change
1				☐
				☐
				☐
				☐
				☐
				☐
				☐
				☐

Attach additional sheets as necessary.

3 Amendments must be authorized by an individual who meets the requirements of Appendix I, Part 1.11b of the 2017 CGP.

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Attachment J
Construction Activities Log

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Sudbury-Hudson Transmission Reliability Project, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Construction Activities Log

Record the following activities in the Construction Activities log.

Type of Action:	Information to include in the Construction Activity Log
Site-mobilization activities commence	› Record the date
Install construction period stormwater controls	› Record the date that each stormwater control identified on the Sediment and Erosion Control Plan is installed. Record the date each control becomes operational.
Earth-disturbance activities commence	› Record the date, the location on the site, and the type of activity. Activities that must be recorded include: clearing, grubbing, mass grading, cutting/filling, final grading, stockpiling. Record the activity in the Grading and Stabilization Log.
Earth-disturbance activities cease	› Record the date, the location on the site, and the type of activity. › Activities that must be recorded include: clearing, grubbing, mass grading, cutting/filling, final grading, stockpiling. › Record the activity in the Grading and Stabilization Log.
Site stabilization measures commence (P/T)	› Record the date, the location on the site, and the type of site stabilization measure commenced. Indicate if the stabilization measure is temporary or permanent. Record the activity in the Grading and Stabilization Log.
Site stabilization measures cease (P/T)	› Record the date, the location on the site, and the type of site stabilization measure that has ceased. Record the date that the stabilization measure becomes operational.Record the activity in the Grading and Stabilization Log.
Removal of construction period stormwater controls	› Record the date that each stormwater control identified on the Sediment and Erosion Control Plan is removed.
Removal of construction equipment and vehicles	› Record the date that all equipment and vehicles vacate the site.
Cessation of pollutant-generating activities	› Record the date that all pollution generating activities on the site cease.
Construction activities cease	› Record the date.

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Attachment K
Grading and Stabilization Log

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Sudbury-Hudson Transmission Reliability Project, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Construction Activities Log

Date	Type of Action	Notes:	Supplemental Log Entry Created[4]
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐

Attach additional sheets as necessary.

4 If the activity type is an earth disturbance activity or a site stabilization measure, then also record the activity in the separate Grading and Stabilization Log

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Sudbury-Hudson Transmission Reliability Project, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Grading and Stabilization Log

Date Grading Activity Initiated	Date Grading Activity Ceased	Description of Grading Activity	Date Stabilization Measure Initiated	Date Stabilization Achieved	P/T	Description of Stabilization Measure

P = Permanent, T = Temporary

Attach additional sheets as necessary

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Attachment L
Inspection Log and Template Forms

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Sudbury-Hudson Transmission Reliability Project, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Inspection Log

This log provides a table of contents for the completed inspection log forms. Insert completed inspection reports into the field binder.

Date of Inspection	Notes:	Initials

Attach additional sheets as necessary

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Sudbury-Hudson Transmission Reliability Project, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Site Inspection Form

Complete this inspection report within 24 hours of completing the site inspection.

Date/Time of Inspection: _____ **Weather Conditions:** _____

Recent Precipitation Event: _____

(Record daily rainfall total if 0.25 inches has fallen within the previous 24 hours)

Construction Activities Underway: _____

Inspector: _____

Status of Existing BMPs

Refer to Part 4.5 of the 2017 CGP to identify areas that must be inspected.
Refer to Part 4.6 for the requirements for inspections.

	Status – Cleaning or Repair Needed?		
Erosion Control Measure	**Yes**	**No**	**Comments/Notes**
[Silt Fence]	☐	☐	
[Haybales]	☐	☐	
[Construction Period Swales]	☐	☐	
[Construction Period Basins]	☐	☐	
[Erosion Control Blankets]	☐	☐	
	☐	☐	
	☐	☐	

N/A – Not applicable

Attach additional sheets if necessary

In the event of a spill refer to the **Spill Response Procedure** and contact appropriate agencies. Refer to Section 8.8 of the SWPPP Manual for Spill Prevention Plan and Response Procedures.

General Comments (Attach figures to show locations of concern):

	No	Yes
Are additional Erosion Control Measures needed? If yes, describe:	☐	☐
Are sediment/pollution discharges from the site present? If yes, describe:	☐	☐

Describe any corrective action required at this time:

Notes:

Attach additional sheets with notes, comments, illustrations and issues as needed. Use site plan to identify locations of work areas or issues noted above.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Authorization: _____ Date: _____

Authorization must be made by personnel identified in the Delegation of Authority and authorized to complete this task.

Attachment M
Corrective Action Log and Template Forms

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Sudbury-Hudson Transmission Reliability Project, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Corrective Action Log

This log provides a table of contents for the completed corrective action log forms. Insert completed corrective action reports into the field binder.

Date of Action	Notes:	Initials

Attach additional sheets as necessary.

Intentionally blank

Sudbury-Hudson Transmission Reliability Project, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Corrective Action Form

	BMP/Activity	Date Observed	Date Corrected	Corrective Action Needed and Notes
1				
2				
3				
4				

Corrective Action

Describe how any incidents of non-compliance have been addressed:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Authorization: _____ Date: _____

Authorization must be made by personnel identified in the Delegation of Authority and authorized to complete this task.

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Attachment N
Spill Log and Template Forms

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Sudbury-Hudson Transmission Reliability Project, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Hazardous Waste & Oil Spill Report

Date: _____ **Time:** _____ **AM / PM**

Exact location (Transformer #): _____

Type of equipment: _____ **Make:** _____ **Size:** _____

S / N: _____ **Weather Conditions:** _____

On or near water? ☐ Yes ☐ No **If yes, name of body of water:** _____

Type of chemical / oil spilled: _____

Amount of chemical / oil spilled: _____

Cause of spill: _____

Measures taken to contain or clean up spill: _____

Amount of chemical / oil recovered: _____ **Method:** _____

Material collected as a result of cleanup:

_____ drums containing _____

_____ drums containing _____

_____ drums containing _____

Location and method of debris disposal: _____

Name and address of any person, firm, or corporation suffering charges: _____

Procedures, method, and precautions instituted to prevent a similar occurrence from recurring: _____

Spill reported by General Office by: _____ **Time:** _____ **AM / PM**

Spill reported to DEP / National Response Center by: _____

DEP Date: _____ **Time:** _____ **AM / PM** **Inspector:** _____

NRC Date: _____ **Time:** _____ **AM / PM** **Inspector:** _____

Additional comments: _____

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Attachment O
Buffer Documentation

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Attachment P
Chemical Information

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Attachment Q
UIC Well Correspondence

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Attachment R
Local Orders of Condition

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Attachment S
Design Calculations for Stormwater Erosion Controls

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MassCentral Rail Trail - Wayside

Sudbury, Marlborough, Stow, Hudson

CONSTRUCTION ACTIVITIES AT:
Inactive MBTA ROW
Sudbury, Marlborough, Stow, and Hudson

PREPARED ON BEHALF OF:
Massachusetts Department of Conservation and Recreation
251 Causeway Street
Boston, MA 02114

PREPARED FOR:
Paul Jahnige, Project Manager
Massachusetts Department of Conservation and Recreation
136 Damon Road
Northampton, MA 01060
(413) 586-8706
Paul.jahnige@state.ma.us

PREPARED BY:
Vanasse Hangen Brustlin, Inc.
101 Walnut Street
PO Box 9151
Watertown, MA 02471
(617) 924-1770

SWPPP Preparation Date: May 2020
Estimated Project Start Date: XX
Estimated Project End Date: XX

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1

Introduction

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This Stormwater Pollution Prevention Plan (SWPPP) manual has been prepared to address the requirements of the U.S. Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) for Stormwater Discharges from Construction Activity (2017, USEPA). A copy of the 2017 CGP is included in Attachment A.

The CGP gives **Project Operators** of construction activities that meet the eligibility requirements of Part 1.1 of the 2017 CGP, authorization to discharge:

- stormwater as defined in Part 1.2.1 of the 2017 CGP, and
- non-stormwater associated with some construction activities as defined in part 1.2.2 of the 2017 CGP provided that adequate measures are taken to prevent pollution to receiving waters.

This manual is specific to project sites in **Massachusetts**, where the EPA is the permitting authority for stormwater discharges from construction sites nationally.

How to Use this Manual

This manual does not become a CGP-compliant SWPPP until the Project Operators:

- finalize the SWPPP by completing the initial activities indicated on the following pages and
- by maintaining the SWPPP during the construction period in accordance with the 2017 CGP.

Before the project activities begin, the Project Operators must review this manual, fill out relevant information in the spaces provided (or attach additional pages as necessary) and update and/or revise as necessary.

What is a Project Operator?

The 2017 CGP provides permit coverage for Project Operators (Operator) to discharge stormwater from construction sites. An Operator is any party associated with a construction project that meets either of the following two criteria:

- The party has operational control over construction plans and specifications, including the ability to make modifications to those plans and specifications; or
- The party has day-to-day operational control of those activities at a project, which are necessary to ensure compliance with a SWPPP for the site or other permit conditions (e.g., they are authorized to direct workers at a site to carry out activities required by the SWPPP or comply with other permit conditions).

Operators are responsible for maintaining compliance with the terms of the 2017 CGP.

All operators who wish to obtain coverage to discharge stormwater under the 2017 CGP must submit and certify their own NOI to the Environmental Protection Agency (EPA).

Department of Conservation and Recreation adopts the role of the Project Operator. Contractors and subcontractors certify that they have reviewed and will follow the provisions of the SWPPP. See Attachment B.

Eligibility for Permit Coverage

To be covered under the 2017 CGP, a party must meet the eligibility conditions and follow the requirements for obtaining permit coverage. To be eligible for coverage:

- You must be an Operator of a construction site for which discharges will be covered under this permit.
- The project's construction activities:
  - will disturb one (1) or more acres of land, or less than one (1) acre of land if the project is part of a larger common plan that will ultimately disturb one (1) or more acres of land.
  - have been designated by EPA as needing permit coverage under 40 CFR 122.26(a)(1)(v) or 40 CFR 122.26(b)(15)(ii).
- Discharges from your site are not already covered by a different NPDES permit for the same discharge or in the process of having coverage under a different NPDES permit for the same discharge denied, terminated, or revoked.
- The project meets the requirements relevant to the Endangered Species Act (ESA) (Section 9.1).
- The project meets the requirements relevant to preservation of Historic Properties (Section 9.2).
- The project meets the requirements relevant to water quality impacts to designated waters (Section 3.2. Refer to Part 1.1.8 and 1.1.9 of the 2017 CGP).

Project Operators must file and certify an NOI at least fourteen (14) days prior to the start of project activities. https://www.epa.gov/compliance/npdes-ereporting

Compliance Requirements

Compliance with the 2017 CGP is achieved by:

- Developing a draft SWPPP (this document);
- Identifying project operators and responsible parties and obtaining authorization to perform permit compliance activities. (Section 2.1 and Attachment A);
- Submitting and certifying a Notice of Intent (NOI) to the Environmental Protection Agency (EPA) Construction General Permit Program;
- Installing a sign or other notice posted conspicuously at a safe, publicly accessible location, in close proximity to the project site. At a minimum, the notice shall include:
  - The NPDES Permit tracking number,
  - A contact name and phone number for obtaining additional project information,
  - The location where an EPA inspector or a member of the public may access a copy of the current SWPPP,
  - The statement: "If you observe indicators of stormwater pollutants in the discharge or in the receiving waterbodies, contact the EPA through the following website: https://www.epa.gov/enforcement/report-environmental-violations."
- Updating this SWPPP as necessary and maintaining compliance with the CGP and any and all Orders of Conditions during construction period activities; and
- Maintaining an updated copy of the SWPPP on the project site.

Document Control

A current copy of the following documents:

1. 2017 NPDES CGP,
2. the SWPPP and all attachments and insertions, and
3. EPA-issued authorizations must be kept **on site** at the Project field office so that they can be made available:
   - at the time of an on-site inspection by the EPA
   - upon request by EPA; a state; tribal; or local agency that approves stormwater management plans;
   - the operator of a storm sewer system receiving discharges from the site;
   - or representatives of the U.S. Fish and Wildlife Service (USFWS) or the National Marine Fisheries Service (NMFS).

If an on-site location is unavailable for storing these documents, a notice of the plan's location must be posted near the main entrance of the construction site.

These documents may be made available to the general public by federal, state, or local agencies. These documents must be retained for at least 3 years from the date that the permit coverage expires or is terminated.

The SWPPP is a dynamic document and must be continually updated by the Operator(s) throughout construction. It is the responsibility of the Operator(s) to update and complete this manual by including the following information and performing ongoing project activity logging as described in the remainder of this document.

Task Completed	Task	See Sections
☐	Designate and Provide Contact Information for the Responsible Parties	Section 1 Attachment B Section 8.7 Attachment N
☐	Provide documentation confirming EPA authorization of the Project	Attachment C
☐	Provide a construction schedule including dates of major earthwork, stabilization and/or erosion control installations.	Table 24 Appendix J
☐	Review the Erosion and Sediment Controls described in this manual and add or update as needed. Document the installation and maintenance of Erosion and Sediment Controls.	Section 7 Attachment E Attachment J Attachment O Attachment S
☐	Identify any chemical treatments that may be applied to the site and describe dosage, application techniques, and training for personnel.	Section 7.12 Attachment P
☐	Identify potential sources of pollution.	Table 48 Section 8.1
☐	Provide documentation of correspondence congruent with the Endangered Species Act	Section 9.1 Attachment F
☐	Provide documentation of correspondence with Massachusetts Historical Commission. Submit the Project Notification Form (PNF) to Massachusetts Historic Commission	Section 9.2 Attachment G
☐	Provide documentation of compliance with DEP regulations 310 CMR 27.00 (Underground Injection Wells)	Section 9.3 Attachment Q

The SWPPP must be kept up to date throughout the construction period until a Notice of Termination (NOT) Form has been submitted to the EPA. From the date of submital of the NOT form, the SWPPP documents must be maintained by the Operator(s) for a period of three years.

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2

Contact Information and Responsible Parties

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2.1 Operators(s)

Individuals identified in this section are designated responsible parties for each of the project Operators. Project Operators may include, but not be limited to the site Owner, the project owner, and the general contractor. Amend this Section during the construction period if any ownership changes or any temporary or permanent staff changes occur.

Table 1 Project Role: Owner

Company or Organization:	Department of Conservation and Recreation
Name:	
Address:	251 Causeway Street
City, State, Zip	Boston, Ma 02114
Telephone:	(617) 626-1250
Fax/Email:	
Title:	

Table 2 Project Role: General Contractor

Company or Organization:	TBD
Name:	[enter]
Address:	[enter]
City, State, Zip	[enter]
Telephone:	[enter]
Fax/Email:	[enter]
Title:	[enter]

Table 3 Project Role: Project Manager

Company or Organization:	Department of Conservation and Recreation
Name:	Paul Jahnige
Address:	136 Damon Road
City, State, Zip	Northampton, MA 01060
Telephone:	(413) 586-8706 ext. 20
Fax/Email:	Paul.Jahnige@state.ma.us
Title:	Project Manager

Table 4 Project Role: [Optional 2]

Company or Organization:	[enter]
Name:	[enter]
Address:	[enter]
City, State, Zip	[enter]
Telephone:	[enter]
Fax/Email:	[enter]
Title:	[enter]

Insert additional sheets as necessary.

2.2 24-hour Emergency Contact Information

The individuals identified in this Section will be available to respond to emergency conditions on the site 24 hours a day, 7 days a week. Amend this Section during the construction period if any temporary or permanent staff changes occur.

Table 5 24-hour Emergency Contact (Primary)

Company or Organization:	Department of Conservation and Recreation
Name:	Paul Jahnige
Address:	136 Damon Road
City, State, Zip	Northampton, MA 01060
Telephone:	(413) 586-8706 ext. 20
Fax/Email:	Paul.Jahnige@state.ma.us
Title:	Project Manager

Table 6 24-hour Emergency Contact (Secondary)

Company or Organization:	[enter]
Name:	[enter]
Address:	[enter]
City, State, Zip	[enter]
Telephone:	[enter]
Fax/Email:	[enter]
Title:	[enter]

Attach additional sheets as necessary.

2.3 Delegation of Authority

The individual authorized to sign/certify the NOI is granted the authority to sign the

- SWPPP,
- Inspection Reports,
- Corrective Action Reports and
- other permit documents.

Alternatively, the individual may delegate this authority. A duly authorized representative may only sign the documents if:

- This authorization specifies either an individual or a position (e.g., Environmental Compliance Officer) who has the responsibility for the overall operation of the regulated area or who has overall responsibility for environmental matters.
- This SWPPP includes a signed, dated written authorization.

The duly authorized representative cannot be a subcontractor or a third party. A duly authorized third party may conduct inspections and corrective actions and may complete reports, but the NOI signer/certifier or duly authorized representative identified here must sign the reports.

Insert authorization signature pages into Attachment B. Amend this Section and add pages to Attachment B during the construction period if any temporary or permanent staff changes occur.

Table 7 Duly Authorized Representative or Position (Primary)

Company or Organization:	VHB
Name:	Tracie Lenhardt
Address:	101 Walnut Street
City, State, Zip	Watertown, MA 02471
Telephone:	(617) 607-2961
Fax/Email:	tlenhardt@vhb.com
Title:	Project Manager

Table 8 Duly Authorized Representative or Position (Secondary, optional)

Company or Organization:	VHB
Name:	Josh Cone-Roddy
Address:	101 Walnut Street
City, State, Zip	Watertown, MA 02471
Telephone:	(617) 607-2797
Fax/Email:	Jcone-roddy@vhb.com
Title:	Project Engineer

Table 9 Duly Authorized Representative or Position (Tertiary, optional)

Company or Organization:	[enter]
Name:	[enter]
Address:	[enter]
City, State, Zip	[enter]
Telephone:	[enter]
Fax/Email:	[enter]
Title:	[enter]

Attach additional sheets as necessary.

2.4 Stormwater Team

The duties of these personnel include one or more of the following:

1. Prepare the Draft SWPPP
2. Finalize the SWPPP
3. Implement the SWPPP
4. Oversee maintenance practices identified as BMPs in the SWPPP
5. Conduct or provide for inspection and monitoring activities
6. Identify other potential pollutant sources and make sure that they are added to the plan
7. Identify any amendments to the SWPPP necessitated by field conditions and make sure they are implemented
8. Ensure that any design changes during construction are addressed in the SWPPP

All Operators and/or Subcontractors that will use this SWPPP for compliance with the terms of their CGP must provide a certification agreement to do so. The certification agreements are located in Attachment B.

Table 10 Stormwater Team 1

Company or Organization:	VHB
Name:	Kelan Koncewicz
Address:	101 Walnut Street
City, State, Zip	Watertown, MA 02471
Telephone:	(617) 607-6156
Fax/Email:	KKoncewicz@vhb.com
Title:	Environmental Scientist

Continued on the next page

Table 11 Stormwater Team 2

Company or Organization:	**VHB**
Name:	Jay Quattrocchi
Address:	101 Walnut Street
City, State, Zip	Watertown, MA 02471
Telephone:	(617) 607-1708
Fax/Email:	VKimball@vhb.com
Title:	Environmental Scientist

Table 12 Stormwater Team 3

Company or Organization:	**Department of Conservation and Recreation**
Name:	Paul Jahnige
Address:	136 Damon Road
City, State, Zip	Northampton, MA 01060
Telephone:	(413) 586-8706 ext. 20
Fax/Email:	Paul.Jahnige@state.ma.us
Title:	Project Manager

Attach additional pages as necessary.

2.5 Personnel Responsible for Inspections

Inspections are to be performed by "qualified personnel" as defined in Part 4.1 of the 2017 CGP and shall include all areas of the site disturbed by construction activity and areas used for materials storage that are exposed to precipitation. The Inspector must look for evidence of, or the potential for, pollutants entering the storm water system, inspect the BMPs installed as part of the Plan, inspect the site drainage outfalls, inspect the site egress points for tracking, and inspect material, waste, borrow, or equipment storage and maintenance areas. If, in the course of the inspection, the inspector identifies an eroded area or an area impacted by sedimentation, additional erosion and sedimentation controls will be implemented, the discharge will be documented, and the SWPPP will be revised to include these changes.

Inspection forms are available in Attachment L. Amend this Section during the construction period if any temporary or permanent staff changes occur.

Table 13 Personnel Authorized to Perform Inspections

Name: Title:	Kelan Koncewicz Environmental Scientist
Name: Title:	Jay Quattrocchi Environmental Scientist
Name: Title:	
Name: Title:	
Name: Title:	
Name: Title:	

Attach additional sheets as necessary.

2.6 Personnel Responsible for Completing Corrective Actions

The following personnel are responsible for completing corrective action forms.

Insert authorization signature pages into Appendix K. Amend this Section during the construction period if any temporary or permanent staff changes occur.

Table 14 Personnel Responsible for Completing Corrective Actions (Primary)

Company or Organization:	VHB
Name:	Tracie Lenhardt
Address:	101 Walnut Street
City, State, Zip	Watertown, MA 02471
Telephone:	(617) 607-2961
Fax/Email:	tlenhardt@vhb.com
Title:	Project Manager

Table 15 Personnel Responsible for Completing Corrective Actions (Secondary, optional) Contractor?

Company or Organization:	
Name:	
Address:	
City, State, Zip	
Telephone:	
Fax/Email:	
Title:	

Attach additional sheets as necessary

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3

Site Evaluation Assessment and Planning

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3.1 Project/Site Information

Table 16 Project Name and Address

Project/Site Name:	MassCentral Rail Trail - Wayside
Project Street/Location:	Inactive MBTA ROW in Sudbury, Marlborough, Stow
City:	Sudbury, Marlborough, Stow, Hudson
State:	Massachusetts
Zip:	Various
County:	Middlesex

Table 17 Project Coordinates - Sudbury to Hudson

Type	Latitude		Longitude	
Eastern End (Sudbury Substation Access Road)	42.360624	N	71.398341	W
Western End (Assabet River Rail Trail Interconnection)	42.396255	N	71.535196	W

Table 18 Source for coordinate information

	Source
☐	USGS topographic map
☐	EPA Website
☐	GPS
☒	Other: (Maps.google.com)

Table 19 Horizontal Reference Datum

	Reference
☐	NAD 27
☒	NAD 83 or WGS 84
☐	Unknown
☐	Other:

3.1.1.1 Additional Information

Yes	No	
☐	☒	Is the project/site located on **Indian country lands,** or located on a property of religious or cultural significance to an Indian tribe? If yes, provide the name of the Indian tribe associated with the area of Indian country (including the name of Indian reservation if applicable), or if not in Indian country, provide the name of the Indian tribe associated with the property: n/a If you are conducting earth-disturbing activities in **response to a public emergency,** document the cause of the public emergency *(e.g., natural disaster, extreme flooding conditions)*, information substantiating its occurrence *(e.g., state disaster declaration)*, and a description of the construction necessary to reestablish effective public services: n/a
☐	☒	Are you applying for permit coverage as a "**federal operator**" as defined in Appendix A of the 2017 CGP?

3.2 Discharge Information

Yes	No	
☒	☐	Does your project/site discharge stormwater into a Municipal Separate Storm Sewer System (MS4)?
☒	☐	Are there any surface waters that are located within 50 feet of your construction disturbances?

3.2.1 Receiving Waters

Name(s) of the first surface water(s) that receive stormwater directly from your site and/or from the MS4 (note: multiple rows provided where your site has more than one point of discharge that flows to different surface waters)

Table 20 Receiving Waters

Number	Name
1	Assabet River
2	Fort Meadow Brook
3	Hop Brook
4	Unnamed Stream/Tributary
5	Dudley Brook
6	Hudson wetlands 1-21 (H1-H21)
7	Sudbury wetlands 1-45 (S1-S45)

3.2.2 Impaired Waters

Use the interactive map of the 2016 integrated list of waters to identify impaired waters in the vicinity of the project area. The interactive map is available online at: http://www.mass.gov/eea/agencies/massdep/water/watersheds/integrated-list-of-waters.html

Table 21 Impaired Receiving Waters

	Is this surface water listed as impaired?		If you answered yes, then answer the following:				
				Has a TMDL been completed?			
	Yes	No	What pollutants are causing the impairment?	Yes	No	Title of the TMDL document	Pollutant(s) for which there is a TMDL
Assabet River	☒	☐	(Debris/Floatables/Trash); (Non-Native Aquatic Plants); Aquatic Plants (Macrophytes); Escherichia coli; Excess Algal Growth; Fecal Coliform; Nutrient/ Eutrophication Biological Indicators; Oxygen, Dissolved; Phosphorus (Total); Taste and Odor.	☒	☐	Assabet River Total Maximum Daily Load for Total Phosphorus *(CN 201.0)*	Phosphorus
Fort Meadow Brook	☐	☒		☐	☒		
Hop Brook	☒	☐	(Non-Native Aquatic Plants); Aquatic Plants (Macrophytes); Dissolved	☒	☐		

			oxygen saturation; Escherichia coli; Excess Algal Growth; Oxygen, Dissolved; Phosphorus (Total); Turbidity. Oxygen, Dissolved; Phosphorus (Total.				
Unnamed Tributary	☒	☐	Dissolved oxygen saturation; Excess Algal Growth; Oxygen, Dissolved; Phosphorus (Total); Total Suspended Solids (TSS).	☒	☐		
Dudley Brook	☐	☒		☐	☐		

3.2.3 Tier 2, 2.5, or 3 Waters

In **Massachusetts**, Tier 2 waters are listed as "High Quality Waters." **All wetlands** that are not designated as an Outstanding Resource Water are considered a High Quality Water (Refer to antidegradation designations, link below).

In **Massachusetts,** Tier 2.5 waters are listed as Outstanding Resource Water, Public Water Supply, and/or Tributary to Public Water Supply, and all wetlands bordering Outstanding Resource Waters and all vernal pools.

In **Massachusetts,** Tier 3 waters are defined as Special Resource Waters. (As of February 2017, no waters are listed as Special Resource Waters).

Tier 2, Tier 2.5, and Tier 3 waters are identified and listed in the Massachusetts Water Quality Standards 314 CMR 4.00. See 314 CMR 4.06(1)(d)m for definitions. See the Tables and Figures associated with 314 CMR 4.06 available online at: https://www.mass.gov/regulations/314-CMR-4-the-massachusetts-surface-water-quality-standards

To determine applicability of specific antidegradation designations refer to: https://www.mass.gov/doc/antidegradation-implementation-procedures-0/download

Table 22 Special Receiving Waters (Tier 2, Tier 2.5 or Tier 3)

	Is this surface water designated as a Tier 2, Tier 2.5 or Tier 3 water?		If you answered yes, specify which Tier (2, 2.5, or 3) the surface water is designated as.
	Yes	No	
Assabet River	☒	☐	Tier 2. High quality water.
Hop Brook	☒	☐	Tier 2. High quality water.

Wetland H3	☒	☐	Tier 2. High quality water.
Wetland H12	☒	☐	Tier 2. High quality water.
Wetland S4	☒	☐	Tier 2. High quality water.
Wetland S12	☒	☐	Tier 2. High quality water.
Wetland S13	☒	☐	Tier 2. High quality water.
Wetland S14	☒	☐	Tier 2. High quality water.
Wetland S15	☒	☐	Tier 2. High quality water.
Wetland S16	☒	☐	Tier 2. High quality water.

3.3 Project Description

3.3.1 General Description

The Department of Conservation and Recreation (DCR) is proposing to construct, operate, and maintain an approximate 7.653-mile, 10-foot wide paved MassCentral Rail Trail (MCRT) extending along an inactive MBTA railroad corridor from the driveway to Eversource's Sudbury Substation on Boston Post Road (Route 20) in Sudbury, MA (Sudbury Substation) to the existing Assabet River Rail Trail off Wilkins Street in Hudson, MA. The MCRT will be constructed as the second phase of a two-phase Project. The first phase of the project includes a new Eversource underground transmission power line within the same rail corridor. Phase 2 of the Project will be constructed after completion of Phase 1.

Construction of the Project will serve the public with the development of a portion of the planned regional Mass Central Rail Trail (MCRT), a multi-use trail that will be managed by the Massachusetts Department of Conservation and Recreation. The proposed MCRT, traversing the state from west to east, will bring a number of advantages to its users, surrounding communities, and the Commonwealth as a whole.

The Project will be installed primarily along an inactive railroad right-of-way (ROW) owned by the Massachusetts Bay Transportation Authority (MBTA). The Project originates at the Sudbury Substation and travels northwest along the MBTA ROW passing through short sections of Marlborough and Stow before entering Hudson and ends connection with the existing Assabet River Rail Trail off Wilkins Street.

The width of the existing MBTA ROW varies some, but is approximately 80 feet wide. The ROW is the former Massachusetts Central Railroad corridor used for passenger and/or freight service form approximately 1880 to 1970. The MBTA ROW has not been used for rail service for over forty years and currently contains remnants of the single track railroad (ballast, tracks, and ties) in some portions. Vegetation within the MBTA ROW has not been maintained since rail service was disconnected and consists mainly of shrubby growth and forested areas. The largest undeveloped areas are associated with protected open space areas that include lands held and/or managed by the Town of Sudbury, the City of Marlborough, the Sudbury Valley Trustees (SVT), and the U.S. Fish and Wildlife Service (USFWS). In some portions of the ROW, there are existing pathways and/or trails currently used by local residents for passive recreation. Evidence of off-road vehicle use is evident in some location as well.

Proposed Project components:

1. Phase 1 - Eversource Underground Transmission Power Line

Construction of Phase 1, the new underground transmission line, will complete installation of erosion controls, the removal of rails and ties, vegetation clearing, grading, installation of the duct bank and manholes, grading of stormwater management features and placement of a 14-foot wide gravel base in preparation of Phase 2, the MCRT.

2. Phase 2 - MCRT

For Phase 2 of the Project, Eversource will turn over the construction site to DCR following installation of the 14-foot wide gravel base. DCR will fine grade and compact the surface, and then pave a 10 foot path. After paving, the shoulders will be loamed and seeded, and woody plantings will be installed. Installation of railings will complete the Project within the MBTA ROW.

Erosion and sediment controls will remain in place from Phase 1 and DCR will assume responsibility to maintain the controls for the duration of Phase 2 of the Project. Once the Project is complete and disturbed areas are stable with final vegetation, DCR will remove the erosion controls upon approval of the environmental monitor.

At roadway crossings, RRFBs will be installed that are activated by people using the MCRT to stop traffic and allow safe crossing of roadways. Construction within public roadway during Phase 2 will be limited to installation of signal equipment, pole foundations, signal poles, gateway details and pavement markings. Conduit for the crossing signals will be installed during Phase 1; during Phase 2, the signal equipment and crossing buttons will be installed.

All disturbed areas outside of the 10-foot-wide paved MCRT will be restored by loaming and seeding with only species native to New England. In addition, woody plantings proposed in Priority Habitat and at both Hop Brook crossings will be installed under the direction of a qualified environmental monitor or qualified biologist.

3.3.2 Site Maps

Attachment D contains the Project Plans for this project.

Attachment E contains Site Maps including the:

- Site Location Map
- FEMA Flood Insurance Rate Map
- Soil Map

3.3.3 Size/Footprint of the Project

The project activities will occupy the footprint identified below.

Table 23 Footprint of the Project Area

Area Description	Area (acres)
Total property size	87.3
Total area of construction disturbance	12.99
Maximum area to be disturbed at any one time	XX

3.3.4 Construction Activities Sequencing and Logging

Construction activities, phasing, and sequencing are generally performed at the discretion of the General Contractor and may be determined or refined during the construction period.

Project Operators are responsible for maintaining a construction log that address the following project activities.

3.3.4.1 Projected Construction Sequence

The projected construction sequence presented in this section is the best estimate of the construction sequence at the time that this SWPPP template was prepared. If the general sequence presented here changes during the course of the project, amend the SWPPP to include the revised project construction sequence.

Phase 1 of this Project will be the underground electric transmission line constructed by Eversource and is subject to a separate SWPPP.

Table 24 Projected Construction Sequence (Phase 2)

Phase 2 –

Area of Disturbance 12.99 **acres**

Action	Projected Date
Fine grading and compaction of 14-foot wide gravel base	
Paving the MCRT	
Loaming and seeding disturbed areas	
Installing pole foundations, installing poles, wiring, signal lights and controllers at road crossings	
Pavement markings, gateway details,	
Remove erosion controls once site is fully stabilized	

Refer to the Construction Activities Log for actual construction sequence performance.

3.3.4.2 Construction Activity Logging Requirements

For each phase of construction, document the dates for the following activities:

- Maintain stormwater controls;
- Commencement and duration of earth-disturbing activities, including final grading, paving, loaming, and seeding final;
- Excavations for pole foundations at road crossings;
- Cessation, temporarily or permanently, of construction activities on the site, or in designated portions of the site;
- Final stabilization of areas of exposed soil. The dates for stabilization must reflect the applicable deadlines subject to in Part 2.2.1; and
- Removal of temporary erosion control measures, removal of construction equipment and vehicles, and cessation of any pollutant-generating activities.

Construction Activity logs are maintained in Attachment J.

3.3.5 Construction Support Activities

Construction support activities are generally performed at the discretion of the General Contractor and may be determined or refined during the construction period. Support activities that are not addressed in the Project Description (Section 0) must be identified here:

3.3.6 Allowable Non-Stormwater Discharges

Congruent with Section 1.2.2 of the 2017 CGP, the following non-stormwater discharges associated with construction activities are authorized under this permit provided that, with the exception of water used to control dust and to irrigate vegetation in stabilized areas, these discharges are not routed to areas of exposed soil on the site and the discharges also meet the requirements of Part 2 of the 2017 CGP.

Table 25 Allowable non-stormwater discharges likely occur at the Project Site

	Likely to be Present at the Site?	
Types of Allowable Non-Stormwater Discharges Present at the Site	**Yes**	**No**
Discharges from emergency fire-fighting activities	☐	☒
Fire hydrant flushing	☐	☒
Landscape irrigation	☐	☒
Waters used to wash vehicles and equipment	☐	☒
Water used to control dust	☒	☐
Potable water including uncontaminated water line flushing	☐	☒
Routine external building wash down	☐	☒
Pavement wash waters	☐	☒
Uncontaminated air conditioning or compressor condensate	☐	☒
Uncontaminated, non-turbid discharges of ground water or spring water	☒	☐
Foundation or footing drains	☐	☒
Construction dewatering water	☒	☐

4

Inspections, Corrective Actions, and Amendments

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4.1 Inspection Schedule

Section 4.2 and Section 4.3 of the 2017 CGP specify minimum inspection frequencies. Section 4.2 specifies the minimum inspection frequency for a typical site. Section 4.3 specifies the minimum inspection frequency for locations on the site that discharge to sensitive waters. Sensitive waters are defined as sediment or nutrient-impaired waters or waters that are identified by the State, tribe or EPA as Tier 2, Tier 2.5, or Tier 3.

Table 26 Project Inspection Schedule

Does the project area discharge to sensitive waters?	Inspection Frequency
☒ Yes	Once every 7 calendar days AND Within 24 hours of an event 0.25 inches or greater
☐ No	Choose one option below:
	☐ Once every 7 calendar days
	☐ Once every 14 calendar days AND Within 24 hours of an event 0.25 inches or greater

To determine if a storm event of 0.25 inch or greater has occurred on the site, data will be obtained from the weather station at:

Blueberry Hill – KMASUDBU29 in Sudbury, MA.

For any day of rainfall during normal business hours that measures 0.25 inches or greater, the date and rainfall amount must be recorded in the Construction Activities Log (Section 3.3.4).

The Site Inspection Log and Inspection Forms are maintained in Attachment L.

Record daily rainfall that exceeds 0.25 inches in the Construction Activities Log (Section 3.3.4).

4.1.1 Reductions in Inspection Frequency

Inspection frequency may be reduced to once per month if:

- The stabilization of the contributing area was completed more than one month prior and the stabilization activities are documented in the Construction Activities and the Grading and Stabilization Logs.
- The project is experiencing frozen soil conditions.

Exceptions may also be made for drought-stricken areas, refer to Part 4.4.2 for additional information.

4.1.1.1 Suspension of Construction Activities due to Frozen Conditions

If the project will suspend construction activities due to frozen conditions, the project may temporarily suspend inspections on the site until thawing conditions begin to occur if:

- Runoff is unlikely due to continuous frozen conditions that are likely to continue at the site for at least 3 months based on historic seasonal averages. If unexpected weather conditions (such as above freezing temperatures or rain on snow events) make discharges likely, the contractor must immediately resume regular inspection frequency as described in Parts 4.2 or 4.3, if applicable;
- Land disturbances have been suspended; and
- All disturbed areas of the site have been temporarily or permanently stabilized in accordance with Part 2.2.14.a of the CGP.

4.1.1.2 Continuation of Construction Activities Despite Frozen Conditions

If the project will continue construction activities despite frozen conditions, the project may temporarily reduce inspections to once per month until thawing conditions begin to occur if:

- Runoff is unlikely due to continuous frozen conditions that are likely to continue at the site for at least 3 months based on historic seasonal averages. If unexpected weather conditions (such as above freezing temperatures or rain on snow events) make discharges likely, the contractor must immediately resume regular inspection frequency as described in Parts 4.2 or 4.3, if applicable;
- Land disturbances have been suspended; and
- All disturbed areas of the site have been temporarily or permanently stabilized in accordance with Part 2.2.14.a of the CGP.

Record changes in the inspection frequency in the Construction Activities Log (Section 3.3.4).

4.2 Corrective Action Directives

Project Operators must take corrective action to address any of the following conditions if they appear at the project site:

- A stormwater control needs repair or replacement
- A stormwater control necessary to comply with the permit was not installed, or was installed incorrectly
- A discharge from the project site is causing an exceedance of water quality standards to receiving waters
- A prohibited discharge has occurred (refer to Part 1.3 of the 2017 CGP)

4.2.1 Corrective Action Timelines

For any required corrective action (refer to part 5.1 of the 2017 CGP), project operators must:

- **Immediately** take all reasonable steps to address the condition, including cleaning up any contaminated surfaces so that the material will not discharge in subsequent storm events.
- When the problem does not require a new or replacement control or significant repair, the corrective action must be completed by the close of the **next business day.**
- When the problem requires a new or replacement control, or significant repair, install the new or modified control by **no later than 7 calendar days** from the time of discovery.
- If it is not possible to complete the action within 7 days, record the extenuating circumstances in detail on a Corrective Action Form (Attachment M).

4.2.2 Corrective Action Reports

For each corrective action taken, complete a corrective action report in accordance with the following (refer to Part 5.4 of the 2017 CGP):

- Within 24 hours of identifying the condition requiring corrective action, document the condition and the date/time it was identified.

  Within 24 hours of completing the corrective action, document the action taken and note whether any modifications to the SWPPP are required.

The Corrective Action Log and Corrective Action Report Forms are maintained in Attachment M.

4.3 Amendments

This SWPPP must be amended and the amendments must be recorded in the amendment log if any of the following conditions apply:

- Whenever new operators become active in construction activities on your site, or you make changes to your construction plans, stormwater controls, or other activities at your site that are no longer accurately reflected in your SWPPP. This includes changes made in response to corrective actions triggered under Part 5. You do not need to modify your SWPPP if the estimated dates in Part 7.2.3.f change during the course of construction;
- To reflect areas on your site map where operational control has been transferred (and the date of transfer) since initiating permit coverage;
- If inspections or investigations by EPA or its authorized representatives determine that SWPPP modifications are necessary for compliance with this permit;
- Where EPA determines it is necessary to impose additional requirements on your discharge, the following must be included in your SWPPP:
- A copy of any correspondence describing such requirements; and
- A description of the controls that will be used to meet such requirements.
- To reflect any revisions to applicable federal, state, tribal, or local requirements that affect the stormwater controls implemented at the site; and
- If applicable, if a change in chemical treatment systems or chemically-enhanced stormwater control is made, including use of a different treatment chemical, different dosage rate, or different area of application.

The Amendment Log is maintained in Attachment I.

5

Staff Training

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5.1 Training

Each Operator or group of Operators must assemble a Stormwater Team to carry out compliance activities associated with the requirements of the 2017 CGP. Prior to the commencement of construction activities, the Operators must ensure that the personnel on the stormwater team understand the requirements of this permit and their specific responsibilities with respect to those requirements.

All of the personnel responsible for the following activities must be trained to understand the relevant requirements under the terms of the 2017 CGP including:

- The design, installation, maintenance, and/or repair of stormwater controls (and pollution prevention controls)
- Permits that include provisions for stormwater and erosion control management include:
    - Sudbury, Stow and Hudson Orders of Conditions;
    - Sudbury Stormwater Management Permit; and
    - USACE General Permits for Massachusetts authorization
- The application and storage of treatment chemicals (if applicable)
- Conducting and documenting inspections (Part 4 of the 2017 CGP)
- Performing and documenting corrective actions (Part 5 of the 2017 CGP)

Minimum training measures for the stormwater team must include:

- Permit deadlines associated with the installation, maintenance, and removal of stormwater controls and stabilization
- The location of all stormwater controls on the site required by this permit and how they must be maintained
- The proper procedures to follow with respect to the permit's pollution prevention requirements
- When and how to conduct inspections, record findings, and take corrective actions.

All members of the stormwater team must have easy access to an electronic or paper copy of the applicable portions of this permit, the most updated copy of the SWPPP, and other relevant documents associated with the SWPPP including logs and completed forms.

The Training Log and Attendance Records are maintained in Attachment H.

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6

Notifications

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6.1 Notice of Intent (NOI)

Following the completion of the draft SWPPP, project operators may submit their NOIs to the EPA.

Permit coverage does not begin until 14 calendar days from the date that the NOI is certified by a person authorized in accordance with Appendix I of the 2017 CGP.

Within 14 calendar days, the EPA may notify the Operator(s) that the authorization has been delayed or denied.

Project NOIs and authorizations are maintained in Attachment C.

6.2 Notice of Termination (NOT)

Operators are required to continue to comply with all conditions and requirements in the permit until coverage is terminated under this permit.

To terminate permit coverage, all Operators must submit a complete and accurate NOT to the EPA. The NOT certifies that an Operator has met the requirements for termination as listed in Part 8 of the CGP. Operators must use NPDES eReporting Tool (NeT) to electronically prepare and submit an NOT for the 2017 CGP.

https://www.epa.gov/npdes/stormwater-discharges-construction-activities#ereporting

Operators must submit the NOT within 30 calendar days after any of the triggering conditions listed in Part 8.2 of the CGP.

An Operator's authorization to discharge under the CGP terminates at midnight of the calendar day that a complete NOT is processed and posted on EPA's website.

Project NOTs and authorizations are maintained in Attachment C.

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7

Erosion and Sediment Controls

Stormwater controls have been designed, installed, and maintained in compliance with Part 2.1 of the 2017 CGP. If any stormwater controls must be designed (e.g., sediment basins or conveyance channels), the design documentation must be included in Attachment S.

Erosion and Sediment Controls must be implemented to address the requirements of Part 2.2 of the 2017 CGP.

This section of the SWPPP provides general guidance for compliance with the 2017 CGP. Ultimately the project Operators are responsible for making sure sufficient controls are implemented to effectively meet the conditions of the 2017 CGP.

The purpose of an erosion and sedimentation control program is to minimize the discharge of pollutants from earth-disturbing activities during the construction phase of the project. The program described in this SWPPP incorporates BMPs specified in guidelines developed by the DEP[1] and the U.S. Environmental Protection Agency[2] and complies with the requirements of the NPDES General Permit for Storm Water Discharges from Construction Activities.

Proper implementation of the erosion and sedimentation control program will:

- minimize exposed soil areas through temporary stabilization and construction sequencing;
- minimize sediment track-out from the site;
- minimize the generation of dust;
- minimize soil compaction;
- place structures to manage stormwater runoff and erosion; and
- establish permanent vegetative cover or other forms of stabilization in accordance with Part 2.2.14 of the Permit.

The Contractor will install of stormwater controls prior to the commencement of each phase of earth-disturbing activities per Part 2.1.3 of the 2017 CGP. All manufactured control measures will be installed and maintained in accordance with the manufacturer's specifications. The site Contractor will inspect all erosion and sediment controls in accordance with the applicable requirements in Part 4, document findings in accordance with Part 4, and perform corrective actions in accordance with Part 5 of the 2017 CGP.

The following sections describe the erosion and sedimentation controls that may be used on this site. **The Contractor will implement, modify, and amend the stormwater controls identified in this section as necessary.**

1 Massachusetts Department of Environmental Protection, 1993. *Massachusetts Nonpoint Source Management Manual, The Megamanual: A Guidance Document for Municipal Officials.*

2 United States Environmental Protection Agency, 1992. *Storm Water Management for Construction Activities: Developing Pollution Prevention Plans and Best Management Practices.*

7.1 Natural Buffers or Equivalent Sediment Controls

The requirements for natural buffers are described in Part 2.2.1 and Appendix G of the 2017 CGP. This section of the SWPPP describes project compliance activities to maintain natural buffers in compliance with the 2017 CGP.

Documentation of compliance with buffer requirements is located in Attachment O.

7.1.1.1 Buffer Compliance Alternatives

Are there any surface waters within 50 feet of the project's earth disturbances?

☒ YES ☐ NO

(Note: If no, no further documentation is required under Section 7.1 of this SWPPP Manual.)

If there are surface waters within 50 feet of the project's earth disturbances, continue below:

☐ The project will provide and maintain a 50-foot undisturbed natural buffer.

Note (1): The project must show the 50-foot boundary line of the natural buffer on the Site Map.

Note (2): The project must show on the Site Map how all discharges from the construction disturbances through the natural buffer area will first be treated by the site's erosion and sediment controls. Also, show on the site map any velocity dissipation devices used to prevent erosion within the natural buffer area.

☐ The project will provide and maintain an undisturbed natural buffer that is less than 50 feet and is supplemented by additional erosion and sediment controls, which in combination achieves the sediment load reduction equivalent to a 50-foot undisturbed natural buffer.

Note (1): The project must show the boundary line of the natural buffer on the site map.

Note (2): The project must show on the site map how all discharges from the construction disturbances through the natural buffer area will first be treated by the site's erosion and sediment controls. Also, show on the site map any velocity dissipation devices used to prevent erosion within the natural buffer area.

☐ It is infeasible to provide and maintain an undisturbed natural buffer of any size, therefore the project will implement erosion and sediment controls that achieve the sediment load reduction equivalent to a 50-foot undisturbed natural buffer.

☒ The project qualifies for one of the exceptions described in the 2017 CGP Appendix G, Part G.2. (If this box is checked, provide information on the applicable buffer exception that applies in Section 7.1.1.2.)

7.1.1.2 Buffer Exceptions

Indicate whether any of the following exceptions to the buffer requirements apply to the project site. Refer to Part 2.2.1 and Appendix G.2 of the 2017 CGP for more information.

☐ There is no discharge of stormwater to the surface water that is located 50 feet from my construction disturbances.

Note: If this exception applies, no further documentation is required under Section 7.1 of this SWPPP Manual.

☐ No natural buffer exists due to preexisting development disturbances that occurred prior to the initiation of planning for this project.

Note (1): If this exception applies, no further documentation is required to achieve compliance with Part 2.2.1.

Note (2): Where some natural buffer exists but portions of the area within 50 feet of the surface water are occupied by preexisting development disturbances, the project must comply with Part 2.2.1 and Appendix G.2.2 of the 2017 CGP.

☒ For a "linear project" (defined in Appendix A), site constraints (e.g., limited right-of-way) make it infeasible to implement one of the Part 2.2.1.a compliance alternatives provided that additional measures described in Appendix G.2.2 of the 2017 CGP are met.

☐ The project qualifies as "small residential lot" construction and meets the compliance alternatives described in Appendix G.3 of the 2017 CGP.

☐ Buffer disturbances are authorized under a CWA Section 404 permit.

Note (1): If this exception applies, no further documentation is required under Section 7.1 of this SWPPP Manual.

Note (2): This exception only applies to the limits of disturbance authorized under the Section 404 permit and does not apply to any upland portion of the construction project.

☐ Buffer disturbances will occur for the construction of a water-dependent structure or water access area (e.g., pier, boat ramp, and trail).

Note (1): If this exception applies, no further documentation is required under Section 7.1 of this SWPPP Manual.

7.2 Perimeter Controls

Refer to Part 2.2.3 of the 2017 CGP for information on the requirements for perimeter controls. Some exceptions apply to linear projects.

7.2.1 General Perimeter Controls

Installation of perimeter controls must be completed prior to the commencement of earth-disturbance activities. This section of the SWPPP provides examples of perimeter controls that the General Contractor may use to effectively control stormwater on construction sites. The General Contractor may select and install perimeter controls at their discretion. The locations of perimeter controls should be clearly identified on the Site Map.

The General Contractor will record activities associated with perimeter controls in the following project logs:

Table 27 Recording Requirements: Perimeter Controls

Action	Recorded in
Installation	Construction Activities Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log

7.2.2 Specific Perimeter Controls

If the General Contractor elects to use controls that are not specified in this SWPPP manual, the contractor will prepare documentation describing the control installation, inspection, maintenance, and removal procedures and record the actions in the appropriate project logs.

7.2.2.1 Compost Filter Tube

Compost Filter Tubes consist of a biodegradable jute mesh filled with compost and placed at the limit of work held in place with stakes. They are appropriate for use as perimeter controls.

The General Contractor will prepare and install compost filter tubes in accordance with manufacturer recommendations.

Inspection and Maintenance Requirements

Inspection and maintenance activities for compost filter tubes will include:

Table 28 Maintenance Requirements: Compost Filter Tubes

Inspection Item	Condition	Maintenance Activity
Condition	Torn outer fabric	Replace
Continuity	Break in continuous perimeter	Re-install existing -or- Install new to close any gaps
Sediment Build-up	Accumulated sediment at one-half the above ground height of the control	Remove the sediment and dispose properly

7.2.2.2 Syncopated silt-fence

Staked silt-fence erosion control devices are commonly used to intercept, filter, and reduce the velocity of stormwater run-off. They are appropriate for use as perimeter controls. Syncopated silt fence includes offset section of fencing to intentionally create gaps every 200 feet adequate for small wildlife to pass.

The General Contractor will place syncopated silt-fences at the downgradient edge of disturbed areas within 450 feet of a vernal pool, they are held in place by wooden stakes.

Inspection and Maintenance Requirements

Inspection and maintenance activities for syncopated silt fences will include:

Table 29 Maintenance Requirements: Syncopated Silt Fence

Inspection Item	Condition	Maintenance Activity
Condition	Rotted or torn	Replace
Continuity	Break in continuous perimeter or insufficient overlap between silt fence sections	Re-install existing -or- Install new to close any gaps
Sediment Build-up	Accumulated sediment at one-half the above ground height of the control	Remove the sediment and dispose properly
Placement	Silt fence not dug in to the ground surface to prevent underflow	Reset, repair and/or re-install

7.2.2.3 Turbidity Curtain

Floating turbidity curtain may be used in open water areas to intercept, filter, and reduce the spread of turbidity within open water as part of the bridge replace work. They are appropriate for use as perimeter controls.

The General Contractor will place turbidity curtain at the downgradient edge of disturbed areas within open water. They are held in place by weighted toes and securing ropes to the shoreline. To be used in open water conditions where water depth is adequate to allow proper extension of the turbidly curtain skirt.

Inspection and Maintenance Requirements

Inspection and maintenance activities for turbidity curtains will include:

Table 29 Maintenance Requirements: Turbidity Curtains

Inspection Item	Condition	Maintenance Activity
Condition	Torn, loss of floatation at top	Replace
Continuity	Break in continuous perimeter	Re-install existing -or- Install new to close any gaps
Sediment Build-up	Accumulated sediment at one-half the above ground height of the control	Remove the sediment and dispose properly

Placement	Place along shoreline only! **DO NOT install across flowing water.**	Reset, repair and/or re-install

7.2.2.4 Staked tall silt-fence

Staked tall silt-fence erosion control devices are commonly used to intercept, filter, and reduce the spread of turbidity within open water as part of the bridge replace work. They are appropriate for use as perimeter controls. This is an alternative perimeter control to turbidity curtain in open water.

The General Contractor will place tall silt fence at the downgradient edge of disturbed areas within open water. They are held in place by driven stakes. To be used in open water conditions where water depth is adequate to allow installation of the silt fence proper but too shallow for installation of a turbidly curtain.

Inspection and Maintenance Requirements

Inspection and maintenance activities for straw bale and silt fences will include:

Table 29 Maintenance Requirements: Straw Bale and Silt Fence

Inspection Item	Condition	Maintenance Activity
Condition	Torn, fallen down stake	Replace, or reinstall
Continuity	Break in continuous perimeter	Re-install existing -or- Install new to close any gaps
Sediment Build-up	Accumulated sediment at one-half the above ground height of the control	Remove the sediment and dispose properly
Placement	Place along shoreline only! **DO NOT install across flowing water.**	Reset, repair and/or re-install

7.3 Sediment Track-out

Refer to Part 2.2.4 of the 2017 CGP for information on the requirements for sediment track-out controls. Some exceptions apply to linear projects.

7.3.1 General Track-out Controls

Sediment track-out controls may be structural or non-structural.

Non-structural controls including:

› Restricting vehicle use to properly designated exit points.

› Sweeping, shoveling, or vacuuming to manually remove sediment from public rights-of-way (hosing or sweeping sediment directly into a stormwater conveyance, storm drain inlet, or surface water is prohibited).

In the event that sediment is tracked-out of the site onto the surface of off-site streets, other paved areas, and sidewalks, the contractor will remove the deposited sediment by the end of the same work day. If track-out occurs on a non-work day, the contractor will remove the sediment by the end of the next work day.

The General Contractor may select and install structural sediment track-out controls at their discretion. The General Contractor shall specify locations of structural controls on the Site Map.

The General Contractor will record activities associated with sediment track-out controls in the following project logs:

Table 30 Recording Requirements: Sediment Track-out Controls

Action	Recorded in
Installation	Construction Activities Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log

7.3.2 Specific Track-out Controls

If the General Contractor elects to use controls that are not specified in this SWPPP manual, the contractor will prepare documentation describing the control installation, inspection, maintenance, and removal procedures and record the actions in the appropriate project logs.

7.3.2.1 Stabilized Construction Entrance/Exit

The General Contractor will establish a stabilized construction entrance consisting of a stone pad at each access point off public roads. The construction entrance may include cross-slope to direct runoff to a protected receiving area. If track-out is observed after construction begins, the General Contractor will take additional measures to address sediment track out.

Following completion of earth-disturbing activities, the General Contractor will remove the stabilized construction entrance/exit and installing final finishing materials.

Inspection and Maintenance Requirements

Inspection and maintenance activities for sediment track-out controls will include:

Table 31 Maintenance Requirements: Construction Entrance

Inspection Item	Condition	Maintenance Activity
Construction access routes adjacent to the disturbance area	Sediment present on vehicle travel surfaces	Sweep, shovel, or vacuum sediment from the surface, dispose of properly
Construction Entrance Condition	Muddy or sediment-laden	Add a top-dressing of stone or gravel

7.4 Stockpiled Sediment or Soil

Refer to Part 2.2.5 of the 2017 CGP for information on the requirements for stockpile controls.

The Contractor will provide cover or appropriate temporary stabilization to stockpiles that will remain inactive/unused for more than 14 days. Temporary stabilization may be performed using vegetative or non-vegetative stabilization practices. Refer to Section 7.13 for more information on stabilization practices.

7.4.1 General Stockpile Controls

In accordance with Part 2.2.5 of the 2017 CGP, the contractor must comply with the following requirements for any stockpiles or land clearing debris composed, in whole or in part, of sediment or soil:

- Locate the piles outside of any natural buffers established under Part 2.2.1 and physically separated from other stormwater conveyances, drain inlets, and areas where stormwater flows are concentrated.
- Protect from contact with stormwater (including run-on) using a temporary perimeter sediment barrier;
- Provide cover or appropriate temporary stabilization to avoid direct contact with precipitation or wind;
- Do not hose down or sweep soil or sediment accumulated on pavement or other impervious surfaces into any stormwater conveyance storm drain inlet, or water of the U.S.

Record activities associated with sediment stockpile controls in the following project logs:

Table 32 Recording Requirements: Stockpile Controls

Action	Recorded in
Installation	Construction Activities Log Grading and Stabilization Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log Grading and Stabilization Log

7.4.2 Specific Stockpile Controls

If the General Contractor elects to use controls that are not specified in this SWPPP manual, the contractor will prepare documentation describing the control installation, inspection, maintenance, and removal procedures and record the actions in the appropriate project logs.

7.4.2.1 Vegetative Stabilization

Vegetative stabilization practices may include seeding exposed surfaces with a seed mix containing a blend of rapid germinating grasses that are indigenous to the appropriate region of Massachusetts. Once seeded, areas will be covered with a layer of straw mulch according to the recommendations provided by the manufacturer. Refer to Section 7.13.2.1 for more information.

7.4.2.2 Non-Vegetative Stabilization

Non-vegetative stabilization practices may include applying straw mulch or an erosion control blanket. Refer to Section 7.13.2.2 for more information.

7.5 Minimize Dust

Refer to Part 2.2.6 of the 2017 CGP for information on the requirements for minimizing dust.

The General Contractor will record activities associated with dust controls in the following project logs:

Table 33 Recording Requirements: Dust Controls

Action	Recorded in
Installation	Construction Activities Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log

Wetting the soil and/or spreading calcium chloride will be performed, as necessary, to minimize the movement of dust and fine-grained sediment. Fugitive dust created by movement of equipment or trucks along the project corridor, or dust generated by wind warrant application of dust control measures. If water is used for dust control, it shall be applied as a fine spray to wet the upper 0.5 inch of soil.

7.6 Minimize the Disturbance of Steep Slopes

Refer to Part 2.2.7 of the 2017 CGP for information on the requirements for controls on steep slopes.

Where a state, tribe, local government, or industry technical manual (e.g., stormwater BMP manual) has defined what is to be considered a "steep slope", the 2017 CGP automatically adopts

that definition. Where no such definition exists, steep slopes are automatically defined as those that are 15 percent or greater in grade.

The General Contractor will record activities associated with steep-slope controls in the following project logs:

Table 34 Recording Requirements: Steep Slope Stabilization Controls

Action	Recorded in
Installation	Construction Activities Log Grading and Stabilization Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log Grading and Stabilization Log

7.6.1 General Steep Slope Controls

During the design phase of the project, the design engineers minimized construction impacts to steep slopes to the maximum extent practicable.

Where disturbances to steep slopes are still required, the General Contractor will minimize disturbances through the implementation of erosion and sediment control practices designed for use on steep slopes.

Stabilization practices on steep slopes will occur within 14 days after grading or construction activities have temporarily or permanently ceased.

7.6.2 Specific Steep Slope Controls

If the General Contractor elects to use controls that are not specified in this SWPPP manual, the contractor will prepare documentation describing the control installation, inspection, maintenance, and removal procedures and record the actions in the appropriate project logs.

7.6.2.1 Vegetative controls

Vegetative slope stabilization practices will be used to minimize erosion on slopes of 3:1 or flatter. Temporary, rapid stabilization will be completed using annual grasses, such as annual rye. Permanent stabilization will be completed with the planting of perennial grasses or legumes.

A suitable topsoil, good seedbed preparation, soil amendments, and water will be provided for effective establishment of these vegetative stabilization methods. Vegetation may be applied via hydro seeding or sodding techniques. Mulch may also be applied following permanent seeding activities to protect soil from the impact of falling rain and to increase the capacity of the soil to absorb water.

Refer to Section 7.13.2.1 for inspection and maintenance activities for vegetative stabilization controls.

7.6.2.2 Erosion Control Blanket

Erosion control blankets may be combined with vegetative controls to minimize erosion on slopes 3:1 or steeper. Erosion control blankets shall consist of a non-woven bio-degradable material and shall be installed by anchoring the top of the blanket in a 6-inch deep trench. The trench shall be backfilled and compacted after the blanket is secured with staples. The erosion control blanket will be installed in the direction of potential flow. Edges of the blankets must be stapled with approximately 4 inches overlap where 2 or more strip widths are required.

Refer to Section 7.13.2.2 for inspection and maintenance activities for non-vegetative stabilization controls.

7.7 Topsoil

Refer to Part 2.2.8 of the 2017 CGP for information on the requirements for the preservation of topsoil.

The General Contractor will record activities associated with topsoil controls in the following project logs:

Table 35 Recording Requirements: Topsoil Controls

Action	Recorded in
Stockpiling	Construction Activities Log Grading and Stabilization Log
Disposal	Construction Activities Log Grading and Stabilization Log

Topsoil will be preserved to the maximum extent practicable. Where it is infeasible to preserve topsoil in place, it will be repurposed throughout the site or stockpiled and disposed of in accordance with local, state and federal regulations, as necessary.

7.8 Soil Compaction

Refer to Part 2.2.9 of the 2017 CGP for information on the requirements for the reduction of soil compaction.

To avoid soil compaction, the General Contractor will limit vehicle and equipment use in areas where final vegetative stabilization will occur or where infiltration practices will be installed.

Prior to seeding or planting of areas where final vegetative stabilization will occur or where infiltration practices will be installed the soil will be inspected to determine if compaction will hinder vegetative growth.

If compaction has occurred, techniques that condition soil to support vegetative growth will be implemented. Soil conditioning techniques shall be specified, as needed by the General Contractor.

7.9 Storm Drain Inlets

Refer to Part 2.2.10 of the 2017 CGP for information on the requirements for the protection of storm drain inlets.

The General Contractor will record activities associated with storm drain inlet protection in the following project logs:

Table 36 Recording Requirements: Storm drain Inlet Controls

Action	Recorded in
Installation	Construction Activities Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log

7.9.1 General Storm Drain Inlet Controls

Prior to any earth-disturbing activities inlet protection measures will be installed. Storm drain inlet controls are required at all storm drain inlets that carry stormwater flow from the project site to a water of the U.S., even if they are located downgradient from a construction period stormwater BMP.

7.9.2 Specific Storm Drain Inlet Controls

If the General Contractor elects to use controls that are not specified in this SWPPP manual, the contractor will prepare documentation describing the control installation, inspection, maintenance, and removal procedures and record the actions in the appropriate project logs.

7.9.2.1 Siltsack Sediment Traps

The General Contractor may choose to use Siltsack sediment traps at the project site. They may be installed at the inlets of existing and proposed catch basins. At locations where silt sacks are used, the catch basin grates will be placed over the siltsack to secure it into place.

7.9.2.2 Straw Bale and Non-Woven Filter Fabric

The General Contractor may choose to use Straw bale barriers at the project site. They may be installed at the inlets of existing and proposed catch basins. At locations where straw bales are used, a layer of non-woven filter fabric will be placed beneath the grate of each catch basin to secure it into place.

7.9.2.3 Inspection and Maintenance Requirements

Inspection and maintenance activities for storm drain inlet controls includes:

Table 37 Maintenance Requirements: Storm Drain Inlet Controls

Inspection Item	Condition	Maintenance Activity
Sediment accumulation	Sediment buildup at filter layer	Sweep, shovel, or vacuum sediment from the filter surface, dispose of properly.
Continuity	Breaks in continuous barrier	Install new or re-install original barrier structure.
Clogging	Standing water	Sweep, shovel, or vacuum sediment from the filter surface, dispose of properly. Install new or re-install restored filter layer.

7.10 Constructed Stormwater Conveyance Channels

Refer to Part 2.2.11 of the 2017 CGP for information on the requirements for the constructed stormwater conveyance channels.

The General Contractor will record activities associated with constructed stormwater conveyance channels in the following project logs:

Table 38 Recording Requirements: Conveyance Channel Controls

Action	Recorded in
Installation	Construction Activities Log Grading and Stabilization Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log Grading and Stabilization Log

7.10.1 General Conveyance Controls

The General Contractor may select and install constructed stormwater conveyance channels at their discretion. The General Contractor shall specify locations of structural controls on the Site Map.

Constructed Stormwater Conveyance Channels may be used to collect runoff from construction areas and discharge to either sedimentation basins or protected catch basin inlets. The contractor may use erosion controls and velocity dissipation devices within and along the length of any stormwater conveyance channel and at any outlet to slow runoff down and to minimize erosion. Permanent infiltration BMPs shall not be used as temporary construction sedimentation basins without prior approval of the project engineer.

7.10.2 Specific Conveyance Controls

If the General Contractor elects to use controls that are not specified in this SWPPP manual, the contractor will prepare documentation describing the control installation, inspection, maintenance, and removal procedures and record the actions in the appropriate project logs.

7.10.2.1 Diversion Channels

Diversion channels may be used to collect runoff from construction areas and discharge to either sedimentation basins or protected catch basin inlets.

Inspection and Maintenance Requirement

Diversion channels will be inspected in accordance with the inspection schedule. If breakout or erosion is observed, the diversion channel shall be reinforced or protected by an erosion control blanket.

Inspection and maintenance activities for conveyance channel controls will include:

Table 39 Maintenance Requirements: Conveyance Channels

Inspection Item	Condition	Maintenance Activity
Surface	Erosion	Reinforce the surface using a vegetative or non-vegetative stabilization measure
Inlet/Outlet	Clogging	Remove Obstruction
Sediment Accumulation	Sediment occupies one half of the storage capacity of the basin	Sweep, shovel, or vacuum sediment from the basin sump and dispose of properly
Embankment/Berm	Cracking	Identify root cause of embankment failure and repair or reconstruct as needed
Embankment/Berm	Erosion	Reinforce the surface using a vegetative or non-vegetative stabilization measure
Embankment/Berm	Breakout	Identify root cause of embankment failure and repair or reconstruct as needed

7.11 Sediment Basins

Refer to Part 2.2.12 of the 2017 CGP for information on the requirements for construction period sediment basins.

If the General Contractor elects to use sediment basin controls, the General Contractor will update the Site Map to show their location on the project site.

The General Contractor will record activities associated with sediment basins in the following project logs:

Table 40 Recording Requirements: Sediment Basin Controls

Action	Recorded in
Installation	Construction Activities Log Grading and Stabilization Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log Grading and Stabilization Log

7.11.1 General Sediment Basin Controls

Constructed sediment basins may be used to collect runoff from construction areas to allow for suspended sediments to settle out of stormwater prior to discharge to points downstream. The following design criteria shall apply:

- Sediment basins must be placed outside any water of the U.S. and any natural buffer established under Part 2.2.1 of the 2017 CGP.
- Sediment basins must be designed and constructed to avoid collecting water from wetlands and waterbodies.
- Sediment basins must be designed and constructed to provide storage for either:
  - The volume of runoff generated from a 2-year, 24-hour design storm, or
  - 3,600 cubic feet per acre of contributing area.
- Outlet structures must be designed to withdraw water from the surface of the basin (not the invert), if feasible, see note below.
- Inlets and outlets must be constructed to dissipate velocity and prevent erosion.

Note: If the outlet structure must be designed to withdraw water from a place within the water column other than the surface, the basin must be designed to allow suspended soil particles to settle out of the water column prior to withdrawal.

Inspection and Maintenance Requirements

Inspection and maintenance activities for sediment basins will include:

Table 41 Maintenance Requirements: Sediment Basins

Inspection Item	Condition	Maintenance Activity
Surface	Erosion	Reinforce the surface using a vegetative or non-vegetative stabilization measure
Inlet/Outlet	Clogging	Remove Obstruction
Sediment accumulation	Sediment occupies one half of the storage capacity of the basin	Sweep, shovel, or vacuum sediment from the basin sump and dispose of properly
Embankment/Berm	Cracking	Identify root cause of embankment failure and repair or reconstruct as needed
Embankment/Berm	Erosion	Identify root cause of embankment failure and repair or reconstruct as needed
Embankment/Berm	Breakout	Identify root cause of embankment failure and repair or reconstruct as needed

7.12 Chemical Treatment

Refer to Part 2.2.13 of the 2017 CGP for information on the requirements for chemical treatment.

Record activities associated with chemical treatment in the following project logs:

Table 42 Recording Requirements: Chemical Treatment Controls

Action	Recorded in
Training	Training Log
Installation	Construction Activities Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log

7.12.1 General Chemical Treatment Controls

In general, chemical treatment may only be applied in the following situations:

› Chemicals may only be applied where the treated stormwater is directed to a sediment control (e.g., a sediment basin, perimeter control) prior to discharge.

› Chemicals must be appropriately suited to the types of soils likely to be exposed during construction and present in the discharges being treated.

- If chemicals will be stored on the project site, chemicals must be stored in leak-proof containers that are kept under storm-resistant cover and surrounded by secondary containment structures.
- Use of chemicals must comply with applicable state and local requirements affecting the use of the selected treatment chemicals.
- Use of the chemicals must be in accordance with good engineering practices and specifications of the chemical provider/supplier.
  - NOTE: Departures from provider/supplier specifications must be documented in this SWPPP.
- All personnel who handle and/or use treatment chemicals must be undergo appropriate, product-specific training
- There are additional restrictions for the use of cationic chemicals. Prior authorization is required (Part 1.1.9 of the 2017 CG) and authorization is conditioned on compliance with additional measures to ensure that the use of the chemicals will not cause and exceedance of the water quality standards.

7.12.2 Specific Chemical Treatment Controls

The General Contractor will list all treatment chemicals in the table below. If any of the chemicals are cationic, the General Contractor will indicate whether the authorization has been obtained from the Regional Office (EPA). Include correspondence and indicate whether a record of the authorization is included in this SWPPP in Attachment P.

Table 43 List of Treatment Chemicals and Dosage/Use to be used on Site

Chemical	Dosage and Application Details	Cationic Authorization in Attachment P
		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐
		☐

Table 44 Departures from Provider/Supplier Specifications

Chemical	Dosage and Application Notes

7.13 Site Stabilization

Refer to Part 2.2.14 of the 2017 CGP for information on the requirements for site stabilization.

The General Contractor will record activities associated with site stabilization in the following project logs:

Table 45 Recording Requirements: Site Stabilization Controls

Action	Recorded in
Installation	Construction Activities Log Grading and Stabilization Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log Grading and Stabilization Log

7.13.1 General Site Stabilization Controls

The contractor will implement and maintain stabilization measures that minimize erosion from exposed portions of the site in accordance with Parts 2.2.14a and 2.2.14b of the 2017 CGP.

- Timeline: Initiate stabilization measures immediately in any areas of exposed soil where construction activities have ceased and will not resume for 14 or more calendar days. The EPA may propose an accelerated schedule if site conditions warrant additional protection measures. Some exceptions for unforeseen circumstances apply, refer to Parts 2.2.14(a)(iii) of the 2017 CGP. Document any departures from the standard timeline in the construction activities log.
- Timeline: for discharges to sediment- or nutrient-impaired waters or to a water that is identified by Massachusetts or the EPA as a Tier 2, Tier 2.5, or Tier 3 water, complete stabilization as soon as practicable but no later than 7 calendar days after stabilization has been initiated.

Site stabilization practices may be temporary or permanent, vegetative or non-vegetative.

7.13.2 Specific Site Stabilization Controls

This section of the SWPPP describes site stabilization practices that the contractor may use during the course of the work.

If the General Contractor elects to use controls that are not specified in this SWPPP manual, the contractor will prepare documentation describing the control installation, inspection, maintenance, and removal procedures and record the actions in the appropriate project logs.

7.13.2.1 Vegetative Stabilization

Temporary, rapid vegetative stabilization will be completed using annual grasses, such as annual rye.

Permanent stabilization will be completed with the planting of perennial grasses or legumes. Permanent vegetative stabilization will provide uniform perennial cover with a density of 70 percent or more of the natural background cover.

The Contractor will provide a suitable topsoil, good seedbed preparation, soil amendments, and water for effective establishment of these vegetative stabilization methods. Vegetation may be applied via hydro seeding or sodding techniques.

Mulch may also be applied following permanent seeding activities to protect soil from the impact of falling rain and to increase the capacity of the soil to absorb water.

7.13.2.2 Non-Vegetative Stabilization

Non-vegetative stabilization practices may consist of the application of mulch or erosion control blankets.

Mulch Application

If application of mulch is necessary, mulch will be applied at a rate of 90 pounds per 1,000 square feet. The mulch will be anchored with a tacking coat (non tar) applied by a hydroseeder. Steeper slopes (greater than 10 percent) will be covered with a bonded fiber matrix.

Erosion Control Blanket

Erosion control blankets will consist of bio-degradable materials such as mats of woven jute and/or coconut fiber.

Erosion control blankets may be combined with vegetative controls. For permanent stabilization applications, erosion control blankets shall consist of a non-woven bio-degradable material and shall be installed by anchoring the top of the blanket in a 6-inch-deep trench. The trench shall be backfilled and compacted after the blanket is secured with staples. Edges of the blankets must be stapled with approximately 4 inches overlap where two or more strip widths are required.

Erosion control blankets are applied to the soil surface as a continuous sheet and are used to protect disturbed areas from erosion and to enhance seed growth, typically where moving water is likely to wash out new vegetative plantings and mulches are ineffective.

Inspection and Maintenance Requirements

Inspection and maintenance activities for site stabilization will include:

Table 46 Maintenance Requirements: Site Stabilization

Inspection Item	Condition	Maintenance Activity
Surface	Erosion	Reinforce the surface using a vegetative or non-vegetative stabilization measure
SWPPP		Maintain the SWPPP throughout the construction period in accordance with the terms of the 2017 CGP.

7.14 Dewatering Practices

Refer to Part 2.4 of the 2017 CGP for information on the requirements for dewatering.

7.14.1 General Dewatering Practices

If project activities require dewatering, the General Contractor will implement dewatering practices to comply with the following requirements. The General Contractor:

› Will treat dewatering discharges with controls to minimize discharges of pollutants

- Will not discharge visible floating solids or foam
- Will use an oil-water separator or suitable filtration device that is designed to remove oil, grease, or other products if dewatering water is found to contain these materials.
- Will discharge water to vegetated, upland areas of the site to promote infiltration.
- Will comply with velocity dissipation requirements of Part 2.2.11
- Will handle backwash water by either hauling it away or returning it to the beginning of the treatment process
- Will replace and clean the filter media used in the dewatering devices when the pressure differential equals or exceeds the manufacturer's specifications.

The General Contractor may select and install dewatering controls at their discretion. The General Contractor shall specify locations of structural controls on the Site Map.

The General Contractor will record activities associated with dewatering controls in the following project logs:

Table 47 Recording Requirements: Dewatering Controls

Action	Recorded in
Installation	Construction Activities Log
Inspection	Inspection Log
Maintenance	Corrective Action Log
Removal	Construction Activities Log

7.14.2 Specific Dewatering Practices

If the General Contractor elects to use controls that are not specified in this SWPPP manual, the contractor will prepare documentation describing the control installation, inspection, maintenance, and removal procedures and record the actions in the appropriate project logs.

7.14.2.1 Dewatering Filter Bag

The dewatering filter bag consists of a non-woven geotextile filter fabric placed at the outlet of one (maximum diameter) six-inch discharge hose. If the dewatering filter bag will be used as a construction period dewatering control device, any bags will be placed on relatively flat terrain, free of brush and stumps. If rough ground conditions make punctures likely, a geotextile fabric will be placed beneath the filter bag. Unattended filter bags will be encircled with a straw bale and silt fence barrier.

Inspection and Maintenance Requirements

All dewatering structures will be placed as far away from wetland resources as practicable. Filter bags used during construction will be bundled and removed for proper disposal. Filter media shall be cleaned and replaced in all dewatering devices when the pressure differential equals or exceeds the manufacturer's specifications.

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8

Pollution Prevention

8.1 Potential Sources of Pollution

The following list identifies pollutant generating activities that are likely to occur on the project site in accordance with Part 7.2.3.g of the 2017 CGP.

Table 48 Pollutant Generating Activities and Pollutants Located on Site

Pollutant-generating Activity	Pollutants or Pollutant Constituents (that could be discharged if exposed to stormwater)	Location on Site (or reference SWPPP site map where this is shown)
Paving Operations	Asphalt constituents	
Vehicle Maintenance	Petroleum-based products	
Cleared & Graded Areas	Soil erosion	
Portable Toilets	Sewage	
Fuel Tanks	Fuel oil, gasoline, other fuels	
Storage Areas	Soil erosion, fuel oil, gasoline, asphalt, concrete, vehicle fluids, paints, solvents, adhesives	

8.2 Fueling and Maintenance of Equipment or Vehicles

When fueling or maintaining equipment or vehicles, the contractor will adhere to the following requirements specified in Part 2.3.1 of the 2017 CGP:

- Provide an effective means of eliminating the discharge of spilled or leaked chemicals, including fuels and oils, from these activities.
- If applicable, comply with the Spill Prevention Control and Countermeasures (SPCC) requirements in 40 CFR 112 and Section 311 of the CWA;
- Ensure adequate supplies are available at all times to handle spills, leaks, and disposal of used liquids;
- Use drip pans and absorbents under or around leaky vehicles;
- Dispose of or recycle oil and oily wastes in accordance with other federal, state, tribal, or local requirements;
- Clean up spills or contaminated surfaces immediately, using dry clean up measures where possible, and eliminate the source of the spill to prevent a discharge or a furtherance of an ongoing discharge. **Do not clean surfaces by hosing the area down.**
- Whenever possible refueling shall take place at least 100 feet away from any vegetated wetland or open water areas.

8.3 Washing of Equipment and Vehicles

Washing equipment and/or vehicles at the Project site will be prohibited.,

8.4 Storage, Handling, and Disposal of Construction Products, Materials, and Wastes

When storing, handling, and disposing of construction products, materials, and wastes, the contractor will adhere to the following good-housekeeping practices specified in part 2.3.3 of the 2017 CGP.

- An effort will be made to store only enough product required to do the job;
- All materials stored on-site will be stored in a neat, orderly manner in their appropriate containers, and (if possible) under a roof or other enclosure;
- Products will be kept in their original containers with the original manufacturer's label;
- Substances will not be mixed with one another unless recommended by the manufacturer;
- Whenever possible, all of a product will be used before disposing of the container;
- Manufacturer's recommendations for proper use and disposal will be followed; and
- The site superintendent will inspect the storage area daily to ensure proper use and disposal of materials on-site.

The following practices will reduce the risks associated with hazardous materials (e.g., petroleum products, solvents):

- A copy of all Material Safety Data Sheets (MSDS) for materials or products used during construction will be kept in the office trailer;
- Products will be kept in original containers unless they are not re-sealable;
- Original labels and material safety data (MSD sheets) will be retained; they contain important product information; and
- If surplus product must be disposed, manufacturer's or local- and state-recommended methods for proper disposal will be followed.

8.4.1 Building Products

In accordance with CGP Part 2.3.3.b, all containers will be tightly sealed and covered with plastic sheeting or a temporary roof when not required for use. Excess materials will be properly disposed according to manufacturer's instructions or state and local regulations and shall not be discharged to the storm sewer system. No storage will occur within 100 feet of a wetland or waterway.

8.4.2 Pesticides, Herbicides, Insecticides

Pesticides, herbicides, and insecticides will not be used at the Project Site.

8.4.3 Diesel Fuel, Oil, Hydraulic Fluids, Other Petroleum Products, and Other Chemicals

In accordance with CGP Part 2.3.3.c products stored on site will be contained in water-tight containers with either

- a cover to minimize the exposure of the container to precipitation and to stormwater or

› or a similarly effective means detained to minimize the discharge of pollutants from these areas such as secondary containment

All on-site vehicles will be monitored for leaks and will receive regular preventive maintenance to reduce the chance of leakage. Spills will be cleaned up immediately, using dry clean-up methods where possible. The source of the spill will be eliminated to prevent continuation of an on-going discharge.

No vehicle maintenance or handling of petroleum products will occur within 100 feet of a wetland or waterway.

Any asphalt substances used on-site will be applied according to manufacturer's recommendations. No petroleum-based or asphalt substances will be stored within 100 feet of a wetland or waterway.

8.4.4 Hazardous or Toxic Waste

In accordance with CGP Part 2.3.3.d, the contractor will:

› Separate hazardous or toxic waste from construction and domestic waste;
› Store waste in sealed containers, which are constructed of suitable materials to prevent leakage and corrosion, and which are labeled in accordance with applicable Resource Conservation and Recovery Act (RCRA) requirements and all other applicable federal, state, tribal, or local requirements;
› Store all containers that will be stored outside within appropriately sized secondary containment (e.g., spill berms, decks, spill containment pallets) to prevent spills from being discharged, or provide a similarly effective means designed to prevent the discharge of pollutants from these areas (e.g., storing chemicals in covered area or having a spill kit available on site); and
› Clean up spills immediately, using dry clean-up methods where possible, and dispose of used materials properly.
› Hosing will not be utilized as a method to clean surfaces or spills.
› Eliminate the source of the spill to prevent a discharge or a furtherance of an ongoing discharge.

All hazardous waste materials (e.g., petroleum products, solvents) will be disposed in the manner specified by local and state regulation, or by the manufacturer. Site personnel will be instructed in these practices, and the site construction supervisor will be responsible for seeing that these procedures are followed.

8.4.5 Construction and Domestic Waste

In accordance with CGP Part 2.3.3.e, the contractor will provide waste containers (e.g., dumpster or trash receptacle) of sufficient size and number to contain construction and domestic wastes. Waste containers will be covered to prevent precipitation from entering the container and becoming a source of pollution. Alternatively, the waste container will be kept in secondary containment to prevent discharges of contaminated stormwater.

Daily loose trash removal will prevent litter, construction debris, and construction chemicals exposed to stormwater from becoming a pollutant source for stormwater discharges. All loose trash will be placed in appropriate storage containers and will be disposed of properly.

The General Contractor will identify the areas to be used for storing dumpsters, compactors or other raw or waste materials on the Site Map.

8.4.6 Large Structures Built or Renovated prior to January 1980

In accordance with CGP Part 2.3.3.f, the contractor will implement controls to minimize the exposure of PCB-containing building materials including paint, caulk, and pre-1980s fluorescent light fixtures to precipitation and stormwater and ensure that disposal of such materials is performed in compliance with applicable state, federal and local laws.

8.4.7 Sanitary Waste

Portable toilets will be placed away from waters of the U.S., stormwater inlets and/or conveyances and will be secured in place so that they will tip or be knocked over. All sanitary waste will be collected from the portable units by a licensed contractor as required and disposed in compliance with state and local regulations.

8.5 Washing of Applicators and Containers used for Paint, Concrete or Other Materials

In compliance with the prohibition in CGP Parts 2.3.4, the contractor must provide an effective means of eliminating the discharge of water from the washout and cleanout of stucco, paint, concrete, form release oils, curing compounds, and other construction materials. To comply with this requirement, the contractor must:

- Direct all wash water into a leak-proof container or leak-proof pit. The container or pit must be designed so that no overflows can occur due to inadequate sizing or precipitation;
- Handle washout or cleanout wastes as follows:
  - Do not dump liquid wastes in storm sewers;
  - Dispose of liquid wastes in accordance with applicable requirements in Part 2.3.3; and
  - Remove and dispose of hardened concrete waste consistent with handling of other construction wastes in Part 2.3.3.
- Locate any washout or cleanout activities as far away as possible from surface waters and stormwater inlets or conveyances, and, to the extent practicable, designate areas to be used for these activities and conduct such activities only in these areas.

8.6 Pavement Sweeping

Pavement sweeping of local roads may be performed daily or as needed, when track-out has occurred. The sweeping program will remove sediments and contaminants directly from paved surfaces before their release into stormwater runoff. Pavement sweeping has been

demonstrated to be an effective initial treatment for reducing pollutant loading into stormwater.

8.7 Spill Prevention and Response

The following practices will be followed for spill control, notification, and cleanup:

The General Contractor is responsible for the daily operations and is also responsible for coordinating spill prevention and cleanup coordination. The General Contractor will designate at least three other site personnel to receive spill prevention and cleanup training. These individuals will each become responsible for a particular phase of prevention and cleanup. The names of the responsible spill personnel will be posted in the material storage area and in the on-site office trailer.

› Spills of toxic or hazardous material in excess of reportable quantities, as established in the under 40 CFR 110, 40 CFR 117, or 40 CFR 302, will be reported to the following agencies as soon as the General Contractor has knowledge of the release:

Massachusetts Department of Environmental Protection Division of Hazardous Waste	(617) 292-5851 or (978) 661-7679
National Response Center	(800) 424-8802

› All spills will be cleaned up immediately after discovery;

› The spill area will be kept well ventilated and personnel will wear protective clothing to prevent injury from contact with a hazardous substance; and

› Manufacturer's recommended methods for spill cleanup will be clearly posted and site personnel will be informed of the procedures and the location of the information and cleanup supplies;

› Materials and equipment necessary for spill cleanup will be kept in the material storage area on-site. Equipment and materials will include, but will not be limited to the emergency response equipment listed herein;

A comprehensive Spill Prevention Control and Countermeasure (SPCC) plan will be developed and implemented by the General Contractor and other Operators. At a minimum the SPCC, will discuss:

› Spill prevention equipment;

› Spill prevention supplies provided on-site; and

› Spill prevention training to be provided by the Owner and/or Tenant to designated employees.

8.7.1 Initial Notification

In the event of a spill the notify the 24-hour Emergency Contact (Section 0) immediately.

The 24-hour Emergency Contact or their chosen delegate will immediately notify emergency response services and notify the local boards and commissions at the first possible opportunity:

- Fire Department (immediately)
- the Police Department, (immediately)
- the Board of Health (at first opportunity)
- and the Conservation Commission (at first opportunity)

8.7.2 Further Notification

Based on the assessment from the Fire Chief, additional notification to a cleanup contractor may be made. The Massachusetts Department of Environmental Protection (DEP) and the EPA may be notified depending upon the nature and severity of the spill. The Fire Chief will be responsible for determining the level of cleanup and notification required. The attached list of emergency phone numbers shall be posted in the main construction/facility office and readily accessible to all employees. A hazardous waste spill report shall be completed as necessary using the attached form.

8.7.3 Assessment - Initial Containment

The supervisor or manager will assess the incident and initiate containment control measures with the appropriate spill containment equipment included in the spill kit kept on-site. A list of recommended spill equipment to be kept on site is included on the following pages.

8.7.4 Reporting

A copy of the Spill Report Template is included in Attachment N.

Table 49 Emergency Notification Phone Numbers

1A	24-hour Contact		T: (###) ###-###
1B	Alternate Contact	DCR – XXXXX	T: (XXX) XXX-XXX
2	Fire and Police		911
3	Cleanup Contractor	Name/Address	T: (###) ###-###
4	MassDEP		T: (800) 340-1133
5A	National Response Center		T: (800) 424-8802
5B	USEPA		T: (800) 424-8802 T: (800) 424-8802
6A	Sudbury Board of Health		T: (978) 440-5479
6B	Marlborough Board of Health		T: (508) 460-3751
6C	Hudson Board of Health		T: (978) 562-2020
6D	Stow Board of Health		T: (978) 897-4592
7A	Sudbury Conservation Commission	Coordinator Lori Capone	T: (978) 440-5470
7B	Hudson Conservation Commission	Agent/Planner Pam Helinek	T: (978) 568-9641
7C	Stow Conservation Commission	Coordinator Kathy Sferra	T: (978) 897-8615

Post this list of emergency contact numbers in the main construction/facility office in a location that is readily accessible to all employees.

Emergency Response Equipment

The following is an example of an equipment and materials list that must be prepared by the Owner and Tenant. Equipment and Supplies on this list shall be maintained at all times and stored in a secure area for long-term emergency response need.

Table 50 Emergency Response Equipment

Supply	Quantity	Supplier
Sorbent Pillows (Pigs)	2	http://www.newpig.com
Sorbent Boom/Sock	25 feet	Item # KIT276 — mobile container with two pigs, 26 feet of sock
Sorbent Pads	50	50 pads, and five pounds of absorbent (or equivalent)
Lite-Dri® Absorbent	5 pounds	http://www.forestry-suppliers.com
Shovel	1	Item # 33934 — Shovel (or equivalent)
Pry Bar	1	Item # 43210 — Manhole cover pick (or equivalent)
Goggles	1 pair	Item # 23334 — Goggles (or equivalent)
Heavy Gloves	1 pair	Item # 90926 — Gloves (or equivalent)

9

Compliance with Other Regulations

9.1 Endangered Species

Appendix D of the 2017 CGP describes eligibility requirements with regard to the protection of threatened and endangered species and designated critical habitat.

9.1.1 Eligibility Criterion

Under which criterion listed in Appendix D of the 2017 CGP are you eligible for coverage under this permit?

☐ A ☐ B ☐ C ☐ D ☒ E

- **Criterion A.** No federally listed threatened or endangered species or their designated critical habitat(s) are likely to occur in your site's "action area" as defined in Appendix A of the 2017 CGP.
- **Criterion B.** The construction site's discharges and discharge-related activities were already addressed in another operator's valid certification of eligibility for your action area under eligibility Criterion A, C, D, E, or F and there is no reason to believe that federally-listed species or federally-designated critical habitat not considered in the prior certification may be present or located in the "action area". To certify your eligibility under this Criterion, there must be no lapse of NPDES permit coverage in the other operator's certification. By certifying eligibility under this Criterion, you agree to comply with any effluent limitations or conditions upon which the other operator's certification was based. You must include in your NOI the tracking number from the other operator's

notification of authorization under this permit. If your certification is based on another operator's certification under Criterion C, you must provide EPA with the relevant supporting information required of existing dischargers in Criterion C in your NOI form.

- **Criterion C.** Federally listed threatened or endangered species or their designated critical habitat(s) are likely to occur in or near your site's "action area," and your site's discharges and discharge-related activities are not likely to adversely affect listed threatened or endangered species or critical habitat. This determination may include consideration of any stormwater controls and/or management practices you will adopt to ensure that your discharges and discharge-related activities are not likely to adversely affect listed species and critical habitat. To make this certification, you must include the following in your NOI: 1) any federally listed species and/or designated habitat located in your "action area"; and 2) the distance between your site and the listed species or designated critical habitat (in miles). You must also include a copy of your site map with your NOI.
- **Criterion D.** Coordination between you and the Services has been concluded. The coordination must have addressed the effects of your site's discharges and discharge-related activities on federally-listed threatened or endangered species and federally designated critical habitat, and must have resulted in a written concurrence from the relevant Service(s) that your site's discharges and discharge-related activities are not likely to adversely affect listed species or critical habitat. You must include copies of the correspondence between yourself and the Services in your SWPPP and your NOI.
- **Criterion E.** Consultation between a Federal Agency and the U.S. Fish and Wildlife Service and/or the National Marine Fisheries Service under Section 7 of the ESA has been concluded. The consultation must have addressed the effects of the construction site's discharges and discharge-related activities on federally listed threatened or endangered species and federally-designated critical habitat. The result of this consultation must be either:
  - a biological opinion that concludes that the action in question (taking into account the effects of your site's discharges and discharge-related activities) is not likely to jeopardize the continued existence of listed species, nor the destruction or adverse modification of critical habitat; or
  - written concurrence from the applicable Service(s) with a finding that the site's discharges and discharge-related activities are not likely to adversely affect federally-listed species or federally designated habitat.
- You must include copies of the correspondence between yourself and the Services in your SWPPP and your NOI.
- **Criterion F.** Your construction activities are authorized through the issuance of a permit under Section 10 of the ESA, and this authorization addresses the effects of the site's discharges and discharge-related activities on federally-listed species and federally designated critical habitat. You must include copies of the correspondence between yourself and the Services in your SWPPP and your NOI.
- For reference purposes, the eligibility criteria listed in Appendix D of the 2017 CGP are as follows:

9.1.2 Supporting Documentation

Provide documentation for the applicable eligibility criterion you select in Appendix D of the 2017 CGP, as follows:

For criterion A, indicate the basis for your determination that no federally-listed threatened or endangered species or their designated critical habitat(s) are likely to occur in your site's action area (as defined in Appendix A of the 2017 CGP). Check the applicable source of information you relied upon:

☐ Specific communication with staff of the U.S. Fish & Wildlife Service or National Marine Fisheries Service.

☐ Publicly available species list.

☒ Other source: IPaC

For criterion B, provide the Tracking Number from the other operator's notification of permit authorization:

Provide a brief summary of the basis used by the other operator for selecting criterion A, B, C, D, E, or F:

For criterion C, provide the following information:

› Any federally listed species and/or designated habitat located in your "action area"

› The distance between your site and the listed species or designated critical habitat (in miles). You must also include a copy of your site with you NOI.

For criterion D, E, or F, attach copies of any letters or other communication between you and the U.S. Fish & Wildlife Service or National Marine Fisheries Service concluding consultation or coordination activities.

Supporting documentation related to project compliance with the Endangered Species Act is provided in Attachment F.

9.2 Historic Preservation

Appendix E of the 2017 CGP describes eligibility requirements with regard to the protection of historic properties, including tribal lands.

The Operator responsible for finalizing this SWPPP must:

› Fill out the answers to the questions below for
  - Appendix E, Step 2
  - Appendix E, Step 3
  - Appendix E, Step 4

› Insert copies of any correspondance with the Massachusetts Historical Commission into Attachment G.

9.2.1 Appendix E, Step 1

Do you plan on installing any of the following stormwater controls at your site? Check all that apply below, and proceed to Appendix E, Step 2.

☐ Dike

☐ Berm

☐ Catch Basin

☐ Pond (Bioretention Basin)

☒ Stormwater Conveyance Channel (e.g., ditch, trench, perimeter drain, swale, etc.)

☒ Culvert

☐ Other type of ground-disturbing stormwater control: Subsurface infiltration structures

(Note: If you will not be installing any ground-disturbing stormwater controls, no further documentation is required for this section of the SWPPP template.)

9.2.2 Appendix E, Step 2

If you answered yes in Step 1, have prior surveys or evaluations conducted on the site already determined that historic properties do not exist, or that prior disturbances at the site have precluded the existence of historic properties?

☐ YES ☒ NO

If yes, no further documentation is required for this section of the SWPPP template. If no, proceed to Appendix E, Step 3.

9.2.3 Appendix E, Step 3

If you answered no in Step 2, have you determined that your installation of subsurface earth-disturbing stormwater controls will have no effect on historic properties?

☐ YES ☒ NO

If yes, provide documentation of the basis for your determination. If no, proceed to Appendix E, Step 4.

9.2.4 Appendix E, Step 4

If you answered no in Step 3, did the State Historic Preservation Officer (SHPO), Tribal Historic Preservation Office (THPO), or other tribal representative (whichever applies) respond to you within 15 calendar days to indicate whether the subsurface earth disturbances caused by the installation of stormwater controls affect historic properties?

☒ YES ☐ NO

If no, no further documentation is required for this section of the SWPPP template.

If yes, describe the nature of their response:

☐ Written indication that adverse effects to historic properties from the installation of stormwater controls can be mitigated by agreed upon actions.

INSERT COPIES OF LETTERS, EMAILS, OR OTHER COMMUNICATION BETWEEN YOU AND THE APPLICABLE SHPO, THPO, OR OTHER TRIBAL REPRESENTATIVE

☒ No agreement has been reached regarding measures to mitigate effects to historic properties from the installation of stormwater controls.

INSERT COPIES OF LETTERS, EMAILS, OR OTHER COMMUNICATION BETWEEN YOU AND THE APPLICABLE SHPO, THPO, OR OTHER TRIBAL REPRESENTATIVE

☐ Other: *Response from MHC indicating determination that the proposed project will have no adverse effect on significant historic or archaeological properties is included in Attachment G.*

Supporting documentation related to project compliance with the Historic Preservation is provided in Attachment G.

9.3 Safe Drinking Water Act Underground Injection Control Requirements

Do you plan to install any of the following controls? Check all that apply below.

☐ Infiltration trenches (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system)

☐ Commercially manufactured pre-cast or pre-built proprietary subsurface detention vaults, chambers, or other devices designed to capture and infiltrate stormwater flow

☐ Drywells, seepage pits, or improved sinkholes (if stormwater is directed to any bored, drilled, driven shaft or dug hole that is deeper than its widest surface dimension, or has a subsurface fluid distribution system)

All stormwater structures meeting the definition of Underground Injection Wells shall be registered in accordance with DEP regulations 310 CMR 27.00. Copies of correspondence with the MassDEP or the EPA Regional Office should be included in the SWPPP.

Supporting documentation related to project compliance with the Safe Drinking Water Act is provided in Attachment Q.

Attachment A
2017 Construction General Permit

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Attachment B
Certifications

Refer to Section 1 of this SWPPP Manual for more information.

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Delegation of Authority

I, _____ (name), hereby designate the person or specifically described position below to be a duly authorized representative for the purpose of overseeing compliance with environmental requirements, including the Construction General Permit, at the _____ construction site. The designee is authorized to sign any reports, stormwater pollution prevention plans and all other documents required by the permit.

Name of person/position: _____

Company: _____

Address: _____

City, State, zip: _____

Phone: _____

By signing this authorization, I confirm that I meet the requirements to make such a designation as set forth in Appendix I of EPA's Construction General Permit (CGP), and that the designee above meets the definition of a "duly authorized representative" as set forth in Appendix I.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Name: _____

Company: _____

Title: _____

Signature: _____

Date: _____

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Signatories to the SWPPP

The signatories identified on this sheet are considered Operators of the project described in this SWPPP and will use, update, and maintain this SWPPP to comply with the terms of the 2017 EPA NPDES CGP.

Subcontractors who are not operators may sign the Subcontractor Certification Form.

OWNER	**CONTRACTOR**	**SUBCONTRACTOR (Operator status)**
Signature and Date	Signature and Date	Signature and Date
Title	Title	Title
Client Contact Client Company ### Street Address Town, State ##### T: (###) ###-#### name@address.com	Contractor Contact Contractor Company Address Town, State Zip T: (###) ###-#### name@address.com	Contractor Contact Contractor Company Address Town, State Zip T: (###) ###-#### name@address.com

Add additional sheets as necessary.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

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Signatories to the SWPPP

The signatories identified on this sheet are considered Operators of the project described in this SWPPP and will use, update, and maintain this SWPPP to comply with the terms of the 2017 EPA NPDES CGP.

Subcontractors who are not operators may sign the Subcontractor Certification Form.

SUBCONTRACTOR (Operator status)	**SUBCONTRACTOR (Operator status)**	**SUBCONTRACTOR (Operator status)**
Signature and Date	Signature and Date	Signature and Date
Title	Title	Title
Client Contact Client Company ### Street Address Town, State ##### T: (###) ###-#### name@address.com	Contractor Contact Contractor Company Address Town, State Zip T: (###) ###-#### name@address.com	Contractor Contact Contractor Company Address Town, State Zip T: (###) ###-#### name@address.com

Add additional sheets as necessary.

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

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Subcontractor Certification (Non-Operator Status)

Stormwater Pollution Prevention Plan

Project Number: _____

Project Title: _____

Operator(s): _____

As a subcontractor, you are required to comply with the Stormwater Pollution Prevention Plan (SWPPP) for any work that you perform on-site. Any person or group who violates any condition of the SWPPP may be subject to substantial penalties or loss of contract. You are encouraged to advise each of your employees working on this project of the requirements of the SWPPP. A copy of the SWPPP is available for your review at the office trailer.

Each subcontractor engaged in activities at the construction site that could impact stormwater must be identified and sign the following certification statement:

"I certify under the penalty of law that I have read and understand the terms and conditions of the SWPPP for the above designated project and agree to follow the practices described in the SWPPP."

This certification is hereby signed in reference to the above named project:

Company: _____

Address: _____

Telephone Number: _____

Type of construction service to be provided: _____

Signature: _____

Title: _____

Date: _____

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Attachment C
EPA NOIs and EPA NOTs

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Attachment D
Project Plans

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Attachment E
Site Map

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Site Map Requirements (Part 7.2.4 of the 2017 CGP):

1. Boundaries of the area of disturbance
2. 50-foot buffer around the area of disturbance
3. Identify areas of steep slope
4. Locations of stockpiles
5. Locations of construction vehicle access
6. All stormwater discharge points from the area of disturbance (to waterbodies AND to storm drain inlets)
7. All surface waters that the area of disturbance discharges to
8. The location and nature of all erosion and sediment controls
   - Perimeter controls
   - Storm drain inlet controls
   - A note that indicates that the contractor will provide information for any other types of controls required.
9. Location of proposed, post-construction impervious surfaces and structures
10. Location of on-site and off-site construction support activity areas covered by this permit
11. Locations of all waters of the US within and one mile downstream of the site. Also identify if any are listed as impaired, or are identified as Tier 2, Tier 2.5, or Tier 3.
12. Areas of federally listed critical habitat within the site and/or at discharge locations
13. Type and extent of pre-construction cover on the site
14. Drainage patterns of stormwater and authorized non-stormwater before and after major grading activities.
15. Locations of all potential pollutant generating activities.

Locations where any chemicals will be used and stored.

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Attachment F
Endangered Species Act

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Attachment G
Historic Preservation

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Attachment H
Training Log and Attendance Forms

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MassCentral Rail Trail, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Training Log

This log provides a table of contents for the training forms. Insert training attendance lists into the field binder.

Date of Inspection	Notes:	Initials

Attach additional sheets as necessary

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MassCentral Rail Trail, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Stormwater Pollution Prevention Training Attendance Form

Date/Time of Training:	
Instructor (name/title):	
Training Location:	
Training Duration:	

Topics addressed in this training

- ☐ Sediment and Erosion Controls
- ☐ Stabilization Controls
- ☐ Pollution Prevention Measures
- ☐ Emergency Procedures
- ☐ Inspections/Corrective Actions
- ☐ Other: _____

Print Name of Attendee:	**Initials**

Attach additional sheets as necessary

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Attachment I
SWPPP Amendment Log

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MassCentral Rail Trail, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Amendment Log

This log provides a table of contents for the amendments to the SWPPP. Insert supplemental materials (if applicable) into the field binder and note their location.

No.	Date of Amendment	Summarize the changes to the SWPPP and indicate any supplemental materials that have been added	Authorization[3] (Name and Signature)	All Other Operators Notified of the Change
1				☐
				☐
				☐
				☐
				☐
				☐
				☐
				☐

Attach additional sheets as necessary.

3 Amendments must be authorized by an individual who meets the requirements of Appendix I, Part 1.11b of the 2017 CGP.

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Attachment J
Construction Activities Log

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MassCentral Rail Trail, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Construction Activities Log

Record the following activities in the Construction Activities log.

Type of Action:	Information to include in the Construction Activity Log
Site-mobilization activities commence	› Record the date
Install construction period stormwater controls	› Record the date that each stormwater control identified on the Sediment and Erosion Control Plan is installed. Record the date each control becomes operational.
Earth-disturbance activities commence	› Record the date, the location on the site, and the type of activity. Activities that must be recorded include: clearing, grubbing, mass grading, cutting/filling, final grading, stockpiling. Record the activity in the Grading and Stabilization Log.
Earth-disturbance activities cease	› Record the date, the location on the site, and the type of activity. › Activities that must be recorded include: clearing, grubbing, mass grading, cutting/filling, final grading, stockpiling. › Record the activity in the Grading and Stabilization Log.
Site stabilization measures commence (P/T)	› Record the date, the location on the site, and the type of site stabilization measure commenced. Indicate if the stabilization measure is temporary or permanent. Record the activity in the Grading and Stabilization Log.
Site stabilization measures cease (P/T)	› Record the date, the location on the site, and the type of site stabilization measure that has ceased. Record the date that the stabilization measure becomes operational.Record the activity in the Grading and Stabilization Log.
Removal of construction period stormwater controls	› Record the date that each stormwater control identified on the Sediment and Erosion Control Plan is removed.
Removal of construction equipment and vehicles	› Record the date that all equipment and vehicles vacate the site.
Cessation of pollutant-generating activities	› Record the date that all pollution generating activities on the site cease.
Construction activities cease	› Record the date.

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Attachment K
Grading and Stabilization Log

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MassCentral Rail Trail, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Construction Activities Log

Date	Type of Action	Notes:	Supplemental Log Entry Created[4]
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐
			☐

Attach additional sheets as necessary.

4 If the activity type is an earth disturbance activity or a site stabilization measure, then also record the activity in the separate Grading and Stabilization Log

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MassCentral Rail Trail, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Grading and Stabilization Log

Date Grading Activity Initiated	Date Grading Activity Ceased	Description of Grading Activity	Date Stabilization Measure Initiated	Date Stabilization Achieved	P/T	Description of Stabilization Measure

P = Permanent, T = Temporary

Attach additional sheets as necessary

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Attachment L
Inspection Log and Template Forms

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MassCentral Rail Trail, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Inspection Log

This log provides a table of contents for the completed inspection log forms. Insert completed inspection reports into the field binder.

Date of Inspection	Notes:	Initials

Attach additional sheets as necessary

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MassCentral Rail Trail, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Site Inspection Form

Complete this inspection report within 24 hours of completing the site inspection.

Date/Time of Inspection: _____ **Weather Conditions:** _____

Recent Precipitation Event: _____
(Record daily rainfall total if 0.25 inches has fallen within the previous 24 hours)

Construction Activities Underway: _____

Inspector: _____

Status of Existing BMPs

Refer to Part 4.5 of the 2017 CGP to identify areas that must be inspected.
Refer to Part 4.6 for the requirements for inspections.

	Status – Cleaning or Repair Needed?		
Erosion Control Measure	**Yes**	**No**	**Comments/Notes**
Silt Fence	☐	☐	
Compost Filter Tubes	☐	☐	
Construction Period Swales	☐	☐	
Construction Period Basins	☐	☐	
Erosion Control Blankets	☐	☐	
Construction Entrances	☐	☐	
	☐	☐	

N/A – Not applicable

Attach additional sheets if necessary

In the event of a spill refer to the **Spill Response Procedure** and contact appropriate agencies. Refer to Section 8.7 of the SWPPP Manual for Spill Prevention Plan and Response Procedures.

General Comments (Attach figures to show locations of concern):

	No	Yes
Are additional Erosion Control Measures needed? If yes, describe:	☐	☐
Are sediment/pollution discharges from the site present? If yes, describe:	☐	☐

Describe any corrective action required at this time:

Notes:

Attach additional sheets with notes, comments, illustrations and issues as needed. Use site plan to identify locations of work areas or issues noted above.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Authorization: _____ Date: _____

Authorization must be made by personnel identified in the Delegation of Authority and authorized to complete this task.

Attachment M
Corrective Action Log and Template Forms

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MassCentral Rail Trail, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Corrective Action Log

This log provides a table of contents for the completed corrective action log forms. Insert completed corrective action reports into the field binder.

Date of Action	Notes:	Initials

Attach additional sheets as necessary.

Intentionally blank

MassCentral Rail Trail, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Corrective Action Form

	BMP/Activity	Date Observed	Date Corrected	Corrective Action Needed and Notes
1				
2				
3				
4				

Corrective Action

Describe how any incidents of non-compliance have been addressed:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Authorization: _____ Date: _____

Authorization must be made by personnel identified in the Delegation of Authority and authorized to complete this task.

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Attachment N
Spill Log and Template Forms

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MassCentral Rail Trail, Sudbury, Marlborough, Stow, Hudson, Massachusetts

Hazardous Waste & Oil Spill Report

Date: _____ **Time:** _____ **AM / PM**

Exact location (Transformer #): _____

Type of equipment: _____ **Make:** _____ **Size:** _____

S / N: _____ **Weather Conditions:** _____

On or near water? ☐ Yes ☐ No **If yes, name of body of water:** _____

Type of chemical / oil spilled: _____

Amount of chemical / oil spilled: _____

Cause of spill: _____

Measures taken to contain or clean up spill: _____

Amount of chemical / oil recovered: _____ **Method:** _____

Material collected as a result of cleanup:

_____ drums containing _____

_____ drums containing _____

_____ drums containing _____

Location and method of debris disposal: _____

Name and address of any person, firm, or corporation suffering charges: _____

Procedures, method, and precautions instituted to prevent a similar occurrence from recurring: _____

Spill reported by General Office by: _____ **Time:** _____ **AM / PM**

Spill reported to DEP / National Response Center by: _____

DEP Date: _____ **Time:** _____ **AM / PM** **Inspector:** _____

NRC Date: _____ **Time:** _____ **AM / PM** **Inspector:** _____

Additional comments: _____

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Attachment O
Buffer Documentation

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Attachment P
Chemical Information

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Attachment Q
UIC Well Correspondence

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Attachment R
Local Orders of Condition

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Attachment S
Design Calculations for Stormwater Erosion Controls

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Appendix F – Standard 9 Supporting Information (Operation and Maintenance Manual)

MassCentral Rail Trail (MCRT)

Stormwater Management System Operation and Maintenance Plan (O&M) and Long Term Pollution Prevention Plan (LTPPP)

June 2020

This Stormwater Management System Operation and Maintenance Plan provides for the inspection and maintenance of structural Best Management Practices (BMPs) and for measures to prevent pollution associated with the Stormwater Management System on the MassCentral Rail Trail Wayland Section (in Hudson, Stow and Sudbury).

This document has been prepared in accordance with the requirements of the Stormwater Regulations included in the Massachusetts Wetlands Protection Act Regulations (310 CMR 10).

Responsible Party

Department of Conservation and Recreation (DCR) office will be responsible for the maintenance of the shared-use facility and associated stormwater management features, in accordance with DCR standards. The facility will be maintained by DCR maintenance staff from:

DCR's Maintenance Facility
Hopkinton Complex
164 Cedar St,
Hopkinton MA 01748
Jeff Cate
Field Operation Team Leader
(508) 435-4303

Maintenance Measures

The stormwater management system covered by this Operation and Maintenance Plan consists of the following components:

- Swales – Dry with check dams
- Areas of increased infiltration
- Drainage structures
  Hudson
  - Sta. 119+25 LT – Catch basin (Str 3)
  - Sta. 119+25 RT – Headwall (Str 4)
  - Sta. 126+70 RT – Catch basin (Str 5)
  - Sta. 126+70 LT – Headwall (Str 6)
  - Sta. 182+55 RT – Catch basin (Str 8)

Sudbury

- Sta. 530+80 RT – Catch basin (Str 9)
- Sta. 533+46 RT – Flared End Section (Str 10)
- Sta. 713+63 LT – Headwall (Str 12)
- Sta. 713+63 RT – Headwall (Str 13)

DCR Operations to maintain swales, and the drainage culverts that will require periodic maintenance.

DCR Engineering to maintain listed catch basin, flared end section, and headwalls. Engineering can assist with blocked culverts if major blockage or structural concern.

Maintenance of these components will be conducted annually in accordance with DCR standard maintenance practices, as noted in the attached Operation and Maintenance table summarizing the pertinent inspection and maintenance activities.

If inspection indicates the need for major repairs of structural surfaces, the inspector should contact the DCR maintenance supervisor to initiate procedures to effect repairs in accordance with DCR standard construction practices.

Practices for Long Term Pollution Prevention

In general, long term pollution prevention and related maintenance activities will be conducted consistent with DCR's NPDES Stormwater MS4 Permit(s), and the measures outlined in the Stormwater Management Plans (SWMP). Information about the DCR permit and the SWMP are available at the following website:

http://www.mass.gov/eea/agencies/dcr/conservation/stormwater-mgmnt/

For the facilities covered by this Operation and Maintenance Plan, long term pollution prevention includes the following measures:

Litter Pick-up
DCR will conduct litter pick-up from the stormwater management facilities in conjunction with routine maintenance activities.

Routine Inspection and Maintenance of Stormwater BMPs
DCR will conduct inspection and maintenance of the stormwater management practices in accordance with the guidelines discussed above.

Spill Prevention and Response
DCR will implement response procedures for releases of significant materials such as fuels, oils, or chemical materials onto the ground or other areas that could reasonably be expected to discharge to surface or groundwater.

- Reportable quantities will immediately be reported to the applicable Federal, State, and local agencies as required by law. The applicable DCR office should also be notified.
- Applicable containment and cleanup procedures will be performed immediately. Impacted material collected during the response must be removed promptly and

disposed of in accordance with Federal, State, and local requirements. A licensed emergency response contractor may be required to assist in cleanup of releases depending on the amount of the release and the ability of the responsible party to perform the required response.

- Reportable quantities of chemical, fuels, or oils are established under the Massachusetts Contingency Plan (MCP) and enforced through MassDEP.

Maintenance of Landscaped Areas

DCR will mow and/or weed whack the shoulders adjacent to the rail trail biweekly or as needed between Memorial Day and Columbus Day. Outside of the 2-foot shoulders on either side of the rail trail, DCR will mow the 5-foot herbaceous area over the duct bank no more than once annually. Outside of the 19-foot maintained area (paved rail trail, 2-foot shoulders on either side and 5-foot area over the duct bank) woody vegetation will be allowed to naturally revegetate and DCR will not implement vegetation management unless it poses a risk to MCRT users or to the underground transmission line. The limit of work, outside of the 19-foot maintained area, will be restored with loam and seed to provide a vegetated surface, but will not be maintained. The vegetated shoulders/slopes outside the maintained area will help to disperse and infiltrate disconnected drainage although no stormwater management benefit is identified. The swales and areas of increased infiltration outside of the 19-foot area will be inspected and mowed as needed or annually at a minimum to maintain proper water quality treatment function.

Eversource inspection vehicles will use the paved MCRT to access the transmission line facility approximately once every three years, or as needed for maintenance of the transmission line.

Within the Priority Habitat areas, the vegetation will not be trimmed lower than 10 inches along the shoulders or over the duct bank.

Fertilizers will not be used. If DCR finds it necessary to use chemical treatment for vegetation control, this work will be done in compliance with MDAR regulations at 333 CMR 11.00, which will limit impacts to sensitive areas such as groundwater and drinking water wells. The MCRT is part of the DCR Yearly Operational Plan regarding vegetation maintenance along their bike path and recreational corridors.

Snow and Ice Management

There are no plans for snow and ice removal, nor de-icing (i.e., sanding, salting) of the bike path surface during winter months.

Prohibition of Illicit Discharges

The DEP Stormwater Management Standards prohibit illicit discharges to the storm water management system. Illicit discharges are discharges that do not entirely consist of stormwater, except for certain specified non-stormwater discharges.

Discharges from the following activities are not considered illicit discharges:

firefighting	foundation drains
water line flushing	footing drains
landscape irrigation	individual resident car washing
uncontaminated groundwater	flows from riparian habitats and wetlands
potable water sources	dechlorinated water from swimming pools

water used to clean residential buildings without detergents	water used for street washing air conditioning condensation

There are no known or proposed illicit connections associated with this project. If a potential illicit discharge to the facilities covered by this plan is detected (e.g., dry weather flows at any pipe outlet, evidence of contamination of surface water discharge by non-stormwater sources), the DCR shall be notified for assistance in determining the nature and source of the discharge, and for resolution through DCR's IDDE program.

Public Access

The MCRT Wayland Section is a public access facility. The facility is typically open dawn to dusk every day. Members of the Sudbury Planning Board or Conservation Commission are free to access the rail trail at any time the facility is open. Periodically the facility may be closed for maintenance construction (repairs, resurfacing, etc.) and for the safety of the public, access to the rail trail will be restricted.

Easements

The DCR holds an easement for construction and operation of the MCRT over the Massachusetts Department of Transportation – MBTA rail corridor. Within the rail corridor there are the following existing easements or license agreements by others:

- NSTAR Electric Company d/b/a Eversource Energy ("Eversource") to construct and operate the transmission powerline;
- Sudbury Lumber for access and storage of materials (off Union Avenue);
- Tennessee Gas Transmission Company to install and operate an underground natural gas transmission pipeline (east of Marlborough/Hudson town line);
- Town of Sudbury (east of Route 20 – building license);
- Douglas P. Webb lease for South Sudbury Station (off Union Avenue)

Appendix: Best Management Practices: Operation & Maintenance Measures

Best Management Practice*	Sweep	Mow	Inspect	Clean	Repair
Swales*	NA	Mow swales as needed or annually (minimum)	Annually	As needed	As needed
Check Dams	NA	String trim as needed (Not to be mowed) or annually (minimum)	Annually	As needed	As needed
Areas of increased infiltration*	NA	Mow as needed or annually (minimum)	Annually	As needed	As needed
Drainage structures	NA	NA	Annually	As needed	As needed

*If mowing occurs between April 1 and November 1, then areas within mapped habitat for state-listed turtles will require "turtle sweeps" by trained individuals ahead of the mower and mower deck heights shall be set lower than 10 inches above the ground or string trimmers can be used.

Best Management Practices – Maintenance/ Evaluation Checklist

Best Management Practice	Inspection Frequency	Date Inspected	Inspector	Minimum Maintenance and Key Items to Check	Cleaning/Repair Needed	Date of Cleaning/Repair	Performed by
Swales	Annually			• Accumulated sand and sediment • Accumulated debris • Erosion of swale	☐**yes** ☐**no** ☐**yes** ☐**no** ☐**yes** ☐**no**		
Check Dams	Annually			• Accumulated sand and sediment • Accumulated debris • Erosion of surface	☐**yes** ☐**no** ☐**yes** ☐**no** ☐**yes** ☐**no**		
Areas of increased infiltration	Annually			• Accumulated sand and sediment	☐**yes** ☐**no**		
Drainage structures	Annually			• Accumulated sand and sediment • Floatables • Inlets free of debris	☐**yes** ☐**no** ☐**yes** ☐**no** ☐**yes** ☐**no**		

Notes on Stormwater / Drainage Issues:

_____

_____

_____

_____

Stormwater Control Manager _____

Project Plans Attached

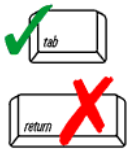
Appendix G – DEP Checklist for Stormwater Report

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

A. Introduction

Important: When filling out forms on the computer, use only the tab key to move your cursor - do not use the return key.



A Stormwater Report must be submitted with the Notice of Intent permit application to document compliance with the Stormwater Management Standards. The following checklist is NOT a substitute for the Stormwater Report (which should provide more substantive and detailed information) but is offered here as a tool to help the applicant organize their Stormwater Management documentation for their Report and for the reviewer to assess this information in a consistent format. As noted in the Checklist, the Stormwater Report must contain the engineering computations and supporting information set forth in Volume 3 of the Massachusetts Stormwater Handbook. The Stormwater Report must be prepared and certified by a Registered Professional Engineer (RPE) licensed in the Commonwealth.

The Stormwater Report must include:

- The Stormwater Checklist completed and stamped by a Registered Professional Engineer (see page 2) that certifies that the Stormwater Report contains all required submittals.[1] This Checklist is to be used as the cover for the completed Stormwater Report.
- Applicant/Project Name
- Project Address
- Name of Firm and Registered Professional Engineer that prepared the Report
- Long-Term Pollution Prevention Plan required by Standards 4-6
- Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan required by Standard 8[2]
- Operation and Maintenance Plan required by Standard 9

In addition to all plans and supporting information, the Stormwater Report must include a brief narrative describing stormwater management practices, including environmentally sensitive site design and LID techniques, along with a diagram depicting runoff through the proposed BMP treatment train. Plans are required to show existing and proposed conditions, identify all wetland resource areas, NRCS soil types, critical areas, Land Uses with Higher Potential Pollutant Loads (LUHPPL), and any areas on the site where infiltration rate is greater than 2.4 inches per hour. The Plans shall identify the drainage areas for both existing and proposed conditions at a scale that enables verification of supporting calculations.

As noted in the Checklist, the Stormwater Management Report shall document compliance with each of the Stormwater Management Standards as provided in the Massachusetts Stormwater Handbook. The soils evaluation and calculations shall be done using the methodologies set forth in Volume 3 of the Massachusetts Stormwater Handbook.

To ensure that the Stormwater Report is complete, applicants are required to fill in the Stormwater Report Checklist by checking the box to indicate that the specified information has been included in the Stormwater Report. If any of the information specified in the checklist has not been submitted, the applicant must provide an explanation. The completed Stormwater Report Checklist and Certification must be submitted with the Stormwater Report.

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[1] The Stormwater Report may also include the Illicit Discharge Compliance Statement required by Standard 10. If not included in the Stormwater Report, the Illicit Discharge Compliance Statement must be submitted prior to the discharge of stormwater runoff to the post-construction best management practices.

[2] For some complex projects, it may not be possible to include the Construction Period Erosion and Sedimentation Control Plan in the Stormwater Report. In that event, the issuing authority has the discretion to issue an Order of Conditions that approves the project and includes a condition requiring the proponent to submit the Construction Period Erosion and Sedimentation Control Plan before commencing any land disturbance activity on the site.

Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Wetlands Program

Checklist for Stormwater Report

B. Stormwater Checklist and Certification

The following checklist is intended to serve as a guide for applicants as to the elements that ordinarily need to be addressed in a complete Stormwater Report. The checklist is also intended to provide conservation commissions and other reviewing authorities with a summary of the components necessary for a comprehensive Stormwater Report that addresses the ten Stormwater Standards.

Note: Because stormwater requirements vary from project to project, it is possible that a complete Stormwater Report may not include information on some of the subjects specified in the Checklist. If it is determined that a specific item does not apply to the project under review, please note that the item is not applicable (N.A.) and provide the reasons for that determination.

A complete checklist must include the Certification set forth below signed by the Registered Professional Engineer who prepared the Stormwater Report.

Registered Professional Engineer's Certification

I have reviewed the Stormwater Report, including the soil evaluation, computations, Long-term Pollution Prevention Plan, the Construction Period Erosion and Sedimentation Control Plan (if included), the Long-term Post-Construction Operation and Maintenance Plan, the Illicit Discharge Compliance Statement (if included) and the plans showing the stormwater management system, and have determined that they have been prepared in accordance with the requirements of the Stormwater Management Standards as further elaborated by the Massachusetts Stormwater Handbook. I have also determined that the information presented in the Stormwater Checklist is accurate and that the information presented in the Stormwater Report accurately reflects conditions at the site as of the date of this permit application.

Registered Professional Engineer Block and Signature

Kenneth Staffier Digitally signed by Kenneth Staffier Date: 2020.07.14 18:15:59-04'00'

Signature and Date

Checklist

Project Type: Is the application for new development, redevelopment, or a mix of new and redevelopment?

☒ New development

☐ Redevelopment

☐ Mix of New Development and Redevelopment

Checklist for Stormwater Report

Checklist (continued)

LID Measures: Stormwater Standards require LID measures to be considered. Document what environmentally sensitive design and LID Techniques were considered during the planning and design of the project:

- ☐ No disturbance to any Wetland Resource Areas
- ☐ Site Design Practices (e.g. clustered development, reduced frontage setbacks)
- ☐ Reduced Impervious Area (Redevelopment Only)
- ☒ Minimizing disturbance to existing trees and shrubs
- ☐ LID Site Design Credit Requested:
  - ☐ Credit 1
  - ☐ Credit 2
  - ☐ Credit 3
- ☒ Use of “country drainage” versus curb and gutter conveyance and pipe
- ☐ Bioretention Cells (includes Rain Gardens)
- ☐ Constructed Stormwater Wetlands (includes Gravel Wetlands designs)
- ☐ Treebox Filter
- ☐ Water Quality Swale
- ☒ Grass Channel
- ☐ Green Roof
- ☐ Other (describe): _____

Standard 1: No New Untreated Discharges

- ☒ No new untreated discharges
- ☒ Outlets have been designed so there is no erosion or scour to wetlands and waters of the Commonwealth
- ☐ Supporting calculations specified in Volume 3 of the Massachusetts Stormwater Handbook included.

Checklist for Stormwater Report

Checklist (continued)

Standard 2: Peak Rate Attenuation

RUNOFF CALCULATIONS ARE PROVIDED FOR THE 2YEAR, 10-YEAR AND 100-YEAR 24 HOURS STORMS(SEE APPENDIX)

☐ Standard 2 waiver requested because the project is located in land subject to coastal storm flowage and stormwater discharge is to a wetland subject to coastal flooding.

☐ Evaluation provided to determine whether off-site flooding increases during the 100-year 24-hour storm.

☐ Calculations provided to show that post-development peak discharge rates do not exceed pre-development rates for the 2-year and 10-year 24-hour storms. If evaluation shows that off-site flooding increases during the 100-year 24-hour storm, calculations are also provided to show that post-development peak discharge rates do not exceed pre-development rates for the 100-year 24-hour storm.

Standard 3: Recharge

RECHARGE IS PROVIDED TO THE MAXIMUM EXTENT PRACTICABLE; SEE NARRATIIVE FOR DETAILED DISCUSSION

☒ Soil Analysis provided.

☒ Required Recharge Volume calculation provided.

☐ Required Recharge volume reduced through use of the LID site Design Credits.

☒ Sizing the infiltration, BMPs is based on the following method: Check the method used.

☒ Static ☐ Simple Dynamic ☐ Dynamic Field[1]

☐ Runoff from all impervious areas at the site discharging to the infiltration BMP.

☐ Runoff from all impervious areas at the site is *not* discharging to the infiltration BMP and calculations are provided showing that the drainage area contributing runoff to the infiltration BMPs is sufficient to generate the required recharge volume.

☐ Recharge BMPs have been sized to infiltrate the Required Recharge Volume.

☒ Recharge BMPs have been sized to infiltrate the Required Recharge Volume *only* to the maximum extent practicable for the following reason:

- ☐ Site is comprised solely of C and D soils and/or bedrock at the land surface
- ☐ M.G.L. c. 21E sites pursuant to 310 CMR 40.0000
- ☐ Solid Waste Landfill pursuant to 310 CMR 19.000
- ☒ Project is otherwise subject to Stormwater Management Standards only to the maximum extent practicable.

☒ Calculations showing that the infiltration BMPs will drain in 72 hours are provided.

☐ Property includes a M.G.L. c. 21E site or a solid waste landfill and a mounding analysis is included.

[1] 80% TSS removal is required prior to discharge to infiltration BMP if Dynamic Field method is used.

Checklist for Stormwater Report

Checklist (continued)

Standard 3: Recharge (continued)

☐ The infiltration BMP is used to attenuate peak flows during storms greater than or equal to the 10-year 24-hour storm and separation to seasonal high groundwater is less than 4 feet and a mounding analysis is provided.

☐ Documentation is provided showing that infiltration BMPs do not adversely impact nearby wetland resource areas.

Standard 4: Water Quality WATER QUALITY IS PROVIDED TO THE MAXIMUM EXTENT PRACTICABLE; SEE NARRATIVE FOR DETAILED DISCUSSION

The Long-Term Pollution Prevention Plan typically includes the following:

- Good housekeeping practices;
- Provisions for storing materials and waste products inside or under cover;
- Vehicle washing controls;
- Requirements for routine inspections and maintenance of stormwater BMPs;
- Spill prevention and response plans;
- Provisions for maintenance of lawns, gardens, and other landscaped areas;
- Requirements for storage and use of fertilizers, herbicides, and pesticides;
- Pet waste management provisions;
- Provisions for operation and management of septic systems;
- Provisions for solid waste management;
- Snow disposal and plowing plans relative to Wetland Resource Areas;
- Winter Road Salt and/or Sand Use and Storage restrictions;
- Street sweeping schedules;
- Provisions for prevention of illicit discharges to the stormwater management system;
- Documentation that Stormwater BMPs are designed to provide for shutdown and containment in the event of a spill or discharges to or near critical areas or from LUHPPL;
- Training for staff or personnel involved with implementing Long-Term Pollution Prevention Plan;
- List of Emergency contacts for implementing Long-Term Pollution Prevention Plan.

☒ A Long-Term Pollution Prevention Plan is attached to Stormwater Report and is included as an attachment to the Wetlands Notice of Intent.

☐ Treatment BMPs subject to the 44% TSS removal pretreatment requirement and the one inch rule for calculating the water quality volume are included, and discharge:

- ☐ is within the Zone II or Interim Wellhead Protection Area
- ☐ is near or to other critical areas
- ☐ is within soils with a rapid infiltration rate (greater than 2.4 inches per hour)
- ☐ involves runoff from land uses with higher potential pollutant loads.

☐ The Required Water Quality Volume is reduced through use of the LID site Design Credits.

☐ Calculations documenting that the treatment train meets the 80% TSS removal requirement and, if applicable, the 44% TSS removal pretreatment requirement, are provided.

Checklist for Stormwater Report

Checklist (continued)

Standard 4: Water Quality (continued)

☐ The BMP is sized (and calculations provided) based on:

- ☐ The ½" or 1" Water Quality Volume or
- ☐ The equivalent flow rate associated with the Water Quality Volume and documentation is provided showing that the BMP treats the required water quality volume.

☐ The applicant proposes to use proprietary BMPs, and documentation supporting use of proprietary BMP and proposed TSS removal rate is provided. This documentation may be in the form of the propriety BMP checklist found in Volume 2, Chapter 4 of the Massachusetts Stormwater Handbook and submitting copies of the TARP Report, STEP Report, and/or other third party studies verifying performance of the proprietary BMPs.

☐ A TMDL exists that indicates a need to reduce pollutants other than TSS and documentation showing that the BMPs selected are consistent with the TMDL is provided.

Standard 5: Land Uses With Higher Potential Pollutant Loads (LUHPPLs) NOT APPLICABLE

☐ The NPDES Multi-Sector General Permit covers the land use and the Stormwater Pollution Prevention Plan (SWPPP) has been included with the Stormwater Report.

☐ The NPDES Multi-Sector General Permit covers the land use and the SWPPP will be submitted ***prior to*** the discharge of stormwater to the post-construction stormwater BMPs.

☐ The NPDES Multi-Sector General Permit does ***not*** cover the land use.

☐ LUHPPLs are located at the site and industry specific source control and pollution prevention measures have been proposed to reduce or eliminate the exposure of LUHPPLs to rain, snow, snow melt and runoff, and been included in the long term Pollution Prevention Plan.

☐ All exposure has been eliminated.

☐ All exposure has ***not*** been eliminated and all BMPs selected are on MassDEP LUHPPL list.

☐ The LUHPPL has the potential to generate runoff with moderate to higher concentrations of oil and grease (e.g. all parking lots with >1000 vehicle trips per day) and the treatment train includes an oil grit separator, a filtering bioretention area, a sand filter or equivalent.

Standard 6: Critical Areas

☒ The discharge is near or to a critical area and the treatment train includes only BMPs that MassDEP has approved for stormwater discharges to or near that particular class of critical area.

☒ Critical areas and BMPs are identified in the Stormwater Report.

Checklist for Stormwater Report

Checklist (continued)

Standard 7: Redevelopments and Other Projects Subject to the Standards only to the maximum extent practicable

☒ The project is subject to the Stormwater Management Standards only to the maximum Extent Practicable as a:

- ☒ Limited Project
- ☐ Small Residential Projects: 5-9 single family houses or 5-9 units in a multi-family development provided there is no discharge that may potentially affect a critical area.
- ☐ Small Residential Projects: 2-4 single family houses or 2-4 units in a multi-family development with a discharge to a critical area
- ☐ Marina and/or boatyard provided the hull painting, service and maintenance areas are protected from exposure to rain, snow, snow melt and runoff
- ☒ Bike Path and/or Foot Path
- ☐ Redevelopment Project
- ☐ Redevelopment portion of mix of new and redevelopment.

☒ Certain standards are not fully met (Standard No. 1, 8, 9, and 10 must always be fully met) and an explanation of why these standards are not met is contained in the Stormwater Report.

☐ The project involves redevelopment and a description of all measures that have been taken to improve existing conditions is provided in the Stormwater Report. The redevelopment checklist found in Volume 2 Chapter 3 of the Massachusetts Stormwater Handbook may be used to document that the proposed stormwater management system (a) complies with Standards 2, 3 and the pretreatment and structural BMP requirements of Standards 4-6 to the maximum extent practicable and (b) improves existing conditions.

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control

A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan must include the following information:

- Narrative;
- Construction Period Operation and Maintenance Plan;
- Names of Persons or Entity Responsible for Plan Compliance;
- Construction Period Pollution Prevention Measures;
- Erosion and Sedimentation Control Plan Drawings;
- Detail drawings and specifications for erosion control BMPs, including sizing calculations;
- Vegetation Planning;
- Site Development Plan;
- Construction Sequencing Plan;
- Sequencing of Erosion and Sedimentation Controls;
- Operation and Maintenance of Erosion and Sedimentation Controls;
- Inspection Schedule;
- Maintenance Schedule;
- Inspection and Maintenance Log Form.

☒ A Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan containing the information set forth above has been included in the Stormwater Report.

Checklist for Stormwater Report

Checklist (continued)

Standard 8: Construction Period Pollution Prevention and Erosion and Sedimentation Control (continued)

☐ The project is highly complex and information is included in the Stormwater Report that explains why it is not possible to submit the Construction Period Pollution Prevention and Erosion and Sedimentation Control Plan with the application. A Construction Period Pollution Prevention and Erosion and Sedimentation Control has ***not*** been included in the Stormwater Report but will be submitted ***before*** land disturbance begins.

☐ The project is ***not*** covered by a NPDES Construction General Permit.

☒ The project is covered by a NPDES Construction General Permit and a copy of the SWPPP is in the Stormwater Report.

☐ The project is covered by a NPDES Construction General Permit but no SWPPP been submitted. The SWPPP will be submitted BEFORE land disturbance begins.

Standard 9: Operation and Maintenance Plan

☒ The Post Construction Operation and Maintenance Plan is included in the Stormwater Report and includes the following information:

- ☒ Name of the stormwater management system owners;
- ☒ Party responsible for operation and maintenance;
- ☒ Schedule for implementation of routine and non-routine maintenance tasks;
- ☒ Plan showing the location of all stormwater BMPs maintenance access areas;
- ☐ Description and delineation of public safety features;
- ☐ Estimated operation and maintenance budget; and
- ☐ Operation and Maintenance Log Form.

☐ The responsible party is ***not*** the owner of the parcel where the BMP is located and the Stormwater Report includes the following submissions:

- ☐ A copy of the legal instrument (deed, homeowner's association, utility trust or other legal entity) that establishes the terms of and legal responsibility for the operation and maintenance of the project site stormwater BMPs;
- ☐ A plan and easement deed that allows site access for the legal entity to operate and maintain BMP functions.

Standard 10: Prohibition of Illicit Discharges

☐ The Long-Term Pollution Prevention Plan includes measures to prevent illicit discharges;

☐ An Illicit Discharge Compliance Statement is attached;

☒ NO Illicit Discharge Compliance Statement is attached but will be submitted ***prior to*** the discharge of any stormwater to post-construction BMPs.