Stormwater Pollution Prevention Plan

TILDEN PROJECT LLC
TILDEN COMMONS
538 US ROUTE 20, NEW LEBANON

COLUMBIA COUNTY **NEW YORK STATE**

Prepared: July 2025

Revision A: September 2025

Lamont Engineers
ENGINEERS • PLANNERS • FACILITY OPERATIONS
197 Elm Street – PO Box 610
Cobleskill, New York 12043
(518) 234-4028

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APPENDICES

OTHER ITEMS MADE A PART OF THIS REPORT BY REFERENCE BUT PROVIDED UNDER SEPARATE COVER

CONTRACT DRAWINGS ENTITLED "TILDEN COMMONS, SITE DEVELOPMENT", BY LAMONT ENGINEERS DATED JUNE 2025.

1. Project Information

1.1. Introduction

This SWPPP is prepared in accordance with the requirements of Article 17, Titles 7, 8 and Article 70 of the New York State Environmental Conservation Law to obtain coverage by the SPDES General Permit for Stormwater Discharge from Construction Activities (GP-0-25-001).

A copy of the Electronic Notice of Intent (eNOI) is presented in Appendix 1.1.

The design standards and practices outlined herein are in accordance with the *New York State Standards and Specifications for Erosion and Sediment Control* and the *New York State Stormwater Management Design Manual.*

This report addresses both construction and post-construction measures to control and mitigate stormwater runoff for site preparation and infrastructure construction of the project.

1.2. Project Location, Description and Scope

The Tilden Commons project is located at 538 US-20 in the Town of New Lebanon in Columbia County. The site is approximately 3.2 acres and currently contains a commercial business.

The project consists of the construction of a single three-story building fronting US Route 20/22 on a 3 acre lot in downtown New Lebanon. The building will house a roughly 10,000 sf grocery store, a 2,000 sf community and space and 41 apartments. The project will also include site grading, the construction of a driveway and parking area, the installation of drainage and storm water practices, drilling a new well and the construction of an on-site wastewater treatment system.

The UTM 18 coordinates of the site are E: 632045, N: 4702801. The work occupies a parcel identified as tax parcel 19.2-1-69. A Location map is included in Appendix 1.2.

Soil disturbing activities include:

- Building and parking lot demolition
- Clearing and grubbing of existing ground cover within the area to be disturbed for construction.
- Removal and stockpiling of topsoil.
- Excavations for the installation of underground utilities and foundations
- Well drilling

- Paving
- Alteration of drainage patterns and construction of stormwater management facilities.
- Landscaping, topsoiling and seeding of disturbed areas.

1.3. SWPPP Contacts

Owner/Operator
Tilden Project LLC
58 Pool Hill Road
New Lebanon, NY 12125
917-488-1061
joshuanyoung@gmail.com

Engineer
Lamont Engineers
PO Box 610
197 Elm Street
Cobleskill, NY 12043
Brendon Becker, P.E.
Principal Engineer
518-234-4028
bbecker@lamontengineers.com

A copy of the Contractor's Certification Form is provided in Appendix 1.3.

2. EXISTING AND PROPOSED MAPPING AND PLANS

2.1. Vicinity Map and Project Boundary

A general plan of the project is shown on the Contract Drawings, provided under separate cover, where the project boundary is shown in more detail.

2.2. Existing and Proposed Topography and Land Use

The project site consists of an existing commercial building with asphalt and gravel driveways and parking, as well as open lawn space.

The site topography generally slopes to the south at very shallow slopes.

2.3. Map and Description of Soils from USDA Soil Survey and On-site soil testing

Information made available through the US Department of Agriculture Soil and Water Conservation Service and the Columbia County Soil and Water District identifies that the soils within the project area are Occum Loam (Om), hydrologic soil group B. Soils testing conducted on the site support this information, as the soils are generally well-drained and composed of

sandy loam. For the purposes of this report, the entire site was designed as containing hydrologic soil group C soils.

Soil maps and descriptions can be found in Appendix 2.3.

2.4. Boundaries of Existing Vegetation and Proposed Limits of Clearing

A limit of disturbance as well as existing vegetation limits are shown on the Contract Drawings.

2.5. Wetlands and Watercourses

No wetlands or watercourses have been identified on the project site.

2.6. Name and Locations of Receiving Waters

All runoff from the project area leaves the site through an existing drainage conveyance system, which discharges on the south side of US-20. It is believed that all runoff is tributary to the Wyomanock Creek, which is about 1,100 feet south of the project site.

NYSDEC Environmental Resource Maps are included in Appendix 2.6

2.7. Existing and Proposed Utilities (Sewer, Water, Gas, etc) and Easements

There are minimal existing underground utilities at the project site. New utilities for the proposed project will be installed, including sewer, water, and electrical. There are no known existing utility easements; there are no proposed utility easements.

2.8. Location of Floodplain/Floodway Limits

There are no regulated floodplains or floodways within the project site.

2.9. Other Environmentally Sensitive Areas

None. There are no known threatened or endangered species within in the project vicinity, according to the available NYS online resource maps.

2.10. Historic Preservation

The project does not have the potential to affect a property that is listed or determined to be eligible for listing on the National or State Register of Historic Places, according to the available NYS online resource maps. Available online resource maps also indicate that the project site is not located in or adjacent to an area designated as sensitive for archeological sites on the NY State Historic Preservation Office archaeological site inventory.

2.11. Climate Change Considerations

As previously stated, no areas within the project site are located in a regulated floodway/flood plain.

Due to the project site's natural resilience to potential risks due to climate change, no additional measures were considered necessary.

2.12. Other Permits and Approvals

- Town of New Lebanon
  - Highway
  - Planning Board
  - Zoning Board
- Columbia County
  - Columbia County DOH
- New York State
  - NYSDEC
  - NYSHPO
  - Hudson River Housing

3. CONSTRUCTION EROSION AND SEDIMENT CONTROL

3.1. Temporary and Permanent Structural and Vegetative Measures

Immediate stabilization: for areas near wetlands or on steep (>10%) slopes, work area shall be mulched with wood chips hay or straw immediately after rough grading following each soil disturbing operation. Stabilization shall be completed no later than the end of each day.

Temporary stabilization: Topsoil stockpiles and disturbed portions of the site where construction activity temporarily ceases shall be stabilized with temporary seed and mulch immediately after the temporary cessation of construction activity in that area. All areas must be stabilized no later than 7 days after work has ceased. The temporary seed shall be applied at the rate of 30 pounds per acre. Mulch and water shall be applied per table 4.2 of the New York State Standards and Specifications for Erosion and Sediment Control Manual. Slopes over 3H:1V shall be stabilized with anchored stabilization matting until such time as vegetation has been established. Areas to be paved shall be temporarily stabilized with geotextiles and stone subbase material, as shown on the Contract Drawings, provided under separate cover, until pavement is installed.

Permanent Stabilization: Disturbed portions of the site where construction activities have permanently ceased shall be stabilized with permanent seed no later than 14 days after the last construction activity. Prior to permanent

seeding, fertilizer and lime shall be applied to the soil per vegetation specification. Permanent seed shall be installed, mulched, and maintained per the requirements detailed on the Contract Drawings.

3.2. Dimensions, Installation Details, and Material Specifications for Erosion and Sediment Control Practices

All dimensions, installation details and materials specifications are shown on the Contract Drawings, provided under separate cover.

3.3. Design Elements not in Conformance with the New York State Standards and Specifications for Erosion and Sediment Control

All erosion and sediment control practices have been designed in accordance with this reference.

3.4. Inspection Schedule and Operation and Maintenance Schedule of all Erosion and Sediment Control Practices

A schedule of inspection and maintenance of erosion and sediment control practices is shown on the Contract Drawings, provided under separate cover.

3.5. Staging Areas, Equipment Storage Areas, Borrow Pits, Waste Areas, and Concrete Washout Areas

Temporary staging, stockpile, and spoil areas have been located on the Contract Drawings, provided under a separate cover. The contractor will be required to locate any additional staging, stockpile, storage, borrow and waste areas. Staging, stockpile, and waste areas are to be approved by the Engineer and Regulatory Agencies.

3.6. Construction Phasing and Sequencing Plans

A sequence of major construction activities can be found on the Contract Drawings, provided under separate cover.

3.7. Pollution Prevention Measures

A. Spill Prevention Plan

All Contractors are responsible for implementing and enforcing the contents of a Spill Prevention Plan as outlined below:

1. Waste Disposal

All construction wastes, hazardous wastes, and sanitary wastes shall be disposed of according to New York State Department of Environmental Conservation standards and regulations. No burning,

burying, or dumping of wastes will be permitted on-site. Transportation and ultimate disposal of wastes off-site shall be done according to all relevant State and local regulations.

2. Material Management Practices

The materials or substances listed below are expected to be present on-site during construction:

- Concrete Products
- Detergents
- Paints
- Structural Steel
- PVC Piping
- Hydraulic Equipment
- Fertilizers
- Petroleum Based Products
- Cleaning Solvents
- Wood
- Metal Building Materials
- HDPE Piping

3. Housekeeping Procedures

- An effort will be made to store only enough products as required to complete the job.
- All materials stored on-site shall be stored in a neat, orderly manner in their appropriate containers and, if possible, under a roof or some other enclosure.
- Products will not be mixed with one another unless recommended by the manufacturer.
- Whenever possible, all of a product shall be used-up before disposing of the container.
- Manufacturers' recommendations for proper use, storage, cleaning, and disposal shall be followed if State or local regulations do not apply.
- There shall be daily inspections to ensure proper use, storage, and disposal of all materials on-site during construction.

4. Hazardous Materials

- Products shall be kept in original containers unless they are not re-sealable, in which case re-sealable containers shall be provided and shall be clearly marked as to contents and potential hazards.
- Original labels and material safety data sheets shall be always retained on the site when such materials are present on the site.
- If surplus products must be disposed, manufacturers' and State and local recommended methods for proper disposal shall be followed.

5. Petroleum Products

- All on-site vehicles shall be monitored for leaks and shall receive regular preventative maintenance to minimize leakage.

- On site fuel storage shall have secondary containment provisions.
- All on site fueling of equipment shall be performed by personnel trained in spill prevention and spill response.
- During on site fueling operations personnel must stay at the pump control, operator shall not rely on automatic shut-offs on fuel pumps.
- Fueling of small equipment shall be performed on non-absorbent surfaces if at all possible.

6. Fertilizers

Fertilizers used shall be applied only in the minimum amounts recommended by the manufacturer. Once applied, fertilizer shall be worked into the soil to limit exposure to stormwater runoff. Fertilizers shall be stored in a covered area and the contents of any partially used bags shall be transferred to a sealable plastic container to avoid spills or leaks.

7. Paints

All containers shall be tightly sealed and stored in a protected "fire safe" area when not required for use. Containers shall be clearly marked as to their contents. Excess paint shall not be discharged into storm or sanitary sewer systems and shall be properly disposed of according to manufacturers' instructions or State and local regulation.

8. Spill Control Practices

- A Spill Prevention Plan (SPP) shall be prepared by the contractor and shall be based on manufacturers' recommended methods for spill cleanup. The SPP shall be clearly posted, and site personnel shall be made aware of the procedures and the locations of all information and cleanup supplies.
- Materials and equipment necessary for spill cleanup shall be kept in the material storage areas on-site. Equipment and materials shall include, but not be limited to brooms, dust pans, mops, rags, shovels, gloves, goggles, kitty litter, sand, sawdust, and plastic & metal trash containers specifically for this purpose. Safety equipment such as fire extinguishers and first-aid kits shall be kept on site at all times in case of emergencies.
- All spills shall be cleaned-up immediately after discovery.
- The spill area shall be kept well ventilated and personnel shall wear appropriate protective clothing to prevent injury from contact with a hazardous substance.
- Spills of toxic or hazardous materials shall be reported to the appropriate State and local authorities, regardless of the size.

- The Spill Prevention Plan shall be modified and adjusted as necessary to prevent reoccurrence of spills after they have occurred, and shall include new clean-up procedures when necessary. A description of the spill, what caused it, and clean-up/prevention procedures to be followed in the future shall be included in the SPP and posted on-site after a spill.
- A spill prevention coordinator shall be designated for the Contract. The coordinator shall designate at least three other personnel who will receive spill prevention and clean-up training. These personnel shall become responsible for a particular phase of prevention and clean-up, and their names shall be posted along with the Spill Prevention Plan.

9. Dust Control

- All Contracts shall provide and apply water for the control of dust within the limits of their respective Work. Water application shall be the primary method of dust control.
- When used on roadways, the water shall be applied uniformly over a width of not less than eight (8) feet by means of an approved pressure distributor spray bar.
- When used on areas that will later be sodded or seeded, the water shall be free from oils, acids, alkalies, salts, or any other substances injurious to plant growth.
- Paved areas shall be kept clean by periodic sweeping with approved equipment.

B. Non-Stormwater Discharges

Concrete Trucks

- Concrete trucks shall be allowed to wash-out or discharge surplus concrete only at locations specifically approved by the Engineer.

Dewatering Effluent

- The Contractor shall pump dewatering effluent to geotextile sediment bags, a stable upland vegetated area, or temporary settling basin to remove suspended sediment prior to discharge to any watercourse.

Clearing and Grubbing Spoil

- No dumping shall be allowed in any stream, corridor, wetland, surface area, floodplain, or at unspecified locations or at locations not approved by the Engineer and regulatory agencies.

4. Stormwater Site Planning, Practice Selection and Details

4.1. Site Planning

The first step in developing a comprehensive stormwater management plan using green infrastructure is to avoid or minimize land disturbance by preserving natural resources and utilizing the hydrology of the site.

Implementation of "green" infrastructure practices aid in the reduction of runoff by proactively reducing runoff volume, peak flow and flow duration. It also promotes infiltration and evapotranspiration to improve groundwater recharge and relieve pollutants for the "end of pipe" stormwater treatment practice. The green infrastructure techniques utilized in this SWPPP are detailed in Section 4.3.

4.2. Determine Water Quality Treatment Volume (WQv)

The analysis uses existing conditions = current conditions. Watershed schematics are presented in Appendix 4.5.

Water quality volumes were computed using the NYS Stormwater Design Manual equation of WQv=[P*Rv*A]/12, where:

P= 90% rainfall = 1.1"
A= Site Area
I= % Impervious
Rv=0.05+0.009*I

The project consists of redevelopment and new development activities. The project site is a 3.22 acre parcel which was previously developed with commercial shops, asphalt parking, and gravel driveways. For planning purposes, the previously developed southern portion of the project site (approximately 1.44 acres) is considered redevelopment, and the mostly undeveloped northern portion of the project site is considered new development.

The redevelopment portion of the project site has an existing impervious area of 1.07 acres. The proposed impervious area in this portion of the project site is 1.00 acres, which is a reduction of approximately 7%. In conjunction with this impervious area reduction, 18% of the proposed redevelopment area will be directed to standard SMPs, providing 100% WQv treatment.

A summary of the minimum required water quality volume is below:

Calculate Required WQv					
Area	Contributing Area (acres)	Impervious Area (acres)	Percent Impervious	Rv	WQv (cf)
New-Dev	1.74	0.80	46	0.46	3,196
Re-Dev	1.44	1.00	69	0.68	3,881

Redevelopment adjustment: 3,881 cf x 18% = 699 cf

Total Adjusted WQv = 3,895 cf (0.089 acre-ft)

4.3. Runoff Reduction by Applying Green Infrastructure Techniques and Standard Stormwater Management Practices with RRv Capacity

The majority of runoff is treated with green infrastructure techniques.

100% reduction of the WQv will be achieved by a combination of an Infiltration Basin and an Infiltration Bioretention Basin.

A small portion of runoff from new impervious surfaces are not directed to RRv practices due to hydraulic and siting infeasibility.

Runoff Reduction Volumes were computed using the NYS Stormwater Design Manual equation of RRv_{min}=[P*Rv*Aic*S]/12, where:

P= 90% rainfall = 1.1”
Aic= Area of Impervious Cover = 0.80 Acres (New-Dev)
Rv= 0.05+0.009*100 = 0.95
S= Hydrologic Soil Group Specific Reduction Factor = 0.4

Minimum RRv: 1213 cf (0.028 acre-ft)

1. RRv Practice 1: Infiltration Basin 1 (I-2)
    a. Provides 3,510 cf RRv
2. RRv Practice 2: Infiltration Bioretention Basin 1 (F-4)
    a. Provides 455 cf RRv

Total RRv Provided = 3,965 cf > 3,895 cf WQv

The full WQv is reduced via Green Infrastructure Techniques.

Green Infrastructure Worksheets are presented in Appendix 4.3

4.4. Apply Standard Stormwater Management Practices to Address Remaining Water Quality Volume

The full WQv is reduced via Green Infrastructure Techniques.

4.5. Apply Volume Peak Rate Control Practices if Needed to Meet Requirements

Channel Protection Volume (CPv) Requirements:
CPv requirements are designed to protect stream channels from erosion. This is typically accomplished by providing 24-hr extended detention of the 1-year, 24-hr design storm that remains after runoff reduction.

Discharge Point:
As a predominantly redevelopment project, the typical channel protection requirement is relaxed. The hydrologic analysis for the project site shows that the post-construction 1-year 24-hour peak discharge rate and volume is less than pre-construction amounts, therefore the CPv requirement has been satisfied.

CPv Provided: 0.249 acre-ft

Overbank Flood (Qp) & Extreme Storm (Qf) Requirements:
Overbank Flood: Control the peak discharge from the 10-yr storm to 10-yr predevelopment rates.

Extreme Storm: Control the peak discharge from the 100-yr storm to 100-yr predevelopment rates. Safely pass the 100-yr storm event.

Hydrologic DP: Runoff from Site to Existing Culvert			
	1-year (cfs)	10-year (cfs)	100-year (cfs)
Pre-Development	3.08	7.67	16.54
Post-Development	3.49	9.35	20.90
Post-Mitigation	2.60	6.45	13.73
Delta	-0.48	-1.22	-2.81

Watershed Schematics and Hydrologic Calculations are presented in Appendix 4.5.

4.6. Conveyance Criteria

Typically, the targeted storm frequencies for conveyance are the 2-yr and 10-yr storms. The 2-yr event is used to ensure non-erosive flows through roadside swales, overflow channels, pond pilot channels, and over berms within practices. The 10-year storm is typically used as a safe conveyance criterion for open channel practices and overflow channels

2-yr Storm

1. Roadside Swales
    a. All swales are non-erosive during the 2-year storm.
2. Pilot Channels
    a. No pilot channels proposed
3. In-Practice Berms
    a. The sediment forebay berm is not overtopped during the 2-year storm.

10-yr Storm

1. Open Channel Practices
    a. All swales safely convey the 10-yr storm.
2. Overflow Channels
    a. All overflow channels safely convey the 10-yr storm.

4.7. Identification of Design Elements not in Conformance with the New York State Stormwater Management Design Manual

Not all proposed impervious surfaces are directed to RRv practices. This was previously detailed in Section 4.3.

The proposed pre-treatment methods for the infiltration basins are not in full conformance with the design manual. The proposed methods, in conjunction with proper and timely maintenance of the practices will adequately protect the basins from buildup of sediment deposits and ensure functionality of the practices.

4.8. Descriptions, Dimensions, Material Specifications and Installation Details for Post-Construction Stormwater Control Practices

Refer to the Contract Drawings, provided under separate cover, for dimensions and installation details of the stormwater management practices.

4.9. Long Term Operation and Maintenance of Post-Construction Stormwater Management Practices

Tilden Project LLC is responsible for long-term operation and maintenance of all post-construction SMPs and their appurtenances. A long-term operation and maintenance manual is presented in Appendix 4.9.

Appendix 1.1

Electronic Notice of Intent (eNOI)

PZ Clerk rec'd 09.03.2025

Construction General Permit (CGP) Electronic Notice of Intent (eNOI) GP-0-25-001

version 1.11

(Submission #: HQD-SK74-3APBS, version 1)

Details

Originally Started By	Asa Snyder
Alternate Identifier	Tilden Commons—Region 4
Submission ID	HQD-SK74-3APBS
Status	Draft

Form Input

Eligibility

Disturbance Threshold

1. Will the construction activity involve soil disturbances listed in Part I.A.1 of GP-0-25-001?
Yes

1.a. Will any runoff from the site enter a sewer system classified as a combined sewer?
No

1.b. Is this a remediation project being done under a Department approved work plan (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.) with a SWPPP which meets the substantive requirements of GP-0-25-001?
No

1.c. Is the construction activity related to a stormwater discharge that does not require a permit as described in 40 CFR 122.3(e), e.g. non-point source agriculture or silviculture activities?
No

Other SPDES Permits

2. Will the discharge from the construction activity meet all conditions listed in Part I.A.2 of GP-0-25-001?
Yes

Threatened and Endangered Species

3. Will the construction activity potentially adversely affect a species that is endangered or threatened per Part I.A.3.?
No

State Historic Preservation Act (SHPA)

4. Is the construction activity designated by the Commissioner of the Office of Parks, Recreation and Historic Preservation (OPRHP), pursuant to 9 NYCRR §§428.12 or 428.13 as exempt from the SHPA review (see Attachment 2 of the Letter of Resolution between NYSDEC and OPRHP, dated January 9, 2015)?
No

4.a. Will the construction activity:

a) occur within an archeologically sensitive area indicated on the sensitivity map, or

b) have the potential to affect a property that is listed or determined to be eligible for listing on the Na or State Registers of Historic Places, or

c) include a new permanent building on the construction site within the following distances from a building, structure, or object that is more than 50 years old and OPRHP, a Historic Preservation Commission of a Certified Local Government, or a qualified preservation professional has determinec historically/archeologically significant building, structure, or object:

- 1-5 acres of disturbance—20 feet
- 5-20 acres of disturbance—50 feet
- 20+ acres of disturbance—100 feet?

No

4.b. Is there documentation at the construction site demonstrating:

a) that the construction activity is not within an archeologically sensitive area indicated on the sensiti map, and that the construction activity is not immediately adjacent to a property listed or determined t eligible for listing on the National or State Registers of Historic Places, and

b) that there is no new permanent building to be built on the construction site within the following distances from a building, structure, or object that is more than 50 years old, or if there is such a new permanent building on the construction site within those parameters that OPRHP, a Historic Preserva Commission of a Certified Local Government, or a qualified preservation professional has determinec the building, structure, or object more than 50 years old is not historically/archeologically significant:

- 1-5 acres of disturbance – 20 feet
- 5-20 acres of disturbance – 50 feet
- 20+ acres of disturbance – 100 feet?

Yes

State Environmental Quality Review (SEQR)

5. Is the construction activity subject to SEQR (Part I.A.5.), or the equivalent environmental review from another NYS or federal agency (Part I.A.6.)?
Yes

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5.a. Has the owner/operator obtained documentation that the project review pursuant to SEQR, or the equivalent, has been satisfied per Part I.A.5. or I.A.6. of GP-0-25-001?
NONE PROVIDED

Uniform Procedures Act (UPA) Permits

6. Has the owner/operator obtained all necessary UPA permits from NYSDEC, or the equivalent from another NYS or federal agency per Part I.A.7.a. of GP-0-25-001?
NONE PROVIDED

Steep Slope

7. Is the construction activity within the watershed of surface waters of the State classified as AA or AA-S identified utilizing the Stormwater Interactive Map on NYSDEC's website?
No

Owner/Operator Information

8. Owner/Operator Name
Tilden Project LLC

9. Owner/Operator Contact Person Information

First and Last Name	Phone	E-mail
Joshua Young	9174881061	joshuayoung@gmail.com

10. Owner/Operator Mailing Address
58 Pool Hill Road
New Lebanon, NY 12125
USA

11. Is the billing contact different from the Owner/Operator Contact?
No

12. What type of organization is the owner/operator?
Corporation

12.b. Is the owner/operator registered with the Department of State to do business in New York State?
NONE PROVIDED

Site Information

13. Project/Site Name
Tilden Commons

14. Site Address
538 US 20
New Lebanon, NY 12125
Columbia

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DEC Region
4

15. Site Latitude & Longitude
42.46642326263599,-73.39380523246572

Project Details

16. This eNOI submission is for:
A construction activity not part of a common plan of development or sale in accordance with Part I.D.1.a.

17. Does the project type fall under Table 1 or Table 2 of Appendix B of GP-0-25-001? If any portion of the construction activity falls under Table 2, regardless of the size of the disturbance, select "Table 2".
Table 2

18. Consistent with Part III.B.1.c.i. of GP-0-25-001, provide a concise overview of the project. Describe existing and proposed conditions, and include any other relevant information.
The project site consists of an existing commercial building with asphalt and gravel driveways and parking, as well as open lawn space.

The site topography generally slopes to the south at very shallow slopes.

The project consists of the construction of a single three-story building fronting US Route 20/22 on a 3 acre lot in downtown New Lebanon. The existing building and parking areas will be demolished.

The new building will house a roughly 10,000 sf grocery store, a 2,000 sf community and space and 41 apartments. The project will also include site grading, the construction of a driveway and parking area, the installation of drainage and storm water practices, drilling a new well and the construction of an on-site wastewater treatment system.

Enter the total project site acreage, the acreage to be disturbed, and the future impervious area (acreage) within the disturbed area, rounded to the nearest tenth of an acre.

19. Total Site Area (acres)
3.2

20. Total Area to be Disturbed (acres)
3.2

21. Existing Impervious Area to be Disturbed (acres)
1.0

22. Future Impervious Area Within Disturbed Area (acres)
1.9

Nature of the project:
Redevelopment with increase in impervious area

23. Do you plan to disturb more than 5 acres of soil at any one time?
No

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24. Indicate the percentage (%) of each Hydrologic Soil Group(HSG) at the site.

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A (%)
0

B (%)
100

C (%)
0

D (%)
0

25. Enter the planned start and end dates of the disturbance activities.

Start Date
NONE PROVIDED

End Date
NONE PROVIDED

26. Identify the nearest surface waterbody(ies) to which construction site runoff will discharge.
Wyomanock Creek and tribs - 1310-0039

27. Type of waterbody identified in question 26?
Stream/Creek Off Site

28. Has the surface waterbody in question 26 been identified as a 303(d) segment in Appendix D of GP-0-25-001?
No

29. Is this project located in one of the Watersheds identified in Appendix C of GP-0-25-001?
No

30. Will the project disturb soils within a State regulated wetland or the protected 100 foot adjacent area?
No

31. Does the site runoff enter a separate storm sewer system (including roadside drains, swales, ditches, culverts, etc)?
Yes

31.a. What is the name of the municipality/entity that owns the separate storm sewer system? If the separate sewer system is owned by an MS4 Operator, enter the MS4 Operator name.
NYSDOT

32. Will future use of this site be an agricultural property as defined by the NYS Agriculture and Markets Law?
No

33. Is this property owned by a state authority, state agency, federal government or local government?
No

Required SWPPP Components

General SWPPP Requirements

PZ Clerk rec'd 09.03.2025

34. Has a SWPPP been developed in conformance with the requirements in Part III. of GP-0-25-001?
Yes

35. Does the SWPPP demonstrate consideration of the future physical risks due to climate change pursuant to the CRRA, 6 NYCRR Part 490, and associated guidance per Part III.A.2. of GP-0-25-001?
Yes

36. Has the required Erosion and Sediment Control component of the SWPPP been developed in conformance with the current NYS Standards and Specifications for Erosion and Sediment Control (aka Blue Book)?
Yes

37. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the NYS Stormwater Management Design Manual?
NONE PROVIDED

SWPPP Preparer

39. The Stormwater Pollution Prevention Plan (SWPPP) was prepared by:
Professional Engineer (P.E.)

40. Name of the person who prepared the SWPPP
Brendon Becker

41. SWPPP Preparer Organization Name
Lamont Engineers

42. SWPPP Preparer Contact Information

First and Last Name	Phone	E-mail
Brendon Becker	518-234-4028	bbecker@lamontengineers.com

43. SWPPP Preparer Address

PO Box 610

Cobleskill, NY 12043

Download SWPPP Preparer Certification Form

Please take the following steps to prepare and upload your preparer certification form:

1) Click on the link below to download a blank certification form
2) The certified SWPPP preparer should sign this form
3) Upload the completed form
Download SWPPP Preparer Certification Form

44. Please upload the SWPPP Preparer Certification
NONE PROVIDED
Comment
NONE PROVIDED

44.a. Has the SWPPP Preparer Certification Form been signed by the SWPPP preparer in accordance with Part VII.J of GP-0-25-001?
NONE PROVIDED

PZ Clerk rec'd 09.03. 2025

Erosion & Sediment Control Criteria

45. Has a construction sequence schedule for the planned management practices been prepared?
Yes

Post-Construction Criteria

Site Planning and Soil Restoration

46. Identify all site planning practices that were used to prepare the final site plan/layout for the project.
Sidewalk Reduction

47. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6 ("Soil Restoration") of the Design Manual.
All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).

Water Quality Criteria

49. Water Quality Sizing Criteria

Total WQv required (acre-feet)	Total RRv provided (acre-feet)	Minimum RRv (acre-feet)	Total WQv provided (acre-feet)	Sum of RRv and WQv provided
.097	.104			NaN

Water Quantity Criteria

50. Per Section 9.2.1.C.VI and VII of the 2024 Design Manual, is there 0% change to hydrology that increases the discharge rate and volume from the project site?
No

51. Does one of the waiver conditions apply to the channel protection for this construction activity?
No

51.b.i. CPv Required (acre-feet)
0.283

51.b.ii. CPv Provided (acre-feet)
0.283

52. Does one of the waiver conditions apply to the Qp and Qf for this construction activity?
No

Overbank Flood Control Criteria (Qp)

52.b.i. Pre-Development (CFS)
7.67

52.b.ii. Post-Development (CFS)
5.69

Total Extreme Flood Control Criteria (Qf)

52.b.iii. Pre-Development (CFS)
16.54

52.b.iv. Post-Development (CFS)
15.05

Operation and Maintenance

53. Has a long-term Operation and Maintenance Plan for the post-construction stormwater management practice(s) been developed?
Yes

53.a. Identify the entity responsible for the long-term Operation and Maintenance.
Tilden Project LLC

Post-Construction SMP Identification

54. Post-Construction RR Techniques and Standard SMPs

RR Techniques and SMPs	Contributing Impervious Area (acres)	Total Contributing Area (acres)
Infiltration Basin (I-2)	0.560	
Infiltration Bioretention (F-4)	0.580	

55. Alternative SMPs

Type of Alternative SMP	Manufacturer of the Alternative SMP	Name of the Alternative SMP	Contributing Impervious Area (acres)
NONE PROVIDED	*NONE PROVIDED*	*NONE PROVIDED*	*NONE PROVIDED*

Other Permits

56. Identify other permits, existing and new, that are required for this project/facility.
Individual SPDES

57. Is this NOI for a change in owner/operator per Part I.G.?
No

58. Is this eNOI for informational purposes only?
No

MS4 SWPPP Acceptance

59. Will the construction activities be within the municipal boundary(ies) of Traditional Land Use Control MS4 Operator(s) and discharge to the MS4(s)?
No

Owner/Operator Certification

Owner/Operator Certification Form Download

Download the Owner/Operator Certification Form by clicking the link below.
Owner/Operator Certification Form

PZ Clerk rec'd 09.03.2025

61. Upload Owner/Operator Certification Form

NONE PROVIDED

Comment

NONE PROVIDED

61.a. Has the Owner/Operator Certification Form from Appendix J been signed by the owner/operator, or a representative of the owner/operator in accordance with Part VII.J of GP-0-25-001 and uploaded to the eNOI?

NONE PROVIDED

Additional Project Information

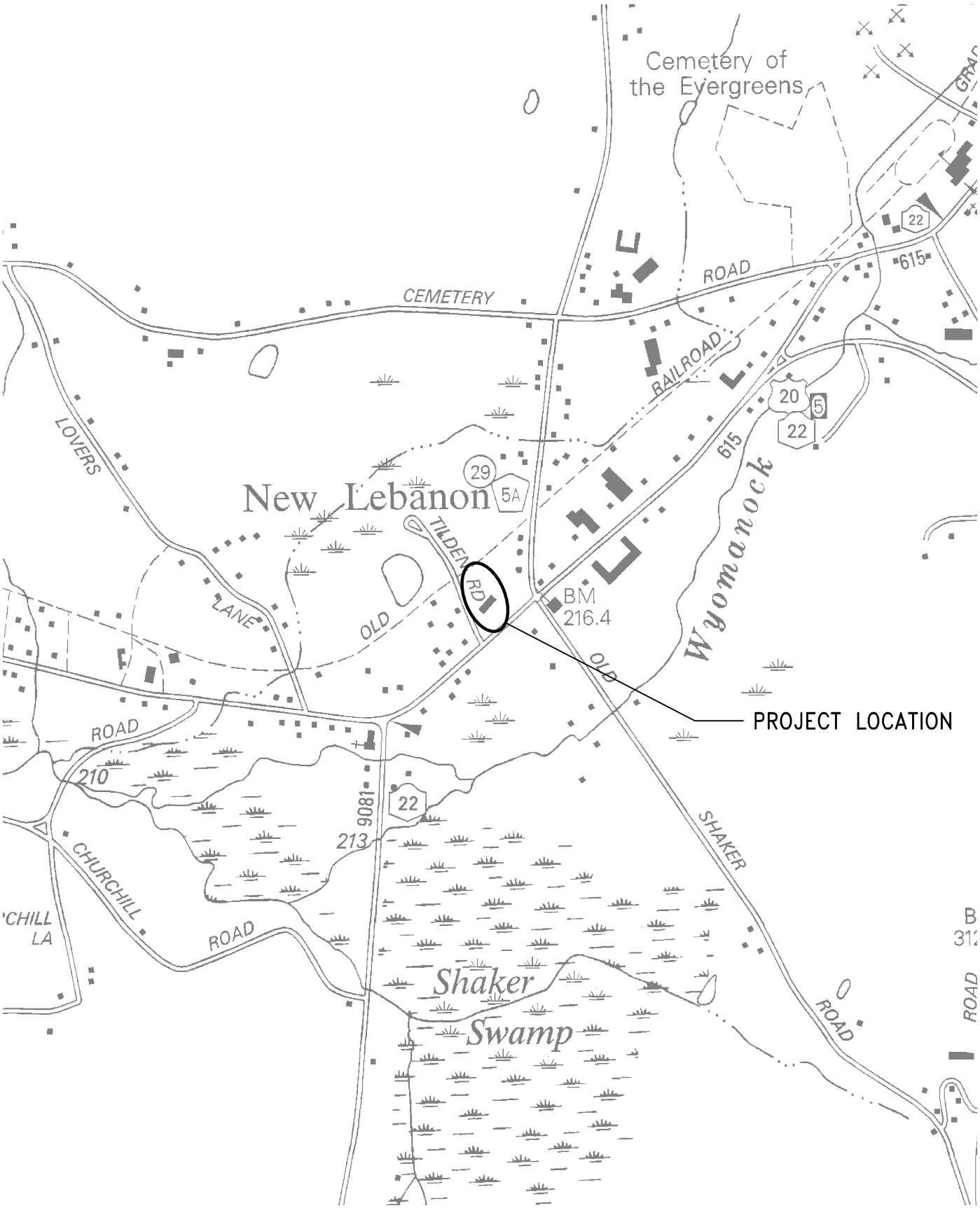
62. Enter any additional pertinent project information in the text box below.

NONE PROVIDED

Appendix 1.2

Location Map

PZ Clerk rec'd 09.03.2025



DATE	PROJECT NO.	HUDSON RIVER HOUSING INC. PROJECT LOCATION MAP	Lamont Engineers
5/23/25	2024125		ENGINEERS • PLANNERS • FACILITY OPERATIONS
SCALE	DRAWN		
1"=1000'	JW	COLUMBIA COUNTY NEW YORK STATE	

K:\APPS\SDSKPROJ\2024125\Aerial Map.dwg, 5/23/2025 10:04:30, DWG To PDF.pc3

Appendix 1.3

Contractor Certification Form

PZ Clerk rec'd 09.03.2025

CONTRACTOR and SUBCONTRACTOR CERTIFICATION STATEMENT

for the New York State Department of Environmental Conservation (DEC) State Pollutant Discharge Elimination System Permit for Stormwater Discharges from Construction Activity (GP-0-25-001)

As per *Part III.A.6* on page 31 of GP-0-25-001, effective 1/29/2025

'Prior to the *commencement of construction activity*, the *owner or operator* must identify the contractor(s) and subcontractor(s) that will be responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices included in the SWPPP; and the contractor(s) and subcontractor(s) that will be responsible for constructing the post-construction stormwater management practices included in the SWPPP. The *owner or operator* shall have each of the contractors and sub-contractors identify at least one person from their company that will be responsible for implementation of the SWPPP. This person shall be known as the *trained contractor*. The *owner or operator* shall ensure that at least one *trained contractor* is on site on a daily basis when soil disturbance activities are being performed.'

The *owner or operator* shall have each contractor and subcontractor involved in soil disturbance sign a copy of the following certification statement before they commence <u>any</u> *construction activity*:

_____	**NYR** _____	_____
Name of Construction Site	*DEC Permit ID*	*Municipality (MS4)*

I hereby certify under penalty of law that I understand and agree to comply with the terms and conditions of the SWPPP and agree to implement any corrective actions identified by the *qualified inspector* during a site inspection. I also understand that the *owner or operator* must comply with the terms and conditions of the most current version of the New York State Pollutant Discharge Elimination System ("SPDES") general permit for stormwater *discharges* from *construction activities* and that it is unlawful for any person to cause or contribute to a violation of *water quality standards*. Furthermore, I am aware that there are significant penalties for submitting false information, that I do not believe to be true, including the possibility of fine and imprisonment for knowing violations.

Responsible Corporate Officer/Partner Signature	Date
Name of above Signatory	Name of Company
Title of above Signatory	Mailing Address
Telephone of Company	City, State and Zip

Identify the specific elements of the SWPPP the contractor or subcontractor is responsible for:

***'TRAINED CONTRACTOR'* FOR THE CERTIFIED CONTRACTOR OR SUBCONTRACTOR**

_____	_____	_____
Name of Trained Employee	*Title of Trained Employee*	*NYSDEC SWT #*

A copy of this signed contractor certification statement must be maintained at the SWPPP on site

Appendix 2.3

Soil Map and Descriptions

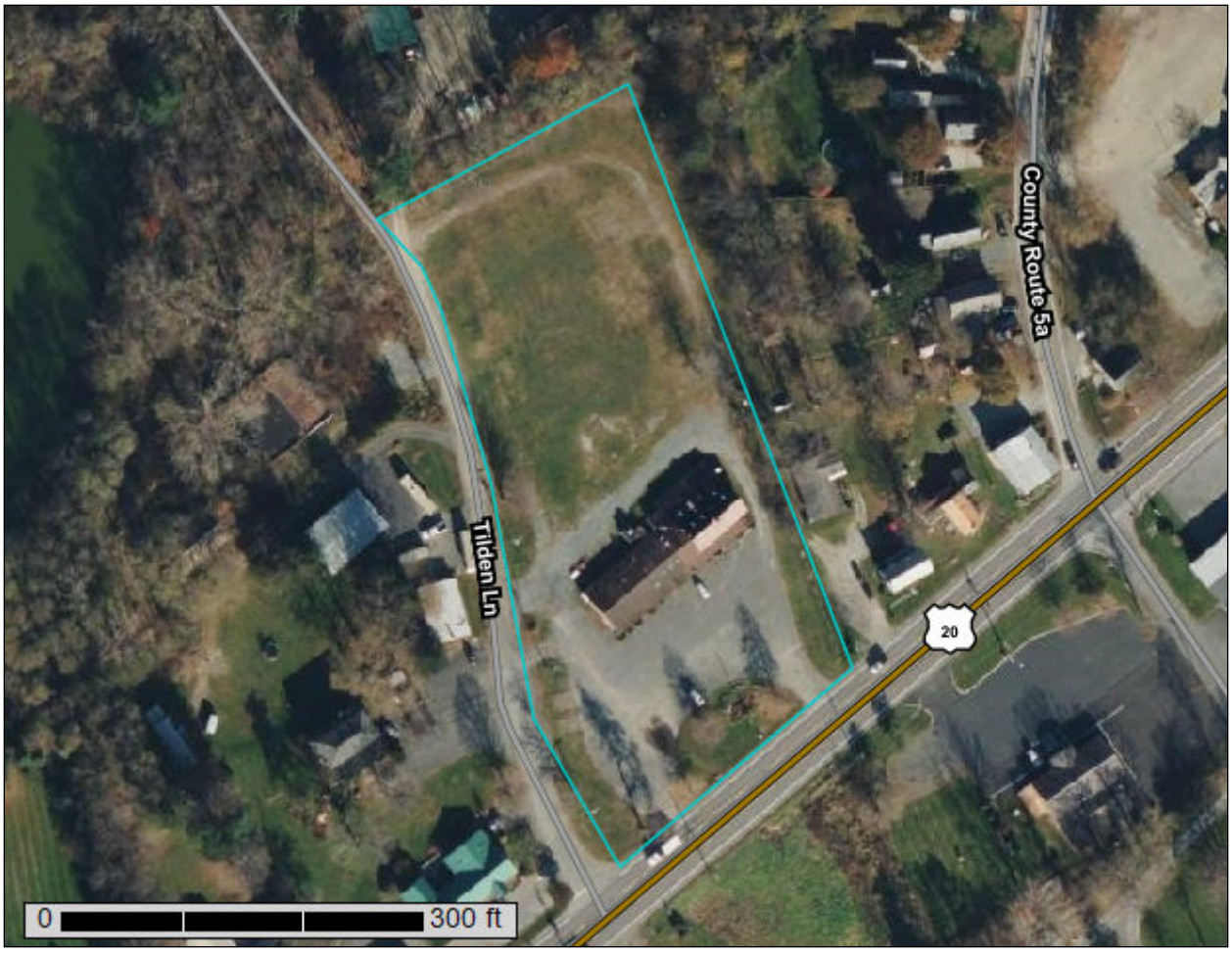
United States Department of Agriculture

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 Columbia County, New York



May 27, 2025

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.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410 or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.

Contents

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 Scale: 1:1,150 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 15 30 60 90

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

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 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

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: Columbia County, New York
Survey Area Data: Version 20, Aug 29, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Aug 15, 2021—Nov 8, 2021

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
Om	Occum loam	2.9	100.0%
Totals for Area of Interest		**2.9**	**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.

Columbia County, New York

Om—Occum loam

Map Unit Setting

National map unit symbol: 9r1h
Elevation: 0 to 1,030 feet
Mean annual precipitation: 38 to 46 inches
Mean annual air temperature: 45 to 50 degrees F
Frost-free period: 115 to 195 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Occum and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Occum

Setting

Landform: Flood plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Rise
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Loamy over sandy alluvium

Typical profile

H1 - 0 to 10 inches: loam
H2 - 10 to 25 inches: fine sandy loam
H3 - 25 to 33 inches: coarse sandy loam
H4 - 33 to 60 inches: stratified very gravelly sand

Properties and qualities

Slope: 0 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 48 to 72 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.8 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 1
Hydrologic Soil Group: B
Ecological site: F144AY010NH - Sandy High Floodplain
Hydric soil rating: No

Minor Components

Linlithgo

Percent of map unit: 8 percent
Hydric soil rating: No

Limerick

Percent of map unit: 2 percent
Landform: Flood plains
Hydric soil rating: Yes

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Appendix 2.6

NYSDEC Environmental Resource Maps

PZ Clerk rec'd 09.03.2025

Tilden Project

July 1, 2025

1:4,514

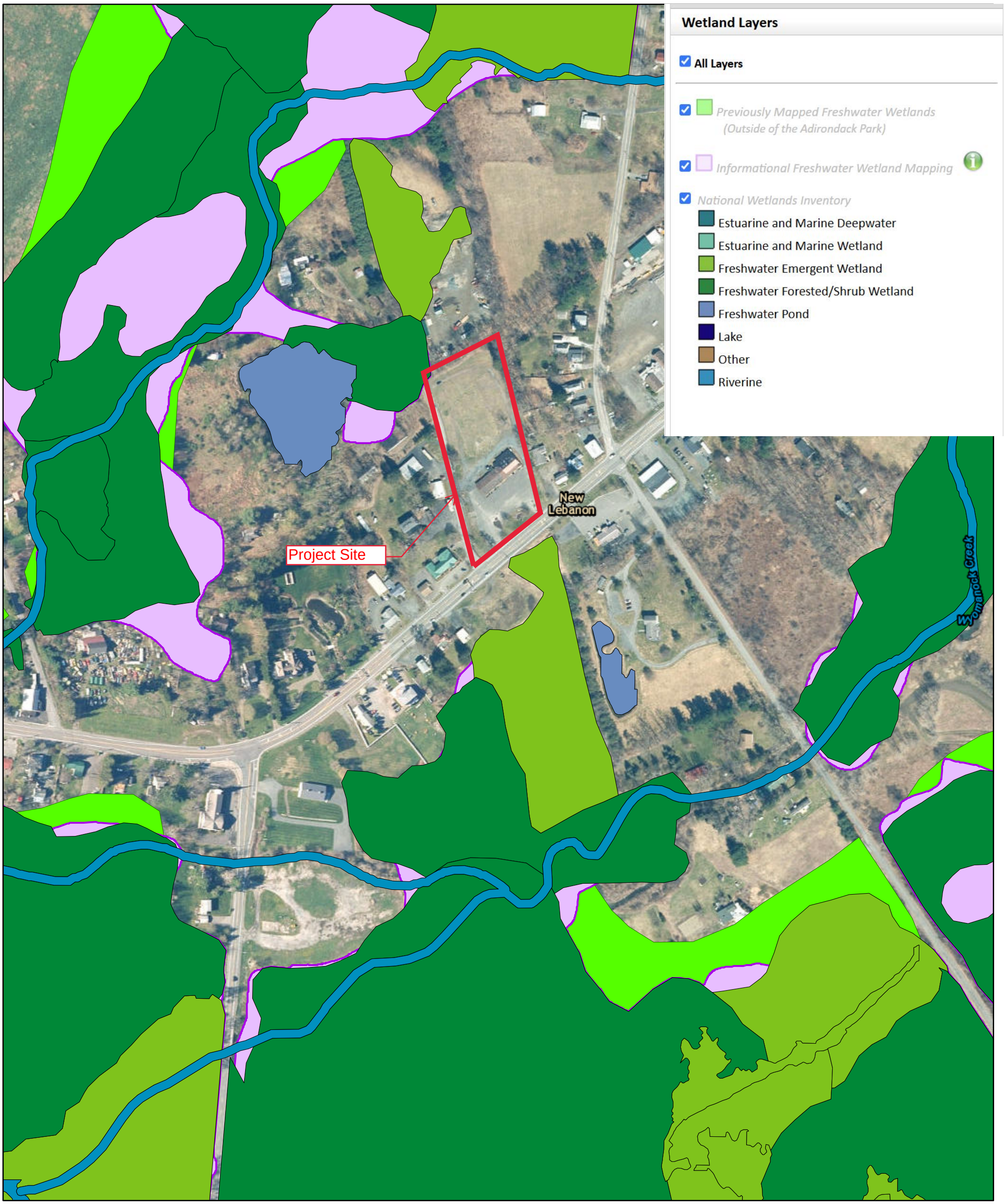
0 0.04 0.07 0.15 mi

0 0.05 0.1 0.2 km

New York State, Maxar, Esri, HERE, Garmin, iPC

NYS Department of Environmental Conservation
Not a legal document

Tilden Project



July 1, 2025

1:4,514

0 0.04 0.07 0.15 mi

0 0.05 0.1 0.2 km

New York State, Maxar, Esri, HERE, Garmin, iPC

NYS Department of Environmental Conservation
Not a legal document

Appendix 3.9

Construction Inspection Log Book

Lamont Engineers
ENGINEERS • PLANNERS • FACILITY OPERATIONS
Dedicated to Service...Committed to Excellence

STORMWATER INSPECTION REPORT

Permit No.:	GP-0-25-001
PROJECT NAME:	Tilden Commons
CONTRACT NO.:	1
ENGINEER:	Lamont Engineers
CONTRACTOR:	
PROJECT NO.:	2024125
Date/Time:	
Inspector:	
Title:	

INSTRUCTIONS:

1. Describe all construction not in conformance with SWPPP.
2. Identify all corrective measures to be taken.
3. Identify all corrective measures taken since last inspection.
4. Attach map/sketch of disturbed area.
5. Insert photos.

INSPECTION SCHEDULE:
Inspections to be performed at least once every 7 days. If >5 acres are disturbed, perform inspection twice every 7 days. Perform inspections every 30 days during shutdowns.

WEATHER	
TEMPERATURE	°F

SITE CONDITIONS:

Soil Conditions:
- ☐ Dry
- ☐ Wet
- ☐ Saturated
- ☐ Frozen
- ☐ Snow Covered

Discharge:
- ☐ None
- ☐ Light
- ☐ Moderate
- ☐ Heavy

Offsite Sediment Tracking:
- ☐ None
- ☐ Light
- ☐ Moderate
- ☐ Heavy

Condition of Discharge:
- ☐ N/A
- ☐ Clean
- ☐ Evidence of Turbidity

Contrast to Receiving Water:
- ☐ Yes
- ☐ No
- ☐ N/A

Disturbance:

Y	N	
☐	☐	Within Limits of the approved plans
☐	☐	Impacting adjacent property

Stockpiles and Waste Areas:

Y	N	
☐	☐	Areas Approved
☐	☐	Perimeter Controls in Place
☐	☐	Stabilized within 7 days of last use

COMMENTS:
Describe or show on map: Total area of active disturbance, total area inactive disturbance, total area with temporary stabilization and total area with final stabilization.

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STORMWATER INSPECTION REPORT

SITE MANAGEMENT PRACTICES:

- ☐ Stabilized Construction Entrance
- ☐ Construction Road Stabilization
- ☐ Dust Control
- ☐ Concrete Truck Washout
- ☐ Protected Areas
- ☐ Temporary Culverts
- ☐ Winter Stabilization
- ☐ Other
- ☐ Other
- ☐ Other
- ☐ Other
- ☐ Other
- ☐ Other
- ☐ Other

EROSION CONTROL PRACTICES:

- ☐ Check Dams
- ☐ Dewatering Sump Pit
- ☐ Diversions
- ☐ Jute Mesh/RECP
- ☐ Mulch
- ☐ Seeding
- ☐ Other
- ☐ Other
- ☐ Other
- ☐ Other
- ☐ Other

SEDIMENT CONTROL PRACTICES:

- ☐ Filter Strip
- ☐ Dirt Bag
- ☐ Sediment Basin/Trap
- ☐ Silt Fence
- ☐ Storm Drain Inlet Protection
- ☐ Turbidity Curtain
- ☐ Other
- ☐ Other
- ☐ Other
- ☐ Other
- ☐ Other
- ☐ Other

Describe current stage of all SMP's and identify all construction activity not in conformance with SWPPP and technical standards:

Describe corrective action that must be taken to install, repair, replace or maintain E&SC practices and to correct deficiencies with construction of SMP's:

Describe status of all corrective actions that were required by previous inspection:

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STORMWATER INSPECTION REPORT

Photos:

Comments:

Photos:

Comments:

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Photos:

Comments:

Photos:

Comments:

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STORMWATER INSPECTION REPORT

Photos:

Comments:

Photos:

Comments:

Signature of
Qualified Inspector: _____

Appendix 4.3

Runoff Reduction Worksheets

Step 2 - Calculate Water Quality Volume

Is this project subject to Section 4.3 of the NYS Design Manual for Enhanced Phosphorus Removal?	No
What is the nature of this construction project?	Redevelopment with increase in impervious area

Design Point:	1		
P=	1.10	inches	*Enter 90% Rainfall Event as P*

Calculate Required WQv

Drainage Area Number	**Contributing Area** (Acres)	**Impervious Area** (Acres)	**Percent Impervious** %	**Rv**	**WQv** (cf)	**SMP Description**
1	1.92	0.87	45	0.46	3,510	Infiltration Basin
2	0.12	0.12	100	0.95	455	Infiltration Bioretention

Infiltration Basin (I-2)

Design Point:	1

Enter Site Data For Drainage Area to be Treated by Practice							
Drainage Area Number	**Contributing Area** (Acres)	**Impervious Area** (Acres)	**Percent Impervious** %	**Rv**	**WQv** (cf)	**Precipitation** (in)	**Description**
1	1.92	0.87	45	0.46	3,510	1.10	Infiltration Basin

Design Criteria		
Enter underlying soil infiltration rate (based on geotechnical testing, refer to Appendix D)	4	
Is the contributing area to the practice an "Infiltration Restricted" stormwater hotspot?	No	
Is the contributing area to the practice an "Infiltration Prohibited" stormwater hotspot?	No	
Maximum contributing area (acres)	10	
Is the contributing area greater than the maximum allowed contributing area?	No	
Enter depth to seasonal high water table (ft)	6	
Enter depth to bedrock (ft)	8	
Enter pretreatment volume provided (cf)	1100	
Enter depth of freeboard (ft)	1	
Enter depth of basin (ft)	1	
Enter slope of maintenance access (%)	1	
Enter width of maintenance access (ft)	12	

Sizing Criteria				
		Value	Units	Notes
Water Quality Volume	WQv	3510	cf	
Basin depth	db	1.0	ft	
Required Surface Area	Ab	3,510	sf	
Enter Surface Area Provided	Ab	4300	sf	

Determine Runoff Reduction		
RRv Provided	**3,510**	***cf***

Infiltration Bioretention (F-4)

Design Point:	1

Enter Site Data For Drainage Area to be Treated by Practice							
Drainage Area Number	**Contributing Area** (Acres)	**Impervious Area** (Acres)	**Percent Impervious** %	**Rv**	**WQv** (cf)	**Precipitation** (in)	**Description**
2	0.12	0.12	100	0.95	455	1.10	Infiltration Bioretention

Design Criteria		
Enter underlying soil infiltration rate (based on geotechnical testing, refer to Appendix D)	4	
Is the contributing area to the practice an "Infiltration Restricted" stormwater hotspot?	No	
Is the contributing area to the practice an "Infiltration Prohibited" stormwater hotspot?	No	
Is contributing area greater than max. contributing area?	No	
Enter depth to seasonal high water table (ft)	6	
Enter depth to bedrock (ft)	8	
Is pretreatment provided, in conformance with Section 6.4.3.1	Yes	
Enter average height of ponding (ft)	0.5	
Enter depth of surface layer (inches)	3	
Enter depth of filter media (ft)	2.5	
Enter depth of drainage layer (inches)	12	
Enter slope of maintenance access (%)	2	
Enter width of maintenance access (ft)	24	

Sizing Criteria				
		Value	Units	Notes
Permeability Flow Rate	k	1	ft/day	
Filter Time	tf	2	days	
Required Filter Area	Af	190	sf	
Enter Provided Filter Area	Af	335	sf	

Calculate Runoff Reduction		
RRv Provided	**455**	***cf***

Appendix 4.5

Watershed Schematics and Hydrologic Calculations

PZ Clerk rec'd 09.03.2025

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FFM GROUP, LLC
538 US ROUTE 30
NEW LEBANON
COLUMBIA COUNTY NEW YORK STATE

Project Number	2024125
Drawn By	AS
Designed By	AHJ/AS
Checked By	BJB
Date	6/20/25
Scale	1" = 60'
File Name	tilden wshed

Sheet Title

WATERSHED SCHEMATIC EXISTING

Sheet No.

4.5

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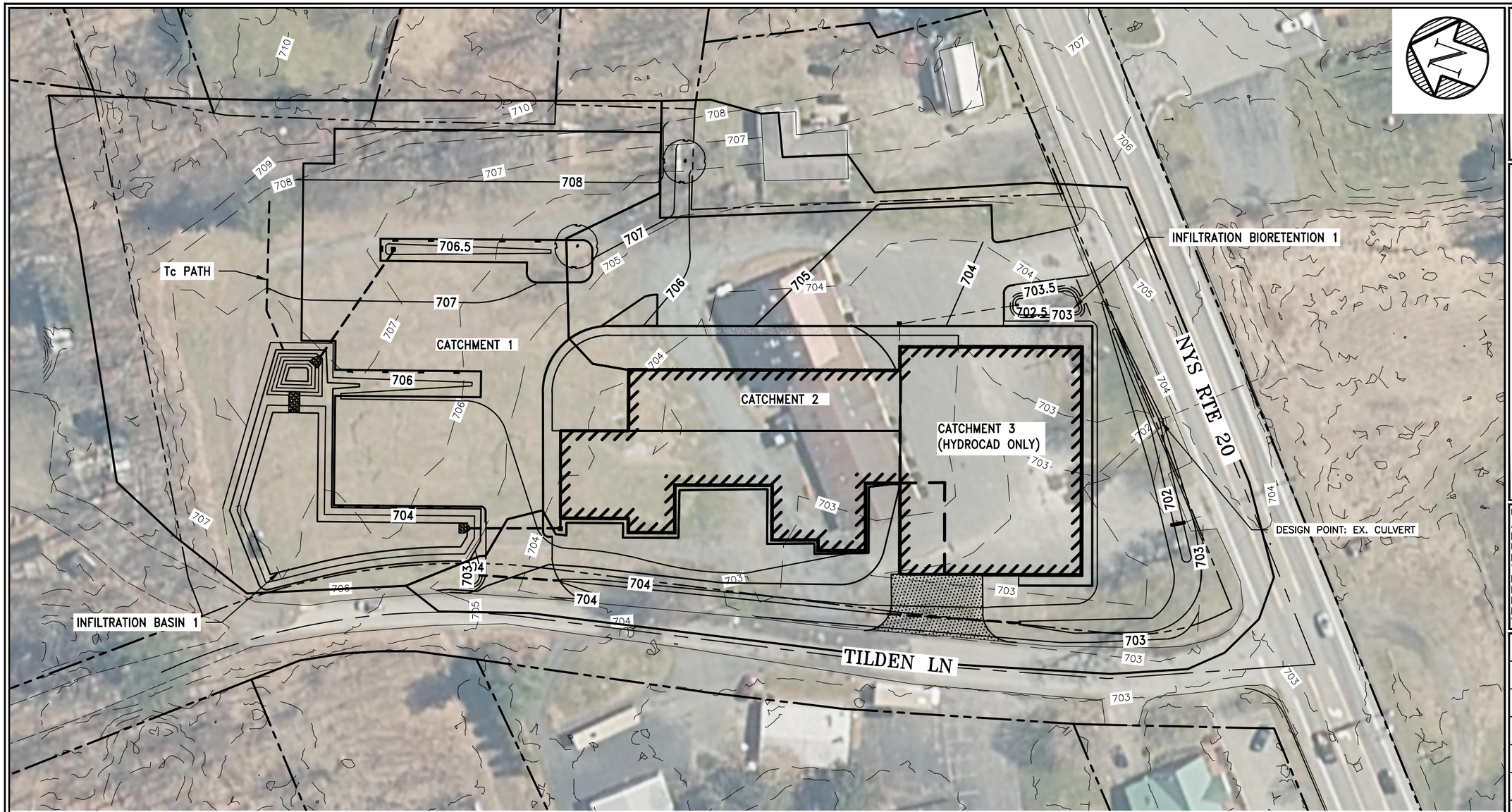
PZ Clerk rec'd 09.03.2025



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538 US ROUTE 30
NEW LEBANON
COLUMBIA COUNTY NEW YORK STATE

Project Number	2024125
Drawn By	AS
Designed By	AHJ/AS
Checked By	BJB
Date	6/20/25
Scale	1" = 60'
File Name	tilden wshed

Sheet Title

WATERSHED SCHEMATIC PROPOSED

Sheet No.

4.5

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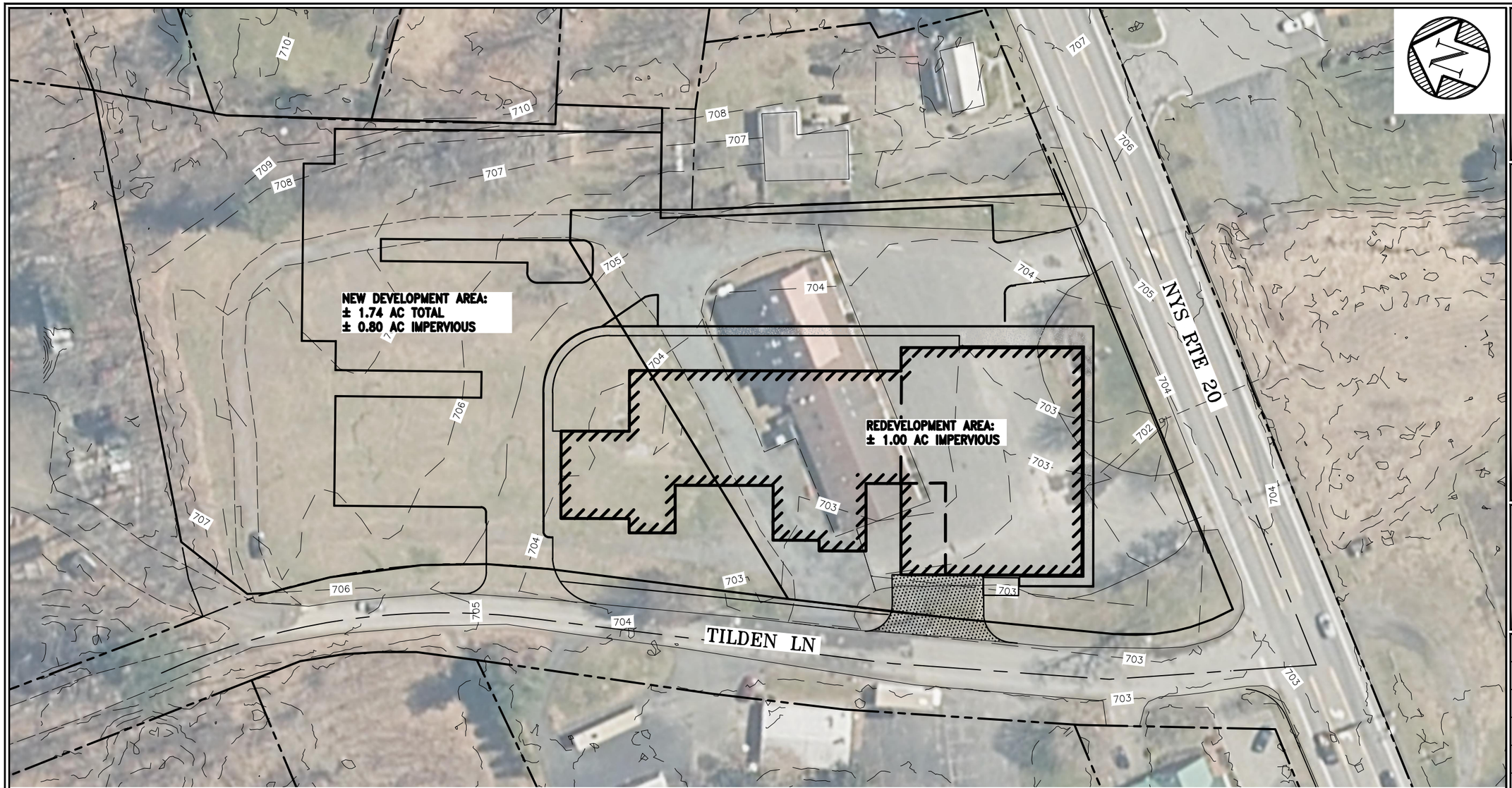

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FFM GROUP, LLC
538 US ROUTE 30
NEW LEBANON
COLUMBIA COUNTY NEW YORK STATE

Project Number	2024125
Drawn By	AS
Designed By	AHJ/AS
Checked By	BJB
Date	6/20/25
Scale	1" = 60'
File Name	tilden wshed

Sheet Title

WATERSHED SCHEMATIC REDEVELOPMENT

Sheet No.

4.5

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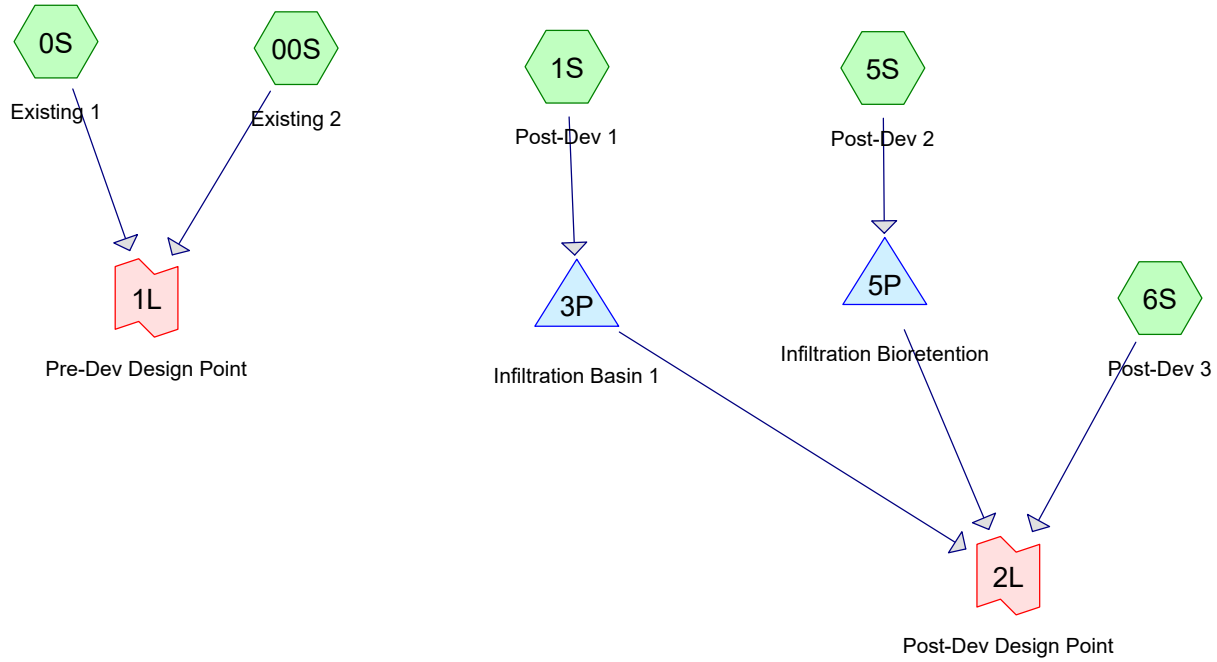
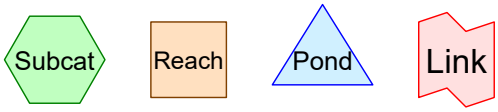




Routing Diagram for Tilden Hydrology
Prepared by {enter your company name here}, Printed 9/3/2025

Project Notes

Defined 9 rainfall events from NY-Tilden IDF
Copied 9 events from NY-Tilden 24-hr S1 storm

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	NY-Tilden 24-hr S1	1-yr	Default	24.00	1	2.37	2
2	10-yr	NY-Tilden 24-hr S1	10-yr	Default	24.00	1	4.09	2
3	100-yr	NY-Tilden 24-hr S1	100-yr	Default	24.00	1	7.14	2

Area Listing (selected nodes)

Area (acres)	CN	Description (subcatchment-numbers)
1.198	79	<50% Grass cover, Poor, HSG B (00S)
2.637	61	>75% Grass cover, Good, HSG B (0S, 1S, 6S)
0.049	98	Ex. Impervious (Off-Site) (00S)
0.105	98	Ex. Impervious (On-Site) (00S)
0.250	98	Existing Impervious (Off-Site) (0S)
1.077	98	Existing Impervious (On-Site) (0S)
0.990	98	Impervious (1S, 5S)
0.288	98	Off-Site Impervious (6S)
0.812	98	On-Site Impervious (6S)
0.563	58	Woods/grass comb., Good, HSG B (00S)
7.968	**80**	**TOTAL AREA**

Soil Listing (selected nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
4.398	HSG B	0S, 00S, 1S, 6S
0.000	HSG C	
0.000	HSG D	
3.571	Other	0S, 00S, 1S, 5S, 6S
7.968		**TOTAL AREA**

Ground Covers (selected nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	1.198	0.000	0.000	0.000	1.198	<50% Grass cover, Poor	00S
0.000	2.637	0.000	0.000	0.000	2.637	>75% Grass cover, Good	0S, 1S, 6S
0.000	0.000	0.000	0.000	0.049	0.049	Ex. Impervious (Off-Site)	00S
0.000	0.000	0.000	0.000	0.105	0.105	Ex. Impervious (On-Site)	00S
0.000	0.000	0.000	0.000	0.250	0.250	Existing Impervious (Off-Site)	0S
0.000	0.000	0.000	0.000	1.077	1.077	Existing Impervious (On-Site)	0S
0.000	0.000	0.000	0.000	0.990	0.990	Impervious	1S, 5S
0.000	0.000	0.000	0.000	0.288	0.288	Off-Site Impervious	6S
0.000	0.000	0.000	0.000	0.812	0.812	On-Site Impervious	6S
0.000	0.563	0.000	0.000	0.000	0.563	Woods/grass comb., Good	00S
0.000	**4.398**	**0.000**	**0.000**	**3.571**	**7.968**	**TOTAL AREA**	

Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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 0S: Existing 1 Runoff Area=90,141 sf 64.11% Impervious Runoff Depth>0.97"
Tc=6.0 min CN=85 Runoff=2.99 cfs 0.167 af

Subcatchment 00S: Existing 2 Runoff Area=1.915 ac 8.04% Impervious Runoff Depth>0.46"
Flow Length=675' Tc=29.7 min CN=74 Runoff=0.57 cfs 0.073 af

Subcatchment 1S: Post-Dev 1 Runoff Area=1.920 ac 45.31% Impervious Runoff Depth>0.62"
Flow Length=85' Slope=0.0230 '/' Tc=12.7 min CN=78 Runoff=1.24 cfs 0.099 af

Subcatchment 5S: Post-Dev 2 Runoff Area=0.120 ac 100.00% Impervious Runoff Depth>1.96"
Tc=6.0 min CN=98 Runoff=0.32 cfs 0.020 af

Subcatchment 6S: Post-Dev 3 Runoff Area=1.944 ac 56.58% Impervious Runoff Depth>0.81"
Tc=6.0 min CN=82 Runoff=2.30 cfs 0.131 af

Pond 3P: Infiltration Basin 1 Peak Elev=703.19' Storage=841 cf Inflow=1.24 cfs 0.099 af
Discarded=0.44 cfs 0.099 af Primary=0.00 cfs 0.000 af Outflow=0.44 cfs 0.099 af

Pond 5P: Infiltration Bioretention Peak Elev=703.08' Storage=235 cf Inflow=0.32 cfs 0.020 af
Discarded=0.00 cfs 0.001 af Primary=0.30 cfs 0.014 af Outflow=0.30 cfs 0.015 af

Link 1L: Pre-Dev Design Point Inflow=3.08 cfs 0.240 af
Primary=3.08 cfs 0.240 af

Link 2L: Post-Dev Design Point Inflow=2.60 cfs 0.144 af
Primary=2.60 cfs 0.144 af

Total Runoff Area = 7.968 ac Runoff Volume = 0.490 af Average Runoff Depth = 0.74"
55.19% Pervious = 4.398 ac 44.81% Impervious = 3.571 ac

Summary for Subcatchment 0S: Existing 1

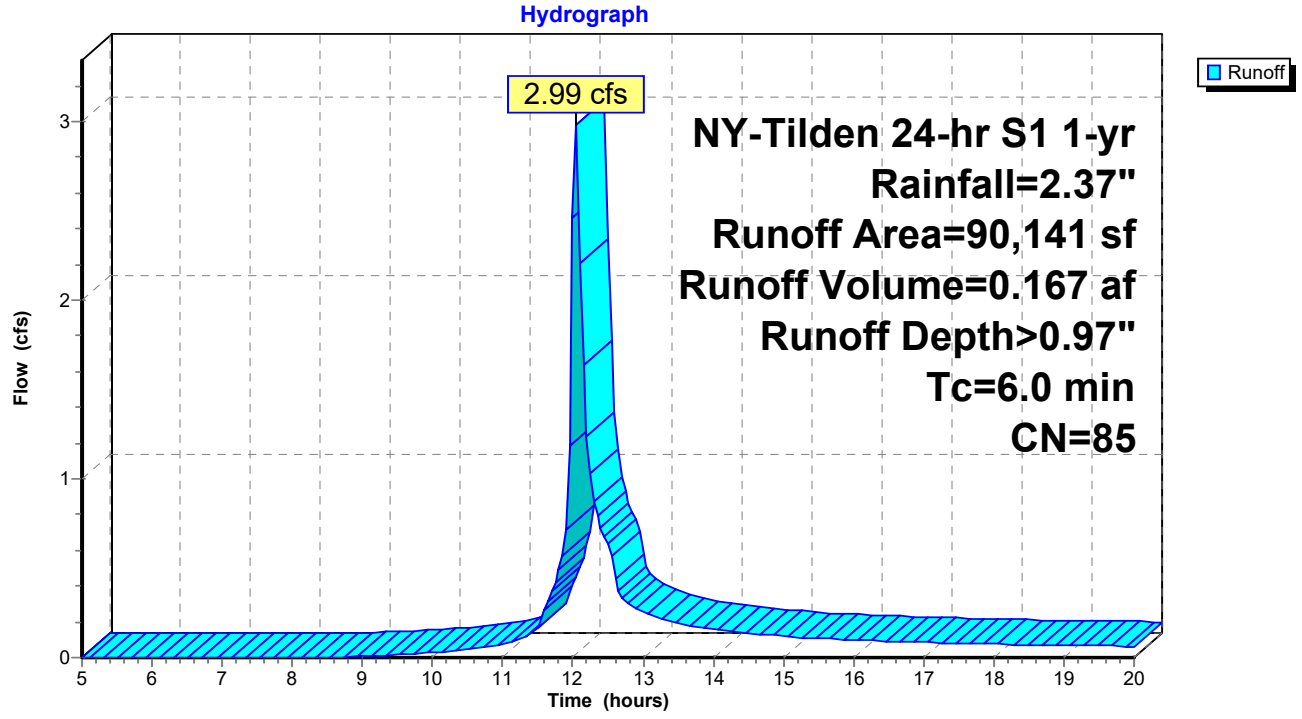
Runoff = 2.99 cfs @ 12.05 hrs, Volume= 0.167 af, Depth> 0.97"
Routed to Link 1L : Pre-Dev Design Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Tilden 24-hr S1 1-yr Rainfall=2.37"

	Area (sf)	CN	Description
*	46,902	98	Existing Impervious (On-Site)
*	10,889	98	Existing Impervious (Off-Site)
	32,350	61	>75% Grass cover, Good, HSG B
	90,141	85	Weighted Average
	32,350		35.89% Pervious Area
	57,791		64.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 0S: Existing 1



Summary for Subcatchment 00S: Existing 2

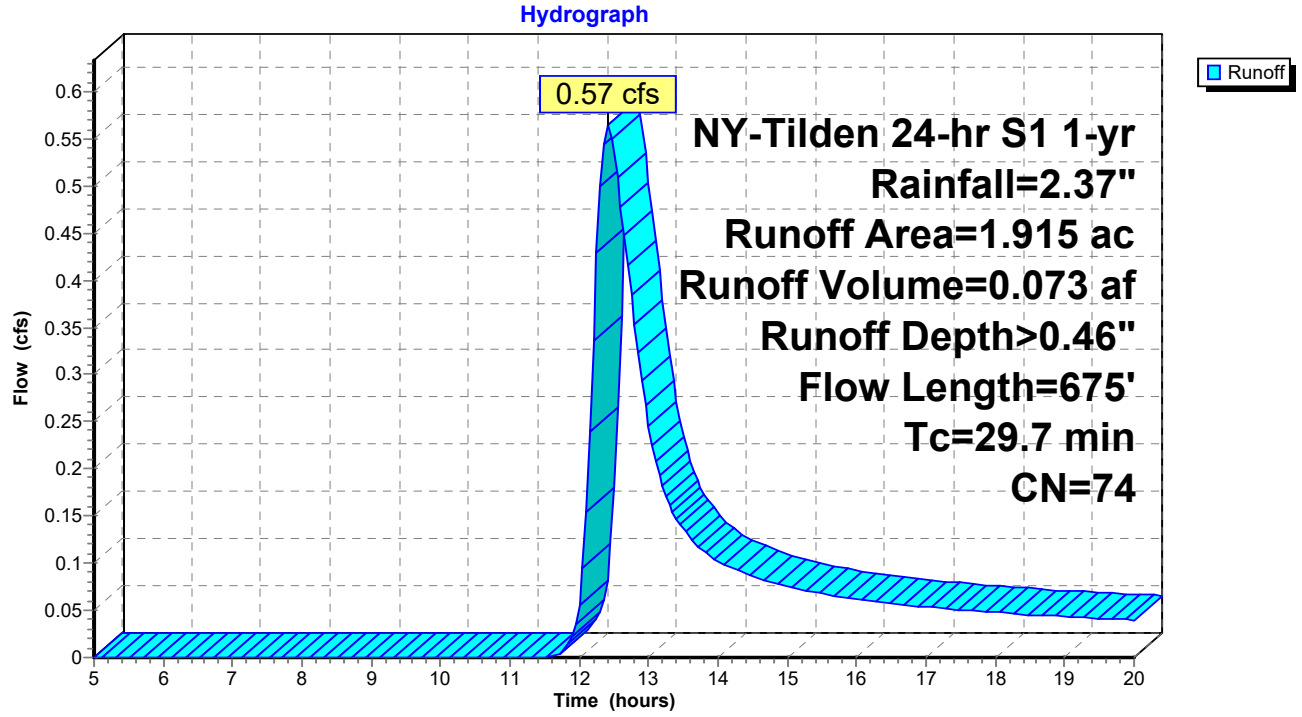
Runoff = 0.57 cfs @ 12.42 hrs, Volume= 0.073 af, Depth> 0.46"
Routed to Link 1L : Pre-Dev Design Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Tilden 24-hr S1 1-yr Rainfall=2.37"

	Area (ac)	CN	Description
*	0.049	98	Ex. Impervious (Off-Site)
*	0.105	98	Ex. Impervious (On-Site)
	1.198	79	<50% Grass cover, Poor, HSG B
	0.563	58	Woods/grass comb., Good, HSG B
	1.915	74	Weighted Average
	1.761		91.96% Pervious Area
	0.154		8.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.2	150	0.0100	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.78"
9.0	380	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.5	145	0.0060	1.57		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
29.7	675	Total			

Subcatchment 00S: Existing 2



Summary for Subcatchment 1S: Post-Dev 1

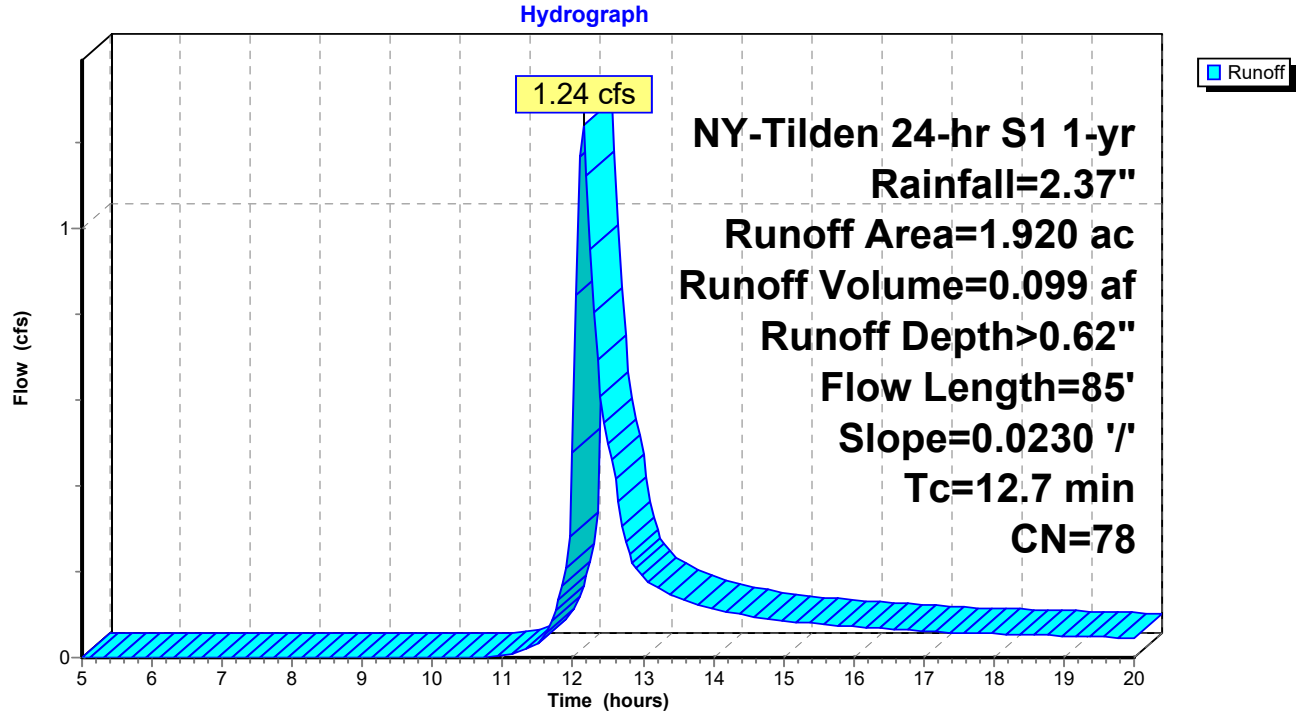
Runoff = 1.24 cfs @ 12.14 hrs, Volume= 0.099 af, Depth> 0.62"
Routed to Pond 3P : Infiltration Basin 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Tilden 24-hr S1 1-yr Rainfall=2.37"

	Area (ac)	CN	Description
*	0.870	98	Impervious
	1.050	61	>75% Grass cover, Good, HSG B
	1.920	78	Weighted Average
	1.050		54.69% Pervious Area
	0.870		45.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	85	0.0230	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.78"

Subcatchment 1S: Post-Dev 1



Summary for Subcatchment 5S: Post-Dev 2

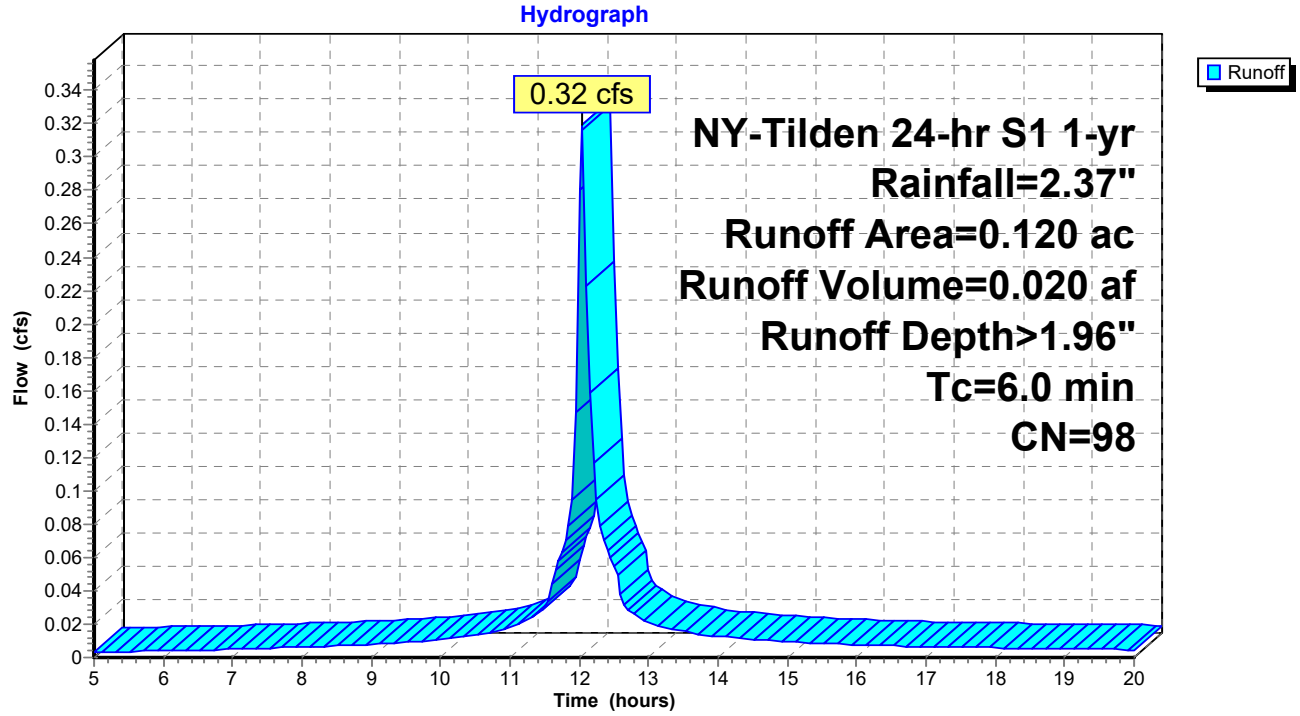
Runoff = 0.32 cfs @ 12.04 hrs, Volume= 0.020 af, Depth> 1.96"
Routed to Pond 5P : Infiltration Bioretention

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Tilden 24-hr S1 1-yr Rainfall=2.37"

	Area (ac)	CN	Description
*	0.120	98	Impervious
	0.120		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 5S: Post-Dev 2



Summary for Subcatchment 6S: Post-Dev 3

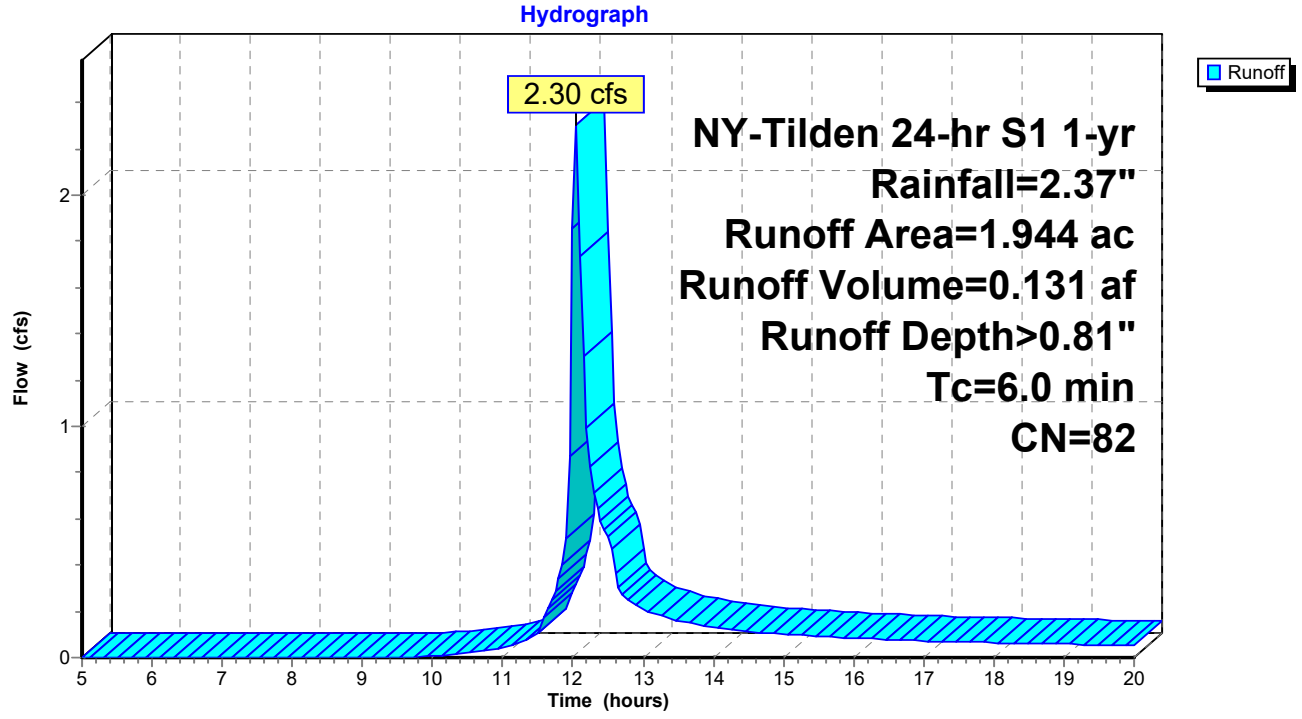
Runoff = 2.30 cfs @ 12.05 hrs, Volume= 0.131 af, Depth> 0.81"
Routed to Link 2L : Post-Dev Design Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Tilden 24-hr S1 1-yr Rainfall=2.37"

	Area (ac)	CN	Description
*	0.812	98	On-Site Impervious
*	0.288	98	Off-Site Impervious
	0.844	61	>75% Grass cover, Good, HSG B
	1.944	82	Weighted Average
	0.844		43.42% Pervious Area
	1.100		56.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 6S: Post-Dev 3



Summary for Pond 3P: Infiltration Basin 1

Inflow Area = 1.920 ac, 45.31% Impervious, Inflow Depth > 0.62" for 1-yr event
Inflow = 1.24 cfs @ 12.14 hrs, Volume= 0.099 af
Outflow = 0.44 cfs @ 12.57 hrs, Volume= 0.099 af, Atten= 65%, Lag= 25.7 min
Discarded = 0.44 cfs @ 12.57 hrs, Volume= 0.099 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Link 2L : Post-Dev Design Point

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 703.19' @ 12.57 hrs Surf.Area= 4,620 sf Storage= 841 cf

Plug-Flow detention time= 13.2 min calculated for 0.099 af (100% of inflow)
Center-of-Mass det. time= 12.4 min (844.4 - 832.0)

Volume	Invert	Avail.Storage	Storage Description
#1	703.00'	12,450 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

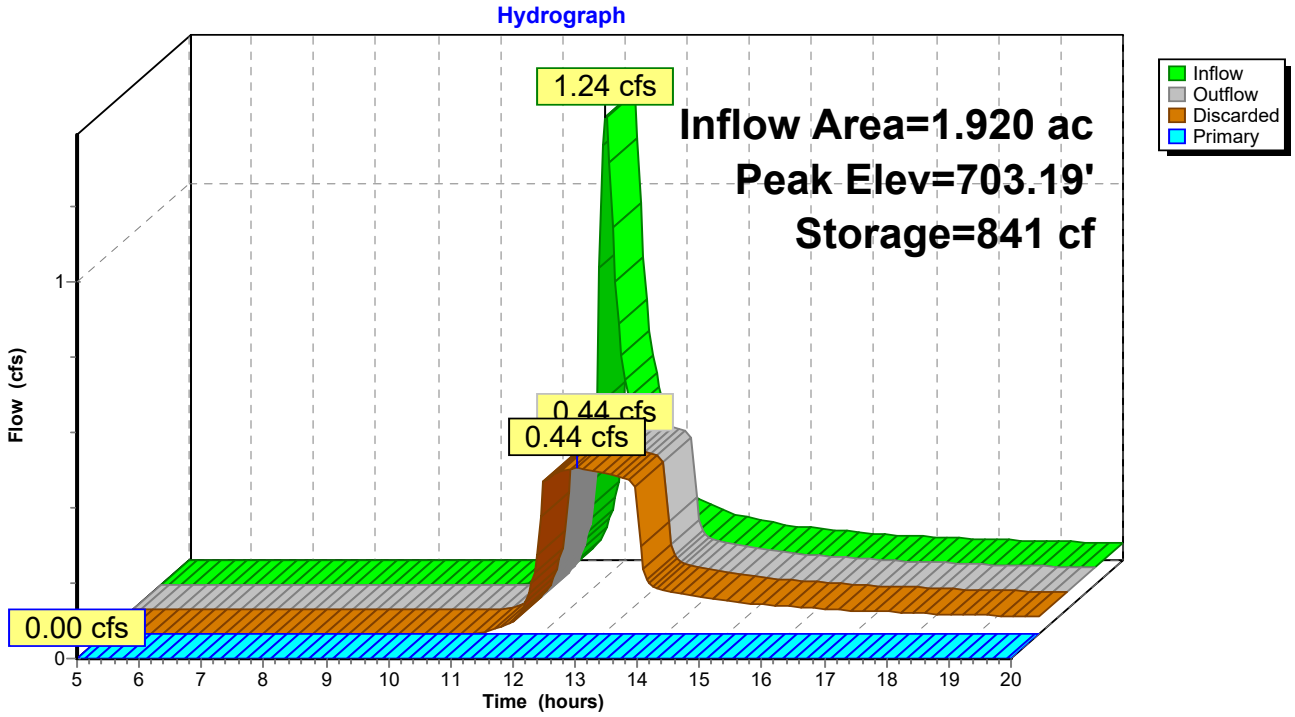
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
703.00	4,300	0	0
704.00	6,000	5,150	5,150
705.00	8,600	7,300	12,450

Device	Routing	Invert	Outlet Devices
#1	Discarded	703.00'	**4.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 697.00'
#2	Primary	704.50'	**5.0' long + 3.0 '/' SideZ 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

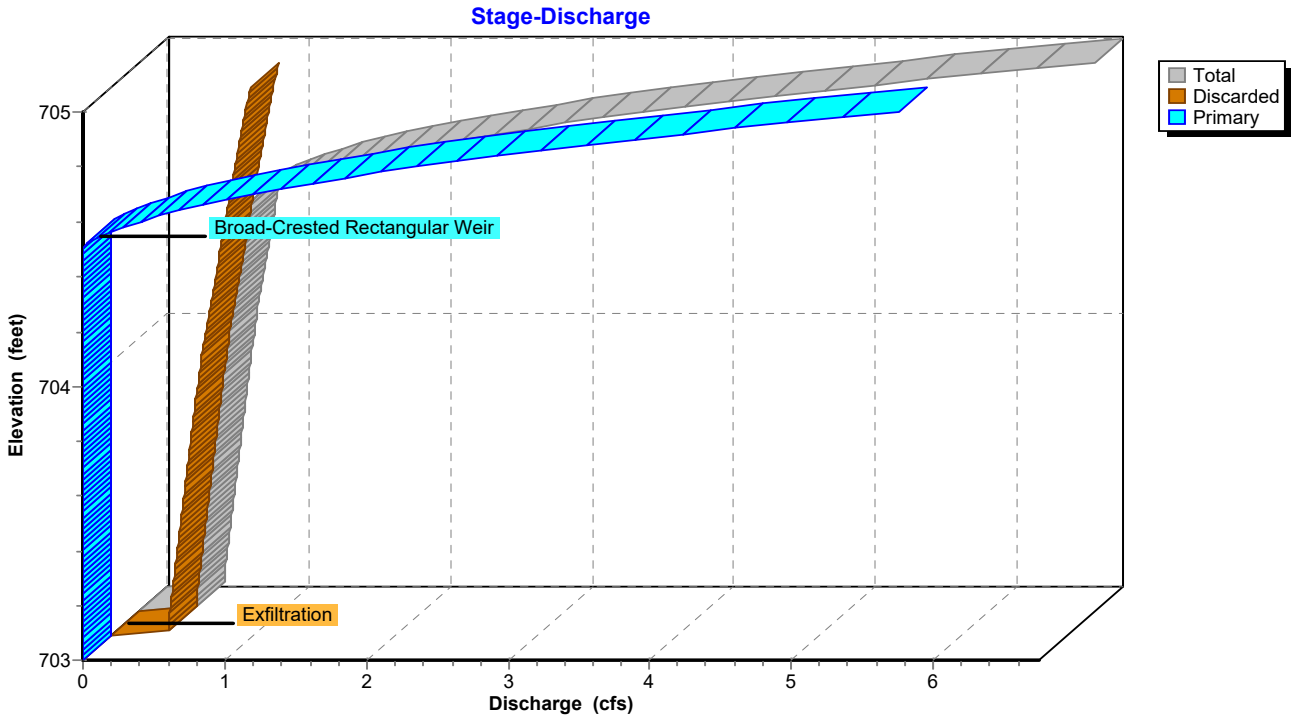
Discarded OutFlow Max=0.44 cfs @ 12.57 hrs HW=703.19' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.44 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=703.00' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

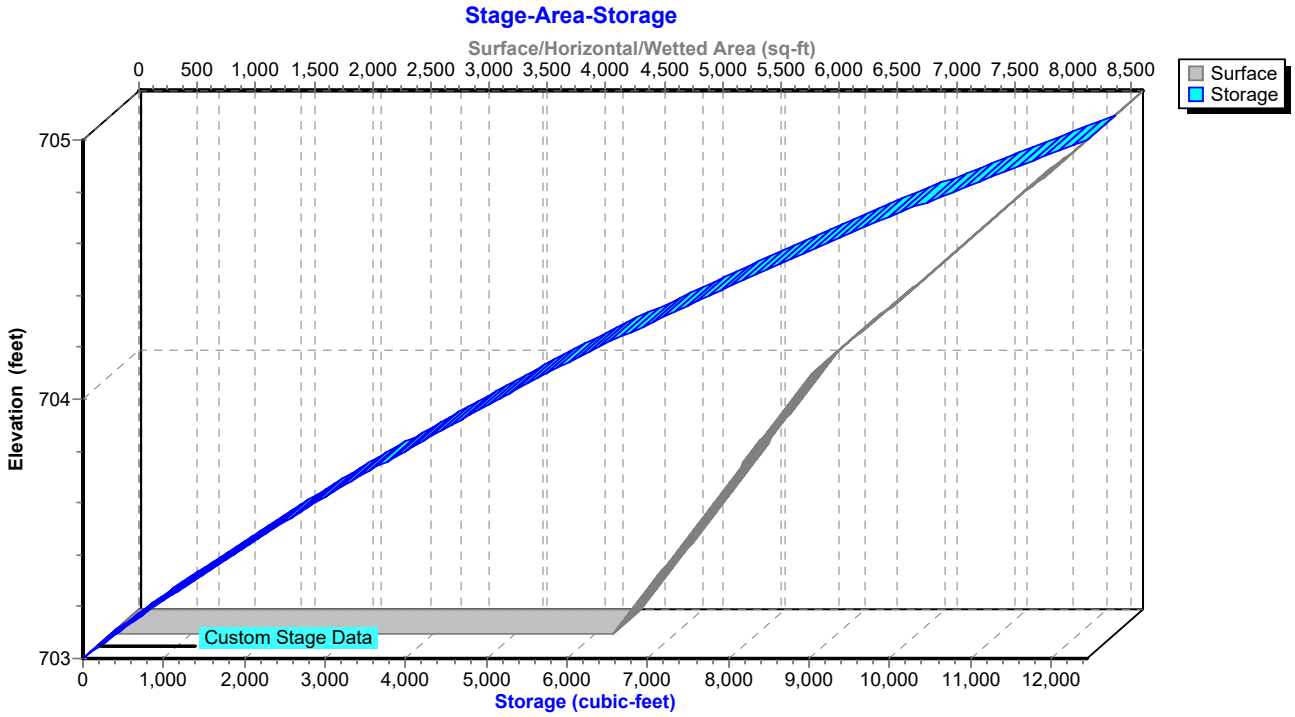
Pond 3P: Infiltration Basin 1



Pond 3P: Infiltration Basin 1



Pond 3P: Infiltration Basin 1



Summary for Pond 5P: Infiltration Bioretention

[82] Warning: Early inflow requires earlier time span

Inflow Area = 0.120 ac,100.00% Impervious, Inflow Depth > 1.96" for 1-yr event
Inflow = 0.32 cfs @ 12.04 hrs, Volume= 0.020 af
Outflow = 0.30 cfs @ 12.06 hrs, Volume= 0.015 af, Atten= 5%, Lag= 1.4 min
Discarded = 0.00 cfs @ 12.06 hrs, Volume= 0.001 af
Primary = 0.30 cfs @ 12.06 hrs, Volume= 0.014 af
Routed to Link 2L : Post-Dev Design Point

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 703.08' @ 12.06 hrs Surf.Area= 486 sf Storage= 235 cf

Plug-Flow detention time= 119.7 min calculated for 0.015 af (76% of inflow)
Center-of-Mass det. time= 56.1 min (797.3 - 741.2)

Volume	Invert	Avail.Storage	Storage Description
#1	702.50'	465 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

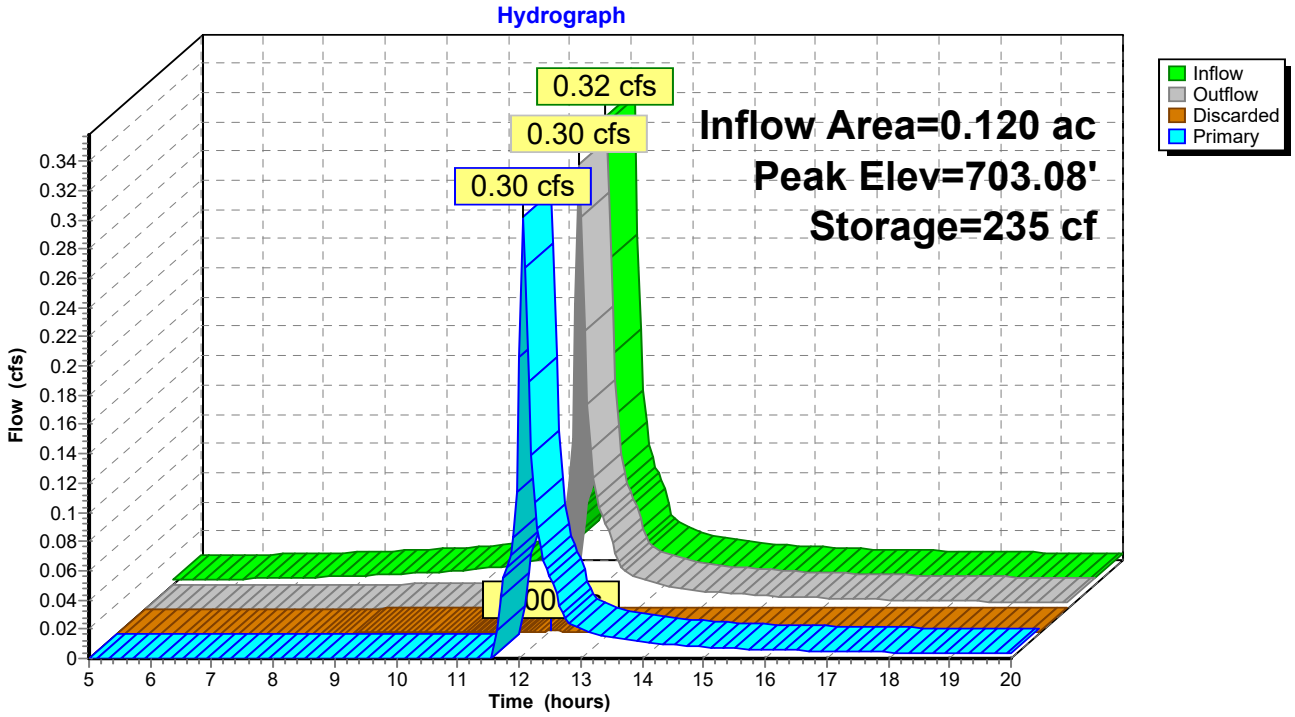
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
702.50	330	0	0
703.50	600	465	465

Device	Routing	Invert	Outlet Devices
#1	Discarded	702.50'	**0.500 in/hr Exfiltration over Surface area above 702.50'** Conductivity to Groundwater Elevation = 698.00' Excluded Surface area = 330 sf
#2	Primary	703.00'	**5.0' long + 1.0 '/' SideZ x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

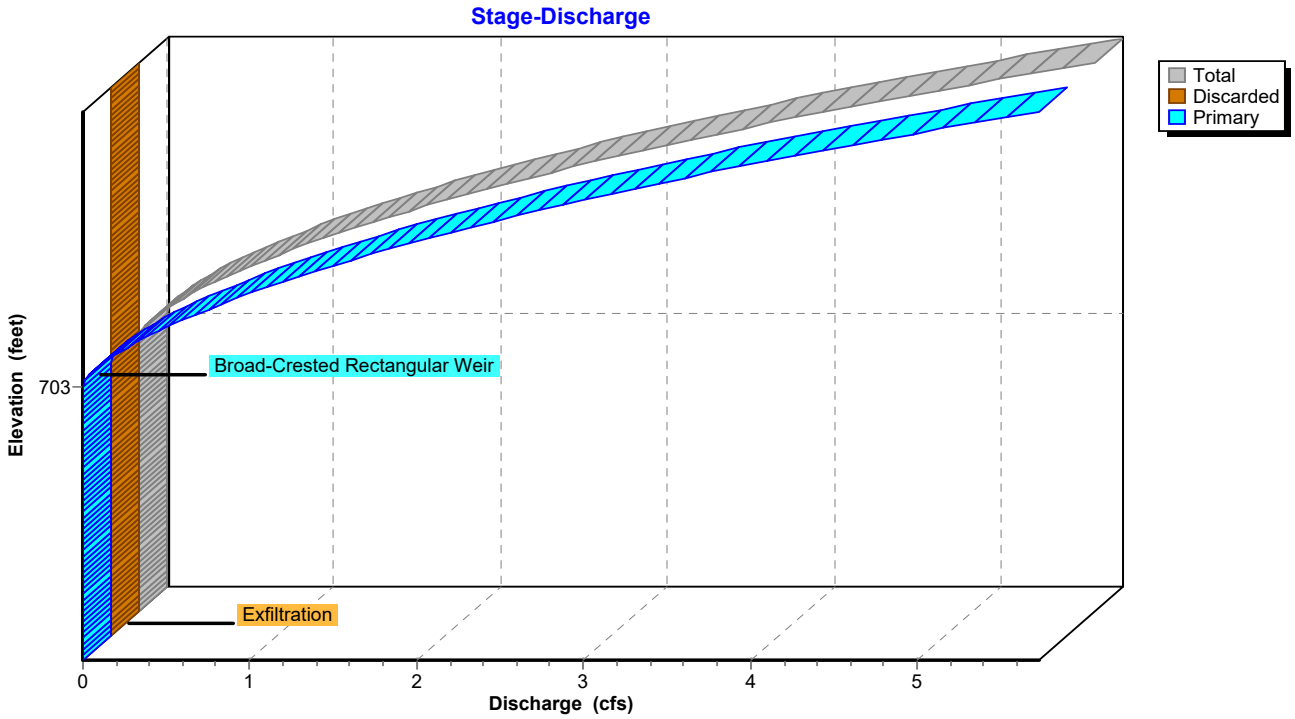
Discarded OutFlow Max=0.00 cfs @ 12.06 hrs HW=703.07' (Free Discharge)
1=Exfiltration (Controls 0.00 cfs)

Primary OutFlow Max=0.29 cfs @ 12.06 hrs HW=703.07' (Free Discharge)
2=Broad-Crested Rectangular Weir (Weir Controls 0.29 cfs @ 0.76 fps)

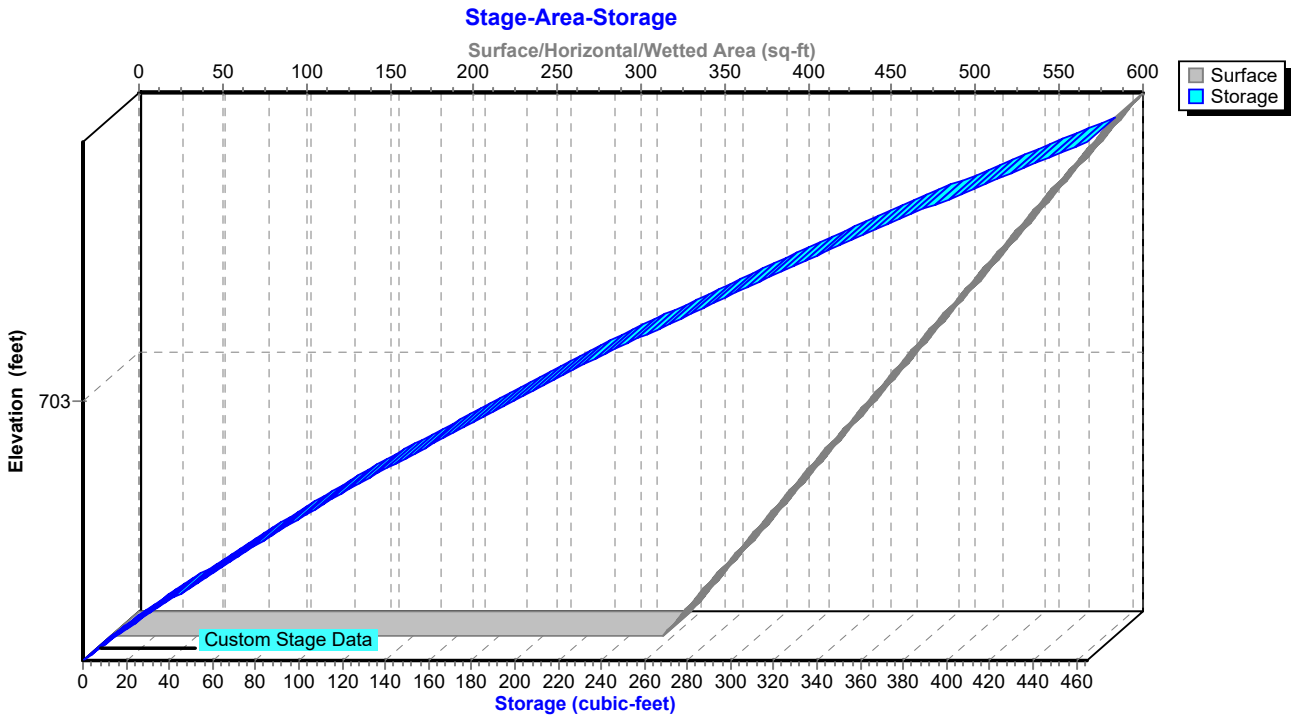
Pond 5P: Infiltration Bioretention



Pond 5P: Infiltration Bioretention



Pond 5P: Infiltration Bioretention

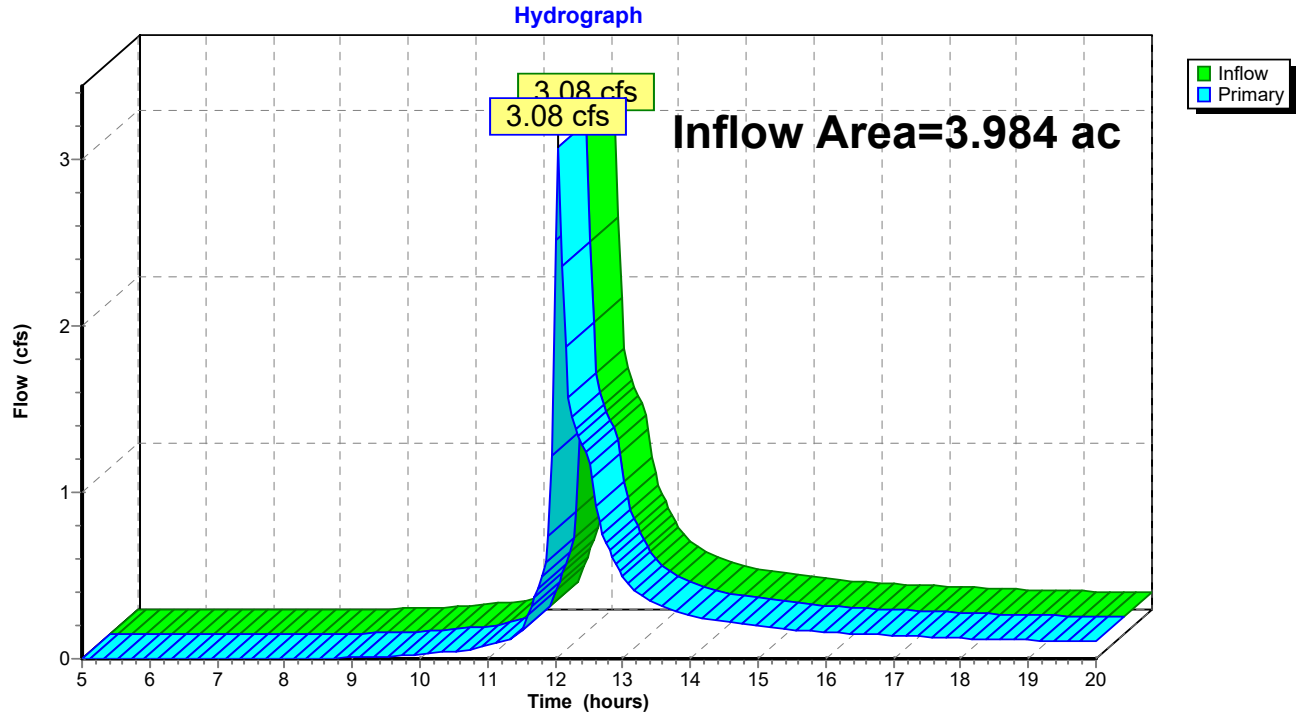


Summary for Link 1L: Pre-Dev Design Point

Inflow Area = 3.984 ac, 37.16% Impervious, Inflow Depth > 0.72" for 1-yr event
Inflow = 3.08 cfs @ 12.05 hrs, Volume= 0.240 af
Primary = 3.08 cfs @ 12.05 hrs, Volume= 0.240 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: Pre-Dev Design Point

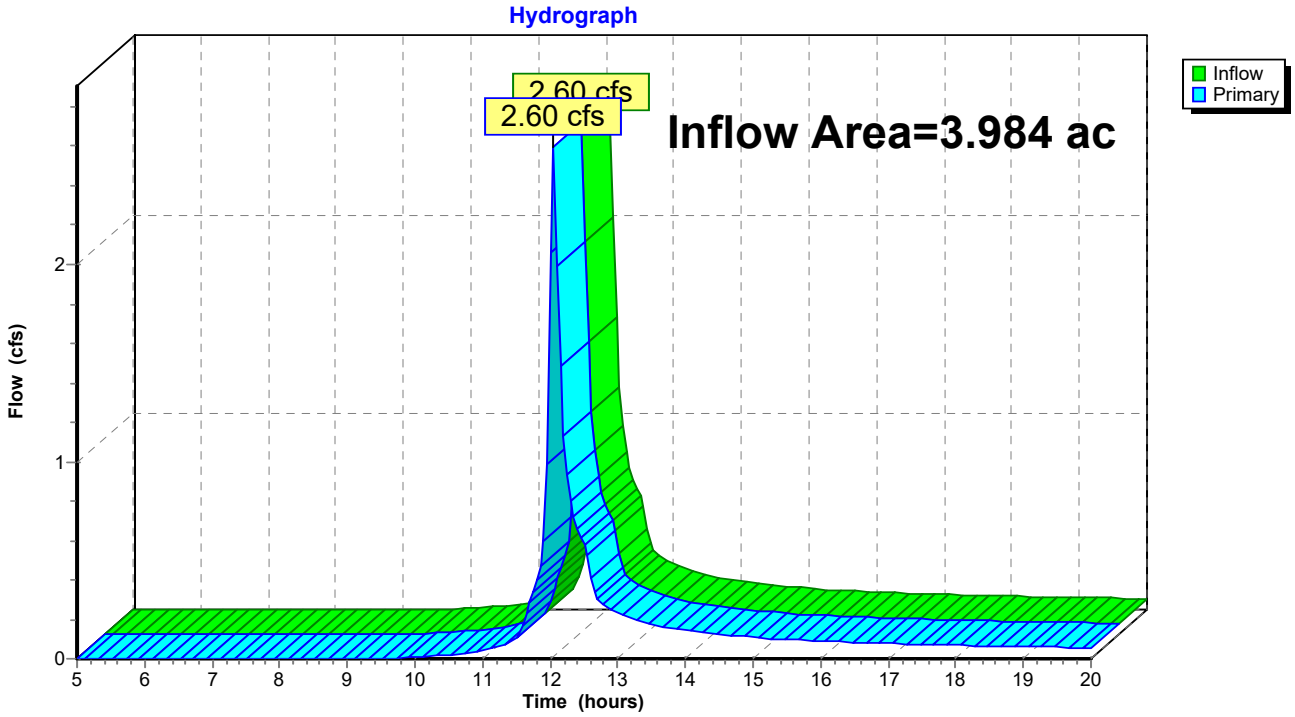


Summary for Link 2L: Post-Dev Design Point

Inflow Area = 3.984 ac, 52.46% Impervious, Inflow Depth > 0.43" for 1-yr event
Inflow = 2.60 cfs @ 12.05 hrs, Volume= 0.144 af
Primary = 2.60 cfs @ 12.05 hrs, Volume= 0.144 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: Post-Dev Design Point



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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 0S: Existing 1 Runoff Area=90,141 sf 64.11% Impervious Runoff Depth>2.35"
Tc=6.0 min CN=85 Runoff=7.01 cfs 0.404 af

Subcatchment 00S: Existing 2 Runoff Area=1.915 ac 8.04% Impervious Runoff Depth>1.49"
Flow Length=675' Tc=29.7 min CN=74 Runoff=2.13 cfs 0.237 af

Subcatchment 1S: Post-Dev 1 Runoff Area=1.920 ac 45.31% Impervious Runoff Depth>1.78"
Flow Length=85' Slope=0.0230 '/' Tc=12.7 min CN=78 Runoff=3.79 cfs 0.285 af

Subcatchment 5S: Post-Dev 2 Runoff Area=0.120 ac 100.00% Impervious Runoff Depth>3.52"
Tc=6.0 min CN=98 Runoff=0.55 cfs 0.035 af

Subcatchment 6S: Post-Dev 3 Runoff Area=1.944 ac 56.58% Impervious Runoff Depth>2.10"
Tc=6.0 min CN=82 Runoff=5.92 cfs 0.339 af

Pond 3P: Infiltration Basin 1 Peak Elev=703.95' Storage=4,826 cf Inflow=3.79 cfs 0.285 af
Discarded=0.62 cfs 0.285 af Primary=0.00 cfs 0.000 af Outflow=0.62 cfs 0.285 af

Pond 5P: Infiltration Bioretention Peak Elev=703.11' Storage=253 cf Inflow=0.55 cfs 0.035 af
Discarded=0.00 cfs 0.002 af Primary=0.53 cfs 0.029 af Outflow=0.54 cfs 0.031 af

Link 1L: Pre-Dev Design Point Inflow=7.67 cfs 0.642 af
Primary=7.67 cfs 0.642 af

Link 2L: Post-Dev Design Point Inflow=6.45 cfs 0.368 af
Primary=6.45 cfs 0.368 af

Total Runoff Area = 7.968 ac Runoff Volume = 1.301 af Average Runoff Depth = 1.96"
55.19% Pervious = 4.398 ac 44.81% Impervious = 3.571 ac

Summary for Subcatchment 0S: Existing 1

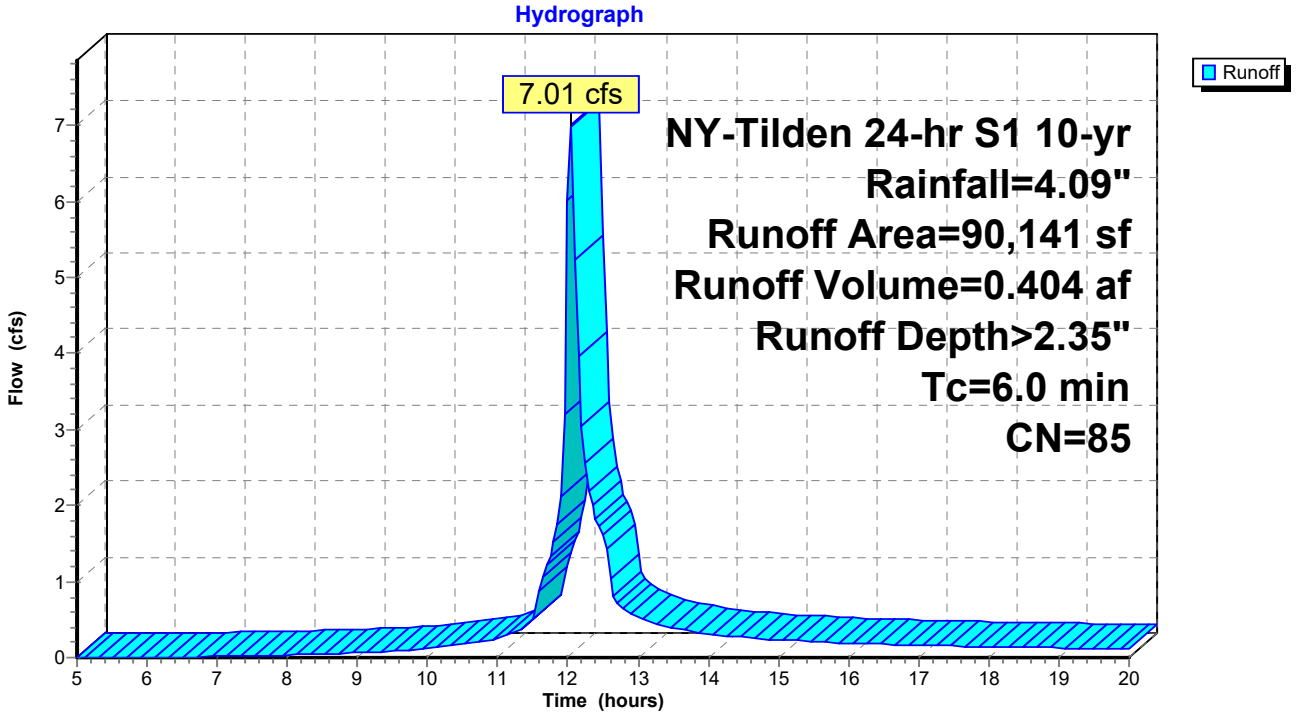
Runoff = 7.01 cfs @ 12.04 hrs, Volume= 0.404 af, Depth> 2.35"
Routed to Link 1L : Pre-Dev Design Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Tilden 24-hr S1 10-yr Rainfall=4.09"

	Area (sf)	CN	Description
*	46,902	98	Existing Impervious (On-Site)
*	10,889	98	Existing Impervious (Off-Site)
	32,350	61	>75% Grass cover, Good, HSG B
	90,141	85	Weighted Average
	32,350		35.89% Pervious Area
	57,791		64.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 0S: Existing 1



Summary for Subcatchment 00S: Existing 2

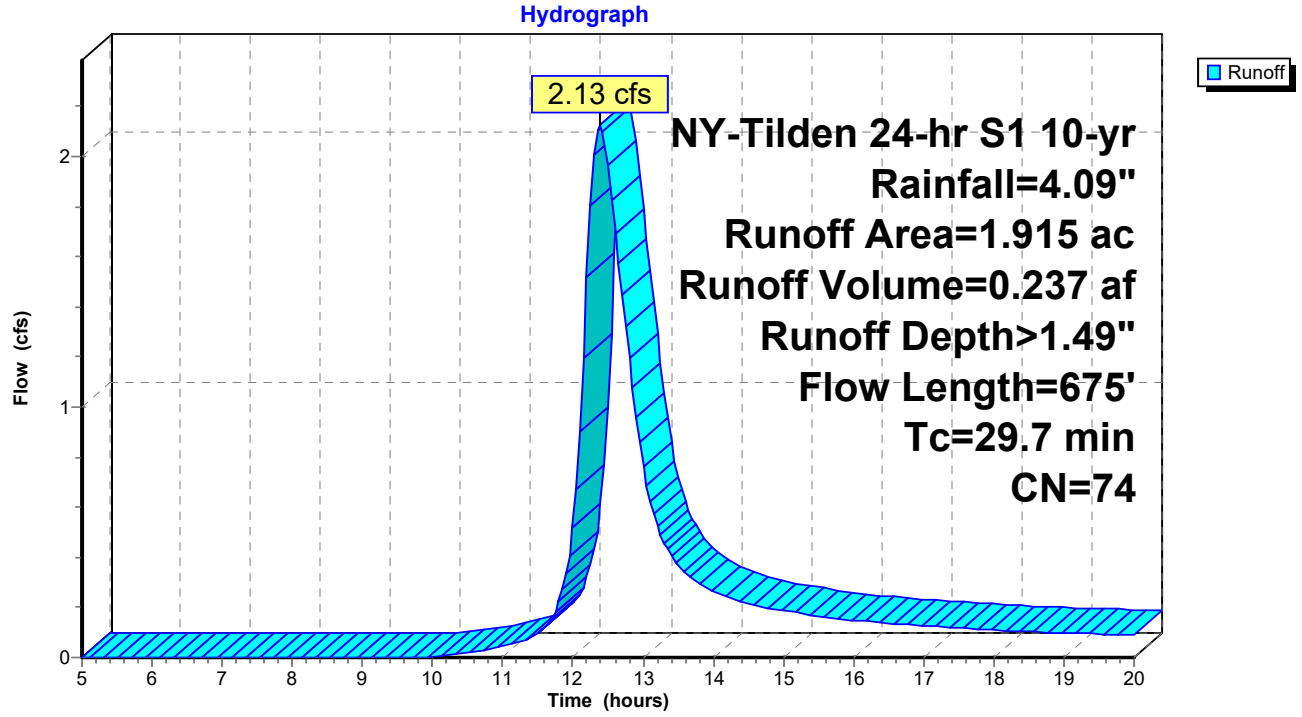
Runoff = 2.13 cfs @ 12.39 hrs, Volume= 0.237 af, Depth> 1.49"
Routed to Link 1L : Pre-Dev Design Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Tilden 24-hr S1 10-yr Rainfall=4.09"

	Area (ac)	CN	Description
*	0.049	98	Ex. Impervious (Off-Site)
*	0.105	98	Ex. Impervious (On-Site)
	1.198	79	<50% Grass cover, Poor, HSG B
	0.563	58	Woods/grass comb., Good, HSG B
	1.915	74	Weighted Average
	1.761		91.96% Pervious Area
	0.154		8.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.2	150	0.0100	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.78"
9.0	380	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.5	145	0.0060	1.57		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
29.7	675	Total			

Subcatchment 00S: Existing 2



Summary for Subcatchment 1S: Post-Dev 1

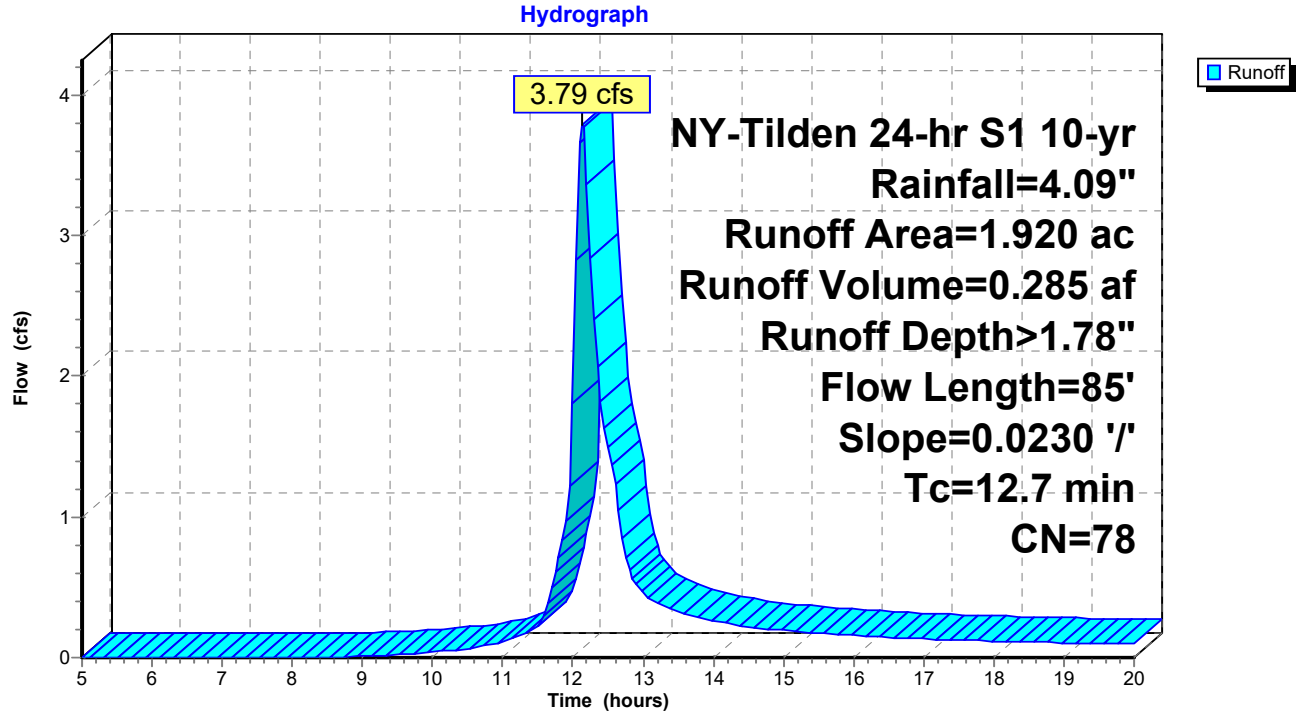
Runoff = 3.79 cfs @ 12.14 hrs, Volume= 0.285 af, Depth> 1.78"
Routed to Pond 3P : Infiltration Basin 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Tilden 24-hr S1 10-yr Rainfall=4.09"

	Area (ac)	CN	Description
*	0.870	98	Impervious
	1.050	61	>75% Grass cover, Good, HSG B
	1.920	78	Weighted Average
	1.050		54.69% Pervious Area
	0.870		45.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	85	0.0230	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.78"

Subcatchment 1S: Post-Dev 1



Summary for Subcatchment 5S: Post-Dev 2

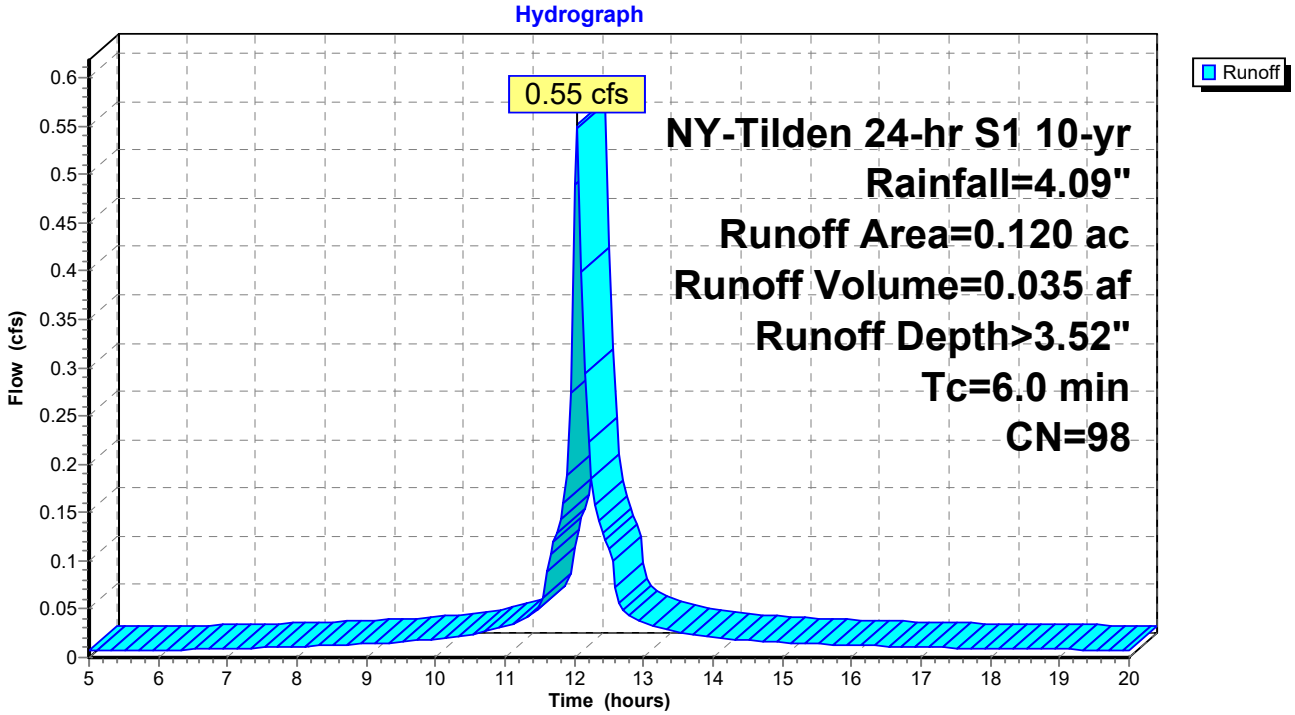
Runoff = 0.55 cfs @ 12.04 hrs, Volume= 0.035 af, Depth> 3.52"
Routed to Pond 5P : Infiltration Bioretention

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Tilden 24-hr S1 10-yr Rainfall=4.09"

	Area (ac)	CN	Description
*	0.120	98	Impervious
	0.120		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 5S: Post-Dev 2



Summary for Subcatchment 6S: Post-Dev 3

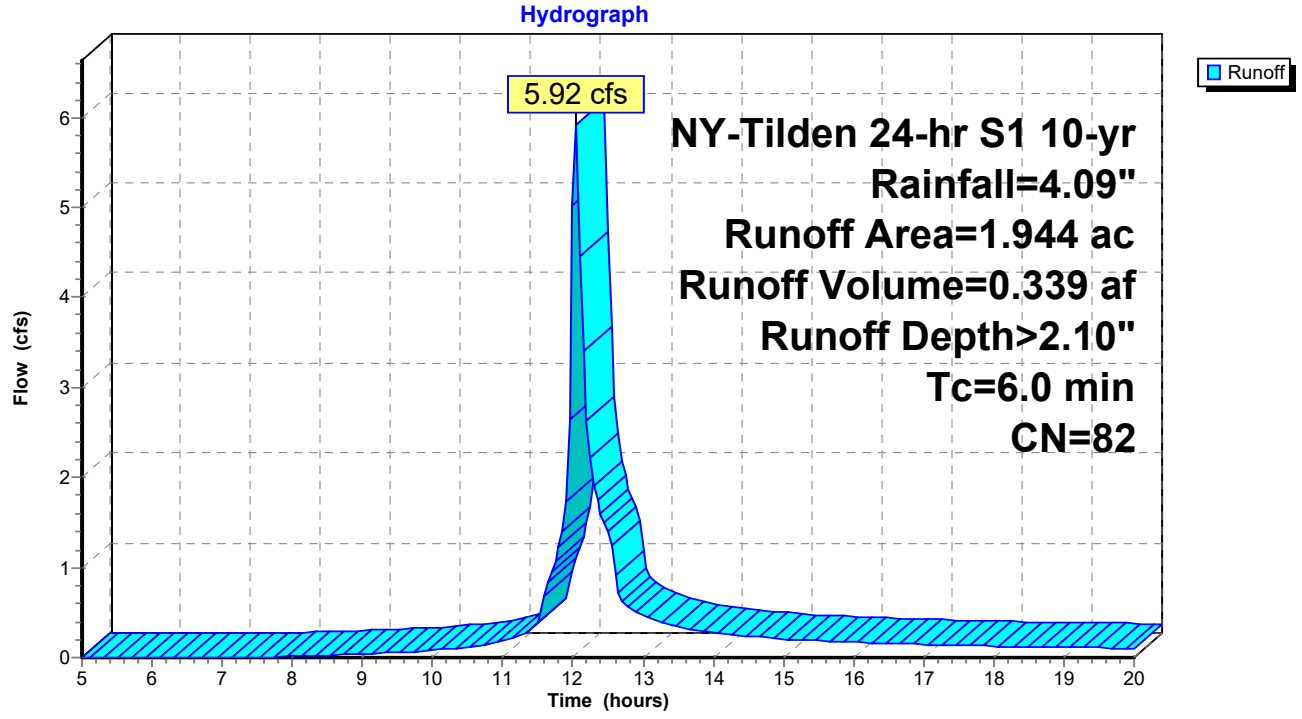
Runoff = 5.92 cfs @ 12.04 hrs, Volume= 0.339 af, Depth> 2.10"
Routed to Link 2L : Post-Dev Design Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Tilden 24-hr S1 10-yr Rainfall=4.09"

	Area (ac)	CN	Description
*	0.812	98	On-Site Impervious
*	0.288	98	Off-Site Impervious
	0.844	61	>75% Grass cover, Good, HSG B
	1.944	82	Weighted Average
	0.844		43.42% Pervious Area
	1.100		56.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 6S: Post-Dev 3



Summary for Pond 3P: Infiltration Basin 1

Inflow Area = 1.920 ac, 45.31% Impervious, Inflow Depth > 1.78" for 10-yr event
Inflow = 3.79 cfs @ 12.14 hrs, Volume= 0.285 af
Outflow = 0.62 cfs @ 12.81 hrs, Volume= 0.285 af, Atten= 84%, Lag= 40.3 min
Discarded = 0.62 cfs @ 12.81 hrs, Volume= 0.285 af
Primary = 0.00 cfs @ 5.00 hrs, Volume= 0.000 af
Routed to Link 2L : Post-Dev Design Point

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 703.95' @ 12.81 hrs Surf.Area= 5,907 sf Storage= 4,826 cf

Plug-Flow detention time= 70.5 min calculated for 0.284 af (100% of inflow)
Center-of-Mass det. time= 69.6 min (872.9 - 803.2)

Volume	Invert	Avail.Storage	Storage Description
#1	703.00'	12,450 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

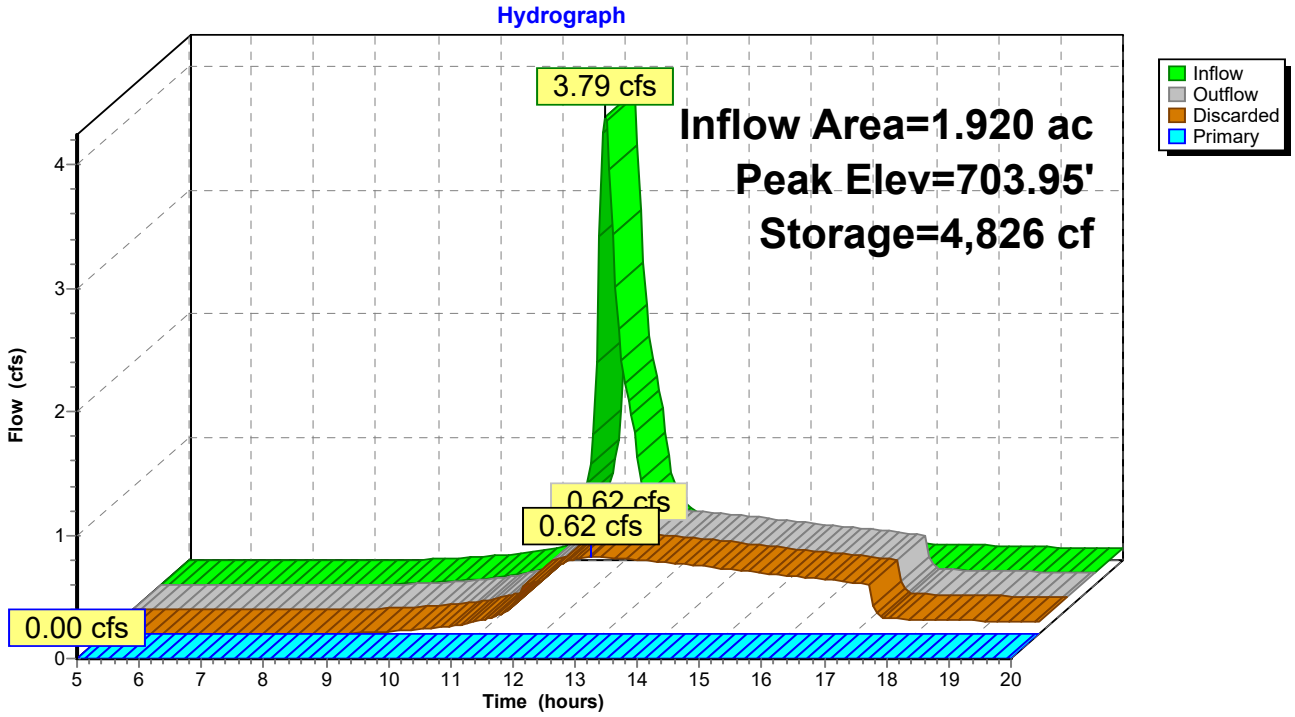
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
703.00	4,300	0	0
704.00	6,000	5,150	5,150
705.00	8,600	7,300	12,450

Device	Routing	Invert	Outlet Devices
#1	Discarded	703.00'	**4.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 697.00'
#2	Primary	704.50'	**5.0' long + 3.0 '/' SideZ 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

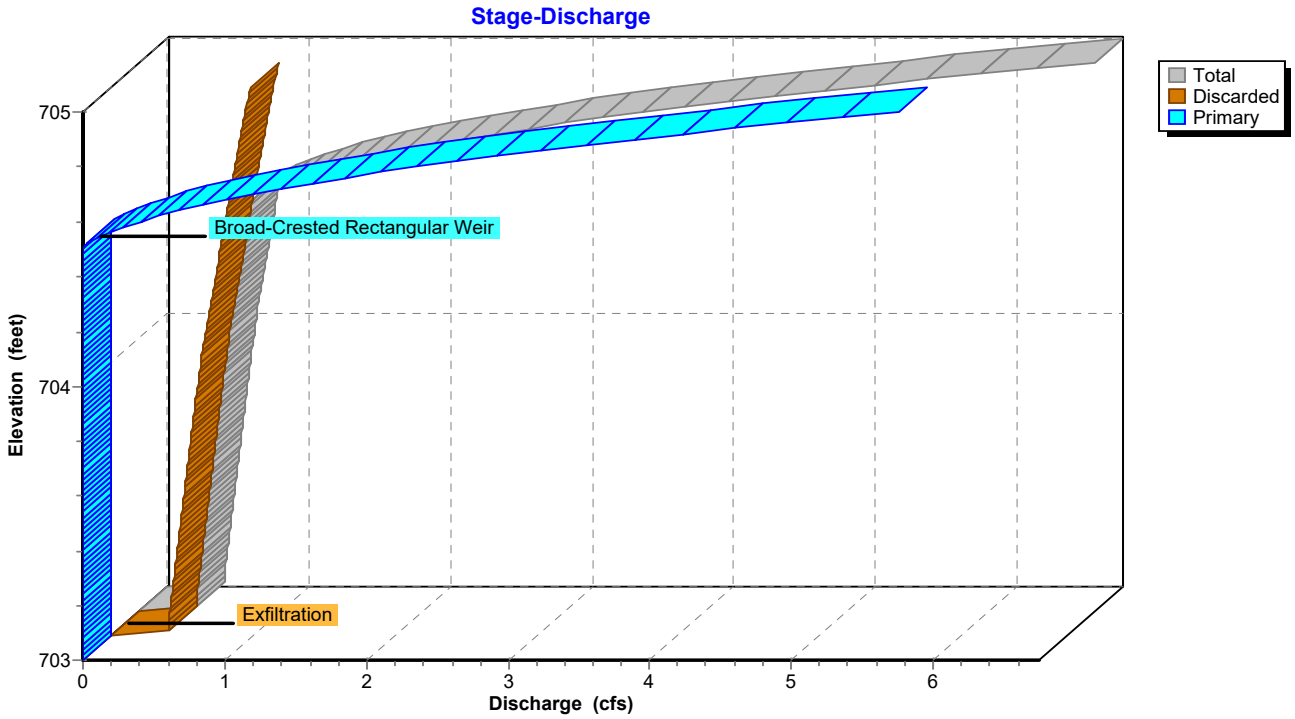
Discarded OutFlow Max=0.62 cfs @ 12.81 hrs HW=703.95' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.62 cfs)

Primary OutFlow Max=0.00 cfs @ 5.00 hrs HW=703.00' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Controls 0.00 cfs)

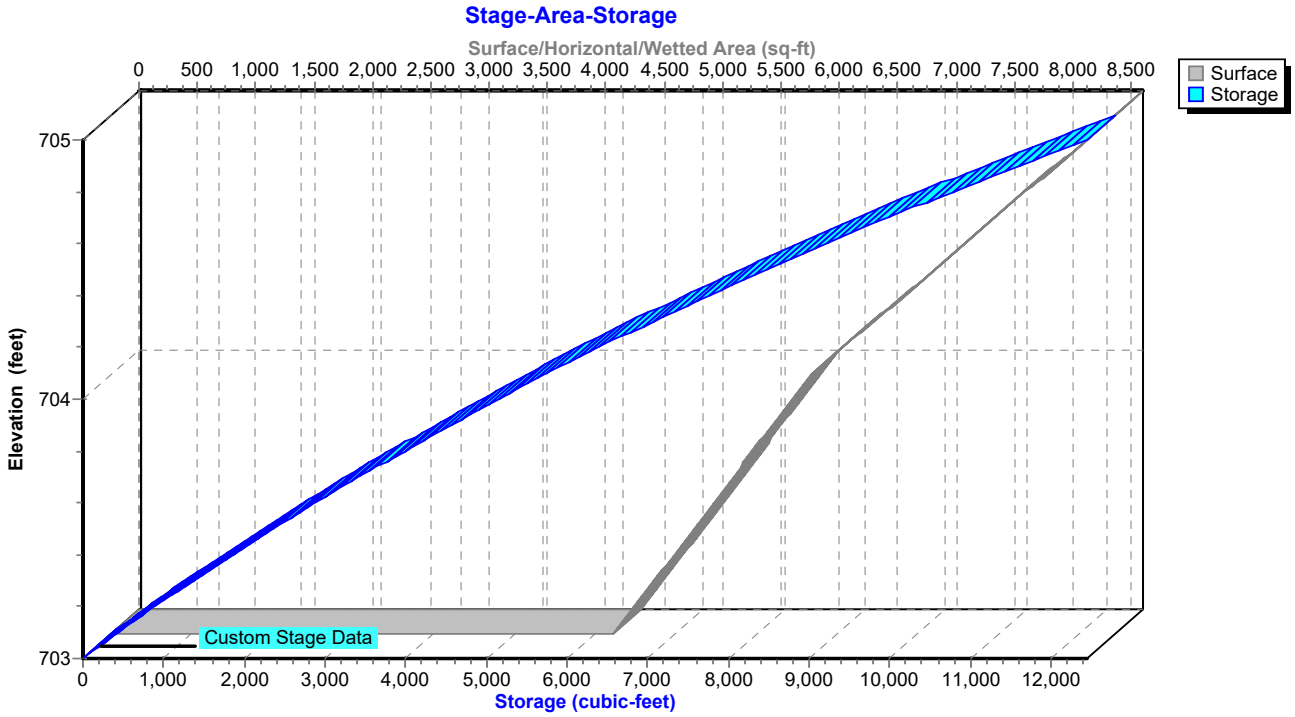
Pond 3P: Infiltration Basin 1



Pond 3P: Infiltration Basin 1



Pond 3P: Infiltration Basin 1



Summary for Pond 5P: Infiltration Bioretention

[82] Warning: Early inflow requires earlier time span

Inflow Area = 0.120 ac,100.00% Impervious, Inflow Depth > 3.52" for 10-yr event
Inflow = 0.55 cfs @ 12.04 hrs, Volume= 0.035 af
Outflow = 0.54 cfs @ 12.06 hrs, Volume= 0.031 af, Atten= 3%, Lag= 1.2 min
Discarded = 0.00 cfs @ 12.06 hrs, Volume= 0.002 af
Primary = 0.53 cfs @ 12.06 hrs, Volume= 0.029 af
Routed to Link 2L : Post-Dev Design Point

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 703.11' @ 12.06 hrs Surf.Area= 495 sf Storage= 253 cf

Plug-Flow detention time= 83.0 min calculated for 0.030 af (87% of inflow)
Center-of-Mass det. time= 40.1 min (775.8 - 735.8)

Volume	Invert	Avail.Storage	Storage Description
#1	702.50'	465 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

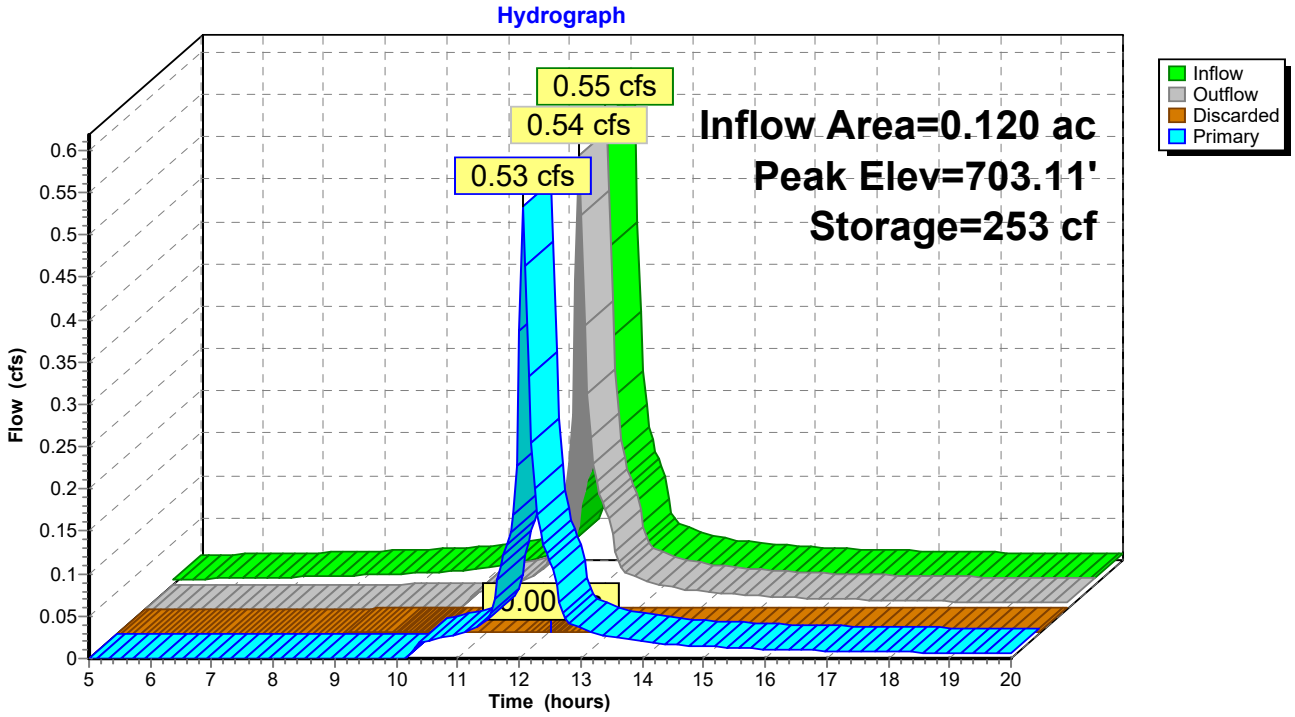
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
702.50	330	0	0
703.50	600	465	465

Device	Routing	Invert	Outlet Devices
#1	Discarded	702.50'	**0.500 in/hr Exfiltration over Surface area above 702.50'** Conductivity to Groundwater Elevation = 698.00' Excluded Surface area = 330 sf
#2	Primary	703.00'	**5.0' long + 1.0 '/' SideZ x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

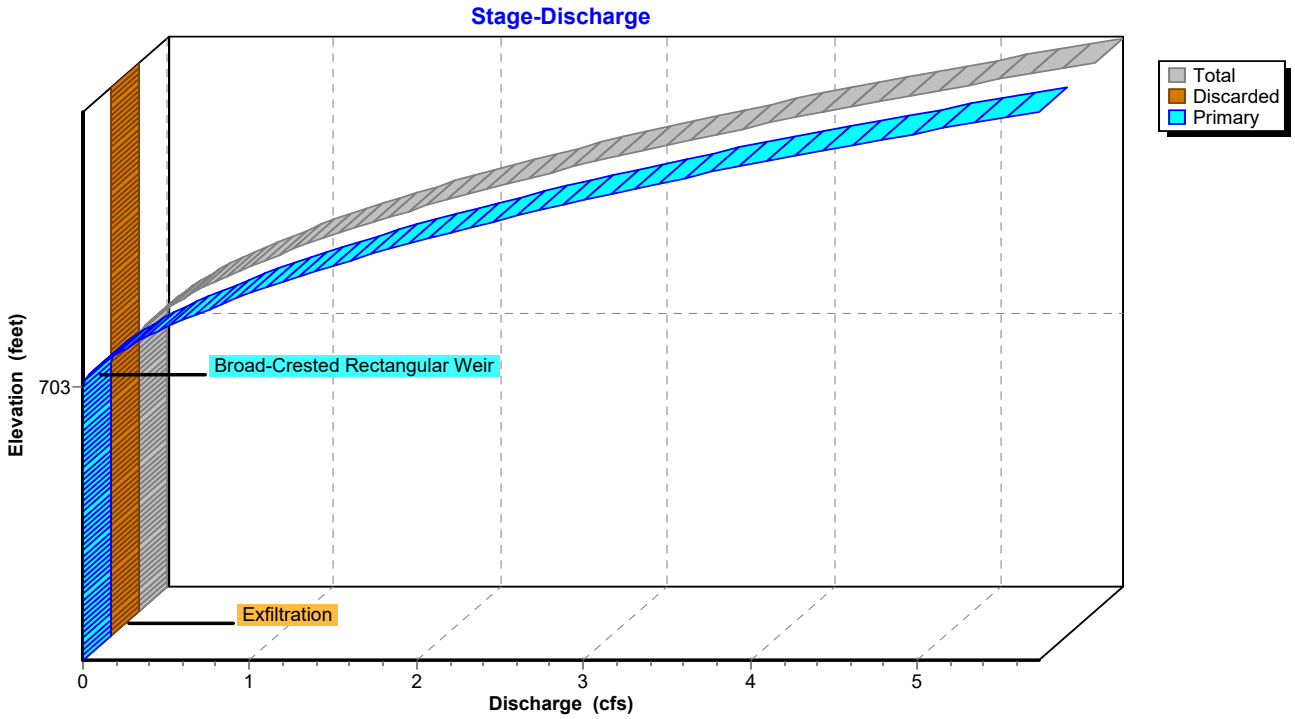
Discarded OutFlow Max=0.00 cfs @ 12.06 hrs HW=703.11' (Free Discharge)
1=Exfiltration (Controls 0.00 cfs)

Primary OutFlow Max=0.52 cfs @ 12.06 hrs HW=703.11' (Free Discharge)
2=Broad-Crested Rectangular Weir (Weir Controls 0.52 cfs @ 0.92 fps)

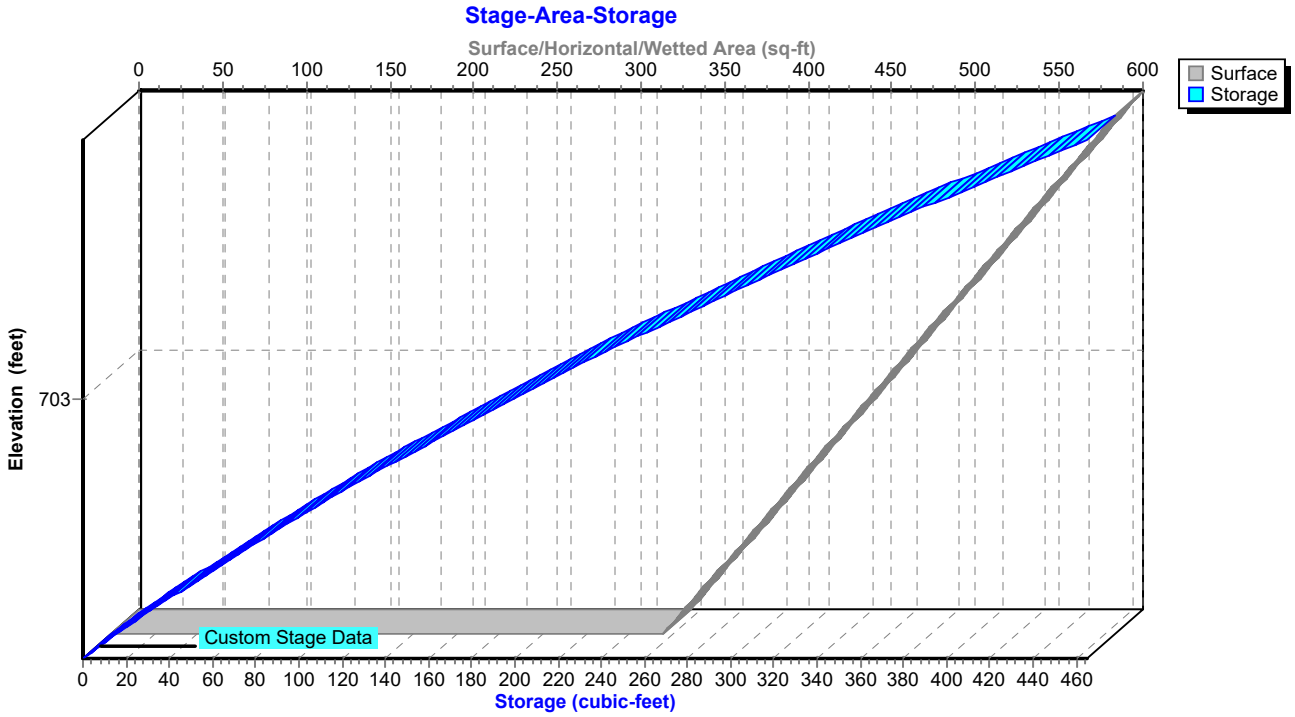
Pond 5P: Infiltration Bioretention



Pond 5P: Infiltration Bioretention



Pond 5P: Infiltration Bioretention

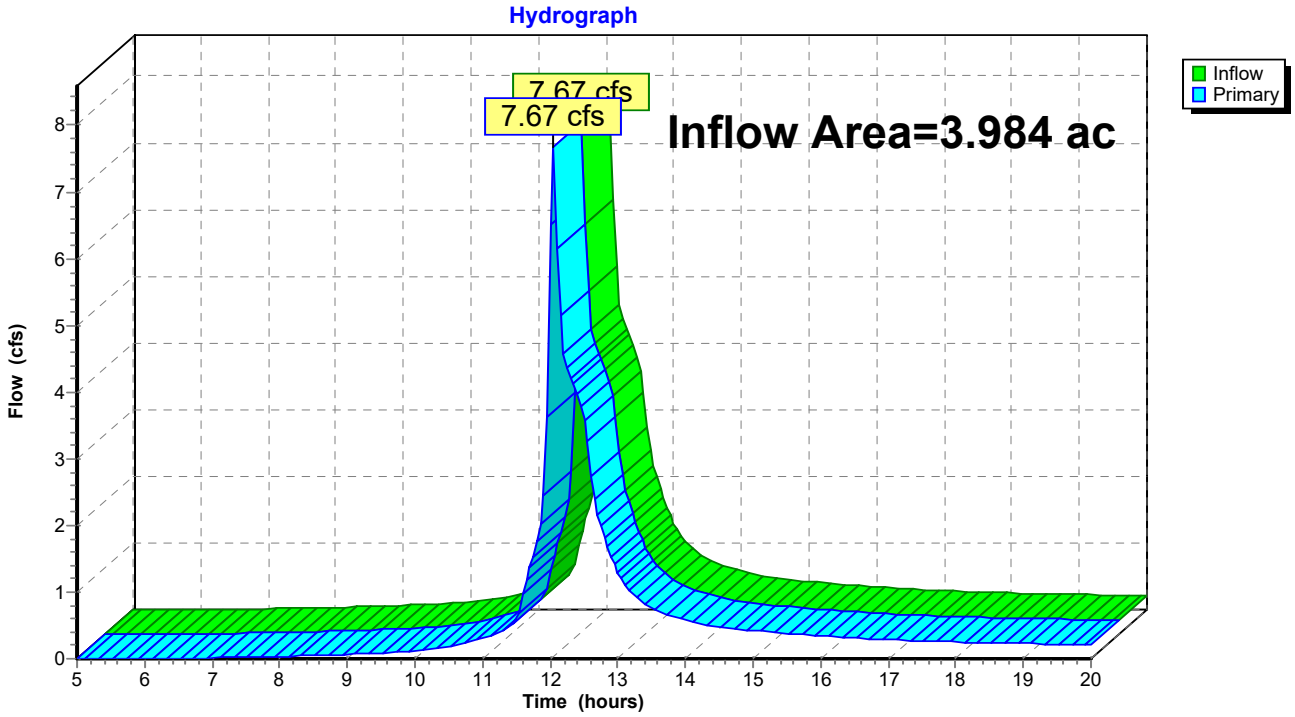


Summary for Link 1L: Pre-Dev Design Point

Inflow Area = 3.984 ac, 37.16% Impervious, Inflow Depth > 1.93" for 10-yr event
Inflow = 7.67 cfs @ 12.05 hrs, Volume= 0.642 af
Primary = 7.67 cfs @ 12.05 hrs, Volume= 0.642 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: Pre-Dev Design Point

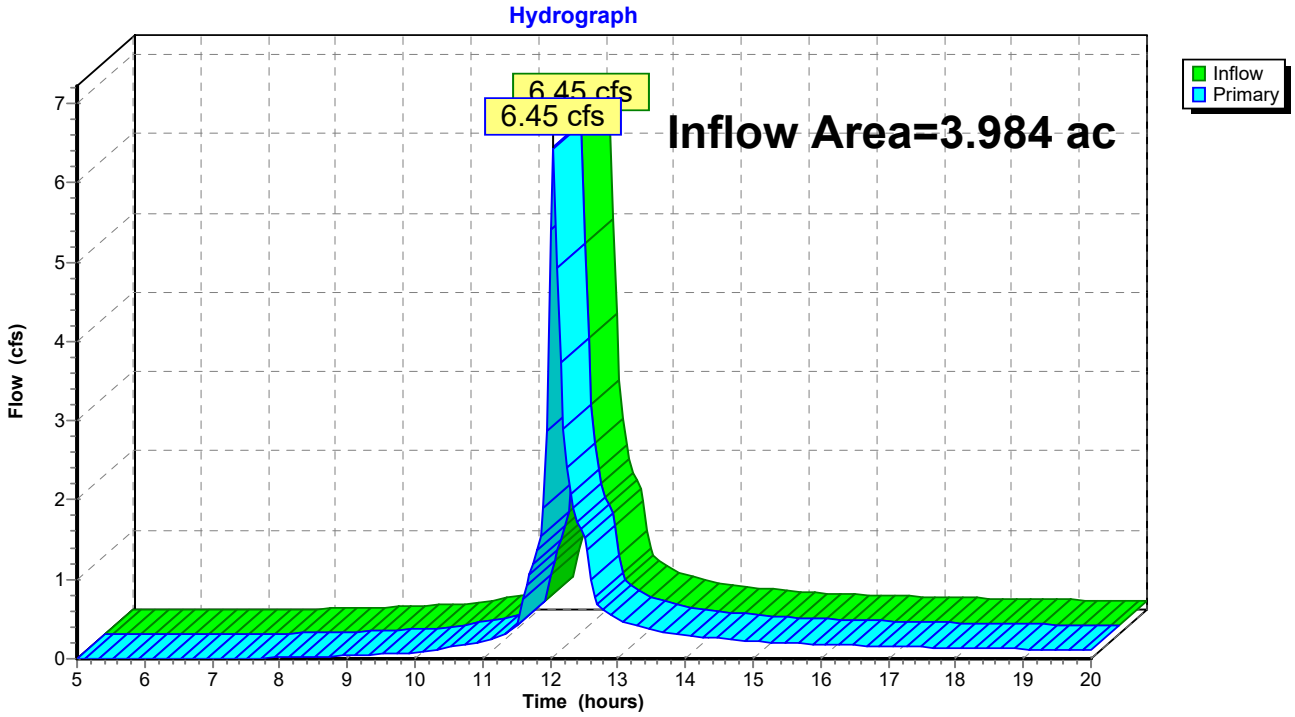


Summary for Link 2L: Post-Dev Design Point

Inflow Area = 3.984 ac, 52.46% Impervious, Inflow Depth > 1.11" for 10-yr event
Inflow = 6.45 cfs @ 12.05 hrs, Volume= 0.368 af
Primary = 6.45 cfs @ 12.05 hrs, Volume= 0.368 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: Post-Dev Design Point



Time span=5.00-20.00 hrs, dt=0.05 hrs, 301 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 0S: Existing 1 Runoff Area=90,141 sf 64.11% Impervious Runoff Depth>5.04"
Tc=6.0 min CN=85 Runoff=14.39 cfs 0.870 af

Subcatchment 00S: Existing 2 Runoff Area=1.915 ac 8.04% Impervious Runoff Depth>3.82"
Flow Length=675' Tc=29.7 min CN=74 Runoff=5.65 cfs 0.610 af

Subcatchment 1S: Post-Dev 1 Runoff Area=1.920 ac 45.31% Impervious Runoff Depth>4.27"
Flow Length=85' Slope=0.0230 '/' Tc=12.7 min CN=78 Runoff=9.02 cfs 0.683 af

Subcatchment 5S: Post-Dev 2 Runoff Area=0.120 ac 100.00% Impervious Runoff Depth>6.28"
Tc=6.0 min CN=98 Runoff=0.96 cfs 0.063 af

Subcatchment 6S: Post-Dev 3 Runoff Area=1.944 ac 56.58% Impervious Runoff Depth>4.71"
Tc=6.0 min CN=82 Runoff=12.80 cfs 0.764 af

Pond 3P: Infiltration Basin 1 Peak Elev=704.83' Storage=11,002 cf Inflow=9.02 cfs 0.683 af
Discarded=0.92 cfs 0.523 af Primary=2.74 cfs 0.135 af Outflow=3.66 cfs 0.658 af

Pond 5P: Infiltration Bioretention Peak Elev=703.16' Storage=278 cf Inflow=0.96 cfs 0.063 af
Discarded=0.00 cfs 0.002 af Primary=0.94 cfs 0.056 af Outflow=0.94 cfs 0.058 af

Link 1L: Pre-Dev Design Point Inflow=16.54 cfs 1.480 af
Primary=16.54 cfs 1.480 af

Link 2L: Post-Dev Design Point Inflow=13.73 cfs 0.955 af
Primary=13.73 cfs 0.955 af

Total Runoff Area = 7.968 ac Runoff Volume = 2.989 af Average Runoff Depth = 4.50"
55.19% Pervious = 4.398 ac 44.81% Impervious = 3.571 ac

Summary for Subcatchment 0S: Existing 1

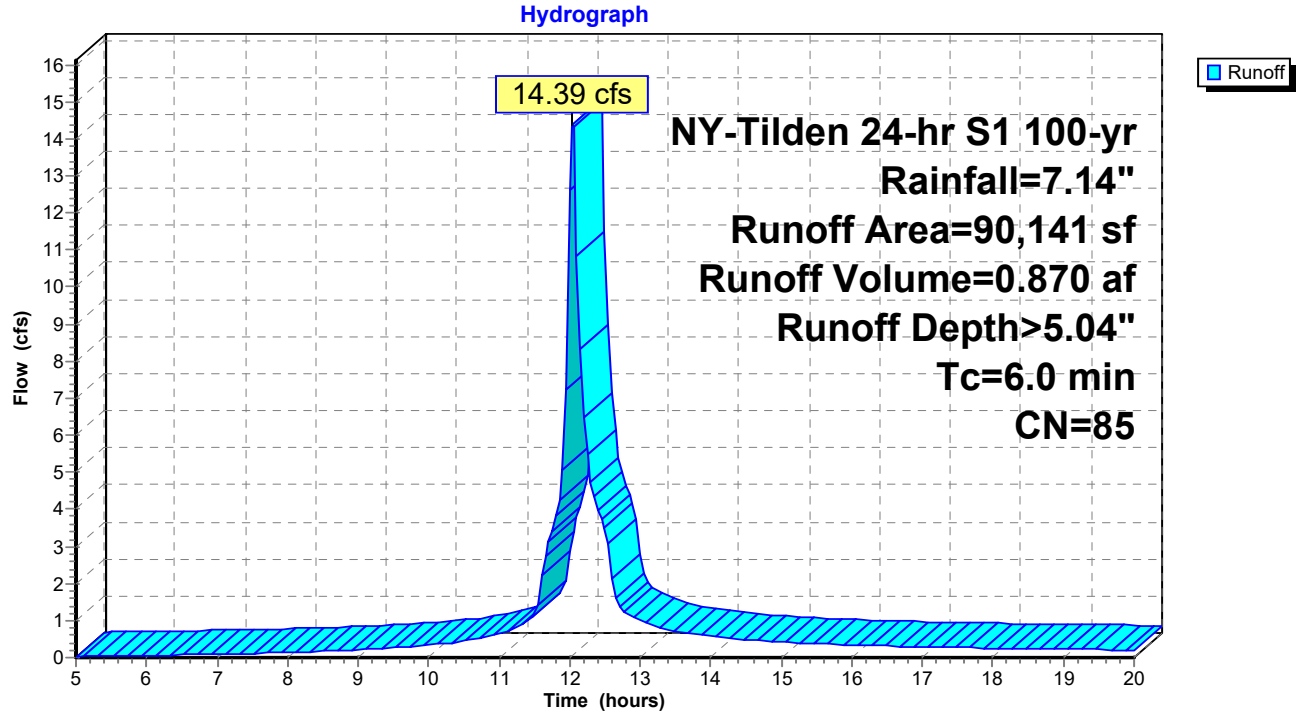
Runoff = 14.39 cfs @ 12.04 hrs, Volume= 0.870 af, Depth> 5.04"
Routed to Link 1L : Pre-Dev Design Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Tilden 24-hr S1 100-yr Rainfall=7.14"

	Area (sf)	CN	Description
*	46,902	98	Existing Impervious (On-Site)
*	10,889	98	Existing Impervious (Off-Site)
	32,350	61	>75% Grass cover, Good, HSG B
	90,141	85	Weighted Average
	32,350		35.89% Pervious Area
	57,791		64.11% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 0S: Existing 1



Summary for Subcatchment 00S: Existing 2

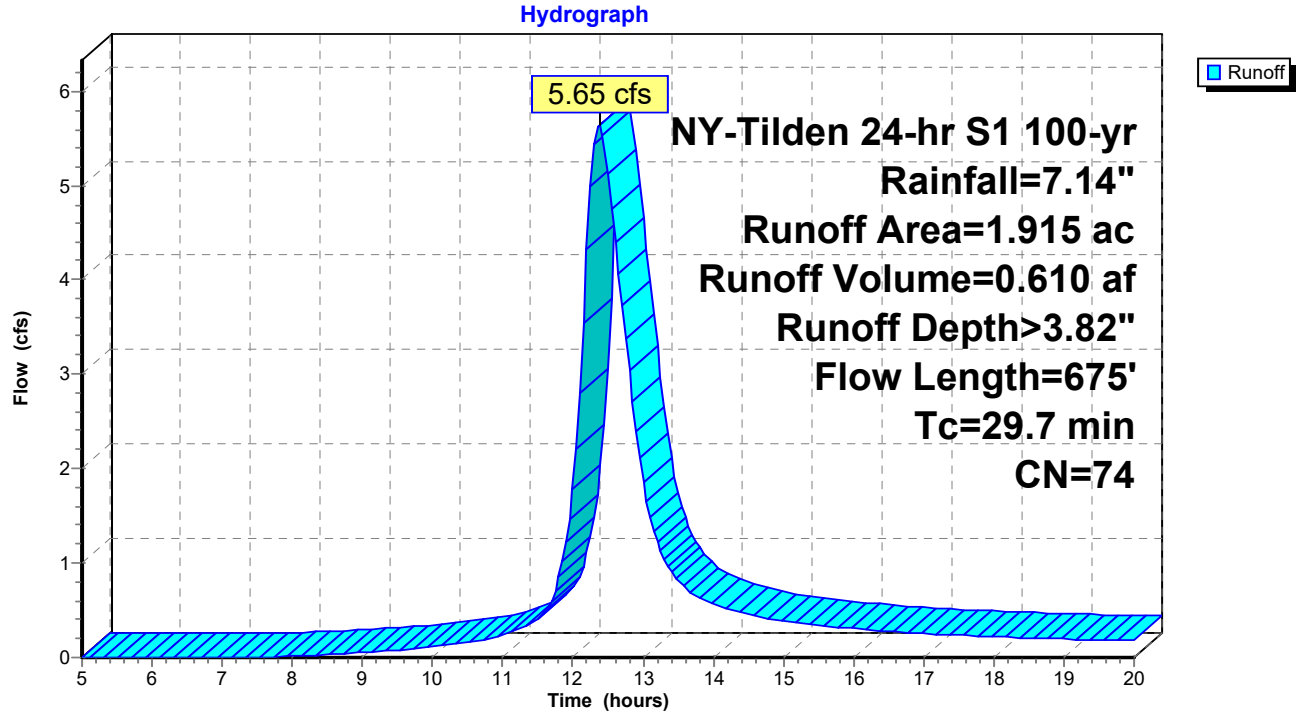
Runoff = 5.65 cfs @ 12.37 hrs, Volume= 0.610 af, Depth> 3.82"
Routed to Link 1L : Pre-Dev Design Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Tilden 24-hr S1 100-yr Rainfall=7.14"

	Area (ac)	CN	Description
*	0.049	98	Ex. Impervious (Off-Site)
*	0.105	98	Ex. Impervious (On-Site)
	1.198	79	<50% Grass cover, Poor, HSG B
	0.563	58	Woods/grass comb., Good, HSG B
	1.915	74	Weighted Average
	1.761		91.96% Pervious Area
	0.154		8.04% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
19.2	150	0.0100	0.13		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.78"
9.0	380	0.0100	0.70		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
1.5	145	0.0060	1.57		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
29.7	675	Total			

Subcatchment 00S: Existing 2



Summary for Subcatchment 1S: Post-Dev 1

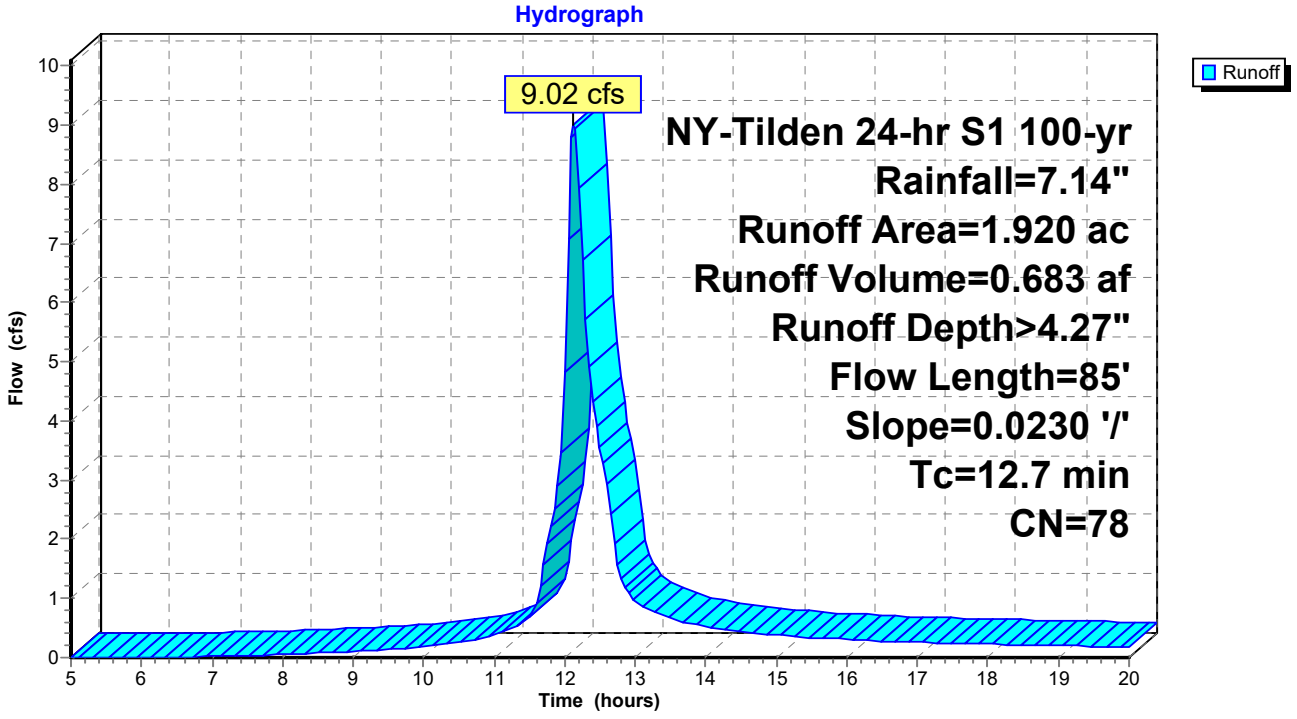
Runoff = 9.02 cfs @ 12.13 hrs, Volume= 0.683 af, Depth> 4.27"
Routed to Pond 3P : Infiltration Basin 1

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Tilden 24-hr S1 100-yr Rainfall=7.14"

	Area (ac)	CN	Description
*	0.870	98	Impervious
	1.050	61	>75% Grass cover, Good, HSG B
	1.920	78	Weighted Average
	1.050		54.69% Pervious Area
	0.870		45.31% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
12.7	85	0.0230	0.11		**Sheet Flow,** Grass: Dense n= 0.240 P2= 2.78"

Subcatchment 1S: Post-Dev 1



Summary for Subcatchment 5S: Post-Dev 2

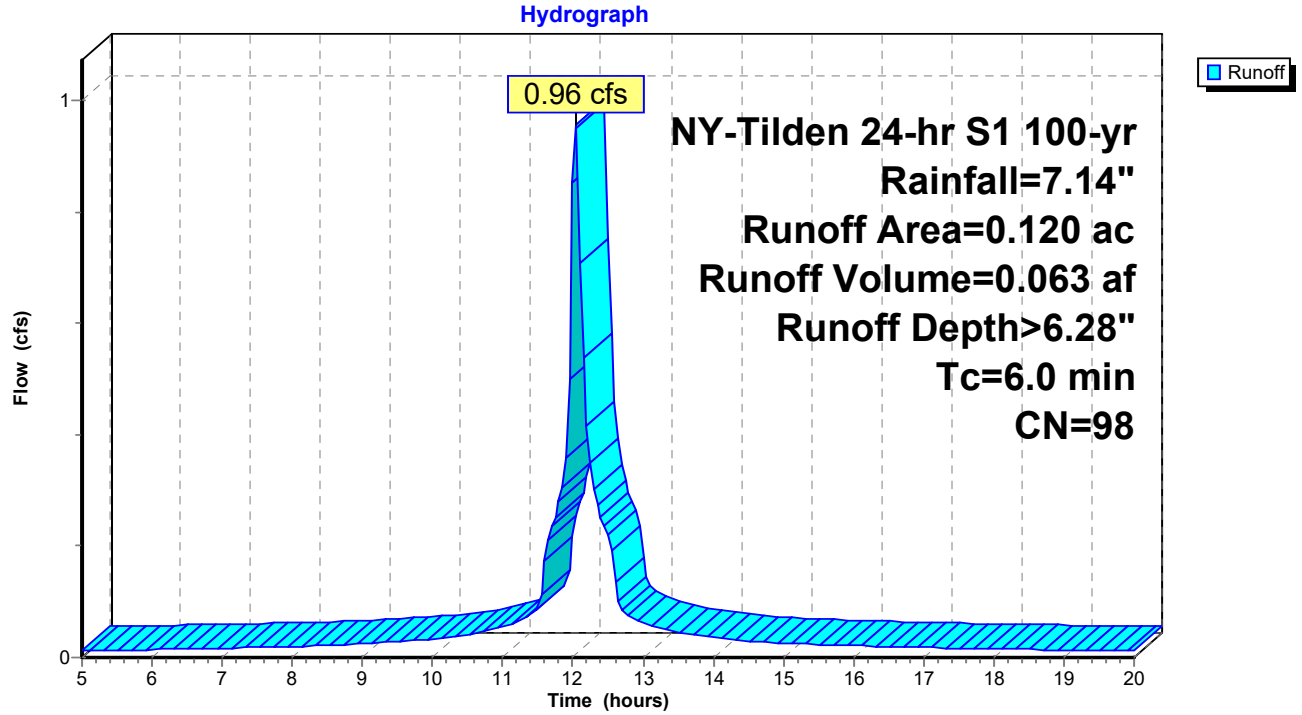
Runoff = 0.96 cfs @ 12.04 hrs, Volume= 0.063 af, Depth> 6.28"
Routed to Pond 5P : Infiltration Bioretention

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Tilden 24-hr S1 100-yr Rainfall=7.14"

	Area (ac)	CN	Description
*	0.120	98	Impervious
	0.120		100.00% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 5S: Post-Dev 2



Summary for Subcatchment 6S: Post-Dev 3

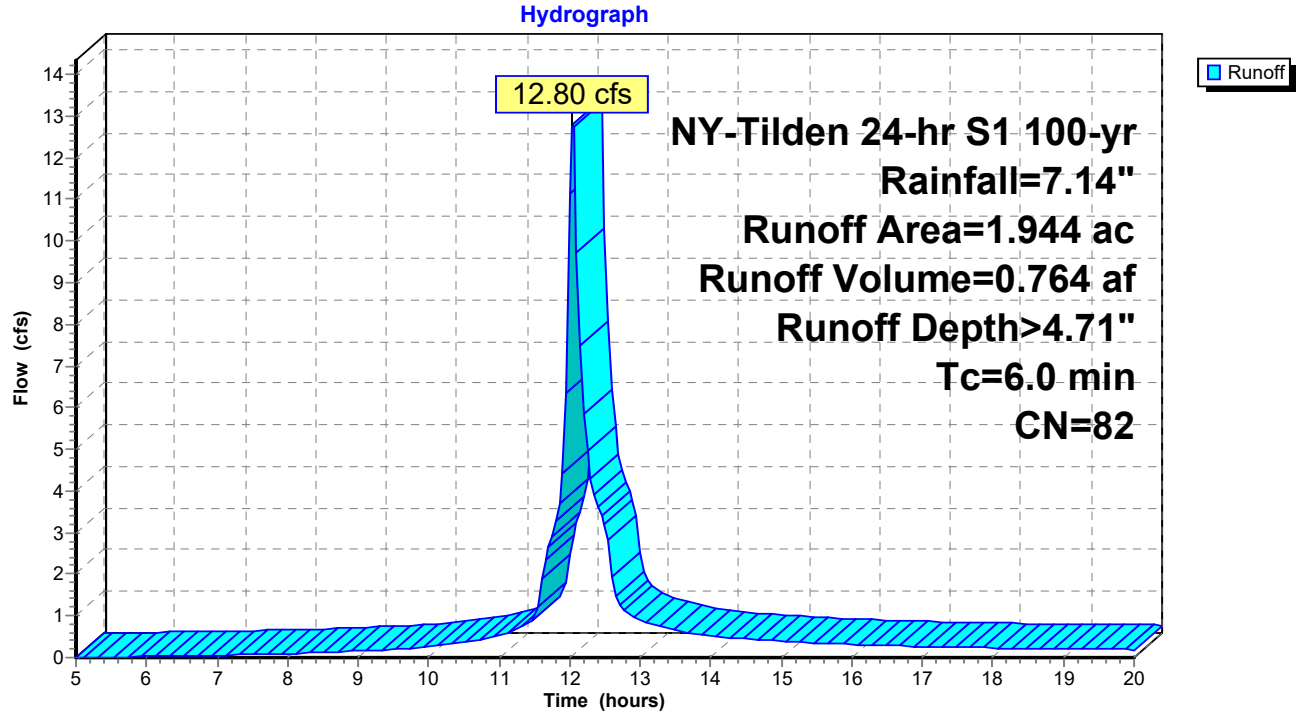
Runoff = 12.80 cfs @ 12.04 hrs, Volume= 0.764 af, Depth> 4.71"
Routed to Link 2L : Post-Dev Design Point

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
NY-Tilden 24-hr S1 100-yr Rainfall=7.14"

	Area (ac)	CN	Description
*	0.812	98	On-Site Impervious
*	0.288	98	Off-Site Impervious
	0.844	61	>75% Grass cover, Good, HSG B
	1.944	82	Weighted Average
	0.844		43.42% Pervious Area
	1.100		56.58% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.0					**Direct Entry,**

Subcatchment 6S: Post-Dev 3



Summary for Pond 3P: Infiltration Basin 1

Inflow Area = 1.920 ac, 45.31% Impervious, Inflow Depth > 4.27" for 100-yr event
Inflow = 9.02 cfs @ 12.13 hrs, Volume= 0.683 af
Outflow = 3.66 cfs @ 12.49 hrs, Volume= 0.658 af, Atten= 59%, Lag= 21.6 min
Discarded = 0.92 cfs @ 12.49 hrs, Volume= 0.523 af
Primary = 2.74 cfs @ 12.49 hrs, Volume= 0.135 af
Routed to Link 2L : Post-Dev Design Point

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 704.83' @ 12.49 hrs Surf.Area= 8,151 sf Storage= 11,002 cf

Plug-Flow detention time= 96.2 min calculated for 0.658 af (96% of inflow)
Center-of-Mass det. time= 81.8 min (863.1 - 781.3)

Volume	Invert	Avail.Storage	Storage Description
#1	703.00'	12,450 cf	**Custom Stage Data (Prismatic)** Listed below (Recalc)

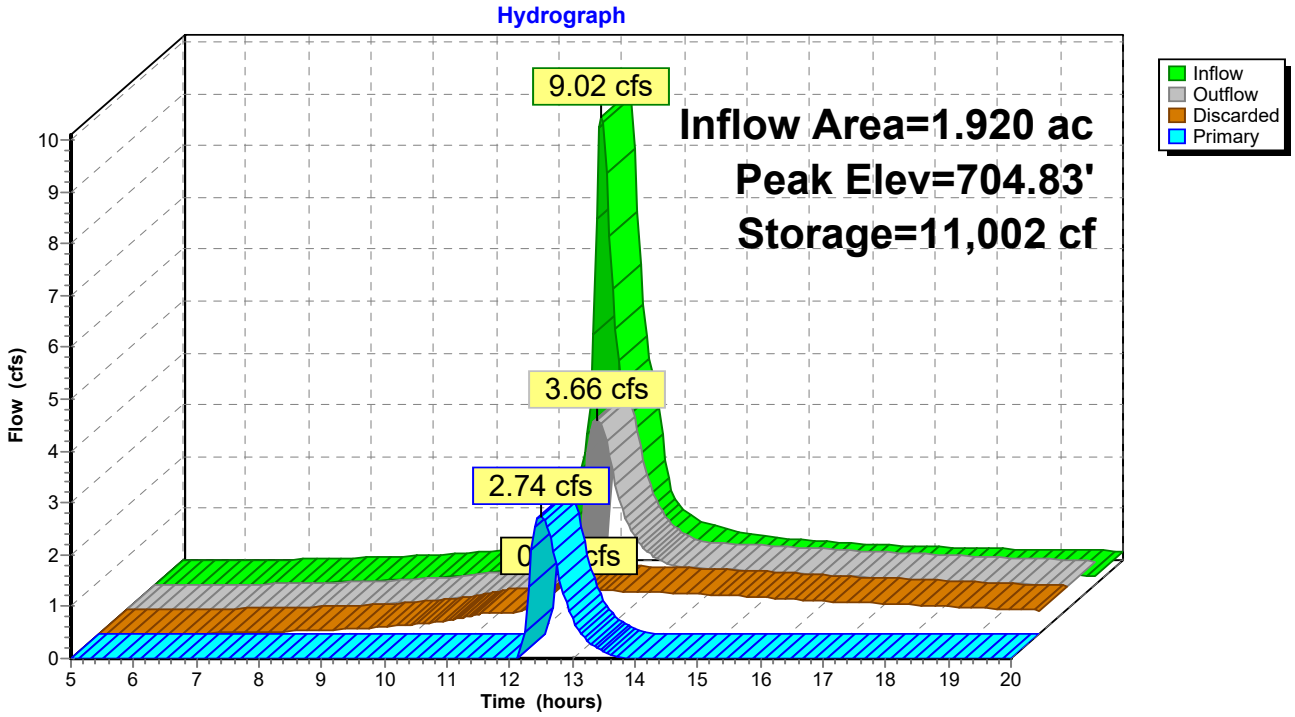
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
703.00	4,300	0	0
704.00	6,000	5,150	5,150
705.00	8,600	7,300	12,450

Device	Routing	Invert	Outlet Devices
#1	Discarded	703.00'	**4.000 in/hr Exfiltration over Surface area** Conductivity to Groundwater Elevation = 697.00'
#2	Primary	704.50'	**5.0' long + 3.0 '/' SideZ 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

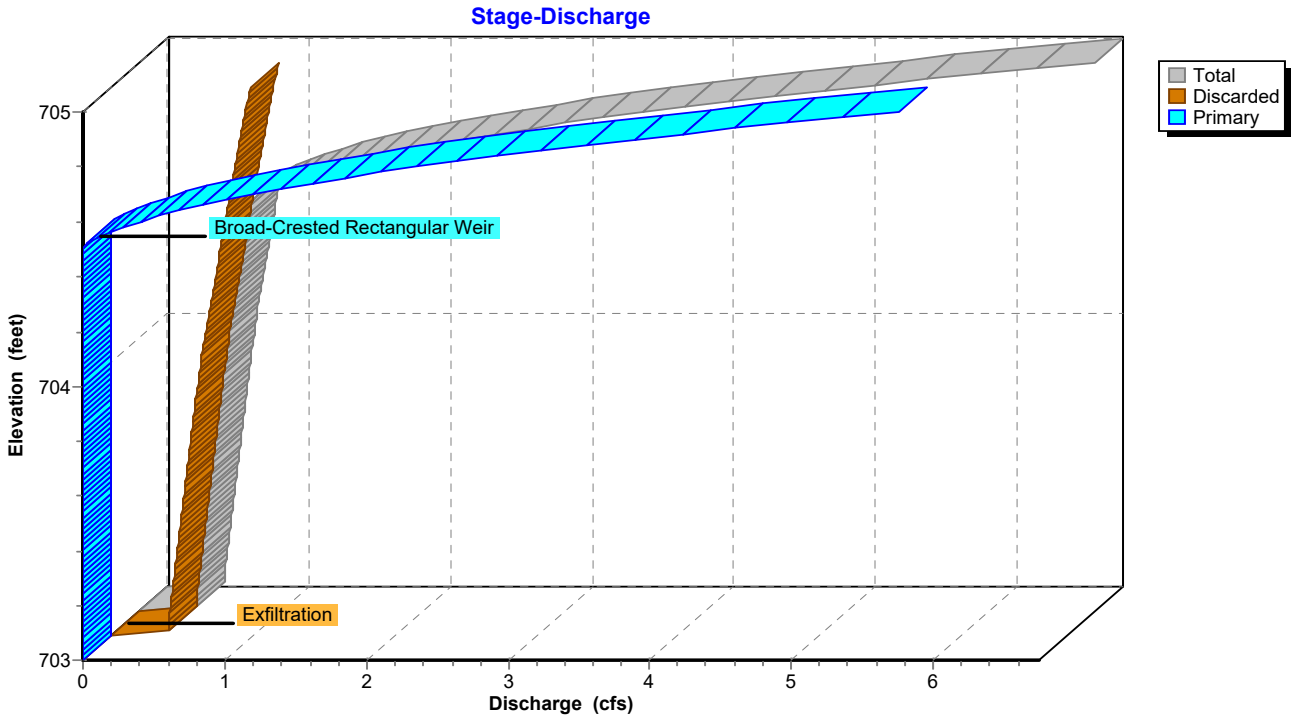
Discarded OutFlow Max=0.92 cfs @ 12.49 hrs HW=704.83' (Free Discharge)
↑—**1=Exfiltration** (Controls 0.92 cfs)

Primary OutFlow Max=2.73 cfs @ 12.49 hrs HW=704.83' (Free Discharge)
↑—**2=Broad-Crested Rectangular Weir** (Weir Controls 2.73 cfs @ 1.40 fps)

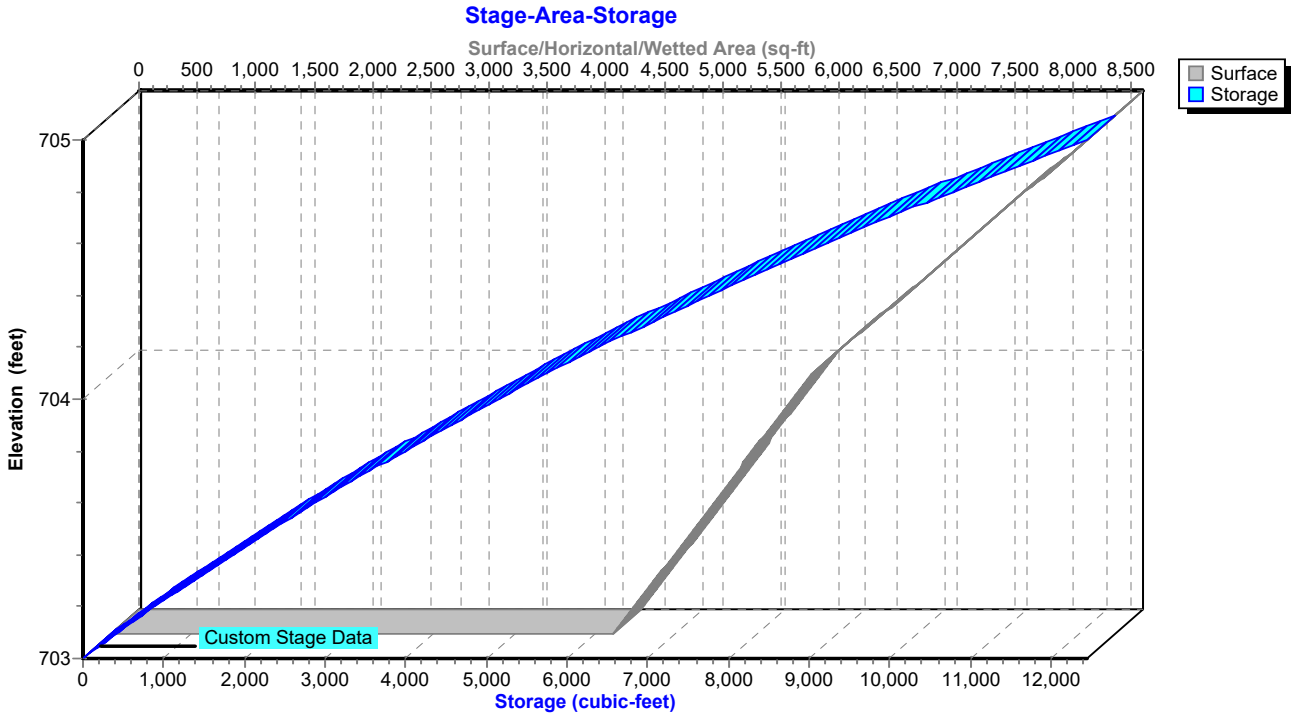
Pond 3P: Infiltration Basin 1



Pond 3P: Infiltration Basin 1



Pond 3P: Infiltration Basin 1



Summary for Pond 5P: Infiltration Bioretention

[82] Warning: Early inflow requires earlier time span

Inflow Area = 0.120 ac,100.00% Impervious, Inflow Depth > 6.28" for 100-yr event
Inflow = 0.96 cfs @ 12.04 hrs, Volume= 0.063 af
Outflow = 0.94 cfs @ 12.06 hrs, Volume= 0.058 af, Atten= 2%, Lag= 1.0 min
Discarded = 0.00 cfs @ 12.06 hrs, Volume= 0.002 af
Primary = 0.94 cfs @ 12.06 hrs, Volume= 0.056 af
Routed to Link 2L : Post-Dev Design Point

Routing by Stor-Ind method, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs
Peak Elev= 703.16' @ 12.06 hrs Surf.Area= 509 sf Storage= 278 cf

Plug-Flow detention time= 54.7 min calculated for 0.058 af (92% of inflow)
Center-of-Mass det. time= 27.0 min (759.8 - 732.8)

Volume	Invert	Avail.Storage	Storage Description
#1	702.50'	465 cf	**Custom Stage Data (Prismatic)**Listed below (Recalc)

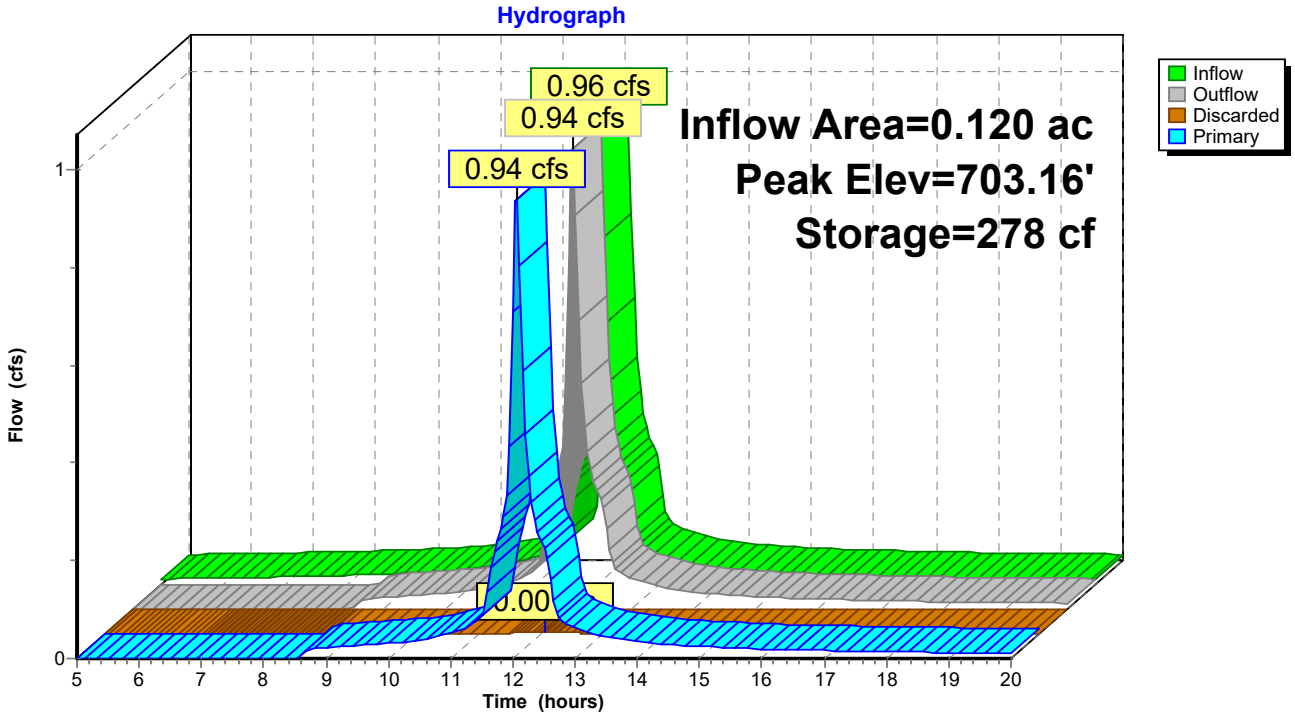
Elevation (feet)	Surf.Area (sq-ft)	Inc.Store (cubic-feet)	Cum.Store (cubic-feet)
702.50	330	0	0
703.50	600	465	465

Device	Routing	Invert	Outlet Devices
#1	Discarded	702.50'	**0.500 in/hr Exfiltration over Surface area above 702.50'** Conductivity to Groundwater Elevation = 698.00' Excluded Surface area = 330 sf
#2	Primary	703.00'	**5.0' long + 1.0 '/' SideZ x 0.5' breadth Broad-Crested Rectangular Weir** Head (feet) 0.20 0.40 0.60 0.80 1.00 Coef. (English) 2.80 2.92 3.08 3.30 3.32

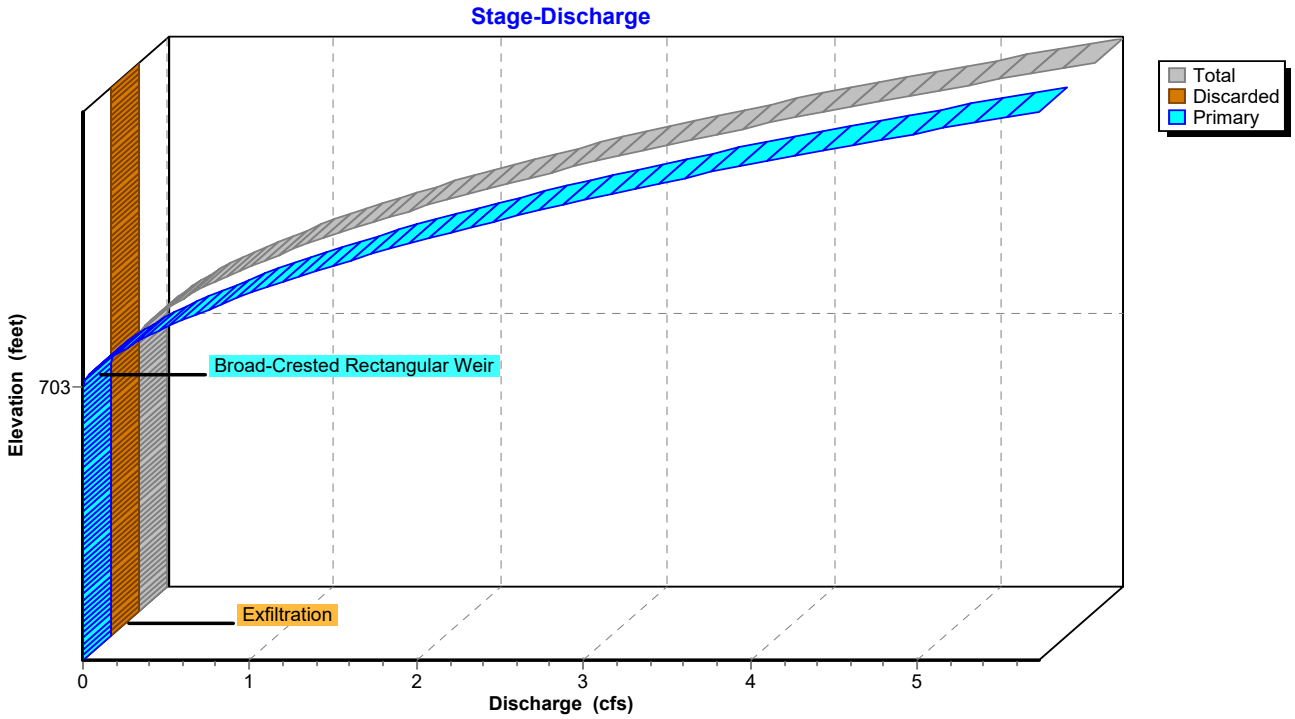
Discarded OutFlow Max=0.00 cfs @ 12.06 hrs HW=703.16' (Free Discharge)
1=Exfiltration (Controls 0.00 cfs)

Primary OutFlow Max=0.92 cfs @ 12.06 hrs HW=703.16' (Free Discharge)
2=Broad-Crested Rectangular Weir (Weir Controls 0.92 cfs @ 1.11 fps)

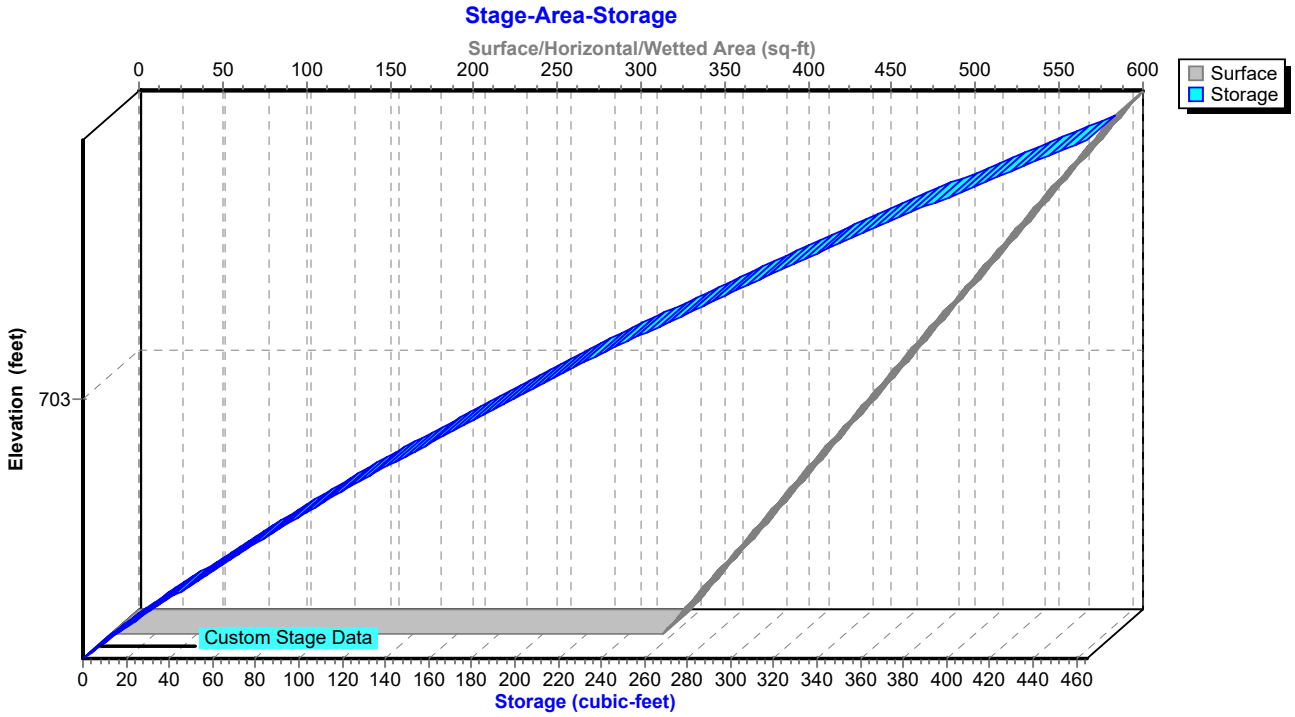
Pond 5P: Infiltration Bioretention



Pond 5P: Infiltration Bioretention



Pond 5P: Infiltration Bioretention

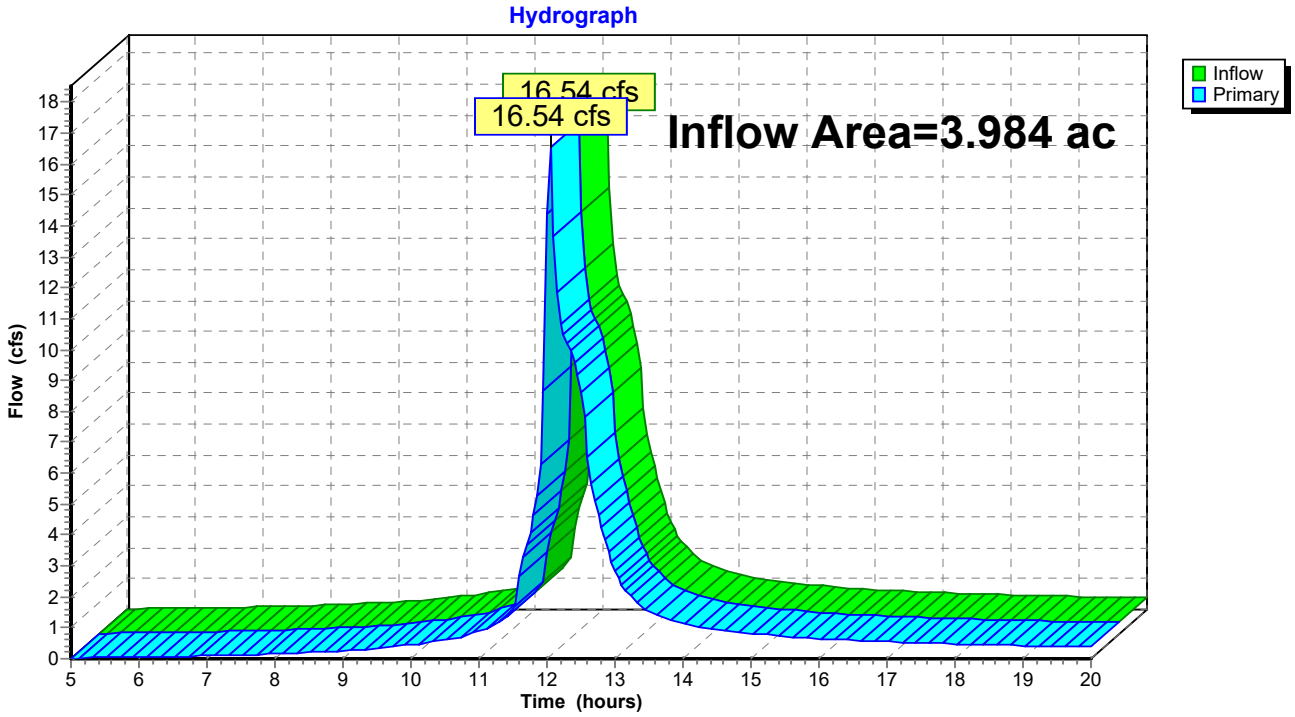


Summary for Link 1L: Pre-Dev Design Point

Inflow Area = 3.984 ac, 37.16% Impervious, Inflow Depth > 4.46" for 100-yr event
Inflow = 16.54 cfs @ 12.05 hrs, Volume= 1.480 af
Primary = 16.54 cfs @ 12.05 hrs, Volume= 1.480 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 1L: Pre-Dev Design Point

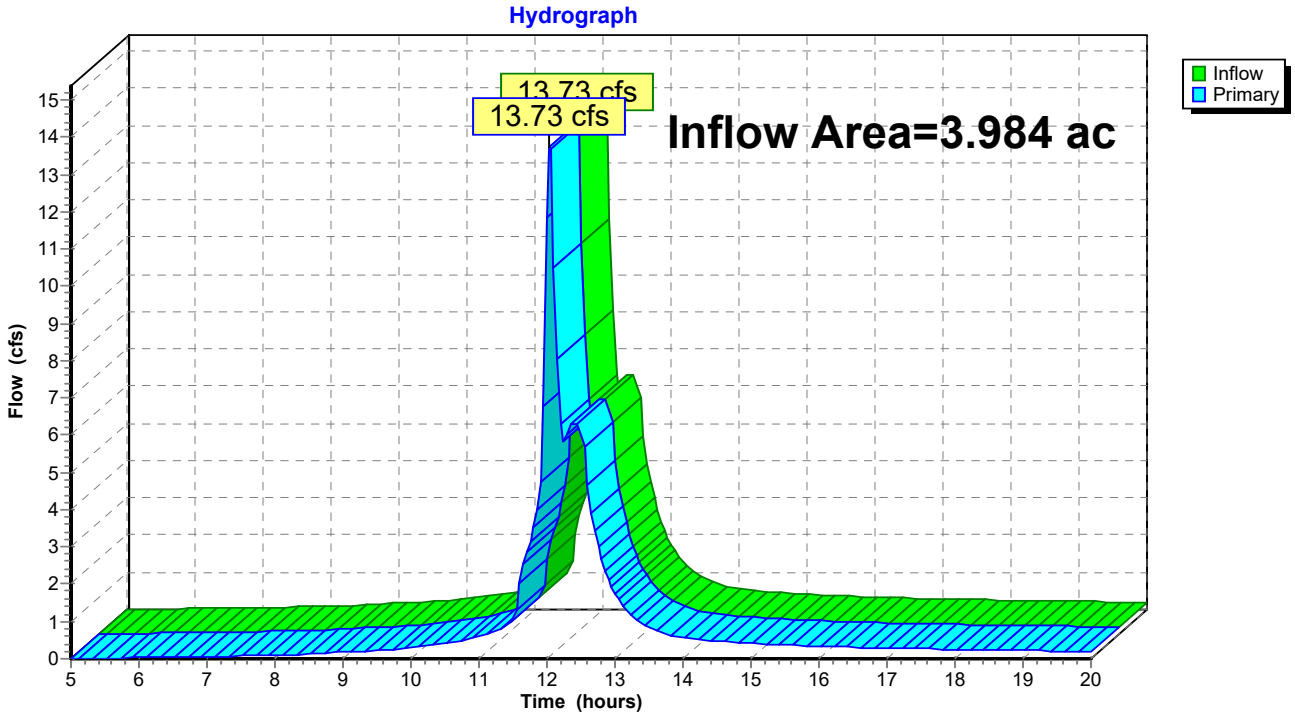


Summary for Link 2L: Post-Dev Design Point

Inflow Area = 3.984 ac, 52.46% Impervious, Inflow Depth > 2.88" for 100-yr event
Inflow = 13.73 cfs @ 12.04 hrs, Volume= 0.955 af
Primary = 13.73 cfs @ 12.04 hrs, Volume= 0.955 af, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 5.00-20.00 hrs, dt= 0.05 hrs

Link 2L: Post-Dev Design Point



Appendix 4.9

Operation and Maintenance Manual

LONG TERM OPERATION AND MAINTENANCE OF POST-CONSTRUCTION STORMWATER MANAGEMENT PRACITCES

Additional maintenance guidance can be found at the following:
dec.ny.gov/environmental-protection/water/water-quality/stormwater/construction-stormwater-toolbox

Swales

- Clean debris from channel and contributing area monthly and after major storm events.
- Mow as needed – monthly or less often.
- Remove sediment annually.

Infiltration Bioretention Basins

- Routine landscaping maintenance: weeding, mulching, thinning plants, replacing dead plants, watering. Re-mulch annually.
- Monthly and after major storm events, inspect the basin components, vegetation, and clean out debris.
- Annually and after major storm events, check sumps for evidence of sediment buildup and standing water, clean sediment from swale, check that the spillway is in good repair with no sign of erosion, and filter bed has not been blocked.
- Repair erosion on earthen berm as needed.

Infiltration Basins

- Routine landscaping maintenance: mowing and watering as required.
- Monthly and after major storm events, inspect the basin components, vegetation, and clean out debris.
- Annually and after major storm events, check for evidence of sediment buildup and standing water, clean sediment as req'd, check that the spillway is in good repair with no sign of erosion.
- Repair erosion on earthen berm as needed.

Outlet Structures

- Monthly and after major storm events, inspect catch basins, inlet pipes, and outlet pipes for sediment and debris.
- Clean all debris and remove sediment when it accumulates to 6" of depth.
- Remove sediment manually or with a vacuum truck.

Outfalls

- Inspect yearly and after major storm events.
- Repair erosion as needed.
- Replace stone outfall material as needed.

Disposal

- Disposal of all material removed from all practices shall be done in accordance with local regulations.

Soil Restoration Maintenance:

- First year maintenance operations includes:
  1. Initial inspections for the first six months (once after each storm greater than half-inch)
  2. Reseeding to repair bare or eroding areas to assure grass stabilization
  3. Water once every three days for first month, and then provide a half inch of water per week during first year. irrigation plan may be adjusted according to the rain event.
  4. Fertilization may be needed in the fall after the first growing season to increase plant vigor
  5. Keep site free of vehicular and foot traffic or other weight loads.