



STORMWATER POLLUTION PREVENTION PLAN FOR CONSTRUCTION ACTIVITIES

MALDEN TURNPIKE (CR 34) OVER MAINLINE NYS THRUWAY (MP 103.16) BRIDGE REHABILITATION

**TOWN OF SAUGERTIES
ULSTER COUNTY, NEW YORK**

**NEW YORK STATE DEPARTMENT
OF ENVIRONMENTAL CONSERVATION**

**SPDES GENERAL PERMIT FOR
CONSTRUCTION ACTIVITIES #GP-0-25-001**

Prepared for:

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DRAWINGS

FIGURE 1	SITE LOCATION MAP
SHEETS ECP-01 - ECP-04	EROSION CONTROL PLAN
SHEETS SMP-01 - SMP- 04	STORMWATER TREATMENT PLAN
SHEETS MSD-01; SMD-01	DETAILS

APPENDICES

APPENDIX A	NOTICE OF INTENT (NOI)
APPENDIX B	ENDANGERED AND THREATENED SPECIES, HISTORIC AND ARCHAEOLOGICAL DOCUMENTATION
APPENDIX C	NOTICE OF TERMINATION (NOT)
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1.0 EXECUTIVE SUMMARY

This Stormwater Pollution Prevention Plan (SWPPP) has been developed in accordance with the New York State Pollution Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activities GP-0-25-001.

This SWPPP considers stormwater management, stormwater pollution prevention, and erosion and sediment control measures necessary during and after construction is complete. Stormwater pollution prevention measures and stormwater management measures have been designed in accordance with the New York State Department of Environmental Conservation (NYSDEC) *New York State Stormwater Management Design Manual*, dated January 2024. All erosion and sediment control measures and stormwater management structures/practices to be implemented on-site have been developed in conformance with Federal and State guidelines.

The SWPPP and plans identify and detail the temporary and permanent erosion and sediment control measures that will be implemented during and after construction is complete. In addition, the SWPPP will show the construction scheduling for implementing the erosion and sediment control measures.

A copy of the SWPPP will be maintained on file with New York State Thruway Authority Office of Transportation Planning and Environmental Services.

In addition, a copy of the plan, as well as a signed and dated copy of the NYSDEC Notice of Intent (NOI) form will be maintained on-site at all times until construction has been completed.

All copies of the SWPPP will be updated, as necessary, to ensure adequate protection of water bodies and wetlands. The plan will remain in effect until all stormwater discharges associated with construction activities have been eliminated, the entire site has undergone final stabilization, and a Notice of Termination (NOT) has been filed with the NYSDEC.

The SWPPP will be amended and/or updated:

- a. whenever the current provisions prove to be ineffective in minimizing *pollutants* in stormwater *discharges* from the site;
- b. whenever there is a change in design, construction, or operation at the *construction site* that has or could have an effect on the *discharge* of *pollutants*;
- c. to address issues or deficiencies identified during an inspection by the *qualified inspector [or trained contractor]*, the Department or other regulatory authority and;
- d. to document the final construction conditions.



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Each of the contractors and subcontractors responsible for installing, constructing, repairing, replacing, inspecting and maintaining the erosion and sediment control practices outlined in this SWPPP must identify at least one person from their company that will be responsible for implementation of the SWPPP. Each of those persons will be known as a *trained contractor*. The contractor/owner shall ensure that one *trained contractor* is on site on a daily basis when soil disturbance activities are being performed. Each of the *trained contractors* shall sign the statement in Section 2.0 below.

Additionally, a *qualified inspector* shall conduct site inspections following the commencement of construction at least once every 7 calendar days and after every storm that generates runoff.



2.0 CERTIFICATIONS

2.1 NOTICE OF INTENT (NOI)

The owner/operator certification of the Notice of Intent (NOI) can be found in Appendix A.

2.2 SITE CONTRACTOR AND SUB-CONTRACTORS

"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."

Site Contractor

Name	_____
Signature	_____
Title	_____
Date	_____
Address	_____ _____ _____
Telephone	_____



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Sub-Contractor (1)

Name _____
Signature _____
Title _____
Date _____
Address _____
Telephone _____

Sub-Contractor (2)

Name _____
Signature _____
Title _____
Date _____
Address _____
Telephone _____



3.0 INTRODUCTION

3.1 PROJECT DESCRIPTION

The project includes the replacement of the bridge carrying Malden Turnpike (CR 32) over NYS Thruway Mainline (I-87) in the Town of Saugerties, Ulster County, New York. Work will include the replacement of the substructure and superstructure, increasing the vertical clearance of the feature crossed and increasing the width of the bridge to accommodate larger shoulders per NYSTA standards.

Additional work related to the replacement of the bridge will include minor pavement repairs and restoration as needed on the NYS Thruway Mainline in the vicinity of the bridge. The proposed design will allow for one eastbound and one westbound travel lane with paved shoulders for bicycle use, pedestrian use, and/or snow storage.

The total project area is approximately 4.6 acres with an approximate proposed limits of disturbance of 3.1 acres. Access to the project area will be provided by Malden Turnpike (CR 32), NYS Route 9W, and NYS Route 212. The proposed soil disturbance and site layout is shown on the Erosion Control Plan (Sheets ECP-01, ECP-02, ECP-03 and ECP-04.) Stormwater treatment plans are included as Sheets SMP-01, SMP-02, SMP-03 & SMP-04.

3.2 CONSTRUCTION DATES

Construction is anticipated to begin in Spring 2026 and last through the fall.

3.3 ENDANGERED AND THREATENED SPECIES

The USFWS was contacted to determine the potential for occurrence of endangered, threatened, or rare species, as well as significant habitats within or adjacent to the project area. Correspondence from the USFWS dated March 13, 2024, indicates the potential presence of three species within or adjacent to the project area: the endangered Indiana bat (*Myotis sodalist*) the endangered northern long-eared bat (*Myotis septentrionalis*), and the candidate species monarch butterfly (*Danaus plexippus*). None of these species have critical habitat within the project area.

The USFWS has performed up-front analysis for certain project types, agencies, and species. This analysis has been compiled in determination keys, a simple interview process to arrive at a recommended determination. Based on the scope of work for this bridge replacement project, the effect to the northern long-eared bat may rely on the concurrence provided in the Revised February 2018 FHWA, FRA, FTA Programmatic Biological Opinion (PBO) for Transportation Projects in the range of the Indiana bat and northern long-eared bat to satisfy requirements under Section 7(a)(2) of the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.). The bridge project is within the scope, and will



adhere to the criteria of the PBO, including the adoption of applicable avoidance and minimization measures, and will have no effect on the endangered Indiana bat and northern long-eared bat.

In addition, according to the NYSDEC Environmental Resource Mapper (ERM) and correspondence from the NYNHP, there are no records of state listed threatened or endangered species at the project location. In addition, the project location is not in the vicinity of state listed threatened or endangered species.

Hunt Engineers, Architects, Land Surveyors & Landscape Architect (HUNT) facilitated a habitat availability survey for the Indiana bat, northern long-eared bat, and monarch butterfly on March 28, 2024, for the project area. The species were not identified on-site during the March 28, 2024, inspection. There are no roost trees identified within the project area or directly adjacent to the project area. The bridge offers potential roosting habitat. As such, a bridge/structure bat survey was conducted on March 28, 2024. No evidence of bat activity was observed within the Subject Property during the survey. The presence of milkweed, the host species for the monarch butterfly, was not found within the Subject Property and no monarch butterflies were observed during the site inspection.

In summary, the project is not anticipated to impact any of the species or natural communities identified by the USFWS and NYNHP, provided that all applicable permits and/or approvals are received and followed accordingly. Additionally, appropriate stormwater management practices will be implemented and enforced, and any ground disturbance associated with the roadway improvements will be contained within the road right-of-way in previously disturbed areas or as described by the accepted design.

3.4 HISTORIC PLACES AND ARCHAEOLOGICAL RESOURCES

The New York State Historic Preservation Office (SHPO) reviewed the project in accordance with the New York State Historic Preservation Act of 1980 (Section 14.09 of the New York Parks, Recreation and Historic Preservation Law) and concurred that No Historic Properties will be impacted by the proposed undertaking. See Appendix B for a copy of the OPRHP Section 14.09 effect determination letter, dated May 13, 2025.

4.0 SOIL CONDITIONS

The hydrologic soil characteristics of the on-site watershed are derived from the USDA Web Soil Survey. The on-site soils are Madalin silty clay loam (Ma) and Rhinebeck silt loam, 0 to 3 percent slopes. The hydrologic soil group of both soils is C/D. A USDA Soil Report is included as Appendix D.

The Soil Conservation Service defines the hydrologic soil groups as follows:

- **Type A Soils:** Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravel sands. These soils have a moderate rate of water transmission.



- Type B Soils: Soils having a moderate infiltration rate when thoroughly wet. These consist mainly of moderately deep to deep, moderately well to well drained soils with moderately fine to moderately coarse textures.
- Type C Soils: Soils having a low infiltration rate when thoroughly wet. These consist chiefly of soils with a layer that impedes downward movement of water and soils with moderately fine-to-fine texture. These soils have a low rate of water transmission.
- Type D Soils: Soils having a very low infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have high shrink-swell potential, soils that have a permanent high water table, soils that have a clay pan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a slow rate of water transmission.

5.0 EROSION AND SEDIMENT CONTROL

5.1 GENERAL

This SWPPP and associated plans identify and detail the temporary erosion and sediment control measures that will be implemented during construction and after the project is completed. In addition, this SWPPP outlines a construction schedule for implementing the erosion and sediment control measures.

A copy of the SWPPP will be maintained on file with the property owner. In addition, a copy of the plan, as well as a signed and dated copy of the NYSDEC Notice of Intent (NOI) form (Appendix A), will be maintained on-site at all times until construction has been completed.

All copies of the SWPPP will be updated, as necessary, to ensure adequate protection of receiving water bodies. The plan will remain in effect until all stormwater discharges associated with construction activities have been eliminated, the entire site has undergone final stabilization, and a Notice of Termination (Appendix C) has been filed with the NYSDEC.

The contractor/owner will have a qualified inspector conduct site inspections prior to construction, following the commencement of construction at least every 7 calendar days, and following any storm event that generates runoff.

Drainage System

To address the minor increase in impervious surface due to the widening of the bridge, the project will enhance existing drainage conditions through the implementation of stormwater management practices. Onsite dry swales with integrated check dams will be used to capture, treat, and convey stormwater runoff from the road



and bridge location. Two swales situated southwest and northeast of the bridge have been designed to accomplish this. Underdrains beneath the swales will convey water ultimately to a tributary of the Sawyer Kill. The southwest swale will outlet to an existing culvert which flows to the outlet location of the northeast swale, where it is ultimately conveyed through existing pipes to the tributary.

Check dams will be strategically placed along the swales to slow runoff, enhance sediment settling, and promote infiltration. The overall system combines settling, filtration, and vegetation to treat runoff, while also reducing peak flow rates. Implementation of the proposed system will thereby reduce total suspended solids, minimize nutrient loads, and control flow rates. The locations of each stormwater management practice (i.e., dry swales and check dams) are provided in the attached drawings (see *Stormwater Treatment Plan*, Sheets SMP-01, SMP-02, SMP-03 & SMP-04.)

5.2 METHODOLOGY

5.2.1 General

Erosion and sediment control measures have been incorporated into the design of the project (see Sheets ECP-01, ECP-02, ECP-03 & ECP-04). These measures will be implemented during construction to minimize soil erosion and control sediment transport off-site. This SWPPP and associated plans and details include limitations on the duration of soil exposure, criteria and specifications for placement and installation of the erosion control measures, a maintenance schedule, and specifications for the implementation of erosion and sediment control practices and procedures.

The construction site will have a designated concrete washout on the site. The concrete washout will be appropriate for the site and work to be done. All concrete trucks must washout at the construction site that it delivered to, it cannot washout at a different location.

Erosion control measures, designed to minimize soil loss, and sediment control measures, devised to retain eroded soil and prevent it from reaching water bodies or adjoining properties, have been developed in accordance with the following documents:

- *New York State Standards and Specifications for Erosion and Sediment Control*, November 2016
- *NYSDEC SPDES General Permit for Stormwater Discharges from Construction Activity*, GP-0-25-001

5.2.2 Objectives

The goals set forth in the erosion and sediment control plan are two-fold. The first objective will be to control erosion by minimizing the opportunity for soil to be transported by wind, rainfall, or run-off. This goal will be met by disturbing less than five acres of land at any one time. Additionally, areas undergoing clearing



and/or grading and where work has been delayed and/or completed and will not be re-disturbed for a period of 21 days or more will be stabilized with temporary or permanent vegetative cover within 14 days.

Secondly, the erosion and sediment control measures will be incorporated into the design drawings to contain and trap sediment as close as possible to its place of origin and prevent it from reaching any off-site watercourses and/or other lands. This objective will be met by installing the recommended erosion and sediment control structures prior to the initiation of construction and maintaining the protective measures during construction.

5.2.3 Types of Temporary Erosion Control Structures

The erosion and sediment control measures needed for the construction phase of this project have been designed in accordance with the New York State Standards and Specifications for Erosion and Sediment Control. All temporary controls will be field located as approved by the construction engineer.

During construction of the project, extensive erosion and sediment control consisting of vegetative and structural measures will be implemented. Among the techniques to be utilized are:

5.2.3.1 Silt Fencing

Prior to the initiation of construction, silt fencing will be installed as shown on the plans and in areas deemed necessary to reduce run-off velocity and intercept sediment-laden run-off.

5.2.3.2 Temporary Seeding

Temporary seeding may be used in disturbed areas to minimize erosion and sediment loss. Any disturbed area that will not be re-disturbed for 21 days or more will be stabilized by the 14th day after the last disturbance.

5.2.3.3 Dust Control

Construction operations will be scheduled in order to minimize the amount of disturbed areas at any one time during the course of work. Existing vegetation will be preserved wherever possible and temporary soil stabilization practices, such as mulching, seeding, and spraying (water), will be utilized to control dust.

5.2.3.4 Staging Areas

Materials, such as aggregate, will be temporarily stockpiled on the site during the construction process. Stockpiles will be located in a designated area away from storm drainage and will be properly protected from erosion by a surrounding silt fence barrier or curbing. Stockpiles will be covered when not active (i.e., at the end of each workday.) A separate area will be designated for equipment staging used by the subcontractor. All of these areas are to be equipped with appropriate controls.

5.2.4 Pre- and Post-Development Discussion



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HydroCAD analyses have been completed for the pre- and post-development conditions to assess, manage and mitigate stormwater. Copies of the reports are included in Appendix H and a runoff flow rate summary table is provided below.

Storm Event Frequency	Existing Outfall Flow Rate (cfs)	Proposed Outfall Flow Rate (cfs)	Off-Site Flow Rate Reduction
1-Year	7.65	6.88	10.1%
10-Year	19.44	18.04	7.2%
50-Year	29.11	27.28	6.3%
100-Year	33.58	31.57	6.0%

As shown by the summary table above, the off-site flow rate is reduced for all storm events as a result of the proposed stormwater management techniques previously discussed. The pre- and post-development runoff calculations and additional supporting information is included in Appendix H.

The total Water Quality Volume (WQv) required is 0.044 acre-feet and the Minimum Runoff Reduction (RRv) required is 382.2 cf. Although the total WQv provided is 0.041 acre-feet and does not meet the required WQv, the sum of the Runoff Reduction Volume (RRv) and the WQv provided is 0.051 acre-feet, which is greater than the minimum WQv required. The RRv provided by the dry swales is 442 cf, which is greater than the minimum RRv required. The WQv and RRv calculations are provided in Appendix H.

5.3 CONSTRUCTION SCHEDULE

Construction activities will be scheduled in such a manner as to minimize the impacts that runoff encountering the construction areas will have on receiving waters both on and off-site. The disturbed-construction area will be kept at or below five acres in size at all times to minimize the potential for impacts during construction.

In order to minimize the impacts of stormwater runoff, a construction sequencing schedule has been prepared and follows the sequence below for installation of erosion control measures.

- Pre-construction Actions

Before construction, important trees and associated rooting zones and vegetation suitable for filter strips will be evaluated, marked, and protected, especially in perimeter areas.

- Construction Access



Construction entrances/exits already exist. The Staging Area will be defined and silt fence installed where there are no curbs.

- Sediment Barriers

Silt fences will be installed per the details provided on the attached plan sheets.

- Maintenance

Routine maintenance activities include minor pavement repairs and restoration as needed on the NYS Thruway Mainline in the vicinity of the bridge.

- Final stabilization

Stockpile areas will be returned to pre-construction conditions. Seeding will be applied to all disturbed unpaved areas within the limits of disturbance. Upon site stabilization reaching 80%, temporary erosion and sediment control devices will be removed.

5.4 CONSTRUCTION PHASE POLLUTION PREVENTION MEASURES

5.4.1 Litter and Construction Debris

Construction debris will be contained in the construction area. The silt fence will control the movement of litter outside of the construction area. All grubbing and clearing residue, demolished material, rubbish, and debris generated will be hauled off-site by the Contractor.

5.4.2 Construction Materials, Waste Materials, and Storage Areas

Construction and waste materials will be confined to the staging and stockpile areas as well as concrete washout areas. The designated concrete washout area will collect and retain all the concrete washout water and solids in leak-proof containment, so that the material does not reach soil, surface waters or groundwaters. If the concrete washout materials cannot be recycled or re-used, it will be disposed of properly, in accordance with all local, state, and federal regulations.

6.0 SPILLS AND RELEASES

Areas where potential spills and leaks can contribute to pollutants in stormwater discharges and drainage points from this facility include locations where heavy equipment and vehicles are used or fueled and parking areas.

6.1 SPILL PREVENTION AND RESPONSE PROCEDURES



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Spill Prevention and Response procedures will be used to minimize the potential for leaks, spills and other releases from entering any body of water. Good housekeeping and preventative maintenance practices will also help prevent spills before they occur.

Prevention:

- Plainly label containers that could be susceptible to spillage or leakage and encourage proper handling;
- When possible use barriers between material storage and traffic areas, secondary containment provisions, and procedures for material storage and handling;
- Have necessary spill response equipment available; expeditiously stopping, containing, and cleaning up leaks, spills, and other releases; and
- Onsite contractor will evaluate the spill and spill response activities to make recommendations or plan updates to prevent any recurrence of the same type of spill.
- No unnecessary storage of petroleum products.

Response Procedures:

1. *Notify SWPPP Coordinator/Contractor and the Fire Department.*
2. *Assess the situation:* Determine whether ignition sources or other safety issues exist. If a fire potential or life-threatening situation exists, evacuate the area and immediately notify a SWPPP Coordinator who should contact the appropriate emergency personnel. If a fire or life-threatening situation exists, await instruction from emergency crews—do not attempt to stop or contain the spill unless instructed by emergency crew to assist.
3. *Stop the flow:* Take measures (i.e., turn off pumps, close valves, etc.) to reduce the flow.
4. *Contain the spill:* Prevent discharges from reaching drainage or watercourses. Examine containment system, if applicable, for integrity. Contain localized spills with absorbent materials. Construct temporary earthen berms, dikes, channels, or impoundment areas where appropriate. If a release threatens to enter storm water catch basins, perform emergency catch basin shutdown procedures by using drain covers or by constructing a berm around the catch basin using absorbent booms.
5. *Clean up the spill:* Use enough absorbent to soak up the spilled liquid. If spilled liquid is flammable, use non-sparking shovels to prevent ignition. Scoop up spent absorbent and place in the proper waste container. Properly label waste container if material is flammable and combustible.



6. *Notification to the proper authorities* (i.e., NYSDEC) will be made and reportable spills of a hazardous substance must be reported to the NYSDEC hotline (1-800-457-7362) within two hours of the release.
7. *Document spill* and retain with SWPPP.

General Spills and Clean-Up:

- Residue or materials resulting from the clean-up will be properly disposed and the results documented;
- Liquid spill area to be contained using spill kit absorbents and the results documented. In the event of a large spill a local spill contractor will be contacted; and
- Clean up leaks, drips, and other spills without using large amounts of water. Use absorbents for dry cleanup whenever possible.

7.0 OPERATION AND MAINTENANCE

A pre-construction site assessment checklist (Appendix E) will be conducted prior to installation of erosion and sediment control measures.

All erosion control measures employed will be inspected on a regular basis (see Section 6.2) to confirm the stability and effectiveness of all protective measures and practices during and after construction.

7.1 PRE-CONSTRUCTION INSPECTION AND MAINTENANCE

Prior to the commencement of construction, a qualified inspector will conduct an assessment of the site and certify that the appropriate erosion and sediment control structures have been adequately installed and implemented (Appendix E). The contractor shall contact the qualified inspector once the erosion and sediment control structures have been installed.

7.2 INSPECTION AND MAINTENANCE DURING CONSTRUCTION

Either at the beginning or at the end of each working day, all damages to erosion control measures will be repaired. Routine inspections will include a visual check of all erosion and sediment control measures.

To ensure the stability and effectiveness of all protective measures and practices during construction, all erosion control measures employed will be inspected by the contractor daily and by a qualified inspector at least every 7 calendar days and within 24 hours of any storm event producing 0.5 inches of precipitation or more. Erosion control measures will be repaired and maintained as necessary by the contractor.

At a minimum, the inspector shall inspect all erosion and sediment control practices and pollution prevention measures to ensure integrity and effectiveness, all post-construction stormwater management practices under



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construction to ensure that they are constructed in conformance with the SWPPP, all areas of disturbance that have not achieved final stabilization, all points of discharge to natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site, and all points of discharge from the construction site.

The inspections will be recorded on the Inspection Form in Appendix F. Specifically, each inspection shall record the following information:

- Date and time of inspection;
- Name and title of person(s) performing inspection;
- A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection;
- A description of the condition of the runoff at all points of discharge from the construction site. This shall include identification of any discharges of sediment from the construction site. Include discharges from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow;
- A description of the condition of all natural surface waterbodies located within, or immediately adjacent to, the property boundaries of the construction site which receive runoff from disturbed areas. This shall include identification of any discharges of sediment to the surface waterbody;
- Identification of all erosion and sediment control practices and pollution prevention measures that need repair or maintenance;
- Identification of all erosion and sediment control practices and pollution prevention measures that were not installed properly or are not functioning as designed and need to be reinstalled or replaced;
- Description and sketch of areas with active soil disturbance activity, areas that have been disturbed but are inactive at the time of the inspection, and areas that have been stabilized (temporary and/or final) since the last inspection;
- Current phase of construction of all post-construction stormwater management practices and identification of all construction that is not in conformance with the SWPPP, its addendum and technical standards;
- Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices and pollution prevention measures; and to correct deficiencies identified with the construction of the post-construction stormwater management practice(s);
- Identification and status of all corrective actions that were required by previous inspection; and
- Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The qualified inspector shall attach paper color copies of the



digital photographs to the inspection report being maintained on-site within seven (7) calendar days of the date of the inspection. The qualified inspector shall also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The qualified inspector shall attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.

When all disturbed areas are stabilized, all temporary erosion and sediment control measures shall be removed per the approval of the contractor's qualified professional.

7.4 FINAL INSPECTION

Prior to filing of the Notice of Termination (NOT), the owner shall have a qualified inspector perform a final site inspection (Appendix F). The qualified inspector shall certify that the site has undergone final stabilization using either vegetative or structural stabilization methods and that all temporary erosion and sediment controls (e.g., silt fence) not needed for long-term erosion control have been removed.

8.0 REPORTING

8.1 INSPECTION/MAINTENANCE REPORTS

Inspection/maintenance reports will be prepared prior to and during construction in accordance with the schedule outlined in this report by a qualified professional. The reports will be prepared to identify and document maintenance of the erosion and sediment control measures. The reports required include a pre-construction inspection, weekly inspections, and final inspection reports.

8.2 SITE LOG BOOK

During construction, the contractor shall maintain a record of all erosion and sediment control inspection reports at the site in a log book. The site log book shall also include a copy of this SWPPP, which contains a copy of GP-0-25-001. The site log book shall be maintained on-site and made available to the permitting authority. Prior to the commencement of construction, the contractor shall certify in the site log book that the SWPPP meets all Federal, State, and local erosion and sediment control requirements.

8.3 RETENTION OF RECORDS

The owner shall retain a copy of this SWPPP and any associated reports for a period of at least five years from the date that the site is finally stabilized.



9.0 PERMANENT CONTROLS & POST-STABILIZATION

The proposed project is a redevelopment project, classified as road construction and reconstruction with ground disturbance over 1 acre. This classification is included in Table 2 of Appendix B of GP-0-25-001. In accordance with Part III.C of the permit, the project requires design of post-construction stormwater management practices.

The dry swales and check dams will remain in place as permanent features to satisfy this requirement. The swales will capture runoff from the bridge and road. The swales have sufficient capacity to contain the runoff.

Revegetation of disturbed areas will be in conformance with *New York State Standards and Specifications for Erosion and Sediment Control* and *NYSDOT Standard Specifications*.

Once final stabilization has been achieved, the remaining sediment control measures, such as silt fences will be removed, per the approval of the contractor's qualified professional.

10.0 FUTURE RISKS DUE TO CLIMATE CHANGE

In accordance with Part II.A.2 of GP-0-25-001, and pursuant to the Community Risk and Resiliency Act (CRRA), 6 NYCRR Part 490, and associated guidance, the following future physical risks due to climate change were considered as part of this project.

- *Increasing temperature and increasing precipitation*

The project has been designed to accommodate increasing precipitation. The design is in conformance with all regulatory requirements and all necessary permits will be obtained. Specific design details are included in the project's Design Approval Document and are included in the attached project drawings (ECP-01, ECP-02, ECP-03 & ECP-04; SMP-01, SMP-02, SMP-03 & SMP-04; MSD-01; SMD-01.)

- *Increasing variability in precipitation, including chance of drought*

This project has been designed to accommodate increasing variability in precipitation. As discussed above and below, the project includes drainage improvements.

- *Increasing frequency and severity of flooding*

This project has been designed to accommodate increased flooding. This project will include the construction of dry swales and check dams designed to treat and convey runoff while promoting infiltration and improving water quality.

These modifications will result in a significant improvement over the current conditions. Furthermore, the design is in accordance with all applicable regulatory size requirements. Additional details are shown in the



STORMWATER POLLUTION PREVENTION PLAN Malden Turnpike over NYS Thruway, Town of Saugerties, NY

attached drawings (Sheets ECP-01, ECP-02, ECP-03 & ECP-04; SMP-01, SMP-02, SMP-03 & SMP-04; MSD-01; SMD-01.)

- *Rising sea level*

The project location is not within an area determined to have potential to be impacted by rising sea level.

- *Increasing storm surge*

The only surface waterbody in the vicinity of the project area is considered to be a tributary of Sawyer Kill, which is not anticipated to be negatively impacted by the project. The Design Approval Document for the project includes additional information on hydrology. The attached drawings (Sheets ECP-01, ECP-02, ECP-03 & ECP-04; SMP-01, SMP-02, SMP-03 & SMP-04; MSD-01; SMD-01) also include additional details.

- *Shifting ecology*

The project location is not within or adjacent to any federal or state-regulated wetlands.

Erosion and Sediment Control has already been discussed in Section 5.0 of this report. See Section 5.0 for further details.

11.0 CONCLUSION

This Stormwater Pollution Prevention Plan identifies and describes the temporary and permanent measures to manage runoff from bridge and associated road improvements. The dry swales and integrated check dams will remain as permanent features.

The development of the proposed project will not alter existing stormwater drainage conditions but rather improve it through the addition of dry swales and check dams. Implementation of this comprehensive plan that includes temporary and permanent measures recommended by NYSDEC will minimize the amount of pollutants generated by resurfacing and expansion activities and will minimize the potential impacts on the environment, particularly off-site stormwater impacts and water quality.



DRAWINGS

FIGURE 1

SHEETS ECP-01 - ECP-04

SHEETS SMP-01 - SMP-04

SHEETS MSD-01; SMD-02

SITE LOCATION MAP

EROSION CONTROL PLAN

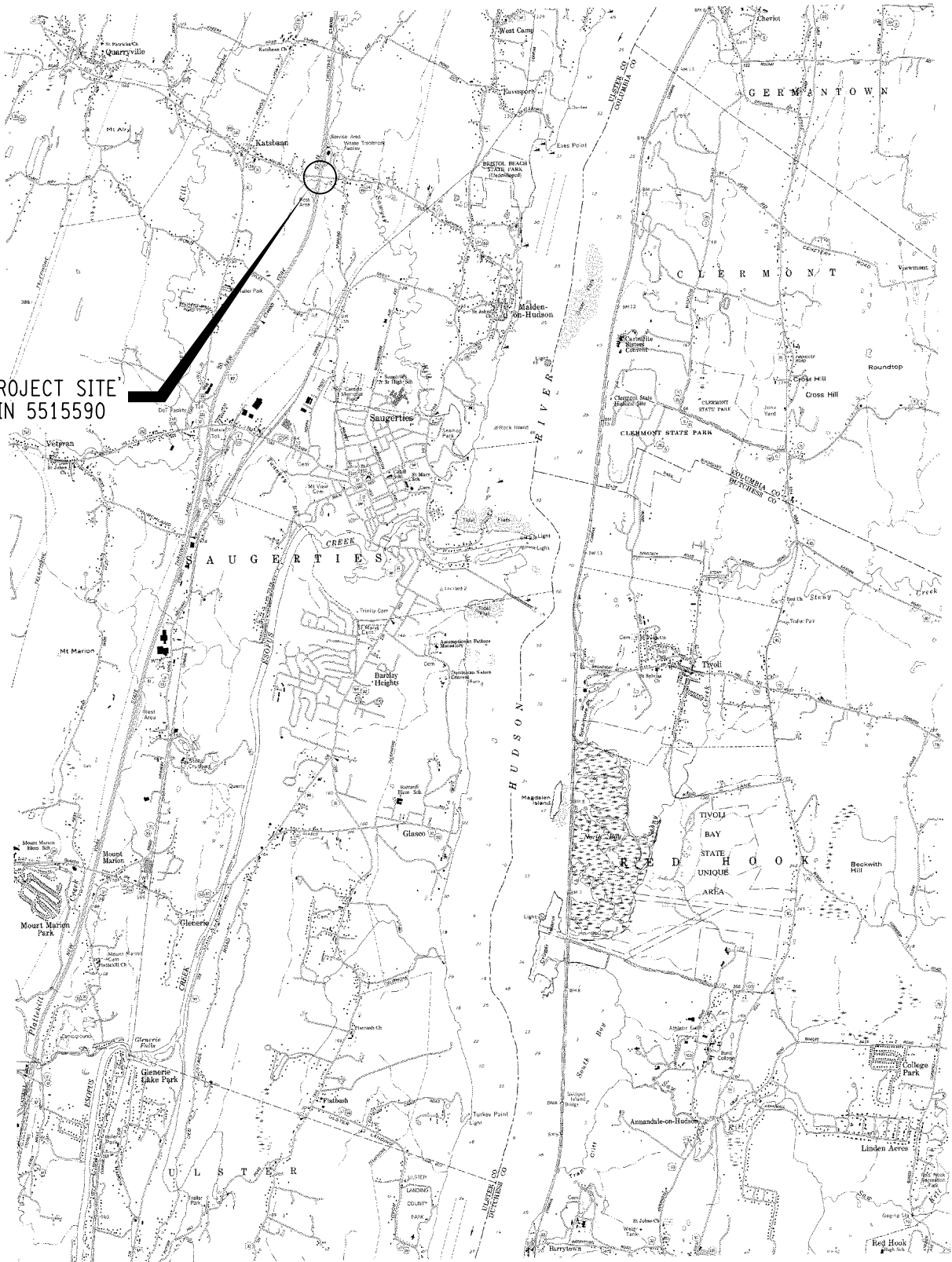
STORMWATER TREATMENT PLAN

DETAILS

GRID
NORTH



PROJECT SITE
BIN 5515590



**Thruway
Authority**



TITLE OF PROJECT
MALDEN TURNPIKE (CR 34) OVER MAINLINE
NYS THRUWAY

LOCATION OF PROJECT
MALDEN TURNPIKE (CR 34) OVER NYS THRUWAY
BIN 5515590 MP 103.16

TITLE OF DRAWING

SITE LOCATION MAP

CONTRACT NUMBER:
A72190

DATE:
05/31/24

DRAWING NUMBER:
Figure 1

+

DESIGN SUPERVISOR
M. COLLINGWOOD

CHECK

DRAFTING
T. BURTNICK

CHECK

USER = jmtpx11-pr-svc
M. COLLINGWOOD

CHECK

DATE/TIME = 11-SEP-2025 17:07
R. JABLONSKI

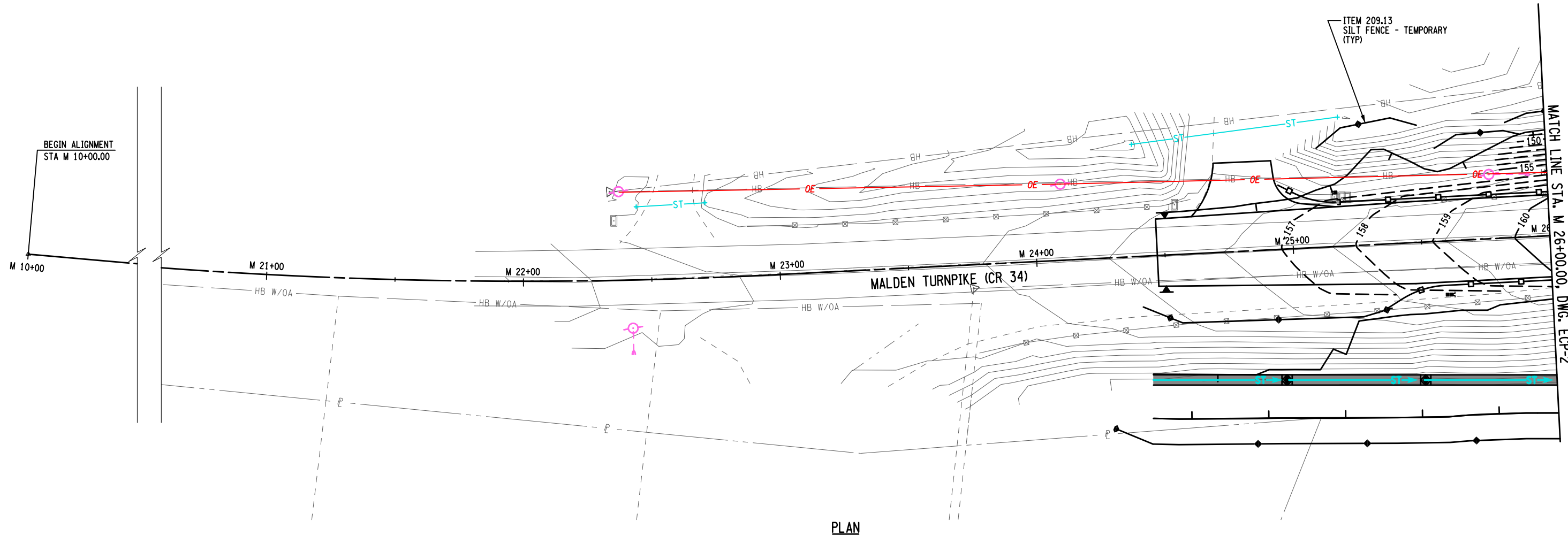
DESIGN
M. COLLINGWOOD

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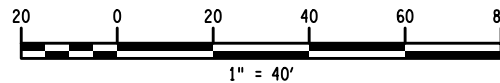
DESIGN SUPERVISOR
M. COLLINGWOOD

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PLAN



ALTERED BY: ON:	AFFIX SEAL: ON:

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REVISIONS			
DATE	DESCRIPTION	BY	SYM.



Thruway
Authority



TITLE OF PROJECT REPLACEMENT OF MALDEN TURNPIKE (CR 34) BRIDGE OVER I-87	CONTRACT NUMBER: A72190
LOCATION OF PROJECT ALBANY DIVISION MP 103.16	DATE: 08/02/2024
TITLE OF DRAWING EROSION CONTROL PLAN	DRAWING NUMBER: ECP-01

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FILE NAME =

DATE/TIME = 11-SEP-2025 17:05

DESIGN SUPERVISOR

DESIGN

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M. COLLINGWOOD

T. BURTNICK

M. COLLINGWOOD

M. COLLINGWOOD

R. JABLONSKI

M. COLLINGWOOD

M. COLLINGWOOD

M. COLLINGWOOD

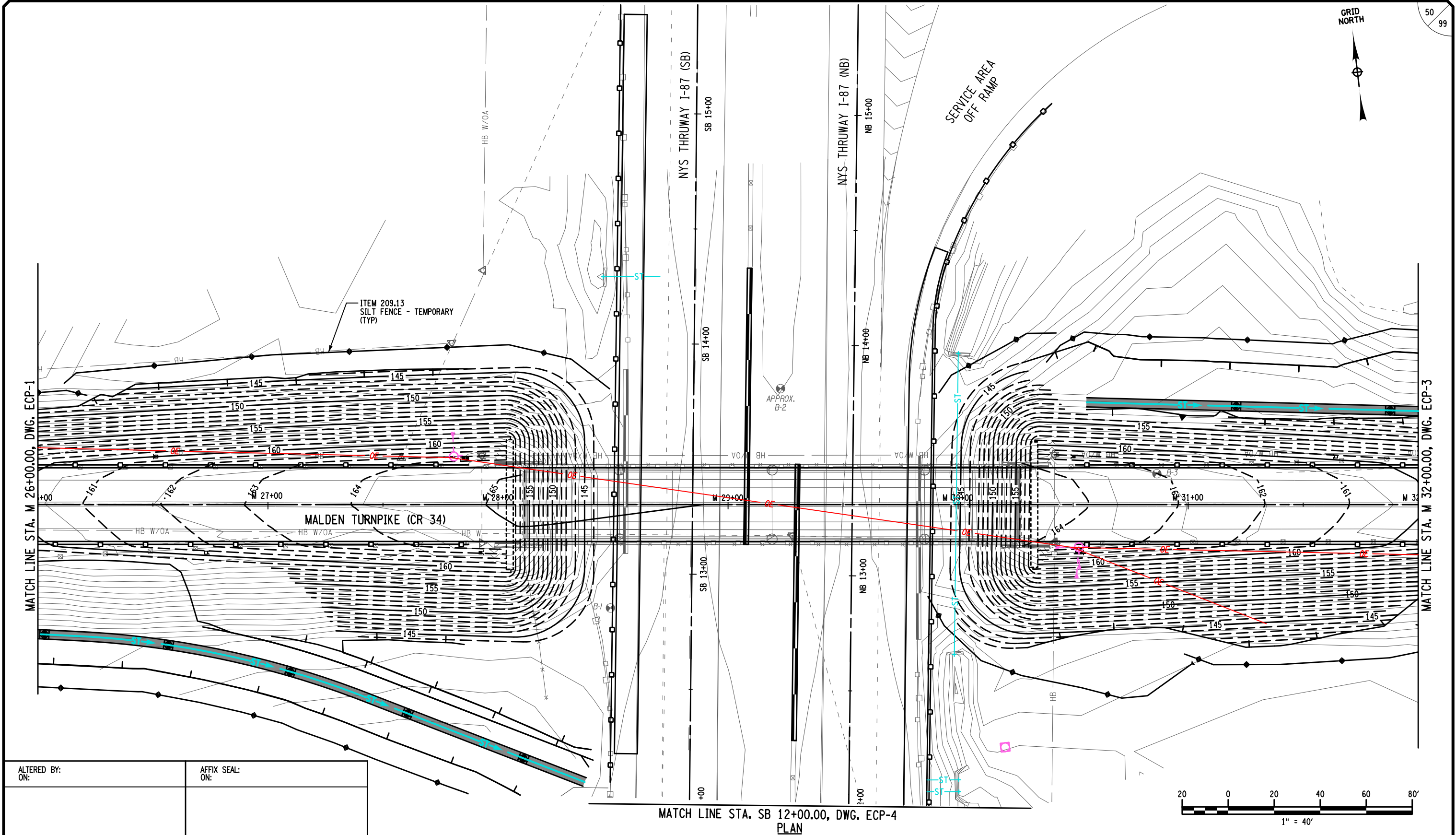
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REVISIONS

DATE	DESCRIPTION	BY	SYM.



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Authority



TITLE OF PROJECT
REPLACEMENT OF MALDEN TURNPIKE (CR 34)
BRIDGE OVER I-87

LOCATION OF PROJECT
ALBANY DIVISION
MP 103.16

TITLE OF DRAWING

EROSION CONTROL PLAN

CONTRACT NUMBER:
A72190

DATE:
08/02/2024

DRAWING NUMBER:
ECP-02

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T. BURTNICK

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M. COLLINGWOOD

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R. JABLONSKI

DESIGN

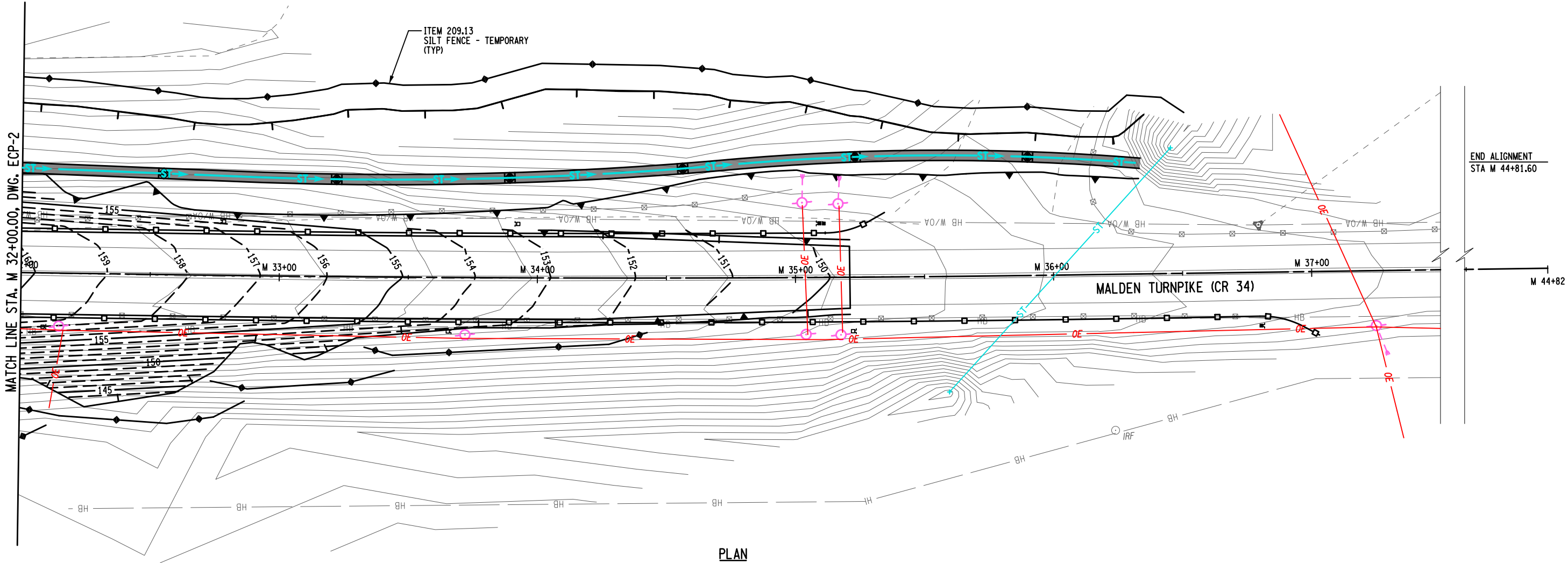
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DESIGN SUPERVISOR

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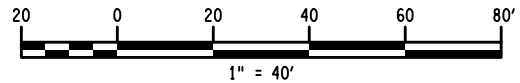
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PLAN

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REVISIONS			
DATE	DESCRIPTION	BY	SYM.



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Authority



TITLE OF PROJECT
REPLACEMENT OF MALDEN TURNPIKE (CR 34)
BRIDGE OVER I-87
LOCATION OF PROJECT
ALBANY DIVISION
MP 103.16

TITLE OF DRAWING
EROSION CONTROL PLAN

CONTRACT NUMBER:
A72190

DATE:
08/02/2024

DRAWING NUMBER:
ECP-03



USER = jmtpx11-pr-svc

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FILE NAME =

M. COLLINGWOOD

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T. BURTNICK

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M. COLLINGWOOD

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R. JABLONSKI

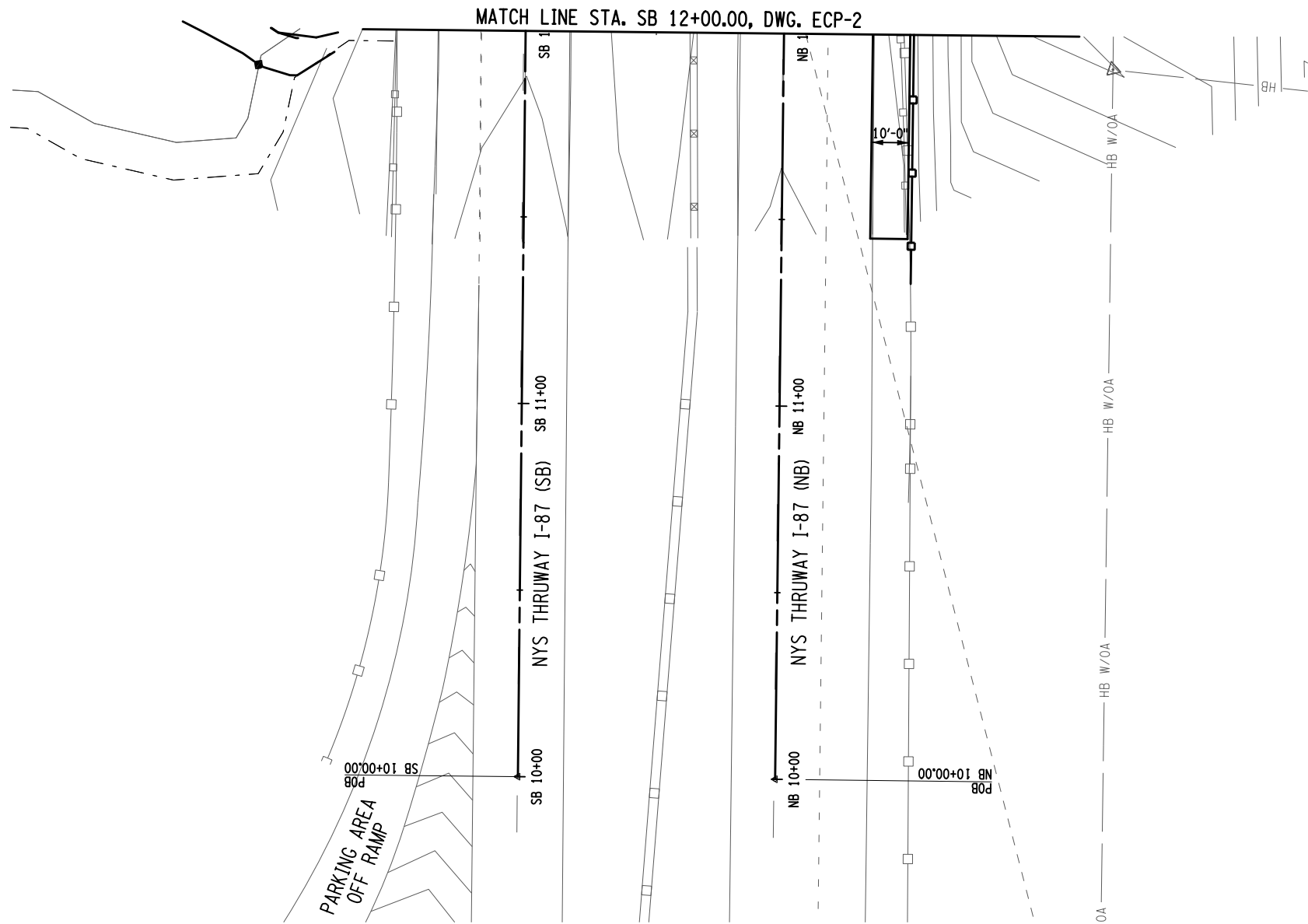
DESIGN

M. COLLINGWOOD

DESIGN SUPERVISOR

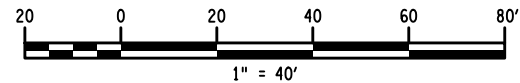
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GRID
NORTH



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AFFIX SEAL:
ON:



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REVISIONS

DATE	DESCRIPTION	BY	SYM.



**Thruway
Authority**



TITLE OF PROJECT
REPLACEMENT OF MALDEN TURNPIKE (CR 34)
BRIDGE OVER I-87

LOCATION OF PROJECT
ALBANY DIVISION
MP 103.16

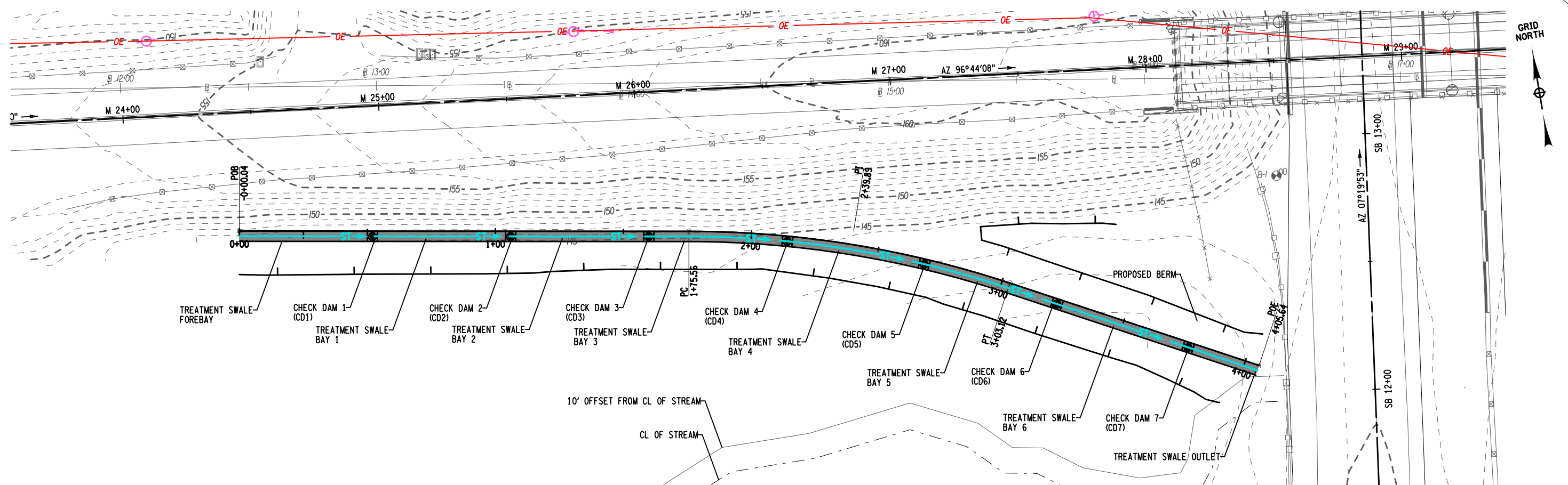
TITLE OF DRAWING
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CONTRACT NUMBER:
A72190

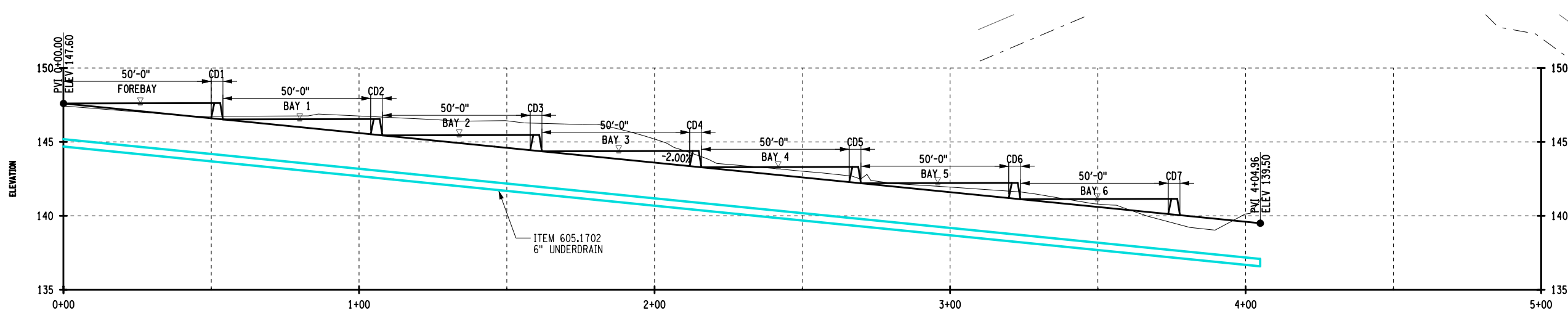
DATE:
08/02/2024

DRAWING NUMBER:
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FILE NAME = DATE/TIME = 11-SEP-2025 17:07 USER = jmtpx11-pr-svc M. COLLINGWOOD R. JABLONSKI M. COLLINGWOOD T. BURTNICK DRAFTING CHECK M. COLLINGWOOD M. COLLINGWOOD



TREATMENT SWALE -PLAN



TREATMENT SWALE - PROFILE

NOTES

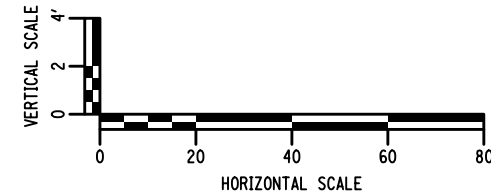
1. SEE SMD-1 FOR DRAINAGE ITEMS AND DESCRIPTIONS
2. FOR TREATMENT SWALE TYPICAL SECTION AND DETAILS, SEE DWG SWD-1
3. ALL CHECK DAMS SAHLL BE PERMANENT

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REVISIONS			
DATE	DESCRIPTION	BY	SYM.



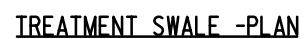
Thruway Authority



TITLE OF PROJECT REPLACEMENT OF MALDEN TURNPIKE (CR 34) BRIDGE OVER I-87	CONTRACT NUMBER: A72190
LOCATION OF PROJECT ALBANY DIVISION MP 103.16	DATE: XX/XX/2024
TITLE OF DRAWING STORMWATER TREATMENT PLAN	DRAWING NUMBER: SMP-01

DESIGN SUPERVISOR

FILE NAME =



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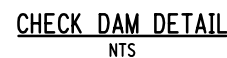


HORIZONTAL SCALE

MP 103.10	TITLE OF DRAWING
	STORMWATER TREATMENT PLAN

DRAWING NUMBER:
SMP-02

TREATMENT SWALE TYPICAL SECTION
NTS



DRAWING NUMBER:
SMD-01

FILE NAME = DATE/TIME = 11-SEP-2025 17:05 USER = jmt011-pr-svc

DESIGN SUPERVISOR M. COLLINGWOOD DESIGN R. JABLONSKI CHECK M. COLLINGWOOD DRAFTING T. BURTNICK CHECK M. COLLINGWOOD

STANDARD OR LARGE GREEN DOUBLE SNOWPLOW MARKER

STANDARD OR LARGE GREEN SINGLE SNOWPLOW MARKER

12" TO 18" (TYP.)

7'-0" ABOVE EDGE OF PAVEMENT

3'-0" (TYP.)

SNOWPLOWING MARKER
NTS

ALTERED BY:
ON:

AFFIX SEAL:
ON:

HAY BALE (TYP.)

STAKE, TWO (2) PER BALE (TYP.)

1/8" DIA. STEEL

PLASTIC LINING

STAPLES, TWO (2) PER BALE

BINDING WIRE

SUITABLE MATERIAL (OPTIONAL)

WOOD OR METAL STAKES, 2 (TWO) PER BALE

CONCRETE WASHOUT DETAIL
NTS

TYPICAL POST (SEE NOTE 4)

VARIES (SEE NOTE 8)

WIRE MESH SUPPORT (IF SPECIFIED)

SILT FENCE GEOTEXTILE

18" MIN. HEIGHT ABOVE GROUND

DISTURBED GRADE

6" MIN.

EMBOD 18" MIN.

4" MIN.

TOE OF SLOPE

RESOURCE REQUIRING PROTECTION

SILT FENCE - TEMPORARY
NTS

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REVISIONS

DATE	DESCRIPTION	BY	SYM.

GENERAL NOTES

1. SILT FENCE OR SEDIMENT FILTER LOGS SHALL BE INSTALLED ON A LINE OF EQUAL ELEVATION (CONTOUR). IT MAY BE INSTALLED AT INTERMEDIATE POINTS UP SLOPE AS WELL AS AT THE BOTTOM.

2. FOR LOCATIONS THAT WARRANT PLACEMENT OF SILT FENCE OR SEDIMENT FILTER LOGS AT THE BASE OF SLOPES, SILT FENCE OR SEDIMENT FILTER LOGS SHALL BE PLACED A MINIMUM OF 10 FEET FROM THE TOE OF THE SLOPE, TO PROVIDE ADEQUATE AREA FOR SEDIMENT STORAGE AND FACILITATE MAINTENANCE OF THE SEDIMENT CONTAINMENT AREA.

3. THE ENDS OF A ROW OF SILT FENCE OR SEDIMENT FILTER LOGS SHALL BE ANGLED UP SLOPE TO PREVENT CHANNELIZED FLOW FROM BEING CONVEYED PAST THE ENDS OF THE FENCE. A SECTION OF SILT FENCE OR SEDIMENT FILTER LOGS SHOULD NOT EXCEED 100 FEET IN LENGTH.

4. WOOD POSTS FOR SILT FENCE SHALL HAVE A CROSS-SECTION AREA OF 3.5 SQUARE INCHES OR STEEL POSTS SHALL BE "T" OR "U" SHAPE AND 1.33 POUNDS/FEET (MINIMUM) FOR STEEL. SPACING FOR THE PROVIDED SILT FENCE POSTS SHALL BE AS DESIGNATED ON THE DEPARTMENT APPROVED LIST FOR SILT FENCE. THE LENGTH OF SILT FENCE POSTS SHALL BE 40 INCHES. WOOD POSTS FOR SEDIMENT FILTER LOGS SHALL BE NOMINAL 2X2. THE LENGTH OF FILTER LOG POSTS SHALL BE 16" GREATER THAN THE DIAMETER OF THE LOG.

5. THE BOTTOM EDGE OF SILT FENCE SHALL BE BURIED A MINIMUM OF 6" BELOW GROUND. THE FENCE SHALL BE INSTALLED WITH THE POSTS ON THE DOWNSLOPE SIDE OF THE FABRIC.

6. WHERE ENDS OF GEOTEXTILE FABRIC COME TOGETHER, THEY SHALL BE OVERLAPPED AND FOLDED AND STAPLED TO PREVENT SEDIMENT BYPASS, OR THE END POSTS OF THE TWO SECTIONS SHALL BE WRAPPED AS SHOWN IN THE DETAIL FOR SILT FENCE END WRAPPING.

7. SEDIMENT SHALL BE REMOVED WHEN ACCUMULATION REACHES ONE-HALF OF THE ABOVE GROUND HEIGHT OR WHEN BULGES DEVELOP IN THE FABRIC. SEDIMENT SHALL BE DISPOSED OF AS UNSUITABLE MATERIAL.

8. THE FOLLOWING ARE MAXIMUM SLOPE LENGTHS (DISTANCE BETWEEN ROWS FOR SILT FENCE INSTALLATION:

SILT FENCE MAXIMUM SLOPE LENGTH (FEET)

SLOPE	STEEPNESS	STANDARD**	REINFORCED***
*5-10%	20:1 TO 10:1	125	250
10-20%	10:1 TO 5:1	100	150
20-33%	5:1 TO 3:1	60	80
33-50%	3:1 TO 2:1	40	70
> 50%	> 2:1	20	30

* FOR SLOPES LESS THAN 5% SILT FENCE IS NOT REQUIRED UNLESS IN SENSITIVE AREAS OR HIGHLY ERODIBLE SOILS.

** STANDARD SILT FENCE IS FABRIC ROLLS STAPLED TO WOODEN POSTS DRIVEN 18 INCHES INTO THE GROUND.

*** REINFORCED SILT FENCE IS FABRIC PLACED AGAINST WELDED WIRE MESH WITH ANCHORED STEEL POSTS DRIVEN 18 INCHES INTO THE GROUND.

9. INSTALLATION OF SILT FENCE OR SEDIMENT LOG, INCLUDING EXCAVATION, BACKFILL, AND COMPACTION OF SOIL SHALL BE INCLUDED IN THE UNIT PRICE BID FOR ITEM 209.13.

10. SEDIMENT FILTER LOG POSTS SHALL BE SPACED NO MORE THAN 10 FEET APART. ENDS OF LOGS SHALL BE OVERLAPPED BY 24 INCHES AND STAKED SIDE BY SIDE. THE MAXIMUM SLOPE LENGTH (DISTANCE BETWEEN ROWS) SHALL NOT EXCEED THE FOLLOWING LIMITS:

SEDIMENT FILTER LOG MAX SLOPE LENGTH (FEET)

DIA. (IN.)	SLOPE %					
	2	5	10	20	25	33
12	250	225	125	65	50	40
18	275	250	150	70	55	45
24	350	275	200	130	100	60

POSTS SHALL BE SPACED NO MORE THAN 10' APART

VARIES (SEE NOTE 10)

(SEE NOTE 2)

10'

TYPICAL POST (SEE NOTE 4)

3" TO 4"

DISTURBED GRADE

TOE OF SLOPE

RESOURCE REQUIRING PROTECTION

SEDIMENT FILTER LOG (DIAMETER VARIES)

SEDIMENT FILTER LOG
NTS

NEW YORK
STATE OF
OPPORTUNITY.

Thruway
Authority

JMT.

TITLE OF PROJECT
REPLACEMENT OF MALDEN TURNPIKE (CR 34)
BRIDGE OVER I-87

LOCATION OF PROJECT
ALBANY DIVISION
MP 103.16

TITLE OF DRAWING
MISCELLANEOUS DETAILS

CONTRACT NUMBER:
A72190

DATE:
08/02/2024

DRAWING NUMBER:
MSD-01



APPENDIX A

NOTICE OF INTENT (NOI)



STORMWATER POLLUTION PREVENTION PLAN
Malden Turnpike over NYS Thruway, Town of Saugerties, NY

A copy of the NOI will be included after the MS4 Acceptance Form has been completed and the NOI has been filed.



APPENDIX B
ENDANGERED AND THREATENED SPECIES
AND
HISTORIC AND ARCHAEOLOGICAL DOCUMENTATION

June 4, 2024

HUNT#3449.003

Christina Minkler, Professional Engineer
JMT of New York
19 British American Boulevard
Latham, NY 12110

**Re: Threatened and Endangered Species Habitat Survey
NYSTA Malden Turnpike (CR 34) over Mainline NYS Thruway MP: 103.16
City of Saugerties, Ulster County, NY**

Dear Ms. Minkler:

Hunt Engineers, Architects, Land Surveyors & Landscape Architect (HUNT-EAS) facilitated a habitat availability survey for the Indiana bat (*Myotis sodalist*), northern long-eared bat (*Myotis septentrionalis*) tricolored bat (*Perimyotis subflavus*) and monarch butterfly (*Danaus plexippus*) on March 28, 2024 for the project area located NYSTA Malden Turnpike bridge over the Mainline NYS Thruway at MP 103.16 in the City of Saugerties, Ulster County, New York (the Subject Property). This investigation was completed on behalf of JMT of New York. According to the USFWS Information for Planning and Consultation (IPaC), the Subject Property is listed as having possible habitat for the Indiana bat, northern long-eared bat, and monarch butterfly. According to the New York Department of Conservation (NYSDEC) Environmental Resource Mapper (ERM) the property is not located within the vicinity of species listed as threatened or endangered. No rare or state listed plants or significant natural communities are listed at the project site or in the immediate vicinity according to the ERM. A description of the above referenced species' preferred habitats and potential presence on site, as well as anticipated impacts to these species are discussed below.

Indiana Bat

The Indiana Bat is listed by the USFWS IPaC as potentially being present or having suitable habitat present within the Subject Property. According to the NYSDEC, the Indiana bat is one of nine (9) species of bat in New York. The bat is about two (2) inches long and weighs approximately 0.2-0.3 ounces. The Indiana bat is generally dark grey to grayish brown in color, with a pink nose. Indiana bats are generally found in tight clusters. In the spring, Indiana bats can travel up to a hundred miles away from their hibernaculum. There, the bats will feed, mostly on flying insects, and prepare for the breeding season. Female nursery colonies will congregate along the banks of streams, lakes or in forested habitat during the months of June and July. In August and September, Indiana bats return to their caves for the breeding season and start hibernation as early as September where they remain until June.

The Indiana bat is federally, and state listed as endangered, and its biggest threat is seen to be the disturbance caused by people exploring caves during hibernation. As they are sensitive to noise and light, they are often

woken up from hibernation, and these brief arousals waste precious energy. If this is repeated several times in one hibernation period, many bats will not survive until spring. During the spring, the biggest threat is seen to be pesticide poisoning. Current management efforts focus on the hibernation period of the Indiana bat by limiting access to known hibernacula to only authorized personnel and continuing the search for more hibernacula to protect.

The Indiana bat prefers summer roosting habitat described by the USFWS as both live and dead trees greater than 5" diameter at breast height (dbh) with cracks, crevices, cavities, and loose or exfoliating bark. The United States Department of Agriculture (USDA) describes female nursery colonies to roost in trees greater than or equal to 9" dbh. The Indiana bat is seen to use trees such as oaks (*Quercus* spp.), hickories (*Carya* spp.), ashes (*Fraxinus* spp.), elms (*Ulmus* spp.), eastern cottonwoods (*Populus deltoides*), locusts (*Robinia* spp.), and maples (*Acer* spp.) throughout their range.

There are no roost trees identified within the project area or directly adjacent to the project area. The bridge offers potential roosting habitat. As such, a bridge/structure bat survey was conducted on March 28, 2024. No evidence of bat activity was observed within the Subject Property during the survey. If bats are found on site, USFWS and NYSDEC should be contacted immediately.

Northern Long-eared Bat

The northern long-eared bat (NLEB) is listed by U.S. Fish and Wildlife Service (USFWS) Information for Planning and Consultation (IPaC) as possibly being present or having suitable habitat present within the Subject Property. According to the NYSDEC, the NLEB is also referred to as the northern myotis bat and is a forest-dependent insectivore. They use a variety of forest habitats for roosting, foraging, and raising their young. It has been recorded that any tree large enough to have a cavity and loose bark can be utilized by the NLEB for roosting and rearing young. The NLEB also will use structures such as bridges to roost in. They hibernate from late fall through early spring. Most of their hibernation sites are known to be caves or abandoned mines.

The NLEB was listed as threatened in 2015, largely due to the massive decline caused by white-nose syndrome. A decline of 98% has been seen in the NLEB abundance in New York State. Current protection for the species includes minimizing and avoiding direct loss of the remaining individuals by protecting known hibernation sites, limiting forest management activities, such as tree removal, where the NLEB is likely to be present to certain times of the year. In late 2022 the species status was upgraded to endangered.

There are no roost trees identified within the project area or directly adjacent to the project area. The bridge offers potential roosting habitat. As such, a bridge/structure bat survey was conducted on March 28, 2024. No evidence of bat activity was observed within the Subject Property during the survey. If bats are found on site, USFWS and NYSDEC should be contacted immediately.

Tricolored Bat

The tricolored bat is listed by the USFWS IPaC as potentially being present or having suitable habitat present within the Subject Property. According to NYSDEC, the tricolored bat is one of nine (9) species of bat in New York. The NYSDEC states that the tricolored bat is a medium-sized bat with tricolored pelage on its back that ranges from dark grey at the base, to yellowish in the middle, and brown at the tip. They weigh 3.5-8 g (0.1-0.3 oz) and have a wingspan of 21-26 cm (8-10 in). Tricolored bats are best identified by their uniquely tricolored, yellowish fur which is dark at the base and tip and light in the middle. Tricolored bats may also be identified by their weak flight which is described as moth-like. Tricolored bats often roost in habitats near open woods, near water, dead trees, and caves/cliff crevices. Riparian areas are seen as the most important foraging habitat for the species. In these areas, bats will feed on flying insects to prepare for the breeding season. Tricolored bats over-winter in humid areas deep within caves and old mines. The tricolored bat predominately breeds in the fall but may also breed again during the spring.

The tricolored bat is currently not listed by the NYSDEC and is proposed endangered federally. The NYSDEC lists white-nose syndrome as the largest threat to the species, however climate change, cave development, habitat loss/fragmentation, and the construction of wind facilities also affect the species. Cave disturbance during winter months will cause the bats to become abnormally active during hibernation and cause the expenditure of precious energy reserves. The tricolored bat, like most bats, is particularly sensitive to environmental toxins found in herbicides and pesticides. Management strategies listed by the USFWS aim to restrict cave access to known hibernacula during winter months by humans, as well as focusing on monitoring debris/gating in front of cave entrances to maintain ideal temperature, airflow, and humidity. During summer months, retaining snags and dying trees are important for roosting bats, as well as managing forest habitat in riparian corridors.

The tricolored bat primarily roosts among live and dead leaf clusters of live or recently dead deciduous hardwood trees as described by the USFWS. Tricolored bats have also been observed roosting among pine needles, eastern red cedar (*Juniperus virginiana*), within barns, porch roofs, concrete bunkers, and rarely in caves. Female tricolored bats exhibit high site fidelity, returning year after year to the same summer roosting locations. Females form maternity colonies in these roosts.

No suitable roost trees were identified within or proximate to the Subject Property during the March 28, 2024 inspection. Tree clearing is not anticipated for the proposed project, as such impacts to this species are not anticipated. Should tree clearing become a part of the project, additional protection measures for this species may be required.

Monarch Butterfly

The monarch butterfly is listed by the USFWS IPaC as possibly being present or having suitable habitat at the Subject Property. The monarch butterfly is currently listed as a candidate species and may be listed as threatened or endangered in 2024. According to the NYSDEC, monarch butterflies go through egg, larval, chrysalis and adult stages. The wings look like stained glass with reddish-orange colorations and black veins. Males have thinner veins with a black dot on the inside of the hind wings, while females have thicker veins

and lack the dot. Monarch butterflies are found in open meadows and fields that usually contain a variety of wildflowers including milkweed (*Asclepias* spp.), coastal beaches with dunes, and man-made butterfly gardens. Monarchs can be seen throughout the spring and summer during daytime hours. In late August, the butterfly starts its migration south to central Mexico.

Monarch caterpillars ingest milkweed, which contains a toxic compound. The presence of this toxin is what allows the monarch to have a defense against predators. Additionally, monarchs will only breed where milkweeds are present. Once larvae emerge, they will only feed on milkweeds, otherwise they would not be able to develop into butterflies. No significant populations of milkweed were observed during the March 28, 2024 site visit. It should be noted; however, that the site visit was conducted outside the growing season and populations of the species may have died back for the winter. To avoid direct impacts to this species, the removal of concentrations of milkweed, if found, should occur anytime between September through April, while the monarchs are migrating and overwintering in central Mexico.

The Indiana bat, northern long-eared bat, tricolored bat, and monarch butterfly were not found onsite; however, if they are found, it is recommended to have an identification and encounter plan in place. If you have any questions or require additional information, please do not hesitate to contact me in our Albany office at blackwoodk@hunt-eas.com.

Sincerely,

HUNT ENGINEERS, ARCHITECTS, LAND SURVEYORS & LANDSCAPE ARCHITECT

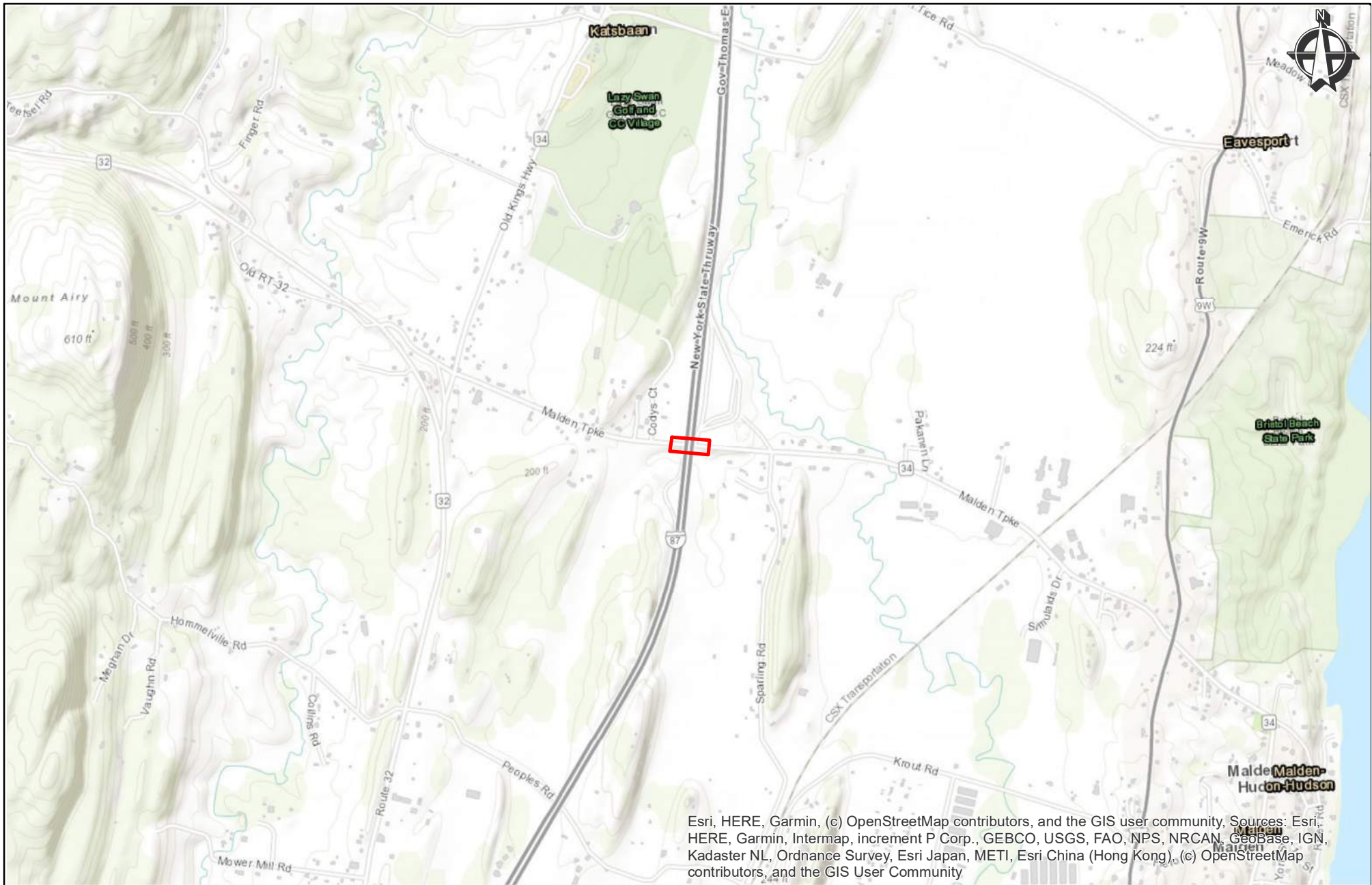


Kerry W. Blackwood

Environmental Scientist I

Enclosures

- Figure 1: Project Location Map
- Figure 2: Project Boundary Map
- Project Site Photo Sheet
- Bridge Bat Assessment Form
- NYSDEC – NYNHP Letter
- USFWS IPaC Documentation



Esri, HERE, Garmin, (c) OpenStreetMap contributors, and the GIS user community, Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, Geobase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

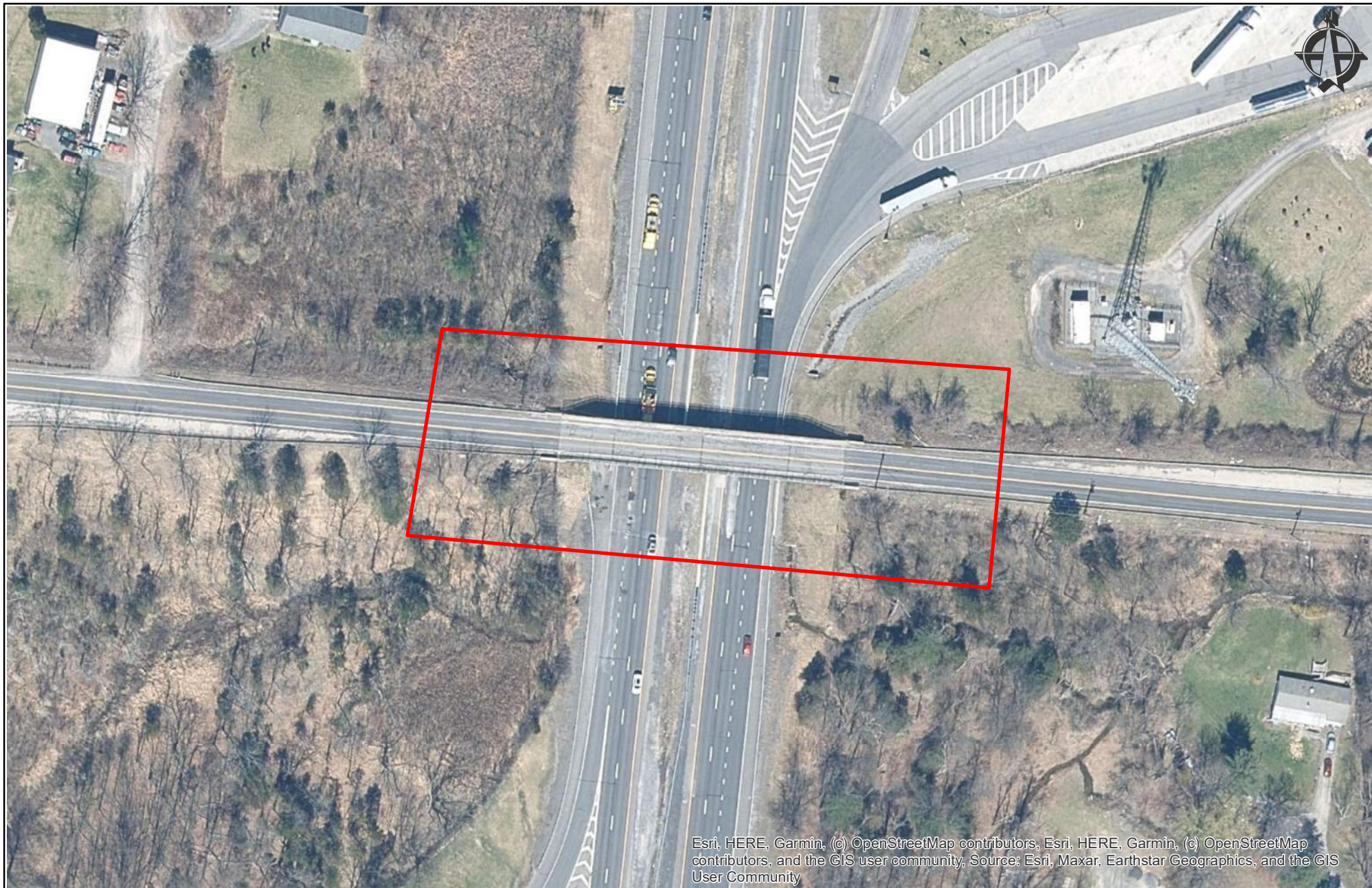
Legend
 Subject Property Boundary

Figure 1
Subject Property Location Map

NYSTA Malden Turnpike Bridge over Mainline (MP 103.16)
City of Saugerties New York
Ulster County

HUNT ENGINEERS | ARCHITECTS | SURVEYORS

0 500 1,000 2,000 3,000 4,000 Feet
 1 inch = 1,500 feet
 1:18,000



Legend

Subject Property Boundary

Figure 2
Subject Property Boundary Map

NYSTA Malden Turnpike Bridge over Mainline (MP 103.16)
City of Saugerties New York
Ulster County

HUNT ENGINEERS | ARCHITECTS | SURVEYORS

0 25 50 100 150 200 Feet
1 inch = 100 feet
1:1,200

PHOTOGRAPH REPORT

Project Name & Job Number: Malden Turnpike – 3449.003

Project Address(es): NYSTA Malden Turnpike (CR 34) over Mainline NYS Thruway MP: 103.16 Saugerties,
New York, Ulster County

Photo Number: 1

Photo Date: 3/28/2024

Photo Location: West end of bridge

Direction Facing: East

Photo Description: East bound approach of bridge



Photo Number: 2

Photo Date: 3/28/2024

Photo Location: East end of bridge

Direction Facing: West

Photo Description: West view of bridge



Photo Number: 3

Photo Date: 3/28/2024

Photo Location: East end of bridge

Direction Facing: West

Photo Description: Adjoining properties



Photo Number: 4

Photo Date: 3/28/2024

Photo Location: Parking lot on east end of bridge

Direction Facing: South

Photo Description: Adjoining properties



Photo Number: 5

Photo Date: 3/28/2024

Photo Location: Bridge deck

Direction Facing: Northeast

Photo Description: Adjoining tower



Photo Number: 6

Photo Date: 3/28/2024

Photo Location: Below bridge

Direction Facing: West

Photo Description: Bridge girders



Photo Number: 7

Photo Date: 3/28/2024

Photo Location: Below bridge

Direction Facing: Northwest

Photo Description: View of Mainline Thruway



Photo Number: 8

Photo Date: 3/28/2024

Photo Location: Below bridge

Direction Facing: East

Photo Description: Bridge girders



Photo Number: 9

Photo Date: 3/28/2024

Photo Location: Below bridge

Direction Facing: East

Photo Description: Bridge girders



Photo Number: 10

Photo Date: 3/28/2024

Photo Location: Below bridge

Direction Facing: East

Photo Description: Bridge abutment



Photo Number: 11

Photo Date: 3/28/2024

Photo Location: Below bridge

Direction Facing: West

Photo Description: Bridge girders



Photo Number: 12

Photo Date: 3/28/2024

Photo Location: Below bridge

Direction Facing: East

Photo Description: BIN number



Photo Number: 13

Photo Date: 3/28/2024

Photo Location: West side of bridge

Direction Facing: North


Photo Description: Adjoining properties on Codys Court



APPENDIX D: Bridge/Structure Bat Assessment Form

Bridge/Structure Bat Assessment Form Instructions

- This form will be completed to document bat occupancy or bat use of bridges, culverts, and other structures. This form shall be submitted to the appropriate personnel within the DOT and USFWS for recordkeeping (or uploaded into the Information, Planning, and Consultation (IPaC) Determination Key for use of the Programmatic Biological Opinion for Transportation Projects in the Range of the Indiana Bat and Northern Long-Eared Bat) prior to conducting: any activities below the deck surface either from the underside or from above the deck surface that bore down to the underside; any activities that could impact expansion joints; any activities involving deck removal on bridges; or any activities involving structure demolition for bridges, culverts, and/or other structures.
- Assessments must be completed within two (2) years of conducting any work (see the above bullet), regardless of whether assessments have been conducted in the past. Assessments must be completed in appropriate weather conditions, suitable for the assessor to observe common signs of bat use.
- Evidence of bat use may include visual observation (live and/or dead), presence of guano, presence of staining, audible observation, and/or odor observation. Presence of one or more indicators is sufficient evidence that bats may be using the bridge, culvert, and/or other structure.
- If bat use of a bridge, culvert, and/or other structure is noted, additional studies may be undertaken during bat active season to identify the specific bat species utilizing the structure, or protected bat species presence can be assumed, in order to comply with threatened and endangered species regulations. Bat active season dates, typically between April and November, vary regionally and by species, so assessors should consult with their local USFWS Field Office for more specific active season dates.
- For use of the Programmatic Biological Opinion for Transportation Projects in the Range of the Indiana Bat and Northern Long-Eared Bat – If the bridge/structure is 1,000 feet or more from suitable bat habitat¹ (e.g., an urban or agricultural area without suitable foraging habitat or corridors linking the bridge to suitable foraging habitat), check the appropriate box and fill out the table below. **No further assessment is required.**








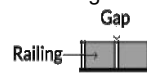
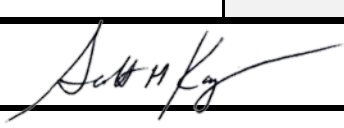
Date & Time of Assessment 3/28/24 @ 3:00PM	DOT Project # D214866	Route/Facility Carried Malden Turnpike	County Ulster
Federal Structure ID	Structure Coordinates (latitude and longitude) 42°06'30.3"N 73°57'28.5"W	<input type="checkbox"/> This bridge/structure is 1,000 feet or more from suitable bat habitat ² Name: <u>Kerry Blackwood</u> Signature: 	

- Any questions pertaining to assessments or this form should be directed to the local USFWS Field Office.

¹ Refer to the USFWS's summer survey guidance for the definition of suitable habitat (<http://www.fws.gov/midwest/endangered/mammals/inba/inbasummersurveyguidance.html>).

² This condition is only for use of the Programmatic Biological Opinion for Transportation Projects in the Range of the Indiana Bat and Northern Long-Eared Bat

Bridge/Structure Bat Assessment Form

Date & Time of Assessment 5/15/2024, 11:30am		DOT Project Number A72190		Route/Facility Carried CR 34 over I-87		County Ulster	
Federal Structure ID 5515590		Structure Coordinates 42°06'30.3"N (latitude and longitude) 73°57'28.5"W		Structure Height (approximate) 20 feet		Structure Length 220 feet	
Structure Type (check one)				Structure Material (check all that apply)			
Bridge Construction Style				Deck Material		Beam Material	
<input type="radio"/> Cast-in-place 		<input type="radio"/> Pre-stressed Girder 		<input type="checkbox"/> Metal		<input type="checkbox"/> None	
<input type="radio"/> Flat Slab/Box 		<input checked="" type="radio"/> Steel I-beam 		<input checked="" type="checkbox"/> Concrete		<input type="checkbox"/> Concrete	
<input type="radio"/> Truss 		<input type="radio"/> Covered 		<input type="checkbox"/> Timber		<input checked="" type="checkbox"/> Steel	
<input type="radio"/> Parallel Box Beam 		<input type="radio"/> Other:		<input type="checkbox"/> Open grid		<input type="checkbox"/> Timber	
				<input type="checkbox"/> Other:		<input type="checkbox"/> Other:	
Culvert Type				Culvert Material		Creosote Evidence	
<input type="radio"/> Box		<input type="radio"/> Other Structure		<input type="checkbox"/> Metal		<input type="radio"/> Yes <input checked="" type="radio"/> No	
<input type="radio"/> Pipe/Round				<input type="checkbox"/> Concrete		<input type="radio"/> Unknown	
<input type="radio"/> Other:				<input type="checkbox"/> Plastic		Notes:	
				<input type="checkbox"/> Stone/Masonry			
				<input type="checkbox"/> Other:			
Crossings Traversed (check all that apply)				Surrounding Habitat (check all that apply)			
<input checked="" type="checkbox"/> Bare ground		<input type="checkbox"/> Open vegetation		<input type="checkbox"/> Agricultural		<input type="checkbox"/> Grassland	
<input type="checkbox"/> Rip-rap		<input type="checkbox"/> Closed vegetation		<input checked="" type="checkbox"/> Commercial		<input type="checkbox"/> Ranching	
<input type="checkbox"/> Flowing water		<input type="checkbox"/> Railroad		<input type="checkbox"/> Residential-urban		<input type="checkbox"/> Riparian/wetland	
<input type="checkbox"/> Standing water		<input checked="" type="checkbox"/> Road/trail - Type: Thruway		<input checked="" type="checkbox"/> Residential-rural		<input type="checkbox"/> Mixed use	
<input type="checkbox"/> Seasonal water		<input type="checkbox"/> Other:		<input checked="" type="checkbox"/> Woodland/forested		<input type="checkbox"/> Other:	
Areas Assessed (check all that apply)							
Check all areas that apply. If an area is not present in the structure, check the "not present" box.							
Document all bat indicators observed during the assessment. Include the species present, if known, and provide photo documentation as indicated.							
Area (check if assessed)		Assessment Notes		Evidence of Bats (include photos if present)			
<input type="checkbox"/> All crevices and cracks: Bridges/culverts: rough surfaces or imperfections in concrete Other structures: soffits, rafters, attic areas		<input type="checkbox"/> Not present		<input type="checkbox"/> Visual - live # dead #		<input type="checkbox"/> Audible <input type="checkbox"/> Species	
<input checked="" type="checkbox"/> Concrete surfaces (open roosting on concrete)				<input type="checkbox"/> Guano		<input type="checkbox"/> Odor	
				<input type="checkbox"/> Staining		<input type="checkbox"/> Photos	
<input checked="" type="checkbox"/> Spaces between concrete end walls and the bridge deck		<input type="checkbox"/> Not present		<input type="checkbox"/> Visual - live # dead #		<input type="checkbox"/> Audible <input type="checkbox"/> Species	
				<input type="checkbox"/> Guano		<input type="checkbox"/> Odor	
				<input type="checkbox"/> Staining		<input type="checkbox"/> Photos	
<input checked="" type="checkbox"/> Crack between concrete railings on top of the bridge deck 		<input type="checkbox"/> Not present		<input type="checkbox"/> Visual - live # dead #		<input type="checkbox"/> Audible <input type="checkbox"/> Species	
				<input type="checkbox"/> Guano		<input type="checkbox"/> Odor	
				<input type="checkbox"/> Staining		<input type="checkbox"/> Photos	
<input type="checkbox"/> Vertical surfaces on concrete I-beams		<input checked="" type="checkbox"/> Not present		<input type="checkbox"/> Visual - live # dead #		<input type="checkbox"/> Audible <input type="checkbox"/> Species	
				<input type="checkbox"/> Guano		<input type="checkbox"/> Odor	
				<input type="checkbox"/> Staining		<input type="checkbox"/> Photos	
<input checked="" type="checkbox"/> Spaces between walls, ceiling joists		<input type="checkbox"/> Not present		<input type="checkbox"/> Visual - live # dead #		<input type="checkbox"/> Audible <input type="checkbox"/> Species	
				<input type="checkbox"/> Guano		<input type="checkbox"/> Odor	
				<input type="checkbox"/> Staining		<input type="checkbox"/> Photos	
<input type="checkbox"/> Weep holes, scupper drains, and inlets/pipes		<input checked="" type="checkbox"/> Not present		<input type="checkbox"/> Visual - live # dead #		<input type="checkbox"/> Audible <input type="checkbox"/> Species	
				<input type="checkbox"/> Guano		<input type="checkbox"/> Odor	
				<input type="checkbox"/> Staining		<input type="checkbox"/> Photos	
<input checked="" type="checkbox"/> All guiderails		<input type="checkbox"/> Not present		<input type="checkbox"/> Visual - live # dead #		<input type="checkbox"/> Audible <input type="checkbox"/> Species	
				<input type="checkbox"/> Guano		<input type="checkbox"/> Odor	
				<input type="checkbox"/> Staining		<input type="checkbox"/> Photos	
<input checked="" type="checkbox"/> All expansion joints		<input type="checkbox"/> Not present		<input type="checkbox"/> Visual - live # dead #		<input type="checkbox"/> Audible <input type="checkbox"/> Species	
				<input type="checkbox"/> Guano		<input type="checkbox"/> Odor	
				<input type="checkbox"/> Staining		<input type="checkbox"/> Photos	
Name: Scott H. Kappeller				Signature: 			

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Fish and Wildlife, New York Heritage Program

625 Broadway, Fifth Floor, Albany, NY 12233-4757

Phone: (518) 402-8935 | Fax: (518) 402-8925

www.dec.ny.gov

03/13/2024

The attached report from the Environmental Resource Mapper includes information from the New York Natural Heritage Program database with respect to the location indicated on the map below. This letter, together with the attached report from the Environmental Resource Mapper, is equivalent to, and carries the same validity, as a letter from the New York Natural Heritage Program, including for projects where a Natural Heritage letter is required.

If your location of interest does not fall within an area covered by the Rare Plants and Rare Animals layer or in the Significant Natural Communities layer, then New York Natural Heritage has no records to report in the vicinity of your project site. Submitting a project screening request to NY Natural Heritage is not necessary.

If the attached report lists that your location of interest is in the vicinity of state-listed animals, including state-listed bats, please consult the [EAF Mapper](#) to obtain a list of the species involved. (You do not have to be filling out an Environmental Assessment Form in order to use the EAF Mapper). Then consult the appropriate [NYSDEC Regional Office](#) for information on any project requirements or permit conditions.

If the attached report lists unlisted animals, rare plants, or significant natural communities, and if you would like more information on these, please submit a project screening request to [New York Natural Heritage](#). For more information, please see the DEC webpage [Request Natural Heritage Information for Project Screening](#).

The absence of data does not necessarily mean that rare or state-listed species, significant natural communities, or other significant habitats do not exist on or adjacent to the proposed site. Rather, NYNHP files currently do not contain information that indicates their presence. For most sites, comprehensive field surveys have not been conducted. NYNHP cannot provide a definitive statement on the presence or absence of all rare or state-listed species or significant natural communities. Depending on the nature of the project and the conditions at the project site, further information from on-site surveys or other resources may be required to fully assess impacts on biological resources from a proposed project.

This response applies only to known occurrences of rare or state-listed animals and plants, significant natural communities, and other significant habitats maintained in the NYNHP database.

New York Natural Heritage Program

<https://www.nynhp.org/>.

Environmental Resource Mapper



The coordinates of the point you clicked on are:

UTM 18	Easting:	586156.1949810889	Northing:	4662339.098135711
Longitude/Latitude	Longitude:	-73.95792430639273	Latitude:	42.10842512223084

The approximate address of the point you clicked on is:
286-360 Malden Tpke, Saugerties, New York, 12477

County: Ulster
Town: Saugerties
USGS Quad: SAUGERTIES

If your project or action is within or near an area with a rare animal, a permit may be required if the species is listed as endangered or threatened and the department determines the action may be harmful to the species or its habitat.

If your project or action is within or near an area with rare plants and/or significant natural communities, the environmental impacts may need to be addressed.

The presence of a unique geological feature or landform near a project, unto itself, does not trigger a requirement for a NYS DEC permit. Readers are advised, however, that there is the chance that a unique feature may also show in another data layer (ie. a wetland) and thus be subject to permit jurisdiction.

Please refer to the "Need a Permit?" tab for permit information or other authorizations regarding these natural resources.

Disclaimer: If you are considering a project or action in, or near, a wetland or a stream, a NYS DEC permit may be required. The Environmental Resources Mapper does not show all natural resources which are regulated by NYS DEC, and for which permits from NYS DEC are required. For example, Regulated Tidal Wetlands, and Wild, Scenic, and Recreational Rivers, are currently not included on the maps.

Print Preview



United States Department of the Interior



FISH AND WILDLIFE SERVICE
New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
Phone: (607) 753-9334 Fax: (607) 753-9699
Email Address: fw5es_nyfo@fws.gov

In Reply Refer To:

06/03/2024 14:03:43 UTC

Project Code: 2024-0062524

Project Name: MP 103.16 MALDEN TURNPIKE OVER MAINLINE BRIDGE
REPLACEMENT

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf>

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see <https://www.fws.gov/program/migratory-bird-permit/what-we-do>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see <https://www.fws.gov/library/collections/threats-birds>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/partner/council-conservation-migratory-birds>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project

planning to further the purposes of the Act. **Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.**

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

New York Ecological Services Field Office
3817 Luker Road
Cortland, NY 13045-9385
(607) 753-9334

PROJECT SUMMARY

Project Code: 2024-0062524

Project Name: MP 103.16 MALDEN TURNPIKE OVER MAINLINE BRIDGE
REPLACEMENT

Project Type: Bridge - Replacement

Project Description: Bridge replacement on Malden turnpike (County Road 34) over Mainline
NYS Thruway

Project Location:

The approximate location of the project can be viewed in Google Maps: [https://
www.google.com/maps/@42.108387500000006,-73.95790835800422,14z](https://www.google.com/maps/@42.108387500000006,-73.95790835800422,14z)



Counties: Ulster County, New York

ENDANGERED SPECIES ACT SPECIES

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

MAMMALS

NAME	STATUS
Indiana Bat <i>Myotis sodalis</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/5949	Endangered
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Endangered
Tricolored Bat <i>Perimyotis subflavus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/10515	Proposed Endangered

INSECTS

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Kerry Blackwood
Address: 251 New Karner Road
City: Albany
State: NY
Zip: 12205
Email: blackwoodk@hunt-eas.com
Phone: 6074272503



APPENDIX C

NOTICE OF TERMINATION (NOT)

**New York State Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505**

(NOTE: Submit completed form to address above)

NOTICE OF TERMINATION for Storm Water Discharges Authorized
under the SPDES General Permit for Construction Activity

Please indicate your permit identification number: NYR ____ _

I. Owner or Operator Information

1. Owner/Operator Name:

2. Street Address:

3. City/State/Zip:

4. Contact Person:

4a. Telephone:

4b. Contact Person E-Mail:

II. Project Site Information

5. Project/Site Name:

6. Street Address:

7. City/Zip:

8. County:

III. Reason for Termination

9a. ☐ All disturbed areas have achieved final stabilization in accordance with the general permit and SWPPP. ***Date final stabilization completed** (month/year): _____

9b. ☐ Permit coverage has been transferred to new owner/operator. Indicate new owner/operator's permit identification number: NYR ____ _
(Note: Permit coverage can not be terminated by owner identified in I.1. above until new owner/operator obtains coverage under the general permit)

9c. ☐ Other (Explain on Page 2)

IV. Final Site Information:

10a. Did this construction activity require the development of a SWPPP that includes post-construction stormwater management practices? ☐ yes ☐ no (If no, go to question 10f.)

10b. Have all post-construction stormwater management practices included in the final SWPPP been constructed? ☐ yes ☐ no (If no, explain on Page 2)

10c. Identify the entity responsible for long-term operation and maintenance of practice(s)?

**NOTICE OF TERMINATION for Storm Water Discharges Authorized under the
SPDES General Permit for Construction Activity - continued**

10d. Has the entity responsible for long-term operation and maintenance been given a copy of the operation and maintenance plan required by the general permit? ☐ yes ☐ no

10e. Indicate the method used to ensure long-term operation and maintenance of the post-construction stormwater management practice(s):

- ☐ Post-construction stormwater management practice(s) and any right-of-way(s) needed to maintain practice(s) have been deeded to the municipality.
- ☐ Executed maintenance agreement is in place with the municipality that will maintain the post-construction stormwater management practice(s).
- ☐ For post-construction stormwater management practices that are privately owned, a mechanism is in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the owner or operator's deed of record.
- ☐ For post-construction stormwater management practices that are owned by a public or private institution (e.g. school, university or hospital), government agency or authority, or public utility; policy and procedures are in place that ensures operation and maintenance of the practice(s) in accordance with the operation and maintenance plan.

10f. Provide the total area of impervious surface (i.e. roof, pavement, concrete, gravel, etc.) constructed within the disturbance area? _____
(acres)

11. Is this project subject to the requirements of a regulated, traditional land use control MS4? ☐ yes
☐ no
(If Yes, complete section VI - "MS4 Acceptance" statement)

V. Additional Information/Explanation:
(Use this section to answer questions 9c. and 10b., if applicable)

VI. MS4 Acceptance - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative (Note: Not required when 9b. is checked -transfer of coverage)

I have determined that it is acceptable for the owner or operator of the construction project identified in question 5 to submit the Notice of Termination at this time.

Printed Name:

Title/Position:

Signature:

Date:

NOTICE OF TERMINATION for Storm Water Discharges Authorized under the
SPDES General Permit for Construction Activity - continued

VII. Qualified Inspector Certification - Final Stabilization:

I hereby certify that all disturbed areas have achieved final stabilization as defined in the current version of the general permit, and that all temporary, structural erosion and sediment control measures have been removed. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:

Title/Position:

Signature:

Date:

VIII. Qualified Inspector Certification - Post-construction Stormwater Management Practice(s):

I hereby certify that all post-construction stormwater management practices have been constructed in conformance with the SWPPP. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:

Title/Position:

Signature:

Date:

IX. Owner or Operator Certification

I hereby certify that this document was prepared by me or under my direction or supervision. My determination, based upon my inquiry of the person(s) who managed the construction activity, or those persons directly responsible for gathering the information, is that the information provided in this document is true, accurate and complete. Furthermore, I understand that certifying false, incorrect or inaccurate information is a violation of the referenced permit and the laws of the State of New York and could subject me to criminal, civil and/or administrative proceedings.

Printed Name:

Title/Position:

Signature:

Date:

(NYS DEC Notice of Termination - January 2015)



APPENDIX D

USDA SOIL REPORT



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 **Ulster County, New York**

Malden Turnpike Over Mainline NYS Thruway Bridge Rehabilitation



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

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

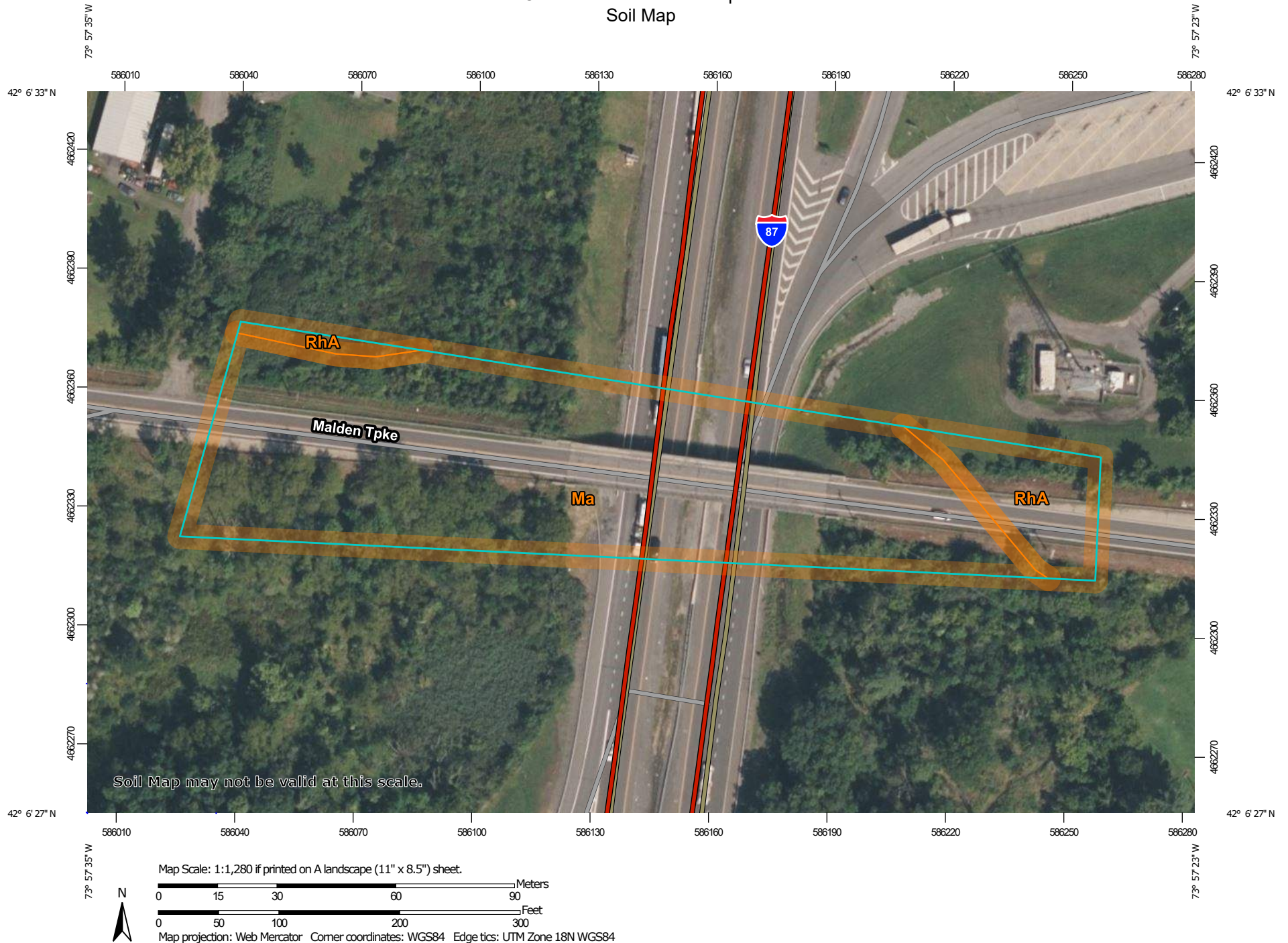
Custom Soil Resource Report

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



Custom Soil Resource Report

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: Ulster County, New York
Survey Area Data: Version 23, 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: Sep 4, 2020—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
Ma	Madalin silty clay loam	2.1	88.4%
RhA	Rhinebeck silt loam, 0 to 3 percent slopes	0.3	11.6%
Totals for Area of Interest		2.4	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.

Ulster County, New York

Ma—Madalin silty clay loam

Map Unit Setting

National map unit symbol: 9xh7

Elevation: 330 to 2,460 feet

Mean annual precipitation: 41 to 62 inches

Mean annual air temperature: 41 to 50 degrees F

Frost-free period: 110 to 200 days

Farmland classification: Farmland of statewide importance

Map Unit Composition

Madalin and similar soils: 80 percent

Minor components: 20 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Madalin

Setting

Landform: Depressions

Landform position (two-dimensional): Toeslope

Landform position (three-dimensional): Tread

Down-slope shape: Concave

Across-slope shape: Concave

Parent material: Clayey and silty glaciolacustrine deposits

Typical profile

H1 - 0 to 13 inches: silty clay loam

H2 - 13 to 45 inches: silty clay

H3 - 45 to 60 inches: stratified silty clay to silty clay loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Very poorly drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: About 0 inches

Frequency of flooding: None

Frequency of ponding: Frequent

Calcium carbonate, maximum content: 15 percent

Available water supply, 0 to 60 inches: Moderate (about 8.6 inches)

Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 4w

Hydrologic Soil Group: C/D

Ecological site: F144AY019NH - Wet Lake Plain

Hydric soil rating: Yes

Minor Components

Canandaigua

Percent of map unit: 5 percent

Landform: Depressions

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Hydric soil rating: Yes

Palms

Percent of map unit: 5 percent

Landform: Swamps, marshes

Hydric soil rating: Yes

Rhinebeck

Percent of map unit: 5 percent

Hydric soil rating: No

Odessa

Percent of map unit: 5 percent

Landform: Depressions

Hydric soil rating: No

RhA—Rhinebeck silt loam, 0 to 3 percent slopes

Map Unit Setting

National map unit symbol: 9xj5

Elevation: 80 to 1,000 feet

Mean annual precipitation: 41 to 62 inches

Mean annual air temperature: 41 to 50 degrees F

Frost-free period: 110 to 200 days

Farmland classification: Prime farmland if drained

Map Unit Composition

Rhinebeck and similar soils: 80 percent

Minor components: 20 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rhinebeck

Setting

Landform: Lake plains

Landform position (two-dimensional): Footslope

Landform position (three-dimensional): Tread

Down-slope shape: Concave

Across-slope shape: Linear

Parent material: Clayey and silty glaciolacustrine deposits

Typical profile

H1 - 0 to 10 inches: silt loam

H2 - 10 to 35 inches: silty clay loam

H3 - 35 to 50 inches: stratified silty clay to silt loam

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Somewhat poorly drained

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

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Depth to water table: About 6 to 18 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Available water supply, 0 to 60 inches: Moderate (about 7.1 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: C/D
Ecological site: F144AY018NY - Moist Lake Plain
Hydric soil rating: No

Minor Components

Cayuga

Percent of map unit: 5 percent
Hydric soil rating: No

Hudson

Percent of map unit: 5 percent
Hydric soil rating: No

Madalin

Percent of map unit: 5 percent
Landform: Depressions
Hydric soil rating: Yes

Churchville

Percent of map unit: 5 percent
Hydric soil rating: No

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- United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. <http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084>

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United States Department of Agriculture, Natural Resources Conservation Service. National soil survey handbook, title 430-VI. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/scientists/?cid=nrcs142p2_054242

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APPENDIX E

PRE-CONSTRUCTION SITE ASSESSMENT CHECKLIST

b. Pre-construction Site Assessment Checklist

(NOTE: Provide comments below as necessary)

1. Notice of Intent, SWPPP, and Contractors Certification:

Yes No NA

- ☐ ☐ ☐ Has a Notice of Intent been filed with the NYS Department of Conservation?
- ☐ ☐ ☐ Is the SWPPP on-site? Where? _____
- ☐ ☐ ☐ Is the Plan current? What is the latest revision date? _____
- ☐ ☐ ☐ Is a copy of the NOI (with brief description) onsite? Where? _____
- ☐ ☐ ☐ Have all contractors involved with stormwater related activities signed a contractor's certification?

2. Resource Protection

Yes No NA

- ☐ ☐ ☐ Are construction limits clearly flagged or fenced?
- ☐ ☐ ☐ Important trees and associated rooting zones, on-site septic system absorption fields, existing vegetated areas suitable for filter strips, especially in perimeter areas, have been flagged for protection.
- ☐ ☐ ☐ Creek crossings installed prior to land-disturbing activity, including clearing and blasting.

3. Surface Water Protection

Yes No NA

- ☐ ☐ ☐ Clean stormwater runoff has been diverted from areas to be disturbed.
- ☐ ☐ ☐ Bodies of water located either on site or in the vicinity of the site have been identified and protected.
- ☐ ☐ ☐ Appropriate practices to protect on-site or downstream surface water are installed.
- ☐ ☐ ☐ Are clearing and grading operations divided into areas <5 acres?

4. Stabilized Construction Access

Yes No NA

- ☐ ☐ ☐ A temporary construction entrance to capture mud and debris from construction vehicles before they enter the public highway has been installed.
- ☐ ☐ ☐ Other access areas (entrances, construction routes, equipment parking areas) are stabilized immediately as work takes place with gravel or other cover.
- ☐ ☐ ☐ Sediment tracked onto public streets is removed or cleaned on a regular basis.

5. Sediment Controls

Yes No NA

- ☐ ☐ ☐ Silt fence material and installation comply with the standard drawing and specifications.
- ☐ ☐ ☐ Silt fences are installed at appropriate spacing intervals
- ☐ ☐ ☐ Sediment/detention basin was installed as first land disturbing activity.
- ☐ ☐ ☐ Sediment traps and barriers are installed.

6. Pollution Prevention for Waste and Hazardous Materials

Yes No NA

- ☐ ☐ ☐ The Operator or designated representative has been assigned to implement the spill prevention avoidance and response plan.
- ☐ ☐ ☐ The plan is contained in the SWPPP on page _____
- ☐ ☐ ☐ Appropriate materials to control spills are onsite. Where? _____



APPENDIX F

CONSTRUCTION INSPECTION REPORT

EROSION AND SEDIMENT CONTROL INSPECTION

TO BE USED FOR WEEKLY INSPECTIONS AND FINAL INSPECTION

DATE: TIME: WEATHER:
INSPECTOR: TITLE SOIL CONDITIONS:

1) Describe the condition of runoff from all points of discharge from the site

During inspection, was any runoff from non-permitted point(s) noted? YES NO
☐ ☐
If yes, describe:

2) Describe any off site discharge of sediment, either at time of inspection or evidence of sediment discharge since last weekly inspection.

3) Describe condition of natural water bodies within, or directly adjacent to project property boundary (including any sediment discharge).

4) Identify any BMPs and erosion and sediment control practices that need repair or maintenance.

Silt Fence	Y / N	NA
Sediment Filter Logs	Y / N	NA
Gravel Bags	Y / N	NA
Straw Bales:	Y / N	NA
Other:	Y / N	NA

Describe any additional BMPs and Sediment Control Practices that need repair or maintenance:

5) Describe corrective actions that must be taken to install, repair, replace, or maintain erosion and sediment control practices.

6) Identify any BMPs and erosion and sediment control practices that were not installed properly or are not functioning and need to be reinstalled or replaced.

7) Identify status of corrective measures and / or maintenance identified in previous Inspection Report Forms

8) Include a sketch of the areas that are disturbed at the time of inspection and areas that have been stabilized (temporary and/or final) since the last inspection. If not applicable during inspection, indicate N/A or provide explanation.



APPENDIX G

GP-0-25-001



Department of
Environmental
Conservation

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL
CONSERVATION (NYSDEC)

SPDES GENERAL PERMIT
FOR STORMWATER DISCHARGES

From

CONSTRUCTION ACTIVITY

Permit No. GP-0-25-001

Construction General Permit (CGP)

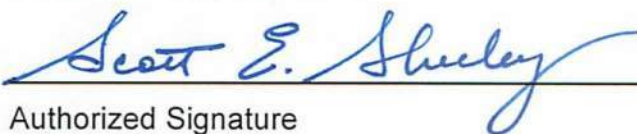
Issued Pursuant to Article 17, Titles 7, 8 and Article 70
of the Environmental Conservation Law

Effective Date: January 29, 2025

Expiration Date: January 28, 2030

Scott E. Sheeley

Chief Permit Administrator

A handwritten signature in blue ink, reading "Scott E. Sheeley". The signature is written over a horizontal line.

Authorized Signature

JAN. 29, 2025

Date

Address: NYSDEC
Division of Environmental Permits
625 Broadway, 4th Floor
Albany, N.Y. 12233-1750

PREFACE

Pursuant to Section 402 of the Clean Water Act (CWA), and 40 CFR 122.26(b)(14)(x), (15)(i), and (15)(ii), *stormwater discharges* from certain *construction activities* are unlawful unless they are authorized by a National Pollutant Discharge Elimination System (NPDES) permit or by a state permit program. New York State administers the approved State Pollutant Discharge Elimination System (SPDES) program with permits issued in accordance with the New York State Environmental Conservation Law (ECL) Article 17, Titles 7 and 8, and Article 70, as well as 6 NYCRR Parts 621 and 750.

Construction activities constitute construction of a *point source* and, therefore, pursuant to ECL sections 17-0505, 17-0701, and 17-0803, the *owner or operator* must have coverage under a SPDES permit prior to *commencement of construction activities*. The *owner or operator* cannot wait until there is an actual *discharge* from the *construction site* to obtain permit coverage.

***Note: The italicized words/phrases within this permit are defined in Appendix A.**

**NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
SPDES CONSTRUCTION GENERAL PERMIT (CGP) GP-0-25-001
FOR STORMWATER DISCHARGES FROM CONSTRUCTION ACTIVITIES**

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Part I. How to Obtain Coverage and General Requirements

To be covered under this permit, the *owner or operator* must meet all eligibility requirements in Part I.A. and follow the requirements for obtaining permit coverage in Part I.D., F., or G.

A. Eligibility Requirements

For a *common plan of development or sale*, the *phase(s)* that meet the eligibility requirements in Part I.A. may obtain coverage under this permit even if other *phase(s)* of the same *common plan of development or sale* do not meet the eligibility requirements and require an individual SPDES permit.

1. The *owner's or operator's construction activities* involve soil disturbances of:
 - a. one or more acres; or
 - b. less than one acre which are part of a *common plan of development or sale* that will ultimately disturb one or more acres; or
 - c. less than one acre where NYSDEC has determined that a SPDES permit is required for *stormwater discharges* based on the potential for contribution to a violation of a *water quality standard* or for significant contribution of pollutants to *surface waters of the State*.
 - i. 5,000 square feet or more, but less than one acre, and are in the New York City Watershed located east of the Hudson River, Appendix C Figure 1; or
 - ii. 20,000 square feet or more, but less than one acre, within the municipal boundaries of the City of New York (NYC); or
 - iii. less than 20,000 square feet which are part of a *common plan of development or sale* that will ultimately disturb 20,000 square feet or more, but less than one acre, within the municipal boundaries of NYC; or
 - iv. that creates 5,000 square feet or more of *impervious area* within the municipal boundaries of NYC.

2. *Discharges from the owner's or operator's construction activities* are/were not:

- a. already covered by a different SPDES permit; or
- b. covered under a different SPDES permit that was denied, terminated, or revoked; or
- c. identified in an expired individual SPDES permit that was not renewed; or
- d. required to obtain an individual SPDES permit or another general SPDES permit in accordance with Part VII.K.

3. If *construction activities* may adversely affect a species that is endangered or threatened, the *owner or operator* must obtain a:

- a. permit issued pursuant to 6 NYCRR Part 182 for the project; or
- b. letter issued by NYSDEC of non-jurisdiction pursuant to 6 NYCRR Part 182 for the project.

4. If *construction activities* have the potential to affect an *historic property*, the *owner or operator* must obtain one of the following:

- a. documentation that the *construction activity* is not within an archeological buffer area indicated on the sensitivity map, and that the *construction activity* is not located on or immediately adjacent to a property listed or determined to be eligible for listing on the National or State Registers of Historic Places, and that there is no new permanent building 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 NYS Office of Parks, Recreation and Historic Preservation (OPRHP), a Historic Preservation Commission of a Certified Local Government, or a qualified preservation professional has determined that the building, structure, or object more than 50 years old is not historically/archeologically significant:
 - i. 1-5 acres of disturbance - 20 feet; or
 - ii. 5-20 acres of disturbance - 50 feet; or

- iii. 20+ acres of disturbance - 100 feet.
- b. NYSDEC consultation form sent to OPRHP,¹ and copied to NYSDEC's Agency Historic Preservation Officer (APO), and
 - i. the State Environmental Quality Review Act (SEQR) Environmental Assessment Form (EAF) with a negative declaration or the Findings Statement, with documentation of OPRHP's agreement with the resolution; or
 - ii. documentation from OPRHP that the *construction activity* will result in No Impact; or
 - iii. documentation from OPRHP providing a determination of No Adverse Impact; or
 - iv. a Letter of Resolution signed by the *owner or operator*, OPRHP and the DEC APO which allows for this *construction activity* to be eligible for coverage under the general permit in terms of the State Historic Preservation Act (SHPA).
- c. documentation of satisfactory compliance with Section 106 of the National Historic Preservation Act for a coterminous project area:
 - i. No Affect; or
 - ii. No Adverse Affect; or
 - iii. Executed Memorandum of Agreement.
- d. documentation that SHPA Section 14.09 has been completed by NYSDEC or another state agency.
- 5. If *construction activities* are subject to SEQR, the *owner or operator* must obtain documentation that SEQR has been satisfied.
- 6. If *construction activities* are not subject to SEQR, but subject to the equivalent environmental review from another New York State or federal agency, the

¹ The consultation form can be submitted, along with other project information, through OPRHP's Cultural Resource Information System (CRIS) portal. If submitted through CRIS, paper copies of the consultation form need not be mailed.

Part I.A.6.

owner or operator must obtain documentation that project review, pursuant to a process equivalent to SEQR from another New York State or federal agency, has been satisfied.

7. If *construction activities* require Uniform Procedures Act (UPA) Permits (see 6 NYCRR Part 621) from NYSDEC, or the equivalent from another New York State or federal agency, the *owner or operator* must:

- a. obtain all such necessary permits; or
- b. receive notification from NYSDEC pursuant to 6 NYCRR 621.3(a)(4) excepting Part I.A.7.a.

8. *Construction activities* are not eligible if they meet the following criteria in Part I.A.8.a. or b.:

- a. For linear transportation and linear utility project types, the *construction activities*:
 - i. are 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; and
 - ii. are undertaken on land with no existing *impervious cover*; and
 - iii. disturb two or more acres of *steep slope*.
- b. For all other project types, the *construction activities*:
 - i. are 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; and
 - ii. are undertaken on land with no existing *impervious cover*; and
 - iii. disturb one or more acres of *steep slope*.

B. Types of *Discharges* Authorized

1. The following *stormwater discharges* are authorized under this permit:
 - a. *Stormwater discharges*, including *stormwater* runoff, snowmelt runoff, and surface runoff and drainage, associated with *construction activity*, are authorized under this permit provided that appropriate *stormwater* controls are designed, installed, and maintained in accordance with Part II. and Part III.
 - b. *Stormwater discharges* from construction support activities at the *construction site* (including concrete or asphalt batch plants, equipment staging yards, material storage areas, excavated material disposal areas, and borrow areas) if the following requirements are met:
 - i. The support activity is directly related to the *construction site* required to have permit coverage for *stormwater discharges*; and
 - ii. The support activity is not a commercial operation, nor does it serve multiple unrelated *construction sites*; and
 - iii. The support activity does not continue to operate beyond the completion of the *construction activity* at the site it supports; and
 - iv. *Stormwater* controls are implemented in accordance with Part II. and Part III. for *discharges* from the support activity areas.
2. The following non-*stormwater discharges* associated with *construction activity* are authorized under this permit:
 - a. Non-*stormwater discharges* listed in 6 NYCRR 750-1.2(a)(29)(vi), with the following exception: “*Discharges* from firefighting activities are authorized only when the firefighting activities are emergencies/unplanned”; and
 - b. Non-*stormwater discharges* of waters to which other components have not been added that are used in accordance with the *SWPPP* to control dust or irrigate vegetation in stabilized areas; and
 - c. Uncontaminated *discharges* from *dewatering* operations

3. Authorized *discharges of stormwater* or authorized *discharges* of non-*stormwater*, commingled with a *discharge* authorized by a different SPDES permit and/or a *discharge* that does not require SPDES permit authorization, are also authorized under this permit.

C. Prohibited *Discharges*

1. Non-*stormwater discharges* prohibited under this permit include but are not limited to:
 - a. Wastewater from washout of concrete; and
 - b. Wastewater from washout and cleanout of stucco, paint, form release oils, curing compounds, and other construction materials; and
 - c. Fuels, oils, or other *pollutants* used in vehicle and equipment operation and maintenance; and
 - d. Soaps, solvents, or detergents used in vehicle and equipment washing or external building washdown; and
 - e. Toxic or hazardous substances from a spill or other release.

D. Electronic Notice of Intent (eNOI) Submittal

To receive authorization in accordance with Part I.D.3.b., the *owner or operator* must submit a complete eNOI in accordance with the requirements in Part I.D. The eNOI contains questions to: ensure eligibility requirements in Part I.A. have been met; obtain *owner or operator* contact information; obtain the total area to be disturbed and the existing/future *impervious areas* (rounded to the nearest tenth of an acre); confirm *Traditional Land Use Control MS4 Operator* jurisdiction over construction projects; satisfy the EPA eRule requirements; confirm that the Water Quality-Based Effluent Limitations in Part II. have been met; demonstrate consideration of the future risks due to climate change in accordance with Part III.A.2.; and confirm that the other *Stormwater Pollution Prevention Plan (SWPPP)* requirements in Part III. have been met.

1. An eNOI may be submitted for:
 - a. *construction activities* that are not part of a *common plan of development or sale*; or

- b. an entire *common plan of development or sale*; or
 - c. separate *phase(s)* of a *common plan of development or sale* if the following requirements are met:
 - i. the *common plan of development or sale* meets the eligibility requirements of Part I.A.5. or 6.; and
 - ii. the *phase(s)* meet(s) all other eligibility requirements of Part I.A.; and
 - iii. Part III.C. Required *SWPPP* Components by Project Type is based on the *common plan of development or sale*, not the *phase(s)*; or
 - d. *tree clearing* that is associated with, or will support, a *renewable energy* generation, transmission, or storage project that meets Part I.A.5. and 6., if the *tree clearing*:
 - i. meets all other eligibility requirements of Part I.A.; and
 - ii. will occur in NYSDEC's Regions 3-9; and
 - iii. is not within ¼ mile of a bat hibernaculum protected pursuant to 6 NYCRR Part 182; and
 - iv. will occur between November 1st and March 31st.
2. As prerequisites for submitting an eNOI, the *owner or operator* must:
- a. prepare a *SWPPP* for Part I.D.1.a., b., c., or d. in accordance with Part III.; and
 - b. based on the following criteria, upload the following signature forms signed in accordance with Part VII.J. to the eNOI prior to submission:
 - i. for all eNOIs:
 - 1. the *SWPPP* Preparer Certification Form, Appendix F, signed by the *SWPPP* preparer; and

2. the Owner/Operator Certification Form, Appendix J, signed by the *owner or operator*; and
- ii. if an eNOI includes *construction activities* within the municipal boundary(ies) of *Traditional Land Use Control MS4 Operator(s)* that will *discharge* to the *MS4(s)*:
 1. determine if the *Traditional Land Use Control MS4 Operator(s)* have review authority. A *Traditional Land Use Control MS4 Operator* does not have review authority where:
 - a. the *owner or operator* of the *construction activities* in Part I.D.2.b.ii. is the same entity as the *Traditional Land Use Control MS4 Operator* identified in Part I.D.2.b.ii.; or
 - b. there is a statute exempting the *owner or operator* from zoning review by the *Traditional Land Use Control MS4 Operator*; or
 - c. there is no such statute per Part I.D.2.b.ii.1.b., the *Traditional Land Use Control MS4 Operator* concludes, after public hearing, that it does not have zoning review authority in accordance with Legal Memorandum LU14 Updated January 2020 “Governmental Immunity from Zoning and Other Legislation”; and
 2. if the *Traditional Land Use Control MS4 Operator(s)* have review authority, submit the *SWPPP* to the *Traditional Land Use Control MS4 Operator(s)* for review and have:
 - a. if outside the municipal boundaries of NYC: the *MS4 SWPPP Acceptance Form*, Appendix G, signed by the principal executive officer or ranking elected official from the *Traditional Land Use Control MS4 Operator*, or by a duly authorized representative of that person in accordance with Part VII.J.2.; or

- b. if within the municipal boundaries of NYC: The City of New York Department of Environmental Protection (NYCDEP) SWPPP Acceptance/Approval Form, Appendix H, signed by the principal executive officer or ranking elected official from the Traditional Land Use Control MS4 Operator, or by a duly authorized representative of that person in accordance with Part VII.J.2.; and
 - 3. if the *Traditional Land Use Control MS4 Operator* does not have review authority, have the MS4 No Jurisdiction Form, Appendix I, signed by the principal executive officer or ranking elected official from the *Traditional Land Use Control MS4 Operator*, or by a duly authorized representative of that person in accordance with Part VII.J.2.
3. Submitting an eNOI:
- a. The *owner or operator* must submit a complete Notice of Intent electronically using a NYSDEC approved form.²
 - b. The *owner or operator* is authorized to *commence construction activity* as of the authorization date indicated in the Letter of Authorization (LOA), which is sent by NYSDEC after a complete eNOI is submitted.
 - i. If an eNOI is received for a *SWPPP* that deviates from one of the technical standards but demonstrates *equivalence* in accordance with Part III.B.1.a.ii. or Part III.B.2.b.ii., if the *SWPPP* includes *construction activities* that are not within the municipal boundary(ies) of *Traditional Land Use Control MS4 Operator(s)*, and/or if the *SWPPP* includes *construction activities* within the municipal boundary(ies) of *Traditional Land Use Control MS4 Operator(s)* that do not have review authority in accordance with Part I.D.2.b.ii.1., the authorization date indicated in the LOA will be 60 business days after the eNOI submission date.

² Unless NYSDEC grants a waiver in accordance with 40 CFR 127.15(c) or (d). All waiver requests must be submitted to Stormwater_info@dec.ny.gov or NYSDEC, Bureau of Water Permits, 625 Broadway, 4th Floor, Albany, New York 12233-3505.

- c. If *Traditional Land Use Control MS4 Operator(s)* have review authority in accordance with Part I.D.2.b.ii.2., the *owner or operator* must, within five business days of receipt of the LOA, send an electronic copy of the LOA to the *Traditional Land Use Control MS4 Operator(s)* with review authority.

E. General Requirements for Owners or Operators with Permit Coverage

1. As of the date the LOA is received, the *owner or operator* must make the eNOI, *SWPPP*, and LOA available for review and copying in accordance with the requirements in Part VII.H. When applicable, as of the date an updated LOA is received, the *owner or operator* must make the updated LOA available for review and copying in accordance with the requirements in Part VII.H.
2. The *owner or operator* must ensure compliance with all requirements of this permit and that the provisions of the *SWPPP*, including any changes made to the *SWPPP* in accordance with Part III.A.5., are properly implemented and maintained from the *commencement of construction activity* until:
 - a. all areas of disturbance have achieved *final stabilization*; and
 - b. the owner's or operator's coverage under this permit is terminated in accordance with Part V.A.5.a.
3. As of the date of the *commencement of construction activities* until Part I.E.2.a. and b. have been met, the *owner or operator* must maintain at the *construction site*, a copy of:
 - a. all documentation necessary to demonstrate eligibility with this permit; and
 - b. this permit; and
 - c. the *SWPPP*; and
 - d. the signed *SWPPP Preparer Certification Form*; and
 - e. the signed *MS4 SWPPP Acceptance Form* or signed *NYCDEP SWPPP Acceptance/Approval Form* or signed *MS4 No Jurisdiction Form* (when applicable); and
 - f. the signed *Owner/Operator Certification Form*; and

- g. the eNOI; and
 - h. the LOA; and
 - i. the LOA transmittal to the Traditional Land Use Control MS4 Operator in accordance with Part I.D.3.c. (when applicable).
4. The *owner or operator* must maintain at the *construction site*, until Part I.E.2.a. and b. have been met, as of the date the documents become final or are received, a copy of the:
- a. responsible contractor's or subcontractor's certification statement(s) in accordance with Part III.A.7.; and
 - b. inspection reports in accordance with Part IV.C.4. and 6.; and
 - c. Request to Disturb Greater Than Five Acres and the Authorization Letter to Disturb Greater Than Five Acres in accordance with Part I.E.6. (when applicable); and
 - d. Request to Continue Coverage and the Letter of Continued Coverage (LOCC) in accordance with Part I.F.2. and 4. (when applicable); and
 - e. The updated LOA(s) in accordance with Part I.E.9. (when applicable).
5. The *owner or operator* must maintain the documents in Part I.E.3. and 4. in a secure location, such as a job trailer, on-site construction office, or mailbox with lock. The secure location must be accessible during normal business hours to an individual performing a compliance inspection. The documents must be paper documents unless electronic documents are accessible to the inspector during an inspection to the same extent as a paper copy stored at the site would be. If electronic documents are kept on site, the *owner or operator* must maintain functional equipment on site available to an inspector during normal hours of operation such that an inspector may view the electronic documents in a format that can be read in a similar manner as a paper record and in a legally dependable format with no less evidentiary value than their paper equivalent.
6. The *owner or operator* must meet the following requirements prior to disturbing greater than five acres of soil at any one time:
- a. The *owner or operator* must submit a written Request to Disturb Greater Than Five Acres to:

Part I.E.6.a.i.

- i. NYSDEC's Regional Office Division of Water staff based on the project location, Appendix E, if a *Traditional Land Use Control MS4 Operator* does not have review authority in accordance with Part I.D.2.b.ii.1.; or
 - ii. the *Traditional Land Use Control MS4 Operator*, if a *Traditional Land Use Control MS4 Operator* has review authority in accordance with Part I.D.2.b.ii.1.; or
 - iii. NYSDEC's Regional Office Division of Water staff based on the project location, Appendix E, and each involved *Traditional Land Use Control MS4 Operator*, if the project spans multiple municipalities with more than one *Traditional Land Use Control MS4 Operator* involved with review authority in accordance with Part I.D.2.b.ii.1.
- b. The written Request to Disturb Greater Than Five Acres must include:
- i. The SPDES permit identification number (Permit ID); and
 - ii. Full technical justification demonstrating why alternative methods of construction that would result in five acres of soil disturbance or less at any one time are not feasible; and
 - iii. The phasing plan for the project and sequencing plans for all *phases* from the *SWPPP* in accordance with Part III.B.1.d.; and
 - iv. Plans with locations and details of erosion and sediment control practices such that the heightened concern for erosion when disturbing greater than five acres at one time has been addressed; and
 - v. Acknowledgment that "the *owner or operator* will comply with the requirements in Part IV.C.2.b."; and
 - vi. Acknowledgment that "the *owner or operator* will comply with the requirements in Part II.B.1.b."
- c. The *owner or operator* must be in receipt of an Authorization Letter to Disturb Greater Than Five Acres, which will include when the

authorization begins and ends and indicate a maximum area (acres) of soil disturbance allowed at any one time, from:

- i. NYSDEC, if Part I.E.6.a.i. or iii. apply; or
 - ii. the *Traditional Land Use Control MS4 Operator*, if Part I.E.6.a.ii. applies.
7. Upon a finding of significant non-compliance with the practices described in the *SWPPP* or violation of this permit, NYSDEC may order an immediate stop to all *construction activity* at the site until the non-compliance is remedied. The stop work order must be in writing, describe the non-compliance in detail, and be sent to the *owner or operator*.
8. If any human remains or archaeological remains are encountered during excavation, the *owner or operator* must immediately cease, or cause to cease, all *construction activity* in the area of the remains and notify the appropriate Regional Water Engineer (RWE).³ *Construction activity* shall not resume until written permission to do so has been received from the RWE.
9. To be authorized to implement modifications to the information previously submitted in the eNOI, the *owner or operator* must:
 - a. notify NYSDEC via email at Stormwater_info@dec.ny.gov requesting access to update the eNOI; and
 - b. update the eNOI to reflect the modifications and resubmit the eNOI in accordance with Part I.D.; and
 - c. receive an updated LOA.
10. The eNOI, *SWPPP*, LOA, updated LOAs (when applicable), and inspection reports required by this permit are public documents that the *owner or operator* must make available for review and copying by any person within five business days of the *owner or operator* receiving a written request by any such person to review these documents. Copying of documents will be done at the requester's expense.

³ The Regional Water Manager where a DEC Region does not have a RWE.

F. Permit Coverage for *Discharges* Authorized Under GP-0-20-001

When applicable:

1. Upon the effective date of this permit, an *owner or operator* of a *construction activity*, with coverage under GP-0-20-001, will have interim coverage under GP-0-25-001 for 45 calendar days starting on the effective date of GP-0-25-001 so long as the *owner or operator* maintains compliance with all applicable requirements of this permit.
2. Within 30 calendar days of the effective date of this permit, the *owner or operator*, with coverage under GP-0-20-001, must submit a complete Request to Continue Coverage electronically using a NYSDEC approved form,⁴ which contains the information identified in Part I.F.3. below, if:
 - a. the *owner or operator* continues to implement the SMP component in conformance with the technical standards in place at the time of initial project authorization; and
 - b. the *owner or operator* will comply with all non-design requirements of GP-0-25-001.
3. The Request to Continue Coverage form contains questions to: ensure eligibility requirements in Part I.A. have been met; verify *owner or operator* contact information; verify the permit identification number; verify the original eNOI submission ID, if applicable; verify Part I.F.2.a. and b.; verify the version of the Design Manual that the technical/design components conform to; and receive an updated Owner/Operator Certification Form, Appendix I.
4. The *owner or operator* has obtained continued coverage under GP-0-25-001 as of the date indicated in the LOCC, which is sent by NYSDEC after a complete Request to Continue Coverage form is submitted.
5. If the owner or operator does not submit the Request to Continue Coverage form in accordance with Part I.F.2. and 3., coverage under this permit is automatically terminated after interim coverage expires.

⁴ Unless NYSDEC grants a waiver in accordance with 40 CFR 127.15(c) or (d). All waiver requests must be submitted to Stormwater_info@dec.ny.gov or NYSDEC, Bureau of Water Permits, 625 Broadway, 4th Floor, Albany, New York 12233-3505.

G. Change of *Owner or Operator*

When applicable:

1. When property ownership changes, or when there is a change in operational control over the construction plans and specifications, the following process applies:
 - a. The new *owner or operator* must meet the applicable prerequisites for submitting an eNOI in accordance with Part I.D.2.; and
 - b. The new *owner or operator* must submit an eNOI in accordance with Part I.D.3.; and
 - c. Permit coverage for the new *owner or operator* will be effective upon receipt of the LOA in accordance with Part I.D.3.b.; and
 - d. The new *owner or operator*, upon receipt of their LOA, must provide their Permit ID to the original *owner or operator*; and
 - e. If the original *owner or operator* will no longer be the *owner or operator* of the *construction activity* identified in the original *owner's or operator's* eNOI, the original *owner or operator*, upon receipt of the new *owner's or operator's* Permit ID in accordance with Part I.G.1.d., must submit to NYSDEC a completed eNOT in accordance with Part V. that includes the name and Permit ID of the new *owner or operator*; or
 - f. If the original *owner or operator* maintains ownership of a portion of the *construction activity*, the original *owner or operator* must maintain their coverage under the permit by modifying their eNOI; modifications to the eNOI must include:
 - i. the revised area of disturbance and/or *impervious area(s)*; and
 - ii. the revised SMP information, if applicable; and
 - iii. a narrative description of what has changed; and
 - iv. the new *owner's or operator's* Permit ID for the portion of the project removed from the eNOI.

Owners or operators must follow Part I.E.9. to modify the eNOI.

Part II. Water Quality-Based Effluent Limitations

A. Maintaining Water Quality

NYSDEC expects that compliance with the requirements of this permit will control *discharges* necessary to meet applicable *water quality standards*. It shall be a violation of the *ECL* for any *discharge* to either cause or contribute to a violation of the following *water quality standards* as contained in Parts 700 through 705 of Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York:

1. There must be no increase in turbidity that will cause a substantial visible contrast to natural conditions; and
2. There must be no increase in suspended, colloidal or settleable solids that will cause deposition or impair the waters for their best usages; and
3. There must be no residue from oil and floating substances, nor visible oil film, nor globules of grease.

If there is evidence indicating that the *stormwater discharges* authorized by this permit are causing, have the reasonable potential to cause, or are contributing to a violation of the *water quality standard*, the *owner or operator* must take appropriate corrective action in accordance with Part IV.C.5. of this permit and document in accordance with Part IV.C.4. of this permit. To address the *water quality standard* violation the *owner or operator* must include and implement appropriate controls in the *SWPPP* to correct the problem or obtain an individual SPDES permit.

If, despite compliance with the requirements of this permit, it is demonstrated that the *stormwater discharges* authorized by this permit are causing or contributing to a violation of *water quality standards*, or if NYSDEC determines that a modification of this permit is necessary to prevent a violation of *water quality standards*, the authorized *discharges* will no longer be eligible for coverage under this permit, and the *owner or operator* must obtain an individual SPDES permit prior to further *discharges* from the *construction site*.

B. Effluent Limitations Applicable to *Discharges* from *Construction Activities*

Discharges authorized by this permit must achieve, at a minimum, the effluent limitations in Part II.B.1.a., b., c., d., and e. These limitations represent the

degree of effluent reduction attainable by the application of best practicable technology currently available.

1. Erosion and Sediment Control Requirements - The *owner or operator* must select, design, install, implement, and maintain control measures to *minimize* the *discharge of pollutants* and prevent a violation of the *water quality standards*. The selection, design, installation, implementation, and maintenance of these control measures must meet the non-numeric effluent limitations in Part II.B.1.a., b., c., d., and e. and be in accordance with the New York State Standards and Specifications for Erosion and Sediment Control (BB), dated November 2016, using sound engineering judgment. Where control measures are not designed in conformance with the design criteria included in the technical standard, the *owner or operator* must include in *SWPPP* the reason(s) for the deviation, or alternative design, and provide information in the *SWPPP* demonstrating that the deviation or alternative design is *equivalent* to the technical standard.

- a. **Erosion and Sediment Controls.** At a minimum, erosion and sediment controls must be selected, designed, installed, implemented, and maintained to:
 - i. *Minimize* soil erosion through application of runoff control and soil stabilization control measure to *minimize pollutant discharges*; and
 - ii. Control *stormwater discharges*, including both peak flow rates and total *stormwater* volume, to *minimize* channel and *streambank* erosion and scour in the immediate vicinity of the *discharge* points; and
 - iii. *Minimize* the amount of soil exposed during *construction activity*; and
 - iv. *Minimize* the disturbance of *steep slope*; and
 - v. *Minimize* sediment *discharges* from the site; and
 - vi. Provide and maintain *natural buffers* around surface waters, direct *stormwater* to vegetated areas and maximize *stormwater* infiltration to reduce *pollutant discharges*, unless *infeasible*; and
 - vii. *Minimize* soil compaction. *Minimizing* soil compaction is not required

where the intended function of a specific area of the site dictates that it be compacted; and

- viii. Unless *infeasible*, preserve a sufficient amount of topsoil to complete soil restoration and establish a uniform, dense vegetative cover; and
 - ix. *Minimize* dust. On areas of exposed soil, *minimize* dust through the appropriate application of water or other dust suppression techniques to control the generation of *pollutants* that could be discharged from the site.
- b. **Soil Stabilization.** In areas where soil disturbance activity has ceased, whether permanently or *temporarily ceased*, the application of soil stabilization measures must be initiated by the end of the next business day and completed within 14 calendar days from the date the current soil disturbance activity ceased. For *construction sites* that *directly discharge* to one of the 303(d) segments listed in Appendix D, or are located in one of the watersheds listed in Appendix C, or are authorized to disturb greater than five acres in accordance with Part I.E.5.a.viii., the application of soil stabilization measures must be initiated by the end of the next business day and completed within seven calendar days from the date the soil disturbance activity ceased.
- c. **Dewatering.** *Discharges* from *dewatering* activities, including *discharges* from *dewatering* of trenches and excavations, must be managed by appropriate control measures.
- d. **Pollution Prevention Measures.** Select, design, install, implement, and maintain effective pollution prevention measures to *minimize* the *discharge of pollutants* and prevent a violation of the *water quality standards*. At a minimum, such measures must be selected, designed, installed, implemented, and maintained to:
- i. *Minimize* the *discharge of pollutants* from equipment and vehicle washing, wheel wash water, and other wash waters. Soaps, detergents and solvents cannot be used; and
 - ii. *Minimize* the exposure of building materials, building products, construction wastes, trash, landscape materials, fertilizers, pesticides, herbicides, detergents, sanitary waste, hazardous and toxic waste, and other materials present on the site to precipitation

and to *stormwater*. *Minimization* of exposure is not required in cases where the exposure to precipitation and to *stormwater* will not result in a *discharge* of *pollutants*, or where exposure of a specific material or product poses little risk of *stormwater* contamination (such as final products and materials intended for outdoor use); and

- iii. Prevent the *discharge* of *pollutants* from spills and leaks and implement chemical spill and leak prevention and response procedures.

- e. **Surface Outlets.** When discharging from basins and impoundments, the surface outlets must be designed, constructed, and maintained in such a manner that sediment does not leave the basin or impoundment and that erosion at or below the outlet does not occur.

C. Post-Construction Stormwater Management Practice (SMP) Requirements

1. The *owner or operator* of a *construction activity* that requires post-construction SMPs, in accordance with Part III.C., must select, design, install, implement, and maintain the SMPs to meet the *performance criteria* in the New York State Stormwater Management Design Manual, dated July 31, 2024 (DM), using sound engineering judgment. Where SMPs are not designed in conformance with the *performance criteria* in the DM, the *owner or operator* must include in the *SWPPP* the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.
2. The *owner or operator* of a *construction activity*, that requires SMPs in accordance with Part III.C., must design the practices to meet the applicable *sizing criteria* in Part II.C.2.a., b., c., or d.

a. Sizing Criteria for *New Development*

- i. Runoff Reduction Volume (RRv) and Water Quality Volume (WQv):
 1. Reduce the total WQv by application of RR techniques and standard SMPs with RRv capacity. The total WQv must be calculated in accordance with the criteria in Section 4.2 of the DM; or

2. Minimum RRV and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the requirements in Part II.C.2.a.i.1. due to *site limitations* must direct runoff from all newly constructed *impervious areas* to a RR technique or standard SMP with RRV capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv must be documented in the *SWPPP*. For each *impervious area* that is not directed to a RR technique or standard SMP with RRV capacity, the *SWPPP* must include documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible*.

In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRV as calculated using the criteria in Section 4.4 of the DM. The remaining portion of the total WQv that cannot be reduced must be treated by application of standard SMPs.

- ii. Channel Protection Volume (CPv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event, remaining after runoff reduction. Where a CPv control orifice is provided, the minimum orifice size must be 3 inches, with acceptable external trash rack or orifice protection. The CPv requirement does not apply when:
 1. Reduction of the entire CPv is achieved by application of runoff reduction techniques or infiltration systems; or
 2. The 1-year post-development peak *discharge* is less than or equal to 2.0 cfs without detention or velocity controls; or
 3. The site *directly discharges* into a fifth order or larger water body (stream, river, or lake), or tidal waters, where the increase in smaller flows will not impact the stream bank or channel integrity. However, the point of *discharge* must be adequately protected against scour and erosion by the increased peak *discharge*.

- iii. **Overbank Flood Control Criteria (Qp):** Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
 - 1. the site *directly discharges* to tidal waters or fifth order or larger streams, or
 - 2. A downstream analysis reveals that *overbank* control is not required.
- iv. **Extreme Flood Control Criteria (Qf):** Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
 - 1. the site *directly discharges* to tidal waters or fifth order or larger streams, or
 - 2. A downstream analysis reveals that *overbank* control is not required.

b. Sizing Criteria for New Development in Enhanced Phosphorus Removal Watersheds

- i. Runoff Reduction Volume (RRv) and Water Quality Volume (WQv):
 - 1. Reduce the WQv by application of RR techniques and standard SMPs with RRv capacity. The total WQv is the runoff volume from the 1-year, 24-hour design storm over the post-developed watershed and must be calculated in accordance with the criteria in Section 4.3 of the DM; or
 - 2. Minimum RRv and Treatment of Remaining Total WQv: *Construction activities* that cannot meet the criteria in Part II.C.2.b.i.1. due to *site limitations* must direct runoff from all newly constructed *impervious areas* to a RR technique or standard SMP with RRv capacity unless *infeasible*. The specific *site limitations* that prevent the reduction of 100% of the WQv must be documented in the *SWPPP*. For each *impervious area* that is not directed to a RR technique or standard SMP with RRv capacity, the *SWPPP* must include

documentation which demonstrates that all options were considered and for each option explains why it is considered *infeasible*.

In no case shall the runoff reduction achieved from the newly constructed *impervious areas* be less than the Minimum RRv as calculated using the criteria in Section 4.5 of the DM. The remaining portion of the total WQv that cannot be reduced must be treated by application of standard SMPs.

- ii. Channel Protection Volume (CPv): Provide 24 hour extended detention of the post-developed 1-year, 24-hour storm event, remaining after runoff reduction. Where a CPv control orifice is provided, the minimum orifice size must be 3 inches, with acceptable external trash rack or orifice protection. The CPv requirement does not apply when:
 - 1. Reduction of the entire CPv is achieved by application of runoff reduction techniques or infiltration systems; or
 - 2. The 1-year post-development peak *discharge* is less than or equal to 2.0 cfs; or
 - 3. The site *directly discharges* to tidal waters, or a fifth order or larger water body (stream, river, or lake) where the increase in smaller flows will not impact the stream bank or channel integrity. However, the point of *discharge* must be adequately protected against scour and erosion by the increased peak *discharge*.
- iii. *Overbank* Flood Control Criteria (Qp): Requires storage to attenuate the post-development 10-year, 24-hour peak *discharge* rate (Qp) to predevelopment rates. The Qp requirement does not apply when:
 - 1. the site *directly discharges* to tidal waters or fifth order or larger streams; or
 - 2. A downstream analysis reveals that *overbank* control is not required.

- iv. Extreme Flood Control Criteria (Qf): Requires storage to attenuate the post-development 100-year, 24-hour peak *discharge* rate (Qf) to predevelopment rates. The Qf requirement does not apply when:
 - 1. the site *directly discharges* to tidal waters or fifth order or larger streams; or
 - 2. A downstream analysis reveals that *overbank* control is not required.

c. Sizing Criteria for Redevelopment Activity

- i. Water Quality Volume (WQv): The WQv treatment objective for *redevelopment activity* must be addressed by one of the following options, as outlined in Section 9.2.1. *Redevelopment activities* located in an Enhanced Phosphorus Removal Watershed (see Part III.B.3. and Appendix C) must calculate the WQv in accordance with Section 4.3 of the DM. All other *redevelopment activities* must calculate the WQv in accordance with Section 4.2 of the DM.
 - 1. Reduce the existing *impervious cover* by a minimum of 25% of the total disturbed, *impervious area*. The Soil Restoration criteria in Section 5.1.6 of the DM must be applied to all newly created pervious areas; or
 - 2. Capture and treat 100% of the required WQv, for a minimum of 25% of the disturbed redevelopment *impervious area*, by implementation of standard SMPs or reduced by application of runoff reduction techniques; or
 - 3. Capture and treat 100% of the required WQv, for a minimum of 75% of the disturbed redevelopment *impervious area*, by implementation of a volume-based alternative SMP, as defined in Section 9.4 of the DM; or
 - 4. Capture and treat 100% of the required WQv, for a minimum of 75% of the disturbed redevelopment *impervious area*, by implementation of a flow-through alternative SMP sized to treat the peak rate of runoff from the WQv design storm; or

5. Application of a combination of 1 through 4 above that provide a weighted average of at least two of the above methods. Application of this method must be in accordance with the criteria in Section 9.2.1(A)(V) of the DM; or
 6. If there is an existing SMP located on the site that captures and treats runoff from the *impervious area* that is being disturbed, the WQv treatment option selected must, at a minimum, provide treatment equal to the treatment that was being provided by the existing practice(s) if that treatment is greater than the treatment required by options 1 through 5 above.
- ii. Channel Protection Volume (CPv) is not required if there is 0% change to hydrology that increases the *discharge* rate and volume from the project site.
 - iii. *Overbank* Flood Control (Qp) is not required if there is 0% change to hydrology that increases the *discharge* rate from the project site.
 - iv. Extreme Flood Control (Qf) is not required if there is 0% change to hydrology that increases the *discharge* rate from the project site.

d. *Sizing Criteria for Combination of Redevelopment Activity and New Development*

Construction projects, that include both *new development* and *redevelopment activity*, must use SMPs that meet the *sizing criteria* calculated as an aggregate of the *sizing criteria* in Part II.C.2.a. or b. for the *new development* portion of the project and Part II.C.2.c. for the *redevelopment activity* portion of the project.

Part III. Stormwater Pollution Prevention Plan (SWPPP)

A. General SWPPP Requirements

1. A SWPPP must be prepared and implemented by the *owner or operator* of all *construction activity* covered by this permit. All authorized *discharges* must be identified in the SWPPP. The SWPPP must document the selection, design, installation, implementation and maintenance of the control measures and

- practices that will be used to meet the effluent limitations in Part II.B. and, where applicable, the SMP requirements in Part II.C.
2. The *SWPPP* must demonstrate consideration in narrative format of the future physical risks due to climate change pursuant to the Community Risk and Resiliency Act (CRRA), 6 NYCRR Part 490, and associated guidance.
 - a. The owner or operator must consider:
 - i. the following physical risks due to climate change:
 - (i) increasing temperature; and
 - (ii) increasing precipitation; and
 - (iii) increasing variability in precipitation, including chance of drought; and
 - (iv) increasing frequency and severity of flooding; and
 - (v) rising sea level; and
 - (vi) increasing storm surge; and
 - (vii) shifting ecology.
 - ii. for each of the following:
 - (i) overall site planning; and
 - (ii) location, elevation, and sizing of:
 - a. control measures and practices; and
 - b. conveyance system(s); and
 - c. detention system(s).
 3. The *SWPPP* must describe the erosion and sediment control practices and where required, SMPs that will be used and/or constructed to reduce the *pollutants* in *stormwater discharges* and to assure compliance with the

requirements of this permit. In addition, the *SWPPP* must identify potential sources of pollution which may reasonably be expected to affect the quality of *stormwater discharges*.

4. All *SWPPPs*, that require the SMP component in accordance with Part III.B.2., must be prepared by a *qualified professional*.
5. The *owner or operator* must keep the *SWPPP* current so that, at all times, it accurately documents the erosion and sediment control practices that are being used or will be used during construction, and all SMPs that will be constructed on the site. At a minimum, the *owner or operator* must modify the *SWPPP*, including construction drawings:
 - a. whenever the current provisions prove to be ineffective in *minimizing pollutants* in *stormwater discharges* from the site; and
 - b. whenever there is a change in design, construction, or operation at the *construction site* that has or could have an effect on the *discharge of pollutants*; and
 - c. to address issues or deficiencies identified during an inspection by the *qualified inspector*, NYSDEC, or other regulatory authority; and
 - d. to document the final construction conditions in an as-built drawing.
6. NYSDEC may notify the *owner or operator* at any time that the *SWPPP* does not meet one or more of the minimum requirements of this permit. The notification must be in writing and identify the provisions of the *SWPPP* that require modification. Within fourteen (14) calendar days of such notification, or as otherwise indicated by NYSDEC, the *owner or operator* must make the required changes to the *SWPPP* and submit written notification to NYSDEC that the changes have been made. If the *owner or operator* does not respond to NYSDEC's comments in the specified time frame, NYSDEC may suspend the *owner's or operator's* coverage under this permit or require the *owner or operator* to obtain coverage under an individual SPDES permit in accordance with Part II.D.4.
7. 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 SMPs included in the *SWPPP*. The *owner or operator* must have each of the contractors and subcontractors identify at least one person from their company to be *trained contractor* that will be responsible for implementation of the *SWPPP*. The *owner or operator* must ensure that at least one *trained contractor* is on site daily when soil disturbance activities are being performed.

The *owner or operator* must have each of the contractors and subcontractors identified above sign a copy of the following certification statement below before the *commencement of construction activities*:

"I hereby certify under penalty of law that I understand and agree to comply with the requirements 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 requirements of the most current version of the New York State Pollutant Discharge Elimination System (SPDES) Construction General Permit (CGP) 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"

In addition to providing the certification statement above, the certification page must also identify the specific elements of the *SWPPP* that each contractor and subcontractor will be responsible for and include the name and title of the person providing the signature; the name and title of the *trained contractor* responsible for *SWPPP* implementation; the name, address and telephone number of the contracting firm; the address (or other identifying description) of the site; and the date the certification statement is signed. The *owner or operator* must attach the certification statement(s) to the copy of the *SWPPP* that is maintained at the *construction site*. If new or additional contractors are hired to implement measures identified in the *SWPPP* after the *commencement of construction activities*, they must also sign the certification statement and provide the information listed above prior to performing *construction activities*.

B. Required *SWPPP* Contents

1. Erosion and sediment control component - The *owner or operator* must prepare a *SWPPP* that includes erosion and sediment control practices.
 - a. Erosion and sediment control practices must be designed:
 - i. in conformance with the BB; or
 - ii. *equivalent* to the BB if deviating from Part III.B.1.a.i.
 - b. If the erosion and sediment control practices are designed in conformance with Part III.B.1.a.ii., the *SWPPP* must include a demonstration of *equivalence* to the BB.
 - c. At a minimum, the erosion and sediment control component of the *SWPPP* must include the following:
 - i. Background information about the scope of the project, including the location, type and size of project; and
 - ii. A site map/construction drawing(s) with north arrows for the project, including a general location map. At a minimum, the site map must show the total site area; all improvements; areas of disturbance; areas that will not be disturbed; existing vegetation; on-site and adjacent off-site surface water(s); floodplain/floodway boundaries; wetlands and drainage patterns that could be affected by the *construction activity*; existing and final contours; locations of different soil types with boundaries; material, waste, borrow or equipment storage areas located on adjacent properties; and location(s) of the *stormwater discharge(s)* and receiving surface water(s); and
 - iii. A description of the soil(s) present at the site, including an identification of the Hydrologic Soil Group (HSG); and
 - iv. A phasing plan for the project and sequencing plans for all *phases*, both of which must address clearing and grubbing, excavation and grading, utility and infrastructure installation, *final stabilization*,

and any other *construction activity* at the site that will result in soil disturbance.

1. The phasing plan must include:
 - a. a map delineating and labeling the limits of soil disturbance for all *phases* of a project; and
 - b. a table identifying the order and intended schedule of when each *phase* will begin and end its sequencing plan. The table must identify the total disturbed area for each *phase* at any one time and the total disturbed area for the overall project at any one time all on one timeline showing all overlapping quantities of disturbed area at any one time; and
2. A sequencing plan for a specific *phase* must include:
 - a. a table indicating the order and intended schedule of *construction activities* within a *phase*, and corresponding construction drawings with a description of the work to be performed; and
 - b. all permanent and *temporary stabilization* measures; and
- v. A description of the minimum erosion and sediment control practices to be installed or implemented for each *construction activity* that will result in soil disturbance. Include a schedule that identifies the timing of initial placement or implementation of each erosion and sediment control practice and the minimum time frames that each practice should remain in place or be implemented; and
- vi. A site map/construction drawing(s) showing the specific location(s), size(s), and length(s) of each erosion and sediment control practice; and
- vii. The dimensions, material specifications, installation details, and operation and maintenance requirements for all erosion and sediment control practices. Include the location and sizing of any

temporary sediment basins and structural practices that will be used to divert flows from exposed soils; and

- viii. A maintenance inspection schedule for the contractor(s) and subcontractor(s) identified in Part III.A.7. to ensure continuous and effective operation of the erosion and sediment control practices. The maintenance inspection schedule must be in accordance with the requirements in the BB technical standard; and
 - ix. A description of the pollution prevention measures that will be used to control litter, construction chemicals and construction debris from becoming a *pollutant* source in the *stormwater discharges*; and
 - x. A description and location of any *stormwater discharges* associated with industrial activity other than construction at the site, including, but not limited to, *stormwater discharges* from asphalt plants and concrete plants located on the *construction site*; and
 - xi. Identification of any elements of the design that are not in conformance with the design criteria in the BB technical standard. Include the reason for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the technical standard.
2. SMP component – The *owner or operator of construction activity* identified in Table 2 of Appendix B must prepare a *SWPPP* that includes SMPs.
- a. SMPs must be designed in conformance with the applicable *sizing criteria* in Part II.C.2.a., c., or d.; and
 - b. SMPs must be designed in conformance with the *performance criteria*:
 - i. in the DM; or
 - ii. *equivalent* to the DM if deviating from Part III.B.2.b.i.; or
 - iii. in the New York State Stormwater Management Design Manual, dated January 2015 (2015 Design Manual), or *equivalent* to it, if the following criteria are met:

1. The eNOI is submitted in accordance with Part I.D. before January 29, 2027 for *construction activities* that are either:
 - a. subject to governmental review and approval:
 - i. where the *owner or operator* made any application to that governmental entity prior to the effective date of this permit; and
 - ii. such application included a *SWPPP* developed using the 2015 Design Manual or *equivalent* to it; or
 - b. not subject to governmental review and approval:
 - i. where a fiscal allocation for the *construction activities* has been developed and approved by a governmental entity; and
 - ii. the *SWPPP* was developed using the 2015 Design Manual or *equivalent* to it; and
 - c. If SMPs are designed in conformance with Part III.B.2.b.ii., the *SWPPP* must include the reason(s) for the deviation or alternative design and a demonstration of *equivalence* to the DM; and
 - d. If SMPs are designed in conformance with Part III.B.2.b.iii., the *SWPPP* must include supporting information or documentation demonstrating that Part III.B.2.b.iii.1.a. or b. apply; and
 - e. The SMP component of the *SWPPP* must include the following:
 - i. Identification of all SMPs to be constructed as part of the project, including which option the SMP designs conform to, either Part III.B.2.b.i., ii., or iii. Include the dimensions, material specifications and installation details for each SMP; and
 - ii. A site map/construction drawing(s) showing the specific location and size of each SMP; and

- iii. A Stormwater Modeling and Analysis Report that includes:
 - (i) Map(s) showing pre-development conditions, including watershed/subcatchments boundaries, flow paths/routing, and design points; and
 - (ii) Map(s) showing post-development conditions, including watershed/subcatchments boundaries, flow paths/routing, design points and SMPs; and
 - (iii) Results of *stormwater* modeling (i.e. hydrology and hydraulic analysis) for the required storm events. Include supporting calculations (model runs), methodology, and a summary table that compares pre- and post-development runoff rates and volumes for the different storm events; and
 - (iv) Summary table, with supporting calculations, which demonstrates that each SMP has been designed in conformance with the *sizing criteria* included in the DM; and
 - (v) Identification of any *sizing criteria* that is not required based on the requirements included in Part II.C.; and
 - (vi) Identification of any elements of the design that are not in conformance with the *performance criteria* in the DM. Include the reason(s) for the deviation or alternative design and provide information which demonstrates that the deviation or alternative design is *equivalent* to the DM.
- iv. Soil testing results and locations (test pits, borings); and
- v. Infiltration test results, when required in accordance with Part III.B.2.a.; and
- vi. An operations and maintenance plan that includes inspection and maintenance schedules and actions to ensure continuous and effective operation of each SMP. The plan must identify the entity

that will be responsible for the long-term operation and maintenance of each practice; and

3. Enhanced Phosphorus Removal Standards - The *owner or operator* of *construction activity* identified in Table 2 of Appendix B that is located in a watershed identified in Appendix C must prepare a *SWPPP* that includes SMPs designed in conformance with the applicable *sizing criteria* in Part II.C.2.b., c., or d. and the *performance criteria* Enhanced Phosphorus Removal Standards included in the DM. At a minimum, the SMP component of the *SWPPP* must meet the requirements of Part III.B.2.

C. Required *SWPPP* Components by Project Type

Owners or operators of *construction activities*, identified in Table 1 of Appendix B, are required to prepare a *SWPPP* that only includes erosion and sediment control practices designed in accordance with Part III.B.1. *Owners or operators* of the *construction activities*, identified in Table 2 of Appendix B, must prepare a *SWPPP* that also includes SMPs designed in accordance with Part III.B.2 or 3.

For the entire area of disturbance, including the entire *common plan of development or sale* if applicable, the owner or operator must evaluate every bullet from Appendix B Table 1 and Table 2 separately. If bullets from both Table 1 and Table 2 apply, the *SWPPP* must include erosion and sediment control practices for all *construction activities* but SMPs for only those portions of the *construction activities* that fall under Table 2 bullet(s).

Part IV. Inspection and Maintenance Requirements

A. General Construction Site Inspection and Maintenance Requirements

1. The *owner or operator* must ensure that all erosion and sediment control practices (including pollution prevention measures), and all SMPs identified in the *SWPPP*, are inspected and maintained in accordance with Part IV.B. and C.

B. Contractor Maintenance Inspection Requirements

1. The *owner or operator* of each *construction activity*, identified in Tables 1 and 2 of Appendix B, must have a *trained contractor* inspect the erosion and sediment control practices and pollution prevention measures being

implemented within the active work area daily to ensure that they are being maintained in effective operating condition at all times. If deficiencies are identified, the contractor must:

- a. if the corrective action does not require engineering design:
 - i. begin implementing corrective actions within one business day; and
 - ii. complete the corrective actions within five business days; or
 - b. if the corrective action requires engineering design:
 - i. begin the engineering design process within five business days; and
 - ii. complete the corrective action in a reasonable time frame but no later than within 60 calendar days.
2. For *construction sites* where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *trained contractor* can stop conducting the maintenance inspections in accordance with Part IV.B.1. The *trained contractor* must begin conducting the maintenance inspections in accordance with Part IV.B.1. as soon as soil disturbance activities resume.
 3. For *construction sites* where soil disturbance activities have been shut down with partial project completion, the *trained contractor* can stop conducting the maintenance inspections in accordance with Part IV.B.1. if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all SMPs required for the completed portion of the project have been constructed in conformance with the *SWPPP* and are operational.

C. Qualified Inspector Inspection Requirements

1. With the exception of the following *construction activities* identified in Tables 1 and 2 of Appendix B, a *qualified inspector* must conduct site inspections for all other *construction activities* identified in Tables 1 and 2 of Appendix B:
 - a. the construction of a single-family residential subdivision with 25% or less *impervious cover* at total site build-out that involves a soil disturbance of one (1) or more acres of land but less than or equal to five (5) acres and is

not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix D; and

- b. the construction of a single-family home that involves soil disturbances of one (1) or more acres but less than or equal to five (5) acres and is not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix D; and
 - c. construction on *agricultural property* that involves soil disturbances of one (1) or more acres but less than five (5) acres; and
 - d. *construction activities* located in the New York City Watershed located east of the Hudson River, see Appendix C Figure 1, that involve soil disturbances of 5,000 square feet or more, but less than one acre.
2. The *qualified inspector* must conduct site inspections in accordance with the following timetable:
- a. For *construction sites* where soil disturbance activities are on-going, the *qualified inspector* must conduct a site inspection at least once every seven (7) calendar days; or
 - b. For *construction sites* where soil disturbance activities are on-going and the *owner or operator* has received authorization in accordance with Part I.E.6. to disturb greater than five (5) acres of soil at any one time, the *qualified inspector* must conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections must be separated by a minimum of two (2) full calendar days; or
 - c. For *construction sites* where soil disturbance activities have been temporarily suspended (e.g. winter shutdown) and *temporary stabilization* measures have been applied to all disturbed areas, the *qualified inspector* must conduct a site inspection at least once every thirty (30) calendar days. The *owner or operator* must notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix E) or, in areas under the jurisdiction of a *Traditional Land Use Control MS4 Operator*, the *Traditional Land Use Control MS4 Operator* (provided the *Traditional Land Use Control MS4 Operator* is not the *owner or operator* of the *construction activity*) by hard copy or email prior to reducing the inspections to this frequency and again by hard copy or email prior to re-commencing construction; or

- d. For *construction sites* where soil disturbance activities have been shut down with partial project completion, the requirement to have the *qualified inspector* conduct inspections ceases if all areas disturbed as of the project shutdown date have achieved *final stabilization* and all SMPs required for the completed portion of the project have been constructed in conformance with the *SWPPP* and are operational. The *owner or operator* must notify the DOW Water (SPDES) Program contact at the Regional Office (see contact information in Appendix E) or, in areas subject to the review authority of *Traditional Land Use Control MS4 Operator(s)* in accordance with Part I.D.2.b.ii.1., the *Traditional Land Use Control MS4 Operator(s)* (provided the *Traditional Land Use Control MS4 Operator(s)* are not the *owners or operators* of the *construction activity*) in writing prior to the shutdown and again in writing prior to resuming *construction activity*. If soil disturbance activities are not resumed within 2 years from the date of shutdown, the *owner or operator* must terminate coverage by meeting the requirements of Part V; or
 - e. For *construction sites* involving soil disturbance of one (1) or more acres that *directly discharge* to one of the 303(d) segments listed in Appendix D or is located in one of the watersheds listed in Appendix C, the *qualified inspector* must conduct at least two (2) site inspections every seven (7) calendar days. The two (2) inspections must be separated by a minimum of two (2) full calendar days.
3. At a minimum, the *qualified inspector* must inspect:
- a. all erosion and sediment control practices and pollution prevention measures to ensure integrity and effectiveness; and
 - b. all SMPs under construction to ensure that they are constructed in conformance with the *SWPPP*; and
 - c. all areas of disturbance that have not achieved *final stabilization*; and
 - d. all points of *discharge to surface waters of the State* located within, or immediately adjacent to, the property boundaries of the *construction site*; and
 - e. all points of *discharge* from the *construction site*.

4. The *qualified inspector* must prepare an inspection report subsequent to each and every inspection. At a minimum, the inspection report must include and/or address all of the following, for all *construction activities* except those listed in Part IV.C.1.:
 - a. Permit identification number; and
 - b. Date and time of inspection; and
 - c. Name and title of person(s) performing inspection; and
 - d. A description of the weather and soil conditions (e.g. dry, wet, saturated) at the time of the inspection, including the temperature at the time of the inspection; and
 - e. A description of the condition of the runoff at all points of *discharge* from the *construction site*. This must include identification of any *discharges* of sediment from the *construction site*. Include *discharges* from conveyance systems (i.e. pipes, culverts, ditches, etc.) and overland flow; and
 - f. A description of the condition of all *surface waters of the State* located within, or immediately adjacent to, the property boundaries of the *construction site* which receive runoff from disturbed areas. This must include identification of any *discharges* of sediment to the *surface waters of the State*; and
 - g. Identification of all erosion and sediment control practices and pollution prevention measures that need repair or maintenance; and
 - h. Identification of all erosion and sediment control practices and pollution prevention measures that were not installed properly or are not functioning as designed and need to be reinstalled or replaced; and
 - i. Description and sketch (map) of areas with active soil disturbance activity, areas that have been disturbed but are inactive at the time of the inspection, and areas that have been stabilized (temporary and/or final) since the last inspection; and
 - j. Estimates, in square feet or acres, of the following areas:

- i. Total area with active soil disturbance (not requiring either *temporary stabilization* or *final stabilization*); and
 - ii. Total area with inactive soil disturbance (requiring either *temporary stabilization* or *final stabilization*); and
 - iii. Total area that has achieved *temporary stabilization*; and
 - iv. Total area that has achieved *final stabilization*; and
- k. Current stage of construction of all SMPs and identification of all *construction activity* on site that is not in conformance with the *SWPPP* and technical standards; and
- l. Corrective action(s) that must be taken to install, repair, replace or maintain erosion and sediment control practices and pollution prevention measures; and to correct deficiencies identified with the construction of the SMP(s); and
- m. Identification and status of all corrective actions that were required by previous inspection; and
- n. Digital photographs, with date stamp, that clearly show the condition of all practices that have been identified as needing corrective actions. The *qualified inspector* must attach color copies of the digital photographs to the inspection report being maintained onsite within seven (7) calendar days of the date of the inspection. The *qualified inspector* must also take digital photographs, with date stamp, that clearly show the condition of the practice(s) after the corrective action has been completed. The *qualified inspector* must attach paper color copies of the digital photographs to the inspection report that documents the completion of the corrective action work within seven (7) calendar days of that inspection.
5. Within one business day of the completion of an inspection, the *qualified inspector* must notify the *owner or operator*, and appropriate contractor or subcontractor identified in Part III.A.7., of any corrective actions that need to be taken. The contractor or subcontractor must:
- a. if the corrective action does not require engineering design:

- i. begin implementing corrective actions within one business day; and
 - ii. complete the corrective actions within five business days; or
 - b. if the corrective action requires engineering design:
 - i. begin the engineering design process within five business days; and
 - ii. complete the corrective action in a reasonable time frame but no later than within 60 calendar days.
6. All inspection reports must be signed by the *qualified inspector*. In accordance with Part I.E.3., the inspection reports must be maintained on site with the *SWPPP*.

Part V. How to Terminate CGP Coverage

A. Electronic Notice of Termination (eNOT) Submittal

The eNOT contains questions to ensure requirements in Part V.A. have been met.

1. An *owner or operator* must terminate coverage when one or more of the following requirements have been met:
 - a. Total project completion:
 - i. all *construction activity* identified in the *SWPPP* has been completed; and
 - ii. all areas of disturbance have achieved *final stabilization*; and
 - iii. all temporary, structural erosion and sediment control measures have been removed; and
 - iv. all SMPs have been constructed in conformance with the *SWPPP* and are operational; and
 - v. an as-built drawing has been prepared; or

- b. Planned shutdown with partial project completion:
 - i. all soil disturbance activities have ceased; and
 - ii. all areas disturbed as of the project shutdown date have achieved *final stabilization*; and
 - iii. all temporary, structural erosion and sediment control measures have been removed; and
 - iv. all SMPs required for the completed portion of the project have been constructed in conformance with the *SWPPP* and are operational; and
 - v. an as-built drawing has been prepared; or
 - c. In accordance with Part I.G. Change of Owner or Operator; or
 - d. The *owner or operator* has obtained coverage under an alternative general SPDES permit or an individual SPDES permit.
2. For *construction activities* that require *qualified inspector* inspections in accordance with Part IV.C.1. and have met Part V.A.1.a. or b., the *owner or operator* must have the *qualified inspector* perform a final site inspection prior to submitting the eNOT. The *qualified inspector* must, by signing the “Final Stabilization” and “Post-Construction Stormwater Management Practice(s)” certification statements on the eNOT, certify that all the requirements in Part V.A.1.a. or b. have been achieved.
3. For *construction activities* that are subject to the review authority of *Traditional Land Use Control MS4 Operator(s)* in accordance with Part I.D.2.b.ii.1. and meet Part V.A.1.a. or b., the *owner or operator* must have the *Traditional Land Use Control MS4 Operator(s)* sign the “MS4 Acceptance” statement on the eNOT in accordance with the requirements in Part VII.J. A *Traditional Land Use Control MS4 Operator* official, by signing this statement, determined that it is acceptable for the *owner or operator* to submit the eNOT in accordance with the requirements of this Part. A *Traditional Land Use Control MS4 Operator* can make this determination by performing a final site inspection themselves or by accepting the *qualified inspector’s* final site inspection certification(s) when required in Part V.A.2.

Part V.A.4.

4. For *construction activities* that require SMPs and meet Part V.A.1.a. or b., the *owner or operator* must, prior to submitting the eNOT, ensure one of the following:
 - a. for SMP(s) that were constructed by a private entity, but will be owned, operated, and maintained by a public entity, the SMP(s) and any right-of-way(s) needed to operate and maintain such practice(s) have been deeded to the municipality in which the practice(s) is located; or
 - b. for SMP(s) that are privately owned, but will be operated and maintained by a public entity, an executed operation and maintenance agreement is in place with the municipality that will operate and maintain the SMP(s); or
 - c. for SMP(s) that are privately owned, the *owner or operator* has a mechanism in place that requires operation and maintenance of the practice(s) in accordance with the operation and maintenance plan, such as a deed covenant in the *owner or operator's* deed of record; or
 - d. for SMP(s) that are owned by a public or private institution (e.g. school, university, hospital), government agency or authority, or public utility, the *owner or operator* has policies and procedures in place that ensure operation and maintenance of the practices in accordance with the operation and maintenance plan.
5. An *owner or operator* that has met the requirements of Part V.A.1., 2., 3., and 4. must request termination of coverage under this permit by submitting a complete Notice of Termination form electronically using a NYSDEC approved form.⁵
 - a. The owner's or operator's coverage is terminated as of the termination date indicated in the Letter of Termination (LOT), which is sent by NYSDEC after a complete eNOT is submitted.

⁵ Unless NYSDEC grants a waiver in accordance with 40 CFR 127.15(c) or (d). All waiver requests must be submitted to Stormwater_info@dec.ny.gov or NYSDEC, Bureau of Water Permits, 625 Broadway, 4th Floor, Albany, New York 12233-3505.

Part VI. Record Retention and Reporting

A. Record Retention

The *owner or operator* must retain a copy of the documents listed in Part I.E.3. and a copy of the LOT for a period of at least five years from the date that NYSDEC accepts a complete NOT submitted in accordance with Part V.

B. Reporting

Except for the eNOI, the signature forms associated with the eNOI, and the eNOT, all other written correspondence requested by NYSDEC, including individual permit applications, must be sent to the address of the appropriate DOW (SPDES) Program contact at the Regional Office listed in Appendix E.

Part VII. Standard Permit Requirements

For the purposes of this permit, examples of contractors and subcontractors include: third-party maintenance and construction contractors.

A. Duty to Comply

The *owner or operator*, and all contractors or subcontractors, must comply with all requirements of this permit. Any non-compliance with the requirements of this permit constitutes a violation of the New York State Environmental Conservation Law (ECL), and its implementing regulations, and is grounds for enforcement action. Filing of a request for termination of coverage under this permit, or a notification of planned changes or anticipated non-compliance, does not limit, diminish or stay compliance with any requirements of this permit.

B. Need to Halt or Reduce Activity Not a Defense

The necessity to halt or reduce the *construction activity* regulated by this permit, in order to maintain compliance with the requirements of this permit, must not be a defense in an enforcement action.

C. Penalties

There are substantial criminal, civil, and administrative penalties associated with violating the requirements of this permit. Fines of up to \$37,500 per day for each

violation and imprisonment for up to 15 years may be assessed depending upon the nature and degree of the offense.

D. False Statements

Any person who knowingly makes any false material statement, representation, or certification in any application, record, report, or other document filed or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance must, upon conviction, be punished in accordance with ECL §71-1933 and or New York State Penal Law Articles 175 and 210.

E. Re-Opener Clause

Upon issuance of this permit, a determination has been made on the basis of a submitted Notice of Intent, plans, or other available information, that compliance with the specified permit requirements will reasonably protect classified water use and assure compliance with applicable *water quality standards*. Satisfaction of the requirements of this permit notwithstanding, if operation pursuant to this permit causes or contributes to a condition in contravention of State *water quality standards* or guidance values, or if NYSDEC determines that a modification is necessary to prevent impairment of the best use of the waters or to assure maintenance of *water quality standards* or compliance with other provisions of ECL Article 17 or the Clean Water Act (CWA), or any regulations adopted pursuant thereto, NYSDEC may require such modification and the Commissioner may require abatement action to be taken by the *owner or operator* and may also prohibit such operation until the modification has been implemented.

F. Duty to Mitigate

The *owner or operator*, and its contractors and subcontractors, must take all reasonable steps to *minimize* or prevent any *discharge* in violation of this permit which has a reasonable likelihood of adversely affecting human health or the environment.

G. Requiring Another General Permit or Individual SPDES Permit

NYSDEC may require any *owner or operator* authorized to *discharge* in accordance with this permit to apply for and obtain an individual SPDES permit or apply for authorization to *discharge* in accordance with another general SPDES permit.

1. Cases where an individual SPDES permit or authorization to discharge in accordance with another general SPDES permit may be required include, but is not limited to the following:

Part VII.G.1.a.

- a. the *owner or operator* is not in compliance with the conditions of this permit or does not meet the requirements for coverage under this permit; and
 - b. a change has occurred in the availability of demonstrated technology or practices for the control or abatement of *pollutants* applicable to the *point source*; and
 - c. new effluent limitation guidelines or new source performance standards are promulgated that are applicable to *point sources* authorized to *discharge* in accordance with this permit; and
 - d. existing effluent limitation guidelines or new source performance standards that are applicable to *point sources* authorized to *discharge* in accordance with this permit are modified; and
 - e. a water quality management plan containing requirements applicable to such *point sources* is approved by NYSDEC; and
 - f. circumstances have changed since the time of the request to be covered so that the *owner or operator* is no longer appropriately controlled under this permit, or either a temporary or permanent reduction or elimination of the authorized *discharge* is necessary; and
 - g. the *discharge* is in violation of section 17-0501 of the ECL; and
 - h. the *discharge(s)* is a significant contributor of *pollutants*. In making this determination, NYSDEC may consider the following factors:
 - i. the location of the *discharge(s)* with respect to *surface waters of the State*; and
 - ii. the size of the *discharge(s)*; and
 - iii. the quantity and nature of the *pollutants discharged* to *surface waters of the State*; and
 - iv. other relevant factors including compliance with other provisions of ECL Article 17, or the CWA.
2. When NYSDEC requires any *owner or operator* authorized by this permit to apply for an individual SPDES permit as provided for in this subdivision, it must notify the *owner or operator* in writing that a permit application is required. This notice must include a brief statement of the reasons for this decision, an application

form, a statement setting a time for the *owner or operator* to file the application for an individual SPDES permit, and a deadline, not sooner than 180 days from the *owner's or operator's* receipt of the notification letter, whereby the authorization to *discharge* under this permit must be terminated. NYSDEC may grant additional time upon demonstration, to the satisfaction of the RWE,⁶ that additional time to apply for an alternative authorization is necessary or where NYSDEC has not provided a permit determination in accordance with 6 NYCRR Part 621.

3. When an individual SPDES permit is issued to an *owner or operator* authorized to *discharge* under this permit for the same *discharge(s)*, this permit authorization for *construction activities* authorized under the individual SPDES permit is automatically terminated on the effective date of the individual SPDES permit unless termination is earlier in accordance with 6 NYCRR Part 750.

H. Duty to Provide Information

The *owner or operator* must furnish to NYSDEC, within five business days, unless otherwise set forth by NYSDEC, any information that NYSDEC may request to determine whether cause exists to determine compliance with this permit or to determine whether cause exists for requiring an individual SPDES permit in accordance with 6 NYCRR 750-1.21(e) (see Part VII.G. Requiring Another General Permit or Individual Permit).

The *owner or operator* must make available to NYSDEC, for inspection and copying, or furnish to NYSDEC within 25 business days of receipt of a NYSDEC request for such information, any information retained in accordance with this permit.

Except for Part I.D.4. and 5. and Part I.G., the following applies: where the *owner or operator* becomes aware that it failed to submit any relevant facts on the Notice of Intent, or submitted incorrect information in a Notice of Intent or in any report to NYSDEC, the *owner or operator* must submit such facts or corrected information to NYSDEC within five business days.

I. Extension

In the event a new permit is not issued and effective prior to the expiration of this permit, and this permit is extended pursuant to the State Administrative Procedure Act and 6 NYCRR Part 621, then the *owner or operator* with coverage under this permit may continue to operate and *discharge* in accordance with the requirements of this permit until a new permit is issued and effective.

⁶ The Regional Water Manager where a DEC Region does not have a RWE.

J. Signatories and Certification

The Notice of Intent, Notice of Termination, and reports required by this permit must be signed as provided in 40 CFR §122.22.

1. All Notices of Intent and Notices of Termination must be signed as follows:

a. For a corporation. By a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:

- (i) a president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function, or any other person who performs similar policy- or decision-making functions for the corporation; or
- (ii) the manager of one or more manufacturing, production or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for Notice of Intent or Notice of Termination requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

Note: NYSDEC does not require specific assignments or delegations of authority to responsible corporate officers identified in 40 CFR §122.22(a)(1)(i). NYSDEC will presume that these responsible corporate officers have the requisite authority to sign the Notice of Intent or Notice of Termination unless the corporation has notified NYSDEC to the contrary. Corporate procedures governing authority to sign a Notice of Intent or Notice of Termination may provide for assignment or delegation to applicable corporate positions under 40 CFR §122.22(a)(1)(ii) rather than to specific individuals.

b. For a partnership or sole proprietorship. By a general partner or the proprietor, respectively.

Part VII.J.1.c.

- c. For a municipality, State, Federal, or other public agency. By either a principal executive officer or ranking elected official. For purposes of this section, a principal executive officer of a Federal agency includes:
 1. the chief executive officer of the agency; or
 2. a senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of EPA).
2. All reports required by this permit, and other information requested by NYSDEC, must be signed by a person described in Part VII.J.1., or by a duly authorized representative of that person. A person is a duly authorized representative only if:
 - a. The authorization is made in writing by a person described in Part VII.J.1. or using the Duly Authorized Form, found on the DEC website; and
 - b. The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
 - c. The written authorization is submitted to NYSDEC.
3. Changes to authorization. If an authorization under Part VII.J.2. is no longer accurate because a different individual or position has responsibility for the overall operation of the *construction activity*, a new authorization satisfying the requirements of Part VII.J.2. must be submitted to NYSDEC prior to or together with any reports, information, or applications to be signed by an authorized representative.
4. Certification. Any person signing a document under Part VII.J.1. or 2. must make the following certification:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who

manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

5. Electronic reporting. If documents described in Part VII.J.1. or 2. are submitted electronically by or on behalf of the *construction activity* with coverage under this permit, any person providing the electronic signature for such documents must meet all relevant requirements of this section, and must ensure that all of the relevant requirements of 40 CFR Part 3 (including, in all cases, subpart D to Part 3) (Cross-Media Electronic Reporting) and 40 CFR Part 127 (NPDES Electronic Reporting Requirements) are met for that submission.

K. Inspection and Entry

The *owner or operator* must allow NYSDEC, the USEPA Regional Administrator, the applicable county health department, or any authorized representatives of those entities, or, in the case of a *construction site* which *discharges* through an *MS4*, an authorized representative of the *MS4* receiving the *discharge*, upon the presentation of credentials and other documents as may be required by law, to:

1. enter upon the *owner's or operator's* premises where a regulated facility or activity is located or conducted or where records must be kept under the requirements of this permit; and
2. have access to and copy at reasonable times, any records that must be kept under the requirements of this permit, including records required to be maintained for purposes of operation and maintenance; and
3. inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices or operations regulated or required under this permit; and
4. sample or monitor at reasonable times, for the purposes of assuring general SPDES permit compliance or as otherwise authorized by the CWA or ECL, any substances or parameters at any location; and
5. enter upon the property of any contributor to the regulated facility or activity under authority of the *owner or operator*.

L. Confidentiality of Information

The following must not be held confidential: this permit, the fact sheet for this permit, the name and address of any *owner or operator*, effluent data, the Notice of Intent, and information regarding the need to obtain an individual permit or an alternative general SPDES permit. This includes information submitted on forms themselves and any attachments used to supply information required by the forms (except information submitted on usage of substances). Upon the request of the *owner or operator*, NYSDEC must make determinations of confidentiality in accordance with 6 NYCRR Part 616, except as set forth in the previous sentence. Any information accorded confidential status must be disclosed to the Regional Administrator upon his or her written request. Prior to disclosing such information to the Regional Administrator, NYSDEC will notify the Regional Administrator of the confidential status of such information.

M. Other Permits May Be Required

Nothing in this permit relieves the *owner or operator* from a requirement to obtain any other permits required by law.

N. NYSDEC Orders or Civil Decrees/Judgments

The issuance of this permit by the NYSDEC, and the coverage under this permit by the *owner or operator*, does not supersede, revoke, or rescind any existing order on consent or civil Decree/Judgment, or modification to any such documents or to any order issued by the Commissioner, or any of the terms, conditions, or requirements contained in such order or modification therefore, unless expressly noted.

O. Property Rights

Coverage under this permit does not convey any property rights in either real or personal property, or any exclusive privileges, nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Federal, State, or local laws or regulations, nor does it obviate the necessity of obtaining the assent of any other jurisdiction as required by law for the *discharge* authorized.

P. Compliance with Interstate Standards

If the *construction activity* covered by this permit originates within the jurisdiction of an interstate water pollution control agency, then the *construction activity* must also comply with any applicable effluent standards or *water quality standards* promulgated by that interstate agency and as set forth in this permit for such *construction activities*.

Q. Oil and Hazardous Substance Liability

Coverage under this permit does not affect the imposition of responsibilities upon, or the institution of any legal action against, the *owner or operator* under section 311 of the CWA, which must be in conformance with regulations promulgated pursuant to section 311 governing the applicability of section 311 of the CWA to *discharges* from facilities with *NPDES* permits, nor must such issuance preclude the institution of any legal action or relieve the *owner or operator* from any responsibilities, liabilities, or penalties to which the *owner or operator* is or may be subject pursuant to the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. section 9601 et seq. (CERCLA).

R. Severability

The provisions of this permit are severable, and if any provision of this permit, or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit, must not be affected thereby.

S. NYSDEC Approved Forms

The *owner or operator* must provide all relevant information that is requested by NYSDEC, and required by this permit, on all NYSDEC approved forms.

APPENDIX A – Abbreviations and Definitions

Abbreviations

APO – Agency Preservation Officer
BB – New York State Standards and Specifications for Erosion and Sediment Control (Blue Book), dated November 2016
BMP – Best Management Practice
CPESC – Certified Professional in Erosion and Sediment Control
CPv – Channel Protection Volume
CWA – Clean Water Act (or the Federal Water Pollution Control Act, 33 U.S.C. §1251 et seq)
DM – New York State Stormwater Management Design Manual (Design Manual), dated July 31, 2024
DOW – Division of Water
EAF – Environmental Assessment Form
ECL – chapter 43-B of the Consolidated Laws of the State of New York, entitled the Environmental Conservation Law
EPA – U.S. Environmental Protection Agency
HSG – Hydrologic Soil Group
MS4 – Municipal Separate Storm Sewer System
NOI – Notice of Intent
NOT – Notice of Termination
NPDES – National Pollutant Discharge Elimination System
NYC – The City of New York
NYCDEP – The City of New York Department of Environmental Protection
NYSDEC – The New York State Department of Environmental Conservation
OPRHP – Office of Parks, Recreation and Historic Places
Qf – Extreme Flood
Qp – Overbank Flood
RR – Runoff Reduction
RRv – Runoff Reduction Volume
RWE – Regional Water Engineer
SEQR – State Environmental Quality Review Act
SHPA – State Historic Preservation Act
SMP – Post-Construction Stormwater Management Practice
SPDES – State Pollutant Discharge Elimination System
SWPPP – Stormwater Pollution Prevention Plan
TMDL – Total Maximum Daily Load
UPA – Uniform Procedures Act
USDA – United States Department of Agriculture
WQv – Water Quality Volume

Definitions

All definitions in this section are solely for the purposes of this permit. If a word is not italicized in the permit, use its common definition.

Agricultural Building – a structure designed and constructed to house farm implements, hay, grain, poultry, livestock or other horticultural products; excluding any structure designed, constructed or used, in whole or in part, for human habitation, as a place of employment where agricultural products are processed, treated or packaged, or as a place used by the public.

Agricultural Property – the land for construction of a barn, *agricultural building*, silo, stockyard, pen or other structural practices identified in Table II in the “Agricultural Best Management Practice Systems Catalogue” (dated June 2023).

Alter Hydrology from Pre- to Post-Development Conditions – the post-development peak flow rate(s) has increased by more than 5% of the pre-developed condition for the design storm of interest (e.g. 10 yr and 100 yr).

Combined Sewer System – a sewer system which conveys sewage and *stormwater* through a single pipe system to a publicly owned treatment works.

Commence (Commencement of) Construction Activities – the initial disturbance of soils associated with clearing, grading or excavation activities; or other construction related activities that disturb or expose soils such as demolition, stockpiling of fill material, and the initial installation of erosion and sediment control practices required in the *SWPPP*. See definition for “*Construction Activity(ies)*” also.

Common Plan of Development or Sale – a contiguous area where multiple separate and distinct *construction activities* are occurring, or may occur, under one plan. The “common plan” of development or sale is broadly defined as any announcement or piece of documentation (including a sign, public notice or hearing, marketing plan, advertisement, drawing, permit application, State Environmental Quality Review Act (SEQR) environmental assessment form or other documents, zoning request, computer design, etc.) or physical demarcation (including boundary signs, lot stakes, surveyor markings, etc.) indicating *construction activities* may occur on a specific plot. A *common plan of development or sale* is comprised of two or more *phases*.

Common plan of development or sale does not include separate and distinct *construction activities* that are occurring, or may occur, under one plan that are at least 1/4 mile apart provided any interconnecting road, pipeline or utility project that is part of the same “common plan” is not concurrently being disturbed.

Construction Activity(ies) – identified within 40 CFR 122.26(b)(14)(x), 122.26(b)(15)(i), and 122.26(b)(15)(ii), any clearing, grading, excavation, filling, demolition or stockpiling activities that result in soil disturbance. Clearing activities can include, but are not limited to, mechanized logging equipment operation, the cutting and skidding of trees, stump removal and/or brush root removal.

Construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of a facility, which is excluded from the calculation of the soil disturbance for a project. Routine maintenance includes, but is not limited to:

- Re-grading of gravel roads or parking lots; and
- Cleaning and shaping of existing roadside ditches and culverts that maintains the approximate original line and grade, and maintains or improves the hydraulic capacity of the ditch; and
- Replacement of existing culverts that maintains the approximate original line and grade, and maintains or improves the hydraulic capacity of a ditch; and
- Replacement of existing bridges that maintains the approximate original line and grade, and maintains or improves the hydraulic capacity beneath the bridges; and
- Cleaning and shaping of existing roadside ditches that does not maintain the approximate original grade, hydraulic capacity and purpose of the ditch if the changes to the line and grade, hydraulic capacity or purpose of the ditch are installed to improve water quality and quantity controls (e.g. installing grass lined ditch); and
- Placement of aggregate shoulder backing that stabilizes the transition between the road shoulder and the ditch or *embankment*; and
- Full depth milling and filling of existing asphalt pavements, replacement of concrete pavement slabs, and similar work that does not expose soil or disturb the bottom six (6) inches of subbase material; and
- Long-term use of equipment storage areas at or near highway maintenance facilities; and
- Removal of sediment from the edge of the highway to restore a previously existing sheet-flow drainage connection from the highway surface to the highway ditch or *embankment*; and
- Existing use of Canal Corp owned upland disposal sites for the canal, and
- Replacement of curbs, gutters, sidewalks and guide rail posts; and
- Maintenance of ski trails including brush hog use and mowing; and
- Above ground snowmaking pipe replacement; and
- Replacement of existing utility poles; etc.

Construction Site – the land area where *construction activity(ies)* will occur. See also the definitions for “*Commence (Commencement of) Construction Activities*” and “*Common Plan of Development or Sale.*”

Dewatering – the act of draining rainwater and/or groundwater from building foundations, vaults or excavations/trenches.

Directly Discharge(s)(ing) (to a specific surface waterbody) – runoff flows from a *construction site* by overland flow and the first point of *discharge* is the specific surface waterbody, or runoff flows from a *construction site* to a separate storm sewer system and the first point of *discharge* from the separate storm sewer system is the specific surface waterbody.

Discharge(s)(d) – any addition of any *pollutant* to waters of the State through an outlet or *point source*.

Embankment – an earthen or rock slope that supports a road/highway.

Equivalent (Equivalence) – the practice or measure meets all the performance, longevity, maintenance, and safety objectives of the technical standard and will provide an equal or greater degree of water quality protection.

Final Stabilization – all soil disturbance activities have ceased and a uniform, perennial vegetative cover with a density of eighty (80) percent over the entire pervious surface has been established; or other *equivalent* stabilization measures, such as permanent landscape mulches, rock rip-rap or washed/crushed stone have been applied on all disturbed areas that are not covered by permanent structures, concrete or pavement.

Historic Property – any building, structure, site, object or district that is listed on the State or National Registers of Historic Places or is determined to be eligible for listing on the State or National Registers of Historic Places.

Impervious Area (Cover) – all impermeable surfaces that cannot effectively infiltrate rainfall. This includes paved, concrete and compacted gravel surfaces (i.e. parking lots, driveways, roads, runways and sidewalks); building rooftops and miscellaneous impermeable structures such as patios, pools, and sheds.

Infeasible – not technologically possible, or not economically practicable and achievable considering best industry practices.

Minimize(ing)(ation) – reduce and/or eliminate to the extent achievable using control measures (including best management practices) that are technologically available and economically practicable and achievable in light of best industry practices.

Municipal Separate Storm Sewer System (MS4) - a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

1. owned or operated by a State, city, town, village, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, *stormwater*, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA, that *discharges to surface waters of the State*; and
2. designed or used for collecting or conveying *stormwater*; and
3. which is not a *combined sewer system*; and
4. which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

Natural Buffer(s) – an undisturbed area with natural cover running along a surface water (e.g. wetland, stream, river, lake, etc.).

New Development – any land disturbance that does not meet the definition of *Redevelopment Activity* included in this appendix.

New York State Erosion and Sediment Control Certificate Program – a certificate program that establishes and maintains a process to identify and recognize individuals who are capable of developing, designing, inspecting and maintaining erosion and sediment control plans on projects that disturb soils in New York State. The certificate program is administered by the New York State Conservation District Employees Association.

Nonpoint Source(s) – any source of water pollution or *pollutants* which is not a discrete conveyance or *point source* permitted pursuant to Title 7 or 8 of Article 17 of the Environmental Conservation Law (see ECL Section 17-1403).

Overbank – flow events that exceed the capacity of the stream channel and spill out into the adjacent floodplain.

Owner or Operator – the person, persons, or legal entity which owns or leases the property on which the *construction activity* is occurring; an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications; and/or an entity that has day-to-day operational control of those activities at a project that are necessary to ensure compliance with the permit requirements.

Performance Criteria – the six performance criteria for each group of SMPs in Chapters 5 and 6 of the technical standard, New York State Stormwater Management Design Manual (DM), dated July 31, 2024. These include feasibility, conveyance, pretreatment, treatment, landscaping, and maintenance. It does not include the *Sizing Criteria* (i.e. WQv, RRV, CPv, Qp and Qf) in Part I.C.2. of the permit.

Phase – a defined area in which *construction activities* are occurring or will occur separate from other defined area(s).

Point Source – any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, vessel or other floating craft, or landfill leachate collection system from which *pollutants* are or may be *discharged*.

Pollutant(s) – dredged spoil, filter backwash, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand and industrial, municipal, agricultural waste and ballast *discharged* into water; which may cause or might reasonably be expected to cause pollution of the waters of the state in contravention of the standards or guidance values adopted as provided in 6 NYCRR Parts 700 et seq.

Qualified Inspector – a person that is knowledgeable in the principles and practices of erosion and sediment control, such as a licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, *New York State Erosion and Sediment Control Certificate Program* holder or other NYSDEC endorsed individual(s).

It can also mean someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided that person has training in the principles and practices of erosion and sediment control. Training in the principles and practices of erosion and sediment control means that the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect has received four (4) hours of NYSDEC endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other NYSDEC endorsed entity. After receiving the initial training, the individual working under the direct supervision of the licensed Professional Engineer or Registered Landscape Architect shall receive four (4) hours of training every three (3) years.

It can also mean a person that meets the *Qualified Professional* qualifications in addition to the *Qualified Inspector* qualifications.

Note: Inspections of any SMPs that include structural components, such as a dam for an impoundment, shall be performed by a licensed Professional Engineer.

Qualified Professional – a person that is knowledgeable in the principles and practices of *stormwater* management and treatment, such as a licensed Professional Engineer, Registered Landscape Architect or other NYSDEC endorsed individual(s). Individuals preparing *SWPPPs* that require the SMP component must have an understanding of the principles of hydrology, water quality management practice design, water quantity control design, and, in many cases, the principles of hydraulics. All components of the *SWPPP* that involve the practice of engineering, as defined by the NYS Education Law (see Article 145), shall be prepared by, or under the direct supervision of, a professional engineer licensed to practice in the State of New York.

Redevelopment Activity(ies) – the disturbance and reconstruction of existing *impervious area*, including *impervious areas* that were removed from a project site within five (5) years of preliminary project plan submission to the local government (i.e. site plan, subdivision, etc.).

Renewable Energy – electricity or thermal energy generated by renewable energy systems through use of the following technologies: solar thermal, photovoltaics, on land and offshore wind, hydroelectric, geothermal electric, geothermal ground source heat, tidal energy, wave energy, ocean thermal, and fuel cells which do not utilize a fossil fuel resource in the process of generating electricity.

Site Limitations – site conditions that prevent the use of an infiltration technique and or infiltration of the total WQv. Typical *site limitations* include: seasonal high groundwater, shallow depth to bedrock, and soils with an infiltration rate less than 0.5 inches/hour. The existence of *site limitations* shall be confirmed and documented using actual field testing (i.e. test pits, soil borings, and infiltration test) or using information from the most current United States Department of Agriculture (USDA) Soil Survey for the County where the project is located.

Sizing Criteria – the criteria included in Part I.C.2 of the permit that are used to size SMPs. The criteria include; Water Quality Volume (WQv), Runoff Reduction Volume (RRv), Channel Protection Volume (Cpv), *Overbank Flood* (Qp), and Extreme Flood (Qf).

Steep Slope – land area designated on the current United States Department of Agriculture (USDA) Soil Survey as Soil Slope Phase D, (provided the map unit name or description is inclusive of slopes greater than 25%), or Soil Slope Phase E or F, (regardless of the map unit name), or a combination of the three designations.

Stormwater – that portion of precipitation that, once having fallen to the ground, is in excess of the evaporative or infiltrative capacity of soils, or the retentive capacity of surface features, which flows or will flow off the land by surface runoff to waters of the State.

Streambank – the terrain alongside the bed of a creek or stream. The bank consists of the sides of the channel, between which the flow is confined.

Stormwater Pollution Prevention Plan (SWPPP) – a project specific report, including construction drawings, that among other things: describes the *construction activity(ies)*, identifies the potential sources of pollution at the *construction site*; describes and shows the *stormwater* controls that will be used to control the *pollutants* (i.e. erosion and sediment controls; for many projects, includes SMPs); and identifies procedures the *owner or operator* will implement to comply with the requirements of the permit. See Part III of the permit for a complete description of the information that must be included in the *SWPPP*.

Surface Waters of the State – shall be construed to include lakes, bays, sounds, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, marshes, inlets, canals, the Atlantic ocean within the territorial seas of the state of New York and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, public or private (except those private waters that do not combine or effect a junction with natural surface waters), which are wholly or partially within or bordering the state or within its jurisdiction. Waters of the state are further defined in 6 NYCRR Parts 800 to 941.

Temporarily Ceased – an existing disturbed area will not be disturbed again within 14 calendar days of the previous soil disturbance.

Temporary Stabilization – exposed soil has been covered with material(s) as set forth in the technical standard, New York Standards and Specifications for Erosion and Sediment Control, to prevent the exposed soil from eroding. The materials can include, but are not limited to, mulch, seed and mulch, and erosion control mats (e.g. jute twisted yarn, excelsior wood fiber mats).

Total Maximum Daily Load (TMDL) – the sum of the allowable loads of a single *pollutant* from all contributing point and *nonpoint sources*. It is a calculation of the maximum amount of a *pollutant* that a waterbody can receive and still meet *water quality standards*, and an allocation of that amount to the *pollutant's* sources. A TMDL stipulates Waste Load Allocations (WLA) for *point source discharges*, Load Allocations (LA) for *nonpoint sources*, and a margin of safety (MOS).

Traditional Land Use Control MS4 Operator – a city, town, or village with land use control authority that is authorized to *discharge* under New York State DEC's SPDES General Permit For Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s) or the City of New York's Individual SPDES Permit for their Municipal Separate Storm Sewer Systems (NY-0287890).

Trained Contractor – an employee from the contracting (construction) company, identified in Part III.A.7., that has received four (4) hours of NYSDEC endorsed training

in proper erosion and sediment control principles from a Soil and Water Conservation District, or other NYSDEC endorsed entity. After receiving the initial training, the *trained contractor* shall receive four (4) hours of training every three (3) years.

It can also mean an employee from the contracting (construction) company, identified in Part III.A.7., that meets the *qualified inspector* qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, *New York State Erosion and Sediment Control Certificate Program* holder, or someone working under the direct supervision of, and at the same company as, the licensed Professional Engineer or Registered Landscape Architect, provided they have received four (4) hours of NYSDEC endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other NYSDEC endorsed entity).

The *trained contractor* is responsible for the day-to-day implementation of the *SWPPP*.

Tree Clearing – *construction activities* limited to felling and removal of trees.

Tree clearing does not include hand felling and leaving the trees in place with no support from mechanized equipment, which is not considered *construction activity* requiring coverage under this permit.

Water Quality Standard – such measures of purity or quality for any waters in relation to their reasonable and necessary use as promulgated in 6 NYCRR Part 700 et seq.

APPENDIX B – Required SWPPP Components by Project Type

Table 1
CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP
THAT ONLY INCLUDES EROSION AND SEDIMENT CONTROLS

The following *construction activities* that involve soil disturbances of one (1) or more acres of land, but less than five (5) acres:

- Single-family home not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix D
- Single-family residential subdivisions with 25% or less *impervious cover* at total site build-out and not located in one of the watersheds listed in Appendix C and not directly discharging to one of the 303(d) segments listed in Appendix D
- Construction of a barn or other *agricultural building*, silo, stock yard or pen.
- Structural agricultural conservation practices as identified in Table II in the “Agricultural Best Management Practice Systems Catalogue” (dated June 2023) that include construction or reconstruction of *impervious area* or *alter hydrology from pre- to post-development* conditions.

The following *construction activities* that involve soil disturbances between five thousand (5000) square feet and one (1) acre of land:

- All construction activities located in the New York City Watershed located east of the Hudson River, see Appendix C Figure 1, that involve soil disturbances between five thousand (5,000) square feet and one (1) acre of land.

Within the municipal boundaries of NYC:

- Stand-alone road reconstruction, where the total soil disturbance from only that road construction, is less than one (1) acre of land.

The following *construction activities*:

- Installation of underground linear utilities; such as gas lines, fiber-optic cable, cable TV, electric, telephone, sewer mains, and water mains
- Environmental enhancement projects, such as wetland mitigation, *stormwater* retrofits, stream restoration, and resiliency projects that reconstruct shoreline areas to address sea level rise
- Pond construction
- Linear bike paths running through areas with vegetative cover, including bike paths surfaced with an *impervious cover*
- Cross-country ski trails, walking/hiking trails, and mountain biking trails, including a de minimis parking lot (maximum 10 spaces total, sized for passenger cars) with 35 feet minimum preservation of undisturbed area downgradient from the parking lot
- Dam rehabilitation (the structure of the dam itself)
- Sidewalks, bike paths, or walking paths, surfaced with an *impervious cover*, that are not part of residential, commercial, or institutional development;
- Sidewalks, bike paths, or walking paths, surfaced with an *impervious cover*, that include incidental shoulder or curb work along an existing highway to support construction of the sidewalk, bike path, or walking path.

Table 1 (Continued)
CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A SWPPP
THAT ONLY INCLUDES EROSION AND SEDIMENT CONTROLS

The following *construction activities*:

- Slope stabilization
- Slope flattening that changes the grade of the site, but does not significantly change the runoff characteristics
- Spoil areas that will be covered with vegetation
- Vegetated open space (i.e. recreational parks, lawns, meadows, fields, downhill ski trails) that do not *alter hydrology from pre- to post-development* conditions
- Athletic fields (natural grass) that do not include the construction or reconstruction of *impervious area* and do not *alter hydrology from pre- to post-development* conditions
- Demolition where vegetation will be established, and no *redevelopment activity* is planned¹
- Installation or replacement of either an overhead electric transmission line or a ski lift tower that does not include the construction of permanent access roads or parking areas surfaced with *impervious cover*.
- Solar array field areas that have tables elevated off the ground, spaced one table width apart, do not *alter hydrology from pre- to post-development conditions*, and address water quality volume and runoff reduction volume by maintaining sheet flow on slopes less than 8%.
- Structural agricultural conservation practices as identified in Table II in the “Agricultural Best Management Practice Systems Catalogue” (dated June 2023) that do not include construction or reconstruction of *impervious area* and do not *alter hydrology from pre- to post-development* conditions.
- Temporary access roads, median crossovers, detour roads, lanes, or other temporary *impervious areas* that will be restored to pre-construction conditions once the *construction activity* is complete (in this context, “temporary” means the *impervious area* will be in place for two years or less)
- Other *construction activities* that do not include the construction or reconstruction of *impervious area*, and do not *alter hydrology from pre- to post-development* conditions, and are not listed in Table 2.

1. If the site is redeveloped in the future, a new eNOI must be submitted.

Table 2

CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A *SWPPP* THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES (SMPs)

The following *construction activities*:

- Single-family home located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix D
- Single-family home that disturbs five (5) or more acres of land
- Single-family residential subdivisions located in one of the watersheds listed in Appendix C or *directly discharging* to one of the 303(d) segments listed in Appendix D
- Single-family residential subdivisions that involve soil disturbances of between one (1) and five (5) acres of land with greater than 25% *impervious cover* at total site build-out
- Single-family residential subdivisions that involve soil disturbances of between 20,000 square feet and one (1) acre of land within the municipal boundaries of NYC with greater than 25% *impervious cover* at total site build-out
- Single-family residential subdivisions that involve soil disturbances of five (5) or more acres of land, and single-family residential subdivisions that involve soil disturbances of less than five (5) acres that are part of a *common plan of development or sale* that will ultimately disturb five (5) or more acres of land
- Multi-family residential developments; includes duplexes, townhomes, condominiums, senior housing complexes, apartment complexes, and mobile home parks
- Creation of 5,000 square feet or more of *impervious area* in the municipal boundaries of NYC
- Airports
- Amusement parks
- Breweries, cideries, and wineries, including establishments constructed on agricultural land
- Campgrounds
- Cemeteries that include the construction or reconstruction of *impervious area* (>5% of disturbed area) or *alter the hydrology from pre- to post-development* conditions
- Commercial developments
- Churches and other places of worship
- Construction of a barn or other *agricultural building* (e.g. silo) that involves soil disturbance greater than five acres.
- Structural agricultural conservation practices as identified in Table II in the “Agricultural Best Management Practice Systems Catalogue” (dated June 2023) that involves soil disturbance greater than five acres and include the construction or reconstruction of *impervious area* or *alter hydrology from pre- to post-development* conditions.
- Facility buildings, including ski lodges, restroom buildings, pumphouses, ski lift terminals, and maintenance and groomer garages
- Institutional development; includes hospitals, prisons, schools and colleges
- Industrial facilities; includes industrial parks
- Landfills; including creation of landfills or capping landfills.
- Municipal facilities; includes highway garages, transfer stations, office buildings, POTWs, water treatment plants, and water storage tanks
- Golf courses
- Office complexes

Table 2 (Continued)

CONSTRUCTION ACTIVITIES THAT REQUIRE THE PREPARATION OF A *SWPPP* THAT INCLUDES POST-CONSTRUCTION STORMWATER MANAGEMENT PRACTICES (SMPs)

The following *construction activities*:

- Permanent laydown yards and equipment storage lots
- Playgrounds that include the construction or reconstruction of *impervious area*
- Sports complexes
- Racetracks; includes racetracks with earthen (dirt) surfaces
- Road construction or reconstruction, outside the municipal boundaries of NYC
- Road construction within the municipal boundaries of NYC
- Stand-alone road reconstruction, within the municipal boundaries of NYC where the total soil disturbance from that road reconstruction involves soil disturbance of one (1) acre or more of land
- Parking lot construction or reconstruction (as with all Table 2 bullets, this includes parking lots constructed as part of the *construction activities* listed in Table 1, unless a Table 1 bullet specifies otherwise)
- Athletic fields (natural grass) that include the construction or reconstruction of *impervious area* (>5% of disturbed area) or *alter the hydrology from pre- to post-development* conditions
- Athletic fields with artificial turf
- Permanent access roads, parking areas, substations, compressor stations, and well drilling pads, surfaced with *impervious cover*, and constructed as part of an overhead electric transmission line, wind-power, cell tower, oil or gas well drilling, sewer or water main, ski lift, or other linear utility project
- Sidewalks, bike paths, or walking paths, surfaced with an *impervious cover*, that are part of a residential, commercial or institutional development
- Sidewalks, bike paths, or walking paths, surfaced with an *impervious cover*, that are part of highway construction or reconstruction
- Solar array field areas on slopes greater than 8% that cannot maintain sheet flow using management practices identified in the BB or the DM
- Solar array field areas on slopes less than 8% that will *alter the hydrology from pre- to post-development* conditions
- Solar array field areas with tables that are not elevated high enough to achieve *final stabilization* beneath the tables
- Traditional *impervious areas* associated with solar development (e.g. roads, buildings, transformers)
- Utility pads surfaced with *impervious cover*, including electric vehicle charging stations
- All other *construction activities* that include the construction or reconstruction of *impervious area* or *alter the hydrology from pre- to post-development* conditions, and are not listed in Table 1

APPENDIX C – Watersheds Requiring Enhanced Phosphorus Removal

Watersheds where *owners or operators of construction activities* identified in Table 2 of Appendix B must prepare a *SWPPP* that includes SMPs designed in conformance with the Enhanced Phosphorus Removal Standards included in the DM technical standard.

- Entire New York City Watershed located east of the Hudson River – Figure 1
- Onondaga Lake Watershed – Figure 2
- Greenwood Lake Watershed – Figure 3
- Oscawana Lake Watershed – Figure 4
- Kinderhook Lake Watershed – Figure 5

Figure 1 - New York City Watershed East of the Hudson

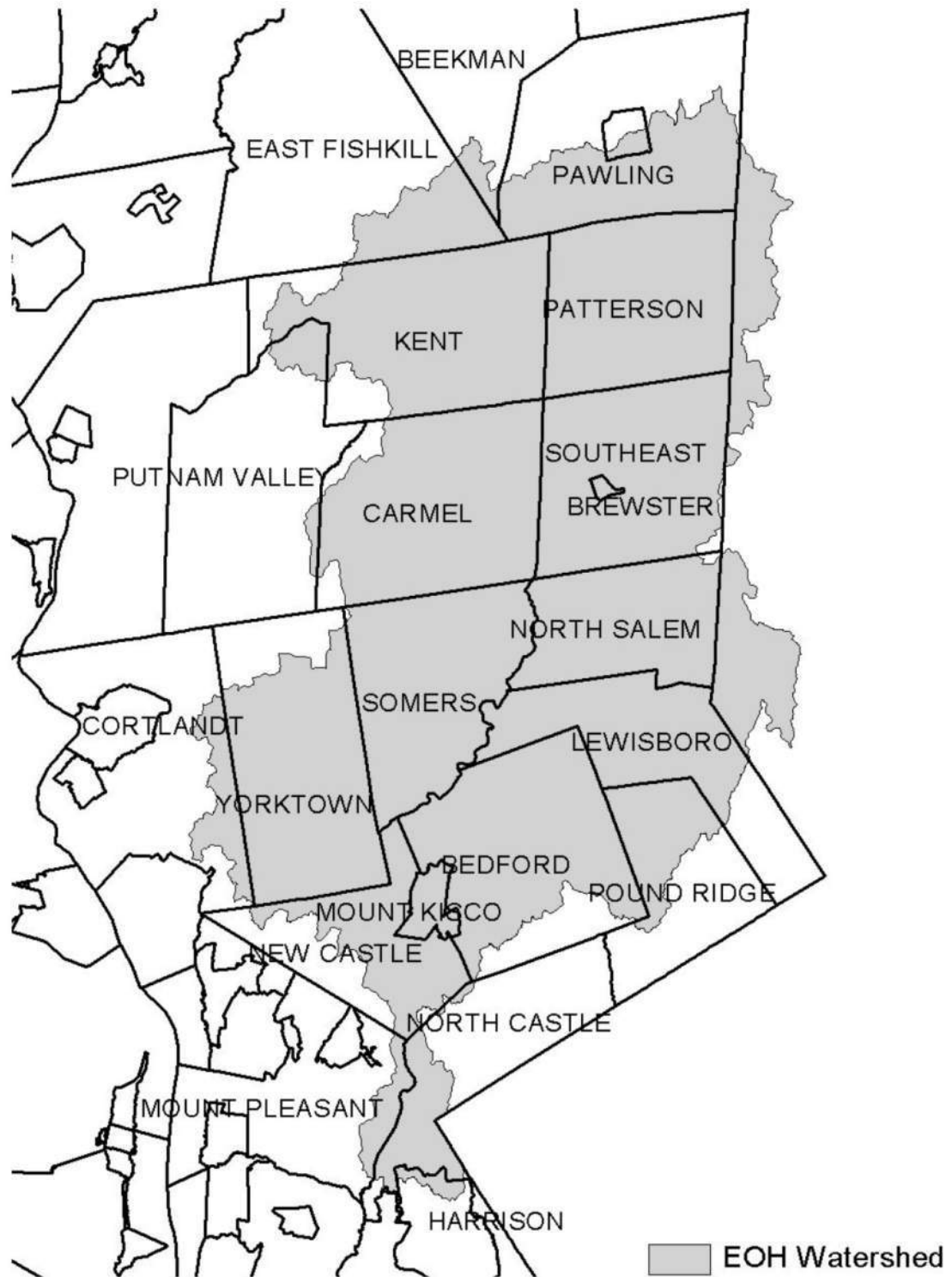


Figure 2 - Onondaga Lake Watershed



Figure 3 - Greenwood Lake Watershed

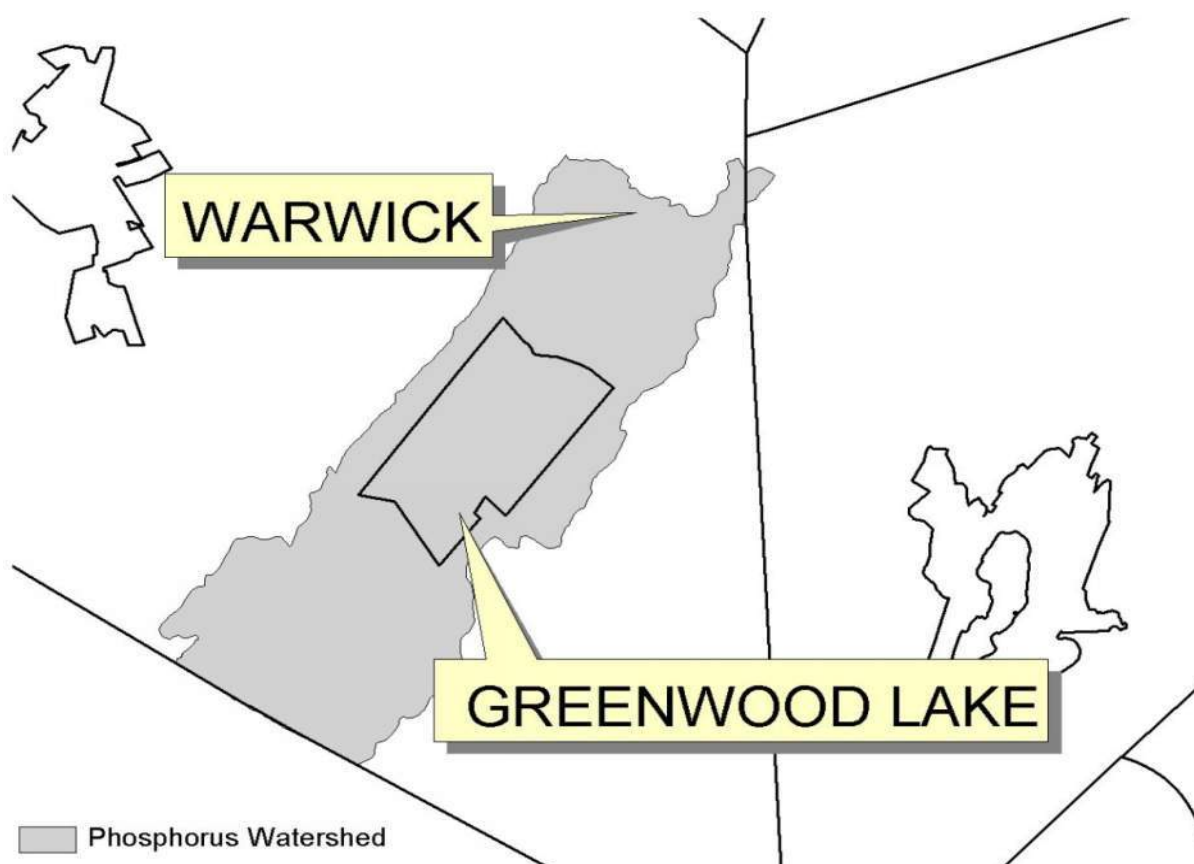


Figure 4 - Oscawana Lake Watershed

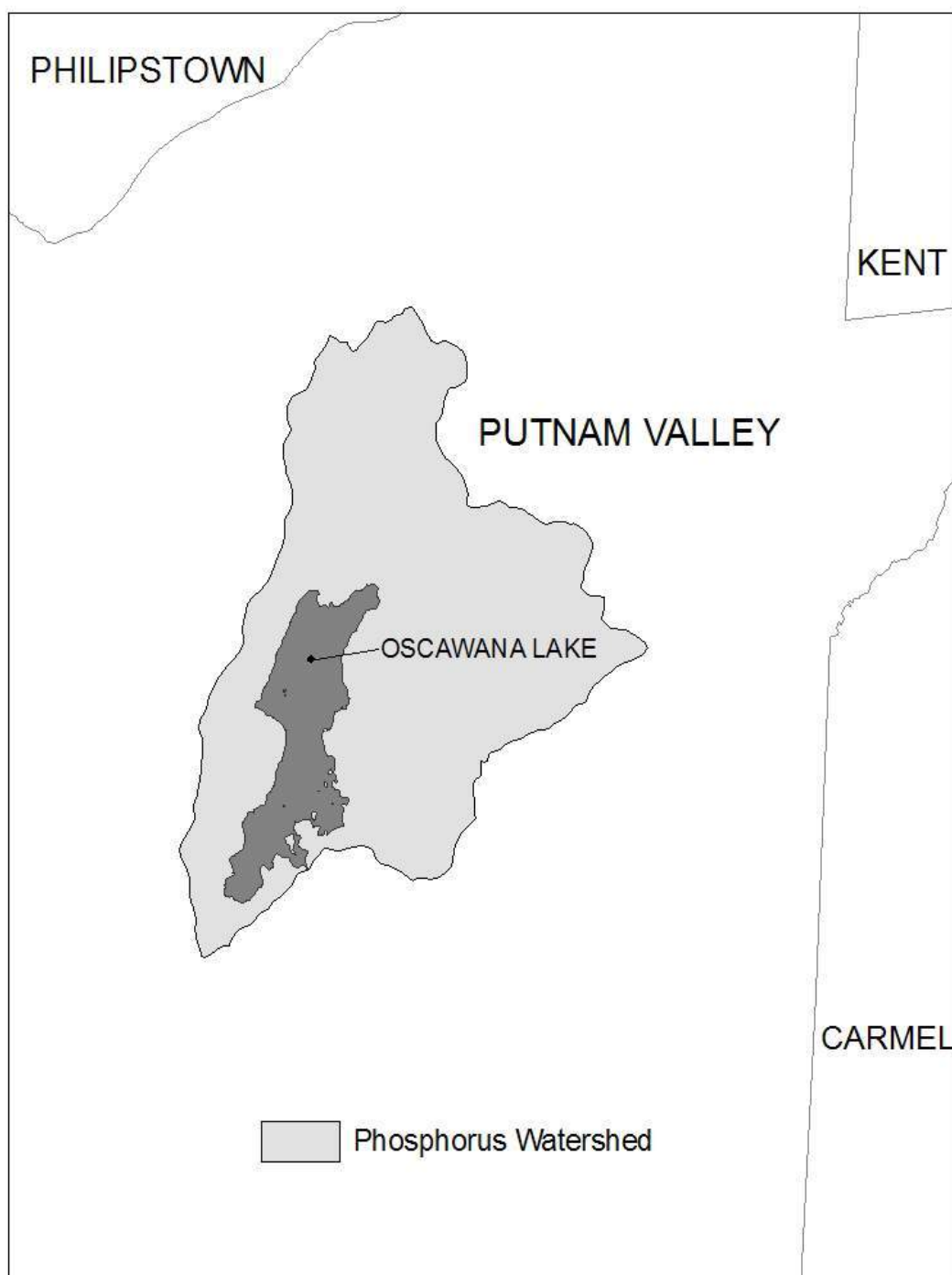
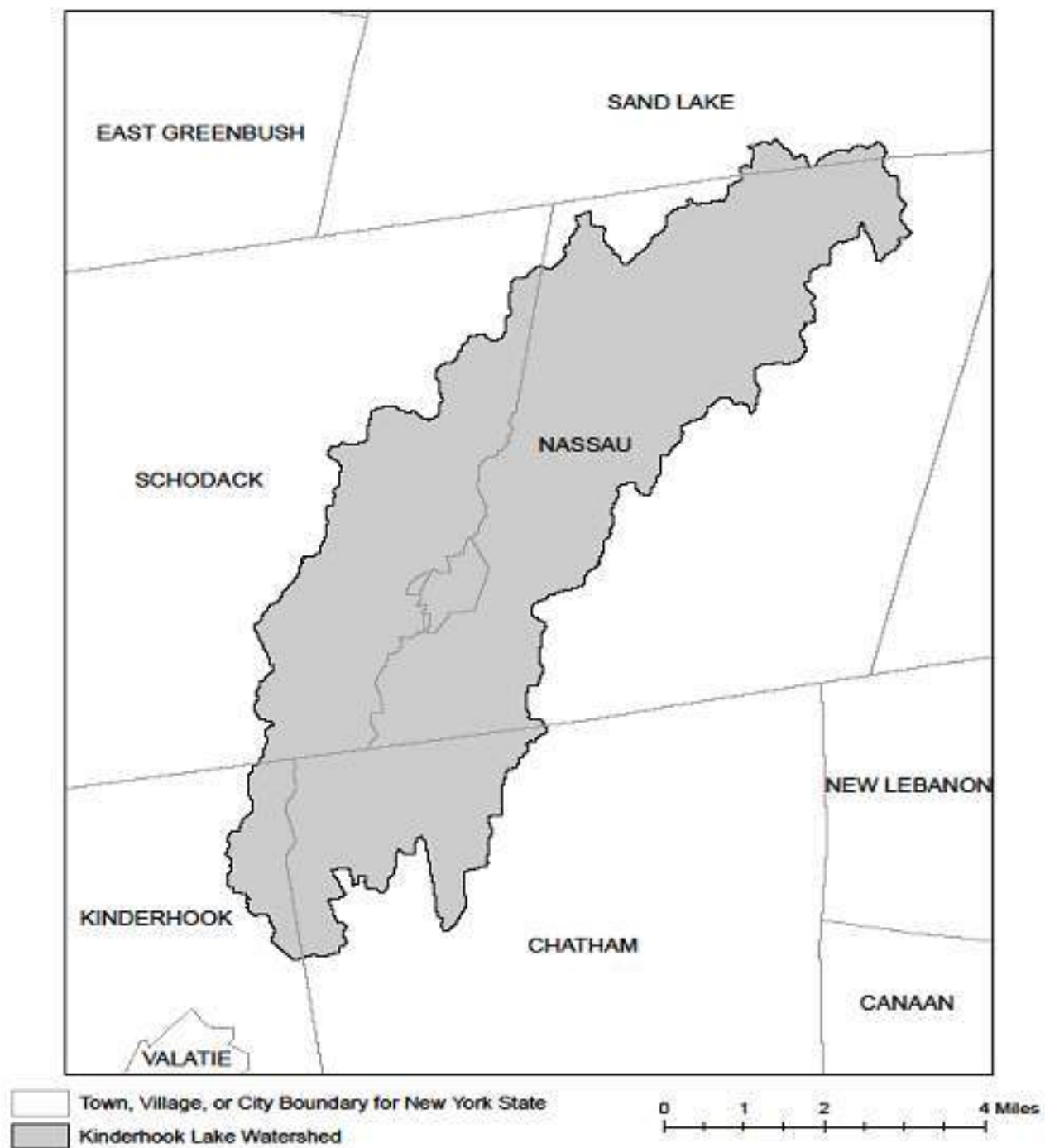


Figure 5 - Kinderhook Lake Watershed



APPENDIX D – Impaired Waterbodies (by Construction Related Pollutants)

List of waterbodies impaired by *pollutants* related to *construction activity*, including turbidity, silt/sediment, and nutrients (e.g. nitrogen, phosphorus). This list is a subset of “The Final New York State 2018 Section 303(d) List of Impaired Waters Requiring a TMDL” dated June 2020.

County	Waterbody	Pollutant
Albany	Ann Lee (Shakers) Pond, Stump Pond (1201-0096)	Phosphorus
Albany	Lawsons Lake (1301-0235)	Phosphorus
Allegany	Amity Lake, Saunders Pond (0403-0054)	Phosphorus
Allegany	Andover Pond (0403-0056)	Phosphorus
Bronx	Reservoir No.1/Lake Isle (1702-0075)	Phosphorus
Bronx	Van Cortlandt Lake (1702-0008)	Phosphorus
Broome	Blueberry, Laurel Lakes (1404-0033)	Phosphorus
Broome	Fly Pond, Deer Lake (1404-0038)	Phosphorus
Broome	Minor Tribs to Lower Susquehanna (0603-0044)	Phosphorus
Broome	Whitney Point Lake/Reservoir (0602-0004)	Phosphorus
Cattaraugus	Allegheny River/Reservoir (0201-0023)	Phosphorus
Cattaraugus	Beaver Lake/Alma Pond (0201-0073)	Phosphorus
Cattaraugus	Case Lake (0201-0020)	Phosphorus
Cattaraugus	Linlyco/Club Pond (0201-0035)	Phosphorus
Cayuga	Duck Lake (0704-0025)	Phosphorus
Cayuga	Owasco Inlet, Upper, and tribs (0706-0014)	Nutrients
Chautauqua	Chadakoin River and tribs (0202-0018)	Phosphorus
Chautauqua	Hulburt/Clymer Pond (0202-0079)	Phosphorus
Chautauqua	Middle Cassadaga Lake (0202-0002)	Phosphorus
Clinton	Great Chazy River, Lower, Main Stem (1002-0001)	Silt/Sediment
Columbia	Robinson Pond (1308-0003)	Phosphorus
Cortland	Dean Pond (0602-0077)	Phosphorus
Dutchess	Fallkill Creek (1301-0087)	Phosphorus
Dutchess	Hillside Lake (1304-0001)	Phosphorus
Dutchess	Wappingers Lake (1305-0001)	Phosphorus
Dutchess	Wappingers Lake (1305-0001)	Silt/Sediment
Erie	Beeman Creek and tribs (0102-0030)	Phosphorus
Erie	Delaware Park Pond (0101-0026)	Phosphorus
Erie	Ellicott Creek, Lower, and tribs (0102-0018)	Phosphorus
Erie	Ellicott Creek, Lower, and tribs (0102-0018)	Silt/Sediment
Erie	Green Lake (0101-0038)	Phosphorus
Erie	Little Sister Creek, Lower, and tribs (0104-0045)	Phosphorus
Erie	Murder Creek, Lower, and tribs (0102-0031)	Phosphorus

Erie	Rush Creek and tribs (0104-0018)	Phosphorus
Erie	Scajaquada Creek, Lower, and tribs (0101-0023)	Phosphorus
Erie	Scajaquada Creek, Middle, and tribs (0101-0033)	Phosphorus
Erie	Scajaquada Creek, Upper, and tribs (0101-0034)	Phosphorus
Erie	South Branch Smoke Cr, Lower, and tribs (0101-0036)	Phosphorus
Erie	South Branch Smoke Cr, Lower, and tribs (0101-0036)	Silt/Sediment
Genesee	Bigelow Creek and tribs (0402-0016)	Phosphorus
Genesee	Black Creek, Middle, and minor tribs (0402-0028)	Phosphorus
Genesee	Black Creek, Upper, and minor tribs (0402-0048)	Phosphorus
Genesee	Bowen Brook and tribs (0102-0036)	Phosphorus
Genesee	LeRoy Reservoir (0402-0003)	Phosphorus
Genesee	Mill Pond (0402-0050)	Phosphorus
Genesee	Oak Orchard Cr, Upper, and tribs (0301-0014)	Phosphorus
Genesee	Oatka Creek, Middle, and minor tribs (0402-0031)	Phosphorus
Genesee	Tonawanda Cr, Middle, Main Stem (0102-0002)	Phosphorus
Greene	Schoharie Reservoir (1202-0012)	Silt/Sediment
Greene	Sleepy Hollow Lake (1301-0059)	Silt/Sediment
Herkimer	Steele Creek tribs (1201-0197)	Phosphorus
Herkimer	Steele Creek tribs (1201-0197)	Silt/Sediment
Kings	Hendrix Creek (1701-0006) 18	Nitrogen
Kings	Prospect Park Lake (1701-0196)	Phosphorus
Lewis	Mill Creek/South Branch, and tribs (0801-0200)	Nutrients
Livingston	Christie Creek and tribs (0402-0060)	Phosphorus
Livingston	Conesus Lake (0402-0004)	Phosphorus
Livingston	Mill Creek and minor tribs (0404-0011)	Silt/Sediment
Monroe	Black Creek, Lower, and minor tribs (0402-0033)	Phosphorus
Monroe	Buck Pond (0301-0017)	Phosphorus
Monroe	Cranberry Pond (0301-0016)	Phosphorus
Monroe	Durand, Eastman Lakes (0302-0037)	Phosphorus
Monroe	Lake Ontario Shoreline, Western (0301-0069) 9	Phosphorus
Monroe	Long Pond (0301-0015)	Phosphorus
Monroe	Mill Creek and tribs (0302-0025)	Phosphorus 2
Monroe	Mill Creek/Blue Pond Outlet and tribs (0402-0049)	Phosphorus
Monroe	Minor Tribs to Irondequoit Bay (0302-0038)	Phosphorus
Monroe	Rochester Embayment - East (0302-0002) [9]	Phosphorus
Monroe	Rochester Embayment - West (0301-0068) 9	Phosphorus
Monroe	Shipbuilders Creek and tribs (0302-0026)	Phosphorus 2
Monroe	Thomas Creek/White Brook and tribs (0302-0023)	Phosphorus

Nassau	Bannister Creek/Bay (1701-0380)	Nitrogen
Nassau	Beaver Lake (1702-0152)	Phosphorus
Nassau	Browswere Bay (1701-0383)	Nitrogen
Nassau	Camaans Pond (1701-0052)	Phosphorus
Nassau	East Meadow Brook, Upper, and tribs (1701-0211)	Silt/Sediment
Nassau	East Rockaway Channel (1701-0381)	Nitrogen
Nassau	Glen Cove Creek, Lower, and tribs (1702-0146)	Silt/Sediment
Nassau	Grant Park Pond (1701-0054)	Phosphorus
Nassau	Hempstead Bay, Broad Channel (1701-0032)	Nitrogen
Nassau	Hempstead Lake (1701-0015)	Phosphorus
Nassau	Hewlett Bay (1701-0382)	Nitrogen
Nassau	Hog Island Channel (1701-0220)	Nitrogen
Nassau	Massapequa Creek, Upper, and tribs (1701-0174)	Phosphorus
Nassau	Milburn/Parsonage Creeks, Upp, and tribs (1701-0212)	Phosphorus
Nassau	Reynolds Channel, East (1701-0215) [12]	Nitrogen
Nassau	Reynolds Channel, West (1701-0216) 12	Nitrogen
Nassau	Tidal Tribs to Hempstead Bay (1701-0218)	Nitrogen
Nassau	Tribs (fresh) to East Bay (1701-0204)	Silt/Sediment
Nassau	Tribs (fresh) to East Bay (1701-0204)	Phosphorus
Nassau	Tribs to Smith Pond/Halls Pond (1701-0221)	Phosphorus
Nassau	Woodmere Channel (1701-0219)	Nitrogen
New York	Harlem Meer (1702-0103)	Phosphorus
New York	The Lake in Central Park (1702-0105)	Phosphorus
Niagara	Bergholtz Creek and tribs (0101-0004)	Phosphorus
Niagara	Hyde Park Lake (0101-0030)	Phosphorus
Niagara	Lake Ontario Shoreline, Western (0301-0053) 9	Phosphorus
Niagara	Lake Ontario Shoreline, Western (0301-0072) 9	Phosphorus
Oneida	Ballou, Nail Creeks (1201-0203)	Phosphorus
Onondaga	Ley Creek and tribs (0702-0001) 10	Nutrients (phosphorus)
Onondaga	Minor Tribs to Onondaga Lake (0702-0022) 10	Nutrients (phosphorus)
Onondaga	Minor Tribs to Onondaga Lake (0702-0022) 10	Nitrogen (NH ₃ , NO ₂)
Onondaga	Onondaga Creek, Lower (0702-0023) 10	Nutrients (phosphorus)
Onondaga	Onondaga Creek, Lower, and tribs (0702-0023)	Turbidity
Onondaga	Onondaga Creek, Middle, and tribs (0702-0004)	Turbidity
Onondaga	Onondaga Creek, Upper, and tribs (0702-0024)	Turbidity
Ontario	Great Brook and minor tribs (0704-0034)	Phosphorus 2
Ontario	Great Brook and minor tribs (0704-0034)	Silt/Sediment

Ontario	Hemlock Lake Outlet and minor tribs (0402-0013)	Phosphorus
Ontario	Honeoye Lake (0402-0032)	Phosphorus
Orange	Brown Pond Reservoir (1303-0013)	Phosphorus
Orange	Lake Washington (1303-0012)	Phosphorus
Orange	Minor Tribs to Middle Wallkill (1306-0061)	Phosphorus
Orange	Monhagen Brook and tribs (1306-0074)	Phosphorus
Orange	Orange Lake (1301-0008) [16]	Phosphorus
Orange	Quaker Creek and tribs (1306-0025)	Phosphorus
Orange	Wallkill River, Middle, Main Stem (1306-0038)	Phosphorus
Orange	Wallkill River, Upper, and Minor tribs (1306-0017)	Phosphorus
Orleans	Glenwood Lake (0301-0041)	Phosphorus
Orleans	Lake Ontario Shoreline, Western (0301-0070) 9	Phosphorus
Orleans	Lake Ontario Shoreline, Western (0301-0071) 9	Phosphorus
Oswego	Lake Neatahwanta (0701-0018)	Nutrients (phosphorus)
Oswego	Pleasant Lake (0703-0047)	Phosphorus
Putnam	Lost Lake, Putnam Lake (1302-0053)	Phosphorus
Putnam	Minor Tribs to Croton Falls Reservoir (1302-0001)	Phosphorus
Queens	Bergen Basin (1701-0009) 18	Nitrogen
Queens	Jamaica Bay, Eastern, and tribs, Queens (1701-0005) 18	Nitrogen
Queens	Kissena Lake (1702-0258)	Phosphorus
Queens	Meadow Lake (1702-0030)	Phosphorus
Queens	Shellbank Basin (1701-0001) 18	Nitrogen
Queens	Willow Lake (1702-0031)	Phosphorus
Rensselaer	Nassau Lake (1310-0001)	Phosphorus
Rensselaer	Snyders Lake (1301-0043)	Phosphorus
Richmond	Grassmere Lake/Bradys Pond (1701-0357)	Phosphorus
Rockland	Congers Lake, Swartout Lake (1501-0019)	Phosphorus
Rockland	Rockland Lake (1501-0021)	Phosphorus
Saratoga	Ballston Lake (1101-0036)	Phosphorus
Saratoga	Dwaas Kill and tribs (1101-0007)	Phosphorus
Saratoga	Dwaas Kill and tribs (1101-0007)	Silt/Sediment
Saratoga	Lake Lonely (1101-0034)	Phosphorus
Saratoga	Round Lake (1101-0060)	Phosphorus
Saratoga	Tribs to Lake Lonely (1101-0001)	Phosphorus
Schenectady	Collins Lake (1201-0077)	Phosphorus
Schenectady	Duane Lake (1311-0006)	Phosphorus
Schenectady Lake	Mariaville Lake (1201-0113)	Phosphorus
Schuyler	Cayuta Lake (0603-0005)	Phosphorus

Seneca	Reeder Creek and tribs (0705-0074)	Phosphorus
St.Lawrence	Black Lake Outlet, Black Lake (0906-0001)	Phosphorus
St.Lawrence	Fish Creek and minor tribs (0906-0026)	Phosphorus
Steuben	Smith Pond (0502-0012)	Phosphorus
Suffolk	Agawam Lake (1701-0117)	Phosphorus
Suffolk	Big/Little Fresh Ponds (1701-0125)	Phosphorus
Suffolk	Canaan Lake (1701-0018)	Phosphorus
Suffolk	Canaan Lake (1701-0018)	Silt/Sediment
Suffolk	Fresh Pond (1701-0241)	Phosphorus
Suffolk	Great South Bay, East (1701-0039)	Nitrogen
Suffolk	Great South Bay, Middle (1701-0040)	Nitrogen
Suffolk	Great South Bay, West (1701-0173)	Nitrogen
Suffolk	Lake Ronkonkoma (1701-0020)	Phosphorus
Suffolk	Mattituck/Marratooka Pond (1701-0129)	Phosphorus
Suffolk	Mill and Seven Ponds (1701-0113)	Phosphorus
Suffolk	Millers Pond (1702-0013)	Phosphorus
Suffolk	Moriches Bay, East (1701-0305)	Nitrogen
Suffolk	Moriches Bay, West (1701-0038)	Nitrogen
Suffolk	Quantuck Bay (1701-0042)	Nitrogen
Suffolk	Shinnecock Bay and Inlet (1701-0033)	Nitrogen
Suffolk	Tidal Tribs to West Moriches Bay (1701-0312)	Nitrogen
Sullivan	Bodine, Montgomery Lakes (1401-0091)	Phosphorus
Sullivan	Davies Lake (1402-0047)	Phosphorus
Sullivan	Evens Lake (1402-0004)	Phosphorus
Sullivan	Pleasure Lake (1402-0055)	Phosphorus
Sullivan	Swan Lake (1401-0063)	Phosphorus
Tompkins	Cayuga Lake, Southern End (0705-0040)	Phosphorus
Tompkins	Cayuga Lake, Southern End (0705-0040)	Silt/Sediment
Ulster	Ashokan Reservoir (1307-0004)	Silt/Sediment
Ulster	Esopus Creek, Lower, Main Stem (1307-0010) [17]	Turbidity
Ulster	Esopus Creek, Middle, Main Stem (1307-0003) 17	Turbidity
Ulster	Esopus Creek, Upper, and minor tribs (1307-0007)[3]	Silt/Sediment
Ulster	Wallkill River, Lower, Main Stem (1306-0027)	Phosphorus
Warren	Hague Brook and tribs (1006-0006)	Silt/Sediment
Warren	Huddle/Finkle Brooks and tribs (1006-0003)	Silt/Sediment
Warren	Indian Brook and tribs (1006-0002)	Silt/Sediment
Warren	Lake George (1006-0016) and tribs	Silt/Sediment
Warren	Tribs to Lake George, East Shore (1006-0020)	Silt/Sediment
Warren	Tribs to Lake George, Lk.George Village (1006-0008)	Silt/Sediment

Washington	Wood Cr/Champlain Canal and tribs (1005-0036)	Phosphorus
Westchester	Lake Katonah (1302-0136)	Phosphorus
Westchester	Lake Lincolndale (1302-0089)	Phosphorus
Westchester	Lake Meahagh (1301-0053)	Phosphorus
Westchester	Lake Mohegan (1301-0149)	Phosphorus
Westchester	Lake Shenorock (1302-0083)	Phosphorus
Westchester	Mamaroneck River, Lower (1702-0071)	Silt/Sediment
Westchester	Mamaroneck River, Upp, & minor tribs (1702-0123)	Silt/Sediment
Westchester	Saw Mill River (1301-0007)	Phosphorus
Westchester	Saw Mill River, Middle, and tribs (1301-0100)	Phosphorus
Westchester	Sheldrake River (1702-0069)	Phosphorus
Westchester	Sheldrake River (1702-0069)	Silt/Sediment
Westchester	Silver Lake (1702-0040)	Phosphorus
Westchester	Teatown Lake (1302-0150)	Phosphorus
Westchester	Truesdale Lake (1302-0054)	Phosphorus
Westchester	Wallace Pond (1301-0140)	Phosphorus

APPENDIX E – List of NYSDEC Regional Offices

<u>Region</u>	<u>COVERING THE FOLLOWING COUNTIES:</u>	<u>DIVISION OF ENVIRONMENTAL PERMITS (DEP) PERMIT ADMINISTRATORS</u>	<u>DIVISION OF WATER (DOW) WATER (SPDES) PROGRAM</u>
1	NASSAU AND SUFFOLK	50 CIRCLE ROAD STONY BROOK, NY 11790 TEL. (631) 444-0365	50 CIRCLE ROAD STONY BROOK, NY 11790-3409 TEL. (631) 444-0405
2	BRONX, KINGS, NEW YORK, QUEENS AND RICHMOND	1 HUNTERS POINT PLAZA, 47-40 21ST ST. LONG ISLAND CITY, NY 11101-5407 TEL. (718) 482-4997	1 HUNTERS POINT PLAZA, 47-40 21ST ST. LONG ISLAND CITY, NY 11101-5407 TEL. (718) 482-4933
3	DUTCHESS, ORANGE, PUTNAM, ROCKLAND, SULLIVAN, ULSTER AND WESTCHESTER	21 SOUTH PUTT CORNERS ROAD NEW PALTZ, NY 12561-1696 TEL. (845) 256-3059	220 WHITE PLAINS ROAD, SUITE 110 TEL. (914) 428 - 2505
4	ALBANY, COLUMBIA, DELAWARE, GREENE, MONTGOMERY, OTSEGO, RENSSELAER, SCHENECTADY AND SCHOHARIE	1130 NORTH WESTCOTT ROAD SCHENECTADY, NY 12306-2014 TEL. (518) 357-2069	1130 NORTH WESTCOTT ROAD SCHENECTADY, NY 12306-2014 TEL. (518) 357-2045
5	CLINTON, ESSEX, FRANKLIN, FULTON, HAMILTON, SARATOGA, WARREN AND WASHINGTON	1115 STATE ROUTE 86, Po Box 296 RAY BROOK, NY 12977-0296 TEL. (518) 897-1234	232 GOLF COURSE ROAD WARRENSBURG, NY 12885-1172 TEL. (518) 623-1200
6	HERKIMER, JEFFERSON, LEWIS, ONEIDA AND ST. LAWRENCE	STATE OFFICE BUILDING 317 WASHINGTON STREET WATERTOWN, NY 13601-3787 TEL. (315) 785-2245	STATE OFFICE BUILDING 207 GENESEE STREET UTICA, NY 13501-2885 TEL. (315) 793-2554
7	BROOME, CAYUGA, CHENANGO, CORTLAND, MADISON, ONONDAGA, OSWEGO, TIOGA AND TOMPKINS	5786 WIDEWATERS PARKWAY SYRACUSE, NY 13214-1867 TEL. (315) 426-7438	5786 WIDEWATERS PARKWAY SYRACUSE, NY 13214-1867 TEL. (315) 426-7500
8	CHEMUNG, GENESEE, LIVINGSTON, MONROE, ONTARIO, ORLEANS, SCHUYLER, SENECA, STEUBEN, WAYNE AND YATES	6274 EAST AVON-LIMA ROADAVON, NY 14414-9519 TEL. (585) 226-2466	6274 EAST AVON-LIMA RD. AVON, NY 14414-9519 TEL. (585) 226-2466
9	ALLEGANY, CATTARAUGUS, CHAUTAUQUA, ERIE, NIAGARA AND WYOMING	700 DELAWARE AVENUE BUFFALO, NY 14209-2999 TEL. (716) 851-7165	700 DELAWARE AVENUE BUFFALO, NY 14209-2999 TEL. (716) 851-7070

APPENDIX F – SWPPP Preparer Certification Form

The SWPPP Preparer Certification Form required by this permit begins on the following page.



SWPPP Preparer Certification Form

SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP)

(In accordance with CGP Part I.D.2.b., the completed form must be attached to the eNOI and submitted to NYSDEC electronically.)

Project/Site Name:

eNOI Submission ID:

Owner/Operator Name:

Certification Statement – SWPPP Preparer

I hereby certify that the Stormwater Pollution Prevention Plan (SWPPP) has been prepared in accordance with the requirements of GP-0-25-001. I certify under penalty of law that the SWPPP and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

SWPPP Preparer First Name

MI

SWPPP Preparer Last Name

Signature

Date

APPENDIX G – MS4 SWPPP Acceptance Form

The MS4 SWPPP Acceptance Form required by this permit begins on the following page.



Department of
Environmental
Conservation

MS4 SWPPP Acceptance Form

for construction activities seeking authorization under the

SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP)

(In accordance with CGP Part I.D.2.b., the completed form must be attached to the eNOI and submitted to NYSDEC electronically.)

I. Project Owner/Operator Information

1. Owner/Operator Name:

2. Contact Person:

3. Street Address:

4. City/State/Zip:

II. Project Site Information

5. Project/Site Name:

6. Street Address:

7. City/State/Zip:

III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information

8. SWPPP Reviewed by:

9. Title/Position:

10. Date Final SWPPP Reviewed and Accepted:

IV. Regulated MS4 Information

11. Name of MS4 Operator:

12. MS4 SPDES Permit Identification Number: NYR20A

13. Street Address:

14. City/State/Zip:

15. Telephone Number:

MS4 SWPPP Acceptance Form - continued

V. Certification Statement - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in section II. of this form has been reviewed and meets the substantive requirements in the SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP). Note: The MS4 Operator, through the acceptance of the SWPPP, assumes no responsibility for the accuracy and adequacy of the design included in the SWPPP. In addition, review and acceptance of the SWPPP by the MS4 Operator does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name¹:

Title/Position:

Signature:

Date:

VI. Additional Information

¹ Printed name of the principal executive officer or ranking elected official for the MS4 Operator or their duly authorized representative in accordance with CGP Part VII.J.2.

APPENDIX H – NYCDEP SWPPP Acceptance/Approval Form

The City of New York Department of Environmental Protection (NYCDEP) SWPPP Acceptance/Approval form required by this permit begins on the following page.



THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Environmental Planning and Analysis
59-17 Junction Blvd., 9th Floor; Flushing, NY 11373

SWPPP Acceptance/Approval

Application Number:

I. Project Owner/Operator Information

1. Owner/Operator Name:

2. Contact Person:

3. Street Address:

4. City/State/Zip:

II. Project Site Information

5. Project/Site Name:

6. Street Address:

7. City/State/Zip:

III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance/Approval

8. SWPPP Reviewed by:

9. Title/Position: /

10. Date Final SWPPP Reviewed and Accepted:

11. Acceptance/Approval Expiration Date:

IV. Regulated MS4 Information for projects that require coverage under the NY State Pollution Discharge Elimination System General Permit for Stormwater Discharges from Construction Activity

12. Name of MS4: *CITY OF NEW YORK*

13. MS4 SPDES Permit Identification Number: *NY-0287890*

14. Contact Person:

15. Street Address: *59-17 Junction Blvd. 9th Floor*

16. City/State/Zip: *Flushing, NY 11373*

17. Telephone Number:



Projects in the MS4 area must submit a copy of this SWPPP Acceptance with a Notice of Intent for coverage under the NY SPDES General Permit for Stormwater Discharges from Construction Activity to: NYS Department of Environmental Conservation, Division of Water; 625 Broadway, 4th Floor; Albany, New York 12233-3505.



THE CITY OF NEW YORK
DEPARTMENT OF ENVIRONMENTAL PROTECTION
Bureau of Environmental Planning and Analysis
59-17 Junction Blvd., 9th Floor; Flushing, NY 11373

V. Certification Statement - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in question 5 has been reviewed and meets the substantive requirements in the SPDES General Permit For Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s).

Note: The MS4, through the acceptance of the SWPPP, assumes no responsibility for the accuracy and adequacy of the design included in the SWPPP. In addition, review and acceptance of the SWPPP by the MS4 does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name:

Title/Position:

Signature:

Date:

VI. Conditions of Acceptance/Approval and Additional Information



Projects in the MS4 area must submit a copy of this SWPPP Acceptance with a Notice of Intent for coverage under the NY SPDES General Permit for Stormwater Discharges from Construction Activity to: NYS Department of Environmental Conservation, Division of Water; 625 Broadway, 4th Floor; Albany, New York 12233-3505.

APPENDIX I – MS4 No Jurisdiction Form

The MS4 No Jurisdiction Form required by this permit begins on the following page.



Department of
Environmental
Conservation

MS4 No Jurisdiction Form

for construction activities seeking authorization under the

SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP)

(In accordance with CGP Part I.D.2.b., the completed form must be attached to the eNOI and submitted to NYSDEC electronically.)

I. Project Owner/Operator Information

- a. Owner/Operator Name:
- b. Contact Person:
- c. Street Address:
- d. City/State/Zip:

II. Project Site Information

- a. Project/Site Name:
- b. Street Address:
- c. City/State/Zip:
- d. eNOI Submission ID:

III. Traditional Land Use Control MS4 Operator Information

- a. Name of MS4 Operator:
- b. MS4 SPDES Permit ID Number: NYR20A
- c. Street Address:
- d. City/State/Zip:
- e. Telephone Number:

IV. Certification Statement

In accordance with CGP Part I.D.2.b.ii.3., I hereby certify that the Traditional Land Use Control MS4 Operator identified in section III. of this form does not have review authority over the construction project identified in section II. of this form, which is owned/operated by the entity identified in section I. of this form. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

- a. Printed name of the principal executive officer or ranking elected official for the MS4 Operator or their duly authorized representative in accordance with CGP Part VII.J.2.:
- b. Title/Position:
- c. Signature:
- d. Date:

APPENDIX J – Owner/Operator Certification Form

The Owner/Operator Certification Form required by this permit begins on the following page.



Owner/Operator Certification Form

SPDES General Permit for Stormwater Discharges from Construction Activity, GP-0-25-001 (CGP)

(In accordance with CGP Part I.D.2.b. or Part I.F.2. and 3., the completed form must be attached to the eNOI or the Request to Continue Coverage, and submitted to NYSDEC electronically.)

Project/Site Name: _____

eNOI Submission ID: _____

eNOI Submitted by: ☐ **Owner/Operator** ☐ **SWPPP Preparer** ☐ **Other**

Certification Statement - Owner/Operator

I hereby certify that I read, and will comply with, the GP-0-25-001 permit requirements. I understand that authorization to discharge under the permit for the project/site named above is dependent on receipt of a Letter of Authorization (LOA) or a Letter of Continued Coverage (LOCC) from the New York State Department of Environmental Conservation (NYSDEC) in accordance with CGP Part I.D.3.b. or Part I.F.4. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Owner/Operator First Name

MI

Owner/Operator Last Name

Signature

Date



APPENDIX H

MS4 SWPPP ACCEPTANCE FORM



Department of
Environmental
Conservation

NYS Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance Form

for

Construction Activities Seeking Authorization Under SPDES General Permit

*(NOTE: Attach Completed Form to Notice Of Intent and Submit to Address Above)

I. Project Owner/Operator Information

1. Owner/Operator Name:

2. Contact Person:

3. Street Address:

4. City/State/Zip:

II. Project Site Information

5. Project/Site Name:

6. Street Address:

7. City/State/Zip:

III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information

8. SWPPP Reviewed by:

9. Title/Position:

10. Date Final SWPPP Reviewed and Accepted:

IV. Regulated MS4 Information

11. Name of MS4:

12. MS4 SPDES Permit Identification Number: NYR20A

13. Contact Person:

14. Street Address:

15. City/State/Zip:

16. Telephone Number:

MS4 SWPPP Acceptance Form - continued

V. Certification Statement - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in question 5 has been reviewed and meets the substantive requirements in the SPDES General Permit For Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s). Note: The MS4, through the acceptance of the SWPPP, assumes no responsibility for the accuracy and adequacy of the design included in the SWPPP. In addition, review and acceptance of the SWPPP by the MS4 does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name:

Title/Position:

Signature:

Date:

VI. Additional Information



APPENDIX H

MS4 SWPPP ACCEPTANCE FORM



Department of
Environmental
Conservation

NYS Department of Environmental Conservation
Division of Water
625 Broadway, 4th Floor
Albany, New York 12233-3505

MS4 Stormwater Pollution Prevention Plan (SWPPP) Acceptance Form

for

Construction Activities Seeking Authorization Under SPDES General Permit

*(NOTE: Attach Completed Form to Notice Of Intent and Submit to Address Above)

I. Project Owner/Operator Information

1. Owner/Operator Name:

2. Contact Person:

3. Street Address:

4. City/State/Zip:

II. Project Site Information

5. Project/Site Name:

6. Street Address:

7. City/State/Zip:

III. Stormwater Pollution Prevention Plan (SWPPP) Review and Acceptance Information

8. SWPPP Reviewed by:

9. Title/Position:

10. Date Final SWPPP Reviewed and Accepted:

IV. Regulated MS4 Information

11. Name of MS4:

12. MS4 SPDES Permit Identification Number: NYR20A

13. Contact Person:

14. Street Address:

15. City/State/Zip:

16. Telephone Number:

MS4 SWPPP Acceptance Form - continued

V. Certification Statement - MS4 Official (principal executive officer or ranking elected official) or Duly Authorized Representative

I hereby certify that the final Stormwater Pollution Prevention Plan (SWPPP) for the construction project identified in question 5 has been reviewed and meets the substantive requirements in the SPDES General Permit For Stormwater Discharges from Municipal Separate Storm Sewer Systems (MS4s). Note: The MS4, through the acceptance of the SWPPP, assumes no responsibility for the accuracy and adequacy of the design included in the SWPPP. In addition, review and acceptance of the SWPPP by the MS4 does not relieve the owner/operator or their SWPPP preparer of responsibility or liability for errors or omissions in the plan.

Printed Name:

Title/Position:

Signature:

Date:

VI. Additional Information

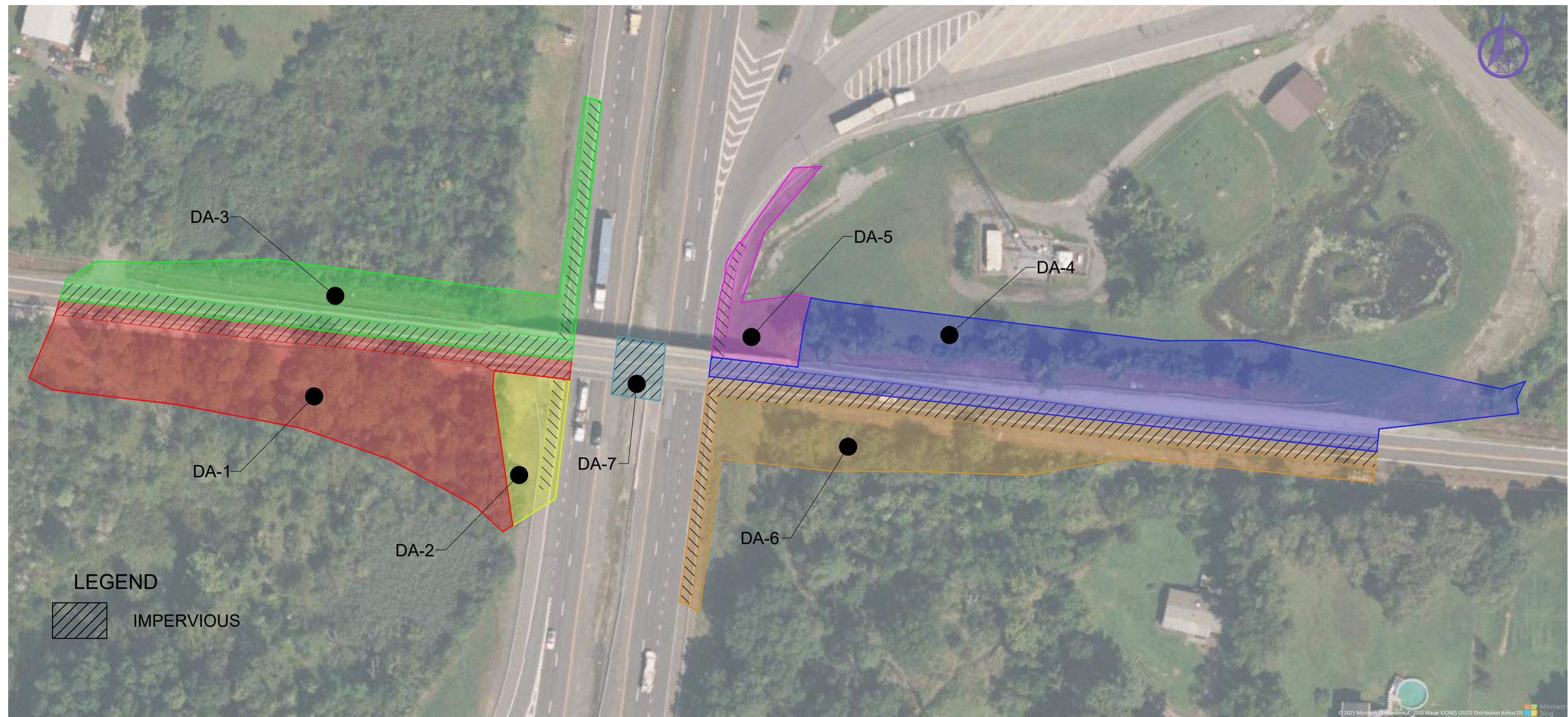


APPENDIX I

CALCULATIONS

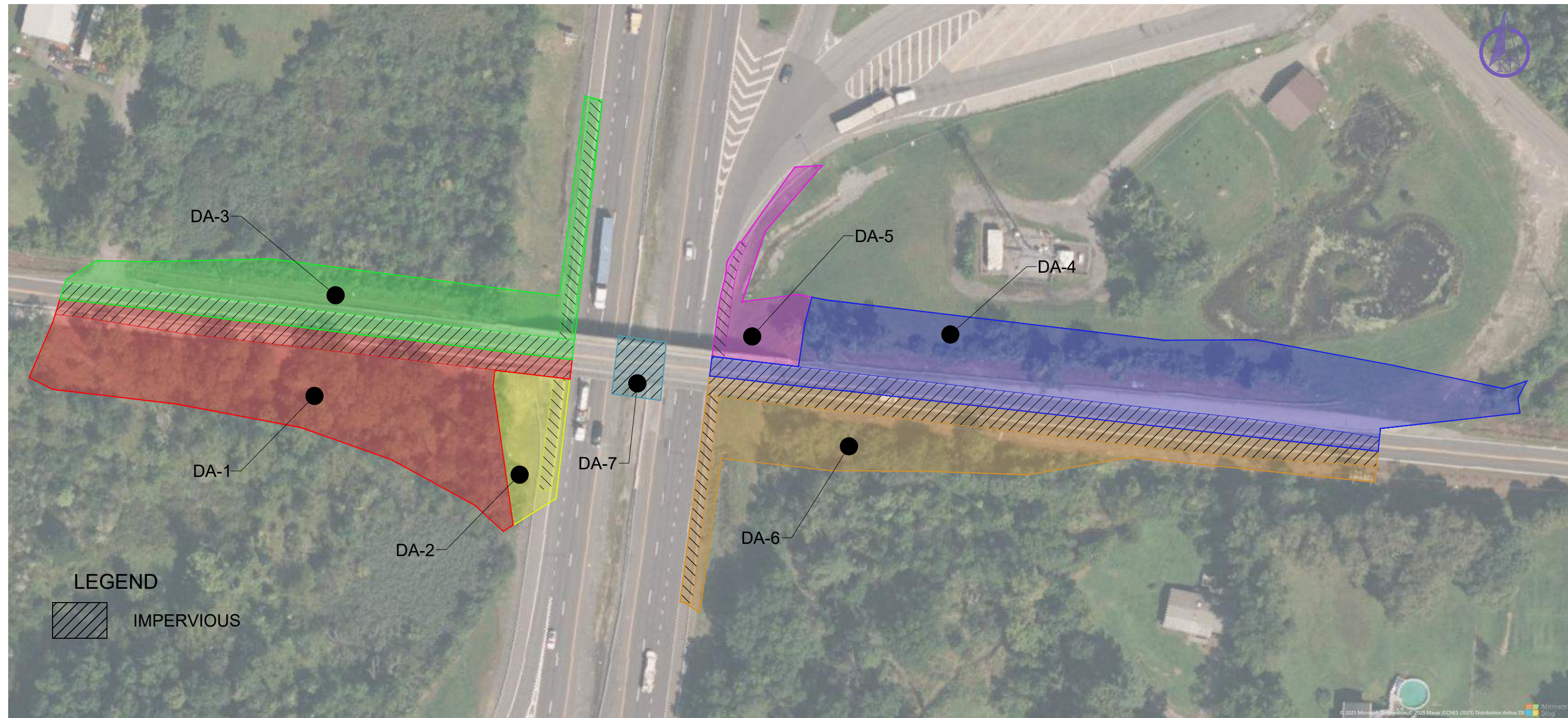
MALDEN TURNPIKE

DRAINAGE AREA PRE



MALDEN TURNPIKE

DRAINAGE AREA POST





Project Malden Turnpike Job No. _____
Subject Stormwater Calcs Sheet No. 1 of 2
Computed By MSC Date 9/15/25 Checked By DRD Date 9/16/25

Drainage Areas

	Disturbed Area (sf)	Contributing Area (sf)	Impervious Area Pre (sf)	Impervious Area Post (sf)	Impervious Area Increase (sf)	Pervious Area Pre (sf)	Pervious Area Post (sf)
DA-1	34368.53	34844.10	5550.49	6598.92	1048.43	29293.61	28245.19
DA-2	5573.28	5573.28	922.57	922.57	0.00	4650.71	4650.71
DA-3	22186.06	22662.11	7401.69	8487.47	1085.78	15260.42	14174.64
DA-4	39686.45	48418.39	6004.11	7925.74	1921.63	42414.28	40492.65
DA-5	5770.91	5770.91	834.67	834.67	0.00	4936.25	4936.25
DA-6	27063.58	28390.89	9264.85	10881.25	1616.40	19126.04	17509.64
DA-7	1899.17	1899.17	1899.17	1899.17	0.00	0.00	0.00
TOTAL (SF)	136547.98	147558.86	31877.54	37549.79	5672.24	115681.32	110009.07

WQv and RRv(min)

P 1.55

New Development

Impervious Area (sf) 5672.24

Redevelopment

Impervious Area (sf) 31877.54

Total Impervious Area 37549.79

Entire Project

Disturbed Area (sf) 136547.98

IC 27.50

Rv 0.30

A 3.13

N 0.15

R 0.85

WQv (min) (ac-ft) 0.044

WQv (min) (cf) 1906.22

RRv (min) (cf) (HSG D) 381.24



Project Malden Turnpike Job No. _____
Subject Stormwater Calcs Sheet No. 1 of 2
Computed By MSC Date 9/15/25 Checked By DRD Date 9/16/25

WQv and RRv Results

WQv treated (cf)

DA-1	788
DA-4	979
Total	1767

WQv treated(ac-ft)

DA-1	0.018
DA-4	0.022
Total	0.041

RRv provided (cf)

DA-1	197		
DA-4	245		
Total	442	>	381.24 (required)

RRv provided (ac-ft)

DA-1	0.005
DA-4	0.006
Total	0.010

WQv + RRv total (cf)	2209	>	1906.22 (required)
-----------------------------	-------------	-------------	---------------------------

WQv + RRv total (ac-ft)	0.051	>	0.044 (required)
--------------------------------	--------------	-------------	-------------------------



Project Malden Turnpike Job No. _____
Subject Stormwater Calcs Sheet No. 2 of 2
Computed By MSC Date 9/15/25 Checked By DRD Date 9/16/25

HydroCAD Flow Results Areas

	1-Year Peak Flow (cfs)		10-Year Peak Flow (cfs)		50-Year Peak Flow (cfs)		100-Year Peak Flow (cfs)	
	Pre	Post	Pre	Post	Pre	Post	Pre	Post
DA-1	1.70	1.42	4.47	3.94	6.76	6.05	7.82	7.03
DA-2	0.27	0.27	0.72	0.72	1.08	1.08	1.25	1.25
DA-3	1.28	1.28	3.11	3.11	4.59	4.59	5.27	5.27
DA-4	2.36	1.87	6.21	5.34	9.40	8.28	10.87	9.65
DA-5	0.28	0.28	0.74	0.74	1.12	1.12	1.30	1.30
DA-6	1.61	1.61	3.89	3.89	5.75	5.75	6.60	6.60
DA-7	0.15	0.15	0.30	0.30	0.41	0.41	0.47	0.47

Total Flows	7.65	6.88	19.44	18.04	29.11	27.28	33.58	31.57
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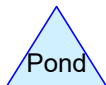
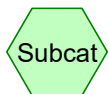
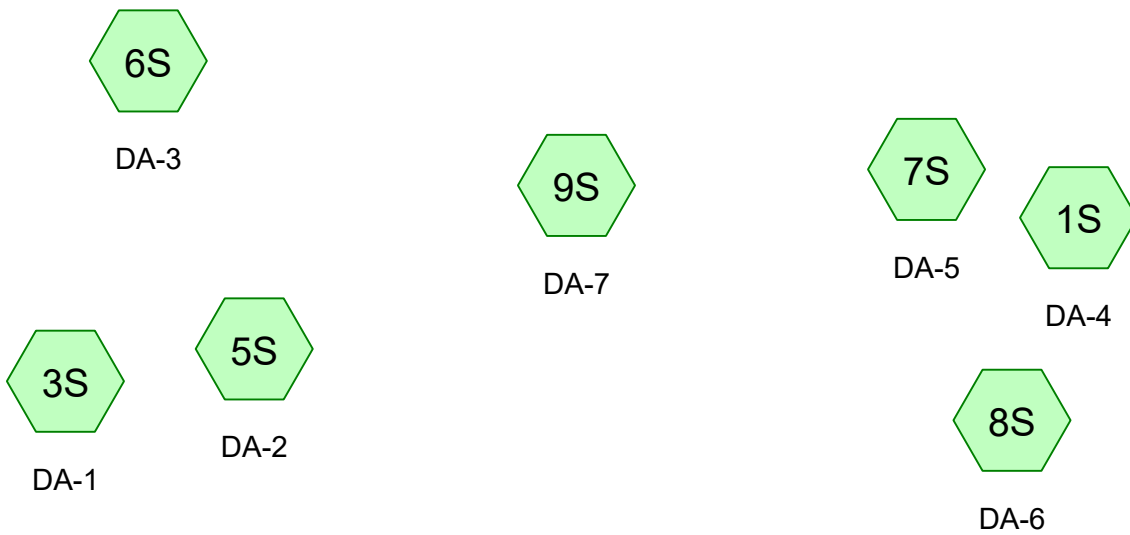
Reduction	10.1%	7.2%	6.3%	6.0%
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Dry Swale (O-1)

Design Point:							
Enter Site Data For Drainage Area to be Treated by Practice							
Drainage Area Number	Contributing Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Rv	WQv (ft³)	Precipitation (in)	Description
1	0.80	0.15	19	0.22	985	1.55	Dry Swale
Design Criteria							
Select HSG			D				
Is the contributing area to the practice a designated hotspot?			No				
Is the practice the first in series for treatment of a Level 1 (Infiltration Restricted) hotspot?			No				
Is contributing area greater than 5 acres?			No				
Enter depth to seasonal high water table (ft)			2				
Enter depth to bedrock (ft)			100				
Enter pretreatment volume provided (cf)			127				
Enter depth of filter media (inches)			30				
Enter depth of drainage layer (inches)			10				
Is an underdrain proposed?			Yes				
Sizing Criteria							
		Value	Units	Notes			
Enter Bottom Width		b	2.00	ft			
Enter Side Slopes		X:1	3.00	:1			
WQv Maximum Flow Depth		d	1.00	ft			
WQv Flow Top Width		Wwqv	8.00	ft			
Channel Area		Awqv	5.00	sf			
Required Channel Length		Lr	197.00	ft			
Enter Provided Channel Length		Lp	350.00	ft			
Channel Volume Provided		Vc	1750.00	cf			
Enter Check Dam Height		Ch	1.00	ft			
Check Dam Spacing		Cs	50.00	ft			
Number of Check Dams Required		C	7.00				
2-yr 24-hr Flow Depth		d2	0.69	ft			
2-yr Storm Flow Top Width		W2	6.14	ft			
Area of 2-yr 24-hr Flow		A2	2.81	sf			
2-yr Wetted Perimeter		Pw2	7.09	ft			
Enter Mannings Coef.		n	0.15				
Enter Longitudinal Slope		S	0.02	ft/ft			
2-yr Velocity		V	0.76	fps			
Enter 10-yr Freeboard			1.06	ft			
Determine Runoff Reduction							
RRv Provided			197	cf			
WQv Treated			788	cf	This is the portion of the WQv that is not reduced/infiltrated		

Dry Swale (O-1)

Design Point:							
Enter Site Data For Drainage Area to be Treated by Practice							
Drainage Area Number	Contributing Area (Acres)	Impervious Area (Acres)	Percent Impervious %	Rv	WQv (ft³)	Precipitation (in)	Description
4	1.11	0.18	16	0.20	1,224	1.55	0
Design Criteria							
Select HSG			D				
Is the contributing area to the practice a designated hotspot?			No				
Is the practice the first in series for treatment of a Level 1 (Infiltration Restricted) hotspot?			No				
Is contributing area greater than 5 acres?			No				
Enter depth to seasonal high water table (ft)			10				
Enter depth to bedrock (ft)			100				
Enter pretreatment volume provided (cf)			135				
Enter depth of filter media (inches)			30				
Enter depth of drainage layer (inches)			10				
Is an underdrain proposed?			Yes				
Sizing Criteria							
		Value	Units	Notes			
Enter Bottom Width		b	2.00	ft			
Enter Side Slopes		X:1	3.00	:1			
WQv Maximum Flow Depth		d	1.00	ft			
WQv Flow Top Width		Wwqv	8.00	ft			
Channel Area		Awqv	5.00	sf			
Required Channel Length		Lr	245.00	ft			
Enter Provided Channel Length		Lp	270.00	ft			
Channel Volume Provided		Vc	1350.00	cf			
Enter Check Dam Height		Ch	1.00	ft			
Check Dam Spacing		Cs	63.00	ft			
Number of Check Dams Required		C	5.00				
2-yr 24-hr Flow Depth		d2	0.79	ft			
2-yr Storm Flow Top Width		W2	6.74	ft			
Area of 2-yr 24-hr Flow		A2	3.45	sf			
2-yr Wetted Perimeter		Pw2	7.99	ft			
Enter Mannings Coef.		n	0.15				
Enter Longitudinal Slope		S	0.02	ft/ft			
2-yr Velocity		V	0.72	fps			
Enter 10-yr Freeboard			0.81	ft			
Determine Runoff Reduction							
RRv Provided			245	cf			
WQv Treated			979	cf	This is the portion of the WQv that is not reduced/infiltrated		



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Page 2

Project Notes

Defined 3 rainfall events from PF_Depth_English_PDS_Malden IDF

Defined 5 rainfall events from PF_Depth_English_PDS_Malden IDF

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Page 3

Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	Type II 24-hr		Default	24.00	1	2.43	2
2	10-yr	Type II 24-hr		Default	24.00	1	4.76	2
3	50-yr	Type II 24-hr		Default	24.00	1	6.66	2
4	100-yr	Type II 24-hr		Default	24.00	1	7.54	2

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.656	84	50-75% Grass cover, Fair, HSG D (1S, 3S, 5S, 6S, 7S, 8S)
0.732	98	Paved roads w/curbs & sewers, HSG D (1S, 3S, 5S, 6S, 7S, 8S, 9S)
3.387	87	TOTAL AREA

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
3.387	HSG D	1S, 3S, 5S, 6S, 7S, 8S, 9S
0.000	Other	
3.387		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	2.656	0.000	2.656	50-75% Grass cover, Fair	1S, 3S, 5S, 6S, 7S, 8S
0.000	0.000	0.000	0.732	0.000	0.732	Paved roads w/curbs & sewers	1S, 3S, 5S, 6S, 7S, 8S, 9S
0.000	0.000	0.000	3.387	0.000	3.387	TOTAL AREA	

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Type II 24-hr 1-yr Rainfall=2.43"

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Page 7

Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: DA-4	Runoff Area=48,418 sf 12.40% Impervious Runoff Depth=1.19" Tc=6.0 min CN=86 Runoff=2.36 cfs 0.110 af
Subcatchment3S: DA-1	Runoff Area=34,844 sf 15.93% Impervious Runoff Depth=1.19" Tc=6.0 min CN=86 Runoff=1.70 cfs 0.079 af
Subcatchment5S: DA-2	Runoff Area=5,574 sf 16.56% Impervious Runoff Depth=1.19" Tc=6.0 min CN=86 Runoff=0.27 cfs 0.013 af
Subcatchment6S: DA-3	Runoff Area=22,662 sf 32.66% Impervious Runoff Depth=1.39" Tc=6.0 min CN=89 Runoff=1.28 cfs 0.060 af
Subcatchment7S: DA-5	Runoff Area=5,771 sf 14.47% Impervious Runoff Depth=1.19" Tc=6.0 min CN=86 Runoff=0.28 cfs 0.013 af
Subcatchment8S: DA-6	Runoff Area=28,391 sf 32.63% Impervious Runoff Depth=1.39" Tc=6.0 min CN=89 Runoff=1.61 cfs 0.076 af
Subcatchment9S: DA-7	Runoff Area=1,899 sf 100.00% Impervious Runoff Depth=2.20" Tc=6.0 min CN=98 Runoff=0.15 cfs 0.008 af

Total Runoff Area = 3.387 ac Runoff Volume = 0.359 af Average Runoff Depth = 1.27"
78.40% Pervious = 2.656 ac 21.60% Impervious = 0.732 ac

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Type II 24-hr 1-yr Rainfall=2.43"

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Summary for Subcatchment 1S: DA-4

Runoff = 2.36 cfs @ 11.97 hrs, Volume= 0.110 af, Depth= 1.19"
Routed to nonexistent node 2R

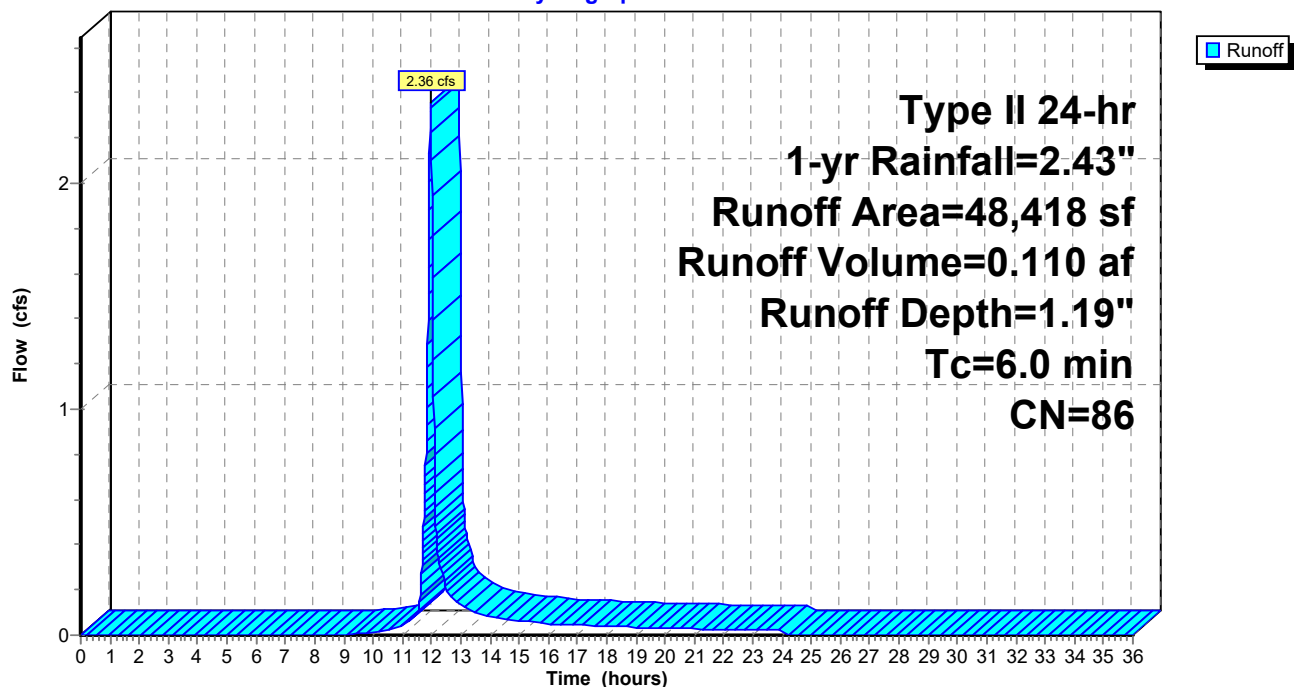
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-yr Rainfall=2.43"

Area (sf)	CN	Description
6,004	98	Paved roads w/curbs & sewers, HSG D
42,414	84	50-75% Grass cover, Fair, HSG D
48,418	86	Weighted Average
42,414		87.60% Pervious Area
6,004		12.40% Impervious Area

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

Subcatchment 1S: DA-4

Hydrograph



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Type II 24-hr 1-yr Rainfall=2.43"

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Summary for Subcatchment 3S: DA-1

Runoff = 1.70 cfs @ 11.97 hrs, Volume= 0.079 af, Depth= 1.19"
Routed to nonexistent node 4R

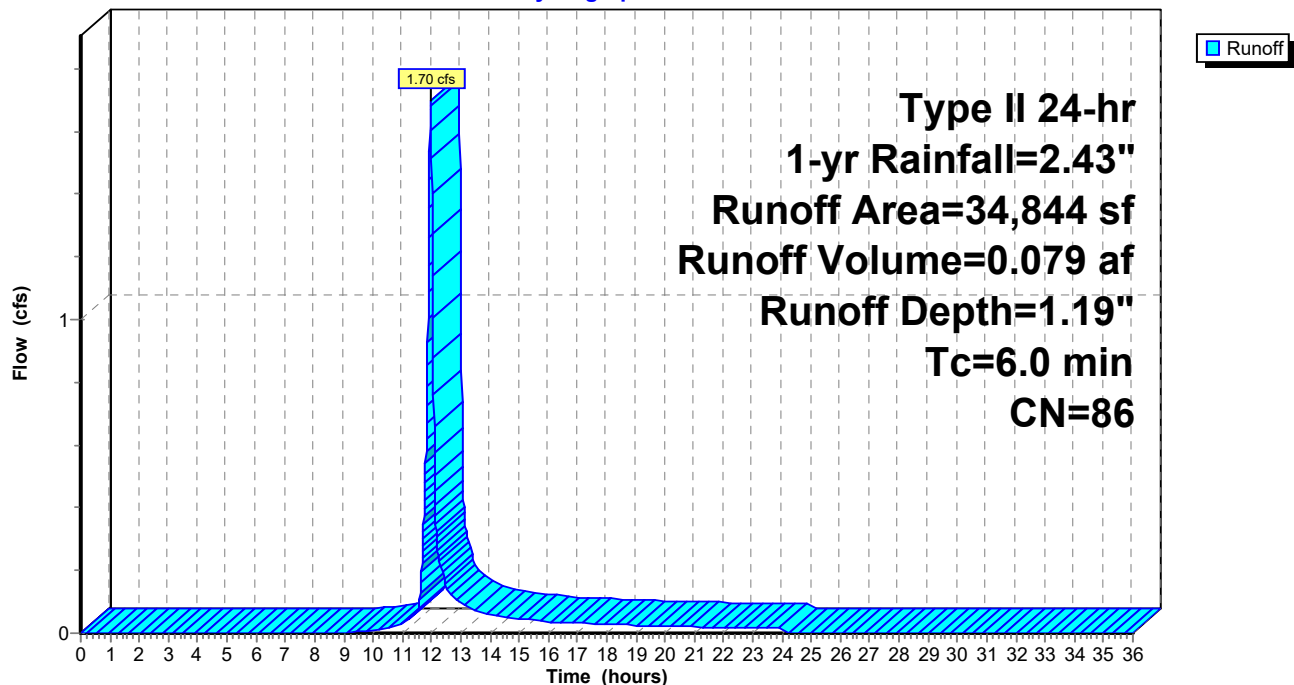
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-yr Rainfall=2.43"

Area (sf)	CN	Description
5,550	98	Paved roads w/curbs & sewers, HSG D
29,294	84	50-75% Grass cover, Fair, HSG D
34,844	86	Weighted Average
29,294		84.07% Pervious Area
5,550		15.93% Impervious Area

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

Subcatchment 3S: DA-1

Hydrograph



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Type II 24-hr 1-yr Rainfall=2.43"

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Summary for Subcatchment 5S: DA-2

Runoff = 0.27 cfs @ 11.97 hrs, Volume= 0.013 af, Depth= 1.19"
Routed to nonexistent node 4R

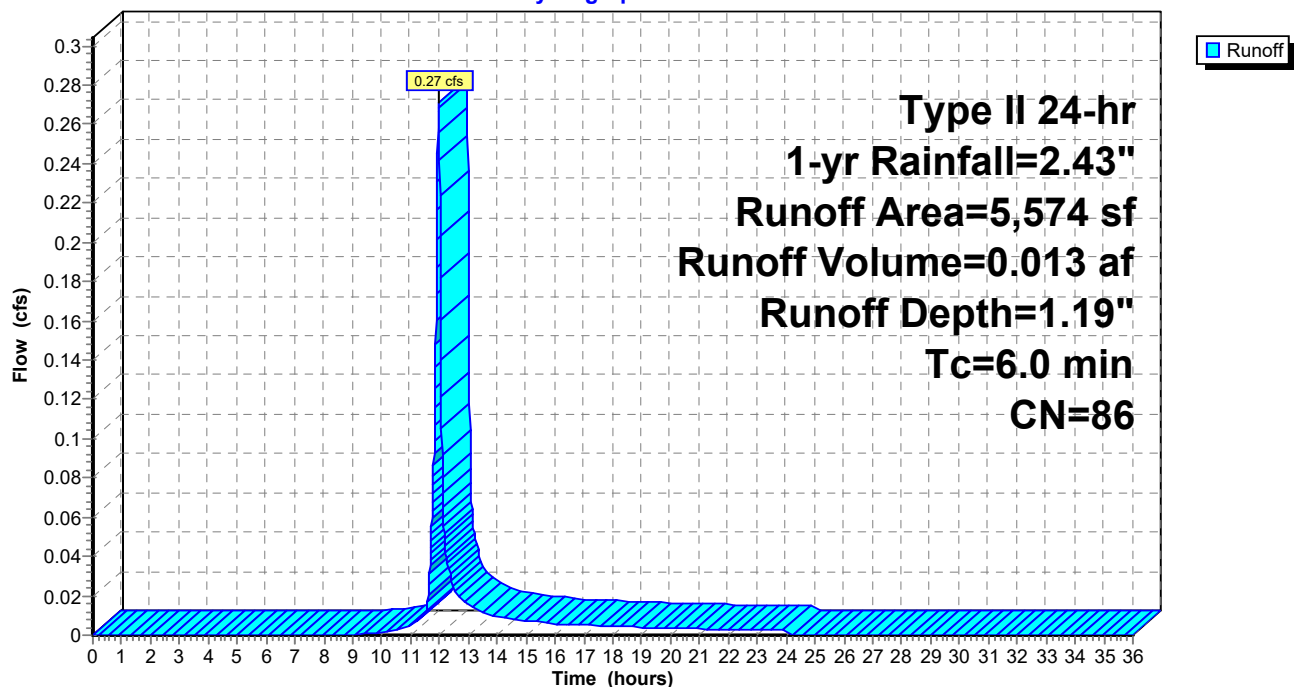
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-yr Rainfall=2.43"

Area (sf)	CN	Description
923	98	Paved roads w/curbs & sewers, HSG D
4,651	84	50-75% Grass cover, Fair, HSG D
5,574	86	Weighted Average
4,651		83.44% Pervious Area
923		16.56% Impervious Area

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

Subcatchment 5S: DA-2

Hydrograph



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Type II 24-hr 1-yr Rainfall=2.43"

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Summary for Subcatchment 6S: DA-3

Runoff = 1.28 cfs @ 11.97 hrs, Volume= 0.060 af, Depth= 1.39"
Routed to nonexistent node 4R

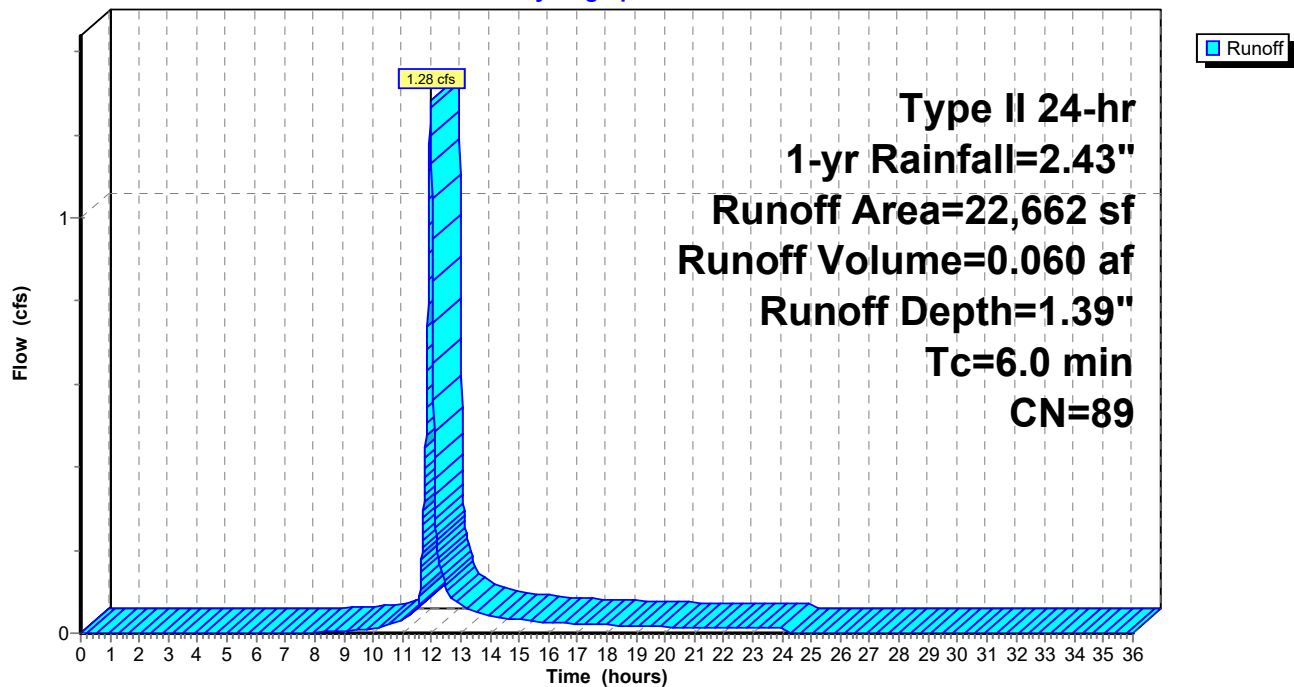
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-yr Rainfall=2.43"

Area (sf)	CN	Description
7,402	98	Paved roads w/curbs & sewers, HSG D
15,260	84	50-75% Grass cover, Fair, HSG D
22,662	89	Weighted Average
15,260		67.34% Pervious Area
7,402		32.66% Impervious Area

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

Subcatchment 6S: DA-3

Hydrograph



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Type II 24-hr 1-yr Rainfall=2.43"

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Summary for Subcatchment 7S: DA-5

Runoff = 0.28 cfs @ 11.97 hrs, Volume= 0.013 af, Depth= 1.19"
Routed to nonexistent node 2R

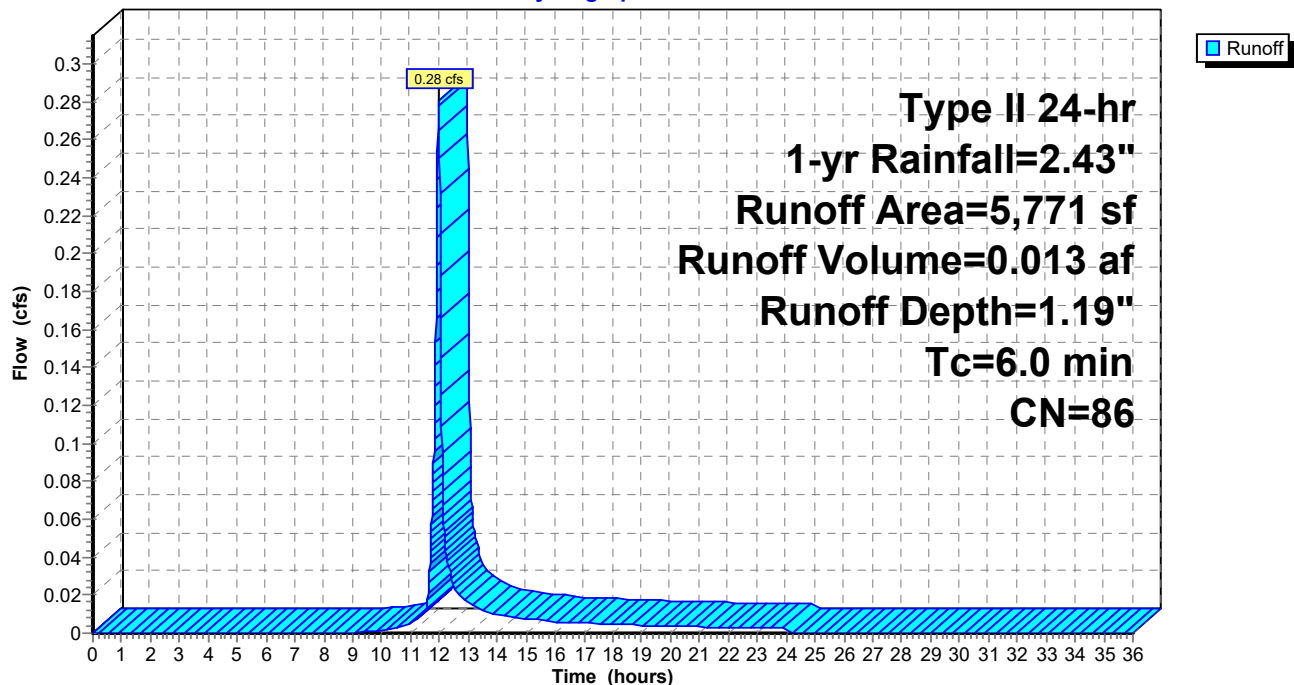
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-yr Rainfall=2.43"

Area (sf)	CN	Description
835	98	Paved roads w/curbs & sewers, HSG D
4,936	84	50-75% Grass cover, Fair, HSG D
5,771	86	Weighted Average
4,936		85.53% Pervious Area
835		14.47% Impervious Area

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

Subcatchment 7S: DA-5

Hydrograph



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Type II 24-hr 1-yr Rainfall=2.43"

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Summary for Subcatchment 8S: DA-6

Runoff = 1.61 cfs @ 11.97 hrs, Volume= 0.076 af, Depth= 1.39"
Routed to nonexistent node 2R

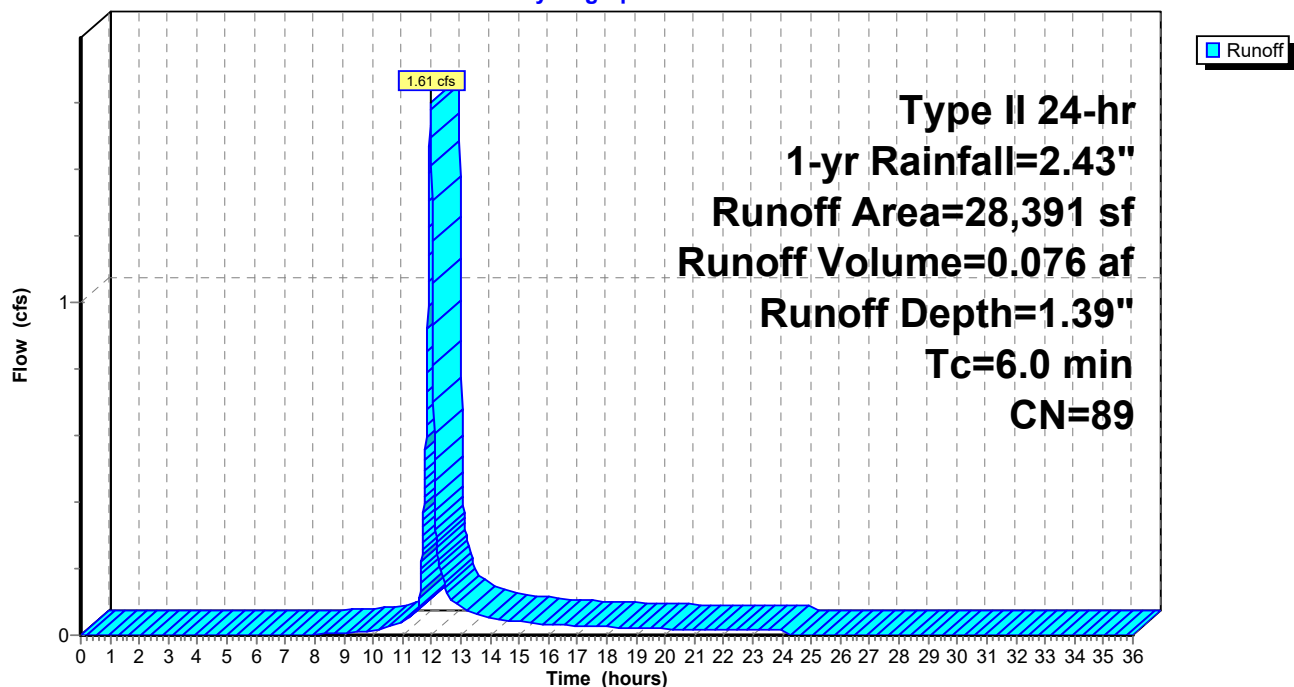
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-yr Rainfall=2.43"

Area (sf)	CN	Description
9,265	98	Paved roads w/curbs & sewers, HSG D
19,126	84	50-75% Grass cover, Fair, HSG D
28,391	89	Weighted Average
19,126		67.37% Pervious Area
9,265		32.63% Impervious Area

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

Subcatchment 8S: DA-6

Hydrograph



Malden Turnpike_Pre

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Type II 24-hr 1-yr Rainfall=2.43"
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Page 14

Summary for Subcatchment 9S: DA-7

Runoff = 0.15 cfs @ 11.97 hrs, Volume= 0.008 af, Depth= 2.20"
Routed to nonexistent node 2R

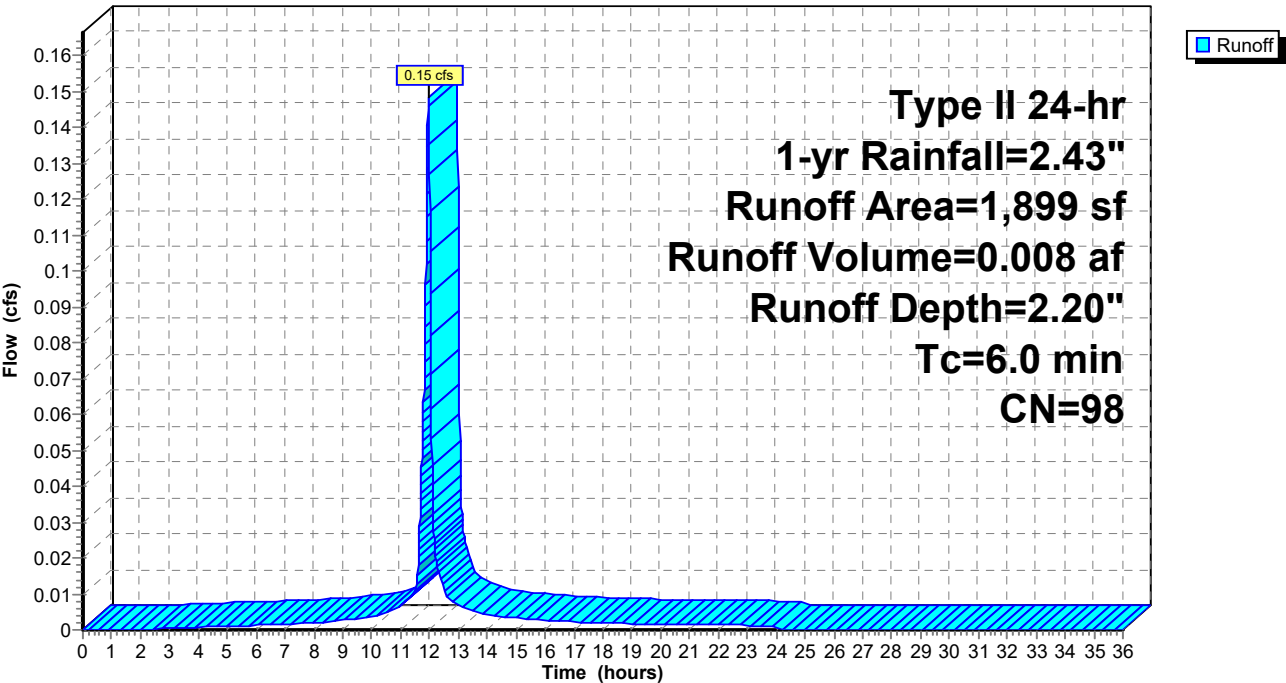
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-yr Rainfall=2.43"

Area (sf)	CN	Description
1,899	98	Paved roads w/curbs & sewers, HSG D
1,899		100.00% Impervious Area

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

Subcatchment 9S: DA-7

Hydrograph



Malden Turnpike_Pre*Type II 24-hr 10-yr Rainfall=4.76"*

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Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: DA-4	Runoff Area=48,418 sf 12.40% Impervious Runoff Depth=3.24" Tc=6.0 min CN=86 Runoff=6.21 cfs 0.300 af
Subcatchment3S: DA-1	Runoff Area=34,844 sf 15.93% Impervious Runoff Depth=3.24" Tc=6.0 min CN=86 Runoff=4.47 cfs 0.216 af
Subcatchment5S: DA-2	Runoff Area=5,574 sf 16.56% Impervious Runoff Depth=3.24" Tc=6.0 min CN=86 Runoff=0.72 cfs 0.035 af
Subcatchment6S: DA-3	Runoff Area=22,662 sf 32.66% Impervious Runoff Depth=3.54" Tc=6.0 min CN=89 Runoff=3.11 cfs 0.154 af
Subcatchment7S: DA-5	Runoff Area=5,771 sf 14.47% Impervious Runoff Depth=3.24" Tc=6.0 min CN=86 Runoff=0.74 cfs 0.036 af
Subcatchment8S: DA-6	Runoff Area=28,391 sf 32.63% Impervious Runoff Depth=3.54" Tc=6.0 min CN=89 Runoff=3.89 cfs 0.192 af
Subcatchment9S: DA-7	Runoff Area=1,899 sf 100.00% Impervious Runoff Depth=4.52" Tc=6.0 min CN=98 Runoff=0.30 cfs 0.016 af

Total Runoff Area = 3.387 ac Runoff Volume = 0.949 af Average Runoff Depth = 3.36"
78.40% Pervious = 2.656 ac 21.60% Impervious = 0.732 ac

Malden Turnpike_Pre

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Type II 24-hr 10-yr Rainfall=4.76"

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Summary for Subcatchment 1S: DA-4

Runoff = 6.21 cfs @ 11.97 hrs, Volume= 0.300 af, Depth= 3.24"
Routed to nonexistent node 2R

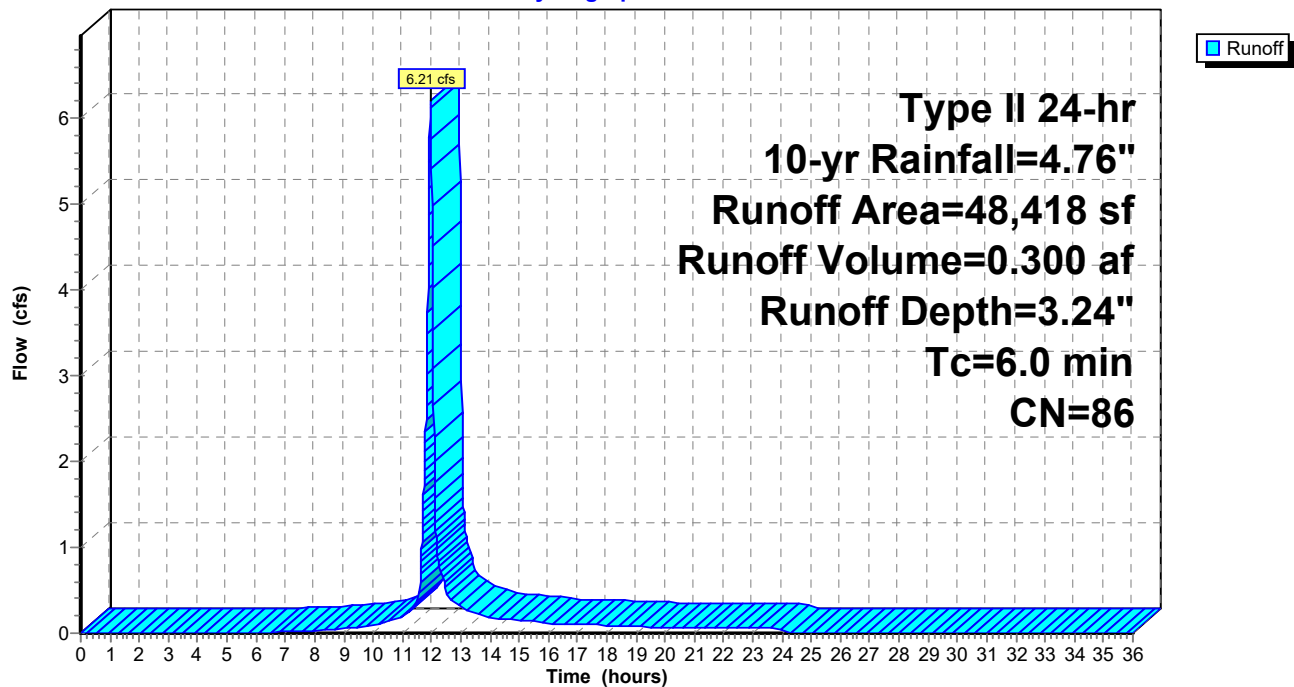
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=4.76"

Area (sf)	CN	Description
6,004	98	Paved roads w/curbs & sewers, HSG D
42,414	84	50-75% Grass cover, Fair, HSG D
48,418	86	Weighted Average
42,414		87.60% Pervious Area
6,004		12.40% Impervious Area

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

Subcatchment 1S: DA-4

Hydrograph



Malden Turnpike_Pre

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Type II 24-hr 10-yr Rainfall=4.76"

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Summary for Subcatchment 3S: DA-1

Runoff = 4.47 cfs @ 11.97 hrs, Volume= 0.216 af, Depth= 3.24"
Routed to nonexistent node 4R

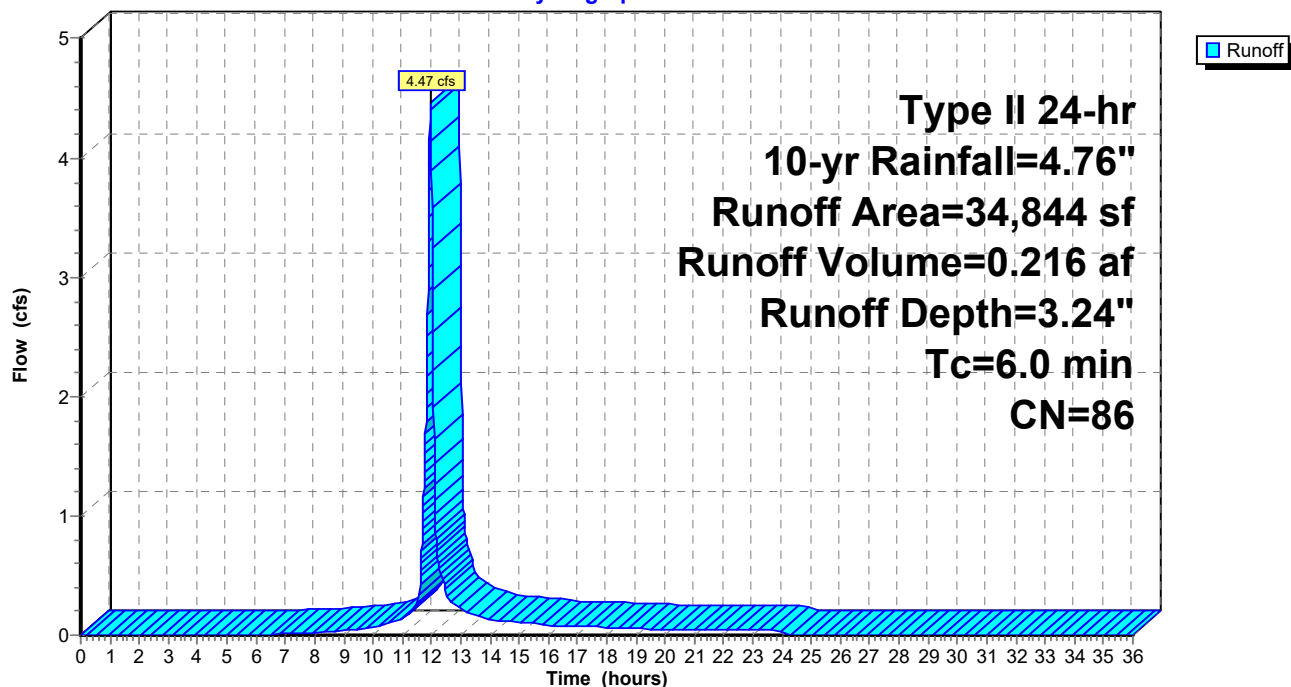
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=4.76"

Area (sf)	CN	Description
5,550	98	Paved roads w/curbs & sewers, HSG D
29,294	84	50-75% Grass cover, Fair, HSG D
34,844	86	Weighted Average
29,294		84.07% Pervious Area
5,550		15.93% Impervious Area

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

Subcatchment 3S: DA-1

Hydrograph



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Type II 24-hr 10-yr Rainfall=4.76"

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Summary for Subcatchment 5S: DA-2

Runoff = 0.72 cfs @ 11.97 hrs, Volume= 0.035 af, Depth= 3.24"
Routed to nonexistent node 4R

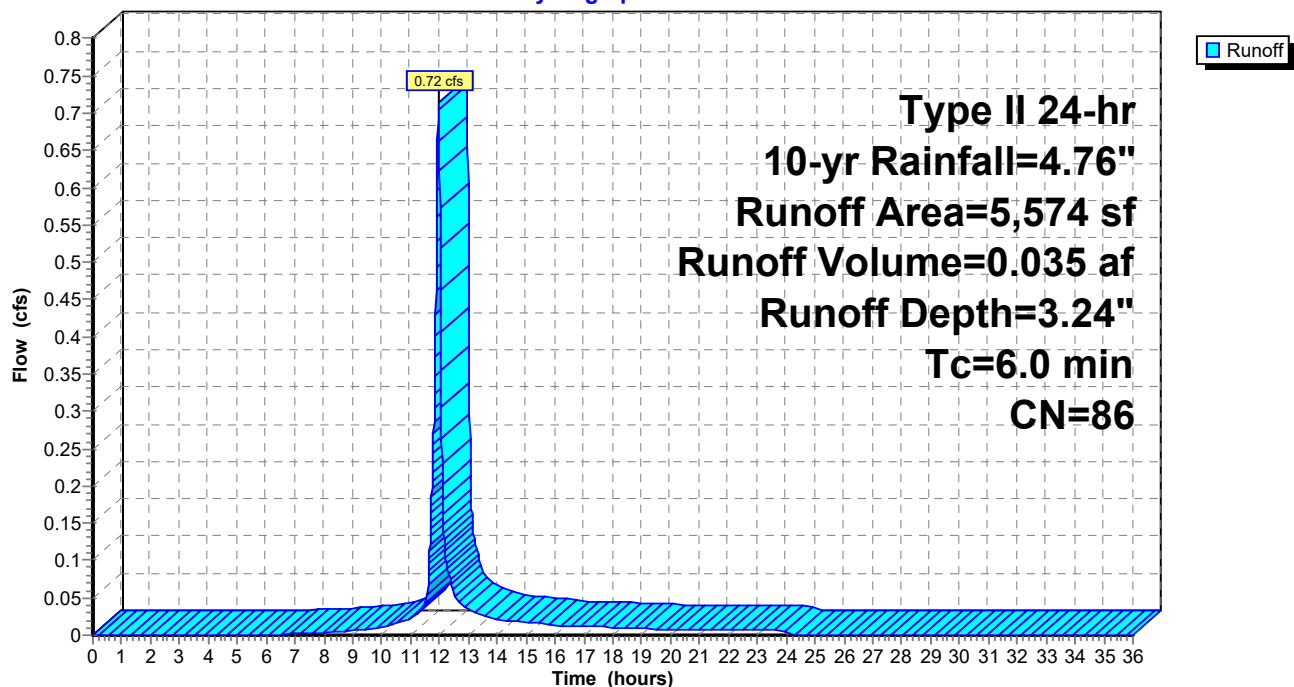
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=4.76"

Area (sf)	CN	Description
923	98	Paved roads w/curbs & sewers, HSG D
4,651	84	50-75% Grass cover, Fair, HSG D
5,574	86	Weighted Average
4,651		83.44% Pervious Area
923		16.56% Impervious Area

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

Subcatchment 5S: DA-2

Hydrograph



Malden Turnpike_Pre

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Type II 24-hr 10-yr Rainfall=4.76"

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Summary for Subcatchment 6S: DA-3

Runoff = 3.11 cfs @ 11.97 hrs, Volume= 0.154 af, Depth= 3.54"
Routed to nonexistent node 4R

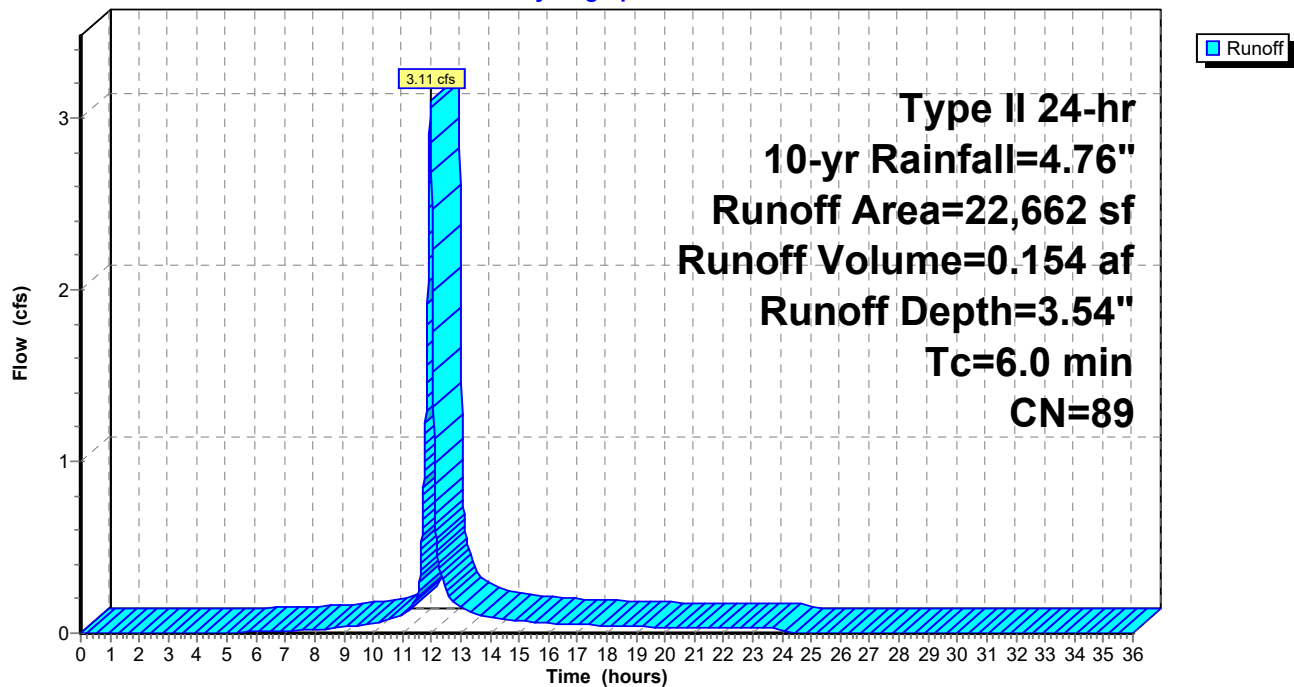
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=4.76"

Area (sf)	CN	Description
7,402	98	Paved roads w/curbs & sewers, HSG D
15,260	84	50-75% Grass cover, Fair, HSG D
22,662	89	Weighted Average
15,260		67.34% Pervious Area
7,402		32.66% Impervious Area

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

Subcatchment 6S: DA-3

Hydrograph



Malden Turnpike_Pre

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Type II 24-hr 10-yr Rainfall=4.76"

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Summary for Subcatchment 7S: DA-5

Runoff = 0.74 cfs @ 11.97 hrs, Volume= 0.036 af, Depth= 3.24"
Routed to nonexistent node 2R

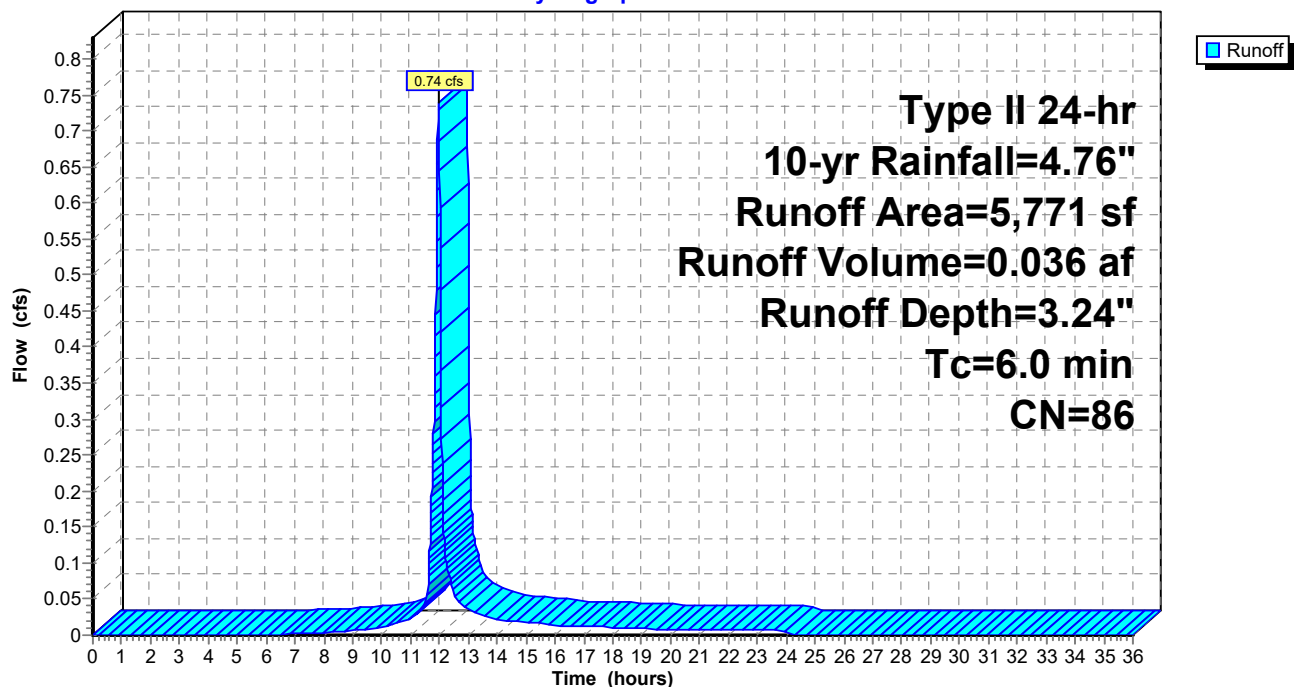
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=4.76"

Area (sf)	CN	Description
835	98	Paved roads w/curbs & sewers, HSG D
4,936	84	50-75% Grass cover, Fair, HSG D
5,771	86	Weighted Average
4,936		85.53% Pervious Area
835		14.47% Impervious Area

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

Subcatchment 7S: DA-5

Hydrograph



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Type II 24-hr 10-yr Rainfall=4.76"

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Summary for Subcatchment 8S: DA-6

Runoff = 3.89 cfs @ 11.97 hrs, Volume= 0.192 af, Depth= 3.54"
Routed to nonexistent node 2R

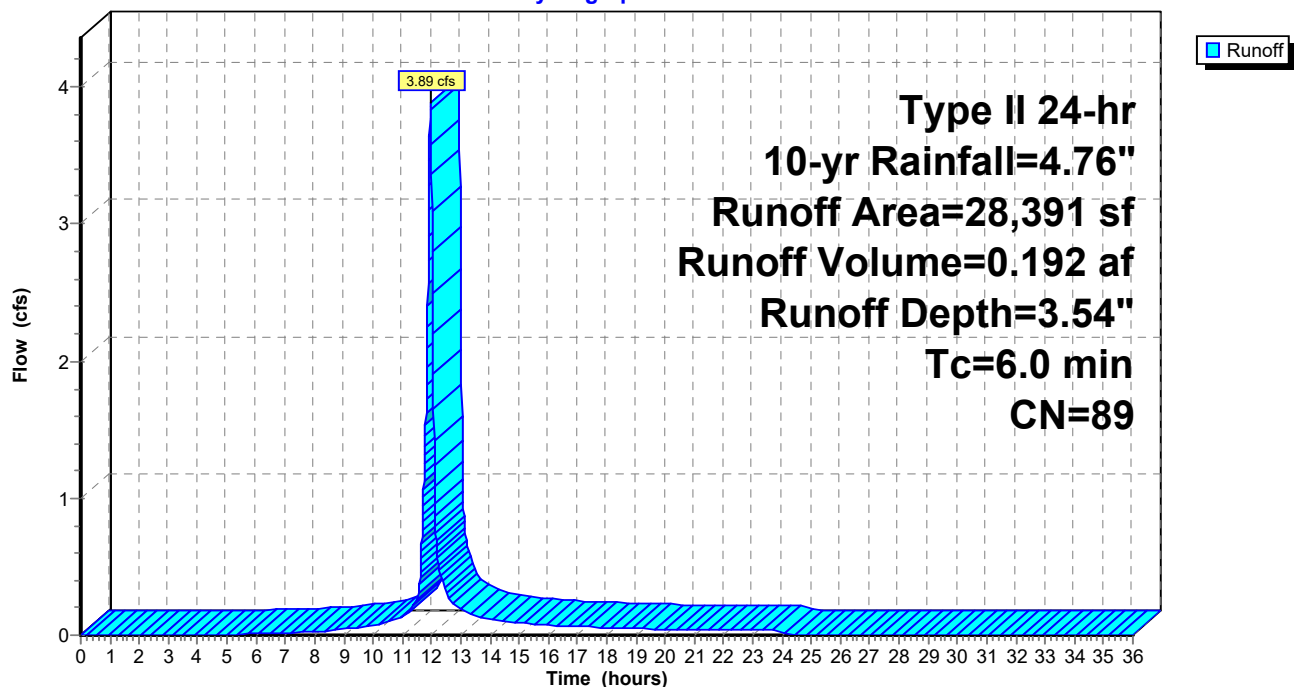
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=4.76"

Area (sf)	CN	Description
9,265	98	Paved roads w/curbs & sewers, HSG D
19,126	84	50-75% Grass cover, Fair, HSG D
28,391	89	Weighted Average
19,126		67.37% Pervious Area
9,265		32.63% Impervious Area

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

Subcatchment 8S: DA-6

Hydrograph



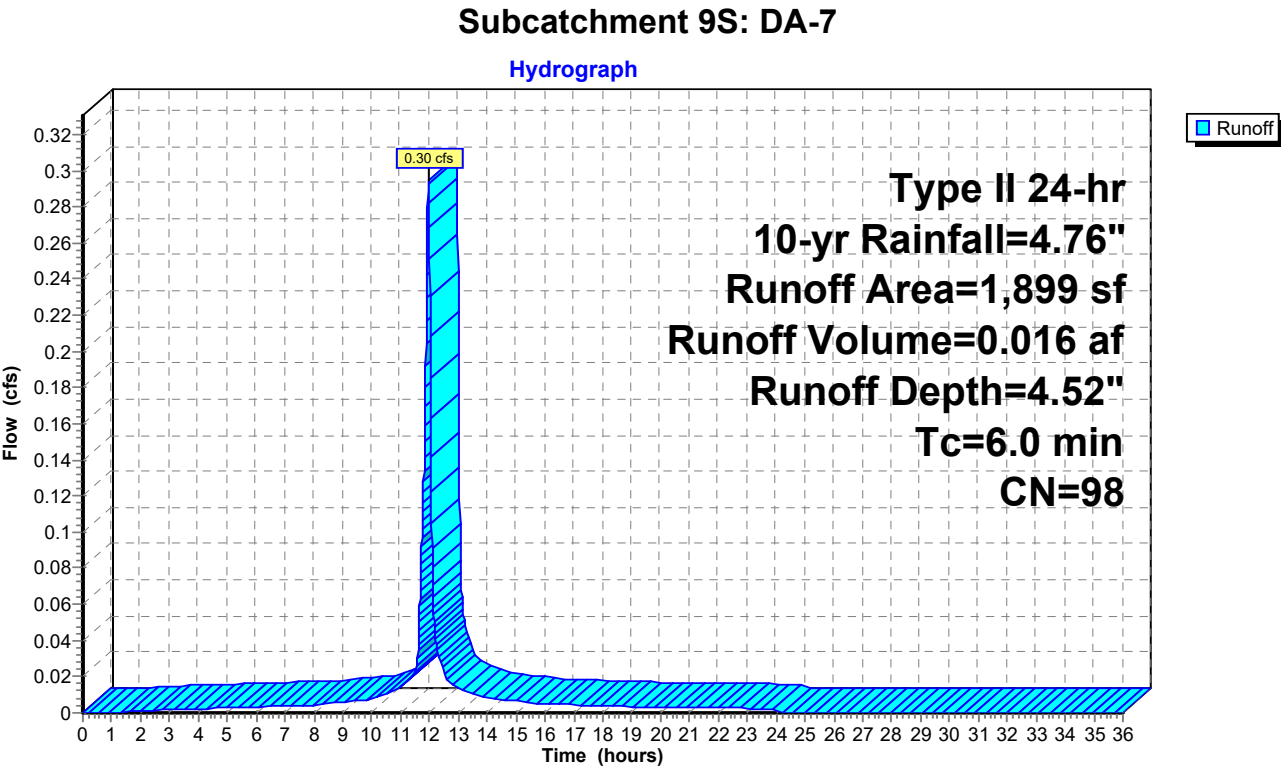
Summary for Subcatchment 9S: DA-7

Runoff = 0.30 cfs @ 11.97 hrs, Volume= 0.016 af, Depth= 4.52"
Routed to nonexistent node 2R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=4.76"

Area (sf)	CN	Description
1,899	98	Paved roads w/curbs & sewers, HSG D
1,899		100.00% Impervious Area

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



Malden Turnpike_Pre*Type II 24-hr 50-yr Rainfall=6.66"*

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Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN
Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: DA-4	Runoff Area=48,418 sf 12.40% Impervious Runoff Depth=5.04" Tc=6.0 min CN=86 Runoff=9.40 cfs 0.467 af
Subcatchment3S: DA-1	Runoff Area=34,844 sf 15.93% Impervious Runoff Depth=5.04" Tc=6.0 min CN=86 Runoff=6.76 cfs 0.336 af
Subcatchment5S: DA-2	Runoff Area=5,574 sf 16.56% Impervious Runoff Depth=5.04" Tc=6.0 min CN=86 Runoff=1.08 cfs 0.054 af
Subcatchment6S: DA-3	Runoff Area=22,662 sf 32.66% Impervious Runoff Depth=5.38" Tc=6.0 min CN=89 Runoff=4.59 cfs 0.233 af
Subcatchment7S: DA-5	Runoff Area=5,771 sf 14.47% Impervious Runoff Depth=5.04" Tc=6.0 min CN=86 Runoff=1.12 cfs 0.056 af
Subcatchment8S: DA-6	Runoff Area=28,391 sf 32.63% Impervious Runoff Depth=5.38" Tc=6.0 min CN=89 Runoff=5.75 cfs 0.292 af
Subcatchment9S: DA-7	Runoff Area=1,899 sf 100.00% Impervious Runoff Depth=6.42" Tc=6.0 min CN=98 Runoff=0.41 cfs 0.023 af

Total Runoff Area = 3.387 ac Runoff Volume = 1.461 af Average Runoff Depth = 5.17"
78.40% Pervious = 2.656 ac 21.60% Impervious = 0.732 ac

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Type II 24-hr 50-yr Rainfall=6.66"

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Summary for Subcatchment 1S: DA-4

Runoff = 9.40 cfs @ 11.97 hrs, Volume= 0.467 af, Depth= 5.04"
Routed to nonexistent node 2R

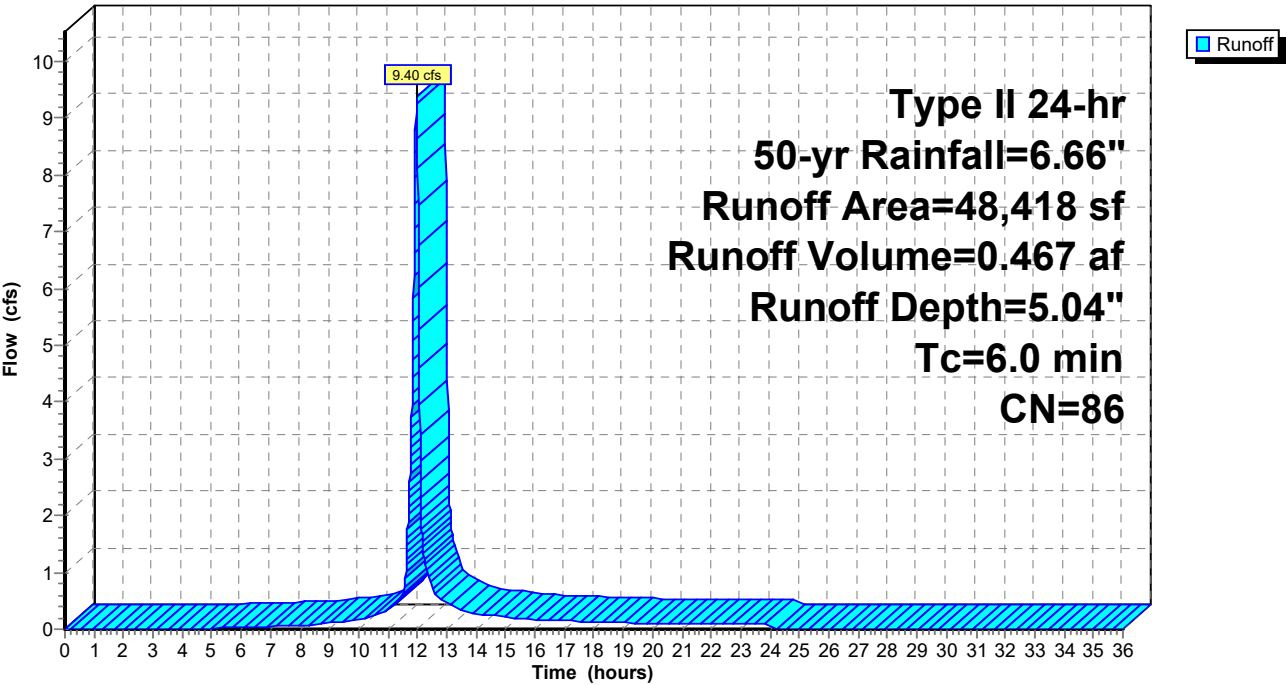
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-yr Rainfall=6.66"

Area (sf)	CN	Description
6,004	98	Paved roads w/curbs & sewers, HSG D
42,414	84	50-75% Grass cover, Fair, HSG D
48,418	86	Weighted Average
42,414		87.60% Pervious Area
6,004		12.40% Impervious Area

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

Subcatchment 1S: DA-4

Hydrograph



Summary for Subcatchment 3S: DA-1

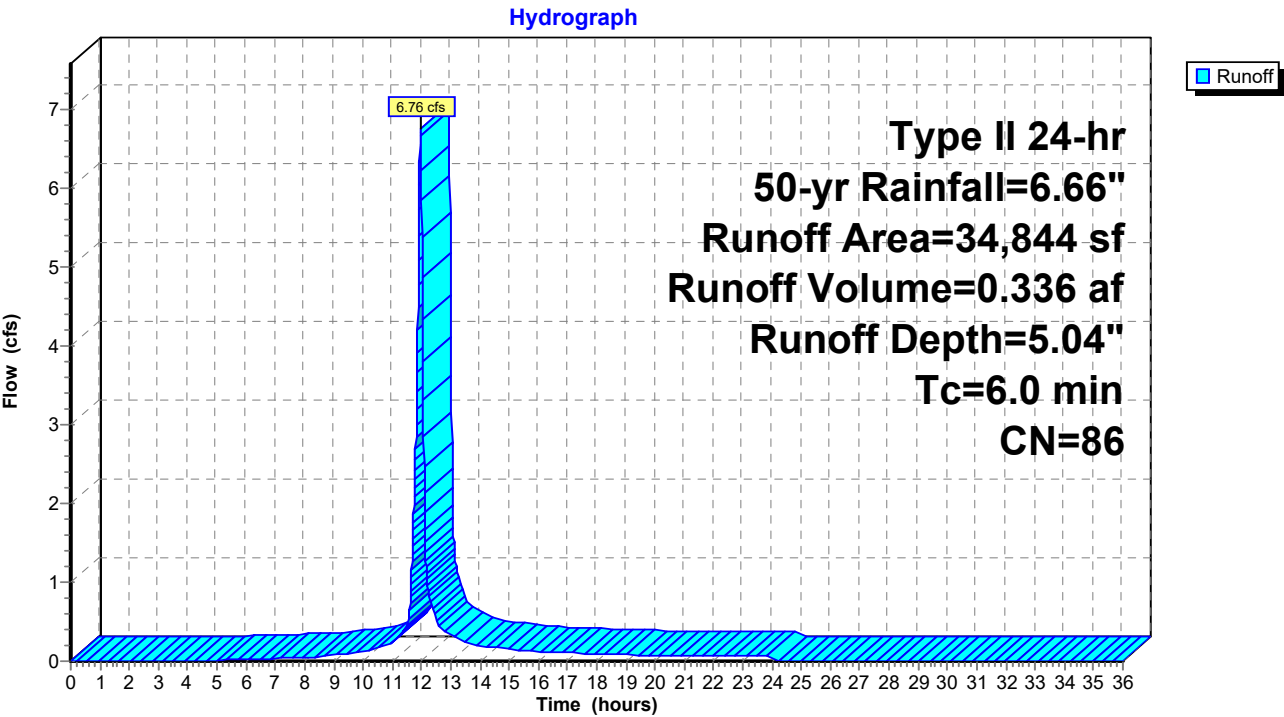
Runoff = 6.76 cfs @ 11.97 hrs, Volume= 0.336 af, Depth= 5.04"
Routed to nonexistent node 4R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-yr Rainfall=6.66"

Area (sf)	CN	Description
5,550	98	Paved roads w/curbs & sewers, HSG D
29,294	84	50-75% Grass cover, Fair, HSG D
34,844	86	Weighted Average
29,294		84.07% Pervious Area
5,550		15.93% Impervious Area

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

Subcatchment 3S: DA-1



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Type II 24-hr 50-yr Rainfall=6.66"

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Summary for Subcatchment 5S: DA-2

Runoff = 1.08 cfs @ 11.97 hrs, Volume= 0.054 af, Depth= 5.04"
Routed to nonexistent node 4R

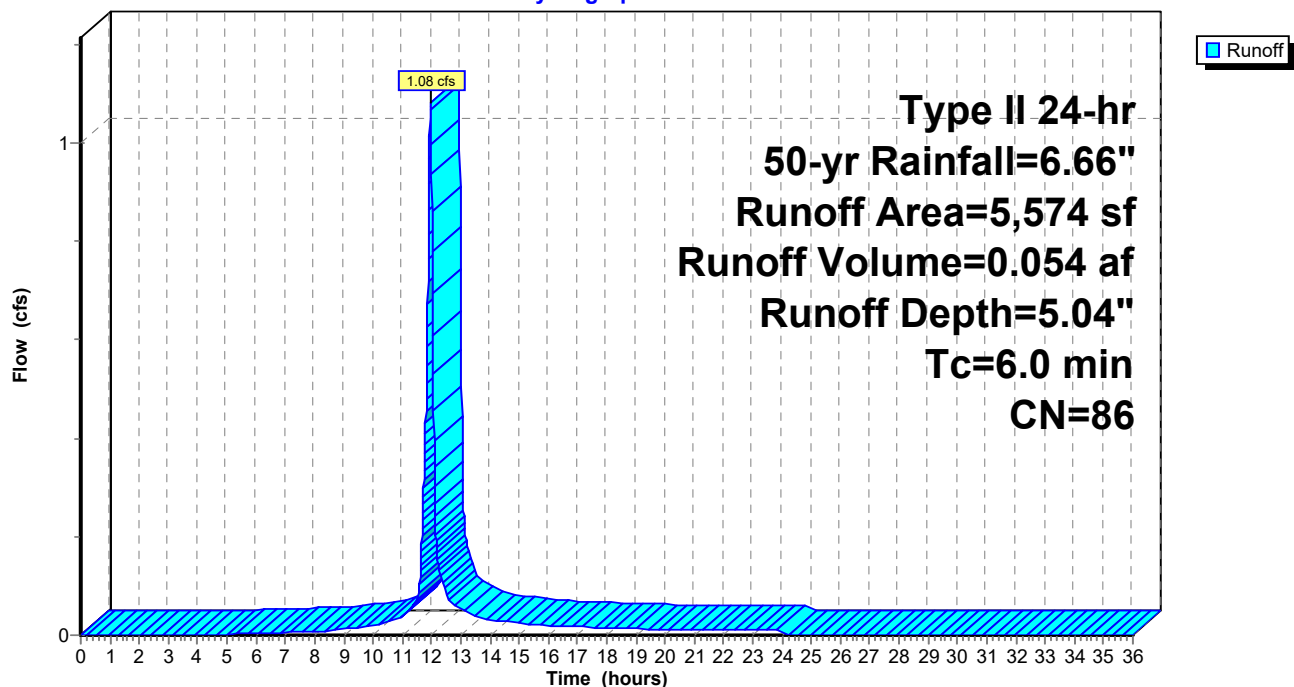
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-yr Rainfall=6.66"

Area (sf)	CN	Description
923	98	Paved roads w/curbs & sewers, HSG D
4,651	84	50-75% Grass cover, Fair, HSG D
5,574	86	Weighted Average
4,651		83.44% Pervious Area
923		16.56% Impervious Area

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

Subcatchment 5S: DA-2

Hydrograph



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Type II 24-hr 50-yr Rainfall=6.66"

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Summary for Subcatchment 6S: DA-3

Runoff = 4.59 cfs @ 11.97 hrs, Volume= 0.233 af, Depth= 5.38"
Routed to nonexistent node 4R

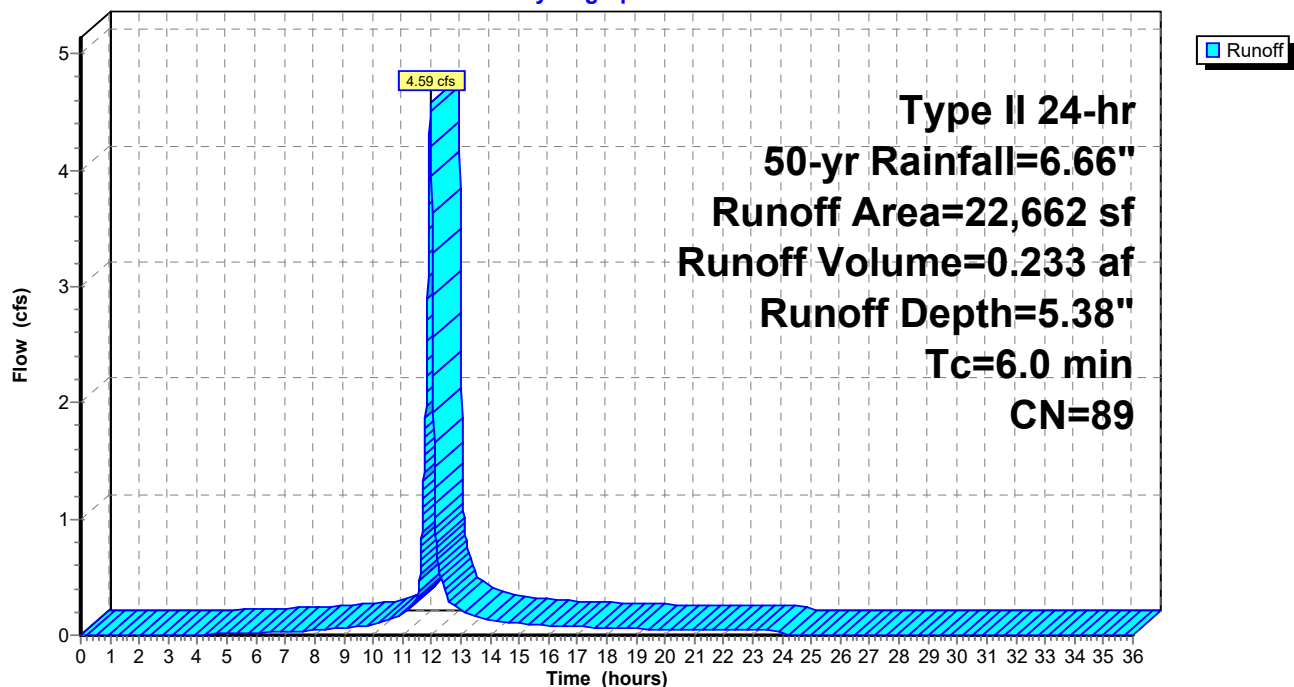
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-yr Rainfall=6.66"

Area (sf)	CN	Description
7,402	98	Paved roads w/curbs & sewers, HSG D
15,260	84	50-75% Grass cover, Fair, HSG D
22,662	89	Weighted Average
15,260		67.34% Pervious Area
7,402		32.66% Impervious Area

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

Subcatchment 6S: DA-3

Hydrograph



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Type II 24-hr 50-yr Rainfall=6.66"

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Summary for Subcatchment 7S: DA-5

Runoff = 1.12 cfs @ 11.97 hrs, Volume= 0.056 af, Depth= 5.04"
Routed to nonexistent node 2R

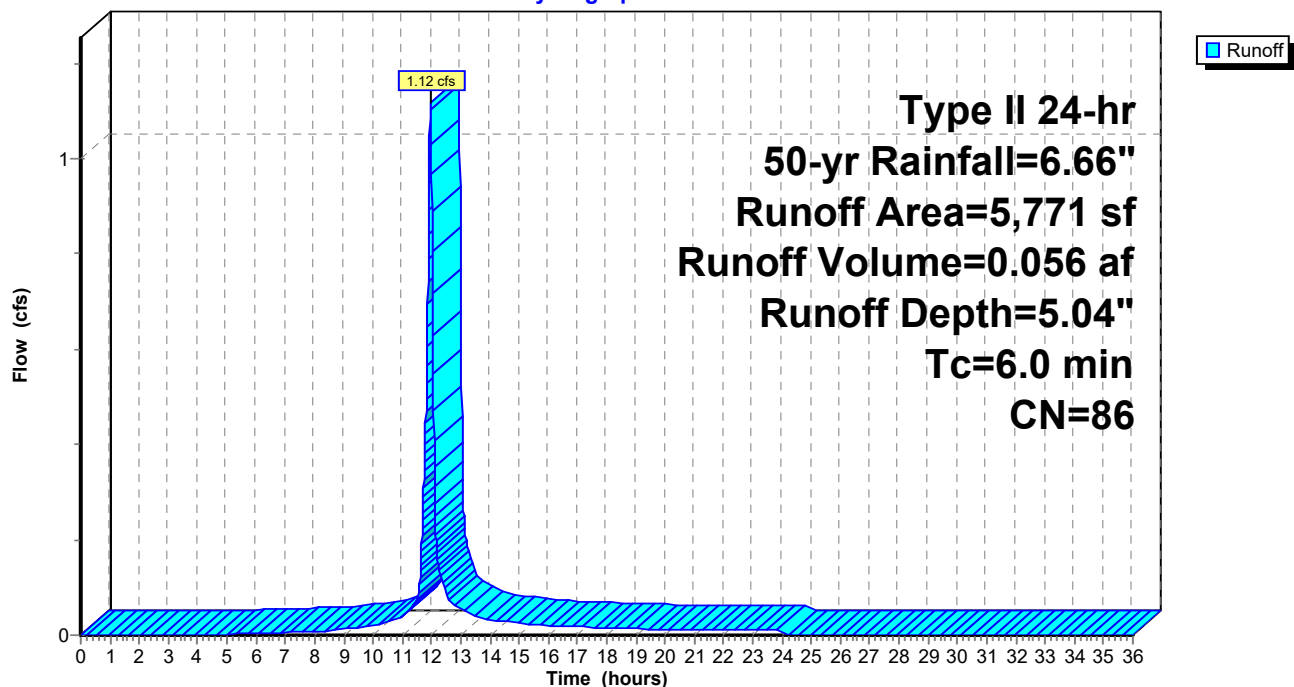
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-yr Rainfall=6.66"

Area (sf)	CN	Description
835	98	Paved roads w/curbs & sewers, HSG D
4,936	84	50-75% Grass cover, Fair, HSG D
5,771	86	Weighted Average
4,936		85.53% Pervious Area
835		14.47% Impervious Area

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

Subcatchment 7S: DA-5

Hydrograph



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Type II 24-hr 50-yr Rainfall=6.66"

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Summary for Subcatchment 8S: DA-6

Runoff = 5.75 cfs @ 11.97 hrs, Volume= 0.292 af, Depth= 5.38"
Routed to nonexistent node 2R

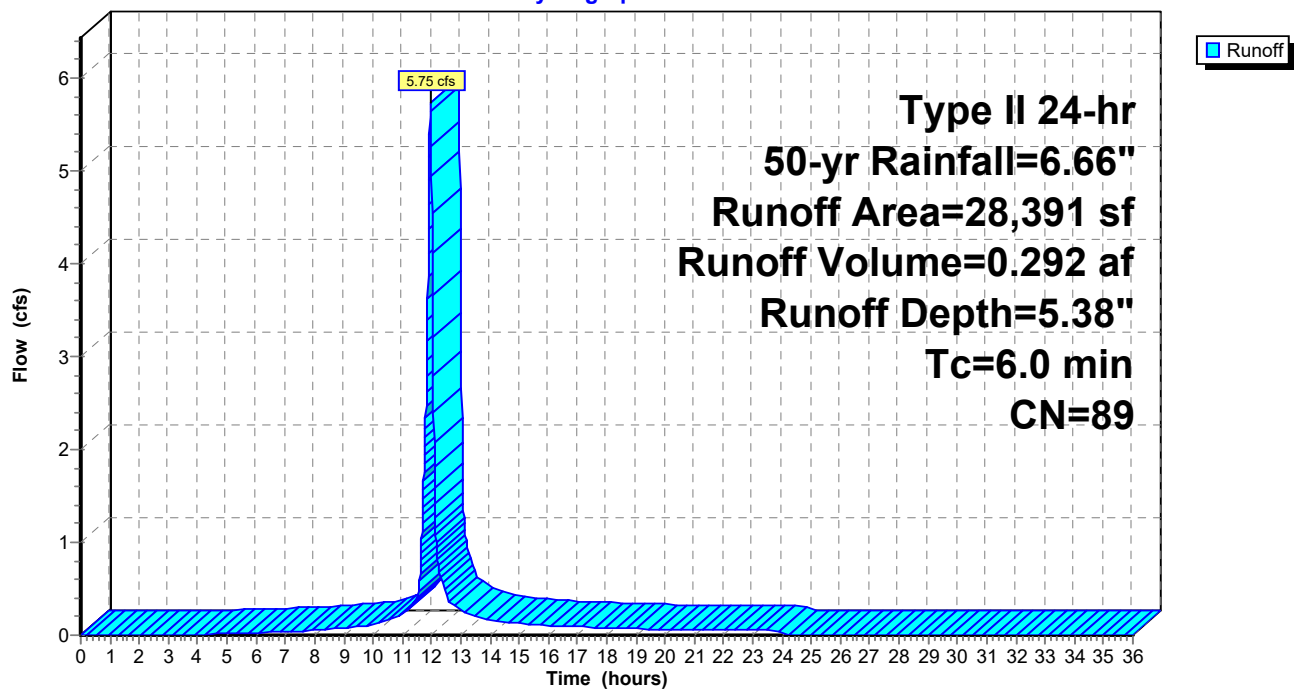
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-yr Rainfall=6.66"

Area (sf)	CN	Description
9,265	98	Paved roads w/curbs & sewers, HSG D
19,126	84	50-75% Grass cover, Fair, HSG D
28,391	89	Weighted Average
19,126		67.37% Pervious Area
9,265		32.63% Impervious Area

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

Subcatchment 8S: DA-6

Hydrograph



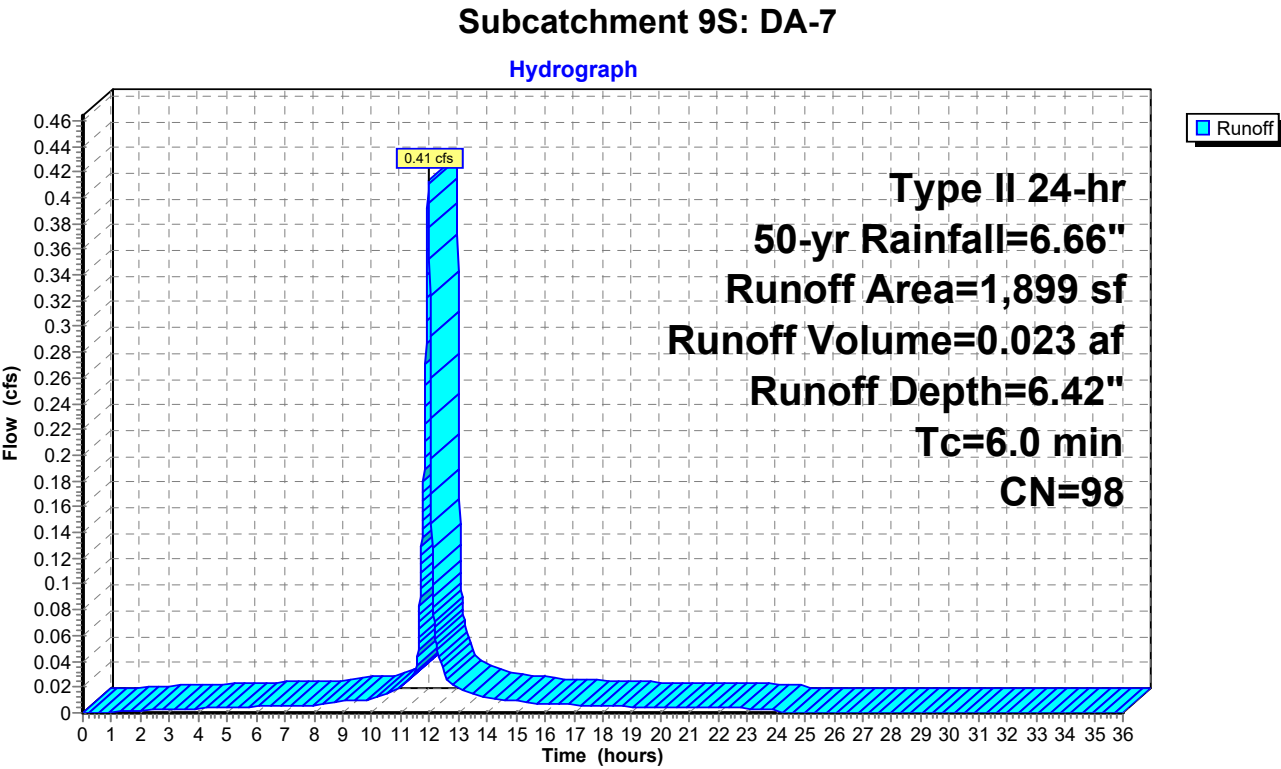
Summary for Subcatchment 9S: DA-7

Runoff = 0.41 cfs @ 11.97 hrs, Volume= 0.023 af, Depth= 6.42"
Routed to nonexistent node 2R

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-yr Rainfall=6.66"

Area (sf)	CN	Description
1,899	98	Paved roads w/curbs & sewers, HSG D
1,899		100.00% Impervious Area

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



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Type II 24-hr 100-yr Rainfall=7.54"

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Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: DA-4	Runoff Area=48,418 sf 12.40% Impervious Runoff Depth=5.89" Tc=6.0 min CN=86 Runoff=10.87 cfs 0.545 af
Subcatchment3S: DA-1	Runoff Area=34,844 sf 15.93% Impervious Runoff Depth=5.89" Tc=6.0 min CN=86 Runoff=7.82 cfs 0.392 af
Subcatchment5S: DA-2	Runoff Area=5,574 sf 16.56% Impervious Runoff Depth=5.89" Tc=6.0 min CN=86 Runoff=1.25 cfs 0.063 af
Subcatchment6S: DA-3	Runoff Area=22,662 sf 32.66% Impervious Runoff Depth=6.24" Tc=6.0 min CN=89 Runoff=5.27 cfs 0.270 af
Subcatchment7S: DA-5	Runoff Area=5,771 sf 14.47% Impervious Runoff Depth=5.89" Tc=6.0 min CN=86 Runoff=1.30 cfs 0.065 af
Subcatchment8S: DA-6	Runoff Area=28,391 sf 32.63% Impervious Runoff Depth=6.24" Tc=6.0 min CN=89 Runoff=6.60 cfs 0.339 af
Subcatchment9S: DA-7	Runoff Area=1,899 sf 100.00% Impervious Runoff Depth=7.30" Tc=6.0 min CN=98 Runoff=0.47 cfs 0.027 af

Total Runoff Area = 3.387 ac Runoff Volume = 1.701 af Average Runoff Depth = 6.03"
78.40% Pervious = 2.656 ac 21.60% Impervious = 0.732 ac

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Type II 24-hr 100-yr Rainfall=7.54"

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Summary for Subcatchment 1S: DA-4

Runoff = 10.87 cfs @ 11.97 hrs, Volume= 0.545 af, Depth= 5.89"
Routed to nonexistent node 2R

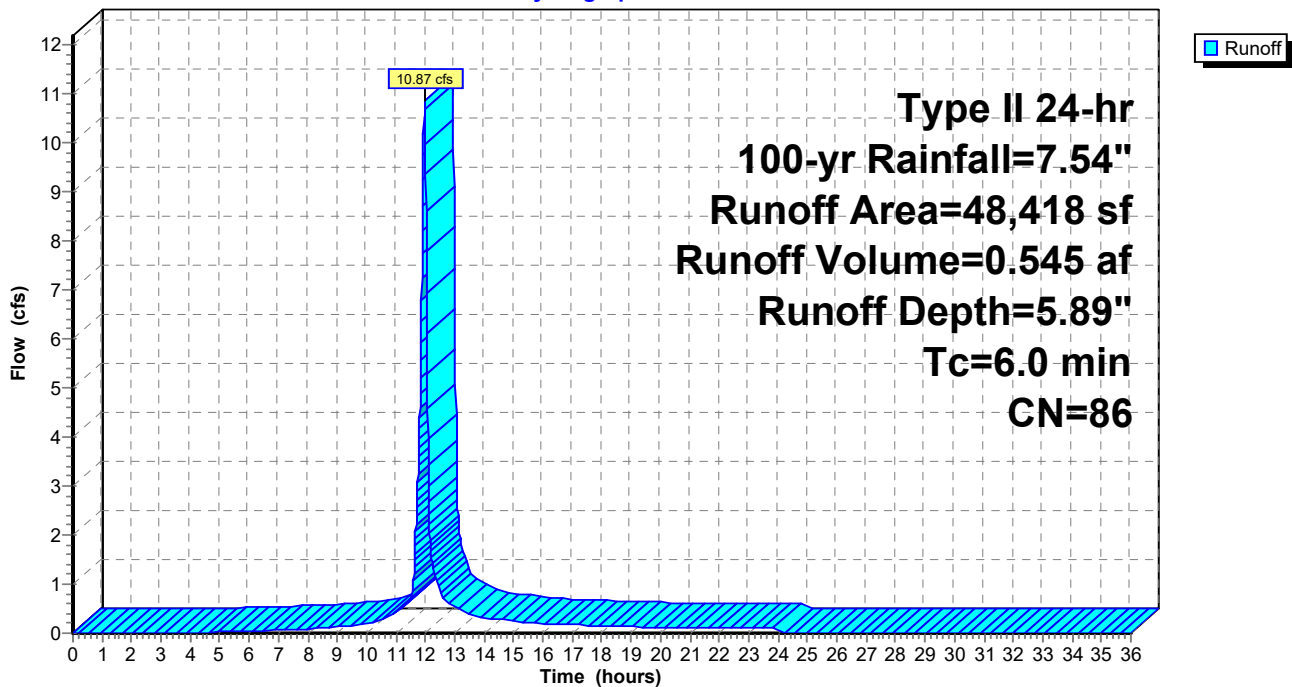
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr Rainfall=7.54"

Area (sf)	CN	Description
6,004	98	Paved roads w/curbs & sewers, HSG D
42,414	84	50-75% Grass cover, Fair, HSG D
48,418	86	Weighted Average
42,414		87.60% Pervious Area
6,004		12.40% Impervious Area

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

Subcatchment 1S: DA-4

Hydrograph



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Type II 24-hr 100-yr Rainfall=7.54"

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Summary for Subcatchment 3S: DA-1

Runoff = 7.82 cfs @ 11.97 hrs, Volume= 0.392 af, Depth= 5.89"
Routed to nonexistent node 4R

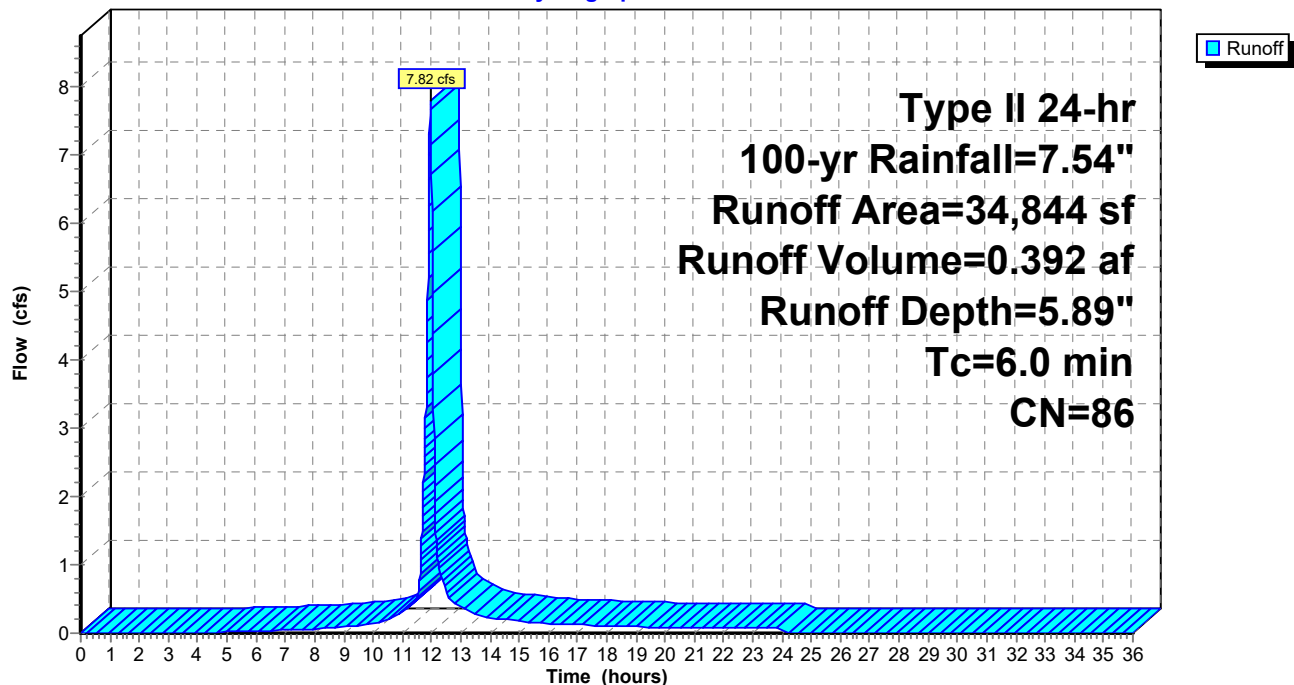
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr Rainfall=7.54"

Area (sf)	CN	Description
5,550	98	Paved roads w/curbs & sewers, HSG D
29,294	84	50-75% Grass cover, Fair, HSG D
34,844	86	Weighted Average
29,294		84.07% Pervious Area
5,550		15.93% Impervious Area

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

Subcatchment 3S: DA-1

Hydrograph



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Type II 24-hr 100-yr Rainfall=7.54"

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Summary for Subcatchment 5S: DA-2

Runoff = 1.25 cfs @ 11.97 hrs, Volume= 0.063 af, Depth= 5.89"
Routed to nonexistent node 4R

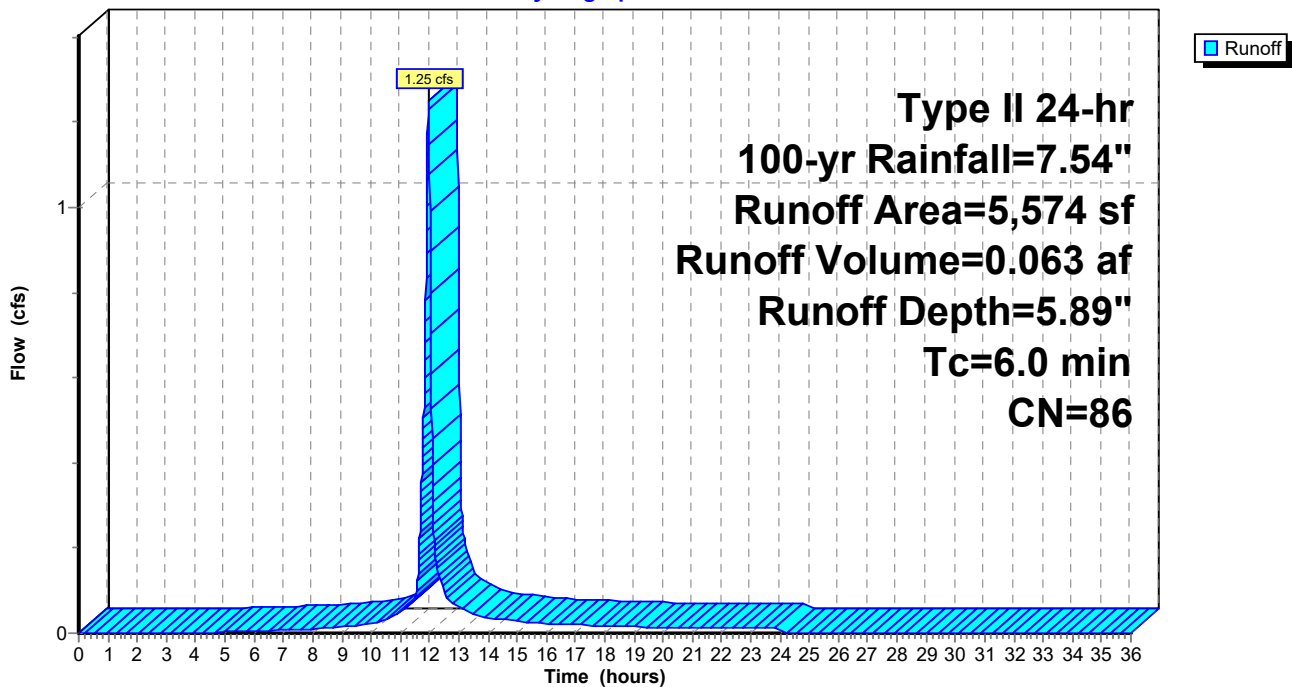
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr Rainfall=7.54"

Area (sf)	CN	Description
923	98	Paved roads w/curbs & sewers, HSG D
4,651	84	50-75% Grass cover, Fair, HSG D
5,574	86	Weighted Average
4,651		83.44% Pervious Area
923		16.56% Impervious Area

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

Subcatchment 5S: DA-2

Hydrograph



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Type II 24-hr 100-yr Rainfall=7.54"

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Summary for Subcatchment 6S: DA-3

Runoff = 5.27 cfs @ 11.97 hrs, Volume= 0.270 af, Depth= 6.24"
Routed to nonexistent node 4R

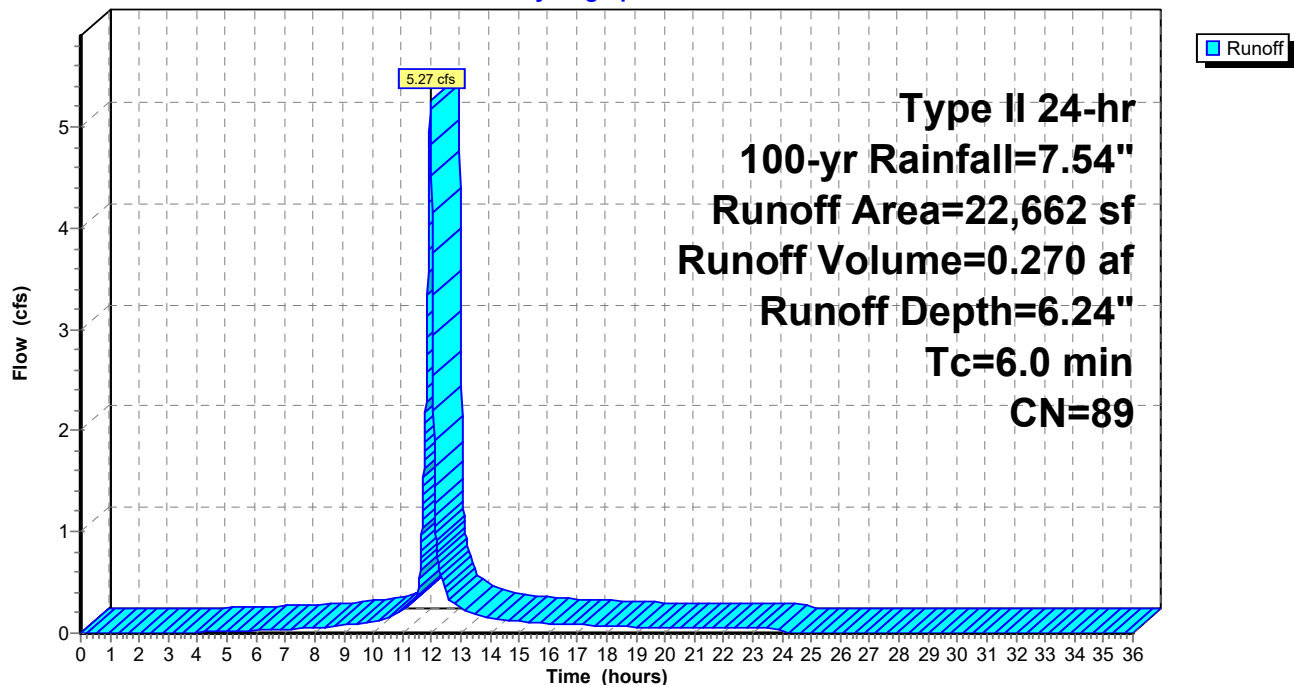
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr Rainfall=7.54"

Area (sf)	CN	Description
7,402	98	Paved roads w/curbs & sewers, HSG D
15,260	84	50-75% Grass cover, Fair, HSG D
22,662	89	Weighted Average
15,260		67.34% Pervious Area
7,402		32.66% Impervious Area

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

Subcatchment 6S: DA-3

Hydrograph



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Type II 24-hr 100-yr Rainfall=7.54"

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Summary for Subcatchment 7S: DA-5

Runoff = 1.30 cfs @ 11.97 hrs, Volume= 0.065 af, Depth= 5.89"
Routed to nonexistent node 2R

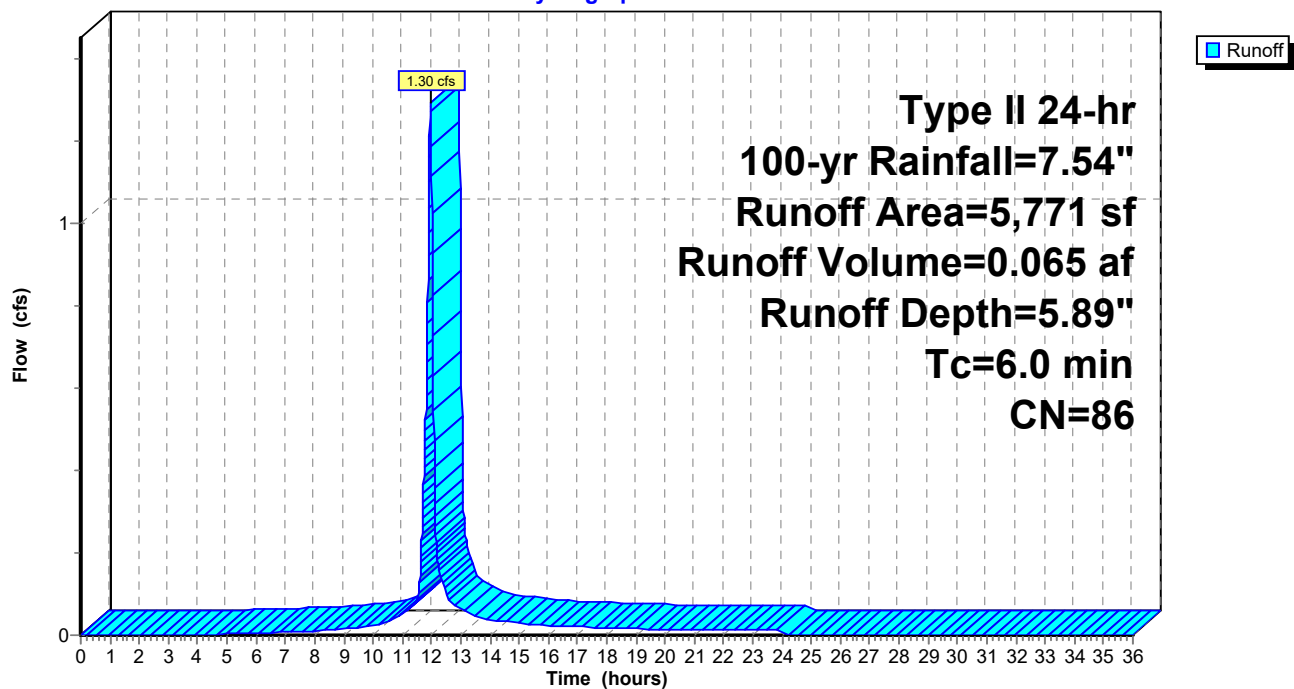
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr Rainfall=7.54"

Area (sf)	CN	Description
835	98	Paved roads w/curbs & sewers, HSG D
4,936	84	50-75% Grass cover, Fair, HSG D
5,771	86	Weighted Average
4,936		85.53% Pervious Area
835		14.47% Impervious Area

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

Subcatchment 7S: DA-5

Hydrograph



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Type II 24-hr 100-yr Rainfall=7.54"

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Summary for Subcatchment 8S: DA-6

Runoff = 6.60 cfs @ 11.97 hrs, Volume= 0.339 af, Depth= 6.24"
Routed to nonexistent node 2R

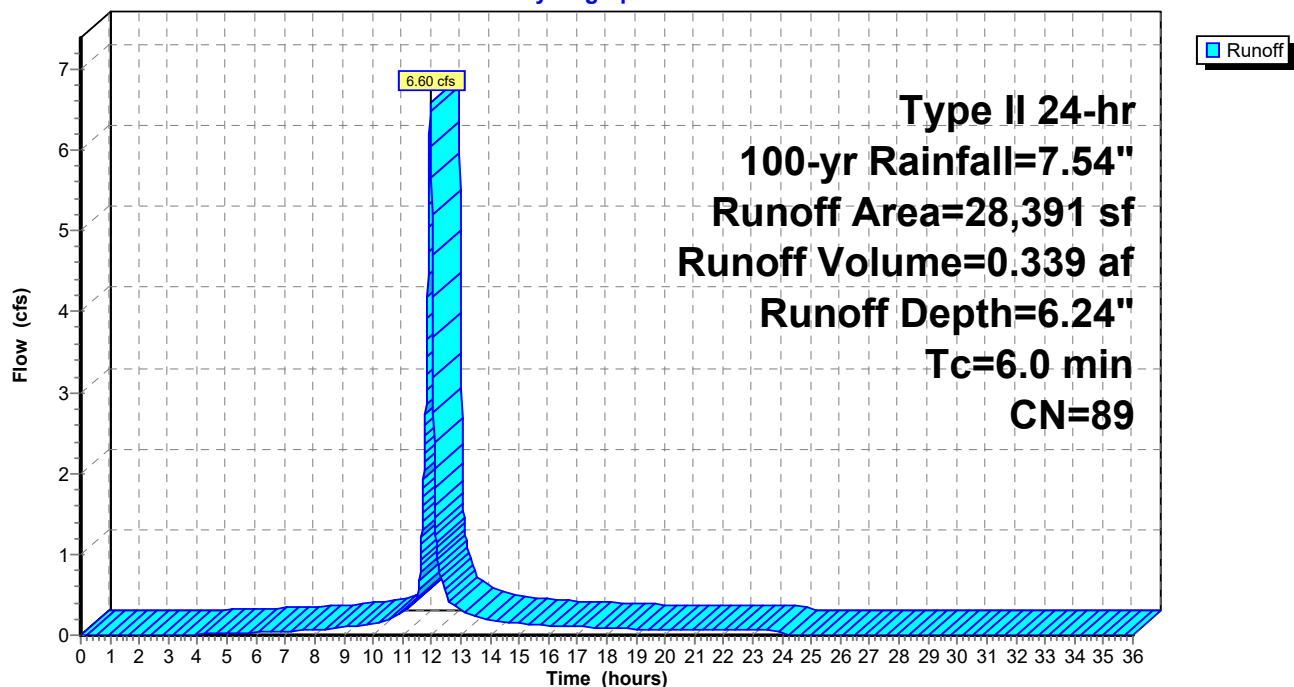
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr Rainfall=7.54"

Area (sf)	CN	Description
9,265	98	Paved roads w/curbs & sewers, HSG D
19,126	84	50-75% Grass cover, Fair, HSG D
28,391	89	Weighted Average
19,126		67.37% Pervious Area
9,265		32.63% Impervious Area

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

Subcatchment 8S: DA-6

Hydrograph



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Type II 24-hr 100-yr Rainfall=7.54"

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Summary for Subcatchment 9S: DA-7

Runoff = 0.47 cfs @ 11.97 hrs, Volume= 0.027 af, Depth= 7.30"
Routed to nonexistent node 2R

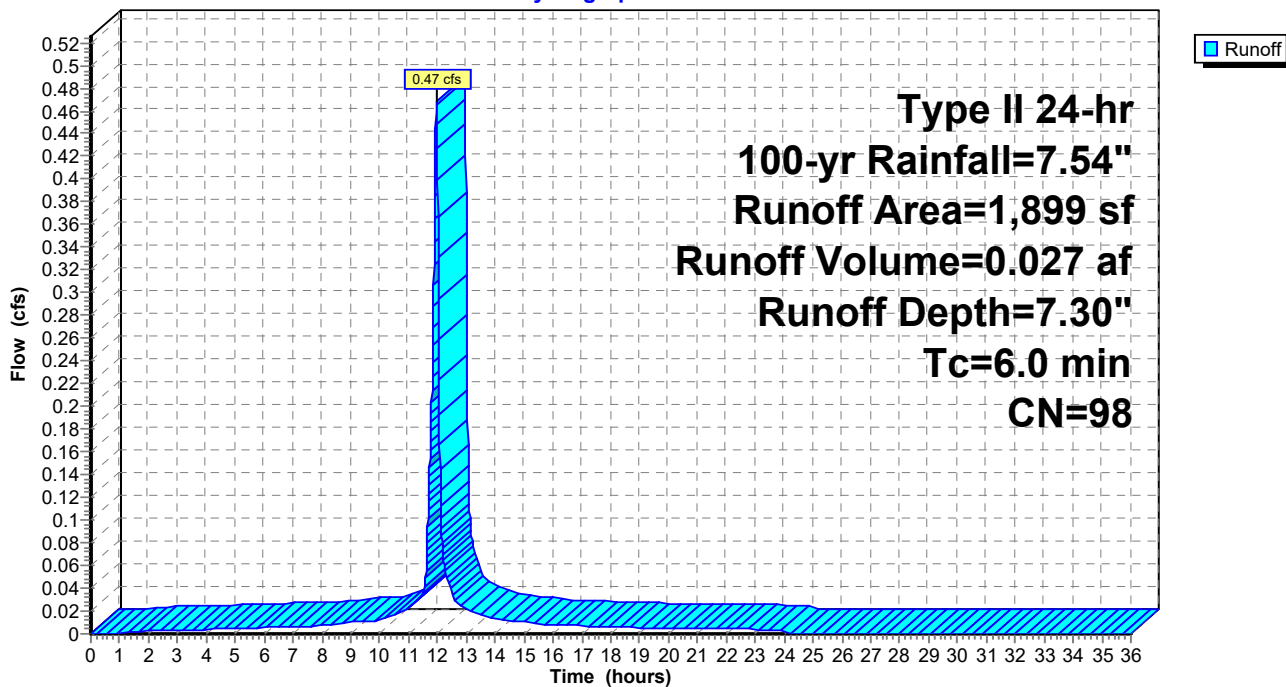
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr Rainfall=7.54"

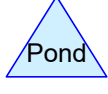
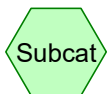
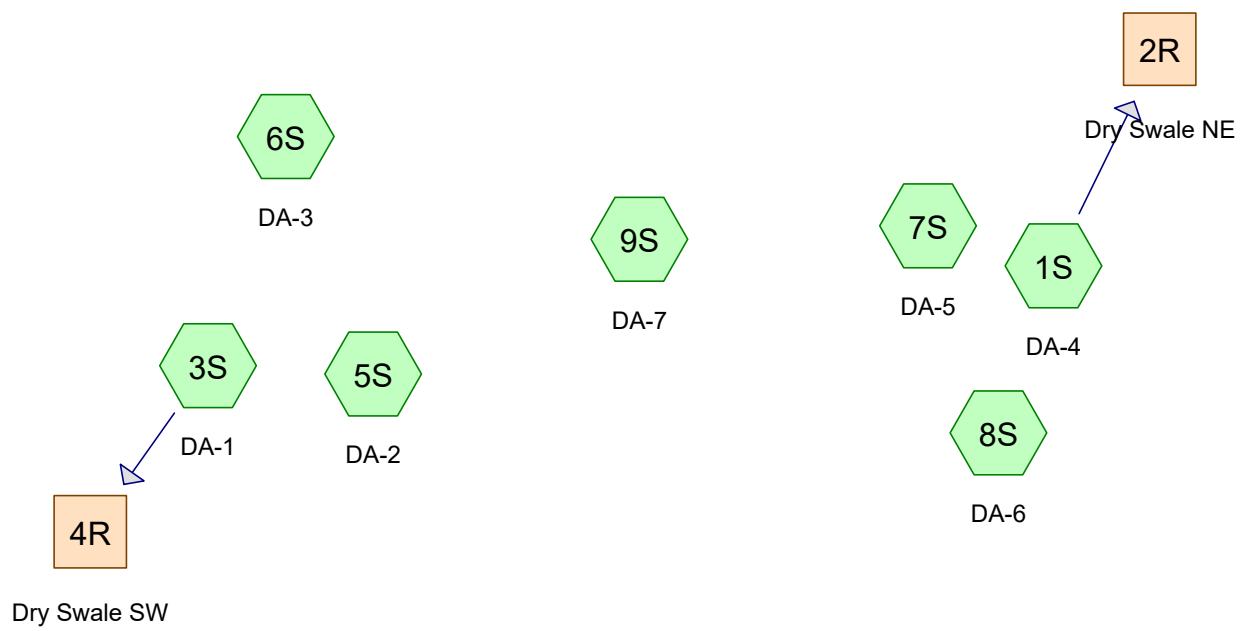
Area (sf)	CN	Description
1,899	98	Paved roads w/curbs & sewers, HSG D
1,899		100.00% Impervious Area

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

Subcatchment 9S: DA-7

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Project Notes

Defined 3 rainfall events from PF_Depth_English_PDS_Malden IDF

Defined 5 rainfall events from PF_Depth_English_PDS_Malden IDF

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Rainfall Events Listing (selected events)

Event#	Event Name	Storm Type	Curve	Mode	Duration (hours)	B/B	Depth (inches)	AMC
1	1-yr	Type II 24-hr		Default	24.00	1	2.43	2
2	10-yr	Type II 24-hr		Default	24.00	1	4.76	2
3	50-yr	Type II 24-hr		Default	24.00	1	6.66	2
4	100-yr	Type II 24-hr		Default	24.00	1	7.54	2

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Area Listing (all nodes)

Area (acres)	CN	Description (subcatchment-numbers)
2.525	84	50-75% Grass cover, Fair, HSG D (1S, 3S, 5S, 6S, 7S, 8S)
0.862	98	Paved roads w/curbs & sewers, HSG D (1S, 3S, 5S, 6S, 7S, 8S, 9S)
3.388	88	TOTAL AREA

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Soil Listing (all nodes)

Area (acres)	Soil Group	Subcatchment Numbers
0.000	HSG A	
0.000	HSG B	
0.000	HSG C	
3.388	HSG D	1S, 3S, 5S, 6S, 7S, 8S, 9S
0.000	Other	
3.388		TOTAL AREA

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Ground Covers (all nodes)

HSG-A (acres)	HSG-B (acres)	HSG-C (acres)	HSG-D (acres)	Other (acres)	Total (acres)	Ground Cover	Subcatchment Numbers
0.000	0.000	0.000	2.525	0.000	2.525	50-75% Grass cover, Fair	1S, 3S, 5S, 6S, 7S, 8S
0.000	0.000	0.000	0.862	0.000	0.862	Paved roads w/curbs & sewers	1S, 3S, 5S, 6S, 7S, 8S, 9S
0.000	0.000	0.000	3.388	0.000	3.388	TOTAL AREA	

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Type II 24-hr 1-yr Rainfall=2.43"

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Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: DA-4 Runoff Area=48,419 sf 16.37% Impervious Runoff Depth=1.19"
Tc=6.0 min CN=86 Runoff=2.36 cfs 0.110 af

Subcatchment3S: DA-1 Runoff Area=34,844 sf 18.94% Impervious Runoff Depth=1.25"
Tc=6.0 min CN=87 Runoff=1.79 cfs 0.084 af

Subcatchment5S: DA-2 Runoff Area=5,574 sf 16.56% Impervious Runoff Depth=1.19"
Tc=6.0 min CN=86 Runoff=0.27 cfs 0.013 af

Subcatchment6S: DA-3 Runoff Area=22,662 sf 37.45% Impervious Runoff Depth=1.39"
Tc=6.0 min CN=89 Runoff=1.28 cfs 0.060 af

Subcatchment7S: DA-5 Runoff Area=5,771 sf 14.47% Impervious Runoff Depth=1.19"
Tc=6.0 min CN=86 Runoff=0.28 cfs 0.013 af

Subcatchment8S: DA-6 Runoff Area=28,391 sf 38.33% Impervious Runoff Depth=1.39"
Tc=6.0 min CN=89 Runoff=1.61 cfs 0.076 af

Subcatchment9S: DA-7 Runoff Area=1,899 sf 100.00% Impervious Runoff Depth=2.20"
Tc=6.0 min CN=98 Runoff=0.15 cfs 0.008 af

Reach 2R: Dry Swale NE Avg. Flow Depth=0.66' Max Vel=0.71 fps Inflow=2.36 cfs 0.110 af
n=0.150 L=270.0' S=0.0161 '/' Capacity=21.31 cfs Outflow=1.87 cfs 0.110 af

Reach 4R: Dry Swale SW Avg. Flow Depth=0.58' Max Vel=0.66 fps Inflow=1.79 cfs 0.084 af
n=0.150 L=250.0' S=0.0160 '/' Capacity=21.26 cfs Outflow=1.42 cfs 0.084 af

Total Runoff Area = 3.388 ac Runoff Volume = 0.363 af Average Runoff Depth = 1.29"
74.55% Pervious = 2.525 ac 25.45% Impervious = 0.862 ac

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Type II 24-hr 1-yr Rainfall=2.43"

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Summary for Subcatchment 1S: DA-4

Runoff = 2.36 cfs @ 11.97 hrs, Volume= 0.110 af, Depth= 1.19"

Routed to Reach 2R : Dry Swale NE

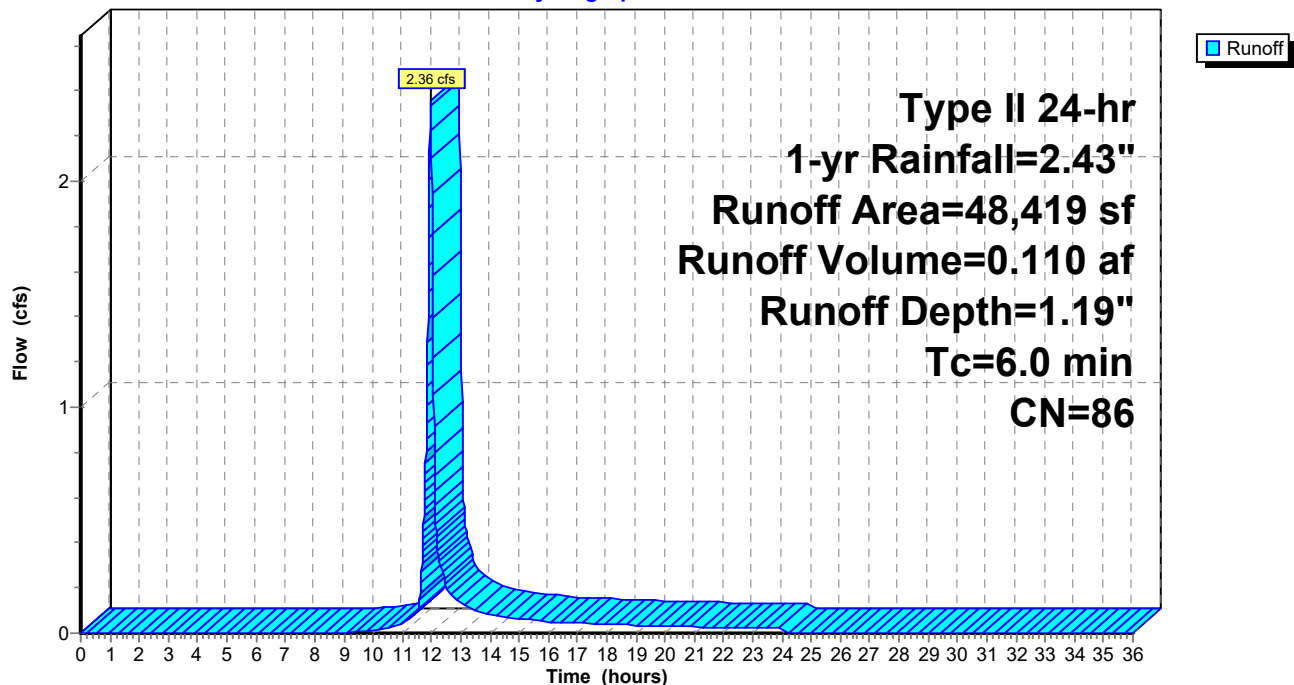
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-yr Rainfall=2.43"

Area (sf)	CN	Description
7,926	98	Paved roads w/curbs & sewers, HSG D
40,493	84	50-75% Grass cover, Fair, HSG D
48,419	86	Weighted Average
40,493		83.63% Pervious Area
7,926		16.37% Impervious Area

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

Subcatchment 1S: DA-4

Hydrograph



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Summary for Subcatchment 3S: DA-1

Runoff = 1.79 cfs @ 11.97 hrs, Volume= 0.084 af, Depth= 1.25"

Routed to Reach 4R : Dry Swale SW

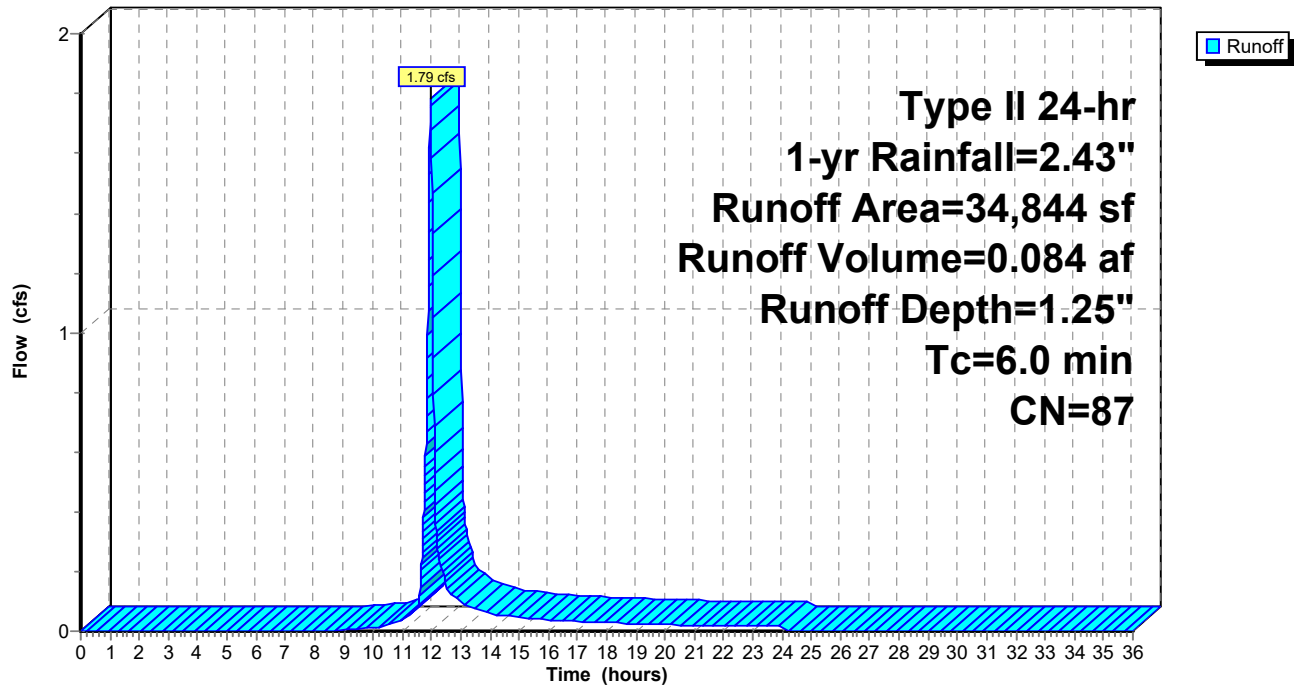
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-yr Rainfall=2.43"

Area (sf)	CN	Description
6,599	98	Paved roads w/curbs & sewers, HSG D
28,245	84	50-75% Grass cover, Fair, HSG D
34,844	87	Weighted Average
28,245		81.06% Pervious Area
6,599		18.94% Impervious Area

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

Subcatchment 3S: DA-1

Hydrograph



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Type II 24-hr 1-yr Rainfall=2.43"

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Summary for Subcatchment 5S: DA-2

Runoff = 0.27 cfs @ 11.97 hrs, Volume= 0.013 af, Depth= 1.19"

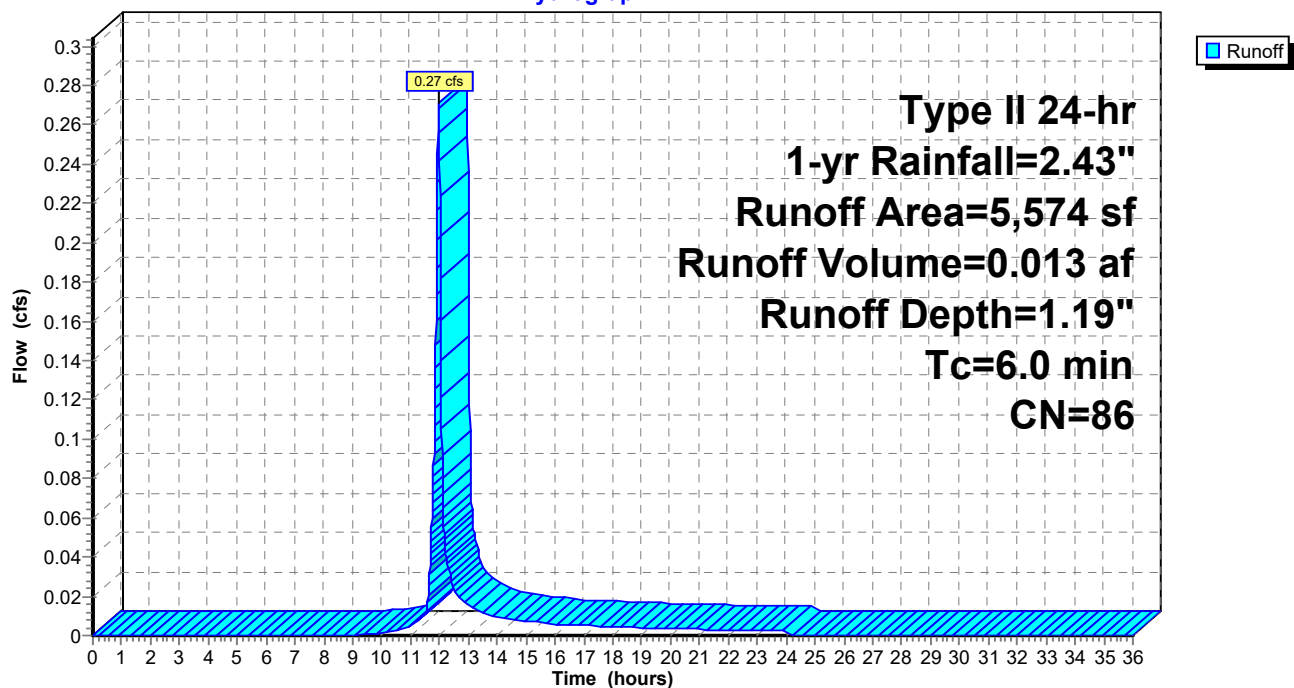
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-yr Rainfall=2.43"

Area (sf)	CN	Description
923	98	Paved roads w/curbs & sewers, HSG D
4,651	84	50-75% Grass cover, Fair, HSG D
5,574	86	Weighted Average
4,651		83.44% Pervious Area
923		16.56% Impervious Area

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

Subcatchment 5S: DA-2

Hydrograph



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Summary for Subcatchment 6S: DA-3

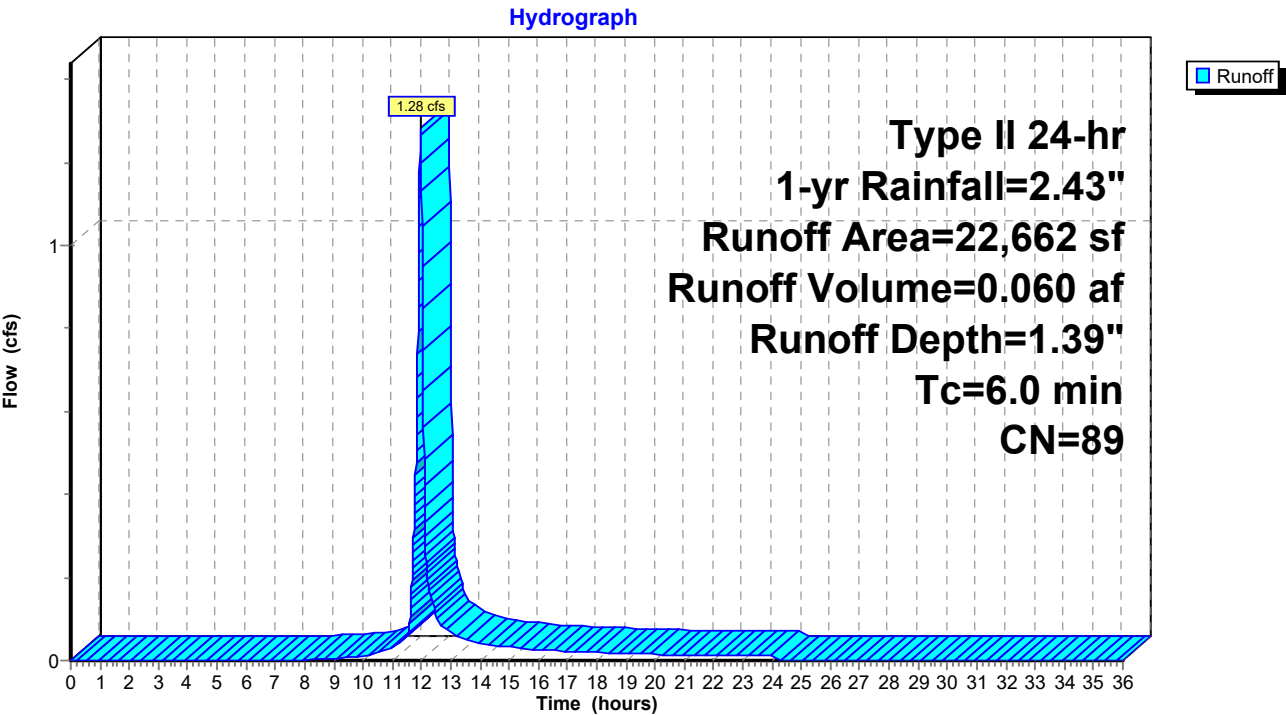
Runoff = 1.28 cfs @ 11.97 hrs, Volume= 0.060 af, Depth= 1.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-yr Rainfall=2.43"

Area (sf)	CN	Description
8,487	98	Paved roads w/curbs & sewers, HSG D
14,175	84	50-75% Grass cover, Fair, HSG D
22,662	89	Weighted Average
14,175		62.55% Pervious Area
8,487		37.45% Impervious Area

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

Subcatchment 6S: DA-3



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Summary for Subcatchment 7S: DA-5

Runoff = 0.28 cfs @ 11.97 hrs, Volume= 0.013 af, Depth= 1.19"

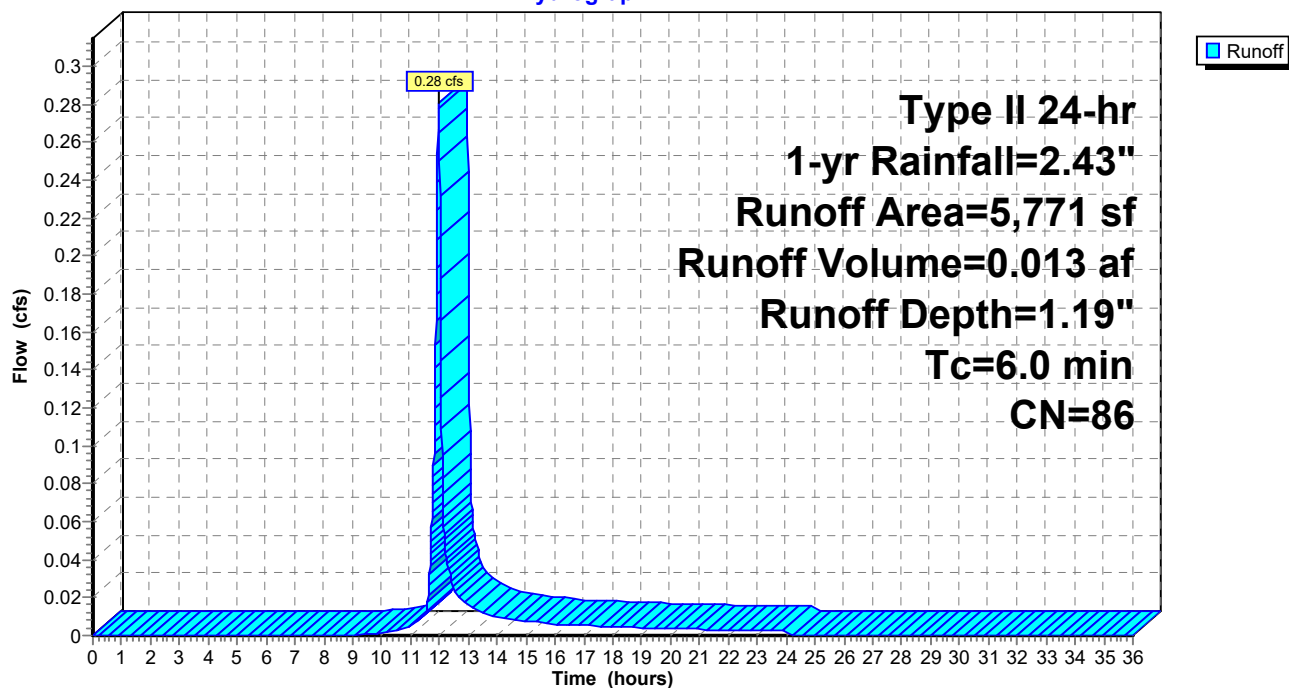
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-yr Rainfall=2.43"

Area (sf)	CN	Description
835	98	Paved roads w/curbs & sewers, HSG D
4,936	84	50-75% Grass cover, Fair, HSG D
5,771	86	Weighted Average
4,936		85.53% Pervious Area
835		14.47% Impervious Area

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

Subcatchment 7S: DA-5

Hydrograph



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Type II 24-hr 1-yr Rainfall=2.43"

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Summary for Subcatchment 8S: DA-6

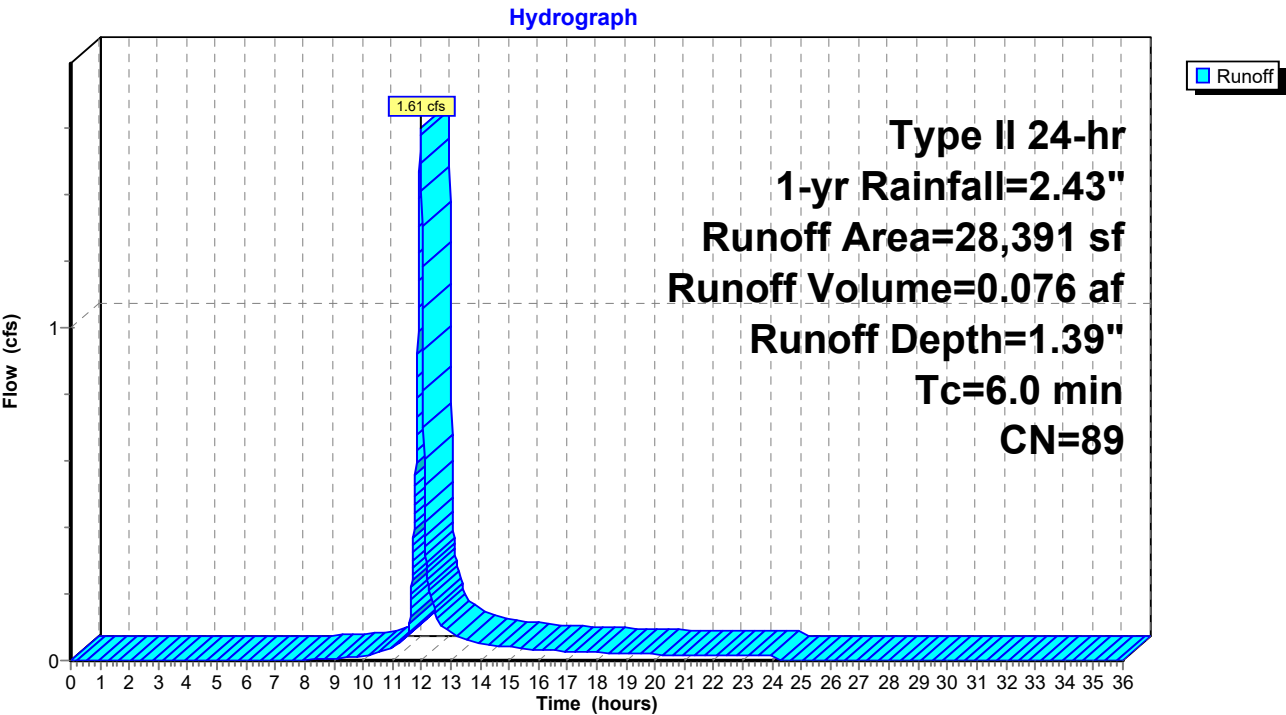
Runoff = 1.61 cfs @ 11.97 hrs, Volume= 0.076 af, Depth= 1.39"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-yr Rainfall=2.43"

Area (sf)	CN	Description
10,881	98	Paved roads w/curbs & sewers, HSG D
17,510	84	50-75% Grass cover, Fair, HSG D
28,391	89	Weighted Average
17,510		61.67% Pervious Area
10,881		38.33% Impervious Area

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

Subcatchment 8S: DA-6



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Type II 24-hr 1-yr Rainfall=2.43"

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Summary for Subcatchment 9S: DA-7

Runoff = 0.15 cfs @ 11.97 hrs, Volume= 0.008 af, Depth= 2.20"

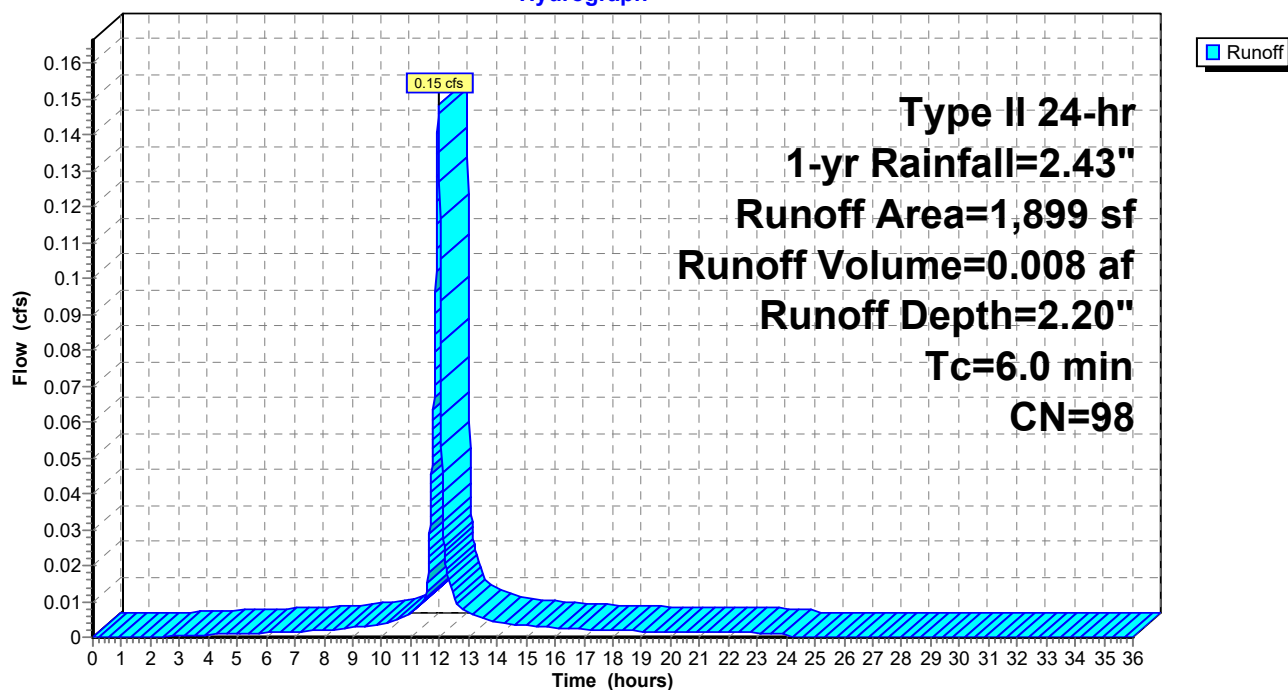
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 1-yr Rainfall=2.43"

Area (sf)	CN	Description
1,899	98	Paved roads w/curbs & sewers, HSG D
1,899		100.00% Impervious Area

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

Subcatchment 9S: DA-7

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Type II 24-hr 1-yr Rainfall=2.43"

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Summary for Reach 2R: Dry Swale NE

Inflow Area = 1.112 ac, 16.37% Impervious, Inflow Depth = 1.19" for 1-yr event
Inflow = 2.36 cfs @ 11.97 hrs, Volume= 0.110 af
Outflow = 1.87 cfs @ 12.13 hrs, Volume= 0.110 af, Atten= 21%, Lag= 9.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Max. Velocity= 0.71 fps, Min. Travel Time= 6.3 min

Avg. Velocity = 0.19 fps, Avg. Travel Time= 23.1 min

Peak Storage= 711 cf @ 12.02 hrs

Average Depth at Peak Storage= 0.66' , Surface Width= 5.96'

Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 21.31 cfs

2.00' x 2.00' deep channel, n= 0.150

Side Slope Z-value= 3.0 '/' Top Width= 14.00'

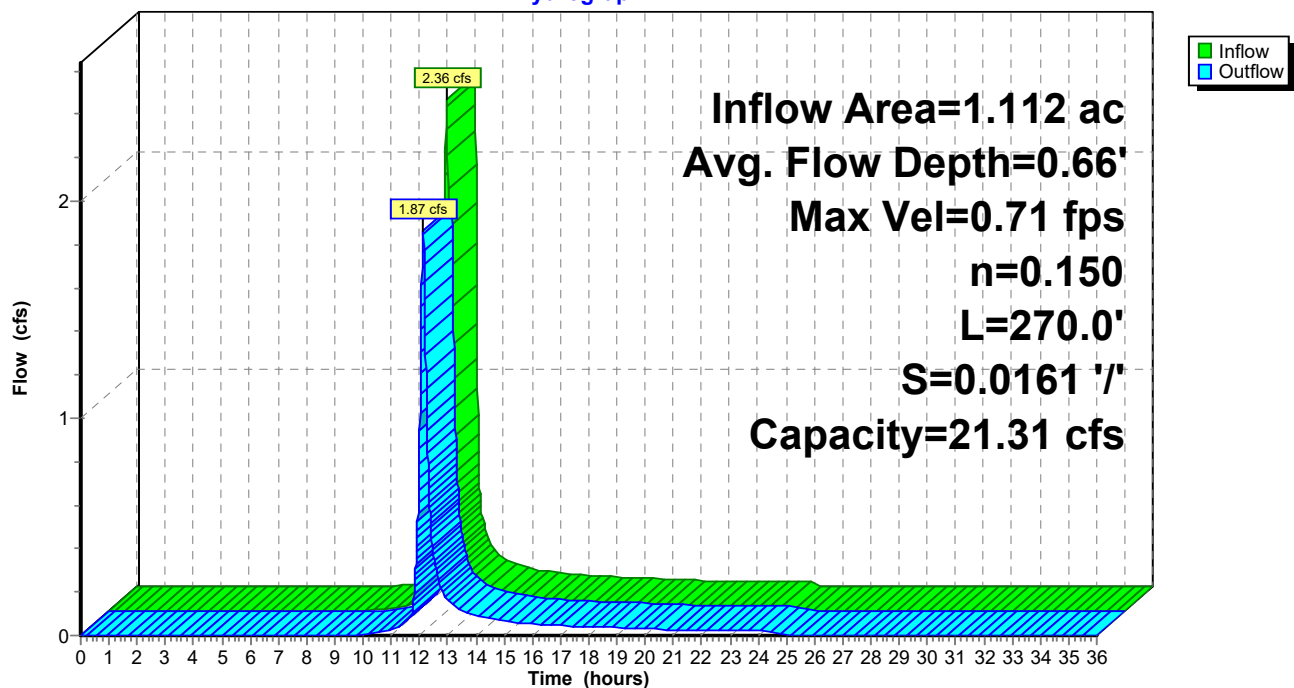
Length= 270.0' Slope= 0.0161 '/'

Inlet Invert= 148.34', Outlet Invert= 144.00'



Reach 2R: Dry Swale NE

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Type II 24-hr 1-yr Rainfall=2.43"

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Summary for Reach 4R: Dry Swale SW

Inflow Area = 0.800 ac, 18.94% Impervious, Inflow Depth = 1.25" for 1-yr event
Inflow = 1.79 cfs @ 11.97 hrs, Volume= 0.084 af
Outflow = 1.42 cfs @ 12.13 hrs, Volume= 0.084 af, Atten= 20%, Lag= 9.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Max. Velocity= 0.66 fps, Min. Travel Time= 6.3 min

Avg. Velocity = 0.18 fps, Avg. Travel Time= 23.1 min

Peak Storage= 540 cf @ 12.02 hrs

Average Depth at Peak Storage= 0.58' , Surface Width= 5.47'

Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 21.26 cfs

2.00' x 2.00' deep channel, n= 0.150

Side Slope Z-value= 3.0 '/' Top Width= 14.00'

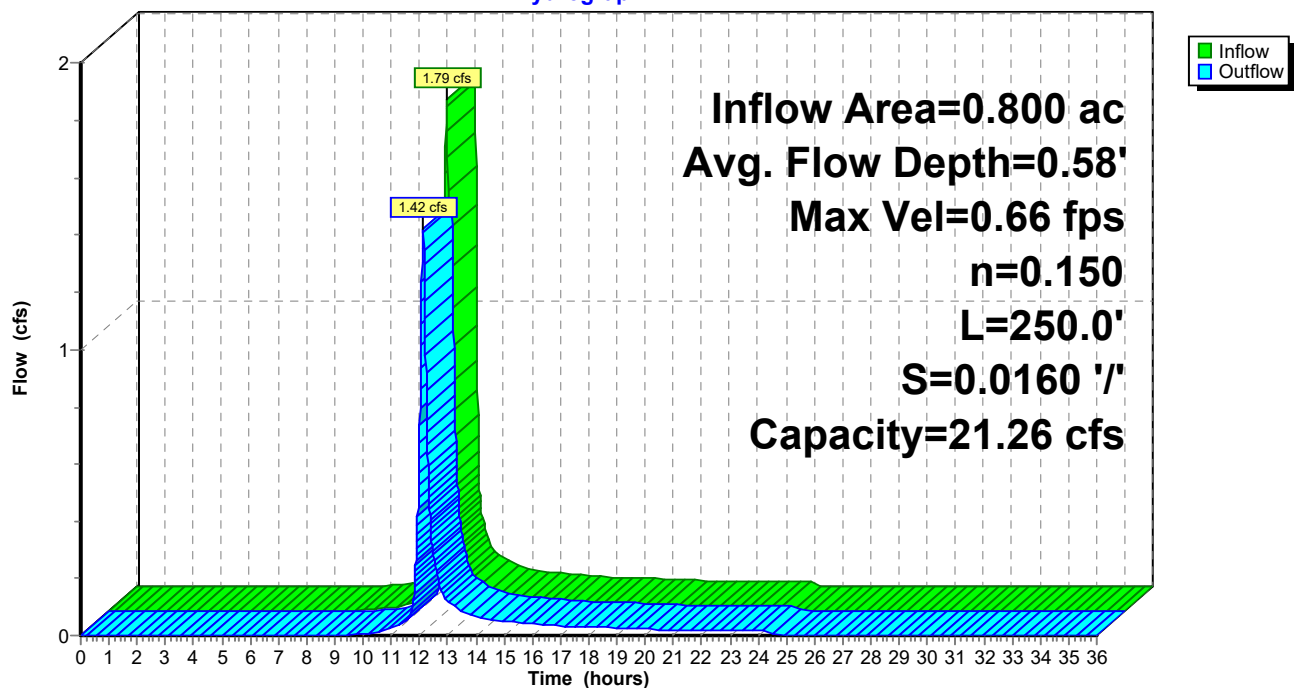
Length= 250.0' Slope= 0.0160 '/'

Inlet Invert= 147.00', Outlet Invert= 143.00'



Reach 4R: Dry Swale SW

Hydrograph



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Type II 24-hr 10-yr Rainfall=4.76"

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Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: DA-4 Runoff Area=48,419 sf 16.37% Impervious Runoff Depth=3.24"
Tc=6.0 min CN=86 Runoff=6.21 cfs 0.300 af

Subcatchment3S: DA-1 Runoff Area=34,844 sf 18.94% Impervious Runoff Depth=3.34"
Tc=6.0 min CN=87 Runoff=4.58 cfs 0.223 af

Subcatchment5S: DA-2 Runoff Area=5,574 sf 16.56% Impervious Runoff Depth=3.24"
Tc=6.0 min CN=86 Runoff=0.72 cfs 0.035 af

Subcatchment6S: DA-3 Runoff Area=22,662 sf 37.45% Impervious Runoff Depth=3.54"
Tc=6.0 min CN=89 Runoff=3.11 cfs 0.154 af

Subcatchment7S: DA-5 Runoff Area=5,771 sf 14.47% Impervious Runoff Depth=3.24"
Tc=6.0 min CN=86 Runoff=0.74 cfs 0.036 af

Subcatchment8S: DA-6 Runoff Area=28,391 sf 38.33% Impervious Runoff Depth=3.54"
Tc=6.0 min CN=89 Runoff=3.89 cfs 0.192 af

Subcatchment9S: DA-7 Runoff Area=1,899 sf 100.00% Impervious Runoff Depth=4.52"
Tc=6.0 min CN=98 Runoff=0.30 cfs 0.016 af

Reach 2R: Dry Swale NE Avg. Flow Depth=1.09' Max Vel=0.94 fps Inflow=6.21 cfs 0.300 af
n=0.150 L=270.0' S=0.0161 '/' Capacity=21.31 cfs Outflow=5.34 cfs 0.300 af

Reach 4R: Dry Swale SW Avg. Flow Depth=0.94' Max Vel=0.86 fps Inflow=4.58 cfs 0.223 af
n=0.150 L=250.0' S=0.0160 '/' Capacity=21.26 cfs Outflow=3.94 cfs 0.223 af

Total Runoff Area = 3.388 ac Runoff Volume = 0.956 af Average Runoff Depth = 3.39"
74.55% Pervious = 2.525 ac 25.45% Impervious = 0.862 ac

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Type II 24-hr 10-yr Rainfall=4.76"

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Summary for Subcatchment 1S: DA-4

Runoff = 6.21 cfs @ 11.97 hrs, Volume= 0.300 af, Depth= 3.24"
Routed to Reach 2R : Dry Swale NE

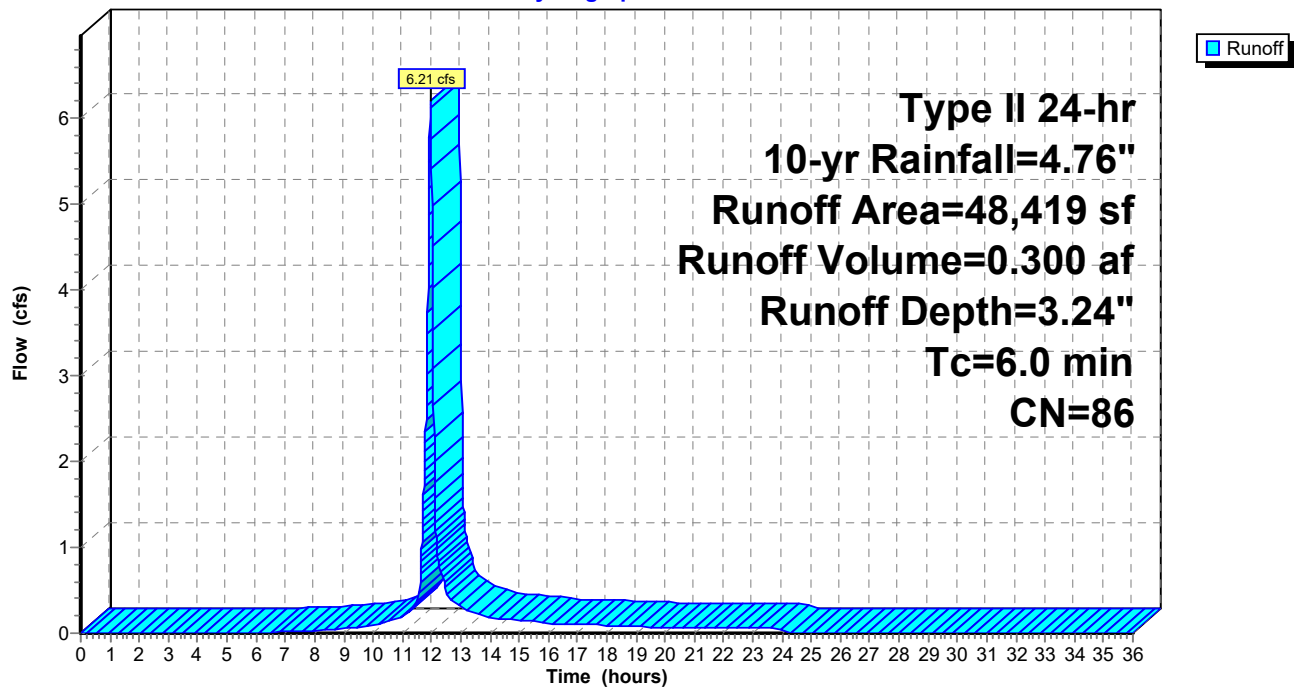
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=4.76"

Area (sf)	CN	Description
7,926	98	Paved roads w/curbs & sewers, HSG D
40,493	84	50-75% Grass cover, Fair, HSG D
48,419	86	Weighted Average
40,493		83.63% Pervious Area
7,926		16.37% Impervious Area

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

Subcatchment 1S: DA-4

Hydrograph



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Summary for Subcatchment 3S: DA-1

Runoff = 4.58 cfs @ 11.97 hrs, Volume= 0.223 af, Depth= 3.34"
Routed to Reach 4R : Dry Swale SW

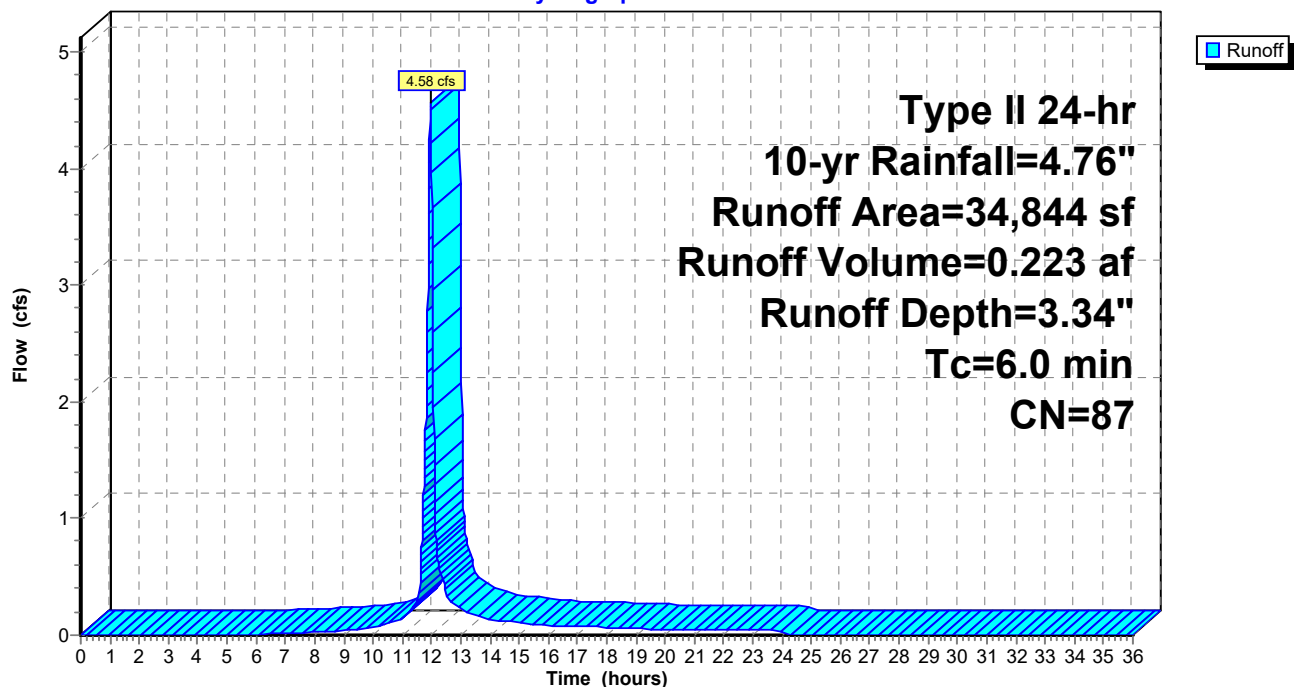
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=4.76"

Area (sf)	CN	Description
6,599	98	Paved roads w/curbs & sewers, HSG D
28,245	84	50-75% Grass cover, Fair, HSG D
34,844	87	Weighted Average
28,245		81.06% Pervious Area
6,599		18.94% Impervious Area

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

Subcatchment 3S: DA-1

Hydrograph



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Type II 24-hr 10-yr Rainfall=4.76"

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Summary for Subcatchment 5S: DA-2

Runoff = 0.72 cfs @ 11.97 hrs, Volume= 0.035 af, Depth= 3.24"

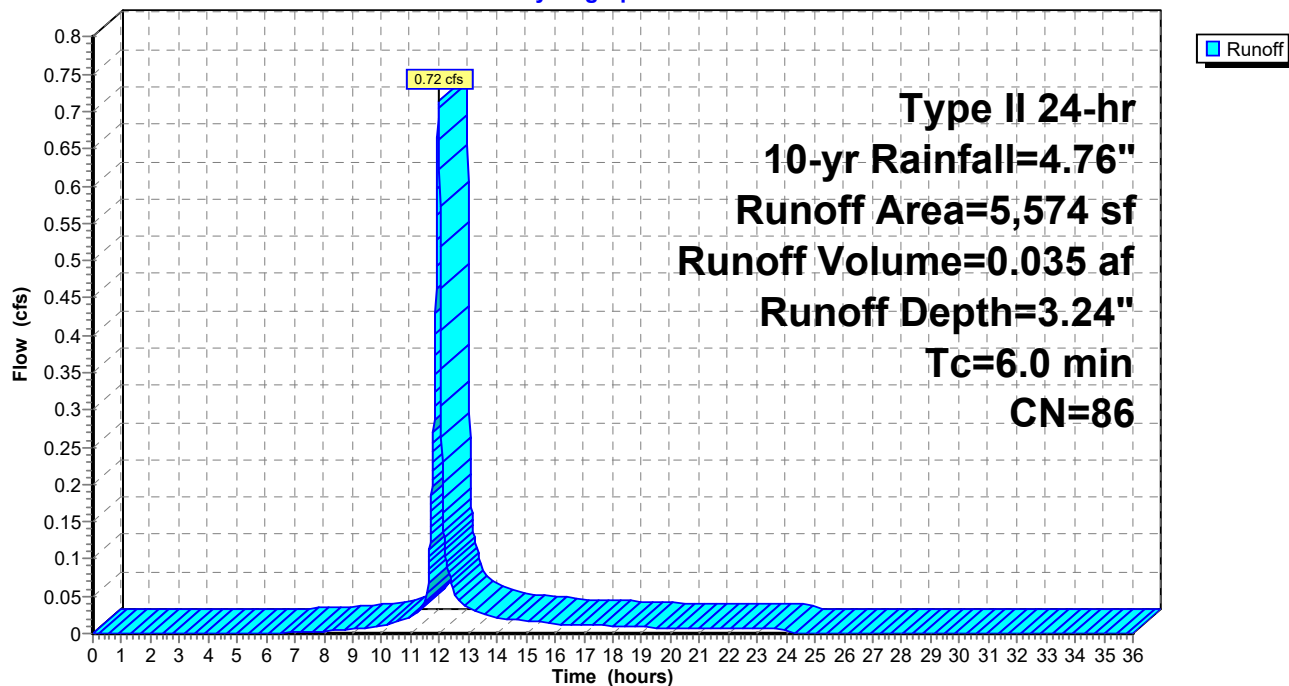
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=4.76"

Area (sf)	CN	Description
923	98	Paved roads w/curbs & sewers, HSG D
4,651	84	50-75% Grass cover, Fair, HSG D
5,574	86	Weighted Average
4,651		83.44% Pervious Area
923		16.56% Impervious Area

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

Subcatchment 5S: DA-2

Hydrograph



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Type II 24-hr 10-yr Rainfall=4.76"

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Summary for Subcatchment 6S: DA-3

Runoff = 3.11 cfs @ 11.97 hrs, Volume= 0.154 af, Depth= 3.54"

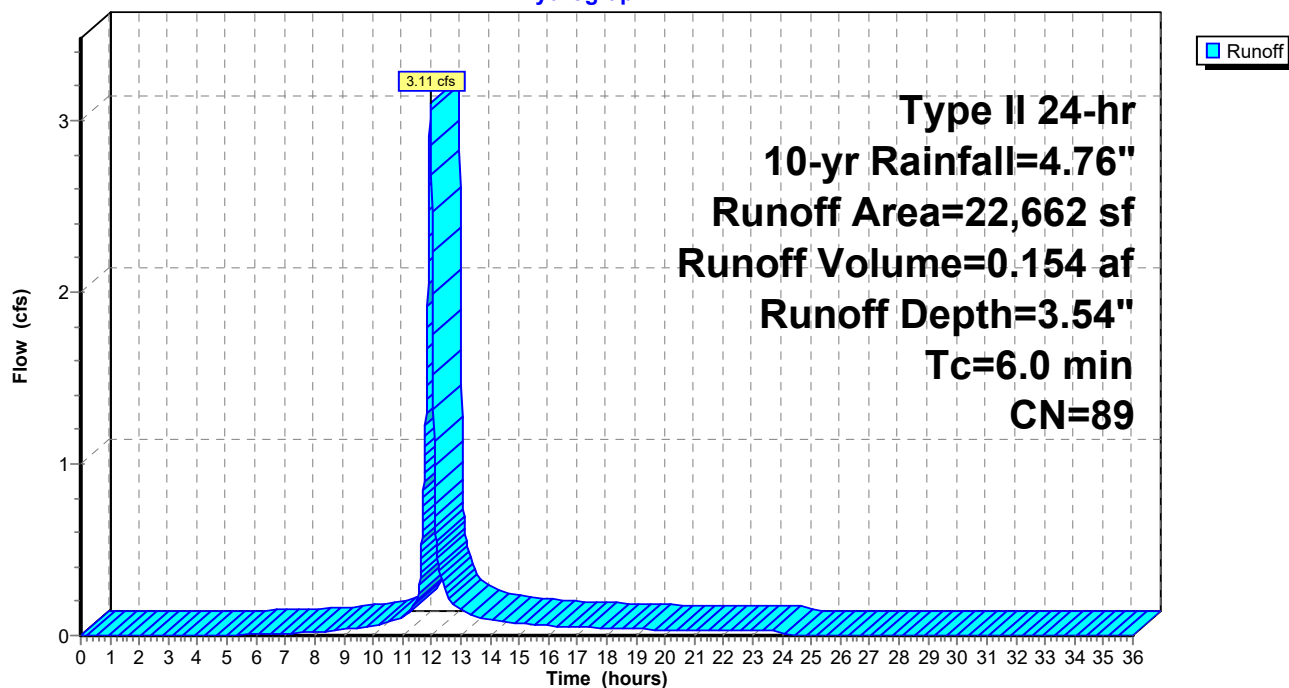
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=4.76"

Area (sf)	CN	Description
8,487	98	Paved roads w/curbs & sewers, HSG D
14,175	84	50-75% Grass cover, Fair, HSG D
22,662	89	Weighted Average
14,175		62.55% Pervious Area
8,487		37.45% Impervious Area

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

Subcatchment 6S: DA-3

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Type II 24-hr 10-yr Rainfall=4.76"

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Summary for Subcatchment 7S: DA-5

Runoff = 0.74 cfs @ 11.97 hrs, Volume= 0.036 af, Depth= 3.24"

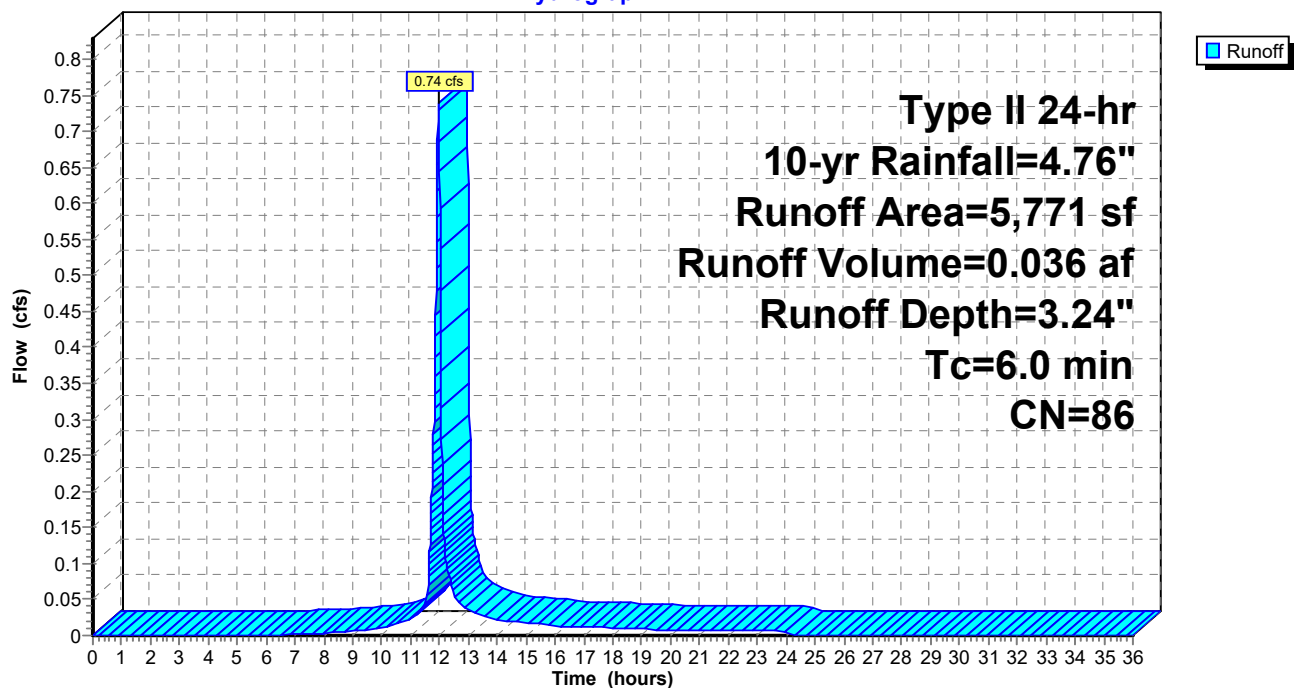
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=4.76"

Area (sf)	CN	Description
835	98	Paved roads w/curbs & sewers, HSG D
4,936	84	50-75% Grass cover, Fair, HSG D
5,771	86	Weighted Average
4,936		85.53% Pervious Area
835		14.47% Impervious Area

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

Subcatchment 7S: DA-5

Hydrograph



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Type II 24-hr 10-yr Rainfall=4.76"

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Summary for Subcatchment 8S: DA-6

Runoff = 3.89 cfs @ 11.97 hrs, Volume= 0.192 af, Depth= 3.54"

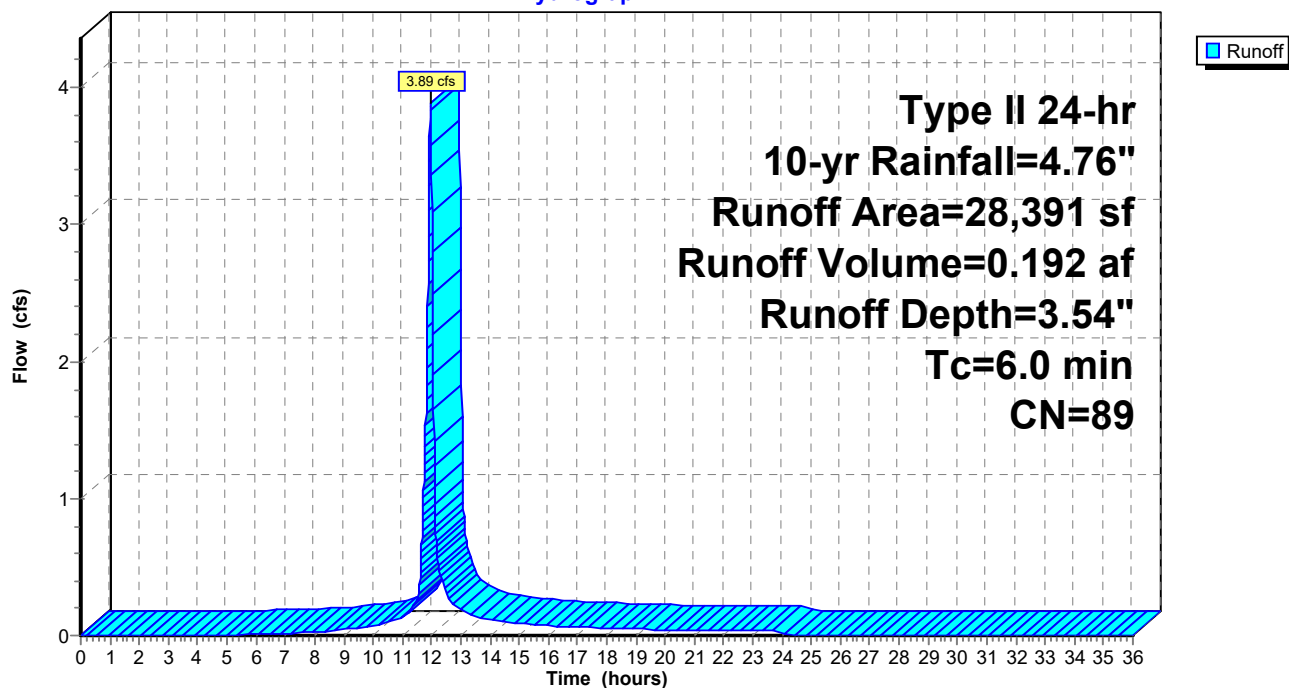
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=4.76"

Area (sf)	CN	Description
10,881	98	Paved roads w/curbs & sewers, HSG D
17,510	84	50-75% Grass cover, Fair, HSG D
28,391	89	Weighted Average
17,510		61.67% Pervious Area
10,881		38.33% Impervious Area

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

Subcatchment 8S: DA-6

Hydrograph



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Type II 24-hr 10-yr Rainfall=4.76"

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Summary for Subcatchment 9S: DA-7

Runoff = 0.30 cfs @ 11.97 hrs, Volume= 0.016 af, Depth= 4.52"

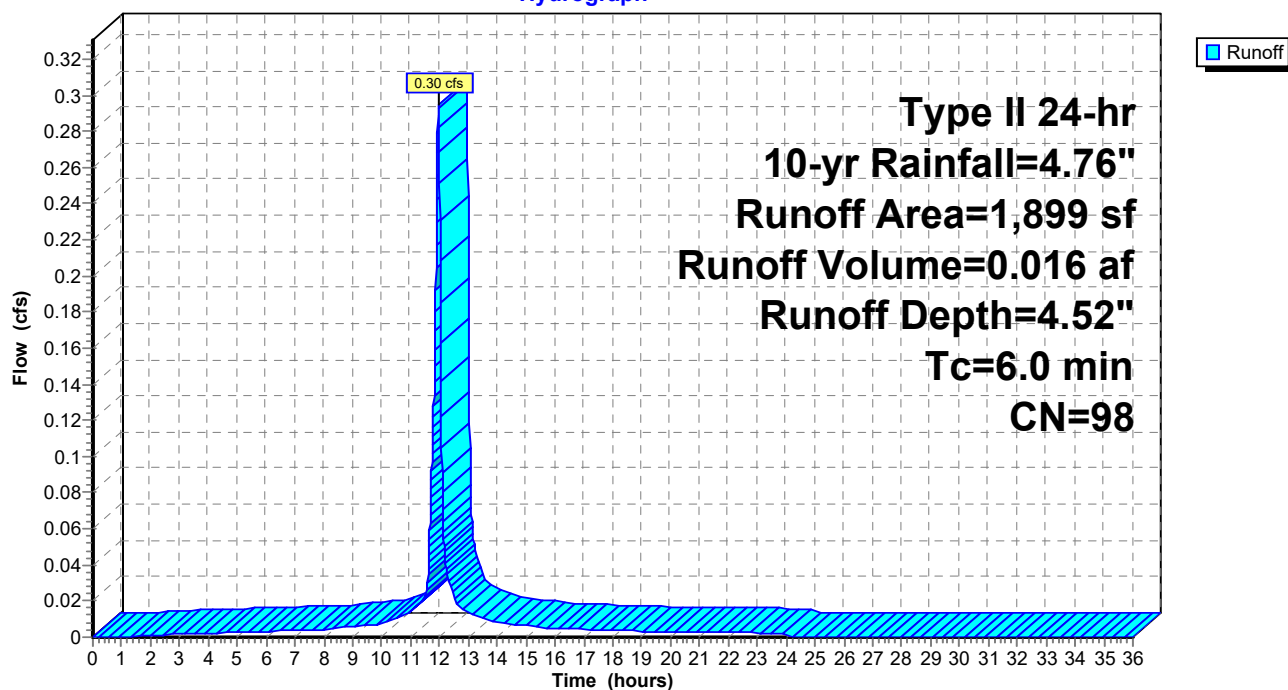
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 10-yr Rainfall=4.76"

Area (sf)	CN	Description
1,899	98	Paved roads w/curbs & sewers, HSG D
1,899		100.00% Impervious Area

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

Subcatchment 9S: DA-7

Hydrograph



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Type II 24-hr 10-yr Rainfall=4.76"

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Summary for Reach 2R: Dry Swale NE

Inflow Area = 1.112 ac, 16.37% Impervious, Inflow Depth = 3.24" for 10-yr event
Inflow = 6.21 cfs @ 11.97 hrs, Volume= 0.300 af
Outflow = 5.34 cfs @ 12.09 hrs, Volume= 0.300 af, Atten= 14%, Lag= 7.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Max. Velocity= 0.94 fps, Min. Travel Time= 4.8 min

Avg. Velocity = 0.25 fps, Avg. Travel Time= 18.2 min

Peak Storage= 1,541 cf @ 12.01 hrs

Average Depth at Peak Storage= 1.09' , Surface Width= 8.51'

Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 21.31 cfs

2.00' x 2.00' deep channel, n= 0.150

Side Slope Z-value= 3.0 '/' Top Width= 14.00'

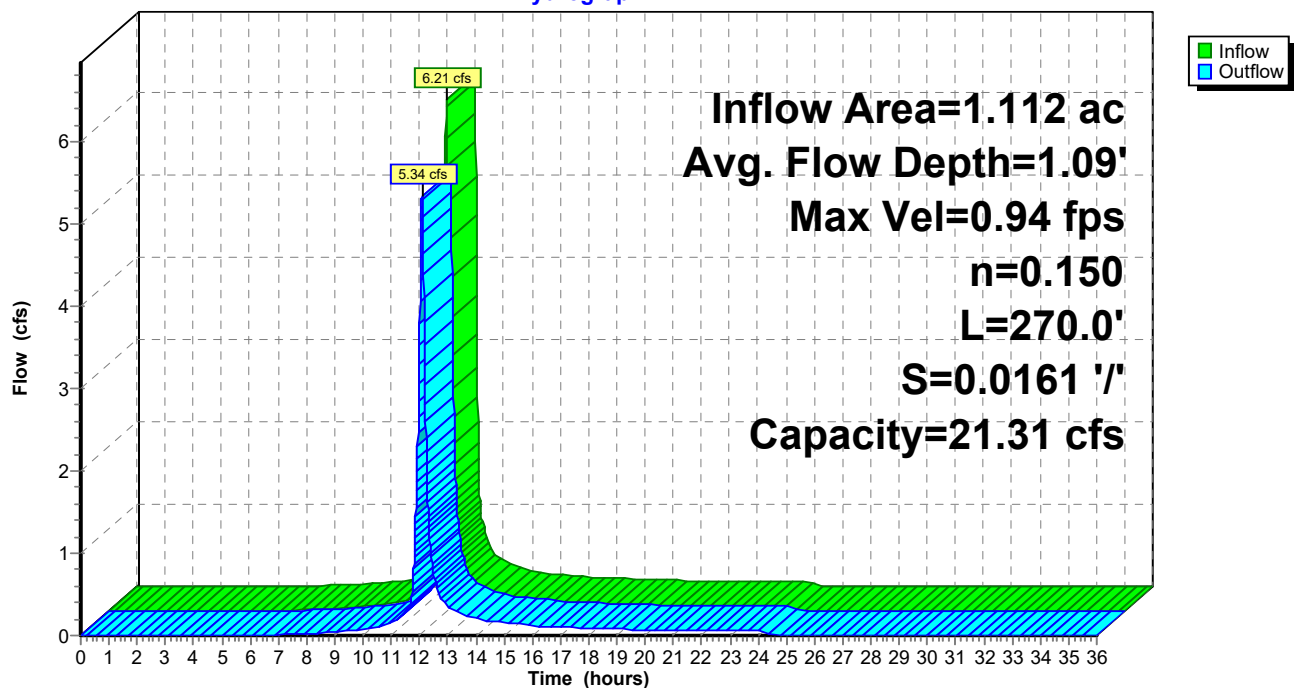
Length= 270.0' Slope= 0.0161 '/'

Inlet Invert= 148.34', Outlet Invert= 144.00'



Reach 2R: Dry Swale NE

Hydrograph



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Type II 24-hr 10-yr Rainfall=4.76"

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Summary for Reach 4R: Dry Swale SW

Inflow Area = 0.800 ac, 18.94% Impervious, Inflow Depth = 3.34" for 10-yr event
Inflow = 4.58 cfs @ 11.97 hrs, Volume= 0.223 af
Outflow = 3.94 cfs @ 12.09 hrs, Volume= 0.223 af, Atten= 14%, Lag= 7.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Max. Velocity= 0.86 fps, Min. Travel Time= 4.8 min

Avg. Velocity = 0.23 fps, Avg. Travel Time= 18.3 min

Peak Storage= 1,140 cf @ 12.01 hrs

Average Depth at Peak Storage= 0.94' , Surface Width= 7.66'

Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 21.26 cfs

2.00' x 2.00' deep channel, n= 0.150

Side Slope Z-value= 3.0 '/' Top Width= 14.00'

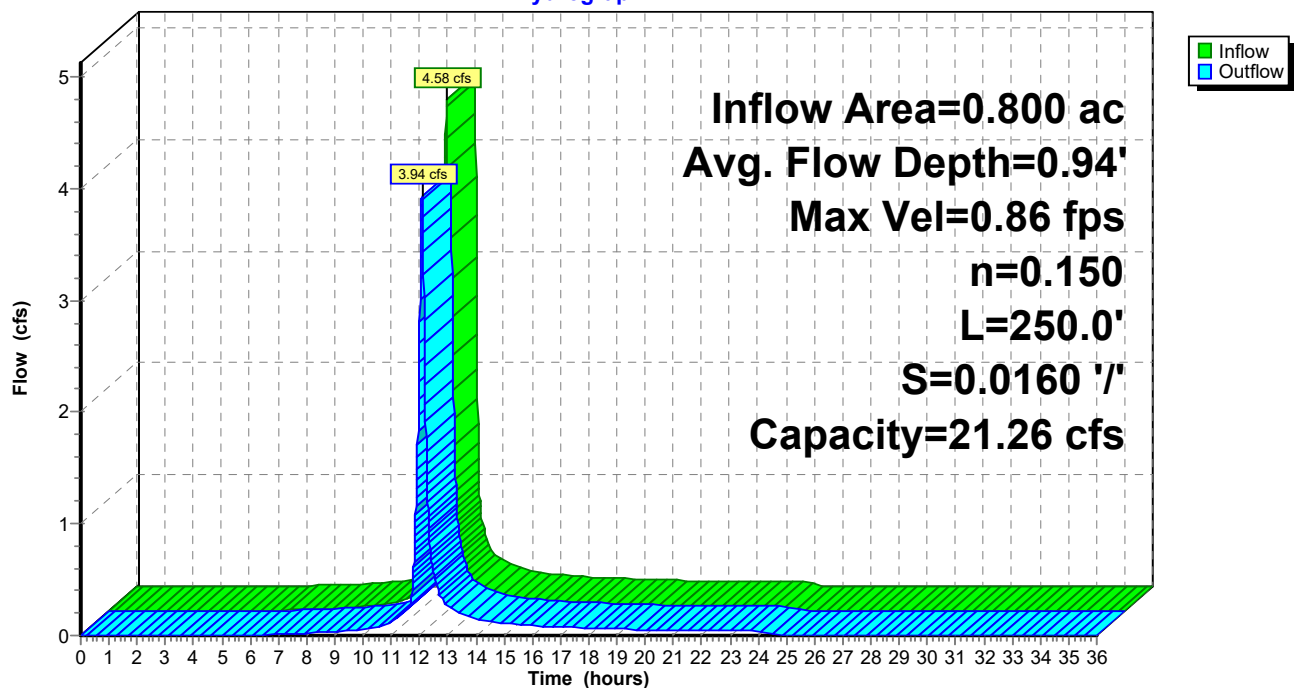
Length= 250.0' Slope= 0.0160 '/'

Inlet Invert= 147.00', Outlet Invert= 143.00'



Reach 4R: Dry Swale SW

Hydrograph



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Type II 24-hr 50-yr Rainfall=6.66"

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Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: DA-4 Runoff Area=48,419 sf 16.37% Impervious Runoff Depth=5.04"
Tc=6.0 min CN=86 Runoff=9.40 cfs 0.467 af

Subcatchment3S: DA-1 Runoff Area=34,844 sf 18.94% Impervious Runoff Depth=5.15"
Tc=6.0 min CN=87 Runoff=6.86 cfs 0.343 af

Subcatchment5S: DA-2 Runoff Area=5,574 sf 16.56% Impervious Runoff Depth=5.04"
Tc=6.0 min CN=86 Runoff=1.08 cfs 0.054 af

Subcatchment6S: DA-3 Runoff Area=22,662 sf 37.45% Impervious Runoff Depth=5.38"
Tc=6.0 min CN=89 Runoff=4.59 cfs 0.233 af

Subcatchment7S: DA-5 Runoff Area=5,771 sf 14.47% Impervious Runoff Depth=5.04"
Tc=6.0 min CN=86 Runoff=1.12 cfs 0.056 af

Subcatchment8S: DA-6 Runoff Area=28,391 sf 38.33% Impervious Runoff Depth=5.38"
Tc=6.0 min CN=89 Runoff=5.75 cfs 0.292 af

Subcatchment9S: DA-7 Runoff Area=1,899 sf 100.00% Impervious Runoff Depth=6.42"
Tc=6.0 min CN=98 Runoff=0.41 cfs 0.023 af

Reach 2R: Dry Swale NE Avg. Flow Depth=1.32' Max Vel=1.05 fps Inflow=9.40 cfs 0.467 af
n=0.150 L=270.0' S=0.0161 '/' Capacity=21.31 cfs Outflow=8.28 cfs 0.467 af

Reach 4R: Dry Swale SW Avg. Flow Depth=1.15' Max Vel=0.97 fps Inflow=6.86 cfs 0.343 af
n=0.150 L=250.0' S=0.0160 '/' Capacity=21.26 cfs Outflow=6.05 cfs 0.343 af

Total Runoff Area = 3.388 ac Runoff Volume = 1.468 af Average Runoff Depth = 5.20"
74.55% Pervious = 2.525 ac 25.45% Impervious = 0.862 ac

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Type II 24-hr 50-yr Rainfall=6.66"

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Summary for Subcatchment 1S: DA-4

Runoff = 9.40 cfs @ 11.97 hrs, Volume= 0.467 af, Depth= 5.04"
Routed to Reach 2R : Dry Swale NE

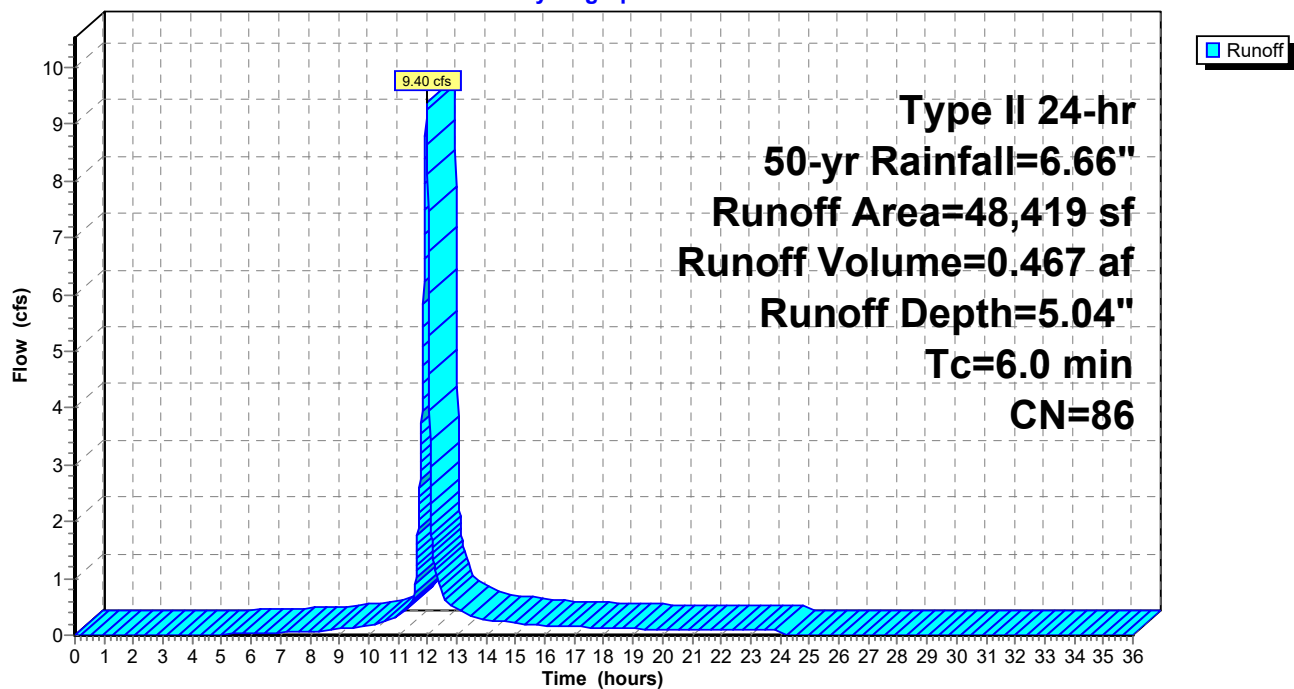
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-yr Rainfall=6.66"

Area (sf)	CN	Description
7,926	98	Paved roads w/curbs & sewers, HSG D
40,493	84	50-75% Grass cover, Fair, HSG D
48,419	86	Weighted Average
40,493		83.63% Pervious Area
7,926		16.37% Impervious Area

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

Subcatchment 1S: DA-4

Hydrograph



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Summary for Subcatchment 3S: DA-1

Runoff = 6.86 cfs @ 11.97 hrs, Volume= 0.343 af, Depth= 5.15"
Routed to Reach 4R : Dry Swale SW

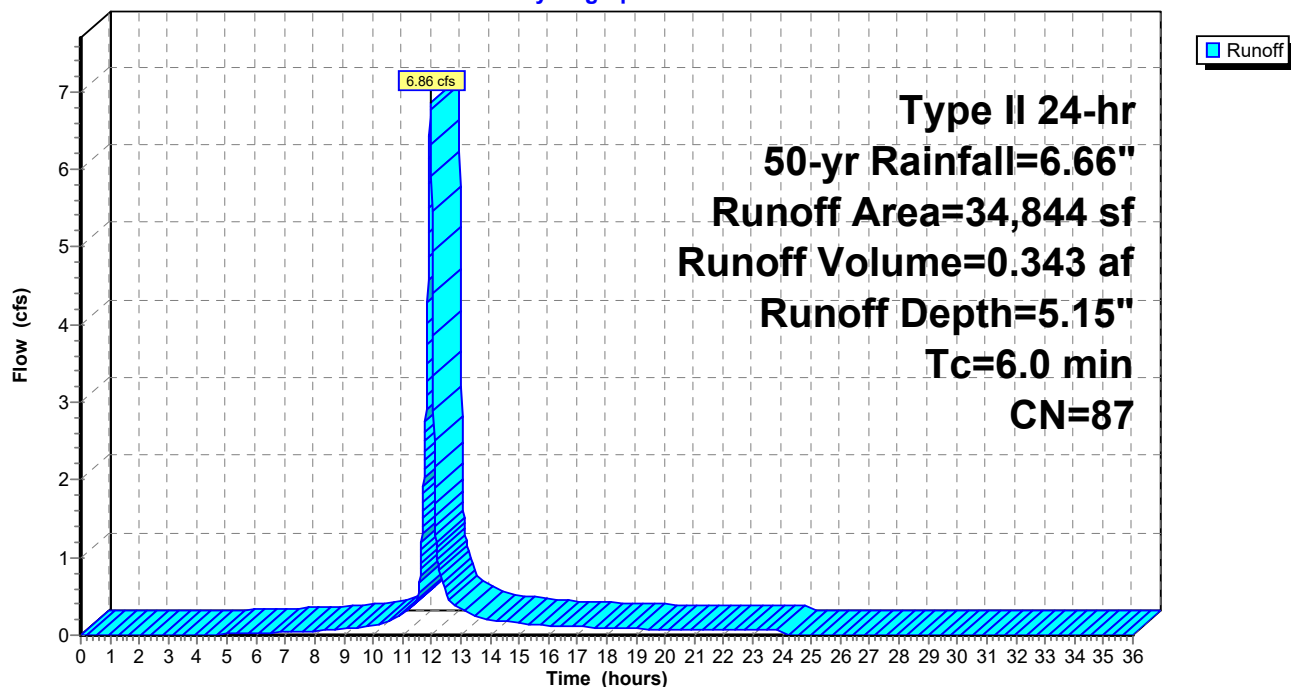
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-yr Rainfall=6.66"

Area (sf)	CN	Description
6,599	98	Paved roads w/curbs & sewers, HSG D
28,245	84	50-75% Grass cover, Fair, HSG D
34,844	87	Weighted Average
28,245		81.06% Pervious Area
6,599		18.94% Impervious Area

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

Subcatchment 3S: DA-1

Hydrograph



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Summary for Subcatchment 5S: DA-2

Runoff = 1.08 cfs @ 11.97 hrs, Volume= 0.054 af, Depth= 5.04"

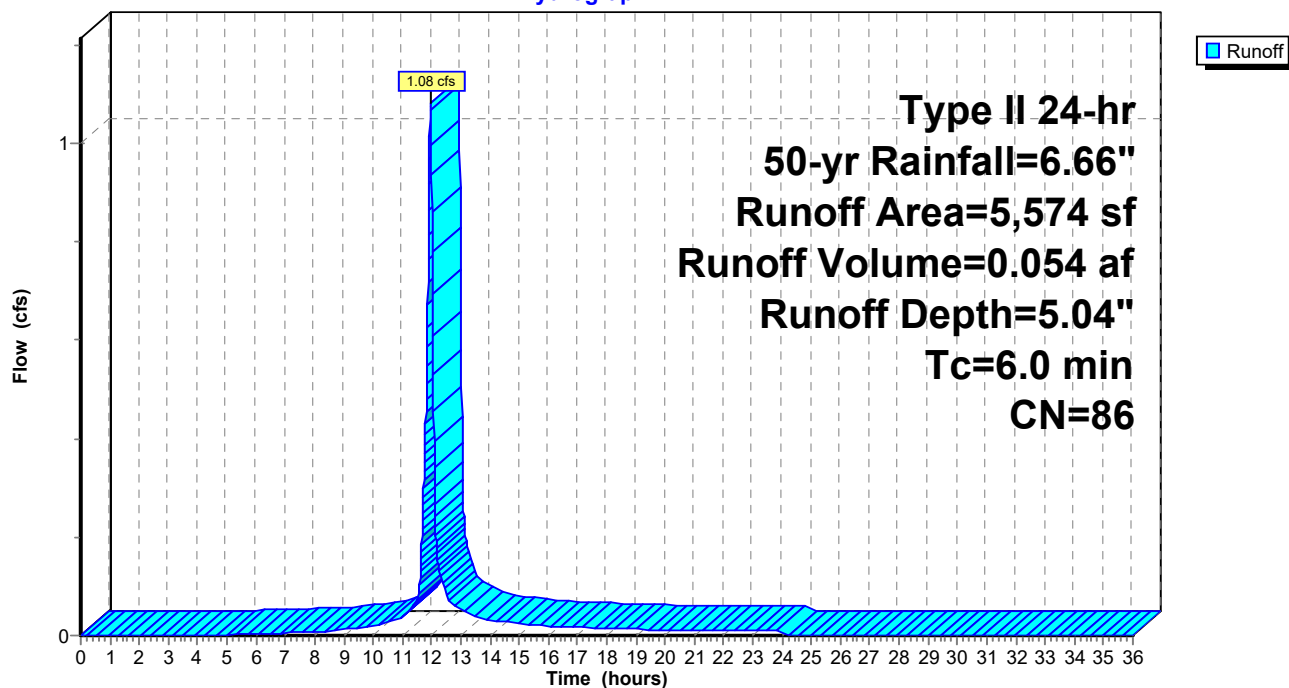
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-yr Rainfall=6.66"

Area (sf)	CN	Description
923	98	Paved roads w/curbs & sewers, HSG D
4,651	84	50-75% Grass cover, Fair, HSG D
5,574	86	Weighted Average
4,651		83.44% Pervious Area
923		16.56% Impervious Area

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

Subcatchment 5S: DA-2

Hydrograph



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Summary for Subcatchment 6S: DA-3

Runoff = 4.59 cfs @ 11.97 hrs, Volume= 0.233 af, Depth= 5.38"

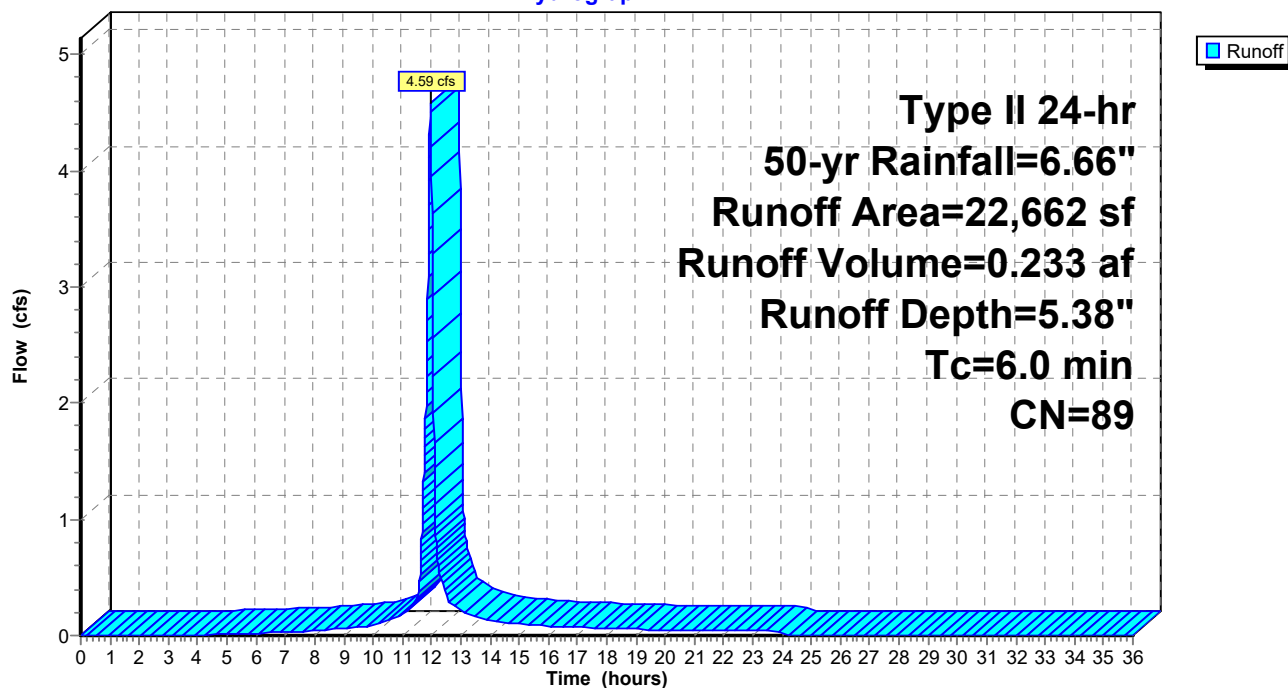
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-yr Rainfall=6.66"

Area (sf)	CN	Description
8,487	98	Paved roads w/curbs & sewers, HSG D
14,175	84	50-75% Grass cover, Fair, HSG D
22,662	89	Weighted Average
14,175		62.55% Pervious Area
8,487		37.45% Impervious Area

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

Subcatchment 6S: DA-3

Hydrograph



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Type II 24-hr 50-yr Rainfall=6.66"

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Summary for Subcatchment 7S: DA-5

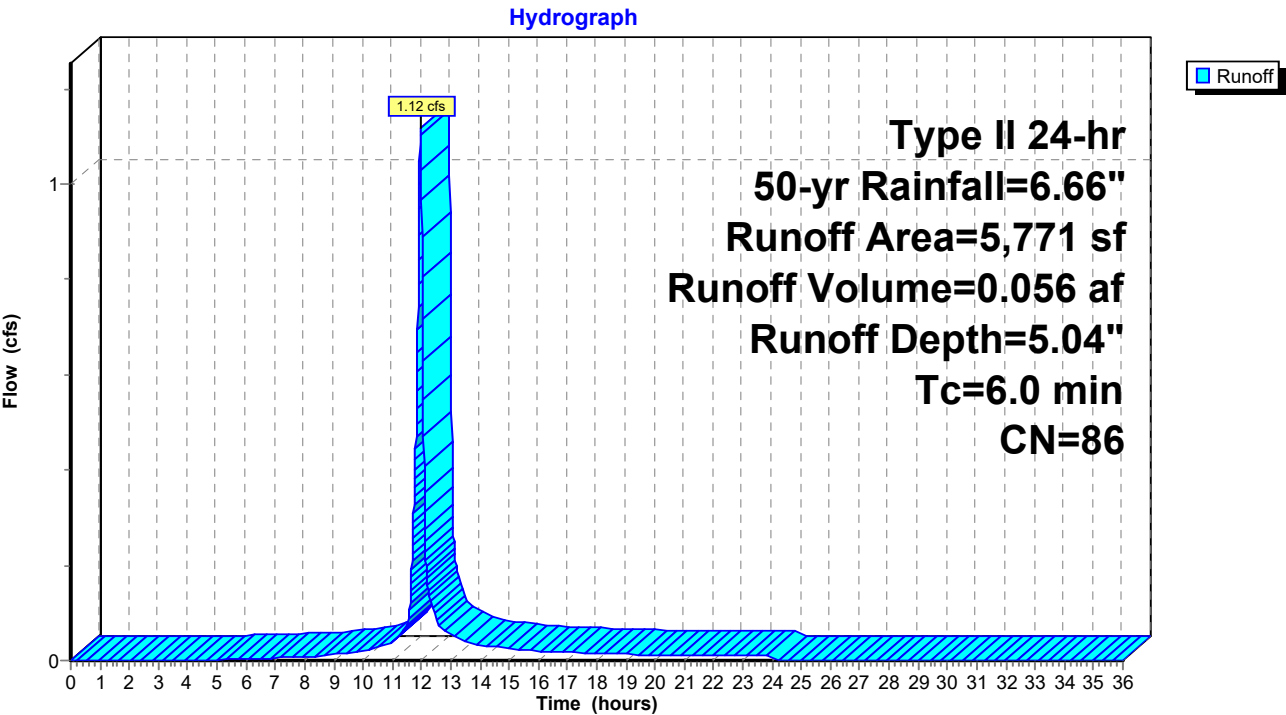
Runoff = 1.12 cfs @ 11.97 hrs, Volume= 0.056 af, Depth= 5.04"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-yr Rainfall=6.66"

Area (sf)	CN	Description
835	98	Paved roads w/curbs & sewers, HSG D
4,936	84	50-75% Grass cover, Fair, HSG D
5,771	86	Weighted Average
4,936		85.53% Pervious Area
835		14.47% Impervious Area

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

Subcatchment 7S: DA-5



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Type II 24-hr 50-yr Rainfall=6.66"
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Summary for Subcatchment 8S: DA-6

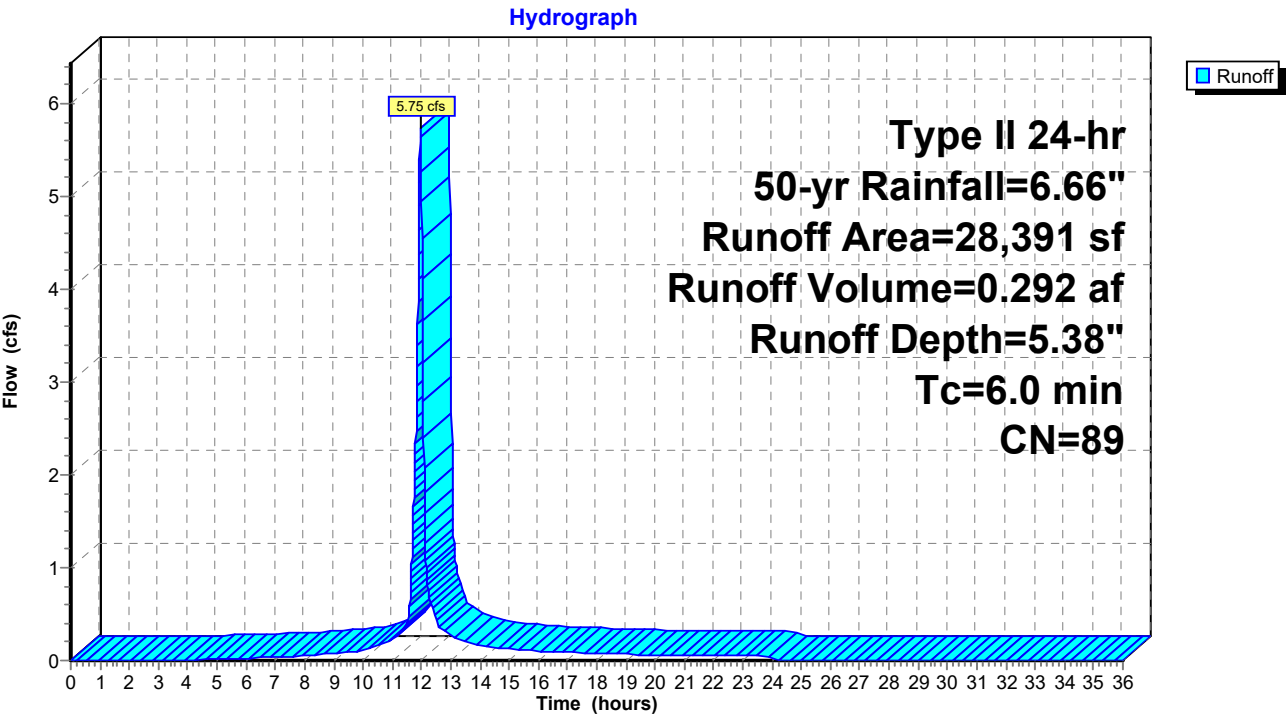
Runoff = 5.75 cfs @ 11.97 hrs, Volume= 0.292 af, Depth= 5.38"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-yr Rainfall=6.66"

Area (sf)	CN	Description
10,881	98	Paved roads w/curbs & sewers, HSG D
17,510	84	50-75% Grass cover, Fair, HSG D
28,391	89	Weighted Average
17,510		61.67% Pervious Area
10,881		38.33% Impervious Area

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

Subcatchment 8S: DA-6



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Type II 24-hr 50-yr Rainfall=6.66"

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Summary for Subcatchment 9S: DA-7

Runoff = 0.41 cfs @ 11.97 hrs, Volume= 0.023 af, Depth= 6.42"

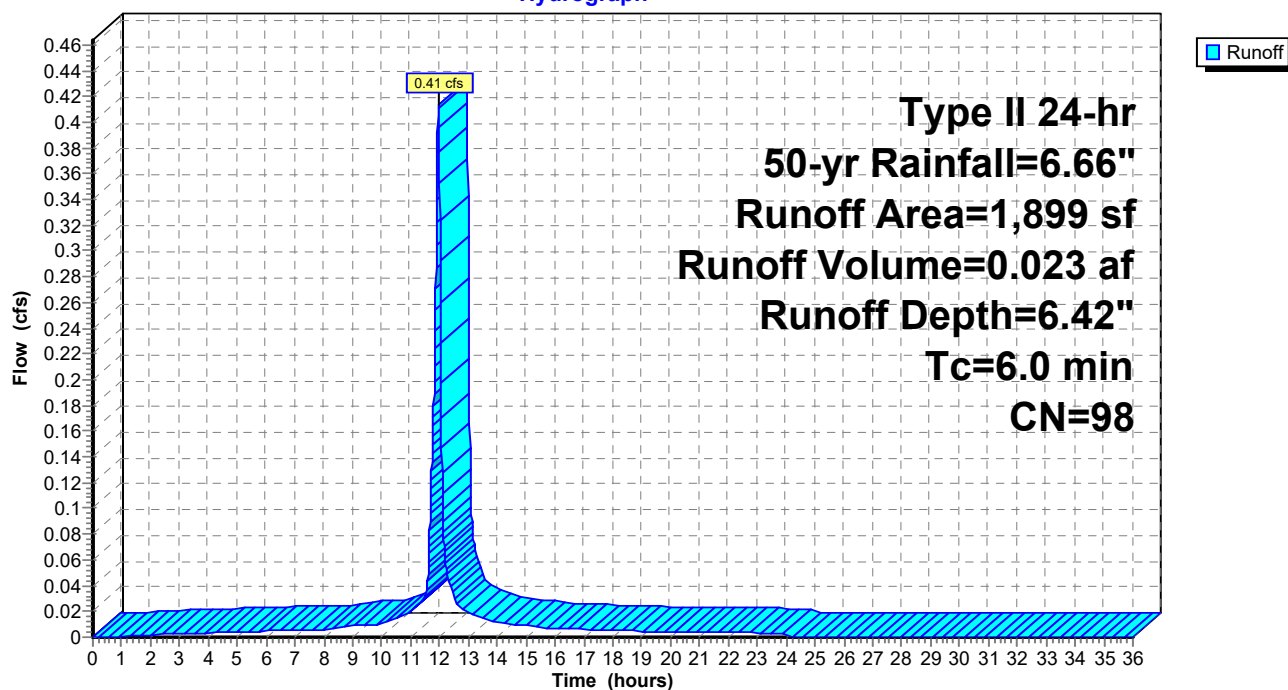
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 50-yr Rainfall=6.66"

Area (sf)	CN	Description
1,899	98	Paved roads w/curbs & sewers, HSG D
1,899		100.00% Impervious Area

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

Subcatchment 9S: DA-7

Hydrograph



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Type II 24-hr 50-yr Rainfall=6.66"

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Summary for Reach 2R: Dry Swale NE

Inflow Area = 1.112 ac, 16.37% Impervious, Inflow Depth = 5.04" for 50-yr event
Inflow = 9.40 cfs @ 11.97 hrs, Volume= 0.467 af
Outflow = 8.28 cfs @ 12.08 hrs, Volume= 0.467 af, Atten= 12%, Lag= 6.5 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Max. Velocity= 1.05 fps, Min. Travel Time= 4.3 min

Avg. Velocity = 0.28 fps, Avg. Travel Time= 16.2 min

Peak Storage= 2,135 cf @ 12.01 hrs

Average Depth at Peak Storage= 1.32' , Surface Width= 9.94'

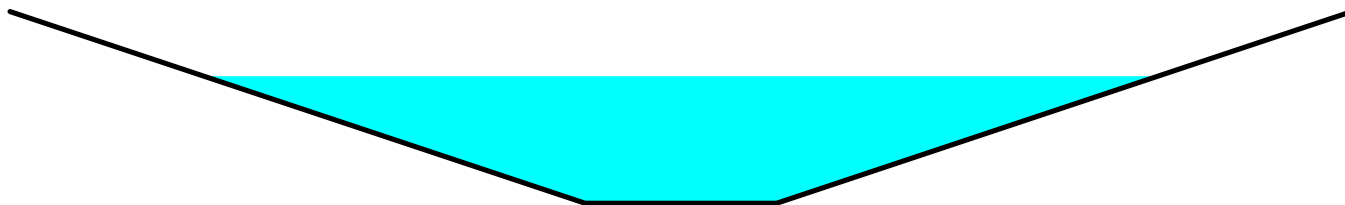
Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 21.31 cfs

2.00' x 2.00' deep channel, n= 0.150

Side Slope Z-value= 3.0 '/' Top Width= 14.00'

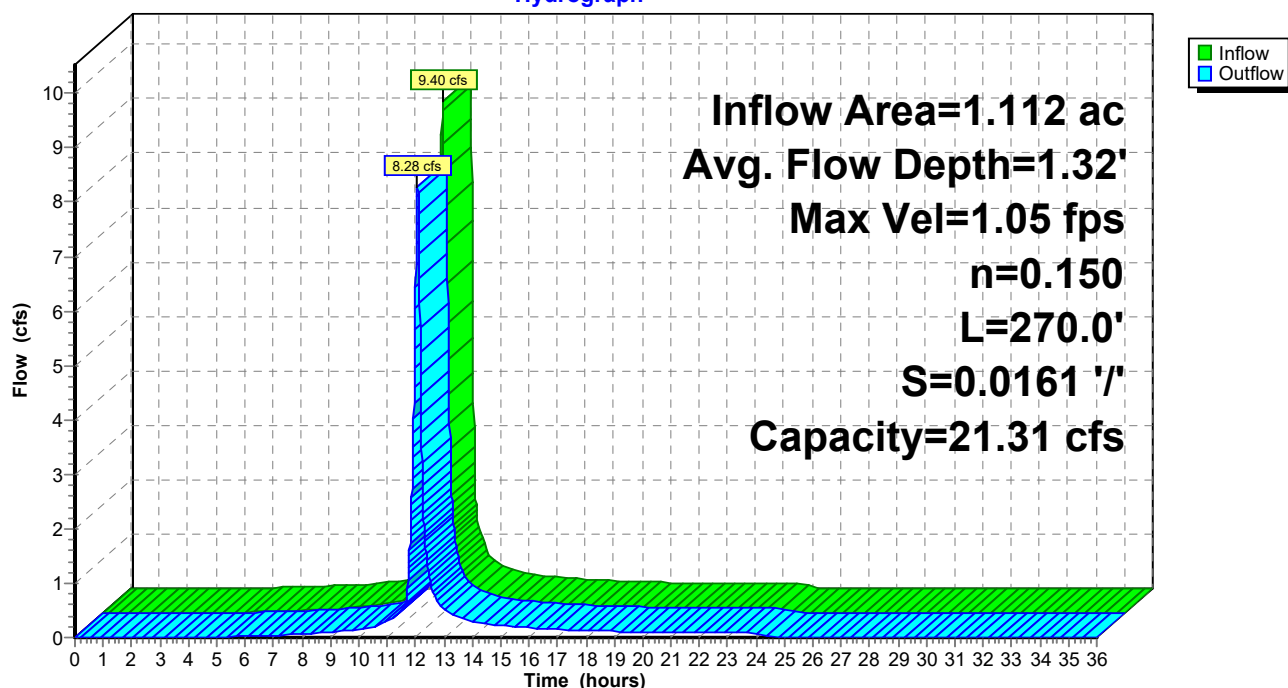
Length= 270.0' Slope= 0.0161 '/'

Inlet Invert= 148.34', Outlet Invert= 144.00'



Reach 2R: Dry Swale NE

Hydrograph



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Type II 24-hr 50-yr Rainfall=6.66"

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Summary for Reach 4R: Dry Swale SW

Inflow Area = 0.800 ac, 18.94% Impervious, Inflow Depth = 5.15" for 50-yr event
Inflow = 6.86 cfs @ 11.97 hrs, Volume= 0.343 af
Outflow = 6.05 cfs @ 12.08 hrs, Volume= 0.343 af, Atten= 12%, Lag= 6.6 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Max. Velocity= 0.97 fps, Min. Travel Time= 4.3 min

Avg. Velocity = 0.26 fps, Avg. Travel Time= 16.3 min

Peak Storage= 1,568 cf @ 12.01 hrs

Average Depth at Peak Storage= 1.15' , Surface Width= 8.90'

Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 21.26 cfs

2.00' x 2.00' deep channel, n= 0.150

Side Slope Z-value= 3.0 '/' Top Width= 14.00'

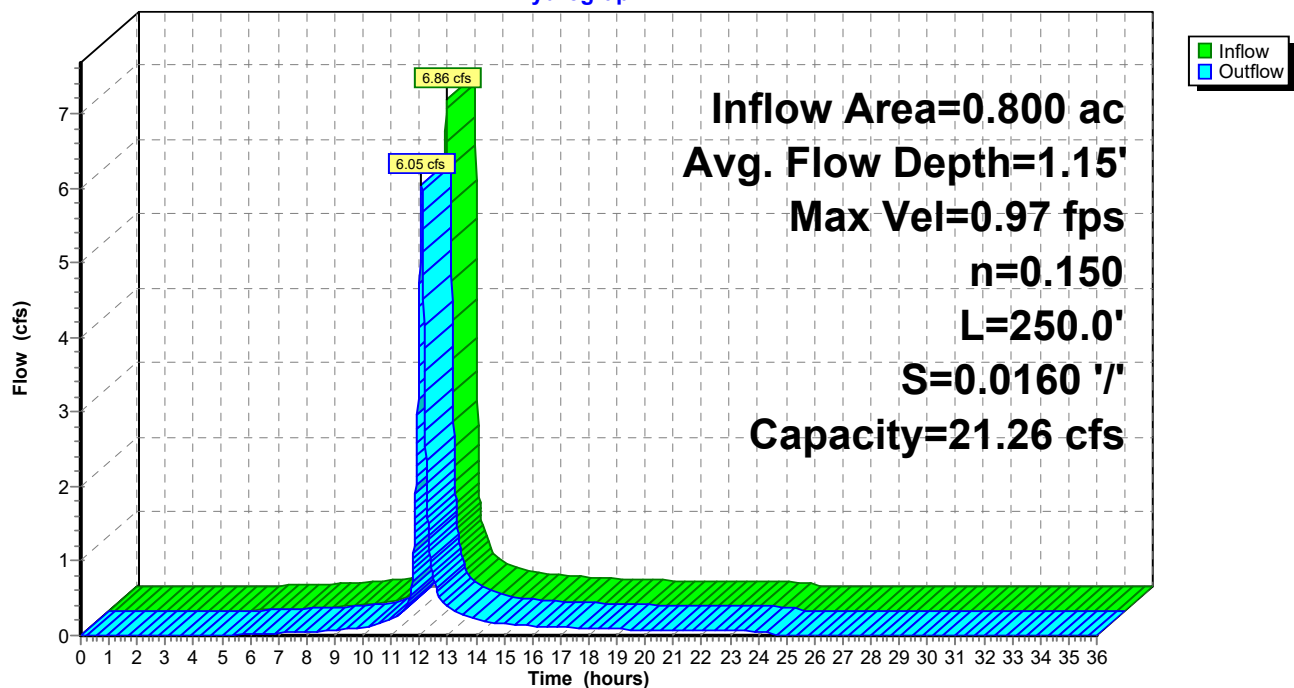
Length= 250.0' Slope= 0.0160 '/'

Inlet Invert= 147.00', Outlet Invert= 143.00'



Reach 4R: Dry Swale SW

Hydrograph



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Type II 24-hr 100-yr Rainfall=7.54"

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Time span=0.00-36.00 hrs, dt=0.01 hrs, 3601 points

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN

Reach routing by Stor-Ind+Trans method - Pond routing by Stor-Ind method

Subcatchment1S: DA-4 Runoff Area=48,419 sf 16.37% Impervious Runoff Depth=5.89"
Tc=6.0 min CN=86 Runoff=10.87 cfs 0.545 af

Subcatchment3S: DA-1 Runoff Area=34,844 sf 18.94% Impervious Runoff Depth=6.00"
Tc=6.0 min CN=87 Runoff=7.92 cfs 0.400 af

Subcatchment5S: DA-2 Runoff Area=5,574 sf 16.56% Impervious Runoff Depth=5.89"
Tc=6.0 min CN=86 Runoff=1.25 cfs 0.063 af

Subcatchment6S: DA-3 Runoff Area=22,662 sf 37.45% Impervious Runoff Depth=6.24"
Tc=6.0 min CN=89 Runoff=5.27 cfs 0.270 af

Subcatchment7S: DA-5 Runoff Area=5,771 sf 14.47% Impervious Runoff Depth=5.89"
Tc=6.0 min CN=86 Runoff=1.30 cfs 0.065 af

Subcatchment8S: DA-6 Runoff Area=28,391 sf 38.33% Impervious Runoff Depth=6.24"
Tc=6.0 min CN=89 Runoff=6.60 cfs 0.339 af

Subcatchment9S: DA-7 Runoff Area=1,899 sf 100.00% Impervious Runoff Depth=7.30"
Tc=6.0 min CN=98 Runoff=0.47 cfs 0.027 af

Reach 2R: Dry Swale NE Avg. Flow Depth=1.42' Max Vel=1.09 fps Inflow=10.87 cfs 0.545 af
n=0.150 L=270.0' S=0.0161 '/' Capacity=21.31 cfs Outflow=9.65 cfs 0.545 af

Reach 4R: Dry Swale SW Avg. Flow Depth=1.23' Max Vel=1.00 fps Inflow=7.92 cfs 0.400 af
n=0.150 L=250.0' S=0.0160 '/' Capacity=21.26 cfs Outflow=7.03 cfs 0.400 af

Total Runoff Area = 3.388 ac Runoff Volume = 1.709 af Average Runoff Depth = 6.05"
74.55% Pervious = 2.525 ac 25.45% Impervious = 0.862 ac

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Type II 24-hr 100-yr Rainfall=7.54"

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Summary for Subcatchment 1S: DA-4

Runoff = 10.87 cfs @ 11.97 hrs, Volume= 0.545 af, Depth= 5.89"
Routed to Reach 2R : Dry Swale NE

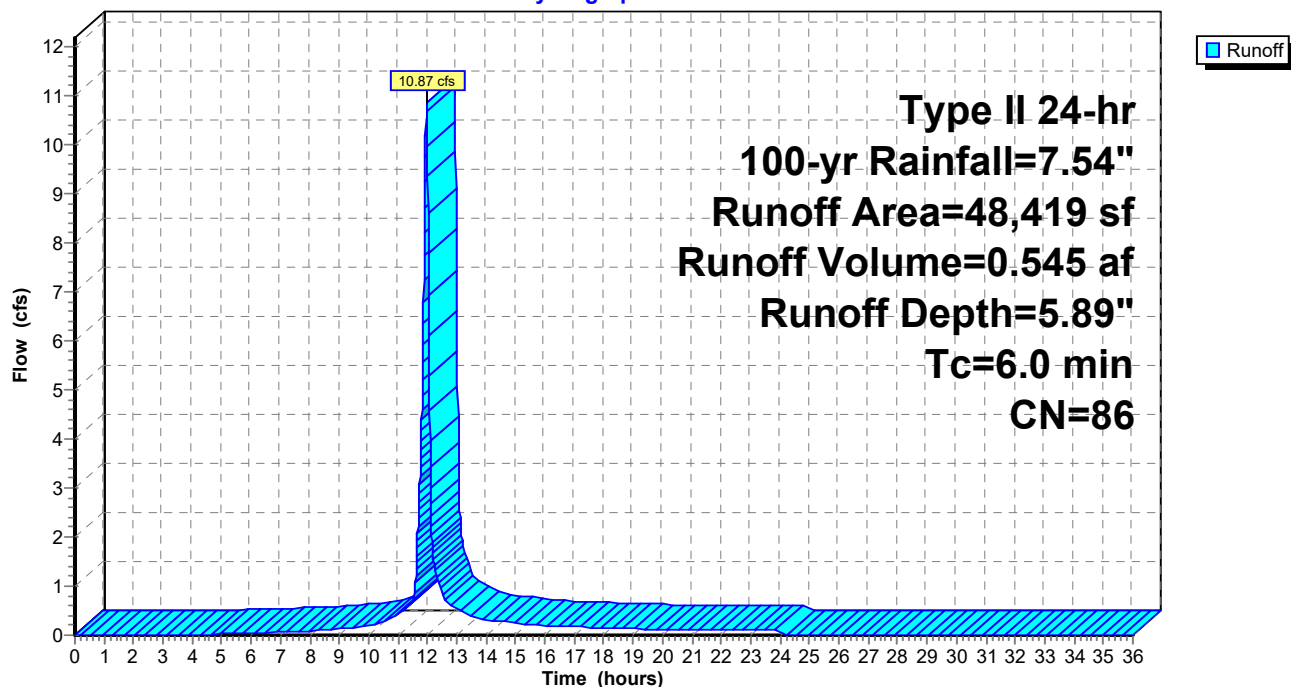
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr Rainfall=7.54"

Area (sf)	CN	Description
7,926	98	Paved roads w/curbs & sewers, HSG D
40,493	84	50-75% Grass cover, Fair, HSG D
48,419	86	Weighted Average
40,493		83.63% Pervious Area
7,926		16.37% Impervious Area

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

Subcatchment 1S: DA-4

Hydrograph



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Summary for Subcatchment 3S: DA-1

Runoff = 7.92 cfs @ 11.97 hrs, Volume= 0.400 af, Depth= 6.00"
Routed to Reach 4R : Dry Swale SW

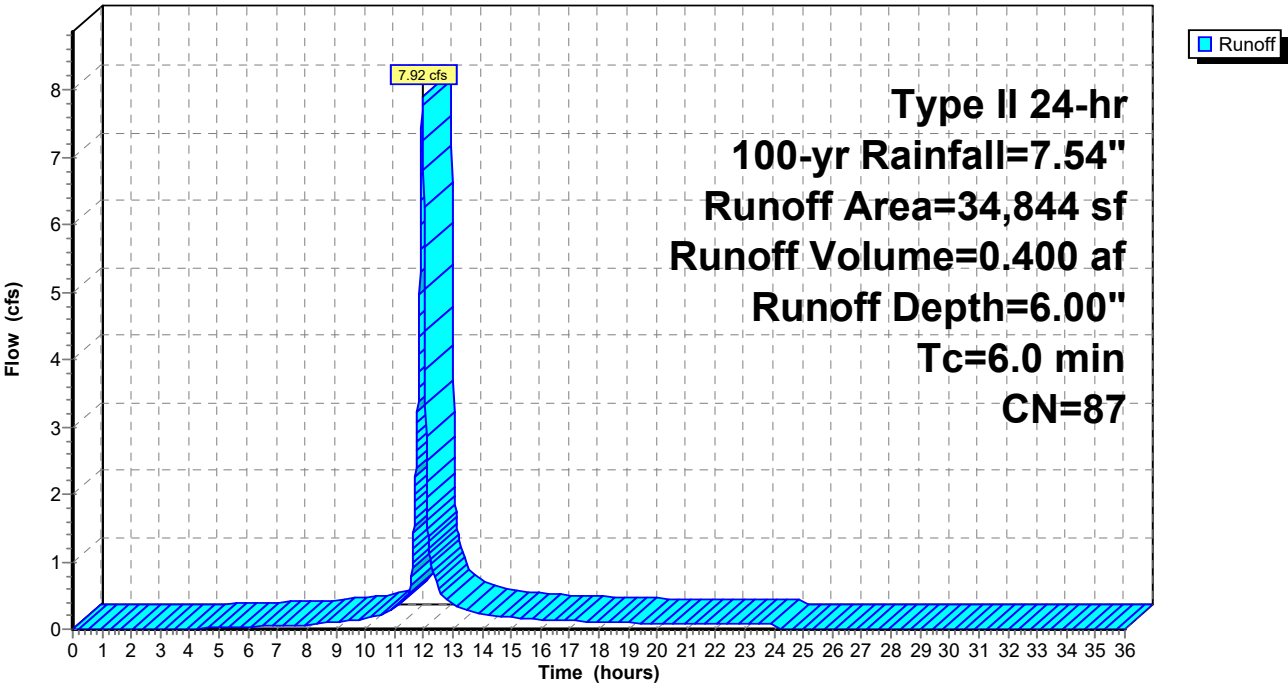
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr Rainfall=7.54"

Area (sf)	CN	Description
6,599	98	Paved roads w/curbs & sewers, HSG D
28,245	84	50-75% Grass cover, Fair, HSG D
34,844	87	Weighted Average
28,245		81.06% Pervious Area
6,599		18.94% Impervious Area

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

Subcatchment 3S: DA-1

Hydrograph



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Type II 24-hr 100-yr Rainfall=7.54"

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Summary for Subcatchment 5S: DA-2

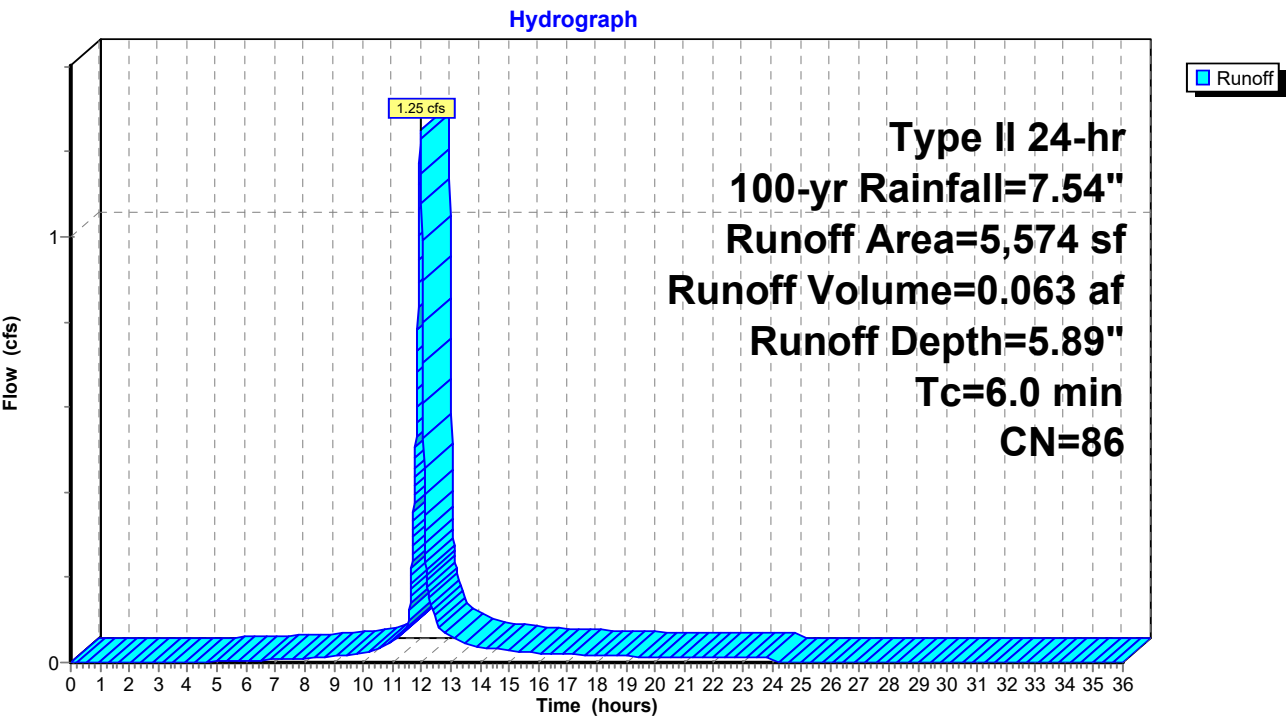
Runoff = 1.25 cfs @ 11.97 hrs, Volume= 0.063 af, Depth= 5.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr Rainfall=7.54"

Area (sf)	CN	Description
923	98	Paved roads w/curbs & sewers, HSG D
4,651	84	50-75% Grass cover, Fair, HSG D
5,574	86	Weighted Average
4,651		83.44% Pervious Area
923		16.56% Impervious Area

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

Subcatchment 5S: DA-2



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Type II 24-hr 100-yr Rainfall=7.54"

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Summary for Subcatchment 6S: DA-3

Runoff = 5.27 cfs @ 11.97 hrs, Volume= 0.270 af, Depth= 6.24"

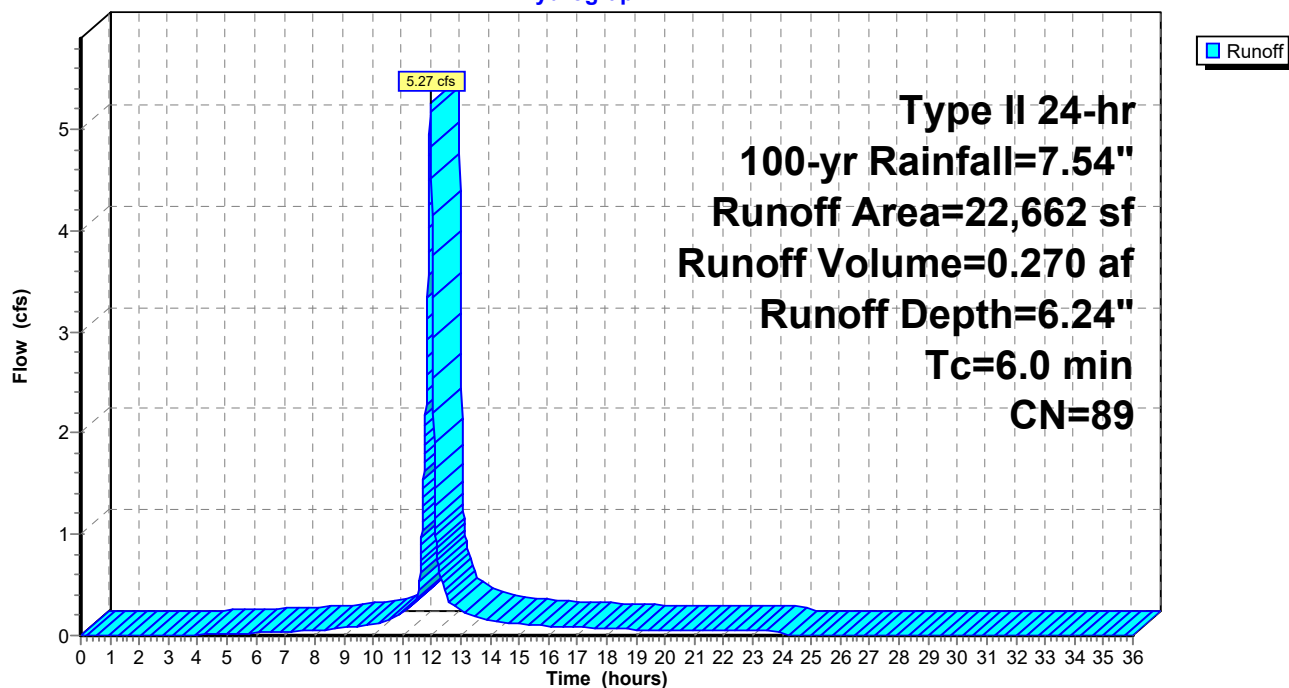
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr Rainfall=7.54"

Area (sf)	CN	Description
8,487	98	Paved roads w/curbs & sewers, HSG D
14,175	84	50-75% Grass cover, Fair, HSG D
22,662	89	Weighted Average
14,175		62.55% Pervious Area
8,487		37.45% Impervious Area

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

Subcatchment 6S: DA-3

Hydrograph



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Summary for Subcatchment 7S: DA-5

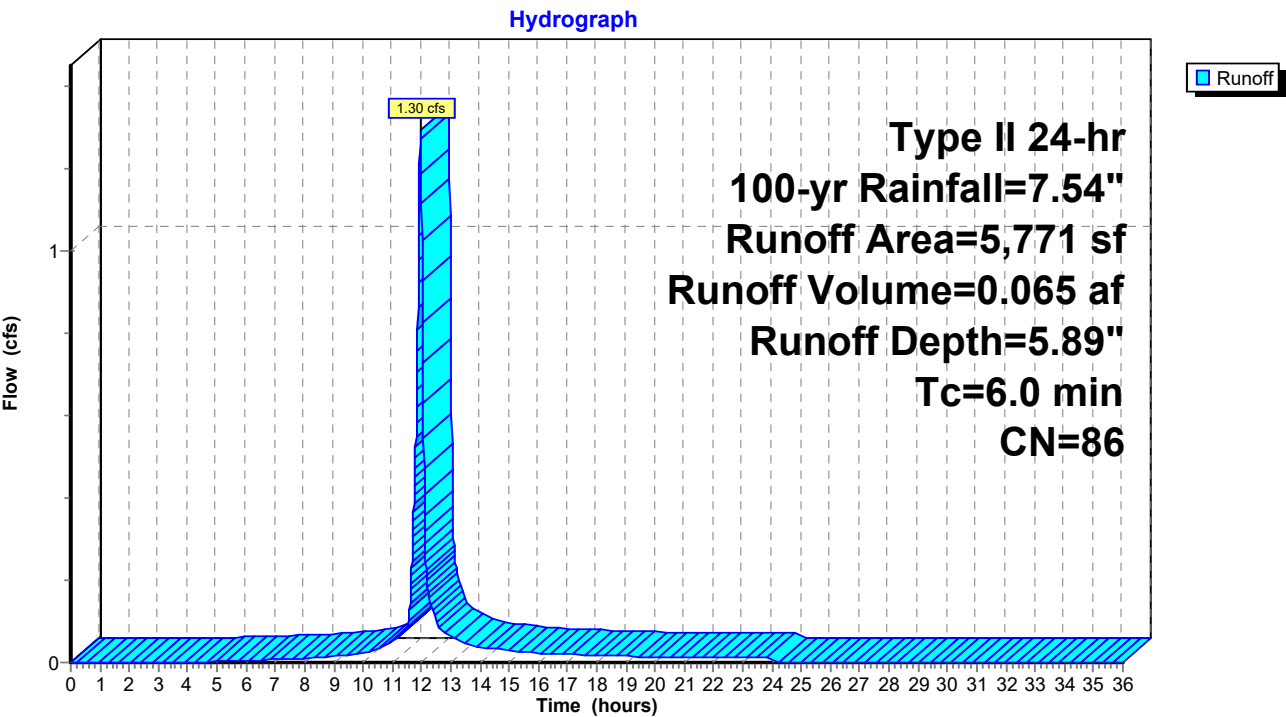
Runoff = 1.30 cfs @ 11.97 hrs, Volume= 0.065 af, Depth= 5.89"

Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr Rainfall=7.54"

Area (sf)	CN	Description
835	98	Paved roads w/curbs & sewers, HSG D
4,936	84	50-75% Grass cover, Fair, HSG D
5,771	86	Weighted Average
4,936		85.53% Pervious Area
835		14.47% Impervious Area

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

Subcatchment 7S: DA-5



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Type II 24-hr 100-yr Rainfall=7.54"
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Summary for Subcatchment 8S: DA-6

Runoff = 6.60 cfs @ 11.97 hrs, Volume= 0.339 af, Depth= 6.24"

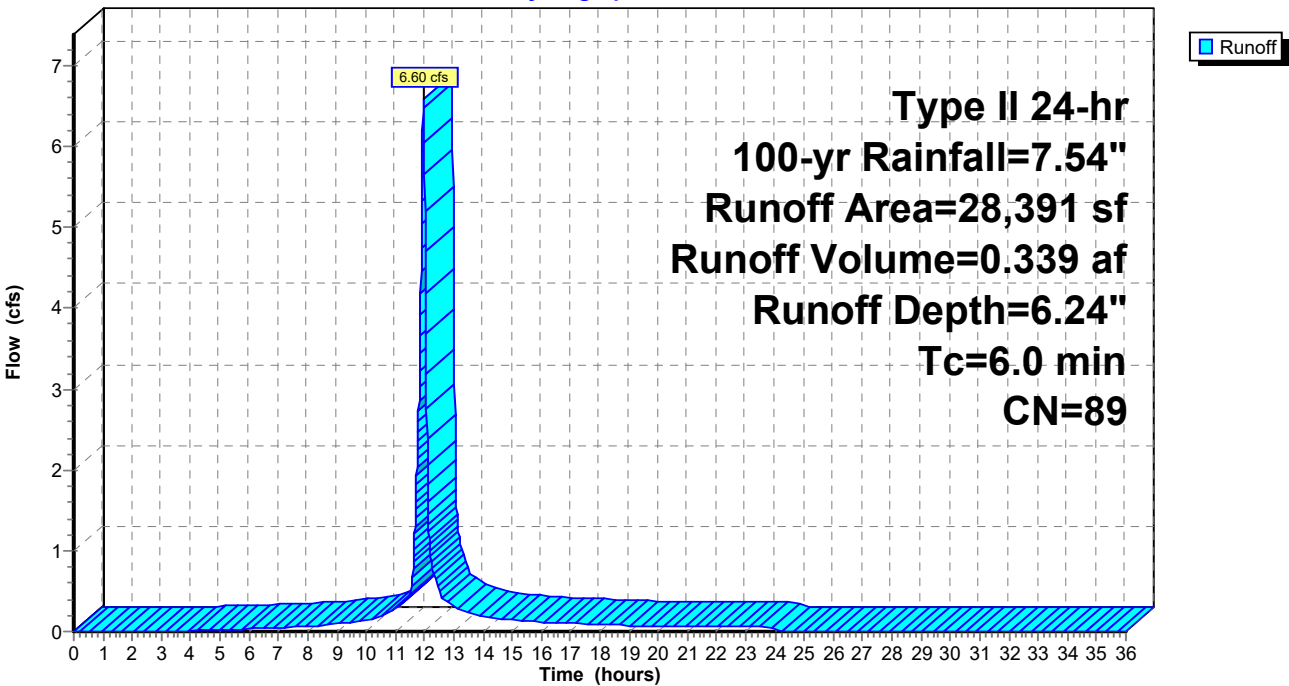
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr Rainfall=7.54"

Area (sf)	CN	Description
10,881	98	Paved roads w/curbs & sewers, HSG D
17,510	84	50-75% Grass cover, Fair, HSG D
28,391	89	Weighted Average
17,510		61.67% Pervious Area
10,881		38.33% Impervious Area

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

Subcatchment 8S: DA-6

Hydrograph



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Type II 24-hr 100-yr Rainfall=7.54"

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Summary for Subcatchment 9S: DA-7

Runoff = 0.47 cfs @ 11.97 hrs, Volume= 0.027 af, Depth= 7.30"

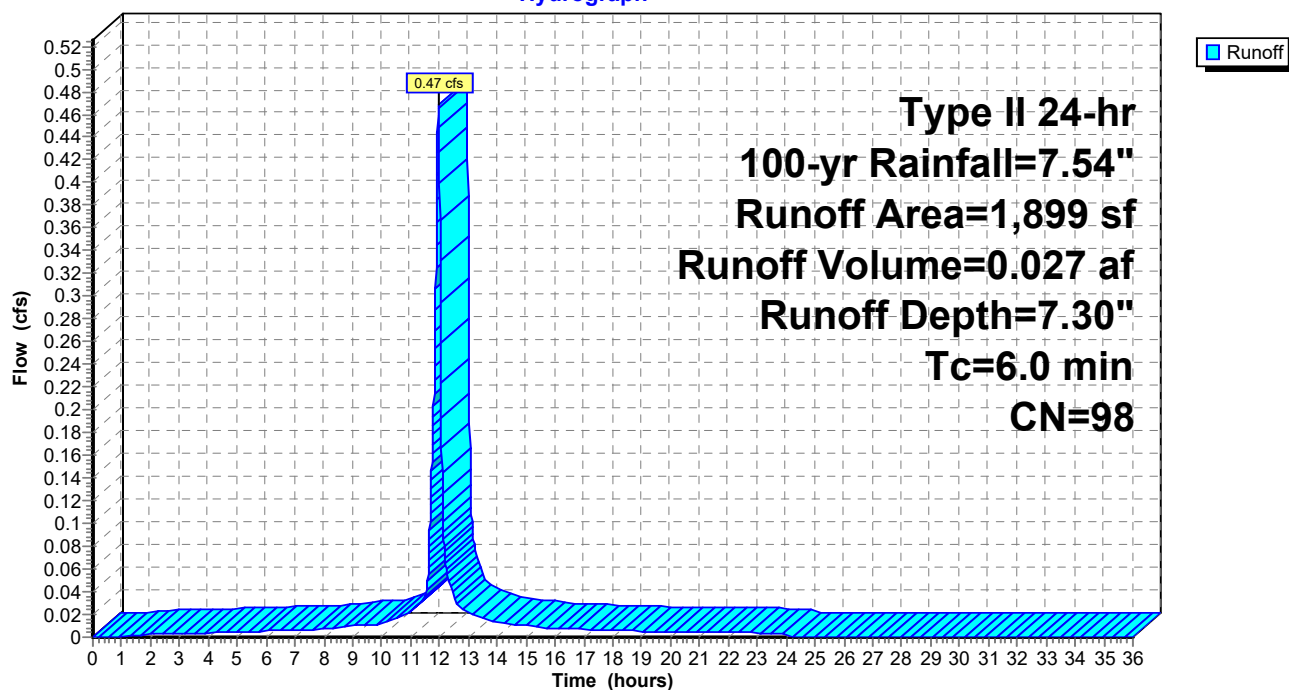
Runoff by SCS TR-20 method, UH=SCS, Weighted-CN, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs
Type II 24-hr 100-yr Rainfall=7.54"

Area (sf)	CN	Description
1,899	98	Paved roads w/curbs & sewers, HSG D
1,899		100.00% Impervious Area

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

Subcatchment 9S: DA-7

Hydrograph



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Type II 24-hr 100-yr Rainfall=7.54"

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Summary for Reach 2R: Dry Swale NE

Inflow Area = 1.112 ac, 16.37% Impervious, Inflow Depth = 5.89" for 100-yr event
Inflow = 10.87 cfs @ 11.97 hrs, Volume= 0.545 af
Outflow = 9.65 cfs @ 12.07 hrs, Volume= 0.545 af, Atten= 11%, Lag= 6.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Max. Velocity= 1.09 fps, Min. Travel Time= 4.1 min

Avg. Velocity = 0.29 fps, Avg. Travel Time= 15.5 min

Peak Storage= 2,392 cf @ 12.01 hrs

Average Depth at Peak Storage= 1.42', Surface Width= 10.50'

Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 21.31 cfs

2.00' x 2.00' deep channel, n= 0.150

Side Slope Z-value= 3.0 '/' Top Width= 14.00'

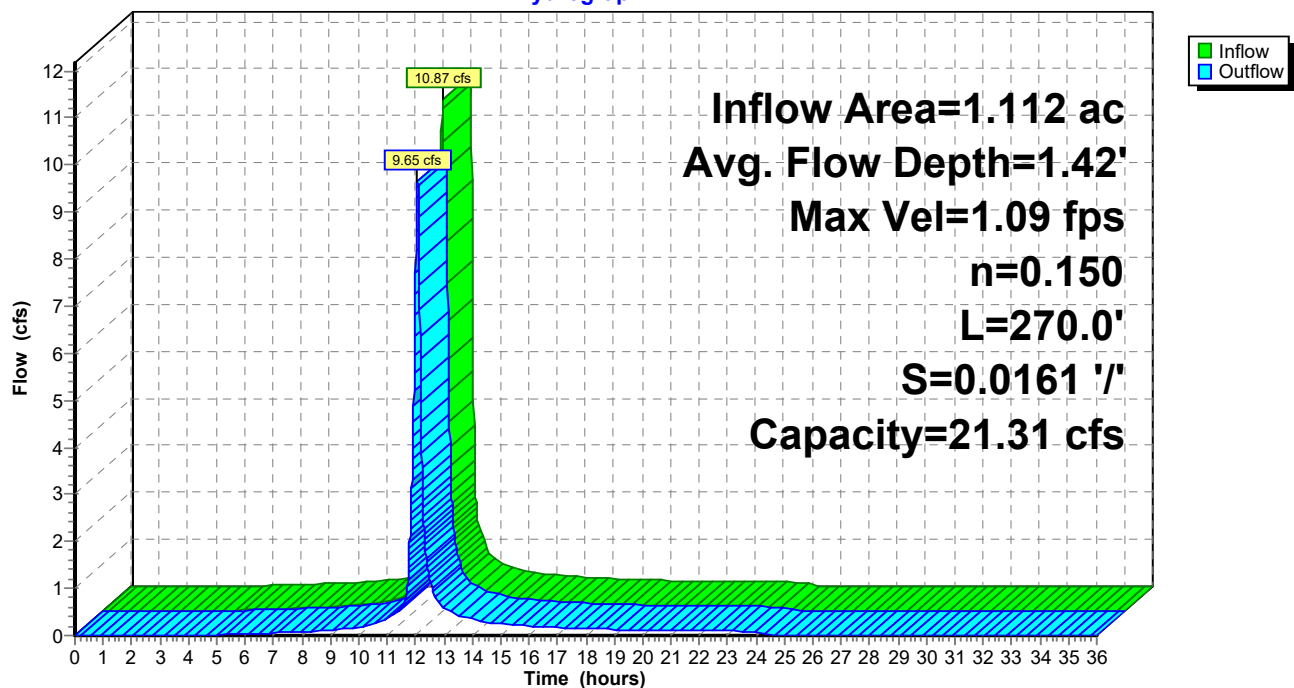
Length= 270.0' Slope= 0.0161 '/'

Inlet Invert= 148.34', Outlet Invert= 144.00'



Reach 2R: Dry Swale NE

Hydrograph



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Type II 24-hr 100-yr Rainfall=7.54"

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Summary for Reach 4R: Dry Swale SW

Inflow Area = 0.800 ac, 18.94% Impervious, Inflow Depth = 6.00" for 100-yr event
Inflow = 7.92 cfs @ 11.97 hrs, Volume= 0.400 af
Outflow = 7.03 cfs @ 12.07 hrs, Volume= 0.400 af, Atten= 11%, Lag= 6.3 min

Routing by Stor-Ind+Trans method, Time Span= 0.00-36.00 hrs, dt= 0.01 hrs

Max. Velocity= 1.00 fps, Min. Travel Time= 4.2 min

Avg. Velocity = 0.27 fps, Avg. Travel Time= 15.6 min

Peak Storage= 1,753 cf @ 12.01 hrs

Average Depth at Peak Storage= 1.23' , Surface Width= 9.39'

Bank-Full Depth= 2.00' Flow Area= 16.0 sf, Capacity= 21.26 cfs

2.00' x 2.00' deep channel, n= 0.150

Side Slope Z-value= 3.0 '/' Top Width= 14.00'

Length= 250.0' Slope= 0.0160 '/'

Inlet Invert= 147.00', Outlet Invert= 143.00'



Reach 4R: Dry Swale SW

Hydrograph

