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Stormwater Pollution Prevention Plan

Prepared in accordance with NYS DEC General Permit GP-0-25-001

for:

Ballston Spa Tannery

Owner/Operator(s):

Tannery Commons, LLC
1000 University Avenue Suite 500
Bolton Landing, New York 12814

SWPPP Contact(s):

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SWPPP Preparation Date:

May 2, 2025

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1.0 PERMIT OVERVIEW AND REQUIREMENTS

1.1 Permit Overview

This Stormwater Pollution Prevention Plan (SWPPP) is prepared to inform the landowner and construction personnel of the measures to be implemented for controlling runoff and pollutants from the site during and after construction activities. The objective of this plan is to comply with the New York Department of Environmental Conservation (NYSDEC) State Pollutant Discharge Elimination System (SPDES) General Permit for Stormwater Discharges from Construction Activities, Permit No. GP-0-25-001 requirements. Any material conflicts between this plan and the site plans, specification or instructions, must be brought to the attention of the design professional. The project may have other permits and it is the responsibility of the owner and contractor to know and understand all permits.

The operator is responsible to maintain onsite in a secure location that is accessible during normal working hours to an individual performing a compliance inspection, the following information:

- ✓ the Notice of Intent (NOI),
- ✓ the NYS Department of Environmental Conservation NOI Acknowledgement Letter,
- ✓ the SWPPP,
- ✓ a copy of the General Permit (included in the SWPPP),
- ✓ MS4 SWPPP Acceptance Form (where applicable), and
- ✓ all inspection reports.

Technical standards are detailed in the "New York State Standards and Specifications for Sediment and Erosion and Sediment Control (November 2016)", as well as illustrated on the Construction Drawings included in **Appendix C**. The design of post-construction stormwater control practices follow the guidance provided by "New York State Stormwater Management Design Manual."

2.0 SWPPP REVIEW, UPDATE

2.1 SWPPP Review

Applicable Federal, State, and local regulatory agencies that have jurisdiction may elect to review this SWPPP and notify the permittee in writing that the SWPPP does not meet the requirements of their regulations. If the SWPPP needs to be revised, the permittee and the site contractor will make the required modifications within seven days of such notification and submit written certification to the notifying agency that the changes have been implemented. A copy of the SWPPP will be kept available on site for review by regulatory agencies, engineers, and subcontractors.

This Project is in the Village of Ballston Spa which is a Traditional Land Use Control MS4 Community.

2.2 SWPPP Update

The permittee identified in this SWPPP shall amend the SWPPP under the following conditions:

- ✓ Whenever the current provisions prove to be ineffective in minimizing pollutants in stormwater discharge from the site
- ✓ Whenever there is a change in design, construction or operation that could have an effect on the discharge of pollutants
- ✓ To address issues or deficiencies identified during an inspection by the qualified inspector, the Department or other regulatory authority
- ✓ To identify a new subcontractor that will implement any part of the SWPPP.

If modifications are required to the post-stormwater management practices and the Project is within a regulated, traditional land use control MS4, the owner or operator of the Project must notify the MS4 in writing of any planned amendments or modifications to the post-construction stormwater management practice component of the SWPPP. Unless otherwise notified by the MS4, the owner or operator shall have the SWPPP amendments or modifications reviewed and accepted by the MS4 prior to commencing construction of the post-construction stormwater management practice. The SWPPP PLAN CHANGES, AUTHORIZATION, AND CHANGE CERTIFICATION form (Appendix E) must be filled out and a copy retained onsite during construction.

If modifications are required to the post-stormwater management practices and the Project is not within a Regulated, Traditional Land Use Control MS4, the changes shall be documented in the SWPPP kept onsite.

3.0 SITE ASSESSMENT, EVALUATION AND PLANNING

3.1 Project Location

The Project is located on Bath Street in Ballston Spa, NY 12020. Access to the site is off Bath Street. Improvements to the site include the construction of a new residential structures with new paths, playground, and parking lot and drive lanes.

See **Appendix C** for a general site location map.

3.2 Pre-Development Conditions

The Project site consists of grass and impervious areas (existing structures, paths and asphalt). The site generally slopes northwest to southeast toward Gordon Creek and municipal storm infrastructure in Bath Street.

3.3 Project Type

This Project is a redevelopment project and has been designed in accordance with Chapter 9 of the NYSDEC Stormwater Management Design Manual and NYSDEC's General Permit (GP-0-25-001) for construction activities.

3.4 Historic Preservation Determination/Endangered Species

According to the NYS CRIS mapper the project location is within an archeological buffer area. A copy of the CRIS map and the OPRHP letter can be found in **Appendix J**. A letter from OPRHP stating no properties are listed in, or eligible for the New York State and National Registry of Historic places will be impacted can be found in **Appendix J**.

The NYSDEC Environmental Resource Mapper shows that this project is not located in an area of rare plants and animals. The NYSDEC Environmental Mapper is included in **Appendix J**.

3.5 Receiving Waters

The runoff from the site flows southeast to Gordon Creek, which is a tributary to Kayaderosseras Creek.

3.6 Soils

According to the Natural Resources Conservation Service (NRCS) Web Soil Survey, the area including and surrounding the Project Site is comprised of Chenango silt loam "A" and Windsor loam sand "A". The Soils Reports can be found in **Appendix E**.

4.0 EROSION AND SEDIMENT CONTROL

4.1 Erosion and Sediment Control Practices

Temporary Structural Practices

- ✓ Silt Fence
- ✓ Stabilized Construction Entrance
- ✓ Concrete Washout

Permanent Structural Controls

- ✓ Grading

Temporary Stabilization Practices (including vegetative practices)

- ✓ Stabilization shall be initiated by the end of the next business day and be completed within 14 days.

Permanent Stabilization Practices (including vegetative practices)

- ✓ Seed and mulch all disturbed areas. Slopes that are 3:1 or steeper should receive a Rolled Erosion Control Product (RECP), sodding, and or hydro-seeding a homogenous mixture of wood fiber mulch with tackifying agent.

Refer to Construction Drawings attached in **Appendix F** for detailed information on each practice.

4.2 Erosion and Sediment Control Drawings

Erosion and Sediment Control practices are shown on Construction Drawings included in **Appendix F**.

4.3 Construction Phasing Plan and Sequence of Operations

The project will be phased to disturb less than five acres, at one time.

- ✓ Temporary structural erosion controls will be installed prior to earthwork as per the attached plans.
- ✓ Areas to be undisturbed for more than 14 days will be temporarily stabilized by seeding.
- ✓ Disturbed areas will be reseeded and mulched immediately after final contours are re-established and no more than 14 days after the completion of construction at that site.
- ✓ Temporary erosion control devices will not be removed until the area served is stabilized by the growth of vegetation and the area is certified as being stabilized by the Erosion Control Superintendent.

Construction Activities
Sequence must include major items such as, but not limited to, clearing and grubbing, excavation and grading, utility and infrastructure installation and any other activity resulting in soil disturbance. Include installation of erosion and sediment control practices and timing of installation.
Install silt fence and construction entrance
Demo buildings, clear site and rough grade
Utility installation
Begin parking, playground, and walk installation
Begin building construction
Monitor/maintain erosion and sediment control measures
Remove erosion and sediment control measures upon stabilization of contributing areas

4.4 Erosion and Sediment Control Practice Maintenance

- ✓ Silt fence – maintenance shall be performed as needed and material removed when "bulges" develop in the silt fence.
- ✓ Stabilized construction entrance – entrance shall be maintained in a condition which shall prevent tracking. This may require periodic top dressing with additional aggregate. All sediment tracked onto or spilled on public rights of way shall be removed immediately. When necessary, wheels must be cleaned to remove sediment prior to entrance on public rights of way. When washing is required, it shall be done in an area stabilized with aggregate and wash water shall be directed away from streams or wetlands preferably to a broad grassed area or a stormwater pond.
- ✓ Replace top-soil, mulch, and seed where seeding has been disturbed.

4.5 Erosion and Sediment Control Inspection

- It is recommended that a rain gage be installed at the site.
- A qualified inspector shall conduct an assessment of the site prior to the commencement of construction and certify in an inspection report that the appropriate erosion and sediment controls described in the SWPPP and required

by GP-0-25-001 have been adequately installed to ensure overall preparedness of the site for commencement of construction.

- This qualified inspector must be a Licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, 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 4 hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the qualified inspector shall receive 4 hours of training every 3 years.
- The day-to-day erosion control activities on the site will be monitored by the construction manager. The qualified inspector (as defined by the NYS DEC SPDES regulations) and his crews will make ***at least one inspection every seven (7) days*** of erosion control devices, and non-stabilized areas during construction. A maintenance inspection report will be completed by the qualified inspector after each inspection. The report form to be completed by the inspector is attached in **Appendix G.** Reports should be compiled and maintained on-site in the SWPPP 3-ring binder.
- All measures will be maintained in good working order; if repair is necessary, it will be initiated within 24 hours of report. The qualified inspector shall take photographs of any needed repairs and also photograph when the repairs are completed. These photographs will be time and date stamped and attached to the weekly inspection report.
- Seeded and planted areas will be inspected for bare spots, washouts, and healthy growth. If necessary, spot reseeding or sodding will be implemented.
- A trained contractor will be an employee from the contracting company responsible for the implementation of the SWPPP. This person will be onsite when any soil disturbing activities are being conducted. The trained contractor must have received 4 hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the qualified inspector shall receive 4 hours of training every 3 years. This trained contractor cannot conduct the regular SWPPP compliance inspections unless they meet the qualified inspector qualifications.

4.6 Contractor Sequence Form

The operator shall prepare a summary of construction status using the Construction Sequence Form (included in **Appendix H**) once every month. Significant deviations to the sequence and reasons for those deviations (i.e. weather, subcontractor availability, etc.), shall be noted by the contractor. The schedule shall be used to record the dates for initiation of construction, implementation of erosion control measures, stabilization, etc. A copy of this table will be maintained at the construction site and updated.

4.7 Spill Prevention Practices

Good Housekeeping and Material Management Practices

The following good housekeeping and material management practices will be followed on site during the construction project to reduce the risk of spills or other accidental exposure of materials and substances to stormwater runoff.

- Materials will be brought on site in the minimum quantities required.
- All materials stored on site will be stored in a neat, orderly manner in their appropriate containers, and if possible, under a roof or other enclosure.
- Products will be kept in their original containers with the original manufacturer's label.
- Substances will not be mixed with one another unless recommended by the manufacturer.
- Whenever possible, all of a product will be used up before disposal.
- Manufacturer's recommendations for proper use and disposal will be followed.
- The construction manager or his designee will inspect regularly to ensure proper use and disposal of materials on site.
- The contractor shall prohibit washing of tools, equipment, and machinery in or within 100 feet of any watercourse or wetland.
- All above grade storage tanks are to be protected from vehicle damage by temporary barriers.

Inventory for Pollution Prevention Plan

The materials and substances listed below are expected to be on-site during construction.

- Petroleum for fueling vehicles will be stored in above ground storage tanks. Tanks will either be steel with an enclosure capable of holding 110% of the storage tank volume or of a Con-Store, concrete encased type typically employed by NYSDOT. Hydraulic oil and other oils will be stored in their original containers. Concrete and asphalt will be stored in the original delivery trucks.
- Fertilizer may be stored on site in its original container for a short period of time prior to seeding. Original containers will be safely piled on pallets or similar devices to protect from moisture.
- Paints and other similar materials will be stored in their original containers and all empty containers will be disposed of in accordance with label directions.
- Portable sanitary facilities, which contain chemical disinfectants (deodorants) will be located on-site, with the disinfectants held in the tank of the toilet.

Hazardous Products

These practices are used to reduce the risks associated with hazardous materials.

- Products will be kept in original containers unless they are not re-sealable.
- Original labels and material safety data sheets will be retained; they contain important product information.
- If surplus product must be disposed of, manufacturers' or local and State recommended methods for proper disposal will be followed.

Spill Prevention

The following product specific practices will be followed on site.

Petroleum Products:

- Construction personnel should be made aware that emergency telephone numbers are located in this SWPPP.
- The contractor shall immediately contact NYSDEC in the event of a spill, and shall take all appropriate steps to contain the spill, including construction of a dike around the spill and placing absorbent material over this spill.
- The contractor shall instruct personnel that spillage of fuels, oils, and similar chemicals must be avoided and will have arranged with a qualified spill remediation company to serve the site.
- Fuels, oils, and chemicals will be stored in appropriate and tightly capped containers. Containers shall not be disposed of on the project site.
- Fuels, oils, chemicals, material, equipment, and sanitary facilities will be stored/located away from trees and at least 100 feet from streams, wells, wet areas, and other environmentally sensitive sites.
- Dispose of chemical containers and surplus chemicals off the project site in accordance with label directions.
- Use tight connections and hoses with appropriate nozzles in all operations involving fuels, lubricating materials or chemicals.
- Use funnels when pouring fuels, lubricating materials or chemicals.
- Refueling and cleaning of construction equipment will take place in parking areas to provide rapid response to emergency situations.
- All on-site vehicles will be monitored for leaks and receive regular preventative maintenance to reduce the chance of leakage. Any vehicle leaking fuel or hydraulic fuel will be immediately scheduled for repairs and use will be discontinued until repairs are made.

Fertilizers:

- Fertilizer will be stored in its original containers on pallets with water resistant coverings.
- Proper delivery scheduling will minimize storage time.
- Any damaged containers will be repaired immediately upon discovery and any released fertilizer recovered to the fullest extent practicable.

Paints:

- All containers will be tightly sealed and stored when not required for use.
- Excess paint will not be discharged to the storm water system or wastewater system, but will be properly disposed of according to manufacturers' instructions or State and local regulations.

Concrete Trucks:

- Concrete trucks will be allowed to wash out or discharge surplus concrete or drum wash water only at designated locations on site.

Asphalt Trucks:

- Asphalt trucks shall not discharge surplus asphalt on the site.

Spill Control Practices

In addition to the good housekeeping and material management practices discussed in the previous sections of this plan, the following practices will be followed for spill prevention and cleanup. The construction manager or site superintendent responsible for the day-to-day site operations will be the spill prevention and cleanup coordinator. He will designate at least three other site personnel who will receive spill prevention and cleanup training. These individuals will each become responsible for a particular phase of prevention and cleanup. The names of responsible spill personnel will be posted in the material storage area and in the onsite construction office or trailer.

- Manufacturers' recommended methods for spill cleanup will be clearly posted and site personnel will be made aware of the procedures and the location of the information and cleanup supplies. Any spill in excess or suspected to be in excess of two gallons will be reported to the NYSDEC Regional Spill Response Unit. Notification to the NYSDEC (1-800-457-7362) must be completed within two hours of the discovery of the spill.
- Materials and equipment necessary for spill cleanup will be kept in the material storage area onsite. Equipment and materials will include but not be limited to absorbent pads, brooms, dust pans, mops, rags, gloves, goggles, activated clay, sand, sawdust, and plastic and metal trash containers specifically for this purpose.
- All spills will be cleaned up immediately after discovery.
- The spill area will be kept well ventilated and personnel will wear appropriate protective clothing to prevent injury from contact with spilled substance.
- Spills of toxic or hazardous material will be reported to the appropriate State or local government agency, regardless of the size.

4.8 Construction Waste

Waste Materials: All waste materials generated during construction will be disposed of at a suitable landfill or transfer station.

Hazardous Waste: The project will not be a generator of hazardous waste and it is not anticipated that any hazardous waste will be generated during construction. If there are any materials generated, a licensed hazardous waste carrier will be contracted to dispose of the hazardous material at a suitable disposal site. If hazardous materials are discovered during construction, the work will be stopped until the issue is resolved.

Waste: Portable sanitary facilities will be made available to construction personnel and will be serviced regularly.

4.9 Offsite Vehicle Tracking

Excavation equipment involved with the construction will remain on the project site and will not regularly egress or ingress the site. Any trucks used to bring in materials or remove materials via municipal paved roads will do so over a stabilized construction entrance. If any off-site vehicle tracking occurs, the contractor will be directed to initiate, street sweeping program in the immediate vicinity of the site.

4.10 Temporary Stabilization for Frozen Conditions

The following temporary stabilization measures **MUST** be performed when construction is occurring during winter/frozen ground conditions. The following requirements do not supersede any other requirements of this SWPPP as they apply to non-frozen ground conditions.

- Perimeter erosion control **MUST** still be installed prior to earthwork disturbance as per this SWPPP.
- Any areas that cannot be seeded to turf by October 1 or earlier will receive a temporary seeding. The temporary seeding will consist of winter rye seeded at the rate of 120 pounds per acre (2.5 pounds per 1,000 square feet) or stabilized as per the temporary stabilization for winter construction/frozen conditions.
- Any area of disturbance that will remain inactive for a period of 14 consecutive days **MUST** be mulched. This includes any previously disturbed areas that are covered with snow.
- Mulch **MUST** consist of loose straw applied at the rate of 2 to 3 bales (90 to 100 pounds) per thousand square feet.
- Mulch **MUST** be applied uniformly over the area of bare soil or bare soil that is covered with snow. For the latter condition, mulch **MUST** be applied on top of snow.
- Using a tracked vehicle, mulch **MUST** be crimped into the bare soil/snow. The tracked vehicle **MUST** be driven across the mulched areas in at least two directions to maximize crimping of mulch into the soil/snow.
- If mulch gets blown off an area to a significant degree, the site inspector **WILL** require that an area be re-mulched in accordance with Items 2 through 5 above, and this area **WILL** be included on the inspection checklist for the next inspection.
- If a particular area repeatedly experiences loss of mulch due to wind, then the inspector **WILL** require that an alternative method be used to secure the mulch in place. Such alternatives may include the use of netting, tackifier or other methods deemed appropriate by the inspector.
- During periods when snow is melting and/or surface soils are thawing during daytime hours, mulched areas **MUST** be re-tracked (crimped) as per Item 5 above at least once every seven days, more frequently if directed by the inspector. Additional mulch may be required to obtain complete coverage of an area. Biodegradable erosion control matting may be required on steeper slopes.
- Additional stabilization measures for non-frozen ground conditions described in this SWPPP **WILL** be implemented at the time deemed appropriate by the inspector.

During the winter season, if a site has been stabilized and soil disturbing activities have been suspended for the winter, weekly inspections can be suspended. However, monthly inspections must still be conducted. All normal weekly inspections must resume when soil disturbing activities resume.

5.0 POST CONSTRUCTION STORMWATER MANAGEMENT DESIGN

5.1 Hydraulic and Hydrologic Analysis

The program utilized for quantifying stormwater runoff rates and volumes was ***HydroCAD*** software, produced by Applied Microcomputer Systems of Chocorua, NH. The 24-hour design storms for 1, 10 and 100-year frequency rainfall were analyzed.

- ✓ Hydrologic/hydraulic analysis for all structural components of the stormwater control system for the applicable design storms (see **Appendix B and C**).
- ✓ Comparison of post-development stormwater runoff conditions with pre-development conditions (see **Appendix B and C**).

5.2 NYSDEC Design Criteria

The New York State Stormwater Management Design Manual dated July 2024 (The Manual) has been utilized to develop the stormwater management plan.

Attachment D of this report contains detailed calculations for determining and summarizing the required and provided volumes for Water Quality. In general, the required design criteria (WQv) was calculated for all areas where site disturbance is proposed.

5.3 Curve Number and Rainfall Data

The surface cover for the project areas are a mixture of grass and impervious areas (drive lanes, parking lot, concrete paths, and a buildings). The curve numbers utilized in the modeling were assigned based on cover type and HSG soil classification.

The design storms used for the pre-development versus post-development comparison were the 1, 10, and 100-year, 24-hour duration, events. The rainfall amounts for these storms were obtained per section 4.9 at the NYS Design manual, and are 2.20, 3.67, and 6.08 inches, respectively.

5.4 Existing Condition

The Project area existing condition, for which this stormwater management plan is based, consists of the existing grass lawn, impervious pavements, concrete sidewalks, and existing structures. Under the watershed's Existing Condition, majority of the site flows toward a closed drainage system located between the western Bath Street sidewalk and the Tannery Building. This closed drainage discharges to Gordon Creek at the east side of the Bath Street Bridge. This discharge point has been labeled Analysis Point 3 (AP-3) for the purposes of this study. A small portion of the site flows south directly into Gordon Creek and another small portion flows north to existing

storm infrastructure along Van Buren Street. These discharge points have been labeled Analysis Point 1 (AP-1) and Analysis Point (AP-2), respectively, for the purposes of this study. AP-1, AP-2, and AP-3 were utilized in comparing all pre-versus post-runoff conditions.

Refer to drawing "W-1 Existing Conditions Watershed Map," located in **Appendix B** for more information.

Refer to **Appendix B** for more information on the existing conditions watershed modeling.

5.5 Proposed Condition

Under the watershed's Proposed Condition, all stormwater from the Project will continue to discharge to the same point as in the Existing Condition (AP-1, AP-2, and AP-3). The total watershed has roughly remained unchanged, as is shown on the drawing "W-2 Proposed Conditions Watershed Map" contained in **Appendix C**. To meet NYSDEC requirements a hydrodynamic separator is incorporated into the stormwater management design to mitigate the quality of stormwater runoff discharged from the Project Site.

Table 5-1 below provides a summary of the existing conditions versus proposed conditions peak discharge rates for the Project's watershed.

Table 5-1
Existing Conditions Versus Proposed Conditions Peak Discharge Rates

Analysis Point	AP-1		AP-2		AP-3	
	Existing	Proposed	Existing	Proposed	Existing	Proposed
Design Storm	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)	(cfs)
1-Year	1.29	0.59	1.14	1.08	10.03	6.85
10-Year	2.19	1.00	1.93	1.84	16.99	12.35
100-Year	3.72	1.82	3.23	3.09	28.47	18.28

5.6 Water Quality Volume (WQv)

The Water Quality Volume (WQv) requirement is designed to improve water quality sizing to capture and treat 90% of the average annual stormwater runoff volumes. The WQv is directly related to the amount of impervious cover created at a site. The following equation is used to determine the water quality storage volume.

$$WQv = \frac{(P)(Rv)(A)}{12}$$

Where:

WQv = Water quality volume (acre/feet)
P = 90% Rainfall Event (1.15" for Ballston Spa)
Rv = 0.05 + 0.009(I) where I is percent impervious cover
A = Site area in acres

The required WQv will be provided by a Hydrodynamic Separator in accordance with the SWMDM. The total required WQv for the project is 0.169 ac-ft. Refer to Table 5-2 for a summary of the water quality volumes provided for the Project.

Table 5-2
Water Quality Volume (WQv) Summary

SMP	Type	Provided
		(ac-ft)
SMP-1	Hydrodynamic Separator	0.236
TOTAL		**0.236**

Refer to **Appendix D** for detailed WQv calculations.

5.7 Runoff Reduction Volume (RRv)

Per chapter 9.2.1.B of the SWMDM, redevelopment projects are not required to meet the runoff reduction requirement. This project is 100% redevelopment and does not propose RRv.

5.8 Channel Protection Volume (CPv)

Per section 9.2.1.C.VI of the NYSDEC SWMDM, channel protection volume is not required if the redevelopment project achieves an overall reduction in both peak flow rate and volume for the 1-year strom event from the Pre development conditions. Below is a table showing the pre and post development 1-yr storm event volumes at each analysis point. Table 5.1 above shows the reduction of the 1-yr storm event peak flow rate for each analysis point.

Table 5-3
Existing Conditions Versus Proposed Conditions 1-YR Volume

Analysis Point	AP-1		AP-2		AP-3	
	Existing	Proposed	Existing	Proposed	Existing	Proposed
Design Storm	(cf)	(cf)	(cf)	(cf)	(cf)	(cf)
1-Year	3,406	1,562	2,728	2,596	25,257	24,499

5.9 Overbank Flood (Qp) and Extreme Flood (Qf) Attenuation

The primary purpose of the Overbank Flood (Qp) control sizing criterion is to prevent an increase in the frequency and magnitude of out-of-bank flooding generated by urban development. It requires storage and attenuation of the 10-year, 24-hour storm to ensure post-development peak discharge rates do not exceed the pre-development condition.

The intent of the Extreme Flood (Qf) criteria is to (a) prevent the increased risk of flood damage from large storm events, (b) maintain the boundaries of the pre-development 100-year floodplain, and (c) protect the physical integrity of stormwater management practices. It requires storage and

attenuation of the 100-year, 24-hour storm to ensure post-development peak discharge rates do not exceed the pre-development condition.

During the 10-year and 100-year 24-hour storm the post-development peak discharge rates do not exceed the pre-development rates. See Table 5-3 of this Report for detailed comparison of pre- and post-development peak rates.

Table 5-3 below provides a summary of the existing conditions versus proposed conditions Qp and Qf attenuation for the Project's watershed.

Table 5-4
Existing Conditions Versus Proposed Conditions Qp and Qf Attenuation

	Pre Development	**Post Development**
10 year, 24 hour storm (Qp)	21.11 CFS	15.19 CFS
100 year, 24 hour storm (Qf)	35.42 CFS	23.19 CFS

5.10 Proposed Stormwater Facility

The Project is proposing the installation of a Hydrodynamic Separator (SMP-1) in conjunction with underground detention pipes (SMP-2) to collect, treat and detain stormwater runoff from site. The stormwater management facilities are indicated on the watershed maps (SMP-1 & SMP-2).

5.11 Treatment

Treatment for the water discharging into SMP-1 is provided via the swirl chamber in the Hydrodynamic Separator. The separator is sized to capture and treat a minimum of 75% of the disturbed, redevelopment impervious area. Water quality peak flow rate calculation can be found in **Appendix D**.

Refer to **Appendix D** for stormwater calculations.

6.0 POST CONSTRUCTION STORMWATER MAINTENANCE

6.1 Maintenance to be Performed

Tannery Commons, LLC will be responsible for long-term maintenance of all post construction stormwater management facilities. Maintenance includes, but is not limited to, cleaning of sediment from drainage inlet sumps, removal of sediment from SMPs, cleaning conveyance piping and channels of obstructions, inspection and repair as required of any outlet control mechanisms and repairing any other detriments in the design that is resulting in the facilities to not function as intended in the design. Post construction stormwater management controls are shown on Construction Drawings included in **Appendix F**.

Post-construction maintenance for this project will consist of regular inspections of permanent stormwater management facilities and steep slopes. These maintenance procedures are essential to assure continual performance of the stormwater management practices on your

site. During the inspection and any maintenance activity to the stormwater management practices, the responsible party should fill out an inspection and maintenance log (**Appendix H**) to record that it was done

Hydrodynamic Separator

- Inspections of the separator must be completed at a minimum of twice a year (Site specific maintenance frequency should be established during the first two or three years or operation)
- Maintenance shall be performed if any internal components are broken or missing, inlet or outlet is obstructed or if the accumulation of trash, debris and/or oil in the baffled chambers around the vortex is significant. All maintenance shall be completed during dry weather when no flow is entering the system.
- Sediment removal with a vacuum truck should be done at least once a year, preferably after spring runoff and then in early fall, or when the separator is at 50% sediment storage capacity, whichever comes first.

7.0 CERTIFICATIONS

Preparer Certification of Compliance with Federal, State, and Local Regulations

This Stormwater Pollution Prevention Plan was prepared in accordance with the New York State Department of Environmental Conservation SPDES General Permit for Stormwater Discharges from Construction Activities (Permit No. GP-0-25-001), pursuant to Article 17, Titles 7, 8 and Article 70 of the Environmental Conservation Law. This SPDES General Permit implements the Federal Clean Water Act pertaining to stormwater discharges.

Name: Doug Heller Title: Civil Engineer

Signature: _____ Date: _____

Company Name: The LA Group, PC

Owner Pollution Prevention Plan Certification

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who are 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 false statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the Penal Law.

I understand that GP-0-25-001 requires site inspections be conducted by a qualified professional once every seven (7) days and when approved in writing by the NYSDEC, disturbances of greater than five (5) acres at one time require site inspections two (2) times every seven (7) days. These inspections shall be performed by a qualified professional as defined by the General Permit.

The Owner/Operator will be held financially responsible for any and all fines related to work tasks that are not specified by the Contractor(s)/Subcontractor(s) below.

Name: _____ Title: Owner/Operator

Signature: _____ Date: _____

Company Name: _____

Contractor and Subcontractor Certification

I hereby certify 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 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 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 proceeding.

Name _____ Title _____

Signature _____ Date _____

Company Name _____
Address _____
City, State, Zip _____
Phone Number _____

SWPPP Components You Are Responsible For

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Name of Trained Individual Responsible for SWPPP Implementation _____ Title _____

Signature of Trained Individual Responsible for SWPPP Implementation _____ Date _____

Contractor and Subcontractor Certification

I hereby certify 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 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 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 proceeding.

Name _____ Title _____

Signature _____ Date _____

Company Name _____
Address _____
City, State, Zip _____
Phone Number _____

SWPPP Components You Are Responsible For
1. _____
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Name _____ Title _____

Signature _____ Date _____

Company Name _____
Address _____
City, State, Zip _____
Phone Number _____

SWPPP Components You Are Responsible For
1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Name of Trained Individual Responsible for SWPPP Implementation _____ Title _____

Signature of Trained Individual Responsible for SWPPP Implementation _____ Date _____

Contractor and Subcontractor Certification

I hereby certify 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 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 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 proceeding.

Name _____ Title _____

Signature _____ Date _____

Company Name _____
Address _____
City, State, Zip _____
Phone Number _____

SWPPP Components You Are Responsible For

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Name of Trained Individual Responsible for SWPPP Implementation _____ Title _____

Signature of Trained Individual Responsible for SWPPP Implementation _____ Date _____

8.0 DEFINITIONS

Construction Activity(ies) - means any clearing, grading, excavation, filling, demolition, or stockpiling activities that result in soil disturbance. Clearing activities can include, but are not limited to, logging equipment operation, the cutting and skidding of trees, tree removal, stump removal and/or brush 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.

Construction Phasing Plan - a plan designed to construct particular portions of an individual project at different times. Phasing is often used when a project is very large to limit the disturbance at a single time to 5 acres per phase.

Erosion and Sediment Control Practices – temporary measures installed prior to construction and maintained during construction to temporarily treat any stormwater runoff. Once construction is completed and post-construction stormwater management practices are installed and the site is stabilized, the erosion and sediment control practices are removed from the site.

Final Stabilization - means that 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 pavement.

Green Infrastructure – in the context of stormwater management, the term green infrastructure includes a wide array of practices at multiple scales to manage and treat stormwater, maintain and restore natural hydrology and ecological function by infiltration, evapotranspiration, capture and reuse of stormwater, and establishment of natural vegetative features. On a regional scale, green infrastructure is the preservation and restoration of natural landscape features, such as forests, floodplains and wetlands, coupled with policies such as infill and redevelopment that reduce overall imperviousness in a watershed or ecoregion. On the local scale green infrastructure consist of site and neighborhood specific practices and runoff reduction techniques. Such practices essentially result in runoff reduction and or establishment of habitat areas with significant utilization of soils, vegetation, and engineered media rather than traditional hardscape collection, conveyance and storage structures. Some examples include green roofs, trees and tree boxes, pervious pavement, rain gardens, vegetated swales, planters, reforestation and protection and enhancement of riparian buffers and floodplains.

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

Municipal Separate Storm Sewer (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):

i. Owned or operated by a state, city, town, 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.
ii. Designed or used for collecting or conveying stormwater
iii. Which is not a combined sewer
iv. Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

Notice of Intent – a standardized format notification sent to the NYSDEC to inform them of the proposed activity to be sent after the SWPPP has been completed.

Owner or Operator – means the person, persons or legal entity which owns or leases the property on which the construction activity is occurring; and/or an entity that has operational control over the construction plans and specifications, including the ability to make modifications to the plans and specifications.

Post-Construction Stormwater Management Practices – permanent devices constructed or installed onsite to treat stormwater from a site when construction is completed.

Qualified Inspector – means 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, or other Department 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 Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department 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.

Qualified Professional – means 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 Department endorsed individual(s). Individuals preparing SWPPPs that require the post-construction stormwater management practice 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.

Regulated, Traditional Land Use Control MS4 - means a city, town, or village with land use control authority that is required to gain coverage under New York State DEC's SPDES General Permit for Stormwater Discharges from Municipal Separate Stormwater Sewer Systems (MS4s).

Sequence of Operations – the individual steps and their specific order which are undertaken in order to construct a project or a given phase of a project from beginning to end. (i.e. clearing, grading, foundation work, landscaping, etc.)

State Pollutant Discharge Elimination System (SPDES) – means the system established pursuant to Article 17 of the Environmental Conservation Law (ECL) and 6 NYCRR Part 750 for issuance of permits authorizing discharges to the waters of the state.

Stormwater Pollution Prevention Plan (SWPPP) - a report that is compiled providing detailed information about the proposed activity and the specifics to how the stormwater will be managed during construction and after construction is completed.

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 or underground 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 800-941.

Temporary Stabilization – means that 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).

Trained Contractor – means an employee from a contracting (construction) company responsible for the day to day implementation of the SWPPP. The trained contractor must have received 4 hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity. After receiving the initial training, the qualified inspector shall receive 4 hours of training every 3 years.

It can also mean an employee from the contracting (construction) company that meets the qualified inspector qualifications (e.g. licensed Professional Engineer, Certified Professional in Erosion and Sediment Control (CPESC), Registered Landscape Architect, 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 4 hours of Department endorsed training in proper erosion and sediment control principles from a Soil and Water Conservation District, or other Department endorsed entity.

9.0 REFERENCES

1. Urban Hydrology for Small Watersheds. Published by the U.S. Soil Conservation Service, Washington, D.C., June 1986.
2. HydroCAD 10.00 Computer Program, by HydroCAD Software Solutions, LLC.
3. NYSDEC Stormwater Management Design Manual. Published by the New York State Department of Environmental Conservation, Updated July 2024.

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Appendix A

Notice of Intent
(NOI)
&
MS4 Acceptance Form

NOI for coverage under Stormwater General Permit for Construction Activity

version 1.44

(Submission #: HQ8-DD11-M6YC0, version 1)

Details

Originally Started By	Cameron Alber
Alternate Identifier	Ballston Spa Tannery
Submission ID	HQ8-DD11-M6YC0
Submission Reason	New
Status	Draft

Form Input

Owner/Operator Information

The previous version of the Construction General Permit (CGP), GP-0-20-001, expired on January 28, 2025, and therefore this GP-0-20-001 eNOI form cannot be used to obtain CGP coverage.
Instead, the GP-0-25-001 eNOI form must be used to obtain coverage under the currently effective CGP, GP-0-25-001, which is effective as of January 29, 2025, with an expiration date of January 28, 2030. In nForm, the name of the GP-0-25-001 eNOI that must be used is: Construction General Permit (CGP) Electronic Notice of Intent (eNOI) GP-0-25-001
Please see the CGP Webpage for further information: https://dec.ny.gov/environmental-protection/water/water-quality/stormwater/construction-activity-permit

Owner/Operator Name (Company/Private Owner/Municipality/Agency/Institution, etc.)
Tannery Commons, LLC

Owner/Operator Contact Person Last Name (NOT CONSULTANT)
Hermanstyne

Owner/Operator Contact Person First Name
Muammar

Owner/Operator Mailing Address
1000 University Avenue Suite 500

City
Rochester

State
NY

Zip
14607

Phone
5853240569

Email
muammar.hermanstyne@coniferllc.com

Federal Tax ID
NONE PROVIDED

> If the owner/operator is an organization, provide the Federal Tax ID number, or Employer Identification Number (EIN), in the format xx-xxxxxxx. If the owner/operator is an individual and not an organization, enter "Not Applicable" or "N/A" and do not provide the individual's social security number.

Project Location

Project/Site Name
Ballston Spa Tannery

Street Address (Not P.O. Box)
125 Bath Street

Side of Street
West

City/Town/Village (THAT ISSUES BUILDING PERMIT)
Ballston Spa

State
NY

Zip
12020

DEC Region
5

> The DEC Region must be provided. Please use the NYSDEC Stormwater Interactive Map (https://gisservices.dec.ny.gov/gis/stormwater/) to confirm which DEC Region this site is located in. To view the DEC Regions, click on “Other Useful Reference Layers” on the left side of the map, then click on “DEC Administrative Boundary.” Zoom out as needed to see the Region boundaries.
> For projects that span multiple Regions, please select a primary Region and then provide the additional Regions as a note in Question 39.

County
SARATOGA

Name of Nearest Cross Street
Hamilton St

Distance to Nearest Cross Street (Feet)
25

Project In Relation to Cross Street
West

Tax Map Numbers Section-Block-Parcel
216.32-1-96.2

Tax Map Numbers
NONE PROVIDED

> If the project does not have tax map numbers (e.g. linear projects), enter “Not Applicable” or "N/A".

1. Coordinates

Provide the Geographic Coordinates for the project site. The two methods are:
- Navigate to the project location on the map (below) and click to place a marker and obtain the XY coordinates.

- The "Find Me" button will provide the lat/long for the person filling out this form. Then pan the map to the correct location and click the map to place a marker and obtain the XY coordinates.

Navigate to your location and click on the map to get the X,Y coordinates
43.004434567843326,-73.85174782084916

Project Details

2. What is the nature of this project?
Redevelopment with no increase in impervious area

> For the purposes of this eNOI, “New Construction” refers to any project that does not involve the disturbance of existing impervious area (i.e. 0 acres). If existing impervious area will be disturbed on the project site, it is considered redevelopment with either increase in impervious area or no increase in impervious area.

3. Select the predominant land use for both pre and post development conditions.

Pre-Development Existing Landuse
Industrial

Post-Development Future Land Use
Multifamily Residential

3a. If Single Family Subdivision was selected in question 3, enter the number of subdivision lots.
NONE PROVIDED

---

4. In accordance with the larger common plan of development or sale, enter the total project site acreage, the acreage to be disturbed and the future impervious area (acreage)within the disturbed area.

*** ROUND TO THE NEAREST TENTH OF AN ACRE. ***

Total Site Area (acres)
7.3

Total Area to be Disturbed (acres)
5.6

Existing Impervious Area to be Disturbed (acres)
4.1

Future Impervious Area Within Disturbed Area (acres)
3.7

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

---

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

A (%)
100

B (%)
0

C (%)
0

D (%)
0

7. Is this a phased project?
No

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

Start Date
06/01/2026

End Date
06/01/2027

9. Identify the nearest surface waterbody(ies) to which construction site runoff will discharge.
Gordon Creek

> Drainage ditches and storm sewer systems are not considered surface waterbodies. Please identify the surface waterbody that they discharge to. If the nearest surface waterbody is unnamed, provide a description of the waterbody, such as, “Unnamed tributary to Niagara River.”

9a. Type of waterbody identified in question 9?
Stream/Creek Off Site

Other Waterbody Type Off Site Description
NONE PROVIDED

9b. If "wetland" was selected in 9A, how was the wetland identified?
NONE PROVIDED

10. Has the surface waterbody(ies) in question 9 been identified as a 303(d) segment in Appendix E of GP-0-20-001?
No

11. Is this project located in one of the Watersheds identified in Appendix C of GP-0-20-001?
No

12. Is the project located in one of the watershed areas associated with AA and AA-S classified waters?
No

> Please use the DEC Stormwater Interactive Map (https://gisservices.dec.ny.gov/gis/stormwater/) to confirm if this site is located in one of the watersheds of an AA or AA-S classified water. To view the watershed areas, click on “Permit Related Layers” on the left side of the map, then click on “Class AA AAS Watersheds.”

If No, skip question 13.

13. Does this construction activity disturb land with no existing impervious cover and where the Soil Slope Phase is identified as D (provided the map unit name is inclusive of slopes greater than 25%), E or F on the USDA Soil Survey?
No

If Yes, what is the acreage to be disturbed?
NONE PROVIDED

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

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

16. What is the name of the municipality/entity that owns the separate storm sewer system?
Village of Ballston Spa

17. Does any runoff from the site enter a sewer classified as a Combined Sewer?
No

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

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

20. Is this a remediation project being done under a Department approved work plan? (i.e. CERCLA, RCRA, Voluntary Cleanup Agreement, etc.)
No

Required SWPPP Components

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

22. Does this construction activity require the development of a SWPPP that includes the post-construction stormwater management practice component (i.e. Runoff Reduction, Water Quality and Quantity Control practices/techniques)?
Yes

If you answered No in question 22, skip question 23 and the Post-construction Criteria and Post-construction SMP Identification sections.

23. Has the post-construction stormwater management practice component of the SWPPP been developed in conformance with the 2015 or 2024 NYS Stormwater Management Design Manual?
Yes

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

SWPPP Preparer
The LA Group

Contact Name (Last, First)
Strom, Brett

Mailing Address
40 Long Alley

City
Saratoga Springs

State
New York

Zip
12866

Phone
5188578100

Email
bstrom@thelagroup.com

Download SWPPP Preparer Certification Form

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

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

Please upload the SWPPP Preparer Certification
NONE PROVIDED
Comment
NONE PROVIDED

Erosion & Sediment Control Criteria

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

26. Select all of the erosion and sediment control practices that will be employed on the project site:

Temporary Structural
Stabilized Construction Entrance
Storm Drain Inlet Protection
Silt Fence

Biotechnical
None

Vegetative Measures
Mulching
Seeding
Topsoiling

Permanent Structural
Land Grading

Other
NONE PROVIDED

Post-Construction Criteria

*** IMPORTANT: Completion of Questions 27-39 is not required if response to Question 22 is No.**

27. Identify all site planning practices that were used to prepare the final site plan/layout for the project.
Preservation of Undisturbed Area
Preservation of Buffers

27a. Indicate which of the following soil restoration criteria was used to address the requirements in Section 5.1.6("Soil Restoration") of the Design Manual.
All disturbed areas will be restored in accordance with the Soil Restoration requirements in Table 5.3 of the Design Manual (see page 5-22).

28. Provide the total Water Quality Volume (WQv) required for this project (based on final site plan/layout). (Acre-feet)
0.169

29. Post-construction SMP Identification

Use the Post-construction SMP Identification section to identify the RR techniques (Area Reduction), RR techniques(Volume Reduction) and Standard SMPs with RRv Capacity that were used to reduce the Total WQv Required (#28).

Identify the SMPs to be used by providing the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes runoff to the technique/practice.

Note: Redevelopment projects shall use the Post-Construction SMP Identification section to identify the SMPs used to treat and/or reduce the WQv required. If runoff reduction techniques will not be used to reduce the required WQv, skip to question 33a after identifying the SMPs.

30. Indicate the Total RRv provided by the RR techniques (Area/Volume Reduction) and Standard SMPs with RRv capacity identified in question 29. (acre-feet)
0

31. Is the Total RRv provided (#30) greater than or equal to the total WQv required (#28)?
No

If Yes, go to question 36. If No, go to question 32.

32. Provide the Minimum RRv required based on HSG. [Minimum RRv Required = (P) (0.95) (Ai) / 12, Ai=(s) (Aic)] (acre-feet)
0

32a. Is the Total RRv provided (#30) greater than or equal to the Minimum RRv Required (#32)?
Yes

If Yes, go to question 33.

Note: Use the space provided in question #39 to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). A detailed evaluation of the specific site limitations and justification for not reducing 100% of the WQv required (#28) must also be included in the SWPPP.

If No, sizing criteria has not been met; therefore, NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

33. SMPs

Use the Post-construction SMP Identification section to identify the Standard SMPs and, if applicable, the Alternative SMPs to be used to treat the remaining total WQv (=Total WQv Required in #28 - Total RRv Provided in #30).

Also, provide the total impervious area that contributes runoff to each practice selected.

NOTE: Use the Post-construction SMP Identification section to identify the SMPs used on Redevelopment projects.

33a. Indicate the Total WQv provided (i.e. WQv treated) by the SMPs identified in question #33 and Standard SMPs with RRv Capacity identified in question #29. (acre-feet)
0.236

Note: For the standard SMPs with RRv capacity, the WQv provided by each practice = the WQv calculated using the contributing drainage area to the practice - provided by the practice. (See Table 3.5 in Design Manual)

34. Provide the sum of the Total RRv provided (#30) and the WQv provided (#33a).
0.236

35. Is the sum of the RRv provided (#30) and the WQv provided (#33a) greater than or equal to the total WQv required (#28)?
Yes

If Yes, go to question 36.

If No, sizing criteria has not been met; therefore, NOI can not be processed. SWPPP preparer must modify design to meet sizing criteria.

36. Provide the total Channel Protection Storage Volume (CPv required and provided or select waiver (#36a), if applicable.

CPv Required (acre-feet)
0

CPv Provided (acre-feet)
0

36a. The need to provide channel protection has been waived because:
NONE PROVIDED

37. Provide the Overbank Flood (Qp) and Extreme Flood (Qf) control criteria or select waiver (#37a), if applicable.

Overbank Flood Control Criteria (Qp)

Pre-Development (CFS)
21.11

Post-Development (CFS)
15.19

Total Extreme Flood Control Criteria (Qf)

Pre-Development (CFS)
35.42

Post-Development (CFS)
23.19

37a. The need to meet the Qp and Qf criteria has been waived because:
NONE PROVIDED

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

If Yes, Identify the entity responsible for the long term Operation and Maintenance
Tannery Commons, LLC

39. Use this space to summarize the specific site limitations and justification for not reducing 100% of WQv required (#28). (See question #32a) This space can also be used for other pertinent project information.
The project has an overall reduction in impervious area and therefore no RRv is required.

Post-Construction SMP Identification

Runoff Reduction (RR) Techniques, Standard Stormwater Management Practices (SMPs) and Alternative SMPs

Identify the Post-construction SMPs to be used by providing the total impervious area that contributes runoff to each technique/practice selected. For the Area Reduction Techniques, provide the total contributing area (includes pervious area) and, if applicable, the total impervious area that contributes

runoff to the technique/practice.

RR Techniques (Area Reduction)

Round to the nearest tenth

Total Contributing Acres for Conservation of Natural Area (RR-1)
NONE PROVIDED

Total Contributing Impervious Acres for Conservation of Natural Area (RR-1)
NONE PROVIDED

Total Contributing Acres for Sheetflow to Riparian Buffers/Filter Strips (RR-2)
NONE PROVIDED

Total Contributing Impervious Acres for Sheetflow to Riparian Buffers/Filter Strips (RR-2)
NONE PROVIDED

Total Contributing Acres for Tree Planting/Tree Pit (RR-3)
NONE PROVIDED

Total Contributing Impervious Acres for Tree Planting/Tree Pit (RR-3)
NONE PROVIDED

Total Contributing Acres for Disconnection of Rooftop Runoff (RR-4)
NONE PROVIDED

RR Techniques (Volume Reduction)

Total Contributing Impervious Acres for Disconnection of Rooftop Runoff (RR-4)
NONE PROVIDED

Total Contributing Impervious Acres for Vegetated Swale (RR-5)
NONE PROVIDED

Total Contributing Impervious Acres for Rain Garden (RR-6)
NONE PROVIDED

Total Contributing Impervious Acres for Stormwater Planter (RR-7)
NONE PROVIDED

Total Contributing Impervious Acres for Rain Barrel/Cistern (RR-8)
NONE PROVIDED

Total Contributing Impervious Acres for Porous Pavement (RR-9)
NONE PROVIDED

Total Contributing Impervious Acres for Green Roof (RR-10)
NONE PROVIDED

Standard SMPs with RRv Capacity

Total Contributing Impervious Acres for Infiltration Trench (I-1)
NONE PROVIDED

Total Contributing Impervious Acres for Infiltration Basin (I-2)
NONE PROVIDED

Total Contributing Impervious Acres for Dry Well (I-3)
NONE PROVIDED

Total Contributing Impervious Acres for Underground Infiltration System (I-4)
NONE PROVIDED

Total Contributing Impervious Acres for Bioretention (F-5)
NONE PROVIDED

Total Contributing Impervious Acres for Dry Swale (O-1)
NONE PROVIDED

Standard SMPs

Total Contributing Impervious Acres for Micropool Extended Detention (P-1)
NONE PROVIDED

Total Contributing Impervious Acres for Wet Pond (P-2)
NONE PROVIDED

Total Contributing Impervious Acres for Wet Extended Detention (P-3)
NONE PROVIDED

Total Contributing Impervious Acres for Multiple Pond System (P-4)
NONE PROVIDED

Total Contributing Impervious Acres for Pocket Pond (P-5)
NONE PROVIDED

Total Contributing Impervious Acres for Surface Sand Filter (F-1)
NONE PROVIDED

Total Contributing Impervious Acres for Underground Sand Filter (F-2)
NONE PROVIDED

Total Contributing Impervious Acres for Perimeter Sand Filter (F-3)
NONE PROVIDED

Total Contributing Impervious Acres for Organic Filter (F-4)
NONE PROVIDED

Total Contributing Impervious Acres for Shallow Wetland (W-1)
NONE PROVIDED

Total Contributing Impervious Acres for Extended Detention Wetland (W-2)
NONE PROVIDED

Total Contributing Impervious Acres for Pond/Wetland System (W-3)
NONE PROVIDED

Total Contributing Impervious Acres for Pocket Wetland (W-4)
NONE PROVIDED

Total Contributing Impervious Acres for Wet Swale (O-2)
NONE PROVIDED

Alternative SMPs (DO NOT INCLUDE PRACTICES BEING USED FOR PRETREATMENT ONLY)

Total Contributing Impervious Area for Hydrodynamic
2.5

Total Contributing Impervious Area for Wet Vault
NONE PROVIDED

Total Contributing Impervious Area for Media Filter
NONE PROVIDED

"Other" Alternative SMP?
NONE PROVIDED

Total Contributing Impervious Area for "Other"
NONE PROVIDED

Provide the name and manufaturer of the alternative SMPs (i.e. proprietary practice(s)) being used for WQv treatment.

Note: Redevelopment projects which do not use RR techniques, shall use questions 28, 29, 33 and 33a to provide SMPs used, total WQv required and total WQv provided for the project.

Manufacturer of Alternative SMP
Stromtech

Name of Alternative SMP
Hydrodynamic Separator

Other Permits

40. Identify other DEC permits, existing and new, that are required for this project/facility.
None

If SPDES Multi-Sector GP, then give permit ID
NONE PROVIDED

If Other, then identify
NONE PROVIDED

41. Does this project require a US Army Corps of Engineers Wetland Permit?
No

If "Yes," then indicate Size of Impact, in acres, to the nearest tenth
NONE PROVIDED

42. If this NOI is being submitted for the purpose of continuing or transferring coverage under a general permit for stormwater runoff from construction activities, please indicate the former SPDES number assigned.
NONE PROVIDED

MS4 SWPPP Acceptance

43. Is this project subject to the requirements of a regulated, traditional land use control MS4?
Yes - Please attach the MS4 Acceptance form below

If No, skip question 44

44. Has the "MS4 SWPPP Acceptance" form been signed by the principal executive officer or ranking elected official and submitted along with this NOI?
NONE PROVIDED

MS4 SWPPP Acceptance Form Download

Download form from the link below. Complete, sign, and upload.
MS4 SWPPP Acceptance Form

MS4 Acceptance Form Upload

NONE PROVIDED

Comment

NONE PROVIDED

Owner/Operator Certification

Owner/Operator Certification Form Download

Download the certification form by clicking the link below. Complete, sign, scan, and upload the form.
Owner/Operator Certification Form (PDF, 45KB)

Upload Owner/Operator Certification Form

NONE PROVIDED

Comment

NONE PROVIDED

Appendix B

Existing Conditions Watershed Map and HydroCAD Calculations

Ballston Spa Tannery

125 Bath Street, Ballston Spa, NY, 12020

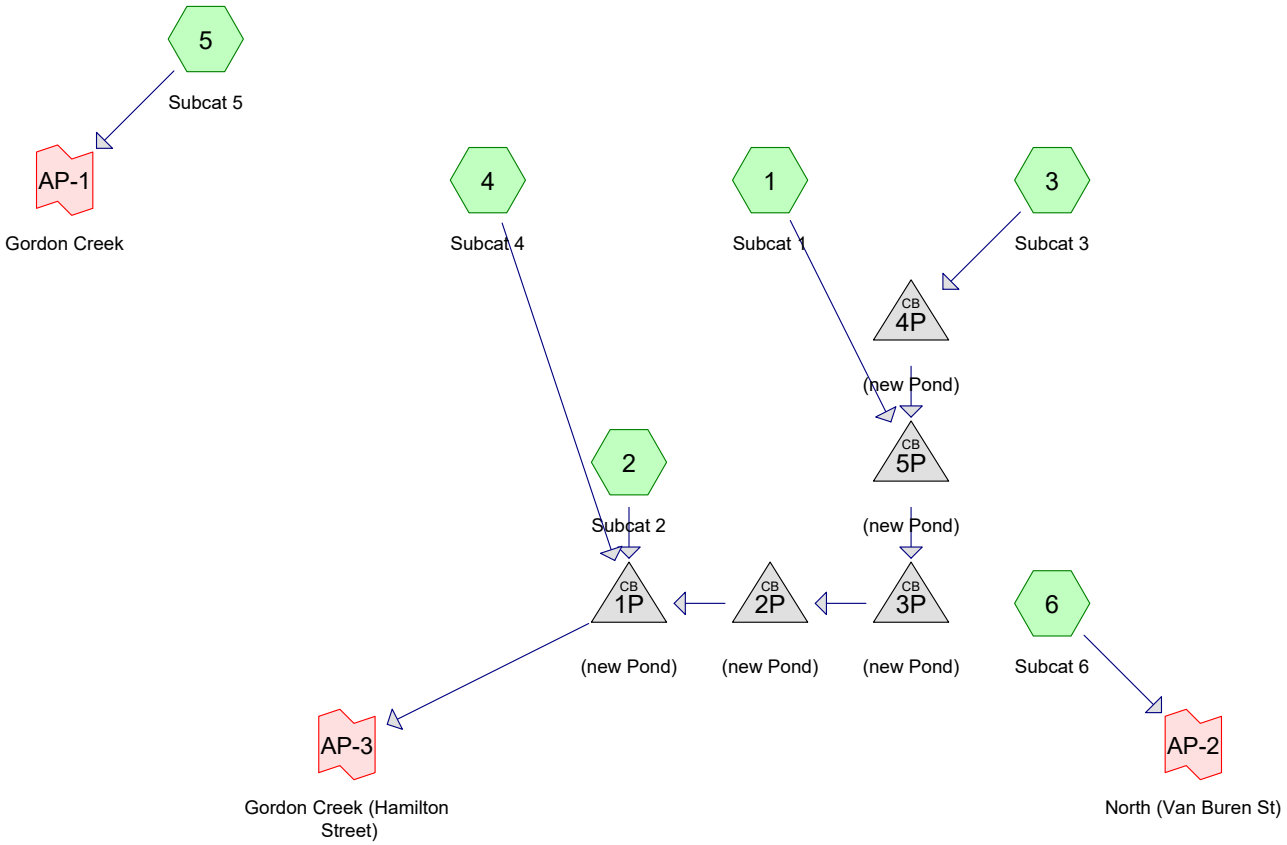
Existing Condition Watershed Map

Date: 5/2/2025

W1

The LA GROUP

Landscape Architecture & Engineering P.C.



Subcat Reach Pond Link

Routing Diagram for 2023024_Predevelopment
Prepared by The LA Group, PC, Printed 5/2/2025

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
65,098	39	>75% Grass cover, Good, HSG A (1, 3, 4, 5, 6)
191,163	98	Paved parking, HSG A (1, 2, 4, 5, 6)
60,860	30	Woods, Good, HSG A (1, 3, 4, 5)
317,121	**73**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
317,121	HSG A	1, 2, 3, 4, 5, 6
0	HSG B	
0	HSG C	
0	HSG D	
0	Other	
317,121		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Sub Num
65,098	0	0	0	0	65,098	>75% Grass cover, Good	
191,163	0	0	0	0	191,163	Paved parking	
60,860	0	0	0	0	60,860	Woods, Good	
317,121	**0**	**0**	**0**	**0**	**317,121**	**TOTAL AREA**	

Summary for Subcatchment 1: Subcat 1

Runoff = 1.16 cfs @ 12.00 hrs, Volume= 3,053 cf, Depth> 0.55"
Routed to Pond 5P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.20"

Area (ac)	CN	Description
0.450	39	>75% Grass cover, Good, HSG A
0.427	98	Paved parking, HSG A
0.665	30	Woods, Good, HSG A
1.542		Weighted Average
1.115		72.31% Pervious Area
0.427		27.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	64	0.2300	0.17		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
2.1	38	0.1840	0.31		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.60"
0.6	54	0.0540	1.63		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	136	0.0440	4.26		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
9.5	292	Total			

Summary for Subcatchment 2: Subcat 2

Runoff = 4.15 cfs @ 11.96 hrs, Volume= 9,945 cf, Depth> 1.97"
Routed to Pond 1P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.20"

Area (ac)	CN	Description
1.390	98	Paved parking, HSG A
1.390		100.00% Impervious Area

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

Summary for Subcatchment 3: Subcat 3

Runoff = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Depth= 0.00"
Routed to Pond 4P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.20"

Area (ac)	CN	Description
0.241	39	>75% Grass cover, Good, HSG A
0.111	30	Woods, Good, HSG A
0.352		Weighted Average
0.352		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	61	0.2900	0.18		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
2.3	39	0.1500	0.28		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.60"
1.0	137	0.1000	2.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.8	237	Total			

Summary for Subcatchment 4: Subcat 4

Runoff = 4.84 cfs @ 11.99 hrs, Volume= 12,260 cf, Depth> 1.53"
Routed to Pond 1P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.20"

Area (ac)	CN	Description
0.358	39	>75% Grass cover, Good, HSG A
1.714	98	Paved parking, HSG A
0.134	30	Woods, Good, HSG A
2.206		Weighted Average
0.491		22.28% Pervious Area
1.714		77.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.1	47	0.2100	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
0.9	53	0.0150	0.97		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.60"
2.3	467	0.0270	3.34		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
8.3	567	Total			

Summary for Subcatchment 5: Subcat 5

Runoff = 1.29 cfs @ 12.00 hrs, Volume= 3,406 cf, Depth> 0.70"
Routed to Link AP-1 : Gordon Creek

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.20"

Area (sf)	CN	Description
16,086	39	>75% Grass cover, Good, HSG A
20,749	98	Paved parking, HSG A
21,238	30	Woods, Good, HSG A
58,074		Weighted Average
37,325		64.27% Pervious Area
20,749		35.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	40	0.2700	0.16		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
5.0	60	0.0500	0.20		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.60"
0.5	50	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.5	150	Total			

Summary for Subcatchment 6: Subcat 6

Runoff = 1.14 cfs @ 11.96 hrs, Volume= 2,728 cf, Depth> 1.64"
Routed to Link AP-2 : North (Van Buren St)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.20"

Area (sf)	CN	Description
3,327	39	>75% Grass cover, Good, HSG A
16,608	98	Paved parking, HSG A
19,934		Weighted Average
3,327		16.69% Pervious Area
16,608		83.31% Impervious Area

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

Summary for Pond 1P: (new Pond)

Inflow Area = 239,112 sf, 64.32% Impervious, Inflow Depth > 1.27" for 1-yr event
Inflow = 10.03 cfs @ 11.98 hrs, Volume= 25,257 cf
Outflow = 10.03 cfs @ 11.98 hrs, Volume= 25,257 cf, Atten= 0%, Lag= 0.0 min
Primary = 10.03 cfs @ 11.98 hrs, Volume= 25,257 cf
Routed to Link AP-3 : Gordon Creek (Hamilton Street)

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 243.00' @ 11.98 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	238.69'	**15.0" Round Culvert** L= 145.0' Ke= 0.500 Inlet / Outlet Invert= 238.69' / 237.24' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=9.70 cfs @ 11.98 hrs HW=242.74' (Free Discharge)
1=Culvert (Barrel Controls 9.70 cfs @ 7.90 fps)

Summary for Pond 2P: (new Pond)

Inflow Area = 82,494 sf, 22.54% Impervious, Inflow Depth > 0.44" for 1-yr event
Inflow = 1.16 cfs @ 12.00 hrs, Volume= 3,053 cf
Outflow = 1.16 cfs @ 12.00 hrs, Volume= 3,053 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.16 cfs @ 12.00 hrs, Volume= 3,053 cf
Routed to Pond 1P : (new Pond)

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 239.70' @ 12.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	238.97'	**15.0" Round Culvert** L= 131.0' Ke= 0.500 Inlet / Outlet Invert= 238.97' / 238.80' S= 0.0013 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=1.15 cfs @ 12.00 hrs HW=239.69' (Free Discharge)
1=Culvert (Barrel Controls 1.15 cfs @ 2.25 fps)

Summary for Pond 3P: (new Pond)

Inflow Area = 82,494 sf, 22.54% Impervious, Inflow Depth > 0.44" for 1-yr event
Inflow = 1.16 cfs @ 12.00 hrs, Volume= 3,053 cf
Outflow = 1.16 cfs @ 12.00 hrs, Volume= 3,053 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.16 cfs @ 12.00 hrs, Volume= 3,053 cf
Routed to Pond 2P : (new Pond)

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 240.18' @ 12.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	239.37'	**12.0" Round Culvert** L= 158.0' Ke= 0.500

Inlet / Outlet Invert= 239.37' / 239.14' S= 0.0015 '/' Cc= 0.900
n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.15 cfs @ 12.00 hrs HW=240.18' (Free Discharge)
└**1=Culvert** (Barrel Controls 1.15 cfs @ 2.32 fps)

Summary for Pond 4P: (new Pond)

Inflow Area = 15,344 sf, 0.00% Impervious, Inflow Depth = 0.00" for 1-yr event
Inflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Outflow = 0.00 cfs @ 0.00 hrs, Volume= 0 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 0.00 hrs, Volume= 0 cf
Routed to Pond 5P : (new Pond)

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 248.00' @ 0.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	248.00'	**12.0" Round Culvert** L= 61.0' Ke= 0.500 Inlet / Outlet Invert= 248.00' / 242.57' S= 0.0890 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 0.00 hrs HW=248.00' (Free Discharge)
└**1=Culvert** (Controls 0.00 cfs)

Summary for Pond 5P: (new Pond)

Inflow Area = 82,494 sf, 22.54% Impervious, Inflow Depth > 0.44" for 1-yr event
Inflow = 1.16 cfs @ 12.00 hrs, Volume= 3,053 cf
Outflow = 1.16 cfs @ 12.00 hrs, Volume= 3,053 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.16 cfs @ 12.00 hrs, Volume= 3,053 cf
Routed to Pond 3P : (new Pond)

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 243.13' @ 12.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	242.57'	**12.0" Round Culvert** L= 100.0' Ke= 0.500 Inlet / Outlet Invert= 242.57' / 239.65' S= 0.0292 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.15 cfs @ 12.00 hrs HW=243.13' (Free Discharge)
└**1=Culvert** (Inlet Controls 1.15 cfs @ 2.55 fps)

Summary for Link AP-1: Gordon Creek

Inflow Area = 58,074 sf, 35.73% Impervious, Inflow Depth > 0.70" for 1-yr event
Inflow = 1.29 cfs @ 12.00 hrs, Volume= 3,406 cf
Primary = 1.29 cfs @ 12.00 hrs, Volume= 3,406 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link AP-2: North (Van Buren St)

Inflow Area = 19,934 sf, 83.31% Impervious, Inflow Depth > 1.64" for 1-yr event
Inflow = 1.14 cfs @ 11.96 hrs, Volume= 2,728 cf
Primary = 1.14 cfs @ 11.96 hrs, Volume= 2,728 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link AP-3: Gordon Creek (Hamilton Street)

Inflow Area = 239,112 sf, 64.32% Impervious, Inflow Depth > 1.27" for 1-yr event
Inflow = 10.03 cfs @ 11.98 hrs, Volume= 25,257 cf
Primary = 10.03 cfs @ 11.98 hrs, Volume= 25,257 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Subcatchment 1: Subcat 1

Runoff = 1.96 cfs @ 12.00 hrs, Volume= 5,346 cf, Depth> 0.96"
Routed to Pond 5P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.67"

Area (ac)	CN	Description
0.450	39	>75% Grass cover, Good, HSG A
0.427	98	Paved parking, HSG A
0.665	30	Woods, Good, HSG A
1.542		Weighted Average
1.115		72.31% Pervious Area
0.427		27.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	64	0.2300	0.17		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
2.1	38	0.1840	0.31		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.60"
0.6	54	0.0540	1.63		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	136	0.0440	4.26		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
9.5	292	Total			

Summary for Subcatchment 2: Subcat 2

Runoff = 7.03 cfs @ 11.96 hrs, Volume= 17,321 cf, Depth> 3.43"
Routed to Pond 1P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.67"

Area (ac)	CN	Description
1.390	98	Paved parking, HSG A
1.390		100.00% Impervious Area

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

Summary for Subcatchment 3: Subcat 3

Runoff = 0.00 cfs @ 24.00 hrs, Volume= 16 cf, Depth> 0.01"
Routed to Pond 4P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.67"

Area (ac)	CN	Description
0.241	39	>75% Grass cover, Good, HSG A
0.111	30	Woods, Good, HSG A
0.352		Weighted Average
0.352		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	61	0.2900	0.18		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
2.3	39	0.1500	0.28		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.60"
1.0	137	0.1000	2.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.8	237	Total			

Summary for Subcatchment 4: Subcat 4

Runoff = 8.19 cfs @ 11.99 hrs, Volume= 21,377 cf, Depth> 2.67"
Routed to Pond 1P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.67"

Area (ac)	CN	Description
0.358	39	>75% Grass cover, Good, HSG A
1.714	98	Paved parking, HSG A
0.134	30	Woods, Good, HSG A
2.206		Weighted Average
0.491		22.28% Pervious Area
1.714		77.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.1	47	0.2100	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
0.9	53	0.0150	0.97		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.60"
2.3	467	0.0270	3.34		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
8.3	567	Total			

Summary for Subcatchment 5: Subcat 5

Runoff = 2.19 cfs @ 12.00 hrs, Volume= 5,956 cf, Depth> 1.23"
Routed to Link AP-1 : Gordon Creek

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.67"

Area (sf)	CN	Description
16,086	39	>75% Grass cover, Good, HSG A
20,749	98	Paved parking, HSG A
21,238	30	Woods, Good, HSG A
58,074		Weighted Average
37,325		64.27% Pervious Area
20,749		35.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	40	0.2700	0.16		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
5.0	60	0.0500	0.20		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.60"
0.5	50	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.5	150	Total			

Summary for Subcatchment 6: Subcat 6

Runoff = 1.93 cfs @ 11.96 hrs, Volume= 4,757 cf, Depth> 2.86"
Routed to Link AP-2 : North (Van Buren St)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.67"

Area (sf)	CN	Description
3,327	39	>75% Grass cover, Good, HSG A
16,608	98	Paved parking, HSG A
19,934		Weighted Average
3,327		16.69% Pervious Area
16,608		83.31% Impervious Area

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

Summary for Pond 1P: (new Pond)

Inflow Area = 239,112 sf, 64.32% Impervious, Inflow Depth > 2.21" for 10-yr event
Inflow = 16.99 cfs @ 11.98 hrs, Volume= 44,060 cf
Outflow = 16.99 cfs @ 11.98 hrs, Volume= 44,060 cf, Atten= 0%, Lag= 0.0 min
Primary = 16.99 cfs @ 11.98 hrs, Volume= 44,060 cf
Routed to Link AP-3 : Gordon Creek (Hamilton Street)

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 251.43' @ 11.98 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	238.69'	**15.0" Round Culvert** L= 145.0' Ke= 0.500 Inlet / Outlet Invert= 238.69' / 237.24' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=16.43 cfs @ 11.98 hrs HW=250.68' (Free Discharge)
1=Culvert (Barrel Controls 16.43 cfs @ 13.38 fps)

Summary for Pond 2P: (new Pond)

Inflow Area = 82,494 sf, 22.54% Impervious, Inflow Depth > 0.78" for 10-yr event
Inflow = 1.96 cfs @ 12.00 hrs, Volume= 5,362 cf
Outflow = 1.96 cfs @ 12.00 hrs, Volume= 5,362 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.96 cfs @ 12.00 hrs, Volume= 5,362 cf
Routed to Pond 1P : (new Pond)

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 239.94' @ 12.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	238.97'	**15.0" Round Culvert** L= 131.0' Ke= 0.500 Inlet / Outlet Invert= 238.97' / 238.80' S= 0.0013 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=1.96 cfs @ 12.00 hrs HW=239.94' (Free Discharge)
1=Culvert (Barrel Controls 1.96 cfs @ 2.64 fps)

Summary for Pond 3P: (new Pond)

Inflow Area = 82,494 sf, 22.54% Impervious, Inflow Depth > 0.78" for 10-yr event
Inflow = 1.96 cfs @ 12.00 hrs, Volume= 5,362 cf
Outflow = 1.96 cfs @ 12.00 hrs, Volume= 5,362 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.96 cfs @ 12.00 hrs, Volume= 5,362 cf
Routed to Pond 2P : (new Pond)

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 240.56' @ 12.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	239.37'	**12.0" Round Culvert** L= 158.0' Ke= 0.500

Inlet / Outlet Invert= 239.37' / 239.14' S= 0.0015 '/' Cc= 0.900
n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.96 cfs @ 12.00 hrs HW=240.56' (Free Discharge)
1=Culvert (Barrel Controls 1.96 cfs @ 2.65 fps)

Summary for Pond 4P: (new Pond)

Inflow Area = 15,344 sf, 0.00% Impervious, Inflow Depth > 0.01" for 10-yr event
Inflow = 0.00 cfs @ 24.00 hrs, Volume= 16 cf
Outflow = 0.00 cfs @ 24.00 hrs, Volume= 16 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.00 cfs @ 24.00 hrs, Volume= 16 cf
Routed to Pond 5P : (new Pond)

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 248.01' @ 24.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	248.00'	**12.0" Round Culvert** L= 61.0' Ke= 0.500 Inlet / Outlet Invert= 248.00' / 242.57' S= 0.0890 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.00 cfs @ 24.00 hrs HW=248.01' (Free Discharge)
1=Culvert (Inlet Controls 0.00 cfs @ 0.36 fps)

Summary for Pond 5P: (new Pond)

Inflow Area = 82,494 sf, 22.54% Impervious, Inflow Depth > 0.78" for 10-yr event
Inflow = 1.96 cfs @ 12.00 hrs, Volume= 5,362 cf
Outflow = 1.96 cfs @ 12.00 hrs, Volume= 5,362 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.96 cfs @ 12.00 hrs, Volume= 5,362 cf
Routed to Pond 3P : (new Pond)

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 243.35' @ 12.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	242.57'	**12.0" Round Culvert** L= 100.0' Ke= 0.500 Inlet / Outlet Invert= 242.57' / 239.65' S= 0.0292 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.96 cfs @ 12.00 hrs HW=243.34' (Free Discharge)
1=Culvert (Inlet Controls 1.96 cfs @ 3.00 fps)

Summary for Link AP-1: Gordon Creek

Inflow Area = 58,074 sf, 35.73% Impervious, Inflow Depth > 1.23" for 10-yr event
Inflow = 2.19 cfs @ 12.00 hrs, Volume= 5,956 cf
Primary = 2.19 cfs @ 12.00 hrs, Volume= 5,956 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link AP-2: North (Van Buren St)

Inflow Area = 19,934 sf, 83.31% Impervious, Inflow Depth > 2.86" for 10-yr event
Inflow = 1.93 cfs @ 11.96 hrs, Volume= 4,757 cf
Primary = 1.93 cfs @ 11.96 hrs, Volume= 4,757 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link AP-3: Gordon Creek (Hamilton Street)

Inflow Area = 239,112 sf, 64.32% Impervious, Inflow Depth > 2.21" for 10-yr event
Inflow = 16.99 cfs @ 11.98 hrs, Volume= 44,060 cf
Primary = 16.99 cfs @ 11.98 hrs, Volume= 44,060 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Subcatchment 1: Subcat 1

Runoff = 3.36 cfs @ 12.00 hrs, Volume= 9,994 cf, Depth> 1.79"
Routed to Pond 5P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=6.08"

Area (ac)	CN	Description
0.450	39	>75% Grass cover, Good, HSG A
0.427	98	Paved parking, HSG A
0.665	30	Woods, Good, HSG A
1.542		Weighted Average
1.115		72.31% Pervious Area
0.427		27.69% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
6.3	64	0.2300	0.17		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
2.1	38	0.1840	0.31		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.60"
0.6	54	0.0540	1.63		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
0.5	136	0.0440	4.26		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
9.5	292	Total			

Summary for Subcatchment 2: Subcat 2

Runoff = 11.72 cfs @ 11.96 hrs, Volume= 29,450 cf, Depth> 5.84"
Routed to Pond 1P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=6.08"

Area (ac)	CN	Description
1.390	98	Paved parking, HSG A
1.390		100.00% Impervious Area

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

Summary for Subcatchment 3: Subcat 3

Runoff = 0.08 cfs @ 12.06 hrs, Volume= 440 cf, Depth> 0.34"
Routed to Pond 4P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=6.08"

Area (ac)	CN	Description
0.241	39	>75% Grass cover, Good, HSG A
0.111	30	Woods, Good, HSG A
0.352		Weighted Average
0.352		100.00% Pervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	61	0.2900	0.18		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
2.3	39	0.1500	0.28		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.60"
1.0	137	0.1000	2.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.8	237	Total			

Summary for Subcatchment 4: Subcat 4

Runoff = 13.73 cfs @ 11.99 hrs, Volume= 36,951 cf, Depth> 4.62"
Routed to Pond 1P : (new Pond)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=6.08"

Area (ac)	CN	Description
0.358	39	>75% Grass cover, Good, HSG A
1.714	98	Paved parking, HSG A
0.134	30	Woods, Good, HSG A
2.206		Weighted Average
0.491		22.28% Pervious Area
1.714		77.72% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.1	47	0.2100	0.15		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
0.9	53	0.0150	0.97		**Sheet Flow,** Smooth surfaces n= 0.011 P2= 2.60"
2.3	467	0.0270	3.34		**Shallow Concentrated Flow,** Paved Kv= 20.3 fps
8.3	567	Total			

Summary for Subcatchment 5: Subcat 5

Runoff = 3.72 cfs @ 12.00 hrs, Volume= 10,853 cf, Depth> 2.24"
Routed to Link AP-1 : Gordon Creek

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=6.08"

Area (sf)	CN	Description
16,086	39	>75% Grass cover, Good, HSG A
20,749	98	Paved parking, HSG A
21,238	30	Woods, Good, HSG A
58,074		Weighted Average
37,325		64.27% Pervious Area
20,749		35.73% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	40	0.2700	0.16		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
5.0	60	0.0500	0.20		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.60"
0.5	50	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.5	150	Total			

Summary for Subcatchment 6: Subcat 6

Runoff = 3.23 cfs @ 11.96 hrs, Volume= 8,208 cf, Depth> 4.94"
Routed to Link AP-2 : North (Van Buren St)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=6.08"

Area (sf)	CN	Description
3,327	39	>75% Grass cover, Good, HSG A
16,608	98	Paved parking, HSG A
19,934		Weighted Average
3,327		16.69% Pervious Area
16,608		83.31% Impervious Area

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

Summary for Pond 1P: (new Pond)

Inflow Area = 239,112 sf, 64.32% Impervious, Inflow Depth > 3.86" for 100-yr event
Inflow = 28.47 cfs @ 11.98 hrs, Volume= 76,836 cf
Outflow = 28.47 cfs @ 11.98 hrs, Volume= 76,836 cf, Atten= 0%, Lag= 0.0 min
Primary = 28.47 cfs @ 11.98 hrs, Volume= 76,836 cf
Routed to Link AP-3 : Gordon Creek (Hamilton Street)

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 274.84' @ 11.98 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	238.69'	**15.0" Round Culvert** L= 145.0' Ke= 0.500 Inlet / Outlet Invert= 238.69' / 237.24' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=27.54 cfs @ 11.98 hrs HW=272.75' (Free Discharge)
1=Culvert (Barrel Controls 27.54 cfs @ 22.44 fps)

Summary for Pond 2P: (new Pond)

Inflow Area = 82,494 sf, 22.54% Impervious, Inflow Depth > 1.52" for 100-yr event
Inflow = 3.41 cfs @ 12.01 hrs, Volume= 10,435 cf
Outflow = 3.41 cfs @ 12.01 hrs, Volume= 10,435 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.41 cfs @ 12.01 hrs, Volume= 10,435 cf
Routed to Pond 1P : (new Pond)

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 240.37' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	238.97'	**15.0" Round Culvert** L= 131.0' Ke= 0.500 Inlet / Outlet Invert= 238.97' / 238.80' S= 0.0013 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=3.37 cfs @ 12.01 hrs HW=240.36' (Free Discharge)
1=Culvert (Barrel Controls 3.37 cfs @ 3.08 fps)

Summary for Pond 3P: (new Pond)

Inflow Area = 82,494 sf, 22.54% Impervious, Inflow Depth > 1.52" for 100-yr event
Inflow = 3.41 cfs @ 12.01 hrs, Volume= 10,435 cf
Outflow = 3.41 cfs @ 12.01 hrs, Volume= 10,435 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.41 cfs @ 12.01 hrs, Volume= 10,435 cf
Routed to Pond 2P : (new Pond)

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 241.82' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	239.37'	**12.0" Round Culvert** L= 158.0' Ke= 0.500

Inlet / Outlet Invert= 239.37' / 239.14' S= 0.0015 '/' Cc= 0.900
n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=3.37 cfs @ 12.01 hrs HW=241.77' (Free Discharge)
1=Culvert (Barrel Controls 3.37 cfs @ 4.29 fps)

Summary for Pond 4P: (new Pond)

Inflow Area = 15,344 sf, 0.00% Impervious, Inflow Depth > 0.34" for 100-yr event
Inflow = 0.08 cfs @ 12.06 hrs, Volume= 440 cf
Outflow = 0.08 cfs @ 12.06 hrs, Volume= 440 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.08 cfs @ 12.06 hrs, Volume= 440 cf
Routed to Pond 5P : (new Pond)

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 248.13' @ 12.06 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	248.00'	**12.0" Round Culvert** L= 61.0' Ke= 0.500 Inlet / Outlet Invert= 248.00' / 242.57' S= 0.0890 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.07 cfs @ 12.06 hrs HW=248.13' (Free Discharge)
1=Culvert (Inlet Controls 0.07 cfs @ 1.23 fps)

Summary for Pond 5P: (new Pond)

Inflow Area = 82,494 sf, 22.54% Impervious, Inflow Depth > 1.52" for 100-yr event
Inflow = 3.41 cfs @ 12.01 hrs, Volume= 10,435 cf
Outflow = 3.41 cfs @ 12.01 hrs, Volume= 10,435 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.41 cfs @ 12.01 hrs, Volume= 10,435 cf
Routed to Pond 3P : (new Pond)

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 243.88' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	242.57'	**12.0" Round Culvert** L= 100.0' Ke= 0.500 Inlet / Outlet Invert= 242.57' / 239.65' S= 0.0292 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=3.37 cfs @ 12.01 hrs HW=243.86' (Free Discharge)
1=Culvert (Inlet Controls 3.37 cfs @ 4.29 fps)

Summary for Link AP-1: Gordon Creek

Inflow Area = 58,074 sf, 35.73% Impervious, Inflow Depth > 2.24" for 100-yr event
Inflow = 3.72 cfs @ 12.00 hrs, Volume= 10,853 cf
Primary = 3.72 cfs @ 12.00 hrs, Volume= 10,853 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link AP-2: North (Van Buren St)

Inflow Area = 19,934 sf, 83.31% Impervious, Inflow Depth > 4.94" for 100-yr event
Inflow = 3.23 cfs @ 11.96 hrs, Volume= 8,208 cf
Primary = 3.23 cfs @ 11.96 hrs, Volume= 8,208 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link AP-3: Gordon Creek (Hamilton Street)

Inflow Area = 239,112 sf, 64.32% Impervious, Inflow Depth > 3.86" for 100-yr event
Inflow = 28.47 cfs @ 11.98 hrs, Volume= 76,836 cf
Primary = 28.47 cfs @ 11.98 hrs, Volume= 76,836 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Appendix C

Proposed Condition Watershed Map and HydroCAD Calculations

Plotted By: BRETT STROM
Scale: 1:1
Plot Date: 5/2/2025
File Name: G:\Proj\2022\2022024_Ballston_Spa_Tannery\2025\2025-4\Hydro\Civil\2022024_ProposedWatershed.dwg

LEGEND

- SUBCATCHMENT BOUNDARY
- TIME OF CONCENTRATION PATH
- 1 — SUBCATCHMENT ID
- SMP-1 — STORMWATER MANAGEMENT PRACTICE
- AP-1 — ANALYSIS POINT

Ballston Spa Tannery

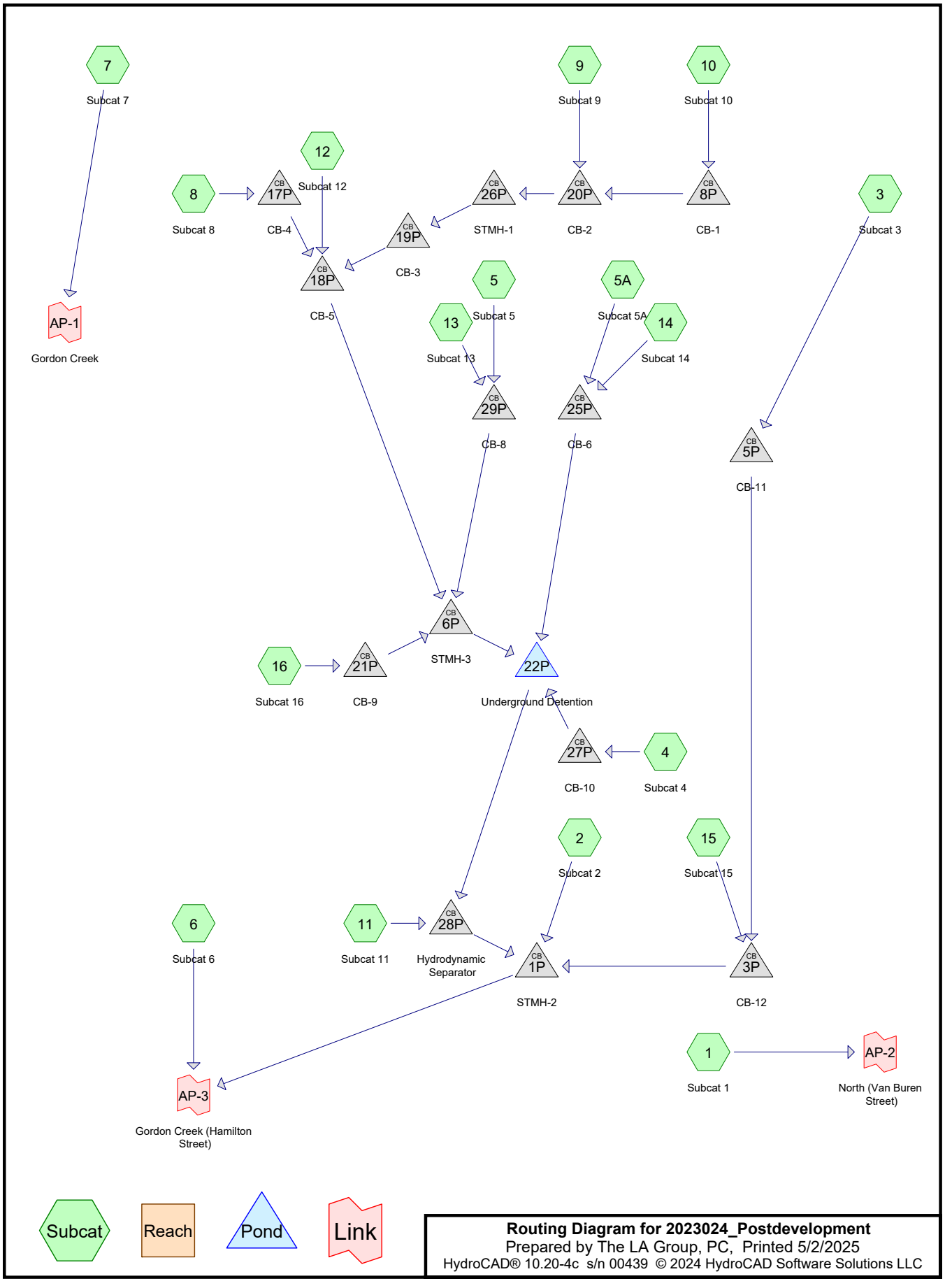
125 Bath Street, Ballston Spa, NY, 12020

Proposed Condition Watershed Map – W2

Date: 5/2/2025

SCALE: 1"=30'

The LA GROUP
Landscape Architecture & Engineering PC



Routing Diagram for 2023024_Postdevelopment
Prepared by The LA Group, PC, Printed 5/2/2025

Area Listing (all nodes)

Area (sq-ft)	CN	Description (subcatchment-numbers)
95,521	39	>75% Grass cover, Good, HSG A (1, 2, 3, 4, 5, 5A, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16)
174,927	98	Paved parking, HSG A (1, 2, 3, 4, 5, 5A, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16)
46,715	30	Woods, Good, HSG A (3, 7, 9, 10, 12)
317,164	**70**	**TOTAL AREA**

Soil Listing (all nodes)

Area (sq-ft)	Soil Group	Subcatchment Numbers
317,164	HSG A	1, 2, 3, 4, 5, 5A, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16
0	HSG B	
0	HSG C	
0	HSG D	
0	Other	
317,164		**TOTAL AREA**

Ground Covers (all nodes)

HSG-A (sq-ft)	HSG-B (sq-ft)	HSG-C (sq-ft)	HSG-D (sq-ft)	Other (sq-ft)	Total (sq-ft)	Ground Cover	Sub Num
95,521	0	0	0	0	95,521	>75% Grass cover, Good	
174,927	0	0	0	0	174,927	Paved parking	
46,715	0	0	0	0	46,715	Woods, Good	
317,164	**0**	**0**	**0**	**0**	**317,164**	**TOTAL AREA**	

Summary for Subcatchment 1: Subcat 1

Runoff = 1.08 cfs @ 11.96 hrs, Volume= 2,596 cf, Depth> 1.34"
Routed to Link AP-2 : North (Van Buren Street)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.20"

Area (ac)	CN	Description
0.171	39	>75% Grass cover, Good, HSG A
0.363	98	Paved parking, HSG A
0.534		Weighted Average
0.171		32.06% Pervious Area
0.363		67.94% Impervious Area

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

Summary for Subcatchment 2: Subcat 2

Runoff = 1.54 cfs @ 11.96 hrs, Volume= 3,679 cf, Depth> 1.87"
Routed to Pond 1P : STMH-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.20"

Area (ac)	CN	Description
0.028	39	>75% Grass cover, Good, HSG A
0.514	98	Paved parking, HSG A
0.542		Weighted Average
0.028		5.09% Pervious Area
0.514		94.91% Impervious Area

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

Summary for Subcatchment 3: Subcat 3

Runoff = 0.03 cfs @ 12.00 hrs, Volume= 79 cf, Depth> 0.07"
Routed to Pond 5P : CB-11

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.20"

Area (ac)	CN	Description
0.202	39	>75% Grass cover, Good, HSG A
0.011	98	Paved parking, HSG A
0.111	30	Woods, Good, HSG A
0.324		Weighted Average
0.313		96.58% Pervious Area
0.011		3.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	61	0.2900	0.18		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
2.3	39	0.1500	0.28		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.60"
1.0	137	0.1000	2.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.8	237	Total			

Summary for Subcatchment 4: Subcat 4

Runoff = 0.69 cfs @ 11.96 hrs, Volume= 1,660 cf, Depth> 0.79"
Routed to Pond 27P : CB-10

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.20"

Area (ac)	CN	Description
0.349	39	>75% Grass cover, Good, HSG A
0.232	98	Paved parking, HSG A
0.582		Weighted Average
0.349		60.10% Pervious Area
0.232		39.90% Impervious Area

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

Summary for Subcatchment 5: Subcat 5

Runoff = 0.82 cfs @ 11.96 hrs, Volume= 1,971 cf, Depth> 1.97"
Routed to Pond 29P : CB-8

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.20"

Area (ac)	CN	Description
0.001	39	>75% Grass cover, Good, HSG A
0.275	98	Paved parking, HSG A
0.276		Weighted Average
0.001		0.21% Pervious Area
0.275		99.79% Impervious Area

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

Summary for Subcatchment 5A: Subcat 5A

Runoff = 0.98 cfs @ 11.96 hrs, Volume= 2,342 cf, Depth> 1.97"
Routed to Pond 25P : CB-6

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.20"

Area (sf)	CN	Description
20	39	>75% Grass cover, Good, HSG A
14,257	98	Paved parking, HSG A
14,277		Weighted Average
20		0.14% Pervious Area
14,257		99.86% Impervious Area

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

Summary for Subcatchment 6: Subcat 6

Runoff = 0.70 cfs @ 11.96 hrs, Volume= 1,685 cf, Depth> 1.93"
Routed to Link AP-3 : Gordon Creek (Hamilton Street)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.20"

Area (ac)	CN	Description
0.005	39	>75% Grass cover, Good, HSG A
0.236	98	Paved parking, HSG A
0.241		Weighted Average
0.005		2.10% Pervious Area
0.236		97.90% Impervious Area

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

Summary for Subcatchment 7: Subcat 7

Runoff = 0.59 cfs @ 12.00 hrs, Volume= 1,562 cf, Depth> 0.31"
Routed to Link AP-1 : Gordon Creek

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.20"

Area (sf)	CN	Description
32,474	39	>75% Grass cover, Good, HSG A
9,516	98	Paved parking, HSG A
17,517	30	Woods, Good, HSG A
59,507		Weighted Average
49,991		84.01% Pervious Area
9,516		15.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	40	0.2700	0.16		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
5.0	60	0.0500	0.20		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.60"
0.5	50	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.5	150	Total			

Summary for Subcatchment 8: Subcat 8

Runoff = 1.21 cfs @ 11.96 hrs, Volume= 2,909 cf, Depth> 1.97"
Routed to Pond 17P : CB-4

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.20"

Area (sf)	CN	Description
46	39	>75% Grass cover, Good, HSG A
17,711	98	Paved parking, HSG A
17,757		Weighted Average
46		0.26% Pervious Area
17,711		99.74% Impervious Area

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

Summary for Subcatchment 9: Subcat 9

Runoff = 0.05 cfs @ 11.98 hrs, Volume= 131 cf, Depth> 0.07"
Routed to Pond 20P : CB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.20"

Area (sf)	CN	Description
4,047	39	>75% Grass cover, Good, HSG A
797	98	Paved parking, HSG A
19,107	30	Woods, Good, HSG A
23,952		Weighted Average
23,154		96.67% Pervious Area
797		3.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	53	0.3400	0.19		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
2.3	39	0.1500	0.28		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.60"
6.9	92	Total			

Summary for Subcatchment 10: Subcat 10

Runoff = 0.04 cfs @ 11.96 hrs, Volume= 94 cf, Depth> 0.12"
Routed to Pond 8P : CB-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.20"

Area (sf)	CN	Description
3,618	39	>75% Grass cover, Good, HSG A
572	98	Paved parking, HSG A
5,241	30	Woods, Good, HSG A
9,431		Weighted Average
8,859		93.94% Pervious Area
572		6.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	52	0.3200	0.19		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
1.5	30	0.2600	0.34		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.60"
6.2	82	Total			

Summary for Subcatchment 11: Subcat 11

Runoff = 0.85 cfs @ 11.96 hrs, Volume= 2,024 cf, Depth> 1.49"
Routed to Pond 28P : Hydrodynamic Separator

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.20"

Area (sf)	CN	Description
4,004	39	>75% Grass cover, Good, HSG A
12,324	98	Paved parking, HSG A
16,328		Weighted Average
4,004		24.52% Pervious Area
12,324		75.48% Impervious Area

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

Summary for Subcatchment 12: Subcat 12

Runoff = 1.03 cfs @ 11.96 hrs, Volume= 2,472 cf, Depth> 1.19"
Routed to Pond 18P : CB-5

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.20"

Area (sf)	CN	Description
9,975	39	>75% Grass cover, Good, HSG A
15,052	98	Paved parking, HSG A
2	30	Woods, Good, HSG A
25,029		Weighted Average
9,977		39.86% Pervious Area
15,052		60.14% Impervious Area

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

Summary for Subcatchment 13: Subcat 13

Runoff = 0.63 cfs @ 11.96 hrs, Volume= 1,518 cf, Depth> 1.59"
Routed to Pond 29P : CB-8

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.20"

Area (sf)	CN	Description
2,234	39	>75% Grass cover, Good, HSG A
9,244	98	Paved parking, HSG A
11,478		Weighted Average
2,234		19.47% Pervious Area
9,244		80.53% Impervious Area

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

Summary for Subcatchment 14: Subcat 14

Runoff = 0.72 cfs @ 11.96 hrs, Volume= 1,720 cf, Depth> 1.62"
Routed to Pond 25P : CB-6

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.20"

Area (sf)	CN	Description
2,238	39	>75% Grass cover, Good, HSG A
10,470	98	Paved parking, HSG A
12,707		Weighted Average
2,238		17.61% Pervious Area
10,470		82.39% Impervious Area

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

Summary for Subcatchment 15: Subcat 15

Runoff = 0.49 cfs @ 11.96 hrs, Volume= 1,177 cf, Depth> 1.60"
Routed to Pond 3P : CB-12

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.20"

Area (sf)	CN	Description
1,688	39	>75% Grass cover, Good, HSG A
7,169	98	Paved parking, HSG A
8,857		Weighted Average
1,688		19.06% Pervious Area
7,169		80.94% Impervious Area

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

Summary for Subcatchment 16: Subcat 16

Runoff = 0.46 cfs @ 11.96 hrs, Volume= 1,112 cf, Depth> 1.48"
Routed to Pond 21P : CB-9

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 1-yr Rainfall=2.20"

Area (sf)	CN	Description
2,262	39	>75% Grass cover, Good, HSG A
6,768	98	Paved parking, HSG A
9,029		Weighted Average
2,262		25.05% Pervious Area
6,768		74.95% Impervious Area

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

Summary for Pond 1P: STMH-2

Inflow Area = 223,918 sf, 62.23% Impervious, Inflow Depth > 1.22" for 1-yr event
Inflow = 6.18 cfs @ 12.00 hrs, Volume= 22,814 cf
Outflow = 6.18 cfs @ 12.00 hrs, Volume= 22,814 cf, Atten= 0%, Lag= 0.0 min
Primary = 6.18 cfs @ 12.00 hrs, Volume= 22,814 cf
Routed to Link AP-3 : Gordon Creek (Hamilton Street)

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 240.41' @ 12.00 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	238.69'	**15.0" Round Culvert** L= 145.0' Ke= 0.500 Inlet / Outlet Invert= 238.69' / 237.24' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=6.16 cfs @ 12.00 hrs HW=240.40' (Free Discharge)
↑**1=Culvert** (Inlet Controls 6.16 cfs @ 5.02 fps)

Summary for Pond 3P: CB-12

Inflow Area = 22,975 sf, 33.30% Impervious, Inflow Depth > 0.66" for 1-yr event
Inflow = 0.52 cfs @ 11.96 hrs, Volume= 1,257 cf
Outflow = 0.52 cfs @ 11.96 hrs, Volume= 1,257 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.52 cfs @ 11.96 hrs, Volume= 1,257 cf
Routed to Pond 1P : STMH-2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 240.25' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	239.85'	**15.0" Round Culvert** L= 282.0' Ke= 0.500

Inlet / Outlet Invert= 239.85' / 238.80' S= 0.0037 '/' Cc= 0.900
n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=0.51 cfs @ 11.96 hrs HW=240.24' (Free Discharge)
1=Culvert (Barrel Controls 0.51 cfs @ 2.31 fps)

Summary for Pond 5P: CB-11

Inflow Area = 14,118 sf, 3.42% Impervious, Inflow Depth > 0.07" for 1-yr event
Inflow = 0.03 cfs @ 12.00 hrs, Volume= 79 cf
Outflow = 0.03 cfs @ 12.00 hrs, Volume= 79 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.03 cfs @ 12.00 hrs, Volume= 79 cf
Routed to Pond 3P : CB-12

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 246.28' @ 11.99 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	246.20'	**12.0" Round Culvert** L= 157.0' Ke= 0.500 Inlet / Outlet Invert= 246.20' / 240.10' S= 0.0389 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.03 cfs @ 12.00 hrs HW=246.28' (Free Discharge)
1=Culvert (Inlet Controls 0.03 cfs @ 0.98 fps)

Summary for Pond 6P: STMH-3

Inflow Area = 108,701 sf, 57.17% Impervious, Inflow Depth > 1.13" for 1-yr event
Inflow = 4.26 cfs @ 11.96 hrs, Volume= 10,208 cf
Outflow = 4.26 cfs @ 11.96 hrs, Volume= 10,208 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.26 cfs @ 11.96 hrs, Volume= 10,208 cf
Routed to Pond 22P : Underground Detention

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 246.16' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	245.00'	**18.0" Round Culvert** L= 5.0' Ke= 0.500 Inlet / Outlet Invert= 245.00' / 244.90' S= 0.0200 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=4.16 cfs @ 11.96 hrs HW=246.14' (Free Discharge)
1=Culvert (Barrel Controls 4.16 cfs @ 3.98 fps)

Summary for Pond 8P: CB-1

Inflow Area = 9,431 sf, 6.06% Impervious, Inflow Depth > 0.12" for 1-yr event
Inflow = 0.04 cfs @ 11.96 hrs, Volume= 94 cf
Outflow = 0.04 cfs @ 11.96 hrs, Volume= 94 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.04 cfs @ 11.96 hrs, Volume= 94 cf
Routed to Pond 20P : CB-2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 260.11' @ 11.97 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	260.00'	**12.0" Round Culvert** L= 133.0' Ke= 0.500 Inlet / Outlet Invert= 260.00' / 259.33' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.04 cfs @ 11.96 hrs HW=260.11' (Free Discharge)
1=Culvert (Barrel Controls 0.04 cfs @ 1.23 fps)

Summary for Pond 17P: CB-4

Inflow Area = 17,757 sf, 99.74% Impervious, Inflow Depth > 1.97" for 1-yr event
Inflow = 1.21 cfs @ 11.96 hrs, Volume= 2,909 cf
Outflow = 1.21 cfs @ 11.96 hrs, Volume= 2,909 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.21 cfs @ 11.96 hrs, Volume= 2,909 cf
Routed to Pond 18P : CB-5

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 249.86' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	249.28'	**12.0" Round Culvert** L= 96.0' Ke= 0.500 Inlet / Outlet Invert= 249.28' / 248.25' S= 0.0107 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.19 cfs @ 11.96 hrs HW=249.85' (Free Discharge)
1=Culvert (Inlet Controls 1.19 cfs @ 2.57 fps)

Summary for Pond 18P: CB-5

Inflow Area = 76,169 sf, 44.81% Impervious, Inflow Depth > 0.88" for 1-yr event
Inflow = 2.34 cfs @ 11.96 hrs, Volume= 5,607 cf
Outflow = 2.34 cfs @ 11.96 hrs, Volume= 5,607 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.34 cfs @ 11.96 hrs, Volume= 5,607 cf
Routed to Pond 6P : STMH-3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 248.91' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	248.15'	**15.0" Round Culvert** L= 180.0' Ke= 0.500 Inlet / Outlet Invert= 248.15' / 246.35' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=2.28 cfs @ 11.96 hrs HW=248.90' (Free Discharge)
1=Culvert (Inlet Controls 2.28 cfs @ 2.95 fps)

Summary for Pond 19P: CB-3

Inflow Area = 33,382 sf, 4.10% Impervious, Inflow Depth > 0.08" for 1-yr event
Inflow = 0.09 cfs @ 11.97 hrs, Volume= 225 cf
Outflow = 0.09 cfs @ 11.97 hrs, Volume= 225 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.09 cfs @ 11.97 hrs, Volume= 225 cf
Routed to Pond 18P : CB-5

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 250.55' @ 11.97 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	250.40'	**12.0" Round Culvert** L= 33.0' Ke= 0.500 Inlet / Outlet Invert= 250.40' / 249.50' S= 0.0273 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.09 cfs @ 11.97 hrs HW=250.54' (Free Discharge)
1=Culvert (Inlet Controls 0.09 cfs @ 1.29 fps)

Summary for Pond 20P: CB-2

Inflow Area = 33,382 sf, 4.10% Impervious, Inflow Depth > 0.08" for 1-yr event
Inflow = 0.09 cfs @ 11.97 hrs, Volume= 225 cf
Outflow = 0.09 cfs @ 11.97 hrs, Volume= 225 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.09 cfs @ 11.97 hrs, Volume= 225 cf
Routed to Pond 26P : STMH-1

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 259.38' @ 11.97 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	259.23'	**12.0" Round Culvert** L= 85.0' Ke= 0.500 Inlet / Outlet Invert= 259.23' / 258.38' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.09 cfs @ 11.97 hrs HW=259.37' (Free Discharge)
1=Culvert (Inlet Controls 0.09 cfs @ 1.29 fps)

Summary for Pond 21P: CB-9

Inflow Area = 9,029 sf, 74.95% Impervious, Inflow Depth > 1.48" for 1-yr event
Inflow = 0.46 cfs @ 11.96 hrs, Volume= 1,112 cf
Outflow = 0.46 cfs @ 11.96 hrs, Volume= 1,112 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.46 cfs @ 11.96 hrs, Volume= 1,112 cf
Routed to Pond 6P : STMH-3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 246.73' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	246.35'	**12.0" Round Culvert** L= 79.0' Ke= 0.500

Inlet / Outlet Invert= 246.35' / 245.95' S= 0.0051 '/' Cc= 0.900
n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.45 cfs @ 11.96 hrs HW=246.73' (Free Discharge)
└**1=Culvert** (Barrel Controls 0.45 cfs @ 2.47 fps)

Summary for Pond 22P: Underground Detention

Inflow Area = 161,016 sf, 60.23% Impervious, Inflow Depth > 1.19" for 1-yr event
Inflow = 6.65 cfs @ 11.96 hrs, Volume= 15,930 cf
Outflow = 3.85 cfs @ 12.06 hrs, Volume= 15,854 cf, Atten= 42%, Lag= 5.6 min
Primary = 3.85 cfs @ 12.06 hrs, Volume= 15,854 cf
Routed to Pond 28P : Hydrodynamic Separator

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 243.81' @ 12.06 hrs Surf.Area= 3,060 sf Storage= 3,180 cf

Plug-Flow detention time= 15.3 min calculated for 15,854 cf (100% of inflow)
Center-of-Mass det. time= 12.2 min (772.9 - 760.7)

Volume	Invert	Avail.Storage	Storage Description
#1	242.40'	10,053 cf	**48.0" Round Pipe Storage** L= 800.0'

Device	Routing	Invert	Outlet Devices
#1	Primary	242.40'	**15.0" Round Culvert** L= 150.0' Ke= 0.500 Inlet / Outlet Invert= 242.40' / 241.10' S= 0.0087 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Device 1	242.40'	**14.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	243.45'	**14.0" W x 9.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	245.80'	**5.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=3.82 cfs @ 12.06 hrs HW=243.81' (Free Discharge)
└**1=Culvert** (Passes 3.82 cfs of 5.23 cfs potential flow)
├**2=Orifice/Grate** (Orifice Controls 3.02 cfs @ 5.17 fps)
├**3=Orifice/Grate** (Orifice Controls 0.80 cfs @ 1.92 fps)
└**4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 25P: CB-6

Inflow Area = 26,984 sf, 91.64% Impervious, Inflow Depth > 1.81" for 1-yr event
Inflow = 1.70 cfs @ 11.96 hrs, Volume= 4,062 cf
Outflow = 1.70 cfs @ 11.96 hrs, Volume= 4,062 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.70 cfs @ 11.96 hrs, Volume= 4,062 cf
Routed to Pond 22P : Underground Detention

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 246.93' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	246.30'	**15.0" Round Culvert** L= 18.0' Ke= 0.500 Inlet / Outlet Invert= 246.30' / 245.40' S= 0.0500 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=1.65 cfs @ 11.96 hrs HW=246.93' (Free Discharge)
1=Culvert (Inlet Controls 1.65 cfs @ 2.69 fps)

Summary for Pond 26P: STMH-1

Inflow Area = 33,382 sf, 4.10% Impervious, Inflow Depth > 0.08" for 1-yr event
Inflow = 0.09 cfs @ 11.97 hrs, Volume= 225 cf
Outflow = 0.09 cfs @ 11.97 hrs, Volume= 225 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.09 cfs @ 11.97 hrs, Volume= 225 cf
Routed to Pond 19P : CB-3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 258.54' @ 11.97 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	258.38'	**8.0" Round Culvert** L= 174.0' Ke= 0.500 Inlet / Outlet Invert= 258.38' / 250.50' S= 0.0453 '/' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf

Primary OutFlow Max=0.09 cfs @ 11.97 hrs HW=258.54' (Free Discharge)
1=Culvert (Inlet Controls 0.09 cfs @ 1.37 fps)

Summary for Pond 27P: CB-10

Inflow Area = 25,331 sf, 39.90% Impervious, Inflow Depth > 0.79" for 1-yr event
Inflow = 0.69 cfs @ 11.96 hrs, Volume= 1,660 cf
Outflow = 0.69 cfs @ 11.96 hrs, Volume= 1,660 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.69 cfs @ 11.96 hrs, Volume= 1,660 cf
Routed to Pond 22P : Underground Detention

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 243.84' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	243.42'	**12.0" Round Culvert** L= 21.0' Ke= 0.500 Inlet / Outlet Invert= 243.42' / 243.00' S= 0.0200 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.68 cfs @ 11.96 hrs HW=243.84' (Free Discharge)
1=Culvert (Inlet Controls 0.68 cfs @ 2.19 fps)

Summary for Pond 28P: Hydrodynamic Separator

Inflow Area = 177,344 sf, 61.63% Impervious, Inflow Depth > 1.21" for 1-yr event
Inflow = 4.37 cfs @ 12.03 hrs, Volume= 17,879 cf
Outflow = 4.37 cfs @ 12.03 hrs, Volume= 17,879 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.37 cfs @ 12.03 hrs, Volume= 17,879 cf
Routed to Pond 1P : STMH-2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 245.08' @ 12.03 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	243.90'	**15.0" Round Culvert** L= 15.0' Ke= 0.500 Inlet / Outlet Invert= 243.90' / 243.60' S= 0.0200 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=4.31 cfs @ 12.03 hrs HW=245.07' (Free Discharge)
1=Culvert (Barrel Controls 4.31 cfs @ 4.69 fps)

Summary for Pond 29P: CB-8

Inflow Area = 23,503 sf, 90.39% Impervious, Inflow Depth > 1.78" for 1-yr event
Inflow = 1.46 cfs @ 11.96 hrs, Volume= 3,489 cf
Outflow = 1.46 cfs @ 11.96 hrs, Volume= 3,489 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.46 cfs @ 11.96 hrs, Volume= 3,489 cf
Routed to Pond 6P : STMH-3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 247.14' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	246.50'	**12.0" Round Culvert** L= 60.0' Ke= 0.500 Inlet / Outlet Invert= 246.50' / 245.90' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.42 cfs @ 11.96 hrs HW=247.13' (Free Discharge)
1=Culvert (Inlet Controls 1.42 cfs @ 2.71 fps)

Summary for Link AP-1: Gordon Creek

Inflow Area = 59,507 sf, 15.99% Impervious, Inflow Depth > 0.31" for 1-yr event
Inflow = 0.59 cfs @ 12.00 hrs, Volume= 1,562 cf
Primary = 0.59 cfs @ 12.00 hrs, Volume= 1,562 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link AP-2: North (Van Buren Street)

Inflow Area = 23,260 sf, 67.94% Impervious, Inflow Depth > 1.34" for 1-yr event
Inflow = 1.08 cfs @ 11.96 hrs, Volume= 2,596 cf
Primary = 1.08 cfs @ 11.96 hrs, Volume= 2,596 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link AP-3: Gordon Creek (Hamilton Street)

Inflow Area = 234,396 sf, 63.83% Impervious, Inflow Depth > 1.25" for 1-yr event
Inflow = 6.85 cfs @ 11.99 hrs, Volume= 24,499 cf
Primary = 6.85 cfs @ 11.99 hrs, Volume= 24,499 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Subcatchment 1: Subcat 1

Runoff = 1.84 cfs @ 11.96 hrs, Volume= 4,532 cf, Depth> 2.34"
Routed to Link AP-2 : North (Van Buren Street)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.67"

Area (ac)	CN	Description
0.171	39	>75% Grass cover, Good, HSG A
0.363	98	Paved parking, HSG A
0.534		Weighted Average
0.171		32.06% Pervious Area
0.363		67.94% Impervious Area

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

Summary for Subcatchment 2: Subcat 2

Runoff = 2.60 cfs @ 11.96 hrs, Volume= 6,410 cf, Depth> 3.26"
Routed to Pond 1P : STMH-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.67"

Area (ac)	CN	Description
0.028	39	>75% Grass cover, Good, HSG A
0.514	98	Paved parking, HSG A
0.542		Weighted Average
0.028		5.09% Pervious Area
0.514		94.91% Impervious Area

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

Summary for Subcatchment 3: Subcat 3

Runoff = 0.05 cfs @ 11.99 hrs, Volume= 151 cf, Depth> 0.13"
Routed to Pond 5P : CB-11

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.67"

Area (ac)	CN	Description
0.202	39	>75% Grass cover, Good, HSG A
0.011	98	Paved parking, HSG A
0.111	30	Woods, Good, HSG A
0.324		Weighted Average
0.313		96.58% Pervious Area
0.011		3.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	61	0.2900	0.18		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
2.3	39	0.1500	0.28		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.60"
1.0	137	0.1000	2.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.8	237	Total			

Summary for Subcatchment 4: Subcat 4

Runoff = 1.17 cfs @ 11.96 hrs, Volume= 2,915 cf, Depth> 1.38"
Routed to Pond 27P : CB-10

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.67"

Area (ac)	CN	Description
0.349	39	>75% Grass cover, Good, HSG A
0.232	98	Paved parking, HSG A
0.582		Weighted Average
0.349		60.10% Pervious Area
0.232		39.90% Impervious Area

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

Summary for Subcatchment 5: Subcat 5

Runoff = 1.39 cfs @ 11.96 hrs, Volume= 3,433 cf, Depth> 3.43"
Routed to Pond 29P : CB-8

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.67"

Area (ac)	CN	Description
0.001	39	>75% Grass cover, Good, HSG A
0.275	98	Paved parking, HSG A
0.276		Weighted Average
0.001		0.21% Pervious Area
0.275		99.79% Impervious Area

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

Summary for Subcatchment 5A: Subcat 5A

Runoff = 1.66 cfs @ 11.96 hrs, Volume= 4,079 cf, Depth> 3.43"
Routed to Pond 25P : CB-6

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.67"

Area (sf)	CN	Description
20	39	>75% Grass cover, Good, HSG A
14,257	98	Paved parking, HSG A
14,277		Weighted Average
20		0.14% Pervious Area
14,257		99.86% Impervious Area

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

Summary for Subcatchment 6: Subcat 6

Runoff = 1.19 cfs @ 11.96 hrs, Volume= 2,935 cf, Depth> 3.36"
Routed to Link AP-3 : Gordon Creek (Hamilton Street)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.67"

Area (ac)	CN	Description
0.005	39	>75% Grass cover, Good, HSG A
0.236	98	Paved parking, HSG A
0.241		Weighted Average
0.005		2.10% Pervious Area
0.236		97.90% Impervious Area

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

Summary for Subcatchment 7: Subcat 7

Runoff = 1.00 cfs @ 12.00 hrs, Volume= 2,769 cf, Depth> 0.56"
Routed to Link AP-1 : Gordon Creek

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.67"

Area (sf)	CN	Description
32,474	39	>75% Grass cover, Good, HSG A
9,516	98	Paved parking, HSG A
17,517	30	Woods, Good, HSG A
59,507		Weighted Average
49,991		84.01% Pervious Area
9,516		15.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	40	0.2700	0.16		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
5.0	60	0.0500	0.20		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.60"
0.5	50	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.5	150	Total			

Summary for Subcatchment 8: Subcat 8

Runoff = 2.06 cfs @ 11.96 hrs, Volume= 5,067 cf, Depth> 3.42"
Routed to Pond 17P : CB-4

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.67"

Area (sf)	CN	Description
46	39	>75% Grass cover, Good, HSG A
17,711	98	Paved parking, HSG A
17,757		Weighted Average
46		0.26% Pervious Area
17,711		99.74% Impervious Area

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

Summary for Subcatchment 9: Subcat 9

Runoff = 0.09 cfs @ 11.98 hrs, Volume= 234 cf, Depth> 0.12"
Routed to Pond 20P : CB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.67"

Area (sf)	CN	Description
4,047	39	>75% Grass cover, Good, HSG A
797	98	Paved parking, HSG A
19,107	30	Woods, Good, HSG A
23,952		Weighted Average
23,154		96.67% Pervious Area
797		3.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	53	0.3400	0.19		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
2.3	39	0.1500	0.28		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.60"
6.9	92	Total			

Summary for Subcatchment 10: Subcat 10

Runoff = 0.07 cfs @ 11.96 hrs, Volume= 169 cf, Depth> 0.22"
Routed to Pond 8P : CB-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.67"

Area (sf)	CN	Description
3,618	39	>75% Grass cover, Good, HSG A
572	98	Paved parking, HSG A
5,241	30	Woods, Good, HSG A
9,431		Weighted Average
8,859		93.94% Pervious Area
572		6.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	52	0.3200	0.19		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
1.5	30	0.2600	0.34		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.60"
6.2	82	Total			

Summary for Subcatchment 11: Subcat 11

Runoff = 1.43 cfs @ 11.96 hrs, Volume= 3,532 cf, Depth> 2.60"
Routed to Pond 28P : Hydrodynamic Separator

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.67"

Area (sf)	CN	Description
4,004	39	>75% Grass cover, Good, HSG A
12,324	98	Paved parking, HSG A
16,328		Weighted Average
4,004		24.52% Pervious Area
12,324		75.48% Impervious Area

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

Summary for Subcatchment 12: Subcat 12

Runoff = 1.75 cfs @ 11.96 hrs, Volume= 4,321 cf, Depth> 2.07"
Routed to Pond 18P : CB-5

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.67"

Area (sf)	CN	Description
9,975	39	>75% Grass cover, Good, HSG A
15,052	98	Paved parking, HSG A
2	30	Woods, Good, HSG A
25,029		Weighted Average
9,977		39.86% Pervious Area
15,052		60.14% Impervious Area

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

Summary for Subcatchment 13: Subcat 13

Runoff = 1.07 cfs @ 11.96 hrs, Volume= 2,648 cf, Depth> 2.77"
Routed to Pond 29P : CB-8

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.67"

Area (sf)	CN	Description
2,234	39	>75% Grass cover, Good, HSG A
9,244	98	Paved parking, HSG A
11,478		Weighted Average
2,234		19.47% Pervious Area
9,244		80.53% Impervious Area

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

Summary for Subcatchment 14: Subcat 14

Runoff = 1.22 cfs @ 11.96 hrs, Volume= 2,999 cf, Depth> 2.83"
Routed to Pond 25P : CB-6

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.67"

Area (sf)	CN	Description
2,238	39	>75% Grass cover, Good, HSG A
10,470	98	Paved parking, HSG A
12,707		Weighted Average
2,238		17.61% Pervious Area
10,470		82.39% Impervious Area

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

Summary for Subcatchment 15: Subcat 15

Runoff = 0.83 cfs @ 11.96 hrs, Volume= 2,053 cf, Depth> 2.78"
Routed to Pond 3P : CB-12

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.67"

Area (sf)	CN	Description
1,688	39	>75% Grass cover, Good, HSG A
7,169	98	Paved parking, HSG A
8,857		Weighted Average
1,688		19.06% Pervious Area
7,169		80.94% Impervious Area

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

Summary for Subcatchment 16: Subcat 16

Runoff = 0.79 cfs @ 11.96 hrs, Volume= 1,940 cf, Depth> 2.58"
Routed to Pond 21P : CB-9

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 10-yr Rainfall=3.67"

Area (sf)	CN	Description
2,262	39	>75% Grass cover, Good, HSG A
6,768	98	Paved parking, HSG A
9,029		Weighted Average
2,262		25.05% Pervious Area
6,768		74.95% Impervious Area

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

Summary for Pond 1P: STMH-2

Inflow Area = 223,918 sf, 62.23% Impervious, Inflow Depth > 2.14" for 10-yr event
Inflow = 11.21 cfs @ 11.99 hrs, Volume= 39,840 cf
Outflow = 11.21 cfs @ 11.99 hrs, Volume= 39,840 cf, Atten= 0%, Lag= 0.0 min
Primary = 11.21 cfs @ 11.99 hrs, Volume= 39,840 cf
Routed to Link AP-3 : Gordon Creek (Hamilton Street)

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 244.16' @ 11.99 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	238.69'	**15.0" Round Culvert** L= 145.0' Ke= 0.500 Inlet / Outlet Invert= 238.69' / 237.24' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=11.06 cfs @ 11.99 hrs HW=244.02' (Free Discharge)
1=Culvert (Barrel Controls 11.06 cfs @ 9.01 fps)

Summary for Pond 3P: CB-12

Inflow Area = 22,975 sf, 33.30% Impervious, Inflow Depth > 1.15" for 10-yr event
Inflow = 0.88 cfs @ 11.96 hrs, Volume= 2,204 cf
Outflow = 0.88 cfs @ 11.96 hrs, Volume= 2,204 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.88 cfs @ 11.96 hrs, Volume= 2,204 cf
Routed to Pond 1P : STMH-2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 240.37' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	239.85'	**15.0" Round Culvert** L= 282.0' Ke= 0.500

Inlet / Outlet Invert= 239.85' / 238.80' S= 0.0037 '/' Cc= 0.900
n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=0.86 cfs @ 11.96 hrs HW=240.36' (Free Discharge)
1=Culvert (Barrel Controls 0.86 cfs @ 2.68 fps)

Summary for Pond 5P: CB-11

Inflow Area = 14,118 sf, 3.42% Impervious, Inflow Depth > 0.13" for 10-yr event
Inflow = 0.05 cfs @ 11.99 hrs, Volume= 151 cf
Outflow = 0.05 cfs @ 11.99 hrs, Volume= 151 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.05 cfs @ 11.99 hrs, Volume= 151 cf
Routed to Pond 3P : CB-12

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 246.31' @ 11.99 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	246.20'	**12.0" Round Culvert** L= 157.0' Ke= 0.500 Inlet / Outlet Invert= 246.20' / 240.10' S= 0.0389 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.05 cfs @ 11.99 hrs HW=246.31' (Free Discharge)
1=Culvert (Inlet Controls 0.05 cfs @ 1.12 fps)

Summary for Pond 6P: STMH-3

Inflow Area = 108,701 sf, 57.17% Impervious, Inflow Depth > 1.97" for 10-yr event
Inflow = 7.21 cfs @ 11.96 hrs, Volume= 17,813 cf
Outflow = 7.21 cfs @ 11.96 hrs, Volume= 17,813 cf, Atten= 0%, Lag= 0.0 min
Primary = 7.21 cfs @ 11.96 hrs, Volume= 17,813 cf
Routed to Pond 22P : Underground Detention

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 246.66' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	245.00'	**18.0" Round Culvert** L= 5.0' Ke= 0.500 Inlet / Outlet Invert= 245.00' / 244.90' S= 0.0200 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=7.04 cfs @ 11.96 hrs HW=246.63' (Free Discharge)
1=Culvert (Barrel Controls 7.04 cfs @ 4.57 fps)

Summary for Pond 8P: CB-1

Inflow Area = 9,431 sf, 6.06% Impervious, Inflow Depth > 0.22" for 10-yr event
Inflow = 0.07 cfs @ 11.96 hrs, Volume= 169 cf
Outflow = 0.07 cfs @ 11.96 hrs, Volume= 169 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.07 cfs @ 11.96 hrs, Volume= 169 cf
Routed to Pond 20P : CB-2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 260.14' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	260.00'	**12.0" Round Culvert** L= 133.0' Ke= 0.500 Inlet / Outlet Invert= 260.00' / 259.33' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.06 cfs @ 11.96 hrs HW=260.14' (Free Discharge)
1=Culvert (Barrel Controls 0.06 cfs @ 1.44 fps)

Summary for Pond 17P: CB-4

Inflow Area = 17,757 sf, 99.74% Impervious, Inflow Depth > 3.42" for 10-yr event
Inflow = 2.06 cfs @ 11.96 hrs, Volume= 5,067 cf
Outflow = 2.06 cfs @ 11.96 hrs, Volume= 5,067 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.06 cfs @ 11.96 hrs, Volume= 5,067 cf
Routed to Pond 18P : CB-5

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 250.08' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	249.28'	**12.0" Round Culvert** L= 96.0' Ke= 0.500 Inlet / Outlet Invert= 249.28' / 248.25' S= 0.0107 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.01 cfs @ 11.96 hrs HW=250.07' (Free Discharge)
1=Culvert (Inlet Controls 2.01 cfs @ 3.02 fps)

Summary for Pond 18P: CB-5

Inflow Area = 76,169 sf, 44.81% Impervious, Inflow Depth > 1.54" for 10-yr event
Inflow = 3.96 cfs @ 11.96 hrs, Volume= 9,792 cf
Outflow = 3.96 cfs @ 11.96 hrs, Volume= 9,792 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.96 cfs @ 11.96 hrs, Volume= 9,792 cf
Routed to Pond 6P : STMH-3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 249.22' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	248.15'	**15.0" Round Culvert** L= 180.0' Ke= 0.500 Inlet / Outlet Invert= 248.15' / 246.35' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=3.87 cfs @ 11.96 hrs HW=249.21' (Free Discharge)
1=Culvert (Inlet Controls 3.87 cfs @ 3.50 fps)

Summary for Pond 19P: CB-3

Inflow Area = 33,382 sf, 4.10% Impervious, Inflow Depth > 0.14" for 10-yr event
Inflow = 0.16 cfs @ 11.97 hrs, Volume= 403 cf
Outflow = 0.16 cfs @ 11.97 hrs, Volume= 403 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.16 cfs @ 11.97 hrs, Volume= 403 cf
Routed to Pond 18P : CB-5

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 250.59' @ 11.97 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	250.40'	**12.0" Round Culvert** L= 33.0' Ke= 0.500 Inlet / Outlet Invert= 250.40' / 249.50' S= 0.0273 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.15 cfs @ 11.97 hrs HW=250.59' (Free Discharge)
1=Culvert (Inlet Controls 0.15 cfs @ 1.48 fps)

Summary for Pond 20P: CB-2

Inflow Area = 33,382 sf, 4.10% Impervious, Inflow Depth > 0.14" for 10-yr event
Inflow = 0.16 cfs @ 11.97 hrs, Volume= 403 cf
Outflow = 0.16 cfs @ 11.97 hrs, Volume= 403 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.16 cfs @ 11.97 hrs, Volume= 403 cf
Routed to Pond 26P : STMH-1

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 259.42' @ 11.97 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	259.23'	**12.0" Round Culvert** L= 85.0' Ke= 0.500 Inlet / Outlet Invert= 259.23' / 258.38' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.15 cfs @ 11.97 hrs HW=259.42' (Free Discharge)
1=Culvert (Inlet Controls 0.15 cfs @ 1.48 fps)

Summary for Pond 21P: CB-9

Inflow Area = 9,029 sf, 74.95% Impervious, Inflow Depth > 2.58" for 10-yr event
Inflow = 0.79 cfs @ 11.96 hrs, Volume= 1,940 cf
Outflow = 0.79 cfs @ 11.96 hrs, Volume= 1,940 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.79 cfs @ 11.96 hrs, Volume= 1,940 cf
Routed to Pond 6P : STMH-3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 246.86' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	246.35'	**12.0" Round Culvert** L= 79.0' Ke= 0.500

Inlet / Outlet Invert= 246.35' / 245.95' S= 0.0051 '/' Cc= 0.900
n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.77 cfs @ 11.96 hrs HW=246.85' (Free Discharge)
└**1=Culvert** (Barrel Controls 0.77 cfs @ 2.82 fps)

Summary for Pond 22P: Underground Detention

Inflow Area = 161,016 sf, 60.23% Impervious, Inflow Depth > 2.07" for 10-yr event
Inflow = 11.26 cfs @ 11.96 hrs, Volume= 27,805 cf
Outflow = 6.79 cfs @ 12.05 hrs, Volume= 27,694 cf, Atten= 40%, Lag= 5.2 min
Primary = 6.79 cfs @ 12.05 hrs, Volume= 27,694 cf
Routed to Pond 28P : Hydrodynamic Separator

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 244.48' @ 12.05 hrs Surf.Area= 3,197 sf Storage= 5,289 cf

Plug-Flow detention time= 14.2 min calculated for 27,694 cf (100% of inflow)
Center-of-Mass det. time= 11.5 min (761.6 - 750.1)

Volume	Invert	Avail.Storage	Storage Description
#1	242.40'	10,053 cf	**48.0" Round Pipe Storage** L= 800.0'

Device	Routing	Invert	Outlet Devices
#1	Primary	242.40'	**15.0" Round Culvert** L= 150.0' Ke= 0.500 Inlet / Outlet Invert= 242.40' / 241.10' S= 0.0087 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Device 1	242.40'	**14.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	243.45'	**14.0" W x 9.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	245.80'	**5.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=6.79 cfs @ 12.05 hrs HW=244.48' (Free Discharge)
└**1=Culvert** (Barrel Controls 6.79 cfs @ 5.53 fps)
├**2=Orifice/Grate** (Passes < 3.80 cfs potential flow)
├**3=Orifice/Grate** (Passes < 3.36 cfs potential flow)
└**4=Sharp-Crested Rectangular Weir** (Controls 0.00 cfs)

Summary for Pond 25P: CB-6

Inflow Area = 26,984 sf, 91.64% Impervious, Inflow Depth > 3.15" for 10-yr event
Inflow = 2.87 cfs @ 11.96 hrs, Volume= 7,078 cf
Outflow = 2.87 cfs @ 11.96 hrs, Volume= 7,078 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.87 cfs @ 11.96 hrs, Volume= 7,078 cf
Routed to Pond 22P : Underground Detention

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 247.17' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	246.30'	**15.0" Round Culvert** L= 18.0' Ke= 0.500 Inlet / Outlet Invert= 246.30' / 245.40' S= 0.0500 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=2.80 cfs @ 11.96 hrs HW=247.15' (Free Discharge)
1=Culvert (Inlet Controls 2.80 cfs @ 3.14 fps)

Summary for Pond 26P: STMH-1

Inflow Area = 33,382 sf, 4.10% Impervious, Inflow Depth > 0.14" for 10-yr event
Inflow = 0.16 cfs @ 11.97 hrs, Volume= 403 cf
Outflow = 0.16 cfs @ 11.97 hrs, Volume= 403 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.16 cfs @ 11.97 hrs, Volume= 403 cf
Routed to Pond 19P : CB-3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 258.60' @ 11.97 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	258.38'	**8.0" Round Culvert** L= 174.0' Ke= 0.500 Inlet / Outlet Invert= 258.38' / 250.50' S= 0.0453 '/' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf

Primary OutFlow Max=0.15 cfs @ 11.97 hrs HW=258.59' (Free Discharge)
1=Culvert (Inlet Controls 0.15 cfs @ 1.57 fps)

Summary for Pond 27P: CB-10

Inflow Area = 25,331 sf, 39.90% Impervious, Inflow Depth > 1.38" for 10-yr event
Inflow = 1.17 cfs @ 11.96 hrs, Volume= 2,915 cf
Outflow = 1.17 cfs @ 11.96 hrs, Volume= 2,915 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.17 cfs @ 11.96 hrs, Volume= 2,915 cf
Routed to Pond 22P : Underground Detention

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 243.99' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	243.42'	**12.0" Round Culvert** L= 21.0' Ke= 0.500 Inlet / Outlet Invert= 243.42' / 243.00' S= 0.0200 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.15 cfs @ 11.96 hrs HW=243.98' (Free Discharge)
1=Culvert (Inlet Controls 1.15 cfs @ 2.54 fps)

Summary for Pond 28P: Hydrodynamic Separator

Inflow Area = 177,344 sf, 61.63% Impervious, Inflow Depth > 2.11" for 10-yr event
Inflow = 8.01 cfs @ 12.01 hrs, Volume= 31,226 cf
Outflow = 8.01 cfs @ 12.01 hrs, Volume= 31,226 cf, Atten= 0%, Lag= 0.0 min
Primary = 8.01 cfs @ 12.01 hrs, Volume= 31,226 cf
Routed to Pond 1P : STMH-2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 246.36' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	243.90'	**15.0" Round Culvert** L= 15.0' Ke= 0.500 Inlet / Outlet Invert= 243.90' / 243.60' S= 0.0200 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=7.87 cfs @ 12.01 hrs HW=246.30' (Free Discharge)
1=Culvert (Inlet Controls 7.87 cfs @ 6.41 fps)

Summary for Pond 29P: CB-8

Inflow Area = 23,503 sf, 90.39% Impervious, Inflow Depth > 3.10" for 10-yr event
Inflow = 2.47 cfs @ 11.96 hrs, Volume= 6,081 cf
Outflow = 2.47 cfs @ 11.96 hrs, Volume= 6,081 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.47 cfs @ 11.96 hrs, Volume= 6,081 cf
Routed to Pond 6P : STMH-3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 247.42' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	246.50'	**12.0" Round Culvert** L= 60.0' Ke= 0.500 Inlet / Outlet Invert= 246.50' / 245.90' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=2.41 cfs @ 11.96 hrs HW=247.40' (Free Discharge)
1=Culvert (Inlet Controls 2.41 cfs @ 3.23 fps)

Summary for Link AP-1: Gordon Creek

Inflow Area = 59,507 sf, 15.99% Impervious, Inflow Depth > 0.56" for 10-yr event
Inflow = 1.00 cfs @ 12.00 hrs, Volume= 2,769 cf
Primary = 1.00 cfs @ 12.00 hrs, Volume= 2,769 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link AP-2: North (Van Buren Street)

Inflow Area = 23,260 sf, 67.94% Impervious, Inflow Depth > 2.34" for 10-yr event
Inflow = 1.84 cfs @ 11.96 hrs, Volume= 4,532 cf
Primary = 1.84 cfs @ 11.96 hrs, Volume= 4,532 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link AP-3: Gordon Creek (Hamilton Street)

Inflow Area = 234,396 sf, 63.83% Impervious, Inflow Depth > 2.19" for 10-yr event
Inflow = 12.35 cfs @ 11.99 hrs, Volume= 42,776 cf
Primary = 12.35 cfs @ 11.99 hrs, Volume= 42,776 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Subcatchment 1: Subcat 1

Runoff = 3.09 cfs @ 11.96 hrs, Volume= 7,977 cf, Depth> 4.12"
Routed to Link AP-2 : North (Van Buren Street)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=6.08"

Area (ac)	CN	Description
0.171	39	>75% Grass cover, Good, HSG A
0.363	98	Paved parking, HSG A
0.534		Weighted Average
0.171		32.06% Pervious Area
0.363		67.94% Impervious Area

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

Summary for Subcatchment 2: Subcat 2

Runoff = 4.34 cfs @ 11.96 hrs, Volume= 10,942 cf, Depth> 5.56"
Routed to Pond 1P : STMH-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=6.08"

Area (ac)	CN	Description
0.028	39	>75% Grass cover, Good, HSG A
0.514	98	Paved parking, HSG A
0.542		Weighted Average
0.028		5.09% Pervious Area
0.514		94.91% Impervious Area

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

Summary for Subcatchment 3: Subcat 3

Runoff = 0.14 cfs @ 12.03 hrs, Volume= 608 cf, Depth> 0.52"
Routed to Pond 5P : CB-11

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=6.08"

Area (ac)	CN	Description
0.202	39	>75% Grass cover, Good, HSG A
0.011	98	Paved parking, HSG A
0.111	30	Woods, Good, HSG A
0.324		Weighted Average
0.313		96.58% Pervious Area
0.011		3.42% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
5.5	61	0.2900	0.18		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
2.3	39	0.1500	0.28		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.60"
1.0	137	0.1000	2.21		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
8.8	237	Total			

Summary for Subcatchment 4: Subcat 4

Runoff = 2.03 cfs @ 11.97 hrs, Volume= 5,510 cf, Depth> 2.61"
Routed to Pond 27P : CB-10

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=6.08"

Area (ac)	CN	Description
0.349	39	>75% Grass cover, Good, HSG A
0.232	98	Paved parking, HSG A
0.582		Weighted Average
0.349		60.10% Pervious Area
0.232		39.90% Impervious Area

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

Summary for Subcatchment 5: Subcat 5

Runoff = 2.32 cfs @ 11.96 hrs, Volume= 5,838 cf, Depth> 5.83"
Routed to Pond 29P : CB-8

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=6.08"

Area (ac)	CN	Description
0.001	39	>75% Grass cover, Good, HSG A
0.275	98	Paved parking, HSG A
0.276		Weighted Average
0.001		0.21% Pervious Area
0.275		99.79% Impervious Area

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

Summary for Subcatchment 5A: Subcat 5A

Runoff = 2.76 cfs @ 11.96 hrs, Volume= 6,936 cf, Depth> 5.83"
Routed to Pond 25P : CB-6

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=6.08"

Area (sf)	CN	Description
20	39	>75% Grass cover, Good, HSG A
14,257	98	Paved parking, HSG A
14,277		Weighted Average
20		0.14% Pervious Area
14,257		99.86% Impervious Area

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

Summary for Subcatchment 6: Subcat 6

Runoff = 1.99 cfs @ 11.96 hrs, Volume= 4,999 cf, Depth> 5.72"
Routed to Link AP-3 : Gordon Creek (Hamilton Street)

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=6.08"

Area (ac)	CN	Description
0.005	39	>75% Grass cover, Good, HSG A
0.236	98	Paved parking, HSG A
0.241		Weighted Average
0.005		2.10% Pervious Area
0.236		97.90% Impervious Area

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

Summary for Subcatchment 7: Subcat 7

Runoff = 1.82 cfs @ 12.01 hrs, Volume= 6,004 cf, Depth> 1.21"
Routed to Link AP-1 : Gordon Creek

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=6.08"

Area (sf)	CN	Description
32,474	39	>75% Grass cover, Good, HSG A
9,516	98	Paved parking, HSG A
17,517	30	Woods, Good, HSG A
59,507		Weighted Average
49,991		84.01% Pervious Area
9,516		15.99% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.0	40	0.2700	0.16		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
5.0	60	0.0500	0.20		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.60"
0.5	50	0.0500	1.57		**Shallow Concentrated Flow,** Short Grass Pasture Kv= 7.0 fps
9.5	150	Total			

Summary for Subcatchment 8: Subcat 8

Runoff = 3.43 cfs @ 11.96 hrs, Volume= 8,617 cf, Depth> 5.82"
Routed to Pond 17P : CB-4

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=6.08"

Area (sf)	CN	Description
46	39	>75% Grass cover, Good, HSG A
17,711	98	Paved parking, HSG A
17,757		Weighted Average
46		0.26% Pervious Area
17,711		99.74% Impervious Area

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

Summary for Subcatchment 9: Subcat 9

Runoff = 0.18 cfs @ 11.99 hrs, Volume= 673 cf, Depth> 0.34"
Routed to Pond 20P : CB-2

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=6.08"

Area (sf)	CN	Description
4,047	39	>75% Grass cover, Good, HSG A
797	98	Paved parking, HSG A
19,107	30	Woods, Good, HSG A
23,952		Weighted Average
23,154		96.67% Pervious Area
797		3.33% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.6	53	0.3400	0.19		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
2.3	39	0.1500	0.28		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.60"
6.9	92	Total			

Summary for Subcatchment 10: Subcat 10

Runoff = 0.13 cfs @ 11.99 hrs, Volume= 454 cf, Depth> 0.58"
Routed to Pond 8P : CB-1

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=6.08"

Area (sf)	CN	Description
3,618	39	>75% Grass cover, Good, HSG A
572	98	Paved parking, HSG A
5,241	30	Woods, Good, HSG A
9,431		Weighted Average
8,859		93.94% Pervious Area
572		6.06% Impervious Area

Tc (min)	Length (feet)	Slope (ft/ft)	Velocity (ft/sec)	Capacity (cfs)	Description
4.7	52	0.3200	0.19		**Sheet Flow,** Woods: Light underbrush n= 0.400 P2= 2.60"
1.5	30	0.2600	0.34		**Sheet Flow,** Grass: Short n= 0.150 P2= 2.60"
6.2	82	Total			

Summary for Subcatchment 11: Subcat 11

Runoff = 2.40 cfs @ 11.96 hrs, Volume= 6,151 cf, Depth> 4.52"
Routed to Pond 28P : Hydrodynamic Separator

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=6.08"

Area (sf)	CN	Description
4,004	39	>75% Grass cover, Good, HSG A
12,324	98	Paved parking, HSG A
16,328		Weighted Average
4,004		24.52% Pervious Area
12,324		75.48% Impervious Area

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

Summary for Subcatchment 12: Subcat 12

Runoff = 2.96 cfs @ 11.96 hrs, Volume= 7,710 cf, Depth> 3.70"
Routed to Pond 18P : CB-5

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=6.08"

Area (sf)	CN	Description
9,975	39	>75% Grass cover, Good, HSG A
15,052	98	Paved parking, HSG A
2	30	Woods, Good, HSG A
25,029		Weighted Average
9,977		39.86% Pervious Area
15,052		60.14% Impervious Area

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

Summary for Subcatchment 13: Subcat 13

Runoff = 1.80 cfs @ 11.96 hrs, Volume= 4,584 cf, Depth> 4.79"
Routed to Pond 29P : CB-8

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=6.08"

Area (sf)	CN	Description
2,234	39	>75% Grass cover, Good, HSG A
9,244	98	Paved parking, HSG A
11,478		Weighted Average
2,234		19.47% Pervious Area
9,244		80.53% Impervious Area

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

Summary for Subcatchment 14: Subcat 14

Runoff = 2.04 cfs @ 11.96 hrs, Volume= 5,180 cf, Depth> 4.89"
Routed to Pond 25P : CB-6

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=6.08"

Area (sf)	CN	Description
2,238	39	>75% Grass cover, Good, HSG A
10,470	98	Paved parking, HSG A
12,707		Weighted Average
2,238		17.61% Pervious Area
10,470		82.39% Impervious Area

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

Summary for Subcatchment 15: Subcat 15

Runoff = 1.39 cfs @ 11.96 hrs, Volume= 3,553 cf, Depth> 4.81"
Routed to Pond 3P : CB-12

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=6.08"

Area (sf)	CN	Description
1,688	39	>75% Grass cover, Good, HSG A
7,169	98	Paved parking, HSG A
8,857		Weighted Average
1,688		19.06% Pervious Area
7,169		80.94% Impervious Area

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

Summary for Subcatchment 16: Subcat 16

Runoff = 1.32 cfs @ 11.96 hrs, Volume= 3,380 cf, Depth> 4.49"
Routed to Pond 21P : CB-9

Runoff by SCS TR-20 method, UH=SCS, Weighted-Q, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Type II 24-hr 100-yr Rainfall=6.08"

Area (sf)	CN	Description
2,262	39	>75% Grass cover, Good, HSG A
6,768	98	Paved parking, HSG A
9,029		Weighted Average
2,262		25.05% Pervious Area
6,768		74.95% Impervious Area

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

Summary for Pond 1P: STMH-2

Inflow Area = 223,918 sf, 62.23% Impervious, Inflow Depth > 3.75" for 100-yr event
Inflow = 16.32 cfs @ 11.98 hrs, Volume= 69,962 cf
Outflow = 16.32 cfs @ 11.98 hrs, Volume= 69,962 cf, Atten= 0%, Lag= 0.0 min
Primary = 16.32 cfs @ 11.98 hrs, Volume= 69,962 cf
Routed to Link AP-3 : Gordon Creek (Hamilton Street)

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 250.50' @ 11.98 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	238.69'	**15.0" Round Culvert** L= 145.0' Ke= 0.500 Inlet / Outlet Invert= 238.69' / 237.24' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=16.03 cfs @ 11.98 hrs HW=250.09' (Free Discharge)
↑—**1=Culvert** (Barrel Controls 16.03 cfs @ 13.06 fps)

Summary for Pond 3P: CB-12

Inflow Area = 22,975 sf, 33.30% Impervious, Inflow Depth > 2.17" for 100-yr event
Inflow = 1.49 cfs @ 11.97 hrs, Volume= 4,161 cf
Outflow = 1.49 cfs @ 11.97 hrs, Volume= 4,161 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.49 cfs @ 11.97 hrs, Volume= 4,161 cf
Routed to Pond 1P : STMH-2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 240.54' @ 11.97 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	239.85'	**15.0" Round Culvert** L= 282.0' Ke= 0.500

Inlet / Outlet Invert= 239.85' / 238.80' S= 0.0037 '/' Cc= 0.900
n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=1.45 cfs @ 11.97 hrs HW=240.53' (Free Discharge)
1=Culvert (Barrel Controls 1.45 cfs @ 3.09 fps)

Summary for Pond 5P: CB-11

Inflow Area = 14,118 sf, 3.42% Impervious, Inflow Depth > 0.52" for 100-yr event
Inflow = 0.14 cfs @ 12.03 hrs, Volume= 608 cf
Outflow = 0.14 cfs @ 12.03 hrs, Volume= 608 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.14 cfs @ 12.03 hrs, Volume= 608 cf
Routed to Pond 3P : CB-12

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 246.38' @ 12.03 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	246.20'	**12.0" Round Culvert** L= 157.0' Ke= 0.500 Inlet / Outlet Invert= 246.20' / 240.10' S= 0.0389 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.13 cfs @ 12.03 hrs HW=246.38' (Free Discharge)
1=Culvert (Inlet Controls 0.13 cfs @ 1.43 fps)

Summary for Pond 6P: STMH-3

Inflow Area = 108,701 sf, 57.17% Impervious, Inflow Depth > 3.45" for 100-yr event
Inflow = 12.11 cfs @ 11.96 hrs, Volume= 31,256 cf
Outflow = 12.11 cfs @ 11.96 hrs, Volume= 31,256 cf, Atten= 0%, Lag= 0.0 min
Primary = 12.11 cfs @ 11.96 hrs, Volume= 31,256 cf
Routed to Pond 22P : Underground Detention

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 247.76' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	245.00'	**18.0" Round Culvert** L= 5.0' Ke= 0.500 Inlet / Outlet Invert= 245.00' / 244.90' S= 0.0200 '/' Cc= 0.900 n= 0.012, Flow Area= 1.77 sf

Primary OutFlow Max=11.81 cfs @ 11.96 hrs HW=247.68' (Free Discharge)
1=Culvert (Inlet Controls 11.81 cfs @ 6.68 fps)

Summary for Pond 8P: CB-1

Inflow Area = 9,431 sf, 6.06% Impervious, Inflow Depth > 0.58" for 100-yr event
Inflow = 0.13 cfs @ 11.99 hrs, Volume= 454 cf
Outflow = 0.13 cfs @ 11.99 hrs, Volume= 454 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.13 cfs @ 11.99 hrs, Volume= 454 cf
Routed to Pond 20P : CB-2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 260.20' @ 11.99 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	260.00'	**12.0" Round Culvert** L= 133.0' Ke= 0.500 Inlet / Outlet Invert= 260.00' / 259.33' S= 0.0050 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.13 cfs @ 11.99 hrs HW=260.20' (Free Discharge)
└**1=Culvert** (Barrel Controls 0.13 cfs @ 1.76 fps)

Summary for Pond 17P: CB-4

Inflow Area = 17,757 sf, 99.74% Impervious, Inflow Depth > 5.82" for 100-yr event
Inflow = 3.43 cfs @ 11.96 hrs, Volume= 8,617 cf
Outflow = 3.43 cfs @ 11.96 hrs, Volume= 8,617 cf, Atten= 0%, Lag= 0.0 min
Primary = 3.43 cfs @ 11.96 hrs, Volume= 8,617 cf
Routed to Pond 18P : CB-5

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 250.60' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	249.28'	**12.0" Round Culvert** L= 96.0' Ke= 0.500 Inlet / Outlet Invert= 249.28' / 248.25' S= 0.0107 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=3.35 cfs @ 11.96 hrs HW=250.56' (Free Discharge)
└**1=Culvert** (Inlet Controls 3.35 cfs @ 4.26 fps)

Summary for Pond 18P: CB-5

Inflow Area = 76,169 sf, 44.81% Impervious, Inflow Depth > 2.75" for 100-yr event
Inflow = 6.67 cfs @ 11.96 hrs, Volume= 17,455 cf
Outflow = 6.67 cfs @ 11.96 hrs, Volume= 17,455 cf, Atten= 0%, Lag= 0.0 min
Primary = 6.67 cfs @ 11.96 hrs, Volume= 17,455 cf
Routed to Pond 6P : STMH-3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 250.05' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	248.15'	**15.0" Round Culvert** L= 180.0' Ke= 0.500 Inlet / Outlet Invert= 248.15' / 246.35' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=6.50 cfs @ 11.96 hrs HW=249.99' (Free Discharge)
└**1=Culvert** (Inlet Controls 6.50 cfs @ 5.30 fps)

Summary for Pond 19P: CB-3

Inflow Area = 33,382 sf, 4.10% Impervious, Inflow Depth > 0.41" for 100-yr event
Inflow = 0.31 cfs @ 11.99 hrs, Volume= 1,127 cf
Outflow = 0.31 cfs @ 11.99 hrs, Volume= 1,127 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.31 cfs @ 11.99 hrs, Volume= 1,127 cf
Routed to Pond 18P : CB-5

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 250.67' @ 11.99 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	250.40'	**12.0" Round Culvert** L= 33.0' Ke= 0.500 Inlet / Outlet Invert= 250.40' / 249.50' S= 0.0273 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.30 cfs @ 11.99 hrs HW=250.67' (Free Discharge)
1=Culvert (Inlet Controls 0.30 cfs @ 1.76 fps)

Summary for Pond 20P: CB-2

Inflow Area = 33,382 sf, 4.10% Impervious, Inflow Depth > 0.41" for 100-yr event
Inflow = 0.31 cfs @ 11.99 hrs, Volume= 1,127 cf
Outflow = 0.31 cfs @ 11.99 hrs, Volume= 1,127 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.31 cfs @ 11.99 hrs, Volume= 1,127 cf
Routed to Pond 26P : STMH-1

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 259.50' @ 11.99 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	259.23'	**12.0" Round Culvert** L= 85.0' Ke= 0.500 Inlet / Outlet Invert= 259.23' / 258.38' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=0.30 cfs @ 11.99 hrs HW=259.50' (Free Discharge)
1=Culvert (Inlet Controls 0.30 cfs @ 1.76 fps)

Summary for Pond 21P: CB-9

Inflow Area = 9,029 sf, 74.95% Impervious, Inflow Depth > 4.49" for 100-yr event
Inflow = 1.32 cfs @ 11.96 hrs, Volume= 3,380 cf
Outflow = 1.32 cfs @ 11.96 hrs, Volume= 3,380 cf, Atten= 0%, Lag= 0.0 min
Primary = 1.32 cfs @ 11.96 hrs, Volume= 3,380 cf
Routed to Pond 6P : STMH-3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 247.04' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	246.35'	**12.0" Round Culvert** L= 79.0' Ke= 0.500

Inlet / Outlet Invert= 246.35' / 245.95' S= 0.0051 '/' Cc= 0.900
n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.29 cfs @ 11.96 hrs HW=247.03' (Free Discharge)
└**1=Culvert** (Barrel Controls 1.29 cfs @ 3.20 fps)

Summary for Pond 22P: Underground Detention

Inflow Area = 161,016 sf, 60.23% Impervious, Inflow Depth > 3.64" for 100-yr event
Inflow = 18.93 cfs @ 11.96 hrs, Volume= 48,882 cf
Outflow = 9.15 cfs @ 12.07 hrs, Volume= 48,708 cf, Atten= 52%, Lag= 6.3 min
Primary = 9.15 cfs @ 12.07 hrs, Volume= 48,708 cf
Routed to Pond 28P : Hydrodynamic Separator

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 246.21' @ 12.07 hrs Surf.Area= 1,349 sf Storage= 9,884 cf

Plug-Flow detention time= 14.3 min calculated for 48,607 cf (99% of inflow)
Center-of-Mass det. time= 11.8 min (760.2 - 748.4)

Volume	Invert	Avail.Storage	Storage Description
#1	242.40'	10,053 cf	**48.0" Round Pipe Storage** L= 800.0'

Device	Routing	Invert	Outlet Devices
#1	Primary	242.40'	**15.0" Round Culvert** L= 150.0' Ke= 0.500 Inlet / Outlet Invert= 242.40' / 241.10' S= 0.0087 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf
#2	Device 1	242.40'	**14.0" W x 6.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#3	Device 1	243.45'	**14.0" W x 9.0" H Vert. Orifice/Grate** C= 0.600 Limited to weir flow at low heads
#4	Device 1	245.80'	**5.0' long Sharp-Crested Rectangular Weir** 2 End Contraction(s)

Primary OutFlow Max=9.07 cfs @ 12.07 hrs HW=246.15' (Free Discharge)
└**1=Culvert** (Barrel Controls 9.07 cfs @ 7.39 fps)
├**2=Orifice/Grate** (Passes < 5.25 cfs potential flow)
├**3=Orifice/Grate** (Passes < 6.41 cfs potential flow)
└**4=Sharp-Crested Rectangular Weir** (Passes < 3.30 cfs potential flow)

Summary for Pond 25P: CB-6

Inflow Area = 26,984 sf, 91.64% Impervious, Inflow Depth > 5.39" for 100-yr event
Inflow = 4.80 cfs @ 11.96 hrs, Volume= 12,116 cf
Outflow = 4.80 cfs @ 11.96 hrs, Volume= 12,116 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.80 cfs @ 11.96 hrs, Volume= 12,116 cf
Routed to Pond 22P : Underground Detention

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 247.58' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	246.30'	**15.0" Round Culvert** L= 18.0' Ke= 0.500 Inlet / Outlet Invert= 246.30' / 245.40' S= 0.0500 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=4.68 cfs @ 11.96 hrs HW=247.55' (Free Discharge)
1=Culvert (Inlet Controls 4.68 cfs @ 3.81 fps)

Summary for Pond 26P: STMH-1

Inflow Area = 33,382 sf, 4.10% Impervious, Inflow Depth > 0.41" for 100-yr event
Inflow = 0.31 cfs @ 11.99 hrs, Volume= 1,127 cf
Outflow = 0.31 cfs @ 11.99 hrs, Volume= 1,127 cf, Atten= 0%, Lag= 0.0 min
Primary = 0.31 cfs @ 11.99 hrs, Volume= 1,127 cf
Routed to Pond 19P : CB-3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 258.69' @ 11.99 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	258.38'	**8.0" Round Culvert** L= 174.0' Ke= 0.500 Inlet / Outlet Invert= 258.38' / 250.50' S= 0.0453 '/' Cc= 0.900 n= 0.012, Flow Area= 0.35 sf

Primary OutFlow Max=0.30 cfs @ 11.99 hrs HW=258.69' (Free Discharge)
1=Culvert (Inlet Controls 0.30 cfs @ 1.89 fps)

Summary for Pond 27P: CB-10

Inflow Area = 25,331 sf, 39.90% Impervious, Inflow Depth > 2.61" for 100-yr event
Inflow = 2.03 cfs @ 11.97 hrs, Volume= 5,510 cf
Outflow = 2.03 cfs @ 11.97 hrs, Volume= 5,510 cf, Atten= 0%, Lag= 0.0 min
Primary = 2.03 cfs @ 11.97 hrs, Volume= 5,510 cf
Routed to Pond 22P : Underground Detention

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 244.21' @ 11.97 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	243.42'	**12.0" Round Culvert** L= 21.0' Ke= 0.500 Inlet / Outlet Invert= 243.42' / 243.00' S= 0.0200 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=1.97 cfs @ 11.97 hrs HW=244.20' (Free Discharge)
1=Culvert (Inlet Controls 1.97 cfs @ 3.00 fps)

Summary for Pond 28P: Hydrodynamic Separator

Inflow Area = 177,344 sf, 61.63% Impervious, Inflow Depth > 3.71" for 100-yr event
Inflow = 10.76 cfs @ 12.01 hrs, Volume= 54,859 cf
Outflow = 10.76 cfs @ 12.01 hrs, Volume= 54,859 cf, Atten= 0%, Lag= 0.0 min
Primary = 10.76 cfs @ 12.01 hrs, Volume= 54,859 cf
Routed to Pond 1P : STMH-2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 247.84' @ 12.01 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	243.90'	**15.0" Round Culvert** L= 15.0' Ke= 0.500 Inlet / Outlet Invert= 243.90' / 243.60' S= 0.0200 '/' Cc= 0.900 n= 0.012, Flow Area= 1.23 sf

Primary OutFlow Max=10.67 cfs @ 12.01 hrs HW=247.79' (Free Discharge)
1=Culvert (Inlet Controls 10.67 cfs @ 8.69 fps)

Summary for Pond 29P: CB-8

Inflow Area = 23,503 sf, 90.39% Impervious, Inflow Depth > 5.32" for 100-yr event
Inflow = 4.12 cfs @ 11.96 hrs, Volume= 10,422 cf
Outflow = 4.12 cfs @ 11.96 hrs, Volume= 10,422 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.12 cfs @ 11.96 hrs, Volume= 10,422 cf
Routed to Pond 6P : STMH-3

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs
Peak Elev= 248.22' @ 11.96 hrs

Device	Routing	Invert	Outlet Devices
#1	Primary	246.50'	**12.0" Round Culvert** L= 60.0' Ke= 0.500 Inlet / Outlet Invert= 246.50' / 245.90' S= 0.0100 '/' Cc= 0.900 n= 0.012, Flow Area= 0.79 sf

Primary OutFlow Max=4.02 cfs @ 11.96 hrs HW=248.17' (Free Discharge)
1=Culvert (Barrel Controls 4.02 cfs @ 5.12 fps)

Summary for Link AP-1: Gordon Creek

Inflow Area = 59,507 sf, 15.99% Impervious, Inflow Depth > 1.21" for 100-yr event
Inflow = 1.82 cfs @ 12.01 hrs, Volume= 6,004 cf
Primary = 1.82 cfs @ 12.01 hrs, Volume= 6,004 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link AP-2: North (Van Buren Street)

Inflow Area = 23,260 sf, 67.94% Impervious, Inflow Depth > 4.12" for 100-yr event
Inflow = 3.09 cfs @ 11.96 hrs, Volume= 7,977 cf
Primary = 3.09 cfs @ 11.96 hrs, Volume= 7,977 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Summary for Link AP-3: Gordon Creek (Hamilton Street)

Inflow Area = 234,396 sf, 63.83% Impervious, Inflow Depth > 3.84" for 100-yr event
Inflow = 18.28 cfs @ 11.98 hrs, Volume= 74,960 cf
Primary = 18.28 cfs @ 11.98 hrs, Volume= 74,960 cf, Atten= 0%, Lag= 0.0 min

Primary outflow = Inflow, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Appendix D

Storm Data

Stormwater Practice Sizing

Job Name and # Ballston Spa Tannery

Water Quality Volume Calculation
5/2/2025
WQv = [(P)(Rv)(A)]/12

Where:
Rv = 0.05 + 0.009(I)
I = impervious cover in percent
P = 90% rainfall (see Figure 4.1 in NYS Stormwater Management Design Manual)
A = Area in acres

Disturbed Impervious

% Impervious	100.00%		
Rv	0.95		
90% Rainfall	1.15		
Area in Square Feet	162951		
WQv Required =	**14835**	**ft^3**	**0.341 ac-ft**
WQv Required (75%)=	**11126**	**ft^3**	**0.255 ac-ft**

% Treatment by Alternative Practice =
(25 - (%IC Reduction + % WQv treatment by SMP + % runoff reduction)) x 3

% IC Reduction	8.5%		
% WQv treatment by SMP	0.0%		
% runoff reduction	0%		
% Treatment by Alternative	49.5%		
Required Treatment by Alternative Practice	**0.169**	**ac-ft**	(7346 ft^3)

Hydrodynamic Separator (SMP-1)

% Impervious	61.63%		
Rv	0.60		
90% Rainfall	1.15		
Area in Square Feet	177344		
WQv Provided =	**10277**	ft^3	**0.236** ac-ft

Water Quality Flow Calculations:

Maximum Basin Retention (S): CNw= 74
(Weighted average from hydroCAD)

$$S = \frac{1{,}000}{CNw} - 10$$

$$S = 3.51 \text{ inches}$$

Runoff (Q) from contributing area:

$$Q = \frac{Required\ WQv}{A}$$

$$Q = \frac{0.169\ af}{4.07\ acres}$$

$$Q = 0.04\ ft\ (0.50\ inches)$$

Calculated Rainfall Value (P_{90}):

$$P_{90} = \frac{S + 2.5Q + (6.25Q^2 + 25SQ)^{0.5}}{5}$$

$$P_{90} = \frac{3.51 + 2.5(0.50) + ((6.25(0.50))^2 + 25(3.51 * 0.50))^{0.5}}{5}$$

$$P_{90} = 2.42\ inches$$

Inflow Volume From HydroCAD:

2023024_Postdevelopment *Type II 24-hr 90% WQv Rainfall=2.42"*
Prepared by The LA Group, PC Printed 5/2/2025
HydroCAD® 10.20-4c s/n 00439 © 2024 HydroCAD Software Solutions LLC Page 1

Summary for Pond 28P: Hydrodynamic Separator

Inflow Area = 177,344 sf, 61.63% Impervious, Inflow Depth > 1.34" for 90% WQv event
Inflow = 4.95 cfs @ 12.03 hrs, Volume= 19,861 cf
Outflow = 4.95 cfs @ 12.03 hrs, Volume= 19,861 cf, Atten= 0%, Lag= 0.0 min
Primary = 4.95 cfs @ 12.03 hrs, Volume= 19,861 cf
Routed to Pond 1P : STMH-2

Routing by Stor-Ind method, Time Span= 0.00-24.00 hrs, dt= 0.05 hrs

Total Inflow: 19,861 cf is greater that the required WQv (7,346 cf)

Appendix E

NRCS Web Soil Survey and Soil Investigations

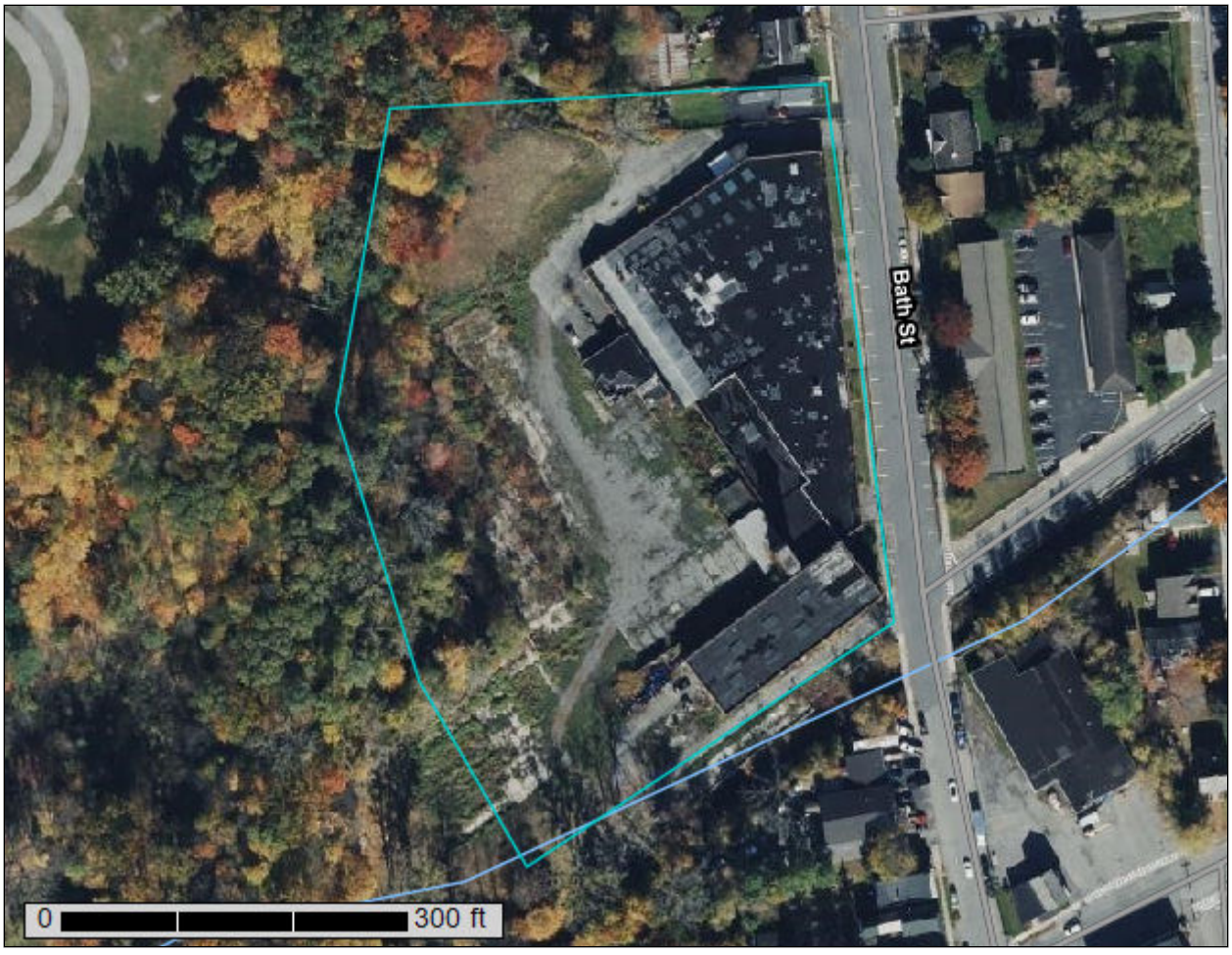
United States Department of Agriculture

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 Saratoga County, New York



October 23, 2024

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

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

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

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

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

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

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

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

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

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

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

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

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

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:1,200 if printed on A portrait (8.5" x 11") sheet.

N

Meters
0 15 30 60 90

Feet
0 50 100 200 300

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

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

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: Saratoga County, New York
Survey Area Data: Version 24, 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 9, 2022—Oct 22, 2022

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
ChB	Chenango silt loam, loamy substratum, udulating	4.0	73.5%
OeE	Windsor loamy sand, 25 to 35 percent slopes	1.5	26.5%
Totals for Area of Interest		**5.5**	**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.

Saratoga County, New York

ChB—Chenango silt loam, loamy substratum, udulating

Map Unit Setting

National map unit symbol: 9w9n
Elevation: 600 to 1,800 feet
Mean annual precipitation: 36 to 48 inches
Mean annual air temperature: 45 to 48 degrees F
Frost-free period: 125 to 160 days
Farmland classification: All areas are prime farmland

Map Unit Composition

Chenango, loamy substratum, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Chenango, Loamy Substratum

Setting

Landform: Terraces, valley trains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Gravelly loamy glaciofluvial deposits over sandy and gravelly glaciofluvial deposits, derived mainly from sandstone, shale, and siltstone

Typical profile

H1 - 0 to 6 inches: silt loam
H2 - 6 to 30 inches: very gravelly fine sandy loam
H3 - 30 to 72 inches: very channery fine sandy loam

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 5.95 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Available water supply, 0 to 60 inches: Moderate (about 6.2 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2e
Hydrologic Soil Group: A
Ecological site: F140XY021NY - Dry Outwash
Hydric soil rating: No

Minor Components

Deerfield

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

Hoosic

Percent of map unit: 7 percent
Hydric soil rating: No

OeE—Windsor loamy sand, 25 to 35 percent slopes

Map Unit Setting

National map unit symbol: 2svl7
Elevation: 10 to 1,110 feet
Mean annual precipitation: 36 to 71 inches
Mean annual air temperature: 39 to 55 degrees F
Frost-free period: 140 to 240 days
Farmland classification: Not prime farmland

Map Unit Composition

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

Description of Windsor

Setting

Landform: Dunes, deltas, outwash terraces, outwash plains
Landform position (three-dimensional): Tread, riser
Down-slope shape: Convex, linear
Across-slope shape: Convex, linear
Parent material: Loose sandy glaciofluvial deposits derived from granite and/or loose sandy glaciofluvial deposits derived from schist and/or loose sandy glaciofluvial deposits derived from gneiss

Typical profile

Oe - 0 to 1 inches: moderately decomposed plant material
A - 1 to 3 inches: loamy sand
Bw - 3 to 25 inches: loamy sand
C - 25 to 65 inches: sand

Properties and qualities

Slope: 25 to 35 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to very high (1.42 to 99.90 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline (0.0 to 1.9 mmhos/cm)
Available water supply, 0 to 60 inches: Low (about 4.5 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 4e
Hydrologic Soil Group: A
Ecological site: F144AY022MA - Dry Outwash
Hydric soil rating: No

Minor Components

Hinckley

Percent of map unit: 10 percent
Landform: Deltas, kames, eskers, outwash plains
Landform position (two-dimensional): Summit, shoulder, backslope
Landform position (three-dimensional): Head slope, crest, side slope, nose slope, rise
Down-slope shape: Convex
Across-slope shape: Convex, linear
Hydric soil rating: No

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

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

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

United States Department of Agriculture, Natural Resources Conservation Service. 2006. Land resource regions and major land resource areas of the United States, the Caribbean, and the Pacific Basin. U.S. Department of Agriculture Handbook 296. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053624

United States Department of Agriculture, Soil Conservation Service. 1961. Land capability classification. U.S. Department of Agriculture Handbook 210. http://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/nrcs142p2_052290.pdf

Appendix F

Map Set

Appendix G

SWPPP Inspection Forms

Ballston Spa Tannery Project
WEEKLY SWPPP INSPECTION REPORT

Inspector Name:	Date:
Signature (required):	Time:
Weather:	Inspection #:
Soil Conditions (dry, saturated, etc):	

Note: Digital photos, with date stamp required for all practices requiring corrective action, before and after, to be attached to the inspection report.

	YES	NO	N/A		
1.	☐	☐	☐	Routine Inspection.	Date of last inspection:_____
2.	☐	☐	☐	Inspection following rain event.	Date/time of storm ending:_____ Rainfall amount:_____ Recorded by:_____
3.	☐	☐	☐	Is this a final site inspection?	
4.	☐	☐	☐	Has site undergone final stabilization?	
	☐	☐	☐	If so, have all temporary erosion and sediment controls been removed?	

Site Disturbance (Indicate Locations on Plan)

	YES	NO	N/A	
1.	☐	☐	☐	Areas previously disturbed, but have not undergone active site work in the last 14 days?
2.	☐	☐	☐	Areas disturbed within last 14 days?
3.	☐	☐	☐	Areas expected to be disturbed in next 14 days?
4.	☐	☐	☐	Do areas of steep slopes or complex stabilization issues exist? If "YES" explain:
5.	☐	☐	☐	Are there currently more than 5 acres of disturbed soil at the site? If so make sure there is an approval letter from NYS DEC.

Additional Comments:_____

Inspection of Erosion and Sediment Control Devices

	Type of Control Device	Accumulation (if any) in %	Repairs/Maintenance Needed
1.			
2.			
3.			
4.			
5.			
6.			

Stabilization/Runoff

	YES	NO	N/A	
1.	☐	☐	☐	Are all existing disturbed areas contained by control devices? Type of devices:
2.	☐	☐	☐	Are there areas that require stabilization within the next 14 days? Specify Area:
3.	☐	☐	☐	Have stabilization measures been initiated in inactive areas?
4.	☐	☐	☐	Is there current snow cover or frozen ground conditions?
5.	☐	☐	☐	Rills or gullies?
6.	☐	☐	☐	Slumping/deposition?
7.	☐	☐	☐	Loss of vegetation?
8.	☐	☐	☐	Lack of germination?
9.	☐	☐	☐	Loss of mulching?

Receiving Structures/Water Bodies (Indicate locations where runoff leaves the project site on the site plan)

	YES	NO	N/A	
1.	☐	☐	☐	Surface water swale or natural surface waterbody?

If natural waterbody:

Is waterbody located ☐ onsite, or ☐ adjacent to property boundary?

Description of condition:_____

2.	☐	☐	☐	Municipal or community system?

Inspect locations where runoff from project site enters the receiving waters and indicate if there is evidence of:

a.	☐	☐	☐	Rills or gullies?
b.	☐	☐	☐	Slumping/deposition?
c.	☐	☐	☐	Loss of vegetation?
d.	☐	☐	☐	Undermining of structures?
e.	☐	☐	☐	Was there a discharge into the receiving water on the day of inspection?
f.	☐	☐	☐	Is there evidence of turbidity, sedimentation, or oil in the receiving waters?

Additional Comments:_____

Inspection of Post-Construction Stormwater Management Control Devices

	Type of Control Device	Phase of Construction	Repairs/Maintenance Needed
1.			
2.			
3.			
4.			

General Site Condition

	YES	NO	N/A	
1.	☐	☐	☐	Have action items from previous reports been addressed?
2.	☐	☐	☐	Does routine maintenance of protection components occur on a regular basis?
3.	☐	☐	☐	Does cleaning and/or sweeping affected roadways occur, at minimum, daily?
4.	☐	☐	☐	Is debris and litter removed on a monthly basis, or as necessary?
5.	☐	☐	☐	Is the site maintained in an orderly manner?

Describe the condition of all natural waterbodies within or adjacent to the Project that receive runoff from the site:

Contractors progress over last 7 days:_____

Anticipated work to be begun in the next 7 days:_____

Additional Comments:_____

Visual Observations

	YES	NO	N/A	
1.	☐	☐	☐	All erosion and sediment control measures have been installed/constructed?
2.	☐	☐	☐	All erosion and sediment control measures are being maintained properly?

SUMMARY OF ACTION ITEMS TO REPAIR/REPLACE/MAINTAIN/CORRECT DEFICIENCIES

Action Reported To (no signature required): _____

Company: _____

Appendix H

Other SWPPP Forms

Construction Sequence
SWPPP Plan Changes
Spill Response Form
Stormwater Management Practice Maintenance Log

The operator shall prepare a summary of construction status using the Construction Sequence Form below once every month. Significant deviations to the sequence and reasons for those deviations (i.e. weather, subcontractor availability, etc.), shall be noted by the contractor. The schedule shall be used to record the dates for initiation of construction, implementation of erosion control measures, stabilization, etc. A copy of this table will be maintained at the construction site and updated in addition to the individual Inspection Reports completed for each inspection.

Construction Sequence Form

Construction Activities (Identify name of planned practices)	Date Complete
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
11.	
12.	

STORM WATER POLLUTION PREVENTION PLAN
PLAN CHANGES, AUTHORIZATION, AND CHANGE CERTIFICATION

CHANGES REQUIRED TO THE POLLUTION PREVENTION PLAN:

_____
_____
_____
_____
_____

REASONS FOR CHANGES:

_____
_____
_____
_____
_____

REQUESTED BY: _____

DATE: _____

AUTHORIZED BY: _____

DATE: _____

CERTIFICATION OF CHANGES:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that false statements made herein are punishable as a Class A misdemeanor pursuant to Section 210.45 of the penal code.

SIGNATURE: _____

DATE: _____

SPILL RESPONSE REPORT

Within 1 hour of a spill discovery less than 2 gallons in volume the following must be notified:

Muammar Hermanstyne
(585)324-0569

Within 1 hour of a spill discovery greater than 2 gallons the following must be notified:

Muammar Hermanstyne
NYSDEC Spill Response Hotline 1-800-457-7362
Spill Response Contractor

Material Spilled: _____

Approximate Volume: _____

Location: _____

Distance to nearest down gradient drainage: _____

Distance to nearest down gradient open water: _____

Temporary control measures in place: _____

Appendix I

SPDES General Permit GP-0-25-001

NEW YORK STATE | 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

Scott E. Sheeley JAN. 29, 2025

Authorized Signature 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

Table of Contents

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.

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:

      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 *discharge*s 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 standard*s 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 discharge*s 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 discharge*s authorized by this permit are causing or contributing to a violation of *water quality standard*s, or if NYSDEC determines that a modification of this permit is necessary to prevent a violation of *water quality standard*s, the authorized *discharge*s 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*

*Discharge*s 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 discharge*s; and

        ii. Control *stormwater discharge*s, 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 *discharge*s 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 discharge*s, 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**. *Discharge*s from *dewatering* activities, including *discharge*s 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 area*s 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.

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:

   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.

   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 <u>not</u> 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 source*s. It is a calculation of the maximum amount of a *pollutant* that a waterbody can receive and still meet *water quality standard*s, and an allocation of that amount to the *pollutant's* sources. A TMDL stipulates Waste Load Allocations (WLA) for *point source discharge*s, Load Allocations (LA) for *nonpoint source*s, 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 planned[1]
- 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

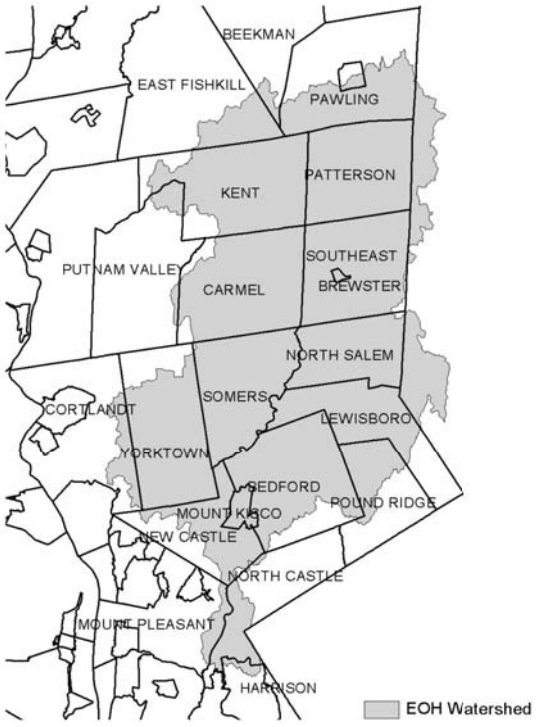


Figure 2 - Onondaga Lake Watershed

Figure 3 - Greenwood Lake Watershed

Figure 4 - Oscawana Lake Watershed

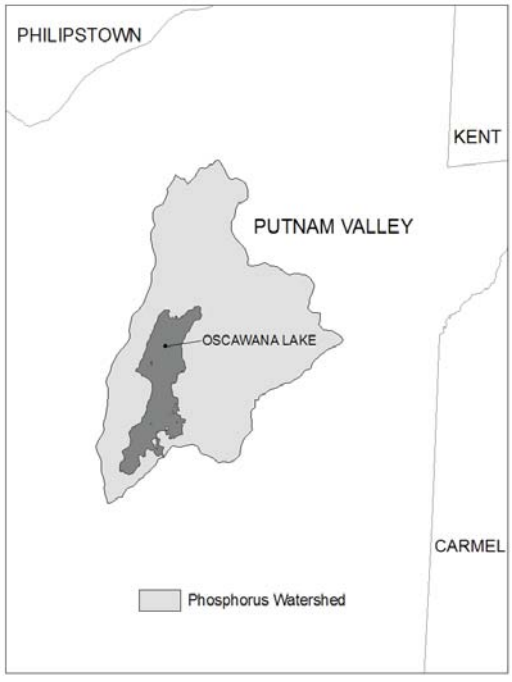
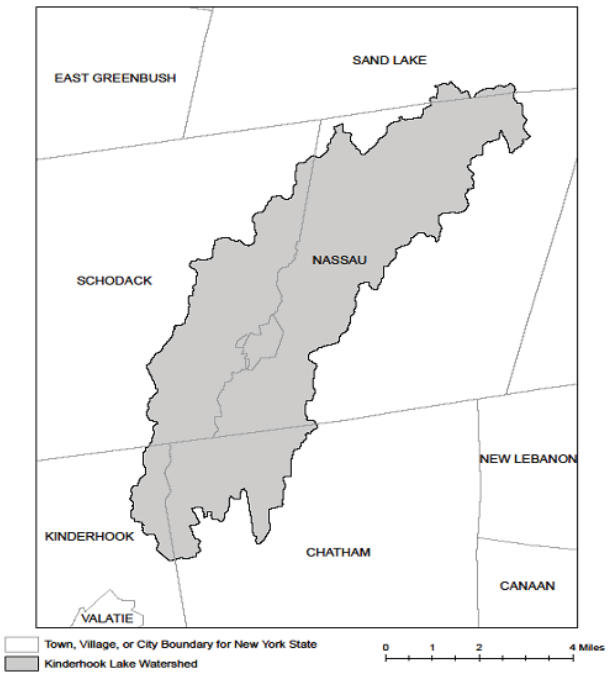


Figure 5 - Kinderhook Lake Watershed



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
Genessee	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 (NH3, NO2)
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	Glenvwood 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, Mongomery 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/Sedimnt
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

Region	Covering the following counties:	Division of Environmental Permits (DEP) Permit Administrators	Division of Water (DOW) Water (SPDES) Program
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 Washiington 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.

NEW YORK STATE | Department of Environmental Conservation

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

Revised: January 2025

APPENDIX G – MS4 SWPPP Acceptance Form

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

NEW YORK STATE | 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 Name[1]:

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.

(NYSDEC - MS4 SWPPP Acceptance Form - January 2025)

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.

NEW YORK STATE | 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.

NEW YORK STATE | Department of Environmental Conservation

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

Revised: January 2025

Appendix J

Historic Preservation/Endangered Species Documentation

New York State
Parks, Recreation and
Historic Preservation

KATHY HOCHUL
Governor

RANDY SIMONS
Commissioner Pro Tempore

April 11, 2025

Matt Brobston
The LA Group
40 Long Alley
Saratoga Springs, NY 12866

Re: DEC
Ballston Spa Tannery Commons
125 Bath St, Ballston Spa, Saratoga County, NY 12020
24PR10894

Dear Matt Brobston:

Thank you for requesting the comments of the Office of Parks, Recreation and Historic Preservation (OPRHP). We have 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). These comments are those of the OPRHP and relate only to Historic/Cultural resources. They do not include potential environmental impacts to New York State Parkland that may be involved in or near your project.

Based upon this review, it is the opinion of OPRHP that no properties, including archaeological and/or historic resources, listed in or eligible for the New York State and National Registers of Historic Places will be impacted by this project.

If further correspondence is required regarding this project, please be sure to refer to the OPRHP Project Review (PR) number noted above. If you have any questions, please contact Julie Maresco at the following email address:

Julie.Maresco@parks.ny.gov

Sincerely,

R. Daniel Mackay

Deputy Commissioner for Historic Preservation
Division for Historic Preservation

Ballston Spa Tannery

November 25, 2024

1:2,257

0 0.02 0.04 0.08 mi

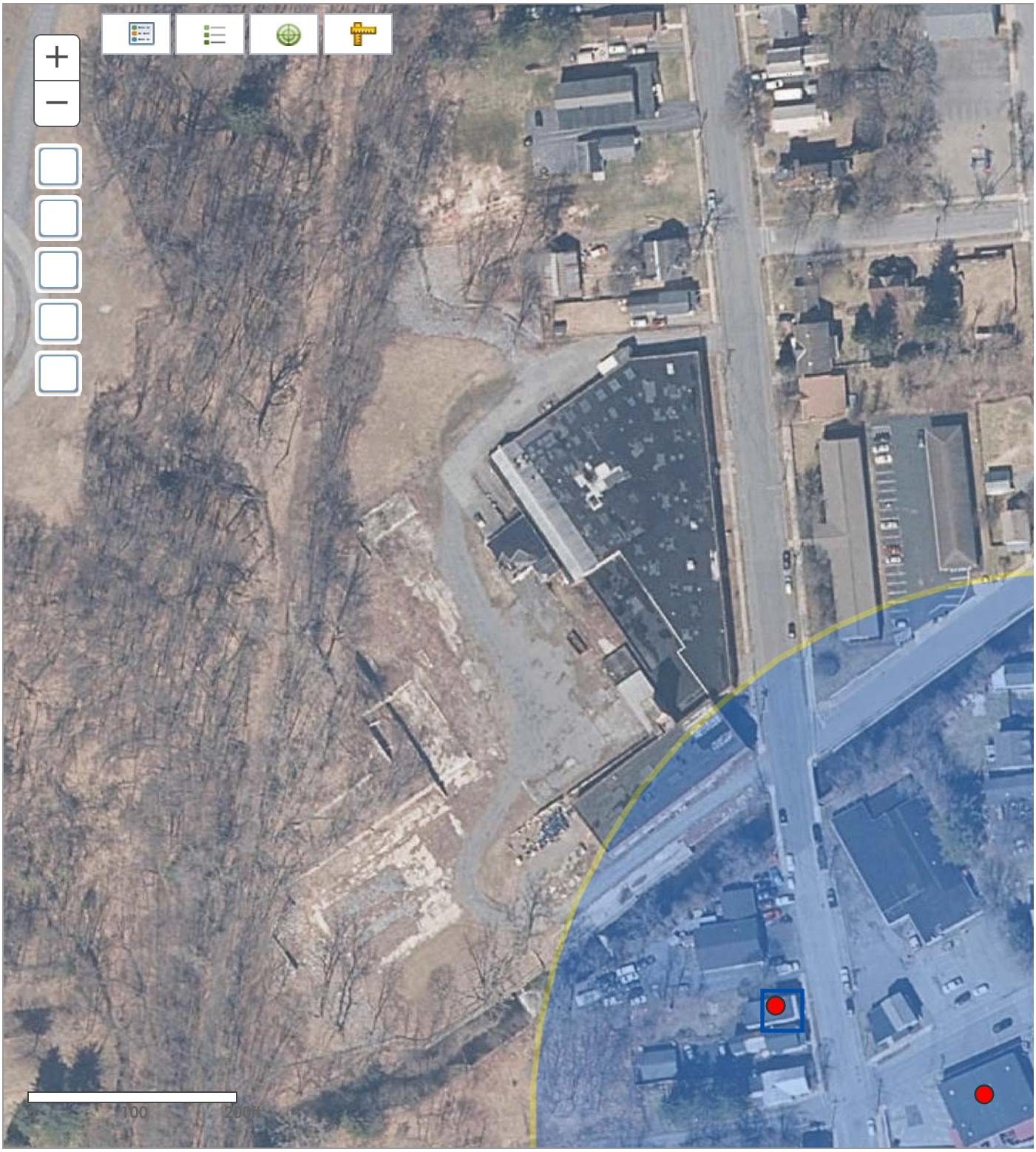
0 0.03 0.07 0.13 km

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

Author: The LA Group
Not a legal document

CRIS NYS
Cultural Resource Information System

HOME SUBMIT SEARCH COMMUNICATE



Appendix K

Deep Ripping and De-compaction (DEC, 2008)

New York State
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Water

Deep-Ripping and Decompaction

April 2008

Document Prepared by:

John E. Lacey,
Land Resource Consultant and Environmental Compliance Monitor
(Formerly with the Division of Agricultural Protection and Development Services,
NYS Dept. of Agriculture & Markets)

New York State
Department of Environmental Conservation

Alternative Stormwater Management
Deep-Ripping and Decompaction

Description

The two-phase practice of 1) "Deep Ripping;" and 2) "Decompaction" (deep subsoiling), of the soil material as a step in the cleanup and restoration/landscaping of a construction site, helps mitigate the physically induced impacts of soil compression; i.e.: soil compaction or the substantial increase in the bulk density of the soil material.

Deep Ripping and Decompaction are key factors which help in restoring soil pore space and permeability for water infiltration. Conversely, the physical actions of cut-and-fill work, land grading, the ongoing movement of construction equipment and the transport of building materials throughout a site alter the architecture and structure of the soil, resulting in: the mixing of layers (horizons) of soil materials, compression of those materials and diminished soil porosity which, if left unchecked, severely impairs the soil's water holding capacity and vertical drainage (rainfall infiltration), from the surface downward.

In a humid climate region, compaction damage on a site is virtually guaranteed over the duration of a project. Soil in very moist to wet condition when compacted, will have severely reduced permeability. Figure 1 displays the early stage of the deep-ripping phase (Note that all topsoil was stripped prior to construction access, and it remains stockpiled until the next phase – decompaction – is complete). A heavy-duty tractor is pulling a three-shank ripper on the first of several series of incrementally deepening passes through the construction access corridor's densely compressed subsoil material. Figure 2 illustrates the approximate volumetric composition of a loam surface soil when conditions are good for plant growth, with adequate natural pore space for fluctuating moisture conditions.

Fig. 1. A typical deep ripping phase of this practice, during the first in a series of progressively deeper "rips" through severely compressed subsoil.

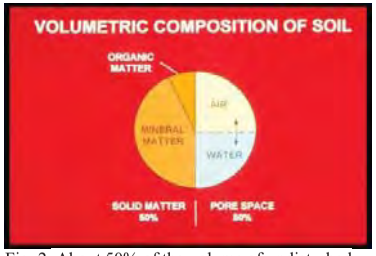


Fig. 2. About 50% of the volume of undisturbed loam surface soil is pore space, when soil is in good condition for plant growth. Brady, 2002.

Recommended Application of Practice

The objective of Deep Ripping and Decompaction is to effectively fracture (vertically and laterallly) through the thickness of the physically compressed subsoil material (see Figure 3), restoring soil porosity and permeability and aiding infiltration to help reduce runoff. Together with topsoil stripping, the "two-phase" practice of Deep Ripping and Decompaction first became established as a "best management practice" through ongoing success on commercial farmlands affected by heavy utility construction right-of-way projects (transmission pipelines and large power lines).

Fig. 3. Construction site with significant compaction of the deep basal till subsoil extends 24 inches below this exposed cut-and-fill work surface.

Soil permeability, soil drainage and cropland productivity were restored. For broader construction application, the two-phase practice of Deep Ripping and Decompaction is best adapted to areas impacted with significant soil compaction, on contiguous open portions of large construction sites and inside long, open construction corridors used as temporary access over the duration of construction. Each mitigation area should have minimal above-and-below-ground obstructions for the easy avoidance and maneuvering of a large tractor and ripping/decompacting implements. Conversely, the complete two-phase practice is not recommended in congested or obstructed areas due to the limitations on tractor and implement movement.

Benefits

Aggressive "deep ripping" through the compressed thickness of exposed subsoil before the replacement/respreading of the topsoil layer, followed by "decompaction," i.e.: "sub-soiling," through the restored topsoil layer down into the subsoil, offers the following benefits:

- Increases the project (larger size) area's direct surface infiltration of rainfall by providing the open site's mitigated soil condition and lowers the demand on concentrated runoff control structures
- Enhances direct groundwater recharge through greater dispersion across and through a broader surface than afforded by some runoff-control structural measures
- Decreases runoff volume generated and provides hydrologic source control
- May be planned for application in feasible open locations either alone or in

conjunction with plans for structural practices (e.g., subsurface drain line or infiltration basin) serving the same or contiguous areas

- Promotes successful long-term revegetation by restoring soil permeability, drainage and water holding capacity for healthy (rather than restricted) root-system development of trees, shrubs and deep rooted ground cover, minimizing plant drowning during wet periods and burnout during dry periods.

Feasibility/Limitations

The effectiveness of Deep Ripping and Decompaction is governed mostly by site factors such as: the original (undisturbed) soil's hydrologic characteristics; the general slope; local weather/timing (soil moisture) for implementation; the space-related freedom of equipment/implement maneuverability (noted above in **Recommended Application of Practice**), and by the proper selection and operation of tractor and implements (explained below in **Design Guidance**). The more notable site-related factors include:

Soil

In the undisturbed condition, each identified soil type comprising a site is grouped into one of four categories of soil hydrology, Hydrologic Soil Group A, B, C or D, determined primarily by a range of characteristics including soil texture, drainage capability when thoroughly wet, and depth to water table. The natural rates of infiltration and transmission of soil-water through the undisturbed soil layers for Group A is "high" with a low runoff potential while soils in Group B are moderate in infiltration and the transmission of soil-water with a moderate runoff potential, depending somewhat on slope. Soils in Group C have slow rates of infiltration and transmission of soil-water and a moderately high runoff potential influenced by soil texture and slope; while soils in Group D have exceptionally slow rates of infiltration and transmission of soil-water, and high runoff potential.

In Figure 4, the profile displays the undisturbed horizons of a soil in Hydrologic Soil Group C and the naturally slow rate of infiltration through the subsoil. The slow rate of infiltration begins immediately below the topsoil horizon (30 cm), due to the limited amount of macro pores, e.g.: natural subsoil fractures, worm holes and root channels. Infiltration after the construction-induced mixing and compression of such subsoil material is virtually absent; but can be restored back to this natural level with the two-phase practice of deep ripping and decompaction, followed by the permanent establishment of an appropriate, deep taproot

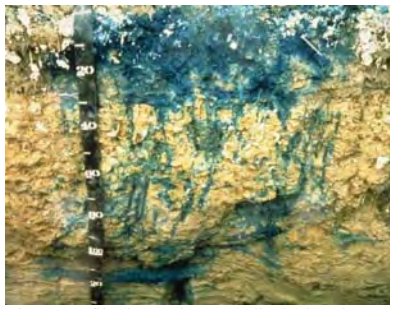


Fig. 4. Profile (in centimeters) displaying the infiltration test result of the natural undisturbed horizons of a soil in Hydrologic Soil Group C.

lawn/ground cover to help maintain the restored subsoil structure. Infiltration after construction-induced mixing and compression of such subsoil material can be notably rehabilitated with the Deep Ripping and Decompaction practice, which prepares the site for the appropriate long-term lawn/ground cover mix including deep taproot plants such as clover, fescue or trefoil, etc. needed for all rehabilitated soils.

Generally, soils in Hydrologic Soil Groups A and B, which respectively may include deep, well-drained, sandy-gravelly materials or deep, moderately well-drained basal till materials, are among the easier ones to restore permeability and infiltration, by deep ripping and decompaction. Among the many different soils in Hydrologic Soil Group C are those unique glacial tills having a natural fragipan zone, beginning about 12 to 18 inches (30 – 45cm), below surface. Although soils in Hydrologic Soil Group C do require a somewhat more carefully applied level of the Deep Ripping and Decompaction practice, it can greatly benefit such affected areas by reducing the runoff and fostering infiltration to a level equal to that of pre-disturbance.

Soils in Hydrologic Soil Group D typically have a permanent high water table close to the surface, influenced by a clay or other highly impervious layer of material. In many locations with clay subsoil material, the bulk density is so naturally high that heavy trafficking has little or no added impact on infiltration; and structural runoff control practices rather than Deep Ripping and Decompaction should be considered.

The information about Hydrologic Soil Groups is merely a general guideline. Site-specific data such as limited depths of cut-and-fill grading with minimal removal or translocation of the inherent subsoil materials (as analyzed in the county soil survey) or, conversely, the excavation and translocation of deeper, unconsolidated substratum or consolidated bedrock materials (unlike the analyzed subsoil horizons' materials referred to in the county soil survey) should always be taken into account.

Sites made up with significant quantities of large rocks, or having a very shallow depth to bedrock, are not conducive to deep ripping and decompation (subsoiling); and other measures may be more practical.

Slope

The two-phase application of 1) deep ripping and 2) decompaction (deep subsoiling), is most practical on flat, gentle and moderate slopes. In some situations, such as but not limited to temporary construction access corridors, inclusion areas that are moderately steep along a project's otherwise gentle or moderate slope may also be deep ripped and decompacted. For limited instances of moderate steepness on other projects, however, the post-construction land use and the relative alignment of the potential ripping and decompaction work in relation to the lay of the slope should be reviewed for safety and practicality. In broad construction areas predominated by moderately steep or steep slopes, the practice is generally not used.

Local Weather/Timing/Soil Moisture

Effective fracturing of compressed subsoil material from the exposed work surface, laterally and vertically down through the affected zone is achieved only when the soil material is moderately dry to moderately moist. Neither one of the two-phases, deep ripping nor decompaction (deep

subsoiling), can be effectively conducted when the soil material (subsoil or replaced topsoil) is in either a "plastic" or "liquid" state of soil consistency. Pulling the respective implements legs through the soil when it is overly moist only results in the "slicing and smearing" of the material or added "squeezing and compression" instead of the necessary fracturing. Ample drying time is needed for a "rippable" soil condition not merely in the material close to the surface, but throughout the material located down to the bottom of the physically compressed zone of the subsoil.

The "poor man's Atterberg field test" for soil plasticity is a simple "hand-roll" method used for quick, on-site determination of whether or not the moisture level of the affected soil material is low enough for: effective deep ripping of subsoil; respreading of topsoil in a friable state; and final decompaction (deep subsoiling). Using a sample of soil material obtained from the planned bottom depth of ripping, e.g.: 20 - 24 inches below exposed subsoil surface, the sample is hand rolled between the palms down to a 1/8-inch diameter thread. (Use the same test for stored topsoil material before respreading on the site.) If the respective soil sample crumbles apart in segments no greater than 3/8 of an inch long, by the time it is rolled down to 1/8 inch diameter, it is low enough in moisture for deep ripping (or topsoil replacement), and decompaction. Conversely, as shown in Figure 5, if the rolled sample stretches out in increments greater than 3/8 of an inch long before crumbling, it is in a "plastic" state of soil consistency and is too wet for subsoil ripping (as well as topsoil replacement) and final decompaction.

Fig. 5. Augered from a depth of 19 inches below the surface of the replaced topsoil, this subsoil sample was hand rolled to a 1/8-inch diameter. The test shows the soil at this site stretches out too far without crumbling; it indicates the material is in a plastic state of consistence, too wet for final decompaction (deep subsoiling) at this time.

Design Guidance

Beyond the above-noted site factors, a vital requirement for the effective Deep Ripping and Decompaction (deep subsoiling), is implementing the practice in its distinct, two-phase process:

1) Deep rip the affected thickness of exposed subsoil material (see Figure 10 and 11), aggressively fracturing it before the protected topsoil is reapplied on the site (see Figure 12); and

2) Decompact (deep subsoil), simultaneously through the restored topsoil layer and the upper half of the affected subsoil (Figure 13). The second phase, "decompaction," mitigates the partial recompaction which occurs during the heavy process of topsoil spreading/grading. Prior to deep ripping and decompacting the site, all construction activity, including construction equipment and material storage, site cleanup and trafficking (Figure 14), should be finished; and the site closed off to further disturbance. Likewise, once the practice is underway and the area's soil permeability and

rainfall infiltration are being restored, a policy limiting all further traffic to permanent travel lanes is maintained.

The other critical elements, outlined below, are: using the proper implements (deep, heavy-duty rippers and subsoilers), and ample pulling-power equipment (tractors); and conducting the practice at the appropriate speed, depth and pattern(s) of movement.

Note that an appropriate plan for the separate practice of establishing a healthy perennial ground cover, with deep rooting to help maintain the restored soil structure, should be developed in advance. This may require the assistance of an agronomist or landscape horticulturist.

Implements

Avoid the use of all undersize implements. The small-to-medium, light-duty tool will, at best, only "scarify" the uppermost surface portion of the mass of compacted subsoil material. The term "chisel plow" is commonly but incorrectly applied to a broad range of implements. While a few may be adapted for the moderate subsoiling of non-impacted soils, the majority are less durable and used for only lighter land-fitting (see Figure 6).

Fig. 6. A light duty chisel implement, not adequate for either the deep ripping or decompaction (deep subsoiling) phase.

Fig. 7. One of several variations of an agricultural ripper. This unit has long, rugged shanks mounted on a steel V-frame for deep, aggressive fracturing through Phase 1.

Use a "heavy duty" agricultural-grade, deep ripper (see Figures 7,9,10 and 11) for the first phase: the lateral and vertical fracturing of the mass of exposed and compressed subsoil, down and through, to the bottom of impact, prior to the replacement of the topsoil layer. (Any oversize rocks which are uplifted to the subsoil surface during the deep ripping phase are picked and removed.) Like the heavy-duty class of implement for the first phase, the decompaction (deep subsoiling) of Phase 2 is conducted with the heavy-duty version of the deep subsoiler. More preferable is the angled-leg variety of deep subsoiler (shown in Figures 8 and 13). It minimizes the inversion of the subsoil and topsoil layers while laterally and vertically fracturing the upper half of the previously ripped subsoil layer and all of the topsoil layer by delivering a momentary, wave-like "lifting and shattering" action up through the soil layers as it is pulled.

Pulling-Power of Equipment

Use the following rule of thumb for tractor horsepower (hp) whenever deep ripping and decompacting a significantly impacted site: For both types of implement, have at least 40 hp of tractor pull available for each mounted shank/ leg.

Using the examples of a 3-shank and a 5-shank implement, the respective tractors should have 120 and 200 hp available for fracturing down to the final depth of 20-to-24 inches per phase. Final depth for the deep ripping in Phase 1 is achieved incrementally by a progressive series of passes (see Depth and Patterns of Movement, below); while for Phase 2, the full operating depth of the deep subsoiler is applied from the beginning.

The operating speed for pulling both types of implement should not exceed 2 to 3 mph. At this slow and managed rate of operating speed, maximum functional performance is sustained by the tractor and the implement performing the soil fracturing. Referring to Figure 8, the implement is the 6-leg version of the deep angled-leg subsoiler. Its two outside legs are "chained up" so that only four legs will be engaged (at the maximum depth), requiring no less than 160 hp, (rather than 240 hp) of pull. The 4-wheel drive, articulated-frame tractor in Figure 8 is 174 hp. It will be decompacting this unobstructed, former construction access area simultaneously through 11 inches of replaced topsoil and the upper 12 inches of the previously deep-ripped subsoil. In constricted areas of Phase 1) Deep Ripping, a medium-size tractor with adequate hp, such as the one in Figure 9 pulling a 3-shank deep ripper, may be more maneuverable.

Fig. 8. A deep, angled-leg subsoiler, ideal for Phase 2 decompaction of after the topsoil layer is graded on top of the ripped subsoil.

Fig. 9. This medium tractor is pulling a 3-shank deep ripper. The severely compacted construction access corridor is narrow, and the 120 hp tractor is more maneuverable for Phase 1 deep ripping (subsoil fracturing), here.

Some industrial-grade variations of ripping implements are attached to power graders and bulldozers. Although highly durable, they are generally not recommended. Typically, the shanks or "teeth" of these rippers are too short and stout; and they are mounted too far apart to achieve the well-distributed type of lateral and vertical fracturing of the soil materials necessary to restore soil permeability and infiltration. In addition, the power graders and bulldozers, as pullers, are far less maneuverable for turns and patterns than the tractor.

Depth and Patterns of Movement

As previously noted both Phase 1 Deep Ripping through significantly compressed, exposed subsoil and Phase 2 Decompaction (deep subsoiling) through the replaced topsoil and upper subsoil need to be performed at maximum capable depth of each implement. With an implement's guide wheels attached, some have a "normal" maximum operating depth of 18 inches, while others may go deeper. In many situations, however, the tractor/implement operator must first remove the guide wheels and other non essential elements from the implement. This adapts the ripper or the deep subsoiler for skillful pulling with its frame only a few inches above surface, while the shanks or legs, fracture the soil material 20-to-24 inches deep.

There may be construction sites where the depth of the exposed subsoil's compression is moderate, e.g.: 12 inches, rather than deep. This can be verified by using a ¾ inch cone penetrometer and a shovel to test the subsoil for its level of compaction, incrementally, every three inches of increasing depth. Once the full thickness of the subsoil's compacted zone is finally "pieced" and there is a significant drop in the psi measurements of the soil penetrometer, the depth/thickness of compaction is determined. This is repeated at several representative locations of the construction site. If the thickness of the site's subsoil compaction is verified as, for example, ten inches, then the Phase 1 Deep Ripping can be correspondingly reduced to the implement's minimum operable depth of 12 inches. However, the Phase 2 simultaneous Decompation (subsoiling) of an 11 inch thick layer of replaced topsoil and the upper subsoil should run at the subsoiling implements full operating depth.

Fig. 10. An early pass with a 3-shank deep ripper penetrating only 8 inches into this worksite's severely compressed subsoil.

Fig. 11. A repeat run of the 3-shank ripper along the same patterned pass area as Fig. 9; here, incrementally reaching 18 of the needed 22 inches of subsoil fracture.

Typically, three separate series (patterns) are used for both the Phase 1 Deep Ripping and the Phase 2 Decompaction on significantly compacted sites. For Phase 1, each series begins with a moderate depth of rip and, by repeat-pass, continues until full depth is reached. Phase 2 applies the full depth of Decompation (subsoiling), from the beginning.

Every separate series (pattern) consists of parallel, forward-and-return runs, with each progressive

pass of the implement's legs or shanks evenly staggered between those from the previous pass. This compensates for the shank or leg-spacing on the implement, e.g., with 24-to-30 inches between each shank or leg. The staggered return pass ensures lateral and vertical fracturing actuated every 12 to 15 inches across the densely compressed soil mass.

Large, Unobstructed Areas
For larger easy areas, use the standard patterns of movement:

- The first series (pattern) of passes is applied lengthwise, parallel with the longest spread of the site; gradually progressing across the site's width, with each successive pass.

- The second series runs obliquely, crossing the first series at an angle of about 45 degrees.

- The third series runs at right angle (or 90 degrees), to the first series to complete the fracturing and shattering on severely compacted sites, and avoid leaving large unbroken blocks of compressed soil material. (In certain instances, the third series may be optional, depending on how thoroughly the first two series loosen the material and eliminate large chunks/blocks of material as verified by tests with a ¾-inch cone penetrometer.)

Fig. 12. Moderately dry topsoil is being replaced on the affected site now that Phase 1 deep ripping of the compressed subsoil is complete.

Fig. 13. The same deep, angled-leg subsoiler shown in Fig. 7 is engaged at maximum depth for Phase 2, decompaction (deep soiling), of the replaced topsoil and the upper subsoil materials.

Corridors
In long corridors of limited width and less maneuverability than larger sites, e.g.: along compacted areas used as temporary construction access, a modified series of pattern passes are used.

- First, apply the same initial lengthwise, parallel series of passes described above.

- A second series of passes makes a broad "S" shaped pattern of rips, continually and gradually alternating the "S" curves between opposite edges inside the compacted corridor.

- The third and final series again uses the broad, alternating S pattern, but it is "flip-flopped" to continually cross the previous S pattern along the corridor's centerline. This final series of the S pattern curves back along the edge areas skipped by the second series.

Maintenance and Cost

Once the two-phase practice of Deep Ripping and Decompation is completed, two items are essential for maintaining a site's soil porosity and permeability for infiltration. They are: planting and maintaining the appropriate ground cover with deep roots to maintain the soil structure (see Figure 15); and keeping the site free of traffic or other weight loads.

Note that site-specific choice of an appropriate vegetative ground-cover seed mix, including the proper seeding ratio of one or more perennial species with a deep taproot system and the proper amount of lime and soil nutrients (fertilizer mix) adapted to the soil-needs, are basic to the final practice of landscaping, i.e: surface tillage, seeding/planting/fertilizing and culti-packing or mulching is applied. The "maintenance" of an effectively deep-ripped and decompacted area is generally limited to the successful perennial (long-term) landscape ground cover; as long as no weight-bearing force of soil compaction is applied.

Fig. 14. The severely compacted soil of a temporary construction yard used daily by heavy equipment for four months; shown before deep ripping, topsoil replacement, and decompaction.

Fig. 15. The same site as Fig. 14 after deep ripping of the exposed subsoil, topsoil replacement, decompaction through the topsoil and upper subsoil and final surface tillage and revegetation to maintain soil permeability and infiltration.

The Deep Ripping and Decompaction practice is, by necessity, more extensive than periodic subsoiling of farmland.The cost of deep ripping and decompacting (deep subsoiling), will vary according to the depth and severity of soil-material compression and the relative amount of tractor and implement time that is required. In some instances, depending on open maneuverability, two-to-three acres of compacted project area may be deep-ripped in one day. In other situations of more severe compaction and - or less maneuverability, as little as one acre may be fully ripped in a day. Generally, if the Phase 1) Deep Ripping is fully effective, the Phase 2) Decompaction should be completed in 2/3 to 3/4 of the time required for Phase 1.

Using the example of two acres of Phase 1) Deep Ripping in one day, at $1800 per day, the net cost is $900 per acre. If the Phase 2) Decompacting or deep subsoiling takes 3/4 the time as Phase 1, it costs $675 per acre for a combined total of $1575 per acre to complete the practice (these figures do not include the cost of the separate practice of topsoil stripping and replacement). Due to the many variables, it must be recognized that cost will be determined by the specific conditions or constraints of the site and the availability of proper equipment.

Resources

Publications:

- American Society of Agricultural Engineers. 1971. *Compaction of Agricultural Soils.* ASAE.
- Brady, N.C., and R.R. Weil. 2002. *The Nature and Properties of Soils. 13th ed.* Pearson Education, Inc.
- Baver, L.D. 1948. *Soil Physics.* John Wiley & Sons.
- Carpachi, N. 1987 (1995 fifth printing). *Excavation and Grading Handbook, Revised. 2nd ed.* Craftsman Book Company
- Ellis, B. (Editor). 1997. Safe & Easy Lawn Care: The Complete Guide to Organic Low Maintenance Lawn. Houghton Mifflin.
- Harpstead, M.I., T.J. Sauer, and W.F. Bennett. 2001. *Soil Science Simplified. 4th ed.* Iowa State University Press.
- Magdoff, F., and H. van Es. 2000. *Building Soils for Better Crops. 2nd ed.* Sustainable Agricultural Networks
- McCarthy, D.F. 1993. *Essentials of Soil Mechanics and Foundations, Basic Geotechnics 4th ed.* Regents/Prentice Hall.
- Plaster, E.J. 1992. *Soil Science & Management. 3rd ed.* Delmar Publishers.
- Union Gas Limited, Ontario, Canada. 1984. *Rehabilitation of Agricultural Lands, Dawn-Kerwood Loop Pipeline; Technical Report.* Ecological Services for Planning, Ltd.; Robinson, Merritt & Devries, Ltd. and Smith, Hoffman Associates, Ltd.
- US Department of Agriculture in cooperation with Cornell University Agricultural Experiment Station. Various years. *Soil Survey of (various names) County, New York.* USDA.

Internet Access:

- Examples of implements:

V-Rippers. Access by internet search of *John Deere Ag -New Equipment for 915* (larger-frame model) *V-Rippe*; and, *for 913* (smaller-frame model) *V-Ripper*. Deep, angled-leg subsoiler. Access by internet search of: B*igham Brothers Shear Bolt Paratill-Subsoiler.* http://salesmanual.deere.com/sales/salesmanual/en_NA/primary_tillage/2008/feature/rippers/915v_pattern_frame.html?sbu=ag&link=prodcat Last visited March 08.

- Soils data of USDA Natural Resources Conservation Service. *NRCS Web Soil Survey.* http://websoilsurvey.nrcs.usda.gov/app/ and *USDA-NRCS Official Soil Series Descriptions; View by Name.* http://ortho.ftw.nrcs.usda.gov/cgi-bin/osd/osdname.cgi . *Last visited Jan. 08.*
- Soil penetrometer information. Access by internet searches of: *Diagnosing Soil Compaction using a Penetrometer (soil compaction tester), PSU Extension;* as well as *Dickey-john Soil Compaction Tester.* http://www.dickey-johnproducts.com/pdf/SoilCompactionTest.pdf and http://cropsoil.psu.edu/Extension/Facts/uc178pdf Last visited Sept. 07