

# WATER TREATMENT PLANT



## Operations and Maintenance Plan Draft



Environment

Prepared for:  
The Town of Tewksbury, MA

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# Operations and Maintenance Plan Draft

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## List of Acronyms

AST – Above Ground Storage Tank

BMP – Best Management Practice

DEP – Department of Environmental Protection

DPW – Department of Public Works

SOP – Standard Operating Procedures

SPCC - Spill Prevention and Countermeasure

SWPPP - Stormwater Pollution Prevention Plan

NPDES – National Pollutant Discharge Elimination System

## 1.0 Purpose

The purpose of the Operation and Maintenance Plan is to minimize the impact of stormwater pollution from various operations and maintenance activities in order to comply with Draft IMS Small MS4 NPDES Permit. Specific Operations and Maintenance Procedures are included if applicable to parks and open space, buildings and facilities, and vehicles and equipment.

## 2.0 Coverage Area

The coverage area considered in this report includes the Water Treatment Plant, which is located on 71 Merrimack Drive, and includes the facility itself, the parking lot in front of the building, the storage areas around the facility, and the intake facility north of the plant. A figure of the coverage area and the Water Treatment Plant is included in Appendix A. This figure is based on ortho imagery and includes nearby water bodies.

### 3.0 Applicable Operations

The O&M Plan covers the following Water Treatment Plant operations:

- All routine and preventative maintenance of the facilities stormwater system
- Road and parking lot maintenance practices, which include deicing, snow removal, and sanding
- External building maintenance, which includes exterior cleaning, washing, painting, and other maintenance activities
- Grounds maintenance, which includes the usage of fertilizer, pesticide, herbicide, green waste disposal, trash management, and sediment and erosion control
- Material storage, which includes stockpiling of debris such as gravel, waste sludge, and heavy equipment storage

## 4.0 Operations and Maintenance Procedures

All Water Treatment Plant operations listed in Section 3.0 shall be conducted in accordance with the applicable Standard Operating Procedures included in Appendix B and summarized in Table 4-1 below.

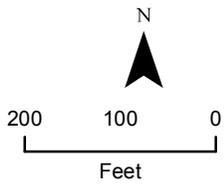
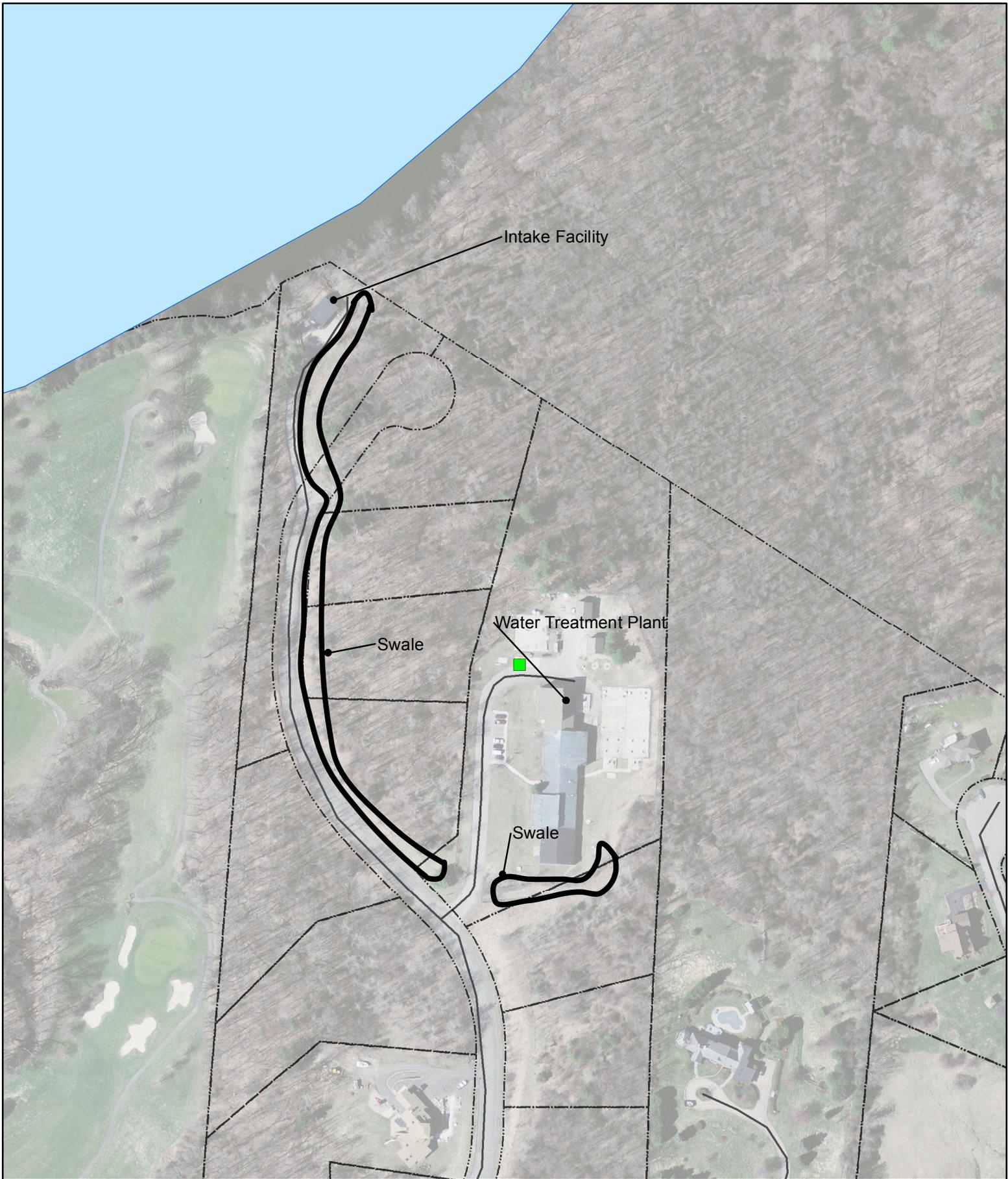
All scheduled inspections and maintenance of the Water Treatment Plant stormwater system are contained in the Stormwater Management System Inspection and Maintenance Logs, attached as Appendix C.

**Table 4-1. Summary of Standard Operating Procedures for Water Treatment Plant Operations and Maintenance**

<b>Standard Operating Procedures</b>	<b>Applicable Work</b>
General Good Housekeeping Procedures	All work conducted by any facility employee
Stormwater System Maintenance	Routine and preventative work on the facility's Stormwater System
Road & Parking Lot Maintenance	Snow plowing, winter salt, sand, or deicer application, paving or patching asphalt or concrete work, painting and striping, trash and debris removal
Vehicle Maintenance & Fueling	Vehicle and equipment maintenance, good housekeeping & waste disposal, vehicle washing, vehicle fueling, fuel spill cleanup
Building Maintenance	Janitorial practices, waste management, pressure washing & exterior surface cleaning, painting, sanding, & sandblasting, HVAC system maintenance
Grounds Maintenance	Landscape maintenance, mowing, mulching, graveling trails & parking lots, trash removal/ waste management
Fertilizer, Herbicide, & Pesticide Application	Storage, mixing, and application of fertilizers, herbicides, and pesticides
Materials Storage	Liquid materials storage, hazardous materials storage, stockpiling materials including: sand & gravel, wood products, including lumber, chips, sawdust, or hog fuel, demolition debris including asphalt and concrete, decommissioned vehicles or equipment
Incidental Spill Response & Cleanup	Limited actions taken to respond to an incidental release of potentially hazardous materials

# Appendix A

## Figure



**Water Treatment Plant  
Project Location Map**

NPDES O&M  
Tewksbury, MA

September 2013

**Legend**

-  Dumpster
-  Lakes and Ponds
-  Roads
-  Property boundaries

**AECOM**

**Appendix B**

**Standard Operating  
Procedures**

### Standard Operating Procedures (SOPs)

<b>Good Housekeeping for Outdoor Operations and Maintenance</b>	
Purpose of SOP:	To prevent the discharge of pollutants to stormwater in the course of conducting all outdoor operations and maintenance work at the Water Treatment Plant.
Location of SOP:	
Last Update:	
Administrator of SOP:	

#### **Prerequisites**

1. Employees should attend training on Municipal Stormwater Pollution Prevention.
2. Employees should read the procedures contained in this SOP and any related references.

#### **Equipment and Materials Needed**

1. Weatherproof containment and storage materials, including containers, drums, pallets, etc.
2. Spill Kit and equipment for dry cleanup, including kitty litter, absorbent pads, brooms, etc.
3. Storm drain inlet protection, including drain covers, berms, etc.

#### **Standard Operating Procedures**

1. All employees should be familiarized with the location of all storm drains and conveyance facilities.
2. Protect stormwater facilities during all work to ensure that only rain water enters the drainage system.
3. Do not dump liquids or other materials outside.
4. Pick up trash and dispose in dumpster.
5. Keep trash receptacles closed at all times.
6. Do not put liquids in trash receptacles.
7. Do not put hazardous materials in trash receptacles.
8. Keep outside work areas clean and sweep up after projects.
9. Do not hose down outside work areas.
10. Quickly clean up and contain all solid or liquid pollutant spills. Use solid absorbents and rags for clean-up of liquid spills and leaks.
11. Sweep paved maintenance and material usage areas often as needed.
12. Promptly repair or replace leaking connections, pipes, valves, hoses, or other leaking equipment that could contaminate stormwater.
13. Report any suspected illegal connections or illegal discharges to the Department of Environmental Protection (DEP).

**Hazardous Waste Disposal**

1. Hazardous wastes should be labeled as such and may include cleaning products, paints, fertilizers, herbicides, and pesticides, oil, fuels, acids, poisons, antifreeze, brake fluid, and solvents.
2. Hazardous Waste materials must be brought to the DPW.

### Standard Operating Procedures (SOPs)

<b>Stormwater System Maintenance</b>	
Purpose of SOP:	To maintain the purpose of the stormwater management system at the Department of Public Works and to guarantee the proper disposal of waste.
Location of SOP:	
Last Update:	
Administrator of SOP:	

#### **Prerequisites**

1. Employees should attend training on Municipal Stormwater Pollution Prevention.
2. Employees should read the procedures contained in this SOP and any related references.

#### **Equipment and Materials Needed**

1. Stormwater Management System inspection and Maintenance Log.
2. Stormwater Management System Map
3. Vactor Truck

#### **Standard Operating Procedures**

1. Inspect and maintain stormwater system according to the Stormwater Management System Inspection and Maintenance Logs once in the spring and once in the fall.
2. Schedule catch basin cleaning annually based on inspection.
3. Inspect all catch basins for obstructions, structural damage, and depth of sediment every month. Clean out catch basins if they are half full of sediment.
4. Schedule street and parking lot sweeping biannually after winter snow & ice management and again in the fall after the summer dry season and before winter rains mobilize accumulated sediments and pollutants from impervious surfaces.
5. Maintain side slopes on ditches at a grade that does not cause side-slope erosion.
6. Maintain 4 to 9 inches of vegetation in ditches.
7. Remove mowed or cut vegetation from ditches and do not dispose of in adjacent waterway or storm drainage system.
8. Do not apply herbicide, pesticide, or fertilizer in ditches or on adjacent roadways.
9. Reseeding of ditches should be done in late spring or early fall. This allows vegetation to be re-established before the next wet season to minimize erosion.

### Standard Operating Procedures (SOPs)

<b>Road and Parking Lot Maintenance</b>	
Purpose of SOP:	To prevent discharge of pollutants to stormwater during Water Treatment Plant vehicle and maintenance activities.
Location of SOP:	
Last Update:	
Administrator of SOP:	

#### **Prerequisites**

1. Employees should attend training on Municipal Stormwater Pollution Prevention.
2. Employees should read the procedures contained in this SOP and any related references.

#### **Equipment and Materials Needed**

1. Spill kit and equipment for dry cleanup including kitty litter, absorbent pads, etc.
2. Storm drain inlet protection including drain covers, berms, etc.
3. Tarps

#### **Standard Operating Procedures**

##### *General Maintenance*

1. Employees should be familiarized with the location of all storm drains and conveyance facilities in the work areas.
2. Collect and dispose of trash along roadsides and in parking lots when observed.

##### *Street Maintenance*

1. Protect nearby storm drains using drain covers, inserts, berms, etc. over or around inlets when doing any maintenance work within 25 feet of an inlet.
2. Sweep or vacuum wastes from all maintenance work when the project is complete and before any rain event.
3. Only schedule paving projects during dry weather.
4. Use erosion and sediment control during any earth disturbing activities.

##### *Parking Lot Maintenance*

1. Clean leaves, trash, sand, and other debris from parking lots regularly or as needed to prevent debris from reaching any storm drain inlet or storm detention area.
2. Make sure to sweep or vacuum the pavement area after the final snowmelt. Paved areas should also be vacuumed as necessary during the summer months.
3. Any automotive leaks, drips, or spills must be cleaned up with dry methods, such as

absorbents, and disposed of properly.

4. Inspect dumpsters and waste disposal areas regularly. Clean up any trash, spills or leaks and report leaking dumpsters to the disposal company.
5. Repair pavement along the parking lot, and include annual inspections.
6. Make sure catch basins are placed on areas where they will receive runoff.
7. Repair areas with significant erosion.
8. Make sure that dumpsters are not located uphill of a nearby catch basin.
9. Make sure dumpsters are located on pavement, are in good condition, and remain covered at all times.

#### *Street Sweeping*

1. Schedule street sweeping to be at least twice per year, and schedule additional sweeping after large storm events or for maintenance projects that leave debris behind.
2. Do not dispose of street sweeping debris on Department of Public Works property or reuse for other purposes. Include provisions for proper disposal of debris in any contracts. Any automotive leaks, drips, or spills must be cleaned up with dry methods (absorbents) and disposed of properly.

#### *Paving/Patching*

1. Conduct all patching, paving, or re-sealing of asphalt on dry days.
2. Stop paving during and immediately after a rainfall.
3. Pre-heat, transfer or load hot asphalt far away from any storm drain inlet.
4. Protect downstream waters and storm drain inlets from debris including grinding, sawing, or pavement demolition dust.
5. Cover and seal all storm drains before applying seal coat or slurry seal. Leave covers in place until the job is complete and all water from emulsified oil sealants has drained or evaporated. Clean up debris from inlets and dispose of properly.

#### *Concrete Pouring*

1. Do not allow slurry from saw-cutting to enter storm drains.
2. Protect nearby storm drains using drain covers, inserts, berms, etc. around or over inlets when working within 25 feet of an inlet.
3. Designate a "Wash Our Area" on the job site in a grassy or graveled area where collective water can soak into the ground. Never wash out on a street or paved area or near a storm drain.
4. If no "Wash out Area" is immediately available, wash out into a container (5-gallon bucket or wheelbarrow) and dispose of the material at the closest suitable grassy or graveled area where collective water can soak into the ground.

### *Painting and Striping*

1. Only schedule painting and striping projects during dry weather.
2. Stop painting if rain is expected.
3. Block nearby storm drain inlets (within 25 feet down gradient from work site).
4. Promptly clean up any spill of paints, cleaners or other chemicals.
5. Conduct all loading, mixing, and cleanup activities at a covered location, far away from any storm drain inlet.

### *Cleaning Sidewalks and Parking Lots*

1. Do not hose down sidewalks or parking lots unless the wash water will only enter gravel or grassy areas where the water can infiltrate into the ground.
2. If you do not use any chemicals or detergents and are only cleaning surfaces of ambient dust, then you may direct the wash water to nearby landscaping or contain it on site and allow it to evaporate. When discharging to landscaping, make sure the water is being absorbed in the ground and not running off into a storm drain or paved area.
3. Dry cleanup methods should be used prior to any pressure washing. These include using absorbents (kitty litter, rages, sand, etc.) to clean up spills, sweeping, vacuuming, and scrapping off dried debris. Use absorbents on oily spots prior to sweeping or washing. The waste material should be disposed of properly.
4. If you must pressure wash, identify all storm drains are before starting. Wash water must not be allowed to flow down gutters or enter storm drains. All wash water must be captured for proper disposal.
  - Determine where water will puddle for collection.
  - Use the following types of equipment to protect storm drains and to contain and collect wash water: vacuum pumps, booms/berms, portable containment areas, weighted storm drain covers, inflatable plumber's plugs, oil/water separators, holding tanks, portable sump pumps, hoses, absorbents.

### *Snow Plowing*

1. Avoid plowing, pushing, blowing, or storing excess snow or other debris into storm drains. Do not hose down sidewalks or parking lots except where wash water will only enter grassy or graveled areas where it can infiltrate into the ground.
2. If you do not use any chemicals or detergents and are only cleaning surfaces of ambient dust, then you may direct the wash water to nearby landscaping or contain it on site and allow it to evaporate. When discharging to landscaping, make sure the water is being absorbed in the ground and not running off into a storm drain or paved area.
3. Avoid plowing, pushing, blowing, or storing excess snow or other debris into storm drains.

### *Snow Storage and Disposal*

1. Do not dispose of snow in wetlands, ditches, open water, or directly on top of storm drains.
2. Cleanup and sweep sediment and debris from paved surfaces after snowmelt.

3. Establish snow storage areas that are:
  - On a grass or gravel surface where melt water can infiltrate.
  - Down gradient from water courses or wetlands.
  - Not located on or near storm drains.

#### *Sanding*

1. Only use clean sand for winter road maintenance.
2. Use the lowest possible application rate that will be effective.
3. Make sure to sweep roads and parking lots after winter sanding operations.

#### *Sand Loading and Storage*

1. Stockpiled sand should be stored under cover or covered with a tarp.
2. When loading sand, do not overload the truck.
3. Loading areas and yards should be swept frequently to prevent sand build up and runoff.

#### *Salt/Deicer Application*

1. Hand apply salt and/or chemical deicers only on sidewalks where required for pedestrian safety.
2. Use the lowest amount of product that will be effective.
3. Do not apply salt and/or chemical deicers near storm drains.

#### **Hazardous Waste Disposal**

1. Hazardous wastes should be labeled as such and may include cleaning products, paints, fertilizers, herbicides, and pesticides, oil, fuels, acids, poisons, antifreeze, brake fluid, and solvents.
2. Hazardous Waste materials must be brought to the DPW.

### Standard Operating Procedures (SOPs)

<b>Vehicle Maintenance &amp; Fueling</b>	
Purpose of SOP:	To prevent the discharge of pollutants to stormwater in the course of Water Treatment Plant vehicle and equipment maintenance, good housekeeping & waste disposal, vehicle washing, vehicle fueling, and fuel spill cleanup.
Location of SOP:	
Last Update:	
Administrator of SOP:	

#### **Prerequisites**

1. Employees should attend training on Municipal Stormwater Pollution Prevention.
2. Employees should read the procedures contained in this SOP and any related references.

#### **Equipment and Materials Needed**

1. Weather proof containers
2. Polly or plastic pallets
3. Drum covers
4. Tarps
5. Spill kit and equipment for dry cleanup (socks, absorbent pads, kitty litter, broom, and dustpan)
6. Drip pan
7. Parts washer

#### **Standard Operating Procedures**

##### *Vehicle and Equipment Maintenance*

1. Conduct all maintenance and repair work inside or under cover.
2. Only emergency maintenance or maintenance that does not involve fluids may be performed outside.
3. Move leaking vehicles or equipment indoors or under cover.
4. Use drip pans for leaking vehicles that need to be stored outside.
5. Contain leaking fluids and tag the vehicle to alert drivers that vehicle is non-operational.
6. Perform all maintenance activities involving fluids indoors only (except in emergency cases).
7. Dispose of wastewater from tire leak check to sanitary sewer, not storm drain.
8. Promptly transfer used fluids to recycling drums or hazardous waste containers.

9. Dispose of liquid waste properly.
10. Store cracked batteries in leak proof secondary containers.

#### *Vehicle & Equipment Fueling*

1. Fuel carefully to minimize drips on the ground.
2. Do not “top off” fuel tanks.
3. Remain present at the fueling station during the entire fueling operation.
4. When fueling small equipment in the field such as lawn mowers, weed whackers, etc., do so over a paved surface, at a location that is down gradient from and far away from the nearest storm drain.

#### *Clean Up of Leaks, Drips, or Spills*

1. Clean up leaks, drips, or spills thoroughly and promptly.
2. If fluids leak or have spilled on an impervious surface, such as a road or parking lot, locate nearest down gradient storm drain and dike or berm the drain to prevent fluids from entering.
3. Put absorbent on the spill area.
4. After clean up, sweep up the contaminated absorbent and remove berm or dike from the storm drain.
5. If spills occur on a pervious surface such as gravel or grass, mark the area and contact the 24-Hour Emergency Spill Response line at 888-304-1133.
6. Never hose down leaks, drips, or spills.
7. Always use dry methods for cleanup of fuel spills (gas, diesel or kerosene).
  - Spread absorbents (kitty litter or loose absorbents, sheets, pillows, pigs, or socks) on the spill.
  - Sweep up or pick up the absorbed materials.
  - Dispose of wastes properly.

#### *Vehicle & Equipment Washing*

1. Wash all vehicles and equipment in the designated wash areas of the Water Treatment Plant.
2. If washing cannot be conducted at the designated wash facility or a commercial wash facility, vehicle and equipment may be rinsed using water only on a pervious surface (grass or gravel) at a location where wash water will not drain to a storm drain inlet, waterway, or wetland. Do not use soap or detergent in these areas.
3. Wash all vehicles and equipment indoors.

**Hazardous Waste Disposal**

1. Hazardous wastes should be labeled as such and may include cleaning products, paints, fertilizers, herbicides, and pesticides, oil, fuels, acids, poisons, antifreeze, brake fluid, and solvents.
2. Hazardous Waste materials must be brought to the DPW.

### Standard Operating Procedures (SOPs)

<b>Building Maintenance</b>	
Purpose of SOP:	To prevent the discharge of pollutants to stormwater in the course of Water Treatment Plant building maintenance activities, including: janitorial practices, waste management, pressure washing & exterior surface cleaning, painting, sanding, & sandblasting.
Location of SOP:	
Last Update:	
Administrator of SOP:	

#### **Prerequisites**

1. Employees should attend training on Municipal Stormwater Pollution Prevention.
2. Employees should read the procedures contained in this SOP and any related references.

#### **Equipment and Materials Needed**

1. Spill kit and equipment for dry cleanup (socks, absorbent pads, kitty litter, broom, and dustpan)
2. Inlet protection (wattles, drain covers, berms, and/or filter fabric)
3. Containers for collecting paint wastes
4. Tarps or ground cloths

#### **Standard Operating Procedures**

##### *Janitorial Practices and Waste Management*

1. Never dump mop water or cleaning wastewater outside, on paved surfaces, or into storm drains. Dispose of wastewater in mop sink or other sanitary sewer drain.
2. Do not pour, transfer, or dispose of any material outdoors or near a storm drain.
3. All waste containers must be leak-tight with tight-fitting lids or covers.
4. Keep container lids closed at all times unless adding or removing material. If possible, store waste receptacles
5. Sweep around outdoor waste containers regularly.
6. When working in the field, collect all wastes in bags or other leak-proof containers and bring back to the garage for proper disposal.
7. Do not wash dumpsters with water outdoors. If a dumpster requires washing, contact the service provider and have them remove it for cleaning, or move it to the designated wash down facility at the Water Treatment Plant for washing to sanitary sewer.
8. Minimize waste by purchasing products that have minimal packaging. Recycle cardboard, plastics and paper products in the proper container.

9. Purchase the least toxic cleaning product possible to accomplish the job. Purchase biodegradable cleaning products where possible.

#### *Painting, Staining, Scraping, Sanding, and Sandblasting*

1. Use a ground cloth securely attached to the base on the building for any scraping or sanding of the exterior surface.
2. Use a ground cloth or oversized tub for paint mixing and tool cleaning. Properly dispose of the wastes.
3. Enclose spray-painting operations with tarps or other means, as possible, to minimize wind drift and to contain overspray.
4. Clean paintbrushes and tools used to apply water-based paints in sinks plumbed to a sanitary sewer or in portable containers that can be emptied into sanitary sewer drains.
5. Brushes and tools used for oil-based paints, finishes, thinners, solvents or other materials must be cleaned over a tub or container and the cleaning wastes disposed or recycled at an approved hazardous waste facility.
6. Never clean tools over a storm drain or outside.
7. Promptly cleanup any spills of paints, cleaners or other maintenance chemicals or supplies.
8. When sand blasting exterior surfaces, place tarps or ground cloths beneath the work area to capture sand blasting media and debris. Enclose the sand blasting area with tarps or plastic to protect from wind and to capture airborne particles (dust).
9. Stop all sand blasting operations on windy days.

#### *Pressure Washing & Exterior Surface Cleaning*

1. Prior to pressure washing, identify where all storm drains are located; wash water must not be allowed to flow down gutters or enter into storm drains.
2. Block or cover all storm drains with booms and weighted storm drain covers before pressure washing.
3. Determine where water will pool for collection. Use a wet vac to vacuum up the wastewater or allow water to evaporate.
4. Use dry cleanup methods, including sweeping, vacuuming, and scrapping off dried debris prior to pressure washing any surface.
5. Use minimal water when Pressure washing.
6. If you are not using any chemicals or detergents, the wash water can be directed to a grassy or gravel area where it can infiltrate. Verify that water is not running out of the area and encountering a paved surface.
7. If any additives are used in the wash water, the waste water must be captured for disposal to sanitary sewer.
8. Solids should be removed from the area prior to pressure washing and a filter bag or similar filtration device should be used to remove suspended solids from the wastewater.
9. A visible sheen must not be evident in the discharge. Use an absorbent pad or boom to eliminate any oil from the discharge.

10. Do not pressure wash an entire building. Spot clean, steam clean, or scrape dirty areas rather than pressure washing the entire structure.

### **Hazardous Waste Disposal**

1. Hazardous wastes should be labeled as such and may include cleaning products, paints, fertilizers, herbicides, and pesticides, oil, fuels, acids, poisons, antifreeze, brake fluid, and solvents.
2. Hazardous Waste materials must be brought to the DPW.

### Standard Operating Procedures (SOPs)

<b>Grounds Maintenance</b>	
Purpose of SOP:	To prevent the discharge of pollutants to stormwater in the course of Water Treatment Plant grounds maintenance activities, including: landscape maintenance, mowing, mulching, graveling trails & parking lots, trash removal/ waste management
Location of SOP:	
Last Update:	
Administrator of SOP:	

#### **Prerequisites**

1. Employees should attend training on Municipal Stormwater Pollution Prevention.
2. Employees should read the procedures contained in this SOP and any related references.

#### **Equipment and Materials Needed**

1. Dumpster covers
2. Tarps
3. Spill kit and equipment for dry cleanup (socks, absorbent pads, kitty litter, broom, and dustpan)

#### **Standard Operating Procedures**

##### *Mowing & Landscape Maintenance*

1. Mulch-mow grass. Sweep and dispose of any grass clippings on paved surfaces.
2. Do not dispose of green waste or clippings in waterways, ditches, or detention basins.
3. Maintain sprinkler systems at rates that do not exceed the infiltration rate of the soil. Observe any runoff on paved surfaces and adjust sprinkler heads to irrigate only pervious surfaces.
4. Sweep areas around landscape beds regularly and after applying new mulch to keep wood products from entering the storm drain system.

##### *Graveling Trails and Parking Lots*

1. Stockpiled gravel should be stored under cover or covered with a tarp.
2. When loading gravel, care should be taken not to overload the truck or vessel.
3. Sweep area after loading to keep gravel from entering the storm water management system.
4. Take care not to cover any storm drain inlets with gravel.

### *Non-Hazardous Waste Management and Disposal*

1. When working in the field, collect all wastes in bags or other leak-proof containers and bring back to the shop for proper disposal.
2. Minimize waste by purchasing products that have minimal packaging. Recycle cardboard, plastics and paper products in the proper container.
3. Never place hazardous materials, liquids, or liquid-containing wastes in the dumpster. If liquid wastes must be disposed of in the trash, absorb them first with kitty litter or other absorbents.
4. Non-hazardous liquid waste may be disposed of in sanitary sewer.

### **Hazardous Waste Disposal**

1. Hazardous wastes should be labeled as such and may include cleaning products, paints, fertilizers, herbicides, and pesticides, oil, fuels, acids, poisons, antifreeze, brake fluid, and solvents.
2. Hazardous Waste materials must be brought to the DPW.

### Standard Operating Procedures (SOPs)

<b>Fertilizer, Herbicide, &amp; Pesticide Application</b>	
Purpose of SOP:	To prevent the discharge of pollutants to stormwater resulting from the application of fertilizer, herbicide or pesticide.
Location of SOP:	
Last Update:	
Administrator of SOP:	

#### **Prerequisites**

1. Employees should attend training on Municipal Stormwater Pollution Prevention.
2. Employees should read the procedures contained in this SOP and any related references.
3. Employees should read the procedures contained in this SOP and any related references. Pesticide application must be done under the supervision of staff holding a Public Applicator's License.
4. All employees who handle or apply fertilizers, herbicides, or pesticides must be trained on the most recent Material Safety Data Sheets (MSDS).

#### **Equipment and Materials Needed**

1. ANSI approved sprayers.
2. Polly or plastic pallets and pails for secondary containment.
3. Spill kit and equipment for dry cleanup (socks, absorbent pads, kitty litter, broom, and dustpan).
4. Proper PPE (rubber gloves and eye protection).

#### **Standard Operating Procedures**

##### *General*

1. Always follow the manufacturer's recommendations for mixing, application, and disposal.
2. Use manual or mechanical methods for weed control whenever possible.
3. When chemicals are used, use the least toxic and most biodegradable product possible.

##### *Mixing*

1. Mix fertilizers, herbicides, and pesticides inside a protected area with impervious secondary containment so that spills and leaks will not contact soil or enter the storm water system.
2. Label all containers.
3. Only mix the minimum amount of product that will be needed for the immediate job.
4. If possible, use rinse water from cleaning of containers and application equipment as a

dilution for the next batch.

#### *Application*

1. Follow application guidance on the product label.
2. Time the application to concur with manufacturer's recommendation for best results. Do not spray if rain is expected.
3. Limit use of pesticides in general and do not broadcast spray pesticides.
4. Spot spray herbicides whenever possible.
5. Use herbicide only when there is vegetation to manage (do not use preventatively or more often than required).
6. Fertilizers may be broadcast sprayed, with care taken to avoid waterways or any inlet to the storm drain system.
7. Use granular materials when possible to avoid application losses.
8. Do not apply fertilizers, herbicide, or pesticides within 50 feet of any open water, drainage ditch, wetland, storm water basin or inlet to the storm drain system.
9. See Manager of Planning & Environmental Services to obtain an NPDES permit before spraying any herbicide in wetland mitigation areas for weed control.

#### *Cleanup*

1. Follow all manufacturers' recommendations for cleanup of the chemical.
2. Sweep paved areas where any granular product has fallen and direct product into grassy areas.
3. Cleanup any spills of product quickly using the methods described in SOP: Incidental Spill Response & Cleanup.
4. Dispose of excess chemicals and empty expired fertilizer, herbicide or pesticide containers according to the instructions on the label and preferably on the target vegetation or pest.
5. If possible reuse the triple rinsate from containers as dilution for the next batch.
6. Never dispose of rinsate by pouring into the storm drain system.
7. Any product that cannot be disposed of through application on the target vegetation or pest must be disposed of as Hazardous Waste.

#### *Storage*

1. Store fertilizers, herbicides, and pesticides inside a protected area with impervious secondary containment so that spills or leaks will not enter soils or the storm drain system.
2. All containers must be clearly and accurately labeled.

**Hazardous Waste Disposal**

1. Hazardous wastes should be labeled as such and may include cleaning products, paints, fertilizers, herbicides, and pesticides, oil, fuels, acids, poisons, antifreeze, brake fluid, and solvents.
2. Hazardous Waste materials must be brought to the DPW.

### Standard Operating Procedures (SOPs)

<b>Materials Storage</b>	
Purpose of SOP:	To prevent the discharge of pollutants to stormwater resulting from materials storage associated with Water Treatment Plant maintenance & operations, including liquid materials storage, hazardous materials storage, stockpiling materials including: sand & gravel, wood products such as lumber, chips, sawdust, or hog fuel, demolition debris including asphalt and concrete, decommissioned vehicles or equipment.
Location of SOP:	
Last Update:	
Administrator of SOP:	

#### Prerequisites

1. Employees should attend training on Municipal Stormwater Pollution Prevention.
2. Employees should read the procedures contained in this SOP and any related references.

#### Equipment and Materials Needed

1. Weather proof containers
2. Polly or plastic pallets
3. Drum covers
4. Tarps
5. Spill kit and equipment for dry cleanup (socks, absorbent pads, kitty litter, broom, and dustpan)
6. Inlet protection (wattles, drain covers, berms, and/or filter fabric)

#### Standard Operating Procedures

##### *Outdoor Storage Areas*

1. If possible, store all containers indoors. If they must be stored outdoors, place them in a shed or under a roof.
2. All containers and dry materials should be covered or have secondary containment.
3. Place all containers on a plastic pallet or other device that elevates them off the ground or pavement and provides containment. This avoids contact with storm water on the ground.
4. Place containers on paved, impervious surfaces and as far from (or at lower elevation than) storm drain inlets and drainage ditches as possible.
5. Keep a spill kit near storage areas. Clean up any spills, leaks or discharges promptly.
6. Inspect all containers stored outdoors regularly.
7. If a container is found to be leaking either empty the contents into a leak-tight container or place entire leaking container inside of a larger leak-tight container. Clean up spills

promptly.

8. Make sure outdoor barrels are covered at all times, and use barrels that do not have holes in the bottom.
9. If rain water collects in a secondary containment structure, allow the water to evaporate if possible. If not possible, verify with sight & smell that the water is not contaminated with a hazardous substance and then pump to sanitary sewer for disposal. If water is suspected of containing hazardous waste (oil sheen, odor), the water must be treated as hazardous waste and be disposed of properly.

#### *Sand, Salt, Dirt or Gravel Stockpiles*

1. Cover sand/salt piles with a tarp or store inside a building or under a roof.
2. Contain stormwater runoff from dirt and gravel stockpiles by using barriers or berms.

#### *Liquid Bulk Material Storage*

1. Provide impervious secondary containment for all Above Ground Storage Tanks (ASTs), except double-walled tanks, sufficient to contain the entire contents of the largest single tank plus an additional 4 inches of rainfall.
2. Keep drain valves in secondary containment at ASTs locked in the closed position at all times. Open for draining only under supervision.
3. Make sure an adequate spill kit with sufficient equipment and supplies is located near storage areas where spills are possible. Clean up any spills, leaks or discharges immediately.
4. Make sure that inspections for petroleum storage continue once a year, unless a year pass is granted for passing the previous two years in a row.

#### *Construction & Demolition Materials*

1. Stockpile only materials that have value and a high likelihood of being reused on projects.
2. Locate stockpiled materials far from storm drains and cover any materials that could erode or leach in stormwater.
3. Treated timber, sand/gravel, and asphalt debris must be stored under cover or tarps with provisions to avoid contact with surface runoff (placed on tarp/pallet or berm).
4. Chipped or ground wood products must be stored under cover where they will not be mobilized by stormwater.
5. Dispose of all other building demolition, land clearing, pavement maintenance, or other construction debris immediately after completing the project.
6. Inspect all containers stored outdoors regularly.
7. If a container is found to be leaking either empty the contents into a leak-tight container or place entire leaking container inside of a larger leak-tight container. Clean up spills promptly.

**Hazardous Waste Disposal**

1. Hazardous wastes should be labeled as such and may include cleaning products, paints, fertilizers, herbicides, and pesticides, oil, fuels, acids, poisons, antifreeze, brake fluid, and solvents.
2. Hazardous Waste materials must be brought to the DPW.

### Standard Operating Procedures (SOPs)

<b>Incidental Spill Response &amp; Cleanup</b>	
Purpose of SOP:	To establish standard operating procedures for taking limited action in response to an incidental release of potentially hazardous materials.
Location of SOP:	
Last Update:	
Administrator of SOP:	

NOTE: This SOP applies only to incidental releases of potentially hazardous materials, which means spills that are not highly toxic. Water Treatment Plant personnel are not trained to respond to an uncontrolled release of potentially hazardous materials, which means any medium or large spill or small spills of extremely hazardous or dangerous materials. No facility employee should respond to any release of a potentially hazardous material without proper training.

#### **Prerequisites**

1. Employees should attend training on Municipal Stormwater Pollution Prevention.
2. Employees should read the procedures contained in this SOP and any related references.
3. Employees should read and attend training on the Department of Public Works Emergency Spill Response Plan.
4. Any employee undertaking the actions outline in this SOP must have received training to the First Responder Operations Level as outlined in the Emergency Spill Response Plan.

#### **Equipment and Materials Needed**

1. Material Safety Data Sheets (MSDS)
2. PPE (gloves, protective clothing, respirator- only if employee is properly trained and fitted)
3. Stormwater Management System Map
4. Spill kit and equipment for dry cleanup (socks, absorbent pads, kitty litter, broom, and dustpan)
5. Inlet protection (wattles, drain covers, berms, and/or filter fabric)

#### **Standard Operating Procedures**

##### *Upland Spills*

1. Confirm that the spill is an incidental release before proceeding. If the spill is an uncontrolled release of hazardous materials as defined in the Spill Prevention Control and Countermeasure (SPCC), this SOP does not apply and the employee should initiate an emergency response by calling 911 per the SPCC.
2. Consult the MSDS sheet for the product of concern. MSDS sheets are transported with all hazardous materials and are kept in a binder at the Water Treatment Plant.
3. Block nearby storm drain inlets and place containment materials (boom) around the spill if it is or has the potential to become mobile.
4. Put on the appropriate PPE, as specified in the MSDS sheet. Only use a respirator if you

have been properly trained and fitted for a personal respirator, and are using the appropriate cartridge for the spilled chemical.

5. Place absorbents on the spill and sweep the dry material into a containment vessel.
6. Dispose of the material as hazardous waste.
7. Notify the Department of Environmental Protection (DEP) of the spill and cleanup as soon as practical at (888) 304-1133.

NOTE: If a spill is too large to cleanup easily with absorbent from the spill kit and a broom, it is not an incidental release and this SOP does not apply. The employee should consult the DEP and initiate a response for an uncontrolled release.

#### *In-Water Spills*

1. For small spills that can be contained with materials in the Water Treatment Plant spill kit, deploy containment boom and absorbent pads.
2. Contact a cleanup contractor, if needed to complete the in-water cleanup.
3. For any spill involving flammable liquid (i.e. fuel), any spill involving more than a minor and very small area of sheen, or any spill of a substance representing an immediate hazard to life or the aquatic environment, call 911 and initiate the SPCC emergency response actions.
4. Notify the Department of Environmental Protection 24-hour Spill Response & Reporting Line at (888) 304-1133.

#### **Hazardous Waste Disposal**

1. Hazardous wastes should be labeled as such and may include cleaning products, paints, fertilizers, herbicides, and pesticides, oil, fuels, acids, poisons, antifreeze, brake fluid, and solvents.
2. Hazardous Waste materials must be brought to the DPW.

## **Appendix C**

# **Inspection and Maintenance Log**

**STORMWATER MANAGEMENT SYSTEM INSPECTION AND MAINTENANCE SCHEDULE**

**SPRING INSPECTION AND MAINTENANCE LOG**

(To be completed annually between February 1st and April 1st, after the last expected significant snow & ice event)

Inspection Date: \_\_\_\_\_ Property Location: \_\_\_\_\_

Inspection Conducted By: \_\_\_\_\_

Instructions: Complete inspection by answering yes/no questions and check follow-up boxes when action is complete. Make any notes necessary to document the condition of the facility and maintenance actions taken. When inspection & maintenance actions are complete, submit form to Manager of Planning & Environmental Services. When inspection and maintenance actions are complete, submit form to Manager of Planning & Environmental Services.

<p><b>Ditches</b></p> <p>Is there evidence of erosion or channeled flow? Yes:___ No:___  <input type="checkbox"/> If yes, consult Engineer and regrade</p> <p>Are there bare spots? Yes:___ No:___  <input type="checkbox"/> If yes, reseed and monitor.</p> <p>Is there sediment debris build up? Yes:___ No:___  <input type="checkbox"/> If yes, remove, correct source, and monitor.</p>	<p><b>Notes:</b></p>
<p><b>Catch Basins</b></p> <p>Has debris accumulated in the catch Basin? Yes:___ No:___  <input type="checkbox"/> If yes, clear obstructions/debris</p> <p>Has more than 1 inch of soil or 6 inches of sludge accumulated in the catch basin? Yes:___ No:___  <input type="checkbox"/> If yes, schedule vactoring.</p>	<p><b>Notes:</b></p>
<p><b>Building</b></p> <p>Is there evidence of flooding? Yes:___ No:___  <input type="checkbox"/> If yes, contact Engineer</p> <p>Is the pavement in poor condition? Yes:___ No:___  <input type="checkbox"/> If yes, repair</p> <p>Is there proper storage and labeling for all chemicals? Yes:___ No:___  <input type="checkbox"/> If yes, store and label containers properly</p>	<p><b>REPAIR</b></p>

<p><b>Vehicles and Equipment</b></p> <p>Are there any leaks or spills at the fueling areas? Yes:___ No:___  <input type="checkbox"/> If yes, make adjustments as listed in O&amp;M plans</p> <p>Are any vehicles washed outdoors? Yes:___ No:___  <input type="checkbox"/> If yes, explain why and wash vehicles indoors</p>	<p><b>Notes:</b></p>
<p><b>Other</b></p> <p>Are there any uncovered barrels or dumpsters? Yes:___ No:___  <input type="checkbox"/> If yes, obtain necessary barrels</p> <p>Are there large amounts of salt/sand or other sediment? Yes:___ No:___  <input type="checkbox"/> If yes, sweep or vacuum area</p>	<p><b>Notes:</b></p>
<p><b>Additional Spring Maintenance</b></p> <p><input type="checkbox"/> Schedule street sweeping for the Water Treatment Plant.  <input type="checkbox"/> Re-seed any exposed ground in the system</p>	
<p><b>Additional Notes:</b></p>	

Water Treatment Plant:  
 Tewksbury, MA  
 (978) 858-0345

**STORMWATER MANAGEMENT SYSTEM INSPECTION AND MAINTENANCE SCHEDULE**

**FALL INSPECTION AND MAINTENANCE LOG**

(To be completed annually between August 1st and October 15th, before the first expected significant snow & ice event)

Inspection Date: \_\_\_\_\_ Property Location: \_\_\_\_\_

Inspection Conducted By: \_\_\_\_\_

Instructions: Complete inspection by answering yes/no questions and check follow-up boxes when action is complete. Make any notes necessary to document the condition of the facility and maintenance actions taken. When inspection & maintenance actions are complete, submit form to Manager of Planning & Environmental Services. When inspection and maintenance actions are complete, submit form to Manager of Planning & Environmental Services.

<p><b>Ditches</b></p> <p>Is there evidence of erosion or channeled flow? Yes:___ No:___  <input type="checkbox"/> If yes, consult Engineer and regrade</p> <p>Are there bare spots? Yes:___ No:___  <input type="checkbox"/> If yes, reseed and monitor.</p> <p>Is there sediment debris build up? Yes:___ No:___  <input type="checkbox"/> If yes, remove, correct source, and monitor.</p>	<p><b>Notes:</b></p>
<p><b>Catch Basins</b></p> <p>Has debris accumulated in the catch Basin? Yes:___ No:___  <input type="checkbox"/> If yes, clear obstructions/debris</p> <p>Has more than 1 inch of soil or 6 inches of sludge accumulated in the catch basin? Yes:___ No:___  <input type="checkbox"/> If yes, schedule vactoring.</p>	<p><b>Notes:</b></p>
<p><b>Building</b></p> <p>Is there evidence of flooding? Yes:___ No:___  <input type="checkbox"/> If yes, contact Engineer</p> <p>Is the pavement in poor condition? Yes:___ No:___  <input type="checkbox"/> If yes, repair</p> <p>Is there proper storage and labeling for all chemicals? Yes:___ No:___  <input type="checkbox"/> If yes, store and label containers properly</p>	<p><b>REPAIR</b></p>

<p><b>Vehicles and Equipment</b></p> <p>Are there any leaks or spills at the fueling areas? Yes:___ No:___</p> <p><input type="checkbox"/> If yes, make adjustments as listed in O&amp;M plans</p> <p>Are any vehicles washed outdoors? Yes:___ No:___</p> <p><input type="checkbox"/> If yes, explain why and wash vehicles indoors</p>	<p><b>Notes:</b></p>
<p><b>Other</b></p> <p>Are there any uncovered barrels or dumpsters? Yes:___ No:___</p> <p><input type="checkbox"/> If yes, obtain necessary barrels</p> <p>Are there large amounts of salt/sand or other sediment? Yes:___ No:___</p> <p><input type="checkbox"/> If yes, sweep or vacuum area</p>	<p><b>Notes:</b></p>
<p><b>Additional Fall Maintenance</b></p> <p><input type="checkbox"/> Schedule street sweeping for the Water Treatment Plant.</p> <p><input type="checkbox"/> Re-seed any exposed ground in the system</p>	
<p><b>Additional Notes:</b></p>	

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