


Weston & Sampson[SM]

westonandsampson.com

55 Walkers Brook Drive, Suite 100
Reading, MA 01867
tel: 978.532.1900

STORMWATER POLLUTION PREVENTION PLAN

MS4 GENERAL PERMIT COMPLIANCE

JUNE 2020

TOWN OF
Dracut
MASSACHUSETTS

DPW Facility
833 Hildreth Street

SWPPP

TABLE OF CONTENTS

List of Appendices iv
1. INTRODUCTION 1
1.1 STORMWATER POLLUTION PREVENTION PLAN (SWPPP) OVERVIEW 1
2. PLANNING AND ORGANIZATION 2
2.1. SWPPP Coordinator and Team 2
3. DETAILED FACILITY ASSESSMENT 3
3.1 Site Inspection 3
3.2 Site Description 3
3.3 Site Plan 3
3.4 Receiving Waters 4
3.5 Significant Material Inventory 4
3.6 Stockpile Storage 4
3.7 Salt Storage 6
3.8 Vehicle and Equipment Storage 7
3.9 Vehicle and Equipment Maintenance/Repair 8
3.10 Vehicle Wash Water and Wastewater 9
3.11 Waste Oil Storage 10
3.12 Fuel Storage and Vehicle/Equipment Fueling 11
3.13 Chemical Unloading, Handling, and Storage 12
3.14 Solid Waste Management 13
3.15 Spills and Leaks 14
3.16 Structural Stormwater Treatment Structures 14
3.17 Non-Stormwater Discharges 14
3.18 Allowable Non-Stormwater Discharges 14
3.19 Existing Stormwater Monitoring Data 14
3.20 Site Summary (Sources of pollution with a high risk of contaminating stormwater) 15
4. IMPLEMENTATION 16
4.1 Good Housekeeping 16
4.2 Preventive Maintenance 17
4.3 Best Management Practices (BMPs) 17
4.4 Sediment and Erosion Control 18
4.5 Management of Stormwater Runoff 18
4.6 Spill Prevention and Response 18

4.7 Employee Training 19
5. EVALUATION 20
5.1 Site Inspection Requirements 20
5.2 Recordkeeping and Reporting 20
5.3 Plan Revisions 21
6. ENDANGERED SPECIES 22
7. HISTORIC PROPERTIES 23
8. CERTIFICATIONS 24

List of Appendices

Appendix A: Locus Map
Appendix B: DPW Facility Site Plan
Appendix C: Inventory of Vehicles and Equipment
Appendix D: SWPPP Material Inventory
Appendix E: List of Significant Spills and Leaks
Appendix F: Site Summary – Activities with a High Risk of Contaminating Stormwater
Appendix G: Spill Prevention and Response Procedures
Appendix H: Employee Training Log/Training Presentation Materials
Appendix I: Quarterly Monitoring Logs
Appendix J: Historic Properties and Endangered Species

STORMWATER POLLUTION PREVENTION PLAN
DEPARTMENT OF PUBLIC WORKS

Facility Name: Dracut Department of Public Works (DPW) Facility

Facility Address: 833 Hildreth St, Dracut MA

1. INTRODUCTION

The 2016 Massachusetts Municipal Separate Storm Sewer Systems (MS4) General Permit, which came into effect on July 1, 2018, regulates discharges from small MS4s to waters of the United States. The MS4 Permit requires operators to develop, implement, and enforce a stormwater management program (SWMP). The purpose of the SWMP is to reduce the discharge of pollutants from the MS4 to the maximum extent practicable, to protect water quality, and to satisfy the applicable water quality requirements of the Clean Water Act. MS4 operators identified in the MS4 Permit are required to implement various Best Management Practices (BMPs) for each of six minimum control measures. These minimum control measures are as follows:

- Public Education and Outreach
- Public Involvement/Participation
- Illicit Discharge Detection and Elimination
- Construction Site Stormwater Runoff Control
- Post-Construction Stormwater Management in New Development and Redevelopment
- Good Housekeeping and Pollution Prevention for Municipal Operations

As part of the minimum control measure for Good Housekeeping and Pollution Prevention for Municipal Operations, Section 2.3.7 of the 2016 MA MS4 Permit requires regulated communities to develop and implement a written stormwater pollution prevention plan (SWPPP) for all permittee-owned or operated maintenance garages, public works yards, transfer stations, and other waste handling facilities where pollutants are exposed to stormwater. This document must be in place within two (2) years of the permit effective date, or by July 1, 2020.

1.1 STORMWATER POLLUTION PREVENTION PLAN (SWPPP) OVERVIEW

This Stormwater Pollution Prevention Plan:

- Identifies the SWPPP coordinator with a description of the coordinator's duties;
- Identifies members of the SWPPP team and lists their responsibilities;
- Describes the facility, with information on location and activities, a site plan, and a description of the stormwater drainage system;
- Identifies potential stormwater contaminants;
- Describes stormwater management controls and various best management practices (BMPs) needed to reduce pollutants in stormwater discharges;
- Describes the facility's monitoring plan; and,
- Describes the implementation schedule and provisions for amendment of the plan.

2. PLANNING AND ORGANIZATION

2.1. SWPPP Coordinator and Team

This is the member roster and list of responsibilities for the pollution prevention team. The team is responsible for implementing the Stormwater Pollution Prevention Plan.

Leader: Tina Douk Office Phone: 978-957-1497

Title: Stormwater Manager

Responsibilities:
Coordinate all stages of plan development, inspections and implementation; coordinate employee training programs; keep all records and ensure that reports are submitted; oversee sampling program.

Member: Ed Patenaude Office Phone: 978-957-1497

Title: Department of Public Works Director

Responsibilities:
Implements the preventive maintenance program; oversees good housekeeping activities.

Member: Richard Patterson Office Phone: 978-957-3130

Title: Deputy Fire Chief/Emergency Response Manager

Responsibilities:
Serves as spill response coordinator.

Member: Office Phone:

Title:

Responsibilities:

3. DETAILED FACILITY ASSESSMENT

3.1 Site Inspection

The DPW Facility was inspected on June 12, 2020 by Caroline Passalacqua and Andrew Wojciak. During the inspection, information pertaining to activities conducted on site, vehicles stored on site, fueling operations, material storage, transfer of waste materials and spill history was gathered. This information was evaluated to develop a stormwater pollution prevention plan for this facility.

3.2 Site Description

The Town of Dracut's DPW Facility is located at 833 Hildreth Street, Dracut Massachusetts. The location of the site is shown in the map included in Appendix A. The facility occupies approximately 9.5 acres of a 29-acre Town-owned parcel. There are 4 buildings on site, which is almost entirely paved or compacted dirt. The paved portion of the site is on top of a capped landfill. Table 1, below, includes the use, footprint, and location of each building on site.

Table 1: Buildings at the Dracut DPW Facility

Building Name	Location	Building Footprint	Building Use
DPW Garage	Southwestern portion of the site near Hildreth St	13,625 SF	Maintenance Garage, Office Space
Canopy Structure	Center of site	1,300 SF	Vehicle Storage, Deicer Storage
Salt Shed 1	Center of site	4,500 SF	Salt storage
Salt Shed 2	Center of site	4,500 SF	Salt storage

In addition to a public works facility, this site is also a yard waste collection center for Dracut residents. Yard waste is composted onsite and the compost is made available to residents for free.

Stormwater runoff from the paved portion of the site near the DPW Garage, including roof runoff from the DPW Garage, is collected by a series of catch basins which eventually discharge to the wetland area southeast of the site. The wetland area is attributed to Peppermint Brook, which is impaired for bacteria. Runoff from the paved stockpile area and unpaved composting area sheet flows to the southeast toward the same wetland area. The DPW has constructed a berm around the composting area with larger yard waste, such as old trees, which contains and diverts runoff away from the area.

3.3 Site Plan

Appendix B includes a detailed site map of the facility showing identified potential sources of pollution. The following items are shown on the map:

- Footprints for all buildings and structures;

- Surface area types;
- Direction of stormwater flow on site;
- Location of all stormwater structures, including catch basins, drain manholes, and applicable outfalls;
- Approximate location of all sanitary sewer structures, including the oil-water separator and sewer manholes; and
- Locations of the following activities exposed to precipitation or runoff:
  - Fueling station
  - Exposed significant material
  - Sand/salt piles and storage sheds
  - Waste storage and disposal areas, including dumpsters
  - Area for loading/unloading material

3.4 Receiving Waters

Runoff from this facility discharges via Outfall 11-4 to the wetland area southeast of the site, which is associated with Peppermint Brook. Peppermint Brook is impaired for E. coli and floatables.

3.5 Significant Material Inventory

Materials stored at the facility are shown on the site map in Appendix B. A full list of vehicles and equipment stored, operated, and maintained at the DPW Facility is included in Appendix C. A complete inventory of materials as well as their likelihood of being exposed to stormwater and their potential to cause an impact on surrounding waterbodies can be found in Appendix D. The most significant materials and activities are discussed in detail in Sections 3.6-3.13.

3.6 Stockpile Storage

Potential Pollutant Risk and Best Management Practices

Stockpiled materials such as gravel, loam, sand, and crushed rock contain similar sources of pollution. When unprotected or outdoors, sand piles and material stockpiles are exposed to precipitation and can erode while contributing significant sediment loads to stormwater runoff. If eroded material enters the storm drain system, the sediment can quickly fill the sumps of catch basins or clog other stormwater treatment structures, rendering them ineffective. This may result in increased sediment loads in receiving waterways.

To avoid contamination of stormwater by sand and other stockpiled material, erosion and sediment control measures should be implemented at each storage site. A relatively level site away from slopes and water features should be used as a stockpile location.

If stockpiles are expected to remain exposed for more than two weeks, they can be stabilized by seeding or mulching or covered with impermeable sheeting to protect the material from stormwater. If the stockpile location becomes a permanent storage site, a roofed structure should be considered to reduce erosion.

Sediment barriers should be placed around the perimeter of the stockpile area to prevent any runoff carrying sand or other material from entering storm drains and surface waters. If the weather becomes dry and windy, regular light watering of the stockpile and surrounding area will provide effective dust control.

The stockpile storage area should be swept regularly and free of debris.

Current Practices and Recommendations

There are two distinct stockpile areas at the Dracut DPW Facility. Stockpiles of fill, sand, and gravel are kept in the paved portion of the site northeast of the salt sheds. None of the stockpiles are covered. 11 smaller stockpiles are confined on three sides by material storage bays made of concrete jersey barriers, including temporary stockpiles of street sweepings and catch basin cleanings. Four larger piles are not confined, but vegetation was observed on the large, unconfined stockpile of fill in this area, providing some erosion control.

Large compost stockpiles, as well as temporary stockpiles of yard waste are kept in the unpaved area north of the designated stockpile area. Stockpiles of larger yard waste are chipped and hauled offsite. The stockpiles in this area are uncovered and unconfined, however the entire area is surrounded by a berm built of larger yard waste to contain and divert stormwater runoff. Catch basin cleanings and street sweepings are hauled off-site by an outside contractor. Compost is available for collection by Dracut residents.

The Dracut DPW should contain stockpiles to the maximum extent practicable with concrete jersey barriers or silt fence. Where feasible, smaller stockpiles should be covered with an impermeable sheeting when not in use. All stockpile areas should be swept frequently to minimize sediment tracking.

Confined Sand and Fill Stockpiles

Compost Stockpile Area

3.7 Salt Storage

Storage of Roadway Pretreatment

Salt Shed #2

Potential Pollution Risk and Best Management Practices

Salt stored in piles for use during winter deicing operations is a significant potential contributor to stormwater pollution. When stored unprotected or outdoors, salt is exposed to precipitation, causing leachate with a high chloride content that can discharge to the site's receiving water. Salt delivery, loading, and handling operations can contribute pollutants to stormwater if the material is not handled with care or if spills are not promptly cleaned up.

To most effectively prevent stormwater pollution, all salt piles should be enclosed and covered in sheds to eliminate exposure to precipitation. Salt sheds should be constructed on level ground with an impervious base on which to store the salt. The shed should prevent disturbance or migration of the salt by wind.

During delivery and loading activities, salt should be transferred to and from vehicles within the salt shed. Salt and sand mixing should also occur in the salt shed whenever possible. Any spills during unloading and loading events should be cleaned up immediately. The salt storage areas should be swept regularly and kept clean.

The salt storage area should not be cleaned in such a way that washwater exposed to salt enters the storm drain system or surface waters. To further limit stormwater pollution, an independent runoff collection system may be installed in the area of the salt storage to collect and convey runoff either directly to a stormwater treatment structure or to a sanitary sewer system, with approval from the operator of the sanitary sewer system.

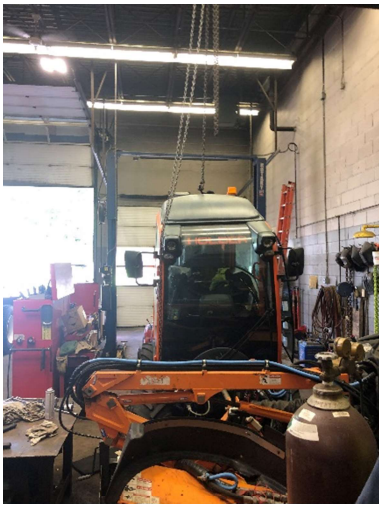
Current Practices and Recommendations

All salt used for winter road operations is stored in one of two salt sheds located in the center of the site. At the time of inspection, both salt sheds were in good condition, with no evidence of salt being

tracked outside. The Town primarily uses salt for winter road maintenance, however sand is used when the salt supply is inadequate. Sand is stored in the stockpile area discussed above.

Three tanks of roadway pretreatment—calcium chloride or a similar deicing agent—are stored under the canopy structure next to the salt sheds. The containers are covered but not in secondary containment. Roadway pretreatment is typically stored in single walled polyethylene tanks even at new DPW facilities, as there is no regulation covering its storage. However, spill response best practices dictate that a barrier, such as a concrete jersey barrier or an asphalt berm, should be placed between the tanks and any vehicle travel area to prevent the tank from being struck and spilling into a nearby catch basin.

3.8 Vehicle and Equipment Storage



Indoor vehicle/equipment storage.

Potential Pollution Risk and Best Management Practices

Vehicle and equipment storage activities are a potential source of pollution due to the fuel, oil, hydraulic fluid, antifreeze, and other hazardous material the machinery may contain. Vehicles and equipment may also pick up pollutants during offsite activities and then track these pollutants into the storage facility.

Regular visual inspection and maintenance of vehicles and equipment can greatly reduce the potential for pollution by finding and addressing leaks before hazardous material can enter the MS4 or nearby surface waters. When in storage, vehicles and equipment should be kept on a covered slab or in a building with a common drain. Discharges from this drain shall be managed by an oil/ water separator to remove oils and gasoline, which then discharges to the sanitary sewer.

No equipment should be kept in an area where leaks could result in pollutants entering catch basins, channels leading to outfalls, or the engineered storm drain system. Vehicles with known fluid leaks shall be stored indoors, or containment shall be provided until the necessary repair can be made. If vehicles and equipment are stored outdoors, catch basins or engineered drainage system structures

should include devices intended to remove oils and sediments prior to entering the system. These treatment devices should be inspected annually and replaced at the frequency recommended by the manufacturer.

Current Practices and Recommendations

Vehicles and equipment are stored both indoors and outdoors at the DPW facility. Vehicles are stored inside the DPW garage, and one larger excavator was being stored under the canopy structure in the center of the site at the time of inspection. Vehicles and equipment are stored outdoors along the northern property line behind the DPW garage and outside the canopy structure. There are catch basins located near both outdoor vehicle storage areas.

The DPW should store vehicles and equipment indoors to the maximum extent practicable. A designated storage area away from catch basins should be used when vehicles and equipment must be stored outdoors. As covered or indoor storage is always preferable, the DPW could also consider constructing an additional canopy structure for vehicle storage as capital funds become available, however no corrective action is required under the MS4 Permit for the Town's current vehicle storage practices.

3.9 Vehicle and Equipment Maintenance/Repair

Potential Pollution Risk and Best Management Practices

When performing vehicle and equipment repair, there is a significant risk for pollutants such as fuel, oil, and lubricants to leak or be spilled. Both accidental and purposeful spillage, i.e., a leaky oil pan needing repair or a pan that is drained during an oil change, can lead to pollutants entering stormwater runoff.

Proper maintenance and repair for vehicles and equipment should include a preliminary assessment of potential pollutant sources. This assessment will determine the best means of containing any potential spills or by-products of the situation at hand. Approved containers should be used to capture hazardous liquids; all waste should be disposed of according to applicable MassDEP and USEPA guidelines.

Due to heavy metal accumulation in used antifreeze, brake fluid, transmission fluid, and hydraulic oils, these liquids may not be disposed of in the sanitary sewer system. Contaminated parts removed or replaced on any vehicles or equipment shall be disposed of properly.

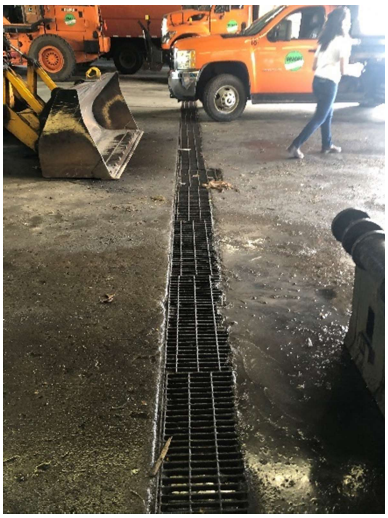
All vehicle and maintenance repair shall take place on a covered slab or within a building with a common drain. Discharge to this drain shall be managed by an oil/ water separator before connecting to the sanitary sewer.

Maintenance and repairs shall not take place in areas prone to stormwater runoff or where pollutants could enter catch basins, channels leading to outfalls, or an engineered storm drain system. All catch basins or engineered drainage systems on site that could be affected by accidental spills should include devices intended to remove oils and sediments prior to entering the system. These

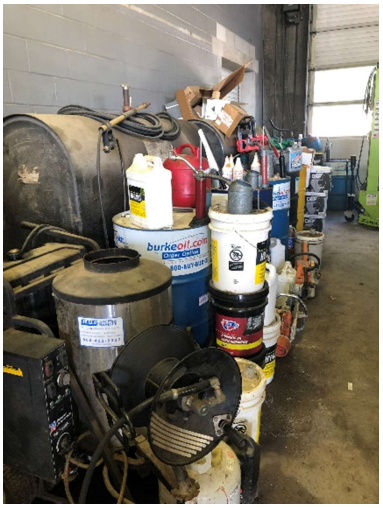
treatment devices should be inspected and replaced at the frequency recommended by the manufacturer.

Current Practices and Recommendations

The DPW performs vehicle and equipment maintenance and repair inside the DPW Garage. The garage is equipped with floor drains that discharge to the oil-water separator and eventually to the sanitary sewer, which is in accordance with best practices. The DPW performs maintenance on its own fleet and the fire department's fleet. All fluids used for vehicle maintenance, including antifreeze, motor oil, hydraulic fluid, and others are stored within the DPW Garage. As funds allow, all containers greater than 55 gallons should be provided with secondary containment in accordance with 40 CFR 112 EPA SPCC regulations.



Floor Drain in Vehicle Maintenance Area



Designated indoor storage area for vehicle fluids.

3.10 Vehicle Wash Water and Wastewater

Potential Pollution Risk and Best Management Practices

Like vehicle storage and maintenance, vehicle washing has the potential to carry fuel, oil, hydraulic fluid, or other hazardous materials into the storm drain system or nearby surface waters when conducted outside in a paved area. Washwater can contain sediment, metals, hazardous materials, or chlorides from grime that builds up on vehicles and equipment during winter and other routine operations, as well as surfactants or nutrients from the cleaning agent itself.

To prevent the transport of contaminants in vehicle wash water to the storm drain system or eventual receiving waters, all vehicle washing should be done indoors in a building equipped with floor drains. These floor drains shall not discharge to the storm drain system or directly to a surface water. If it is not practicable for vehicles and equipment to be washed indoors, then they shall be washed outdoors over grass or an impervious area where runoff is treated for nutrients and petroleum

products. Heavily soiled vehicles or vehicles dirtied from salting should never be washed outside.

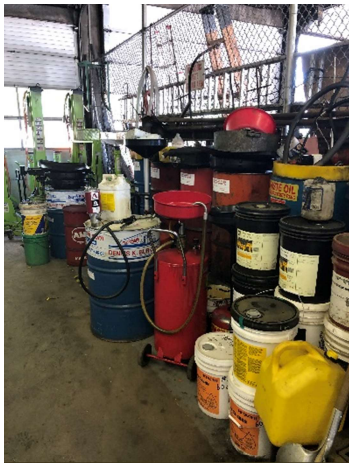
Current Practices and Recommendations

The Dracut DPW washes all vehicles indoors with the exception of the sanders, which are washed outdoors. Floor drains in the indoor vehicle washing area discharge to an oil-water separator and eventually connect to the sanitary sewer. Washwater from outdoor vehicle washing is likely collected by the drainage system and discharged without treatment to the wetland area southeast of the site.

The DPW should wash all vehicles and equipment indoors. Vehicle washwater, especially washwater from a sander which likely has a high chloride content, is not an allowable discharge under the MS4 Permit.

3.11 Waste Oil Storage

Waste oil drum (close-up).



Waste oil storage area.

Potential Pollution Risk and Best Management Practices

When not stored properly, waste oil can be a potential source of petroleum in stormwater. Waste oil containers can leak, and spills can occur while transporting the waste oil.

To prevent these potential issues, oil containers should be properly labeled and stored in secondary containment. These containers should be regularly checked for rust, leaks, or any other signs of deterioration. Any defective container should be immediately replaced. A spill kit should be located anywhere oil is stored and all employees should be trained on its location and the proper spill response procedures. Any floor drain located near stored oil should be equipped with an oil water separator before the water goes into the wastewater system. When possible, steps should be taken to recycle the used oil and to reduce the use of oil and other hazardous materials. All oil filters should be disposed of properly.

Current Practices and Recommendations

There are five 55-gallon drums of waste oil kept in a designated portion of the DPW garage over secondary containment. These drums are collected and hauled offsite by an outside contractor as needed.
The current practices for handling waste oil are allowable under the MS4 Permit. While in a new facility, waste oil would be stored in a double-walled tank in a fireproof room and oil pumps would be used to transfer the waste oil into the tank, no corrective action is required at this time. As funds allow, the Town will look to improve upon existing practices, including the use of a double-walled tank for waste oil storage.

3.12 Fuel Storage and Vehicle/Equipment Fueling

Potential Pollution Risk and Best Management Practices

Fuel storage and vehicle fueling activities can expose petroleum products to stormwater runoff. Fuel storage areas should be covered and/or in containment structures to reduce the potential for leaks or spills to be transported by runoff. Vehicle fueling areas should also be covered wherever practicable. If a fueling island is not covered, then the vehicles to be fueled shall park on a concrete pad equipped with grooves around the edge to capture any spilled fuel. A spill response kit shall be provided at or near the fueling area, and all employees with access to the fueling station shall be trained on its location and appropriate use.

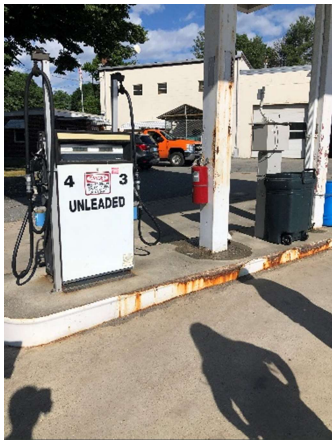
Current Practices and Recommendations

The DPW's fueling station is located in front of the DPW garage. The fueling station is covered, however the downspouts from the canopy are located next to the fuel pumps and discharge roof runoff over the concrete fueling pad to the closest catch basin. The placement of this downspout negates the canopy, as any spills on the fueling pad may still be conveyed to the drainage system. There is no spill response equipment located near the fueling station or maintained onsite.

The fueling station is supplied by two 10,000-gallon underground storage tanks (USTs), one for gasoline and one for diesel. The fueling station is accessible to the entire municipal fleet.

The MS4 Permit requires permittees to divert stormwater away from areas that are potential sources of pollution, contain runoff in such areas or reuse, infiltrate, or treat stormwater to reduce the discharge of pollutants. The DPW will develop a separate plan to improve the fueling station so that runoff is no longer discharged over the fueling area. This plan will include a short-term and long-term remedy, and will provide a schedule for implementation based on available funds.

Covered fueling island.



Fueling area – downspout shown next to pillar.

3.13 Chemical Unloading, Handling, and Storage

Potential Pollution Risks and Best Management Practices

Improper use, handing, and storage of chemicals including fertilizers, pesticides, paints, and chemicals can contribute to loadings of nutrients and toxic compounds to stormwater. The risk of incorrect use or spilling of chemicals increase when they are not handled by properly trained personnel. Stormwater contamination can also result from storage or loading activities, when the chemicals are not being directly used or properly contained and covered. Leaks and spills from faulty containers can migrate to the storm drain system if not properly and quickly controlled.

Hazardous chemicals should be stored indoors in dry, well-ventilated locations. Floors of storage areas should be watertight, impervious, and provide spill containment. In case a spill or leak does occur, storage areas and any vehicles transporting chemicals should be equipped with a spill response kit. Employees shall follow the spill response procedures included in Appendix F of the SWPPP.

Current Practices and Recommendations

The DPW temporarily stores fertilizer in the maintenance garage. The DPW is responsible for parks maintenance and landscaping in Dracut, and applies fertilizer as necessary. Fertilizer is used as soon as possible after delivery and is not stored in bulk at the DPW facility.

Other hazardous chemicals are handled at the DPW Facility once per year during the Town-sponsored Household Hazardous Waste Collection Day. This event is run by Clean Harbors, who set up in the DPW Facility and take responsibility for handling, loading, and the proper disposal of hazardous materials. The DPW also regularly collects empty propane tanks, which are stored outside in a designated part of the stockpile area. Empty propane tanks are collected and properly disposed of by an outside contractor.

While not required under the MS4 permit, the Town should consider storing used propane tanks in

a covered container. Other existing practices for chemical handling, unloading, and storage can continue.

3.14 Solid Waste Management

Potential Pollutant Risk and Best Management Practices

The handling and storage of solid waste can contaminate stormwater with nutrients, pathogens, metals, and sediments. Solid waste, which encompasses agricultural, construction and demolition, household, industrial, municipal, and tire waste, can be classified as both hazardous and non-hazardous. Each waste storage location shall be properly labeled, covered, and contained, and all storage containers shall be routinely inspected for signs of spills, leaks, corrosion, or general deterioration. If stormwater runoff encounters improperly stored solid waste, it may carry any pollutants found in the waste to the storm drain system or nearby receiving waters.

Employees shall be properly trained in correct solid waste management practices and shall be knowledgeable of the potential hazards associated with solid waste handling and storage.

Current Practices and Recommendations

There are several dumpsters at the DPW Facility, including one for scrap metal and one for trash and litter that is collected by DPW staff during their normal operations around town. The dumpsters are uncovered but kept in the stockpile area, away from the drainage system.

The DPW should replace all uncovered dumpsters, or use impermeable sheeting to cover those dumpsters when they are not in use.

General trash dumpster.


Scrap metal dumpster.

3.15 Spills and Leaks

There have been no significant spills or chronic leaks at the DPW facility in the past three years. Any future significant spills and/or chronic leaks shall be recorded on the list provided in Appendix E.

3.16 Structural Stormwater Treatment Structures

Structural stormwater treatment systems (or structural BMPs) are used to treat or pretreat stormwater runoff. Examples of structural BMPs include settling basins, drainage swales, infiltration basins and bioretention areas. These can significantly reduce the pollutant loads that enter receiving waterbodies. There are no structural stormwater treatment structures at the DPW facility.

3.17 Non-Stormwater Discharges

Under the Town's MS4 Permit, only stormwater and certain non-stormwater discharges, identified in Section 3.18, are allowed to discharge to the Town's drainage system. Any other discharge is considered illicit and must be removed as outlined in Chapter 25, Illicit Discharge By-law, of the Town of Dracut Bylaws.

If washwater from washing the sanders outdoors enters the drainage system, that would be considered an illicit discharge. The DPW should wash all vehicles, including the sanders, indoors where washwater discharges to the sanitary sewer.

3.18 Allowable Non-Stormwater Discharges

Certain non-stormwater discharges to the storm drain system or surface waters are allowable under the Town's MS4 Permit, such as potable water, compressor condensate, irrigation drainage, landscape watering, pavement washing without detergents, and uncontaminated groundwater. To be allowable, these non-stormwater sources must be identified in the SWPPP. The only allowable non-stormwater discharge identified at the Dracut DPW facility is air conditioner condensate from the office areas of the DPW garage.

3.19 Existing Stormwater Monitoring Data

There is no existing stormwater monitoring data from this facility. No flow was observed from the outfall (Outfall ID 11-4) to the wetland area southeast of the facility at the time of inspection, despite the 0.4 inches of rain that fell in the preceding 24 hours.

3.20 Site Summary (Sources of pollution with a high risk of contaminating stormwater)

This section identifies the areas, activities and/or materials at the DPW Facility that pose the highest risk of contaminating stormwater. Appendix F summarizes this information by potential pollution source. The following areas are potential high-risk sources of contamination:

- Vehicle and Equipment Washing. The DPW washes sanders outdoors. Since there are no stormwater treatment structures at the DPW facility, washwater likely enters the drainage system and carries sediment, chlorides, surfactants, and other pollutants to the nearby wetland area.
- Vehicle and Equipment Fueling. The downspout from the vehicle fueling station discharges directly over the fueling pad, which is upstream of a catch basin. Any spills that may occur during vehicle fueling may encounter stormwater runoff and carry petroleum products into the drainage system and the nearby wetland area.

4. IMPLEMENTATION

This section describes practices that are in place or that will be implemented to control pollutants with the potential to contaminate stormwater. Implementing these practices at this facility may reduce stormwater pollution and will conserve resources by identifying problems in equipment and structures before they fail.

4.1 Good Housekeeping

Good housekeeping practices are the most effective first step towards preventing pollution in stormwater. These activities are usually done daily to maintain a clean facility and prevent future problems. The following is a list of good housekeeping practices for Department of Public Works facilities:

- All fluid products and wastes are kept indoors.
- Used antifreeze is kept in a covered container.
- All changing of fluids is done indoors in the maintenance garage.
- Spillage occurring during addition or removal from salt storage piles or sand and salt pile mixing are promptly cleaned up.
- Fueling of small equipment is completed indoors.
- Fertilizers, herbicides, or pesticides are stored indoors.
- Lead-acid batteries are stored indoors and in secondary containment.
- Hazardous materials storage lockers with spill containment are used wherever feasible. Storage areas are located away from vehicle and equipment paths to reduce the potential of accident related leaks and spills.
- Storage drums and containers are not located close to storm drain inlets.
- All hazardous material storage areas and containers have proper signage, labels, restricted access, locks, inventory control, overhead coverage, and secondary containment.
- All materials, waste oil storage containers, and gas cans are properly labeled.
- Oil/water separators are maintained regularly and properly.
- Speedi Dri (or similar absorbent) is readily available and used for appropriate spills.
- Drip pans are used for maintenance operations involving fluids and under leaking vehicles and equipment awaiting repair.

The following is a list of good housekeeping practices that will be implemented, along with expected date of implementation, at this facility.

.

- Within 90 days, at least one full spill response kit will be purchased and kept on-site.
- The DPW will develop a plan for short-term and long-term retrofits to the fueling station canopy to effectively divert runoff away from the fueling pad. This plan will include a schedule for implementation based on available resources.

4.2 Preventive Maintenance

Preventative Maintenance can minimize stormwater pollution by addressing potential issues before they become problems. This facility shall develop a preventive maintenance program that involves inspections and maintenance of stormwater management controls and routine inspections of facility operations to detect faulty equipment. Equipment, such as tanks, vehicles containers and drums, should be checked regularly for signs of deterioration and leaks. Structural stormwater controls should be regularly maintained to prevent inadequate performance during storm events.

The following is a list of preventive maintenance procedures practiced at this facility:

- Mechanics are aware of spill prevention and response procedures.
- All transfers to and from tanks are observed by qualified personnel trained in spill response procedures.
- Catch basins and sediment chambers are checked and cleaned as needed.
- Hydraulic equipment is kept in good repair to prevent leaks.
- Outdoor drum and storage tank areas are checked for leaks.
- Vehicle storage areas are inspected frequently for evidence of leaking oil.
- Material storage tanks and containers are regularly inspected for leaks.
- All material and bulk deliveries are monitored by facility employees.
- All waste oil is fully contained, and the containers are inspected regularly.

The following is a list of preventive maintenance measures that will be implemented and the date by which they will be implemented.

- All vehicles and equipment will be washed indoors upon implementation of this SWPPP.
- Within 6 months, spill response equipment will be located at all potential spill areas, and all staff will be aware of spill prevention and response procedures.
- Upon implementation of this SWPPP, the Town will begin assessing available resources to construct a 6" high asphalt berm around the roadway pretreatment storage tanks. The berm will be constructed as funding and staffing allows.
- Within 5 years, the Town will consider installing a stormwater treatment structure between the on-site drainage and the receiving wetland. This treatment structure could be included on the retrofit inventory required to be developed during Permit Year 4.

4.3 Best Management Practices (BMPs)

The following is a list of existing and planned Best Management Practices. When implemented, each BMP will prevent or reduce the discharge of potential pollutants in stormwater runoff from the areas of concern listed in the Site Summary.

- Loading and unloading will be performed inside whenever possible.
- Hazardous materials that are in easily ripped or breakable containers (such as bags, plastic pails) will not be loaded or unloaded outside when it rains.
- A staff member is present during loading and unloading operations.

- Minimize the volume of gasoline stored within the buildings and on the site.
- Clean up any oil spills observed in the parking lot, garages, or other surfaces in a timely manner.
- Salt and sand mixing shall take place indoors to the maximum extent practicable.
- Monitor all material deliveries.
- Inspect all storage tanks prior to filling activities for spills, leaks and corrosion.
- When drums are being handled, catch basins are covered to help contain potential spills.
- A member of the spill response team is present during refilling of the gasoline and/or diesel tanks.
- All impervious areas are swept at least once per year.
- All propane tanks will be stored in a covered container to be constructed in-house.
- Secondary containment will be provided for all containers greater than 55 gallons as funds allow.
- The construction of additional covered vehicle and equipment storage space will be added to the DPW's capital improvement project. The DPW will send a letter to the Town Manager requesting funding to construct a canopy, Quonset hut, or similar structure.

4.4 Sediment and Erosion Control

This following erosion and sedimentation controls shall be implemented on those portions of the facility where loose material such as sand, fill, salt, or gravel is stored.

- The edges of permanent and temporary stockpile areas shall be confined with jersey barriers or silt fence to prevent sediment tracking out of the stockpile area.
- Cover stockpiles or stockpile areas wherever possible.

4.5 Management of Stormwater Runoff

As explained in Section 3.2, stormwater runoff from the paved portion of the site, the stockpile area, and the compost area is managed separately.

- Runoff from the paved portion of the site near the DPW garage is collected by a series of catch basins and eventually discharges to the wetland area southeast of the site.
- Runoff from the stockpile area sheet flows toward the wetland area to the southeast of the site.
- Runoff from the compost area is contained by the berm around the area and diverted toward the rest of the facility, eventually discharging to the wetland area to the southeast of the site.

4.6 Spill Prevention and Response

The complete Spill Prevention and Response Procedures can be found in Appendix G.

The following procedures apply to the facility:

- All personnel are instructed in location, use, and disposal of spill response equipment and supplies maintained at the site.

- The Pollution Prevention Team leader will be advised immediately of all spills of hazardous materials or regulated materials, regardless of quantity.
- Spills will be evaluated to determine the necessary response. If there is a health hazard or fire potential, 911 will be called. If a spill exceeds five gallons or threatens surface waters, including the storm drain system, state or federal emergency response agencies will be called.
- Spills will be contained as close to the source as possible with oil-absorbent materials. Additional materials or oil-absorbent socks will be utilized to protect adjacent catch basins.

4.7 Employee Training

Regular employee training is required for employees who work in areas where materials or activities are exposed to stormwater, or who are responsible for implementing activities identified in the SWPPP, including all members of the Pollution Prevention Team. This training must be conducted in addition to the annual employee training for Illicit Discharge Detection and Elimination (IDDE).

The Dracut Department of Public Works is responsible for stormwater management training for their employees. The Department will coordinate training related to stormwater management on an annual basis to review specific responsibilities for implementing this SWPPP, including but not limited to BMP implementation, Good Housekeeping, Spill Prevention and O&M procedures. Members of the Pollution Prevention Team will meet at least twice yearly to discuss the effectiveness of and improvements to the SWPPP.

Documentation for these training sessions is included in Appendix H. Documentation includes attendance sheets; the instructor's name and affiliation; the date, time, and location of training; and the presentation that was used.

5. EVALUATION

5.1 Site Inspection Requirements

All stormwater pollution control measures and stormwater discharge points at the facility must be inspected quarterly. A minimum of one (1) of these quarterly inspections must occur during a wet weather event. A visual examination must be made during daylight hours and within 30 minutes after stormwater begins to runoff. The inspection must check for evidence of pollution, evaluate non-structural controls in place at this site, and inspect equipment. The inspection report must include:

- The inspection time and date.
- The name of the inspector(s).
- Weather information and a description of any discharge occurring at the time of inspection.
- Identification of any previously unidentified discharges from the site.
- Any control measures needing maintenance or repair.
- Any failed control measures that need replacement.
- Any SWPPP changes required as a result of the inspection.
- A certification statement signed by the inspector with the following Certification Language: "This Compliance Evaluation Report has been prepared by qualified personnel who properly gathered and evaluated information submitted for this Report. The information in this Report, to the best of my knowledge, is accurate and complete."

The inspection form for these inspections and all previously completed inspections can be found in Appendix I.

Corrective action may be necessary based on evidence of past stormwater pollution or the high potential for future stormwater pollution to occur. Any information about these issues and the corrective action taken against them must be included in a Compliance Evaluation Report. The permittee must repair or replace control measures in need of repair or replacement before the next anticipated storm event, or as soon as practicable. In the interim, the permittee shall have back-up measures in place. The Compliance Evaluation Report must be kept with the SWPPP and must state the problem, the solution, and when the solution was implemented.

5.2 Recordkeeping and Reporting

The Town must keep a written record (hardcopy or electronic) of all activities required by the SWPPP. This includes but is not limited to maintenance, stormwater monitoring, inspection, and training for a period of at least five (5) years. These records will be made available to state or federal inspectors and to the general public upon request.

Quarterly inspections of this facility must be described in the Town's MS4 Annual Report, including any corrective actions taken. Inspection and employee training records must demonstrate that the operation of this facility is in compliance with the 2016 Massachusetts MS4 Permit.

5.3 Plan Revisions

The Town shall review this SWPPP regularly to determine if any update or revision is required. Changes that may trigger revision include:

- An increase in the quantity of any potential pollutant stored at the facility;
- The addition of any new potential pollutant (not already addressed in this SWPPP) to the list of materials stored or used at the facility;
- Physical changes to the facility that expose any potential pollutant (not presently exposed) to stormwater;
- Presence of a new authorized non-stormwater discharge at the facility; or
- Addition of an activity that introduces a new potential pollutant.

Changes in activity may include but are not limited to an expansion of operations, or changes in any significant material handling or storage practices which could impact stormwater.

The amended SWPPP will describe any new activities that might contribute to increased pollution, as well as any control measures that have been implemented to minimize the potential for pollution.

This Plan must also be amended if a state or federal inspector determines that it is not effectively controlling pollutants in stormwater discharges.

6. ENDANGERED SPECIES

The 2016 MS4 Permit requires that the Town demonstrate that all activities taking place on the premises will not adversely impact endangered and threatened species or critical habitat.

Through consultation with the US Fish & Wildlife Service (USFWS), it was determined that the only threatened species within Dracut is the northern long-eared bat. Correspondence with USFWS regarding this determination is included in Appendix J. Current activities at this facility will not affect this species. Therefore, the Town has determined that it can certify eligibility under USFWS Criterion A for coverage under the permit. Prior to construction of any structural BMPs onsite, the Town will consult with USFWS to confirm that the proposed project will not impact the northern long-eared bat or any other endangered or threatened species that may be identified in the future.

7. HISTORIC PROPERTIES

The 2016 MS4 Permit requires the Town to demonstrate that all activities taking place on the premises will not adversely impact federal historic properties on the National Register of Historic Properties (NRHP). Under the Historic Preservation Act, Dracut can certify eligibility under Criterion A on their Notice of Intent for coverage under the permit because the Town was previously covered under the 2003 MS4 Permit, and conditions have not changed since that determination.

The Town does not have any properties listed on the National Register of Historic Places.
.

8. CERTIFICATIONS

This section includes certifications for the facility's:

- Non-Stormwater Discharges
- Stormwater Pollution Prevention Plan

Non-Stormwater Discharges

With the exception of condensate from air conditioners and air compressors, all stormwater outfalls to surface waters at this facility have been evaluated and found to be free of non-stormwater discharges.

Stormwater Pollution Prevention Plan

This Stormwater Pollution Prevention Plan has been prepared in accordance with good engineering practices. Qualified personnel properly gathered and evaluated information submitted for this Plan. The information in this Plan, to the best of my knowledge, is accurate and complete.

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

_____
Name:

_____
Title:

_____
Date

Appendix A

Locus Map

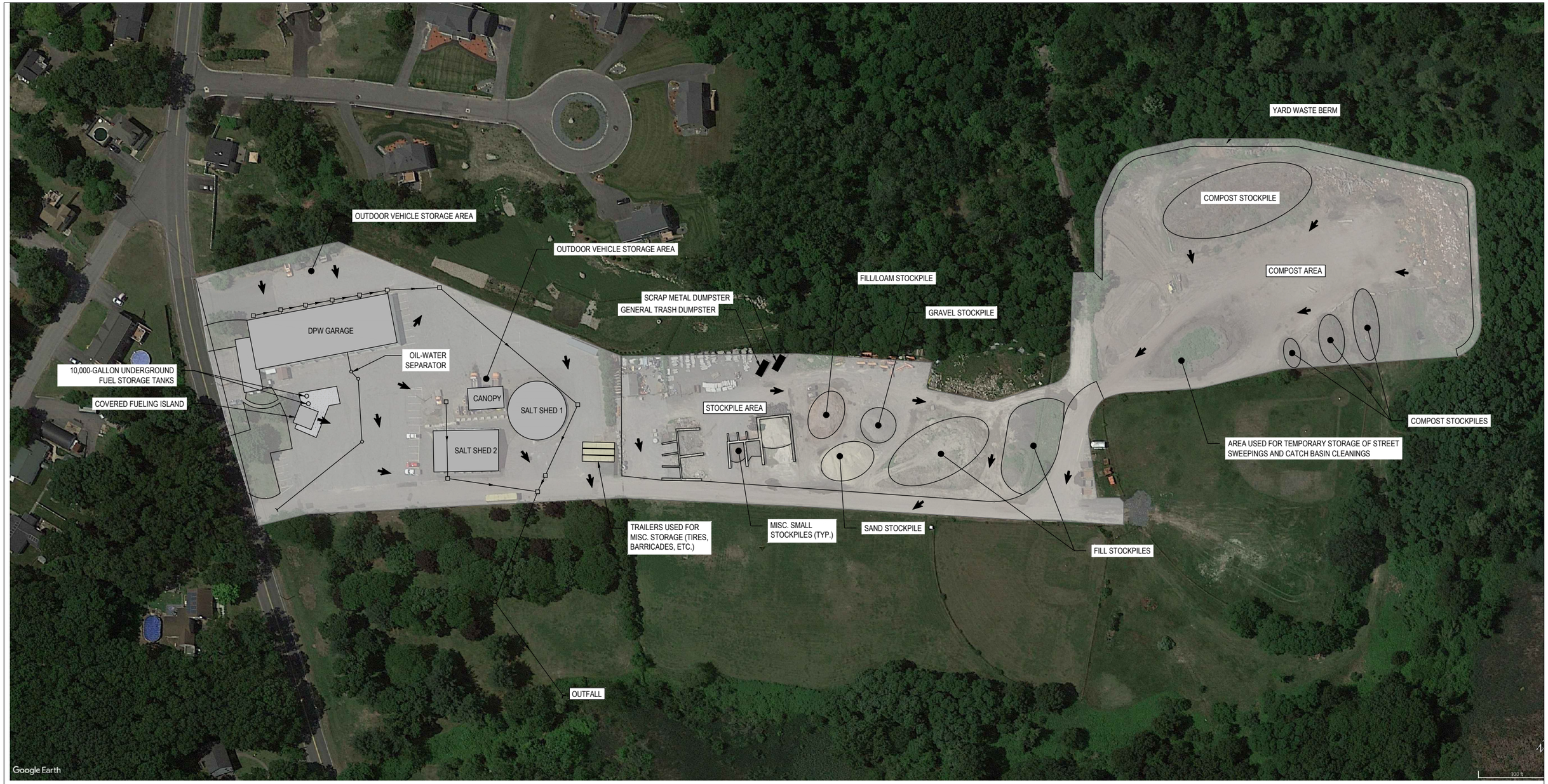
Weston & Sampson℠

DRACUT, MA
SWPPP
DPW FACILITY LOCUS MAP

0 500' 1,000'

Appendix B

DPW Facility Site Plan



LEGEND

- CATCH BASIN
- DRAINAGE MANHOLE
- OUTFALL
- RUNOFF FLOW DIRECTION

N

Weston & Sampson

DRACUT, MA
SWPPP
DPW FACILITY SITE PLAN

0 125' 250'

Appendix C

Inventory of Vehicles and Equipment

Inventory of Municipal Vehicles and Equipment

Updated June 2020

Equipment Number	Make	Description	Additional Equipment	Primary Use
TK-1	INTL 7300	10-YARD DUMP TRUCK	6.8-YARD SALT SPREADER and 11' ANGLE PLOW	GENERAL USE, SALTING, AND PLOWING
TK-2	INTL 4700	6-YARD DUMP TRUCK	6.8-YARD SALT SPREADER and 10' ANGLE PLOW	GENERAL USE, SALTING, AND PLOWING
TK-4	FRHT 10850	CABO CHASSI	6.8-YARD SALT SPREADER and 11' ANGLE PLOW	SALTING AND PLOWING
TK-5	FRHT 11450	10-YARD DUMP TRUCK	6.8-YARD SALT SPREADER and 11' ANGLE PLOW	GENERAL USE, SALTING, AND PLOWING
TK-6	CHEVY SILVERADO 3500	2-YARD DUMP TRUCK	1.7-YARD SALT SPREADER and 9' ANGLE PLOW	CEMETARY DEPARTMENT, SALTING, AND PLOWING
TK-7	INTL 7400	10-YARD DUMP TRUCK	10-YARD SALT SPREADER and 11' ANGLE PLOW	GENERAL USE, SALTING, AND PLOWING
TK-8	CHEVY K2500	9' UTIIL BODY	8' ANGLE PLOW	GENERAL USE AND PLOWING
TK-9	INTL 400SER	8-YARD DUMP TRUCK	11' SIDECAST PLOW	GENERAL USE AND PLOWING
TK-10	CHEVY GMT400	9' FLAT BED	9' ANGLE PLOW	GENERAL USE AND PLOWING
TK-11	CHEVY SILVERADO 3500	8' PICK UP	8' ANGLE PLOW	GENERAL USE AND PLOWING
TK-12	FRHT 11450	10-YARD DUMP TRUCK	6.8-YARD SALT SPREADER and 11' ANGLE PLOW	GENERAL USE, SALTING, AND PLOWING
TK-14	CHEVY CHASSI 3500	FLAT BED	9' ANGLE PLOW	GENERAL USE AND PLOWING
TK-18	CHEVY SILVERADO 3500	2-YARD DUMP TRUCK	9' ANGLE PLOW	GENERAL USE AND PLOWING
TK-21	INTL 7400	14-YARD DUMP TRUCK	10-YARD SALT SPREADER	GENERAL USE AND SALTING
TK-24	INTL 400SER	11-YARD DUMP TRUCK	6.8-YARD SALT SPREADER and 11' ANGLE PLOW	GENERAL USE, SALTING, AND PLOWING
TK-27	CHEVY SILVERADO 2500 HD	PICK UP	8' ANGLE PLOW	GENERAL USE AND PLOWING
TK-28	FORD F350	2.5-YARD DUMP TRUCK	1.9-YARD SALT SPREADER and 9'ANGLE PLOW	GENERAL USE, SALTING, AND PLOWING

Equipment Number	Make	Description	Additional Equipment	Primary Use
TK-34	HOLDR UTIL	.75-YD DUMP TRUCK	.5-YARD SALT SPREADER, 5' PLOW AND SNOW BLOWER, and FLAIL BRUSH CUTTER	SALTING AND PLOWING SIDEWALKS AND CUTTING BRUSH IN THE ROADWAY
TK-35	HOLDR UTIL	.75-YD DUMP TRUCK	.5-YARD SALT SPREADER, 5' PLOW AND SNOW BLOWER, FLAIL BRUSH CUTTER, and 6' POWER BROOM	SALTING AND PLOWING SIDEWALKS, CUTTING BRUSH IN THE ROADWAY, AND SWEEPING SIDEWALKS
TK5-2	CHEVY SILVERADO 3500	9' UTIL BODY	8' ANGLE PLOW	SEWER DEPARTMENT AND PLOWING
TK-13	DEERE 624J	3-YARD BUCKET	12' SNOW PUSHER	GENERAL USE, SALTING, AND PLOWING
TK-15	DEERE TC44H	2-YARD BUCKET	12' ANGLE PLOW	GENERAL USE AND PLOWING
TK-17	JCB BACKHOE	1.25-YARD BUCKET	10' ANGLE PLOW	GENERAL USE AND PLOWING
TK-22	DEER 54415	3-YARD BUCKET	12' ANGLE PLOW	GENERAL USE AND PLOWING
TK-30	DEERE 312GR	6000 LB MACHINE	14.6 CUFT BUCKET	GENERAL USE AND SNOW REMOVAL
CAR 2	CHEVY TRAVERSE	UTIL		DPW DIRECTOR
CAR 3	FORD ESCAPE	UTIL		STORMWATER MANAGER
TK3	CHEVY SILVERADO	PICK UP		REPAIR SHOW TOOL TK
TK16	FORD F250	PICK UP		GENERAL FOREMAN
TK20	CHEVY 2500	PICK UP		DPW FOREMAN
TK23	CHEVY SILVERADO	PICK UP		REPAIR SHOW TOOL TK
S-1	FORD F350	PICK UP		SEWER DEPARTMENT DIRECTOR
26	JOHN DEERE 4600	TRACTOR	MOWER DECK and FR BUCKET BACKHOE	PARK MOWING AND MAINTENANCE
29	JOHN DEERE 4220	TRACTOR	MOWER DECK and FR BUCKET	PARK MOWING AND MAINTENANCE

Appendix D

SWPPP Material Inventory

Appendix D
Dracut, MA DPW Facility - SWPPP Material Inventory

The following table includes an inventory of materials and activities that are exposed to stormwater at the DPW Facility. These areas are also identified on the Site Map included in Appendix B.

Material	Activity/ Use	Quantity stored (tank size if applicable: above or below ground)	Pollutant	Likelihood of contact with storm water? (Low, medium or high)	Comments
Gravel, Fill	Material Stockpile	N/A	Sediment, Total Suspended Solids	Medium	Gravel and fill are stored in material storage bays and in larger, unconfined piles in the stockpile area. Piles are uncovered and only some are confined on three sides by jersey barriers. Runoff from this portion of the site sheet flows toward the nearby wetland area but does not enter the MS4.
Salt	Material Stockpile	N/A	Chlorides	Medium	Salt is kept inside one of two salt sheds. The salt is loaded indoors and minimal salt/sand mixing occurs.
Vehicles/Equipment	Vehicle & Equipment Storage	N/A	Oil, Grease & Petroleum Products	Medium	Some vehicles and larger pieces of equipment are stored outdoors. Any fluid leaks from these vehicles may cause stormwater pollution.

Material	Activity/ Use	Quantity stored (tank size if applicable: above or below ground)	Pollutant	Likelihood of contact with storm water? (Low, medium or high)	Comments
Vehicles/ Equipment	Vehicle & Equipment Maintenance	N/A	Chlorides, Oil, Grease, and Petroleum Products	Low	All vehicle and equipment maintenance occurs in the DPW Garage. Floor drains in the DPW garage discharge to an oil-water separator which discharges to the sanitary sewer.
Vehicles/ Equipment	Vehicle & Equipment Washing	N/A	Chlorides, Grease, Surfactants, Oil & Petroleum Products	High	Most vehicles are washed indoors, but sanders are washed outdoors. Since there are no stormwater treatment structures at the DPW Facility, any washwater collected by the drainage system will directly discharge to the nearby wetland area.
Waste Oil	Waste Oil Storage	275 gallons	Oil & Petroleum Products	Low	Waste oil at the DPW Facility is kept indoors in five 55-gallon drums over secondary containment.

Material	Activity/ Use	Quantity stored (tank size if applicable: above or below ground)	Pollutant	Likelihood of contact with storm water? (Low, medium or high)	Comments
Gasoline	Fuel storage and Vehicle/ Equipment Fueling	10,000 gallons	Petroleum Products	High	Gasoline is stored in an underground storage tank (UST) near the fueling island. There is a downspout from the fueling island canopy that discharges directly to the fueling pad. Runoff from this downspout may carry pollutants into the drainage system and the nearby wetlands area.
Diesel Fuel	Fuel Storage and Vehicle/ Equipment Fueling	1,000 gallons	Petroleum Products	High	Diesel fuel is stored in a UST near the fueling island and gasoline UST. The downspout from the fueling island canopy poses the same risk for diesel as for gasoline, mentioned above.
Solid Waste	Solid Waste Management	N/A	Nutrients, pathogens, metals, sediments	Medium	Solid waste is confined in uncovered dumpsters in a portion of the site with no catch basins.

Appendix E

List of Significant Spills and Leaks

Appendix E
Dracut, MA DPW Facility
List of Significant Spills (> 5 gallons) and Chronic Leaks

The DPW Facility has not had any significant (> 5 gallons) spills of oils, toxic or hazardous materials within the last 3 years. Any spills that occur in the future should be documented in this table.

Date	Spill	Leak	Source	Description			Response Procedures	Measures Taken to Prevent Recurrence
	(check one)			Type of Material	Quantity	Reason		

Completed by:
Title:
Date:

Appendix F

Site Summary – Activities with a High Risk of Contaminating Stormwater

Appendix F
Dracut, MA Department of Public Works
Site Summary (Activities with a High Risk of Contaminating Stormwater)

The following table includes a list of those activities that have a high risk of contaminating storm water, as well as pollutants that may be associated with those activities.

Activity	Pollutants	Current Practices	Future Practices
Vehicle and Equipment Washing	Chlorides, Grease, Surfactants, Oil & Petroleum Products	Most vehicles are washed indoors, but sanders are washed outdoors. Since there are no stormwater treatment structures at the DPW Facility, any washwater collected by the drainage system will directly discharge to the nearby wetland area.	The DPW should wash all vehicles and equipment inside the DPW Garage, where washwater will discharge to the oil-water separator and the sanitary sewer.
Vehicle & Equipment Fueling	Petroleum Products	There is a canopy over the fueling area, however there is a downspout from the canopy that discharges over the concrete fueling pads. Any fuel that is spilled may be carried to the drainage system or nearby wetland area by stormwater runoff.	The DPW should redirect the downspout so that stormwater runoff does not discharge directly over the fueling area.

Appendix G

Spill Prevention and Response Procedures

Standard Operating Procedures *Town of Dracut* *Department of Public Works* **Spill Response**	**SOP Number:** 7	**Issue Date:** June 30, 2019

Approved by: *The Stormwater Committee*

Edward Patenaude *Public Works Director*

Tina Douk *Stormwater Manager*

SPILL RESPONSE AND CLEANUP PROCEDURES

Municipalities are responsible for any contaminant spill or release that occurs on property they own or operate. Particular areas of concern include any facilities that use or store chemicals, fuel oil or hazardous waste, including schools, garages, DPW yards, and landfills. Implementation of proper spill response and cleanup procedures can help to mitigate the effects of a contaminant release.

Responding to a Spill

In the event of a spill, follow these spill response and cleanup procedures:

1. Notify a member of the facility's Pollution Prevention Team, the facility supervisor, and/or the facility safety officer.
2. Assess the contaminant release site for potential safety issues and for direction of flow.
3. With proper training and personal protective equipment, complete the following:
    a. Stop the contaminant release;
    b. Contain the contaminant release through the use of spill containment berms or absorbents;
    c. Protect all drains and/or catch basins with the use of absorbents, booms, berms or drain covers;
    d. Contacts contracted company to clean up the spill;
    e. Dispose of all contaminated products in accordance with applicable federal, state and local regulations.
        i. Products contaminated with petroleum shall be handled and disposed of as described in MassDEP policy WCS-94-400, Interim Remediation Waste Management Policy for Petroleum Contaminated Soils, http://www.mass.gov/dep/cleanup/laws/94-400.pdf.
        ii. Products saturated with petroleum products or other hazardous chemicals require special handling and disposal by licensed transporters. Licensed transporters will pick up spill contaminated materials for recycling or disposal. Save the shipping records for at least three years.
        iii. Waste oil contaminated products:
            1. Perform the "one drop" test to ensure absorbents do not contain enough oil to be considered hazardous. Wring absorbents through a paint filter. If doing so does not generate one drop of oil, the materials are not hazardous.
            2. If absorbents pass the "one drop" test they may be discarded in the trash, unless contaminated with another hazardous waste.
                a. It is acceptable to mix the following fluids and handle them as waste oil:
                    i. Waste Motor Oil;
                    ii. Hydraulic Fluid;
                    iii. Power Steering Fluid;
                    iv. Transmission Fluid;

v. Brake Fluid;
vi. Gear Oil.

b. **Do not mix** the following materials with waste oil, store each separately:
i. Gasoline;
ii. Antifreeze;
iii. Brake and Carburetor Cleaners;
iv. Cleaning Solvents;
v. Other Hazardous Wastes.

3. If absorbents do not pass the "one drop" test they should be placed in separate metal containers with tight fittings lids, labeled "Oily Waste Absorbents Only".

4. If you need assistance containing and/or cleaning up the spill, or preventing it from discharging to a surface water (or an engineered storm drain system), contact your local fire department using the number listed below, however **in the case of an emergency call 911**;
a. Dracut: Fire Department: 978-957-3131

5. Contact the MassDEP 24-hour spill reporting notification line, toll-free at **(888)-3104-1133**;
a. The following scenarios **are exempt** from MassDEP reporting requirements:
i. Spills of less than 10 gallons of petroleum and do not impact a water body;
ii. Spills of less than one pound of hazardous chemicals and do not present an imminent health or safety hazard;
iii. Spills from passenger vehicle accidents;
iv. Spills within a vault or building with a watertight floor and walls that completely contain all released chemicals.

Procedures for Reporting Spill Response

When contacting emergency response personnel or a regulatory agency, or when reporting the contaminant release, be prepared to provide the following information:

1. Your name and the phone number you are calling from.
2. The exact address and location of the contaminant release.
3. Specifics of release, including:
a. What was released;
b. How much was released, which may include:
i. Pounds;
ii. Gallons;
iii. Number of containers.
4. Where was the release sent/what was contaminated, addressing:
a. Pavement;
b. Soil;
c. Drains;
d. Catch Basins;
e. Water Bodies;
f. Public Street; and
g. Public Sidewalk.
5. The concentration of the released contaminant.
6. Determine what/who caused the release.
7. Is the release being contained and/or cleaned up, or is the response complete.

8. Type and amount of petroleum stored on site, if any.
9. Characteristics of contaminant container, including:
    a. Tanks;
    b. Pipes;
    c. Valves.

Maintenance and Prevention Guidance

Prevention of spills is preferable to even the best response and cleanup. To mitigate the effects of a contaminant release, provide proper maintenance and inspection at each facility.

To protect against contaminant release adhere to the following guidance:

1. Ensure all employees are properly trained to respond in the case of a spill, understand the nature and properties of the contaminant and understand the spill control materials and personnel safety equipment. Maintain training records of current personnel on site and retain training records of former personnel for at least three years from the date last worked at the facility;
2. Provide yearly maintenance and inspection at all municipal facilities, paying particular attention to underground storage tanks. Maintain maintenance and inspection records on site;
3. Implement good management practices where chemicals and hazardous wastes are stored;
    a. Ensure storage in closed containers inside a building and on an impervious surface;
    b. If storage cannot be provided inside, ensure secondary containment for 110 percent of the maximum volume of the storage container;
    c. Locate storage areas near maintenance areas to decrease the distance required for transfer;
    d. Provide accurate labels, MSDS information and warnings for all stored materials;
    e. Regularly inspect storage areas for leaks;
    f. Ensure secure storage locations, preventing access by untrained or unauthorized persons;
    g. Maintain accurate records of stored materials.
4. Replace traditional hazardous materials such as pesticides and cleansers with non-hazardous products such as bio-lubricants which can reduce response costs in the case of a spill;
5. Maintain an oil and grease spill response kit with the following materials, at a minimum, at each facility:
    a. 6.5 gallon bucket with screw top lid and handle
    b. 10 gallons of sand
    c. 200 pounds of Speedy Dry absorbent
    d. Drain covers
    e. Spill containment berms
    f. (4) 3' absorbent socks
    g. (16) 16" x 18" absorbent pads
    h. Goggles
    i. Nitrile gloves
    j. Disposable bags to dispose of used materials
    k. Laminated contacts list shall include the following names and numbers:
        i. Safety Officer; Facility Supervisor; Ed Patenaude
        ii. Local Fire Department;
        iii. MassDEP spill report notification line;
        iv. MassDEP Regional Office;
        v. Hazardous Waste Compliance Assistance Line;
        vi. Household Hazardous Products Hotline;

vii. Massachusetts Department of Fire Services;
viii. Licensed Site Professionals Information.

Attachments

1. Spill Response and Cleanup Contact List

Spill Response and Cleanup Contact List

	Phone Number	Date and Time Contacted
Safety Officer: Commanding Officer on Duty	**(978) 957-3131**	
Facility Supervisor: Thomas Ayotte	**(978) 835-4290**	
Dracut Fire Department:	**(978) 957-3131**	
MassDEP 24-Hour Spill Reporting:	**(888)-304-1133**	
MassDEP Northeast Regional Office	**(978) 694-3200**	
Hazardous Waste Compliance Assistance Line	**(617) 292-5898**	
Household Hazardous Products Hotline	**(800) 343-3420**	
Massachusetts Department of Fire Services	**(978) 567-3100 or (413) 587-3181**	
Licensed Site Professionals Association (Wakefield, MA)	**(781) 876-8915**	
Licensed Site Professionals Board	**(617) 556-1091**	

Appendix H

Employee Training Log

Town of Dracut Department of Public Works

DPW Facility

Stormwater Pollution Prevention Plan (SWPPP) Training Sign-In

Name (Please Print)	Department

Appendix I

Quarterly Monitoring Logs

Appendix I
Dracut, MA DPW Facility Stormwater Pollution Prevention Plan
Quarterly SWPPP Inspection Report

General Information			
Date:			Start/End Time:
Inspector's Name(s):			
Weather Conditions (Check if applicable):	☐ Clear ☐ Cloudy ☐ Rain	☐ Sleet ☐ Fog ☐ Snow	Temperature:
Description of discharges occurring at the time of inspection:			

Areas Exposed to Stormwater			
Inspect the following areas and activities that are exposed to stormwater for evidence of/potential for stormwater pollution:			
	Area/Activity	Evidence of or potential for stormwater pollution?	Notes/Necessary Corrective Action
1	Fuel Storage Area	☐ Yes ☐ No	
2	Vehicle Fueling Area	☐ Yes ☐ No	
3	Stockpile Storage Area(s)	☐ Yes ☐ No	
4	Salt/Deicing Agent Storage	☐ Yes ☐ No	
5	Dumpsters	☐ Yes ☐ No	
6	Vehicle and Equipment Storage Area	☐ Yes ☐ No	
7	Vehicle and Equipment Maintenance Area	☐ Yes ☐ No	
8	Vehicle fluid storage area (includes Waste Oil)	☐ Yes ☐ No	
9	Vehicle Washing Area	☐ Yes ☐ No	

Stormwater Outfalls and Control Measures				
Inspect each stormwater outfall and each stormwater control measure (BMP) at the facility.				
Outfall / Structure ID	Condition of Structure	Observed Discharge?	Evidence of stormwater pollution observed in discharge?	What evidence of stormwater pollution was observed? Examples include color, odor, cloudiness, excessive sediment, etc.
OF 11-4 (in wetland area southeast of site)	☐ Good ☐ Fair ☐ Poor ☐ Needs Repair	☐ Yes ☐ No	☐ Yes ☐ No	
	☐ Good ☐ Fair ☐ Poor ☐ Needs Repair	☐ Yes ☐ No	☐ Yes ☐ No	
Describe any corrective action required at any outfall or stormwater control measure at the facility:				

Are any changes to the SWPPP required as a result of this inspection? If so, please describe below:

Inspector Name and Title (Print):

Signature of Inspector:

Date:

Appendix J

Historical Properties and Endangered Species

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Project information

NAME

Dracut

LOCATION

Massachusetts and New Hampshire

Local office

New England Ecological Services Field Office

(603) 223-2541
(603) 223-0104

70 Commercial Street, Suite 300
Concord, NH 03301-5094

http://www.fws.gov/newengland

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Log in to IPaC.
2. Go to your My Projects list.
3. Click PROJECT HOME for this project.
4. Click REQUEST SPECIES LIST.

Listed species

[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Northern Long-eared Bat Myotis septentrionalis No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Threatened

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act

[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird

species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Bald Eagle *Haliaeetus leucocephalus* This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Oct 15 to Aug 31
Black-billed Cuckoo *Coccyzus erythropthalmus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Bobolink *Dolichonyx oryzivorus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Canada Warbler *Cardellina canadensis* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Aug 10
Eastern Whip-poor-will *Antrostomus vociferus* This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Aug 20

Lesser Yellowlegs Tringa flavipes This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Prairie Warbler Dendroica discolor This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Red-headed Woodpecker Melanerpes erythrocephalus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Rusty Blackbird Euphagus carolinus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Snowy Owl Bubo scandiacus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Wood Thrush Hylocichla mustelina This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ 'Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

The area of this project is too large for IPaC to load all NWI wetlands in the area. The list below may be incomplete. Please contact the local U.S. Fish and Wildlife Service office or visit the NWI map for a full list.

FRESHWATER EMERGENT WETLAND

- PEM1/FO5Fh
- PEM1E
- PEM1Eb
- PEM1Eh
- PEM1C
- PEM1Fh
- PEM1Ed
- PEM1/SS1E
- PEM1/SS1Ed
- PEM1Ad
- PEM1/SS1C
- PEM1A
- PEM1B
- PEM1Fb
- PEM1/FO5Fb
- PEM1Cd
- PEM1/SS1Eh
- PEM1/SS3Eh
- PEM1F
- PEM1/SS1Cd
- PEM1Ex
- PEM1Ax
- PEM1Cx
- PEM1Ch
- PEM1Fx

FRESHWATER FORESTED/SHRUB WETLAND

- PFO1E
- PSS1E
- PFO1C
- PSS1/FO1E
- PFO1Cd
- PFO1A
- PFO4Eg
- PFO1/SS1E
- PFO5Fb
- PSS3Eh
- PSS1Ed
- PFO1Ad
- PSS1C
- PFO1/4E

PFO1Ed
PSS1/EM1E
PSS1Cd
PFO1/SS1Ed
PSS1/EM1C
PSS1/FO1Cd
PSS1Eh
PFO5Fh
PSS1/FO1Ed
PSS1/FO1Eh
PFO1Eh
PSS1/EM1Ed
PSS1/3E
PSS1/EM1Eh
PSS4/3Eg
PSS1/FO1C
PSS1A
PFO1/4C
PSS1B
PFO1/EM1C
PFO1Cb
PFO1B
PSS1/4E
PSS1F
PSS1Fh
PFO1Ch
PSS3E
PSS1Ch
PSS3Ba
PFO4Cb
PFO1/4A
PSS3/EM1Eh
PSS1Eb
PFO4/SS1E
PSS1Ex
PSS4Eh
PSS1Fd
PSS1Ad
PSS1Cx
PSS1Fx

FRESHWATER POND

PUBHh
PUBHx
PUBH
PUBFh
PUBFx
PUB/FO5Fb

PUSCx
PUBF
PUB/FO5Fh
PUB/EM1Fh
PUB/SS1Fh
PUB/FO5Hh
PUB/SS1Fb
PUSCh
PUBFd
PUBFb

LAKE

L1UBHh

RIVERINE

R2UBH
R2UBHx
R4SBC
R4SBCx
R5UBH
R3UBH

A full description for each wetland code can be found at the National Wetlands Inventory website

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the

geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.