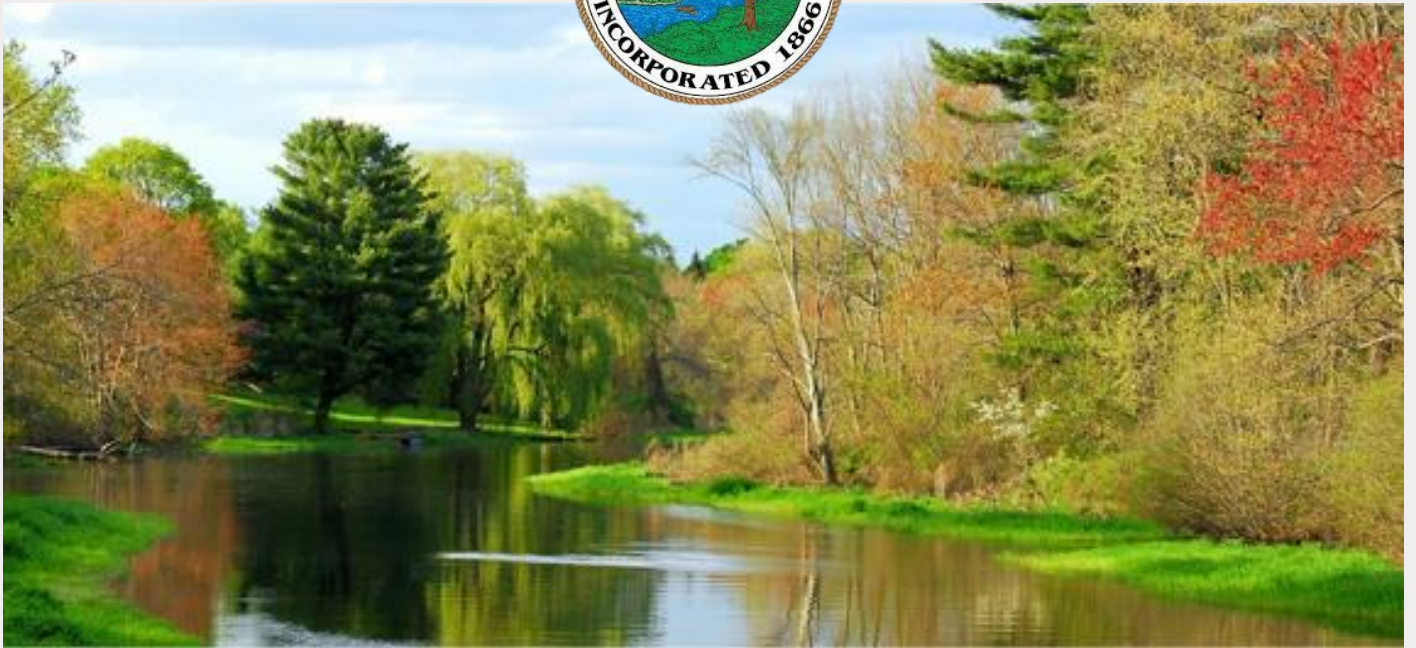


Clean Water Best Practices:

HUDSON MUNICIPAL FACILITIES



2021

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Centennial Beach

INTRODUCTION

OBJECTIVES

The objectives of this manual are to:

- Provide a general guidance document detailing ways to reduce stormwater-transported pollution during typical activities on municipally-owned properties; and
- Promote behavior that will improve water quality in the Town of Hudson.



This pollution prevention manual includes “best practices” for municipal facilities that are not typically regulated under specific Environmental Protection Agency (EPA) or state permit programs (i.e., wastewater treatment facilities, incinerators, etc.).

The focus of this manual is on facilities that may have activities with the potential to contribute to stormwater pollution through common day-to-day activities but are not considered industrial in nature.

This manual should be maintained by the appropriate facility manager or department lead of the Town of Hudson’s municipally owned properties. It is the expectation of the EPA, under your community’s Clean Water Act permit obligations, that staff, contractors, and operators of municipally-owned properties are informed of their role in pollution prevention and follow simple best practices to minimize their potential of polluting surface waters and groundwater in Hudson.

This pollution prevention manual has been developed to address the requirements of EPA’s 2016 National Pollutant Discharge Elimination System (NPDES) Small Municipal Separate Storm Sewer System (MS4) Permit for Massachusetts. This manual is intended to provide general guidance to municipal staff. In any instance where these best practices and Town regulations conflict, or Town regulations are more stringent, Town regulations shall govern. Individual Town-owned facilities may require more specific stormwater pollution prevention plans under future MS4 permit conditions or at the request of regulatory agencies.

Table 1-1, below, lists common municipal facilities that are subject to implement the best practices in this manual. Appendix A contains a list of municipal facilities in Hudson where these best practices are applicable.

Impervious cover is any surface that cannot effectively absorb or infiltrate rainfall. This includes driveways, roads, parking lots, rooftops, and sidewalks. In natural landscapes, rainfall is typically absorbed into the soil and intercepted or taken up by vegetation.

Table 1-1: Typical Municipal Facilities in New England Communities

Closed Municipal Landfills
Public Works and Other Fleet Maintenance Facilities
Solid Waste Transfer Facilities
Airfields
Parks, Athletic Fields, Cemeteries, and Golf Courses
Public Buildings (Police, Fire, Schools, Libraries, Recreation, Stadiums)
Boat Launches, Natural Areas
Animal Shelters/Services
Public Parking Facilities
Fairgrounds
Public Housing
Marinas

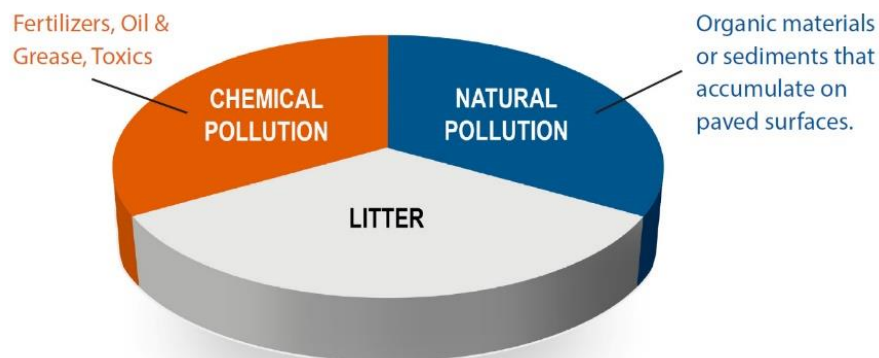
WHAT IS STORMWATER?

Stormwater is runoff water from rain or melting snow that flows across a landscape. Runoff flows from rooftops, paved areas, bare soils, and lawns and gets conveyed via drainage systems that can include catch basins, pipes, ditches, and swales to waterbodies, including ponds, lakes, streams, rivers, and oceans.

Pollution transported via stormwater runoff is currently one of the most significant sources of pollutants to the nation’s waters. It is the responsibility of individuals to reduce many of these pollutants through pollution prevention.

Stormwater-transported pollution can be divided into three general categories: natural pollution, chemical pollution, and litter. Natural pollutants include organic materials like leaves and sediment. Chemical pollutants include items such as oils, greases, detergents, paints, and fertilizers. Litter, such as plastic bags, cigarettes, and trash, is the third typical stormwater pollutant. Table 1-2 shows these three general forms of stormwater pollution and Table 1-3 describes more specific pollutant sources that are most common in in municipal facility settings.

Table 1-2: Three General Forms of Stormwater Pollution



POLLUTANTS OF CONCERN

Table 1-3: Common Stormwater Pollutant, Sources, and Impacts

Pollutant	Sources	Impacts
Sediment	Non-vegetated areas; construction sites; eroding slopes or ditches; winter sand application; vehicle/boat washing.	Destruction of plant and fish habitat; transportation of attached oils, nutrients and other pollutants; increased maintenance costs during drainage system cleaning.
Nutrients (phosphorus, nitrogen)	Rainfall; fertilizers; eroding soils; on-site wastewater systems; bird, wildlife and pet waste; vehicle/boat washing; grass and leaves; sewer leaks; leaking trash containers.	Increased potential for nuisance or toxic algal blooms; increased potential for hypoxia/anoxia (i.e. low levels of dissolved oxygen which can kill aquatic organisms).
Hydrocarbons (Polycyclic Aromatic Hydrocarbons)	Vehicle and equipment leaks; vehicle and equipment emissions; pesticides; fuel spills; equipment cleaning; improper fuel storage and disposal.	Toxic.
Heavy Metals	Vehicle brake and tire wear; vehicle/equipment exhaust; batteries; galvanized metal; paint and wood preservatives; light bulbs, e-waste; batteries; fuels; pesticides; cleaners.	Toxic; drinking water contamination.
Pathogens	Bird, wildlife, and pet wastes; on-site wastewater systems; sewer leaks and backups; leaking trash containers.	Risk to human health leading to closure of shellfish and swimming areas; drinking water contamination.
Toxic Chemicals	Herbicides, Pesticides, Dioxins, and PCBs, from landscape maintenance, equipment and vehicle maintenance/wear, spills, illegal discharges and leaks.	Toxic.
Debris/Litter	Improper waste disposal and storage; leaking rubbish containers; cigarette butts; littering.	Unightly, nuisance for drainage system functionality and potential risk to human and aquatic life.



PARKS AND OPEN SPACE

EROSION PREVENTION AND SEDIMENT CONTROL

Erosion Prevention Recommended Procedures:

Prevent erosion by maintaining vegetative cover through the growth and maintenance of healthy native or non-invasive plants that have extensive root structures.



Scour is created when high velocity stormwater erodes the soil that it is flowing over. This can be prevented by installing permanent reinforcing fabrics, crushed angular stone, or reducing the velocity or volume of water within the drainage system.

- Prevent erosion by covering bare soil with either a mix of loam and seed to develop a vegetative cover or with rocks, mulch, or other protective covering.
- Repair damage to landscaped, bare, and poorly vegetated areas as soon as possible to prevent erosion. If signs of erosion are present, repair them as soon as possible. Prioritize repairing eroded areas within 50 feet of surface water (e.g. river, pond, lake).
- Use erosion control techniques and/or devices to temporarily stabilize disturbed areas prior to vegetative establishment and to protect all storm drain systems from scour. This could include erosion control blankets or matting.
 - Refer to the Massachusetts Department of Transportation's (MassDOT's) list of qualified construction materials to find a list of approved fabrics: <https://www.mass.gov/service-details/qualified-construction-materials-list>
 - Extensive erosion control information can be found in the Massachusetts Department of Environmental Protection's (MassDEP's) Erosion and Sediment Control Guidelines for Urban and Suburban Areas: https://www.mass.gov/files/documents/2016/08/qz/esfull.pdf?_ga=2.114972103.1399987852.1578335225-1181284277.1553270254
- Refer to the University of Massachusetts Agriculture & Landscape Program: "Right Plan, Right Place" – A Plant Selection Guide for Managed Landscapes to find native plants with absorbent root structures: <https://ag.umass.edu/landscape/fact-sheets/right-plant-right-place-plant-selection-guide-for-managed-landscapes>
- Inspect areas that abut snow plowing lanes for damages that may have occurred during the winter months as soon as possible after snowmelt. If damage has occurred, these areas will need to be revegetated or protected from further erosion with angular stone, curbing, or other forms of reinforcement.

Sediment Control Recommended Procedures:

- Sweep up sediment, debris, and residue regularly from paved areas. Increase sweeping frequencies near loading/unloading operations and in high traffic areas. Note where catch basin sumps are consistently more than 50% full and target the vicinity of these locations with increased sweeping frequencies.

Avoid washing sediments into storm drain systems.



- Keep paved areas adjacent to stockpiles and earthwork construction sites free from loose sediment and tracked materials. Establish temporary sediment control devices or stabilization measures in areas where stockpiles and exposed soil may migrate into storm drain systems.
- Keep stockpiled materials covered when not in use to minimize the transfer of sediment or other pollutants to the storm drain system. This can be done with tarps, berming, or sandbags. Stockpiles can also be sprayed with bonded fiber matrix and/or hydroseed where practicable. Surround stockpiled materials with straw wattles, hay bales, or similar measures where practicable.
- Place stockpiled materials downgradient and/or as far as practicable from storm drain inlets, drainage paths, and natural waterways.
- Inspect stockpiles regularly and after significant rain events to ensure that the sediment or pollutant control devices functioned effectively. Repair any damages to the system.

LAWN CARE AND LANDSCAPE MAINTENANCE

The goal of this document is to provide general guidance to reduce stormwater-generated pollution from lawns and landscapes maintained by municipal staff.

Landscaping Recommended Procedures:



- Take into account soil types, available light, drainage capabilities, maintenance, budget, and impact on water quality when designing new landscaped areas.
- Take specific caution to not plant large tree varieties underneath overhead wires or in places where they will obstruct driving site distances. Do not plant trees with high water demands near sewer and storm drain piping.
- Minimize erosion-prone steep slopes by using techniques such as terracing.
- When establishing new plantings, consider using alternative materials such as drought-resistant or native plantings to reduce the need for irrigation and extensive application of fertilizers and pesticides.

Mowing Recommended Procedures:



- Remove debris and trash from areas prior to mowing.
- Perform mowing at optimal times; Mowing should not be performed if significant rain events are predicted to avoid rutting and creating erosion-sensitive areas.
- Mow as high as possible, ideally at 3"– 4" above the ground. Vary mowing patterns.

Allow appropriate areas to grow into meadows or fields and mow once or twice per year rather than weekly where possible. Consider converting unused lawn areas to forest.

- Keep mower blades sharpened to avoid damaging grass leaf tissue.
- If possible, establish mowing set-back distances from pavement, storm drains, and waterbodies.
- Collect grass clippings and leaves after mowing. Do not blow or wash them into the street, gutter, storm drains or surface water. Sweep any clippings off impervious surfaces and away from storm drains back onto the lawn. Properly dispose of organic waste after mowing, weeding, and trimming.
- Never refuel, change the mower oil, or brush or hose off mowers near a storm drain or surface water.

Irrigation Recommended Procedures:

- Irrigate only when necessary based on moisture content and not on a fixed schedule. Irrigate at a rate that can infiltrate into the soil to limit water runoff. Most lawns rarely need watering except for a few weeks in the summer.
- Irrigate at appropriate times when no rain is forecasted.
- Repair broken sprinkler heads as soon as possible.
- Avoid irrigating close to impervious surfaces such as parking lots and sidewalks.



PROPER USE, STORAGE, AND DISPOSAL OF PESTICIDES AND FERTILIZERS

Pesticide Use Recommended Procedures:

The EPA defines a pesticide as any substance intended for preventing, destroying, repelling, or mitigating any pest. Pest can include insects, animals, unwanted plants, fungi, bacteria, etc. The term applies to insecticides, herbicides, fungicides, etc.

Pesticides may only be applied by licensed applicators and in accordance with a written VMP and YOP for right-of-way applicators or an IMP.

- The Massachusetts Department of Agricultural Resources (MDAR) administers pesticide regulations and licensing.
- Pesticides shall be used in accordance with all state and local regulations, including, but not limited to:
 - 333 CMR 10 – Certification and Licensing of Pesticide Applicators: <https://www.mass.gov/doc/333-cmr-10-certification-and-licensing-of-pesticide-applicators/download>
 - The three categories that typically apply to municipal applicators are “Ornamental and Turf Pest Control,” “Right-of-Way Pest Control,” and “Industrial, Institutional, Structural, and Health Related Pest Control.”
 - Every commercial applicator who uses or supervises the use of a restricted or state-limited use pesticide in any of these categories must be certified for that category.
 - 333 CMR 11 – Rights of Way Management: <https://www.mass.gov/doc/333-cmr-11-rights-of-way-management/download>
 - No person shall use an herbicide for the purpose of clearing or maintaining a right-of-way unless appropriately certified by MDAR or licensed by MDAR and working under the on-site supervision of an appropriately certified applicator.
 - No person shall use an herbicide for the purpose of clearing or maintaining a right-of-way except in accordance with a Vegetation Management Plan (VMP) and a Yearly Operational Plan (YOP) as approved by MDAR.
 - 333 CMR 14 – Protection of Children and Families from Harmful Pesticides: <https://www.mass.gov/doc/333-cmr-14-protection-of-children-and-families-from-harmful-pesticides/download>
 - Implement required Integrated Pest Management (IPM) Plans for schools, daycares, and childcare facilities to establish standards, requirements, and procedures regarding the use of pesticides within the facilities.





Massachusetts Pesticide Program

617-626-1776

<https://www.mass.gov/orgs/pesticide-program>

Test your soil to find fertilization needs and application rates. The University of Massachusetts Soil and Plant Nutrient Testing Laboratory provides these services:

Paige Laboratory
161 Holdsworth Way
Amherst, MA 01003

(413) 545-2311

<https://soiltest.umass.edu/>

- Municipal IPMs can be found here: <https://massnrc.org/ipm/schools-daycare/ipm-tools-resources/ipm-plan-maker/make-your-ipm-online/locate-school-plan.asp>
- Catch Basin Permit Application Program: <https://www.mass.gov/service-details/catch-basin-applicator-permit-program>
 - Allows a municipal employee to use MDAR-approved dry formulation mosquito larvicides in storm drains and catch basins, provided that the employee is working under the supervision of a certified or licensed pesticide applicator.
 - In order to obtain a Permit, the applicant must complete an MDAR-approved training and pass an exam that focuses on the use and handling of mosquito larvicides
- Municipal employees must be trained, certified, and licensed in pesticide application before working with any pesticide. Municipal employees should always use the appropriate Personal Protective Equipment (PPE) when handling pesticides; proper PPE should be listed on the product label.
- Refer to the Massachusetts Pesticide Program for more information regarding pesticide examination and licensing, enforcement, product registration, licensed applicators, use, storage, and disposal, laws, regulations, and more.

Fertilizer Use Recommended Procedures:

- For guidance on the application of plant nutrients to lawns and non-agricultural turf, refer to 330 CMR 31.00 – Plant Nutrient Application Requirements for Agricultural Land and Non-Agricultural Turf and Lawns: <https://www.mass.gov/doc/330-cmr-31-plant-nutrient-application-requirements-for-agricultural-land-and-non-agricultural/download>
- All fertilizers products manufactured or distributed in the Commonwealth of Massachusetts must be registered with MDAR.
- Soil testing should be performed by qualified personnel before using a fertilizer. Using the right type and amount of fertilizer for the location will help ensure that the proper nutrients are absorbed by the plants and will reduce runoff. Soil testing is recommended every 3-4 years for turf and plantings and every year for soil where phosphorus-containing fertilizers are used.
- Choose a fertilizer that has at least 40–60% of the nitrogen in a slow-release form, such as sulfur-coated urea, polymer coated urea, composted organics, etc.



Table 2-1, below, gives an overview of the impact nutrients can have on aquatic environments. Refer to the University of Massachusetts Center for Agriculture, Food, and the Environment guidance on nutrient management for turf:

<https://ag.umass.edu/turf/publications-resources/nutrient-management-for-turf>

- Fertilizers shall only be applied by properly trained personnel. Municipal employees should always use the appropriate PPE when handling fertilizer; proper PPE should be listed on the product label.
- Fertilizers should always be applied in strict accordance with the manufacturer's instructions and local regulations. Never over-apply these materials.
- Aerate grassy areas to improve infiltration and soil health.
- Time fertilizer applications methods for maximum plant uptake, usually in the fall and spring. Fertilize when soil is moist to help the fertilizer infiltrate into the root zone. Do not apply fertilizer before heavy rain or when soil is frozen.
- Calibrate application equipment regularly to ensure proper application and loading rates.
- Avoid applying fertilizer near pavement. Sweep any fertilizer off pavement and dispose of according to the manufacturer's specifications.
- Limit irrigation after fertilizer application to prevent runoff; limit to approximately 0.5-inch of water per application for a week following application.
- Properly dispose of fertilizer bags according to manufacturer's specifications and applicable regulations.

Table 2-1: Nutrient Benefits and Impacts to Aquatic Environments

Nutrient	Benefits to Plants	Impacts to Aquatic Environments
Nitrogen (N)	Needed for healthy green growth and regulation of other nutrients.	Increased potential for nuisance or toxic algal blooms in salt water; increased potential for hypoxia/anoxia (low levels of dissolved oxygen, which can kill aquatic organisms).
Phosphorus (P)	Helps seeds to develop proper roots and to resist disease.	Increased potential for nuisance or toxic algal blooms in fresh waters; increased potential for hypoxia/anoxia (low levels of dissolved oxygen which can kill aquatic organisms).
Potassium (K)	Important for root development and helps resist disease.	Slightly hazardous to aquatic organisms.



Pesticide and Fertilizer Storage and Disposal Recommended Procedures:

- Store pesticides and fertilizers in well-ventilated, insulated, cool, and dry locations, according to the manufacturer's specifications and applicable building codes, fire codes, and other regulations.
- Flammable products should be stored separately from non-flammable products in a fire-proof cabinet.
- Small quantities of pesticides (less than 500 pounds or 220 gallons) can be stored in double-walled 18-gauge sheet metal cabinets.
- Large quantities of pesticides (greater than 500 pounds or 220 gallons, which is not common for a municipality) can be stored in a prefabricated Hazardous Material Storage building or in a purpose-built storage facility.
- Lock pesticide storage areas while not in use and display a sign to warn people of the presence of pesticides.
- Storage areas and buildings should have a 2-hour fire rating and be impervious to the stored materials. Floors should be impervious and provide spill containment.
- Label all containers with contents and purchase date.
- Never leave unlabeled or unstable pesticides and fertilizers at the storage site.
- Maintain an up-to-date inventory of all pesticides and fertilizers at all storage sites.
- Order only the amount of materials needed to minimize excess materials which would require storage or disposal.
- Order materials for delivery as close to the time of use as possible to reduce the amount of chemicals in storage.
- Regularly inspect pesticide and fertilizer storage areas for leaks or spills.

If a spill or leak does occur with pesticides or fertilizers, follow the clean-up procedures described in the Spill Prevention and Cleanup section of this manual.

- Cleanup spills and leaks of pesticides, herbicides, and fertilizers quickly to prevent them from reaching the storm drain system.
- Properly dispose of pesticides, herbicides, fertilizers, and associated waste materials in accordance with the manufacturer's specifications and applicable regulations.



- Never dispose of pesticides, herbicides, or fertilizers in drainage swales, gutters, storm drains, or surface water.

ATHLETIC FIELD MAINTENANCE

The goal of this document is to provide general athletic field management best practices that may reduce stormwater pollution generated from facilities maintained by municipal staff.

Athletic Field Irrigation Recommended Procedures:

- Athletic Fields typically need an inch of water per week; sand-based fields may require increased amounts of water during hot weather months.
- Avoid over-irrigating the field.
- Irrigation should occur on an as-needed basis. Soil moisture probes can be utilized to determine an appropriate timeline for irrigation.

Athletic Field Mowing Recommended Procedures:

- Sharpen blades as necessary and/or adjust reels prior to every mowing event.
- Sweep any lawn clippings off impervious surfaces and back onto the lawn, away from storm drains.
 - Mow no more than one-third of a blade of grass at any given time.
- Optimum grass heights vary depending on sport and time of year but should ultimately be shortest in the spring and longest in the summer months. Soccer fields typically require shorter grass than baseball fields. Refer to the baseball field maintenance link below for more information on common types of grasses and suggested mowing heights:
http://www.mlb.com/documents/5/6/6/262918566/field_maintenance_guide_english.pdf
- Weed control can be accomplished through physical or chemical methods (as allowable under state and local regulations and policies). If chemical weed control is performed, the chemical should be spot-applied and special attention should be taken to ensure the area receives the amount of downtime required after application. Extensive chemical weed control measures are most effective in the fall after sports seasons have ended and the vegetation is still actively growing.

Athletic Field Fertilizing Recommended Procedures:

- Follow the guidelines provided in the Fertilizing and Turf Health Recommended Procedures section of this manual.



PORTABLE TOILET MANAGEMENT

Portable toilets have the potential to spill and release pollutants such as organic matter, bacteria, and disinfectants into stormwater collection systems.



Portable Toilet Location Recommended Procedures:

- Place portable toilets on flat and stable surfaces.
- Secure portable toilets to the ground with stakes to reduce the chances of the toilets being knocked or blown over.
- Avoid placing portable toilets near storm drains or on impervious surfaces that would quickly transport leaks or spills to storm drains. Gravel, sand, and grass surfaces are recommended for portable toilet placement. If placing portable toilets near storm drains or on impervious surfaces is unavoidable, provide secondary containment for leaks and spills.

Portable toilets shall never be placed directly on top of a storm drain.

- Portable toilets should be located away from areas with high levels of vehicular traffic, but in areas that provide easy access for a pump truck and service staff to reduce the potential for spills during cleanings.

Portable Toilet Maintenance Recommended Procedures:

- Provide a cleaning and maintenance schedule for all public portable toilets. Ensure the schedule is followed.
- Check portable toilets regularly for damages, leaks, and spills.
- Damaged portable toilets must be repaired or replaced immediately.

PET WASTE MANAGEMENT

Pet waste has the potential to pollute stormwater with contaminants such as nutrients and pathogens.

Pet Waste Collection Recommended Procedures:

- Provide pet waste stations equipped with waste bags and covered disposal containers where pets are permitted.
- Post signs detailing proper disposal methods for pet waste.



Educating the public on the effects of abandoning pet waste or disposing of waste bags in catch basins is the most effective method of managing pet waste.

- Schedule routine garbage pickups from pet waste receptacles.

Pet Waste Management Recommended Procedures:

- During the summer, check parks and public trails for abandoned pet waste. Check public open spaces for pet waste prior to mowing and watering. Document pet waste problem areas to consider possible increased public education signs, pet waste stations, or enforcement actions.
- During catch basin cleaning, track locations of excessive pet waste dumping for targeted outreach to the neighborhood.

WATERFOWL MANAGEMENT

Waterfowl, including geese, ducks, and loons, produce waste that has the potential to pollute stormwater with contaminants such as nutrients and pathogens.



Waterfowl Management Recommended Procedures:

- Identify waterfowl congregation areas and take measures to discourage congregation near waterbodies and storm drain systems. Typical measures include, but are not limited to:
 - Installing a 3-foot fence barrier between congregation areas and the storm drain systems or waterbodies.
 - Using strobe lights or reflective tape.
 - Establishing no-mow zones to reduce feeding areas.
 - Planting thick vegetation along waterlines.
 - Placing full-bodied swan or coyote decoys in typical congregation areas.
- Install signage near waterfowl congregation areas to educate the public on the negative effects of waterfowl droppings entering waterbodies and storm drain systems. Include language on the sign to discourage waterfowl feeding.
- Do not destroy geese eggs or remove them from their nests. It is illegal to destroy geese eggs, and geese will continue to lay eggs to replace the missing ones.
- If you are experiencing problems with geese or have any questions regarding waterfowl management, visit <https://www.mass.gov/service-details/learn-about-canada-geese> or contact the Massachusetts Northeast Wildlife District in Ayer, MA at 978-772-2145.

WASTE CONTAINER MANAGEMENT

Waste Container Management Recommended Procedures:



- All waste and recycling containers must have tight-fitting covers or lids and must be leak-tight.
- Periodically inspect waste areas to check for spills and leaks.
- Whenever possible, place waste and recycling containers inside or underneath protective cover (like a roof or overhang) and on impervious surfaces downgradient and/or as far as practicable from storm drain inlets, drainage paths, and natural waterways.
- Schedule routine waste and recycling pickups and ensure waste is disposed of at appropriate and approved disposal facilities.
- Clean and sweep the areas surrounding waste and recycling containers regularly.
- Do not wash out waste or recycling containers outdoors or in a parking lot where the rinse water can easily enter the storm drain system.
- During the summer, check parks and public trails for littering problems. Check public open spaces for litter prior to mowing. Document litter problem areas to consider possibly increasing waste and recycling containers in certain areas or implementing enforcement actions.
- Monitor waste and recycling containers at highly trafficked areas and on holidays to ensure there is no overflow.



VEHICLES AND EQUIPMENT

VEHICLE AND EQUIPMENT MAINTENANCE AND STORAGE

Vehicle and Equipment Maintenance Recommended Procedures:

- Perform routine preventative maintenance to keep vehicles and equipment functioning optimally.
- Conduct routine inspections of vehicles and equipment to identify maintenance needs. Look closely for stains or leaks underneath vehicles.

Never repair vehicles and equipment outside.

- Use drip pans for leaking vehicles until they can be repaired. Monitor active drip pans to prevent overtopping. Provide a labeled location to empty and store drip pans. Dispose of all leaked fluids properly.
- Make sure maintenance areas have spill kits nearby.
- Clean up spills promptly with dry methods (rags and adsorbents), if possible. Promptly and properly dispose of all spill response materials used.

Vehicle and Equipment Storage Recommended Procedures:

- Store and park vehicles and equipment on impervious surfaces at all times and under cover or indoors whenever possible.
- Vehicles with leaks shall be stored indoors or within containment until the leaks are repaired.

Never store leaking vehicles and equipment over a storm drain.

- Perform street sweeping in vehicle and equipment storage areas on a regular basis to remove dirt and leakage stains. Dispose of sweepings properly.
- Keep clutter around stored vehicles and equipment to a minimum to make it easier to identify and clean any leaks.



VEHICLE AND EQUIPMENT WASHING

Vehicle and Equipment Washing Recommended Procedures:

- Vehicle and equipment washing (power washing, steam cleaning, and engine and undercarriage washing, in particular) should not occur outdoors unless wash water is collected and contained in a manner that prevents discharge to the storm drain system.
- Wash all vehicles and equipment in an indoor area designated for washing. Wash water should be collected and recycled for reuse or collected for proper offsite disposal.



Never discharge vehicle or equipment wash water to a storm drain, surface water, or to areas near drinking water wells.

- The preferred means of discharging vehicle and equipment wash water is to the sanitary sewer system, with approval from the local sewer authority (typically in the form of a wastewater discharge permit). Pretreatment of wash water prior to discharge to the sanitary sewer may be required by the sewer authority.
- If wash water is collected in a holding tank for subsequent shipment to a publicly-owned treatment works (POTW), 314 CMR 18.00 regulations apply.
 - 314 CMR 18.00 – Industrial Wastewater Holding Tank and Container Construction, Operation, and Record Keeping Requirements: <https://www.mass.gov/doc/314-cmr-1800-wastewater-holding-tanks-containers/download>
- Wash water generated from rinsing vehicles with detergent-free, solvent-free water under low pressure for the purpose of removing surface dust (not including undercarriage or engine washing or washing of vehicles exposed to hazardous materials) may be allowed to discharge to a vegetated area for infiltration into the ground, but only in accordance with 310 CMR 27.00 and 314 CMR 5.00.
 - 310 CMR 27.00 – Underground Injection Control Regulations: <https://www.mass.gov/doc/310-cmr-2700-underground-injection-control/download>
 - 314 CMR 5.00 – Groundwater Discharge Permit Program: <https://www.mass.gov/doc/314-cmr-500-groundwater-discharge-permits/download>



- Use biodegradable, phosphate free soaps, and use low-pressure techniques to minimize the potential for detaching oil and paint residues, heavy metals, or other potentially hazardous materials from vehicle surfaces.
- Minimize water and soap use when washing vehicles.

Never perform engine or undercarriage washing outdoors.

- All grease, leaks, and spills in the wash area should be cleaned before washing any vehicles or equipment. Refer to the Spill Prevention and Cleanup Procedures for proper cleanup guidelines.
- Contact your local landfill or transfer station to verify whether the grit removed from a wash water holding tank can be disposed of at the facility and if there are limits on the quantity that may be disposed.
- Contact the MassDEP Central Region Solid Waste Section Chief to verify whether there are permitting requirements for disposal or beneficial use of the grit material removed from holding tanks. Refer to the MassDEP's link below for a list of active landfills and transfer stations:

<https://www.mass.gov/lists/massachusetts-landfills-transfer-stations-compost-sites-recycling-facilities>

MassDEP Central
Region

8 New Bond Street
Worcester, MA 01606

508-792-7650

VEHICLE AND EQUIPMENT FUELING

Vehicle and Equipment Fueling Recommended Procedures:



- Maintain fuel storage tanks in accordance with local, state, and federal laws.
- Train all municipal employees (including new/seasonal employees) and subcontractors on proper vehicle and equipment fueling and spill response procedures; conduct annual refresher trainings for all employees.
- Fueling area should be under cover and on an impervious surface.
- Fuel carefully to minimize leaks on the ground and never top off fuel tanks. If necessary, use a funnel to ensure that leaks are minimized.
- Require the person performing the fueling to stay with the vehicle/equipment during the entire fueling operation.

Keep a spill kit, clearly labeled, at or near each fueling station and in all mobile vehicles and equipment.

Contact the MassDEP to report any size spill within two hours of occurrence:

MassDEP
Emergency
Response
Program

Report a Spill of
Oil or Hazardous
Materials

888-304-1133

- Clearly label and tag all valves and switches at the fueling station. Locate the emergency shut off switch in an accessible location near the fuel island.
- Inspect fueling equipment in accordance with Spill Prevention, Control, and Countermeasure Plans and at least monthly for cracks, leaks, corrosion, or structural failures.
- Isolate storm drains from fueling areas using berms or protective covers wherever possible.
- Fueling small equipment in the field should be done on an impervious surface whenever possible (i.e. pavement or concrete) and away from any storm drains or ditches. Use a funnel to ensure that leaks are minimized.
- Perform street sweeping in fueling areas on a regular basis to remove dirt and leakage stains. Dispose of sweepings properly.
- Comply with applicable MassDEP Air Pollution Control Regulations in 310 CMR 7.00 regarding Stage I and II vapor recovery systems for gasoline dispensing facilities.
- 310 CMR 7.00 – Air Pollution Control Regulations: <https://www.mass.gov/doc/310-cmr-700-air-pollution-control-regulations/download>

If a spill occurs while fueling vehicles or equipment, follow the clean-up procedures described in the Spill Prevention and Cleanup section of this manual.

PETROLEUM AND CHEMICAL STORAGE, HANDLING, AND DISPOSAL

Petroleum and Chemical Storage Recommended Procedures:



- Develop and implement a Spill Prevention, Control, and Countermeasure (SPCC) plan if storing more than 1,320 gallons of oil in above ground tanks, containers, and oil-filled equipment (required) on any given facility.
- Register aboveground and underground storage tanks (ASTs and USTs) with the Hudson Fire Department and MassDEP.
- Petroleum and chemical storage tanks may be subject to additional permitting, licensing, and inspection requirements in accordance with Massachusetts Board of Fire Prevention regulations, including, but not limited to:
 - 527 CMR 1.00 – Massachusetts Comprehensive Fire Safety Code: <https://www.mass.gov/doc/massachusetts-527-cmr-100-2015-edition-as-of-october-18-2019/download>
 - 502 CMR 5.00 – Permit and Inspection Requirements of Aboveground Storage Tanks of More Than Ten Thousand Gallons Capacity: <https://www.mass.gov/doc/502-cmr-5-permit-and-inspection-requirements-of-above-ground-storage-tanks-of-more-than-ten/download>
- Verify that any underground storage tanks are managed in accordance 310 CMR 80.000 – Underground Storage Tank Systems Regulations: <https://www.mass.gov/doc/310-cmr-80-underground-storage-tank-systems/download>
- Store materials according to the manufacturer’s specifications under cover and away from high traffic areas, posted with appropriate signage.
- Store incompatible hazardous materials in separate areas.

Never store petroleum or chemical products near a floor drain or storm drain.

- Keep spill kits in areas where petroleum and chemicals are stored. Keep them in well-marked locations where they are readily available. Check the spill kits on a monthly basis and keep them stocked with supplies.
- Petroleum and chemical storage tanks should be surrounded by a berm or other form of secondary containment such as dikes, liners, vaults, or double-walled tanks. If tanks are surrounded by a berm, the area inside the berm should slope

to a drain with a dead-end sump that is periodically pumped out and properly disposed of.

- Visually inspect a new tank or container before use for loose fittings, weak welds, and improper or poorly fitted gaskets.
- Inspect tank foundations, connections, coatings, tank walls and the piping system monthly. Look for corrosion, leaks, cracks, scratches, and other physical damage that may weaken the tank or container system.
- Routinely inspect storage areas for leaks or spills.

Petroleum and Chemical Handling Recommended Procedures:

Train employees in hazardous material handling, safety, spill cleanup, inspections, and reporting on an annual basis.



Management standards for hazardous waste generators include requirements for material storage and handling, container labeling, inspections, onsite storage time limits, recordkeeping, contingency planning, training, and offsite shipping.

- Handle petroleum products and chemicals according to the manufacturer's specifications.
- Conduct oil changes indoors.
- Maintain material Safety Data Sheets (SDSs) for all chemicals used. Make SDSs available on materials that require special handling, storage, or disposal.
- Transfer materials from one container to another indoors in a well-ventilated area.
- Properly label all containers in accordance with Occupational Safety and Health Administration (OSHA) standards. Label each waste container with its contents. Hazardous wastes are required to be labeled with the words "Hazardous Waste," the name of the waste, the hazard associated with the waste, and the accumulation start date.
- Keep waste containers closed except when adding or removing wastes.
- Identify whether facility wastes are subject to 310 CMR 30.000 – Hazardous Waste Regulations. If hazardous wastes are generated (including waste oil), the facility must identify their hazardous waste generator status, obtain a MassDEP generator ID number, and comply with management standards applicable to their generator status. Refer to the following link for hazardous waste generation information: <https://www.mass.gov/guides/hazardous-waste-generation-generators#-why-following-the-rules-is-important->
- Properly dispose of any rainwater that accumulates within secondary containment that may have mixed with the wastes. If petroleum products have

mixed the rainwater they must be treated as waste and disposed of properly; this rainwater should not be discharged to storm drains.

- Do not mix wastes. This can cause dangerous chemical reactions, make recycling impracticable, complicate disposal, and/or make disposal more costly.
- Arrange for regular waste collection in accordance with applicable hazardous waste regulations (for example, large quantity generators may store wastes onsite for no more than 90 days; small quantity generators may store wastes onsite for 180 days).
- Store the waste containers away from storm drains, water bodies, and away from moving vehicles and equipment to prevent accidental spills.

Hot-drain used oil filters for at least 12 hours before disposal.

(Disposal in the regular trash is allowed if no free liquids remain after hot-draining, or after draining and crushing or dismantling in accordance with MassDEP regulations).

Petroleum and Chemical Disposal Recommended Procedures:

- Transport used petroleum and chemical products with a licensed transporter. Refer to the MassDEP web page below for links to lists of Massachusetts licensed hazardous waste transporters and treatment, storage, and disposal facilities: <https://www.mass.gov/hazardous-waste-management>
- Hazardous wastes and waste oil must be shipped offsite using a uniform hazardous waste manifest. Maintain records of the transport of waste oil, hazardous wastes, and other wastes that are sent for disposal on site for three years.
- Dispose of all wastes in accordance with applicable state and federal regulations.

Never place hazardous waste (including gasoline-contaminated waste) in solid waste dumpsters.

- Train employees on proper disposal practices.



PARTS/CLEANING STORAGE

Parts Cleaning Recommended Procedures:

- Do not clean parts outdoors. Perform cleaning in a designated area to minimize the potential for spills.
- Use citrus-based cleaners and steam cleaning, pressure washing, or aqueous washers instead of solvents whenever possible. Keep parts cleaner lids closed except when in use.
- Store waste parts cleaners indoors and in properly labeled containers in accordance with applicable regulations. Many waste parts cleaning solvents are regulated as hazardous wastes in Massachusetts.
- Comply with the applicable hazardous waste generator regulations in 310 CMR 30.000 for hazardous waste parts cleaners and any other hazardous wastes generated (e.g. waste oil). There are different applicable requirements depending on the amount and type of hazardous wastes generated.
 - 310 CMR 30.000 – Hazardous Waste Regulations:
<https://www.mass.gov/doc/310-cmr-30000-hazardous-waste-regulations/download>
- Dispose of all waste parts cleaners properly with a licensed contractor on a frequent basis. Store waste products in approved and well-marked containers. Refer to the MassDEP web page below for links to lists of Massachusetts licensed hazardous waste transporters and treatment, storage, and disposal facilities:
<https://www.mass.gov/hazardous-waste-management>

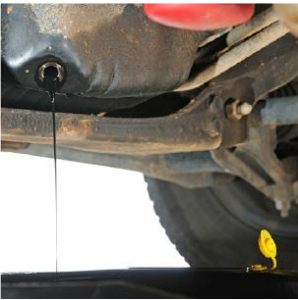
Never dispose of spent cleaners or wash water down floor drains, sinks, storm drains, onto the ground, or into a waterbody.

Spare Parts Storage Recommended Procedures:

- Store spare parts in a designated area either inside or under cover.
- Clean petroleum products from any spare parts as much as possible prior to storage.

Use drip pans for any parts or vehicles that are dripping fluids.

- Routinely monitor storage areas for staining and leaking.
- Collect any waste oil in accordance with applicable MassDEP Hazardous Waste Regulations in 310 CMR 30.000.





Police and DPW Building

BUILDINGS AND FACILITIES

SPILL PREVENTION, RESPONSE, AND CLEANUP

Spill Prevention Recommended Procedures:



Develop and maintain a Spill Prevention Control and Countermeasure (SPCC) Plan in accordance with 40 CFR Part 112 if the facility stores more than a total of 1,320 gallons of oil in above-ground storage tanks, containers, and oil-filled equipment. Written spill prevention and response plans/procedures may be required under other regulatory programs, such as hazardous waste contingency plans (310 CMR 30.000) and OSHA emergency response plans (29 CFR 1910.120), if applicable.

- Train all municipal employees (including new/seasonal employees) on proper methods of spill prevention, response, cleanup, and record keeping. Conduct annual refresher trainings.
- Keep spill kits in areas where petroleum or hazardous materials are stored. Keep them in well-marked locations where they are readily available.
- Check spill kits on a monthly basis and keep them stocked with supplies.
- Label all petroleum or hazardous material storage containers so they are easily identifiable. Check containers often to ensure that leaks or spills have not occurred.
- If possible, store all hazardous materials indoors. If this is not possible, keep all materials that are outside under cover and away from storm drains and waterbodies.
- Keep rain off materials in outside storage areas by installing a permanent structure over these areas or covering them with a tarp.
- Berm material storage areas to easily contain any leaks or spills that may occur.
- Place absorbent materials underneath all mounted taps and at any potential spill and drip location while filling and unloading storage containers. Filling and/or unloading storage containers should occur on impervious surfaces and away from storm drains, to the extent practicable. Any collected liquids or used absorbent materials should be reused, recycled, or disposed of properly.
- Install spill control devices, such as an outlet hood, in catch basins that collect runoff from storage areas where oils, gases, or other materials are present.
- Develop and implement standardized containment, storage, and disposal activities, reporting procedures and documentation, and follow-up procedures.

40 CFR 112 – Oil Pollution Prevention:
https://www.epa.gov/sites/production/files/2014-04/documents/b_40cfr112.pdf

310 CMR 30.000 – Hazardous Waste:
<https://www.mass.gov/doc/310-cmr-30000-hazardous-waste-regulations/download>

29 CFR 1910.120 – Hazardous Waste Operations and Emergency Response:
<https://www.osha.gov/laws-regs/regulations/standards/1910/1910.120>

Spill Response Recommended Procedures:

Contact your immediate supervisor and department head to report any spill.

MassDEP Oil and Hazardous Materials List – Reportable Quantity Look-Up:

<http://eeaonline.eea.state.ma.us/DEP/MOM/HL/hazmat.aspx>

- Contact the Department of Public Works and the Fire Department following a spill (immediately for all spills that enter the sewer system, storm drain system, or surface water).
 - Hudson Department of Public Works: 978-562-9333
 - Hudson Fire Department: 978-562-5565
- Contact MassDEP to report spills that exceed their applicable reportable quantity. Refer to 310 CMR 40.1600 for reportable spill quantities and reporting deadlines.

MassDEP Emergency Response Program – 888-304-1133

National Response Center

800-424-8802

<https://www.epa.gov/emergency-response/national-response-center>

- Depending on the spilled material, quantity and location, other agencies may require notification. For example:
 - A release of oil that causes a visible sheen on surface water or a release of a hazardous chemical listed in 40 CFR 302.4 in an amount equal to or greater than its reportable quantity is reportable to the National Response Center.
 - 40 CFR 302.4 – Designation of Hazardous Substances: <https://www.govinfo.gov/content/pkg/CFR-2004-title40-vol26/pdf/CFR-2004-title40-vol26-sec302-4.pdf>
 - A release of an extremely hazardous substance listed in 40 CFR 355 in an amount equal to or greater than its reportable quantity must be reported to the local emergency planning committee (LEPC) and the State Emergency Response Commission (SERC).
 - 40 CFR 355 – Emergency Planning and Notification: <https://www.govinfo.gov/content/pkg/CFR-2016-title40-vol30/pdf/CFR-2016-title40-vol30-part355.pdf>
- For additional MassDEP guidance for municipalities on management of spills, refer to: <https://www.mass.gov/files/documents/2016/08/xm/spillmgm.pdf>
- For guidance to determine when you are required to report spills to the EPA, refer to: <https://www.epa.gov/emergency-response/when-are-you-required-report-oil-spill-and-hazardous-substance-release>

Contact the Massachusetts State Emergency Response Commission (SERC) to find your Local Emergency Planning Committee (LEPC)

<https://www.epa.gov/epcra/state-emergency-response-commissions-contacts#ma>

Spill Cleanup Recommended Procedures:

For all leaks and spills, cleanup should be performed by municipal employees only to the extent that it can be done safely and in accordance with their level of training received (such as OSHA training pursuant to 29 C.F.R. 1910.120). If a spill cannot be safely handled by municipal employees, contact a licensed spill cleanup contractor.

- Stop the source of the spill if safe to do so.
- Deploy containment booms if the spill has the potential to reach a storm drain or nearby surface water.
- For spills that cannot be safely handled by municipal employees in accordance with their level of spill response training, contact a licensed spill cleanup contractor.
- Depending on the size and severity of the spill, a Massachusetts Licensed Site Professional (LSP) may need to be hired to oversee the cleanup and follow-up activities.
- Use an absorbent material for general cleanup of liquids in accordance with spill response training. Do not hose down the spill.
- Use brooms or shovels for the general cleanup of dry materials in accordance with spill response training. Never hose down or bury dry material spills.
- Use as little water as possible during cleanup activities.
- Clean or dispose of the cleanup equipment, and properly dispose of all wastes generated during the cleanup with a licensed contractor. Refer to the MassDEP web page below for links to lists of Massachusetts licensed hazardous waste transporters and treatment, storage, and disposal facilities:

<https://www.mass.gov/hazardous-waste-management>

After a spill has been properly cleaned, a detailed report about the incident should be completed and submitted to the Hudson Department of Public Works.



GARBAGE STORAGE



Consider adding locks to waste and recycling containers located in public areas.

- Keep all waste and recycling containers covered. Tarps or other covers may be used to cover large containers (e.g. 30-yard roll offs).
- Keep all container lids closed at all times, except when adding or removing material.
- All waste receptacles should be leak-tight with tight-fitting lids or covers.
- Never place liquids or liquid-containing wastes in a dumpster or trash receptacle.
- Whenever possible, place waste and recycling receptacles inside or underneath protective cover (like a roof or overhang).
- Do not place outdoor waste and recycling receptacles near storm drains or other drainage systems such as ditches.
- Periodically inspect waste storage containers and their surrounding areas for spills and leaks.
- Clean and sweep the areas surrounding outdoor waste containers regularly and immediately prior to any expected storm event.
- Schedule routine waste and recycling pickups at a minimum of once per week and ensure materials are disposed of at appropriate and approved facilities.

PAINTING

Painting Recommended Procedures:



- Municipal employees performing renovation, repair, and painting projects that disturb lead-based paint in facilities built before 1978 must be certified and follow specific work practices to prevent lead contamination. Refer to the EPA's link below for more information regarding the Lead Renovation, Repair, and Painting Program <https://www.epa.gov/lead/lead-renovation-repair-and-painting-program>
- Contact MassDEP to determine if air emission permits are required: <https://www.mass.gov/air-quality-permitting-reporting>

Never dispose of paint, waste paint products, or rinse water from paint cans, brushes, and other painting equipment into a storm drain, gutter, the ground, street, or a waterbody.

- Store waste paints, solvents, and rags in sealed fire- and explosion-proof containers and perform blasting and spray painting in compliance with applicable MassDEP hazardous waste regulations detailed in 310 CMR 30.000.
- Use drop cloths under any painting or preparation activity such as scraping or sandblasting. Clean up after exterior activities to avoid migration of chips and dust into storm drains.
- Replace solvent-based paints with less toxic paints such as latex or water-based paints whenever possible.
- Waste paints, thinners, solvents, residues, and sludges that constitute hazardous waste as defined in 310 CMR 30.000 must be managed and/or disposed of as hazardous waste. Refer to the following MassDEP web page for links to lists of Massachusetts licensed hazardous waste transporters and treatment, storage, and disposal facilities: <http://www.mass.gov/hazardous-waste-management>
- When thoroughly dry, nonhazardous latex paint and paint cans, used brushes, rags, absorbent materials, and drop cloths should be disposed of as solid waste at an appropriate disposal facility.



Street Painting Recommended Procedures:

- Develop paint-handling procedures for proper use, storage, and disposal of paints.
- Transfer and load paints and hot thermoplastics away from storm drain inlets.
- Replace paints containing lead and tributyltin with less toxic alternatives.
- Use water-based paints.
- Clean water-based paint application equipment in a sink that is connected to the sanitary sewer or an appropriate on-site wastewater disposal facility and in accordance with applicable wastewater discharge permits and regulations.
- If leftover paints can be used for future projects, properly store leftover paints according to the manufacturer's recommendations. If there will be no use for leftover paints on future project, dispose of the leftovers at an appropriate disposal facility.

Dispose of leftover paints properly. Some paints are considered hazardous wastes once they are no longer intended for use. When thoroughly dry, nonhazardous paint may be disposed of as solid waste at an appropriate facility.

FLOOR DRAINS

Floor Drains Recommended Procedures:



Know where all floor drains discharge. Interior floor drains should never be directly connected to a storm drain system.

- Floor drains should be connected to an off-line holding tank or to the sanitary sewer system via an oil/water separator. Never use floor drains if you are unsure of their discharge location.
 - Register holding tanks with the Hudson Fire Department.
- Floor drains servicing vehicle or equipment maintenance areas or other hazardous material storage with potential for spills should have labeled spill kits nearby.
- Keep a spill kit within close proximity of floor drains. Check the spill kits on a monthly basis and keep them stocked with supplies.
- Maintain a regular inspection and clean-out procedure for floor drains, holding tanks, and oil/ water separators (if applicable).
- Obtain and use drain mats, containment booms, or protective covers to cover floor drains if a spill occurs.
- Store hazardous materials away from floor drains.
- Never dump hazardous materials into floor drains.
- Floor drains must be installed, operated, and maintained in accordance with all state and local regulations, including, but not limited to:
 - 248 CMR 10.00 – Massachusetts Uniform State Plumbing Code: <https://www.mass.gov/doc/248-cmr-1000-uniform-state-plumbing-code-0/download>
 - 310 CMR 22.00 – Drinking Water: <https://www.mass.gov/doc/310-cmr-2200-the-massachusetts-drinking-water-regulations/download>

SEPTIC SYSTEM MANAGEMENT

When septic systems fail, they have the ability to cause serious health threats to communities and the environment.



Septic System Management Recommended Procedures:

If a septic system fails, you should immediately contact the Hudson Health Department at 978-562-2020.

- Septic systems should be inspected and pumped every 3 to 5 years. Alternative septic systems with mechanical components should be inspected once a year.
- Keep a record of all septic system inspections, repairs, and pumping for future reference.
- Never park or drive on a drainfield.
- Plant trees at least 30 feet from the drainfield to prevent their roots from growing into the septic system.
- Divert roof drains, sump pumps, surface water, and other storm drain systems away from septic systems, as excess water near the system can hinder the wastewater treatment process.
- Only flush human waste and toilet paper down toilets. Flushing items like non-flushable wipes, diapers, paper towels, cat litter, greases, oils, and household chemicals (to name a few) can clog the drainfield.
- Use only septic system additives that have been approved for use in Massachusetts by MassDEP. Refer to this link for approved additives: <https://www.mass.gov/guides/septic-system-additives-allowed-for-use-under-title-5>
- Refer to MassDEP's Title 5/Septic System Policies and Guidance for information regarding how MassDEP administers the Title 5 program as well as technical design guidance: <https://www.mass.gov/lists/title-5septic-systems-policies-guidance>

All septic systems must comply with Massachusetts Title 5 Regulations (310 CMR 15.00).

Title 5 Hotline:
617-292-5673

<https://www.mass.gov/doc/310-cmr-15000-title-5-of-the-state-environmental-code/download>



MS4 INFRASTRUCTURE OPERATIONS & MAINTENANCE

Under the 2016 Small MS4 General Permit for Massachusetts, municipalities are required to meet specific operations and maintenance requirements for their roads and stormwater management infrastructure. The links below provide general guidance regarding road maintenance, catch basin cleaning, street sweeping, and inspection and maintenance of structural stormwater control facilities (best management practices—BMPs); these four topics are covered more in-depth in their specific standard operating procedures (SOPs) in Appendix B.

WINTER ROAD MAINTENANCE

- Follow MassDEP snow disposal guidance: <https://www.mass.gov/guides/snow-disposal-guidance>
- Follow MassDEP guidelines for road salt storage: <https://www.mass.gov/guides/guidelines-on-road-salt-storage>
- Refer to MassDOT for more information on road treatment materials, application guidelines, and reduced salt areas: <http://www.mass.gov/service-details/road-treatment-types>

CATCH BASIN CLEANING

- Follow MassDEP guidelines for management of catch basin cleanings: <https://www.mass.gov/doc/catch-basin-cleanings-management-guidelines/download>

STREET SWEEPING

- Follow MassDEP guidelines for reuse and disposal of street sweepings: <https://www.mass.gov/files/documents/2018/05/14/street-sweepings.pdf>

INSPECTION AND MAINTENANCE OF STRUCTURAL STORMWATER CONTROL FACILITIES (BMPS)

- Follow the Massachusetts Stormwater Handbook guidelines for stormwater BMP Operations and Maintenance: <https://www.mass.gov/guides/massachusetts-stormwater-handbook-and-stormwater-standards>



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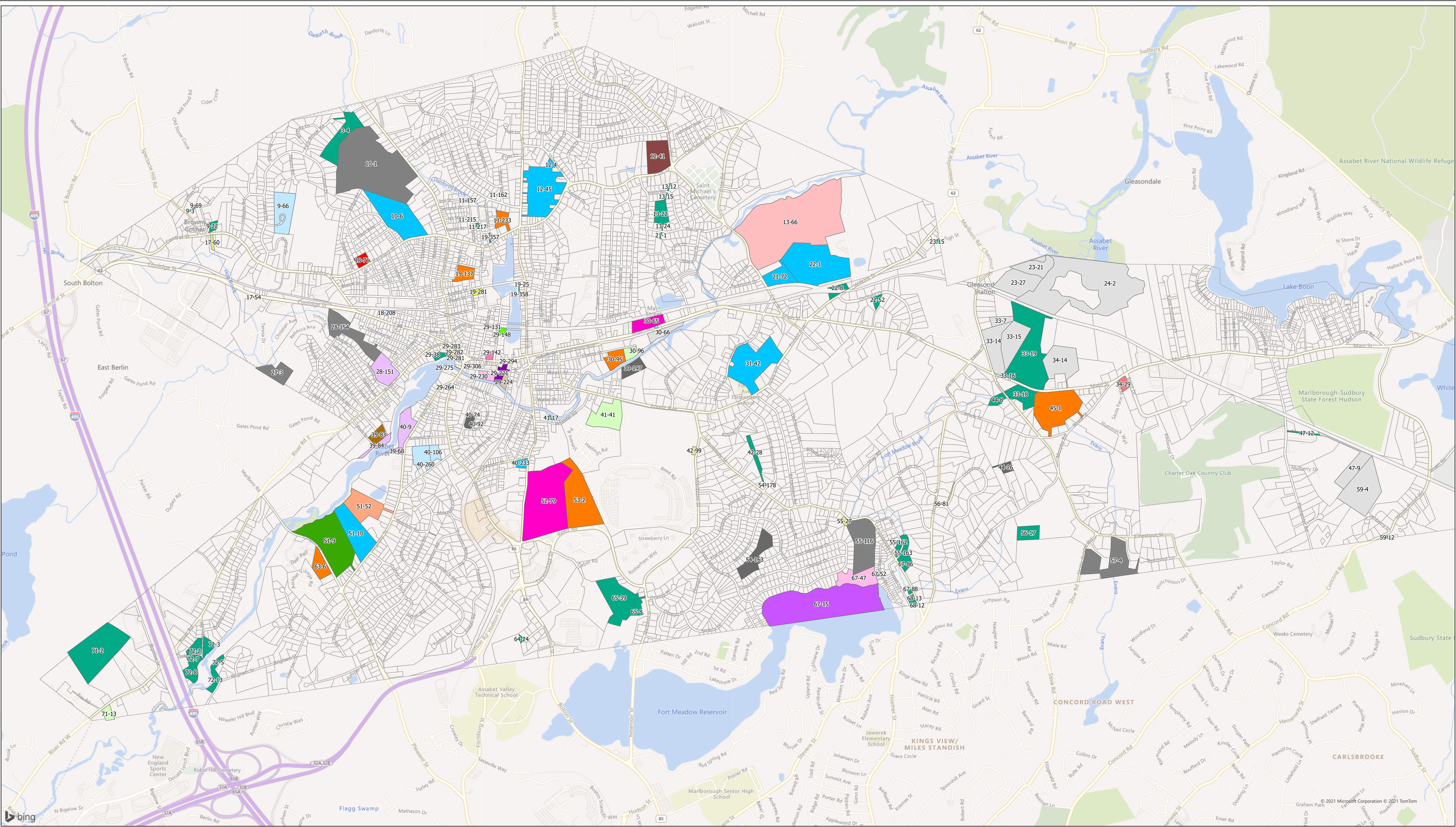
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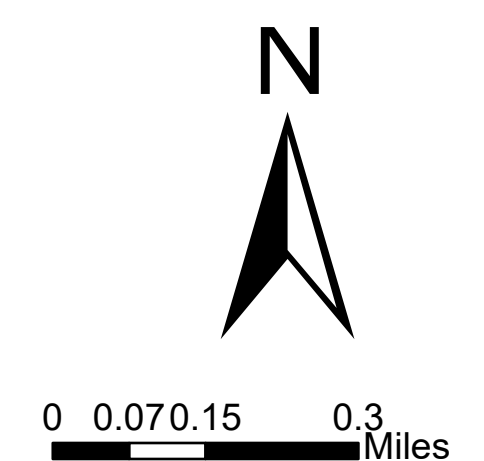
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**APPENDIX A – 2021 Town of Hudson Municipal Facilities with
Potential Stormwater Polluting Activities**



Municipally Owned Properties
 Hudson, MA
 Project #: 0230927.03
 Map Created: June 2021



- | | | | | |
|-------------------------------|-------------------------------|-------------------|----------------------------------|--------------------------|
| Abandoned Building | Beach | Housing Authority | Public Works | Skate Park & Parking Lot |
| Administration | Cemetery | Library | Public Works & Police Department | Town Hall |
| Aqueduct | Community Garden | Light & Power | Pump Station | Vacant Lot |
| Athletic Fields | Conservation Land | Park | School | Water Tank |
| Athletic Fields & Parking Lot | Fire Department | Parking Lot | School & Athletic Fields | Wooded Lot |
| | Fire Department & Parking Lot | Playground | Senior Center | Parcels |

Third Party GIS Disclaimer: This map is for reference and graphical purposes only and should not be relied upon by third parties for any legal decisions. Any reliance upon the map or data contained herein shall be at the users' sole risk.



Town of Hudson Municipal Facilities with Potential Stormwater Polluting Activities (created in 2021)

Facility Name	Location	Map Parcel	Land Use	Parks and Open Space								Vehicles and Equipment					Buildings and Facilities				
				Erosion Prevention and Sediment Control	Lawn Care and Landscape Maintenance	Proper Use, Storage and Disposal of Pesticides and Fertilizers	Athletic Field Maintenance	Portable Toilet Management	Pet Waste Management	Waterfowl Management	Waste Container Management	Vehicle and Equipment Maintenance and Storage	Vehicle and Equipment Washing	Vehicle and Equipment Fueling	Petroleum and Chemical Storage, Handling, and Disposal	Parts/Cleaning Storage	Spill Prevention, Response, and Cleanup	Garbage Storage	Painting	Floor Drains	Septic System Management
Hudson Public Schools Administration Building	155 APSLEY ST	19-281	Administration	X	X							X						X	X		
Riverside Park	0 CHAPIN RD	63-6	Athletic Fields	X	X	X	X	X	X			X						X	X		
	0 TECHNOLOGY DR	53-2	Athletic Fields	X	X	X	X	X	X			X						X	X		
Cherry Street Fields	0 CHERRY ST & PARK	30-95	Athletic Fields	X	X	X	X	X	X			X						X	X		
Sauta Complex	539 MAIN ST	45-1	Athletic Fields	X	X	X	X	X	X			X						X	X		
Moultons Field and Playground	0 MARION ST	19-137	Athletic Fields	X	X	X	X	X	X			X						X	X		
	0 COX ST	11-233	Athletic Fields	X	X	X	X	X	X			X						X	X		
Hudson High School Fields	0 CHAPIN RD	51-9	Athletic Fields & Parking Lot	X	X	X	X	X	X			X						X	X		
Centennial Beach	0 FORT MEADOW RES	67-15	Beach	X				X	X	X	X							X			
Forestvale Cemetery	0 BROAD ST	52-79	Cemetery	X	X	X					X										
Main Street Cemetery	0 MAIN ST	30-65	Cemetery	X	X	X					X										
Hudson Community Garden	10 PORT ST	39-83	Community Garden	X	X	X		X			X	X						X			
Simpson Road Park	0 CHESTNUT ST	57-4	Conservation Land	X						X	X										
Morse Property	0 CAUSEWAY ST	55-116	Conservation Land	X						X	X										
Hog Brook	0 LINDEN ST	28-154	Conservation Land	X						X	X										
Crystal Springs	0 STILL DR	27-3	Conservation Land	X						X	X										
Danforth Creek Property	0 PHILLIPS VILLA	10-1	Conservation Land	X						X	X										
	0 MAIN ST	34-29	Fire Department	X	X							X	X	X	X	X	X	X	X	X	X
Hudson Fire Station 1	8 RIVER ST	29-283	Fire Department & Parking Lot	X	X							X	X	X	X	X	X	X	X	X	X
Hudson Housing Authority	1 BRIGHAM ST	40-260	Housing Authority	X	X					X		X						X	X		
Hudson Housing Authority	1 BRIGHAM CIR	40-106	Housing Authority	X	X					X		X						X	X		
Hudson Housing Authority	0 FRANKLIN & IRVING ST	18-208	Housing Authority	X	X					X		X						X	X		
Hudson Housing Authority	0 GLEN RD	9-66	Housing Authority	X	X					X		X						X	X		
Hudson Housing Authority	49 WASHINGTON ST	29-264	Housing Authority	X	X					X		X						X	X		
Hudson Public Library	2 WASHINGTON ST	29-282	Library	X	X													X	X		
	0 RIVER RD	71-13	Light & Power	X	X																
Hudson Light & Power Department	49 FOREST AVE	41-41	Light & Power	X	X							X	X	X	X	X	X	X	X		
	0 WASHINGTON ST	29-275	Light & Power	X	X																
Hudson Light & Power Department	77 CHERRY ST	30-96	Light & Power	X	X							X	X	X	X	X	X	X	X		
Tripps Pond	0 RIVER ST	28-151	Park	X	X					X	X	X						X			
	0 PARK ST	39-68	Park	X	X					X	X	X						X			
	0 PORT ST & PARK	39-84	Park	X	X					X	X	X						X			
Wood Park	0 PARK ST	40-9	Park	X	X					X	X	X						X			
Liberty Park	8 WASHINGTON ST	29-281	Park	X	X					X	X	X						X			
Centennial Beach	0 FORT MEADOW DR & SEBAGO	67-47	Parking Lot	X	X					X		X									
	0 SOUTH ST	29-306	Parking Lot	X	X							X									
	0 SOUTH ST	29-230	Parking Lot	X	X							X									
	0 CHURCH & POPE ST	29-131	Parking Lot	X	X							X									
Cellucci Park	39 SOUTH ST	29-224	Playground	X	X					X		X									
	0 PARMENTER RD	59-4	Public Works	X	X										X	X	X	X	X	X	X
	0 PARMENTER RD	47-9	Public Works	X	X										X	X	X	X	X	X	X
	0 MAIN ST	33-15	Public Works	X	X	X									X	X	X	X	X	X	X
	0 MAIN ST	34-14	Public Works	X	X	X									X	X	X	X	X	X	X

Town of Hudson Municipal Facilities with Potential Stormwater Polluting Activities (created in 2021)

Facility Name	Location	Map Parcel	Land Use	Parks and Open Space							Vehicles and Equipment					Buildings and Facilities				
				Erosion Prevention and Sediment Control	Lawn Care and Landscape Maintenance	Proper Use, Storage and Disposal of Pesticides and Fertilizers	Athletic Field Maintenance	Portable Toilet Management	Pet Waste Management	Waterfowl Management	Waste Container Management	Vehicle and Equipment Maintenance and Storage	Vehicle and Equipment Washing	Vehicle and Equipment Fueling	Petroleum and Chemical Storage, Handling, and Disposal	Parts/Cleaning Storage	Spill Prevention, Response, and Cleanup	Garbage Storage	Painting	Floor Drains
	405 MAIN ST	30-66	Public Works	X	X	X									X	X	X	X	X	X
Water Treatment Plant	0 CHESTNUT ST	33-14	Public Works	X	X	X									X	X	X	X	X	X
	0 CHESTNUT ST	33-7	Public Works	X	X	X									X	X	X	X	X	X
	0 CHESTNUT ST	23-27	Public Works	X	X	X									X	X	X	X	X	X
	0 MAIN ST	24-2	Public Works	X	X	X									X	X	X	X	X	X
	0 CHESTNUT ST	23-21	Public Works	X	X	X									X	X	X	X	X	X
Hudson Fire, Police, and Water	0 MUNICIPAL DR	13-66	Public Works & Police Department	X	X	X						X	X	X	X	X	X	X	X	X
Hudson High School	69 BRIGHAM ST	51-10	School	X	X	X					X						X	X		
Joseph L. Mulready Elementary School	0 FRONT OF COX ST SCHOOL	21-72	School	X	X	X					X						X	X		
Forest Avenue Elementary School	136 FOREST AVE SCHOOL	31-42	School	X	X	X					X						X	X		
Forest Avenue Elementary School	0 COX ST	22-1	School	X	X	X					X						X	X		
David J. Quinn Middle School	0 STRATTON RD	12-4	School	X	X	X					X						X	X		
Camela A. Farley Elementary School	119 COTTAGE ST	10-6	School	X	X	X					X						X	X		
David J. Quinn Middle School	201 MANNING ST	12-45	School	X	X	X					X						X	X		
Broad Street School	119 BROAD ST	40-233	School	X	X	X					X						X	X		
Hudson High School	0 BRIGHAM ST	51-52	School & Athletic Fields	X	X	X					X						X	X		
Hudson Council on Aging	29 CHURCH ST	29-148	Senior Center	X	X												X	X		
South Street Skatepark	37 SOUTH ST	29-221	Skate Park & Parking Lot	X	X						X									
Hudson Treasurer's Office	78 MAIN ST	29-142	Town Hall	X	X												X	X		



APPENDIX B – MS4 Infrastructure Operations & Maintenance SOPs

Standard Operating Procedure

Town of Hudson

Department of Public Works

Winter Road Maintenance



Issue Date: June 2021

Revision: 0

Revision Date:

Responsible Parties

Department of Public Works

Purpose of SOP

Document the Town's procedures for winter road maintenance, use and storage of salt and sand, and proper disposal of snow.

MS4 Permit – Required Level of Service

- Evaluate and implement ways to reduce the use of salts and/or use alternative materials in their place. (In the MS4 Permit, "salt" refers to any chloride-containing material used to treat paved surfaces for deicing, including sodium chloride, calcium chloride, magnesium chloride, and brine solutions.)
- Ensure that snow is not disposed into waters of the United States.

Equipment

The Town owns, operates, and maintains various ice control and snow removal equipment.

Materials and Storage

Prior to each winter season, the Town assesses deicing materials, and to the extent practical, selects materials that have the least impact on water quality while still effectively meeting the Town's public safety needs for a variety of winter conditions. The Town's major materials used in snow and ice control are salt and magnesium chloride. These materials are stockpiled in a salt shed at the DPW Facility, located at 1 Municipal Drive. The quantity of these materials is assessed in advance of a storm event to ensure supply is sufficient. Stocks are replenished between events.

- **Cover from Precipitation:** Deicing materials are stored in the salt shed at the DPW Facility unless active loading or spreading is occurring. The containment structure is permanent in its construction and made of materials that are not subject to salt corrosion. Temporary storage of deicers is not recommended; however, if materials must be stored outside of a permanent structure, the storage must be on a temporary basis only. Temporary storage piles are covered with a tarp and adequately secured at all times when not being actively worked.
- **Impervious Bottom:** Deicing materials are only stored on an impervious surface such as a concrete slab or an asphalt parking lot. The use of a tarp or other material as an impervious bottom is not adequate, unless specifically designed and certified by a professional engineer.
- **Management of Run-on and Run-off:** Deicing materials are stored away from storm drain inlets and other conveyance structures. Storage structures provide adequate barriers to prevent run-on into the storage pile, runoff from the storage pile, and minimize erosion from the pile.

Operations

- **Weather Forecasts:** The Town monitors multiple local weather forecasts to inform winter operations.
- **Mobilization:** If a storm begins during the typical workday, crew members receive direct orders regarding routes from the DPW Operations Manager. If a storm begins after hours, crew members will receive a phone call from the DPW Operations Manager to report and then will receive orders when they arrive onsite.
- **Route Prioritization:** The Town plows and treats all Town-owned roadways and parking lots for most storm events following established plowing routes. Primary and secondary roads are typically treated first; sidewalks are typically maintained after all roadways are cleared. During isolated storm events that only affect certain areas of the Town, limited routes are selected to deice those areas.

Standard Operating Procedure

Town of Hudson

Department of Public Works

Winter Road Maintenance



Issue Date: June 2021

Revision: 0

Revision Date:

- **Deicing:** The Town evaluates the timing and extent that deicing materials are applied during and at the end of a storm event based on the post-storm weather and road conditions.
- **Equipment Calibration:** All equipment is calibrated annually in accordance with the manufacturer's instructions and the specified applications rates for the material being applied.
- **Application Rate:** The Town uses the lowest application rate that will effectively treat surfaces to meet safety needs.
- **Loading:** When loading deicers, care is taken to not overfill the truck and spilled material is cleaned up following loading operations.
- **Snow Pile Placement:** The Town has one designated snow pile placement site at the DPW Facility.

Maintenance

- Loading areas are swept frequently to prevent the build-up and run-off of deicers. At a minimum, loading areas are inspected and swept when needed.

Record Keeping and Documentation

- Copies of manufacturer's recommendations for equipment calibration, plowing speed, and deicer application rates as well as calibration records and documentation of new equipment purchases are kept at the DPW Facility.
- Equipment operators document the number of truckloads of deicing materials used during each winter storm event.
- Every spring, invoices are tallied to document the total amounts of deicing materials used during the winter season.
- The Town documents the miles of roads plowed or treated, the approximate totals of materials used, and evaluates opportunities to minimize the use of materials annually. Efforts to reduce chloride-containing materials are reported in the Town's MS4 annual report.

Training

- This SOP is incorporated into annual training for applicable Town staff. Documentation of the trainings, including sign-in sheets and learning materials used, will be included in the Town's MS4 annual reports.

Revising the SOP

- These procedures are reviewed annually by the DPW and updated as needed.

Standard Operating Procedure

Town of Hudson

Department of Public Works

Catch Basin Inspection and Cleaning



Issue Date: June 2021

Revision: 0

Revision Date:

Responsible Parties

Department of Public Works

Purpose of SOP

Document the Town's procedures for the operation and maintenance of catch basins, frequency and optimization of cleaning programs, disposal of cleanings, and record keeping.

MS4 Permit – Required Level of Service

- Document the number of catch basins cleaned, inspected, and the total volume or weight of material removed from catch basins annually.
- Establish a catch basin cleaning schedule with the goal of providing routine cleaning at a frequency that ensures no catch basin will be more than 50 percent full of sediment at any time.
- Prioritize catch basin cleaning in areas with high potential pollutant loads that discharge to waters impaired by turbidity and total suspended solids.
- Clean catch basins more frequently if they are located near construction sites or if annual inspection and maintenance activities indicate excessive sediment (sump greater than 50 percent full) or debris loadings.
- Verify catch basin cleanings are stored and disposed of properly.

Equipment

The Town subcontracts catch basin cleaning to a contractor that owns and operates a clamshell bucket. The Town periodically performs catch basin cleaning with a vacuum truck that they own, operate, and maintain.

Operations

- All Town-owned catch basins are inspected annually, and catch basins are cleaned bi-annually.
- The goal of the catch basin inspection/cleaning schedule is to conduct routine cleanings to confirm that no catch basin will become more than 50 percent full. Each catch basin sump is assessed to determine if it is more than 50 percent full based on whether the contents exceed one half the distance between the bottom interior of the catch basin to the invert of the deepest outlet of the catch basin.
- If necessary, schedule adjustments will be made to prioritize catch basins located at known problem areas (low spots) and near construction activities (roadway construction, residential, commercial, or industrial development). If inspections and maintenance activities indicate excessive sediment and debris loading, these catch basins will be marked for more frequent cleaning. To aid in minimizing catch basin sediment loading, streets are swept a minimum of twice per year, during the spring and fall.
- The cleaning schedule will be assessed annually and updated as necessary.
- Catch basin inspection and cleaning procedures address both the grate opening and the basin sump.
- Catch basin inspections and actions and repairs associated with identified problem areas and structural damages are performed by the Town. Catch basin cleaning is performed by a subcontractor.
- For each catch basin cleaned, the Town's subcontractor documents date, time, location, estimated quantity of material removed, and observations about the condition of the structures and standing water quality (if present).
- If spills that reach the catch basin occur or visual evidence of illicit discharges are observed within the catch basin, the information shall be reported to the DPW Operations Manager by the observing personnel within 24 hours.

Standard Operating Procedure

Town of Hudson

Department of Public Works

Catch Basin Inspection and Cleaning



Issue Date: June 2021

Revision: 0

Revision Date:

Maintenance

- If catch basins require repair and maintenance, the issues shall be reported to the DPW Operations Manager by the observing personnel.

Management, Storage, and Disposal

- Water from cleanings is decanted during catch basin cleaning.
- Catch basin cleanings are temporarily stockpiled at the DPW Facility prior to being hauled to the Town's Transfer Station.
- Any cleanings that are visually contaminated must be kept in a separate stockpile to evaluate appropriate disposal options.
- Town-owned equipment is stored at the DPW Facility at 1 Municipal Drive.

Record Keeping and Documentation

- Record logs are kept at the DPW Facility.
- The total number of catch basins cleaned and inspected and the amount of cleaning residuals generated are recorded after each annual inspection and/or cleaning event. This information is summarized and reported in the Town's MS4 annual report.

Training

- This SOP will be incorporated into annual training for applicable Town staff. Documentation of the trainings, including sign-in sheets and learning materials used, will be included in the Town's MS4 annual reports.

Revising the SOP

- These procedures are reviewed annually by the DPW and updated as needed.

Standard Operating Procedure

Town of Hudson

Department of Public Works

Sweeping Streets and Parking Lots



Issue Date: June 2021

Revision: 0

Revision Date:

Responsible Parties

Department of Public Works

Purpose of SOP

Document the Town's procedures for the operation and maintenance of street sweepers, frequency of sweeping, disposal of sweepings, and record keeping. The procedures are implemented to keep Town roads and parking lots clean and to minimize pollution entering the stormwater drainage systems.

MS4 Permit – Required Level of Service

- All municipally owned streets and parking lots shall be swept a minimum of once per year in the spring.
- Increase street sweeping frequencies on all streets and parking lots that discharge to waters impaired by Total Phosphorus or with a high potential pollutant load to a minimum of twice per year, during the spring and the fall.
- If necessary, sweep streets more frequently based on catch basin cleaning and inspection results, nearby land uses, potential for pollutant road reduction, or if there are nearby water quality-limited or TMDL waters.
- Verify street sweepings are stored and disposed of properly.
- Document the mileage of streets swept and total volume or weight of street sweepings removed annually.

Equipment

The Town owns, operates, and maintains the following equipment for street sweeping:

- 2 Elgin Pelican Mechanical Sweepers

Operations

- At a minimum, street and parking lot sweeping takes place twice per year, during the spring and fall months. Certain priority streets get swept more than twice per year.
- If necessary, schedule adjustments are made to prioritize streets with known problem areas (low spots or where catch basin inspections indicate excessive sediment and debris loading) and near construction activities (roadway construction, residential, commercial, or industrial development).
- The Town posts street sweeping schedules on their website to inform residents of their sweeping activities.
- The sweeping schedule is assessed annually and updated as necessary.
- Sweeping does not typically take place during rain events or during the winter months.
- The stockpiling of material takes place at the DPW Facility prior to disposal.
- If spills occur or illegal discharges are observed during sweeping, the information is reported to the DPW Operations Manager within 24 hours.
- Sweepers are operated according to the manufacturer's recommended settings, standards, and procedures.

Maintenance

- Sweepers are checked for mechanical issues or leaks after every use. Staff immediately contain and properly clean up any spills and dispose of material properly. Spill clean-up supplies are available at the DPW Facility located at 1 Municipal Drive. Mechanical issues are reported to the DPW Operations Manager.
- Equipment is washed and stored at the DPW Facility.
- Left-over debris is scraped out from the hopper daily and combined with the sweepings pile.

Standard Operating Procedure

Town of Hudson

Department of Public Works

Sweeping Streets and Parking Lots



Issue Date: June 2021

Revision: 0

Revision Date:

Storage and Disposal

- Street sweepings are temporarily stockpiled at the DPW Facility. Material is sampled annually and analyzed by a laboratory for contaminants. The material is then hauled to an approved landfill for disposal.

Record Keeping and Documentation

- Records, including the most recent sweeping equipment manufacturer's recommended settings, standards, and procedures, are kept at the DPW Facility.
- Street sweeping locations, dates, and estimated quantities of materials swept are recorded after each sweeping event. This information is summarized and reported in the Town's MS4 annual report.

Training

- This SOP will be incorporated into annual training for applicable Town staff. Documentation of the trainings, including sign-in sheets and learning materials used, will be included in the Town's MS4 annual reports.

Revising the SOP

- These procedures are reviewed annually by the DPW and updated as needed.

Standard Operating Procedure

Town of Hudson

Department of Public Works

Inspection and Maintenance of Structural Stormwater Control Facilities (aka BMPs)



Issue Date: June 2021

Revision: 0

Revision Date:

Responsible Parties

Department of Public Works

Purpose of SOP

Procedures for inspection and maintenance of constructed BMPs to ensure proper function.

MS4 Permit – Required Level of Service

- Establish and implement inspection and maintenance frequencies and procedures for all stormwater BMPs such as water quality swales, retention/detention basins, infiltration structures, proprietary treatment devices, or other similar structures owned or operated by the permittee.
- All municipally owned stormwater BMPs (excluding catch basins) shall be inspected annually at a minimum.

Operations

- All Town-owned BMPs are inspected at a minimum of once a year. BMPs found to have recurring issues will be inspected at a higher frequency.
- Town-owned BMPs are inspected for potential problems including, but not limited to: standing water; clogging; structural damage; erosion; trash or debris within basins and banks; tree growth on embankments; damage to emergency spillways; and sediment accumulation around outlets.
- Inspection staff refer to the BMP's specific Operation and Maintenance (O&M) Plan or utilize the attached Table 1, for general Massachusetts BMP inspection and maintenance requirements.
- For each BMP inspected, staff document date, time, location, issues found, and follow-up actions taken (including maintenance, if conducted). BMPs are photographed during inspections.
- Confirm, through inspections, that any documented issues have been resolved. Document the date of all follow-up inspections.
- If new BMPs are discovered during inspection, note type and location, conduct a preliminary inspection, and report them to the DPW to include in the Town's BMP inventory.

Maintenance

- Ensure proprietary treatment structures are operating and maintained per the manufacturer's recommended standards and any specific O&M requirements.
- Maintain BMPs at appropriate frequencies based on inspection results and O&M requirements (see Table 1, attached).
- Should any problems be encountered, necessary maintenance or repairs should be scheduled and completed as quickly as possible.

Record Keeping and Documentation

- Records, including specific O&M requirements, are kept at the DPW Facility.
- The total number of BMP inspections and related maintenance and repairs are documented. This information is summarized and reported in the Town's MS4 annual report.

Standard Operating Procedure

Town of Hudson

Department of Public Works

Inspection and Maintenance of Structural Stormwater Control Facilities (aka BMPs)



Issue Date: June 2021

Revision: 0

Revision Date:

Training

- This SOP will be incorporated into annual training for applicable Town staff. Documentation of the trainings, including sign-in sheets and learning materials used, will be included in the Town's MS4 annual reports.

Revising the SOP

- These procedures are reviewed annually by the DPW and updated as needed.

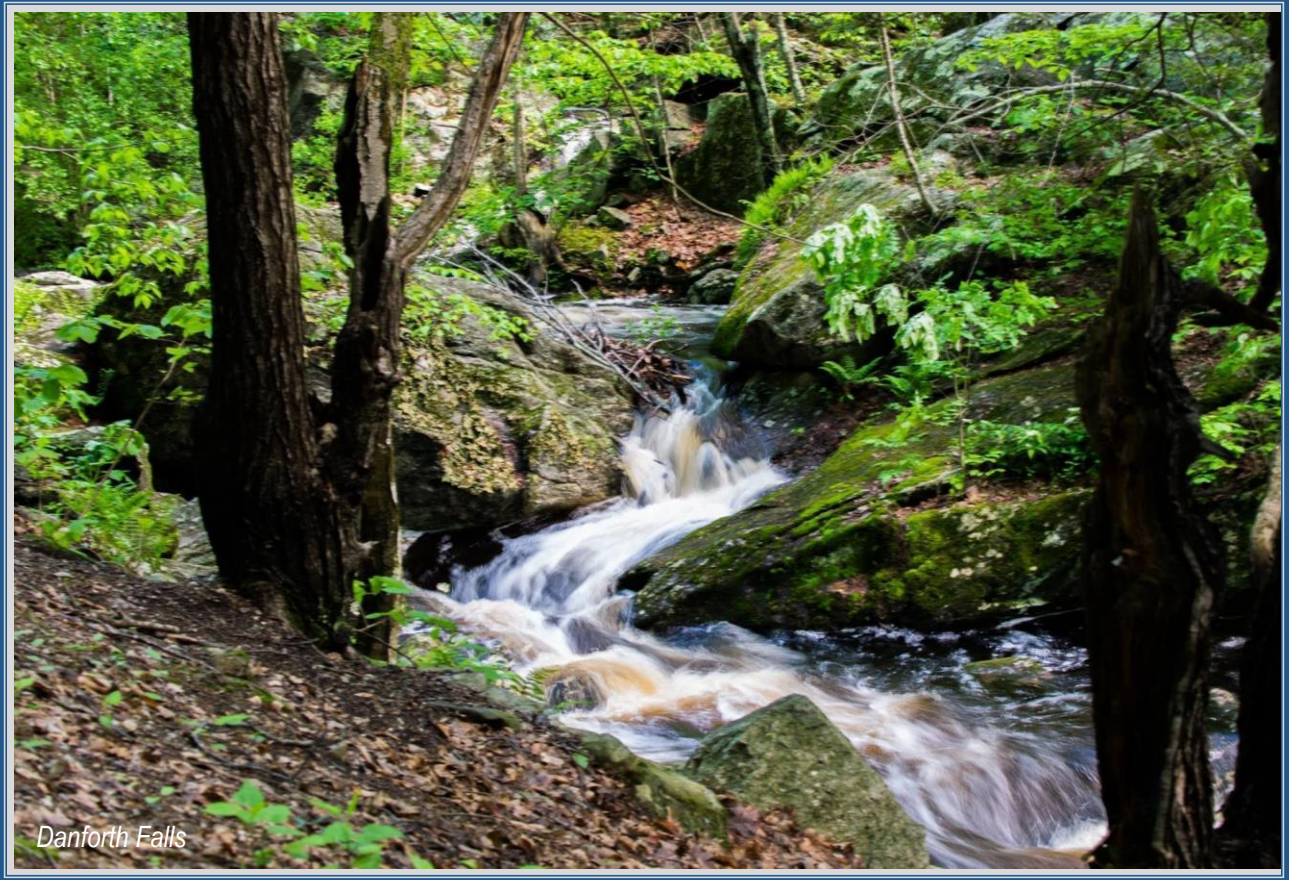
Table 1*Inspection and Maintenance Guidance for Constructed Best Management Practices (BMPs)*

Stormwater Treatment System Classification	Common Best Management Practice Names	Estimated Labor-Hours for Inspections	Estimated Crew-Hours for Maintenance	Typical Inspection and Maintenance Activities	Recommended Maintenance Frequency
Filter	Bioretention Areas and Rain Gardens, Constructed Stormwater Wetlands, Proprietary Media Filters, Sand & Organic Filters	30-45 Minutes	2-8 Hours	<ul style="list-style-type: none"> • Check for Erosion • Remove Sediment/Debris • Check Filter Media Quality and Replace Surface Mulch • Perform Landscaping (Weed, Trim, etc.) • Check for Clogging/Blockages • Inspect Any Control Structures 	2x/Year and Following Large Storm Events
Detention	Wet Pond, Wet Basins, Dry/Extended Dry Detention Basins	30 Minutes	3-4 Hours	<ul style="list-style-type: none"> • Check Embankment Conditions for Damage from Erosion and/or Rodents • Remove Sediment/Debris • Check for Clogging/Blockages • Check Vegetation/Mow Embankments/ • Inspect Any Control Structures 	2x/Year and Following Large Storm Events
Infiltration	Dry Wells, Infiltration Basins, Infiltration Trenches, Leaching Catch Basins, Subsurface Structures, Porous Pavement	30-45 Minutes	1-2 Hours (may be more for porous pavements and subsurface structures)	<ul style="list-style-type: none"> • Check for Clogging/Blockages • Remove Sediment/Debris • Check for Joint Separation/Blockages in Porous Pavements and Vacuum Sweep • Conduct Infiltrometer Test if Failure is Observed • Inspect Any Control Structures 	2x/Year and Following Large Storm Events
Conveyance and Distribution	Drainage Channels, Grassed Channel (Biofilter Swale), Water Quality Swale	30 Minutes	2-4 Hours	<ul style="list-style-type: none"> • Check for Erosion • Remove Sediment/Debris • Perform Landscaping 	2x/Year
Buffer	Vegetated Filter Strips	30 Minutes	2 Hours	<ul style="list-style-type: none"> • Check for Erosion • Remove Sediment/Debris • Perform Landscaping 	2x/Year

Stormwater Treatment System Classification	Common Best Management Practice Names	Estimated Labor-Hours for Inspections	Estimated Crew-Hours for Maintenance	Typical Inspection and Maintenance Activities	Recommended Maintenance Frequency
Sediment Separator	Deep Sump Catch Basins, Oil/Grit Separators, Proprietary Separators	30-45 Minutes	2-4 Hours	<ul style="list-style-type: none"> • Check Surface Conditions (signs of erosion/settling) • Skim Floatables • Remove Sediment • Replace Booms (as needed) 	Inspections will ultimately dictate schedule. Late Fall (after leaf-fall and before snowfall)

Notes:

1. All inspection and maintenance requirements herein are intended to provide general guidance to municipal staff. In any instance where these requirements and a BMP's specific Operations and Maintenance (O&M) Plan conflict, the O&M Plan shall govern.
2. For the recommended labor-hours above, an Inspection Crew consists of one person and a Maintenance Crew consists of two people, which includes an experienced, trained supervisor and a laborer.



APPENDIX C – Important Contacts

<u>Organization/Agency</u>	<u>Phone Number</u>
Hudson Health Department.....	978-562-2020
Hudson Department of Public Works.....	978-562-9333
Hudson Fire Department.....	978-562-5565
Massachusetts Northeast Wildlife District	978-772-2145
Massachusetts Pesticide Program.....	617-626-1776
Massachusetts Title 5 Hotline	617-292-5673
MassDEP Emergency Response Program	888-304-1133
- Oil and Hazardous Material Spills	
MassDEP Central Region.....	508-792-7650
National Response Center.....	800-424-8802
University of Massachusetts Soil.....	413-545-2311
and Plant Nutrient Testing Laboratory	



APPENDIX D – Links

Links Referenced Within Manual

Catch Basin Larvicide Applicator Permit Program:

<https://www.mass.gov/service-details/catch-basin-applicator-permit-program>

EPA Lead Renovation, Repair, and Painting Program:

<https://www.epa.gov/lead/lead-renovation-repair-and-painting-program>

EPA National Response Center:

<https://www.epa.gov/emergency-response/national-response-center>

EPA Spill Reporting Requirements:

<https://www.epa.gov/emergency-response/when-are-you-required-report-oil-spill-and-hazardous-substance-release>

Massachusetts Pesticide Program:

<http://www.mass.gov/orgs/pesticide-program>

Massachusetts State Emergency Response Committee:

<https://www.epa.gov/epcra/state-emergency-response-commissions-contacts#ma>

Massachusetts Stormwater Handbook:

<https://www.mass.gov/guides/massachusetts-stormwater-handbook-and-stormwater-standards>

MassDEP Air Quality Permitting and Reporting:

<http://www.mass.gov/air-quality-permitting-reporting>

MassDEP Erosion and Sediment Control Guidelines for Urban and Suburban Areas:

https://www.mass.gov/files/documents/2016/08/qz/esfull.pdf?_ga=2.114972103.1399987852.1578335225-1181284277.1553270254

MassDEP Guidelines for Management of Catch Basin Cleanings:

<https://www.mass.gov/doc/catch-basin-cleanings-management-guidelines/download>

MassDEP Guidelines for Reuse and Disposal of Street Sweepings:

<https://www.mass.gov/files/documents/2018/05/14/street-sweepings.pdf>

MassDEP Guidelines for Road Salt Storage:

<http://www.mass.gov/guides/guidelines-on-road-salt-storage>

MassDEP Hazardous Waste Generation and Generators:

<https://www.mass.gov/guides/hazardous-waste-generation-generators#-why-following-the-rules-is-important->

MassDEP Hazardous Waste Management:

<http://www.mass.gov/hazardous-waste-management>

MassDEP List of Active Landfills and Transfer Stations:

<https://www.mass.gov/lists/massachusetts-landfills-transfer-stations-compost-sites-recycling-facilities>

MassDEP List of Allowed Septic System Additives:

<https://www.mass.gov/guides/septic-system-additives-allowed-for-use-under-title-5>

MassDEP Oil and Hazardous Materials List – Reportable Quantity Look-Up:

<http://eeaonline.eea.state.ma.us/DEP/MOMHL/hazmat.aspx>

MassDEP Snow Disposal Guidance:

<http://www.mass.gov/guides/snow-disposal-guidance>

MassDEP Spill Management:

<https://www.mass.gov/files/documents/2016/08/xm/spillmgm.pdf>

MassDEP Title 5/Septic Systems Policies and Guidance:

<https://www.mass.gov/lists/title-5septic-systems-policies-guidance>

MassDOT Qualified Construction Materials List:

<http://www.mass.gov/service-details/qualified-construction-materials-list>

MassDOT Winter Road Treatment Types:

<https://www.mass.gov/service-details/road-treatment-types>

MassWildlife Learning about Canada Geese:

<https://www.mass.gov/service-details/learn-about-canada-geese>

MDAR Municipal School Integrated Pest Management (IPM) Plan Database:

<https://massnrc.org/ipm/schools-daycare/ipm-tools-resources/ipm-plan-maker/make-your-ipm-online/locate-school-plan.asp>

MLB Baseball Tomorrow Fund Field Maintenance Guide:

http://www.mlb.com/documents/5/6/6/262918566/field_maintenance_guide_english.pdf

Penn State's College of Agricultural Sciences Center for Turfgrass Science:

<http://plantscience.psu.edu/research/centers/turf/extension/factsheets>

University of Massachusetts Agriculture & Landscape Program: "Right Plan, Right Place" – A Plant Selection Guide for Managed Landscapes:

<https://ag.umass.edu/landscape/fact-sheets/right-plant-right-place-plant-selection-guide-for-managed-landscapes>

University of Massachusetts Soil and Plant Nutrient Testing Laboratory:

<http://ag.umass.edu/services/soil-plant-nutrient-testing-laboratory>

29 CFR 1910.120 – Hazardous Waste Operations and Emergency Response:

<https://www.osha.gov/laws-regs/regulations/standardnumber/1910/1910.120>

40 CFR 112 – Oil Pollution Prevention:

https://www.epa.gov/sites/production/files/2014-04/documents/b_40cfr112.pdf

40 CFR 302.4 – Designation of Hazardous Substances:

<https://www.govinfo.gov/content/pkg/CFR-2004-title40-vol26/pdf/CFR-2004-title40-vol26-sec302-4.pdf>

40 CFR 355 – Emergency Planning and Notification:

<https://www.govinfo.gov/content/pkg/CFR-2016-title40-vol30/pdf/CFR-2016-title40-vol30-part355.pdf>

248 CMR 10.00 – Massachusetts Uniform State Plumbing Code:

<https://www.mass.gov/doc/248-cmr-1000-uniform-state-plumbing-code-0/download>

310 CMR 7.00 – Air Pollution Control:

<https://www.mass.gov/doc/310-cmr-700-air-pollution-control-regulations/download>

310 CMR 15.00 – Massachusetts State Environmental Code, Title 5:

<https://www.mass.gov/doc/310-cmr-15000-title-5-of-the-state-environmental-code/download>

310 CMR 22.00 – Drinking Water:

<https://www.mass.gov/doc/310-cmr-2200-the-massachusetts-drinking-water-regulations/download>

310 CMR 27.00 – Underground Injection Control:

<https://www.mass.gov/doc/310-cmr-2700-underground-injection-control/download>

310 CMR 30.000 – Hazardous Waste:

<https://www.mass.gov/doc/310-cmr-30000-hazardous-waste-regulations/download>

310 CMR 80.000 – Underground Storage Tank Systems:

<https://www.mass.gov/doc/310-cmr-80-underground-storage-tank-systems/download>

314 CMR 5.00 – Groundwater Discharge Permit Program:

<https://www.mass.gov/doc/314-cmr-500-groundwater-discharge-permits/download>

314 CMR 18.00 – Industrial Wastewater Holding Tank and Container Construction, Operation, and Record Keeping Requirements:

<https://www.mass.gov/doc/314-cmr-1800-wastewater-holding-tanks-containers/download>

330 CMR 31.00 – Plant Nutrient Application Requirements for Agricultural Land and Non-Agricultural Turf and Lawns:

<https://www.mass.gov/doc/330-cmr-31-plant-nutrient-application-requirements-for-agricultural-land-and-non-agricultural/download>

333 CMR 10 – Certification and Licensing of Pesticide Applicators:

<https://www.mass.gov/doc/333-cmr-10-certification-and-licensing-of-pesticide-applicators/download>

333 CMR 11 – Rights of Way Management:

<https://www.mass.gov/doc/333-cmr-11-rights-of-way-management/download>

333 CMR 14 – Protection of Children and Families from Harmful Pesticides:

<https://www.mass.gov/doc/333-cmr-14-protection-of-children-and-families-from-harmful-pesticides/download>

502 CMR 5.00 – Permit and Inspection Requirements of Aboveground Storage Tanks of More Than Ten Thousand Gallons Capacity:

<https://www.mass.gov/doc/502-cmr-5-permit-and-inspection-requirements-of-above-ground-storage-tanks-of-more-than-ten/download>

527 CMR 1.00 – Massachusetts Comprehensive Fire Safety Code:

<https://www.mass.gov/doc/massachusetts-527-cmr-100-2015-edition-as-of-october-18-2019/download>