

## **Chapter 8 - Maintenance Yard Operations**

This Chapter focuses on eliminating and/or minimizing the amounts of pollutants entering the waters of the State from maintenance yard operations, including maintenance activities at service areas and ancillary operations. Ancillary Operations may include Highway Agency owned or operated impoundment lots, recycling centers, solid waste transfer stations, mobile fueling stations, etc. The concept behind these BMPs is to stress ways of improving stormwater quality through the implementation of pollution prevention and source reduction techniques. Many of the BMPs in this Chapter require the development of standard operating procedures (SOPs). **At a minimum, these SOPs must include the items listed in Attachment D of the permit.**

### **Inspections**

Inspections are an important part of your maintenance yard operations. The entire maintenance yard needs to be inspected regularly, and these inspections should be documented as a part of your Stormwater Pollution Prevention Plan (SPPP).

- Inspections of all Maintenance Yard Operations shall be conducted regularly.

### **Discharge of Stormwater from Secondary Containment**

Many maintenance yards have secondary containment for things such as aboveground fueling tanks and waste oil storage. These containment areas can accumulate water during storm events. This permit authorizes the discharge of clean stormwater from secondary containment, under the following conditions:

- The discharge pipe/outfall from a secondary containment area must have a valve and the valve must remain closed at all times except as described below. A Highway Agency may discharge stormwater that accumulated in the secondary containment area if a visual inspection is performed to ensure that the contents of aboveground storage tank have not come in contact with the stormwater to be discharged. Visual inspections are only effective when dealing with materials that can be observed, like petroleum. If the contents of the tank are not visible in stormwater, the Highway Agency must rely on previous tank inspections to determine with some degree of certainty that the tank has not leaked. If the Highway Agency cannot make a determination with reasonable certainty that the stormwater in the secondary containment area is uncontaminated by the contents of the tank, then the stormwater shall be hauled for proper disposal.

**(NOTE:** If the stormwater from secondary containment is hauled, the Department recommends that copies of all hauling receipts be kept on site.)



*The Highway Permit authorizes the discharge of stormwater that accumulates in a secondary containment area if certain precautions are taken.*

## **De-icing and Sand Storage**

### **WHAT IS REQUIRED?**

#### **Minimum Standard**

Highway Agencies must construct a permanent structure (a permanent building or permanent structure that is anchored to a permanent foundation with a impermeable floor, and that is completely roofed and walled) for the storage of salt, and other de-icing materials, if applicable. Once completed, Highway Agencies shall perform regular maintenance and inspections of the permanent structure. Seasonal tarping shall be used as an interim BMP until the permanent structure is completed. Sand may be stored outside and uncovered if a 50-foot setback is maintained from storm sewer inlets, ditches or other stormwater conveyance channels, and surface water bodies.



*An acorn storage shed is an example of a “permanent structure.”*

#### **Measurable Goal**

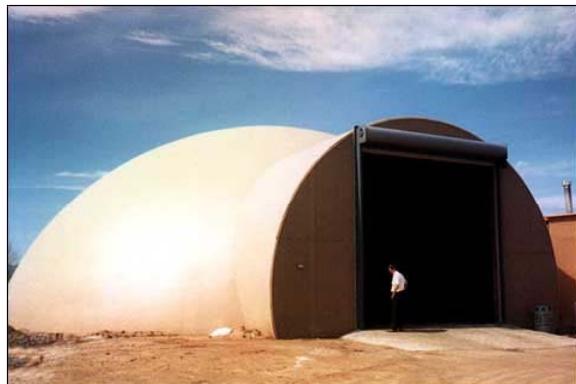
Highway Agencies shall certify annually that they have met the De-icing Material Storage minimum standard.

#### **Implementation Schedule**

Within 12 months from the effective date of permit authorization, Highway Agencies shall implement the interim seasonal tarping BMP. Within 12 months of the effective date of permit authorization, Highway Agencies will comply with the 50-foot buffer requirement for the outside storage of sand. Within 36 months from the effective date of permit authorization Highway Agencies shall store all salt and de-icing materials in a permanent structure.

### **WHAT DOES THIS MEAN?**

When salt and other de-icing materials are stored outside and uncovered, they can easily dissolve and be transported by stormwater. To prevent de-icing materials, including sand/salt mixtures, from coming into contact with stormwater Highway Agencies must construct indoor storage. This permanent structure for the storage of salt and other de-icing materials must be a permanent building or permanent structure that is anchored to a permanent foundation with a impermeable floor, and that is completely roofed and walled. An example would be an acorn structure, a monolithic dome (shotcrete dome), a shed or



*Monolithic, or shotcrete dome*



*This three sided storage structure does not comply with the permit minimum standard.*

building. The permanent structure may have an open entryway for equipment access for loading and unloading. The structure can not be a three sided building. Highway Agencies have 36 months from the effective date of permit authorization to construct such a structure. Until this structure is built, all de-icing materials may be stored outdoors between October 15 and April 30 as long as they are tarped when not in use (see Interim Seasonal Tarping below). Additionally, sand may be permanently stored outdoors and uncovered, as long as a 50-foot setback is maintained from any storm sewer inlets, ditches or other stormwater conveyance channels, and surface water bodies. For sand stored in three-sided uncovered bins, the 50-foot setback is measured from the open side of the bin. It is important

to note that if the sand is covered the 50-foot setback is not required.

### **Good Housekeeping Practices for Salt and De-Icing Material Handling (as required by Attachment D of the permit)**

The SPPP for De-icing Material Storage shall include the following required practices to ensure that Maintenance Yard Operations prevent or minimize the exposure of salt and de-icing materials to stormwater runoff from storage, loading and unloading areas and activities:

- Prevent and/or minimize the spillage of salt and de-icing materials during loading and unloading activities.
- At the completion of loading and unloading activities, spilled salt and de-icing materials shall be removed using dry cleaning methods and either reused or properly discarded.
- Sweeping by hand or mechanical means of storage and loading/unloading areas shall be done on a regular basis. More frequent sweeping is required following loading/unloading activities. Sweeping shall also be conducted immediately following, as practicable, loading/unloading activities.
- Tracking of materials from storage and loading/unloading areas shall be minimized.
- Minimize the distance salt and de-icing materials are transported during loading/unloading activities.



*The Highway Agency should be implementing good housekeeping procedures to prevent and minimize spillage of salt and de-icing materials during loading and unloading activities.*

**Interim Seasonal Tarping** - All Highway Agencies must tarp all de-icing materials until a permanent structure is built. Interim storage measures must include, but are not limited to the following:

- Tarping materials that are not actively being used.
- The storage of de-icing materials (salt and de-icing products) outside is limited to October 15 through April 30. All salt and de-icing materials must be removed from the site prior to May 1 and may not be stored outside again until October 15.
- The implementing of a regular inspection, sweeping and housekeeping program to ensure that the material is maintained and stored in a proper manner.

### **WANT TO KNOW MORE?**

The application of salt and sand on roads to improve conditions in winter weather has been a popular practice since the 1930s. Sand is widely used in colder climates where temperatures drop below 0° F. In New Jersey, where the climate is warmer, salt is primarily used to reduce ice bonding to road surfaces. The Department understands that during the winter, the application of sand and salt is a public safety issue that outweighs the possible environmental impacts of the application. However, the proper storage and handling of these materials is something within our control. In addition during winter weather, salt and de-icing materials are spread over large areas. However, at storage facilities the discharges are concentrated and year round. The Department's goal is to ensure that these materials are properly handled, stored or covered, so that they are not transported by stormwater and discharged to surface and ground waters of the State.

Improper salt and sand storage may result in stormwater runoff containing high amounts of sodium and solids. Sodium chloride (road salt) is an effective de-icer but can be highly corrosive to stormwater facilities. Smaller waterways like small streams, rivers and ponds are at a higher risk to increases in salinity, which can threaten species that have lowered immune responses. Additionally, sodium chloride washed off roadways can eventually reach drinking water sources where even small traces can affect people with hypertension. Requiring indoor storage of salt and de-icing materials is an effective pollution prevention technique that helps to eliminate pollutant loadings to surface and groundwaters.

### **Recommendations**

The following recommendations are not required by the permit, but should be taken into account when siting a new permanent structure:

- Locate the site at least 200 hundred feet away from nearby streams, wells, reservoirs and groundwater sources.
- Do not build your structure in designated well head protection areas.
- Ensure that the top elevation of the pad for the permanent structure, as well as the access way, is higher than the 100-year storm level.
- Control site drainage by diverting stormwater away from storage areas (e.g., by installing curbing, temporary berms, etc.).
- Place wind barriers at strategic areas where shipments of salt and sand are being loaded. This can help to reduce the possibility of windblown particles entering nearby areas.

- When constructing a de-icing material storage structure, include a paved, impermeable access way.
- Highway Agencies are encouraged to work together with neighboring highway agencies (such as NJ Turnpike Authority, South Jersey Transportation Authority, NJDOT), municipalities and/or public complexes to construct joint use de-icing material storage facilities.

## Fueling Operations

### WHAT IS REQUIRED?

#### Minimum Standard

Highway Agencies must develop and implement standard operating procedures for vehicle fueling, and receiving of bulk fuel deliveries at maintenance yard operations. The standard operating procedures shall incorporate the required practices listed in Attachment D.

#### Measurable Goal

Highway Agencies must certify annually that there is a vehicle fueling and bulk receiving standard operating procedures in place.

#### Implementation Schedule

Within 12 months of the effective date of permit authorization, Highway Agencies shall have developed and begun implementing the required standard operating procedures for fueling operations.

### WHAT DOES THIS MEAN?

When applicable, the minimum standard requires Highway Agencies to develop SOPs for vehicle fueling and receiving of bulk fuel. The SOP shall, at minimum, include, the following:

#### **Fueling (as required by Attachment D of the permit)**

- No topping off vehicles, mobile fuel tanks, and storage tanks. Drip pans must be used under all hose and pipe connections and other leak-prone areas **during** bulk transfer of fuels.
- During bulk transfer, block storm sewer inlets, or contain tank trucks used for bulk transfer, with temporary berms or temporary absorbent booms during the transfer process. If temporary berms are being used instead of blocking the storm sewer inlets, all hose connection points associated with the transfer of fuel must be within the temporary berms during the loading/unloading of bulk fuels. A trained employee must always be present to supervise during bulk fuel transfer.
- Clearly post, in a prominent area of the facility, instructions for safe operation of fueling equipment, and appropriate contact information for the person(s) responsible for spill response.



*Storm drain inlets blocked during bulk fuel transfer.*

- Any equipment, tanks, pumps, piping and fuel dispensing equipment found to be leaking or in disrepair must immediately be repaired or replaced.

(NOTE - All repairs and replacement of such equipment, pumps, piping, and fuel dispensing equipment should be made in accordance with any applicable local, State, or federal regulations and/or requirements.)

### **Recommendations**

The following recommendations may be beneficial but are not required.

- Use only pumps, hoses and containers that have been approved for fuel use.
- When installing new tanks consider aboveground storage tanks rather than underground storage tanks.
- Designated transfer areas should be paved with concrete and be designed with containment.
- When practical, vehicle fueling should be done at designated fueling areas rather than on location (mobile fueling) where employees are less equipped to handle spills.
- Fueling stations can be regional or shared with other Highway Agencies or other public agencies to help to reduce costs of operation and upgrading.
- Ensure that all underground storage tanks are maintained in accordance with the New Jersey Underground Storage of Hazardous Substances Act (N.J.S.A. 58:10A-21 et seq.) and the Department's Underground Storage Tanks rules at N.J.A.C. 7:14B, if applicable.

## **Vehicle Maintenance**

### **WHAT IS REQUIRED?**



*Vehicle maintenance should be performed indoors whenever possible.*

### **Minimum Standard**

Highway Agencies shall develop and implement a standard operating procedure (SOP) for vehicle maintenance and repair activities that occur at maintenance yard operations, if applicable. The SOP shall include the required practices listed in Attachment D. The SOP shall include regular inspections of all maintenance areas and activities.

### **Measurable Goal**

Highway Agencies must certify annually that there is a vehicle maintenance standard operating procedure in place and that regular inspections and maintenance are being performed.

### Implementation Schedule

Within 12 months of the effective date of permit authorization, Highway Agencies shall have developed and begun implementing the required standard operating procedures for Vehicle Maintenance.

### **WHAT DOES THIS MEAN?**

Highway Agencies are required to develop and implement vehicle maintenance SOPs to eliminate and/or minimize the amount of pollutants entering surface and ground water from vehicle maintenance activities. **The SOP shall, at minimum, include the following:**

### **Vehicle Maintenance (as required by Attachment D of the permit)**

Perform all vehicle and equipment maintenance at an indoor location with a paved floor whenever possible. For projects that must be performed outdoors that last more than one day, portable tents or covers must be placed over the equipment being serviced when not being worked on, and drip pans must be used.

If maintenance is being performed outdoors on exposed equipment (such as engine blocks, lawn equipment, and tractors) and won't be completed in one day, the exposed machinery, should be covered with a tarp or portable tent when not being worked on. If the machinery is not exposed (hood of vehicle can be closed, tractor engine cover replaced), then no tarp is required. Drip pans are required if equipment that is being serviced could possibly leak oil, hydraulic fluids or other fluids, and will be left outside for a time period greater than one day.

**Important Note** - Floor drains within maintenance garages, if connected to the MS4, are illicit connections and must be eliminated in accordance with the Highway Agency's Illicit Connection Elimination Program (see Chapter 6 of this guidance document). All other discharges from floor drains within maintenance garages to surface or ground waters of the State require a separate NJPDES permit in accordance with N.J.A.C. 7:14A. Any such discharge must be ceased until a final effective NJPDES permit is issued by the State. The Department recommends, however, that all floor drains in maintenance garages be permanently sealed, and that all discharges to "motor vehicle waste disposal wells" be closed in accordance with N.J.A.C. 7:14A-8.4. If you have any questions or concerns about a floor drain or about "motor vehicle waste disposal wells," contact the Department's Bureau of Nonpoint Pollution Control at (609) 633-7021.

## **Good Housekeeping Practices**

### **WHAT IS REQUIRED?**

#### Minimum Standard

Highway Agencies must implement good housekeeping procedures for all materials or machinery listed in the Inventory Requirements for Maintenance Yard Operations prepared in accordance with Attachment D. These good housekeeping procedures include, but not limited to, the required practices listed in Attachment D at all maintenance yard operations (including maintenance operations at ancillary operations).

#### Measurable Goal

Highway Agencies must certify annually that they have met the Good Housekeeping Practices minimum standard.



*Good housekeeping includes proper storage of materials like waste oil.*

### **Implementation Schedule**

Within 12 months of the effective date of permit authorization, Highway Agencies shall have developed and begun implementing the required standard operating procedures for Good Housekeeping.

### **WHAT DOES THIS MEAN?**

The intent of this program is to help maintain a clean and orderly work place. Highway Agencies are required to do this by maintaining up-to-date inventories, conducting regular inspections and educating all employees about good housekeeping practices. Requirements and recommendations include basic housekeeping practices such as eliminating or minimizing exposure of materials to stormwater, maintaining a clean and orderly work environment, cleaning up any spills as soon as they are discovered, properly disposing of any hazardous materials, etc. Some examples of how to do this might include keeping oil, oil filters, hydraulic and transmission fluids, greases, cleaning solutions, antifreeze, coolants and batteries indoors or covered and on a spill platform.

### **Inventory Requirements for Maintenance Yard Operations (including Service Areas and Ancillary Operations)**

In accordance with Attachment D of the permit, Highway Agencies shall include for maintenance yard operations an inventory that includes the following:

- A list to be made part of the SPPP of general categories of all materials or machinery located at the maintenance yard, which could be a source of pollutants in a stormwater discharge. The materials in question include, but are not limited to: raw materials; intermediate products; final products; waste materials; by-products; machinery and fuels; and lubricants, solvents, and detergents that are related to the maintenance yard operations or ancillary operations. Materials or machinery that are not exposed to stormwater or that are not located at the maintenance yard or related to its operations do not need to be included.

In addition to the Inventory Requirements for Maintenance Yard Operations, the **Good Housekeeping SOP** shall also include the following:

### **Good Housekeeping (as required by Attachment D of the permit)**

- Properly mark or label all containers. Labels must be kept clean and visible. All containers must be kept in good condition and tightly closed when not in use. When practical, containers must be stored indoors. If indoor storage is not practical, containers may be stored outside as long as they are covered and placed on spill platforms. An area that is graded and/or bermed that prevents run-through of stormwater may be used in place of spill platforms. Outdoor storage locations must be regularly maintained.
- Conduct cleanups of any spills or liquids or dry materials immediately after discovery. Clean all maintenance areas with dry cleaning methods only. Spills shall be cleaned up with a dry, absorbent material (e.g., kitty litter, sawdust, etc.) and the rest of the area is to be swept.

Collected waste is to be disposed of properly. Clean-up materials, spill kits and drip pans must be kept near any liquid transfer areas, protected from rainfall.

**Important Note:** Discharges of hazardous substances shall be reported to the NJDEP Action Hotline at 1-877-WARN-DEP (1-877-927-6337) in accordance with N.J.A.C. 7:1E-5.3 (a copy of the rule may be found at: <http://www.nj.gov/dep/rpp/brp/download.htm>). Additional information on discharges of hazardous substances and notification requirements may be found at: <http://www.state.nj.us/dep/enforcement/relprev/dpcc/document/dcrgid.htm>.

### **Recommendations**

The following recommendations may be beneficial to your program but are not required by the permit.

- Dispose of stockpiles of scrap you will never use.
- Switch to non-toxic chemicals whenever possible.
- Equipment should be kept clean of excessive build-up of oil and grease, and all equipment should be checked regularly for drips or leaks.
- Batteries should be stored indoors, and any leaking, cracked or broken batteries should be handled in accordance with applicable federal and/or State rules and regulations.
- Check incoming vehicles and equipment for leaks (including delivery trucks and employee and subcontractor vehicles). Do not allow leaking vehicles or equipment on site.

### **WANT TO KNOW MORE?**

#### **Fueling, Vehicle Maintenance, and Good Housekeeping**

When stormwater is exposed to pollutants associated with maintenance and fueling activities it becomes polluted with toxic or other deleterious materials (e.g., petroleum hydrocarbons, heavy metals and organics). Many times this stormwater contamination is a result of human errors, such as topping off fuel tanks, not being attentive during loading and unloading procedures, improper cleanup after a spill occurs, and improperly storing materials associated with maintenance activities (e.g., fertilizers, pesticides, waste oil, waste solvents, scrap materials, and material stock piles). The fueling, maintenance and good housekeeping SOPs, if properly implemented, help eliminate or minimize stormwater contamination from these activities.

Fueling and maintenance activities can contribute to local stormwater pollution when not managed properly. Petroleum hydrocarbons, found in diesel fuel, waste oils and lubricants, can be harmful to aquatic life. Hydrocarbons that have a lighter density can float on the surface of the water harming waterfowl, while dense hydrocarbons sink to the bottom and accumulate in the sediment, affecting bottom feeders and other organisms. Heavy metals, which are found in fuel and may leach from scrap materials and batteries, tend to have a cumulative effect on the food chain since they can accumulate in the tissues, becoming more and more potent as they are passed up the food chain. In addition, heavy metals have been shown to cause several detrimental effects on various species of shellfish, including inhibited feeding behavior, delayed shell growth, depression of cardiovascular function and respiration and a suppression of growth or death of eggs, embryos or larvae. Organic compounds, like BTEX found in gasoline, and other organic compounds found in solvents are known mutagens, teratogens, and carcinogens.

When good housekeeping practices are not implemented, hazardous materials are potentially exposed to stormwater. Once that happens the only effective way to remove the pollutants is by providing costly treatment. Stormwater is difficult at best to treat due to inherent problems like variability of rainfall and its intensity. If maintenance yards are large, storage of stormwater for treatment requires the construction of large lined basins. Instead, it is far more cost effective to implement BMPs designed at eliminating or minimizing contact between stormwater and source materials. Properly implemented Good Housekeeping SOPs do just that and prevent the need for costly end of pipe treatment systems.

### **Equipment and Vehicle Washing**

**Equipment and vehicle washing is not authorized under the Highway Permit (except for washwater from rinsing of certain de-icing and beach maintenance vehicles and equipment as authorized in Part I, Section A.2.d.)** The discharge of equipment and vehicle washwater from maintenance yards to the surface and ground waters of the State may be unlawful under the Water Pollution Control Act unless a separate NJPDES permit is obtained for such discharge.