MCM # 6

POLLUTION PREVENTION/GOOD HOUSEKEEPIG FOR MUNICIPAL OPERATIONS

MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4)
OPERATION & MAINTENANCE MANUAL
NPDES PERMIT NO. PAI132232

Dallas Township
Luzerne County, PA
2919 SR 309 Highway / P.O. Box 518
Dallas, PA 18612
(570)-674-2007

April 2016

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Luzerne County, PA

Operation & Maintenance Program

Introduction

Dallas Township owns and operates a Municipal Building, Maintenance Buildings, and a salt shed all under one campus located at 2919 SR 309 Highway Dallas, Pa 18612. The Township also owns two parks, Dallas Township Park located on Sago St., and Kunkle Park located off Old Tunkhannock Rd.

This manual contains stormwater good housekeeping practices, pollution prevention and protocols, and control measures for specific operations and activities for the prevention of nonpoint sources of pollution within the township.

This manual has been developed for all township employees, who can utilize the document as part of their NPDES Municipal Stormwater (MS4) permit stormwater management program addressing illicit discharges and municipal stormwater good housekeeping.

Storage of Bulk Materials

Goal: Prevent or reduce the risk of discharge of pollutants to stormwater from solid bulk materials that are typically stockpiled and stored outdoors.

Overview: Solid bulk materials, including raw or unfinished products and by-products, are often stockpiled and stored outdoors on a temporary or permanent basis in large piles, stacks, or bins. Some examples of these bulk materials include:

- Gravel
- Sand
- Topsoil
- Compost
- Chemicals
- Logs and Treated Wood
- Building Materials
- Concrete
- Metal Products

Rain and stormwater runoff coming into contact with these stored materials can result in erosion and washoff of both suspended and dissolved pollutants. Contaminants may include sediment, nutrients, organic matter, abnormal pH, heavy metals, toxic chemicals and dissolved salts.

Applicable Operations and Activities: Road Department stores bulk materials at maintenance facility for Township operations.

Pollution Control: Cover and contain bulk materials to prevent erosion and contact with stormwater runoff.

Targeted Pollutants:

- Sediment
- Nutrient
- Organic Matter
- Heavy Metals
- Abnormal pH
- Soluble Chemicals

BMPs:

- Always store bulk materials indoors or use storage sheds whenever possible.
- Established permanent outdoor storage areas should be covered with a roof and bermed or enclosed to prevent contact with rain and stormwater runoff. This is particularly important for water-soluble materials and those that can leach pollutants into stormwater or groundwater.

- Where feasible, a waterproof cover (made of polyethylene, polypropylene, or equivalent) should be used over all materials stored outside. The cover should be adequately secured and remain in place at all times when the materials or stockpile in not being used.
- For large stockpiles that cannot be covered or when covering bulk materials is not feasible, containment measures and erosion and sedimentation (E&S) controls should be implemented at the perimeter of the site and at any catch basins as needed to prevent erosion and dispersion of the material to a storm drain or drainage ditch. Bulk materials should not be allowed to wash off the site or discharge into surface waters.
- Locate stockpiles a minimum of 50 feet away from concentrated flows of stormwater, stormwater drains, drainage ditches, and surface waters.
- Consider the use of storm drain covers, filter fabric, silt fences or secured liners at areas with temporary stockpiles to keep materials from entering the stormwater drainage system. Make sure that nearby stormwater drains clearly marked.
- Protect all temporary stockpiles from contact with stormwater runoff from surrounding areas using sediment barriers such as berms, dikes, fiber rolls, silk fences, or sandbags.
- Store small amounts of bulk materials and any bagged materials on pallets to avoid contact with stormwater runoff.
- Keep all outdoor storage containers and bins in good condition. Repair or replace any deteriorating storage containers and bins.
- Minimize the amount of materials purchased or keep on site to reduce storage needs and prevent large stockpiles.

Storage Area Design Features:

- Consider sloping paved areas to minimize the pooling of water on the site. Minimizing water pooling is particularly important with materials that may leach pollutants. A minimum slope of 1.5% is recommended.
- Use curbing around the perimeter of stockpiles or storage areas to both prevent contact with uncontaminated stormwater runoff from adjacent areas and contain runoff from stockpiles. The area inside the curb should slope to a drain which is connected to a stormwater structural control that provides water quality treatment.
- Ensure that all stormwater from the site is treated by an appropriate structural or non-structural stormwater control.

Inspection and Prevention Maintenance Requirements:

- Daily – Inspect the storage area to check for erosion and/or leaching from stockpiles of raw materials.
- As Needed – Storage areas should be swept and cleaned when needed. Solid materials should be collected and disposed of properly. Do not hose down paved areas.
- Weekly – Inspect berms, curbing, and secondary containment. Perform repairs as needed.

Fueling Operations

Goal: Prevent or reduce the risk of discharge of pollutants to stormwater from vehicle and equipment fueling activities.

Overview: Fueling operations include vehicles, equipment, or small containers with gasoline, diesel fuel, kerosene, or other petroleum products. Spill and leaks that occur during fueling can contaminate stormwater runoff, surface water and groundwater with toxic hydrocarbons, oil and grease, and heavy metals.

Township Operations: Dallas Township fuels their vehicles off site at a commercial fuel station.

Applicable Operations:

- Fleet Maintenance Yards
- Mobile Fueling Operations
- Any Other Site Fueling Vehicles or Equipment

Pollution Control Approach: Maximize the prevention of leaks and spills, and ensure that any leaked or spilled fuel is properly cleaned up.

Targeted Pollutants:

- Oil and Grease
- Heavy Metals
- Toxic Chemicals
- Trash and Debris
- Gasoline and Other Fuels

BMPs:

For All Fueling Operations:

- Never fuel vehicles and equipment unattended.
- Post signs at the fuel dispenser or fuel island reminding users not to top off fuel tanks when filling, which can increase the risk of spilling fuel onto the ground.
- Ensure the following safeguards are in place:
  - Fuel dispensing equipment and pumps are equipped with automatic shutoffs and overflow protection to prevent spills and leaks.
  - Protective guards around pumps, tanks and piping to prevent damage from vehicles.
  - Clear tagging or labeling of all equipment, pumps and valves.
- Install vapor recovery nozzles and systems to help control drips and protect air quality.

- Maintain clean fuels dispensing areas using dry cleanup methods such as sweeping for removal of litter and debris, and the use of rags and absorbents for leaks and spills. Absorbents should be removed promptly and disposed as hazardous waste.

For Stationary (Permanent) fueling Operations:

- Cover the fueling area with an overhanging roof structure or canopy so that rain cannot come in contact with the fueling area.
- Label drains within the facility by paint/stencil, sign, or marker to indicate whether they flow to an oil/water separator, sanitary sewer, or stormwater drain.
- Use secondary containment when transferring fuel from a tanker truck to onsite fuel tanks. Cover storm drains in the vicinity during transfer.

For Mobile Fueling Operations:

- Use off-site stationary fueling stations as much as possible. These businesses are better equipped to handle fuel and spills properly.
- All fueling operations should be located to ensure that spills or leaks will not discharge, flow or be washed to the stormwater drainage system, surface waters or groundwater.
- Place temporary caps over nearby catch basins and manhole covers so that if a spill occurs it is prevented from entering the stormwater drainage system.
- Use drip pans or absorbent pads to capture drips and spills during fueling. Absorbents must be removed promptly and disposed as hazardous waste.
- If fueling is done during evening/night hours, lighting should be provided.
- Spill and clean up materials should be located in the mobile fueling vehicles.

Fueling Area Design Features:

- Design fueling areas to prevent contact with rain and stormwater runoff:
  - Cover the entire fueling area with a roof or canopy structure.
  - Use berms or curbs to prevent stormwater runoff from flowing onto the fueling area.
  - Position roof downspouts away from fueling area.
- Fueling areas should be paved with Portland cement concrete, free of cracks and gaps, and impervious in order to contain leaks and spills. Apply a suitable sealant that protects any asphalt in areas surrounding the fueling area.
- Use a trench or perimeter drain around the fueling area or slope the pavement to a drain connected to a dead-end sump, an underground storage container which does not discharge to the stormwater drainage system. The sump captures and holds spilled fuel from the pad to be pumped out later.
- Install spill control devices (such as oil/water separator) in catch basins that collect stormwater runoff from the fueling area.
- Ensure that all stormwater from the site is treated by an appropriate structural or non-structural stormwater control.

Additional Considerations:

- All specific standards set by Federal and State Laws concerning the storage of oil

and hazardous materials must be met, including:

- Spill Prevention Control and Countermeasure (SPCC) Plan
- Secondary containment
- Integrity and leak detection monitoring
- Emergency preparedness plans

- Storage of all fuels should comply with the Uniform Fire Code and National Electric Code, and any other applicable code, including local fire regulations on the clearance of roof covers and flammable materials.
- Follow appropriate practices and protocols for loading, filling and/or unloading of liquid materials.

Inspection Procedures:

- **Ongoing** - Inspect the fueling area to check for any material leaks or spills. Promptly clean using dry methods such as rags and absorbents. Promptly dispose of clean up materials and any contaminated soil.
- **Daily** – Inspect vehicles and equipment for leaks, loose fittings and improper or poor fitting gaskets. Leaks should be repaired immediately or equipment removed for service.
- **As needed** – Fueling areas should be swept and cleaned when needed. Trash and debris should be collected and disposed of properly. Do not hose down paved areas.
- **After the Storm** – Inspect spill control devices to remove separated floatable liquids. Properly dispose of captured fuel and other contaminants.

Spill Prevention and Response:

- Storing liquid petroleum and related materials, a Spill Prevention Control and Countermeasure (SPCC) Plan must be developed and kept up-to-date. Regularly requirements and sample SPCC Plans can be found at http://www.epa.gov/oilspill
- Develop Standard Operating Procedures (SOPs) for spill prevention and clean up.
- Have an emergency plan, equipment and trained personnel ready at all times to deal immediately with major spills.
- Store and maintain appropriate spill cleanup materials on site in a location near the fueling area(s).

Loading and Unloading Operations

Goal: Prevent or reduce the risk of discharge of pollutants to stormwater from any outdoor loading, unloading or transfer of liquid or solid materials.

Overview: Loading and unloading of both liquid and solid materials and products often takes place outdoors on docks from trucks, rail cars and other transport vehicles. Materials that are spilled, leaked, or lost during transfer have the potential to accumulate and come into contact with rain and stormwater runoff and can contribute oil and greases, nutrients, heavy metals, sediment, toxic chemicals and abnormal pH to runoff and down streams receiving waters.

Applicable Operations and Activities: Dallas Township undertakes the loading or unloading of solid materials, or the transfer of liquid to or from storage containers and tanks outdoors.

Pollution Control Approach: Prevent contact with rain and stormwater runoff and employ proper procedures during loading, unloading and transfer operations.

Targeted Pollutants:

- Sediment
- Nutrients
- Organic Matter
- Oil and Grease
- Heavy Metals
- Toxic Chemicals
- Abnormal pH
- Trash and Debris

BMPs:

- Conduct loading, unloading and other material transfer operations during dry weather or indoors if possible.
- Loading/unloading areas should be covered to reduce exposure of materials to rain.
- Use overhangs or door skirts between trailers and buildings.
- Load and unload only at designated loading areas to limit the areas where spills and leaks can occur.
- For liquid transfer operations, use drip pans under hoses and pipe connections, and when making and breaking connections. Check equipment regularly for leaks, including valves, pumps, flanges and connections.
- Drip pans should be stored in a covered area and must be cleaned periodically. Properly dispose of any collected/dripped material.
- Contain and immediately clean up any leaks or spills during material transfers. Never hose down the loading/unloading area into a stormwater drain or drainage ditch.

- Park transport vehicles and tanker trucks in designated areas where spills and leaks can be contained.

Loading/Unloading Area Design Features:

- Design loading and unloading areas to prevent contact with rain and stormwater runoff:
  - Cover the loading/unloading area with a roof awning structure.
  - Pave and grade the loading/unloading area
  - Use berms or curbs to prevent stormwater runoff from adjacent areas from flowing onto the loading/unloading area.
  - Position roof downspouts away from loading/unloading area.
- For liquid materials, the loading and unloading areas should be paved with Portland cement concrete. Special coating may be required for some materials.
- For liquid transfer, the loading area should be designed to prevent liquid spills from entering a stormwater drain, drainage ditch or surface water b sloping the area to drain connected to a dead-end sump or sanitary sewer. Ensure that the secondary containment system is large enough to contain the entire volume of a potential spill.
- Ensure that all stormwater from the site is treated by an appropriate structural or non-structural stormwater control.
- Local fire regulations should be consulted on the clearance of roof covers over flammable materials.

Inspection Procedures:

- **Ongoing** – Inspect loading/unloading area(s) to check for any materials lost, leaked or spilled during transfer operations. Promptly contain and clean up any leaks or spills.
- **Ongoing** – Check liquid transfer equipment regularly for leaks from valves, pumps, flanges and connections.
- **As needed** – Loading/unloading areas, including parking and access roads, should be swept and cleaned when needed. Solid materials should be collected and disposed of properly. Do not hose down paved areas.
- **Weekly** – inspect berms, curbing, and secondary containment systems. Perform repairs as needed.

Spill Prevention and Response:

- Develop Standard Operating Procedures (SOP) for spill prevention and clean up
- Store and maintain appropriate spill cleanup materials on site in a location near the loading/unloading area(s).

Solid Waste Handling and Transfer

Goal: Prevent or reduce the risk of discharge of pollutants to stormwater from the improper storage, handling and transfer of solid wastes.

Overview: Solid waste management involves the collection, storage, transfer and final disposal of trash, garbage and solid wastes from the township operations. Improper handling, storage and transfer of solid wastes can contribute trash and floatables, oil and greases, heavy metals, nutrients, suspended solids, toxic chemicals and other pollutants to stormwater runoff and downstream receiving waters.

Applicable Operations and Activities: Township facility, site or operation that generates stores, or transfer trash, garbage or other solid wastes.

Pollution Control Approach: Prevent and reduce the discharge of pollutants to stormwater runoff by reducing waste generation and by proper storage, handling and transfer of solid wastes.

Targeted Pollutants:

- Sediment
- Nutrient
- Bacteria
- Organic Matter
- Oil and Grease
- Heavy Metals
- Toxic Chemicals
- Trash and Debris

BMPs:

Waste Reduction:

- Reduce waste generation at the site or facility:
  - Maintain usage and waste inventory.
  - Modify processes or equipment to generate less waste.
  - Use substitute materials with less toxic substances.
- Use waste segregation and separation.
- Recycle materials whenever possible.

Solid Waste Containers and Waste Management Areas:

- Use covered dumpsters and solid waste containers with leak-proof lids and covers. Ensure that dumpster lids and container covers are always closed when not in use.

- Solid waste management areas should be located a minimum of 50 feet away from concentrated flows of stormwater, drainage courses, and stormwater drains, and should not be located in areas prone to flooding or ponding.
- Dumpsters and waste containers should be located on paved areas or concrete pads, and covered by overhanging roof structure or canopy when possible.
- Utilize a secondary containment system (such as curbing, berms, liner or vault) where waste containers touch the ground to prevent contact with stormwater runoff and to contain spills. Smaller waste containers can be raised off the grounds with a pallet or similar method.
- Ensure that dumpster or solid waste container capacity (size and number) is adequate for the waste streams generated by the facility.
- Only appropriate solid wastes should be placed in dumpsters and solid waste containers. Certain wastes such as hazardous waste, appliances, fluorescent lamps, pesticides, etc., may not be disposed of in solid waste containers.
- Do not dump liquid in dumpsters.
- Avoid overfilling a dumpster or solid waste container – arrange for regular waste collection before containers overflow.
- Dumpster and solid waste containers should be kept in good condition without corrosion or leaky seams. Repair or replace if they are deteriorating to the point where leakage is occurring. Consider the use of dumpster and container liners.
- Immediately clean up any leaks or spills from a dumpster or solid waste container. Never hose down the solid waste management area into the stormwater drain or drainage ditch.
- Dispose of rinse and washwater from the cleaning of dumpster and solid waste containers to a sanitary sewer drain in accordance with local wastewater requirements. Never discharge the washwater onto pavement, or to a stormwater drain or drainage ditch.
- Keep all solid waste collection and storage areas clean.

Temporary Waste Piles:

- Cover temporary waste piles with a waterproof cover (made of polyethylene, polypropylene, or equivalent). The cover should be adequately secured.

Litter:

- Provide a sufficient number of covered litter receptacles for the facility.
- Empty litter receptacles frequently to prevent spillage.
- Stencil or mark stormwater drains on the facility's property with "DUMP NO WASTE: KEEP IT CLEAN – DRAINS TO STREAM".

Solid Waste Transfer and Transport:

- Loading and unloading solid wastes can cause leaks and spills during transfer. Operate all equipment to minimize spills and fugitive emission losses (such as dust or mist). Vacuum transfer systems can help minimize waste loss.
- Ensure that vehicles that transport waste have spill prevention equipment such as baffles for liquid wastes, and sealed gates and spill guards for solid waste.

Inspection Procedures: Look for physical evidence of problems:

- Inspect solid waste management area for leaks or spills.
- Inspect dumpsters and solid waste containers for proper coverage, tarps for leaks or tears.
- Inspect curbs and berms around dumpsters area.

Measurable Goal: Establish environmentally responsible maintenance procedures for solid waste handling and transferring.

Operational By-Products/Waste

Goal: Eliminate illegal dumping.

Overview: Illegal dumping has become an increasingly large problem. The garbage is usually dumped on vacant lots, along utility right-of-ways, on public and private lands, and at other normally unattended locations. Illegal dumps can pollute local waterways and groundwater.

Township Operations: "No Dumping" signs are posted where appropriate in the Township. By-product/waste are identified for recycling. "Illegally dumped" materials are cleaned up and disposed of in accordance with environmental regulations.

Targeted Pollutants:

- Bacteria
- Organic Matter
- Oil and Grease
- Heavy Metals
- Toxic Chemicals
- Trash and Debris

BMPs:

- Post "No Dumping" signs.
- Illuminate area if possible.
- Prevent access. Erect barriers.
- Identify the by-products/waste that should be recycled (i.e., paper, cardboard).

Inspection Procedures:

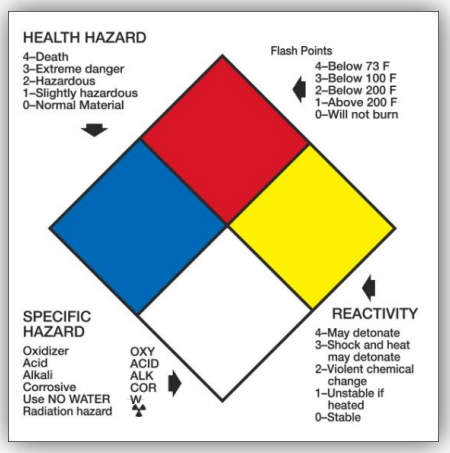
- Conduct regularly scheduled inspections for maintenance concerns.
- Unscheduled patrolling of areas by police.

Maintenance Procedures:

- Clean up and dispose of "illegally dumped" materials, trash/debris in accordance with environmental regulations.
- Cut and remove vegetation.

Measurable Goal: Document inspections and any actions taken.

Hazardous and Waste Materials Management



Goal: Reduce and/or eliminate impacts to receiving waters from lube oils; coatings and their compatible solvents (paints, thinners, etc.); anti freeze; cleaning agents; fuels (gas, diesel, kerosene).

Overview: Hazardous material and wastes are those that "could cause injury or death; or damage or pollute land, air, or water". This includes substance that are ignitable (flammable), corrosive, toxic, explosive, or reactive, i.e., react with air, water, or acids or bases. Specific definitions are found in the Code of Federal Regulations (40 CFR Part 261). Improper handling, transfer, storage and disposal of hazardous materials and wastes can result in the contamination of stormwater runoff, surface water and groundwater.

Township Operations: All materials are stored in closed, labeled containers. Secondary containments devices are used where appropriate. All oil is recycled. Other materials are recycled if possible and otherwise disposed of in accordance with environmental regulations.

Applicable Operations and Activities:

- Toxic Chemicals
- Corrosive and Reactive Materials
- Ignitable and Flammable Materials

Targeted Pollutants:

- Bacteria
- Oil and Grease
- Heavy Metals
- Toxic Chemicals
- Abnormal pH
- Hazardous Materials

BMPs:

- Material Safety Data Sheets (MSDS) must be available for each hazardous material used or generated at a facility, site or operation and should be followed for details regarding labeling, handling, storage, cleanup, and proper disposal.
- Ensure that all materials stored in closed, labeled containers. If stored outside, drums should be placed on pallets, away from storm receivers. Inside storage areas should be located away from floor drains.

- Whenever possible, store and handle hazardous materials and wastes indoors or enclosed storage sheds.
- Outdoor handling and storage areas for hazardous material or waste containers should be paved and covered with an overhanging roof structure or canopy. Utilize a secondary containment system (such as curbing, berms, liner or vault) where containers touch the ground to prevent contact with stormwater runoff and to contain spills. Smaller storage containers can be raised off the ground with a pallet or similar method, with provision for spill control.
- Label all containers of hazardous materials with the identity of the substance as shown on the MSDS as well as the appropriate hazard warning (health and physical hazards), according to Federal regulations.
- All hazardous materials and wastes should be in sealed containers constructed of a suitable material. Ensure that each container is compatible with its contents. Containers must be in good conditions and not leaking.
- Containers must be closed at all times except when adding or removing hazardous materials or wastes.
- All spills and leaks of hazardous materials and wastes should be immediately cleaned up with the appropriate method and disposed properly.
- Storage of reactive, ignitable or flammable materials and wastes should comply with the Uniform Fire Code and the National Electric Code, and any other applicable code.
- Follow appropriate practices and protocols for loading, filling and/or unloading of liquid materials.
- Never mix hazardous wastes.
- Use a pretreatment system to remove containments prior to discharge.
- Reduce stock of materials “on hand”.
- Use the least toxic materials (i.e., non hazardous) to perform work.
- Minimize working quantities of hazardous materials stored on hand.
- Install/use secondary containment devices where appropriate.
- Eliminate wastes by reincorporating coating/solvent mixtures into the original coating material for reuse.
- Recycle materials if possible, or ensure proper disposal of wastes.
- Review MSDS for chemical compatibility guidance. Incompatible hazardous materials or wastes should be stored at least 20 feet apart and be separated by non-combustible partition, dike, berm, or secondary containment device.

Inspection Procedures:

- Regular inspection of material storage areas (inside and outside).
- Regular inspection and cleaning or oil/water separators by qualified contractor.
- Inspect stormwater discharge locations regularly (for contaminants, soil staining, plugged discharge lines).

Measurable Goal: Document inspections and actions taken.

Spill Response and Prevention

Goal: Limit potential for spills and be prepared for clean up response.

Overview: Spills and leaks are major contributors to stormwater pollution and can adversely impact water quality in receiving waters. *Spill prevention* and *spill response* are critical to effective stormwater pollution prevention efforts.

Township Operations: The Township keeps all materials properly stored and labeled and uses secondary containment systems where appropriate. Police department shall ensure fluids spill from motor vehicle accidents are cleaned in appropriate manner. This shall be coordinated with vehicle tow services.

Applicable Operations and Activities:
- Toxic chemicals
- Corrosive and reactive materials
- Ignitable and flammable materials
- Primers, paints, finishes and coatings

BMPs:
- Keep all materials properly stored in closed, labeled containment systems.
- Use secondary containment systems where appropriate.
- Keep spill recovery materials available for immediate response to a spill.

Inspection Procedures:
- Inspect secondary containment systems, oil/water separators periodically.
- Inspect containers for leaks.
- Monitor areas near storm inlets and floor drains for indications of spills.

Maintenance Procedures: Use reusable spill cleanup material (sponge mops, oil absorbent pads, etc.).
- Pump out oil water separators as needed.
- Protect drains with oil absorbent materials.
- Clean out receivers on regular schedule.
- Remove spilled salt from salt loading area.

Measurable Goals: Document inspections and any spill incidents as well as actions taken to clean up.

Outdoor Manufacturing Operations

Goal: Prevent or reduce the risk of discharge of pollutants to stormwater from manufacturing operations taking place outdoors

Overview: Township Maintenance crew may perform some manufacturing or production activities in outdoor areas. These activities include outdoor processing, fabrication, mixing, milling, refining, grinding, crushing, and operations using hazardous materials. These activities have the potential to produce or release pollutants such as suspended solids, abnormal pH, heavy metals, oils and greases, toxic chemicals, and other pollutants that can contaminate stormwater runoff, surface water and groundwater.

Township Operations: The Township's maintenance department may perform manufacturing of parts or equipment outdoors.

Applicable Operations and Activities: Any outdoor manufacturing or production activity including:

- Processing
- Fabrication
- Mixing
- Milling
- Refining
- Grinding/Crushing
- Any Other Outdoor Manufacturing Activity with Possible Contaminants

Pollution Control Approach: Cover and contain outdoor manufacturing activities to prevent contact with rain and stormwater runoff.

Targeted Pollutants:

- Sediment
- Organic Matter
- Oil and Grease
- Heavy Metals
- Toxic Chemicals
- Abnormal pH
- Trash and Debris

BMPs:

- If practical and cost-effective, relocate the manufacturing/production activity indoors.
- Cover the manufacturing or production area(s) with a permanent roof if possible.
- If moving or covering the activity is not possible:
  - Perform the activity during dry periods when rain in not likely, whenever possible.
  - Modify or segregate the activity to eliminate or minimize exposure to rain and/or contamination of stormwater runoff.

- Use berms or curbs to prevent stormwater runoff from adjacent areas from flowing onto the manufacturing or production area(s).
- Place drip pans or absorbent material beneath any process or activity with a potential to leak or spill contaminants.

- Provide a secondary containment system for all outdoor manufacturing or production equipment or processes that may use oil or any hazardous material.
- All equipment should be regularly inspected and properly maintained such that they do not leak or discharge petroleum, hydraulic oil, or other pollutants.
- Immediately contain and clean up any leaks or spills during manufacturing or production using appropriate methods. Use dry absorbents, such as absorbent granules, socks and pads to clean up spills or leaking fluids. Absorbents should be cleaned up properly, bagged and disposed properly.
- Cover outdoor open process tanks (such as dip tanks) when not in use.
- Cover temporary storage piles and waste materials with reinforced tarpaulins or place in covered bins.
- Oil and grease should be collected separately and not disposed into solid waste containers.
- Sweep or use other dry methods such as vacuuming to clean outdoor manufacturing/production areas regularly. Do not hose down manufacturing and production areas.
- Ensure that all washwater is collected or drains to a sump or drain line connected to sanitary sewer, a holding tank or treatment/recycling system.

Outdoor Manufacturing and Production Area Design Features:

- For manufacturing and production activities where liquids are used, the production area should be designed to prevent liquid spills from entering a stormwater drain, drainage ditch or surface water by grading the area to a drain connected to a dead-end sump or sanitary sewer. Ensure that the secondary containment system is large enough to contain the entire volume of potential spill.
- Local fire regulations should be consulted on the clearance of roof covers over flammable materials.

Inspection Procedures:

- Daily - Inspect outdoor manufacturing and production area(s) to check for any contaminants. Promptly contain, clean up and properly dispose of any contaminants. Do not hose down paved areas.
- Ongoing - Conduct routine preventive maintenance of process equipment and check for leaks.
- Weekly - Inspect berms, curbing, and secondary containment systems, perform repairs as needed.

Spill Prevention and Response:

- Develop Standard Operating Procedures for spill prevention and clean up.
- Store and maintain appropriate spill cleanup materials and equipment in a location near the outdoor manufacturing/production area(s).

Outdoor Painting and Finishing

Goal: Prevent or reduce the risk of discharge of pollutants to stormwater from painting, finishing and coating activities occurring outside, including surface preparation.

Overview: Outdoor painting, finishing and coating activities involve the application of primers, paints, finishes and coatings to any type of exterior surface. These activities also include surface preparation work that involves stripping, sanding, or sandblasting. Without proper pollution prevention, stormwater runoff from outdoor painting and finishing work areas can become contaminated by chemicals and solvents as well as suspended solids, heavy metals and toxic hydrocarbons.

Township Operations: the Township Road Department may perform outside preparation and painting on equipment or vehicle fleet.

Applicable Operations and Activities: Any activity involving the outdoor application of primers, paints, finishes and coatings to vehicles, furniture, manufactured products, buildings, structures, rooftops, roadways, parking lots, or any other exterior surface. This includes preparation work such as stripping and sandblasting.

Pollution Control Approach: Contain pollutants from painting, finishing and coating activities to prevent pollutants from reaching surrounding stormwater drains, drainage ditches and surface waters.

Targeted Pollutants:

- Sediment
- Oil and Grease
- Heavy Metals
- Toxic Chemicals
- Trash and Debris
- Paints and Finishes

BMPs:

- If practical, enclose all painting, finishing and coating activities consistent with Pennsylvania and OSHA regulations.
- Prior to starting surface preparation, painting, finishing and coating activities, check the weather and avoid when windy conditions or rain is likely.
- Follow section “Pressure Washing and Surface Cleaning” for any outdoor cleaning or pressure washing activities prior to surface preparation or painting/finishing/coating activities.

- Protect nearby stormwater drains with waterproof covers, filter fabric, or a secured liner prior to surface preparation or painting/finishing/coating activities.
- Transport paint and finishes to and from project sites in containers with secure lids and tied down to the vehicle.
- Use ground cloths, tarps or plastic sheeting under objects to collect dust and debris from stripping, sanding and sandblasting operations.
- Use ground cloths, tarps or plastic sheeting in locations where paints, finishes, coatings and other liquid materials are carried and applied.
- Review Material Safety Data Sheets (MSDS) for all paints, finishes, coatings, detergents, solvents and degreasers to ensure that they are stored, mixed, and used in full compliance with manufacturer's recommendation and the MSDS.
- Mix and pour paints, finishes and coatings over drip trays, and indoors if possible.
- Prior to sandblasting or spray painting, properly enclose the work area to contain blasting residue and airborne overspray and drift. Use plywood or temporary scaffolding to hang drop cloths or draperies. Inspect containment measures during the activity to ensure they are working.
- Test and inspect spray equipment prior to painting or coating. Tighten all hoses and connections. Do not overfill paint containers.
- Immediately contain and clean up, and properly dispose of any paint or other liquid spills using absorbent materials.
- Clean up and properly dispose of paint or metal chips, sediment, particulates, trash and debris generated using dry methods such as sweeping and vacuuming. Do not hose down work areas.
- If using water-based paints, clean painting equipment in a sink or basin connected to the sanitary sewer or in portable containers that can be dumped into a sanitary sewer. Clean up non-water based paints, finishes, or other materials in a manner that enables the collection of waste paint and solvents for recycling and proper disposal. Never pour waste paint down a sink or stormwater drain.
- If any paint or coating contains lead or tributyl tin, it is considered a hazardous waste and should be disposed of as such.
- Properly store leftover paints and finishes if they are to be kept. Recycle paint when possible, or dispose of properly.

Inspection Procedures:

- **Daily** – Inspect outdoor painting and finishing area(s) to check for any contaminants including dust/sediment, debris, spilled paint/finishes, and trash. Promptly contain and clean up sing appropriate methods. Do not hose down paved areas.

Spill Prevention and Response:

- Develop Standard Operating Procedures (SOPs) for spill prevention and clean up.
- Store and maintain appropriate spill cleanup materials on site in a location near the work area.

Chemical Application

Goal: Prevent or reduce the risk of discharge of pollutants to stormwater from chemical applications undertaken outdoors for pest control, wood treatment, and other applications.

Overview: Pesticides, herbicides, wood preservatives and other chemicals are often used outdoors for pest management, building and grounds maintenance, water proofing and sealing, dust and sediment management, and other processes. Chemicals applied outdoors can pollute stormwater either through direct contact with rain or through stormwater runoff coming in contact with treated areas and surfaces.

Township Operations: The Township owns and maintains a municipal building with maintenance building on one site and also two parks.

Application Operations and Activities: Any outdoor chemical application such as:

- Pesticide/herbicide/fungicide treatment (other than landscaping activities)
- Lumber and wood treatment
- Sealing and waterproofing
- Dust or sediment management and control

Pollution Control Approach: Practice proper application of chemical treatments and handling of chemicals to reduce the potential of contamination of stormwater runoff.

Targeted Pollutants:

- Heavy Metals
- Toxic Chemicals
- Pesticides, Other Chemicals

BMPs:

- Never apply chemicals outdoors when it is raining or if there is a significant chance of rain in the forecast.
- Avoid excessive application of the chemical. Always follow the manufacturers' application guidelines and directions for appropriate amounts and application conditions.
- Use the smallest amount of chemicals necessary to accomplish the intended purpose.
- Consider the use of a less toxic alternative to perform the required task.

- Use drip pans or absorbent pads to capture drips and spill when transferring liquid chemicals.
- Avoid mixing or applying chemicals near a stormwater drain, drainage ditch or surface water.
- Inspect application equipment, sprayers and hoses for leaks, loose fittings and improper or poor fitting gaskets. Leaks should be repaired immediately or equipment removed from service.
- When applying chemicals on rooftops and impervious surfaces, downspouts and stormwater drains should be covered.
- Protect nearby stormwater drains with covers, filter fabric, or a secured liner for all drainage areas treated by the chemical application or/over which outdoor chemical application processes have occurred.
- Immediately clean up and properly dispose of any chemical leaks or spills using appropriate methods and materials. Do not hose down leaks or spills to a stormwater drain, drainage ditch or surface water.
- Follow all pollution prevention practices and guidance for hazardous materials and waste handling. (See section Hazardous/Waste Management).

Inspection Procedures:

- **Daily** – Inspect application equipment for leaks, loose fittings and improper or poor fitting gaskets. Leaks should be repaired immediately or equipment removed from service.

Spill Prevention and Response:

- Develop Standard Operating Procedures (SOPs) for spill prevention and clean up
- Store and maintain appropriate spill cleanup materials in a location near the chemical application area(s).

Pressure Washing and Surface Cleaning

Goal: Prevent or reduce the risk of discharge of pollutants to stormwater from outdoor pressure washing and surface cleaning activities.

Overview: Outdoor pressure washing and surface cleaning activities, such as the cleaning of building facades. Rooftops and pavements, can readily degrade water quality if the washwater is allowed to discharge to the stormwater drainage system or to surface water. The washwater from these activities can be contaminated with detergents and cleaning agents, suspended soils, organic matter, trash, heavy metals, and numerous other pollutants present on the surface being washed.

Applicable Operations and Activities: Any outdoor pressure washing or surface cleaning operations or activity, such as the cleaning of:

- Building facades
- Rooftops
- Pavements

Pollution Control Approach: Prevent contaminated washwater and pollutants from reaching or being discharged to the stormwater drainage system.

Targeted Pollutants:

- Sediments
- Nutrient
- Bacteria
- Organic Matter
- Oil and Grease
- Heavy Metals
- Toxic Chemicals
- Trash and Debris

BMPs:

- Prior to pressure washing and surface cleaning activities, contact the local Municipal Authority to determine the available options for the proper disposal of washwater.
- Identify and cover all nearby stormwater drains with impervious barriers such as berms, plugs or rubber mats, or screens as needed. Ensure stormwater drain covers and the amount of washwater generated will not flood the area or adversely affect vehicle or pedestrian traffic.

- Create a containment area with temporary curbs, berms and tarps as needed to keep washwater contained.
- Clean up as much as possible using dry cleaning methods such as sweeping and vacuuming before washing. Use absorbents on small oil spots.
- Consider surface cleaning only using water; when using detergents and cleaning agents, use the least toxic product needed to get the job done.
- Never dispose of washwater containing soap or other cleaning agents, grease, oils, solids, floatable debris or other pollutants onto pavement, or to a stormwater drain, drainage ditch or surface water. Discharge washwater to a holding tank truck or sanitary sewer in accordance with local wastewater requirements.
- Pressure washing wastewater that contains visible debris or residue, soap, detergent or other cleaning agents, or excessive amounts of any pollutant, may not be left on paved surfaces to evaporate, because that residue will eventually be discharged to the stormwater drainage system.
- Pressure washing and surface cleaning activities should not be undertaken during rain events or when rain is eminent.
- Minimize water use by using high pressure, low volume nozzles; this reduces the volume of wastewater that needs to be properly disposed.
- Instead of pressure washing and other wet surface cleaning, consider using alternative dry methods.
- Manage and dispose of washwater from pressure washing and surface cleaning appropriately:
-

Paved Area?	Using Soap, Detergent or Cleaning Agents	Washwater Management and Disposal Requirements
YES	YES	Use a water collection device that enables collection of the washwater and associated solids. A sump pump, wet vacuum or similar device may be used to collect the washwater and loose material. All collected water and solids must be disposed of properly.
YES	NO	A filter fabric catch basin insert or other type of filter media/screening device should be used to trap the particles in the washwater runoff. All filtered solids must be disposed properly.
NO	YES	Disperse water as sheet flow and allow to infiltrate grass or ground. Do not allow to enter stormwater drainage system or flow to stream or other water body. Ensure this practice does not kill grass or vegetation.
NO	NO	Disperse water as sheet flow and allow to infiltrate grass or ground.

Tool, Parts and Equipment Cleaning

Goal: Prevent or reduce the risk of discharge of pollutants to stormwater from the cleaning of tools, parts, or smaller power equipment.

Overview: The cleaning of tools, parts and smaller power equipment can often contaminate stormwater runoff when inappropriate methods of cleaning are used and washwater is not managed properly. Pollutants can include detergents and cleaning agents, hydrocarbons and other toxic organic compounds, oils and greases, nutrients, heavy metals, abnormal pH, and suspended solids.

Township Operations: The Township owns a maintenance building, where maintenance and repairs are done on all vehicles and equipment.

Applicable Operations and Activities: Township's maintenance personnel may have occasion to wash tools, parts or small power equipment outdoors.

Pollution Control Approach: Provide appropriate facilities and employ proper techniques for the cleaning of tools, parts and equipment to prevent contaminated washwater and pollutants from reaching the stormwater drainage system.

Targeted Pollutants:

- Sediment
- Nutrients
- Oil and Grease
- Heavy Metals
- Toxic Chemicals
- Abnormal pH
- Trash and Debris
- Detergents and Cleaning Agents

BMPs:

- Tool, parts and equipment washwater is considered process water and must be discharged to a sanitary sewer, holding tank or process treatment system, regardless of the washing method used.
- Designated wash area should be well marked with signs indicating where and how washing must be done.
- Use the least toxic detergents, cleaning agents or solvents to get the job done.
- Minimize use of solvents. Clean using manual methods or steam cleaning when possible, or use water-based solvents. Use a wire brush or bake oven for small tools and

parts cleaning. Use non-caustic cleaning methods instead of caustic agents whenever possible.

- Use self-contained sinks and tanks when cleaning with solvents. Do all liquid cleaning at a centralized area so the solvents and residues stay in one area.
- Consider recycling washwater with a closed loop system or use self-contained washers. Numerous products are commercially available that recycle and contain wash water and cleaning solvents.
- Collect all washwater from tool and equipment washing operations and discharge to a sanitary sewer, holding tank, or process treatment system. Recycle or pretreat washwater effluent prior to discharge to sanitary sewer as required by the local wastewater utility.
- Never discharge any washwater directly to a stormwater drain, drainage ditch or surface water.

Inspection Procedures: Check to make sure all washwater sumps and berms do not leak, upon completion of cleaning activity.

Maintenance Procedures:

- Recycle washwater with closed loop system or use self-contained washers.
- Discharge all washwater to a sanitary sewer.

Measurable Goal: Document inspections and any actions taken.

Vehicle/Equipment Washing

Goal: Prevent or reduce the risk of discharge of pollutants to stormwater from vehicle and equipment washing and cleaning activities.

Overview: Washing and cleaning of vehicle exteriors and engine compartments is a common activity for township's vehicle fleets. Washwater from vehicle cleaning and detailing activities can contaminate stormwater and receiving waters with toxic hydrocarbons, oils and grease, detergents and detailing chemicals, nutrients, heavy metals and suspended solids.

Pollution Control Approach: Prevent the release of vehicle and equipment washwater and associated pollutants to the stormwater drainage system.

Township Operations: The Township conducts all vehicles washing outside where runoff can sheet flow across vegetated areas. All hoses are equipped with automatic shutoff devices and spray nozzles.

Applicable Operations and Activities:

- Maintenance Building
- Township's vehicle fleet

Targeted Pollutants:

- Sediments
- Nutrients
- Oil and Grease
- Heavy Metals
- Toxic Chemicals
- Trash and Debris
- Detergents and Agents

BMPs:

For all vehicles washing and cleaning:

- Initiate single purpose use of vehicle bays – dedicate only one bay for washing.
- Perform cleaning with pressurized cold water, without the use of soaps, if waste water will flow to a storm sewer system.

- Never allow washwater or cleaning agents (including detailing products) to flow into a stormwater drain, drainage ditch or surface water.
- Use minimal amounts of biodegradable soaps only if wastewater will discharge to a sanitary sewer system.
- Rinse with hoses that are equipped with automatic shutoff devices and spray nozzles.
- Steam clean (without soap) where wastes can be captured for proper disposal (i.e., oil/water separator).

For fleet or permanent facilities:

- Designate a paved vehicle area. Designated area should be well marked, and bermed and graded to capture washwater and direct it to a sump or drain line connected to a sanitary sewer, a holding tank or a treatment/recycling system.
- Do not conduct oil changes or other maintenance activities in the designated washing area. These activities should be conducted in an area specifically designated for vehicle maintenance.
- For smaller fleets and operations, consider the use of properly maintained off-site commercial car wash and cleaning facilities.

Inspection procedures: Identify the need for cleaning of catch basins, oil/water separators.

Maintenance Procedures:

- Perform steam cleaning or pressure washing where wastes can be captured for proper disposal.
- Take precautions against excess use of/spillage of detergents.

Measurable Goals: Document inspections and any actions taken.

Vehicle/Equipment Maintenance

Goal: Prevent or reduce the risk discharge of pollutants to stormwater from vehicle/ equipment maintenance activities areas.

Overview: Vehicle and heavy and light equipment repair and maintenance activities are potentially significant sources of stormwater pollution, due to the use of harmful materials and wastes involved. Engine repair and service, brake and transmission work, parts cleaning, replacement of vehicle fluids, and outdoor vehicle and equipment storage can all contribute a number of contaminants to stormwater runoff such as hydrocarbons (motor oil, gasoline, diesel fuel and grease), heavy metals (such as lead, copper, and zinc), antifreeze, solvents and other toxic chemicals.

Pollution Control Approach: Implement procedures during repair and maintenance, vehicle storage, waste handling and cleaning activities to prevent contaminants from entering the stormwater drainage system.

Township Operations: The Township conducts all vehicle/equipment maintenance work indoors. If work must be performed outside, measures are employed to guard against spillage of materials. All spilled materials are cleaned up immediately using “dry” methods. All vehicle fueling is done off-site at commercial fuel pumps. Wastes are recycled or disposed of in accordance with environmental regulations.

Applicable Operations and Activities:

- Maintenance Building

Targeted Pollutants:

- Sediments
- Oil and Grease
- Heavy Metals
- Toxic Chemicals
- Trash and Debris
- Vehicle Fluids

BMPs:

Repair and Maintenance Activities:

- Conduct maintenance work indoors. If work must be performed outside, guard against spillage of materials that could discharge to storm receivers.
- Any outdoor maintenance and repair activities at a stationary facility should be done in a designated vehicle maintenance area covered with a roof and bermed or enclosed to prevent with rain and stormwater.
- For temporarily or mobile repairs or maintenance work being done outdoors, always use a tarp or ground cloth, and drip pans beneath the vehicle or equipment to capture spills and drips.
- Designate a special area to drain and replace motor oil, coolant, and other vehicle fluids where drips and spills can be easily cleaned up. The designated area should have no connections to a stormwater drain or sanitary sewer.
- Avoid changing motor oil or vehicle fluids, or performing equipment maintenance near a stormwater drain, drainage ditch, surface water or anywhere where contaminants could come into contact with rain or stormwater runoff.
- Always use a funnel when pouring fluids, and use a drip pan under a vehicle when unclipping hoses, unscrewing filters and removing other parts that might leak to keep splatters and drips off the shop floor.
- Check all incoming vehicles for oil and other vehicle fluid leaks. Use a drip pan underneath leaking vehicles and equipment.
- Initiate single purpose use of vehicles bays – dedicate one (or more) bays that have no (or sealed) floor drains for repairs/maintenance.
- Clean spilled materials immediately using “dry” methods.
- Never leave vehicles unattended while refueling.

Vehicle and Equipment Storage:

- Inspect vehicles and equipment for leaks on a regular basis, particularly those parked or stored long term. Use a drip pan underneath leaking vehicle and equipment.
- Store batteries upright in a contained and covered place indoors. Do not store batteries outside on the ground. Check to ensure batteries are not damaged or leaking. Keep battery acid-neutralized materials, such as baking soda, available near the storage area.

Material and Waste Handling:

- Do not pour liquid waste to sinks or storm drains.
- Identify appropriate recycling/disposal options for waste.
- Recycle greases, used oil and oil filters, antifreeze, cleaning solutions, automotive batteries, hydraulic fluids, and transmission fluids. Collect and store these recyclable materials separately and contract with a recycling service for pickup.
- Promptly transfer used fluids to proper waste or recycling drums. Avoid leaving full drip pans or other open containers sitting out for extended periods of time.

Cleaning Activities:

- Keep work area, tools and equipment clean and orderly. Ensure that oil and grease accumulations do not buildup.

- For larger spills, apply absorbent materials such as absorbent granules, socks and pads. Absorbents should be cleaned up promptly, bagged and placed in the trash.
- Sweep or damp mop for regular cleaning of work areas.
- Avoid hosing down work areas and parking lots. If the area is pressure-washed, wash water should be collected and/or directed to sanitary sewer. Never direct washwater to a stormwater drain, drainage ditch or surface water.
- Post signs over sinks to remind employees not to pour wastes down sink drains.
- Switch to use of non-toxic or less toxic chemicals for maintenance and cleaning when possible.

Inspection Procedures:

- Inspect (for maintenance purposes) floor drain systems, oil/water separators.
- Monitor "parked" vehicles/equipment for leaks.

Maintenance Procedures:

- Maintain a clean work area – remove contaminants from floors, drains, catch basins, using "dry" methods.
- Use non-hazardous cleaners. Use non-chlorinated solvents instead of chlorinated solvents.
- Repair or replace any leaking containers.
- Use steam cleaning/pressure washing instead of solvent for parts cleaning.
- Store waste fluids in properly capped, labeled storage containers.
- Store batteries in leak proof, compatible (i.e., non reactive) containers.
- Rinse grass from lawn care equipment on permeable (grassed) areas.
- Protect against pollution if outside maintenance is necessary (cover storm receiver, use secondary containment vessels, etc.).

Measurable Goal: Document Maintenance site inspections and spill responses.

Roadway and Bridge Maintenance

Goal: Reduce impact to receiving waters from road salt components, hydrocarbons, particulates such as dry paint or abrasive compounds and road debris.

Overview: Street and highway repair and maintenance activities include roadway and bridge repairs, median and shoulder work, painting and striping, routing mowing and vegetation management, and deicing operations. If these activities are not conducted properly, they have the potential to contaminate stormwater runoff with sediment, abnormal pH, heavy metals, toxic hydrocarbons and other chemicals, organic matter, and deicing materials.

Township Operations: The Township is responsible for maintaining all municipally owned roads and bridges. Paving operations are only carried out in dry weather. Fluid leaks or spills from equipment are cleaned up immediately using “dry” methods.

Pollution Control Approach: Use proper pollution prevention practices during street and highway repair and maintenance activities to prevent the introduction of sediment, concrete/asphalt, pesticides, and organic matter to the stormwater drainage system.

Applicable Operations and Activities: Street and highway repair and maintenance undertaken by municipal and private contractors including:

- Roadway Repairs
- Painting and Striping
- Resurfacing and Paving
- Bridge Repairs
- Moving and Vegetation Management
- Deicing Operations

Targeted Pollutants:

- Sediments
- Organic Matter
- Oil and Grease
- Heavy Metals
- Toxic Chemicals
- Abnormal pH
- Trash and Debris
- Pesticides, Deicing Materials

BMPs:

General Measures for Street and Highway Repair and Maintenance:

- Incorporate preventive maintenance and planning for regular operations and maintenance activities.

- Cover and contain all maintenance supplies and material with a temporary waterproof cover to prevent contact with rain or stormwater runoff.
- Avoid storing piles of raw materials (soil, sand, gravel) in the street, near stormwater drains or gutters. If piles must be stored on the street or highway surface, use appropriate temporary containment or sediment barriers such as berms, dikes, fiber rolls, silts fences, or sand bags.
- Do not refuel, service or clean maintenance trucks, paving equipment, mowers and other vehicles, tolls and equipment near a stormwater drain, drainage ditch or surface water.
- Regularly inspect all equipment for leaks and repairs as needed.
- Stage road operations and maintenance activity (patching, potholes) to reduce spillage. Cover catch basins and manholes during this activity.
- Clean up fluid leaks or spills from paving equipment/materials immediately.
- Restrict the use of herbicides/pesticide applications to roadside vegetation.
- Sweep and vacuum paved roads and shoulders to remove debris and particulate matter.
- Maintain roadside vegetation; select vegetation with a high tolerance to road salt.
- Clean out bridge scuppers and catch basins regularly.
- Direct water from bridge scuppers to vegetated areas.
- Mechanically remove (i.e., sweep) debris from bridge deck and structure prior to washing.
- Clean storm sewer systems annually using hydrovac.

Painting and Striping:

- Schedule painting, marking, and striping projects during dry weather only. Cease all activities when rain threatens.
- Use thermoplastic markings in place of paint, whenever feasible.
- Block nearby stormwater drain inlets (within 25 feet and/or down gradient of the project).
- Promptly clean up any spills of paints, cleaners or other chemicals.

Resurfacing and Paving:

- Pave/re-seal in dry weather only.
- Implement appropriate pollution prevention practices for concrete and asphalt production and installation.

Bridge Repair Work:

- Use suspended tarps, booms and vacuums to capture pollutants (e.g. waste, debris, paint, solvents, rust and paint scrapings) generated during bridge repair and maintenance. If sanding or sand blasting, use a vacuum bag attachment.
- When working on bridges, transport and store paint and materials in containers with secure lids.
- Do not transfer, store or load paint on a bridge.
- Use the appropriate stormwater and erosion and sedimentation control techniques when doing work along stream banks.

Vegetation Management:

- Mowing operations should be performed when the soil and grass are dry.

- Grass clippings should be left to decay and release their nutrient back to the turf, thus minimizes the need for fertilizer.
- Never blow or dump grass and vegetation clippings, leaves and other waste onto the street or highway surface, or into a stormwater drain, drainage ditch or surface water.

Roadway Deicing Operations: (see Road Salt Storage and Application p.41)

Inspection Procedures:

- Inspect paving, sweeping, vacuuming, and all other maintenance vehicle/equipment as appropriate.
- Inspect roads and bridges for implementation of applicable BMP's.

Maintenance Procedure:

- Repair leaking/defective containers or equipment.

Measurable Goal: Document inspections and any actions taken.

Catch Basin and Storm Drain System Cleaning and Maintenance

Goal: Reduce sediments loading to receiving waters.

Overview: Catch basins can capture sediments and sediment-bound pollutants in stormwater. A factor that is critical to the effectiveness of a catch basin at removing sediments is regular maintenance to remove accumulated sediments and other debris.

Township Operations: All Townships owned inlets, ditches and outfalls are cleaned as needed and prior to and/or just after large storm events for the purpose of removing any accumulated debris and sediment. Inlets and pipes are replaced as they are identified for repair or a complaint is received.

Applicable Operations and Activities:

- Removing Sediments/debris
- Repair inlets/ditches/swales

Targeted Pollutants:

- Sediment
- Nutrients
- Bacteria
- Organic Matter
- Oil and Grease
- Heavy Metals
- Toxic Chemicals
- Abnormal pH
- Trash and Debris
- Detergents
- Fertilizer
- Pesticide

BMPs:

- Repair/replace catch basins, grates and pipes as necessary.
- Clean catch basins, ditches and outfalls on regular basis and as necessary.

Inspection Procedures:

- Prioritize stormdrain system and catch basins for routine maintenance.

- Clean catch basins when depth of deposits is > 1/3 the depth from the bottom of the basin to the invert of the lowest pipe/opening into or out of basin.
- Clean ditches to maintain hydraulic capacity by removing accumulated sediments and debris.
- Inspect stormwater conveyance facilities immediately following heavy storms to identify any issues and to remove any blockages.

Maintenance Procedures:

- Catch basins/storm sewer pipe – clean in spring to remove sand/grit/salt from winter road maintenance. Clean in fall to remove leaves/silt/debris.
- Establish ditches:
  - Maintain proper slope.
  - Maintain vegetation.
  - Remove obstacles/debris (i.e., trash, tree branches, brush, cut vegetation).
  - Excavation/ditch scraping – if necessary, use devices (i.e., hay bales, silt fence) to capture sediments prior to stormwater discharge into receiving waters, reseed ditch.
  - Properly dispose of collected debris.

Measurable Goal: Document inspections and any actions taken.

Street Cleaning

Goal: Prevent or reduce the risk of discharge of pollutants to stormwater from streets, driveways, parking areas and other impervious surfaces.

Overview: Streets, roads, highways and other large paved surfaces, such as parking areas, are significant sources of pollutants in stormwater discharges including trash, sediment, organic matter and oil and grease. Regular sweeping and cleaning of roadways and parking areas are effective methods of removing both large and fine particulate pollutants.

Township Operations: Street sweeping/vacuuming is conducted by the Road Department annually in the spring. Leaf collection is conducted by Road Department in the fall. Collected leaf materials are hauled to Dallas Area Municipal Authority composting facility.

Applicable Operations and Activities: Townships public streets, roads and parking areas.

Targeted Pollutants:

- Sediment
- Nutrient
- Oil and Grease
- Heavy Metals
- Vehicle Fluids
- Organic Matter
- Trash and Debris

BMPs:

- Street sweep/vacuum at regular intervals, and “as needed”.
- Make sure your sweepers are well maintained and the brooms are changed regularly based on manufacturer recommendations.
- Commit to sweeping in the range of 3-to-7 mph, depending upon specific conditions.

Road and Street Sweeping:

- Operate all sweeper equipment to get optimal removal of debris and pollutants from the roadway. This includes adjusting sweeper speed, brush alignment and rotation rate, and sweeping pattern.

- Vacuum sweepers are the preferred method of roadway sweeping, as mechanical brush sweeping does not remove fine particulates as effectively.
- Establish the frequency of street and highway sweeping based on vehicular traffic and litter patterns. Conduct highway and street sweeping at optimal frequencies to minimize the buildup of pollutants.
- If stormwater drain blockages and/or high pollutant loadings occur in certain areas, schedule additional sweeping in those areas.
- Schedule sweeping operations immediately after:
  - Special events such as street fairs, art shows and parades where additional debris is likely to have accumulated.
  - Grass cutting and/or vegetation removal on roadway medians and shoulders.
  - Street and highway repair projects that involves saw cutting, chip sealing or other operations that might have left wastes or debris on road surfaces.
- Schedule sweeping operations after leaf collection in the fall and after deicer application in the winter.
- Schedule additional sweeping during new construction projects involving temporary storage of construction materials like dirt, sand and road base along the roadway.
- Ensure that debris from sweeper hoppers is collected and taken to a temporary storage area or directly to a landfill. Any temporary sweeper debris storage area should be more than 100 feet from any stormwater drain, drainage ditch or surface water. Ensure that any temporary storage areas are protected from contact with stormwater runoff.
- Avoid conducting sweeping operations during wet weather.
- Do not wash down any streets or curbs during sweeping operations. Fine water spray for dust control is acceptable but it should use as little water as possible.
- Consider using street signage or windshield flyer placements advising residents of "No Parking: Street sweeping" days and enforcement for parked vehicles that consistently ignore the no-parking days.

<u>Parking Lot Maintenance</u>:

- Post "No Littering" signs in parking areas.
- Provide an adequate number of covered trash receptacles to discourage littering. Clean out receptacles frequently to prevent spillage.
- Do not allow rooftop drains from adjacent buildings to discharge directly onto paved surfaces.
- Establish the frequency of parking area cleaning based on usage and litter patterns.
- Sweep the parking area using a vacuum or mechanical sweeper on a regular basis as needed. Vacuum sweepers are preferred as mechanical brush sweeping does not remove fine particulates as effectively. Dispose of debris and dirt at a landfill – never dump into a stormwater drain, drainage ditch or surface water.
- Clean up oil, antifreeze and other vehicle fluid leaks on pavement surfaces using absorbent materials. Properly dispose of used absorbents and cleanup materials.
- When pressure washing of parking areas is necessary, follow the procedures in (Pressure Washing and Surface Cleaning section)

- Have designated personnel conduct inspections of the parking areas and stormwater facilities associated with them. Clean out stormwater inlets and catch basins on a regular basis as needed.

Inspection Procedures:

- **Inspect** - streets, and plan (as needed) for maintenance/repairs
- **Prioritize** – some streets (i.e., those with high traffic flows, on flat grades, or with many trees) may need more frequent cleaning.
- **Daily** – Inspect cleaning equipment/sweepers for leaks.

Maintenance Procedures:

- Spring sweeping/vacuuming – remove salt sand residues.
- Fall sweeping, collection of leaves at appropriate time intervals.
- Dry sweep or vacuum streets during dry weather.
- Maintain equipment – check for/repair fluid leaks.
- Stage road operations and maintenance activity (patching, potholes repair) to reduce spillage of materials. Cover catch basins and manholes during activity.

Measurable Goal: Document inspections and any actions taken.

Road Salt Storage and Application

Goal: Reduce salt applications to the minimum amount necessary to maintain public safety. Prevent salt contaminated runoff from reaching local waterways.

Township Operations: The Township uses 50/50 salt/anti-skid mix. Salt and anti-skid is stored on site at the municipal complex in a three- sided, roofed building.

Applicable Activities:

- Deicing Operations
- Loading/Unloading

Pollution Control Approach: Consider alternative deicing materials (i.e., calcium chloride, magnesium chloride). Apply deicers on roadways only as needed, using the minimum quantities and lowest applications rate that will be effective. Transfer to storage shed to prevent contact with stormwater runoff.

Targeted Pollutants:

- Sediment
- Nutrients

BMPs:

- Require covered facility for salt storage and size properly for seasonal needs.
- Store salt on highest ground elevation to allow for infiltration of stormwater.
- Calibrate salt spreaders for proper application.
- Use a wetting agent with salt to minimize “bouncing” during application.
- Cover salt loading area, or build storage shed.
- Unload salt deliveries directly into storage facility, or if not possible, move inside immediately.
- Post a copy of the Material Safety Data Sheet (MSDS) and the bill of lading for each product and shipment
- Each vehicle that applies anti-icing or deicing products must maintain a log, with entries by each operator, listing the times of operation, locations where each anti-icing or deicing product was applied.

Inspection Procedures: Look for physical evidence of problems:

- Inspect salt storage shed for leaks, structural problems.
- Inspect salt piles for proper coverage, tarps for leaks or tears.
- Inspect salt application equipment.
- Inspect salt regularly for lumping or water contamination.
- Inspect surface areas for evidence of runoff – salt stains on ground near and around the salt shelter, loading area, or down slope.
- Inspect for excessive amounts of salt on roads.

Maintenance Procedures:

- Service trucks and calibrate spreaders regularly to ensure accurate, efficient distribution of salt.
- Educate and train operators on hazards of over-salting to roads and environment.
- Repair salt storage shed – structural problems can lead to salt spillage.
- Repair/replace tarps.

Measurable Goal: Document inspections and any actions taken.

Landscaping and Lawn Care and Vegetation Management

Goal: Prevent or reduce the risk of discharges of pollutants to stormwater from landscaping, lawn care and vegetation.

Overview: Landscaping, lawn care and vegetation management include a wide variety of activities, including vegetation removal, lawn moving, fertilizer and pesticide application, watering and other landscaping practices. Improper landscaping practices can result in the contamination of stormwater runoff with sediment, nutrients, organic materials, toxic chemicals, heavy metals oils and trash. Leaves, grass clippings and other removed vegetation can also clog stormwater drain inlets and pipe, resulting in localized flooding and damage.

Township Operations: The Township owns and maintains a municipal building, road department buildings, and also two parks.

Applicable Operations and Activities:

- Vegetation/Landscaping Installation
- Landscape Maintenance
- Grass Seeding and Sodding
- Mowing and Lawn Care
- Fertilizer Application
- Pesticide Application
- Water and Irrigation
- Vegetation Removal

Pollution Control Approach: Use proper landscaping practices to prevent the introduction of sediment, fertilizers, pesticides, and vegetative materials to the stormwater drainage system.

Targeted Pollutants:

- Sediments
- Nutrients
- Bactria
- Organic Matter
- Oil and Grease
- Heavy Metals
- Toxic Chemicals
- Trash and Debris

BMPs: Road Department Employees should be encouraged to use slow release or naturally derived (organic) fertilizers.

Landscaping and Planting Activities:

- Leave grass clippings on lawn, or mulch clippings into lawn.
- Never blow clippings, leaves and other waste onto a stormwater drain or drainage ditch.
- All new trees should be planted away from sewer lines or underground utilities.
- Conduct soil disturbance activities during dry weather, cover stockpiled landscaping materials.
- Choose native plants and those that require less water and fertilizer.
- Place temporarily stockpiled landscaping materials, including soil and mulch, away from stormwater drains, drainage ditches and surface waters. Berm and cover stockpiles with secure waterproof tarps or plastic sheeting to prevent exposure to rainfall and stormwater.
- Cover all stormwater drains before hydro-seeding.
- Protect and preserve open space buffer areas and instruct maintenance personnel to establish no-mow zones to allow trees and shrubs to reclaim disturbed stream banks.

Watering and Irrigation:

- Avoid overwatering. Only water when plants and grass show signs of moisture stress.
- If it is necessary to water landscaping, drip irrigation techniques should be employed and watering should be conducted in the morning.

Moving Management:

- Turf grasses should be moved high and frequently to reduce insects and weeds. Keep mover blades sharp. Grass can be cut lower in the spring and fall to stimulate root growth, but no shorter than 1½ inches.

Weed/pest Management:

- Try to use manual or mechanical method for weed removal rather than applying herbicides.
- Use non-toxic and less toxic pesticides and pest control methods, whenever possible. Avoid the use of copper-based pesticides.
- Do not mix or prepare pesticides for application near a stormwater drain, drainage ditch or surface water. Prepare the minimum amount of pesticide needed for the job and use the lowest rate that will effectively control the pest.
- Spot treat only affected areas instead of using widespread pesticide application.
- Do not apply pesticides when it is raining or when rain is forecast.

Fertilizer Application:

- Determine the proper fertilizer application for the types of soil and vegetation involved. Soils should be tested to determine the correct fertilizer formula and requirements.
- Follow the manufacturers' recommendations and directions for the proper amounts of fertilizer and application instructions.
- Avoid applying fertilizers when it is raining or when rain is forecast.
- Fertilizers should be worked into the soil rather than broadcast and left on the surface.

- Sweep up dry fertilizer granules that fall on pavement or other hard surfaces. Do not hose or blow off.

Waste Management:

- Use dry cleanup methods, such as sweeping and bagging, rather than blowing or washing off paved surfaces.
- When possible, recycle grass clippings and leaves by using a mulching mower.
- Dispose of grass clippings, leaves, sticks, or other collected vegetation by bagging as solid waste for pick up or bring to a composting facility or permitted landfill. If composting on-site, keep waste materials and compost away from stormwater drains and natural drainage ways.
- Always cover waste materials when hauling off-site.

Inspection Procedures:

- Routinely monitor lawns to identify problems during the early stages.
- Identify nutrient/water needs of plants, inspect for problems by testing soils.

Maintenance Procedures:

- Minimize/ eliminate fertilizer application.
- Leave grass clippings on lawn, or mulch clippings into lawn.
- Limit water as necessary to supplement rainwater (1inch/week is adequate).
- Mow with sharpened blades set high (3 inches) – remove only the top 1/3 of the leaves.
- Water plants in the early a.m.

Measurable Goal: Establish environmentally responsible maintenance procedures for lawn care.

Construction and Land Disturbance

Goal: Limit sediments runoff to receiving waters.

Overview: All disturbed areas of soil must be protected from eroding, especially steep slopes and large exposed areas. Soil should be stabilized so it does not invade neighboring property or wash into stormwater drains, streams or rivers. All stormwater drains or other means of transporting stormwater both natural and man-made must be protected at all times during construction.

Township Operations: Construction and land clearing activities are planned to limit soil exposure. Sediment control devices are installed prior to soil disturbance. Construction sites are stabilized as soon as practicable to protect against sediment runoff. Storm drains are protected against sediment runoff. The Township has Memorandum of Understanding with Luzerne Conservation District.

Applicable Operations and Activities:

- All Township projects that involve land disturbance.

Targeted Pollutants:

- Erosion
- Sediment
- Organic Matter
- Oil and Grease
- Trash and Debris
- Hydrocarbons

BMPs:

Erosion Control:

- Construct soil binders, or silt fencing and straw bales to hold disturbed soil.
- Establish earth dikes and drainage swales.
- For steep slopes, use rip rap to prevent erosion
- Multiple forms of erosion control must be utilized in highly concentrated water flow areas.
- Plan the construction and/or land clearing activates so that soil is not exposed for long periods of time.
- Limit grading to small areas.

Sediment Control:

- Minimize compaction of soils for infiltration.
- Maximize opportunities for infiltration.
- Stabilize site to protect against sediment runoff.
- Protect against sediment flowing into storm drains.
- Maintain native vegetation (especially near waterways).
- Install sediment barriers on slope or divert stormwater.
- Install sediment control devices before disturbing soil.
- On steeper banks, place fiber rolls or erosion control blankets.
- Construct a sediment trap or sediment basin.
- To drain water from site, direct the water through silt socks or use sediment filters or traps to remove sediment. Pumped water shall be directed to a pumped water filter bag.
- All erosion and sediment controls must remain in place until vegetation has a good growth.

Excavations:

- Do not use herbicides to kill vegetation. Use mechanical means to clear the area.
- Put in place proper erosion control practices before excavation.
- Temporarily block off adjacent stormwater inlets with sandbags and silt socks.
- Only clean fill may be used. Fill containing wood, plastic, or metal materials is not permitted.
- Provide temporary soil stabilization if site will remain dormant for longer than 30 days. Soil stabilization includes seeding, mulches, blankets or mats and soil binders. If the site to remain dormant for more than one year use permanent stabilization such as permanent seeding and planting, sodding, channel stabilization and vegetative buffer strips.

Inspection Procedures:

- Regularly scheduled inspections (of sediment control devices, erosion safeguards).
- Inspect during storm or snow melt events.

Maintenance Procedures: Check/repair all devices that have been installed to ensure protection against erosion.

Measurable Goal: Document inspections and any actions taken.

Stormwater Training Videos Links:

- Part 1: https://www.youtube.com/watch?v=rhXbA1R_VZk&feature=youtu.be
- Part 2: https://www.youtube.com/watch?v=_AdGziksz_g&feature=youtu.be
- Part 3: https://www.youtube.com/watch?v=ZiajZM6Avlg&feature=youtu.be

  https://www.youtube.com/watch?v=IGqvsztguRA&feature=youtu.be