POLLUTION PREVENTION/GOOD HOUSEKEEPING

FOR MUNICIPAL OPERATIONS:

A GUIDANCE DOCUMENT
OF
BEST MANAGEMENT PRACTICES
AND
INSPECTION CHECKLISTS

WNY
Stormwater
Coalition

Erie County Department of Environment and Planning
Division of Environmental Compliance Services

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AND INSPECTION CHECKLISTS

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INTRODUCTION

This group of (17) Pollution Prevention/Good Housekeeping Best Management Practices and Inspection checklists that relate to municipal operations and their potential effects on stormwater have been developed and assembled by a group of municipal officials that have a wealth of experience pertaining to operations and maintenance within municipalities. The information that has been formulated as guidance material for implementation of the Stormwater Phase II Municipal Separate Storm Sewer System Permit **has not** been designed to be comprehensive in all aspects of each topic. Municipalities should be "flexible" in their use of this information as pertains to their own unique municipal operations.

STORMWATER REFERENCE INFORMATION

Many sources of information concerning stormwater are available. The sources listed below were used to develop the Guidance Document:

New York State Dept. of Transportation – (http://www.dot.state.ny.us) - use the search function to locate the Environmental Handbook for Transportation Operations document and other related information

Cornell University - (http://www.cornell.edu) – the Dept. of Horticulture has information pertaining to pest control, landscaping and lawn care

U.S. Environmental Protection Agency - (http://www.epa.gov) – the National Menu of Best Management Practices (BMPs) for NPDES Storm Water Phase II document can be found at http://cfpub.epa.gov/npdes/stormwater/menuofbmps/menu.cfm within the EPA website, along with other stormwater related information

Rick\StWtrOutlineInfo

GLOSSARY OF TERMS

Biochemical oxygen demand – Depletion of dissolved oxygen in water caused by decomposition of chemical or biologic matter.

Catch Basin – A unit that is installed to capture and retain debris, particulate matter, or other solid materials, but allows stormwater to "flow through" to its discharge location

Drip Irrigation –irrigation via a perforated device (i.e. hose) that allows for a slow watering method with reduced evaporation and runoff losses

Hydraulic – Referring to water

(IPM) Integrated Pesticide Management – An environmentally sensitive approach to pest management (**not** elimination) that uses the least toxic control method – a sustainable approach to managing pests by combining biological, cultural, physical, and chemical tools.

Loading – Term used in conjunction with *sediment* and *hydraulic* to describe excessive amounts (of the term that is described)

Naturescaping – An alternative landscaping technique that incorporates native plants and creates beneficial wildlife habitat – also conserves water and energy, reduces soil/water pollution.

Oil/Water Separator – A unit that is installed "in line" to a wastewater discharge pipe which is devised to capture petroleum derived materials that float on water

Pesticides – Products that are toxic and are used to kill pests - can be classified as insecticides, herbicides, rodenticides, biocides, aquacides.

POTW – Publicly Owned Treatment Works - - a municipal wastewater treatment plant

Scupper – an opening (in a bridge deck) to allow water drainage – it does not capture debris, particulate matter, or other solid materials

Sediments - Small particles of matter that settle to the bottom of a body of water

Silt – Material consisting of mineral soil particles ranging in diameter from 0.02 millimeters to 0.002 millimeters

Stormwater - rainwater runoff or snow melt waters – these waters can interact with different types of materials, transporting contaminants to surface waters (i.e. streams, creeks, rivers)

Toxicity –The relative degree of being poisonous

Xeriscaping – An alternative landscaping technique that incorporates slow growing plants to conserve water and reduce yard trimmings

Zero input, low input (lawns) - have minimal need for care (i.e. addition of fertilizers/pesticides, water, etc.)

LANDSCAPING AND LAWN CARE
POLLUTION PREVENTION/GOOD HOUSEKEEPING PRACTICES

1. IDENTIFY IMPACTS TO/ON STORMWATER/RECEIVING WATERS (SURFACE WATERS)

    - Nutrient loading (nitrogen and phosphorous) from fertilizer runoff can cause excessive aquatic plant growth

2. PROBLEM EVALUATION: ASSESS IMPACT ON RECEIVING WATERS, PRIORITIZE

    - Biochemical Oxygen Demand

3. IDENTIFY (AND CHOOSE APPROPRIATE) SOLUTIONS (BMP's)

    - Purchase only enough lawn care products necessary for one year – store properly to avoid waste generation (spills, leaks)
    - Use slow release or naturally derived (organic) fertilizers
    - Train employees in the proper application of lawn care products
    - Develop zero input/low input lawns
    - Consider alternative landscape techniques (i.e. naturescaping, xeriscaping)
    - Plant trees away from sewer lines or other underground utilities
    - Use drip irrigation techniques for landscaping

4. INSPECTION PROCEDURES

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

5. MAINTENANCE PROCEDURES

    - Minimize/eliminate fertilizer application
    - Leave grass clippings on lawn, or mulch clippings into lawn
    - Limit watering as necessary to supplement rainwater (1 inch/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.

6. ADVISORY

    - Refer to the Cornell University website (Dept. of Horticulture)

LANDSCAPING AND LAWN CARE INSPECTION CHECKLIST

Location: _____

COMPONENTS/ITEMS TO CHECK	PROBLEMS OBSERVED	MAINTENANCE/REPAIRS NECESSARY	ACTION
Grass/plant condition	Wilted/brown leaves	Yes No	❑ Add water
General area	Barren soils	Yes No	❑ Re-seed, cover with hay or burlap to prevent runoff

Date of Inspection _____ Name_____

Frequency _____

SPILL RESPONSE AND PREVENTION
POLLUTION PREVENTION/GOOD HOUSEKEEPING PRACTICES

1. IDENTIFY MATERIALS THAT IMPACT STORMWATER/RECEIVING WATERS (SURFACE WATERS)

    - Liquids associated with vehicle/equipment maintenance products (oils, fuels, antifreeze, etc.)
    - Rock salt
    - Chemicals (fertilizers, pesticides)

2. PROBLEM EVALUATION: ASSESS IMPACT ON RECEIVING WATERS, PRIORITIZE

    - Toxicity
    - Biochemical oxygen demand

3. IDENTIFY (AND CHOOSE APPROPRIATE) SOLUTIONS (BMP's)

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

4. INSPECTION PROCEDURES

    - Inspect secondary containment systems, oil/water separators periodically
    - Inspect containers for leaks, areas near storm receiver inlets and outlets, floor drains for indications of spills

5. MAINTENANCE PROCEDURES

    - Use reusable spill clean up materials (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

6. ADVISORY

    - Report petroleum spills (as necessary) to the NYSDEC (851-7220 or 1-800-457-7362)
    - Refer to NYSDOT guidance information (Environmental Handbook for Transportation Operations)

SPILL RESPONSE AND PREVENTION INSPECTION CHECKLIST

Location: _____

COMPONENTS/ITEMS TO CHECK	PROBLEMS OBSERVED	MAINTENANCE/REPAIRS NECESSARY	ACTION
Products/waste storage areas	Uncovered/deteriorating containers Materials spilled, leaks	Yes No	❑ Cover/replace ❑ Clean up
Equipment storage areas	Fluid leaks	Yes No	❑ Clean up
Secondary containment systems	Structural deterioration Leakage of fluids	Yes No	❑ Repair/replace ❑ Clean up
Oil/water separators	Excessive amounts of contaminants	Yes No	❑ Pump out
Floor drains, storm receiver inlets and outlets	Accumulation of contaminants	Yes No	❑ Clean up/remove

Date of Inspection _____ Name_____

Frequency _____

PEST CONTROL
POLLUTION PREVENTION/GOOD HOUSEKEEPING PRACTICES

1. IDENTIFY IMPACTS TO/ON STORMWATER/RECEIVING WATERS (SURFACE WATERS)

    - Runoff of pesticides may harm aquatic life, may contaminate water

2. PROBLEM EVALUATION: ASSESS IMPACT ON RECEIVING WATERS, PRIORITIZE

    - Toxicity to aquatic plants and animals

3. IDENTIFY (AND CHOOSE APPROPRIATE) SOLUTIONS (BMP's)

    - Purchase only enough pesticides necessary for one year – store properly to avoid waste generation (spills, leaks, product deterioration)
    - Minimize/eliminate pesticide application, use lowest toxicity pesticides
    - Do not apply pesticides immediately prior to or during rain events
    - Ensure that employees are properly trained and certified in pesticide application techniques and safety
    - Develop zero input, low input lawns
    - Eliminate food, water, and shelter for pests
    - Adopt integrated pest management (IPM) techniques
    - Adopt alternatives to pesticides options (i.e. use mechanical traps, physical methods for removal, or biological controls)

4. INSPECTION PROCEDURES

    - Identify pests – are levels acceptable or must action be taken to control pests?
    - Inspect pesticide inventory – properly dispose of out-of-date pesticide materials

5. MAINTENANCE PROCEDURES

    - Inspect pest traps (i.e. bait boxes) regularly – remove (and properly dispose of) dead pests
    - Block/eliminate access to buildings/structures for pests
    - Remove pests (insects) by hand

6. ADVISORY

    - Abide by NYSDEC regulations (6NYCRR Part 325) pertaining to this topic
    - Refer to the Cornell University website (Dept. of Horticulture)

PEST CONTROL INSPECTION CHECKLIST

Location: _____

COMPONENTS/ITEMS TO CHECK	PROBLEMS OBSERVED	MAINTENANCE/REPAIRS NECESSARY	ACTION
Pesticide storage area	Excessive amounts of pesticides Spilled pesticides Empty containers No security or access control	Yes No	❑ Reduce volumes, implement IPM ❑ Clean up ❑ Properly dispose ❑ install
Application equipment	Improper amounts of pesticides applied	Yes No	❑ Properly calibrate
Floor	Drain system Not curbed around perimeter No impermeable surface	Yes No	❑ Eliminate ❑ Install curbing ❑ Install impermeable surface

Date of Inspection _____ Name_____

Frequency _____

PET WASTE COLLECTION
POLLUTION PREVENTION/GOOD HOUSEKEEPING PRACTICES

1. IDENTIFY IMPACTS TO/ON STORMWATER/RECEIVING WATERS (SURFACE WATERS)

    - Municipal animal shelters

2. PROBLEM EVALUATION: ASSESS IMPACT ON RECEIVING WATERS, PRIORITIZE

    - Biochemical oxygen demand
    - Solids loading

3. IDENTIFY (AND CHOOSE APPROPRIATE) SOLUTIONS (BMP's)

    - House all animals in an enclosed, roofed structure
    - ID/utilize "permitted" waste disposal facilities for animal wastes

4. INSPECTION PROCEDURES

    - Inspect shelter regularly for necessary cleanup/removal of wastes

5. MAINTENANCE PROCEDURES

    - Remove spilled food, animal wastes on a regular basis

6. ADVISORY

    - None

PET FACILITY MAINTENANCE INSPECTION CHECKLIST

Facility Location: _____

COMPONENTS/ITEMS TO CHECK	PROBLEMS OBSERVED	MAINTENANCE/REPAIRS NECESSARY	ACTION
Animal Housing area	Excessive amounts of waste Dead animals	Yes No	❑ Remove/rinse to floor drain (to sanitary sewer) ❑ Bag and remove
Facility's floor drain	Discharges directly to environment	Yes No	❑ Connect to sanitary sewer

Frequency of Inspection Daily_____ Name_____

Date _____

SEPTIC SYSTEM MANAGEMENT
POLLUTION PREVENTION/GOOD HOUSEKEEPING PRACTICES

1. IDENTIFY IMPACTS TO/ON STORMWATER/RECEIVING WATERS (SURFACE WATERS)

    - Ponding of improperly treated wastewaters (on the surface of a leach field or a sand filter system) can increase the biochemical oxygen demand of receiving waters.
    - Excessive amounts of disinfectant (i.e. chlorine) applied to a wastewater discharge from a sand filter system can cause toxicity to aquatic plants and animals

2. PROBLEM EVALUATION: ASSESS IMPACT ON RECEIVING WATERS, PRIORITIZE

    - Biochemical oxygen demand

3. IDENTIFY (AND CHOOSE APPROPRIATE) SOLUTIONS (BMP's)

    - Divert stormwater runoff (i.e. from roof drains) away from septic system
    - Divert groundwater (sump pump) discharges away from septic system
    - Locate swimming pools away from the septic system (at least 20' from the septic tank, at least 35' from the closest edge of the leach field or sand filter system)
    - Prevent problems caused by vegetation - growth of woody plants on the system
    - Prevent hydraulic loading - "Spread out" the use of devices which use large volumes of water across the entire day – clothes washing, dish washing, bathing, repair leaky fixtures
    - Minimize water usage by using flow restrictors on potable water distribution devices (i.e. shower heads, water faucets)

4. INSPECTION PROCEDURES

    Physical evidence of problems:

    - "back up" of wastewater in sewer lines
    - sewage odors
    - leach field/sand filter - wetness/ponding on surface
    - overflow of wastes from system components
    - heavy vegetation (woody plants) growth on system components

5. MAINTENANCE PROCEDURES

    - "Pump out" the septic tank as needed (NYSDEC recommends once/year)
    - Mow surface vegetation regularly
    - Prevent "heavy equipment" from driving on top of the system components

6. ADVISORY

    - Obtain site plan/site sketch of system, and retain for reference.

SEPTIC SYSTEM MANAGEMENT INSPECTION CHECKLIST

Unit ID:_____NYSDEC Permit #_____ Location_____

COMPONENTS/ITEMS TO CHECK	PROBLEMS OBSERVED	MAINTENANCE/REPAIRS NECESSARY	ACTION
Septic tank cover	Broken/cracked?	Yes No	❑ Replace
Distribution box	sewage overflowing, distribution box level?	Yes No	❑ Clean out ❑ Re-level
Leach field or sand filter	sewage on surface, odors, excessive vegetation growth	Yes No	❑ Clean out distribution lines ❑ Cut vegetation
Disinfection system (if present)	Operating improperly	Yes No	❑ Check/repair equipment
Outfall	Improper chlorine residual	Yes No	❑ Perform monitoring, sampling/analysis as permit requires

Frequency of Inspection _____ Last pump out (date) _____

Date of Inspection _____ Name_____

(If unit is a HOLDING TANK, pump out schedule)_____

VEHICLE/EQUIPMENT MAINTENANCE
POLLUTION PREVENTION/GOOD HOUSEKEEPING PRACTICES

1. IDENTIFY IMPACTS TO/ON STORMWATER/RECEIVING WATERS (SURFACE WATERS)

    - Trace amounts of metals/hydrocarbons are found in materials (i.e. fuels, antifreeze, batteries, motor oils, grease, parts cleaning solvents) that are typically used in maintenance operations

2. PROBLEM EVALUATION: ASSESS IMPACT ON RECEIVING WATERS, PRIORITIZE

    - Toxicity
    - Biochemical oxygen demand

3. IDENTIFY (AND CHOOSE APPROPRIATE) SOLUTIONS (BMPs)

    - Conduct maintenance work indoors – if work must be performed outside, guard against spillage of materials that could discharge to storm receivers
    - Seal floor drains that discharge directly to the environment, if possible
    - Initiate single purpose use of vehicle bays – dedicate one (or more) bays that have no (or sealed) floor drains for repairs/maintenance
    - Clean up spilled materials immediately, using "dry" methods
    - Install pretreatment systems (oil/water separators) where necessary in sewer lines to capture contaminants (oil, grit), and maintain as needed
    - Never leave vehicles unattended while refueling
    - Identify appropriate recycling/disposal options for wastes

4. INSPECTION PROCEDURES

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

5. 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 receivers, use secondary containment vessels, etc.)

6. ADVISORY

    - Report petroleum spills (as necessary) to the NYSDEC (851-7220 or 1-800-457-7362)
    - Refer to NYSDOT guidance information (Environmental Handbook for Transportation Operations)

VEHICLE AND EQUIPMENT MAINTENANCE/STORAGE AREA INSPECTION CHECKLIST

Unit ID: _____ Location:_____

COMPONENTS/ITEMS TO CHECK	PROBLEMS OBSERVED	MAINTENANCE/REPAIRS NECESSARY	ACTION
Truck/equipment	Leaks/spills	Yes No	❑ Clean spill, repair leak, capture fluids in drip pan
Salt/sand spreader	Improper amounts of product applied	Yes No	❑ Recalibrate
Lawn care equipment	Improper operation	Yes No	❑ Inspect/repair

Date of Inspection _____ Name_____

Frequency _____

VEHICLE/EQUIPMENT WASHING
POLLUTION PREVENTION/GOOD HOUSEKEEPING PRACTICES

1. IDENTIFY IMPACTS TO/ON STORMWATER/RECEIVING WATERS (SURFACE WATERS)

    - Nutrients (biodegradable soaps)
    - Metals
    - Petroleum based wastes (organic pollutants)

2. PROBLEM EVALUATION: ASSESS IMPACT ON RECEIVING WATERS, PRIORITIZE

    - Biochemical oxygen demand from nutrient sources
    - Toxicity
    - Hydraulic loading

3. IDENTIFY (AND CHOOSE APPROPRIATE) SOLUTIONS (BMPs)

    - Initiate single purpose use of vehicle bays - dedicate only one bay for washing (with floor drain system)
    - Perform cleaning with pressurized cold water, without the use of soaps, if wastewaters will flow to a **storm sewer** system
    - Use minimal amounts of biodegradable soaps **only** if wastewaters 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)

4. INSPECTION PROCEDURES

    - Inspect floor drain systems regularly - use only those that discharge to a sanitary sewer, identify the need for cleaning of catch basins, oil/water separators

5. MAINTENANCE PROCEDURES

    - Map storm drain locations accurately to avoid illegal discharges
    - Perform steam cleaning or pressure washing where wastes can be captured for proper disposal
    - Take precautions against excess use of/spillage of detergents

6. ADVISORY

    - Require all facilities to connect floor drain systems to sanitary sewers (if available)
    - Refer to NYSDOT guidance information (Environmental Handbook for Transportation Operations)

VEHICLE AND EQUIPMENT WASHING AREA INSPECTION CHECKLIST

Facility location: _____

COMPONENTS/ITEMS TO CHECK	PROBLEMS OBSERVED	MAINTENANCE/REPAIRS NECESSARY	ACTION
Designated "wash only" area	No impermeable pad with wastewater collection system	Yes No	❑ Designate/construct area
Wastewater discharge location	Does not flow to either a holding tank or to sanitary sewers	Yes No	❑ Properly relocate discharge
Washing/degreasing compounds	Solvent based	Yes No	❑ Change to biodegradable products
Floor drain sump	Nonexistent	Yes No	❑ Install and maintain sump, remove debris
Oil/water separator	Excessive oils/sludges	Yes No	❑ Clean out contaminants
Catch basin	Non existent, accumulation of contaminants	Yes No	❑ Install/maintain catch basin

Date of Inspection _____ Name_____

Frequency _____

ROADWAY AND BRIDGE MAINTENANCE
POLLUTION PREVENTION/GOOD HOUSEKEEPING PRACTICES

1. IDENTIFY IMPACTS TO/ON STORMWATER/RECEIVING WATERS (SURFACE WATERS)

- Road salt components - sodium, calcium, and chlorides
- Hydrocarbons
- Particulates – such as dry paint or abrasive compounds, road debris
- Debris

2. PROBLEM EVALUATION: ASSESS IMPACT ON RECEIVING WATERS, PRIORITIZE

- Particulate matter
- Toxicity (paint – may contain metals such as lead, barium, cadmium)

3. IDENTIFY (AND CHOOSE APPROPRIATE) SOLUTIONS (BMPs)

- Incorporate preventive maintenance and planning for regular operations & maintenance activities
- Pave in dry weather only.
- 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 application to roadside vegetation
- Use porous asphalt for pothole repair and shoulder work
- 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
- Control particulate wastes from bridge sandblasting operations
- Use calcium magnesium acetate for deicing around bridges to minimize corrosion
- 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

4. INSPECTION PROCEDURES

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

5. MAINTENANCE PROCEDURES

- Clean bridge scuppers routinely and keep free of debris
- Direct runoff water from bridges to vegetated areas
- Install catch basins in place of bridge scuppers
- Use tarps, booms, and vacuums during painting or blasting activities (refer to reference information to control/capture particulate matter)
- Repair leaking/defective containers or equipment on paving equipment

6. ADVISORY

- Refer to NYSDOT guidance information (Environmental Handbook for Transportation Operations

ROADWAY AND BRIDGE MAINTENANCE INSPECTION CHECKLIST

Bridge No.: _____ BIN: _____ Carried: _____ Crossed: _____

Wetlands Present: Y N Stream Restriction: Y N If yes, Dates: _____

COMPONENTS/ITEMS TO CHECK	PROBLEMS OBSERVED	MAINTENANCE/ REPAIRS NECESSARY	ACTION
Bridge Deck (Top Side)	Debris Along Curb	Yes No	❑ Sweep bridge, deposit debris on bank 50' from sweep and spread out ❑ Wash Bridge Deck
Bridge Seats at Abutment, or Top of Piers	Debris on Seat or Top of Pier	Yes No	❑ Remove debris, deposit on stream banks ❑ Bird Nest Present? If yes, wait until nesting is complete. ❑ Wash Abutment & Pier
Washing of Superstructure	Debris – Salts on Superstructure	Yes No	❑ Bird Nest Present? If yes, wait until nesting is complete. ❑ Flaking Paint Present? If yes, do not wash. ❑ Stream Restriction? If yes, wait until restrictions are removed. ❑ Wash Superstructure

ALTERNATIVE DISCHARGE OPTIONS FOR CHLORINATED WATER POLLUTION PREVENTION/GOOD HOUSEKEEPING PRACTICES

1. IDENTIFY IMPACTS TO/ON STORMWATER/RECEIVING WATERS (SURFACE WATERS)

    - Discharge of chlorinated (i.e. swimming pool, POTW) waters to surface waters can injure or kill aquatic life

2. PROBLEM EVALUATION: ASSESS IMPACT ON RECEIVING WATERS, PRIORITIZE

    - Toxicity – very low levels of chlorine can detrimentally affect aquatic life
    - Hydraulic loading

3. IDENTIFY (AND CHOOSE APPROPRIATE) SOLUTIONS (BMPs)

    - Dechlorinate pool water before any discharge, be it over land or to the sanitary sewer, or allow the "disinfectant" to dissipate with sunlight, use, etc. prior to discharge
    - Use ultraviolet radiation or osmosis to disinfect water/wastewater
    - Backwash water should be discharged to the sanitary sewer, if available – if not available, discharge water over vegetated areas, not to surface waters

4. INSPECTION PROCEDURES

    - Check chlorine residuals prior to discharge.
    - Do not discharge wastewaters into the sanitary sewer system during periods of high flow.

5. MAINTENANCE PROCEDURES

    - Maintain proper levels of chlorine residuals in pool.
    - Allow disinfectant to dissipate prior to discharge of pool waters.

6. ADVISORY

    - Obtain permission from the municipal POTW prior to discharging any chlorinated pool waters to a sanitary sewer system.

ALTERNATIVE DISCHARGE OPTIONS FOR CHLORINATED WATER INSPECTION CHECKLIST

Location: _____

COMPONENTS/ITEMS TO CHECK	PROBLEMS OBSERVED	MAINTENANCE/REPAIRS NECESSARY	ACTION
Pools, hot tubs	Need to empty unit and replace water	Yes No	❑ Discharge to sanitary sewers or to vegetated areas after the disinfectant dissipates, not to storm sewers or surface waters

Date of Inspection _____ Name_____

Frequency _____

HAZARDOUS AND WASTE MATERIALS MANAGEMENT
POLLUTION PREVENTION/GOOD HOUSEKEEPING PRACTICES

1. IDENTIFY IMPACTS TO/ON STORMWATER/RECEIVING WATERS (SURFACE WATERS)

- Lube oils
- Coatings and their compatible solvents (paints, thinners, etc.)
- Anti freeze
- Cleaning agents
- Fuels (gas, diesel, kerosene)

2. PROBLEM EVALUATION: ASSESS IMPACT ON RECEIVING WATERS, PRIORITIZE

- Biochemical oxygen demand
- Toxicity to aquatic plants and wildlife
- Particulate loading

3. IDENTIFY (AND CHOOSE APPROPRIATE) SOLUTIONS (BMP's)

- Ensure that all materials are 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
- Eliminate floor drain systems that discharge to storm drains, if possible
- Use a pretreatment system to remove contaminants prior to discharge
- Reduce stock of materials “on hand” – use “first in/first out” management technique
- Use the least toxic material (i.e. non hazardous) to perform the work
- 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

4. INSPECTION PROCEDURES

- Physical on-site verification of sealed floor drains (or redirected to sanitary sewer)
- Regular inspection of material storage areas (inside and outside)
- Regular inspection and cleaning of oil/water separators by qualified contractor
- Inspect stormwater discharge locations regularly (for contaminants, soil staining, plugged discharge lines)

5. MAINTENANCE PROCEDURES

- Repair or replace any leaking/defective containers, and replace labels as necessary
- Maintain caps and/or covers on containers
- Maintain aisle space for inspection of products/wastes

6. ADVISORY

- Abide by NYSDEC regulations (6NYCRR Part 372) and OSHA regulations (29 CFR Part 1910) pertaining to these topics
- Refer to NYSDOT guidance information (Environmental Handbook for Transportation Operations)

HAZARDOUS AND WASTE MATERIALS MANAGEMENT INSPECTION CHECKLIST

Location: _____

COMPONENTS/ITEMS TO CHECK	PROBLEMS OBSERVED	MAINTENANCE/REPAIRS NECESSARY	ACTION
Outside storage areas	Weathering	Yes No	❑ Protect from weathering – store on pallets, cover
Salt piles Soil staging areas	Salt staining Silt runoff	Yes No Yes No	❑ Cover with tarps ❑ Cover with tarps, install physical barriers
Aboveground storage tanks	Deterioration	Yes No	❑ Inspect/repair/maintain, install secondary containment
Inside storage areas	Potential for discharges	Yes No	❑ Seal floor drains, install secondary containment
Drums, other containers	Deterioration Uncovered	Yes No	❑ Repair/replace ❑ Cover/cap

Date of Inspection _____ Name_____

Frequency _____

OPERATIONAL BY PRODUCTS/WASTES
POLLUTION PREVENTION/GOOD HOUSEKEEPING PRACTICES

1. IDENTIFY IMPACTS TO/ON STORMWATER/RECEIVING WATERS (SURFACE WATERS)

    - Potential for leaching of toxic and biologic contaminants to receiving waters

2. PROBLEM EVALUATION: ASSESS IMPACT ON RECEIVING WATERS, PRIORITIZE

    - Toxicity
    - Biochemical oxygen demand

3. IDENTIFY (AND CHOOSE APPROPRIATE) SOLUTIONS (BMP's)

    - Post “no dumping” signs
    - Illuminate area if possible
    - Prevent access – erect barriers
    - Identify the by products/wastes that should be recycled (i.e. paper, cardboard) or can be legally disposed of on municipal lands (i.e. deer carcasses) by referencing NYSDEC regulations (6NYCRR PART 360)

4. INSPECTION PROCEDURES

    - Regularly scheduled inspections - for maintenance concerns
    - Unscheduled patrolling of areas by police

5. MAINTENANCE PROCEDURES

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

6. ADVISORY

    - Abide by NYSDEC regulations (6NYCRR Part 360) pertaining to this topic
    - Refer to NYSDOT guidance information (Environmental Handbook for Transportation Operations)

OPERATIONAL BY-PRODUCTS AND WASTES INSPECTION CHECKLIST

Location _____

(example. Temporary dumping areas for bulky trash items)

COMPONENTS/ITEMS TO CHECK	PROBLEMS OBSERVED	MAINTENANCE/REPAIRS NECESSARY	ACTION
Condition of general area	Possible runoff to/ contamination of storm sewer or water body	Yes No	❑ Remove ❑ Fix
Type of material/waste observed?	Appropriate?	Yes No	❑ Remove to appropriate container/location
Security	Regular policing of area, Location properly secured/closed/locked?	Yes No	❑ Secure waste area
Disposal	Past disposal date?	Yes No	❑ Dispose timely

Inspection Frequency _____

Last Clean-up Date _____

Date of Inspection _____ Name_____

CATCH BASIN AND STORM DRAIN SYSTEM CLEANING
POLLUTION PREVENTION/ GOOD HOUSEKEEPING PRACTICES

1. IDENTIFY IMPACTS TO/ON STORMWATER/RECEIVING WATERS (SURFACE WATERS)

- **Catch basins** capture grit and debris, which, if not removed in a timely fashion, can discharge toxic and biological pollutants during rain and/or snow melt events
- **Storm drainage systems**, while not designed for capture of solid materials, can perform in the same manner with similar results.
- **Storm ditches**, if stripped of vegetation during cleaning, can result in silt deposition in receiving waters

2. PROBLEM EVALUATION: ASSESS IMPACT ON RECEIVING WATERS, PRIORITIZE

- Toxicity – heavy metals, organic compounds, etc.
- Biochemical oxygen demand
- Sediment loading

3. IDENTIFY (AND CHOOSE APPROPRIATE) SOLUTIONS (BMP's)

- Address:
  - storm drain receivers and (below grade) storm sewer systems
  - parking lot receivers
  - open ditches
  - catch basins and floor drain systems inside of buildings should be either:
    - sealed to prevent discharge
    - "permitted" by NYSDEC
    - discharged to sanitary sewers
- Contaminated wastewaters should not be discharged to a catch basin/street receiver/ditch
- Increase frequency of cleaning, as necessary
- Repair/replace storm drain receiver and catch basin receiver grates as necessary

4. INSPECTION PROCEDURES

- Physical inspection – prioritize storm drain systems and catch basins – catch basins on steep grades may need more frequent cleaning
- Clean catch basin when depth of deposits are >1/3 the depth from the bottom of the basin to the invert of the lowest pipe/opening into or out of basin – Institute temporary street parking bans to facilitate access to catch basins
- Ditch inspections – ID problems while traveling to job site
- Storm event inspection – identify pollution problems (i.e. sediments) to determine the need for additional protective measures
- Post storm event inspection – ID problems (i.e. blockages)

5. MAINTENANCE PROCEDURES

- Catch basins/storm sewer pipe – cleaning in spring to remove sand/grit/salt from winter road maintenance, cleaning in fall to remove leaves/silt/debris
- Established ditch:
  - Maintain proper slope
  - Maintain vegetation by cutting (to capture sediment) – Do not allow vegetation to grow to a height that would impair sight lines of drivers of motor vehicles
  - 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 sediment prior to stormwater discharge into receiving waters, reseed ditch
- New installation – capture particulate matter – install sediment basins/other devices in ditch
- Proper disposal of debris

6. ADVISORY

- Refer to NYSDOT guidance information (Environmental Handbook for Transportation Operations)

CATCH BASIN AND STORM DRAIN SYSTEM CLEANING INSPECTION CHECKLIST

Road Name: _____ Road Number: _____ Road Section: From: _____ To: _____

COMPONENTS/ITEMS TO CHECK	PROBLEMS OBSERVED	MAINTENANCE/ REPAIRS NECESSARY	ACTION	LOCATION (House number, distance from intersection)
Catch Basin/ Drop Inlet	Deterioration of Structure	Yes No	❑ Repair Structure or Grate ❑ Replace Structure or Grate	
	Clogged Inlets During or After Storm Event	Yes No	❑ Clean Grate / Inlet	
	Deposits in Structure	Yes No	❑ Clean Out Structure	
Storm Manhole	Deterioration of Structure	Yes No	❑ Repair Structure or Cover ❑ Replace Structure or Cover	
	Deposits in Structure	Yes No	❑ Clean Out Structure	
Storm Sewer Piping	Clogged Pipe	Yes No	❑ Clean Out Pipe	
	Deteriorated Pipe	Yes No	❑ Replace Pipe	
Ditches (Pollutants)	Excessive Vegetation	Yes No	❑ Mow Vegetation ❑ Scheduled Ditch Cleaning	
	Debris (branches, litter, garbage, etc.)	Yes No	❑ Clean Out Ditch	
	Excessive Siltation	Yes No	❑ Clean Out & Regrade Ditch	
Roadside / Cross Culverts	Clogged Pipe	Yes No	❑ Clean Out ❑ Review Size & Replace ❑ Clean Out & Regrade Ditch	
	Deteriorated Pipe	Yes No	❑ Replace Pipe ❑ Line Pipe	
Sediment Basins	Excessive Vegetation	Yes No	❑ Mow	
	Excessive Sediment Deposits	Yes No	❑ Clean Out Basin	
Outfall	Pollutants	Yes No	❑ Rip-rap	

Date of Inspection _____Name_____ Frequency _____

STREET CLEANING AND MAINTENANCE
POLLUTION PREVENTION/GOOD HOUSEKEEPING PRACTICES

1. IDENTIFY IMPACTS TO/ON STORMWATER/RECEIVING WATER (SURFACE WATERS)

- Poorly maintained streets allow for a "build up" of trash, grit, and debris, from which sediment and toxic/biological pollutants can be "washed out" during rain and /or snow melt events.
- Street repair/paving processes use materials that can contaminate receiving waters if they interact with stormwater.

2. PROBLEM EVALUATION: ASSESS IMPACT ON RECEIVING WATERS, PRIORITIZE

- Particulate matter – can cause sediment loading
- Biochemical oxygen demand
- Toxicity to aquatic plants and wildlife

3. IDENTIFY (AND CHOOSE APPROPRIATE) SOLUTIONS (BMP's)

- Street sweeping/vacuuming - at regular intervals, and "as needed"
- Perform operations such as paving in dry weather only.
- Prior to road reconstruction, consider/evaluate the use of "shouldered roads" instead of "curbed roads"
- Maintain roadside vegetation; select plants/trees that can withstand the action of road salt. Direct runoff to these areas.

4. 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

5. 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
- Initiate temporary street by street parking bans to allow access for cleaning
- Maintain equipment - check for/repair fluid leaks
- Stage road operations and maintenance activity (patching, pothole repair) to reduce spillage of materials. Cover catch basins and manholes during activity

6. ADVISORY

- Refer to NYSDOT guidance information (Environmental Handbook for Transportation Operations)

STREET CLEANING AND MAINTENANCE INSPECTION CHECKLIST

Location/Section of Road _____

COMPONENTS/ITEMS TO CHECK	PROBLEMS OBSERVED	MAINTENANCE/REPAIRS NECESSARY	ACTION
Roads (curb line)	Debris, grit, stone	Yes No	❑ Shovel or Vacuum
Milling	Broken pavement (excavated material)	Yes No	❑ Cover storm inlets, shovel, vacuum
Paving	Tack coat overspray	Yes No	❑ Cover storm inlets
Storm drain inlets	Broken brick, block, mortar	Yes No	❑ Repair
Roadside vegetation	Too high None observed	Yes No Yes No	❑ Cut ❑ Re-seed

Date of Inspection _____ Name_____

Frequency _____

ROAD SALT STORAGE AND APPLICATION
GOOD HOUSEKEEPING/POLLUTION PREVENTION PRACTICES

1. IDENTIFY IMPACTS TO/ON STORMWATER/RECEIVING WATERS (SURFACE WATERS)

- Salt is very soluble in water, and, in high concentrations, can have a deleterious effect on plants and aquatic life.

2. PROBLEM EVALUATION: ASSESS IMPACT ON RECEIVING WATERS, PRIORITIZE

- Toxicity

3. IDENTIFY (AND CHOOSE APPROPRIATE) SOLUTIONS (BMP's)

- Require covered facility for salt storage (prevents lumping and run-off loss), and size properly for seasonal needs
- Store salt on highest ground elevation to allow for infiltration of stormwater
- Calibrate salt spreaders for proper application
- Consider alternative deicing materials (i.e. calcium chloride, magnesium chloride)
- Use a wetting agent with salt to minimize "bouncing" during application
- Cover salt loading area, or build into storage shed
- Unload salt deliveries directly into storage facility, or if not possible, move inside immediately

4. 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 downslope
  - inspect for excessive amounts of salt on roads

5. 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

6. ADVISORY

- Refer to NYSDOT guidance information (Environmental Handbook for Transportation Operations)

ROAD SALT STORAGE AND APPLICATION INSPECTION CHECKLIST

Unit ID: _____ Location _____

COMPONENTS/ITEMS TO CHECK	PROBLEMS OBSERVED	MAINTENANCE/REPAIRS NECESSARY	ACTION
Storage shed	Salt outside of shed	Yes No	❑ Move salt into shed
Truck loading area	Salt on ground	Yes No	❑ Pick up, load onto truck ❑ do not overfill truck
Roads – (sites of application)	Excessive salt on ground	Yes No	❑ Remove by sweeping?
Salt spreader	Excessive salt on ground	Yes No	❑ Recalibrate salt spreader?

Date of Inspection _____ Name_____

ROAD KILL COMPOSTING OPERATIONS
GOOD HOUSEKEEPING/POLLUTION PREVENTION PRACTICES

1. IDENTIFY IMPACTS TO/ON STORMWATER/RECEIVING WATERS (SURFACE WATERS)

    - Potential for leaching of biologic contaminants to receiving waters

2. PROBLEM EVALUATION: ASSESS IMPACT ON RECEIVING WATERS, PRIORITIZE

    - Biochemical oxygen demand

3. IDENTIFY (AND CHOOSE APPROPRIATE) SOLUTIONS (BMP's)

    - Establish compost pile/windrow on a well drained, impervious surface that has minimal slope – segregate from other operations
    - Identify the proper types of carcasses (typically, deer) that should be composted
    - Locate compost piles at least 200 ft. away from receiving waters or wetlands
    - Prevent access by vermin/scavengers – erect barriers (i.e. snow fence) around pile

4. INSPECTION PROCEDURES

    - Check for odors, temperature of compost, exposed carcasses
    - Keep records (use a daily log)

5. MAINTENANCE PROCEDURES

    - Monitor temperatures
    - Take samples, analyze for pathogens
    - Establish windrows
    - Prevent erosion
    - Recycle completely composted material

6. ADVISORY

    - Abide by NYSDEC regulations (6NYCRR Part 360) pertaining to this topic
    - Refer to NYSDOT guidance

ROAD KILL COMPOST SITE INSPECTION CHECKLIST

Location: _____

COMPONENTS/ITEMS TO CHECK	PROBLEMS OBSERVED	MAINTENANCE/REPAIRS NECESSARY	ACTION
Compost pile	Exposed Carcasses	Yes No	❑ Add cover material (wood chips, compost)
	Odors	Yes No	❑ Cover with wood chips ❑ Add lime
	Liquid runoff (leachate)	Yes No	❑ Absorb with wood chips, return to compost pile
	Animals scavenging	Yes No	❑ Fence area ❑ Temporarily cover with tarp
	Wood chips too dry Wood chips too wet	Yes No Yes No	❑ Add water ❑ Allow to dry
	Insufficient compost temperature	Yes No	❑ Temporarily cover with tarp

Date of Inspection _____ Name_____

Frequency _____

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MARINA OPERATIONS
POLLUTION PREVENTION/GOOD HOUSEKEEPING PRACTICES

1. IDENTIFY IMPACTS TO/ON STORMWATER/RECEIVING WATERS (SURFACE WATERS)

- Liquids associated with boat maintenance products (oils, fuels, antifreeze, wood preservatives, etc. and particulate matter (i.e. boat bottom paint from hull sanding) can contain toxics
- Boat sewage can contain pathogenic bacteria that contribute increased biochemical oxygen demand to waterways
- Barren soils can contribute to sedimentation

2. PROBLEM EVALUATION: ASSESS IMPACT ON RECEIVING WATERS, PRIORITIZE

- Biochemical oxygen demand
- Toxicity
- Sediment loading

3. IDENTIFY (AND CHOOSE APPROPRIATE) SOLUTIONS (BMP's)

- Construct and maintain pump out stations (for sanitary wastes)
- Build and maintain fish cleaning stations
- Stabilize shoreline
- Designate locations for boat maintenance away from the water
- Minimize impervious areas – install vegetated buffer strips (i.e. grass, shrubs)
- Provide covered trash receptacles, spill clean up kits at fueling stations
- Educate (posters, signage) boaters and other marina users of potential problems

4. INSPECTION PROCEDURES

- Identify areas of runoff that lack vegetation
- Regularly inspect fueling stations (including tanks and piping), maintenance areas for spills, other potential sources of pollution
- Regularly check (and empty as necessary) fish cleaning stations, sewage pump out stations, trash cans

5. MAINTENANCE PROCEDURES

- Empty trash cans and pump out stations as needed
- Maintain vegetated areas between the water and work areas
- Replace spill clean up kits as necessary

6. ADVISORY

- Refer to: Shipshape Shores and Waters: A Handbook for Marina Operators and Recreational Boaters - http://www.epa.gov/owow/nps/marinashdbk2003.pdf

MARINA OPERATIONS INSPECTION CHECKLIST

Location: _____

COMPONENTS/ITEMS TO CHECK	PROBLEMS OBSERVED	MAINTENANCE/REPAIRS NECESSARY	ACTION
Trash cans, sewage pump out stations, fish cleaning stations	Full	Yes No Yes No	❑ Empty, dispose of wastes properly
Fueling stations	Spills	Yes No Yes No	❑ Clean up
Vegetated areas	Barren soils	Yes No	❑ Re-vegetate
		Yes No	❑
		Yes No	❑
		Yes No	❑

Date of Inspection _____ Name_____

Frequency_____

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CONSTRUCTION AND LAND DISTURBANCE
POLLUTION PREVENTION/GOOD HOUSEKEEPING PRACTICES

1. IDENTIFY IMPACTS TO/ON STORMWATER/RECEIVING WATERS (SURFACE WATERS)

    - Sediment runoff (i.e. silt, debris) can affect fish reproduction and habitat
    - Removal of shade trees from stream banks can increase water temperature which can result in reduced dissolved oxygen content in streams

2. PROBLEM EVALUATION: ASSESS IMPACT ON RECEIVING WATERS, PRIORITIZE

    - Particulate matter – can cause sediment loading
    - Biochemical oxygen demand – increases with temperature, depletes oxygen

3. IDENTIFY (AND CHOOSE APPROPRIATE) SOLUTIONS (BMP's)

    - Plan the construction and/or land clearing activities so that soil is not exposed for long periods of time
    - Minimize compaction of soils and impervious cover
    - Maximize opportunities for infiltration
    - Install sediment control devices before disturbing soil
    - Limit grading to small areas
    - Stabilize site to protect against sediment runoff
    - Protect against sediment flowing into storm drains
    - Maintain native vegetation (especially near waterways)
    - Install sediment barriers on slopes or divert stormwater

4. INSPECTION PROCEDURES

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

5. MAINTENANCE PROCEDURES

    - Check/repair all devices that have been installed to ensure protection against erosion

6. ADVISORY

    - Refer to NYSDOT guidance information (Environmental Handbook for Transportation Operations)
    - NY State Standards and Specifications for Sediment and Erosion Control
    - NY State Stormwater Management Design Manual

CONSTRUCTION AND LAND DISTURBANCE INSPECTION CHECKLIST

Location: _____

COMPONENTS/ITEMS TO CHECK	PROBLEMS OBSERVED	MAINTENANCE/REPAIRS NECESSARY	ACTION
Sediment control devices	None observed In disrepair	Yes No Yes No	❑ Install ❑ Repair
Sediment barrier devices	None observed In disrepair	Yes No Yes No	❑ Install ❑ Repair
		Yes No	❑
		Yes No	❑
		Yes No	❑
		Yes No	❑

Date of Inspection _____ Name_____

Frequency __initial, and as needed (coinciding with storm events)

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