



Municipal Pollution Prevention

Stormwater Quality

NICK VANDE HEY, PE
3/1/2021

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Federal Clean Water Act



- ❑ US Environmental Protection Agency requires each state to identify water bodies that are not 'fishable or swimmable'
- ❑ Each state also needs to identify the pollutants causing the water body impairment

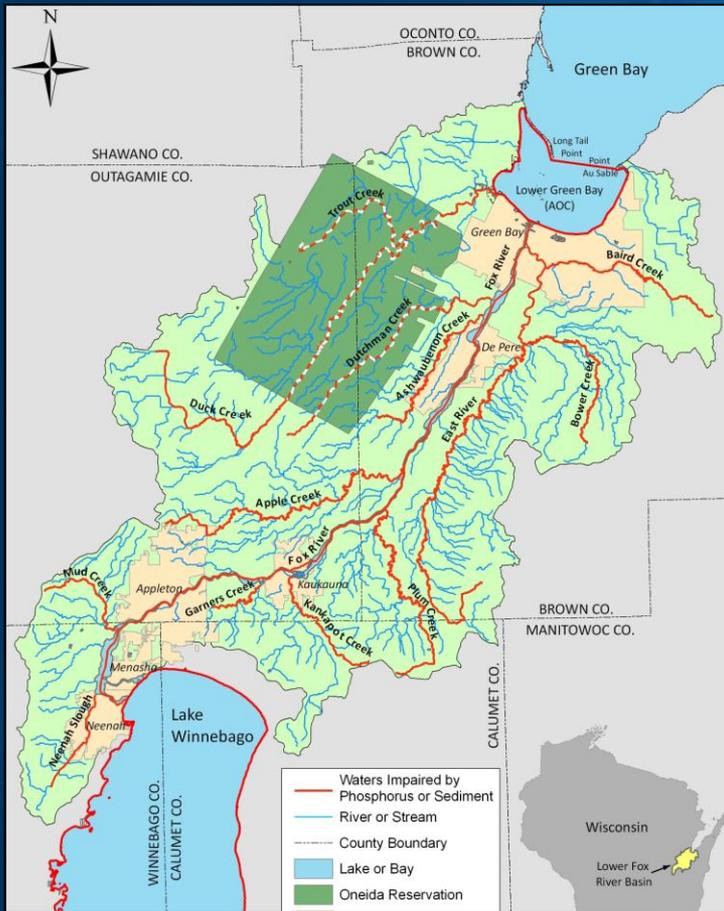
Pollutants Causing Impairment



Sediment



Phosphorus



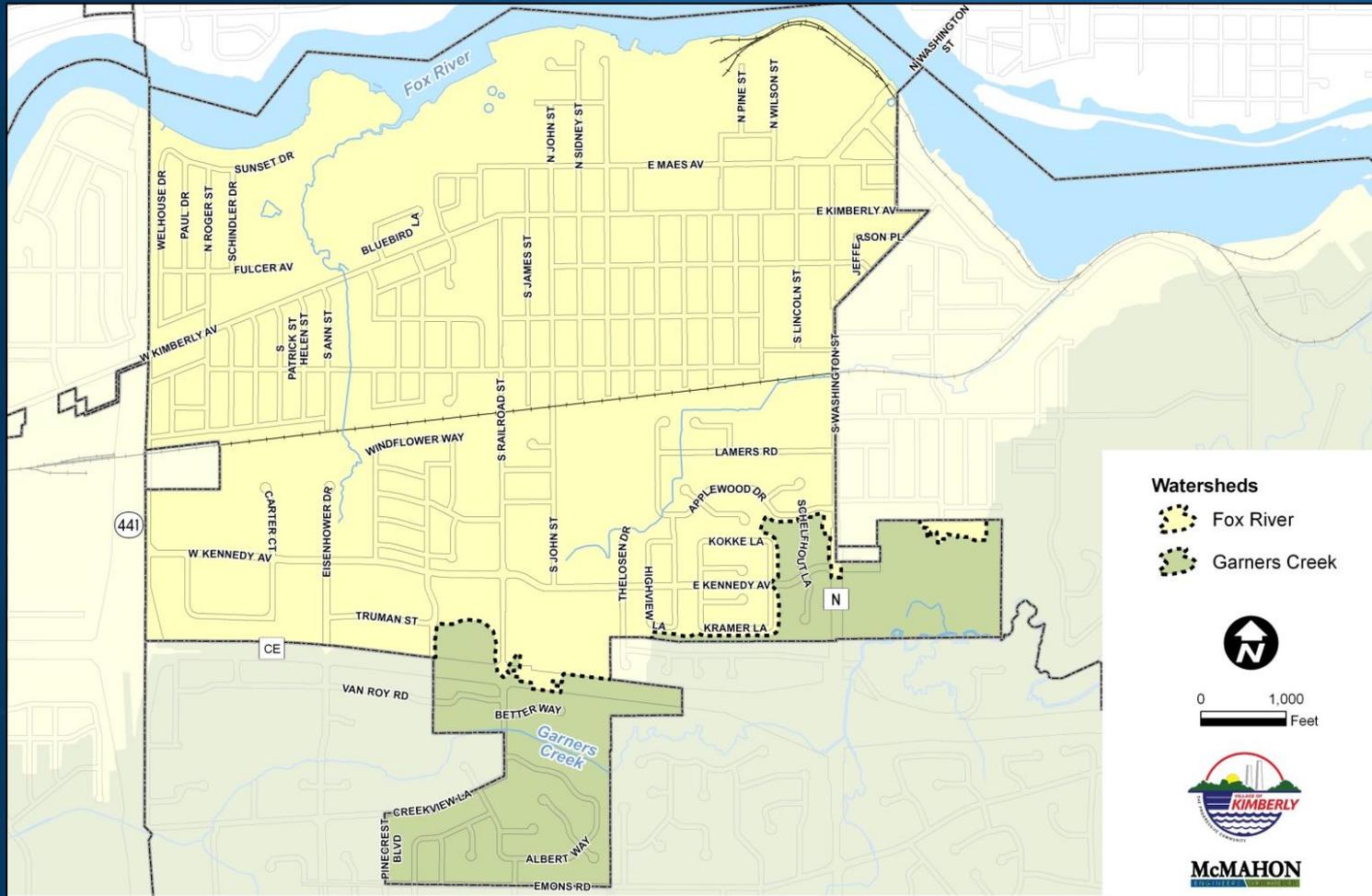
Total Maximum Daily Load (TMDL)

- Lower Fox River Basin TMDL for phosphorus and sediment pollutants was approved by US Environmental Protection Agency on May 18, 2012

Municipal Stormwater Permit

- Village received its initial Municipal Stormwater Permit from Wisconsin DNR in late 2006
- Wisconsin DNR renewed the Village's Municipal Stormwater Permit in 2019
- TMDL phosphorus and sediment allocations implemented thru Municipal Stormwater Permit





Watersheds

- Fox River
- Garners Creek

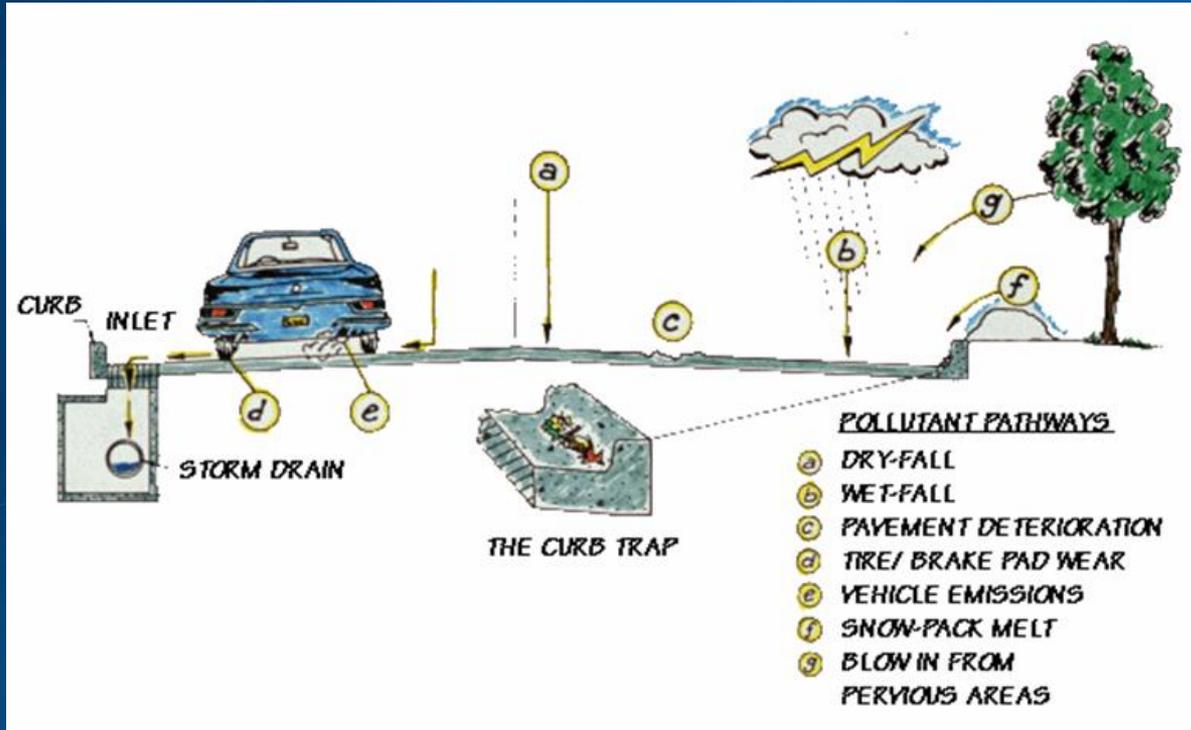


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Feet



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Stormwater Pollutant Pathways



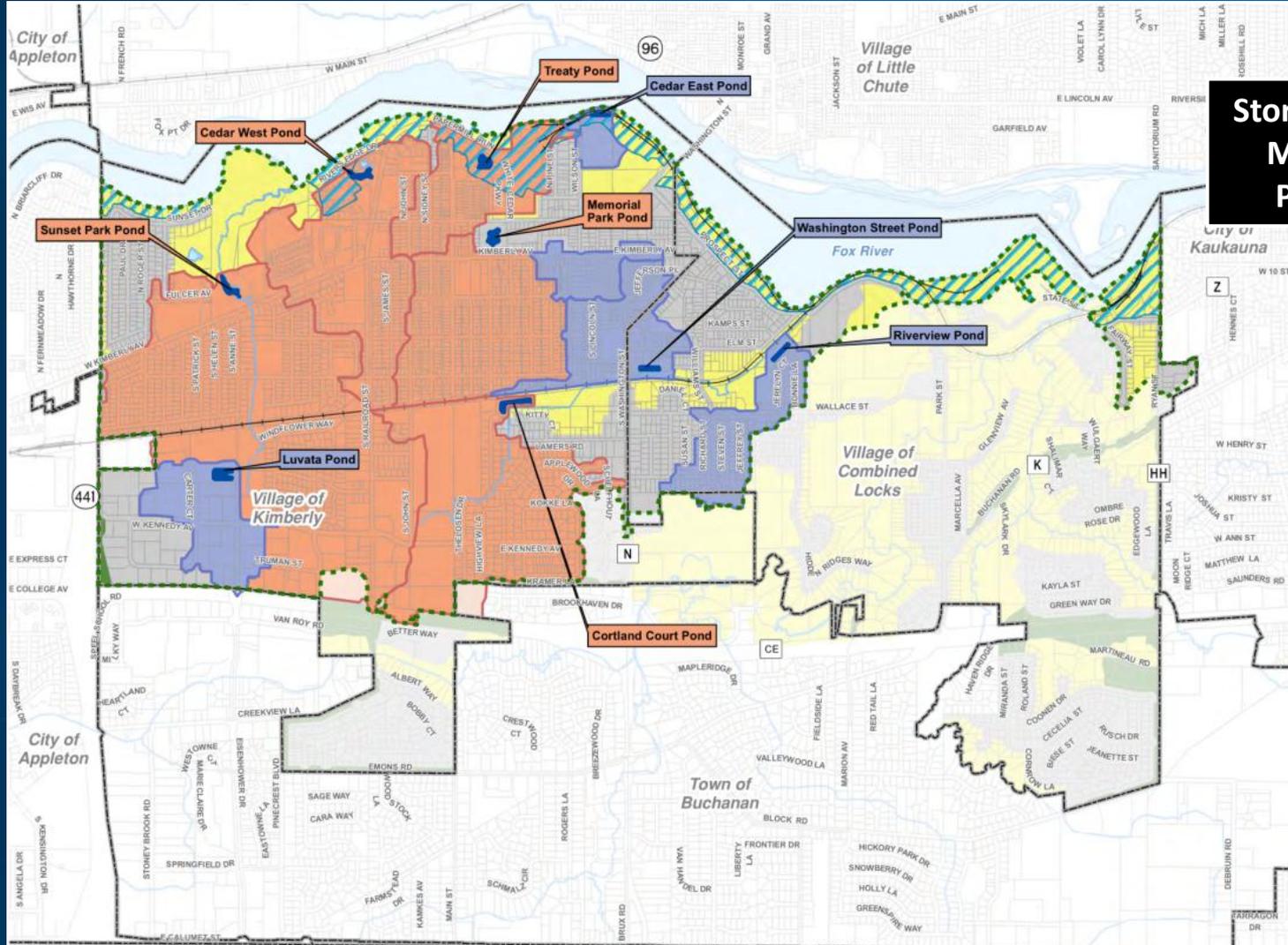
KEY POLLUTANT DEPOSITION PATHWAYS ON THE STREET SURFACE

Permit Requirements

- ❑ Public Education
- ❑ Public Involvement
- ❑ Illicit Discharge Detection & Elimination
- ❑ Construction Site Pollutant Control
- ❑ Post-Construction Stormwater Management
- ❑ Municipal Pollution Prevention
- ❑ Stormwater Quality Management



Stormwater Quality Management - Plan of Action



- Structural BMP's**
- Existing BMP Watershed
 - Proposed BMP Watershed
 - Pond Location
- Surface Drainage**
- Curb and Gutter
 - (High Efficiency Street Sweeper Sweeping Twice Per Month With Parking Control)
 - No Control
 - Grass Swale
- Other Mapped Features**
- Study Area
 - Municipal Boundary
 - Parcel or Right-of-Way Line
 - | Railroad Centerline
 - Rivers and Streams
 - Surface Water
 - Riparian Area

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Fleet Maintenance & Municipal Garage

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General Guidelines

- ❑ Conduct vehicle and equipment maintenance at designated locations, preferably inside shop or outdoors beneath a canopy.
- ❑ Park damaged, leaking, or dirty vehicles beneath a covered surface, if possible, to prevent exposure to rainfall.



General Guidelines

- Keep maintenance areas clean by promptly disposing of trash, debris, old parts, fluids that are collected in drip pans and absorbent materials that are used to cleanup a spill.



Fueling

- ❑ Don't top off fuel tanks to prevent spills due to overfilling.
- ❑ Be aware of the emergency pump shut-off button location.
- ❑ Keep absorbent materials on site for spill cleanup.
- ❑ Consider containment device, canopy, fence/lock and camera.



Fueling

- ❑ Periodically clean fueling areas using approved methods to remove accumulated fuel and grease.
- ❑ When possible, transport equipment to a designated fueling area rather than using mobile fueling.
- ❑ If mobile fueling is used, keep a spill kit on the fuel truck.



Leaks & Spills

- ❑ Clean up spills immediately to minimize safety hazards and deter spreading. Use a drip pan or absorbent material.
- ❑ Inspect for leaks or stains around vehicles and equipment. Locate source of leak and then repair leak or drain the fluid.
- ❑ Store cracked batteries in a leak proof container.



Fluid & Hazardous Disposal

- ❑ Collect used anti-freeze, motor oil, transmission fluid, hydraulic fluid and hazardous fluids. Store in separate containers by type.
- ❑ Properly label storage containers.
- ❑ Do not mix different types of fluids.



Fluid & Hazardous Disposal

- ❑ Recycle used fluids, oil, hydraulic filters and batteries.
- ❑ Do not dispose of used fluids, filters, batteries or other hazardous materials in the trash.



Parts Cleaning

- ❑ Clean parts indoors and properly dispose of fluids, grease, dirt, and other debris cleaned from parts.
- ❑ Allow parts to fully drain before removing from cleaning sink to reduce dripping of cleaning fluid to the floor.
- ❑ Keep lids closed on parts cleaning sinks when not in use.



Garage & Pavement Cleaning

- ❑ Use dry methods (sweeping, wiping, absorbents) to clean work areas as much as possible.
- ❑ Dispose of mop water properly, usually by pouring down a sanitary sewer drain. Do not dispose of mop water by pouring into storm drain or onto outdoor pavement, gravel or turf area.



Garage & Pavement Cleaning

- ❑ Don't hose down outside work areas.
- ❑ In addition to routine cleaning, clean outside work and storage areas when rain is forecast.



Washing

- Wash equipment and vehicles ONLY in designated facilities where the wash water drains to the sanitary sewer system or is collected and recycled.



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Material Storage & Spill Cleanup

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Store & Handle Materials Safely

- ❑ Read and follow label / MSDS instructions and local procedures.
- ❑ Store materials in original containers if possible. If not, clearly label replacement containers.
- ❑ Store materials away from high traffic areas to prevent accidents that might cause a spill or cause spilled materials to be spread by traffic.



Store & Handle Materials Safely

- ❑ Keep containers closed or sealed, except when filling or emptying container.
- ❑ Keep materials and waste containers in good condition.
- ❑ Replace containers with a leak.
- ❑ Routinely inspect containers for corrosion or signs of leaks.



Store & Handle Materials Safely

- Store materials and containers as follows:
 - Best: Indoors in sealed containers.
 - Good: Outdoors in sealed containers on a paved surface and beneath a canopy.
 - Acceptable: Outdoors in sealed containers on a paved surface, but no canopy.



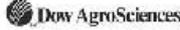
Store & Handle Materials Safely

- ❑ Spill trapping devices are recommended:
 - Indoors: Store barrels on a spill containment base.
 - Outdoors: Storage areas should be bordered by a curb, berm or containment device to contain spills.



Cleanup Spills Properly

- ❑ Follow cleanup instructions specified on MSDS and local procedures.
- ❑ Contain the spill:
 - Use a drip pan or absorbent material.
 - If a liquid spill might enter a storm drain, use a drain mat or pipe plug.
- ❑ Report large spills or spills of hazardous materials to your supervisor. Refer to local spill response procedures.

MATERIAL SAFETY DATA SHEET	
 Dow AgroSciences	
Emergency Phone: 888-955-5554 Dow AgroSciences LLC Indianapolis, IN 46186	
Product Date: 1/12/00 Printed Date: 06/29/00 MSDS: 059554	
RODEO® HERBICIDE	
6. ACCIDENTAL RELEASE MEASURES:	9. PHYSICAL AND CHEMICAL PROPERTIES:
ACTION TO TAKE FOR SPILLS: Absorb spill with an inert absorbent material such as sawdust, Zorssol, sand, or dirt. Report large spills to Dow AgroSciences at 888-955-5554.	APPEARANCE: Clear, pale yellow liquid DENSITY: 10.0 – 10.5 lb/gal pH: 4.8 – 6.0 ODOR: None
7. HANDLING AND STORAGE:	SOLUBILITY IN WATER: Miscible SPECIFIC GRAVITY: 1.01 g/mL FREEZING POINT: -79° – -10° (-110° – -50° F)
PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Keep out of reach of children. Do not breathe. Avoid contact with eyes, skin, and clothing. Avoid breathing vapors and spray mists. Handle concentrate in ventilated areas. Wash thoroughly with soap and water after handling and before eating, drinking, using tobacco, using the toilet or washing. Keep away from food, feedstuffs, and water supplies. Store in original container with this label fully exposed. Store above 60°F (15°C) to keep from crystallizing.	10. STABILITY AND REACTIVITY:
	STABILITY (CONDITIONS TO AVOID): Stable under normal storage conditions.
	INCOMPATIBILITY (SPECIFIC MATERIALS TO AVOID): Galvanized metal (may react as an oxidizing agent); calcium or spray paints may produce hydrogen gas which



Cleanup Spills Properly

- ❑ Locate the source of the spill and take steps to stop further spillage.
- ❑ Clean up spills immediately to minimize safety hazards and deter spreading.



Cleanup Spills Properly

Liquid Spills:

- Use absorbent materials or mop up small liquid spills. Do not hose the spill to a storm drain.
- Remove the absorbent materials promptly and follow procedures for proper disposal.



Cleanup Spills Properly

Dry Material Spills:

- ❑ Cover a powder spill with plastic sheeting to keep it from blowing until the spill can be cleaned up.
- ❑ Do not hose the spill to a storm drain.
- ❑ If usable, place the spilled material into the original or properly marked container.
- ❑ Follow procedures for disposal of spilled material that cannot be reused.

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Street & Drainage System Maintenance

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Pavement Repair

- ❑ Require concrete trucks to wash out in a designated location so wash water does not get into a storm drain, ditch or stream.
- ❑ Locate stockpiles of asphalt patching material on a paved surface.
- ❑ Sweep up and properly dispose of left over or uncompacted patching material.



Pavement Repair

- ❑ Rather than diesel, use less harmful products for cleanup activities.
- ❑ Clean trucks, equipment and tools in a wash facility where wash water will not get into a storm drain, ditch or stream.
- ❑ If no wash facility is available, clean equipment over a layer of absorbent material spread on a paved surface and/or heavy plastic sheeting.



Paint Stripping

- ❑ Don't apply paint when rain is likely or during high winds.
- ❑ Waste handling for water-based (latex) paint:
 - Pour small quantities of unused paint in open barrels and allow to dry. Dispose of dried paint in trash.
 - Contain wash water used for equipment cleaning and dispose in sanitary sewer.



Paint Stripping

- Waste handling for oil-based paint:
 - Unused oil-based paint must be disposed in accordance with established procedures.
 - Dispose of solvents used for equipment cleaning in accordance with established procedures.



HAZARDOUS WASTE
FEDERAL LAW PROHIBITS IMPROPER DISPOSAL
IF FOUND, CONTACT THE NEAREST POLICE OR PUBLIC SAFETY AUTHORITY
OR THE U.S. ENVIRONMENTAL PROTECTION AGENCY

Generator's Name _____
Generator's Address _____ Phone _____
Generator's City _____ State _____ Zip Code _____
EPA ID No. _____
Date of Generation/Removal _____ EPA Manifest No. _____
U.S.T. Proper Shipping Name _____
Quantity (_____)
U.S. No. _____

**HANDLE WITH CARE - THIS CONTAINER IS DANGEROUS AND CONTAINS
HAZARDOUS OR TOXIC WASTE**

In the event of a spill or release of this hazardous waste, contact the
U.S. Coast Guard National Response Center at (800) 424-8802
for information and assistance.



Storm Drain Inlet Cleaning

- ❑ Dispose of trash and debris removed from inlets in a sanitary landfill.
- ❑ Report suspected dumping or pollution problems to supervisory personnel.
- ❑ Consider applying markers with NO DUMPING message to inlets where there is evidence of dumping.



Street Sweeping

- ❑ Dispose of trash and debris removed from streets in a sanitary landfill.
- ❑ Report suspected dumping or pollution problems to supervisory personnel.



Ditch Maintenance

- Sample and analyze material that has been removed from ditches if it appears to be contaminated with oil or other pollutants.
- Contaminated sediments must be disposed in accordance with established procedures.



Ditch Maintenance

- Uncontaminated soil may be used onsite (shaped into ditch) or stockpiled and used as fill or other land application.
- Cover soil stockpiles to prevent erosion and/or install silt fence to capture sediment.



Ditch Maintenance

- Apply grass seed to exposed soils. A compost/mulch mixture applied with seed speeds vegetation growth and prevents erosion.
- If the channel experiences high velocities, turf reinforcement mats and/or check dams should be used to protect the channel until vegetation is established.



Report Pollution & Dumping

- Look for signs of pollution at the jobsite and during travel:
 - Oil sheen on water surface
 - Excess trash and debris
 - Odor
 - Colored or cloudy water
 - Dead or dying fish
- Report suspected pollution problems or illegal dumping to supervisor.



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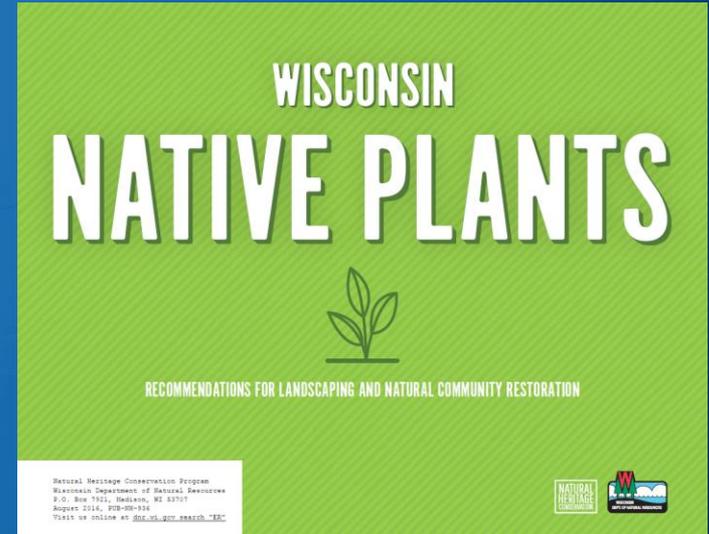
Parks & Grounds Maintenance

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Plant Selection

- Utilize native perennial vegetation to reduce water, fertilizer and pesticide needs.
- Consider using Wisconsin Native Plant list as a plant selection tool.



Watering

- ❑ Avoid over watering to prevent excess runoff.
- ❑ Avoid runoff by adjusting watering time and spray head direction / volume.
- ❑ Check soil moisture and consider watering only when the top few inches of soil is dry.



Grass Clippings & Leaves

- ❑ Mow grass as high as possible and leave clippings on the lawn.
- ❑ Collect and compost leaves for use as a soil amendment or shred and add to flower beds as mulch.



Grass Clippings & Leaves

- ❑ Sweep paved surfaces or blow clippings and trimmings onto grass rather than hosing down.
- ❑ Do not dispose of grass clippings, leaves or other debris into storm drain.
- ❑ Remove accumulated litter and debris from storm drain inlets.



Fertilizers & Soil Management

- ❑ Follow local nutrient management plan.
- ❑ Test soils well before the application season to determine fertilizer needs.
- ❑ Aerate and add compost to the soil to reduce fertilizer needs, improve drainage, and promote root growth.
- ❑ Limit soil erosion by planting vegetation on bare areas and using mulch or matting for landscaped areas.



Fertilizers, Pesticides & Herbicides

- ❑ Follow safety, storage and disposal procedures for fertilizer, pesticides and herbicides.
- ❑ Follow label directions precisely when mixing or applying fertilizers, pesticides or herbicides.
- ❑ Mix fertilizers, pesticides and herbicides where spills will not soak into the ground or runoff into the storm drainage system.



Fertilizers, Pesticides & Herbicides

- ❑ Use fertilizers, pesticides and herbicides only as needed.
- ❑ Use non-toxic substitutes for chemicals when possible.
- ❑ Carefully select the most appropriate product for the problem to be treated.
- ❑ Apply pesticides and herbicides to the problem area only, versus application over a wider area.



Fertilizers, Pesticides & Herbicides

- ❑ Avoid stray product from being deposited on streets or other paved surfaces where it may be washed into the storm drain system.
- ❑ Don't apply chemicals near sensitive areas including streams, lakes, wetlands, drainageways or storm inlets.



Fertilizers, Pesticides & Herbicides

- ❑ Follow label instructions and local procedures.
- ❑ Do not apply during windy conditions or when rain is predicted.
- ❑ Report suspected problems during applications.



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