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**OPERATION AND MAINTENANCE PROGRAM**

**FOR THE PREVENTION AND REDUCTION  
OF POLLUTION IN STORM WATER RUNOFF**

**FROM MUNICIPAL OPERATIONS**

**WITHIN THE CITY OF**

**[MUNICIPALITY NAME]**

**ST. LOUIS COUNTY, MISSOURI**



**February 2005**

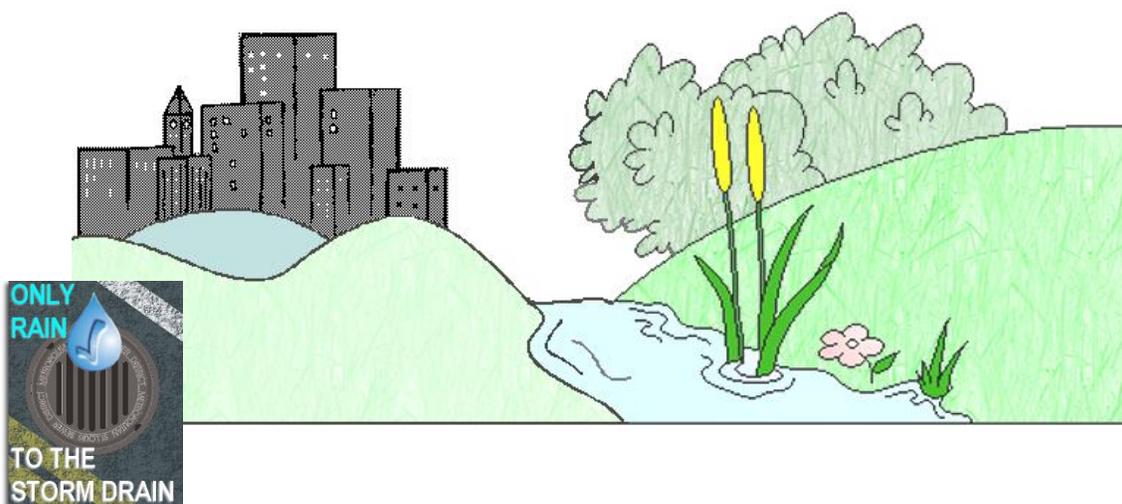
**Adopted [Date]**



## Note From The Authors

This document is a Model Operation and Maintenance Program developed to meet the requirements in the St. Louis Metropolitan Small MS4 Storm Water Permit, Section 4.2.6. All co-permittees are required to implement an Operation and Maintenance Program to comply with their permit. The St. Louis County Phase II Storm Water Management Plan calls for co-permittees to adopt the program by the end of permit year three, March 9, 2006, and fully implement it by the end of permit year four, March 9, 2007. Under the permit, MSD, as coordinating authority, must annually report the status of each co-permittees' compliance with the milestones in the Plan.

A model program was developed to assist co-permittees in complying with the permit Section 4.2.6, and to help foster uniform approaches to implementing the Operation and Maintenance (O&M) Program. Each co-permittee must include in their program the applicable elements from the model program, based on the extent of their infrastructure, municipal facilities and services. In drafting the model program, the authors made an effort to be as comprehensive as possible in addressing municipal operations by including generic example text for a variety of municipal operations. However, a co-permittee may add measures as it deems appropriate to meet its specific needs. Co-permittees are expected to edit the text in this model program to specifically apply it to their organization by including details, commitments, and policies specific to their organization. To assist in this editing process, this document contains instructions to the co-permittee editors in *A SMALL CAPITAL, ITALICIZED FONT LIKE THIS*. *THESE INSTRUCTIONS* must be addressed in the document and removed from the text before finalizing your city's plan. For additional information on the Best Management Practices (BMPs), please contact members of the Work Group, in Appendix 1-A3, or refer to EPA Fact Sheets on the web at: <http://cfpub.epa.gov/npdes/stormwater/menuofbmps/poll.cfm>.





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## Chapter 1 - Program Administration

### **A. Introduction:** *(EXAMPLE TEXT)*

The Missouri Department of Natural Resources (MDNR) issued Phase II Storm Water Permit MO-R040005 to the (municipality name) and 60 other co-permittees in St. Louis County, effective March 10, 2003. The area served by the 61 co-permittees is collectively known as the St. Louis Metropolitan Small MS4. One of the minimum control measures in the permit that must be addressed by the co-permittees includes pollution prevention and good housekeeping for municipal operations. Specifically, section 4.2.6.1.1 of the permit (Appendix 1-A2) requires each co-permittee to “develop and implement an operation and maintenance program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations.”

A Storm Water Management Plan (SWMP) for the St. Louis Metropolitan Small MS4 was developed by the St. Louis Municipalities Phase II Storm Water Planning Committee in the Fall of 2002 and submitted to MDNR as part of the application for the Phase II permit. As a co-permittee under the state permit the (municipality name) is bound by the commitments contained in the Plan. Chapter 14 of that Plan provided for organization of a municipal work group to develop a model operation and maintenance program to be adopted by each of the 61 co-permittees.

This document represents the (municipality name) adoption of the work group’s model program as applicable and tailored to specifically meet (municipality name) needs and goals. This program impacts all facets of municipal operations. It is the (municipality name) intent to adhere to the policies and procedures stated herein in order to prevent pollution, to safeguard the environment for the health and benefit of all (city) employees, residents and visitors and to serve as a model for the entire regulated area. Where the municipal operations described in this manual are contracted, rather than performed by municipal employees, the best management practices (BMPs) will be imposed to the maximum extent practicable on the contractor through purchasing or contract mechanisms by including BMPs in the scope of work or job/service specifications. Contractors will be required to obtain all applicable local/state/federal environmental permits. This program has been adopted by (Resolution/Ordinance #\_\_\_) on (Date), (See appendix 1-A4).

*(EACH CO-PERMITTEE CAN ADD ADDITIONAL APPROPRIATE VERBIAGE, IF DESIRED, TO EMPHASIZE ITS COMMITMENT TO THE PROCESS, TO FURTHER EXPLAIN ITS ENABLING LEGISLATION, RELATED POLICIES, ETC.)*

### **B. Policies:** *(EXAMPLE TEXT)*

The (municipality name) has adopted several policies regarding the purchase of recycled products; janitorial and other supplies exhibiting lower toxicity; utilization of integrated pest management practices; and other pollution prevention policies. Copies of policies are contained in Appendix 1-B1.

### **C. Organization of Manual:**

The SWMP prepared for St. Louis County by the Planning Committee contains a detailed listing of BMP elements that were to be considered when developing a model operation and maintenance program for the 61 co-permittees. The Planning Committee placed these elements into nine major categories of municipal operations/activities. Based on its size and the nature of its municipal services each co-permittee may have activities in only some or in all nine categories. For consistency within the Plan area, each of the nine categories is addressed in the following Chapters 2 through 10. A statement of non-applicability is contained in those chapters where the (municipality name) is not engaged in the subject activity.

*REGARDLESS OF THE PRIMARY FUNCTION OF ANY PARTICULAR FACILITY, THE PLANNING COMMITTEE ANTICIPATED THAT ALL CHAPTERS MAY POTENTIALLY APPLY TO ACTIVITIES AT THAT FACILITY. FOR EXAMPLE AT A PARK MAINTENANCE FACILITY, THE MAINTENANCE OF PARKS MAY INVOLVE SOME ACTIVITIES THAT HAVE BEEN COVERED BY EACH OF THE OTHER CHAPTERS IN THIS DOCUMENT. THE HANDLING OF SUPPLIES WOULD BE SUBJECT TO GENERAL HOUSEKEEPING BMPs IN CHAPTER 2. THE MAINTENANCE AND CLEANING OF PARK EQUIPMENT, SUCH AS MOWERS, TRACTORS, TRUCKS, ETC., WOULD BE SUBJECT TO BMPs IN CHAPTERS 3 AND 4; CONSTRUCTION OR REPAIR OF FACILITIES, IN CHAPTER 5; MAINTENANCE OF PARK DRIVEWAYS AND PARKING AREAS, IN CHAPTER 6; CLEANING DRAINAGE CHANNELS AND STORM SEWERS, IN CHAPTER 8; AND MAINTAINING COMPOST PILES FOR MULCH, IN CHAPTER 9. MUNICIPALITIES ARE EXPECTED TO INCORPORATE ALL APPLICABLE BMPs FROM ALL CHAPTERS INTO PROCEDURES THAT APPLY TO ANY GIVEN FACILITY OR ANY GROUP OF EMPLOYEES TO ENSURE THAT EMPLOYEES ARE MADE AWARE OF ALL APPLICABLE BMPs.*

### **D. Administration:**

*THIS SECTION SHOULD IDENTIFY THE CO-PERMITTEE'S PROCEDURES AND THE STAFF RESPONSIBLE FOR ENSURING:*

- *THE PROGRAM IS KEPT UP-TO-DATE*
- *ALL AFFECTED EMPLOYEES ARE PROVIDED WITH PROGRAM ORIENTATION TRAINING*
- *RETRAINING AND DISCIPLINARY PROCEDURES FOR EMPLOYEES WHO FAIL TO FOLLOW THE SPECIFIED PROCEDURES*
- *REPORTING IMPLEMENTATION STATUS TO THE PLAN AREA COORDINATING AUTHORITY (MSD)*

The responsible party for administration of the operation and maintenance (O&M) program is the Director of Public Works. This person is responsible for ensuring the program is kept up to date, and that employees are trained on the procedures implementing the program.

The (municipality name) will train all staff associated with activities that can impact pollution in storm water runoff. Each chapter will identify employees who should be subject to training on that particular chapter. Employees will receive general storm water pollution prevention training provided by the Missouri Department of Natural Resources, Environmental Assistance Office or others. Upon implementation of specific procedures, management will review the new procedures that incorporate storm water BMPs, proper waste management and

applicable NPDES permit requirements with all employees affected. New employees will be trained on applicable procedures within the first three months of employment. Contractors working for the municipality and implementing BMPs for municipal work, as described in Section A., must train their employees on applicable BMPs before work begins. To maintain proficiency, a schedule of periodic retraining will be implemented, or provisions made for an employee awareness campaign to ensure employees remain aware of the BMPs and proper waste management.

Records documenting the training of employees and contractors must be maintained in file.



## Chapter 2 - General Housekeeping, Operation and Maintenance

### **A. Description of Activities:**

Municipal operations include a variety of activities conducted to maintain City owned property and facilities. This chapter will cover those activities that are not specifically covered in the other chapters of this document. This chapter covers custodial and building maintenance activities, materials management and storage, safe material substitutions, spill plans, establishment of general O&M procedures, scheduling, record keeping and housekeeping practices in general.

This chapter also covers general municipal housekeeping issues, which include illegal dumping, littering, pet wastes, trash storage, and recycling.

### **B. Locations:** *(EXAMPLE TEXT)*

1. City Hall – 1234 City Hall Street. This facility is situated on seven (7) acres, with a building size of approximately 60,000 square feet. City Hall houses the Finance and Administration Department, the Police Department, the Planning Department, the City Clerks office, and the Public Works Department, which includes the Building Maintenance Division. A paved parking lot is provided for visitors/employees, and all City vehicles, including police cars, are parked inside an enclosed parking structure. Materials and supplies utilized in performing all building maintenance, including custodial work, are stored within the building. A total of 150 employees report to this facility.
2. Public Works Facility – 5678 Dump Truck Street. This facility houses the Street Maintenance Division and the Fleet Maintenance Division of the Public Works Department. The facility is situated on approximately three (3) acres. It contains a main building, a covered equipment storage building, and a covered bulk storage bin, with a combined area of approximately 35,000 square feet. The main building has six (6) vehicle work bays, an enclosed vehicle wash bay, a sign shop, shower/locker facilities, lunchroom, administrative offices, and a conference room. A 100-foot diameter salt dome, with a capacity of 8000 tons, is also located on the site. A paved parking lot is provided for visitors/employees. All equipment associated with street maintenance activities are either stored within the covered equipment storage building, or on the paved yard storage area. All materials utilized in performing street maintenance is either stored within the main building or within the covered bulk storage bin. All fleet maintenance activity is done inside the main building, within the vehicle work bays. The Fleet Maintenance Division maintains the entire City fleet, including police cars. The Public Works Facility typically operates from 7 a.m. to 3:30 p.m. The hours vary during emergency operations such as snow removal. A total of 32 employees report to this facility.

3. City Athletic Complex – 910 Ballpark Drive. This 95-acre facility consists of 12 baseball/softball fields and 7 soccer fields. The complex also contains a 2200 square foot building which houses the Parks Maintenance Division of the Public Works Department. This division is responsible for the maintenance of the athletic complex, the maintenance of all other City parks, and all grounds maintenance activities associated with City Hall and the City’s various beautifications areas. A paved parking lot and a gravel parking lot is provided for employees and patrons. Equipment is either stored within the building, or on an unpaved storage area adjacent to the building. All material used in park maintenance activities is stored within the building. With the exception of the winter months, this facility operates seven (7) days a week from 7 a.m. to 11 p.m. During the winter the facility operates from 7 a.m. to 3:30 p.m. A total of 12 employees report to this facility.
4. Central Park – 1112 Park Place. This 38-acre facility is home to the City’s Family Aquatic Park. The park also includes a playground and a paved parking lot.

**C. Responsible Parties:** *(EXAMPLE TEXT)*

1. City Hall - The Director of Public Works has authority over City Hall. The building is actively managed by the Building Maintenance Supervisor.

Director of Public Works: (xxx) xxx-xxxx  
 Building Maintenance Supervisor: (xxx) xxx-xxxx

2. Public Works Facility – The Director of Public Works has authority over the Public Works Facility. The facility is actively managed by the Superintendent of Maintenance Operations.

Director of Public Works: (xxx) xxx-xxxx  
 Superintendent of Maintenance Operations: (xxx) xxx-xxxx

3. Athletic Complex - The Director of Public Works has authority over the athletic complex. The complex is actively managed by the Superintendent of Parks Operations.

Director of Public Works: (xxx) xxx-xxxx  
 Superintendent of Parks Operations: (xxx) xxx-xxxx

4. Central Park - The Director of Public Works has authority over Central Park. The park is actively managed by the Superintendent of Parks Operations.

Director of Public Works: (xxx) xxx-xxxx  
 Superintendent of Parks Operations: (xxx) xxx-xxxx

**D. Materials/Supplies acquisition, storage and usage: (EXAMPLE TEXT)**

1. City Hall: Material/supply needs are determined by the Building Maintenance Supervisor .

<b>Material</b>	<b>Maximum Quantity Kept On Hand</b>	<b>For Use Within</b>	<b>Storage Location</b>
Various Cleaning Supplies	50 Gallons	Six Months	Warehouse portion of basement and various custodial closets.
Latex Paint	15 Gallons	Six Months	Paint room located in basement.
Aerosol Cans (various products)	Only Amount Needed	Six Months	Storeroom
Emergency Backup Batteries (lead acid)	2	Six Months	Storeroom
Fluorescent Lamps	50	Six Months	Storeroom
Light Ballasts	2	Six Months	Storeroom
Scale Remover (acid)	1 Gallon	Six Months	Storeroom

*(TABLES LIST COMMON MATERIALS EXPECTED TO BE IN INVENTORY, AND SHOULD BE REVISED BY THE MUNICIPALITY TO REFLECT ACTUAL STOCK.)*

2. Public Works Facility: Material/supply needs are determined by the Superintendent of Maintenance Operations. Material/supplies used in vehicle/equipment maintenance and repair operations are listed in Chapter 3. Materials/supplies used in roadway/bridge maintenance are listed in Chapter 6.

<b>Material</b>	<b>Maximum Quantity Kept On Hand</b>	<b>For Use Within</b>	<b>Storage Location</b>
Various Cleaning Supplies	10 Gallons	Six Months	Custodial Closet

3. Athletic Complex: Material/supply needs are determined by the Superintendent of Parks Operations. Materials/supplies used in field maintenance are listed in Chapter 7.

<b>Material</b>	<b>Maximum Quantity Kept On Hand</b>	<b>For Use Within</b>	<b>Storage Location</b>
Various Cleaning Supplies	10 Gallons	Six Months	Custodial Closet

4. Central Park: Material/supply needs are determined by the Superintendent of Parks Operations. Materials/supplies used in parks maintenance operations are listed in Chapter 7.

Material	Maximum Quantity Kept On Hand	For Use Within	Storage Location
Various Cleaning Supplies	10 Gallons	Six Months	Custodial Closet
Swimming Pool Chemicals	50 Gallons	One Month	Storage Room

**E. Waste generation, storage, disposal, recycling:** (EXAMPLE TEXT)

1. City Hall: Standard office waste is generated, along with waste from custodial operations. A fountain located in the rear of the building is backwashed on a regular basis. Wastes from building and office maintenance activities are also included in this list.

Waste	Maximum Storage Capacity	Storage Location	Method Of Disposal	Contractor	Frequency
Standard Office Waste	2 – 15 yd <sup>3</sup> Dumpsters	Fenced Area Outside of Loading Dock	Landfill	Waste Hauler	Twice a Week
White Paper & Cardboard	Various Containers	Loading Dock	Recycle	Recycling Co.	Weekly
Aluminum Cans & Plastic Bottles	Various Containers	Loading Dock	Recycle	Recycling Co.	Weekly
Custodial Waste (mop buckets, auto scrubber, water based cleaners)	N/A	N/A	Dump in Drain to Sanitary Sewer.	N/A	Daily
Emergency Lighting Batteries (lead acid, NiCd)	Box	Maintenance Shop	Recycle	Hazardous Material Recycler	Quarterly
Lamp Ballasts	Box	Maintenance Shop	Landfill (if PCBs, with approval)	Waste Hauler	Quarterly
Lamps (fluorescent, mercury vapor, sodium vapor)	Box	Maintenance Shop	Recycle	Hazardous Material Recycler	Quarterly
Lamp (green tip fluorescent)	Box	Loading Dock	Landfill	Waste Hauler	Weekly
Computer Monitors, CPUs	Box	Storage Area	Recycle	Reuse or Hazardous Material Recycler	As Needed
Oil Based Paints and Thinners	Drum	Maintenance Shop	Energy Recovery	Hazardous Waste Vendor	Quarterly
Organic Solvents	Drum	Maintenance Shop	Energy Recovery	Hazardous Waste Vendor	Quarterly

2. Public Works Facility: Standard office waste is generated, along with waste from custodial operations. Additional waste generated from vehicle maintenance activities and street maintenance activities is included in Chapters 3 and 6 of this document.

Waste	Maximum Storage Capacity	Storage Location	Method Of Disposal	Contractor	Frequency
Standard Office Waste	15 yd <sup>3</sup> Dumpsters	Parking Lot	Picked up by Waste Hauler.	Waste Hauler	Twice a Week.
White Paper & Cardboard	Various Containers	Brought to City Hall	Picked up for Recycling.	Recycling Co.	Weekly
Aluminum Cans & Plastic Bottles	Various Containers	Brought to City Hall	Picked up for Recycling.	Recycling Co.	Weekly
Custodial Waste (mop buckets, auto scrubber)	N/A	N/A	Dump in Drain to Sanitary Sewer.	N/A	Daily
Backwash Water from Fountain	N/A	N/A	Discharged to Sanitary Sewer.	City Personnel	Weekly

*(INCLUDE ADDITIONAL FACILITY MAINTENANCE WASTES, AS APPLICABLE)*

3. Athletic Complex: Standard office waste is generated from the maintenance building. Additional waste generated from parks maintenance activities is included in Chapter 7 of this document.

Waste	Maximum Storage Capacity	Storage Location	Method of Disposal	Contractor	Frequency
Standard Office Waste	2 – 15 yd <sup>3</sup> Dumpsters	Parking Lot	Picked up by Waste Hauler.	Waste Hauler	Twice a Week.

*(INCLUDE ADDITIONAL FACILITY MAINTENANCE WASTES, AS APPLICABLE)*

4. Central Park: Standard office waste is generated, along with waste from custodial operations. Additional waste generated from parks maintenance activities is included in Chapter 7 of this document.

Waste	Maximum Storage Capacity	Storage Location	Method Of Disposal	Contractor	Frequency
Standard Office Waste	2 – 15 yd <sup>3</sup> Dumpsters	Fenced Area Outside of Loading Dock	Picked up by Waste Hauler.	Waste Hauler	Twice a Week.
Custodial Waste (mop buckets, auto scrubber)	N/A	N/A	Dump in Drain to Sanitary Sewer.	N/A	Daily
Backwash Water from Swimming Pool	N/A	N/A	Discharged to Sanitary Sewer.	Pool Company	Twice a Week.

*(INCLUDE ADDITIONAL FACILITY MAINTENANCE WASTES, AS APPLICABLE)*

**F. Best Management Practices (BMP):**

*(THE FOLLOWING BMP'S ARE RECOMMENDED TO BE IMPLEMENTED TO THE MAXIMUM EXTENT PRACTICABLE)*

**FACILITIES**

- Pool drainage and filter backwash water from chlorinated swimming pools, fountains and lined ponds must be discharged into the sanitary sewer system. Other chlorinated water from water line or tank disinfection must also be directed to the sanitary sewer.
- Any discharge to surface water of pool or backwash water from pools and ponds must be dechlorinated prior to discharging into storm sewer system under the conditions of an NPDES permit obtained by the facility. The NPDES permit requires ceasing chlorination 7 days prior to discharge or using chemical dechlorination. These discharges to surface water must be approved under local building code, and not create a nuisance to adjoining property.
- Avoid using copper or silver-containing algacides in pools, fountains and ponds.
- Ensure grease traps and oil/water separators in kitchens and food service areas are maintained. Avoid sanitary sewer grease-blockage by regularly pumping out traps and separators.
- Maintain site plumbing plans showing sanitary and storm sewer connections. Ensure wastewater is discharged only to the sanitary sewer, and storm water to the storm sewer. Label storm drain inlets to ensure they are used only for storm water drainage.
- Minimize the use of pesticides through an Integrated Pest Management (IPM) Program. An IPM Program uses monitoring of pest populations compared to an action threshold, and then choosing the proper tactics, using nonchemical pest control practices, such as mechanical and biological controls, when possible, or less toxic products when needed. IPM does not rely on routine applications of pesticide based on a calendar date.

Reduce the risk of West Nile Virus by reducing stagnant water (mosquito breeding grounds) caused by cans, containers and tires present in litter and junk piles. Keeping storm water drainage gutters and drains clean will also reduce conditions suitable for mosquito breeding. Refer to MU Extension IPM Guides at:

<http://ipm.missouri.edu/ipmresources.htm> (See Chapter 7 for additional BMPs.)

- Minimize the use of herbicides through an Integrated Pest Management Program for weed control. With turf grass, prevention of weed infestation begins with practices to promote healthy grass through proper planting, watering, fertilizing, mowing, aerification, and thatch control. Refer to MU Extension Publication IPM1009: <http://muextension.missouri.edu/xplor/agguides/pests/ipm1009.htm> (See Chapter 7 for additional BMPs.)

## MATERIAL MANAGEMENT



- Develop a policy to purchase recycled products or products with high post-consumer waste content whenever practical. Many resources are available from the EPA WasteWise Helpline: 800 EPA-WISE. Website: <http://www.epa.gov/epaoswer/non-hw/reduce/wstewise/wrr/buyq&a.htm> (See Appendix 2-F1 for a sample waste reduction and recycling policy.)
- Collect and recycle, to the maximum extent practicable, wastes generated by municipal operations. (See the policy in Appendix 2-F1.)
- Develop policy to purchase environmentally preferred products whenever practical. For a "Database of Environmental Information for Products and Services," see EPA website: <http://yosemite1.epa.gov/oppt/eppstand2.nsf/> (See Appendix 2-F2 for a sample green procurement policy or <http://www.pwgsc.gc.ca/sd-env/sds2003/green-procurement-e.html>).
- Provide for the proper disposal of all wastes generated or collected in the course of municipal operations, in accordance with all applicable local, state and federal laws.
- Inspect facilities for litter on a regular basis, and clean up as needed.
- Keep trash container lids closed to keep rain out. Do not dispose of liquid waste in the trash container.
- Ensure that the collection frequency of trash containers is appropriate to avoid overflows.
- Outdoor material stockpiles at both permanent locations and at job sites should be covered to protect from rainfall and prevent contamination of storm water runoff.
- Material stockpiles which can not feasibly be covered should be surrounded by a berm or otherwise contained so that storm water runoff can be captured.
- Petroleum products, fuels, chemicals, hazardous and toxic materials, and all wastes should be properly labeled to ensure appropriate handling and disposal.
- Petroleum products, fuels, chemicals, hazardous and toxic materials, and all wastes



should be stored and handled with appropriate safeguards to prevent contamination of storm water from drips and spillage from the transfer of materials (for example, cover storage containers, use collection trays for drips, maintain spill kits and floor drain plugs to contain spills, etc.). Liquid containers should be stored under roof; or if outdoors, containers should be kept clean and sealed water-tight.

- Prevent spills of hazardous materials by selecting storage areas that avoid traffic to minimize accidental contact, and select areas that are away from storm drain inlets and streams to minimize the impact of a spill. Storage areas should be kept clean and organized.
- Contain and clean up all spills immediately. Ensure employees are familiar with spill response procedures and the location of spill kits to enable them to stop the spills at the source and contain the spilled material. With training on hazards from a material safety data sheet, minor spills can be addressed by employees, however, significant spills will require evacuation and contacting emergency responders.
- Keep material safety data sheets (MSDS) for chemicals onsite for information on reportable spill quantities, proper handling, and health and safety issues.
- Maintain and post a list of emergency contact numbers for spill reporting and spill clean-up contractor response, including: Missouri Department of Natural Resources (MDNR) – 573-634-2436, National Response Center – 800-424-8802, and for releases to the sewer, MSD – 314-768-6260. Reportable quantities (RQ) for chemicals are listed on the MSDS, and petroleum RQs include: any amount released to a storm sewer or waterway causing a sheen, 25 gallons from an underground tank, and 50 gallons from all other sources.
- Prepare for appropriately handling the clean up of the spilled material and disposal of waste. Do not hose down spills to the storm sewer system. Clean up spills with dry methods, using absorbent to pickup fluids.
- Spill response plans are recommended for all areas of municipal operations. Spill Prevention Control and Countermeasure (SPCC) plans are required to meet regulatory criteria in 40 CFR 112 for sites with a storage capacity over 660 gallons oil in one container or 1,320 gallons on site.
- Establish at all municipal facilities materials management and inventory controls to include the proper identification of hazardous and non-hazardous substances, and proper labeling of all containers.
- Regular inspections and inventory of material storage and use areas should be performed to ensure BMPs are being used.



## COMMUNITY

- Develop/enforce ordinances for waste containers which regulate size, type, covers and water-tightness for residential,

commercial and industrial areas. (See Appendix 2-F3 for language from the St. Louis County Waste Management Code.)

- Develop/enforce ordinances against illegal dumping, littering and improper yard waste disposal, providing for corrective action, enforcement and penalties. (See Appendix 2-F4 and 2-F5 for Model Ordinances.)
- Develop/enforce ordinances requiring pet owners, property owners, and equestrian and animal boarding facilities to clean up wastes from their pets and other animals. (See Appendix 2-F6 for Model Ordinance).
- Provide pet waste scoop dispensers and signage in parks and other public areas frequented by pet walkers to promote the proper disposal of pet waste and notify the public of ordinance requirements.
- Provide recycling and yard waste services for residential waste.
- Provide sufficient numbers of appropriately-sized waste receptacles at municipal facilities and in public areas with regularly scheduled servicing, collection and disposal.
- Educate citizens on trash and pet waste issues to promote compliance with ordinances using available methods such as resident newsletters, brochures, internet sites, storm drain marking projects, etc.
- Promote and assist in neighborhood and stream clean-up activities.
- Develop/enforce municipal ordinances against illegal discharges to storm water from sources such as failing septic tanks, septic tanks discharging to storm water, etc. Ordinances to address illegal connections of sanitary sewers should be at least as stringent as the Missouri Department of Health regulations in 19 CSR 20-3 and County requirements, such as St. Louis County Plumbing Code Section 1103.
- Develop/enforce municipal ordinances requiring the proper maintenance of septic tanks and other small onsite sewage disposal systems. For a model ordinance, see: <http://www.anjec.org/html/ord-modelseptic.htm>

#### O&M PROGRAM

- Establish standard operation and maintenance procedures, maintenance schedules and long term inspection procedures in accordance with this program manual with emphasis on safety, efficiency, and compliance with applicable laws and good environmental stewardship.
- General housekeeping inspections of facilities and storage areas should be performed once a month and records kept of the inspections.
- Develop record keeping procedures that effectively track implementation of program elements and that provide the information necessary to meet the reporting requirements of the MS4 permit.

#### **G. NPDES Permit status:**

Applicable MDNR general storm water permits must be obtained if the (city) engages in the following activities described by the following categories:

Airports (R80F) – Storm water runoff from airports that use de-icers or conduct uncovered vehicle or aircraft maintenance, washing, or fueling.

Equipment/Vehicle Washing (G75, See also Chapter 4) - Car wash wastewater treatment systems for design flows of 50,000 gallons per day or less. This includes no-discharge land application systems. Provides for 500 gallons per day de-minimis exemption under certain conditions.

Recycling facilities (R80H, See also Chapter 9) - Solid waste transfer stations, and solid waste recovery facilities.

Yard Waste compost facilities (G97, See also Chapter 9) - Yard Waste Composting operations between 2 to 5 acres.

Solid Waste Transfer – requires a site specific storm water permit.

Swimming pools (G76) – Discharges of filter backwash and pool drainage from swimming pools and lined ponds.

Transportation Operations (local bus, etc.) – requires a site specific storm water permit.

Trucking (R80C) - Motor freight transportation (garbage, refuse, etc.).

Vehicle Maintenance (R80C, See also Chapter 3) - Motor freight transportation and warehousing.

Warehousing and storage (R80C) - Motor freight transportation and warehousing.

If the above categories describe (city) operations, but the activities and materials stored or handled are not exposed to storm water, a “No Exposure Certification” must be submitted in lieu of obtaining a permit. Further descriptions and a copy of the general permits are available at: [www.dnr.mo.gov/wpscd/wpcp/permits/wpcpermits-general.htm](http://www.dnr.mo.gov/wpscd/wpcp/permits/wpcpermits-general.htm)

The discharge of process waste water to a storm water inlet from any (city) facility requires an NPDES Operating Permit from MDNR’s Water Pollution Control Program. All permit conditions and limitations must be complied with.

*SECTION G SHOULD LIST, FOR EACH SITE IDENTIFIED IN SECTION B, THE PHASE I PERMIT STATUS. PHASE I PERMIT REQUIREMENTS COULD APPLY TO ACTIVITIES IN CHAPTERS 3, 4, 6 AND 9. A CO-PERMITTEE ENGAGED IN ACTIVITIES COVERED BY THOSE CHAPTERS MAY BE REQUIRED TO HAVE EITHER A PHASE I NPDES PERMIT OR A CERTIFICATION OF NO-EXPOSURE ON FILE WITH THE MDNR. SEE THE PHASE I PERMIT STATUS LISTED FOR EACH CO-PERMITTEE IN THE 2003 PHASE II STORMWATER PERMIT APPLICATION.*

## **H. Training:**

*IN ADDITION TO THE DISCUSSION IN CHAPTER 1, SECTION D, THIS SECTION SHOULD IDENTIFY WHICH MUNICIPAL EMPLOYEES WILL BE TRAINED IN POLLUTION PREVENTION TECHNIQUES FOR THE ACTIVITIES LISTED IN SECTION A. ADDITIONAL DETAILS ON HOW EMPLOYEES WILL BE TRAINED ON THIS CHAPTER MAY BE INCLUDED ALSO. TRAINING MIGHT INCLUDE IN-HOUSE TRAINING AS WELL AS ATTENDANCE AT REGIONAL TRAINING ACTIVITIES.*

All employees involved in maintenance operations, construction, purchasing, facility or site design, or building or facility management will be trained on this chapter, including the following Departments and work units:

*(EXAMPLE LIST)*

- Vehicle maintenance department – mechanics, storekeepers and management.
- Public works department – equipment operators, laborers, and management.

In addition to training on the housekeeping BMPs and proper waste management, employees will be provided general awareness of NPDES discharge requirements.



## Chapter 3 - Vehicle/Equipment Repair and Maintenance Operations

### **A. Description of Activities:**

Fleet maintenance facilities are responsible for the maintenance and repair of equipment and vehicles ranging from chain saws and light vehicles to loaders and tandem dump trucks. Preventative maintenance or PM's include oil and filter changes, tune ups and tire rotations. Repairs include engine and transmission replacement; brake, suspension or axle repair; and welding work. There are fueling sites at all of (municipality's) repair facilities. Outside contractors perform services such as glass repair or replacement and all bodywork.

### **B. Locations:** *(EXAMPLE TEXT)*

- The main garage located at 123 Main Street serves the central county region. It is responsible for approximately XX pieces of equipment. This location has one welding area and fifteen work bays. Three of the work bays have above ground lifts. The materials/ supplies used at this facility are all stored inside.
- There are four satellite garages:

(Dist 1) 1 First Street	North County
(Dist 2) 2 Second Rd.	West County
(Dist 3) 3 Third Lane	Southwest County
(Dist 4) 4 Fourth Avenue	South County

These facilities are responsible for YY pieces of equipment combined. Each location has four working bays, two of which have vehicle lifts. The floor drains at districts 3,4, and 5 are connected to sediment/ oil traps. The bulk oils and fluids that are used at the districts are stored outside in 55-gallon drums in a designated area that has berm containment. All bottled oils and spray chemicals are stored inside in the parts room.

The majority of repair and maintenance work is done inside however, due to the difficulty in moving certain pieces of equipment, some work is done at the job site. The above locations perform vehicle and equipment maintenance for all (municipality) departments.

### **C. Responsible Parties:** *(EXAMPLE TEXT)*

The Fleet Manager oversees all aspects of fleet administration and operations. The Fleet Services Supervisor is responsible for the day-to-day operations of the five garages with each garage having a working foreman. The main garage has twenty-one full time employees (11 mechanics, 4 parts personal, 6 support staff). The four district's garages have 5 full time employees (4 mechanics, 1 support person).

**D. Materials/Supplies acquisition, storage and usage:** (EXAMPLE TEXT)

Materials /supplies for all locations are ordered through the main garage and delivered directly to each location. The following materials and quantities are typically kept on hand for main garage operation:

Material	Maximum Quantity Kept On Hand	For Use Within	Storage Location
5w20 Oil	120 Quarts	6 Months	Parts Room
5w30 Oil	120 Quarts	6 Months	Parts Room
5w30 Oil	500 Gallons	6 Months	Bulk Container +
10w30 Oil	120 Quarts	6 Months	Parts Room
10w30 Oil	250 Gallons	6 Months	Bulk Container
10w40 Oil	500 Gallons	6 Months	Bulk Container
15w40 Oil	500 Gallons	6 Months	Bulk Container
30w Oil	250 Gallons	6 Months	Bulk Container
Trans Fluid	500 Gallons	6 Months	Bulk Container
Hyd Fluid	500 Gallons	6 Months	Bulk Container
Anti-Freeze (Reg)	110 Gallons	6 Months	55 Gallon Drum Shop
Anti-Freeze (X-Life)	110 Gallons	6 Months	55 Gallon Drum Shop
Gasoline	20,000 Gallons	3 Months	Underground Tank ++
Diesel	6,000 Gallons	3 Months	Underground Tank ++
Brake Solvent	55 Gallons	2 Months	55 Gallon Drum Shop
Penetrating Oil	120 18oz. Aerosol Can	1 Month	Parts Room
Brake Clean	120 18oz. Aerosol Can	1 Month	Parts Room
Carb Cleaner	60 18oz. Aerosol Can	1 Month	Parts Room

+ Bulk containers are double walled

++ Underground fuel tanks meet all 1998 UST standards and are insured by UST Insurance Fund

The following materials and quantities are typically kept on hand for each work location:

Material	Maximum Quantity Kept On Hand	For Use Within	Storage Location
<i>TO BE COMPLETED</i>			

**E. Waste generation, storage, disposal, recycling:** (EXAMPLE TEXT)

All locations: Waste generated by operations of all garages are as follows:

Waste	Maximum Storage Capacity	Storage Location	Method Of Disposal	Contractor	Frequency
Used Motor Oil, Hydraulic and Transmission Fluid	1000 Gallons	Inground Tank	Recycled	Licensed Oil Recycler	Quarterly
Used Oil Filters		Drain 24 Hours	Trash Can	Trash Hauler	As Generated
Used Antifreeze		Labeled Container in Shop	Recycle or Sewer if Approved by MSD		As Generated
Worn Brake Pads/Shoes			Returned For Recycling	Parts Vendor	As Needed
Equipment Batteries (Lead-acid and NiCd)	20	Shop	Returned For Recycling	Battery Vendor	As Needed
Tires	<25, Unless Meeting Rules in 10 CSR 80	Shop	Returned For Recycling and/or Recapped	Tire Vendor, Permitted Waste Tire Hauler	As Needed
Scrap Metal		Shop	Recycled	Metal Recycler	As Needed
Shop Towels	N/A	N/A	Trash Can	Trash Hauler	As Generated
Organic Solvent for Parts Cleaning	<220 or 220 – 2200 lbs as Registered Waste Gen.	No Smoking Area	Energy Recovery Or Recycling	Hazardous Waste Vendor	Quarterly or As Needed
Sand Blasting Grit (no lead based paint)		Shop Or Covered Container	Sanitary Landfill	Trash Hauler	As Generated
UST Condensate		Loading Dock	Treatment	Hazardous Waste Vendor	Within 90 days of Generation
Refrigerant	Tested Container Capacity	Shop	Recover for Reuse	Onsite or EPA Registered Co.	As Needed

## **F. Best Management Practices (BMP):**

*(THE FOLLOWING BMP'S ARE RECOMMENDED TO BE IMPLEMENTED TO THE MAXIMUM EXTENT PRACTICABLE)*

### OPERATIONS

- Institute a preventive maintenance program to minimize fluid leaks and equipment failures. Inspect vehicles and equipment frequently for leaks, collecting leaks with pans or absorbent, and repairing leaks.
- All routine vehicle maintenance and repairs at (municipality) facilities are performed indoors. On occasion and when necessary, outside maintenance work will be performed in a paved area with provisions made to contain and clean up all drips and spills.
- Use non-hazardous, environmentally safe products when possible. Avoid use of chlorinated organic solvents.
- Environmentally safe detergents are used instead of caustic cleaning solutions.
- Flammable liquids are kept in a vented fire-rated cabinet.
- All supply material and waste containers are marked clearly and properly to identify the contents.
- Keep material safety data sheets (MSDS) for chemicals onsite for information on reportable spill quantities, proper handling and health and safety.
- All supply material and waste containers are stored under cover to prevent contact with rainfall; or when uncovered, containers are clean and sealed.
- Tops of containers have absorbent mats and are free of standing liquid, and stored containers are kept closed.
- Waste oils, filters, antifreeze, and other wastes are collected in designated, labeled containers and recycled to the maximum extent practicable.
- Wheel weights are kept in a container marked "scrap lead".
- Records of waste pick-ups are logged and maintained in file.
- Drain pans are labeled for specific types of fluid. Use pans under vehicles and equipment with fluid leaks. Always use drip pans when making and breaking connections.
- Used oil filters should be gravity drained for 24 hrs with the anti-drain back valve or filter dome punctured to facilitate the draining process. Crushing the oil filter and recycling is preferred.
- Batteries, waste oil, etc. having spill/leak potential are stored indoors and are in secondary containment, when possible.
- Neutralizer and absorbent are kept by both new and used batteries.
- All floors are clean of oil and grease.



- Immediately clean up all spills of chemicals or vehicle fluids using dry methods (absorbents), minimizing the use of water whenever possible.
- Vehicle operators should be instructed to remain with the vehicle during fueling, and not to top-off the fuel tank to avoid overflows and spills.
- For painting or sanding activities outdoors, use a tarp enclosure to contain and capture material. Collect and dispose of paint chips and sand blast waste in the trash for non-lead based paint, or evaluate lead based paint for hazardous waste disposal.
- Keep the facility and surrounding area clear of litter.

## SPILL PREVENTION

- Spill control plans should be in place with procedures for proper spill response to minimize environmental impacts. SPCC plans must meet regulatory criteria in 40 CFR 112 for sites with a storage capacity over 660 gallons oil in one container or 1,320 gallons on site.
- Procedures for loading, unloading and transfer operations should be developed to prevent overfilling and spills.
- In areas where spills could occur, such as fueling and loading areas, keep spill kits with absorbent materials nearby and display signage indicating the location of those spill kits. Storm drain plugs or covers are recommended to prevent the flow of spilled material from entering the storm drain.
- For fueling areas, post signs that state “no topping off”.
- Regularly inspect all tanks and containers to ensure physical integrity.
- Maintain equipment to ensure the proper operation of automatic shutoff devices on pumps and, overfill protection and spill buckets on tanks.
- Emergency phone numbers are clearly posted in the shop and near material storage areas.

## FACILITY

- All floors in work areas are sloped to floor drains that are connected to an MSD-approved sediment /oil trap prior to discharge into the sanitary sewer system. Trap is pumped out quarterly, or as needed.
- A site-plumbing schematic showing all drains, traps, and shut offs for utilities should be posted in shop. Employees should be made aware of sanitary and storm sewers to ensure all wastewater is discharged to the sanitary sewer.
- Storm drains/inlets can be labeled to help protect from improper usage.
- All above ground storage tanks have secondary containment in accordance with SPCC requirements and are covered with a roof. If containment is not roofed, inspect accumulated rain water for contamination prior to discharge.
- Fueling areas are recommended to be designed with a roof to prevent contact with storm water. The area should be graded and sloped to direct storm water runoff away from the site and to prevent runoff from flowing over the fueling area.
- Storm water treatment devices can be used to treat runoff from fueling areas.
- “No smoking” signs are posted in the shop, and near hazardous waste and flammable material storage areas. Verify that fire extinguishers are charged and inspected yearly.

*(INSERT SIMILAR BMP LISTING FOR EACH LOCATION IF MORE THAN 1 LOCATION. OR, IF BMPs ARE IDENTICAL FOR ALL LOCATIONS, JUST LIST ONCE, REFERENCING ALL LOCATIONS.)*

**G. NPDES (National Pollutant Discharge Elimination System) Permit status:**

*(EXAMPLE TEXT)*

Vehicle maintenance facilities of this type are considered “municipal industrial” facilities under the Missouri Storm Water Regulations and are subject to separate NPDES storm water (Phase I) permitting requirements under MDNR general permit R80C. As stated above, all of (municipality) vehicle repairs and maintenance are performed indoors or are otherwise done without exposure to storm water. Therefore, a NPDES Storm Water permit is not required and a no-exposure certification has been filed with the Missouri Department of Natural Resources.

*(INSERT SIMILAR PARAGRAPH FOR EACH ADDITIONAL LOCATION AT WHICH CO-PERMITTEE PERFORMS OPERATIONS COVERED BY THIS CHAPTER)*

**H. Training:** *(EXAMPLE TEXT)*

Training on storm water BMPs will be provided to mechanics, storekeepers, material handlers, laborers, equipment operators, janitors, and management staff working at facilities identified in Section B. All employees will be provided safety training and training on written procedures pertaining to general housekeeping. Implement monthly safety meetings to include environmental training and HAZMAT training.

## Chapter 4 - Vehicle/Equipment Washing

### **A. Description of Activities:**

(Municipality) will wash vehicles and equipment at wash bay facilities designed according to this chapter. At (municipality) facilities where no wash bay exists, all vehicles and equipment will be taken to commercial facilities when washing is required. *(COULD INCLUDE ADDITIONAL DETAILS IF THERE IS A SPECIFIC LOCATION OR CITY CONTRACT FOR WASHING OR JUST LEAVE IN GENERAL TERMS.)*

### **B. Locations:** *(EXAMPLE TEXT)*

The (municipality) wash bay facilities are located at the following locations:

- 1) North maintenance yard, 123 First Street
- 2) South maintenance yard, 456 Second Street

### **C. Responsible Parties:** *(EXAMPLE TEXT)*

The Facility Superintendent responsible for pool vehicles, (name), is responsible for ensuring that vehicles are taken off-site to approved commercial facilities for washing, or that washing on (municipality) property is done in the locations specified in Section B.

### **D. Materials/Supplies acquisition, storage and usage:**

The wash soap to be used is *(PRODUCT NAME OR SPECIFICATION- NON-PHOSPHATE, BIODEGRADABLE DETERGENT)*.

### **E. Wash bay design and waste disposal:**

Wash water from vehicle and equipment washing must be disposed in the MSD sanitary sewer, with pretreatment using a sediment/oil trap. The accumulated solids in the sediment/oil trap must be pumped out and properly disposed of, such as at a wastewater treatment plant by an MSD approved waste hauler. If floating oils and grease accumulate in the sediment/oil trap, the contents must be disposed by a permitted waste hauler at a commercial facility able to handle oily waste.

### **F. Best Management Practices (BMPs):**

*(THE FOLLOWING BMP'S ARE RECOMMENDED TO BE IMPLEMENTED TO THE MAXIMUM EXTENT PRACTICABLE)*

*(FOR OFF-SITE WASHING)*

- All vehicles are taken to commercial facilities when washing is needed.
- Commercial facilities used are verified to be in compliance with MSD sewer discharge requirements. Facilities must discharge wastewater to the sanitary sewer system, and wash bays must be covered to prevent storm water in the sanitary system.

*(FOR MUNICIPAL WASHING)*

- Wash bay facilities are designed to collect wash water, pretreat with a sediment/oil trap (interceptor), and discharge to the sanitary sewer system. The trap must be pumped quarterly, or as needed.
- Wash bays are covered and wash area curbed or otherwise drained to prevent storm water runoff from discharging to the sanitary system. Uncovered wash bays have an inlet valve to the sanitary sewer. The wash bay is cleaned and the valve is maintained closed when washing is not occurring, to keep uncontaminated storm water out of the sanitary sewer. Post instructions regarding the use of the valve.
- Mobile wash services must collect wash water for recycling or proper disposal into a sanitary sewer.
- Job-site mud removal is performed without detergent in a contained, permeable (gravel) area with wash water infiltrating into soil or gravel.

**G. NPDES Permit status:**

Not applicable.

*(NOT APPLICABLE FOR THESE EXAMPLES, HOWEVER, NOTE THAT MDNR GENERAL PERMIT G75 APPLIES TO CAR WASH WASTEWATER DISCHARGED TO THE STORM WATER SYSTEM.)*

**H. Training:** *(EXAMPLE TEXT)*

Employees responsible for operating fleet vehicles and equipment will be made aware of BMPs regarding washing, and the proper, designated locations for washing.

## Chapter 5 - Facility Repair, Remodeling and Construction

*THIS CHAPTER IS INTENDED TO DEAL WITH THE LISTED ACTIVITIES FOR THE CO-PERMITTEE'S FACILITIES, SUCH AS CITY HALLS, OTHER ADMINISTRATION BUILDINGS, MAINTENANCE GARAGES, JAILS, COMMUNITY/RECREATION CENTERS, AIRPORT TERMINALS, PARK BUILDINGS, WASTEWATER TREATMENT FACILITIES, STRUCTURES AT RECYCLING SITES, ETC. PORTIONS OF THIS CHAPTER WILL ADDRESS CONSTRUCTION, RENOVATION, AND REPAIR WORK RELATED TO INFRASTRUCTURE, HOWEVER, ADDITIONAL CHAPTERS WILL ALSO COVER SUCH INFRASTRUCTURE AS STREETS/PARKING (SEE ALSO CHAP. 6), PARK GREENSPACE (SEE CHAP. 7) OR STORM WATER CONVEYANCES (SEE CHAP. 8).*

### **A. Description of Activities:** (EXAMPLE TEXT)

On an as-needed basis, city personnel perform minor renovations/repairs and small capital improvements on city facilities, such as erecting or removing partitions, replacing a door or window, painting, etc. Major projects are typically contracted out to commercial firms specializing in the type of work required.

### **B. Locations:** (EXAMPLE TEXT)

City hall and central garage contain a shop and material storage areas for facility repair, remodeling and construction; and city employees are involved in these activities. Repair, remodeling, construction and capital improvements are periodically performed on all types of municipal facilities.

### **C. Responsible Parties:** (EXAMPLE TEXT)

Facilities Manager – The Facilities Manager or Facilities Supervisor is the responsible party that will ensure all repairs, remodeling and construction will be preformed without subjecting the storm water system to any new contaminant streams. They are responsible for the construction practices of the contractors that work for them on municipal facilities.

### **D. Materials/Supplies acquisition, storage and usage:** (EXAMPLE TEXT)

Varies with nature of job. Materials are purchased on an as-needed basis and in quantities expected to be completely consumed in the process of completing the project. Materials used for every project will vary. The majority of materials are purchased on a project basis and are consumed during that project. Materials should be stored indoors or under cover so they are protected from rainfall and runoff. All unused portions of materials should be properly secured to prevent loss, such as bagged cement. Tarps should be used on the ground to collect fallen debris and other spilled material. Waste should be cleaned up on a daily basis and properly disposed of as noted below in section "E". Routinely stocked materials are identified in the following table.

<b>Material</b>	<b>Maximum Quantity Kept Onsite</b>	<b>Storage Location</b>
Lumber	100 Linear Feet	Warehouse
Drywall	500 Square Feet	Warehouse
Dirt	50 Tons	Yard
Rock	50 Tons	Yard
Oil-Based Paint	10 Gallons	Flammable Cabinet
Latex Paint	20 Gallons	Warehouse

**E. Waste generation, storage, disposal, recycling:** (EXAMPLE TEXT)

Waste generation varies with the nature of the job. Typically, wastes consist of small amounts of lumber cut-offs, wallboard scraps, empty paint cans, etc. Order and mix only the amount of materials necessary for the work to be completed. Dispose of all waste properly, recycle whenever possible. Never bury waste material or leave material in the street, gutter, or near a creek or streambed that would allow the material to enter the storm water system. Such materials are disposed in the city hall dumpster for pick-up by the city contracted waste hauler. Listed below are the disposal methods for various types of materials that are generated from facility repairs and remodeling:

<b>Waste</b>	<b>Storage Requirements</b>	<b>Method Of Disposal</b>	<b>Contractor</b>
Lumber, Drywall, Siding, Roof Shingles, Insulation	Dumpster or Container	Sanitary or Demolition Landfill	
Fluorescent, Sodium Vapor, Mercury Vapor Lamps	Closed, Labeled Container	Recycling as Universal Waste	
Fluorescent Green tip Lamps	Dumpster	Sanitary Landfill	
Fluorescent Light Ballasts	Closed Labeled Container	Recycling or Landfill (if PCBs, with approval)	
Mercury Switch/Thermostat	Closed Labeled Container	Reclaim	Hazardous Material Recycler
Asbestos Containing Materials (tile, insulation, roofing material)	To be managed only by certified personnel.	Special Waste Landfill	
Latex Paint Waste	Closed Container	Energy Recovery or Sanitary Sewer	Waste Vendor or MSD
Oil-based Paint Waste	Closed Labeled Container	Energy Recovery as Hazardous Waste	
Lead Based Paint Removal Waste	To be managed only by certified personnel.	Test for Hazardous Waste Characteristics.	
General Trash	Dumpster or Container	Sanitary Landfill	
Steel, Iron, Copper		Recycle	
Carpet		Recycle, or Sanitary Landfill	Green Building Recycling

Leaks, drips, or spills should be cleaned up immediately. Clean up using “dry” methods, absorbent materials or rags, or remove the contaminated soil or material.

Clean up of equipment is to be performed in designated areas. Never clean up concrete equipment or paint brushes and allow the washout into the street, storm drains, drainage ditches, or streams.

## **F. Best Management Practices (BMP):**

*(THE FOLLOWING BMP'S ARE RECOMMENDED TO BE IMPLEMENTED TO THE MAXIMUM EXTENT PRACTICABLE)*

### **FACILITY DESIGN**

- Consider designing facilities for “Low Impact Development” to reduce the volume and rate of storm water runoff from impervious areas to improve water quality. Refer to information on Low Impact Development from EPA’s web site at: <http://www.epa.gov/owowwtr1/NPS/lid/lidlit.html> for more information about Low Impact Development methods.
- In designing storm water drainage facilities, use the following BMPs, in accordance with MSD’s storm water drainage facility design regulations, to improve the water quality of site drainage: wet detention ponds, wetlands, structural filter systems, grass swales, vegetative filter strips, and riparian buffers along streams. MSD’s design regulations are contained in the “Rules and Regulations and Engineering Design Requirements for Sanitary Sewage and Stormwater Drainage Facilities”. Fact sheets on storm water management practices are available from the Storm Water Manager’s Resource Center at the following web site: <http://www.stormwatercenter.net>
- Carefully design and install plumbing and storm water systems to code, eliminating cross-connections between sanitary and storm drain systems.
- Design material storage and handling areas to avoid rain and storm water runoff contacting stored material.
- Design landscaping that uses native vegetation to reduce the need for irrigation, fertilizer and pesticide.

### **LAND DISTURBANCE**

- Comply with St. Louis County or municipal land disturbance ordinances and programs implemented under the St. Louis County Phase II Storm Water Management Plan. For projects less than the land disturbance program thresholds, prevent erosion of soil from bare ground at the site by employing erosion and sediment control BMPs, such as: soil stabilization with mulch or seeding, settling basins, sediment traps, vegetated buffer strips, and silt fencing for perimeter controls. For details concerning these BMPs, see the SWPPP link on the following web page: [www.stlouisco.com/plan/land\\_disturbance.html](http://www.stlouisco.com/plan/land_disturbance.html)
- All construction or maintenance activities that excavate in or discharge any dredge or fill material into a “water of the United States” requires a Corps of Engineers 404 permit and a MDNR 401 water quality certification. Waters of the United States include ditches, creeks, rivers, lakes, ponds and wetlands. See Appendix 5-F1 for a summary of permit requirements.

## CONSTRUCTION/REMODELING

- In accordance with city purchasing policies as stated in Chapter 1 and 2, every effort is made to purchase materials that are manufactured with recycled materials.
- Properly store materials as far away from storm inlets and streams as practical, and cover stored materials to avoid storm water impacts.
- Recycle or properly dispose of wastes, as indicated in Section E above.
- Never clean out or wash out paint or concrete mixers in the street or near a gutter, storm drain or stream.
- Small quantities of inert demolition wastes and construction scraps are disposed in the city hall dumpster. If larger quantities are generated, arrangements are made with a city-contracted hauler for a special pick-up.
- Keep work sites clean, pickup trash that can be wind blown daily.
- Utilize certified asbestos inspectors to inspect floor tile, ceiling tile, fire-proof barriers and doors, roofing material and insulating materials for asbestos content prior to demolition. Manage material using certified asbestos personnel.
- Utilize certified inspectors to inspect for lead based paint on structures older than 1978. Use only state certified removal contractors for lead based paint abatement.
- When scraping or washing to remove non-lead based paint, collect paint chips in a tarp for proper disposal. Use water-based paint instead of oil-based paint whenever possible.
- Ensure that facility plumbing connects all sanitary wastewater discharges to the sanitary sewer, and that storm water is sent to the storm sewer system.

### **G. NPDES Permit status:**

Land disturbance projects over 1 acre require a Land Disturbance Permit MO-R100A (if regulated under a Phase II compliant land disturbance program) or Permit MO-R101 from the MDNR. Storm water operating permits will not apply unless process water will be discharged to storm water and not to the sanitary sewers.

### **H. Training:**

All employees involved in facility construction, facility repair and remodeling activities will be trained on the BMPs presented in this chapter. Personnel should be trained in the items noted below:

General housekeeping  
Material storage, cleanup, and disposal  
Material reuse and recycling  
Equipment cleanup  
Land disturbance erosion control

Reduction of material for disposal through storage, reuse, or recycling can greatly reduce material and disposal costs, long term liability, preserve environmental quality, improve workplace safety and provide a positive public image.



## **Chapter 6 - Cleaning and Maintenance of Roadways, Highways, Bridges and Parking Facilities**

### **A. Description of Activities:**

Most highway agencies and municipalities are responsible for the cleaning and maintenance of roadways, highways, and parking facilities under their maintenance purview. Activities include, but may not be limited to, street sweeping, flushing, applying surface seals, patching, snow removal, and emergency response to spills and accidents.

Street sweeping operations normally involve self-contained and powered collection devices, utilizing belt conveyors or vacuum systems. This work may be performed on a scheduled basis, or when requested, and is usually conducted on roads with curbs where debris can accumulate in the gutter line.

Many agencies flush bridge decks and parking structures in the spring to remove de-icing chemicals and to clean the drainage structures. Also, flushing operations are performed on sections of pavement where mud or debris accumulates after flooding, creating hazardous conditions.

Bridge decks and parking structures are normally sealed on a five-to-seven year cycle to protect the concrete and steel reinforcement from corrosive elements.

Patching operations involve the preparation of potholes and the fill of either hot mix or cold patching material.

Highway agencies plow and salt the roadways under their maintenance jurisdiction during winter snow events. Typically, 200 to 400 pounds of salt per lane mile is used to de-ice the pavement. Other chemicals, such as calcium chloride, are used when prevailing temperatures fall below 20° Fahrenheit.

Most highway agencies are required to respond to emergency situations involving spills and debris from vehicles. This work is performed if it is determined that the material which will be removed from the public road right-of-way is of a non-hazardous nature. Hazardous material is handled through hazardous material removal procedures not specified in this chapter.

### **B. Locations:**

All road networks or public parking structures of the City of St. Louis, Saint Louis County, and all municipalities within the boundaries of Saint Louis County.

*(MUNICIPALITIES NEED TO INSERT A DESCRIPTION OF THEIR STREET MAINTENANCE RESPONSIBILITIES)*

**C. Responsible Parties:** (EXAMPLE TEXT)

The responsible parties involved in the cleaning and maintenance of streets and parking lots include:

- Facilities Manager for City Hall – (xxx) xxx-xxxx
- Building Maintenance Superintendent – (xxx) xxx-xxxx
- Public Works Director – (xxx) xxx-xxxx
- Street Superintendent – (xxx) xxx-xxxx

**D. Materials/Supplies Acquisition, Storage and Usage:** (EXAMPLE TEXT)

Large quantities of materials are expended in the performance of work. Some material is purchased and used immediately, while other material is stockpiled. Agencies working within the constraints of their budget weigh fiscal responsibility against the immediate and long-range needs for such materials, and adjust their purchasing habits accordingly.

Material	Maximum Quantity Kept On Hand	For Use Within	Storage Location
Salt (Sodium Chloride, Calcium Chloride)	Up to 1,000 tons	One Year	Various Locations (Sites listed: )
Aggregate (various sizes)	Up to 100 Tons	One Season	
Cold-Patching Material	Up to 50 Tons	One Season	
Hot Mix Asphalt	Purchased When Needed.	Daily	
Deck Sealing Materials	Up to 500 Gallons	One Season	
Topsoil	Up to 100 Tons	One Season	
Concrete Ready-Mix	Purchased When Needed.	Daily	
Concrete Bag Mix	200 bags (20 Tons)	One Season	

**E. Waste Generation, Storage, Disposal, Recycling:** (EXAMPLE TEXT)

A certain amount of construction spoil and waste is generated during the performance of maintenance operations on our road network. Recycling methods are employed if they are determined to be cost-effective; however, in many instances, waste material must be removed from the work site by various disposal methods.

Waste	Maximum Storage Capacity	Storage Location	Method Of Disposal	Frequency
Asphalt Millings from Co-Planing Operation	Unlimited Storage Options	Landfill or Other Locations	First preference is to recycle the material, using it for road base, parts, earth fill (if laws permit), or in asphaltic concrete, etc. If material can't be economically recycled, it will be disposed of in a landfill.	
Concrete Rubble	Unlimited Storage Options	Earth Fill or Landfill	First preference is to place concrete waste in earth fill; however, if this cannot be economically accomplished, the spoil material is taken to a landfill.	
Trash, Grit and Debris from Street Sweeping and Road Clean Up			Sanitary Landfill	
Water Based Paint			Sanitary Sewer, as Approved by MSD.	As Generated
Shot, Sand Blast Waste with Lead Free Paint			Sanitary Landfill	
Lead Based Paint Chips and Shot, Sand Blast Waste	Sealed Container Capacity		Evaluate for Hazardous Waste Determination.	Store <90 Days

**F. Best Management Practices (BMP):**

*(THE FOLLOWING BMP'S ARE RECOMMENDED TO BE IMPLEMENTED TO THE MAXIMUM EXTENT PRACTICABLE)*

**MAINTENANCE**

- If certain road maintenance activities are prone to produce pollutants that can be carried off with storm water runoff, schedule these maintenance activities during times of dry weather if possible.
- Capture scrapings/rust/dirt/sandblasting grit/over spray/drips, etc., from preparation and painting of bridges/structures/traffic control devices.
- For steel girders on bridges, utilize certified inspectors to inspect for lead based paint on structures older than 1978. Use only state certified removal contractors for lead based paint abatement.



- Used asphalt is recycled when it is cost-beneficial.
- Block scuppers and drains when sealing bridge decks.
- On asphalt overlays, ensure storm water drainage capacity of curbs and inlets is maintained by milling down into the street at the curb, or using open graded thin bonded overlay.
- Comply with St. Louis County or municipal land disturbance ordinances and programs implemented under the St. Louis County Phase II Storm Water Management Plan. For projects less than the land disturbance program thresholds, employ BMPs for erosion and sediment control.
- All construction or maintenance activities that excavate in or discharge any dredge or fill material into a “water of the United States”, which includes ditches, creeks, rivers, lakes, ponds and wetlands, requires a Corps of Engineers 404 permit and a MDNR 401 water quality certification. Examples of construction or repair activities requiring a permit include: bridge work, culverts under road crossings, dredging or placing rip rap in creeks. See Appendix 5-F1 for a summary of permit requirements.

### DE-ICING

- Use calibrated chemical applicators for salt and brine applications.
- Minimize the use of salt without compromising public safety.
- Stop salt feed on trucks at stop signs, where equipped.
- Stored salt is on an impervious surface and is covered.
- As available, use road weather information such as weather forecasts, meteorological data, and pavement sensors to maximize the efficiency and effectiveness of resources.



### CLEANING

- Remove as much mud, grit, salt and debris as possible (by scraping, brooming, etc.) prior to roadway flushing on bridges.
- Evaluate the need for street sweeping to remove grit and trash at facility parking lots and roadways within jurisdiction. Implement street sweeping, when feasible, focusing on heavy traffic patterns, seasonal variations (spring/fall), and problem areas. Record the volume of trash/debris removed to identify the priority of areas being cleaned and the effectiveness of resources used. Investigate to determine sources of litter in areas of excessive accumulation.
- The environmentally preferred sweepers are those with an integral collection device and fugitive dust control. Properly dispose of trash/debris as indicated in Section E above.
- Do not hose down parking lots in a manner that discharges wash water to the storm drain untreated.



**G. NPDES Permit status:**

Not Applicable

**H. Training:** *(EXAMPLE TEXT)*

Employees involved in Street and Highway maintenance and repair will be trained on the BMPs in this chapter.



## Chapter 7 - Maintenance of Parks, Green Spaces, Trails and Landscaping

### **A. Description of Activities:** (EXAMPLE TEXT)

The (municipality) has 50 parks totaling nearly 150 acres of land, and over 30 miles of biking, hiking and jogging trails.

The (municipality) has responsibility for the development and maintenance of recreational areas and green space within the city, including neighborhood and regional parks, community gardens, bike and walking paths, linear and river parks, trees, public facility landscaping and public street right-of-way landscaping. The city promotes an interconnected system of open space and trails that facilitates active and passive recreational opportunities for the community.

The creation and design of parks and open space can assist in management of storm water by providing green infrastructure and a means of absorbing rainwater, slowing its release in to streams, storing, filtering and slowing storm water runoff down and thus preventing or reducing flash flooding downstream. Local governments have an opportunity to use their park lands to benefit the environment and to demonstrate best practices for storm water management.

Maintenance activities include mowing of grassy areas, pruning trees, removing fallen limbs, mulching, emptying trash receptacles, trail maintenance (repairing asphalt bike path and walking trails), routine cleaning of park restrooms, and parking lot maintenance.

### **B. Locations:** (EXAMPLE TEXT)

Blossom Park is located at 123 Park Avenue.

Logan Park is located at 456 River Road.

Rock Creek Park is located at 1500 Cliff Drive.

Green spaces are interlaced throughout the community and are maintained by the Parks Department and local volunteers.

### **C. Responsible Parties:** (EXAMPLE TEXT)

The Director of Public Works has authority over all parks. Parks are actively managed by the Superintendent of Parks Operations. Volunteers donate their time to assist in park maintenance.

### **D. Materials/Supplies acquisition, storage and usage:**

The following materials and quantities are typically kept on hand for landscaping and park maintenance operations.

Material	Maximum Quantity Kept On Hand	For Use Within	Storage Location	Comments
Mulch Pile	100 yd <sup>3</sup>	6 Months	Asphalt Pad	Keep Covered
Fertilizer	25 Bags	6 Months	Garage	
Herbicide	10 Gallons	6 Months	Garage	
Rock	100 Tons	1 Year		

(EXAMPLE INVENTORY, INSERT SEPARATE TABLE FOR EACH LOCATION)

**E. Waste generation, storage, disposal, recycling:**

Wastes generated by landscaping and park maintenance operations are as follows.

Waste	Maximum Storage Capacity	Storage Location	Method Of Disposal	Contractor	Frequency
Wood, brush	20 yd <sup>3</sup>	Yard	Chip into Mulch	Tree Service	6 Months
Leaves, Grass	10 yd <sup>3</sup>	Composter	Compost into Mulch	None	6 Months

(EXAMPLE INVENTORY, INSERT SEPARATE TABLE FOR EACH LOCATION)

**F. Best Management Practices (BMP):**

(THE FOLLOWING BMP'S ARE RECOMMENDED TO BE IMPLEMENTED TO THE MAXIMUM EXTENT PRACTICABLE)

**PARK DESIGN AND SITING**

- Creating undeveloped, natural open space and preserving established trees and other natural vegetation, particularly around natural drainage areas, such as creeks, is recommended. Tree buffers and tall grass filters around streams improve water quality, slow runoff and prevent erosion. A minimum buffer width of 50 feet is recommended.
- Avoid site development and placing facilities in the flood plain.
- Design park sites to preserve natural resources such as wetlands and existing natural draining areas, minimizing their loss and maintaining existing trees and a riparian corridor next to creeks to the degree possible. Minimize creek crossings, and place them only after consideration of the stream features to enable natural flow.
- Design landscaping that uses native vegetation to reduce the need for irrigation, fertilizer and pesticide. Select plants appropriate for site conditions for sun, moisture, and soil type.
- Utilize low impact development to minimize impervious surfaces, See Chapter 5.



- In designing storm water drainage facilities, use the following BMPs to improve the water quality of site drainage and slow the release of water to streams: wet detention ponds, micro detention basins, wetlands, rain gardens, vegetative filter strips and riparian buffers along streams, structural filter systems, pervious pavement and green (vegetated) roofs. The use of swales instead of curbs along roads and parking lots is beneficial to filter pollutants and reduce the volume and rate of storm water flow. Fact Sheets on storm water management practices are available from the Stormwater Manager's Resource Center at the following web site: <http://www.stormwatercenter.net>

## COMMUNITY PROGRAMS

- Sponsor activities and annual events that involve the general public, schools, watershed groups, stream teams, etc., providing hands-on activities that promote water quality in their adopted parks and greenways. Typical activities include: field trips, cleanups, educational programs, restoration projects, stream monitoring, storm drain marking, and trail projects.
- Organize or participate in reforestation programs, planting native trees to buffer streams, create shade, and beautify parks. Support community volunteer group efforts in these programs.
- Require pet owners to pickup and properly dispose of pet waste in parks. Provide pet waste scoop dispensers and signage in parks to notify visitors of the requirement.
- Control wild geese populations near lakes with "no feeding the geese" signs and ordinances. Other techniques to control populations include habitat modification by increasing shoreline vegetation height, scare tactics or relocation.



## PARK/LANDSCAPE MAINTENANCE

- Remove litter and debris regularly.
- Properly dispose of yard waste, for example, by composting. Do not dump yard waste into creeks.
- Minimize mowing of open space sites, depending on site objectives.
- Mow grass higher and leave grass clippings on the lawn to retain moisture and provide nutrients.
- Remove exotic invasive vegetation and replace with native plantings as resources are available.
- Perform soil tests to determine the optimum fertilizer application rate.
- Apply fertilizer only in cool weather, preferably fall. Avoid application before a rain, and do not apply fertilizer at rates higher than indicated in on label instructions. Apply slow release fertilizers such as methylene urea, IDBU or resin coated fertilizer.



- When disturbing land, such as clearing vegetation and destroying the root zone, employ BMPs for erosion and sediment control. For details concerning these BMPs, see the SWPPP link on the following web page: [www.stlouisco.com/plan/land\\_disturbance.html](http://www.stlouisco.com/plan/land_disturbance.html)
- All construction or maintenance activities that excavate in or discharge any dredge or fill material into a “water of the United States”, which includes ditches, creeks, rivers, lakes, ponds and wetlands, requires a Corps of Engineers 404 permit and a MDNR 401 water quality certification. Examples of activities that require a permit include: placing culverts in creeks, constructing outfalls, and stream restoration activities. See Appendix 5-F1 for a summary of permit requirements.

## INTEGRATED PEST MANAGEMENT

- Use Integrated Pest Management (IPM) techniques to minimize the use of pesticides. Pesticide application should be timed carefully and combined with other pest management practices. Pests and their development stage should be identified accurately and pesticide applications made only when necessary, using the least amount needed and the least toxic product for adequate pest control.
- Use mechanical controls to keep pests in check, such as species specific, pheromone based traps. Remove pests by hand. Eliminate conditions favorable to pests and place barriers to control pests and weeds.
- Use natural, biological controls, when feasible, including natural enemies of pests, such as: predators, parasites, pathogens, pheromones, and juvenile hormones.
- Reduce the risk of West Nile Virus by reducing stagnant water (mosquito breeding grounds) caused by cans, containers and tires present in litter and junk piles. Keeping storm water drainage gutters and drains clean will also reduce conditions suitable for mosquito breeding. Refer to MU Extension IPM Guides at: <http://ipm.missouri.edu/ipmresources.htm>
- Minimize the use of herbicides through an Integrated Pest Management techniques for weed control. This includes practices that keep plants healthy, such as selecting disease and pest resistant varieties and maintaining good growing conditions. For turf grass, prevention of weed infestation begins with practices to promote healthy grass through proper planting, watering, fertilizing, mowing, aerification, and thatch control. Refer to MU Extension Publication IPM1009: <http://muextension.missouri.edu/xplor/agguides/pests/ipm1009.htm>

## PESTICIDE/HERBICIDE USE

- When pesticide or herbicide use is required, select pesticides carefully, avoiding highly water soluble and very environmentally stable products to minimize potential for leaching from soils into waterways. Environmentally friendly products readily degrade in the environment and/or bind to soil particles.
- Consider the vulnerability of the area in which pesticides are applied, avoiding areas with streams, ponds, sinkholes or wells. Sinkholes are an environmentally sensitive area because they allow surface water to reach groundwater quickly with little natural soil filtering.
- Apply pesticides when the target pest is at its most vulnerable life stage, and use site specific rather than wholesale application.

- Read pesticide labels carefully for information and restrictions about the rate, timing, and placement of the pesticide in that container. Calibrate equipment to apply at the proper rate. Apply when the threat of rain is low to avoid wasting material and washing pesticide into the waterways. Carefully calculate how much pesticide concentrate is needed to treat the specific site with the equipment being used, to eliminate disposal of excess spray mix.
- Store pesticides in their original containers in a cool, well-ventilated building with a concrete floor. Handle pesticides carefully to avoid spills.
- Dispose of pesticide waste properly, following label instructions.

**G. NPDES Permit status:**

Not applicable

**H. Training:** *(EXAMPLE TEXT)*

All employees directly involved in the design, construction and maintenance of landscaping, trails, green spaces and parks will be trained on the BMPs in this chapter. Affected employees will likely be: facility engineers, park management, equipment operators, gardeners, laborers, and contract operations providing these services.



## Chapter 8 - Cleaning and Maintenance of Drainage Channels, Storm Sewers and Inlet Structures

### **A. Description of Activities:**

The storm drainage system functions to collect and convey surface runoff to receiving waters during storms in order to prevent flooding. The system consists of improved and unimproved drainage channels, culverts, bridges, trench drains, gutters, ditches, swales, storm sewers and storm inlet structures. Maintenance of the system is necessary to ensure it functions hydraulically as intended. MSD has the major responsibility for the cleaning and maintenance of improved channels and storm sewers in the Plan Area. Maintenance responsibilities are defined in MSD's "Statement of Policy for Maintenance of Stormwater Sewer Systems and Facilities". Many of the co-permittees are responsible for maintaining the storm sewer systems on their property, and on systems not dedicated to the MSD system. In addition, municipalities are responsible for maintaining bridges, storm culverts, ditches and gutters along the streets in their city. MSD does maintain road inlets and culverts on systems dedicated to MSD. MSD does not maintain detention and retention basins or yard swales. Maintenance of basins and yard swales is the responsibility of property owners, as addressed in MSD's "Rules and Regulations and Engineering Design Requirements for Sanitary Sewage and Stormwater Drainage Facilities".

### **B. Locations:** (EXAMPLE TEXT)

The (Municipality) separate storm system includes XX miles of storm sewers and YY miles of open natural drainage ditches and channels. All structures are identified on facility base maps. The number of catch basins on the separate storm system is approximately ZZ. Generally, the inlets on the storm system are not constructed with traps to capture oil, grease or debris.

### **C. Responsible Parties:** (EXAMPLE TEXT)

Metropolitan St. Louis Sewer District  
Director of Operations, Telephone: (xxx) xxx-xxxx  
Yard, Operations Manager, Telephone: (xxx) xxx-xxxx

Municipality  
Public Works Department, Director, Telephone: (xxx) xxx-xxxx

### **D. Equipment/Materials/Supplies acquisition, storage and usage:** (EXAMPLE TEXT)

(Municipality) Public Works Department has XX Vacators for cleaning inlets. YY hydroflush units for cleaning storm sewers. Hoist trucks and front end loaders for maintenance in channels. Contractors are used for clearing brush blockages.

**E. Waste generation, storage, disposal, recycling:** (EXAMPLE TEXT)

Wastes generated from maintenance of the storm drainage system must be disposed of properly, as indicated in the table. All waste being disposed of in a landfill must not contain free liquid. Water draining from waste destined for a sanitary landfill is considered wastewater and must be disposed of in a sanitary sewer system.

Waste	Storage Requirements	Method Of Disposal	Contractor
Catch Basin Grit & Trash	Dewater and Place in Dumpster with Wastewater to Sanitary Sewer	Sanitary Landfill under Special Waste Permit	Waste Management Contractor
Sediment from Channel or Basin	Dewater Controlling Soil Released	Demolition/Construction Landfill or Evaluate for Clean Fill Status; or Wet to MSD Hauled Waste Receiving Station	
Solid Waste from Storm Sewer Flushing	Dewater and Place in Dumpster with Wastewater to Sanitary Sewer	Sanitary Landfill	Trash Service
Trash and Debris from Channel Cleaning	Dumpster	Sanitary Landfill	Trash Service
Wastewater		Sanitary Sewer	
Yard Waste and Trees from Channel Cleaning		Compost Brush; Wood to Demolition Landfill or Firewood to Residences	Tree Service

**F. Best Management Practices (BMP):**

*(THE FOLLOWING BMP'S ARE RECOMMENDED TO BE IMPLEMENTED TO THE MAXIMUM EXTENT PRACTICABLE)*

**GENERAL**

- Within budgetary constraints and responsibilities, perform preventative maintenance of the storm drainage system to remove flow obstructions to reduce flooding and erosion problems and improve water quality.
- Utilize care in cleaning catch basins, storm sewers and drainage channels, to properly collect and dispose of waste as indicated in Section E to minimize contaminants discharged into storm water. Note in the work order the volume of waste collected and disposed of. Investigate into the source of increased maintenance needs, if excessive. When possible, focus cleaning efforts before rainy seasons.
- If storm inlets/catch basins, storm sewers and drainage channels are impacted by non-storm water discharges or illegal dumping of waste, contact MSD, Division of Environmental Compliance at 314-436-8710 for investigation and enforcement.

- Implement Phase II public education efforts; public participation efforts to mark inlets with “No Dumping, Drains to Stream”; or organize public stream clean-up events.
- Identify failing detention or retention basins and report them to MSD Customer Service at 314-768-6260.
- Comply with St. Louis County or municipal land disturbance ordinances and programs implemented under the St. Louis County Phase II Storm Water Management Plan. For projects less than the land disturbance program thresholds, employ BMPs for erosion and sediment control.

## CATCH BASINS

- Prioritize catch basins for routine maintenance on a specified frequency based on need. Identify areas for additional maintenance to coincide with litter from major public events, and based on work orders generated by customer complaints and/or flooding. Increase maintenance of inlets that are fully blocked or 75% full of trash or debris when maintained. Reduce maintenance of catch basins that do not result in waste generation.
- Consider installation of catch basin inlets in areas where storm sewers will be known to receive excessive amounts of litter or sediment.



## STORM SEWERS

- Prioritize storm sewers for routine maintenance on a specified frequency based on flat grades, low flow, or review of work orders. Identify areas for additional maintenance based on work orders generated by customer complaints and/or flooding.
- Utilize care in cleaning storm sewers by flushing, to properly collect waste using debris/sediment traps.
- Seal/repair joints in structures to prevent root intrusion and soil wash-out.
- Minimize or avoid the use of chemical root/vegetation killers, and use the least toxic alternatives when necessary.

## DRAINAGE CHANNELS

- All construction or maintenance activities that excavate in or discharge any dredge or fill material into a “water of the United States”, which includes ditches, creeks, rivers, lakes, ponds, and wetlands, requires a Corps of Engineers 404 permit and a MDNR 401 water quality certification. Examples of construction or repair activities requiring a permit include: sewer creek crossings, outfall structures, stream bank stabilization, and all channel modifications. See Appendix 5-F1 for a summary of permit requirements.
- Consider downstream conditions prior to spot channel stabilization efforts to avoid simply moving problems downstream. Revegetate stabilized areas with native plants whenever possible, and as soon as possible.
- MSD’s Division of Environmental Compliance will inspect all open drainage channels under its Illicit Discharge Detection Program, and will notify MSD’s Operations Department, St. Louis County, the municipality or MoDOT, as applicable, regarding maintenance needs concerning damaged structures or blockages requiring removal.

## MUNICIPAL DETENTION BASINS

- Existing control structures undergoing renovation are modified to the maximum extent practicable to meet new construction criteria in MSD's "Rules and Regulations and Engineering Design Requirements for Sanitary Sewage and Stormwater Drainage Facilities".
- Inspect facilities to insure proper operation and maintain as needed, including: trash and debris removal, vegetation control, vector control, structural and erosion repair, and sediment removal to restore capacity.

### **G. NPDES Permit status:**

Not applicable

### **H. Training:**

MSD collection system operators, contractors and municipal employees involved in maintenance of drainage systems will be trained on the BMPs in this chapter.

## Chapter 9 - Operation and Maintenance of Recycling and Composting Facilities

*(NOTE: FOR THE PURPOSES OF THIS CHAPTER, RECYCLING INCLUDES YARD WASTE/MULCHING/COMPOSTING OPERATIONS AS WELL AS SITES COLLECTING COMMON HOUSEHOLD RECYCLABLES SUCH AS PAPER, PLASTIC, GLASS, CARDBOARD, ETC.)*

**A. Description of Activities:** *(EXAMPLE TEXT)*

The material collected at the recycling depository includes a variety of materials such as yard waste, wood, paper, plastic, glass, aluminum, steel, and textiles.

**B. Locations:** *(EXAMPLE TEXT)*

The facility is located at 123 Any Street. The site consists of x.x acres with a xxx square foot canopy structure. The site is fenced and paved for the general public use of the site. Most material is collected under the canopy, where material is processed for shipping. Trucks enter the facility from the City's Public Works yard to the east and deliver or remove dumpsters, container trucks, and baled recyclables.

**C. Responsible Parties** *(EXAMPLE TEXT)*

The Public Works Director has authority over the facility. The facility is actively managed by the City's Sanitation Director and staffed with two fulltime attendants and other Public Works employees on a temporary basis when needed.

Director of Public Works, Telephone: xxx-xxxx

Director of Sanitation, Telephone: xxx-xxxx

**D. Materials/Supplies acquisition, storage and usage:** *(EXAMPLE TEXT)*

Recyclable materials are delivered directly to designated, labeled storage areas. Only collected recyclable materials are kept on site until a significant quantity is obtained for shipping. Trash and waste is removed from the site by attendants and not allowed to accumulate. The following materials and quantities are typically stored onsite:

Recyclable	Maximum Quantity Stored	Storage Location	Contractor	Handling Method	Shipment Frequency
Yard Waste, Brush, Grass Clippings, Wood				Compost, Mulch	
Steel, Tin Cans					
Aluminum Cans					
Paper – Newspaper, Phone Book					

Catalogs, Magazines					
Mixed Paper (junk mail, boxboard, office paper, computer paper)					
Corrugated Cardboard					
Plastic Bottles (#1 and #2)					
Glass					
Textiles (old clothing, draperies or linens)					

*(INSERT SEPARATE TABLE FOR EACH LOCATION)*

**E. Waste generation, storage, disposal, recycling:** *(EXAMPLE TEXT)*

A small amount of waste is generated by the public. Residents bring their recyclables to the facility in non-recyclable containers and then leave the non-recyclable container (often, plastic bags) behind. This small amount of waste is removed by attendants and disposed of in sanitary trash containers. No dumping or disposal of trash is otherwise allowed on the site.

**F. Best Management Practices (BMP):**

*(THE FOLLOWING BMP'S ARE RECOMMENDED TO BE IMPLEMENTED TO THE MAXIMUM EXTENT PRACTICABLE)*

- Yard waste composting operations and mulch piles should be located away from storm water drainage systems, and must not be located within 100 feet of a natural creek or man-made storm water drainage channel, 300 feet from a water well or 1,000 feet from a sinkhole, under MDNR permit G97.
- Compost/mulch is confined by an impervious base with curbing or otherwise stored to prevent leachate and runoff from contaminating storm water, and to prevent storm water drainage running into the pile.
- Do not discharge leachate to storm water. As necessary to manage leachate, design a system to collect and properly treat leachate or incorporate into the early stages of the composting process.
- Materials that will pollute storm water are collected under a roofed structure or in an enclosed dumpster.
- The public is notified by signage at the facility that lists materials accepted at the facility and those unauthorized items that are not acceptable.
- Attendants are on duty to monitor use of the facility and to ensure unauthorized items are not deposited by the public.
- The Police Department routinely patrols the facility to prevent unauthorized dumping.
- No fluids are drained into any storm water system.

- Every effort is made to ensure the facility is clean and that no unauthorized or contaminated materials are deposited at the facility.
- Materials easily moved by wind must be stored in a manner to prevent the material from becoming airborne and scattered.
- An emergency phone is available at the site for attendants to promptly report any problems to the supervisors or the Police.
- Drums or containers of oil, petroleum products or hazardous materials are not accepted. Also drums or containers that have previously contained these substances are unacceptable for recycling at the facility.

**G. NPDES Permit status:** *(EXAMPLE TEXT)*

1. Recycling Center: Facilities involved in the recycling or composting of materials are considered “municipal industrial” facilities under Missouri Storm Water Regulations and are subject to separate NPDES Storm Water (Phase I) permitting requirements, unless they are collection points only and completely protected from storm water (run-on and run-off). Potentially applicable MDNR NPDES General Permits include: R80H for Recycling facilities and G97 for Yard Waste Compost sites. As noted above, all of the city’s recyclable collection and handling activities are conducted indoors or are otherwise conducted without exposure to storm water. Therefore, an NPDES Storm Water permit is not required for the Recycling Center. A “no-exposure certification” has been filed with the Missouri Department of Natural Resources.

**H. Training:** *(EXAMPLE TEXT)*

All City employees attending to the operation or using the recycling and composting facility will undergo initial City-provided training upon employment. All employees are regularly instructed on the use of equipment and handling of problem situations.



## Chapter 10 - Water Quality Impact Assessment of Flood Management Projects

### **A. Description of Activities:** *(EXAMPLE TEXT)*

New flood management projects located within the co-permittees jurisdiction must be assessed for impacts on water quality. Existing projects must be assessed for incorporation of additional water quality protection devices or practices, where feasible. Flood management projects in the Plan Area can include: regional storm water control (retention basins, detention basins); flood control levees and associated pump stations; storm water drainage conveyance capacity improvements; projects involving land buyouts; and designated uses of flood plain land.

Storm water management projects in both development and re-development will be assessed for water quality impact, according to MSD's "Rules and Regulations and Engineering Design Requirements for Stormwater Drainage Facilities", which address the Storm Water Management Plan water quality requirements under MCM 5. Projects within designated levee districts, such as Monarch-Chesterfield, Earth City and Riverport will be based on the Storm Water Master Plan for these districts. All flood management projects involving channel modification will also be assessed for aquatic and water quality impacts through the Corps of Engineers 404 permit and MDNR 401 water quality certification process.

### **B. Locations:**

Existing projects located within the Plan Area include: *(INSERT LIST OF FLOOD MANAGEMENT PROJECTS)*

### **C. Responsible Parties:** *(EXAMPLE TEXT)*

All co-permittees that plan, design or install flood management projects are subject to this chapter. MSD has general responsibility for storm water drainage facilities in the Plan Area. St. Louis County, municipalities, and property owners have responsibility for the drainage facilities not dedicated to, and maintained by MSD. St. Louis County and municipalities maintain control over planning and zoning, land use regulations, and flood plain management through ordinances.

### **D. Materials/Supplies acquisition, storage and usage:** *(EXAMPLE TEXT)*

Not applicable. For construction phase of work, land disturbance requirements will apply. See Chapter 2 and 8 for construction and maintenance.

### **E. Waste generation, storage, disposal, recycling:** *(EXAMPLE TEXT)*

Not applicable. See Chapter 2 and 8 for maintenance.

**F. Best Management Practices (BMP):**

*(THE FOLLOWING BMP'S ARE RECOMMENDED TO BE IMPLEMENTED TO THE MAXIMUM EXTENT PRACTICABLE)*

- Implement and enforce ordinances and/or procedures requiring that water quality factors be incorporated into the design and operation of storm water/flood control structures.
- Inspect existing flood management facilities on a specified frequency to determine water quality impacts and exploit opportunities for improvement.
- Existing control structures undergoing renovation are modified to the maximum extent practicable to meet new construction criteria in MSD's "Rules and Regulations and Engineering Design Requirements for Sanitary Sewage and Stormwater Drainage Facilities".
- Design new flood management projects to prevent or minimize adverse water quality impacts, exploring alternative programs utilizing non-structural flood damage reduction and stream bank stabilization measures to the maximum extent practicable, such as flood proofing houses, and buy outs.
- Use models based on fully developed conditions, and adopt a free board above base flood elevation for development.
- Identify existing wetlands or other natural open space areas, particularly around streams, and preserve them from development so they can provide natural attenuation, retention or detention of runoff.
- Survey watersheds downstream from proposed projects to determine potential water quality impacts. Design proposed projects to minimize downstream impact.
- Work closely with local governments, environmental organizations and others to develop multi-use open space corridors along streams which will allow for overbank floodplain storage.
- Floodplains are preserved to the maximum extent practicable.
- Use non-structural flood management practices to the maximum extent practicable, utilizing acquisition of flood-prone property where possible.
- Open storm water conveyance systems are used to the maximum extent practicable to preserve natural conditions and habitat.
- Channel improvement projects are to use natural approaches rather than concrete, riprap or other "hard" techniques to the maximum extent practicable.
- Inlets and outlets from closed portions of conveyance systems are designed to minimize scour and erosion.
- Trash racks are provided at outlet structures of detention ponds and other flood control structures to capture trash and floatables.
- Employ natural solutions and use controls that preserve the hydrology of a site as a first line of flood control to the maximum extent practicable.

**G. NPDES Permit status:** *(EXAMPLE TEXT)*

Not applicable

**H. Training:** *(EXAMPLE TEXT)*

Employees and contractors responsible for the planning and design of the flood management projects identified in Section A will be trained on the BMPs in this chapter. In addition, employees performing this work will be familiar with MSD's rules and regulations and engineering design requirements for storm water drainage facilities.



## **APPENDICES**

*(NUMBERED BASED ON APPLICABLE CHAPTER, SECTION AND THEN SEQUENTIALLY STARTING WITH 1)*



**Appendix 1-A1: Sixty One Co-Permittees, St. Louis Metropolitan Small MS4 Phase II Permit #MO-R040005**

- Ballwin, City of
- Bellefontaine Neighbors, City of
- Bel-Nor, Village of
- Bel-Ridge, Village of
- Berkeley, City of
- Black Jack, City of
- Breckenridge Hills, City of
- Brentwood, City of
- Bridgeton, City of
- Calverton Park, Village of
- Charlack, City of
- Chesterfield, City of
- Clarkson Valley, City of
- Clayton, City of
- Cool Valley, City of
- Crestwood, City of
- Creve Coeur, City of
- Dellwood, City of
- Des Peres, City of
- Ellisville, City of
- Fenton, City of
- Ferguson, City of
- Florissant, City of
- Frontenac, City of
- Glendale, City of
- Green Park, City of
- Hanley Hills, Village of
- Hazelwood, City of
- Jennings, City of
- Kirkwood, City of
- Ladue, City of
- Lakeshire, City of
- Manchester, City of
- Marlborough, Village of
- Maryland Heights, City of
- Moline Acres, City of
- Normandy, City of
- Northwoods, City of
- Norwood Court, Town of
- Oakland, City of
- Olivette, City of
- Overland, City of
- Pagedale, City of
- Richmond Heights, City of
- Riverview, Village of
- Rock Hill, City of
- St. Ann, City of
- St. George, City of
- St. John, City of
- Shrewsbury, City of
- Sunset Hills, City of
- Town and Country, City of
- Valley Park, City of
- Vinita Park, City of
- Warson Woods, City of
- Webster Groves, City of
- Wildwood, City of
- Winchester, City of
- Woodson Terrace, City of
- St. Louis County
- Metropolitan St. Louis Sewer District



**Appendix 1-A2: Excerpts from the St. Louis Metropolitan Small MS4  
Phase II Permit MO-R040005  
Pertinent to Minimum Control Measure #6  
(Pollution Prevention/Good Housekeeping from Municipal Operations)**

*Permit Section 4.2 lists the six Minimum Control Measures (MCMs) to be addressed by each co-permittee. Section 4.2.6 specifically addresses the requirements for MCM #6. In addition, portions of Section 4.1.1 as well as other permit provisions are applicable in addressing the requirements of MCM #6.*

**4.2.6 Pollution Prevention/Good Housekeeping for Municipal Operations**

**4.2.6.1** *Permit requirement.* The permittee shall:

**4.2.6.1.1** Develop and implement an operation and maintenance program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations; and

**4.2.6.1.2** Using training materials that are available from EPA, State, or other organizations, the permittee shall develop training to prevent and reduce storm water pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbance, and storm water system maintenance.

**4.2.6.2** *Decision process.* The permittee shall document the permittee's decision process for the development of a pollution prevention/good housekeeping program for municipal operations. The permittee's rationale statement shall address both the permittee's overall pollution prevention/good housekeeping program and the individual BMPs, measurable goals, and responsible persons for the program. The rationale statement shall include the following information, at a minimum:

**4.2.6.2.1** The permittee's operation and maintenance program to prevent or reduce pollutant runoff from their municipal operations. The permittee shall specifically list the municipal operations that are impacted by this operation and maintenance program. The permittee shall also include a list of industrial facilities the permittee owns or operates that are subject to EPA's Multi-Sector General permit (MSGP) or individual NPDES permits for discharges of storm water associated with industrial activity that ultimately discharge to the permittee's MS4. The permittee shall include the permit number or a copy of the industrial application form for each facility.

**4.2.6.2.2** Any government employee training program the permittee uses to prevent and reduce storm water pollution from activities such as park and open space maintenance, fleet and building maintenance, new construction and land disturbances, and storm water system maintenance. The permittee shall

describe how this training program will be coordinated with the outreach programs developed for the public information minimum measure and the illicit discharge minimum measure.

- 4.2.6.2.3 The permittee's program description shall specifically address the following areas:
  - 4.2.6.2.3.1 Maintenance activities, maintenance schedules, and long term inspection procedures for controls to reduce floatables and other pollutants to the permittee's regulated small MS4.
  - 4.2.6.2.3.2 Controls for reducing or eliminating the discharge of pollutants from streets, roads, highways, municipal parking lots, maintenance and storage yards, waste transfer stations, fleet or maintenance shops with outdoor storage areas, and salt/sand storage locations and snow disposal areas the permittee operates.
  - 4.2.6.2.3.3 Procedures for the proper disposal of waste removed from the permittee's MS4 and area of jurisdiction, including dredged material, accumulated sediments, floatables, and other debris.
  - 4.2.6.2.3.4 Procedures to ensure that new flood management projects are assessed for impacts on water quality and existing projects are assessed for incorporation of additional water quality protection devices or practices.
- 4.2.6.2.4 Identification of the person(s) responsible for overall management and implementation of their pollution prevention/good housekeeping program and if different, the person responsible for each of the BMPs identified for this program.
- 4.2.6.2.5 How the permittee will evaluate the success of this minimum measure, including how the permittee selected the measurable goals for each of the BMPs.

#### Other Permit Sections Pertinent to MCM #6

*The following four sections contain pollution control requirements specifically for municipally owned facilities and were, therefore considered when drafting the O&M Program under MCM #6.*

- 4.1.1.2 For facilities under the control of the permittee good housekeeping practices shall be maintained to keep solid waste from entry into waters of the state to the maximum extent practicable.
- 4.1.1.3 All fueling facilities under the control of the permittee shall adhere to applicable federal and state regulations concerning underground storage, above ground storage, and dispensers, including spill prevention, control and counter measures.

- 4.1.1.4 Substances regulated by federal law under the Resource Conservation and Recovery Act (RCRA) or the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) that are transported, stored, or used for maintenance, cleaning or repair by the permittee shall be managed according to the provisions of RCRA and CERCLA.
- 4.1.1.5 All paint, solvents, petroleum products and petroleum waste products (except fuels) under the control of the permittee shall be stored so that these materials are not exposed to storm water. Sufficient practices of spill prevention, control, and/or management shall be provided to prevent any spills of these pollutants from entering a water of the state. Any containment system used to implement this requirement shall be constructed of materials compatible with the substances contained and shall also prevent the contamination of groundwater.

*Other provisions of the permit also were considered in developing the municipal O&M program. MCMs #3 (Illicit Discharge Detection and Elimination), #4 (Construction Site Storm Water Runoff Control) and #5 (Post-Construction Storm Water Management in New Development and Redevelopment) all can apply to activities conducted by the municipal co-permittee at municipally owned projects. While the permit requirements for these MCMs are primarily geared toward the municipal co-permittee exerting control over these activities by the people living and working within the municipality, logically similar controls must be applied to municipal activities of the same nature. The municipal co-permittees must ensure that there are no illicit discharges from municipal facilities, that there are runoff controls in place for municipal land disturbance projects and that storm water management provisions have been considered for new or redeveloped municipal properties.*



## Appendix 1-A3: Model Operation & Maintenance and Training Program Work Group

Brian K. McGownd, P.E.  
Deputy Director of Public Works/Assistant City  
Engineer  
City of Chesterfield

Rebecca Edwards  
Project Manager  
City of Fenton

Mike Moehlenkamp  
Fleet Services Supervisor  
St. Louis County Department of Highways &  
Traffic

Steve Nagle  
Director of Planning  
East-West Gateway Coordinating Council

Patrick G. Palmer, P.E.  
Operations Division Manager  
St. Louis County Department of Highways &  
Traffic

Tim P. Fischesser  
Executive Director  
St. Louis County Municipal League

Carl Brown  
Government Assistance Unit Chief  
Missouri Department of Natural Resources  
Environmental Assistance Office

Nancy Morgan, P.E.  
Environmental Engineer  
Missouri Department of Natural Resources

Mark Koester, P.E.  
Principal Engineer  
Metropolitan St. Louis Sewer District

Ruth Wallace  
Environmental Specialist  
Missouri Department of Natural Resources  
Environmental Assistance Office

James Gillam  
Operations Division Manager  
Metropolitan St. Louis Sewer District

Bruce Litzsinger, P.E.  
Manager of Environmental Compliance  
Metropolitan St. Louis Sewer District



## **Appendix 1- A4: Ordinance/Resolution Adopting O&M Program**

*INSERT COPY OF (MUNICIPALITY NAME) DOCUMENT ADOPTING O&M PROGRAM*



## **Appendix 1- B1: Policies**

*INSERT COPIES OF (MUNICIPALITY NAME) POLICIES*



## Appendix 2-F1: Sample Recycling Policy

### The City of [city name]

#### Waste Reduction and Recycling Policy Statement

##### 1. Policy

The City of [city name] is committed to good stewardship of the environment. A key element of that stewardship is the reduction of the amount of solid waste going from the city into landfills. Solid waste landfills have negative long-range environmental impacts, drain community resources, and have limited capacity to accept the large quantities of waste generated by our society today. The City of [name] will make every effort to reduce the solid waste generated at our facilities. Four methods will be used to implement this policy: source reduction, reuse of materials, recycling, and purchase of recycled materials. Every City department and individual employee has a personal responsibility for implementing this policy.

##### 2. Methods to Achieve Solid Waste Reduction

A. *Source Reduction*: All members of the City staff are responsible for implementing operational practices that prevent waste from being produced. Examples include printing reports and documents on both sides of the paper; printing appropriate numbers of documents; using email rather than printed correspondence; and using products that are reusable, refillable, repairable, non-toxic, recyclable. Products with reusable, returnable packaging or items requiring the least possible packaging should be purchased when practical. Every effort should be made to prevent excess or unneeded materials from being purchased.

B. *Reuse of Materials*: All employees of the City are responsible for reusing products whenever possible. An example would be to use dishes, glasses, and reusable flatware rather than disposable paper and plastic ware.

C. *Recycling*: All City employees are responsible for separating identified recyclable materials and placing them in appropriate recycling containers. City Recycling includes aluminum cans, steel cans, batteries, cardboard, glass bottles and jars, hard back books, newspapers, phone books, catalogs and magazines, brown paper bags, microfiche, news blend, office blend, plastic bottles (#1 and #2 only), styrofoam and peanuts, toner cartridges, transparencies, videotapes, and additional items as implemented. Facilities Management Recycling includes construction/demolition debris, fluorescent light bulbs, motor oil, oil filters, paint, pallets, refrigerants, scrap metal, solvents, tires, yard waste, and additional items as implemented.

D. *Purchase of Recycled Content Material*: All City departments are responsible for making efforts to purchase and use products manufactured from or containing recycled materials. All recycled content purchases will be reported to the Purchasing Department for record-keeping and reporting purposes.

### 3. Procedures

The Director of Public Works will be responsible for implementing this Policy by:

- A. Designating departments and employees responsible for the task of developing and implementing a waste reduction and recycling program in accordance with this Policy.
- B. Designating personnel in the Purchasing Department to ensure recycled content products are purchased when feasible and that criteria for recycled content products are included in the purchasing bid process.
- C. Designating personnel in Facilities Management to ensure that all new construction includes designated areas for recycling and solid waste collection and removal.
- D. Designating personnel to promote recycling and waste reduction in employee events and materials.
- E. Encouraging all contractors to adhere to City recycling policies and procedures.
- F. Taking other appropriate action as he/she deems necessary to implement this Policy.

Initially approved [date]

Source: <http://www.legal.uncc.edu/policies/ps-110.html>

## Appendix 2-F2: Sample Green Procurement Policy

### The City of [CITY NAME] Green Procurement Policy

#### 1. Policy Objective

The objective of this policy is to provide direction for greening [CITY NAME]'s procurement.

#### 2. Policy Statement

As set out in this Policy, priority in procurement will be given to green products and services, including construction.

#### 3. Definitions

Green procurement is the procurement of products and services that have a lesser or reduced effect on human health and the environment when compared with competing products or services that serve the same purpose. This comparison may consider raw material acquisition, production, manufacturing, packaging, distribution, operation, maintenance, disposal and re-use of the product or service. Green procurement encompasses the concept of the procurement of goods and services that provide for basic human needs and bring a better quality of life, while minimizing the use of non-renewable natural resources and toxic materials and the emission of wastes and pollutants over the life cycle, so as not to jeopardize the ability of future generations to meet their own needs.

A green product is one that is less harmful than the alternative, having characteristics including, but not limited to, the following:

- Recyclable - local facilities exist that are capable of recycling the product at the end of its useful life.
- Biodegradable - will not take a long time to decompose in landfill.
- Contain recycled material (post-consumer recycled content).
- Minimal packaging and/or for which there will be take-back by the manufacturer/supplier of packaging.
- Reusable or contain reusable parts.
- Minimal content and use of toxic substances in production.
- Produce fewer and/or less polluting by-products during manufacture, distribution, use and/or disposal.
- Produce the minimal amount of toxic substances during use or at disposal.
- Make efficient use of resources - a product that uses energy, fuel or water more efficiently or that uses less paper, ink or other resources.
- Durable - have a long economically useful life and/or can be economically repaired or upgraded.

Sustainable (green) service - A service acquired from a supplier who has a green operational policy and whose internal practices promote sustainability.

Threshold - the dollar value of contracts, above which a formal record is kept on file showing that environmental criteria were considered when requirements were defined.

#### **4. Policy Procedures**

Where available and cost effective, green products and services, including construction, that are of equal or better performance and quality, will be purchased. In determining cost effectiveness, a department should give consideration to the costs and benefits that accrue, in the shorter and longer term, to the City of [CITY NAME].

For all bid solicitations (e.g. requests for proposal, requests for quote, and requests for standing), environmental factors or impact will be considered when requirements are defined. In addition, bid solicitations will include instructions asking bidders to identify any environmental benefits over the life cycle of their products and/or services.

Green procurement principles will be applied to construction projects beginning with the design stage.

Departments will determine the contract dollar value (hereafter referred to as the threshold) above which a formal record is kept on file showing that environmental criteria were considered when requirements were defined. In determining their threshold, departments may wish to consider contracting volumes, training requirements and budgetary constraints.

For all procurement, consideration will be given to environmental factors or impact. For requirements:

A. Valued in excess of a threshold, a formal record of the evaluation will be kept on file. In the case where a green purchase was made, the record will list the environmental criteria included in the bid solicitation. In the case where a green product or service was not acquired, the reasons for not selecting an environmentally preferable product or service will be documented. See Documentation Form attached.

B. Valued at or below the threshold, a formal record of the evaluation is not required.

Each department will be responsible for ensuring that its personnel have sufficient training about the environment and green procurement to carry out the directives in this policy.

#### **5. Guidelines**

##### **5.1 The life cycle approach and the environment**

Applying the four R's (Reduce, Reuse, Recycle and Recover) at each phase of the material management life cycle helps protect the environment and reduce costs.

##### **5.1.1 Planning**

During the planning process, managers will assess the need for a given purchase and, whenever possible,

- Reduce consumption.
- Consider acquiring second-hand or used material.
- Consider products that are less damaging to the environment, such as those made with resource-saving materials or processes.
- Consider the environmental cost of purchases during each phase of the life cycle.

#### 5.1.2 Acquisition

As much as practical, products selected should:

- Be reusable and contain reusable parts.
- Be recyclable and contain recycled materials (e.g. recycled paper, reconditioned laser printer cartridges).
- Include second-hand or used material.
- Use resources and energy efficiently.
- Have a long service life or be economical to repair.
- Contain minimal packaging, or use returnable or reusable shipping containers.
- Be non-toxic and non-polluting.

#### 5.1.3 Maintenance and Operations

A. Ensure that products are properly maintained and used. This will extend the service life of a product. When economically feasible, equipment should be repaired, refinished and reused.

B. Hazardous material must be shipped, stored and handled in accordance with applicable federal and provincial law, and regulations.

#### 5.1.4 Disposal

Consider alternatives to disposing of material, such as reusing, recycling or recovering it. Try to minimize the amount of waste generated.

#### 5.2 Combine environmental actions with fiscal responsibility

A. Government interest in economy of operations is fully compatible with environmental interests. Many sound environmental practices have resulted in savings.

B. Most environmental actions can be phased in gradually without additional cost. When these actions may entail additional costs for the government, managers should accommodate them within existing budgets.

C. Government should lead by example. In light of the volume of government procurement, the government can play a significant role in promoting the development and marketing of green products and services. As demand for these products and services increase their prices will drop and become more affordable to all consumers.

Source: <http://www.pwgsc.gc.ca/sd-env/sds2003/>



## Documentation Form for the Evaluation of Environmental Factors

Fill in one of the two sections below:

A) Green Product/Service was purchased.

List all green criteria used in the bid solicitation:

B) Green Product/Service was not purchased.

List reasons why green product/service was not purchased:

<input type="checkbox"/>	No green alternative.
<input type="checkbox"/>	Did not meet operational requirement. Specify in what way: _____
<input type="checkbox"/>	Upfront costs for green product were higher than for non-green ones and no additional funds were available.
<input type="checkbox"/>	Other. Provide details: _____



## **Appendix 2-F3: St. Louis County Waste Management Code**

St. Louis County Waste Management Code, Chapter 607, contains provisions related to the proper disposal of trash. The County Waste Management Code is effective in all portions of incorporated or unincorporated St. Louis County, except municipalities with populations of 75,000 and an organized health department. Municipalities are encouraged to enact ordinances that correspond to those portions of the Code included in this appendix.

### **Waste Management Code, Chapter 607**

#### **SUBCHAPTER B. DUTIES IMPOSED IN CONNECTION WITH THE GENERATION AND STORAGE OF WASTE ON PREMISES**

##### **607.050 On Whom Duties Are Imposed for Storage of Waste.**

Sections 607.050 through 607.140 describe conditions that shall exist, conditions that must not exist, actions that must be taken and actions that must not be taken, all in connection with the storage of waste upon the premises where the waste is generated. The persons responsible for seeing that the conditions and actions described in Sections 607.050 through 607.140 are complied with depends upon the type of premises involved, and are described as follows:

- A. On residential premises or premises with mixed used but containing at least one (1) residence, it shall be the responsibility of every person the age of seventeen (17) years or older residing on the premises to see that Sections 607.050 through 607.140 are satisfied with respect to disposal of residential waste generated on the premises, regardless of whether the noncompliance was occasioned by the action or failure to act of the person charged.
- B. On nonresidential premises or premises with mixed uses but containing at least one (1) nonresidential use, it shall be the responsibility of the person in possession of the premises as well as each manager, agent or employee of a person in possession of the premises to see that Sections 607.050 through 607.140 are satisfied with respect to disposal of nonresidential waste generated on the premises, regardless of whether the noncompliance was occasioned by the action or failure to act of the person charged.
- C. On all premises, it shall be a violation of Section 607.050 through 607.140 to do any act which would make the premises fail to comply with such sections, whether or not the person charged resides on the premises or is in possession of the premises or is the agent or employee of a person in possession of the premises.

(O. No. 13320, 6-5-87)

##### **607.060 Waste Containers Required.**

There shall be provided on each premises where waste is generated, whether such premises are residential or nonresidential, containers for the storage of all waste except bulky waste and demolition and construction waste, the containers shall conform to the requirements of Section 607.070 if for use on residential premises and shall conform to the requirements of

Section 607.080 if for use on nonresidential premises. The containers must be sufficient in quantity and size to hold all waste (except bulky waste and demolition and construction waste generated on the premises) between the times when the waste is generated and removed from the containers and the premises. The premises surrounding the containers shall be maintained in a neat, clean, odor free and sanitary condition.  
(O. No. 13320, 6-5-87)

607.070 Waste Containers for Residential Waste Other Than From Multifamily Residences of Four or More Units--Use of Waste Containers required.

Residential waste, other than residential waste from multifamily premises of four (4) or more units or from premises having mixed uses but containing at least one (1) residence, shall be deposited and stored in galvanized metal containers or rubber, fiberglass or plastic containers which are nonabsorbent and do not become brittle in cold weather or in plastic containers or plastic bags not less than twenty (20) gallons nor more than thirty-five (35) gallons in capacity unless container size is approved otherwise by the hauler. Containers shall be leak-proof, waterproof, and fly-tight and shall be properly covered at all times except when depositing waste therein or removing waste therefrom. The containers, other than plastic bags, shall have handles, bails or other suitable lifting devices or features. Containers shall be of a type originally manufactured for residential waste, with tapered sides for easy emptying. They shall be lightweight and of sturdy construction. Plastic bags used to contain waste shall be of sufficient strength to be used one (1) time to store the waste actually deposited therein. Waste Generated on the premises shall be deposited in the containers and shall be deposited in such a manner that the area surrounding the containers and the exterior of any such containers is and remain clean, neat, odor free and sanitary. This section does not apply to demolition and construction waste.  
(O. No. 15601, 8-1-91)

607.080 Waste containers for Nonresidential Waste and Waste From Multifamily Residences of Four or More Units; Use of Waste Containers Required.

Nonresidential waste and residential waste from multifamily residences of four (4) or more units, as well as residential waste from premises having mixed uses but which contain at least one (1) residence, shall be stored in container(s) which are spill-proof, leak-proof, and shall be covered at all times except when depositing waste therein or removing waste therefrom. Waste generated on the premises shall be deposited in the container(s) and shall be deposited in such a manner that the area surrounding the container(s) and the exterior of any such container(s) is and remains clean, neat, odor free and sanitary. This section does not apply to demolition and construction waste.  
(O. No. 13320, 6-5-87)

607.100 Waste Not To Be Deposited in Waste Container of Another.

No person shall deposit waste in any waste container other than a waste container on the premises where the waste was generated without the consent of the owner of such waste container.  
(O. No. 13320, 6-5-87)

#### 607.120 Placement of Waste Containers and Bulky Noncontainerized Waste.

1. Residential waste containers and bulky/noncontainerized waste shall be stored upon the premises where the waste was generated, unless written permission for storage on other premises is obtained from a person having authority to grant such permission. The containers and bulky/noncontainerized waste shall be stored in a place not visible from the street which the residential structure faces. Waste containers used for the storage of residential waste and bulky/noncontainerized waste, other than waste from multifamily premises having four (4) or more units, shall be placed at the curb or mailbox or back yard or side yard as required by the hauler for collection. Waste containers and bulky/noncontainerized waste shall be placed at the collection point if in front of the premises or on a street not earlier than dusk of the day prior to the regularly scheduled collection day. Waste containers shall be returned to their appropriate storage places following collection and on the same day as collection.
2. Nonresidential solid waste containers and bulky/noncontainerized waste generated on nonresidential premises shall be stored upon the nonresidential premises where the waste was generated, unless written permission for storage on other premises is obtained from a person having authority to grant such permission.  
(O. No. 17291, 11-11-94)

#### 607.130 Demolition and Construction Waste.

1. No person shall store in or place additional demolition and construction waste in a mobile waste container which is full.
2. The person who has requested that a mobile waste container be located to receive demolition or construction waste or any person who may lawfully require that a mobile waste container be removed from a site shall require that a mobile waste container which is full be removed and the waste deposited at an appropriate facility.
3. Demolition and construction waste shall be stored in a secure container or otherwise secured to prevent dispersal by the wind.
4. Demolition and construction waste shall not be stored in a floodplain unless it is stored in a waste container.
5. A mobile waste container is full if no more waste can be added to it without making it unsafe or illegal to transport.  
(O. No. 13320, 6-5-87)

#### 607.140 Waste To Be Collected.

If waste collection service is reasonably available for a premises where waste is generated, an agreement shall be in effect for the collection of waste generated on the premises with a waste collection service having waste collection vehicles licensed by the Director for the collection, transportation, and disposal of waste.  
(O. No. 15601, 8-1-91)

#### 607.145 Frequency of Pickup.

Residential and Commercial Waste: Waste collection service shall provide for the collection of all solid waste (other than demolition and construction waste and bulky residential waste) from

the premises not less often than once per week. In the event no waste hauler serves the area, waste (other than demolition and construction and bulky residential waste) must be removed from the premises not less often than once per week, and deposited at a licensed sanitary landfill, waste processing facility or transfer station, unless exempted from the requirement of weekly pickup under the terms of Section 607.145.  
(O. No. 15601, 8-1-91)

#### 607.270 Waste Spilled During Transportation.

Waste spilled or blown during the transportation of waste shall be recollected immediately if such recollection may be made safely, and as soon as possible otherwise, and placed in the transportation vehicle or mobile waste container by the employees of the waste hauler, or by the person transporting the waste, whether or not such person is engaged in the business of hauling waste and whether or not the vehicle is licensed or required to be licensed under this chapter.

(O. No. 13320, 6-5-87)

#### 607.280 Waste Spilled by Hauler During Collection.

Waste spilled or blown during the movement of waste from the point of collection into the waste transportation vehicle shall be recollected and placed in the transportation vehicle by the waste hauler whether or not the waste was placed by the generator in proper waste containers as required by this chapter. Waste haulers are not obligated to collect waste which has not been placed in waste containers as required by this chapter.

(O. No. 13320, 6-5-87)

### **SUBCHAPTER D. DISPOSAL OF WASTE**

#### 607.310 Waste Must Be Deposited at a Licensed Landfill, Licensed Waste Processing Facility or Licensed Transfer Station.

1. No person shall deposit waste on any real estate or permit waste to be deposited on any real estate for which there is no valid and current license, and, if appropriate, renewal license, for the operation of a waste processing facility or transfer station issued by the Director;...

(O. No. 15601, 8-1-91)

#### 607.320 Presumption Regarding Waste Not Deposited at Licensed Facility.

In a prosecution of a defendant for violation of Section 607.310, the prosecution shall make a prima facie case upon a showing that:

A. Waste has been deposited on real estate which does not have the license described in Section 607.310; and

B. The waste so deposited contains at least three (3) pieces of waste which uniquely identify the defendant.

(O. No. 13320, 6-5-87)

#### 607.810 Wastes Not To Be Deposited in Waters Within County.

No person shall dump or deposit or permit dumping or depositing of any wastes into any stream, spring, body of surface or ground water, whether natural or artificial, within the boundaries of St. Louis County except as provided herein or as allowed by another jurisdiction concerned with matters of health and having the authority to regulate such dumping or depositing and which in fact regulates such dumping or depositing.  
(O. No. 13320, 6-5-87)

#### 607.940 Citation for Violations of Provisions of This Chapter; Form of Citation.

1. Any person designated by the Director to enforce provisions of this chapter may issue a citation to any person when having probable cause to believe that such person has committed a violation of Sections 607.060, 607.070, 607.080, 607.090, 607.100, 607.110, 607.120, 607.130, 607.140, 607.150, 607.210, 607.230, 607.240, 607.250, 607.260, 607.270, 607.280, 607.290, 607.300, 607.310, 607.340, 607.720, 607.730, 607.740, 607.750, 607.760, 607.800, 607.810, 607.1020, 607.1040, 607.1155, 607.1200 and 607.1205 of this chapter. The citation shall require the person in whose name the citation is issued to pay a fine either by mail or in person at the offices of the Department of Health within ten (10) days after receipt of the citation.



## Appendix 2-F4: Model – Litter Control Ordinance

### Description:

Litter found throughout our community often finds its way into our streams, rivers and lakes and detracts from our quality of life. Pollutants carried into our streams, rivers, and lakes by litter, diminish the quality of our water and its aquatic resources. Litter control ordinances provide a prohibition against littering and provide an enforcement mechanism with penalties for dealing with those found littering. This ordinance is modeled on the “Georgia Litter Control Law” (O.C.G.A. § 16-7-40 et. seq.).

Note: Italicized text should be interpreted as comments, instructions, or information to assist the local government in tailoring the ordinance. This text would not appear in a final adopted ordinance.

### 1. General Provisions

#### 1.1 Purpose and Intent

*THE PURPOSE OF THIS ORDINANCE IS TO PROTECT THE PUBLIC HEALTH, SAFETY, ENVIRONMENT, AND GENERAL WELFARE THROUGH THE REGULATION AND PREVENTION OF LITTER. THE OBJECTIVES OF THIS ORDINANCE ARE:*

*A. PROVIDE FOR UNIFORM PROHIBITION THROUGHOUT THE (**JURISDICTION**) OF ANY AND ALL LITTERING ON PUBLIC OR PRIVATE PROPERTY; AND,*

*B. Prevent the desecration of the beauty and quality of life of the (**jurisdiction**) and prevent harm to the public health, safety, environment, and general welfare, including the degradation of water and aquatic resources caused by litter.*

#### 1.2. Applicability

This ordinance shall apply to all public and private property within the (**jurisdiction**).

#### 1.3. Compatibility with Other Regulations

*THIS ORDINANCE IS NOT INTENDED TO INTERFERE WITH, ABROGATE, OR ANNUL ANY OTHER ORDINANCE, RULE OR REGULATION, STATUTE, OR OTHER PROVISION OF LAW. THE REQUIREMENTS OF THIS ORDINANCE SHOULD BE CONSIDERED MINIMUM REQUIREMENTS, AND WHERE ANY PROVISION OF THIS ORDINANCE IMPOSES RESTRICTIONS DIFFERENT FROM THOSE IMPOSED BY ANY OTHER ORDINANCE, RULE OR REGULATION, OR OTHER PROVISION OF LAW, WHICHEVER PROVISIONS ARE MORE RESTRICTIVE OR IMPOSE HIGHER PROTECTIVE STANDARDS FOR HUMAN HEALTH OR THE ENVIRONMENT SHALL BE CONSIDERED TO TAKE PRECEDENCE.*

#### 1.4. Severability

If the provisions of any article, section, subsection, paragraph, subdivision or clause of this ordinance shall be judged invalid by a court of competent jurisdiction, such order of judgment shall not affect or invalidate the remainder of any article, section, subsection, paragraph, subdivision or clause of this ordinance.

## 2. Definitions

“**Litter**” means any organic or inorganic waste material, rubbish, refuse, garbage, trash, hulls, peelings, debris, grass, weeds, ashes, sand, gravel, slag, brickbats, metal, plastic, and glass containers, broken glass, dead animals or intentionally or unintentionally discarded materials of every kind and description.

“**Public or private property**” means the right of way of any road or highway; any body of water or watercourse or the shores or beaches thereof; any park, playground, building, refuge, or conservation or recreation area; timberlands or forests; and residential, commercial, industrial, or farm properties.

## 3. Prohibition Against Littering Public or Private Property or Waters

It shall be unlawful for any person or persons to dump, deposit, throw or leave or to cause or permit the dumping, depositing, placing, throwing or leaving of litter on any public or private property in this (**jurisdiction**) or any waters in this (**jurisdiction**) unless:

- A. *THE PROPERTY IS DESIGNATED BY THE STATE OR BY ANY OF ITS AGENCIES OR POLITICAL SUBDIVISIONS FOR THE DISPOSAL OF SUCH LITTER, AND SUCH PERSON IS AUTHORIZED BY THE PROPER PUBLIC AUTHORITY TO USE SUCH PROPERTY;*
- B. The litter is placed into a receptacle or container installed on such property; or,
- C. The person is the owner or tenant in lawful possession of such property, or has first obtained consent of the owner or tenant in lawful possession, or unless the act is done under the personal direction of the owner or tenant, all in a manner consistent with the public welfare.

## 4. Vehicle Loads Causing Litter

No person shall operate any motor vehicle with a load on or in such vehicle unless the load on or in such vehicle is adequately secured to prevent the dropping or shifting of materials from such load onto the roadway.

## 5. Violations, Enforcement and Penalties

### 5.1 Violations

It shall be unlawful for any person to violate any provision or fail to comply with any of the requirements of this ordinance. Any person who has violated or continues to violate the provisions of this ordinance, may be subject to the enforcement actions outlined in this section or may be restrained by injunction or otherwise sentenced in a manner provided by law.

### 5.2 Evidence

- A. Whenever litter is thrown, deposited, dropped or dumped from any motor vehicle, boat, airplane, or other conveyance in violation of this ordinance, it shall be prima facie evidence that the operator of the conveyance has violated this ordinance.

B. Except as provided in subsection (1), whenever any litter which is dumped, deposited, thrown or left on public or private property in violation of this ordinance is discovered to contain any article or articles, including but not limited to letters, bills, publications or other writing which display the name of the person thereon in such a manner as to indicate that the article belongs or belonged to such person, it shall be a rebuttable presumption that such person has violated this ordinance.

### 5.3 Penalties

Any person who violates this ordinance shall be guilty of a violation and, upon conviction thereof, shall be punished as follows:

A. *BY A FINE OF NOT LESS THAN \$25 AND NOT MORE THAN \$1,000; AND*

B. In addition to the fine set out in subsection 1 above, the violator shall reimburse the **(jurisdiction)** for the reasonable cost of removing the litter when the litter is or is ordered removed by the **(jurisdiction)**; and

C. 1. In the sound discretion of the court, the person may be directed to pick up and remove from any public street or highway or public right-of way for a distance not to exceed one mile any litter he has deposited and any and all litter deposited thereon by anyone else prior to the date of execution of sentence; or

2. In the sound discretion of the court, the person may be directed to pick up and remove any and all litter from any public property, private right-of-way, or with prior permission of the legal owner or tenant in lawful possession of such property, any private property upon which it can be established by competent evidence that he has deposited litter. Pick up and removal shall include any and all litter deposited thereon by anyone prior to the date of execution of sentence; and,

D. The court may publish the names of persons convicted of violating this ordinance.

### 5.4 Enforcement

All law enforcement agencies, officers and officials of this state or any political subdivision thereof, or any enforcement agency, officer or any official of any commission of this state or any political subdivision thereof, are hereby authorized, empowered and directed to enforce compliance with this article.

*Official Code of Georgia § 16-7-43(d) provides procedures for local governments to appoint individuals, in addition to traditional law enforcement officials, to enforce the provisions of this ordinance. The District encourages the use of this procedure to appoint individuals involved in public works, code enforcement (including local environmental code enforcement officers) or building inspection to carry out this important function.*

Source: <http://www.northgeorgiawater.com/pdfs/modordfin-task10/tab6.pdf>

**Additional Ordinance Provisions:**

Handbills – Handbills on public or private property. No person shall tack, stick, paste, or fasten in any manner any handbill or flier containing commercial advertising of a written, printed, or pictorial nature upon any public property within the limits of the City; or, on any motor vehicle, dwelling, or other structure within the City without the consent of the owner or occupant thereof. Such violation constitutes a public nuisance.

## Appendix 2-F5: Model – Nuisance Ordinance for Debris and Yard Waste

AN ORDINANCE AUTHORIZING THE DECLARATION OF PUBLIC NUISANCE FOR AN ACCUMULATION OF DEBRIS ON PROPERTY; PROVIDING FOR REMOVAL AND ABATEMENT OF SAME; AND RECOVERY OF COSTS RELATING THERETO.

WHEREAS, Sec. 67.398, RSMo. Supp 1997 provides the governing body of a city, town or village in St. Louis County may declare the presence of certain debris and conditions upon any property to be a nuisance, and that the costs incurred by the city town or village in removing or abating such nuisance conditions may be recovered from the owner of the offending property either by including such costs in a special tax bill or by having such costs added to the annual real estate tax bill for the property; and

WHEREAS, it is the desire and intent of the [Board of Aldermen/Trustees or City Council] to enhance and protect the public health and safety by providing a process for declaration of such public nuisances and recovery of the costs of removal or abatement of same:

NOW, THEREFORE, BE IT ORDAINED BY THE [Board of Aldermen/Trustees or City Council] OF THE [City or Village] of \_\_\_\_\_ AS FOLLOWS:

### Section 1.

Any lot or land shall be a public nuisance if it has the presence of debris of any kind including, but not limited to, weed cuttings, cut and fallen trees and shrubs, overgrown vegetation and noxious weeds which are seven inches or more in height, rubbish and trash, lumber not piled or stacked twelve inches off the ground, rocks or bricks, tin, steel, parts of derelict cars or trucks, broken furniture, any flammable material which may endanger public safety or any material which is unhealthy or unsafe and declared to be a public nuisance.

### Section 2.

When a public nuisance as described above exists, the [code enforcement official] shall so declare and give written notice to the owner of the property by personal service, certified mail, if otherwise unsuccessful, by publication. Such notice shall, at a minimum:

1. declare that a public nuisance exists;
2. describe the condition which constitute such nuisance;
3. order the removal or abatement of such condition within seven days from the date of service of such notice;
4. inform the owner that he or she may file a written request for a hearing before the [code enforcement official] on the question of whether a nuisance exists upon such property; and
5. state that if the owner fails to begin removing the nuisance within time allowed, or upon failure to pursue the removal of such nuisance without unnecessary delay, the [code enforcement official] shall cause the condition which constitutes the nuisance to be removed or abated and that the cost of such removal or abatement may be

included in a special tax bill or added to the annual real estate tax bill for the property and collected in the same manner and procedure for collecting real estate taxes.

Section 3.

If the owner of such property fails to begin removing the nuisance within the time allowed, or upon failure to pursue the removal of such nuisance without unnecessary delay, the [code enforcement official] shall cause the condition which constitutes the nuisance to be removed. If the [code enforcement official] causes such condition to be removed or abated, the cost of such removal shall be certified to the [city or village] clerk and/or [finance officer] who shall cause the certified cost to be included in a special tax bill or added to the annual real estate tax bill, at the collecting official's option, for the property and the certified cost shall be collected by the [city or village] collector or other official collecting taxes in the same manner and procedure for collecting real estate taxes. If the certified cost is not paid, the tax bill shall be considered delinquent, and the collection of the delinquent bill shall be governed by the laws governing delinquent and back taxes. The tax bill from the date of its issuance shall be deemed a personal debt against the owner and shall also be a lien on the property until paid.

Section 4.

This Ordinance shall be in full force and effect from and after its passage and approval by the Mayor.

PASSED BY THE BOARD OF ALDERMEN FOR THE CITY OF \_\_\_\_\_,  
MISSOURI, THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 2000.

Source: St. Louis County Municipal League

**Additional Ordinance provision for pet waste as a nuisance, in Section 2:**

A dog, cat, puppy, kitten or other animal creates a nuisance if it soils, defiles or defecates on urban property other than property of a person responsible for the animal unless such waste is immediately removed by a person responsible for the animal and deposited in a waste container or buried on ground where the person responsible for the animal has permission or the right to bury it.

## Appendix 2-F6: Model – Animal Waste Ordinance

WHEREAS, accumulation of fecal matter from animals on public property is an unsanitary and noisome condition which interferes with the public's use of sidewalks, parks and other public areas; and

WHEREAS, creation of this nuisance rests with animal owners who do not remove their animals' feces in public areas;

NOW, THEREFORE, THE CITY OF \_\_\_\_ DOES ORDAIN;

Section 1. Language in the City of \_\_\_\_ Municipal Code, Chapter 6.06, is hereby added to read as follows:

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### **Chapter 6.06 ANIMAL FECAL MATTER**

#### Sections:

- 6.06.010 Control of Animals
- 6.06.020 Removing Fecal Matter
- 6.06.030 Possession of Removal Equipment
- 6.06.040 Set Aside Areas
- 6.06.050 Violation - Penalty

6.06.010 Control of Animals. It is unlawful for the owner of any animal to cause, permit or allow such animal to roam, run, stray, or to be away from the premises of such owner unless the animal is under tethered control.

6.06.020 Removing Fecal Matter. It is unlawful for the owner or handler of any animal to fail to remove fecal matter deposited by their animal on public property or public easement, or private property of another, before the owner leaves the immediate area where the fecal matter was deposited.

6.06.030 Possession of Removal Equipment. It is unlawful for the owner or handler of any animal to fail to have in their possession the equipment necessary to remove their animal's fecal matter when accompanied by said animal on public property or public easement, or private property of another.

6.06.040 Set Aside Areas. The above prohibitions shall not extend to areas set aside and designated by the city as areas where animals can be off-leash for exercise or training.

6.06.050 Violation - Penalty. Any person violating this section is guilty of a misdemeanor, and upon conviction shall be punished:

- A. By a fine of not less than twenty dollars or more than fifty dollars for the first offense; or
- B. For the second and subsequent offenses occurring within one year, a fine of not less than thirty dollars or more than one hundred dollars.

The minimum fines provided for by this section are mandatory minimums, and shall not be either suspended or deferred except in cases in which the court determines that the defendant is indigent and unable to pay any fine.

Section 2. Severability. If any section, subsection, paragraph, sentence, clause, or phrase of this ordinance is declared unconstitutional or invalid for any reason, such decision shall not affect the validity of the remaining portions of this ordinance.

Source: <http://www.mrsc.org/ords/G54-651.aspx>

**Additional Ordinance Provisions:**

For accumulation of waste on property –

It is unlawful for an owner to allow the accumulation of animal feces in any open area, run, cage or yard wherein animals are kept and to fail to remove or dispose of feces to avoid offensive odors or unsanitary conditions creating a nuisance as determined by the city staff (OR DESIGNATED MUNICIPAL REPRESENTATIVE). It is unlawful for an owner to allow pet waste to be deposited, or cause unsanitary conditions resulting from pet waste, on an adjacent property through storm water runoff or washing off areas where animals are kept.

For accumulation of Manure –

No organic material, furnishing food or a breeding place for flies, will be allowed to accumulate on the premises. Manure shall not be allowed to accumulate and must be cleaned up on a regular basis sufficient to maintain a sanitary condition satisfactory to the city staff (OR DESIGNATED MUNICIPAL REPRESENTATIVE).

## Appendix 5-F1: Corps of Engineers 404 Permit & MDNR 401 Certification

All construction or maintenance activities that excavate in or discharge any dredge or fill material into a “water of the United States” requires a Corps of Engineers 404 permit and a MDNR 401 water quality certification. The permitting and certification process is shared between the Corps and the MDNR.

If you are considering a project that may involve placing materials in a lake, river, stream, ditch or wetland (including dry streams, ditches or wetlands) contact the Corps to find out if the project you are planning is in jurisdictional waters and is a regulated activity. The Corps has the sole authority to determine whether the activity is regulated; whether a site specific, individual 404 permit is required, or whether a Nationwide Permit (NWP) applies for projects with minor impacts. If a NWP does apply, contacting the Corps of Engineers is recommended to determine thresholds for notification under the NWP, and to obtain additional regional requirements imposed by the Corps’ St. Louis Office.

The MDNR requires any project that needs a 404 Permit from the Corps (individual or NWP) to also obtain a 401 Water Quality Certification (401 Certification) from MDNR. The 401 Certification is verification by the state that the project will not violate water quality standards. The department may require actions on projects to protect water quality in the form of certification conditions. For some of the NWPs, the MDNR has published their conditions that must be met in addition to the NWP conditions.

After you contact the Corps about your project and, if applicable, submit an application, they will send you a letter authorizing your project under a particular permit. If the Corp's letter to you indicates that you must obtain an individual 401 certification, you must send an application to MDNR also. If they state that MDNR has ‘conditionally certified’ your activity, and have enclosed certification conditions, then nothing further is needed.

Questions about permit applicability and procedures for obtaining individual permits can be found by calling the Corps of Engineers at 314-331-8575 or 314-331-8186. Permit application forms and procedures for applying to the Corps and the MDNR can be found on the following web pages:

<http://www.mvs.usace.army.mil/permits/permitap.htm>.

<http://www.dnr.mo.gov/wpscd/wpcp/401/wpcp-401.htm#general>.

The following is a list of NWPs commonly applicable to municipal operations. For most of these NWPs, the MDNR has conditionally certified these activities. The NWPs will list numerous thresholds for applicability and notification in terms of linear feet and acreage of the project.

- NWP 3 Maintenance – repair or replacement of an existing structure, and removal of accumulated sediment or placement of riprap to protect a structure.
- NWP 7 Outfall Structures – construction of new outfall and intake structures, and removal of accumulated sediment blocking these structures.
- NWP 12 Utility Lines – construction, maintenance, and repair of utility lines (sewer, water, electric or communication), including outfalls and excavations for the utility line.
- NWP 13 Bank Stabilization – stabilization projects for erosion protection.

- NWP 14 Linear Transportation – construction or modification of linear transportation crossings, such as bridges and culverts for roads and trails.
- NWP 27 Stream and Wetland Restoration Activities – activities associated with the restoration of former waters, or the enhancement or creation of wetlands and riparian areas, or the restoration and enhancement of streams, including activities associated with flow modification, habitat and vegetation.
- NWP 31 Maintenance of Existing Flood Control Facilities – dredge or fill activities associated with maintaining existing flood control facilities such as retention/detention basins and channels.
- NWP 41 Reshaping Existing Drainage Ditches – dredge or fill activities to modify the cross-sectional configuration of drainage ditches, not modifying capacity beyond the original design.
- NWP 43 Storm Water Management – construction, maintenance, and dredging of storm water management facilities, such as ponds, detention/retention basins, outfalls, and emergency spillways.

## Glossary: Definitions of Terms Used In This Document

The following definitions are specific to the St. Louis Metropolitan Small MS4 and to the (municipality).

**Best Management Practice (BMP)** means: Schedules of activities, prohibitions of practices, maintenance procedures and other management practices to prevent or reduce the pollution of streams within St. Louis County from urban runoff. BMPs also include treatment requirements, operating procedures and practices to control site runoff, spillage or leaks, sludge or waste disposal or drainage from raw material storage. BMPs may be structural or non-structural. *(This definition adapted from Section (1)(C)1 of Missouri Storm Water Regulation 10 CSR 20-6.200)*

**Coordinating Authority** means: The municipal entity, which is one of the co-permittees to a state issued Phase II storm water permit, that is recognized by the Missouri Department of Natural Resources (MDNR) as the party which will coordinate the activities of all of the co-permittees in meeting the requirements of the permit. For the St. Louis County Plan Area, the Metropolitan St. Louis Sewer District (MSD) has been identified in the permit as the coordinating authority for the 61 co-permittees. One of the coordinating authority's responsibilities is to prepare and submit an annual report to the MDNR on the status of compliance of all 61 co-permittees with the permit and approved SWMP.

**Co-permittee** means: An individual permittee named in a Phase II permit that is issued to multiple entities within a single urbanized area such as St. Louis County. Within the St. Louis County Plan Area, each of the 61 co-permittees, is responsible only for the permit conditions relating to the discharges for which it is the owner or operator and for carrying out the responsibilities for which it has been designated within the SWMP. The co-permittees share in the financial and administrative responsibilities under the permit and cooperate with each other and with the coordinating authority in complying with the terms of the permit and with meeting the commitments in the SWMP. The co-permittees are listed in [Appendix 1-A1](#).

**Green Procurement** - the procurement of products and services that have a lesser or reduced effect on human health and the environment when compared with competing products or services that serve the same purpose.

**Green Product** – a product that is less harmful than the next best alternative, having characteristics such as:

- Being recyclable.
- Being biodegradable.
- Containing recycled material (post-consumer recycled content).
- Having minimal packaging and/or for which there will be take-back by the manufacturer/supplier of packaging.
- Being reusable or contain reusable parts.
- Having minimal content and use of toxic substances in production.
- Producing fewer and/or less polluting by-products during manufacture, distribution, use and/or disposal.

- Producing the minimal amount of toxic substances during use or at disposal.
- Making efficient use of resources - a product that uses energy, fuel or water more efficiently or that uses less paper, ink or other resources.
- Being durable or having a long economically useful life and/or can be economically repaired or upgraded.

**Green Space** - planned and preserved open land; an interconnected system of open land, determined to have cultural, ecological, developmental, agricultural, and/or recreational value.

**Maximum Extent Practicable (MEP)** – the technology-based discharge standard for Municipal Separate Storm Sewer Systems to reduce pollutants in storm water discharges that was established by CWA §402 (p). A discussion of MEP as it applies to regulated small MS4s is found at 40 CFR 122.34.

**MCMs** means: Minimum Control Measures. The six MCMs are: Public education and outreach; Public participation/involvement; Illicit discharge, detection and elimination; Construction site runoff control; Post-construction site runoff control; and Pollution prevention/good housekeeping.

**Municipal Industrial Facility** means: An industrial facility, as defined in the federal and state storm water regulations, which is owned or operated by a municipality. The regulations define covered industrial facilities by their Standard Industrial Classification (SIC) codes as published by the U.S. Office of Management and Budget. From this extensive list of covered SIC codes, the following operations have been identified as those most likely to be owned or operated by a municipality: Transportation Operations, Landfills, Hazardous Waste Treatment/Storage/Disposal facilities, Vehicle Maintenance or Fueling facilities, Vehicle Washing facilities, Solid Waste Transfer facilities, Wastewater Treatment facilities, Recycling facilities, Yard Waste/Composting facilities and certain types of Warehousing & Storage facilities.

**Municipal Separate Storm Sewer System (MS4)** means: A conveyance or system of conveyances including roads and highways with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, paved or unpaved channels or storm drains designated and utilized for routing of storm water which is contained within the municipal corporate limits or is owned and operated by the state, city, town, village, county, district, association or other public body created by or pursuant to the laws of Missouri having jurisdiction over disposal of sewage, industrial waste, storm water or other liquid wastes and is not a part or portion of a combined sewer system. *(This definition adapted from Section (1)(C)16 of Missouri Storm Water Regulation 10 CSR 20-6.200)*. Each of the 61 co-permittees operates its own MS4. In addition, the term is used to refer to the entire St. Louis County Plan Area which is identified in the Phase II permit as the St. Louis Metropolitan Small MS4.

**Municipal Work Group** means: A group of municipal representatives organized under the provisions of Chapter 14 of the St. Louis County SWMP to develop a model Operation and Maintenance Program and a Training Program for the 61 co-permittees in order to comply with the provisions of Section 4.2.6.1.1 of the Plan Area Phase II storm water permit. The work group members are listed in [Appendix 1-A3](#).

**Municipality** means: Any public entity as described in the definition of Municipal Separate Storm Sewer System. St. Louis County and the Metropolitan St. Louis Sewer District are considered “municipalities” for the purposes of the Phase II storm water permit along with the 59 cities, towns and villages who are co-permittees. The Missouri Department of Transportation (MoDOT) is also a “municipality” and operates an MS4 within the Plan Area. However, MoDOT is covered by a separate state permit and is not a co-permittee under the St. Louis Metropolitan Small MS4 permit.

**NPDES** means: National Pollutant Discharge Elimination System. This term was introduced in Section 402 of the federal Water Pollution Control Act of 1972 (last amended in 1987 and now known as the Clean Water Act). Section 402 provides for the issuance of NPDES permits for the discharge of pollutants to waters of the United States and specifies the conditions under which permits may be issued. The 1987 amendments established the phased permitting requirements for municipal storm water discharges. In Missouri, the Missouri Department of Natural Resources has been delegated the authority to issue NPDES permits.

**Phase I** means: The first phase of the federal storm water regulations. These took effect December 17, 1990. Phase I regulations provide for storm water permitting for industrial facilities, for land disturbance sites 5 acres or greater in size and for MS4s having populations greater than 100,000 (medium and large MS4s). Industrial facilities operated by municipalities, regardless of size, are included under Phase I. See definition of “Municipal Industrial Facility.”

**Phase II** means: The second phase of the federal storm water regulations. These took effect February 7, 2000. Phase II regulations provide for storm water permitting for MS4s, in urbanized areas as defined by the Bureau of the Census, with populations below 100,000 (Small MS4s) and for land disturbance sites between 1 acre and 5 acres in size. Each of the individual municipal entities within the St. Louis County Plan Area has a population below 100,000 and is, therefore, a Small MS4 subject to Phase II requirements.

**Phase II Permit** means: Storm water permit # MO-R040005 with effective date of March 10, 2003, issued by the Missouri Department of Natural Resources to the 61 St. Louis County co-permittees. This permit was issued pursuant to the provisions of Missouri Storm Water Regulation 10 CSR 20-6.200.

**Plan Area** means: The portion of St. Louis County served by separate storm sewers and within the corporate boundaries of the Metropolitan St. Louis Sewer District. The Plan Area includes the 59 cities, towns and villages who are co-permittees as well as unincorporated St. Louis County. While there are a total of 77 municipalities in the Plan Area, 18 have populations of less than 1000 and are therefore, exempt from the Phase II permitting requirements, per Section (1)(C)22 of Missouri storm water regulation 10 CSR 20-6.200. The City of St. Louis and twelve county municipalities adjoining the City of St. Louis are served by combined sewers and are not part of the Plan Area. The Plan Area is identified in the Phase II permit as the St. Louis Metropolitan Small MS4.

**Plan Area Training Committee** means: The Municipal Work Group defined above.

**Recycling Facility** means any co-permittee-owned or operated facility which collects, for recycling, common household recyclables such as paper, plastic, glass, cardboard, etc. or which collects and processes yard wastes for use as mulch or compost.

**St. Louis Municipalities Phase II Storm Water Planning Committee** means: The group of 22 representatives from municipal governments, St. Louis County, MSD and various state and regional agencies which developed the Storm Water Management Plan for St. Louis County.

**Separate Storm Sewer** means: A pipe, conduit, conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels or storm drains) designed and intended to receive and convey storm water and which discharges to waters of the state and which is not part of a combined sewer system.

**Storm Water** means: rainfall runoff, snow melt runoff and surface runoff and drainage.

**Storm Water Management Plan (SWMP) or Plan** means: The Plan developed for the St. Louis County Plan Area by the St. Louis Municipalities Phase II Storm Water Planning Committee and approved by the Missouri Department of Natural Resources through the issuance of NPDES permit MO-R040005.

**Sustainable (green) Service** - A service acquired from a supplier who has a green operational policy and whose internal practices promote sustainability.

**Threshold** - the dollar value of contracts, above which a formal record is kept on file showing that environmental criteria were considered when requirements were defined.

**Urban Runoff** means: Storm water and other runoff from streets, parking lots, rooftops, residential, commercial and industrial areas and any areas that have been rendered impervious through development activities. Such runoff becomes contaminated with fertilizers, pesticides, vehicle drippings and emissions, animal wastes, street litter, yard wastes, silt, chemical spills and other urban wastes. These contaminants are carried through the separate storm sewers and discharged into area streams where they degrade the water quality, harm aquatic life and other wildlife, reduce aesthetic and recreational values and make the waters unsafe for human use.

*(EACH CO-PERMITTEE CAN ADD DEFINITIONS OF ANY TERMS APPLICABLE TO ITS SPECIFIC NEEDS.)*

## For More Information...

- **Corps of Engineers-** 404 Permits and MDNR 401 certification.  
<http://www.dnr.mo.gov/wpscd/wpcp/401/wpcp-401.htm#general>  
<http://www.mvs.usace.army.mil/permits/permitap.htm>
- **Erosion and Sediment Control BMPs** – St. Louis County BMPs are available under the SWPPP link on the following web site:  
[www.stlouisco.com/plan/land\\_disturbance.html](http://www.stlouisco.com/plan/land_disturbance.html).
- **General Overview** - For a general overview of storm water runoff issues, see EPA's website: <http://www.epa.gov/weatherchannel/stormwater.html>
- **Green Procurement** – Many resources are available from the EPA *WasteWise Helpline*: 800 EPA-WISE. Website: <http://www.epa.gov/epaoswer/non-w/reduce/wstewise/wrr/buyq&a.htm>  
  
“Database of Environmental Information for Products and Services” see EPA website: <http://yosemite1.epa.gov/oppt/eppstand2.nsf/Pages/PickStore.html?Open>  
  
Sample Green Procurement Policy –  
<http://www.pwgsc.gc.ca/sd-env/sds2003/green-procurement-e.html>
- **Low Impact Development Methods / Facility Design** - to reduce storm water runoff from impervious areas - see EPA's web site at:  
<http://www.epa.gov/owowwtr1/NPS/lid/lidlit.html>
- **Model Municipal Ordinances** –
  - Animal Waste - <http://www.mrsc.org/Subjects/Legal/nuisances/nu-poop.aspx>
  - Debris and Yard Waste Nuisance -  
<http://www.stlmuni.org/scripts/stlmuni/ordinance/index.cfm?ViewMe=1012>
  - Container size - <http://www.southernshores.org/chap8.htm>
  - Litter Control - <http://www.northgeorgiawater.com/pdfs/modordfin-task10/tab6.pdf>
  - Septic Tank Maintenance: <http://www.anjec.org/html/ord-modelseptic.htm>
  - Riparian Buffer -  
[http://www.stormwatercenter.net/Model%20Ordinances/buffer\\_model\\_ordinance.htm](http://www.stormwatercenter.net/Model%20Ordinances/buffer_model_ordinance.htm)
- **NPDES-** Permits from MDNR-  
[www.dnr.mo.gov/wpscd/wpcp/permits/wpcpermits-general.htm](http://www.dnr.mo.gov/wpscd/wpcp/permits/wpcpermits-general.htm)
- **Nonpoint Source Control, EPA Grants** – Information on EPA Grants can be found at:  
[www.epa.gov/owow/nps/funding.html](http://www.epa.gov/owow/nps/funding.html)

- **Pesticide Management** – For more information on Pesticide BMPs, see: <http://muextension.missouri.edu/xplor/agguides/pests/q07520.htm>

For a summary of Missouri pesticide regulations, see:

<http://muextension.missouri.edu/explore/agguides/agecon/q00855.htm>

For more information on Integrated Pest Management Programs, see:

<http://ipm.missouri.edu/ipmresources.htm>

<http://muextension.missouri.edu/explore/agguides/pests/ipm1004.htm>

<http://muextension.missouri.edu/explore/agguides/pests/ipm1009.htm>

- **Pet Waste** – For more information, see: <http://www.marc.org/water/summer.htm>
- **Spill Response and Reporting** – For EPA contacts and reporting instructions: <http://www.epa.gov/superfund/programs/er/triggers/index.htm>  
MDNR contact and reporting instructions: [http://www.dnr.state.mo.us/alpd/esp/esp\\_eer.htm](http://www.dnr.state.mo.us/alpd/esp/esp_eer.htm)
- **Storm Drain Marking Projects** – For more information, call MSD's Division of Environmental Compliance at 314-436-8710.
- **Storm Water Best Management Practices (BMPs)** - EPA Fact Sheets on the web at: <http://cfpub.epa.gov/npdes/stormwater/menuofbmps/poll.cfm>.
- **Storm Water Management Practices** – Fact Sheets are available from the Storm water Manager's Resource Center at the following web site: <http://www.stormwatercenter.net>
- **Storm Water Permits** -- Missouri Department of Natural Resources (MDNR) <http://www.dnr.state.mo.us/wpscd/wpcp/permits/wpcpermits-stormwater.htm>
- **Waste Disposal Guidance** – MDNR Pollution Prevention Guidance publications: <http://www.dnr.state.mo.us/oac/pubs.htm#PollutionPrevention>
- **Waste Reduction and Recycling Policy** – For the sample policy, see: <http://www.legal.uncc.edu/policies/ps-110.html>