

OPERATION AND MAINTENANCE MANUAL

FOR THE PREVENTION AND REDUCTION
OF POLLUTION IN STORMWATER RUNOFF
FROM MUNICIPAL OPERATIONS
WITHIN THE
CITY OF

CARL JUNCTION, MISSOURI



MAY 2013

Operation and Maintenance Manual
City of Carl Junction, Missouri
May 2013

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Chapter 1 - Program Administration

A. Introduction:

The Missouri Department of Natural Resources (MDNR) issued Phase II Storm Water Permit MO-R040028 to the City of Carl Junction, also referred to as the Carl Junction Small MS4. One of the minimum control measures in the permit that must be addressed by the permittee includes pollution prevention and good housekeeping for municipal operations. Specifically, section 4.2.6.1.1 of the permit (Appendix 1-A1) requires the 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.”

This operation and maintenance manual document was originally developed for the co-permittees of the St. Louis Metropolitan Small MS4 and has been used with the permission of the Metropolitan Sewer District of St. Louis. The original St. Louis MS4 operation and maintenance manual has been tailored to specifically meet the needs and goals of the City of Carl Junction.

This program impacts all facets of municipal operations. It is the intent of the City of Carl Junction 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 Carl Junction 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-A2).

B. Organization of Manual:

The BMP elements of the operation and maintenance program have been divided into 11 major categories of municipal operations/activities.

Regardless of the primary function of any particular facility, it has been anticipated that all chapters may potentially apply to activities at that facility. For example, 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; and so on. The City of Carl Junction will incorporate all applicable BMPs from all chapters into procedures that apply to any given facility, any given activity, or any group of employees to ensure that employees are made aware of all applicable BMPs.

C. Administration:

The responsible party for administration of the operation and maintenance (O&M) program is the Superintendent 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.

D. Training:

The City of Carl Junction 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, City of Joplin 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.

E. Inspections:

INSPECTIONS of all City facilities will be made on a QUARTERLY basis and problems will be addressed, including the need for additional training. Copies of the inspection checklists will be included in Appendix 1-E1, once they are developed.

F. Records:

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

RECORDS must be kept of all inspections, problems found and measures taken to address the problems.

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:

1. Community Center – 303 N. Main Street. This facility is situated on 10 acres, with a building size of approximately 42,000 square feet. The Community Center includes the Senior Center, Fitness Center, Gymnasium and City Hall. Also included on the property are a water tower, a well house, a secure evidence storage building and the Police Department building (see item 2 for Police Department). The City Hall portion houses the Finance and Administration Department, the Planning Department, the City Clerk's office and the Building Inspector office. The Fitness Center portion occupies approximately 200 square feet of the building. This facility operates six (6) days a week from 8 a.m. to 10 p.m. On Sunday the facility is open 10 a.m. to 6 p.m. A paved parking lot is provided for visitors, employees, and City vehicles. Materials and supplies utilized in performing all building maintenance, including custodial work, are stored within the building. Maintenance of City vehicles associated with the facility is performed at a vendor's location. A total of 5 employees report to this facility.
2. Police Department/Municipal Courts – 302 N. Main Street. This facility is located in a separate building on the Community Center property. The approximately 8,000 sq ft building houses the police department and the municipal courts. Materials and supplies utilized in performing all building maintenance, including custodial work, are stored within the building. Maintenance of Police vehicles is performed at a vendor's location. A total of 15 employees report to this facility.
3. Public Works Facility – 813 S. Joplin Street. This facility houses the Street, Water, Wastewater and the Parks division of the Public Works Department. The facility is situated on approximately twenty (20) acres. It contains the wastewater treatment plant, 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 one (1) large vehicle work bay, a sign shop, shower/locker facilities, lunchroom, administrative offices, and a records storage room. A 1000 square foot covered bulk salt building, with a capacity of 8000 tons, is also located on the site. A gravel parking lot is provided for employees. All equipment associated with public works maintenance activities is stored within the covered equipment storage building. All materials utilized in performing street maintenance are stored outside of the main building or within the covered bulk storage bin. All fleet maintenance activity is done inside the main building, within the vehicle work bay. 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 9 employees report to this facility.
4. Frank Dean Ball Complex – 1502 Park Lane. This 10-acre facility consists of 5 baseball/softball fields. The complex also contains a 2000 square foot building which houses the Concession Stand, Restrooms, concession storage and three (3) storage sheds. A paved handicapped parking area and a gravel parking lot

is provided for employees and patrons. Equipment is stored within the buildings. All material used in maintenance activities is stored within the buildings. This facility operates seven (7) days a week. No employees report to this facility.

5. Memorial Park – 413 Pennell St. This 3-acre facility has one (1) baseball field, one (1) storage shed, one (1) restroom facility and one (1) concession stand. All equipment and materials used for maintenance of this park are located within the storage shed. The park also includes a playground and a gravel parking lot. This facility operates seven (7) days a week. No employees report to this facility
6. Center Creek Park – 201 Valley Lane. This 5-acre park is the home to the City swimming pool. It has concession area, shower and locker facilities, restrooms, pump room and storage room. All equipment and materials for the maintenance and operation of the swimming pool are contained inside this building. Three (3) picnic pavilions, two (2) tennis courts and various playground structures are also located on this property. Paved parking lots for patrons and employees are provided. The Park is open seven days a week with the exception of the swimming pool. The pool is operated from Memorial Day until Labor Day seven (7) days a week from 12 p.m. to 6 p.m. No employees report to this facility.
7. Four Oaks Park – 121 Schimm Circle. This one (1) acre park has playground equipment only. No equipment is stored at this facility. Parking is on the street. No employees report to this facility.
8. Country Club Park – 110 Hickory St. This five (5) acre park has one (1) picnic pavilion, a playground structure, a restroom/concession stand and a basketball court. No equipment is stored at this facility. Parking is provided on a gravel parking lot. No employees report to this facility.
9. Lakeside Park – Sunnybrook and W Briarbrook Ln. This 86 acre park is home to Bulldog Lake, a fishing lake on which no motorized boats are allowed. It has a fishing/walking bridge and 3 interconnected lakes on the facility. It also contains an approximately 1 mile long, gravel walking/biking trail. No motorized vehicles are allowed on the trail. No equipment is stored at the facility. Parking is provided on a gravel parking lot. No employees report to this facility.

C. Responsible Parties:

1. Community Center – The City Administrator has authority over the Community Center. The building is actively managed by the Building Inspector.

Building Inspector: (417) 649-7237

2. Police Department/Municipal Courts – The City Administrator has authority over the Police Department/Municipal Courts facility. The facility is actively managed by the Chief of Police and Building Inspector.

Chief of Police: (417) 649-7070, Building Inspector: (417) 649-7237

3. Public Works Facility – The Superintendent of Public Works has authority over the Public Works Facility, Wastewater Treatment Plant and all Parks. These facilities are actively managed by the Superintendent of Public Works.

Superintendent of Public Works: (417) 649-7229

- 4. Frank Dean Ball Complex – See Item 3.
- 5. Memorial Park – See Item 3.
- 6. Center Creek Park – See Item 3.
- 7. Four Oaks Park – See Item 3.
- 8. Country Club Park – See Item 3.
- 9. Lakeside Park – See Item 3.

D. Materials/Supplies acquisition, storage and usage:

- 1. Community Center –Material/supply needs are determined by the Building Inspector.

Material	Maximum Quantity Kept on Hand	For Use Within	Storage Location
Various Cleaning Supplies	1 Gallons	Six Months	Various custodial closets
Cement Sealer	5 Gallons	Six Months	City Hall custodial closet
Aerosol Cans (various products)	Only Amount Needed	Six Months	Various custodial closets
Emergency Backup Batteries (dry cell)	25	Six Months	Storeroom
Fluorescent Lamps	50	1 year	Various custodial closets
Light Ballasts	2	Six Months	Various custodial closets
Scale Remover (acid)	1 Gallon	One Year	Various custodial closets

- 2. Police Department/Municipal Courts –Material/supply needs are determined by the Chief of Police and Building Inspector.

Material	Maximum Quantity Kept on Hand	For Use Within	Storage Location
Various Cleaning Supplies	1 gallon	Six Months	Storeroom
Fluorescent Lamps	25	1 year	Storeroom

- 3. Public Works Facility – Material/supply needs are determined by the Superintendent of Public Works. 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. Materials/supplies used in park maintenance operations are listed in Chapter 7. Materials/supplies used in composting operations are listed in Chapter 9.

Material	Maximum Quantity Kept on Hand	For Use Within	Storage Location
Various Cleaning Supplies	1 Gallons	Six Months	Custodial Closet
Liquid Chlorine	5	Six Months	Supply Room

4. Frank Dean Ball Complex – Material/supply needs are determined by the Superintendent of Public Works. Materials/supplies used in park and field maintenance operations are listed in Chapter 7.

Material	Maximum Quantity Kept on Hand	For Use Within	Storage Location
Various Cleaning Supplies	1 Gallons	6 Months	Storage shed

5. Memorial Park – Material/supply needs are determined by the Superintendent of Public Works. 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	1 Gallons	6 Months	Storage Shed

6. Center Creek Park – Material/supply needs are determined by the Superintendent of Public Works. 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	1 Gallons	6 Months	Pump room
Swimming Pool Chemicals	50 Gallons	3 Months	Pump room

7. Four Oaks Park – Material/supply needs are determined by the Superintendent of Public Works. No supplies or equipment are stored at the facility.

8. Country Club Park – Material/supply needs are determined by the Superintendent of Public Works. No supplies or equipment are stored at the facility.

9. Lakeside Park – Material/supply needs are determined by the Superintendent of Public Works. No supplies or equipment are stored at the facility.

E. Waste generation, storage, disposal, recycling:

1. Community Center – Standard office waste is generated, along with waste from custodial operations. Wastes from building and office maintenance activities and fitness center activities are also included in this list.

Waste	Maximum Storage Capacity	Storage Location	Method of Disposal	Contractor	Frequency
Standard Office Waste	2 – 15 yd ³ Dumpsters	Fenced Area Outside of Rear Door	Landfill	Allied Waste	Weekly
White Paper & Cardboard	3 – 15 yd ³ Dumpsters	Rear of Building	Recycle	Service Recycling	Monthly
Aluminum Cans & Plastic Bottles	Various Containers	Offices	Recycle	MMR	Monthly
Custodial Waste (mop buckets, auto scrubber, water base cleaners)	5 gallons	Various custodial closets	Dump in Drain to Sanitary Sewer	N/A	Daily
Emergency Lighting Batteries (dry cell)	Box	Storage room	Landfill	Allied Waste	As needed
Light Ballasts	Box	Storage room	Landfill (Non-PCBs, with approval)	Allied Waste	As needed
Lamps (fluorescent, mercury vapor, sodium vapor)	Box	Storage room	Recycle	Henkles Ace Hardware	As needed
Lamp (green tip fluorescent)	Box	Storage room	Landfill	Henkles Ace Hardware	As needed
Computer Monitor, CPUs	Box	Storage room	Recycle	Reuse or Hazardous Material Recycler	As Needed

2. Police Department/Municipal Courts – Standard office waste is generated, along with waste from custodial operations. 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	1 – 15 yd ³ Dumpsters	Fenced Area Outside of Building	Landfill	Allied Waste	Weekly
White Paper & Cardboard	3 – 15 yd ³ Dumpsters	Outside of Community Center	Recycle	Service Recycling	Monthly
Aluminum Cans & Plastic Bottles	Various Containers	Offices	Recycle	MMR	As needed
Custodial Waste (mop buckets, auto scrubber, water base cleaners)	N/A	N/A	Dump in Drain to Sanitary Sewer	N/A	Daily
Emergency Lighting Batteries (dry cell)	Box	Storage room	Landfill	Allied Waste	As needed
Light Ballasts	Box	Storage room	Landfill (if non PCBs, with approval)	Allied Waste	As needed
Lamps (fluorescent, mercury vapor, sodium vapor)	Box	Storage room	Recycle	Henkles Ace Hardware	As needed
Lamp (green tip fluorescent)	Box	Storage room	Recycle	Henkles Ace Hardware	As needed

3. Public Works Facility – Standard office waste is generated, along with waste from custodial operations. Wastes from building and office maintenance activities are also included in this list. Additional waste generated from vehicle maintenance activities and street maintenance activities is included in Chapters 3 and 6 of this document. Additional wastes generated from parks maintenance and composting activities are included in Chapters 7 and 9, respectively, of this document.

Waste	Maximum Storage Capacity	Storage Location	Method of Disposal	Contractor	Frequency
Standard Office Waste	1 – 30 yd ³ Dumpsters	Outside of Loading Dock	Landfill	Allied Waste	Weekly
White Paper & Cardboard	1 – 15 yd ³ Dumpsters	Front Gate	Recycle	Service Recycling	Monthly
Aluminum Cans & Plastic Bottles	Various Containers	Offices	Landfill	Allied Waste	Weekly
Custodial Waste (mop buckets, auto scrubber, water base cleaners)	N/A	N/A	Dump in Drain to Sanitary Sewer	N/A	Daily
Emergency Lighting Batteries (dry cell)	Box	Storage room	Landfill	Allied Waste	As needed
Light Ballasts	Box	Storage room	Landfill (if non PCBs, with approval)	Allied Waste	As needed
Lamps (fluorescent, mercury vapor, sodium vapor)	Box	Storage Room	Recycle	Henkles Ace Hardware	As needed
Lamp (green tip fluorescent)	Box	Storage room	Recycle	Henkles Ace Hardware	As needed

4. Frank Dean Ball Complex – Standard concession waste is generated from the concession stand along with waste from custodial operations. Wastes from building maintenance activities are also included in this list. Additional waste generated from park and field maintenance operations is included in Chapter 7 of this document.

Waste	Maximum Storage Capacity	Storage Location	Method of Disposal	Contractor	Frequency
Standard Concession Waste	15 yd ³ Dumpster	Outside of Concession Stand	Landfill	Allied Waste	Weekly
Aluminum Cans & Plastic Bottles	Various Containers	Outside of concession stand	Landfill	Allied Waste	Weekly
Custodial Waste (mop buckets, auto scrubber, water base cleaners)	N/A	N/A	Dump in Drain to Sanitary Sewer	N/A	Daily
Backwash Water from Soda Fountain	N/A	N/A	Discharged to Sanitary Sewer	City Personnel	Weekly

5. Memorial Park – Standard concession waste is generated from the concession stand along with waste from custodial operations. Wastes from building maintenance activities are also included in this list. Additional waste generated from park and field maintenance operations is included in Chapter 7 of this document.

Waste	Maximum Storage Capacity	Storage Location	Method of Disposal	Contractor	Frequency
Standard Concession Waste	15 yd ³ Dumpster	Outside of Concession Stand	Landfill	Allied Waste	Week
Aluminum Cans & Plastic Bottles	Various Containers	Outside of concession stand	Landfill	Allied Waste	Weekly
Custodial Waste (mop buckets, auto scrubber, water base cleaners)	N/A	N/A	Dump in Drain to Sanitary Sewer	N/A	Daily
Backwash Water from Soda Fountain	N/A	N/A	Discharged to Sanitary Sewer	City Personnel	Weekly

6. Center Creek Park – Standard concession waste is generated from the concession stand along with waste from custodial operations. Wastes from pool and building maintenance activities are also included in this list. Additional waste generated from park and field maintenance operations is included in Chapter 7 of this document.

Waste	Maximum Storage Capacity	Storage Location	Method of Disposal	Contractor	Frequency
Standard Concession Waste	2 - 15 yd ³ Dumpster	Outside of Concession Stand	Landfill	Allied Waste.	Weekly
White Paper & Cardboard	Various Containers	Outside of concession stand	Landfill	Allied Waste	Weekly
Aluminum Cans & Plastic Bottles	Various Containers	Outside of concession stand	landfill	Allied waste	Weekly
Custodial Waste (mop buckets, auto scrubber, water base cleaners)	N/A	N/A	Dump in Drain to Sanitary Sewer	N/A	Daily
Pool Chemical Waste	N/A	N/A	Discharged to Sanitary Sewer	City Personnel	As Needed
Backwash Water from Pool Pump and Filter	N/A	N/A	Discharged to Sanitary Sewer	City Personnel	As Needed

7. Four Oaks Park – Standard park trash can waste is generated. Trash cans are emptied by City personnel as needed and waste is stored at one of the other listed facilities. Additional waste generated from park maintenance operations is included in Chapter 7 of this document.

8. Country Club Park – Standard concession waste is generated from the concession stand along with waste from custodial operations. Wastes from building maintenance activities are also included in this list. Additional waste generated from park and field maintenance operations is included in Chapter 7 of this document.

Waste	Maximum Storage Capacity	Storage Location	Method of Disposal	Contractor	Frequency
Standard Concession Waste	15 yd ³ Dumpster	Outside of Concession Stand	Landfill	Allied Waste.	Weekly
White Paper & Cardboard	Various Containers	Outside of concession stand	Landfill	Allied Waste	Weekly
Aluminum Cans & Plastic Bottles	Various Containers	Outside of concession stand	Landfill	Allied waste	Weekly
Custodial Waste (mop buckets, auto scrubber, water base cleaners)	N/A	N/A	Dump in Drain to Sanitary Sewer	N/A	Daily

9. Lakeside Park – Standard park trash can waste is generated. Trash cans are emptied by City personnel as needed and waste is stored at one of the other listed facilities. Additional waste generated from park maintenance operations is included in Chapter 7 of this document.

F. Best Management Practices (BMP):

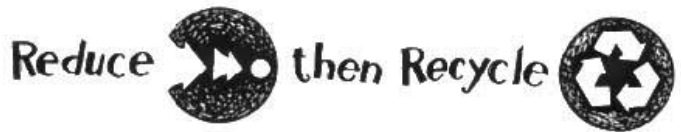
The following BMPs are to be implemented at all applicable City facilities to the maximum extent practicable.

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.
- ❖ 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

- ❖ Waste Reduction/Green Procurement
 - Collect and recycle, to the maximum extent practicable, wastes generated by municipal operations. (See the Waste Reduction and Recycling policy in Appendix 2-F1.)
 - Purchase environmentally preferred products whenever practical. (See the Green Procurement Policy in Appendix 2-F2. For a “Database of Environmental Information for Products and Services,” see EPA website: <http://yosemite1.epa.gov/oppt/eppstand2.nsf/>.)
- ❖ Material Storage/Disposal
 - 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 and waste in.
 - 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 cannot 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 watertight.
- 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.
- ❖ Spill Prevention/Response
 - 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.
 - No spillable material or material prone to blowing away is to be kept near doorways leading to the outside.
 - 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, Carl Junction City Hall – 417-649-7237 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 cleanup 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 pick up 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.
 - 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.

O&M PROGRAM

- ❖ General housekeeping inspections of municipal facilities and storage areas are to be performed quarterly and records kept of the inspections.

- ❖ Records will be kept that effectively track implementation of program elements and that provide the information necessary to meet the reporting requirements of the MS4 permit.

COMMUNITY

- ❖ Educate citizens on trash and pet waste issues through public education program and public outreach programs.
- ❖ Promote and assist in neighborhood and stream clean-up activities.
- ❖ Educate citizens about and enforce municipal ordinance against illegal discharges to storm water.
- ❖ Provide sufficient numbers of appropriately-sized waste receptacles at municipal facilities and in public areas with regularly scheduled servicing, collection and disposal
- ❖ 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.
- ❖ Educate citizens about and enforce ordinance regulating size, type, covers and water-tightness of waste container for residential, commercial and industrial areas. (See Appendix 2-F3 for Ordinance.)
- ❖ Educate citizens about and enforce ordinance against littering and improper yard waste disposal. (See Appendix 2-F4 and 2-F5 for Ordinances.)
- ❖ Educate citizens about and enforce ordinances requiring pet owners, and property owners to clean up wastes from their pets and other animals. (See Appendix 2-F6 Ordinance.)

G. NPDES Permit status:

The City of Carl Junction has no NPDES Phase 1 facilities covered under this chapter.

H. Training:

All City of Carl Junction employees will be trained on this chapter, including the Police Department.

Training will either be provided in-house or at regional training activities offered by the Missouri Department of Natural Resources, Environmental Assistance Office, City of Joplin 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.

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:

The Public Works facility is responsible for maintenance and repair of vehicles and equipment, ranging from chain saws and light vehicles to street cleaners, dump trucks and tractors. Preventative maintenance or PM's include oil and filter changes, tune ups. Light repairs include: brake, suspension or axle repair, and welding work. Fueling of City vehicles and equipment takes place at this site. Major repairs, such as tire replacement, body work, engine and transmission repairs or other mechanical work, is performed off-site by outside vendors.

B. Locations:

1. Public Works Facility – 813 S. Joplin Street. This facility is responsible for approximately 30 pieces of equipment. The main building has one (1) large vehicle work bay and a sign shop. All equipment associated with public works maintenance activities is stored within the covered equipment storage building. All fleet maintenance activity is done inside the main building, within the vehicle work bay.

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 location performs vehicle and equipment maintenance for public works departments only.

C. Responsible Parties:

The Public Works Superintendent oversees all aspects of administration and operations. The Superintendent is responsible for the day-to-day operations of the garage. The main garage has no full time employees.

D. Materials/Supplies acquisition, storage and usage:

The following materials and quantities are typically kept on hand at the Public Works facility for maintenance operations:

Material	Maximum Quantity Kept on Hand	For Use Within	Storage Location
5W20 Oil	12 Quarts	6 Months	Parts Room
5W30 Oil	12 Quarts	6 Months	Parts Room
10W30 Oil	12 Quarts	6 Months	Parts Room
Transmission Fluid	10 Gallons	6 Months	Parts Room
Hydraulic Fluid	10 Gallons	6 Months	Parts Room
Anti-Freeze (Reg)	10 Gallons	6 Months	Parts Room
Anti-Freeze (X-life)	10 Gallons	6 Months	Parts Room
Gasoline	1,500 Gallons	3 Months	Above Ground Tanks
Diesel	500 Gallons	3 Months	Above Ground Tank
Brake Solvent	6 Cans	6 Months	Parts Room
Penetrating Oil	12 Aerosol Can	6 Months	Parts Room
Carb Cleaner	12 Aerosol Can	6 Months	Parts Room
Starting Ether	12 Aerosol Can	1 Year	Parts Room

E. Waste generation, storage, disposal, recycling:

Waste generated by vehicle and equipment maintenance operations are as follows:

Waste	Maximum Storage Capacity	Storage Location	Method of Disposal	Contractor	Frequency
Used Motor Oil, Hydraulic and Transmission Fluid	50 Gallons	Above Ground Barrel	Recycled		Quarterly
Used Oil Filters		Drain 24 Hours	Trash Can	Allied Waste	As Generated
Used Antifreeze	5 Gallons	Labeled Container in Shop	Recycle		
Worn Brake Pads/ Shoes		Parts Room	Returned for Recycling	Parts Vendor	As Needed
Equipment Batteries (Lead acid and NiCd)	20	Parts Room	Returned for Recycling	Battery Vendor	As needed
Tires	<25, Unless Meeting Rules in 10CSR 80	Shop	Returned for Recycling and/or Recapped	Tire Vendor or Permitted Waste Tire Hauler, Inc	As needed
Scrap Metal		Shop	Recycle	Missouri Metal Recycler	As needed
Shop Towels		Shop	Trash Can	Allied Waste	As Generated

F. Best Management Practices (BMP):

The following BMPs are to be implemented at all applicable City facilities to the maximum extent practicable.

OPERATIONS

- ❖ Stick to the 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 City 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. (See the Green Procurement Policy in Appendix 2-F2. For a "Database of Environmental Information for Products and Services," see EPA website: <http://yosemite1.epa.gov/oppt/eppstand2.nsf/>.)
- ❖ 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 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 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.
- ❖ No spillable material or material prone to blowing away is to be kept near doorways leading to the outside.
- ❖ Proper procedures for loading, unloading and transfer operations should be followed to prevent overfilling and spills.
- ❖ In areas where spills could occur, such as fueling and loading areas, spill kits with absorbent materials are kept nearby, with signage indicating the location of those spill kits. Storm drain plugs or covers are to be used 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, overflow 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 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 is to be posted in shop. Employees are made aware of sanitary and storm sewers to ensure all wastewater is discharged to the sanitary sewer.
- ❖ Storm drains/inlets are 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, or if not roofed, accumulated rain water is inspected for contamination prior to discharge.
- ❖ Fueling areas are roofed to prevent contact with storm water and are graded and sloped to direct storm water runoff away from the site and to prevent runoff from flowing over the fueling area.
- ❖ “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.

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

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.

H. Training:

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. The City has implemented monthly safety meetings, which will include environmental training and HAZMAT training.

Chapter 4 -Vehicle/Equipment Washing

A. Description of Activities:

The City of Carl Junction will wash vehicles and equipment at wash bay facilities designed according to this chapter. At City facilities where no wash bay exists, all vehicles and equipment will be taken to commercial facilities when washing is required.

B. Locations:

The City wash bay facilities are located at the following location:

1. Public Works Facility – 813 S. Joplin Street.

C. Responsible Parties:

The Public Works Superintendent is responsible for ensuring that vehicles are taken off-site to approved commercial facilities for washing, or that washing on City property is done in the location specified in Section B.

D. Materials/Supplies acquisition, storage and usage:

The wash soap to be used at City wash bay facilities is a NON-PHOSPHATE, BIODEGRADABLE DETERGENT.

E. Wash bay design and waste disposal:

Wash water from vehicle and equipment washing must be disposed in the 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 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 BMPs are to be implemented at all applicable City facilities to the maximum extent practicable.

FOR OFF-SITE WASHING:

- ❖ Vehicles are to be taken to commercial facilities when washing is needed.
- ❖ Commercial facilities used are verified to be in compliance with applicable sewer discharge requirements.
 - Facilities must discharge wastewater to the sanitary sewer system.
 - 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.

H. Training:

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

A. Description of Activities:

On an as-needed basis, city personnel perform minor repairs only and small capital improvements on city facilities, such as replacing light bulbs, correcting small vandalism or small maintenance items. Major projects are typically contracted out to commercial firms specializing in the type of work required.

B. Locations:

The Community Center, Police Department and the Public Works facilities contain shops and/or material storage areas for facility repair, and city employees are involved in these activities. Repairs are periodically performed on all types of municipal facilities. Remodeling is contracted out to commercial firms specializing in the type of work required.

C. Responsible Parties:

The Facilities Manager is the responsible party that will ensure all repairs 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:

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.

Material	Maximum Quantity Kept Onsite	Storage Location
Lumber	100 Linear Feet	Public Works
Dirt	50 tons	Public Works
Rock	50 Tons	Public Works
Oil-Based Paint	10 Gallons	Flammable Cabinet
Latex Paint	20 Gallons	Public Works

E. Waste generation, storage, disposal, recycling:

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 and 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 Community Center, Police Department or Public Works facility dumpsters 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:

Waste	Storage Requirements	Method of Disposal	Contractor
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	Special Waste Landfill	
Mercury Switch/Thermostat	Closed Labeled Container	Reclaim	Hazardous Material Recycler
Asbestos Containing Materials (tile, insulation, roofing materials)	To be managed only by certified personnel	Special Waste Landfill	
Latex Paint Waste	Closed Container	Energy Recovery or Sanitary Sewer	Waste Vendor or City Sewer
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 where the washout can enter the street, storm drains, drainage ditches, or streams.

F. Best Management Practices (BMP):

The following BMPs are to be implemented at all applicable City facilities 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/owow/wtr1/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 the City’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. The City's design requirements are contained in the "Stormwater Management Criteria". 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 City of Carl Junction land disturbance requirements. 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.
- ❖ 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, pick up trash that can be windblown 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.
- ❖ No spillable material or material prone to blowing away is to be kept near doorways leading to the outside.

G. NPDES Permit status:

Land disturbance projects over 1 acre require a Land Disturbance Permit MO-R100A 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:

The City of Carl Junction is responsible for the cleaning and maintenance of all City streets and parking facilities under their maintenance purview. Activities include street sweeping, flushing, applying surface seals, patching, snow removal, and emergency response to spills and accidents. Highways within the City limits are controlled and maintained by MoDOT.

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

Flushing operations are performed by the City on sections of pavement where mud or debris accumulates after flooding, creating hazardous conditions.

Parking structures are sealed on a five-to-seven year cycle to protect the asphalt, 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.

The City plows the roadways under their maintenance jurisdiction during winter snow events and intersections receive a salt/sand mix. The City is currently transitioning to sand only.

The City coordinates with the Carl Junction Fire Protection District 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 within the boundaries of the City of Carl Junction.

1. Public Works Facility – 813 S. Joplin Street. All street, and parking maintenance is performed from this location. All equipment associated with public works maintenance activities is stored within the covered equipment storage building. All materials utilized in performing street maintenance are stored outside of the main building or within the covered bulk storage bin.

C. Responsible Parties:

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

Public Works Director – (417) 649-7229

D. Materials/Supplies Acquisition, Storage and Usage:

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

Material	Maximum Quantity Kept on Hand	For Use Within	Storage Location
Salt (Sodium Chloride, Calcium Chloride)	Up to 50 tons	One Year	Public Works
Aggregate (various sizes)	Up to 100 tons	One Season	Public Works
Cold-Patching Material	Up to 5 tons	One Season	Public Works
Topsoil	Up to 100 tons	One Season	Public Works
Concrete Ready-Mix	Purchased When Needed	Daily	n/a
Concrete Bag Mix	Purchased When Needed	Daily	Public Works

E. Waste Generation, Storage, Disposal, Recycling:

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
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 Cleanup			Sanitary Landfill	As Generated
Water Based Paint			Sanitary Sewer	As Generated

F. Best Management Practices (BMP):

The following BMPs are to be implemented at all applicable City facilities 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.
- ❖ Used asphalt is recycled when it is cost-beneficial.
- ❖ 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 City land disturbance ordinances and programs implemented under the City's 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 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:

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:

The City of Carl Junction has 6 parks totaling nearly 100 acres of land, and over 3 miles of biking, hiking and jogging trails.

The City 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. The City will take opportunities 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:

1. Frank Dean Ball Complex – 1502 Park Lane. This 10-acre facility consists of 5 baseball/softball fields. The complex also contains a 2000 square foot building which houses the Concession Stand, Restrooms, concession storage and three (3) storage sheds. A paved handicapped parking area and a gravel parking lot is provided for employees and patrons. Equipment is stored within the buildings. All material used in maintenance activities is stored within the buildings. This facility operates seven (7) days a week. No employees report to this facility.
2. Memorial Park – 413 Pennell St. This 3-acre facility has one (1) baseball field, one (1) storage shed, one (1) restroom facility and one (1) concession stand. All equipment and materials used for maintenance of this park are located within the storage shed. The park also includes a playground and a gravel parking lot. This facility operates seven (7) days a week. No employees report to this facility.
3. Center Creek Park – 201 Valley Lane. This 5-acre park is the home to the City swimming pool. It has concession area, shower and locker facilities, restrooms, pump room and storage room. All equipment and materials for the maintenance and operation of the swimming pool are contained inside this building. Three (3) picnic pavilions, two (2) tennis courts and various playground structures are also located on this property. Paved parking lots for patrons and employees are provided. The Park is open seven days a week with the exception of the swimming pool. The pool is operated from Memorial Day until Labor Day seven (7) days a week from 12 p.m. to 6 p.m. No employees report to this facility.
4. Four Oaks Park – 121 Schimm Circle. This one (1) acre park has playground equipment only. No equipment

is stored at this facility. Parking is on the street. No employees report to this facility.

5. Country Club Park – 110 Hickory St. This five (5) acre park has one (1) picnic pavilion, a playground structure, a restroom/concession stand and a basketball court. No equipment is stored at this facility. Parking is provided on a gravel parking lot. No employees report to this facility.
6. Lakeside Park – Sunnybrook and W Briarbrook Ln. This 86 acre park is home to Bulldog Lake, a fishing lake on which no motorized boats are allowed. It has a fishing/walking bridge and 3 interconnected lakes on the facility. It also contains an approximately 1 mile long, gravel walking/biking trail. No motorized vehicles are allowed on the trail. No equipment is stored at the facility. Parking is provided on a gravel parking lot. No employees report to this facility.
7. Public Works Facility – 813 S. Joplin Street. This facility is not a park, but houses the Parks division of the Public Works Department. Equipment and supplies associated with park maintenance activities are stored within the covered equipment storage building.

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

C. Responsible Parties:

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

Superintendent of Public Works: (417) 649-7229

D. Materials/Supplies acquisition, storage and usage:

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

1. Frank Dean Ball Complex – Material/supply needs are determined by the Superintendent of Public Works.

Material	Maximum Quantity Kept on Hand	For Use Within	Storage Location
Fertilizer	5 bags	6 months	Storage Shed
Herbicide	10 Gallons	6 months	Storage Shed
Chalk for Ball Field Marking	5 bags	1 year	Storage Shed
Soil for Infield Maintenance	1,000 lbs	1 year	Outside

2. Memorial Park – Material/supply needs are determined by the Superintendent of Public Works.

Material	Maximum Quantity Kept on Hand	For Use Within	Storage Location
Playground Mulch			No excess qty kept
Fertilizer	5 bags	6 months	Storage Shed
Herbicide	10 Gallons	6 months	Storage Shed

3. Center Creek Park – Material/supply needs are determined by the Superintendent of Public Works. Materials/supplies used in pool maintenance operations are listed in Chapter 2.

Material	Maximum Quantity Kept on Hand	For Use Within	Storage Location
Playground Mulch			No excess qty kept
Fertilizer	25 bags	6 months	Storage Shed
Herbicide	10 Gallons	6 months	Storage Shed

4. Four Oaks Park – No supplies or equipment are stored at the facility.

5. Country Club Park – No supplies or equipment are stored at the facility.

6. Lakeside Park – No supplies or equipment are stored at the facility.

7. Public Works Facility – 813 S. Joplin Street. Material/supply needs are determined by the Superintendent of Public Works.

Material	Maximum Quantity Kept on Hand	For Use Within	Storage Location
Compost Pile	100 cu yd	1 year	Outside
Fertilizer	25 bags	6 months	Storage Shed
Herbicide	10 Gallons	6 months	Storage Shed
Rock	100 tons	1 year	Storage Shed

E. Waste generation, storage, disposal, recycling:

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

1. Frank Dean Ball Complex – Wastes from concession stand, custodial operations, and building maintenance activities are included in chapter 2 of this document.

Waste	Maximum Storage Capacity	Storage Location	Method of Disposal	Contractor	Frequency
Wood, brush	20 cu yd	Yard	Chip into Mulch	Tree Service	6 Months
Leaves, Grass	10 cu yd	Composter	Compost into Mulch	none	6 Months

2. Memorial Park – Wastes from concession stand, custodial operations, and building maintenance activities are included in chapter 2 of this document.

Waste	Maximum Storage Capacity	Storage Location	Method of Disposal	Contractor	Frequency
Wood, brush	20 cu yd	Yard	Chip into Mulch	Tree Service	6 Months
Leaves, Grass	10 cu yd	Composter	Compost into Mulch	none	6 Months

3. Center Creek Park – Wastes from concession stand, custodial operations, and pool and building maintenance activities are included in chapter 2 of this document.

Waste	Maximum Storage Capacity	Storage Location	Method of Disposal	Contractor	Frequency
Wood, brush	20 cu yd	Yard	Chip into Mulch	Tree Service	6 Months
Leaves, Grass	10 cu yd	Composter	Compost into Mulch	none	6 Months
etc.					

4. Four Oaks Park – Wastes from park trash cans are included in chapter 2 of this document.

Waste	Maximum Storage Capacity	Storage Location	Method of Disposal	Contractor	Frequency
Wood, brush	n/a	Other listed Facility	Chip into Mulch	Tree Service	6 Months
Leaves, Grass	n/a	Other listed Facility	Compost into Mulch	none	6 Months
etc.					

5. Country Club Park – Wastes from concession stand, custodial operations, and building maintenance activities are included in chapter 2 of this document.

Waste	Maximum Storage Capacity	Storage Location	Method of Disposal	Contractor	Frequency
Wood, brush	n/a	Other listed Facility	Chip into Mulch	Tree Service	6 Months
Leaves, Grass	n/a	Other listed Facility	Compost into Mulch	none	6 Months
etc.					

7. Lakeside Park – Wastes from park trash cans are included in chapter 2 of this document.

Waste	Maximum Storage Capacity	Storage Location	Method of Disposal	Contractor	Frequency
Wood, brush	n/a	Other listed Facility	Chip into Mulch	Tree Service	6 Months
Leaves, Grass	n/a	Other listed Facility	Compost into Mulch	none	6 Months

7. Public Works Facility – 813 S. Joplin Street. No park maintenance waste is generated or stored at this facility. Wastes from custodial operations, and building maintenance activities are included in chapter 2 of this document.

F. Best Management Practices (BMP):

The following BMPs are to be implemented at all applicable City facilities 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 stormwater 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. 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.
- ❖ 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/resources.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.
- ❖ No spillable material or material prone to blowing away is to be kept near doorways leading to the outside.

G. NPDES Permit status:

Not applicable

H. Training:

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. 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.

Section 425.310 of the City Code lists the requirements of citizens to maintain the stormwater system on their property, as stated below.

Section 425.310: WATERCOURSE PROTECTION. Every person owning property through which a watercourse passes, or such person's lessee, shall keep and maintain that part of the watercourse within the property free of trash, debris, excessive vegetation, and other obstacles that would pollute, contaminate, or significantly retard the flow of water through the watercourse. In addition, the owner or lessee shall maintain existing privately owned structures within or adjacent to a watercourse, so that such structures will not become a hazard to the use, function, or physical integrity of the watercourse.

Property owners are also responsible for long-term operation and maintenance of any BMPs constructed on their property, as stated in Carl Junction's "Stormwater Management Criteria."

The City of Carl Junction is responsible for maintaining the storm sewer systems on City property and also for maintaining bridges, storm culverts, ditches and gutters along the streets in their city.

B. Locations:

The City separate storm system includes storm sewers and open natural drainage ditches and channels. All structures, including catch basins are identified on facility base maps. Generally, the inlets on the storm system are not constructed with traps to capture oil, grease or debris.

C. Responsible Parties:

The Superintendent of Public Works is responsible for maintenance of the storm sewer system and the open drainageways.

Superintendent of Public Works: (417) 649-7229

D. Equipment/Materials/Supplies acquisition, storage and usage:

The City of Carl Junction Public Works Department is responsible for cleaning storm sewer grates and clearing brush blockages and uses hoist trucks and front end loaders for maintenance in channels.

E. Waste generation, storage, disposal, recycling:

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	
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 BMPs are to be implemented at all applicable City facilities to the maximum extent practicable.

GENERAL

- ❖ NO "GRATE FLIPPING." Do not simply flip the grate and allow debris accumulated there to enter the storm sewer system. Always remove debris and dispose of it properly.
- ❖ 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, report to City Administrator at 417-649-7237 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 City Administrator at 417-649-7237.

- ❖ Comply with City land disturbance ordinance and programs implemented under the Carl Junction MS4 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.

MUNICIPAL DETENTION BASINS

- ❖ Existing control structures undergoing renovation are modified to the maximum extent practicable to meet new construction criteria in the City's "Stormwater Management Criteria".
- ❖ 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:

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

A. Description of Activities:

The material collected at the composting facility includes a variety of materials such as yard waste and wood. The City of Carl Junction partners with the Joplin Recycling Center and provides no facilities of its own. The City keeps a couple of cardboard containers and a couple of paper containers for waste generated at City facilities, but these are not discussed in this chapter.

B. Locations:

Composting of vegetation takes place at the Public Works facility, located at 813 S. Joplin Street. The composting portion of the facility consists of approximately 0.5 acres. The composting area is available for citizen drop-off, as well as City crews performing leaf pickup and park maintenance activities. Compost is distributed free of charge to any citizen of Carl Junction.

C. Responsible Parties

The Public Works Superintendent has authority over the facility. The composting facility has no fulltime attendants, but Public Works employees are available on site at the Public Works facility.

Superintendent of Public Works: (417) 649-7229

D. Materials/Supplies acquisition, storage and usage:

Compostable materials are delivered directly to the composting area of the Public Works Facility. Only compostable materials are kept on this portion of the site. Trash and waste is removed from the site by attendants and not allowed to accumulate.

E. Waste generation, storage, disposal, recycling:

A small amount of waste is generated by the public. Residents may bring their compostable material to the facility in non-compostable containers and then leave the non-compostable container behind. This small amount of waste is removed by municipal employees 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 BMPs are to be implemented at all applicable City facilities 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.

- ❖ Compost/mulch is stored to prevent leachate and runoff from contaminating storm water, and to prevent storm water drainage running into the pile. Methods of containment may include an impervious base with curbing or a berm around all sides of the pile where stormwater could enter or leave.
- ❖ Do not discharge leachate to storm water. As necessary to manage leachate, design a system to collect and properly treat leachate, provide leachate as "compost tea" 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.
- ❖ The Police Department routinely patrols the facility to prevent unauthorized dumping.
- ❖ No fluids are drained into any storm water system. Any fluids will be drained to the sanitary sewer 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.

G. NPDES Permit status:

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: G97 for Yard Waste Compost sites. As noted above, all of the city's compostable collection and handling activities are conducted without exposure to storm water. Therefore, an NPDES Storm Water permit is not required for the composting site. A "no-exposure certification" has been filed with the Missouri Department of Natural Resources.

H. Training:

All City employees attending to the operation or using the 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:

New flood management projects located within the permittee's jurisdiction must be assessed for impacts on water quality. Existing projects may 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 floodplain land.

Storm water management projects in both development and re-development will be assessed for water quality impact, according to the City's "Stormwater Management Criteria," which addresses the Storm Water Management Plan water quality requirements under MCM 5. 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:

There are currently no existing City flood management projects located within the Plan Area. This portion of the Operation and Maintenance manual will be updated when and if City flood management projects are built.

C. Responsible Parties:

The Public Works Superintendent has authority over flood management projects.

Superintendent of Public Works: (417) 649-7229

The Carl Junction City Board of Aldermen through the City Planning & Zoning Commission maintains control over planning and zoning, land use regulations, and flood plain management through ordinances.

D. Materials/Supplies acquisition, storage and usage:

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:

Not applicable. See Chapter 2 and 8 for maintenance.

F. Best Management Practices (BMP):

The following BMPs are to be implemented at all applicable City facilities to the maximum extent practicable.

- ❖ Enforce existing 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 the City's "Stormwater Management Criteria."
- ❖ 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, where possible, 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:

Not applicable.

H. Training:

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 the City's rules and regulations and engineering design requirements for storm water drainage facilities.

Chapter 11 –Drinking Water and Wastewater Facilities

A. Description of Activities:

The City obtains drinking water from wells and chlorinates and fluoridates the water before distribution. Treatment takes place at 7 well facilities. The drinking water distribution system also includes 6 water towers. The drinking water system is covered under a different permit and will not be discussed in detail in this chapter.

The sanitary sewer system functions to collect and convey wastewater to the wastewater treatment facility (WWTF), located at the Public Works facility. The WWTF has a flow equalization basin, an oxidation ditch, an ultraviolet disinfection unit and a sludge storage lagoon. The sludge is land applied. Wastewater from the Village of Airport Drive is also received and treated. The wastewater treatment plant is covered under a different permit and will not be discussed in detail in this chapter.

B. Locations:

1. Public Works Facility – 813 S. Joplin Street. The Wastewater Department and the wastewater treatment plant are located at this facility.

LIST OF LIFT STATION LOCATIONS:

Lift Station #914 on Nichloas Lane
Lift Station #661A on Karen Drive
Lift Station #839 on Well Street
Lift Station #439A on Rocky Lane

LIST OF WATER WELL LOCATIONS:

Well #1 on Water Street (off line)
Well #2 on North Main Street
Well #3 on Hodge Drive
Well #4 on Briarbrook Drive (off line)
Well #5 on Lakeview Lane
Well #6 on Anita Drive
Well #7 on Copper Oaks Drive
Well #8 on Ivy Road
Well #9 on Gum Road

LIST OF WATER TOWER LOCATIONS, WITH CAPACITIES:

Tower #2 on North Main Street - 200,000 gallons
Tower #3 on Hodge Drive – 100,000 gallons
Tower #6 on Anita Drive – 100,000 gallons
Tower #7 on Copper Oaks Drive – 300,000 gallons
Tower #8 on Ivy Road – 200,000 gallons
Tower #9 on Gum Road – 200,000 gallons

C. Responsible Parties:

The Superintendent of Public Works is responsible for the drinking water and wastewater systems and facilities.

Superintendent of Public Works: (417) 649-7229

D. Equipment/Materials/Supplies acquisition, storage and usage:

Materials for use at the locations listed in this chapter are stored inside or under cover.

E. Waste generation, storage, disposal, recycling:

Wastes generated at the locations listed in this chapter are not stored onsite, but are disposed of properly at other City facilities.

F. Best Management Practices (BMP):

All drinking water and wastewater systems and facilities will be subject to the general good housekeeping BMPs listed in Chapter 2.

G. NPDES Permit status:

The Carl Junction public drinking water system is regulated by the Missouri Department of Natural Resources under permit number MO-5010138.

The Carl Junction WWTF is regulated by the Missouri Department of Natural Resources under permit number MO-0025186.

H. Training:

Contractors and municipal employees involved in drinking water and wastewater systems and facilities will be trained on all applicable BMPs.

APPENDICES

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

Appendix 1-A1: Excerpts from the Carl Junction Small MS4 Phase II Permit MO-R040028 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 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.

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 Stormwater Runoff Control) and #5 (Post-Construction Stormwater Management in New Development and Redevelopment) all can apply to activities conducted by the

City at municipally owned projects. While the permit requirements for these MCMs are primarily geared toward the City exerting control over these activities by the people living and working within the City, logically similar controls must be applied to municipal activities of the same nature. The City 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 stormwater management provisions have been considered for new or redeveloped municipal properties.

Appendix 1-A2: Ordinance/Resolution Adopting O&M Program

INSERT COPY OF Carl Junction DOCUMENT ADOPTING O&M PROGRAM

Appendix 1-E1: Good Housekeeping Inspection Checklists

INSERT COPIES OF LATEST GOOD HOUSEKEEPING INSPECTION CHECKLISTS.

Appendix 2-F1: Recycling Policy

The City of Carl Junction Waste Reduction and Recycling Policy

1. Policy

The City of Carl Junction 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 Carl Junction 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), ink and toner cartridges, and additional items as implemented. Facilities Management Recycling includes fluorescent light bulbs, motor oil, oil filters, paint, pallets, scrap metal, 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 City Clerk for record-keeping and reporting purposes. Purchases are to follow the Green Procurement Policy.

3. Procedures

The City Administration 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 Departments 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 the Departments 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.

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

Appendix 2-F2: Green Procurement Policy

The City of Carl Junction Green Procurement Policy

1. Policy Objective

The objective of this policy is to provide direction for greening Carl Junction'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 Carl Junction.

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/>

GREEN PROCUREMENT
DOCUMENTATION FORM

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:

No green alternative

Did not meet operational requirement. Specify in what way: _____

Upfront costs for green product were higher than for non-green ones and no additional funds were available.

Other. Provide details:

Appendix 2-F3: Waste Generation and Storage Ordinance

INSERT COPY OF WASTE GENERATION AND STORAGE ORDINANCE.

Appendix 2-F4: Litter Control Ordinance

INSERT COPY OF LITTER CONTROL ORDINANCE.

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

INSERT COPY OF NUISANCE ORDINANCE FOR DEBRIS AND YARD WASTE.

Appendix 2-F6: Animal Waste Ordinance

INSERT COPY OF ANIMAL WASTE ORDINANCE.

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’ Little Rock 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 918-669-7401. Permit application forms and procedures for applying to the Corps and the MDNR can be found on the following web pages:

<http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits.aspx>.
<http://www.dnr.mo.gov/env/wpp/401/index.html>.

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) - Schedules of activities, prohibitions of practices, maintenance procedures and other management practices to prevent or reduce the pollution of streams within the City of Carl Junction 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)

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 - 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 - 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) - 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.

NPDES - 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 - 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 - 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. The City of Carl Junction has a population below 100,000 and is, therefore, a Small MS4 subject to Phase II requirements.

Phase II Permit - Stormwater permit # MO-R040028 issued by the Missouri Department of Natural Resources to the City of Carl Junction. This permit was issued pursuant to the provisions of Missouri Storm Water Regulation 10 CSR 20-6.200.

Plan Area - The City of Carl Junction and all areas within its corporate boundaries that discharge to the MS4.

Recycling Facility - any City-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.

Separate Storm Sewer - 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 - rainfall runoff, snow melt runoff and surface runoff and drainage.

Storm Water Management Plan (SWMP) or Plan - The Plan developed for the City of Carl Junction and approved by the Missouri Department of Natural Resources through the issuance of NPDES permit MO-R040028.

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.

ADDITIONAL RESOURCES

- ❖ Corps of Engineers-404 Permits and MDNR 401 certification.
<http://www.usace.army.mil/Missions/CivilWorks/RegulatoryProgramandPermits.aspx>.
<http://www.dnr.mo.gov/env/wpp/401/index.html>.
- ❖ Erosion and Sediment Control BMPs –
 - EPA Construction Site Stormwater Runoff Control web site:
http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=min_measure&min_measure_id=4
 - DNR erosion and sediment control field guide website:
<http://www.dnr.mo.gov/env/wpp/wpcp-guide.htm>
- ❖ General Overview -For a general overview of stormwater 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.
 - "Database of Environmental Information for Products and Services" see EPA website:
<http://yosemite1.epa.gov/oppt/eppstand2.nsf/Pages/PickStore.html?Open>
- ❖ 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 –
 - Septic Tank Maintenance: <http://www.anjec.org/html/ord-modelseptic.htm>
 - Riparian Buffer -
http://www.stormwatercenter.net/Model%20Ordinances/buffer_model_ordinance.htm
- ❖ Nonpoint Source Control, EPA Grants – Information on EPA Grants can be found at:
www.epa.gov/owow/nps/funding.html
- ❖ Pesticide Management –
 - For more information on Pesticide BMPs, see:
<http://muextension.missouri.edu/xplor/agguides/pests/g07520.htm>
 - For a summary of Missouri pesticide regulations, see:
<http://muextension.missouri.edu/explore/agguides/agecon/g00855.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>

- ❖ Spill Response and Reporting –
 - For EPA contacts and reporting instructions:
<http://www.epa.gov/tips/>
<http://www.epa.gov/region07/contact.htm>
 - MDNR contact and reporting instructions: <http://www.dnr.mo.gov/concern.htm>
- ❖ Storm Water Best Management Practices (BMPs) -EPA Fact Sheets on the web at:
<http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm>.
- ❖ Stormwater Management Practices – Fact Sheets are available from the Stormwater Manager’s Resource Center at the following web site: <http://www.stormwatercenter.net>
- ❖ Stormwater Permits --Missouri Department of Natural Resources (MDNR)
<http://www.dnr.mo.gov/env/wpp/stormwater/>