

# **CITY OF RAYTOWN, MISSOURI**



## **STORMWATER MANAGEMENT PLAN NPDES PERMIT RE-APPLICATION SUBMITTAL PACKAGE**

**Prepared By:  
Raytown Public Works Department**

*Submitted November 28, 2007*

## Executive Summary:

The City of Raytown is at the top of the watershed of 2 major watersheds of the Blue River and the Little Blue River. About 75% of Raytown is within the Little Blue River watershed, and the remainder is within the Blue River watershed. The City of Raytown is divided into 14 subwatersheds. Therefore, what we do or don't do in Raytown has impacts on adjacent corporate jurisdictions and water bodies. Very little of our corporate limits receives runoff from adjacent communities.

There are 3 lakes within Raytown that act as water quality filters in the fact that micro-organisms living in them attack pollutants which would otherwise be discharged from the corporate limits. The City of Raytown has 3 regional stormwater detention basins, and numerous smaller privately owned and maintained detention basins.

The City of Raytown is a leader in the Kansas City area in disconnecting homes and apartments illegal stormwater connections to the sanitary sewer system. The intent of this plan is to remove excess water from the public from the public sanitary sewer system and reduce the potential for sewer backups in private residences/buildings. Each property owner may fill out a Storm Water Mitigation application. The City will inspect the property to see if the foundation drains, floor drains, downspouts, etc. are illegally connected to the plumbing system. If so, the City will reimburse the property owner up to \$4,000 if they hire a licensed plumber to install a backflow valve, and a sump pump to collect the illegal connections and then discharge the storm water to the yard area or approved storm sewer system.

We have implemented many of the facets associated with the National Pollutant Discharge Elimination System (NPDES) Phase II permit currently in place. We are generally in a mode of maintenance rather than implementation of the Phase II permit requirements. We are working toward full compliance with an executable plan to improve stormwater quality and manage quantity.

Information on the Permittee:

Name of the Permittee: City of Raytown, Missouri  
Type of Entity: City - Municipality  
Total Area (acres): 10 sq. miles = 6400 acres  
Mailing Address: 10000 E. 59<sup>th</sup> Street, Raytown, MO 64133  
Primary Contact: Public Works Director, Mahesh Sharma, PE  
Phone Number: (816) 737-6012  
Secondary Contact: City Engineer, Jason Hanson, PE  
Phone Number: (816) 737-6012

Information on the Municipal Separate Storm Sewer System:

MS4 System Location: Raytown, Missouri  
Name of Organization: City of Raytown, Missouri  
County Permittee Resides: Jackson County, Missouri  
There are major receiving waters within the permitted area include:  
Big Blue River and Little Blue River  
The receiving waters are on the latest CWA's list of impaired waters.  
Received certification that their SWMP complies with the requirements of Part 3.1: N/A

Information on Adjacent Waterways:

The Permittee is within 100 feet of: Numerous small streams and small lakes  
The Permittee is not within 100 feet of waters classified as major reservoirs: N/A  
None of the Permittee's area is defined as wetland.  
The Permittee has received a CWA, Section 404 permit from the US Army Corps  
of Engineers: N/A  
Stormwater from Raytown does not discharge to a sinkhole.

Information on Critical Areas:

There are threatened or endangered species in the area: See Page 4  
The Permittee has met eligibility criteria for protection of threatened or endangered  
species.  
There are critical habitats in the area: See Page 4  
The Permittee has met eligibility criteria for protection of critical habitats.  
The historic properties in the area: See Page 4  
The Permittee has met eligibility criteria for protection of historic properties.

Endangered Species:

County	Species	Status	Habitat
Jackson	Barn Owl (Tyto Auriculata)	Endangered	
Jackson	Peregrine Falcon (Falco Peregrinus)	Endangered	

Historic Properties:

Name	Address	Owner	Year Added
Rice-Tremonti House	8801 E. 66 <sup>th</sup> St., Raytown	Private	1979

## **4.2.1 MCM #1: Public Education and Outreach on Stormwater Impacts**

### **4.2.1.1 Permit Requirements**

The City of Raytown is a member of the Mid-America Regional Council (MARC) Water Quality Public Education Program. Raytown will participate in the regional plan to implement a public education program by distributing regional educational materials to the community and conducting outreach activities. The focus of these efforts will be to educate the public with activities discussing the impact of non-point source stormwater discharges on water bodies and the steps the public can take to reduce pollutants in stormwater runoff. This will be a continuation of the existing MARC regional water quality public education program.

### **4.2.1.2 Decision Process**

Raytown developed their stormwater public education and outreach program in cooperation with other jurisdictions in the region. The target pollutants were identified and prioritized. The actions that impact the target pollutants were identified. The public education program was designed to impact the actions identified. We engage the public through information on the cities website, council presentations on local access TV channel, presentations to civic groups, and through brochures and mailings to our citizens.

#### **4.2.1.2.1 Inform Public on Steps to Reduce Stormwater Pollution**

Raytown informs businesses, individuals and households in the community about the steps they can take to reduce stormwater pollution with the following programs:

- Information on City website and MARC website
- Government Channel
- Maintain Library of Stormwater Educational Materials\*
  - 10 Natives for the Kansas City Region
  - Conserve Water with Rain Barrels
  - How to Build Your Own Rain Garden
  - Keep Sediment out of Water
  - Know Your Roots
  - Know Your Soil
  - Know Your Watershed
  - Making & Using Compost
  - Oil & Water Don't Mix
  - Pick Up After Your Pet
  - Protect Our Streams
  - Redirect or Disconnect Your Downspout

- Stormdrain Stewardship
- Use Lawn Chemicals Wisely
- Wash Your Car the Right Way
- Display Educational Materials at City Hall
- Display Educational Materials at Community Events\*\*
- Issue Press Release Regarding Local Storm Water Issues\*\*
- Publish Articles in Local Newspaper\*\*
- Paid Advertising, & Public Service Announcements\*\*

\* The topics for the brochures will be dependent on the topics in Mid-America Regional Council's (MARC) seasonal campaign for public educational. Additional topics will be included in the program, depending on the immediate needs of the surrounding communities. Detailed information about each seasonal campaign will be included in Raytown's annual report.

\*\* Raytown will participate in the MARC educational campaign. This campaign will be a region-wide effort and will cover many topics during the permit cycle.

#### 4.2.1.2.2 How to Become Involved

Raytown plans to inform individuals and groups on how to become involved in the stormwater program by providing those instructions in all materials distributed to the public through the MARC regional water quality public education program. This is described in more detail in 4.2.2 Public Involvement/Participation.

#### 4.2.1.2.3 Target Audiences

During the development of the MARC regional water quality public education program, Raytown identified the sources of stormwater pollutants that needed to be reduced to improve overall water quality. The target audiences were selected because changing their behavior would have a significant stormwater quality impact on the target pollutants. The target audiences for the public education program are:

- Citizens (homeowners)
- Development Community
- Home Builders / Contractors
- Lawn Service Companies
- Restaurant Owners / Operators
- Car Wash Owners / Operators
- Business Owners
- Students
- Seniors
- Elected Officials
- City Staff

#### 4.2.1.2.4 Target Pollutant Sources

The target pollutant sources having a major impact on stormwater quality were identified. The following is a list of these sources:

The following is a list of potential sources of pollutants that are experienced in the permitted area. (1 = Major impact, 2 = Minor impact, 3 = Not an impact)

- 1 Construction activities (sediment, construction chemicals and debris, solid and sanitary wastes)
- 2 Overapplication of fertilizer, herbicides, pesticides
- 3 Improper disposal of paint and household hazardous chemicals
- 3 Pet waste contamination
- 2 Improper disposal of waste oil, grease, and gasoline disposal
- 2 Trash, debris, and illegal dumping
- 2 Detergents washed into drains
- 2 Snow removal (salt, sand and snow disposal)
- 2 Sanitary sewer overflows
- 2 Infiltration from cracked sanitary sewers
- 1 Failing septic systems
- 1 Sewer service connections to storm drainage system
- 3 Foundation drains connected to storm drainage system
- 3 Downspouts connected to storm drainage system
- 3 Lake or water body used for motor boating
- 2 Spills from roadway accidents or fires
- 1 Connected impervious areas covering large acreages (such as malls, institutions with large parking areas)
- 1 Stream bank erosion
- 3 Waste transfer station
- 1 Service Stations, Mechanics
- 1 Volume & Velocity of water

#### 4.2.1.2.5 Outreach Strategy & Partnerships

Raytown's outreach strategy is to implement a variety of methods to reach a number of different target audiences multiple times. To change behavior, repetition is important. The mechanisms are described in 4.2.1.2.1 of this permit application.

The strategy is to partner with other governmental and non-governmental entities to execute the public outreach strategy. The idea is to share information and resources so duplication does not occur.

The number of people targeted to be reached by the public education and outreach strategy is hundreds of thousands metro wide per year through the MARC regional program.

#### 4.2.1.2.6 Person Responsible

The person responsible for overall management and implementation of the permittee's stormwater public education and outreach program is the Public Works Director. Others may be involved in the execution of each of the individual activities in the programs, but most of the activities will be delegated through the Public Works Department.

#### 4.2.1.2.7 Measurable Goals Selection

Raytown selected the measurable goals for each of the BMPs after reviewing EPA & ASCE research on the effectiveness of certain BMPs. The BMPs selected were chosen because of the evidence that they will have a positive impact the target pollutants identified as a concern for Raytown. The public education and outreach BMPs were also selected because many have been effective methods of communicating with the public for our community. The implementation of BMPs selected will determine the success of the measure on water quality. MARC public attitude surveys are part of an ongoing effort to measure the impact that water quality public education efforts have on the public's overall awareness and behavior.

## **4.2.2 MCM #2: Public Involvement and Participation**

### **4.2.2.1 Permit Requirements**

Raytown will comply with State and Local public notice requirements when implementing the public involvement and participation program. All public meeting notifications are currently posted on the web site and on public bulletin boards in City Hall.

### **4.2.2.2 Decision Process**

The following sections include the documentation for Raytown's decision process and rationale statement for the development of a stormwater public involvement and participation program. It documents the overall program and the individual BMPs, measurable goals, and responsible party for the program.

#### **4.2.2.2.1 Involving the Public in Developing the Submittal**

Raytown staff developed the submittal for the stormwater management notice of intent application.

#### **4.2.2.2.2 Involving the Public in Program Implementation**

Raytown actively involves the public in the development and implementation of the stormwater program through a number of different methods selected because they are existing effective methods used by Raytown or because of EPA guidance documents that list these BMPs as effective public involvement methods.

#### **4.2.2.2.3 Target Audiences to Involve in Program**

The target audiences for the permittee's public involvement program are:

1. Citizens (Homeowners)
2. Mass Media
3. Local Elected Officials
4. Local Government Agencies
5. Seniors
6. Civic Organizations
7. Contractors and Home Builders

#### **4.2.2.2.4 Public Involvement Activities**

Raytown plans will involve the public through the activities described below:

- MARC Public Attitude Surveys
- Community Hotline
- Hold Stakeholder Meetings for certain City Projects
- Stormwater Stenciling

#### 4.2.2.2.5 Person Responsible

The person responsible for overall management and implementation of the permittee's stormwater public education and outreach program is the Public Works Director. Others may be involved in the execution of each of the individual activities in the programs, but most of the activities will be delegated through the Public Works Department.

#### 4.2.2.2.6 Goal Selected

Raytown selected the measurable goals for each of the BMPs after reviewing EPA & ASCE research on the effectiveness of certain BMPs. The BMPs selected were chosen because of the evidence that they will have a positive impact on the target pollutants identified as a concern for Raytown. Some of the public involvement methods selected were also chosen because they have been used effectively by Raytown in the past. The implementation of BMPs selected will determine the success of the measure on water quality. MARC public attitude surveys are part of an ongoing effort to measure the impact that water quality public education efforts have on the public's overall awareness and behavior.

### **4.2.3 MCM #3: Illicit Discharge Detection and Elimination**

#### 4.2.3.1 Permit Requirement

##### 4.2.3.1.1 Overview

Raytown will formalize a program to implement and enforce the detection and elimination of illicit discharges (as defined in 10 CSR 20-6.200) into our corporate boundaries. We will develop and incorporate an ordinance by December 31, 2008. The ordinance will be submitted with the yearly 2008 compliance report.

##### 4.2.3.1.2 Map

Raytown has developed a storm sewer map showing all inlets, pipes, creeks, and outfalls throughout the City. This was done by a 2-person crew going to each structure, pipe, and creek throughout the City and recording the data on the City maps.

##### 4.2.3.1.3 Enforcement

Raytown will effectively prohibit non-stormwater discharges into the stormwater system of Raytown's stormwater system via the following ordinances and regulations. Each ordinance/regulation is enforceable by Raytown with appropriate procedures and consequential actions.

##### 4.2.3.1.4 Methods to Detect

Raytown will implement and maintain a plan using the following methods to detect and address non-stormwater discharges, including illegal dumping to the stormwater system. These activities will be completed on an as-needed basis or upon service request from the public.

- Closed Circuit Television
- Outfall/Manhole Inspection Program
- Visual Inspection upon Complaint
- Public Service Requests

The fire department hazardous waste team responds to emergency spills and containment issues. The City of Raytown has shared our stormwater mapping with the Fire Department.

The City of Raytown is a leader in the Kansas City area in disconnecting homes and apartments illegal stormwater connections to the sanitary sewer system. The intent of this plan is to remove excess water from the public from the public sanitary sewer system and reduce the potential for sewer backups in private residences/buildings. Each property owner may fill out a Storm Water Mitigation application. The City will inspect the property to see if the foundation drains, floor drains, downspouts, etc. are illegally connected to the plumbing

system. If so, the City will reimburse the property owner up to \$4,000 if they hire a licensed plumber to install a backflow valve, and a sump pump to collect the illegal connections and then discharge the storm water to the yard area or approved storm sewer system.

#### 4.2.3.1.5 Informing the Public

Raytown informs public employees, businesses and the general public of hazards associated with illegal discharges and improper disposal of waste using the following methods:

- Distribute Educational Literature
- Recycling Program for Recyclables and Hazardous Waste
- Training of City Staff
- Storm Drain Stenciling
- Community Hotline

#### 4.2.3.1.6 Not Significant Contributors

Raytown has not identified any of the following categories of non-stormwater discharges or flows (i.e. illicit discharges) as significant contributors of pollutants to their small MS4: water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration (as defined in 10 CSR 20-6.200), uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, springs, water from crawl space pumps, footing drains, lawn watering, flows from riparian habitats and wetlands, and street wash water (discharges or flows from fire fighting activities are excluded from the effective prohibition against non-stormwater and will only be addressed where they are identified as significant sources of pollutants to waters of the State.)

#### 4.2.3.1.7 Occasional Incidental Non-Stormwater Discharges

Raytown's staff intends to propose an illicit discharge ordinance that will not include a list of other similar occasional incidental non-stormwater discharges (e.g. non-commercial or charity car washes, etc.) that will not be addressed as illicit discharges because they are not reasonably significant sources of pollutants to the MS4. Should these occasional or incidental non-stormwater discharges be identified in the future, those entities responsible for discharging will be prohibited or conditions placed on them so as to minimize their discharge of pollutants.

#### 4.2.3.2 Decision Process

Raytown will document their decision process for the development of a stormwater illicit discharge detection and elimination program. Raytown's rationale statement addresses both their overall illicit discharge detection and

elimination program and the individual BMPs, measurable goals, and responsible persons for their program.

#### 4.2.3.2.1 Sources for Mapping

Raytown developed a storm sewer map showing the location of all inlets, pipes, and outfalls and the names and location of all receiving waters. We used a 2-person crew to field inspect each inlet, pipe, and outfall while recording this data on paper and later having the City mapping technician add the information to the City maps. The storm sewer map will be routinely updated with updated information and new development storm sewers.

#### 4.2.3.2.2 Regulatory Mechanism

Raytown will use the following mechanism to effectively prohibit illicit discharges to the MS4:

1. Inspection Upon Complaint
2. Sanitary Sewer Evaluation
3. City Ordinance

This mechanism was selected because ordinances are commonly used by Raytown to establish laws and set forth the enforcement mechanisms. The ordinance establishes legal authority: to regulate the contribution of pollutants to the municipal separate storm sewer system (MS4) of stormwater discharges by any use; to prohibit illicit connections and discharges to the MS4; and to establish legal authority to carry out all inspections, surveillance and monitoring procedures necessary to ensure compliance.

#### 4.2.3.2.3 Enforcement

Raytown will set forth in the ordinance enforcement procedures intended to remove the source of the illicit discharge detected.

Raytown will implement and maintain the mechanisms described in 4.2.3.2.2 above with the civil fines and legal actions as allowed and appropriate.

#### 4.2.3.2.4 Detection

Raytown will detect and address illicit discharges to the MS4, including discharges from illegal dumping and spills. Raytown's program will address on-site sewage disposal systems that flow into the MS4.

##### 4.2.3.2.4.1 Identify Priority Areas

Raytown will use the system maps identified in 4.2.3.1.2 above and other data to identify priority areas with likelihood of illicit connections.

#### 4.2.3.2.4.2 Trace the Source

Raytown will be able to utilize the storm sewer maps to trace illicit discharges upstream to find the source.

#### 4.2.3.2.4.3 Removal

Raytown will follow the ordinance adopted and the enforcement mechanisms detailed in the ordinance including those legal actions described in 4.2.3.1.3 above to enforce the removal of an identified illicit connection.

#### 4.2.3.2.4.4 Program Evaluation

The success of the described program will be evaluated annually by analyzing the number of illicit connections discovered and eliminated.

#### 4.2.3.2.5 Public Information

Raytown will inform public employees, business and the general public of hazards associated with illegal discharges and improper disposal of waste through the following methods:

- Procedural Training for City Staff
- Distribute Literature
- Post Signs
- Recycling Program for Household Hazardous Waste
- Storm Drain Stenciling
- Community Hotline

Where applicable the information distributed through these means will coordinate with the information distributed in the Public Education minimum control measure (e.g., consistent/coordinated messages in literature).

#### 4.2.3.2.6 Responsible Party

The Public Works Director will be responsible for overall management and implementation of Raytown's stormwater illicit discharge detection and elimination program. Others will be involved in the execution of each of the individual activities in the programs, but most of the activities will be delegated through the Public Works Department.

#### 4.2.3.2.7 Measurable Goals

Raytown will evaluate the success of the program based on the number of illicit connections found and eliminated.

## **MCM #4: Construction Site Stormwater Runoff Control**

### **4.2.4.1 Permit Requirements**

Raytown plans to develop, implement, and enforce a program to reduce pollutants in any stormwater runoff from construction activities that result in disturbance of greater than or equal to one acre. Raytown also plans to reduce pollutants in stormwater runoff from construction activities that disturbs an area less than one acre if the site is part of a larger common plan of development or sale. We will develop and incorporate an ordinance by December 31, 2008. The ordinance will be submitted with the yearly 2008 compliance report.

#### **4.2.4.1.1 Regulatory Mechanism**

Raytown will draft an ordinance or other regulatory mechanism with the required erosion and sediment controls, as well as sanctions to ensure compliance. We have been requiring erosion and sediment control on all construction sites and plan review.

#### **4.2.4.1.2 Best Management Practices (BMPs)**

Raytown will require construction site operators to implement the appropriate erosion and sediment control Best Management Practices (BMPs). Raytown will adopt the Kansas City Metro American Public Works Association (APWA)'s Erosion and Sediment Control Manual in their ordinance which includes the construction specifications and design standards.

#### **4.2.4.1.3 Wastes to Be Controlled**

Raytown will require construction site operators to control wastes that may cause adverse impacts to water quality such as:

1. Discarded Building Materials
2. Sediment
3. Litter or Trash

#### **4.2.4.1.4 Site Plan Review**

Raytown has implemented procedures for multi-departmental site plan review, which incorporate consideration of potential water quality impacts.

#### **4.2.4.1.5 Receipt & Consideration of Public Comment**

Raytown staff does not plan to propose formal procedures in its Ordinance for receipt and consideration of information submitted by the public in the plan review process. However, the public has opportunity to speak concerning

significant proposed projects in City Council sessions and Planning Commission meetings.

#### 4.2.4.1.6 Site Inspection

Raytown will implement and maintain procedures in their ordinance for site inspection and enforcement of erosion and sediment control measures. We currently employ one (1) public works inspector, and two (2) building code inspectors.

#### 4.2.4.2 Decision process

The following sections include the rationale statement for the development of Raytown's overall construction site stormwater runoff control program. It documents the individual BMPs, measurable goals, and responsible party for their program.

#### 4.2.4.2.1 Regulatory Mechanism

Raytown will draft an ordinance that will require the use of erosion and sediment controls on construction sites. An ordinance will outline the requirements for designers and contractors before, during and after the construction activities. The ordinance will provide enforcement measures for those designers and contractors who do not follow the ordinance.

Other resources will be available to anyone involved in design and construction of erosion and sediment control activities. The resources include:

- In-House Design and Construction Manual
- BMP Fact Sheets
- Construction Specifications
- Standard Details
- Ordinance
- Staff Training

#### 4.2.4.2.2 Enforcement

Raytown will ensure compliance with the developed ordinance by including an enforcement section in the ordinance detailing the sanctions and enforcement mechanisms. Raytown will use the following sanctions:

- Non-Monetary Penalties (such as Stop Work Orders)
- Fines
- Permit Revocation

#### 4.2.4.2.3 Implementation of Proper Controls

Raytown will require construction site operators to control wastes that may have adverse impacts on water by implementing appropriate water quality BMPs.

#### 4.2.4.2.4 Pre-Construction Site Plan Review

Raytown has procedures for site plan review, including the review of construction plans, which will look at the potential water quality impacts. Raytown will implement and maintain procedures and rationale for those sites that do not require site plan review. All plans are reviewed by multiple departments. Significant development projects are approved by the Planning Commission and City Council prior to issuance of construction permits.

#### 4.2.4.2.5 Public Input on Submittals

Raytown staff does not plan to propose procedures in the Lee's Summit ordinance for receipt and consideration of information submitted by the public in the formal plan review process. However, the public has opportunity to speak concerning significant projects proposed in City Council sessions and/or the Planning Commission meetings.

#### 4.2.4.2.6 Site Inspection & Enforcement

Raytown will implement and maintain procedures for site inspection and enforcement of control measures. The sites will be inspected using a priority rating system. The site with the most potential risk to the community will be top on the priority list.

#### 4.2.4.2.7 Person Responsible

The person responsible for overall management and implementation of the permittee's stormwater public education and outreach program is the Public Works Director. Others will be involved in the execution of each of the individual activities in the programs, but most of the activities will be delegated through the Public Works Department.

#### 4.2.4.2.8 Measurable Goals

Raytown will measure compliance by the downward trend of complaints, citations, fines, and enforcement actions taken against the development community.

## **MCM #5: Post-Construction Stormwater Management in New Development and Redevelopment**

### 4.2.5.1 Permit Requirement

#### 4.2.5.1.1 Overview

Raytown will develop, implement, and enforce a program to address stormwater runoff from new development and redevelopment projects that disturb greater than or equal to one acre, including projects less than one acre that are part of a larger common plan of development or sale.

#### 4.2.5.1.2 Strategies

Raytown will develop and implement strategies, which will include a combination of structural and/or non-structural Best Management Practices (BMPs), appropriate for the community.

#### 4.2.5.1.3 Ordinance

Raytown will use an ordinance by the end of December 2008 or other regulatory mechanism to address post-construction runoff from new development and redevelopment projects to the extent allowable under State or Local law.

#### 4.2.5.1.4 Long-Term Operation & Maintenance

Raytown will ensure adequate long-term operation and maintenance of BMPs.

### 4.2.5.2 Decision Process

The City of Raytown seeks to be progressive in our approach to improving the quality of life for our residents. We have required detention basins since the mid 1990's on nearly all development projects.

#### 4.2.5.2.1 Priority Areas

Raytown will implement regulatory procedures to address stormwater runoff from new development and redevelopment projects. There are no areas identified as a priority for regulatory procedures in the fact that the only 303D listed impacted water body adjacent to the City of Raytown is the Little Blue River with the pollutant impairment noted as mercury. The Little Blue River is about one mile east of Raytown's corporate boundary.

#### 4.2.5.2.2 Regulatory Procedures

Raytown will implement regulatory procedures that will be specifically tailored for the community, minimize water quality impacts, and attempt to maintain pre-development runoff conditions.

- Stormwater Design and Erosion & Sediment Control Ordinance
- Inspection and Maintenance
- Zoning Ordinances
- Stormwater Master Plan
- Comprehensive Plan

#### 4.2.5.2.3 Non-Structural Best Management Practices (BMPs)

##### 4.2.5.2.3.1 Policies & Ordinances

Raytown will implement and maintain policies and ordinances that will help minimize water quality impacts. Our parks department owns and/or controls their stream buffer areas and lakes. We have a couple of miles of streams within the city that has regulated floodplains associated with them. Any construction activity within this floodplain requires FEMA and City permitting.

##### 4.2.5.2.3.2 Infill Development

Raytown encourages infill development or re-development in higher density urban areas, and areas with existing storm sewer infrastructure.

##### 4.2.5.2.3.3 Education

Raytown will implement education programs for developers and the public about project designs that minimize water quality impacts.

##### 4.2.5.2.3.4 Other Non-Structural Measures

Raytown requires that residential properties must have at least 65% impervious land through the subdivision regulations.

#### 4.2.5.2.4 Structural BMPs

##### 4.2.5.2.4.1-4 Structural BMPs

Raytown will implement APWA section 5600 which includes multiple stage detention and/or retention basins. The basins must match predevelopment peak flow rates for the 1, 10 & 100 year return events. These multiple stage discharge risers necessary to meet the discharge requirements allows

extended detention of the impounded volume. Infiltration practices are not practical in the clay soils typically found in Raytown.

#### 4.2.5.2.5 Regulatory Mechanism

Raytown will implement an ordinance by December 31, 2008 or other regulatory mechanism to address post-construction runoff from new developments and redevelopments. These mechanisms will help to not only recommend proper practices, but will help enforce the proper use of the practices under certain circumstances.

Raytown will ensure compliance with the developed ordinance by way of sanctions and enforcement mechanisms. Raytown will implement the following sanctions in their ordinance:

- Non-Monetary Penalties (such as Stop Work Orders)
- Fines
- Permit Revocation for Non-Compliance

#### 4.2.5.2.6 Long-Term Operation & Maintenance

Raytown will enforce maintenance responsibilities of private owners of Best Management Practices, BMP's, retention/detention basins, in place throughout the city.

#### 4.2.5.2.7 Responsible Party

The person responsible for overall management and implementation of the permittee's stormwater public education and outreach program is the Public Works Director. Others will be involved in the execution of each of the individual activities in the programs, but most of the activities will be delegated through the Public Works Department.

#### 4.2.5.2.8 Measurable Goals

We will evaluate the success by a downward trend in percentage of citations and fines issued to the development community as a result of education and compliance with ordinances and codes in place.

## **MCM #6: Pollution Prevention/Good Housekeeping for Municipal Operations**

### 4.2.6.1 Permit Requirement.

#### 4.2.6.1.1 Overview

Raytown has developed and will continue to improve 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.

#### 4.2.6.1.2 Training

Using training materials that are available from EPA, State and other organizations, Raytown's program will include employee training to prevent and reduce stormwater pollution from activities.

### 4.2.6.2 Decision Process

Raytown has developed a pollution prevention/good housekeeping program for municipal operations as a matter of course over the years. Raytown's rational statement addresses both their overall pollution prevention/good housekeeping program and the individual BMP's, measurable goals, and responsible persons for the program. The rational statement is outlined in the following sections.

#### 4.2.6.2.1 Pollution Prevention & Good Housekeeping Measures

Raytown has implemented pollution prevention and good housekeeping measures in the following City activities:

- Catch Basin Cleaning
- Street Sweeping
- Recycling Program
- Maintenance Schedule and Activities
- Minimize Pesticides Used
- Proper Disposal of Waste from Storm Sewer System
- Employee Training

#### 4.2.6.2.2 Employee Training

Raytown will implement and maintain an employee-training program in the following areas so as to prevent and reduce stormwater pollution from the following activities:

- Parks Maintenance
- Fleet and Building Maintenance

- Stormwater System Maintenance
- New Construction and Land Disturbances

These activities will be coordinated with the outreach programs developed for the public information and illicit discharge minimum control measures so that a consistent message is presented throughout Raytown's program.

#### 4.2.6.2.3 Activities

Raytown's program will address the following areas:

##### 4.2.6.2.3.1 Clean Up Activities

The following activities will be implemented to reduce the floatables and other pollutants in the MS4:

- Catch Basin Cleaning from Service Requests, proper disposal
- Street Sweeping
- Maintenance Schedule and Activities
- Minimize Pesticides Used

##### 4.2.6.2.3.2 Pollutant Locations

Raytown reduces potential pollutants from public operations by street sweeping operations. Hazardous materials are stored indoors and capable of containing spills. Our road salt storage building is under construction. Fleet maintenance is performed in covered areas with appropriate spill containment. We sweep all streets once or twice yearly. This encompasses approximately 150 centerline miles of roadways.

The following controls and/or programs will be implemented to reduce or eliminate the discharge of pollutants from facilities owned by Raytown:

- Catch Basin Cleaning
- Street Sweeping
- Recycling Program
- Maintenance Schedule and Activities
- Minimize Pesticides Used
- Proper Disposal of Waste from Storm Sewer System
- Employee Training

##### 4.2.6.2.3.3 Pollutant Removal

Raytown's standard procedure for the disposal of dredge spoil, accumulated sediments, floatables, and other debris from our storm sewer system is disposal in a landfill which is regulated by state and federal guidelines.

#### 4.2.6.2.3.4 Flood Management

Raytown will review their current regulations concerning flood management to ensure they allow for:

1. Assessment and implementation of solutions that address impacts to water quality for new projects and;
2. Review of existing projects for inclusion of water quality aspects.

#### 4.2.6.2.4 Responsible Party

The Public Works Director will be responsible for overall management and implementation of the pollution prevention and good housekeeping program for Raytown. Others will be involved in the execution of each of the individual activities in the programs, but most of the activities will be delegated through the Public Works Department.

#### 4.2.3.2.5 Program Evaluation

Raytown will evaluate the success of the pollution prevention/good housekeeping minimum control measures by compliance by our personnel and acceptance by our citizens.

## CITY OF RAYTOWN - JACKSON COUNTY - STORMWATER OUTFALLS

<u>Outfall #</u>	<u>Size</u>	<u>Quarter</u>	<u>Section</u>	<u>Township</u>	<u>Range</u>	<u>Latitude</u>	<u>Longitude</u>	<u>Receiving Water</u>
1	54"	NW	32	49	32	94° 28' 52"	39° 01' 40"	Big Blue River
2	58" x 91"	NW	32	49	32	94° 28' 46"	39° 01' 40"	Big Blue River
3	3 - 10' x 6'	NE	32	49	32	94° 28' 10"	39° 01' 40"	Big Blue River
4	84"	NE	32	49	32	94° 28' 09"	39° 01' 40"	Big Blue River
5	48"	NW	33	49	32	94° 27' 17"	39° 01' 37"	Big Blue River
6	54"	NE	33	49	32	94° 27' 00"	39° 01' 48"	Big Blue River
7	72" x 73"	SE	4	48	32	94° 26' 40"	39° 00' 18"	Little Blue River
8	60" x 72"	SE	4	48	32	94° 26' 40"	39° 00' 15"	Little Blue River
9	2 - 8'4" x 11'	NE	9	48	32	94° 26' 41"	38° 59' 42"	Little Blue River
10	2 - 8' x 4'	SE	9	48	32	94° 26' 41"	38° 59' 30"	Little Blue River
11	36"	NW	15	48	32	94° 26' 27"	38° 59' 07"	Little Blue River
12	49" x 57"	NW	15	48	32	94° 26' 27"	38° 58' 55"	Little Blue River
13	42"	SW	15	48	32	94° 26' 28"	38° 58' 34"	Little Blue River
14	creek	SE	21	48	32	94° 26' 53"	38° 57' 49"	Little Blue River
15	creek	SE	21	48	32	94° 27' 05"	38° 57' 49"	Little Blue River
16	54"	SW	20	48	32	94° 28' 38"	38° 57' 54"	Little Blue River
17	36"	SW	8	48	32	94° 29' 00"	38° 59' 18"	Big Blue River
18	53" x 34"	SW	8	48	32	94° 29' 00"	38° 59' 37"	Big Blue River
19	36"	NW	8	48	32	94° 29' 00"	39° 00' 05"	Big Blue River
20	5' x 3'	SW	5	48	32	94° 29' 00"	39° 00' 25"	Big Blue River
21	5' x 3'	NW	5	48	32	94° 29' 00"	39° 00' 46"	Big Blue River