City of Rolla

Wastewater and Stormwater

Best Management Practices
STORM WATER AND FLOOD CONTROL

Chapter 15

STORMWATER AND FLOOD CONTROL

ARTICLE I. GENERAL

Sec. 15-1. Statutory Authorization

The Legislature of the State of Missouri has in Chapter 89 delegated the responsibility to local governmental units to adopt regulations designed to promote the public health, safety, and general welfare of its citizenry. Therefore, the City Council of the City of Rolla, Missouri, does ordain the following Ordinance.

Sec. 15-2. Interpretation and Purpose

It is hereby determined that land development projects and associated increases in impervious cover alter the hydrologic response of local watersheds and increase stormwater runoff rates and volumes, flooding, stream channel erosion, and sediment transport and deposition.

The purpose of this Ordinance is to establish minimum stormwater improvement requirements and controls to safeguard persons, protect property, and prevent damage to the environment in watersheds within the City of Rolla. This Ordinance seeks to meet that purpose through the following objectives:

1. By requiring the implementation of both an on-site stormwater conveyance system and stormwater detention;
2. Minimize increases in stormwater runoff from any development in order to reduce flooding, siltation and streambank erosion and maintain the integrity of stream channels;
3. Minimize the total annual volume of surface water runoff which flows from any specific site during and following development to not exceed the pre-development hydrologic regime to the maximum extent practicable;
4. Prohibit illicit connections and illegal discharges to the municipal storm sewer system;
5. Provide for the protection of stream systems through the establishment of stream buffers;
6. Minimize public and private losses due to flood conditions in specific areas.

Sec. 15-3. Definitions

For the purpose of this Article, the following terms, phrases, words, and their derivatives shall have the meaning herein given. When not inconsistent with the context, words used in the present tense include the future, words in the plural number include the singular number, and words in the singular number include the plural number.
INFLOW AND INFILTRATION REDUCTION THROUGH VOLUNTARY COMPLIANCE AGREEMENT

BYPASS ELIMINATION PLAN
FOR
SOUTHEAST AND VICHY ROAD
WASTEWATER TREATMENT PLANTS

Prepared By: HDR

City of Rolla, Missouri
Rolla, Missouri

HDR in Association With CM | Archer

APRIL 2012
HDR Project No. 174520

EXHIBIT B

PEAK FLOW

VOLUNTARY COMPLIANCE AGREEMENT

THIS COMPLIANCE AGREEMENT is made between the Missouri Department of Natural Resources and the City of Rolla, MO 65060 (hereinafter “the Department”) and the City of Rolla, MO 65060 (hereinafter “the City”). The parties, the Department and the City, stipulate and agree as follows:

WHEREAS, the Department, or its designee, on behalf of the Missouri Clean Water Commission, administers the provisions of the Missouri Clean Water Law, Chapter 444 of the Revised Statutes of Missouri (as amended);

WHEREAS, the City owns and operates a wastewater treatment plant for the biological treatment of domestic wastewater;

WHEREAS, the City, in operation of this wastewater treatment plant discharges to “waters of the state,” as defined in Section 644.05(2), RSMO;

WHEREAS, the City has obtained various operating permits that include enforceable compliance on discharges - 10 CFR 20-7.812 Effluent Regulations, prior to its revision, established a basis for limiting the discharge from the peak flow clarifiers through Outlet 4002 and 4003 to forty-five (45) milligrams per liter of Biological Oxygen Demand (BOD) and Total Suspended Solids (TSS), providing that the wastewater being discharged from those outfalls receive primary treatment and that the discharge is not continuous but occurs during wet-weather events;

WHEREAS, a revision to 10 CFR 20-7.812 Effluent Regulations became effective on June 30, 2016; the maximum standards for discharge from Biological Oxygen Demand (BOD) and Total Suspended Solids (TSS) regulations in National Pollutant Discharge Elimination System (NPDES) permits for discharges from Outlet 4002 and 4003 because those discharges bypass secondary treatment, a requirement of the Clean Water Act. Federal regulations 40 CFR 132.11 (m) define bypass as the “unnecessary diversion of waste streams from any portion of a treatment facility”;

WHEREAS, to eliminate discharges from the peak flow clarifiers through Outlet 4002 and 4003, the City will need to conduct an engineering evaluation followed by the construction of capital improvements. Those efforts will require considerable time and monetary investment;

WHEREAS, this Compliance Agreement only addresses bypasses made at the treatment works of wastewater that is routed through the peak flow clarifiers and discharged through Outlet 4002 and 4003 without receiving secondary treatment. Bypasses upstream of the treatment plant, called sanitary sewer overflows, and other bypasses within the treatment plant are not covered in this Agreement.

NOW, THEREFORE, in consideration of the mutual promises contained herein and other good and valuable consideration, the Department and the City herein stipulate and agree as follows:

Old Broken Pipe

New Liner
**WASTEWATER BYPASS REDUCTION**

### Southeast WWTF Bypass Summary Table

<table>
<thead>
<tr>
<th>Reporting Period</th>
<th>Number of SSO Events</th>
<th>Number of Bypass Events</th>
<th>Bypass Duration (days)</th>
<th>Bypass Volume (Mgal)</th>
<th>Yearly Precipitation Depth (in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012-2013</td>
<td>2</td>
<td>31</td>
<td>79</td>
<td>131.139</td>
<td>47.7</td>
</tr>
<tr>
<td>2013-2014</td>
<td>15</td>
<td>17</td>
<td>51</td>
<td>108.894</td>
<td>40.7</td>
</tr>
<tr>
<td>2014-2015</td>
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<td>13</td>
<td>30</td>
<td>46.190</td>
<td>48.0</td>
</tr>
</tbody>
</table>

### Vichy Road WWTF Bypass Summary Table

<table>
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<tr>
<th>Reporting Period</th>
<th>Number of SSO Events</th>
<th>Number of Bypass Events</th>
<th>Bypass Duration (days)</th>
<th>Bypass Volume (Mgal)</th>
<th>Yearly Precipitation Depth (in)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012-2013</td>
<td>0</td>
<td>12</td>
<td>28</td>
<td>8.343</td>
<td>47.7</td>
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<td>2013-2014</td>
<td>1</td>
<td>4</td>
<td>7</td>
<td>4.656</td>
<td>40.7</td>
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<tr>
<td>2014-2015</td>
<td>0</td>
<td>3</td>
<td>6</td>
<td>1.136</td>
<td>48.0</td>
</tr>
</tbody>
</table>

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*For the purpose of this summary, the years reported are from July 1 to June 30 for each period.*

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**Rolla SE Annual Bypass Summary**

**Rolla Vichy Annual Bypass Summary**

*For the purpose of this summary, the years reported are from July 1 to June 30 for each period.*
PUBLIC OUTREACH THROUGH PARTNERSHIPS

Master Gardeners
Master Naturalists
Missouri DNR
Mill Creek Watershed Coalition
Boy Scouts
Venture Crew
Girl Scouts
Missouri S&T
Rolla Public Schools
Local Stream Teams
Kaleidoscope Discovery
PARTNERSHIPS FOR GREEN INFRASTRUCTURE
220 - 1½” caliper trees planted over two years.

REFOREST ROLLA PROGRAM

The City of Rolla agrees to provide and install the following trees within the city right-of-way free of charge. The City shall meet with the property owner to discuss available tree options based on soil conditions and utilities. Once a tree(s) has been selected, the city will ensure all underground utilities are located; deliver, plant, and stake the tree, and provide the initial care. There is no limit on the number of trees a property owner may request. However, the city will plant one tree per year.

Property Owner Responsibility

I agree to be a tree steward in the Reforest Rolla tree planting program for the approved tree(s). This entails watering, pruning, feeding, removing stakes after 1 year, keeping the tree well, and monitoring the health of the new tree(s). I consent my services to this tree(s) for a period of two years. The city will NOT provide these services if the tree(s) die during the initial care. I hereby condition and hold harmless the City of Rolla from any damages, my property or personal injury as a result of Reforest Rolla activities.

Signature: __________________________  Date: ____________

Address of proposed tree(s):

Name
Address
Phone
Email

Tree(s) requested and number:

As the owner of the property located at _________________, I give permission to the City of Rolla to enter my property for the purpose of planting a tree(s). I understand that once installed, the tree(s) will belong to the City of Rolla and will be maintained by the City. Should the tree(s) die, the city will remove the tree(s) and replace it. I hereby declare that I will take full responsibility for any damages that might occur due to health issues, utilities, or personal property. Furthermore, I, the owner of the mentioned property, do hereby condition and hold harmless the City of Rolla from any damages occurring on my property or result of Reforest Rolla activities.

Signature: __________________________  Date: ____________
STORM DRAIN MARKER PROGRAM

- DNR 319 grant funds for multi-phase program

- Phase I – 500 markers
  - 14 crew members
  - 4 hours
  - $2,167

- Phase II – 1,500 markers
  - 62 volunteers
  - 4 hours
  - $7,833

- Phase III – 2,300 markers
  - 33 volunteers
  - 3 days
  - $7,500

- Federal Funds - $17,500
- Local Match - $11,667
- Project Total - $29,167

All inlets received a marker in a year and a half!
HOUSEHOLD HAZARDOUS WASTE DISPOSAL

City of Rolla
2014 Household Hazardous Waste Collected

- 2014: 5 tons
- 2013: 4.7 tons
- 2012: 5.5 tons
- 2011: 10.1 tons
- 2010: 0.4 tons
- 2009: 3.1 tons
- 2008: 4.8 tons

2014 Household Hazardous Waste Participants

- Participants: 840
- Year: 2014
- Participants: 805
- Year: 2013
- Participants: 719
- Year: 2012
- Participants: 580
- Year: 2011
- Participants: 268
- Year: 2010
- Participants: 384
- Year: 2009
- Participants: 286
- Year: 2008

Household Hazardous Waste?
MUNICIPAL “GOOD HOUSEKEEPING”

Tymco Regenerative Air Sweeper with gutter broom, blower, hopper and raker bar

Beet Juice salt additive
To request a copy of this presentation, email
shargis@rollacity.org

Thank You!