

**2021-2026
STORM WATER MANAGEMENT PLAN**

FOR THE

CITY OF ROLLA

ROLLA, MISSOURI

November, 2021

(Updated December, 2023)

**PREPARED BY
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Section 1 - Permit Area Characteristics

1.1 City of Rolla Description

Situated midway between Springfield and St Louis on Interstate 44 (*Figure 1-1.*), Rolla has a 2020 population of 19,943 and is county seat of Phelps County. It serves as the northern terminus for Missouri Highway 72 and is located on one of Missouri's major north/south highways, U.S Route 63. This gave rise to one of Rolla's slogans "The Middle of Everywhere".

General Operating Permit Number MO-R04C055 (previously GOP #MO-R040033), issued October 1, 2021, covers the approximate 12.12 square miles of land located within the corporate limits of Rolla, Missouri (*Appendix A, Page A-1*). Total physical acreage of the town rarely increases more than 1% in size per decade, with the exception of the period from 1990 to 2000 where the town saw a 26% increase. The population increases more slowly yet, with only a 19% increase from 2000 to 2010.

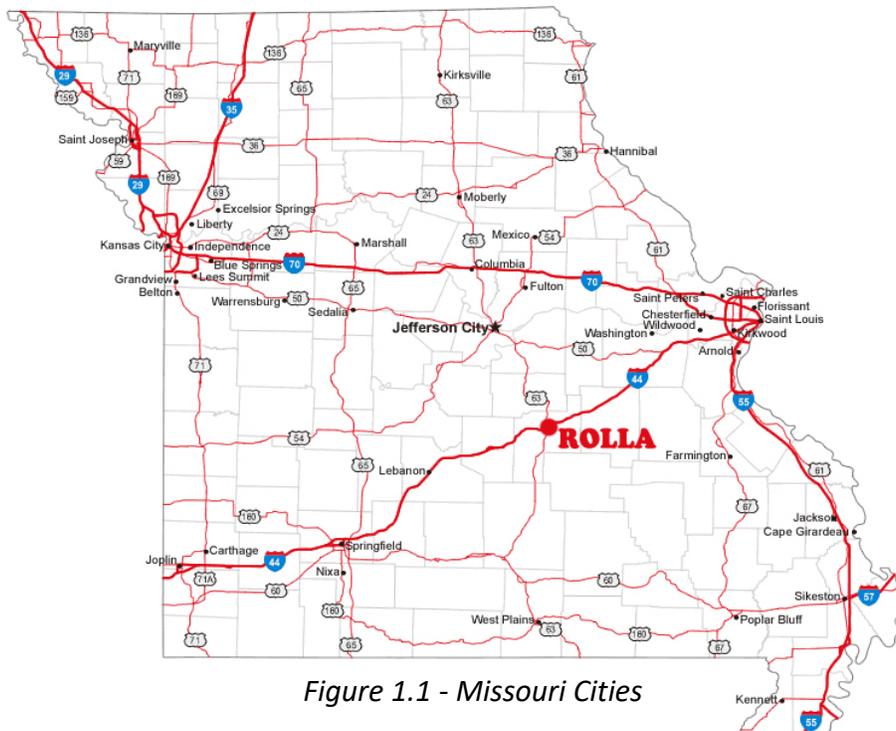


Figure 1.1 - Missouri Cities

Rolla is a third class city that operates under the Council-Mayor-Administrator form of government. The elected body consists of Mayor and twelve city council members responsible for the creation of ordinances and policies. The Mayor is elected for a four-year term and council members for two-year terms. Six of the twelve city council members are elected every other year. The city council hires a City Administrator who is responsible for citywide operations, including the city-owned Rolla National Airport.

Missouri University of Science and Technology, or Missouri S&T, which provides undergraduate and graduate level degree programs for over 8,800 students, is situated in Downtown Rolla. The area is also home to several medical facilities, including Phelps Health and the nationally accredited Delbert Day Cancer Institute. In addition, National Geospatial Technical Operations Center, the Missouri Water Science Center, the National Spatial Data Infrastructure Partnership Office Liaisons, and the Rolla Science Information Services office are located in the Rolla

facilities of the USGS Mid-Continent Mapping Center. These various organizations provide many unique opportunities when developing best management practices for permit compliance.

Demographics and socioeconomic factors can have a significant impact on SWMP elements, including such things as the selection of targeted pollutants and outreach media used, to overcoming language barriers and choosing best management practices. Ethnically speaking, Rolla is comprised of 89.3% Caucasian, 3.4% African American, 4.4% Asian and 1.72% individuals of biracial descent. The remainders of the ethnicities fall below 1% in population. Most Rolla residents (89.6%) speak only English. The next largest language group is Indo-European, followed closely by Asian then Spanish.

The population is 52.5% males with an average age of 32 and 47.5% female with an average age of 39. 41% are married and 31% have never been married. The majority of individuals have a high school diploma (26.3%) or have attended some college (23%). Nearly 28% of the households have an income of less than \$15,000. 60% of the households fall between an income of greater than \$15,000 and less than \$75,000. Most households are small with either one or two inhabitants. 44% of homes have one vehicle; 34% have two. 41% of the residents are not in the labor force, nearly 14% live below poverty level and 52% rent their home. For a more in depth look at demographic data, visit <http://www.rollacity.org/comdev/forms/Econ/demostate.pdf>.

1.2 Land Use and Development Characteristics

Land use information is an important factor in determining the amount of storm water generated within a city and ultimately affects the volume of storm water runoff and its characteristics (*Appendix A, Page A-2*). Careful examination of land use will often times provide important clues to sources of illicit discharge or assist in correctly sizing storm water collection facilities. Land use can also be an effective indicator of areas that would be most benefited by the installation of low impact development Best Management Practices (BMPs).

Not surprisingly, Rolla exhibits a land use pattern typical of smaller municipalities. Residential land represents over 36% of the land area (*Table 1-1*). The central core is composed of a dense mixture of commercial, institutional and small lot residential uses. Lower density housing radiates outward from the center representing initial growth bands following WWII. Arterial corridors are composed primarily of linear commercial swaths.

The “Rolla 2020 Comprehensive Plan Update” developed by the City of Rolla Community Development Department, was passed by Ordinance January 17, 2006. According to the document, future land use (*Table 1-2*) will exhibit the following characteristics:

“Rolla’s developed area will increase by 1,492.7 acres by 2020, or 93 acres on average over fifteen years, if the population and housing projection rates occur as anticipated. Housing and transportation needs will consume the largest proportion of the newly developed parts of the City at 975.7 acres or almost 65.4 percent of the total increase in land use.

Public and institutional uses that include all public property (except publicly-owned parkland) and private institutional uses such as churches, schools, nursing homes, and privately owned recreation areas will require a total of 190.4 additional acres. Commercial and industrial land needs will be satisfied over the next 15 years with an estimate 196.4 acres or 12.3 acres on average.”

Proper planning and building code enforcement is vital to the Storm Water Management Plan. Rolla’s Community Development Department monitors development trends within the city limits. Proper review and planning ensures land use, zoning and subdivision requirements are followed.

Rolla Land Use Acreage, 1996-2004

	<u>1996 acres*</u>	<u>% Total</u>	<u>2004 acres</u>	<u>% Total</u>	<u>Typical Ratios</u>
Residential	1,424	34.8 %	1,717	36.2 %	35-39%
Single-family	1,250	30.6	1,408	29.7	35-41
Duplex 2-family	40	1.0	56	1.2	N/A
Multi-family	134	3.2	253	5.3	N/A
Commercial/Office	485	11.9	523	11.0	5-7
Manufacturing	123	3.0	169	3.6	7-10
Parkland (Public & Private)	356	8.7	459	9.7	10-18
Public/Institutional	649	15.9	672	14.1	12-15
Right-Of-Way	1,051	25.7	1,205	25.4	20-26
Total Developed	4,088	100.0	4,745	100.0	
Undeveloped	2,952	(41.9%)	2,682	(36.1%)	
Total Acres	7,040		7,427		

Table 1-1. – Existing Land Use

Rolla Land Use Projections Summary, 2005-2020 (acres)					
	<u>2005-2010</u>	<u>2010-2015</u>	<u>2015-2020</u>	<u>Total</u>	<u>Avg./yr.</u>
Residential	241.6	208.5	199.7	649.8	40.6
Single-Family	115.4	107.3	102.9	325.6	20.4
Two-Family	22.2	20.7	20.0	62.9	3.9
Multi-Family	104.0	80.5	76.8	261.3	16.3
Commercial/Off.	52.4	44.5	51.5	148.4	9.3
Manufacturing	17.0	14.4	16.6	48.0	3.0
Public/Institutional	67.4	57.0	66.0	190.4	11.9
Parkland	46.1	39.0	45.1	130.2	8.1
Right-Of-Way	115.3	97.6	113.0	325.9	20.4
Total	539.8	461.0	491.9	1,492.7	93.0

Source: City of Rolla Community Development Department.

Table 1-2. – Future Land Use

1.3 Topography and Physical Characteristics

Many natural factors influence the quantity and rate as well as the quality of stormwater runoff. Topography has an impact on runoff velocity; soil type effects absorption and filtration of water; geology can change the entire landscape. Each of these deserves mention to better understand storm water runoff in the Rolla area.

Rolla is nestled in the Plateau Section of the Ozark Highlands (*Figure 1.2*) and features rugged uplands with diverse topographic, geologic, soil and hydrologic conditions. The municipality proper sees an approximate 360 foot drop in elevation from its high point of ±1210' located on the northeast corner of town to the low point of ±850' on the Interstate 44 corridor at the east city limits line. The majority of the city has a slope of 8% or less with smaller outlying areas having slopes of 35% or greater (*Appendix A, Page A-3*).

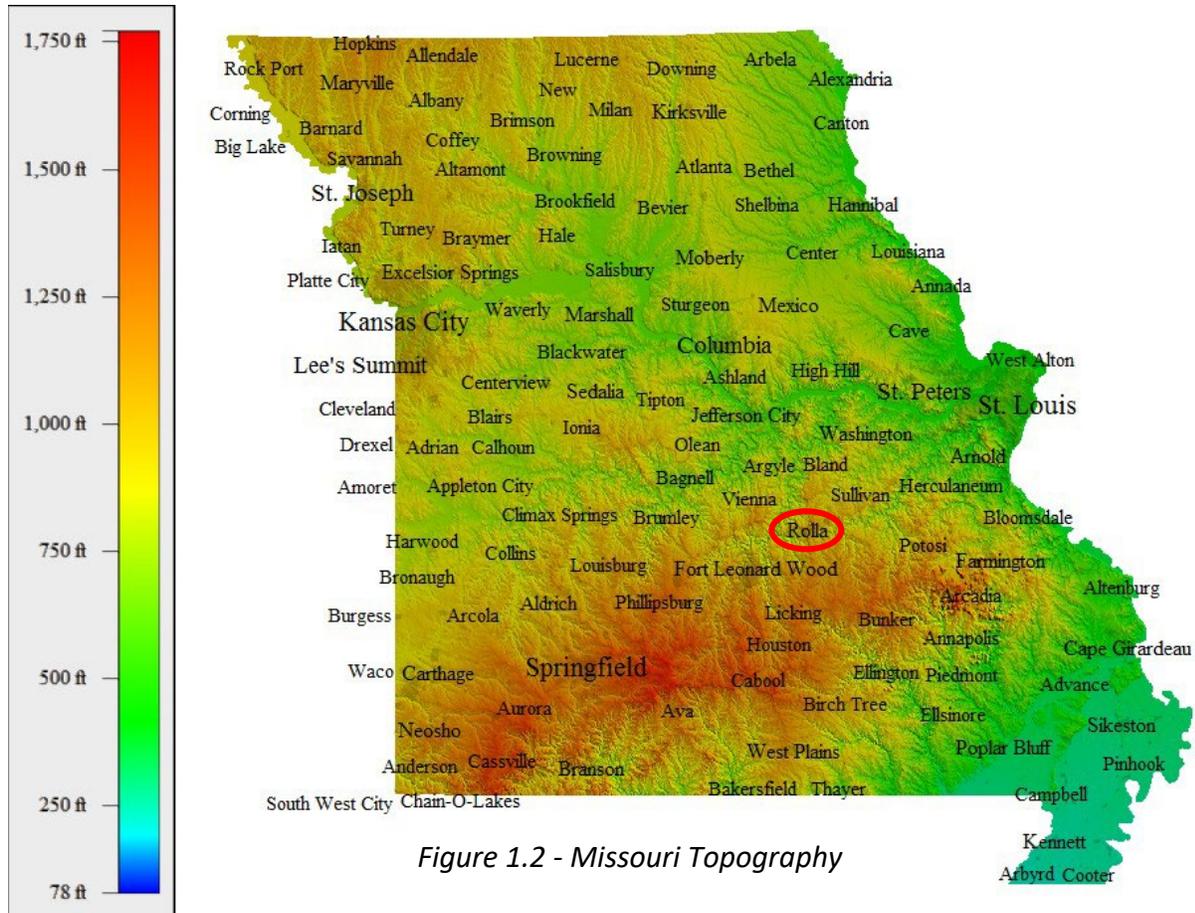
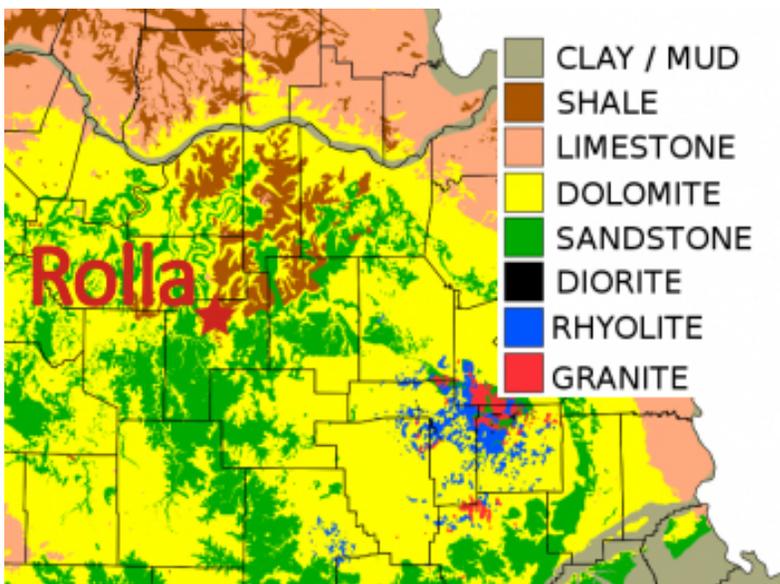


Figure 1.2 - Missouri Topography

The area is underlain primarily with sedimentary rock, particularly gray dolomite, shale and sandstone (Figure 1.3). Surface soils are typically thick and classified as residual, being formed by the weathering of the parent material. These are usually red-brown in color with chert gravel deposits and clay. Stream valley soils typically consist of alluvial deposits composed primarily of sandy gravel.



Based on USDA’s soil taxonomy, the region is covered with Alfisols and Ultisols (Figure 1.4). Alfisols are nutrient rich and typically form under hardwood forest cover. The name implies an abundance of aluminum and iron and only moderate leaching that is typical of soils in unglaciated areas. Conversely, ultisols occur in glaciated areas, are highly leached and acidic, and usually appear red from the accumulation of iron. The presence of iron in both soils is significant in terms of storm water runoff.

Figure 1.3 – Geology of the Rolla Area

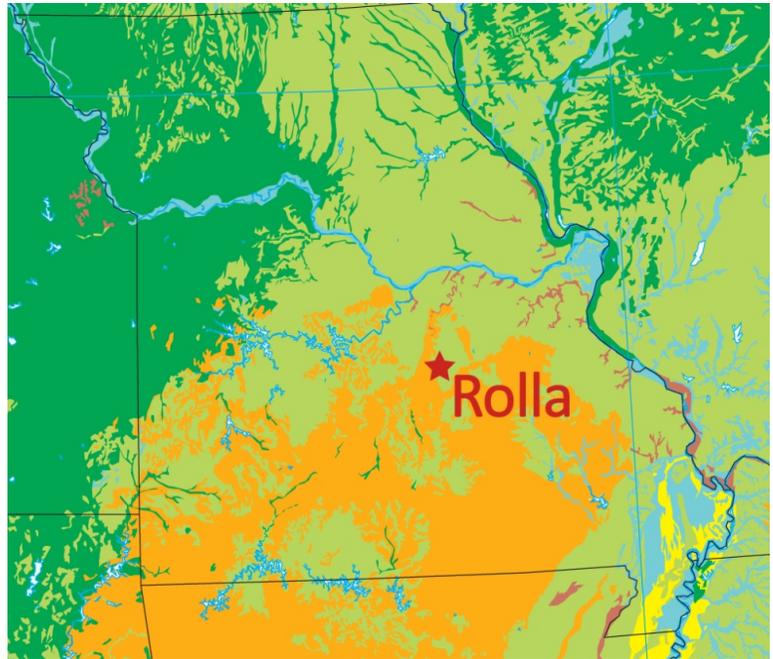
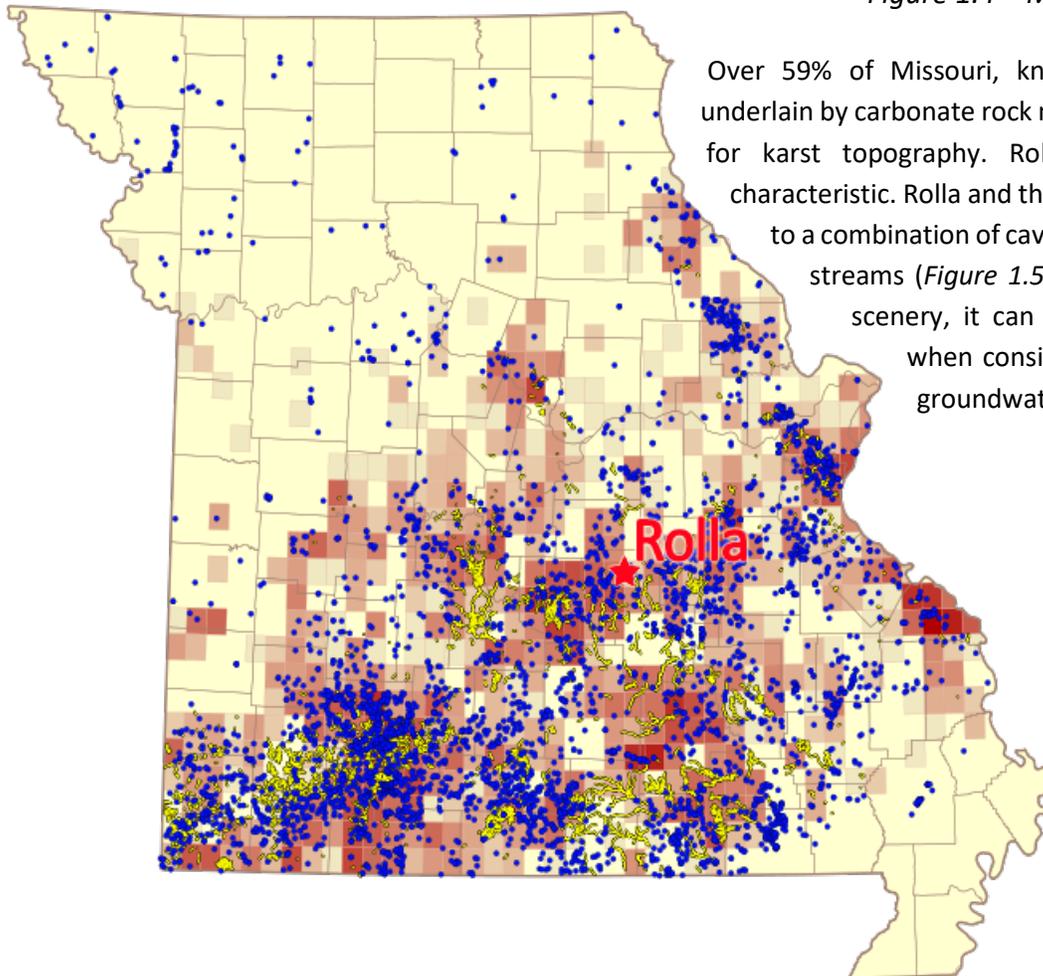


Figure 1.4 – Missouri Soils



Over 59% of Missouri, known as the “Cave State”, is underlain by carbonate rock making it the ideal environment for karst topography. Rolla is no exception to that characteristic. Rolla and the surrounding county are home to a combination of caves, springs, sinkholes and losing streams (Figure 1.5). While it makes for beautiful scenery, it can pose its own set of concerns when considering storm water runoff and groundwater pollutants.

Figure 1.5 – Missouri Karst Topography
(dark red indicates cave density, losing streams in yellow, springs as blue dots.)

1.4 Climate

Rolla's climate has been categorized as both humid subtropical and humid continental. Humid subtropical is characterized by hot, humid summers and mild to cool winters and is typical of the American South. Humid continental climates are typified by large seasonal temperature differences, well-distributed precipitation year round, summer rainfalls occurring in thunderstorms and high humidity levels.

According to U.S. Climate Data, Rolla's average annual temperature is 55.5°F with an annual average high of 66°F and an average annual low of 45.1°F. The warmest month is typically July with an average high of 89°F and an average low of 68°F; the coolest month is January with an average high of 39°F and an average low of 20°F.

Average annual precipitation for Rolla is 48.26 inches. January typically receives the lowest average monthly rainfall at 2.56 inches, while May receives the most at 5.51 inches. Rolla is subject to both slow, drenching rains and intense cloudbursts with higher than normal precipitation that lead to local flash flooding (*Figure 1.6*).



Figure 1-6. – Local Flash Flooding

1.5 Local Watersheds and Water Bodies

While Rolla has no river channels within its corporate boundaries, it does contain over 13 miles of streams. These include Burgher Branch, Burgher Branch Tributary, East Fork Burgher Branch, Deible Branch, Dutro Carter Creek, Spring Creek, Love Branch, Little Beaver Creek and Little Dry Fork. These streams ultimately discharge to the Upper Bourbeuse River, Dry Fork Creek, Little Piney Creek and the Gasconade River (*Appendix A, Page A-4*).

Rolla itself is generally divided into five major drainage basins that receive runoff from the surrounding land; Burgher Branch, Deible Creek, Dutro Carter Creek, Spring Creek, and Little Beaver Creek (*Appendix A, Page A-5*). For the purposes of the Storm Water Management Plan, these will be divided further into sub-basins (*Table 1-3*).

Numerous freshwater ponds are scattered throughout the city. Many are natural, several are manmade. For the most part, these are not included in the storm water conveyance system unless they are used as a detention or retention facility. Each of these is included in the wetlands inventory provided by the U.S. Fish and Wildlife Service

(USFWS). Seven small freshwater emergent wetlands are scattered throughout town. According to USFWS, the emergent wetland is “characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants.” These areas should be given additional consideration when developing storm water BMPs.

Table 1-3. Watershed Drainage Basin Areas			
Stream	Acres	Square Miles	Major Basin
Beaver Creek *	325	0.51	Beaver
Bourbeuse River *	1,458	2.28	Spring
Burgher Branch	2,217	3.46	Burgher
Burgher Branch Tributary	103	0.16	Burgher
Deible Branch	1,455	2.27	Dutro Carter
Dutro Carter	2,585	4.04	Dutro Carter
East Fork Burgher Branch	501	0.78	Burgher
Frisco	327	0.51	Burgher
Little Beaver Creek	2,727	4.26	Beaver
Little Bourbeuse Creek *	287	0.45	Spring
Little Dry Fork	4,155	6.49	Dry Fork
Spring Creek *	2,315	3.62	Spring

(* Acreage and square miles do not necessarily reflect total area of the drainage basin, but rather that portion that is immediately relevant to the storm water management plan.)

Table 1-3. – Watershed Drainage Basin Areas

Rolla is located in a karst region. While most of the features typically associated with this type of geology do not occur within the city limits, Rolla does have several gaining streams. A gaining stream’s channel bottom is lower than the surrounding groundwater table (Figure 1-7), allowing water to move from the ground into the stream. This should be taken into consideration when developing inspection procedures and BMPs.

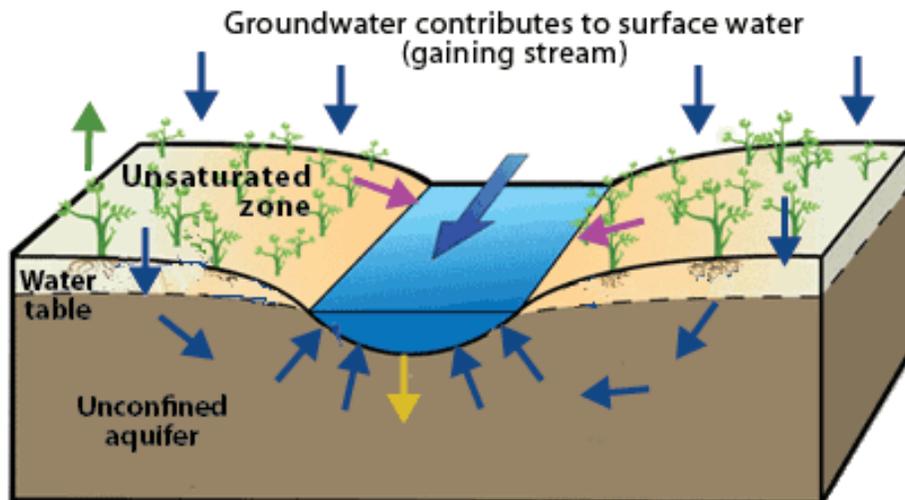


Figure 1-7. – Gaining Stream Dynamics

1.6 Storm Water Conveyance System

The City of Rolla’s storm water conveyance system (*Appendix A, Page A-6*) is separate from the sanitary sewer system and consists of a variety of structures, both manmade and natural. These include curb and gutter, storm drains and pipes, box culverts, detention and retention basins, ditches and streams to name a few.

Rolla currently has over 62.79 miles of storm sewer pipe, 3.6 miles of box culverts, and over 4,500 curb inlets, junction boxes, storm manholes and area inlets. Pipe materials include reinforced concrete (RCP), high density polyethylene (HDPE), corrugated metal pipe (CMP) and polyvinyl chloride (PVC) and range in size from 10” to 84”. Over recent years, the city has begun replacing all metal pipe with either concrete or HDPE to reduce the occurrence of pipes failing to rust and corrosion. This also assists with reduction in inflow and infiltration (I&I).

There are 593 storm sewer pipe outfall locations scattered throughout town. Many have yet to be verified for outfall condition, material, and dimension. This data is continually updated as dry weather screenings provide needed information.

There are eight storm water outlets, where storm water leaves city limits to enter waterways of Phelps County. They are (*Table 1-4.*):

Stormwater Outlet NO	1/4	1/4	Section	Township	Range	County	LAT	LONG	Receiving Stream
1	SE	NW	17	37N	7W	Phelps	37°56'00"	91°42'45"	Little Dry Fork
2	SW	SE	29	38N	7W	Phelps	37°59'00"	91°42'48"	Bourbeuse
3	SW	NE	29	38N	7W	Phelps	37°59'25"	91°42'48"	Little Prairie Lake
4	NE	NE	30	38N	7W	Phelps	37°59'30"	91°43'32"	Lanes Fork
5	NW	NE	35	38N	8W	Phelps	37°58'50"	91°46'24"	Spring Creek
6	NW	NE	10	37N	8W	Phelps	37°56'44"	91°48'11"	Little Beaver Creek
7	SW	SW	10	37N	8W	Phelps	37°56'17"	91°48'7"	Blue's Pond
8	NW	NW	14	37N	8W	Phelps	37°56'2"	91°46'35"	Little Beaver Creek

In addition to these items, the city has five retention ponds with a surface area of 24.6 acres that store storm water year round and 16 detention ponds with a surface area of 41.5 acres capable of storing storm water runoff during periods of increased precipitation (*Appendix A, Page A-7*). These facilities were designed and constructed as part of an open channel capital improvement program that was developed to eliminate flooding in the community for up to a 100-year storm occurrence. This project, which started the end of 2000, removed over 180 homes from the 100 year flood zone.

Most of these storm water conveyance facilities are designed, built and maintained by in-house staff. Regular maintenance is built into the department schedule and includes regular inspections of detention ponds, storm sewer inlet cleaning, pipe inspections and televising where required, and repair and/or replacement of deficient structures.

1.7 Sanitary Sewer Conveyance System

The City of Rolla’s sanitary sewer conveyance system consists of a variety of structures, including sewer lines and laterals, manholes, force mains and lift stations, and sewage treatment facilities that serve nearly 8,879 acres in area and 53 sewer districts that correspond roughly to drainage basins (*Appendix A, page A-8*). All of these features are mapped, tracked, televised, cleaned and repaired by city staff.

Over 3,400 sanitary sewer manholes, 135 miles of sewer line and 5 miles of force main are located within the city limits of Rolla. Sanitary sewer lines range in size from 6” to 42”, with the majority being 8” in diameter. Pipe materials include cured in place, clay, ductile iron, polyvinylchloride (PVC), reinforced concrete pipe (RCP) and truss pipe. The predominant materials are PVC and clay. Eleven lift stations are monitored for everything from power and battery to temperature and high flow. Staff members call daily and record information in spreadsheets that are available on request (*Figure 1-8*).

Lift Station 1806 Highway 72 East
a.k.a. Hwy 72

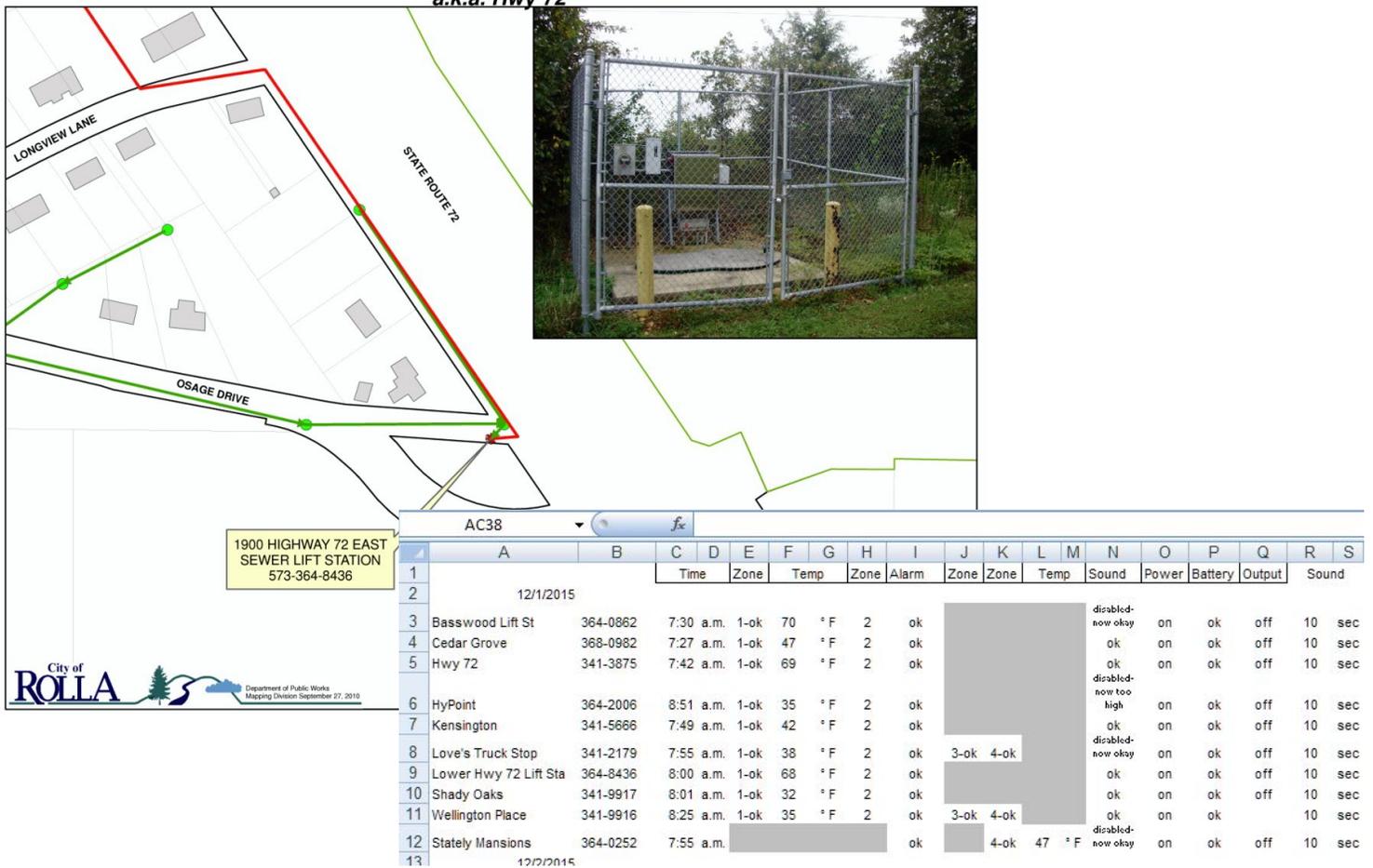


Figure 1-8. – Lift Station Monitoring

Over 1,727 acres of property located outside the city limits has access to City of Rolla sanitary sewer system and its treatment facilities. This includes many smaller subdivisions as well as the town of Doolittle, Missouri (*Appendix*

A, page A-9). Through a direct billing program, these customers pay a non-metered residential rate for treatment of waste that would otherwise end up in a septic tank or sewage lagoon.

With the exception of a half dozen isolated, large agricultural tracts of property, all septic systems have been removed from within the city limits. The remaining six properties are situated far enough from existing sewer lines to make it economically unfeasible to provide sanitary sewer service at this time.

State of the art equipment is used to televise the sanitary sewer lines. The city also cleans the lines on a scheduled routine basis using a jet-vac and root cutter, with priority lines receiving extra attention as needed. This equipment has allowed the city to determine areas in need of repairs to eliminate inflow and infiltration (I&I). These activities are conducted year round

Employees routinely inspect grease traps, sanitary sewer creek crossings, problem lines and monitor and report all sanitary sewer overflows (SSOs) to the Department of Natural Resources. SSOs invariably prompt in-house design and/or construction of improvements to eliminate issues that have caused the overflow. There has been a dramatic decrease in the number of SSOs over the last few years.

1.8 Wastewater Treatment System

The City of Rolla is served by three wastewater treatment facilities (*Appendix A, page A-10*). Vichy Road Treatment Plant is located approximately .3 miles from the city limits on the north side of town and serves approximately 8.42% of the population and a 747.4 acre area. The Southwest Treatment Plant is located a little over a half mile from the city limits and serves the community of Doolittle as well as 4.78% of the customers and 424.5 acres on the southwest side of Rolla. The Southeast Treatment Plant, the largest of the three facilities, is located roughly .7 miles from the city limits and serves the remaining 86.77% of the city's sanitary sewer customers and a 7,704.5 acre area. All three treatment plants are fully supported by user fees. At \$5.40 per 1000 gallons and a \$12.00/month sewer availability fee, this rate is still well below state average.

Each plant is covered by a Missouri State Operating Permit (*Appendix B*). MO-0047031, issued on November 1, 2018, covers the Vichy Road Plant and expires on October 31, 2023. The plant has two outfalls to an unnamed tributary of Spring Creek, of which one is prohibited from discharging. Monthly monitoring reports for flow, Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS), Ph., Ammonia and Oil/Grease, quarterly monitoring reports for copper, and annual Whole Effluent Toxicity (WET) tests as well as monthly influent tests for BOD and TSS are all requirements of the permit.

The Southwest Treatment Plant, operating under Permit MO-0047023, has one outfall that discharges to Little Beaver Creek. The permit was issued on November 1, 2018 and expires September 30, 2023. Monthly monitoring reports for flow, Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS), Ammonia, pH, Dissolved Oxygen (DO) and *E. coli*, quarterly monitoring reports for Oil and Grease, total nitrogen, total phosphorus copper, annual Acute Whole Effluent Toxicity (WET) tests, a Chronic WET test once every five years, as well as monthly influent tests for BOD and TSS and quarterly in-stream monitoring of total nitrogen and total phosphorus are all requirements of the permit.

The Southeast Treatment Plant operates under permit MO-0050652, issued on September 1, 2018 and expires June 30, 2023. It has one outfall that discharges to Dutro Carter Creek and two outfalls from which discharges are no longer authorized. Monthly monitoring reports for flow, Biochemical Oxygen Demand (BOD), Total Suspended Solids (TSS), *E. coli*, pH, Ammonia, Oil and Grease and cyanide, annual reports Whole Effluent Toxicity (WET) tests,

monthly in-stream monitoring of hardness, and monthly influent monitoring of BODs and TSSs are all requirements of this particular permit.

Flow monitoring is conducted at all three wastewater treatment plants to determine the effectiveness of inflow and infiltration (I&I) reduction, the foundation of the city's bypass elimination plan and Voluntary Compliance Agreement.

The Rolla National Airport operates under its own permit, MO-0137693, issued January 1, 2020 and valid until December 31, 2024. Two permitted features are covered, consisting of a Publicly Owned Treatment Works (POTW) and a center pivot land application field. The POTW is a single cell, no-discharge storage and irrigation system. An unnamed tributary to the Dry Fork serves as the receiving stream for the POTW, and an unnamed tributary to Dry Creek for the land application field. The storage basin is monitored for freeboard and precipitation; the irrigated wastewater is monitored for nitrogen. The land application field is monitored for irrigation period, volume irrigated, application area, and application rate.

1.9 Water Supply and Distribution System

Rolla Municipal Utilities (RMU) provides water distribution to 7,600 metered customers within Rolla city limits. It operates under the direction of the Board of Public Works as a financially self-supporting function of the City of Rolla and is financed by electric and water revenue. According to RMU's website, they operate and maintain 137 miles of water distribution mains, 1,150 fire hydrants, 18 deep wells, 2 pumping stations and a water storage capacity of 6,950,000 gallons (*Appendix A, page A-11*).

The Rolla National Airport at Vichy, Missouri (*Appendix A, page A-13*) is located outside the city limits of Rolla and therefore does not have access to the facilities provided by Rolla Municipal Utilities. It instead operates under a Permit to Dispense Water to the Public for Rolla National Airport (*Appendix B*), MO3221427, issued by the Department of Natural Resources November 18, 2015. The system is a non-transient, non-community public water system that regularly serves at least twenty-five (25) of the same persons over six (6) months per year. It currently has 14 commercial connections. The system is run from two elevated towers, both built in 1942. The main well yields 225 GPM and the emergency well yields 100 GPM. The systems are maintained by a Certified Operator with a Water Distribution System Classification I per Missouri Safe Drinking Water Law and Regulations.

1.10 Water Quality and TMDLs

There are currently six water bodies in Phelps County that are on the EPA 2020 Approved 303(d) list of impaired waters (*Appendix A, page A-12*). This includes the Bourbeuse River with impaired sections in extreme northern Phelps County. Of the six waterways, five are immediately affected by pollutants from within Rolla city limits (*Table 1-5*).

There are no "active" EPA approved TMDLs for these water bodies. The EPA approved placing Little Beaver Creek, WBID 1529, Phelps County, in Category 4B of the Integrated Report due to an existing permit-in-lieu of a TMDL (*Appendix D*) that addresses the impairment. To address the biochemical oxygen demand pollutant on the 303(d) list, the permit limits were adjusted for BOD's and suspended solids from the Southwest Wastewater Treatment Facility. The full record can be found on Missouri DNR's website at <http://dnr.mo.gov/env/wpp/tmdl/1529-l-beaver-ck-record.htm>. The remainders of the waterways do not currently have an assigned TMDL. However, the City of Rolla MS4 has been directly assigned the Waste Load Allocation (WLA) on three of the creeks. Dutro Carter Creek and Little Dry Fork are both impaired by the Southeast Wastewater Treatment Plant for low Dissolved

Oxygen and Little Beaver Creek is impaired for *Escherichia coli* from municipal point source discharges, most likely the Southwest Wastewater Treatment Plant.

Table 1-5. - Impaired Water Bodies					
Year	Water Body Name	MDNR Proposed Impairment Size	Size Units	Pollutant	Source
2006	Burgher Branch	1.5	Mi.	Oxygen, Dissolved	Source Unknown
2006	Dutro Carter Cr.	1.5	Mi.	Oxygen, Dissolved	Rolla SE WWTP
2016	Dutro Carter Cr.	0.5	Mi.	Escherichia coli	Source Unknown
2002	Frisco Lake	5.0	Ac.	Mercury in Fish Tissue	Atmospheric Deposition
2014	Little Beaver Creek	3.5	Mi.	Escherichia coli	Municipal Point Source
2008	Little Beaver Creek	3.5	Mi.	Sedimentation	Smith Sand and Gravel
2006	Little Dry Fork	5.2	Mi.	Oxygen, Dissolved	Rolla SE WWTP
2006	Little Dry Fork	4.7	Mi.	Oxygen, Dissolved	Rolla SE WWTP
2008	Little Dry Fork	4.7	Mi.	Oxygen, Dissolved	Source Unknown

Table 1-5. – Impaired Water Bodies

The city has numerous codified policies in place as well as enforcement authority to protect water quality both inside the corporate limits as well as outside. For example, “Chapter 15 – Stormwater and Flood Control” ordinance includes such verbiage as:

“Article IV - Illicit Storm Sewer Connections and Illegal Discharges;

- *Sec. 15-53. Purpose; The purpose of this Article is to establish general requirements and principles for the maintenance and control of illicit storm sewer connections and illegal discharges into the municipal storm sewer system within the City of Rolla. (Ord. 3500, §2)*
- *Sec. 15-59. 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, yard waste, 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, as specified in Article V. Stream Buffers. (Ord. 3500, §2)*
- *Sec. 15-78. Buffer Management and Maintenance; (a) Management of Resources: The stream buffer, including wetlands and floodplains, shall be managed to enhance and maximize the unique value of these resources. Management includes specific limitations on alteration of the natural conditions of these resources. The following practices and activities are restricted within the active channel and buffer area, except with approval by the City of Rolla.*

Chapter 35 of the city ordinance addresses Sewers and Water and establishes such guidance as:

- *Sec. 35-93. Stormwater, surface water, etc. - Discharge to sanitary sewer prohibited.*
- *Sec. 35-94. Same - Discharge to storm sewers or approved natural outlet.*
- *Sec. 35-95. Prohibiting the discharge of certain waters and wastes to public sewers*

- Sec. 35-98. Grease, oil and sand interceptors; when required, approval and accessibility.
- Sec. 35-101 Tests required on industrial wastes for compliance with governmental regulations and special conditions.

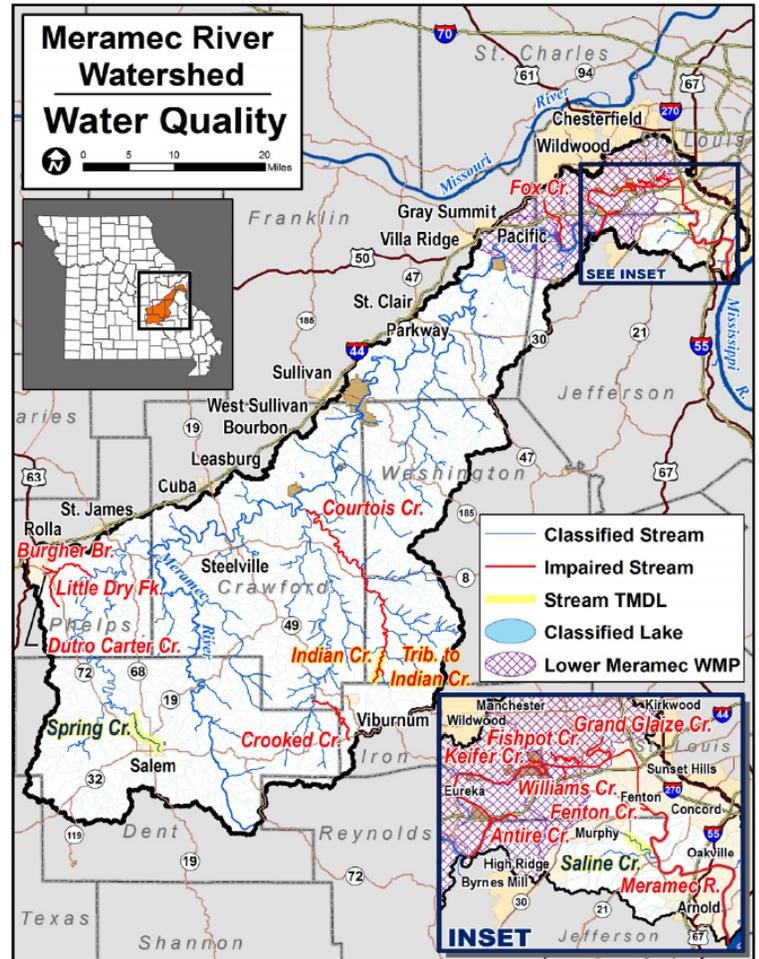
For a complete listing of City of Rolla ordinances and additional codified water quality protection, visit <http://www.rollacity.org/muncourt/ordinance.shtml>

1.11 Meramec River Watershed Plan

The Meramec is one of the longest free-flowing waterways in Missouri and historically was one of the most polluted. Thanks to the efforts of communities throughout the drainage basin, it has improved significantly.

Rolla is located on the extreme western boundary of the Meramec River Watershed. This area suffers stream degradation from low dissolved oxygen, which can be the result of an excess of organic materials, frequently as a result of discharge from wastewater treatment plants. Burgher Branch, Dutro Carter Creek, Frisco Lake and Little Dry Fork all drain to the Meramec River. This should be given special consideration when developing BMPs.

Figure 1-9. – Meramec River Watershed Impairment



1.12 Additional External City Property

Rolla National Airport is a former United States Army airfield located on U.S. Highway 63 in Maries County approximately 14 miles north of Rolla (Figure 1-10.). The 1,215 plus acres of land were originally covered by General Operating Permit Number MO-R80F001 issued on December 14, 2012. Because the airport performs no deicing and pollutants are stored under cover, the permit was terminated in accordance with Subsection (10)(B) of the Missouri Clean Water Commission regulation 10 CSR 20-6.010 on December 15, 2017 (Appendix B).

Rolla National Airport is home base for 47 single and multi-engine planes, and serves as an important transportation hub for many large local businesses and government organizations. The airport averages over 22,000 operations on a yearly basis. The airport grounds also offer substantial potential for industrial & commercial development.

Data from the Federal Emergency Management Agency (FEMA) floodplain map indicates that the site is not located in a designated floodplain. The property is generally flat in nature. Four small ponds located at the site capture a portion of the surface water drainage, while the remainder drains to two separate streams, Dry Fork

Creek and Winsel Branch (*Appendix A, page A-13*). The land classified as “timber area”, located in the southeast corner of the site, is nearly synonymous with that portion of airport property that drains to Winsel Creek and consists of approximately 82 acres. The creek begins in the wooded area and flows in a southeasterly direction. Winsel Creek flows to the Little Bourbeuse Creek, then the Bourbeuse River.

The remainder of the property drains to a tributary of the Dry Fork. Two small drainage ditches, approximately 1,750 feet in length, flow in a northeasterly direction parallel to the northeast taxiway to a storm sewer pipe at its north end, at which point the discharge enters the tributary. This includes all stormwater discharge from airport operations. The Dry Fork itself flows intermittently northeast and east for approximately 21 miles before entering the Bourbeuse River.

The Rolla National Airport storm water conveyance system is separate from the sanitary sewer system. Storm water discharged from the paved runways and taxiways flows through any number of 114 storm sewer manholes and approximately 6 miles of storm pipe ranging in size from 10” diameter corrugated metal pipe to 84” diameter reinforced concrete pipe. Two 7’ diameter pipes carry discharge from the entire system to the tributary of the Dry Fork.

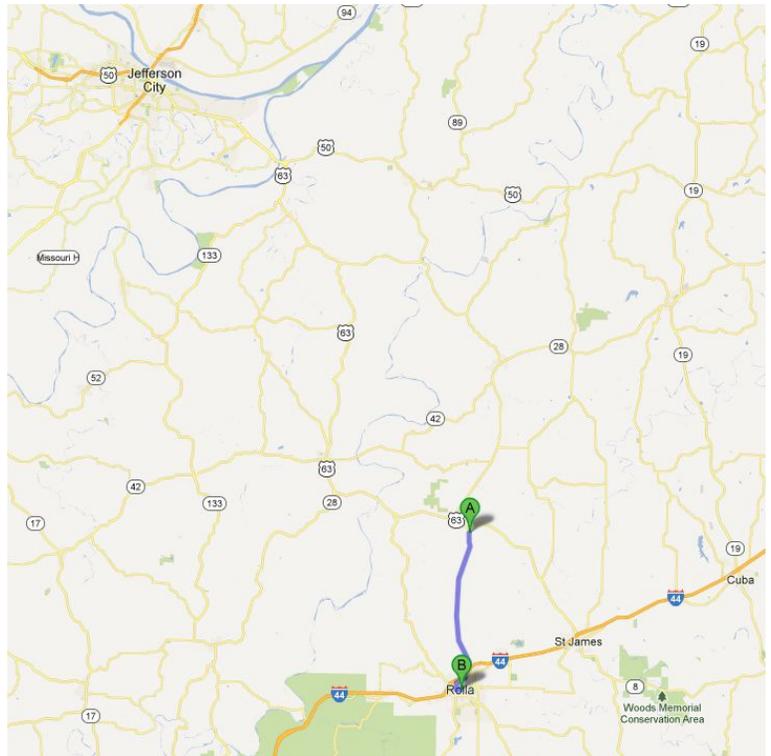


Figure 1-10. – Rolla National Airport

There are 2 storm sewer outlet locations on the airport property (*Table 1-1., Stormwater Outlet Table*) and one storm sewer pipe outfall, signed on-site as Outfall #001.

A total of 25 sanitary sewer manholes are located on the site; ten of them are still active. The remaining 15 have been abandoned. Of the original 8,800 lineal feet of sewer line, primarily 8” clay in nature, over half (4,776 lineal feet) have been abandoned and 870 lineal feet consists of 4” clay laterals. This leaves a total of 3,155 lineal feet of active sewer line. The Imhoff septic system was replaced by a land application waste water treatment facility in FY2015.

Stream Name	Outlet #	1/4	1/4	Section	Township	Range	County	LAT	LONG	Receiving Stream
Winsel Creek	A1	SE	NW	12	T39N	R8W	Maries	38.1188	91.7549	Little Bourbeuse Creek
Dry Fork Tributary	A2	SE	NW	1	T39N	R8W	Maries	38.1438	91.7555	Dry Fork

Table 1-1. – Stormwater Outlet Table

1.13 Flooding and flood hazard mitigation

According to the City of Rolla Emergency Operations Plan, “flooding is a potential risk in the City of Rolla. Phelps County lies in the Missouri River Watershed and is extremely vulnerable to flooding. There are several major

waterways in Phelps County including the Gasconade, Little Piney and Bourbeuse Rivers and various other creeks and branches. Flooding could potentially occur anywhere in the county.” In fact, there are over 198 acres of land in Rolla that are located in one of the flood zone classifications.

Promoting building behavior that reduces the risk of flooding has been a municipal practice for many years. Both Rolla and Phelps County participate in the National Flood Insurance program. For construction on lots located in the floodplain, the developer must acquire a floodplain development permit and engineered no-rise certification, ensuring that construction on the property will not adversely affect flood heights. No-rise Certification must be supported by technical data and signed by a registered professional engineer.

Subdivision standards and specifications also state that lots in Zone A or AE of the floodplain cannot be developed for human habitation. These areas have been successfully used for recreational purposes. The city has purchased several acres of floodplain property to restore riparian corridors throughout town. These have made a very popular setting for many of the local walking trails.

All new development must follow the city’s stormwater design standards. Environmentally sensitive site planning and proper design can assist in reducing the impacts of development on stormwater quality and quantity. Development must be evaluated from a long-term perspective on a watershed level. By considering both structural and non-structural Best Management Practices (BMPs) that work together as a system, volume, rate, timing and pollutant load of runoff may remain similar to that which occurred pre-development.

In 2002, the City developed and implemented a Storm Water Master Plan with the intent of outlining improvements to the storm sewer system that would alleviate flooding. In 2003, a \$3 million bond was approved that would finance improvements that addressed safety, regulatory requirements, environmental and aesthetic concerns and the financial aspect. The citywide flood control project removed approximately 200 homes and businesses from the 100-year flood plain while protecting the city’s infrastructure and the quality of our streams.

1.14 Construction and Land Disturbance

The City of Rolla has been issuing in-house land disturbance permits since 2003 and has seen the permitting of nearly 128 projects. For those projects less than one acre in size that do not require a permit, contractors are still required to follow Best Management Practices to ensure sediment does not leave the site. To assist in educating members of the construction industry, packets are distributed with the Land Disturbance Permit that includes the permit application, handouts, brochures and an in-house manual developed by staff to more accurately reflect local conditions. The information is updated regularly.

The city is also regulated by a Missouri State Operating Permit that authorizes land disturbance activities citywide. Quarterly reports are submitted that summarize active city job sites, person responsible for the project, project area and area being disturbed.

Chapter 15 of the city ordinance regulates Stormwater and Flood Control. Article III, Erosion and Sediment Control establishes requirements for land disturbance in the city limits of Rolla and covers Section 15-32 to Section 15-52. Contractors are required to have both a State of Missouri and a City of Rolla land disturbance permit.

1.15 Subdivision Development

Development procedures play an important role in the implementation of Best Management Practices. The City of Rolla has implemented numerous ordinances and codes over the years to ensure that the natural resources of

the area are protected. Incoming development is analyzed for impact to storm water runoff as well and storm water conveyance.

1.16 Additional Regulatory Considerations

While this list is not exhaustive, compliance with the City of Rolla's NPDES permit must compliment and incorporate compliance with the following environmental and cultural requirements, as outlined by Federal and State laws:

- Clean Water Act (CWA) Regulation of Fill and Removal Activities, Section 404 establishes guidelines and a permitting process for work within waterways.
- Water Quality Certification, Section 401, ensuring that work does not violate state water quality standards to minimize adverse impacts on waterways.
- Section 106 of the National Historic Preservation Act (NHPA) of 1966 ensures an assessment of the adverse effects of projects on historic properties.
- Section 4(f) of the U.S. Department of Transportation Act of 1966 and Section 6(f) of the Land and Water Conservation Fund (LWCF) Act give consideration to publicly owned lands, or those held for use as public parks, recreation areas, or wildlife and waterfowl refuges.
- National Environmental Policy Act (NEPA) of 1969 requires consideration of the physical environment.
- Federal floodplain management guidelines mandate an evaluation of floodplain impacts for proposed actions.
- Hazardous Waste regulations are extensive and govern such facilities as underground storage tanks and hazardous waste generators and activities including demolition of structures.
- Missouri Endangered Species Law, Chapter 252, RSMo, and 3 CSR 10 protect species that are listed as endangered in the state.
- Federal Endangered Species Act of 1973 through U.S. Fish and Wildlife Service provides for "the conservation of species that are endangered or threatened throughout all or a significant portion of their range and the conservation of the ecosystems on which they depend" source NOAA Fisheries <http://www.nmfs.noaa.gov/pr/laws/esa/>

Section 2 - Program Management

2.1 Regulatory Background

The federal Clean Water Act (CWA) of 1972 established regulations to control industrial and municipal wastewater discharges making it unlawful to discharge pollutants from a point source without acquiring a permit. In 1987, Congress amended the Clean Water Act with the Water Quality Act (WQA) which outlined strategies to meet the water quality standards through a nationwide comprehensive program to be implemented in two phases.

The regulation of polluted discharges from urban runoff produced by municipalities became a primary goal. Municipal Separate Storm Sewer Systems (MS4) community designations were devised under the National Pollutant Discharge Elimination System (NPDES) program. NPDES requires municipalities that discharge pollutants into waters of the United States to obtain a permit.

Larger metropolitan areas were the first to be regulated as Phase I communities. Typically these were communities with a population greater than 100,000 inhabitants. In 1999, the EPA began the second portion of the program, requiring smaller communities to be permitted under a "General Operating Permit".

The City of Rolla is a Phase II Small MS4 covered by a general permit that regulates multiple facilities within a specific category and authorizes the discharge of urban runoff. The Missouri Department of Natural Resources, in compliance with the Missouri Clean Water Law (chapter 644 R.S. Mo. as amended) and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress), issued the original General Operating Permit No. MO-R040033 to the City of Rolla on March 10, 2003.

The City's operating permit, renewed every five years, requires the implementation of a Storm Water Management Plan (SWMP). The SWMP is to be evaluated and updated on a continuing basis and must be consistent with provisions as outlined in 40 CFR 122.34. The city's fourth permit, issued October 01, 2021, expires on September 30, 2026 and requires annual review and reporting.

The program management portion of the City of Rolla SWMP serves as a foundation for the remainder of the requirements of the MS4 General Operating Permit. Without a structured, coordinated effort within and across departments, the SWMP would fall short of meeting its requirements. This section outlines the administrative structure of the program including departmental responsibilities, storm water program staff, relevant stakeholders, coordination and scheduling efforts, and prioritization of resources.

2.2 External Organizational Structure

The City of Rolla operates under the Council-Mayor-Administrator form of government (*Figure 2-1.*). The elected body consists of Mayor and twelve city council members, with the Mayor serving a four-year term and council members for two-year terms. Other elected positions include the Municipal Court Judge and Prosecuting Attorney. In combination with the City Counselor and court employees, these individuals are representative of the Municipal Court system (*Table 2-1.*).

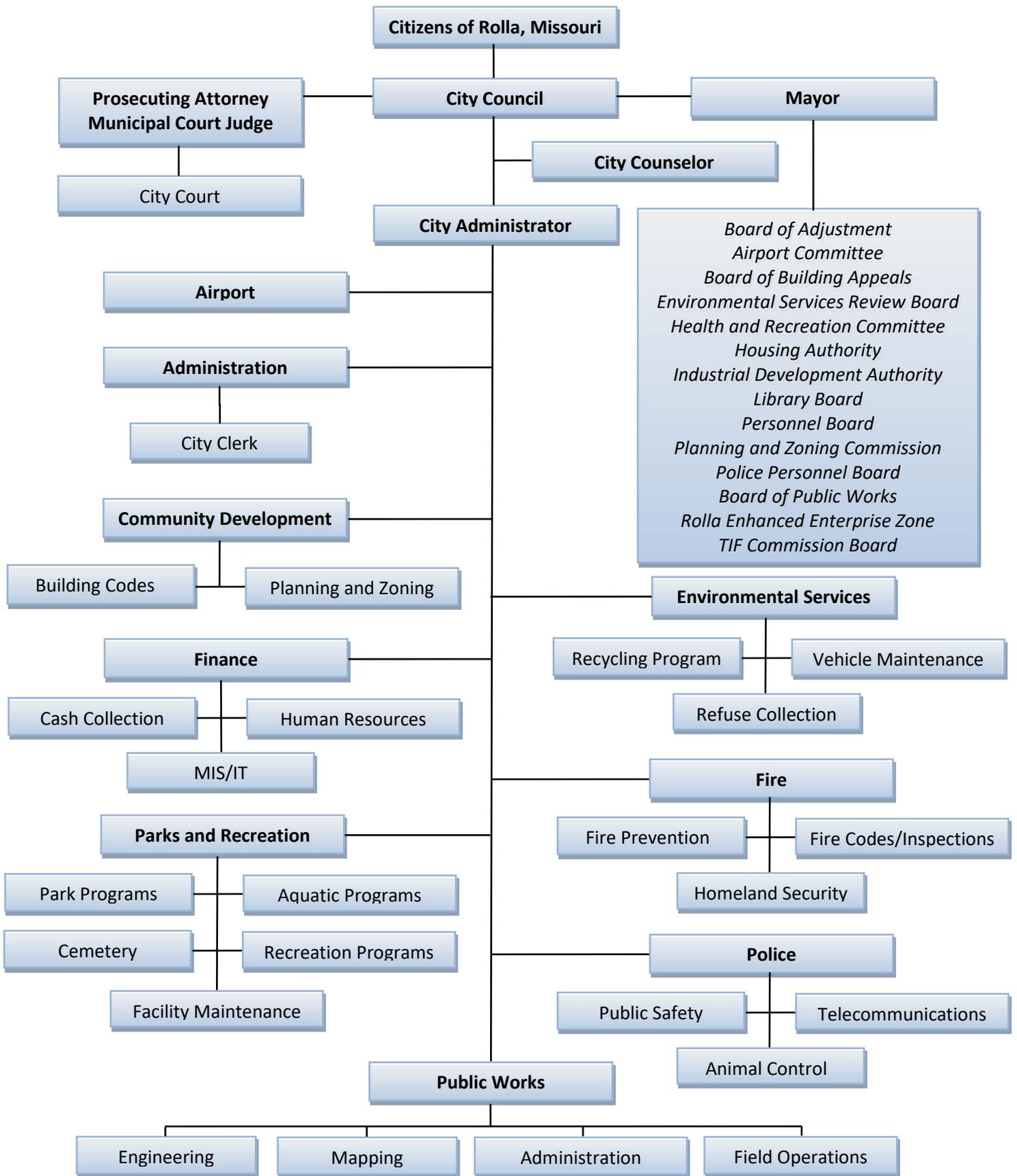


Figure 2-1. – City of Rolla External Organizational Chart

The Mayor appoints and City Council approves members to each of the fourteen different committees that exist under the leadership of the City of Rolla. These committees are responsible for such duties as supervision of the city library or certification of prospective police officers to approval or rejection of new subdivisions and planning related issues. Membership on a committee is strictly voluntary.

The City Administrator, hired by the City Council, is responsible for citywide operations. The Administrator manages city operations through supervision of eight individual divisions and the Rolla National Airport. Each division is directed by a department head who reports directly to the Administrator.

Table 2-1. City of Rolla Administration		
Title	Name	Contact Number
Mayor	Louis J. Magdits, IV	573-426-6948
City Administrator	John Butz	573-426-6948
City Clerk	Lorri Thurman	573-426-6942
City Counselor	Lance Thurman	573-341-2266
Municipal Court Judge	James Crump	573-364-7190
Prosecuting Attorney	Brad Neckermann	573-364-8590

Table 2-1. – City of Rolla Administration

2.3 Internal Organizational Structure

Eight separate departments coordinate their efforts to ensure the city operates smoothly. Each has its own role in the Storm Water Management Plan, whether it be coordinating departmental training efforts, ordinance enforcement for illicit discharge, or staffing an educational booth at a local festival.

Six of the eight departments play a significantly greater role in the SWMP by contributing directly to the development and implementation of the six Minimum Control Measures (Table 2-2.). Personnel from these departments, namely Community Development, Environmental Services, Fire, Parks and Recreation, Airport and Public Works, form the Storm Water Program Management Team.

2.3.1 Community Development

The Community Development Department, which operates out of the Municipal Building, is responsible for the preparation of the Comprehensive Plan and related elements, including research and statistical analysis. Staff advises and supports the Planning and Zoning Commission, Board of Adjustment, Board of Building Appeals, and City Council on rezoning requests, subdivision plats, annexations, variances, building code interpretations and other development requests within the City. The department is also responsible for enforcement of the City’s building codes/nuisance ordinances with the issuance of building permits, development inspections, and nuisance abatements. Department staff assists with affordable housing programs, neighborhood and downtown revitalization efforts, comprehensive redevelopment initiatives, development review committee meetings and managing the Rolla Enterprise Zone.

On a storm water management level, the administrative side of the department is tasked with such duties as promoting low impact development strategies, increased incorporation and promotion of low-impact best management practices in development, redevelopment of existing structures, coordination of subdivision review committee meetings, and initializing the land disturbance permitting process. The Building Codes

division offers a unique opportunity to interact with developers and landlords on an environmental level by offering storm water friendly solutions to some of the problems often faced by commercial development or rental properties.

The department will be tasked with, at a minimum, greater input on small construction site storm water runoff control, increased promotion of low impact development methods, review of development guidelines as related to storm water quality, and issuance of land development permits.

Table 2-2. City of Rolla Storm Water Program Management Team

Title	Name	Department	Contact #	Responsibility
City Planner	Tom Coots	Community Development	573-364-5333	Oversees subdivision development and redevelopment, planning and zoning, and economic development.
Building Codes Administrator	Dawn Bell	Community Development	573-364-5333	Oversees personnel responsible for enforcing local building codes including new building construction, renovations and demolition.
Environmental Services Director	Roger Pankey	Environmental Services	573-364-6693	Oversees Environmental Services Department including solid waste collection, recycling, yard waste pick up and composting, hazardous waste disposal, vehicle maintenance and budgeting.
Fire Chief	Jeff Breen	Fire Department	573-364-3989	Oversees training of Fire Department personnel in hazardous materials storage, hazardous spill cleanup, materials inventories and performs public outreach on same. Responsible for implementing citywide spill response program with training element.
Parks Superintendent	Stan Busch	Parks and Recreation	573-341-2386	Oversees field operations of the Parks and Recreation Department including maintenance of buildings and grounds
Parks Director	Floyd Jernigan	Parks and Recreation	573-341-2386	Oversees the Parks and Recreation Department including supervision of all divisions, departmental budgeting and resource scheduling
Public Works Director	Darin Pryor	Public Works	573-364-8659	Oversees the Public Works Department including supervision of all divisions, departmental budgeting and resource scheduling
City Engineer	Darin Pryor	Public Works	573-364-8659	Oversees engineering and field operations of the Public Works Department including maintenance of streets, wastewater and storm sewer systems
Environmental Specialist, Storm Water Management	Jim Fels	Public Works	573-364-8659	Manages storm water program including MS4 annual reports and permit renewal, SWMP implementation and updates, MCM implementation, and USACE permitting.
Airport Manager	Darrin Bacon	Airport (Administration)	573-299-4498	Manages implementation of SWMPPP BMP's, performs inspections and sampling, provides data to Public Works (PWD) for incorporation into reports, serves as main airport contact, maintains open communication with PWD.
Land Disturbance Management	Jim Fels	Public Works	573-364-8659	Manages land disturbance permits, including issuance, inspections and enforcement.

2.5.2 *Environmental Services*

The Environmental Services Department consists of the Solid Waste, Recycling and Vehicle Maintenance divisions. All three facilities are located in a centralized area adjacent to the new Public Services Yard.

Solid Waste is housed in the Environmental Services building and is responsible for all regular municipal refuse pick-up service for both residential and commercial customers. The division provides weekly citywide curbside collection of refuse, recyclables and yard wastes as well as special pickups of appliances and other large or unusual items. Recycling, located to the south of the Environmental Services building, offers weekly curbside recycling as well as a drop-off site that accepts various types of plastic, glass, paper, aluminum and tin cans, and cardboard. Processing of these materials takes place on site with the end product being sold on the open market. Approximately 3,000 tons of waste per year has been removed from the landfill and returned to usable consumer forms through the efforts of this division. This operation is also responsible for collection and disposal of household hazardous waste as well as processing of yard waste and the collection of wood pallets that are converted to free mulch. Vehicle Maintenance, housed in the Environmental Services building, maintains equipment from all city departments.

As part of the SWMP, the department will be tasked with, at a minimum, continued disposal of normal household waste as well as recyclables, electronics, household hazardous waste, yard waste, construction debris, special curbside pick-ups and intermittent “special” waste pick-ups. The department has an extensive “good housekeeping policy” in place and is active in educating the public.



2.5.3 *Fire and Rescue*

Fire and Rescue operates out of two separate facilities. Fire Station #1 is located on the east side of town and houses the administrative staff as well as equipment for water rescue, hazmat operations and Homeland Security. The site also houses a DNR sponsored methamphetamine by-product collection and disposal operation. Fire Station #2 is located on the west side of town and shares a facility with the local Community Hall.

The department has 30 full time personnel that receive ongoing in-house training as well as state certified and federally recognized Hazardous Materials Training. As part of their response, personnel are trained to recognize and address each spill in the proper manner such as recognizing small and large spills. Training includes how to handle spills that have the potential to enter the waterway. In spills that do enter the waterway, the department has a verifiable reporting track record with the Missouri Department of Natural Resources and considers MDNR to be an extension and resource of their team. The department also has on hand the needed supplies to handle most everyday spill incidents within the City of Rolla. In addition, the City of Rolla Fire & Rescue is a Homeland Security All Hazards Regional Response Team which receives monthly training.

As part of the SWMP, this department will be tasked with, at a minimum, hazardous spill response, air quality monitoring, illicit discharge detection, a formalized spill response manual, employee training and maintenance of a citywide Tier Two Emergency and Hazardous Chemical Inventory. As part of the department's inspection of local businesses and industries, staff will include an illicit discharge inspection of each facility. This department also has an extensive "good housekeeping policy" in place and is active in educating the public.

2.5.4 Rolla National Airport



Located in Vichy, Missouri, Rolla National Airport is home base for 47 single and multi-engine planes and serves as an important transportation hub for many large local businesses and government organizations. The airport averages over 22,000 operations on a yearly basis. Available services include fuel sales, hangar and tie-down rental provided by the City, as well as hangar rental and flight instruction services provided by private businesses at the site.

With all maintenance operations performed under cover and the lack of de-icing activities performed on the runway, the airport qualified for an exemption from the general operating permit. The Airport is currently covered by Permit MO-0137693 authorizing wastewater discharge and MO3221427 for non-transient non-community water system to dispense water to the public.

As part of the SWMP, the department will be tasked with, at a minimum, adherence to stormwater best management practices and the training of employees in storm water pollution prevention.

2.5.5 Parks and Recreation

Parks and Recreation operates out of city hall while grounds crews work from the "Parks Shed" located offsite. The Parks and Recreation Department manages over 310 acres of land divided into 33 parks (*Table 2-3.*) including small neighborhood parks to the 85 plus acre Ber Juan Park, which includes a softball/baseball complex, tennis courts, lake and the City's Recreation Centre and outdoor pool facilities. The department also administers the 40-acre Rolla Cemetery, incorporated into the city in 1861. Additional responsibilities include coordination of the recreation program and concession operations at the outdoor facilities, maintenance of city athletic fields and courts, upkeep of 12.65 miles of trails and operation of two maintenance sheds.



The outdoor pool facility, known as the Splash Zone Aquatic Center, originally operated under general permit MO-G760056 regulating the discharge of filter backwash and pool drainage from swimming pools and lined ponds which use chlorine as a sanitizer. In 2016, the facility was connected to the sanitary sewer, consequently allowing for cancellation of the permit.

As part of the SWMP, the department will be tasked with, at a minimum, evaluating and reducing current usage of landscaping chemicals including fertilizers, pesticides and herbicides, actively promoting the reduction of pet

waste in park facilities, pollution prevention as part of building maintenance, training of full-time personnel and seasonal employees in storm water pollution prevention, and development of an operations and maintenance program and manual for storm water pollution prevention in park facilities.

Table 2-3. Public Parks

PARK NAME	AC.	ADDRESS	WATERSHED	SUBDIVISION	DATE ACQUIRED	DEDICATED
ANN'S ACRES	1.00	Soest & South Murry	BURGHHER BRANCH	Ann's Acres	4/19/1971	yes
BARNITZ	0.95	5th & Iowa	FRISCO	School View	10/6/1941	yes
BER JUAN	84.6	14th & Holloway	BURGHHER BRANCH			no
			BURGHHER BRANCH TRIBUTARY			
BREUER	6.65	10th & Wakefield	EAST FORK BURGHHER BRANCH	Fox Creek/Eastmeadow	11/18/1981	yes
BREWER SCIENCE	5.36	Hy Point Blvd	LANES FORK		9/13/2007	no
BUEHLER	3.17	Kingshighway & Fairgrounds	LITTLE BEAVER			no
			DUTRO CARTER			
COUNTRY AIRE	0.97	Casey Lane	DUTRO CARTER	Country Aire Place	1/9/2002	yes
COUNTRY RIDGE	0.64	Palmer Court	DUTRO CARTER	Country Ridge	3/13/2002	yes
COVENTRY	15.93	Coventry & Belmont	BURGHHER BRANCH	Brookridge/Stoneridge		yes
DEER CROSSING	0.86	Winchester Drive	DUTRO CARTER	Deer Crossing	9/16/1993	yes
DEER CROSSING EAST III	0.55	Southview Drive	DUTRO CARTER	Deer Crossing East III	12/24/2015	yes
GREEN ACRES	9.21	Green Acres Drive	DUTRO CARTER	Green Acres		no
HERITAGE HEIGHTS	2.07	McCutchen Drive	EAST FORK BURGHHER BRANCH	Heritage Heights	4/13/1970	yes
LANNING	0.02	Main & 4th	DUTRO CARTER		4/21/1970	
LARIAT LANE	1.38	Southview & Lariat	DUTRO CARTER	Ledgerwood Estates	4/7/1983	yes
LARRY MAY PARK		18 TH Street	BURGHHER BRANCH TRIBUTARY			
MAGGI	0.45	Commercial Drive	DUTRO CARTER	Maggi Place		yes
MURRY	0.42	10th & Angus Valley	BURGHHER BRANCH	Murry Hill 2nd	11/16/1962	yes
NORTHSIDE	2.46	Vichy & Rose Glade	SPRING CREEK	Lexington Place	3/18/2004	yes
OSAGE	2.28	Lions Club & Osage	DUTRO CARTER		2003	no
PARKVIEW	2.00	Parkview Drive	LITTLE BEAVER			
PENNY	0.17	Lester & Edith	LITTLE BEAVER	Williams 2nd	4/19/1971	yes
POWELL	0.37	11th & Poole	DUTRO CARTER			no
RIDGEVIEW	4.28	Ridgeview & Morrell	LITTLE BEAVER	Ridgeview		yes
SCHUMAN	15.19	14th & Oak	FRISCO			no
SILVERLEAF	21.35	Silverleaf Lane	DEIBLE BRANCH		4/26/2006	no
SOUTHSIDE	51.29	Lions Club & Southview	DEIBLE BRANCH			no
SOUTHVIEW	18.86	Southview Drive	DUTRO CARTER		11/15/2004	no
TIM PONZER	7.54	Sycamore & Cypress	DEIBLE BRANCH	Ponzer 3rd	2/23/1989	yes
TORY	9.14	Tory Avenue	BURGHHER BRANCH	Forum Lakes	5/18/1981	yes
TOWN & COUNTRY	1.66	Pinetree & Soest	BURGHHER BRANCH	Town & Country East	2/10/1964	yes
VETERANS PARK	11.7	Southview Drive	DUTRO CARTER		2009	no
WEDGEWOOD	6.44	Chestnut Drive	DUTRO CARTER	Wedgewood Manor	5/28/1970	no

Table 2-3. – Public Park Land

2.5.6 Public Works

The Public Works Department serves as the “umbrella” organization responsible for facilitating the administration of the SWMP, and as such warrants a separate section in the SWMP document. All SWMP tasks

not previously assigned to another department will be conducted by Public Works, including program management. This department is also responsible for management of the SWMP document itself.

2.6 SWMP Administration by Public Works

Public Works is divided into three separate divisions; administration, engineering, and field operations (*Figure 2-2.*), and employs 46 full-time and 5 part-time individuals. Field Operations has by far the largest number of Public Works employees and consists of four divisions: wastewater, streets, overlays and contracts, and locates and inspections.

2.6.1 Field Operations

The **Wastewater Division** is subdivided into two primary areas, collection and treatment. The division is staffed with twelve individuals who perform various operation and maintenance activities at the treatment plants as well as cleaning and televising our sewage collection system.

Nine members are assigned to the treatment operations of the division. Treatment of wastewater takes place at three separate locations, the Southeast Wastewater Treatment Plant which currently handles roughly three



quarters of Rolla's 4.2 million gallons of sanitary sewer flow per day, the Vichy Road Wastewater Treatment Plant and the Southwest Wastewater Treatment Plant located on Martin Springs Drive. Each treatment plant operates under a separate permit; #MO-0047023, #MO-0047031, and #MO-0050632 (*Appendix B*).

Eight full time and one part time individuals are assigned to the collection system maintenance and operations section of the Wastewater Division. They manage over 140 miles of sanitary sewer lines throughout the Rolla community. This division is also responsible for inspecting sewer taps and connections for any new sewer service in the city. In addition to serving the residents of Rolla, the division also serves several areas just outside the city limits and a portion of the City of Doolittle. The collection division is integral to both the detection and elimination of illicit discharge. Crew members have an established schedule of televising, root cutting and cleaning.

The **Street Division** is comprised of 20 full time and two part-time individuals who are assigned to operate and maintain our approximate 118-mile street and alley system. Street Division is subdivided into three primary areas: streets, concrete construction and traffic.

The Street Crew consists of 9 individuals responsible for various construction activities, pavement repair, earthwork, right-of-way maintenance, street sweeping, creek cleaning, ditch maintenance, snow removal, and maintenance and operation activities on the drainage system such as installation of storm pipes and inlets and the construction of detention facilities.



Seven full time crew members are tasked with concrete construction activities throughout the city. Work consists primarily of the construction or repair of concrete curb and sidewalks as well as ADA retrofits. Four full time and two part time employees are responsible for operations and maintenance of traffic signage, signals and pavement markings.

The Street Division is paramount to the success of the SWMP. They are tasked with erosion control on all city construction activities, operations and maintenance of the storm sewer system and hydrologic features, maintenance of parking facilities, and many of the municipal good housekeeping measures. Aside from their routine duties, they are also responsible for implementation of many of the city programs, such as construction of filtration strips and urban reforestation efforts.

Overlays and Contracts is comprised one individual assigned to schedule and manage street improvement projects, asphalt overlays and city contracts for rock and asphalt. Much of the position encompasses inspections and coordination of field crews. The **Locates and Inspections** portion of Public Works activities is shared by several employees on an as needed basis. Inspections may include driveway aprons, sidewalks, sanitary sewer taps and storm sewer concerns.

2.6.2 Engineering

The **Engineering Division** of Public Works provides administration, engineering, planning, and supervision for projects undertaken by the Public Works Department, and performs many of these functions for various other agencies within city government. Whether in-house planning and design, coordination of outside engineering firms and contractors, or construction surveying and inspection, the Engineering Division has a hand in nearly every activity involving the City's facilities and infrastructure. Engineering staff is responsible for establishing priorities for work to be performed, preparing budgets, plans, contract documents, specifications, and quality control for Public Works projects. Engineering projects include streets, sewer collection, storm sewer management, and subdivision development review. Engineering services are also provided on a regular basis to Community Development, Environmental Services, Rolla National Airport, Parks Department, and Rolla Municipal Utilities. Engineering is subdivided into two primary subsections, engineering and mapping. The division is staffed with six full time and four part-time employees and is tasked with the majority of the activities associated with the SWMP.

Mapping is composed of two employees who are responsible for the development, operation and maintenance of the city's Geographic Information System (GIS). The GIS currently contains information for all city infrastructure as well as planning and zoning overlays. Staff members can easily manipulate data to develop

stormwater related maps, hazardous spill scenarios, and industrial hotspots, to name a few. Maps made by this section are the basis for compliance in many portions of the permit.

Engineering has four full time and one part-time employees whose duties include the remainder of the division’s responsibilities. This section performs the majority of the SWMP related activities, including general operating permit applications, annual reporting, SWMP development, project development, land disturbance inspections and program management. Design work completed by this section falls under the blanket Land Disturbance Permit #MO-R100047 (*Appendix B*) and must include a SWPPP.

2.6.3 Administration

The **Administrative Division** of Public Works provides administration, engineering, planning, and supervision for projects undertaken by the Public Works Department. The division is staffed with three full time and one part time employees, including the Public Works Director, and is responsible for final approval of SWMP related programs and projects, as well as budgeting, program approval and financial considerations.

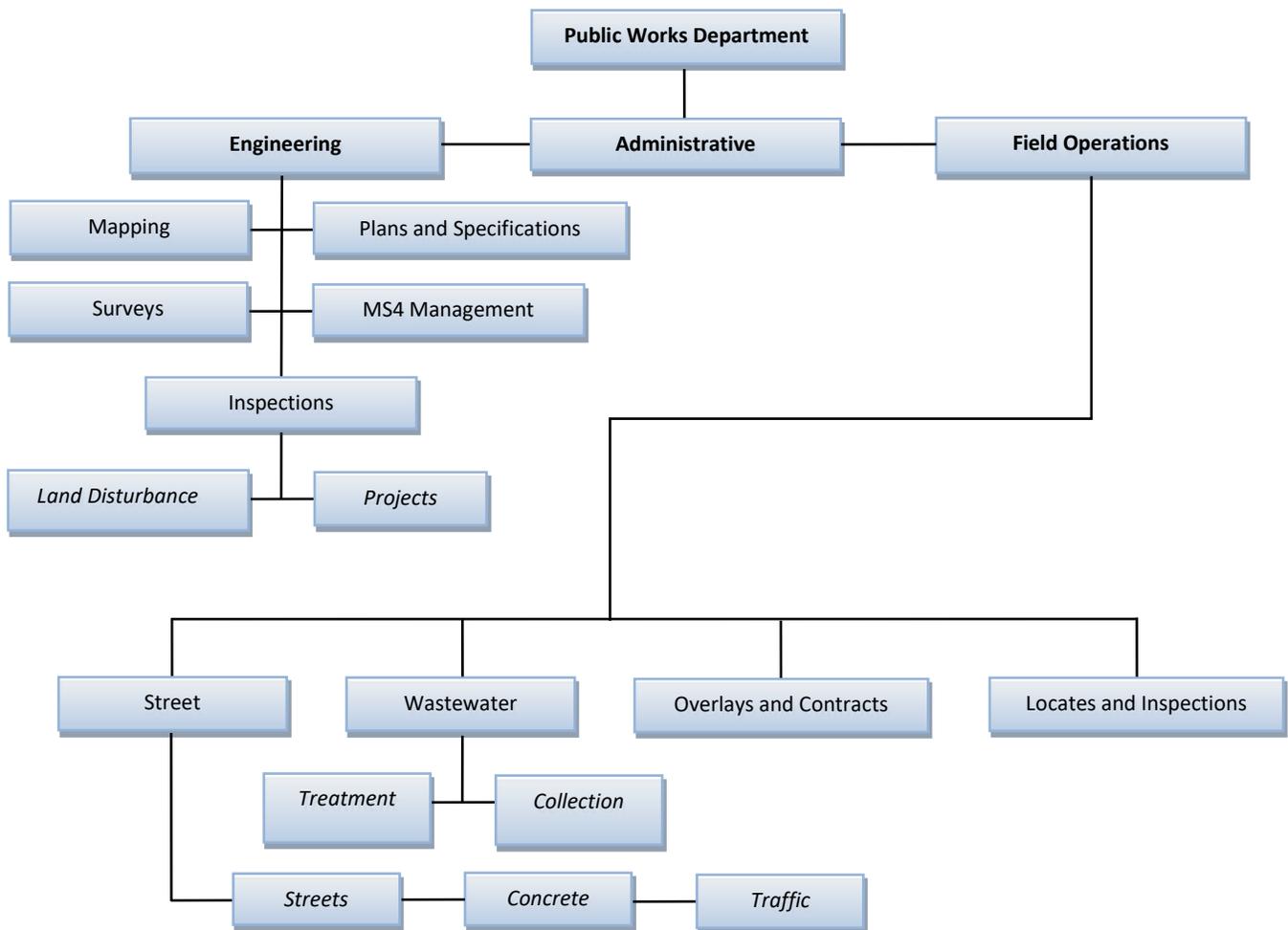


Figure 2-2. – Public Works Organizational Chart

Table 2-3. Public Works Storm Water Contacts				
Title	Name	Division	Contact Number	Responsibility
Public Works Director	Darin Pryor	Public Works	573-364-8659	Oversees the Public Works Department including supervision of all divisions, departmental budgeting and resource scheduling
City Engineer	Darin Pryor	Engineering	573-364-8659	Oversees engineering staff and assists in enforcement of MS4 regulations.
Environmental Specialist, Storm Water Management	Jim Fels	Engineering	573-426-6952	Manages storm water program including land disturbance permits, MS4 annual reports and permit renewal, SWMP implementation and updates, MCM implementation, and USACE permitting.
Environmental Specialist, Land Disturbance Management	Jim Fels	Engineering	573-426-6952	Conducts land disturbance inspections; incorporates storm water BMPs in development of capital improvement plans and specifications.
Environmental Specialist, Reviews	Jim Fels	Engineering	573-364-3989	Reviews subdivision plans and regulations; reviews consultant storm water design calculations
Senior Project Coordinator, GIS Administrator	Dave Forshee	Mapping	573-364-8659	Manages GIS based mapping system;
Street Superintendent	Tim Feeler	Street	573-364-3989	Reviews subdivision plans; storm water design
Wastewater Supervisor	William Olms	Wastewater	573-364-8659	Oversees field operations of the Public Works Department including maintenance of streets, wastewater and storm sewer systems
Sewer Superintendent	Jeff Grisham	Wastewater	573-426-6955	Manages storm water program including land disturbance permits, MS4 annual reports and permit renewal, SWMP implementation and updates, MCM implementation, and USACE permitting.

Table 2-3. – Public Works Storm Water Contacts

2.7 Interagency Contacts

The City of Rolla has jurisdiction over storm water related activities within the corporate limits of Rolla with the exception of organizations of higher stature on the political hierarchy, i.e. county, state and federal agencies. City personnel interact frequently with contact members in these organizations and have built a strong working relationship with each. Cooperative efforts in the past have led to several low impact development projects as well as the exchange of techniques and ideas.

Two of the four agencies hold MS4 permits and are bound by their own set of requirements. Where requirements overlap or conflict, the agencies have worked together to resolve any issues.

Future plans include a more coordinated program for cooperative efforts between the agencies. This will include, at a minimum, yearly meetings with organizational representatives (*Table 2-4.*).

Table 2-3. Additional Storm Water Contacts			
Jurisdiction	Name	Contact Number	Responsibility
Rolla Public Schools	Kyle Dare	573-458-0100	Superintendent, Rolla Public School District
Missouri Science and Technology	Fred Stone	573-341-4252	Director, Design and Construction Management
Missouri Department of Transportation	Preston Kramer	573-368-2567	Area Engineer, Central Missouri District
Phelps County Highway Department	Mark Case	573-364-3864	Superintendent, Phelps County Highway Department

Table 2-4. – Additional Storm Water Contacts

2.8 Interdepartmental Coordination

Over the next five years, the focus of the SWMP will be strengthening the program management portion of the plan as well as developing a better method of tracking measurable goals. Strong interdepartmental coordination and cooperation by City personnel is essential to the successful implementation of a comprehensive MS4 program. Each department, division and employee must be aware of their role in the SWMP as well as the responsibilities of other employees. The Stormwater Management Plan Team hereafter referred to as “The Team”, will be responsible for coordinating this effort.

The Team will strive to develop ways to integrate the SWMP responsibilities across departments using its limited staff and financial resources. This will require a commitment from other departments to accept responsibility for portions of the stormwater management program and to assist other departments when possible. Additional responsibilities may be delegated to departments on an as needed basis.

The next permit cycle will see an increase in training as well as a more concrete tracking method. Training will occur in all departments and will cover all aspects of the SWMP. Each department will receive training for its respective Team member who will then be responsible for conducting training in their own department. The Team will meet quarterly and prior to the submittal of the annual report and/or permit application. Should it become necessary to meet more frequently, communication can be made through phone or email. Each department will be responsible for submitting any required testing, monitoring, or measurable goal tracking to the SWMP coordinator. Each team member will receive a copy of the SWMP as well as continued updates to the Plan.

2.9 Mapping

The mapping system already contains most of the information that will be needed to conduct a watershed based analysis/program. These include parcels, buildings, right of way, land use, zoning, flood zones, sanitary sewer (manholes, sewer lines, lift stations, force mains, some laterals, SSOs), storm sewer (detention ponds, structures, pipes, outfalls, streams, box culverts), treatment plants, contours, aerial photography, parks, school districts, street centerlines, ward boundaries.

Over the next five year permit cycle, mapping for each boundary will be meant to enhance and update the existing mapping. It will be done with MS4 in mind and will be additional information pertinent to the SWMP. Items will include the above required info by year boundary (i.e. year 1 houses, parcels, sewer, etc.), detailed and updated stream bank data to allow for creek walkthroughs, hot spots, impermeable surfaces to try possible mitigation of built areas.

A watershed focus will allow for improved review of the efficacy of implemented BMPs. Lessons learned in one watershed can be applied to all successive watersheds.

Section 3 – Local Implementation Plan

3.1 Storm Water Management Plan (SWMP) Development

In 2003, the City of Rolla submitted its first Storm Water Management Plan (SWMP). The document, developed by in house staff with the assistance of the Storm Water Management Adhoc Committee, focused primarily on flooding, both its causes and effects. This included developing possible solutions to decrease storm water runoff while increasing the quality. While an effort was made to cover all the permit requirements, the document lacked a clear outline of the process needed to achieve compliance. The program, still in its infancy, lacked management and coordination, did not establish good measurable goals and did not provide a clear methodology for evaluating the effectiveness of the program.

The City of Rolla developed its second SWMP in 2008. However it continued to lack the same key elements as the original document. Due to unforeseen events, a change in staff responsible for production of the document meant additional training was required.

Application for the 2013 general operating permit therefore included the development of a new SWMP that incorporated a program management aspect, measurable goals, schedules for evaluation of the program, the development of a Storm Water Management Program team, and better coordination of the program. The new SWMP was adopted in July of 2013. Each annual report allowed for evaluation of the effectiveness of tracking measures, BMPs, data recording, etc. as well as inspiring new ideas.

The biggest challenge for the City of Rolla over the last decade has been the decline in the operating budget and the loss of employees. Over the last ten years, the city has lost a total of 14 full time positions, including the Communications Director who was an integral part of the SWMP team. Many of his duties were dismissed, including city newsletters, mayors talk column, Channel 16 interviews, newspaper articles, city blogspot and Facebook articles, and public relations. Revenues from property and sales taxes, franchise fees, and miscellaneous fees/taxes all stagnated with the economy. Funding had been in a steady decline from 2007 on, particularly in the general fund. This is the portion of the budget that finances virtually the entire stormwater management program and team. Without funding, unbudgeted programs, advertising, mass printing and mailings, educational purchases and fee based training were virtually impossible.

Despite all the factors impeding the stormwater management program, the city continues to strive to meet the goals outlined in the SWMP. Those that are not completed are at the very least in progress or have been shifted to other years. Many of the BMPs have become part of the city's standard operating procedure and have been absorbed into routine maintenance, so where we may fall short on one new BMP goal, we compensate with three or four others that are already incorporated into our standard operations.

3.2 SWMP Rationale

A review of the prior SWMP revealed that it was still too cumbersome to serve as a guide for compliance. Therefore, the current five year plan, 2021-2026, is being developed using new methodology, the goal being more easily quantifiable measurable goals, less repetition, and more manageable tasks.

The city continues to struggle with staffing and funding, making it difficult to complete all the required tasks as quickly as desired. This has necessarily resulted in creative scheduling, funding and partnerships. To that end, staff

has developed a new five year storm water management plan that will be more effective for a community with limited resources.

3.3 Local Implementation Plan

As per requirements of Section 4.1 of the General Operating Permit, the *“permittee shall develop, implement, and enforce a Storm Water Management Program and plan (SWMP) designed to reduce the discharge of pollutants from the permittee’s regulated small MS4”*. This statement is the basis for the City of Rolla’s Local Implementation Plan (LIP) within its jurisdiction. The City of Rolla’s new SWMP will be composed of compliance through the implementation of three different methods.

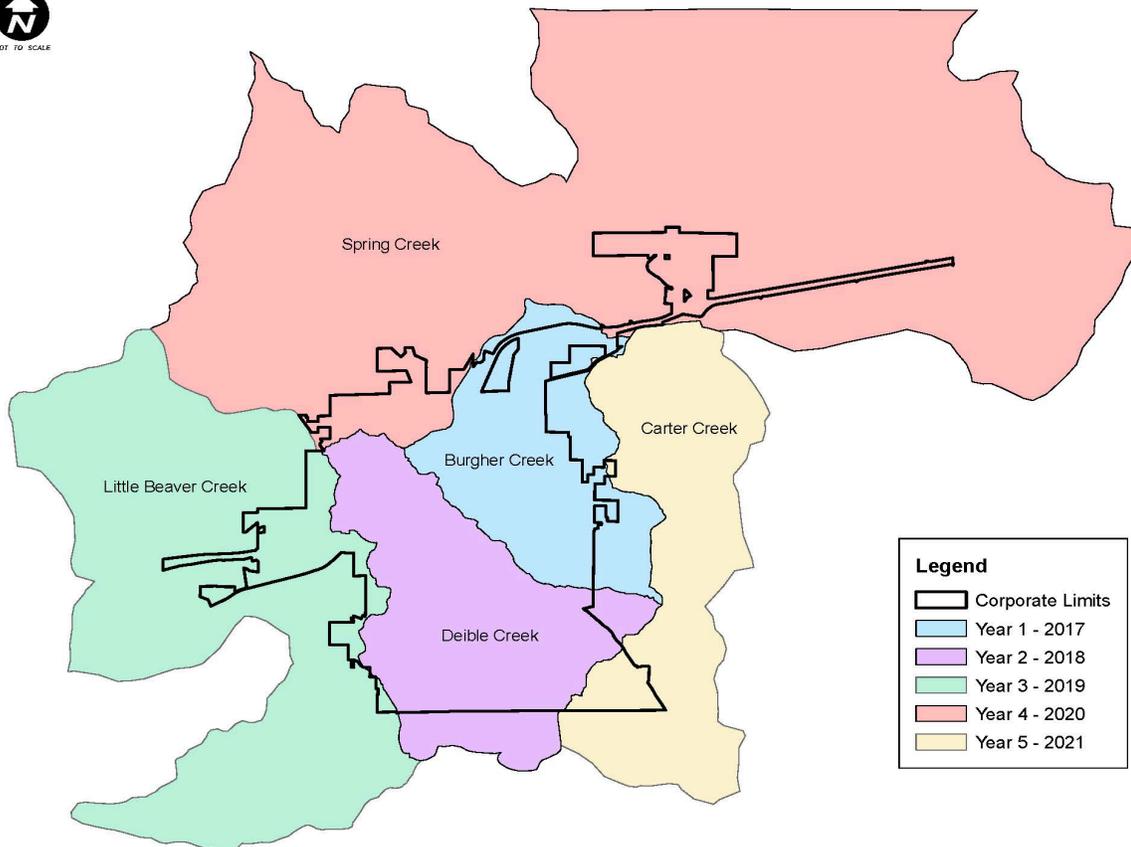
1. Citywide Routine BMPs - The city’s infrastructure is an asset to the citizens of the community and as such must be managed properly to ensure it holds its value. Many of the tasks that are part of the SWMP are citywide BMPs that have been developed over the years as part of the operations and maintenance of the city’s assets, several of them being routine in nature, while still others have been implemented specifically as part of the stormwater management program. These are activities that have consistently proven to be of value to the MS4 program. They will be tracked in a different format, and will be evaluated and updated annually. The data will be saved in a separate file that will be included in the annual report. This component will include:
 - a. Routine BMPs that are performed citywide, such as detention pond or creek crossing inspections, street sweeping, waste collection, or sewer line cleaning. These are standard operations and maintenance procedures. The number of items and the number of times per year that the procedures occur vary little from year to year.
 - b. Existing BMPs that may occur less “routinely” but have been incorporated into the city’s operations over the years and occur citywide, such as the urban reforestation project, outreach and educational presentations, pipe lining projects, or stream stabilization projects.
 - c. New BMPs that may be developed and are implemented citywide such as commercially targeted outreach programs or storm pipe inspections to eliminate corroded metal pipes.

Each of the tasks, along with a description of the BMP, the permit subsection covered by the BMP, the amount and/or number of times per year that the BMP is addressed, the and the type of operations and maintenance work completed, will be presented in tabular format as “Recurring Activities and BMPs”.

2. Watershed Based BMPs - The second component consists of dividing the community into five separate drainage areas, one for each plan year. The city has roughly 12 sub-watersheds as discussed in Table 1.3 that will be combined into the five areas. These watershed areas will be used to divide tasks such as dry weather outfall screenings, storm drain marker inventory and inspections, stream bank inspections, etc.

Each year, the majority of the implementation and analysis of BMPs will focus on the basin assigned to that year, for instance year one of the plan will focus on Burgher Branch basin. By focusing efforts on a basin wide level, staff can saturate the area with information, keeping storm water quality always at the forefront. There will be more impact on the residents and will allow for the maximum benefit using available resources.

Using the six minimum control measures, the BMPs outlined in the permit application will be applied to the current basin for that year, with the philosophy that sometimes less is more. By reducing the number of BMPs per year and per MCM, more focus can be placed on implementation and analysis. With only a small staff devoted to Stormwater management, this is a model that can be implemented in other communities. Instead of spreading staff and resources out to the point of ineffectiveness, each basin will be treated like a “mini-MS4” community allowing for more timely analysis of the effectiveness of each BMP and the opportunity to apply needed modifications prior to beginning the next basin area.



3. The third component contains the Program Management portion of the permit. It will provide an overview of Rolla’s permit program, including legal authority, storm water program organizational structure, relevant departmental responsibilities, enforcement policies and procedures, funding resources, information management and training coordination and methods.

3.4 Minimum Control Measures

As of the 2021 permitting cycle, the City of Rolla is classified as a “Traditional Small MS4 that serves a population of at least 10,000 but less than 40,000”, or **Group B**. Under the coverage of the MOR04C general comprehensive permit, the city shall “develop and implement a Stormwater Program that includes the following six (6) Minimum Control Measures (MCMs):

3.4.1 Minimum Control Measure #1 – Public Outreach and Education (POE)

3.4.1.1 POE Goal

The MS4 Operator shall implement a public education program to distribute educational materials to the community and/or conduct equivalent outreach activities about the impacts of storm water discharges on water bodies and the steps that the public can take to reduce pollutants in stormwater runoff.

3.4.1.2 POE Overview

A quality education program is always the “first line of attack” when working to improve stormwater quality. An informed and knowledgeable community is vital to the success of any stormwater management program. Activities under MCM #1 address these concerns by implementing Best Management Practices (BMPs) that support a variety of educational opportunities.

Education leads to greater compliance. As an individual begins to understand his or her responsibility and that of the community in the overall effectiveness of the program, they begin to make modifications in their behavior. The cumulative effect that these changes in behavior have on stormwater quality is the ultimate goal of outreach and education.

The City’s focus over the next five years will be toward reducing those pollutants that contribute to the impairment of the streams in the basin of interest, with each being analyzed on an individual basis. Target audiences will be determined based on analysis of the GIS, census data, and field research. Pollutant sources may include any number of items, such as yard waste, pet waste and fertilizers, and will be presented in the annual report. Outreach and education will be done through a variety of methods, including mass mailings, brochures, websites, presentations and informational kiosks.

3.4.1.3 POE Target Audiences

The MS4 Operator shall target specific audiences who are likely to have significant stormwater impacts.

Traditional MS4s (cities and counties) shall address the residents being served by the MS4;

Additional audiences within the MS4 service area (such as, but not limited to, those listed in Table I) shall be addressed as listed below:

Group B: A minimum of one (1) additional audiences

The target audiences may remain the same for the entire permit cycle or may change if the tracking and adaptive management reviews show a new target may be better for the MS4. Any changes shall be stated and explained in the MS4 Stormwater Management Program Report. The City of Rolla will focus its efforts on:

- **Developers or construction site operators;**
- **Homeowner or neighborhood associations;**
- **Contractors**

3.4.1.4 POE Target Pollutants

The MS4 Operator shall target specific pollutant(s) in the permittee’s education program (such as, but not limited to, those listed in **Table II**). Each MS4 shall have a minimum of one target pollutant for each target audience from Section 4.1.A of this permit. The City of Rolla will focus its efforts on:

- Homeowner or neighborhood associations - Grass clippings and leaf litter; Fertilizer and pesticide; Litter, trash containment, balloon releases; Dumping of solid waste
- Developers or construction site operators - Sediment runoff from construction/land disturbance
- Contractors - Oil, grease, fluids from vehicles; Sediment runoff from construction/land disturbance

3.4.1.5 POE Educational Resources

The MS4 Operator must utilize appropriate educational resources to be used as BMPs (materials, events, activities, etc.) in conjunction with the selected pollutants for the selected target audiences. The MS4 Operator may change BMPs during the permit cycle if determined appropriate through tracking and adaptive management reviews show a different BMP may be more effective for the MS4. Any changes shall be reflected in the SWMP and explained in the MS4 Stormwater Management Program Report.

[See file MCFI Tracking, tab entitled "Educational Resources"](#)

3.4.1.6 POE Educational Opportunities

The MS4 Operator must create opportunities, or support activities that are coordinated by citizen groups, for residents and others to become involved with the Stormwater Management Program. The activities, (BMPs) must have an effort to impact stormwater runoff by improving water quality.

[See file MCFI Tracking, tab entitled "Educational Opportunities"](#)

3.4.1.7 POE MS4 Support of Educational Opportunities

The MS4 Operator shall create or support the involvement BMP(s) in previous section.

3.4.1.8 POE Program Review

Using adaptive management as required in parts 4.1.A.3.d and 4.1.B.1.c, all MS4 Operators shall review their Public Education and Outreach on Stormwater Impacts Program, at minimum, annually and update implementation procedures and/or BMPs as necessary within the requirements of this permit. This may be conducted when preparing the annual MS4 Stormwater Management Program Report for submittal to the Department.

[See file MCFI Tracking, tab entitled "Annual Review"](#)

Annual Review of MCM 1			
Year Reviewed	Date of Review	Reviewer(s)	Were changes made and noted?
2021-2022			
2022-2023	12-2-22	Jim Fels	Yes, contact names
2023-2024	1-5-24	Jim Fels	Yes, contact names
2024-2025			
2025-2026			

3.4.2 Minimum Control Measure #2 – Public Participation and Involvement (PPI)

3.4.2.1 PPI Goal

The permittee shall develop and implement a comprehensive public participation program that provides opportunities for public participation in the development and oversight of the permittee's Stormwater Program.

This program must provide opportunities for public participation of the permittee's permit renewal and shall, at a minimum, comply with any state and local public notice requirements. Additionally, the program must provide opportunities for public participation in activities related to developing and implementing the Stormwater Management Program.

3.4.2.2 PPI Overview

Having an involved citizenry increases the likelihood for success in a community's stormwater management program. The public can provide valuable input on everything from research and development to implementation and financing.

By becoming a stakeholder, an individual has a vested interest in the final outcome of the plan. This can be achieved by creating targeted audiences, designing activities that are geared toward these specific groups, and soliciting public contribution to both. Activities under MCM #2 address these requirements.

3.4.2.3 PPI Public Notice Period

The MS4 Operator shall hold a public notice period for a minimum of thirty (30) days to allow the public to review the draft permit, and description of the MS4s Stormwater Management Program (this may be the SWMP) prior to the submission of the renewal application to the Department.

Draft Operating Permit and SWMP were made available in the Public Works Departments Information Kiosk from May 5, 2021 and will remain available for public review through receipt of new permit and/or the adoption of the new SWMP at which time the information will be updated.

3.4.2.4 PPI Public Website

As part of the public notice, if the MS4 Operator has a public website, the required items shall be posted on their website with a way to submit comments, along with the standard public notice methods for the MS4.

- The permittee shall respond to comments received during the comment period.
- The MS4 Operator shall retain copies of any public comments and records of information submitted by the public received as part of the public notice process. These comments and responses shall be made available to the public or the Department upon request.

Draft Operating Permit and SWMP were made available on the Public Works Departments website, <https://www.rollacity.org/pw-sw.shtml> from May 5, 2021 and will remain available for public review through receipt of new permit and/or the adoption of the new SWMP at which time the information will be updated.

3.4.2.5 PPI Public Meeting

The MS4 Operator shall hold a public information meeting to provide information on, or describe the contents of, the proposed Stormwater Management Program. This meeting shall be advertised at least thirty (30) days prior to the public meeting.

- As part of the notice of public meeting, if the MS4 Operator has a public website, the MS4 Operator shall post on that site, along with the standard public notice methods for the MS4. The notice of the public informational meeting, including the date, time and location.
- The meeting must be held within the service area of the MS4. Co-permittees shall hold the meeting within the boundaries of each co-permittee.

<i>Dates of public notice:</i>	Phelps County Focus, 6/10, 6/17; City of Rolla Facebook page
<i>Dates of notice of meeting:</i>	Bulletin board posting, 6/14
<i>Date of meeting:</i>	June 24, 2021, 4:00 pm to 6:00 pm
<i>Location (or virtual):</i>	Eugene Northern Community Hall, 400 West 4th Street

3.4.2.6 PPI Public Inquiries

The MS4 Operator shall have a publicly available method to accept public inquiries, or concerns, and to take information provided by the public about stormwater and stormwater related topics.

<i>Method used to accept public inquiries or concerns:</i>	The City of Rolla will accept public inquiries or concerns utilizing any method the reporting party has available to them. We take phone calls on department lines as well as individual direct lines, emails, letters, posts to the city’s website or Facebook page, texts, PMs, walk-ins, etc.
<i>Explain how these reports are tracked:</i>	In addition to keeping a log in “Stormwater Incident Tracking.xml” the City of Rolla routinely follows state statutes for retention of information therefore letters, emails, messages, etc. are, at a minimum, scanned to a central location for tracking. Reports are tracked in a spreadsheet and hyperlinked to the completed investigation form. Reports are also tracked on a GIS based map.

3.4.2.7 PPI Stormwater Committee

If the MS4 Operator utilizes a stormwater management panel or committee, the MS4 Operator shall provide opportunities for citizen representatives on the panel or committee. The attendance of the meeting shall be recorded.

	Does the MS4 Operator utilize a stormwater management panel?	If yes, were opportunities for citizen representation provided?	Are there any citizens on the panel?
2021-2022	N/A	N/A	N/A
2022-2023	N/A	N/A	N/A
2023-2024	N/A	N/A	N/A
2024-2025	N/A	N/A	N/A
2025-2026	N/A	N/A	N/A

3.4.2.8 PPI Governing Board

If the permittee has a governing board such as; County Council, City Council, or Board of Curators, a representative of the MS4 Operator, who is familiar with the MS4 Stormwater Program, shall provide an update to the governing board. This shall be conducted at minimum, annually with the status of, or updates on, the Stormwater Management Program, and compliance with the Stormwater Management Program.

	Date the City Council was updated	Method used to update the City Council	Name of MS4 representative(s)
2021-2022	6-24-21	Public Works Open House	Steve Hargis
2022-2023	6-23-22	Public Works Open House	Jim Fels
2023-2024	3-23-23 and 7-13-23	Public Works Open House	Jim Fels
2024-2025			
2025-2026			

3.4.2.9 PPI Program Review

Using adaptive management, all MS4 Operators shall review their Public Participation Program, at minimum, annually and update implementation procedures as necessary within the requirements of this permit. This shall be used to review how to best reach the public, the effectiveness of the mechanisms, the effectiveness of reaching the public and the MS4 Governing board and if the community and MS4 government are working together for water quality. Any additional events and/or BMPs shall be acknowledged in the Stormwater Management Program report.

Annual Review of MCM 2			
Year Reviewed	Date of Review	Reviewer(s)	Were changes made and noted?
2021-2022			
2022-2023	12-2022	Jim Fels	No Changes
2023-2024	12-2023	Jim Fels	No Changes
2024-2025			
2025-2026			

3.4.3 Minimum Control Measure #3 – Illicit Discharge Detection and Elimination (IDDE)

3.4.3.1 IDDE Goal

The MS4 Operator shall implement, and enforce a program to detect and eliminate illicit discharges (as defined in 10 CSR 20-6.200 at 40 CFR 122.26(b)(2) into the regulated MS4.

3.4.3.2 IDDE Overview

Illicit discharge consists of any material other than storm water that culminates in the waterways of the United States. Typically, though not always, the pollutants enter the system through the storm drain. Though exceptions

are provided for such discharges as air conditioner condensate, firefighting activities and dye testing, illicit discharges are prohibited under state and local laws.

Unlike wastewater which receives treatment before being released, storm water and illicit discharges receive no treatment, allowing such pollutants as pathogens, nutrients and toxins to flow directly into waterways. The most effective means of preventing this from occurring is to educate the individuals responsible for the pollutants, enforce ordinances and control spills before they become illicit discharge.

The illicit discharge detection and elimination program shall at minimum, include the following:

3.4.3.3 IDDE Storm Sewer System Map

A current storm sewer system map that shall be updated as needed to include features which are added, removed, or changed. This map may be paper or electronic. This storm sewer map, must show at a minimum:

- *The location of all MS4 outfalls. Completed: 2010, will be re-inventoried during the 2021-2026 permit cycle. See “[City of Rolla outfall locations](#)”*
- *The names and locations of all receiving waters of the state that receive discharges from the MS4 outfalls. Completed: 2003*
- *The boundary of the regulated MS4 area. Completed: 2003, continually updated as areas are annexed into the boundary of the MS4*
- *The map shall be readily available & used by field staff as needed. Available to print hardcopy from the department network or from the city website*

3.4.3.4 IDDE Storm Sewer Map Tracking

The MS4 Operator must record the sources of information used for the map and track, at minimum:

- *A numbering or naming system of all outfalls: 2010, to be re-inventoried during the 2021-2026 permit cycle.*
- *Dates that the outfall locations were verified or last field surveyed: 2003*
- *For newly added outfalls, the date that it was added to the storm sewer system: 2003, continually updated on the city GIS as areas are annexed into the boundary of the MS4*

3.4.3.5 IDDE Enforcement Procedure

The MS4 shall effectively prohibit non-stormwater discharges into the permittee’s storm sewer system and implement appropriate enforcement procedures and actions.

- *Attach a link to the applicable ordinance: Chapter 15, Stormwater and Flood Control Ordinance, Section 15-55; <https://www.rollacity.org/court/chapter15.shtml>*
- *Attach a link to the enforcement procedures and actions: Chapter 15, Stormwater and Flood Control Ordinance, Section 15-61; <https://www.rollacity.org/court/chapter15.shtml>*

3.4.3.6 IDDE Dry Weather Screening Strategy

The MS4 Operator shall conduct (or have conducted on their behalf) outfall field assessments. The screening shall be conducted during dry weather conditions (a minimum of 72 hours after the last precipitation event) to check for the presence of a discharge.

Dry weather screening shall include a checklist or other tracking device to; ensure a complete inspection of each outfall, enhance consistency, and to track the field screening. When discharge is present, the checklist or tracking device shall note the following general observations and physical characteristics at a minimum:

- Date and time;
- Weather conditions and temperature (air & water);
- Color of discharge;
- Estimate of flow rate (this may be noted qualitatively);
- Odor;
- Surface scum, algal bloom, floatables or oil sheen present;
- Deposits or stains (note the color);
- Turbidity (may be noted qualitatively);
- Stream impact including vegetation, fish, wildlife;
- Length of impacted stream; and
- Notes of an obvious source of flow (such as lawn irrigation, etc.)
- Other _____

See [Dry Weather Outfall Screening Inspection Form](#)

Total % of all outfalls to be screened during the permit cycle 2021-2026 (minimum of 60% for existing permittees:

100%

Dry Weather Outfall Screenings		
Year Reviewed	Amount (% or #) per year of permit cycle	Any specific priority areas included:
2021-2022		
2022-2023	100%	Burgher Branch Watershed
2023-2024	100%	Dutro Carter Creek Watershed
2024-2025		
2025-2026		

3.4.3.7 IDDE Diagnostic Monitoring Procedures

The MS4 Operator shall maintain diagnostic monitoring procedures to detect and investigate unknown non-stormwater flows as part of the dry weather screening program.

See file [Dry Weather Outfall Screening Manual](#)

3.4.3.8 IDDE Sourcing Illicit Discharge

The MS4 Operator shall maintain procedures for tracing the source of an illicit discharge. If initial screening indicates that a dry weather discharge contains pollutants, or if an illicit discharge is suspected from another reporting method, the source shall be traced.

All methods at the city’s disposal are used to determine the source of illicit discharge. This may include visually following the flow, sampling, dye testing, televising, residential inspections (when the property owner is agreeable), and utilizing the GIS to determine possible sources.

See file [Illicit Discharge Investigation Form](#)

3.4.3.9 IDDE Illicit Discharge Removal

The MS4 Operator shall maintain procedures for removing the source of the discharge. After locating the source, the pollutant and source must be removed. The exact procedure will depend on the source and the circumstances.

See file [Illicit Discharge Investigation Procedure Manual](#)

3.4.3.10 IDDE Priority Areas

In order to prevent further illicit discharge, the MS4 Operator shall identify priority areas. Annually, the MS4 Operators shall evaluate this priority area list and/or map and update as necessary to reflect changing priorities.

Example such as, but not limited to:

- Areas with evidence of ongoing illicit discharges;
- Areas with a past history of illicit discharges;
- Certain land use influencing stormsewer/ proximity of potential pollutant sources;
- Areas of higher population density;
- Neighborhoods with onsite sewage systems;
- Areas with known litter or dumping issues;
- Areas with large or increased number of citizen complaints; and
- Industrial areas

Illicit Discharge Priority Areas	
Year Reviewed	Priority Areas
2021-2022	
2022-2023	Hypoint area
2023-2024	Hypoint area
2024-2025	
2025-2026	

3.4.3.11 IDDE Written Procedures

The MS4 Operator shall maintain written procedures for implementing the IDDE Program, including those components described within this section, to ensure program continuity and consistency.

See file [Illicit Discharge Investigation Procedure Manual](#)

3.4.3.12 IDDE Illicit Discharge Investigation

The MS4 Operator must conduct investigations in response to field screening discoveries, spills, or in response to complaints from the public, municipal staff, or adjacent MS4s.

1. Immediately respond to all illicit discharges, including spills, which are determined to constitute a threat to human health, welfare, or the environment.
2. Investigate within five (5) business days, on average, any complaints, reports or monitoring information that indicates a potential illicit discharge which does not constitute a threat to human health, welfare or the environment.
3. If illicit connections or illicit discharges are observed related to, discharging to, or discharging from, an adjacent MS4 Operator’s municipal storm sewer system, the MS4 Operator must notify the other MS4’s Operator within 24 hours of discovery or as soon as practicable.

Attach a copy of, or explain any details on the timeline for investigations.

See file [Illicit Discharge Investigation Procedure Manual, Section 2, “Investigation”](#)

See file [“Spill and Illicit Discharge Investigation Form”](#) (Appendix A)

Adjacent MS4	Contact person(s)	Phone number/ email
N/A	N/A	N/A

3.4.3.13 IDDE Enforcement

The MS4 Operator shall have procedures for appropriate enforcement, this may include fines, the ability to collect cleanup and abatement costs, and actions to ensure that the permittee’s illicit discharge ordinance (or other regulatory mechanism) is being implemented.

Attach a copy of, or include a written description of the enforcement procedures. This shall include a link to the ordinance and/or other regulatory mechanism that the MS4 Operator will use to enforce the prohibition of illicit discharges into the MS4.

See file [Illicit Discharge Investigation Procedure Manual, Section 5, “Enforcement”](#)

See Chapter 15, Stormwater and Flood Control Ordinance, Section 15-61 “Enforcement”; <https://www.rollacity.org/court/chapter15.shtml>

3.4.3.14 IDDE Records Maintenance

The MS4 Operator shall maintain a database, or other centralized system, to track dry weather field screenings, spills, incidents, and investigations.

For all spills, incidents and investigations, see the file [Stormwater Incident Tracking](#)

For Dry Weather Outfall Screening tracking, see the file [Outfall Screenings](#)

3.4.3.15 IDDE Education

The MS4 Operator shall inform public employees, businesses, and the general public of hazards associated with illegal discharges and improper disposal of waste, this may work with part 4.1 and part 4.6 of this permit (MCM #1 and MCM #6).

3.4.3.16 IDDE Staff Training

The MS4 Operator must develop and implement or maintain a training program for all municipal field staff, who, as part of their normal job responsibilities, may come into contact with or otherwise observe an illicit discharge or illicit connection to the storm sewer system.

[See file MCMIII Tracking, tab entitled “Employee Training Program”](#)

3.4.3.17 IDDE Training Effectiveness

Reviews of the training effectiveness shall be considered after municipal site inspections or after an illicit discharge incident occurs. If a certain department or facility did not perform the way they were trained, or if an issue arises that was not handled properly, the MS4 Operator should consider if the training is enough or is ineffective. The MS4 Operator shall consider ways to survey or test staff to see if the training is effective.

[See file MCMIII Tracking, tab entitled “Employee Training Program”](#)

3.4.3.18 IDDE Program Review

Using adaptive management the MS4 Operator shall review their IDDE Program, at minimum, annually and update implementation procedures as necessary. This data shall be used to continuously evaluate the effectiveness of each BMP and the implementation of each BMP. Any additional BMPs shall be acknowledged in the Stormwater Management Program report.

Annual Review of MCM 3			
Year Reviewed	Date of Review	Reviewer(s)	Were changes made and noted?
2021-2022			
2022-2023	12-2022	Jim Fels	Priority area
2023-2024	1-2024	Jim Fels	No changes
2024-2025			
2025-2026			

For additional programmatic BMP’s, see file [See file MCMIII Tracking, tab entitled “Programmatic BMPs”](#)

3.4.4 Minimum Control Measure #4 – Construction Site Stormwater Runoff Control (CSRC)

3.4.4.1 CSRC Goal

The MS4 Operator shall develop, implement and enforce a program to reduce pollutants in any stormwater runoff to their MS4 from construction activities that result in land disturbance of greater than or equal to one acre. Reduction of stormwater discharges from construction activity disturbing less than one acre shall be included in the program if that construction activity is part of a larger common plan of development or sale that would disturb one acre or more.

3.4.4.2 CSRC Overview

The discharge of runoff from construction sites not only has the capacity to cause erosion but contributes to the level of pollutants in storm sewer systems and local water bodies. Sediment carried in suspension in the runoff increases the total suspended solids (TSS's) and frequently transports metals and mercury bound to the soil particles. Construction site waste such as concrete wash water, floatable litter and debris, slurry and toxic building materials amplify the problem.

Activities under MCM #4 address these concerns by implementing a program that reduces storm water discharges and pollutants utilizing a combination of methods. Regulatory mechanisms, construction site Best Management Practices (BMPs), pre-construction plan reviews, job site inspection's, enforceable sanctions and education have successfully been combined to form the City of Rolla's CSRC program.

3.4.4.3 CSRC Regulatory Mechanism

The MS4 Operator shall have a law, ordinance and/or other regulatory mechanism to require construction site runoff control BMPs at construction/land disturbance sites greater than or equal to one (1) acre or less than one acre if the construction activity is part of a larger common plan or development or sale that would disturb one acre or more. The mechanism shall include sanctions which are designed to ensure compliance, to the extent allowable under State, or local law.

See Chapter 15 – Stormwater and Flood Control Ordinance;

<https://www.rollacity.org/court/chapter15.shtml#sec7>

3.4.4.4 CSRC Pre-construction Review Process

The MS4 Operator shall review pre-construction plans for:

- Threats to water quality including soil erosion potential, site slope, project size and type, sensitivity of receiving waterbodies, discharge flow type (pipe or sheet flow), location of discharge point in relation to receiving water, proximity of the site to receiving waterbodies, and other factors relevant to the MS4 service area.
- A checklist, or other listed criteria, shall be used to ensure consistency and completeness (attach a check list if used by plan reviewers.)
- Requirements for construction site operators to select, install, implement, and maintain appropriate stormwater control measures. This includes temporary BMPs throughout the life of the land disturbance, and permanent BMPs which remain on site as required by local codes and ordinances.
- Consider ways to minimize disturbed areas through actions such as, phased construction requirements, temporary seeding or sodding, or erosion mats to exposed areas.
- Requirements for construction site operators to control construction-site waste that may cause adverse impacts to water quality. (Trash, concrete wash-out, etc.)

3.4.4.5 CSRC Inspection Authority and Enforcement

The MS4 Operator shall establish authority for site inspections and enforcement of control measures. To the extent allowable by state, federal, and local law, all MS4 Operators shall implement procedures for inspecting construction/land disturbance projects.

The construction site runoff control program shall:

- Identify priority sites for inspection based on nature of the construction activity, topography, disturbed area, and the characteristics of soils and sensitivity of, or proximity to, receiving water.
- Construction site inspections shall include assessment of compliance with the MS4 Operator's construction site storm water runoff control ordinance or regulatory mechanism, and other applicable ordinances.
- The inspections shall evaluate any structure that functions to prevent pollution of stormwater or to remove pollutants from stormwater and use enforcement polices to require BMPs are implemented and effective.
- Final inspection, upon completion of the land disturbance and prior to final approval of construction project. Ensure all disturbed areas have been stabilized, that all temporary erosion and sediment control measures are removed.
- The inspections conducted by the MS4 Operator shall be documented with a checklist. The checklist must include structural BMPs and check on the self-inspection which are conducted by the construction site operator. These MS4 Operator checklists may be electronic.
- Include a copy of or a link to the checklist.

Site inspections are conducted once a week and following a rainfall event. Inspection checklists are completed for each inspection. The Permit remains active until all areas of the site have become stabilized and temporary BMPs have been removed, at which time a final inspection is completed and the permit is formally closed via letter to the permit holder.

See file "[General SWPPP Inspection Form](#)"

3.4.4.6 CSRC Escalating Enforcement Policy

The construction site runoff control program shall include an established, escalating enforcement policy that clearly describes the action to be taken for violations. The program shall have written procedures to ensure compliance with the MS4 Operator's construction site runoff control regulatory mechanism.

Attach a copy of, or include a link to the escalating enforcement policy.

See Chapter 15, Stormwater and Flood Control Ordinance, Section 15-13 "Enforcement and Penalties"; <https://www.rollacity.org/court/chapter15.shtml>

Attach a copy of, or include a link to the applicable ordinance or regulatory mechanisms.

See Chapter 15, Stormwater and Flood Control Ordinance; <https://www.rollacity.org/court/chapter15.shtml>

Include the sanctions and/or enforcement mechanisms. The MS4 Operator must have a minimum of two (2) enforcement actions.

See Chapter 15, Stormwater and Flood Control Ordinance, Section 15-13 "Enforcement and Penalties"; <https://www.rollacity.org/court/chapter15.shtml> Enforcement actions include, but are not limited to:

- Notice of Violation
- Stop Work Order
- Possible civil, criminal or monetary penalties with failure to address NOV
- Restoration of lands to undisturbed condition
- Lien upon property until fines are paid

3.4.4.7 CSRC Operator Inspection Requirement

The MS4 Operator shall require the construction site operator to conduct inspections at minimum:

- * Every fourteen (14) days, when construction is active.
- * Within 72 hours of any storm event, and within 48 hours after any storm event equal to or greater than a 2-year, 24-hour storm has ceased.

Checklists used for these inspections conducted by construction site operators shall either be submitted to the MS4 Operator, or the MS4 Operator shall verify that these inspections are being conducted by the construction site operator checklists during MS4 Operator inspections.

Permittees are given the choice of using their own inspection form, or may use a copy of the city's form. Instructions are given regarding the frequency of required inspections. The documents are either submitted to the city or alternately may be stored on site and available for review at all times.

3.4.4.8 CSRC Records Inventory

The MS4 Operator shall maintain an inventory of active public and private land disturbance sites, as defined in Section 4.4 of this permit. This may be supplemented with records such as a plan review checklist and email correspondence.

All Land Disturbance Permits and any corresponding documentation is stored by physically in a designated filed cabinet as well as digitally in file folders. Associated data includes permit applications, signed permits, receipts, plans and SWPPPs, NOVs, and general correspondence. The LDPs are tracked in a centralized master file that contains contact information, site information and priority sites.

See file "[Master LDP List](#)"

3.4.4.9 CSRC Oversight Inspections

The MS4 Operator shall track their oversight inspections. This may be done by retaining copies of records such as inspection checklists and email correspondence. The MS4 Operator must make these inventories available to the Department upon request.

All oversight inspections, associated correspondence and documents are maintained in conjunction with the LDP file itself.

3.4.4.10 CSRC Existing Permittees

Review the Stormwater Management Program including ordinances, permitting procedures, review procedures, inspection procedures and enforcement procedures to ensure compliance with these requirements. Any changes necessary to be in compliance with this permit shall be completed within the first year of this permit issuance.

The inventory of active sites must be updated as new projects are reviewed and projects are completed. If the MS4 Operator needs to develop this inventory, it shall be completed within one (1) year of this permit issuance.

All ordinances, permitting procedures, review procedures, inspection procedures and enforcement procedures are reviewed annually at a minimum. Changes are documented and distributed to pertinent staff. Active LDP sites are logged in a master file as they are issued and updated as items change.

See file "[Master LDP List](#)"

3.4.4.11 CSRC Public Input

The Stormwater Management Program must include procedures for the MS4 Operator to receive and consider information submitted by the public about land disturbance sites. This may be in combination with 4.2.D of this permit.

How does the MS4 Operator receive and consider information submitted by the public about land disturbance sites?

The City of Rolla will accept public inquiries or concerns utilizing any method the reporting party has available to them. We take phone calls on department lines as well as individual direct lines, emails, letters, posts to the city’s website or Facebook page, texts, PMs, walk-ins, etc. A log is maintained in the file “[Stormwater Incident Tracking.xml](#)” Additionally, LDP specific site information is retained in the site file. City of Rolla routinely follows state statutes for retention of information therefore letters, emails, messages, etc. are, at a minimum, scanned to a central location for tracking. Reports are tracked in a spreadsheet and hyperlinked to the completed investigation form.

3.4.4.12 CSRC Training

The MS4 Operator shall provide, or support access to, construction site runoff control training for MS4 inspectors and plan reviewers at minimum once during this permit cycle. This education shall be tracked or documented.

[See file MCMIV Tracking, tab entitled “Employee Training Program”](#)

3.4.4.13 CSRC Written Procedures

The MS4 Operator must provide written procedures outlining the local inspection and enforcement procedures to their inspectors to ensure consistency among the inspections.

3.4.4.14 CSRC Program Review

Using adaptive management, all MS4 Operators shall review, at minimum annually, their Construction Site Stormwater Runoff Control Program and evaluate the ordinances, review procedures, inspection procedures, enforcement procedures, receipt of public information procedures, and effectiveness of training procedures to ensure compliance with these requirements and determine if changes are needed.

Annual Review of MCM 4 *			
Year Reviewed	Date of Review	Reviewer(s)	Were changes made and noted?
2021-2022			
2022-2023	12-2022	Jim Fels	No changes
2023-2024	12-2023	Jim Fels	No changes
2024-2025			
2025-2026			

* Annual review shall include an evaluation of the most common violations and how they are handled, how many violations are escalated, potential changes to the education program to reduce violations, potential

additions to pre-construction plan review to aid in reduction of violations, assessing public complaints, and consistency of inspections across sites.

[See file MCMIV Tracking, tab entitled "Annual Review"](#)

[See file MCMIV Tracking, tab entitled "Programmatic BMPs"](#)

3.4.5 Minimum Control Measure #5 – Post-Construction Runoff Control (PCRC)

3.4.5.1 PCRC Goal

The MS4 Operator shall continue or develop, implement, and enforce a program to address the quality of long-term stormwater runoff from new development and redevelopment projects that disturb equal to and greater than one acre, including projects less than one acre that are part of a larger common plan of development or sale that would disturb one acre or more and that discharge into the regulated MS4.

The MS4's program shall ensure that controls are in place that have been designed and implemented to prevent or minimize water quality impacts

3.4.5.2 PCRC Overview

Development alters the landscape by increasing impermeable surfaces, compacting soil, and introducing pollutants into the storm sewer system. These characteristics mean an increase in the quantity of runoff and a reduction in the quality of the discharge.

As development occurs, vegetation must be removed; the same vegetation that filters pollutants, slows erosion and runoff velocity, and provides shade that supports varying ecosystems. Activities under MCM #5 address these issues by implementing BMP's that either preserve or restore vegetation, stream buffers, permeable surfaces and promote onsite treatment of stormwater discharge.

3.4.5.3 PCRC Regulatory Mechanism

The MS4 Operator shall maintain and utilize an ordinance(s) or other regulatory mechanism(s) to address post-construction runoff from new development and redevelopment projects to the extent allowable under state or local law for sites equal to or greater than one acre including projects less than one acre that are part of a larger common plan of development or sale.

See Chapter 15, Stormwater and Flood Control Ordinance <https://www.rollacity.org/court/chapter15.shtml>

3.4.5.4 PCRC Regulatory Mechanism

The MS4 Operator shall continue or develop a strategy to minimize water quality impacts. This shall include a combination of structural and/or non-structural controls (BMPs) appropriate for the permittee's community.

1. Structural controls include but are not limited to; extended detention basins, grass swales, bio-retention, permeable surfaces, sand filter basins, stormwater planters, proprietary BMPs.

The ordinance or regulatory mechanism for structural post-construction controls, or water quality facilities, shall include the adoption or development of numeric or technical performance and/or design standards to control post-construction stormwater discharges. These post-construction stormwater standards are for designing, installing, implementing, and maintaining stormwater control measures

which may include, but are not limited to BMPs that; infiltrate, evapo-transpire, harvest, detain, retain, and/or reuse stormwater.

The MS4 Operator must adopt or maintain local stormwater discharge design standards that consider parameters such as; site discharge volume, rate, duration, and frequency for new development and redevelopment sites with the intent to minimize the impact of stormwater runoff on water quality.

2. Structural controls include but are not limited to; extended detention basins, grass swales, bio-retention, permeable surfaces, sand filter basins, stormwater planters, proprietary BMPs. The ordinance(s) or regulatory mechanism(s) for non-structural Post-Construction controls, shall include:
 - Adoption or development of preventative actions that involve management and source controls such as, but not limited to:
 - Policies and ordinances that provide requirements and standards to direct development to identified areas;
 - Protection of sensitive areas such as wetlands and riparian areas;
 - Maintain and/or increase open space (which may include a dedicated funding source for open space acquisition);
 - Maintain requirements for buffer zones along water bodies;
 - Require minimizing impervious surfaces;
 - Require minimizing disturbance of soils and vegetation;
 - Policies or ordinances that encourage infill development in higher density urban areas, and areas with existing infrastructure;
 - Programs which incentivize the use of green infrastructure;
 - Requirements for minimization of directly connected impervious areas; and
 - Tree preservation ordinances.
 - Other _____

3.4.5.5 PCRC Pre-construction Plan Review

Pre-construction plan review shall be conducted by the MS4 Operator to assess site characteristics at the beginning of the construction site design phase to ensure adequate planning for stormwater program compliance.

The structural or non-structural controls chosen shall; protect sensitive areas, minimize the creation of stormwater pollution, and effectively reduce stormwater pollution. This can be achieved by reasonably mimicking pre-construction runoff conditions on all affected new development projects, or the permittee may achieve this goal through a method more appropriate for its community.

The plan review process shall:

- Use a formal checklist. This may be part of the same plan review in MCM 4. Attach a copy of the checklist.
- Evaluate non-structural BMP selection first, such as comprehensive plans, zoning ordinances, buffer strips, and/or maximization/preservation of open space.

3.4.5.6 PCRC Long Term Maintenance Enforcement Authority

The MS4 Operator shall have ordinances or similar enforcement mechanisms to ensure adequate long-term operation and maintenance (O&M) of the selected BMPs, including, as appropriate, agreements between the MS4 Operator and other parties such as post-development landowners or regional authorities. Long term O&M shall

be addressed during the plan review and approval process. Copies of O&M manuals shall be retained by the party responsible for the post-construction BMP, and with the MS4 Operator. This may be done electronically.

3.4.5.7 PCRC Water Quality BMP Inspection

The MS4 Operator shall inspect, or require inspection of, each water quality structural and non-structural water post-construction BMP according to the following at minimum:

- A minimum of one (1) inspection shall be conducted during construction, and one (1) inspection before the site is finalized, to verify water quality facilities are built as designed and any applicable boundaries or practices for non-structural BMPs are being observed. This may be conducted in combination with MCM 4 inspections. The MS4 inspector shall have access to the approved plans to ensure proper installation.
- A minimum of once in the first three years after the installation by, the MS4 Operator.
- Annually by the owner or operator of the post-construction BMP, or by the MS4 Operator. If completed by the BMP owner or operator, this inspection report shall be submitted to the MS4 Operator for evaluation and review.
- The MS4 Operator shall inspect a minimum of 60% of all water quality post-construction BMPs within the five year permit cycle. This must include installations with ongoing or open enforcement issues.

3.4.5.8 PCRC Compliance Policy

The MS4 Operator must maintain a plan designed to ensure compliance with the MS4's post-construction water quality regulatory mechanism. This plan shall include escalating enforcement mechanisms the MS4 Operator will use to ensure compliance. The MS4 Operator must have the authority to initiate a range of enforcement actions to address the variability and severity of noncompliance.

Attach a copy of, or include a written description of the escalating enforcement policy and mechanisms.

Enforcement responses to violations must consider at minimum:

- Degree and duration of the violation;
- Effect the violation has on the receiving water;
- Compliance history of the post-construction BMP owner or operator; and
- Cooperation of the owner or operator with compliance efforts.

3.4.5.9 PCRC Enforcement Actions

Enforcement actions shall be timely in order to ensure the actions are effective. The MS4 Operator shall begin enforcement actions within thirty (30) days of discovering a violation.

The MS4 Operator shall maintain a minimum of two possible sanctions. These include, but are not limited to:

- Education regarding the BMP and verbal warnings;
- Written warnings or notice of violation (this includes email notification);
- Property lien; and
- Fines.
- Other _____

3.4.5.10 PCRC BMP Inventory

The MS4 Operator shall maintain an inventory tracking the water quality post-construction BMPs. Explain how the inventory is maintained. The inventory must contain:

- Relevant contact information for each project (e.g., tracking number, name, address, phone, etc.);
- The type of post-construction BMP;
- Applicable operations and maintenance documents;
- Date the MS4 Operator approved the construction site plan; and,
- If the water quality facility is owned or operated by the MS4, the tracking shall also include any maintenance, such as sediment clean-out or replanting.

3.4.5.11 PCRC BMP Inspections

The MS4 Operator shall also track the post-construction BMP inspections. This may be done by retaining copies of records such as inspection checklists and email correspondence. The MS4 Operator must make these inventories available to the Department upon request. The tracking must contain at a minimum:

- The tracking must contain at a minimum:
- Inspection dates and time;
- Inspector name;
- Inspection findings; and,
- Follow up actions and dates, including corrective actions and enforcement actions.

3.4.5.12 PCRC Existing Permittees

Evaluate the ordinances, permitting procedures, review procedures, inspection procedures and enforcement procedures to ensure compliance with these requirements and determine if changes are needed. Any changes necessary to be in compliance with this permit shall be completed within the first two (2) years of permit issuance. The inventory of water quality facilities must be updated as new facilities are added and projects are completed. If the MS4 Operator needs to develop this inventory, it shall be completed within two (2) years of this permit issuance.

3.4.5.13 PCRC Training

The MS4 Operator shall provide appropriate training for MS4 inspectors at minimum once every permit cycle. This may include Green Infrastructure training, or specific operation of proprietary post-construction BMPs. The MS4 shall provide overall training to explain the function of both structural and non-structural post-construction water quality BMPs.

[See file MCMIV Tracking, tab entitled "Employee Training Program"](#)

3.4.5.14 PCRC Program Review

Using adaptive management, all MS4 Operators shall review, at minimum annually, their Post-Construction Site Stormwater Management in New Development and Redevelopment Program and evaluate effectiveness of the overall program and determine if changes are needed.

Annual Review of MCM 5 *			
Year Reviewed	Date of Review	Reviewer(s)	Were changes made and noted?
2021-2022			
2022-2023	12-2022	Jim Fels	No changes
2023-2024	12-2023	Jim Fels	No changes
2024-2025			
2025-2026			

* Annual review shall include an evaluation of the number and type of developments, how many BMPs were installed/inspected, the amount of watershed area being treated, types of violations found and frequency, and the effectiveness of education in improving the program.

[See file MCMIV Tracking, tab entitled “Annual Review”](#)

[See file MCMIV Tracking, tab entitled “Programmatic BMPs”](#)

3.4.6 Minimum Control Measure #6 – Pollution Prevention for Municipal Operations (PPMO)

3.4.6.1 PPMO Goal

The permittee shall 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.

3.4.6.2 PPMO Overview

In theory, before a regulated municipality can expect businesses and residents to follow the requirements of the NPDES permit, it should examine and subsequently alter its own behavior to ensure that it is doing everything possible to reduce the amount and type of pollutants produced by municipal operations. Effective storm water management should start with municipal employees.

Activities under MCM #6 address these concerns by implementing a program that stresses inspections and maintenance, proper disposal practices, improved flood plain management and frequent training of municipal employees. The SWMP document itself is a major component of this minimum control measure and provides an evaluation, assessment and reporting tool that assist’s municipalities in their pollution prevention efforts.

3.4.6.3 PPMO Employee Training Program Permit Requirement

The MS4 Operator shall maintain and utilize an employee training program for MS4 municipal operations staff. The training shall be given at minimum annually to all MS4 staff who work with material handling, at MS4 owned or operated vehicle/equipment maintenance areas, storage yards, and material storage facilities. This may be broken up into staff units, or by applicable topics.

[See file “MCMVI Tracking”](#)

3.4.6.4 PPMO Training Topics Permit Requirement

The training shall be used to prevent and reduce stormwater pollution. The training shall cover a minimum of the following topics/activities (if applicable to the MS4):

[See file "MCMVI Tracking"](#)

3.4.6.5 PPMO Permit Requirement

The MS4 Operator shall:

- Maintain material to use in the training program, such as those available from the EPA, the state, or other organizations.
- Include a written procedures for the training program, including a description of how this training will coordinate with all other minimum control measures.
- Include a written schedule to offer topic specific training when it is appropriate, such as swimming pool discharges in the summer, leaf disposal in the fall, proper salt clean-up and usage in the winter.

[See file "MCMVI Tracking"](#)

3.4.6.6 PPMO Municipal Operations Permit Requirement

The MS4 Operator shall maintain a list of all municipal operations/facilities that are impacted by this operation and maintenance program.

[See file "MCMVI Tracking"](#)

3.4.6.7 PPMO Industrial Facilities Permit Requirement

The MS4 Operator shall maintain a list of industrial facilities the MS4 Operator owns or operates which are subject to NPDES permits for discharges of stormwater associated with industrial activity. The list shall include the permit number or a copy of the No Exposure Exemption Certification (if applicable) for each facility. This includes Municipal projects with a land disturbance permit, wastewater facilities, airports, etc. NPDES permitted facilities not owned or operated by the permittee are not required to be part of the list, however the MS4 Operator should be familiar with all such facilities in their MS4 service area as they may signify a priority area for the IDDE program.

[See file "MCMVI Tracking"](#)

3.4.6.8 PPMO Pollutants Control

The MS4 Operator shall develop or maintain controls for reducing or eliminating the discharge of floatables and pollutants from municipal facilities listed in Sections 3.7.6 and 3.7.7.

These controls shall include at a minimum, where applicable:

- A list of potential pollutant sources at each facility, such as materials used and stored on site.
- A minimum of annual inspections of all municipally owned or operated facilities for stormwater issues. Records shall be kept for inspections and follow up. This may be a checklist, and may be electronic.
- Use of structural controls/BMPs to reduce or prevent pollutants from entering waters of the state or into another MS4 where needed. A map with descriptions of these BMPs shall be maintained for each facility.
- All paints, solvents, petroleum products, and petroleum waste products (except fuels) under the control of the permittee shall be stored so these materials are not exposed to stormwater.

- Sufficient practices of spill prevention, control, and/or management shall be provided to prevent any spill of these pollutants from entering waters of the state. This shall include spill kits when liquid product is stored at a facility; and 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.
- Tracking of rock salt/brine or other deicer usage.
- Maintaining municipal salt storage area(s) after use of rock salt, at minimum sweep and/or shovel spillage in loading area and storage area, and unload salt hoppers or keep under cover when salt is in the hopper.

[See file "MCMVI Tracking"](#)

3.4.6.9 PPMO Waste Disposal

The MS4 Operator shall have procedures for proper disposal of waste removed from the MS4 structures and areas of jurisdiction, including at a minimum:

- Street sweeper spoils and washout;
- Accumulated sediment;
- Dredged materials;
- Floatables, trash and litter;
- Leaves, other organic matter; and
- Other debris

[See file "MCMVI Waste Disposal Procedures"](#)

3.4.6.10 PPMO Equipment Washing

The MS4 Operator shall maintain and utilize the following procedures, at minimum, for the washing of all municipal vehicles and equipment (if applicable to the MS4):

- Use of any soap or detergent shall only be where there is connection to sanitary sewer or equivalent treatment; and
- Any wash or rinse water that contains pollutants such as salt, oils, grease, sediment, grass clippings, lawn chemicals, or pesticides shall not be discharged to waters of the state or the MS4 system without appropriate treatment.
- Any washing or rinsing activities shall be conducted in an appropriate area so the water is treated. This area(s) shall be marked on the map of the facility.

[See file "MCMVI Tracking"](#)

3.4.6.11 PPMO Control Tracking

The MS4 Operator shall maintain written explanations of the controls, procedures, inspection schedules, and explanation of tracking of these controls. Tracking may be done by retaining inspection reports or checklists. Individual Stormwater Pollution Prevention Plans (SWPPP) or one overarching Operations and Maintenance Manual (O&M Manual) for all applicable MS4 facilities may be used to comply with this requirement.

- Individual SWPPPs

- Other written explanation of controls, procedures, inspection schedules, and explanation of tracking (inspection reports or checklists).

Annually, the MS4 Operator shall evaluate the results, controls, and inspection procedures to ensure compliance with these requirements and determine if changes are needed. This evaluation may also aid in finding priority areas or pollutants in relation to MCMIII, or adding more education in relation to MCMI.

[See file "MCMVI Tracking"](#)

3.4.6.12 PPMO Flood Management Projects

The MS4 Operator shall maintain procedures to determine if there are impacts to water quality for new flood management projects, if applicable. Any flood management projects shall require the protection of water quality in the standards that are used to plan, design, build, and maintain stormwater infrastructure. Flood management projects are those project developed or designed to reduce flooding. Include a written description of the procedures to determine if there are impacts to water quality for new flood management projects.

Have there been any flood management projects to review?		
Year Reviewed	Yes/No	If yes, the location(s)
2021-2022	No	
2022-2023	No	
2023-2024	No	
2024-2025		
2025-2026		

[See file "MCMVI Tracking"](#)

3.4.6.13 PPMO Existing Permittees

Existing permittees shall evaluate the current Stormwater Management Program including training, inspection procedures, and other municipal operation procedures to ensure compliance with these requirements. Any changes necessary to be in compliance with this permit shall be completed within one (1) year of this permit issuance.

3.4.6.14 PPMO Program Review

Using adaptive management the MS4 Operator shall review their PPMO Program, at minimum, annually and update implementation procedures as necessary. This data shall be used to continuously evaluate the effectiveness of each BMP and the implementation of each BMP. Any additional BMPs shall be acknowledged in the Stormwater Management Program report.

Annual Review of MCM 6			
Year Reviewed	Date of Review	Reviewer(s)	Were changes made and noted?
2021-2022			
2022-2023	12-2022	Jim Fels	No changes
2023-2024	12-2023	Jim Fels	No changes
2024-2025			
2025-2026			

List any additional programmatic BMPs and when they were added to the Stormwater Management Program. (Examples of programmatic BMPs include; New training program, adopting a standard operating procedure for equipment cleaning.)

[See file "MCMVI Tracking"](#)

3.5 MS4 Stormwater Management Program Report

3.5.1 Reporting

A report to the Department on the status of the MS4's program is due annually on or before February 28th. This report shall cover the previous year from January 1st to December 31st. The report shall be submitted on the Department approved, MS4 Stormwater Management Program Report form. If approved by the Department, permittees may submit the MS4 Stormwater Management Program Report using an alternative report format. The MS4 Operator shall submit the MS4 Stormwater Management Program.

The annual reports must be submitted through the eDMR system. This is accessible through the Missouri Gateway for Environmental Management (MoGEM): <https://dnr.mo.gov/mogem/>

Who has access to the eDMR system?	
Name	Role in the eDMR system
Jim Fels	Organization Official

Appendix A

City of Rolla

2021 - 2026 Storm Water Management Plan

ROLLA CITY LIMITS AND MS4 BOUNDARY

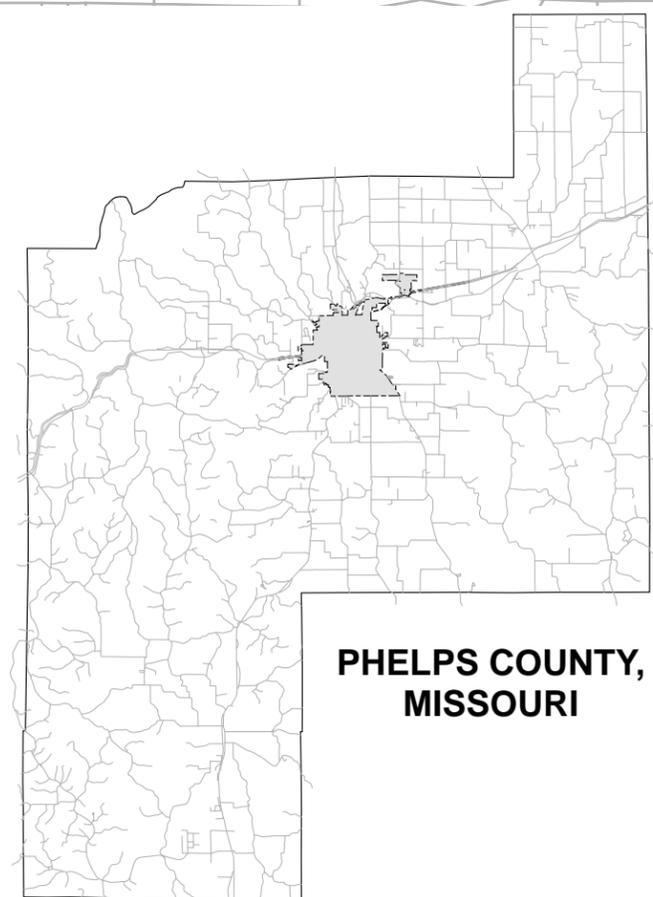
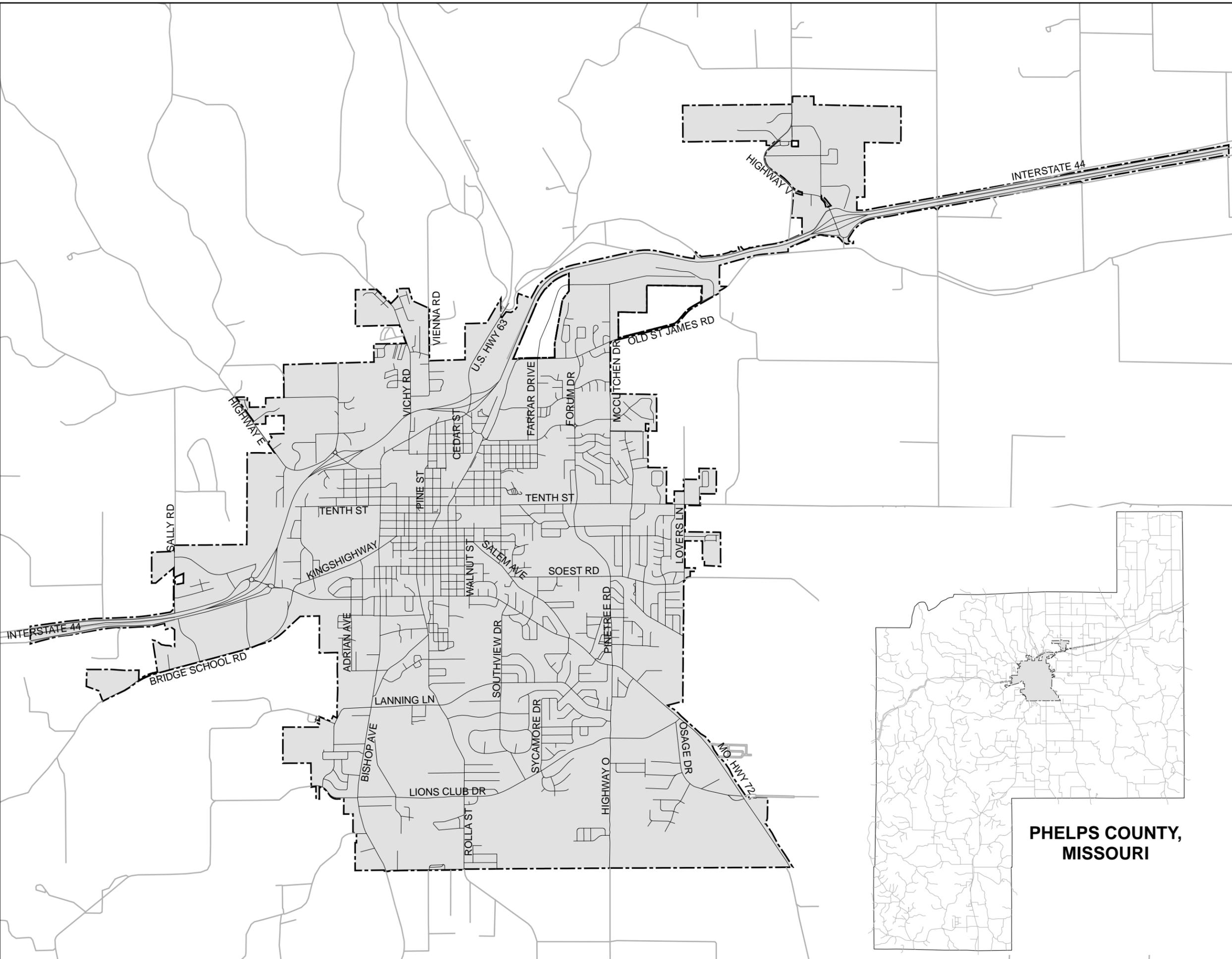
Legend

- City Street
- County Road
- - - City Limits



This map was prepared by the
Department of Public Works
Map revision date: July 2021

Appendix A
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**PHELPS COUNTY,
MISSOURI**

City of Rolla

2021 - 2026 Storm Water Management Plan

EXISTING LANDUSE

Legend

- City Street
- County Road
- Residential
- Church
- Manufacturing
- Commercial / Retail
- Office
- Park and Open Space
- Public and Vacant Space
- City Limits



This map was prepared by the
Department of Public Works
Map revision date: July 2021

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City of Rolla

2021 - 2026 Storm Water Management Plan

SLOPE CONSTRAINTS

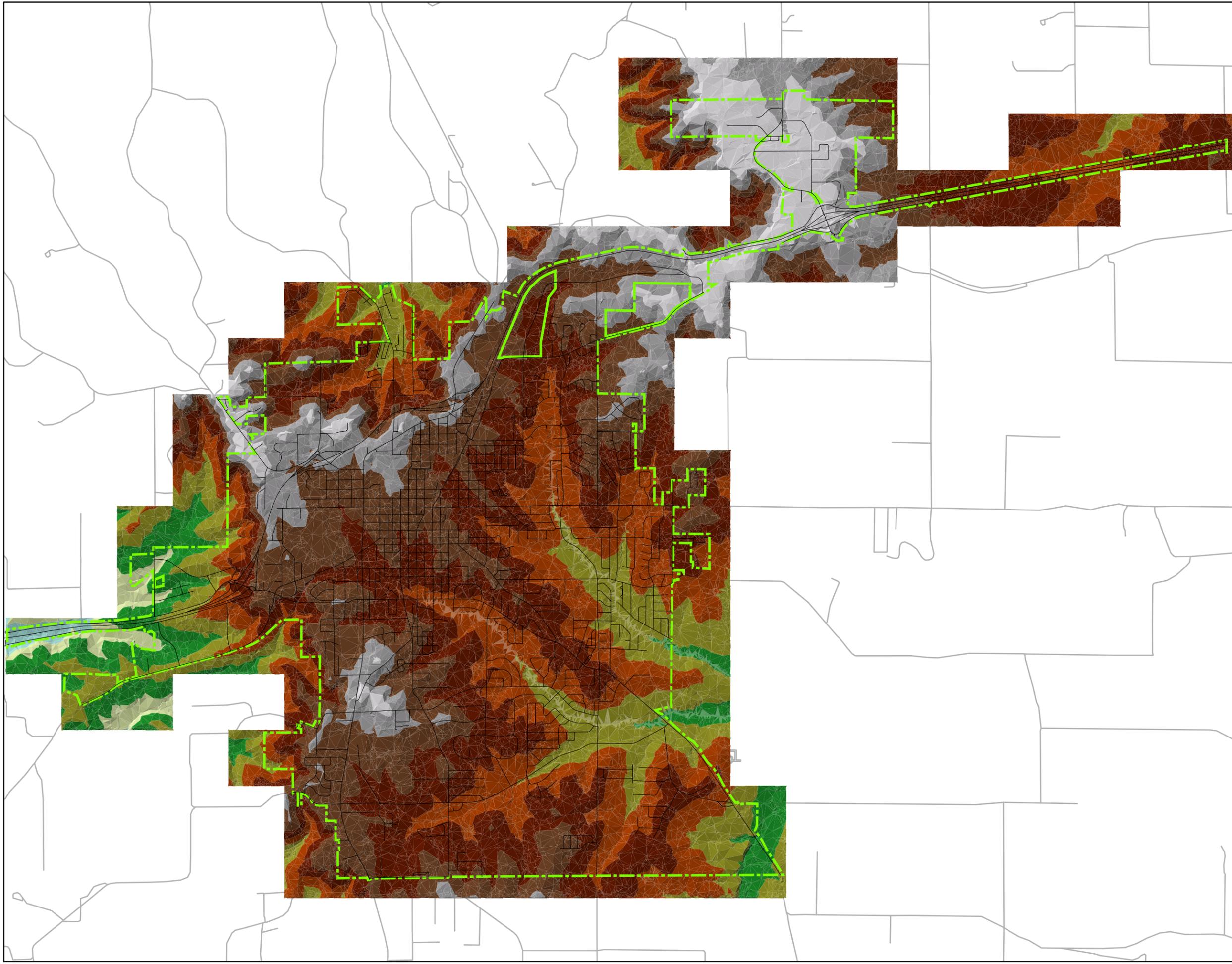
Legend

-  City Street
-  County Road
-  City Limits
-  1179 - 1223
-  1136 - 1179
-  1093 - 1136
-  1050 - 1093
-  1007 - 1050
-  963 - 1007
-  920 - 963
-  877 - 920
-  834 - 877



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Department of Public Works
Map revision date: July 2021

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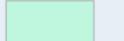


City of Rolla

2021 - 2026 Storm Water Management Plan

PHELPS COUNTY DRAINAGE BASINS

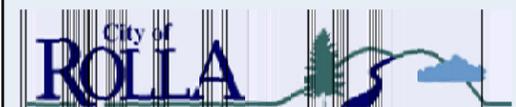
Legend

-  City Limits
-  Gasconade River
-  Bourbeuse River
-  Upper Meramec River
-  Dry Fork Creek
-  Little Piney Creek
-  Lower Big Piney River
-  Spring Creek
-  Mooney Branch
-  River / Stream

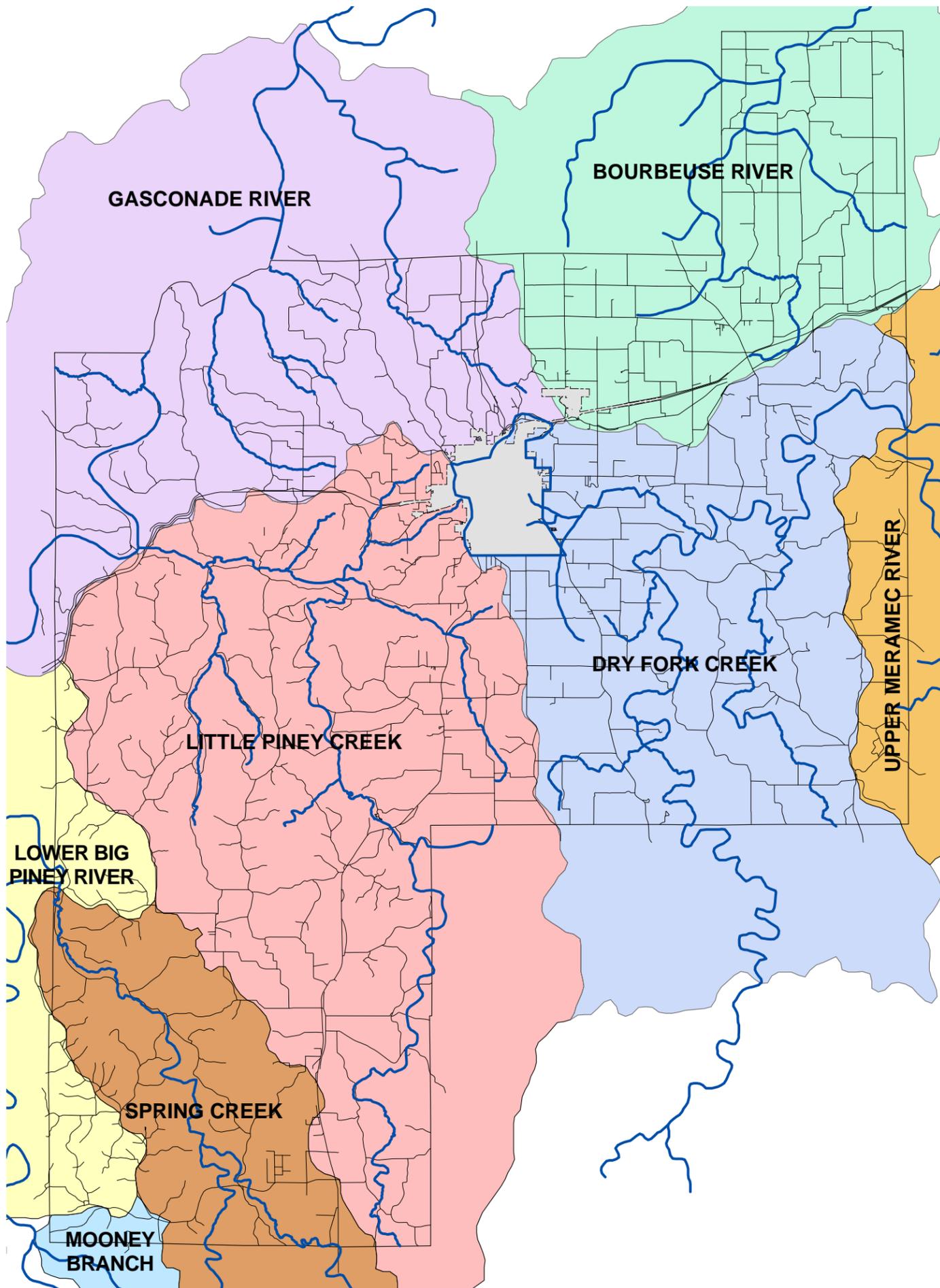
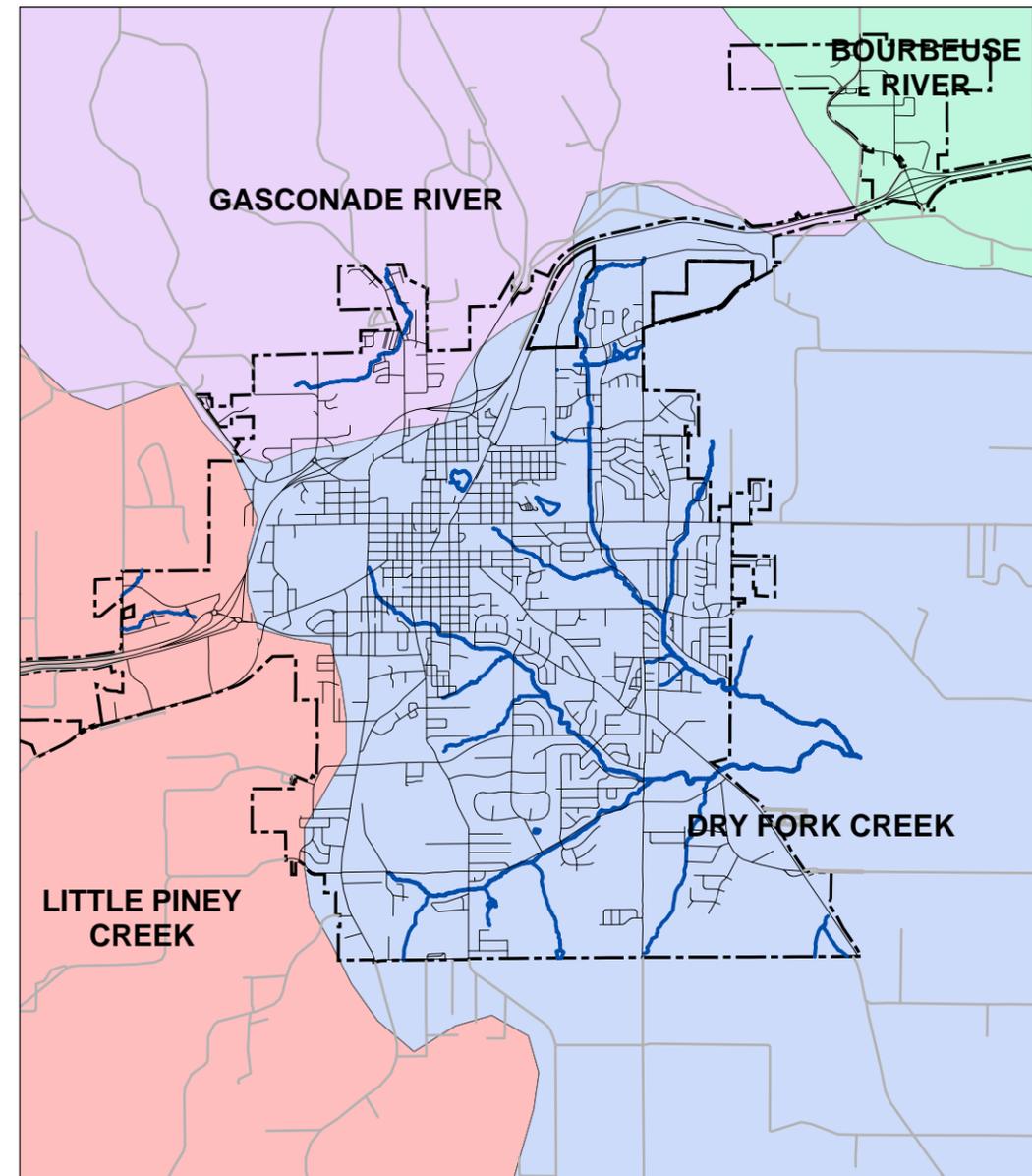


This map was prepared by the
Department of Public Works
Map revision date: July 2021

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COUNTY DRAINAGE BASINS IN CITY OF ROLLA



City of Rolla

2021 - 2026 Storm Water Management Plan

CITY OF ROLLA DRAINAGE BASINS

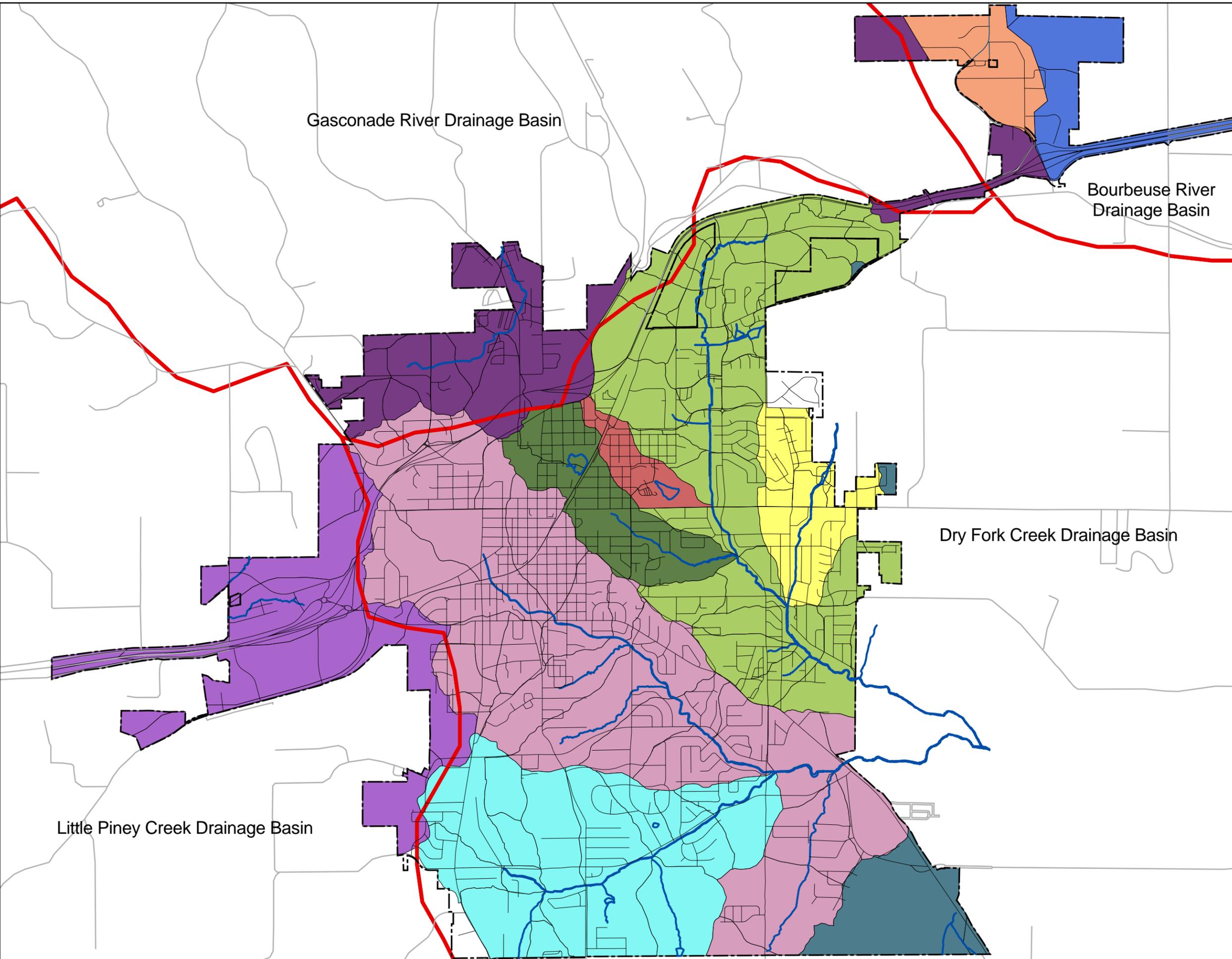
Legend

- Stream
- County Drainage Boundary
- City Limits
- Bourbeuse River
- Burgher Branch
- Burgher Branch Tributary
- Deible Branch
- Dutro Carter
- East Fork Burgher Branch
- Frisco Branch
- Lanes Fork
- Little Beaver Creek
- Little Dry Fork
- Spring Creek



This map was prepared by the
Department of Public Works
Map revision date: July 2021

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City of Rolla

2021 - 2026 Storm Water Management Plan

CITY OF ROLLA STORMWATER CONVEYANCE

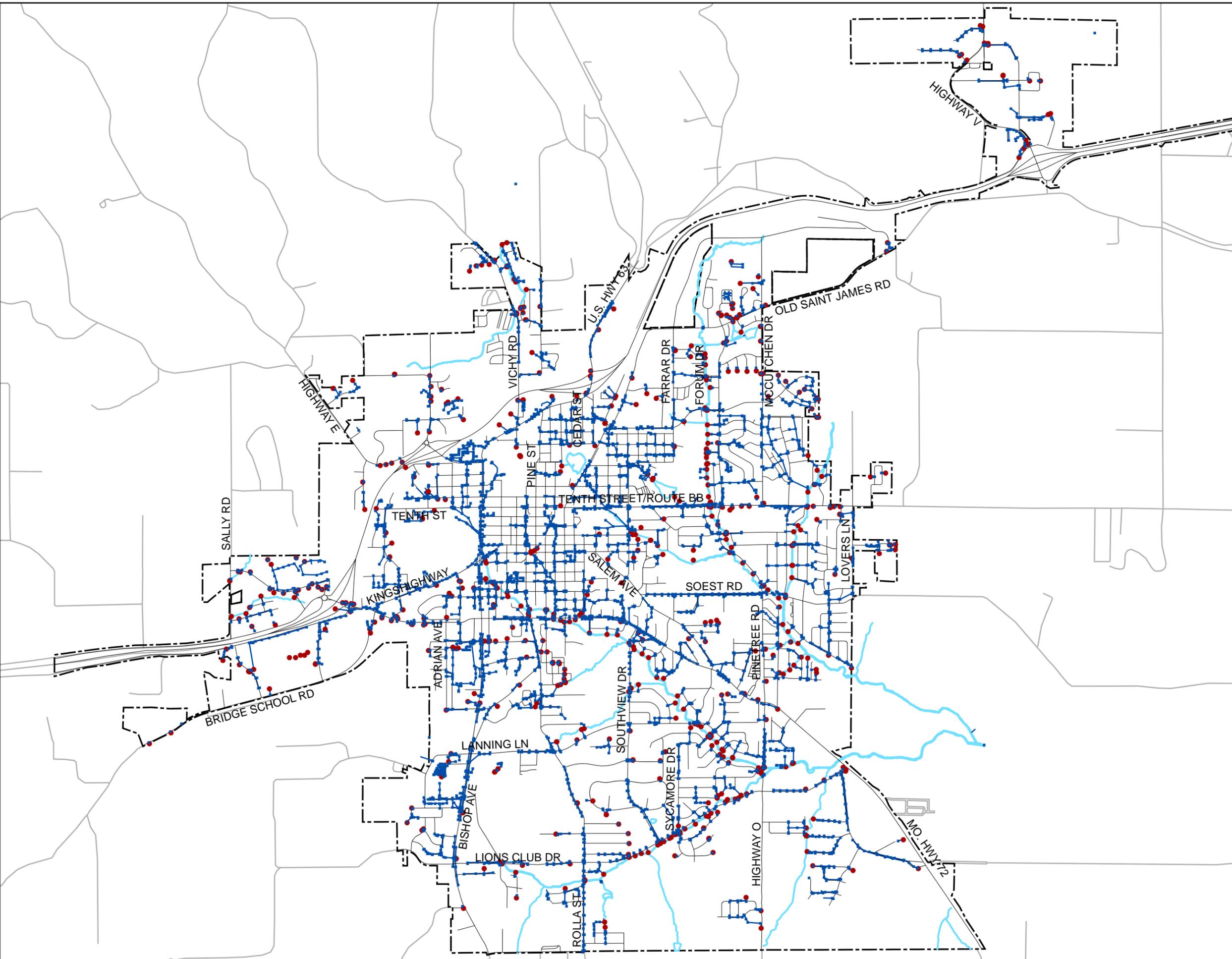
Legend

- Storm Sewer Inlet
- Storm Sewer Pipe
- Pipe Outfall
- Stream
- City Street
- - - City Limits



This map was prepared by the
Department of Public Works
Map revision date: July 2021

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City of Rolla

2021 - 2026 Storm Water Management Plan

CITY OF ROLLA STORM WATER STRUCTURES

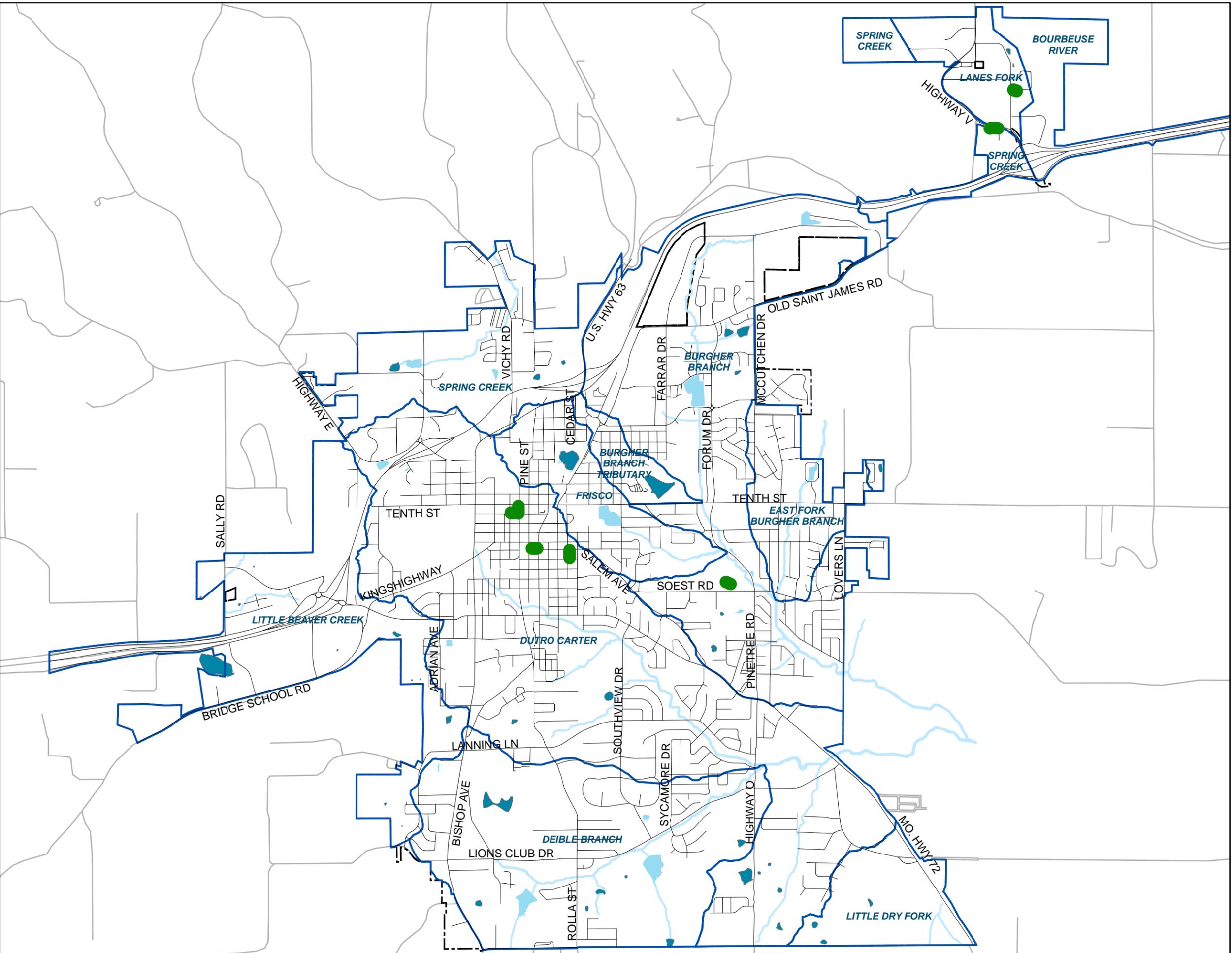
Legend

-  Filtration Strip
-  Detention Facility
-  Retention Facility
-  Stream
-  Drainage Basin
-  City Street
-  City Limits



This map was prepared by the
Department of Public Works
Map revision date: July 2021

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City of Rolla

2021 - 2026 Storm Water Management Plan

CITY OF ROLLA SANITARY SEWER CONVEYANCE

Legend

- Manhole
- Cleanout
- Lateral
- Sewer line
- * Lift Station
- City Street
- - - City Limits



This map was prepared by the
Department of Public Works
Map revision date: July 2021

Appendix A
Page A-8



City of Rolla

2021 - 2026 Storm Water Management Plan

CITY OF ROLLA SANITARY SEWER SPECIAL FEATURES

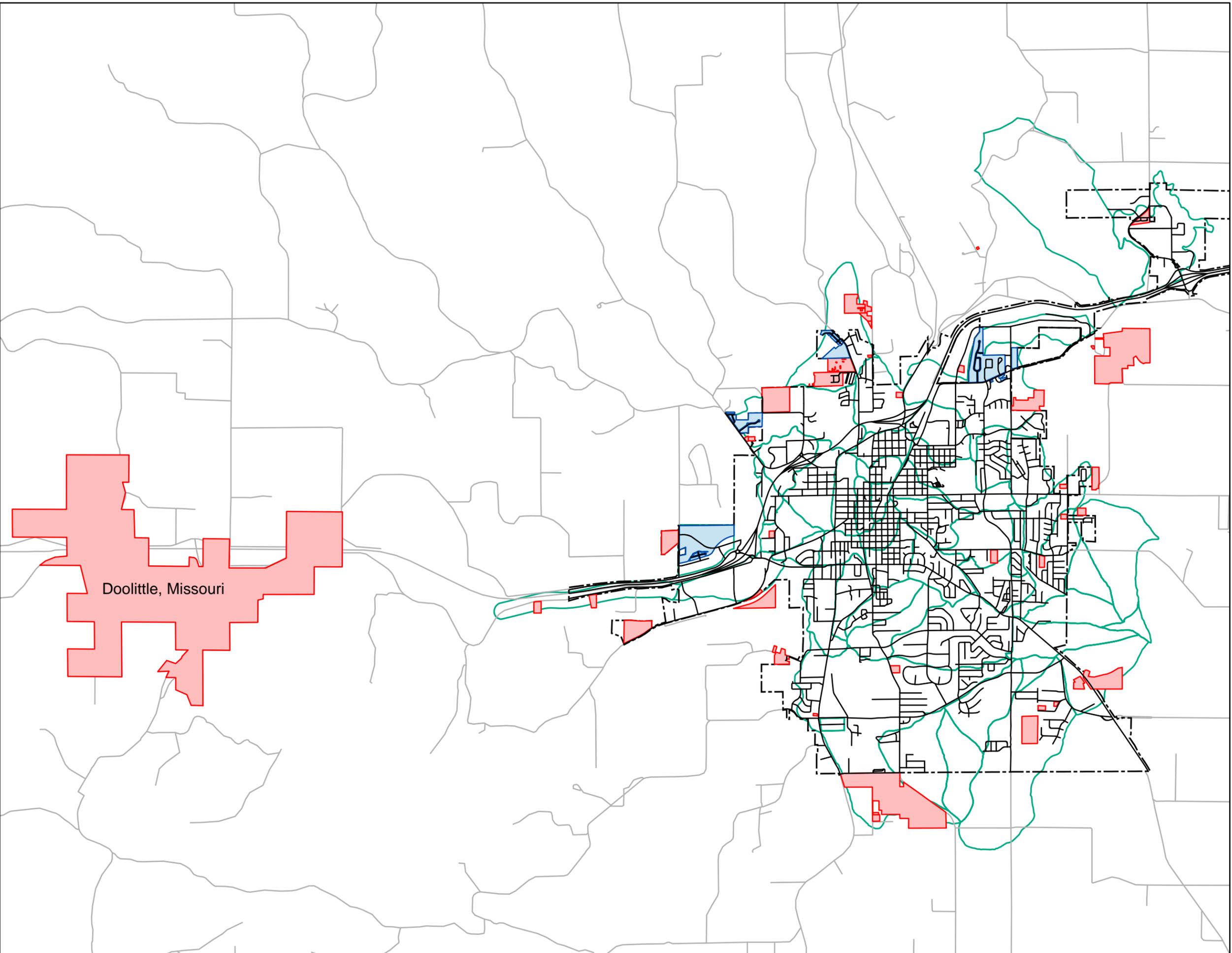
Legend

-  Flat Rate District
-  Direct Billed District
-  Sewer District Boundary
-  City Street
-  City Limits



This map was prepared by the
Department of Public Works
Map revision date: July 2021

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City of Rolla

2021 - 2026 Storm Water Management Plan

CITY OF ROLLA WASTEWATER TREATMENT PLANTS

Legend

-  Wastewater Treatment Plant
-  City Street
-  City Limits



This map was prepared by the
Department of Public Works
Map revision date: July 2021

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Vichy Road Wastewater Treatment Plant



Southwest Wastewater Treatment Plant



Southeast Wastewater Treatment Plant



City of Rolla

2021-2026 Storm Water Management Plan

CITY OF ROLLA WATER FACILITIES

Legend

- Fire Hydrant
- ▲ Fire Valve
- ◆ Well
- Waterlines
- Public Water Supply District #2 Boundary
- City Street
- - - City Limits



This map was prepared by the
Department of Public Works
Map revision date: July 2021

Appendix A
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City of Rolla

2021 - 2026 Storm Water Management Plan

CITY OF ROLLA IMPAIRED WATERWAY SECTIONS

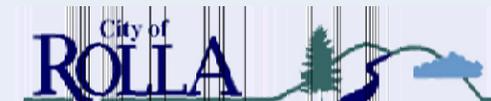
Legend

-  Impaired Waterway
-  Stream
-  City Street
-  City Limits



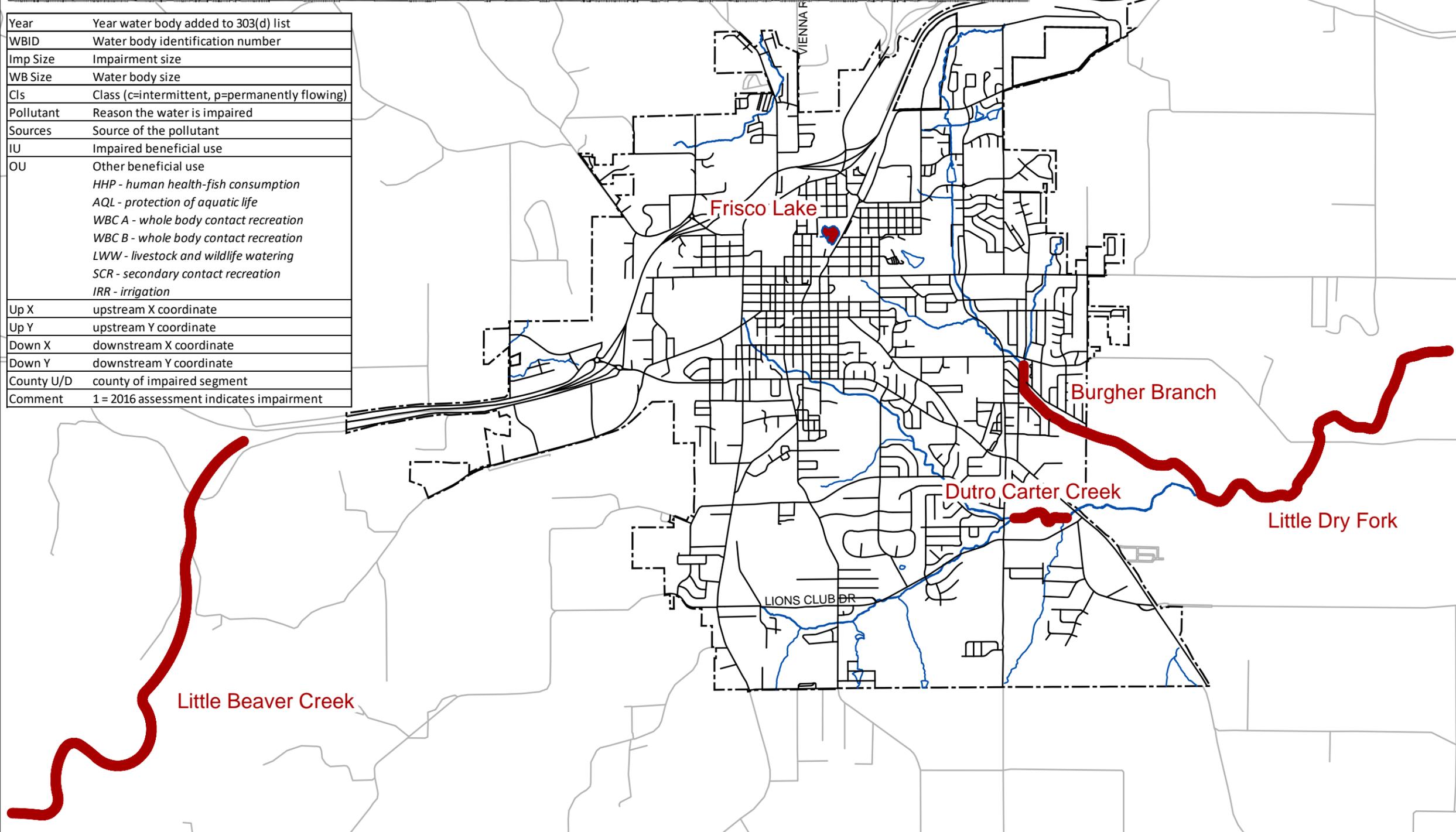
This map was prepared by the
Department of Public Works
Map revision date: August 2021

Appendix A
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Year	WBID	Waterbody	Cls	Imp Size	WB Size	Units	Pollutant	Source	IU	OU	U/D County	Up X	Up Y	Down X	Down Y	WBDE	Comments	Priority	TMDL Year
2009	1865	Burgher Branch	C	1.5	1.5	MI	Oxygen, Dissolved (W)	Source Unknown	AQL	IRR, LWV, SCR, WBC H, HHP	Phelps	612212	4200283	611960	4199067	7146102	1	M	2026-2030
2019	3569	Dutro Carter Creek	C	0.5	0.5	MI	Escherichia coli (W)	Source Unknown	SCR	IRR, LWV, SCR, WBC H, HHP	Phelps	612946	4199021	612708	4199065	7146102	1	M	2026-2030
2019	3570	Dutro Carter Creek	C	0.5	0.5	MI	Escherichia coli (W)	Source Unknown	WBC B	AQL, IRR, LWV, HHP	Phelps	612511	4198782	610120	4198755	7146102	1	M	2026-2030
2009	3569	Dutro Carter Creek	P	1.5	1.5	MI	Oxygen, Dissolved (W)	Rolla SE WWTP	AQL	IRR, LWV, SCR, WBC H, HHP	Phelps	612946	4199021	612708	4199065	7146102	1	M	2026-2030
2002	7280	Frisco Lake	LS	5	5	Ac	Mercury in Fish Tissue (T)	Atmospheric Deposition - Toxics	HHP	AQL, IRR, LWV, SCR, WBC B	Phelps	608326	4201324	608325	4201324	7146102	1	L	>10 years
2014	1529	L. Beaver Creek	C	3.5	3.5	MI	Escherichia coli (W)	Source Unknown	WBC A	AQL, IRR, LWV, SCR, HHP	Phelps	602527	4199323	600308	4195823	10290303	1	M	2026-2030
2008	1529	L. Beaver Creek	C	3.5	3.5	MI	Sedimentation/Siltation (S)	Smith Sand and Gravel	AQL	IRR, LWV, SCR, WBC A, HHP	Phelps	602527	4199323	600308	4195823	10290303	1	M	2026-2030
2009	1863	L. Dry Fork	P	5.2	5.2	MI	Oxygen, Dissolved (W)	Rolla SE WWTP	AQL	IRR, LWV, SCR, WBC H, HHP	Phelps	613267	4199756	614362	4200448	7146102	1	M	2026-2030
2009	1864	L. Dry Fork	C	4.7	4.7	MI	Oxygen, Dissolved (W)	Rolla SE WWTP	AQL	IRR, LWV, SCR, WBC H, HHP	Phelps	612755	4198955	613258	4199800	7146102	1	M	2026-2030
2008	1864	L. Dry Fork	C	4.7	4.7	MI	Oxygen, Dissolved (W)	Source Unknown	AQL	IRR, LWV, SCR, WBC H, HHP	Phelps	613005	4192838	612737	4198961	7146102	1	M	2026-2030

Year	Year water body added to 303(d) list
WBID	Water body identification number
Imp Size	Impairment size
WB Size	Water body size
Cls	Class (c=intermittent, p=permanently flowing)
Pollutant	Reason the water is impaired
Sources	Source of the pollutant
IU	Impaired beneficial use
OU	Other beneficial use
	HHP - human health-fish consumption
	AQL - protection of aquatic life
	WBC A - whole body contact recreation
	WBC B - whole body contact recreation
	LWW - livestock and wildlife watering
	SCR - secondary contact recreation
	IRR - irrigation
Up X	upstream X coordinate
Up Y	upstream Y coordinate
Down X	downstream X coordinate
Down Y	downstream Y coordinate
County U/D	county of impaired segment
Comment	1 = 2016 assessment indicates impairment



City of Rolla

2021 - 2026 Storm Water Management Plan

ROLLA NATIONAL AIRPORT DRAINAGE BASINS

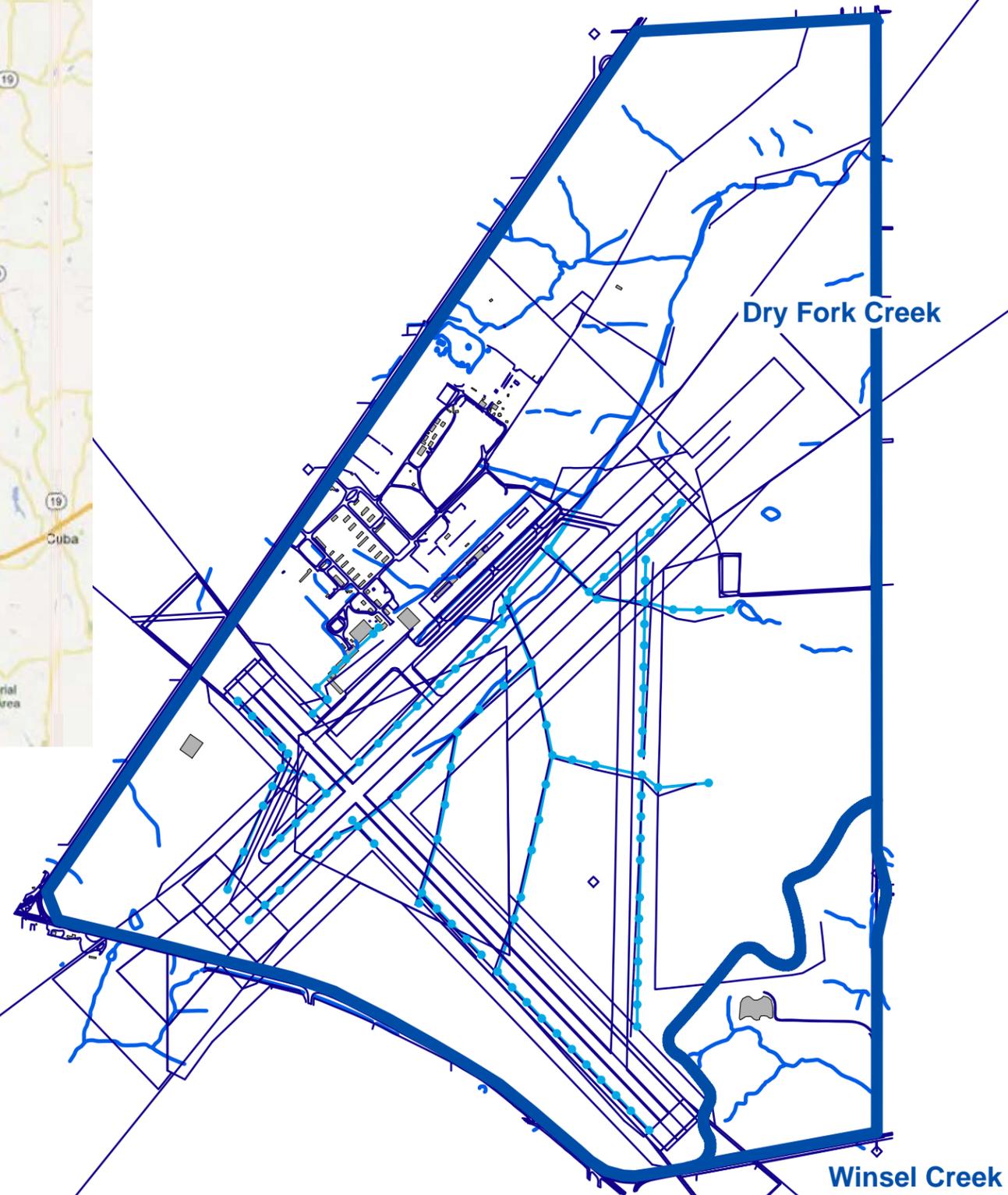
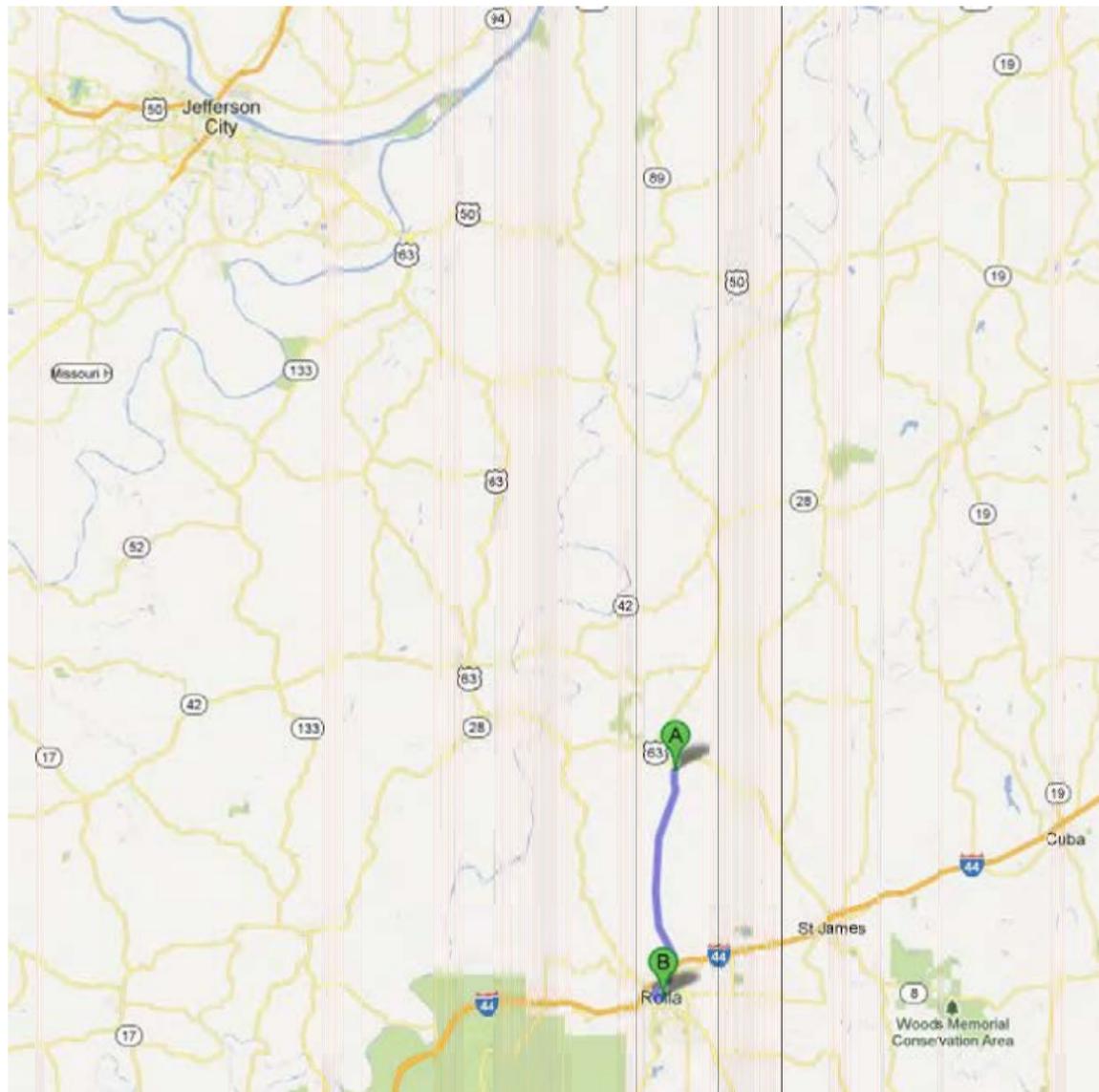
Legend

- Storm Sewer Structures
- Storm Sewer Pipe
- ▬ Basin Boundary
- Stream



This map was prepared by the
Department of Public Works
Map revision date: August 2021

Appendix A
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Appendix B



Missouri Department of dnr.mo.gov

NATURAL RESOURCES

Michael L. Parson, Governor

Dru Buntin, Director

October 20, 2021

City of Rolla
ATTN: Anne McClay
901 North Elm Street
Rolla, MO 65401

Dear Permittee:

Pursuant to the Federal Water Pollution Control Act, under the authority granted to the State of Missouri and in compliance with the Missouri Clean Water Law, the Missouri Department of Natural Resources (Department) has issued, and we are enclosing, **General State Operating Permit number MOR04C055 issued for Rolla Phase II MS4.**

This General Permit is both your federal discharge permit and your new state operating permit and replaces all previous state operating permits and letters of approval for the discharges described within. In all future correspondence regarding this permit, please refer to your general permit number as shown on page one of your permit.

This permit may include requirements with which you may not be familiar. If you would like the Department to conduct a Compliance Assistance Visit to discuss the permit, an appointment can be set up by contacting your local regional office at 573-840-9750.

The permit requires the development and implementation of a Stormwater Management Plan (SWMP). MS4 SWMP Reports shall be submitted by February 28 of each year. Refer to page 22 of your permit for more information on this report.

The requirements found in this permit do not supersede nor relieve liability for compliance with other federal, state, county, or local statutes, regulations, or ordinances. Also, any exemptions found in this permit do not imply an exemption from other permits from the Department. It is your responsibility to ensure that any and all necessary permits for this facility have been obtained.

If you were adversely affected by this decision, you may be entitled to an appeal before the Administrative Hearing Commission (AHC) pursuant to Sections 644.051.6 and 621.250, RSMo. To appeal, you must file a petition with the AHC within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the AHC. Contact information for the AHC is as follows: Administrative Hearing Commission, United States Post Office Bldg., Third Floor,



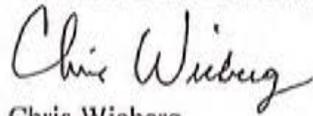
City of Rolla
October 13, 2021
Page 2 of 2

131 West High Street, Jefferson City, MO 65101, and PO Box 1557, Jefferson City, MO 65102. phone: 573-751-2422, fax: 573-751-5018, website: www.oe.mo.gov/ahc.

If you have any questions concerning this permit, please do not hesitate to contact us by mail at Department of Natural Resources, Water Protection Program, P.O. Box 176, Jefferson City, MO 65102-0176, or by phone at 573-522-4502. Thank you.

Sincerely,

WATER PROTECTION PROGRAM



Chris Wieberg
Director

CW:sfv

Enclosure

STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



MISSOURI STATE OPERATING PERMIT

General Operating Permit

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No: MOR04C055
Owner: City of Rolla
Address: 901 North Elm
Rolla, MO 65401

Continuing Authority: City of Rolla
901 North Elm Street
Rolla, MO 65401

Facility Name: Rolla Phase II MS4
Facility Address: 901 NORTH ELM ST
ROLLA, MO 65401

Legal Description: See Page 2
UTM Coordinates: See Page 2
Receiving Stream: See Page 2
First Classified Stream - ID#: See Page 2
USGS# and Sub Watershed#: See Page 2

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein.

FACILITY DESCRIPTION All Outfalls SIC #9511
All Outfalls - Stormwater discharges from Regulated Phase II Municipal Separate Storm Sewer Systems.
Comprehensive permit

SIC 9511/NAICS 924110

This permit authorizes only wastewater, including storm water, discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System, it does not apply to other regulated areas. This permit may be appealed in accordance with RSMo Section 644.051.6 and 621.250, 10 CSR 20-6.020, and 10 CSR 20-1.020.

October 01, 2021
Issue Date


Edward B. Galbraith, Director
Division of Environmental Quality

September 30, 2026
Expiration Date


Chris Wieberg, Director
Water Protection Program

Outfall Number: 001
Legal Description: Sec. 12, T37N, R08W, Phelps County
UTM Coordinates: 608617.917/4200424.279
Receiving Stream: Tributary to Dutro Carter Branch(U)
First Classified Stream - ID//: 100K Extent-Remaining Streams (C) 3960.00
USGS# and Sub Watershed//: 07140102 - 0108

Outfall Number: 002
Legal Description: Sec. 29, T38N, R07W, Phelps County
UTM Coordinates: 613243.372/4205494.236
Receiving Stream: Tributary to L. Prairie Comm. Lake(U)
First Classified Stream - ID//: 100K Extent-Remaining Streams (C) 3960.00
USGS# and Sub Watershed//: 07140103 - 0201

Outfall Number: 003
Legal Description: Sec. 29, T38N, R07W, Phelps County
UTM Coordinates: 612821.626/4204670.851
Receiving Stream: Tributary to Bourbeuse River tributary(U)
First Classified Stream - ID//: Bourbeuse River tributary (C) 4054.00
USGS# and Sub Watershed//: 07140103 - 0201

Outfall Number: 004
Legal Description: Sec. 30, T38N, R07W, Phelps County
UTM Coordinates: 611872.827/4205638.698
Receiving Stream: Tributary to Lanes Fork(U)
First Classified Stream - ID//: 100K Extent-Remaining Streams (C) 3960.00
USGS# and Sub Watershed//: 07140103 - 0202

Outfall Number: 005
Legal Description: Sec. 35, T38N, R08W, Phelps County
UTM Coordinates: 607592.919/4203620.453
Receiving Stream: Tributary to Spring Creek(U)
First Classified Stream - ID//: 100K Extent-Remaining Streams (C) 3960.00
USGS// and Sub Watershed//: 10290203 - 0204

Outfall Number: 006
Legal Description: Sec. 35, T38N, R08W, Phelps County
UTM Coordinates: 607774.423/4203961.766
Receiving Stream: Tributary to Spring Creek(U)
First Classified Stream - ID//: 100K Extent-Remaining Streams (C) 3960.00
USGS// and Sub Watershed//: 10290203 - 0204

Outfall Number: 007
Legal Description: Sec. 18, T37N, R07W, Phelps County
UTM Coordinates: 611869.123/4199160.627
Receiving Stream: Burgher Br.(C)
First Classified Stream - ID//: Burgher Br. (C) 1865.00
USGS// and Sub Watershed//: 07140102 - 0108

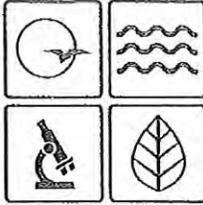
Outfall Number: 008
Legal Description: Sec. 14, T37N, R08W, Phelps County
UTM Coordinates: 606912.939/4199239.474
Receiving Stream: Tributary to Trib. to L. Beaver Cr.(U)
First Classified Stream - ID//: 100K Extent-Remaining Streams (C) 3960.00
USGS// and Sub Watershed//: 10290203 - 0108

Outfall Number: 009
Legal Description: Sec. 09, T37N, R08W, Phelps County
UTM Coordinates: 604964.014/4199722.074
Receiving Stream: Blues Pond(L3)
First Classified Stream - ID//: Blues Pond (L3) 7369.00
USGS# and Sub Watershed//: 10290203 - 0108

Outfall Number: 010
Legal Description: Sec. 09, T37N, R08W, Phelps County
UTM Coordinates: 604948.139/4200257.592
Receiving Stream: Tributary to Little Beaver Creek(U)
First Classified Stream - ID//: 100K Extent-Remaining Streams (C) 3960.00
USGS# and Sub Watershed//: 10290203 - 0108

Outfall Number: 011
Legal Description: Sec. 17, T37N, R08W, Phelps County
UTM Coordinates: 602385.379/4199371.236
Receiving Stream: L. Beaver Cr.(C)
First Classified Stream - ID//: L. Beaver Cr. (C) 1529.00
USGS# and Sub Watershed//: 10290203 - 0108

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Missouri Department of dnr.mo.gov

NATURAL RESOURCES

Eric R. Greitens, Governor

Carol S. Comer, Director

JUN 28 2017

City of Rolla
P.O. Box 979
901 North Elm Street
Rolla, MO 65402

Dear City of Rolla:

Enclosed please find your Missouri State Operating Permit which authorizes land disturbance activities for City of Rolla. This permit has been issued at your request and is based upon information submitted in your application to the department.

Please note that prior to the beginning of land disturbance activities other permits may also be required. Especially note the requirements for a Missouri Department of Natural Resources 401 Water Quality Certification and the U.S. Army Corps of Engineers 404 permit. A 401 Certification is needed when placing material, or fill, into the jurisdictional waters of the United States. Examples are culverts under road crossings, riprap along stream banks and storm water outfall pipes. The term jurisdictional waters refers to large lakes, rivers, streams and wetlands, including those that don't always contain water.

The permitting and certification process is shared between the department and the U.S. Army Corps of Engineers. More details can be found at the US Army Corps of Engineer's Website at <http://www.usace.army.mil/>. Some of these activities are also described on page 2, item 3 of the enclosed permit.

This permit contains several requirements and should be thoroughly read and understood by you. If your permit requires environmental monitoring, copies of the necessary forms have been enclosed. In all future correspondence regarding your permit please reference your permit number as shown on page 1 of the permit.

Please contact the Water Pollution Enforcement and Compliance Unit if you would like to schedule an Environmental Assistance Visit (EAV) at 573-751-1300. During the visit, staff will review the requirements of the permit and answer any questions that you may have. Staff will also be available to walk the site to advise on Best Management Practices required by the permit. The department's regional office staff may also contact you to schedule an EAV.

If you were adversely affected by this decision, you may be entitled to an appeal before the administrative hearing commission pursuant to 10 CSR 20-1.020 and Sections 644.051.6 and 621.250, RSMo. To appeal, you must file a petition with the administrative hearing commission within thirty days after the date this decision was mailed or the date it was delivered, whichever date was earlier. If any such petition is sent by registered mail or certified mail, it will be deemed filed on the date it is mailed; if it is sent by any method other than registered mail or certified mail, it will be deemed filed on the date it is received by the administrative hearing commission. Contact information for the AHC is as follows: Administrative Hearing Commission, Third Floor, 131 West High Street, Jefferson City, MO 65101 (Mailing address: P.O. Box 1557, Jefferson City, MO 65102-1557), Phone: 573-751-2422, Fax: 573-751-5018, Website: www.oh.mo.gov/ahc.



Recycled paper

City of Rolla
Page Two

Please be aware that this facility may also be subject to any applicable county or other local ordinances or restrictions.

Sincerely,

WATER PROTECTION PROGRAM

A handwritten signature in cursive script that reads "David J. Lamb". The signature is written in black ink and is positioned above the typed name.

David J. Lamb
Acting Director

DJL/vs

Enclosure

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STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



MISSOURI STATE OPERATING PERMIT

General Operating Permit

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No MOR100047
Owner: City of Rolla
Address: PO BOX 979
901 North Elm Street
Rolla, MO 65402

Continuing Authority: City of Rolla
P.O. Box 979
901 North Elm St.
Rolla, MO 65402

Facility Name: City of Rolla
Facility Address: PO BOX 979
901 North Elm St
ROLLA, MO 65402

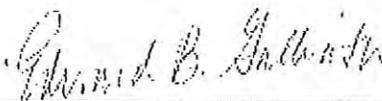
Legal Description: NE 1/4, Sec. 11, T37N, R8W, Phelps County
UTM Coordinates: 607998.920/4201072.397
Receiving Stream: Various City Wide (U)
First Classified Stream - ID#: Dutro Carter Cr. (C) 3570.00
USGS# and Sub Watershed#: 07140102 - 0108

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein.

FACILITY DESCRIPTION All Outfalls SIC #1629
All Outfalls - Construction or land disturbance activity (e.g., clearing, grubbing, excavating, grading, filling and other activity that results in the destruction of the root zone and/or land disturbance activity that is reasonably certain to cause pollution of waters of the state)

This permit authorizes only wastewater, including storm water, discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System. it does not apply to other regulated areas. This permit may be appealed in accordance with RSMo Section 644.051.6 and 621.250, 10 CSR 20-6.020, and 10 CSR 20-1.020.

July 01, 2017
Issue Date


Edward B. Galbraith, Director
Division of Environmental Quality

June 22, 2022
Expiration Date


David J. Lamb, Acting Director
Water Protection Program

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Missouri Department of dnr.mo.gov

NATURAL RESOURCES

Eric R. Greitens, Governor

Carol S. Comer, Director

December 15, 2017

Mr. Steve Hargis, P.E., Director of Public Works
City of Rolla
P.O. Box 979
Rolla, MO 65402

RE: Termination of MO-R80F001

Dear Mr. Hargis:

This is to advise that the referenced permit is terminated in accordance with Subsection (10)(B) of the Missouri Clean Water Commission regulation 10 CSR 20-6.010, Construction and Operating permits.

As disclosed in the request to terminate the permit, the facility is no longer required to maintain a permit.

Should you have any questions concerning this permit termination, please feel free to contact Michael Hefner at (573) 840-9764 or at 2155 North Westwood Blvd., Poplar Bluff, MO 63901.

Sincerely,
SOUTHEAST REGIONAL OFFICE

Jackson L. Bostic
Regional Director

JLB/mhk

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STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No.	MO-0137693
Owner:	City of Rolla
Address:	P.O. Box 979, Rolla, MO 65402
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	Rolla National Airport WWTF
Facility Address:	HWY 28 & HWY 63, Vichy, MO 65580
Legal Description:	See Page 2
UTM Coordinates:	See Page 2
Receiving Stream:	See Page 2
First Classified Stream and ID:	See Page 2
USGS Basin & Sub-watershed No.:	See Page 2

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

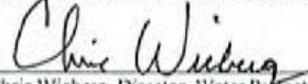
The use or operation of this facility shall be by or under the supervision of a Certified "D" Operator. Single cell storage lagoon/wastewater irrigation/sludge is retained in lagoon. Design population equivalent is 400. Design flow is 30,500 gallons per day (1-in-10 year design including net rainfall minus evaporation). Average design flow is 5,479 gallons per day (dry weather flows). Actual flow is 3,500 gallons per day. Design sludge production is 0.75 dry tons per year.

This permit authorizes only irrigation of wastewater under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 644.051.6 of the Law.

January 1, 2020
Effective Date

December 31, 2024
Expiration Date


Edward B. Galbraith, Director, Division of Environmental Quality


Chris Wieberg, Director, Water Protection Program

FACILITY DESCRIPTION (continued):

Permitted Feature #001 – POTW – SIC #4952

Legal Description: SW ¼, NE ¼, Sec. 01, T39N, R08W, Maries County
UTM Coordinates: X= 608789, Y= 4222666
Receiving Stream: Tributary to Dry Fork (3960)
First Classified Stream and ID: 100K Extent-Remaining Streams
USGS Basin & Sub-watershed No.: (07140103-0101)

Storage Basin:

Maximum Operating Level: 2 foot of freeboard (storage basin water level in feet below the overflow level)

Storage volume (min to max water levels, in gallons):	<u>Cell #1</u>	<u>Total</u>
	572,280	572,280

Storage Capacity (in Days):

Design for Dry weather flows: 140 days

Design with 1-in 10 year flows: 90 days

Permitted Feature #002 – Sprinkler System - Irrigation Field

Legal Description: SW ¼, NE ¼, Sec. 01, T39N, R08W, Maries County
UTM Coordinates: X= 608699, Y= 4222786
Receiving Stream: Tributary to Dry Fork
First Classified Stream and ID: 100K Extent-Remaining Streams
USGS Basin & Sub-watershed No.: (07140103-0101)

Wastewater Irrigation Design Parameters:

Irrigation volume per year: 12,584,105 gallons (based on annual irrigation rate)

Minimum irrigation volume per year at Design Flow: 2,000,000 gallons

Irrigation areas: 18.6 acres at design loading

Irrigation rates: 0.214 inch/hour; 0.75 inch/day; 2.0 inches/week; 22 inches/year

Field slopes: 6 percent

Equipment type: Sprinklers

Vegetation: Grass hay

Irrigation rate is based on: Hydraulic loading rate

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STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No.	MO-0050652
Owner:	City of Rolla
Address:	P.O. Box 979, Rolla, MO 65402
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	Rolla Southeast Wastewater Treatment Plant
Facility Address:	1801 MO-72, Rolla, MO 65401
Legal Description:	See Page 2
UTM Coordinates:	See Page 2
Receiving Stream:	See Page 2
First Classified Stream and ID:	See Page 2
USGS Basin & Sub-watershed No.:	See Page 2

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

See Page 2

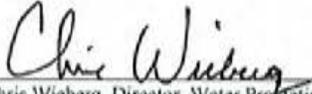
This permit authorizes only wastewater and stormwater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 621.250 RSMo, Section 640.013 RSMo and Section 644.051.6 of the Law.

<u>September 1, 2018</u>	<u>March 1, 2019</u>
Effective Date	Modification Date

June 30, 2023
Expiration Date



Edward B. Galbraith, Director, Division of Environmental Quality



Chris Wieberg, Director, Water Protection Program

FACILITY DESCRIPTION (continued):

Outfall #001 – POTW – SIC #4952

The use or operation of this facility shall be by or under the supervision of a Certified **B** Operator.

Lift station / bar screen / grit removal / activated sludge / clarifiers (2) / trickling filter / oxidation ditch / UV disinfection / aerobic digestion / sludge storage lagoon / sludge is land applied.

Flow is split between the West trickling filter, the West activated sludge unit, or the East oxidation ditch via a lift station. Fully treated effluent from the West plant is blended with fully treated effluent from the East plant prior to disinfection. The blended effluent is discharged from Outfall#001.

Design population equivalent is 47,650.

Design flow is 4.765 MGD.

Actual flow is 3.06 MGD.

Design sludge production is 7.39 dry tons/year.

Legal Description:	Sec. 18, T37N, R7W, Phelps County
UTM Coordinates:	X = 611958, Y = 4199021
Receiving Stream:	Dutro Carter Creek (P)
First Classified Stream and ID:	Dutro Carter Creek (P) (3569) 303(d)
USGS Basin & Sub-watershed No.:	(07140102-0108)

Permitted Feature SM1 – Instream Monitoring

Instream monitoring location – Upstream – bridge over Dutro Carter Creek approximately 0.45 miles upstream from Outfall #001

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STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI CLEAN WATER COMMISSION



MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No.	MO-0047023
Owner:	City of Rolla
Address:	P.O. Box 979, Rolla, MO 65402
Continuing Authority:	Same as above
Address:	Same as above
Facility Name:	Rolla Southwest Wastewater Treatment Facility
Facility Address:	14655 County Road 7100, Rolla, MO 65401
Legal Description:	See Page 2
UTM Coordinates:	See Page 2
Receiving Stream:	See Page 2
First Classified Stream and ID:	See Page 2
USGS Basin & Sub-watershed No.:	See Page 2

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

See Page 2

This permit authorizes only wastewater and stormwater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 621.250 RSMo, Section 640.013 RSMo and Section 644.051.6 of the Law.

November 1, 2018
Effective Date


Edward B. Galbraith, Director, Division of Environmental Quality

September 30, 2023
Expiration Date


Chris Wieberg, Director, Water Protection Program

FACILITY DESCRIPTION (continued):

Outfall #001 – POTW – SIC #4952

The use or operation of this facility shall be by or under the supervision of a Certified C Operator.

Bar screen / grit removal / oxidation ditch / secondary clarifiers (2) / UV disinfection / sludge holding lagoon / sludge is land applied

Design population equivalent is 10,000.

Design flow is 1.0 MGD.

Actual flow is 388,000 gallons per day.

Design sludge production is 100 dry tons/year.

Legal Description:	Sec. 17, T37N, R8W, Phelps County
UTM Coordinates:	X = 602357, Y = 4199328
Receiving Stream:	Little Beaver Creek (C)
First Classified Stream and ID:	Little Beaver Creek (C) (1529) 303(d) List
USGS Basin & Sub-watershed No.:	(10290203-0108)

Permitted Feature SM1 – Instream Monitoring

Instream monitoring location – Upstream – See Special Condition #22.

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STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES

MISSOURI CLEAN WATER COMMISSION



MISSOURI STATE OPERATING PERMIT

In compliance with the Missouri Clean Water Law, (Chapter 644 R.S. Mo. as amended, hereinafter, the Law), and the Federal Water Pollution Control Act (Public Law 92-500, 92nd Congress) as amended,

Permit No. MO-0047031
Owner: City of Rolla
Address: P.O. Box 979, Rolla, MO 65402
Continuing Authority: Same as above
Address: Same as above
Facility Name: Rolla, Vichy Road Wastewater Treatment Facility
Facility Address: 11751 County Road 8030, Rolla, MO 65401
Legal Description: See Page 2
UTM Coordinates: See Page 2
Receiving Stream: See Page 2
First Classified Stream and ID: See Page 2
USGS Basin & Sub-watershed No.: See Page 2

is authorized to discharge from the facility described herein, in accordance with the effluent limitations and monitoring requirements as set forth herein:

FACILITY DESCRIPTION

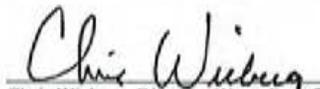
See Page 2

This permit authorizes only wastewater discharges under the Missouri Clean Water Law and the National Pollutant Discharge Elimination System; it does not apply to other regulated areas. This permit may be appealed in accordance with Section 621.250 RSMo, Section 640.013 RSMo and Section 644.051.6 of the Law.

November 1, 2018
Effective Date


Edward B. Galbraith, Director, Division of Environmental Quality

October 31, 2023
Expiration Date


Chris Wieberg, Director, Water Protection Program

FACILITY DESCRIPTION (continued):

Outfall #001 – POTW – SIC #4952

The use or operation of this facility shall be by or under the supervision of a Certified C Operator.

Microscreen / grit removal / contact stabilization / peak flow clarifier / secondary clarifier / activated sludge / trickling filter / aerobic digester / sludge is hauled by contract hauler and land applied / blending occurs when flows from the peak flow clarifier are combined with fully treated effluent prior to discharge from Outfall #001

Design population equivalent is 4,000.

Design flow is 400,000 gallons per day.

Actual flow is 317,000 gallons per day.

Design sludge production is 100 dry tons/year.

Legal Description:	Sec. 35, T38N, R8W, Phelps County
UTM Coordinates:	X = 607731, Y = 4203975
Receiving Stream:	Tributary to Tributary to Spring Creek (C)
First Classified Stream and ID:	8-20-13 MUDD V1.0 (C) (3960)
USGS Basin & Sub-watershed No.:	(10290203-0204)

Permitted Feature SM1 – Instream Monitoring

Instream monitoring location – Downstream – approximately 300 feet downstream of Outfall #001. See Special Condition #19.