

City of Branson



MS4 Permit Application 2017 Annual Report

Prepared by City of Branson Engineering and Public Works Department



MO Form 780-1846 (Stormwater Annual Report – Small MS4s Permits)

Table of Contents

Executive Summary

MCM #1 – Public Education

- Public Education Efforts
- Overall Compliance with Permit Conditions
- Stormwater Activities Planned for Next Reporting Cycle

MCM #2 – Public Participation/Involvement

- Public Involvement Efforts
- Overall Compliance with Permit Conditions
- Stormwater Activities Planned for Next Reporting Cycle

MCM #3 – Illicit Discharge Detection and Elimination

- Illicit Discharge Detection and Elimination Efforts
- Overall Compliance with Permit Conditions
- Results of Information Collected and Analyzed During Reporting Cycle
- Stormwater Activities Planned for Next Reporting Cycle

MCM #4 – Construction Site Stormwater Runoff Control

- Construction Site Runoff Control Efforts
- Overall Compliance with Permit Conditions
- Stormwater Activities Planned for Next Reporting Cycle
- Summary of the Number of Inspections

MCM #5 – Post Construction

- Post-Construction Runoff Control Efforts
- Overall Compliance with Permit Conditions
- Stormwater Activities Planned for Next Reporting Cycle

MCM #6 – Good Housekeeping for Municipal Operations

- Good Housekeeping Efforts
- Overall Compliance with Permit Conditions
- Results of Information Collected and Analyzed During Reporting Period
- Stormwater Activities Planned for Next Reporting Cycle

MO Form 780-2049 (Stormwater Annual Report – Small MS4s Permits Addendum – Water Quality Program Assessment)



Executive Summary:

The City of Branson was issued its first Municipal Separate Storm Sewer Permit in November of 2016. The Stormwater Coordinator is responsible for implementing the stormwater program. At this time, the City's stormwater program is primarily funded through the transportation fund.

The stormwater management plan was developed by city staff with input from a consultant and a citizen task force and was adopted by city ordinance by the Branson Board of Aldermen on April 9, 2013. This plan was submitted with the application for a permit on May 9, 2013. The City utilizes this plan as a guidance document to work towards compliance with all six minimum control measures.

The purpose of this report is to provide information related to the efforts of the City of Branson to reduce non-point source pollution through public education and participation, illicit discharge detection and elimination, construction site runoff control, post-construction runoff control and good housekeeping in municipal operations. It is the City's intent to be as compliant as possible with the state and federal requirements set forth under NPDES Phase II. A summary table is enclosed which outlines the MCM's completed this first year of the permit.

The City of Branson views the stormwater management plan as an opportunity to expand on a vision for clean water within our jurisdiction. We recognize that this stormwater management plan is a starting point for effective non-point source pollution reduction and our residents and community leaders are committed to being proactive in protecting our water resources as we place great value on the water resources in our care.



Minimum Control Measure #1 – Public Education

Summary: The City of Branson has continued to build its public education program through distribution of educational materials to the community, the city website, and conducting outreach activities. The focus of these efforts is to educate the public with activities discussing the impact of stormwater discharges on water bodies and the steps the public can take to reduce pollutants in storm water runoff.

Public Education Efforts

- Biennial Business and Community Survey was updated to include questions regarding stormwater issues and sent to citizens for response.
- Distributed educational brochures to the public at City Hall, Public Works, Recycle Center and Utilities Department. Enhanced Facebook page to include water quality posts.
- Added 5 additional links to the city’s new stormwater web page that is available to public, contractors, developers and builders. Now includes the city’s MS4 plan, MS4 annual report, and a map of the Table Rock Lake watershed.
- Stormwater webpage received 92 visits in the 12 month report period.

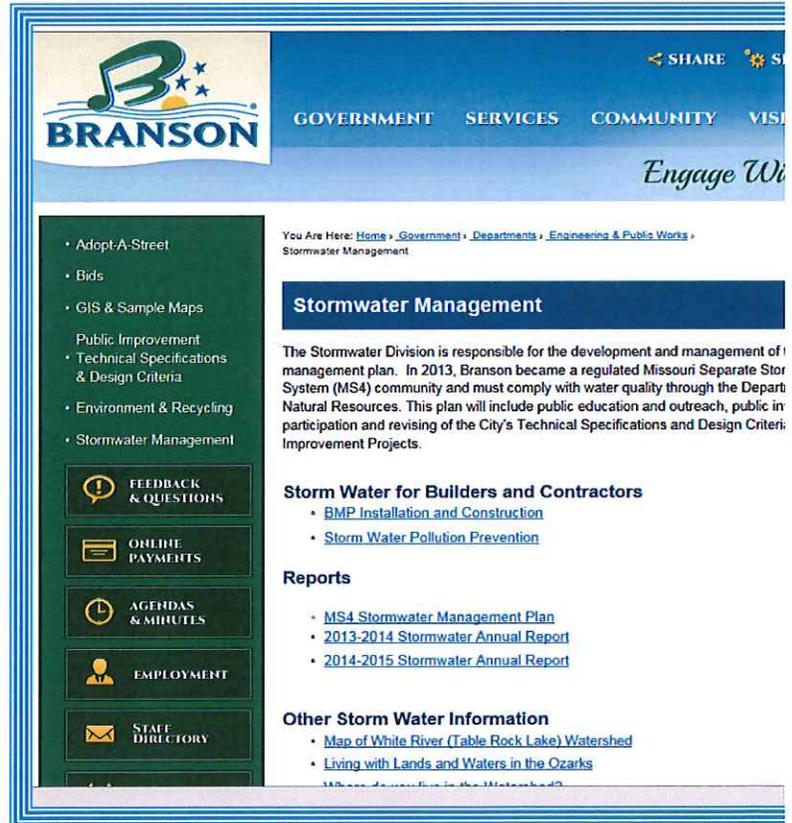


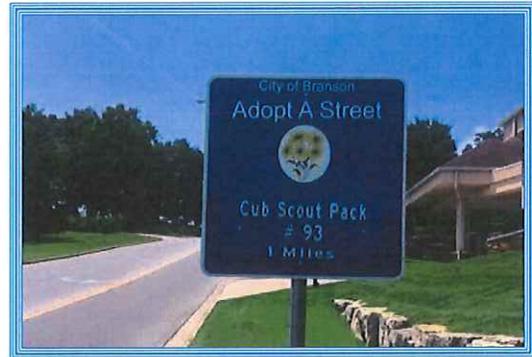
Exhibit 1.1



- Created webpage on Branson’s Adopt-A-Street program, to reduce floatables. Informative cards (below) handed out at Earth Day and available at city hall and on website.



Exhibit 1.2



- Household Chemical Collections: 4.6 Tons collected and safely disposed of or recycled for beneficial use (i.e. used motor oil is used to heat recycle center).
- Distributed 200 brochures throughout the community and at local events.



- Completed the installation of a watershed friendly parking lot at Lakeside forest. This can be used for future demonstrations.

- Provided citizens with materials to install 16 storm drain decals and 20 corresponding handouts. This brings our total to 711 storm drains marked by 201 volunteers, and 3,170 handouts distributed to homes/businesses.

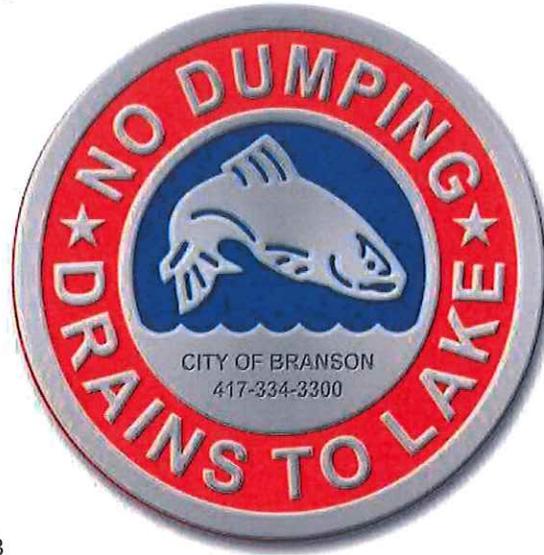


Exhibit 1.3

No SWMP elements have been changed or refined since permit application. All measurable goals have been met.

Overall Compliance with Permit Conditions:

The Best Management Practices (BMP's) in the City's Stormwater Management Plan (SWMP) seem to be effective for local population. The City continues to make progress towards achieving the goal of reducing the discharge pollutants to the Maximum Extent Practicable (MEP). We have begun to make the public more aware of stormwater quality issues.

Stormwater Activities Completed Reporting Cycle:

- Select appropriate erosion control materials to distribute to contractors/developers during Open for Business process for developments.
- Promote the Missouri Stream Team Program and The Lakes of Missouri Volunteer Program through water quality webpage and social media.

No changes are proposed to MCM #1's BMP's or measurable goals.

Minimum Control Measure #2 – Public Participation & Involvement

Summary: The City of Branson has actively involved the public in the development and implementation of the stormwater program.

The Stormwater Division of the Engineering Department has a strong relationship with the Public Relations Department as well as local newspapers and radio stations. We have had individuals, families and groups such as the Boy Scouts take on specific tasks of laying permeable pavers and storm drain markers.

Public Involvement Efforts:

- Processed a total of 17,994 vehicles through the city’s recycle center and safely disposed of 4.6 tons of household chemicals. The number of counted vehicles number was decreased due to the addition of two 24 hour drop off areas.
- Organized a total of 20 participants in marking 16 storm drains. These volunteers also handed out 24 brochures on “The Water Connection and Household Hazardous Waste,” as well as the door hanger below:

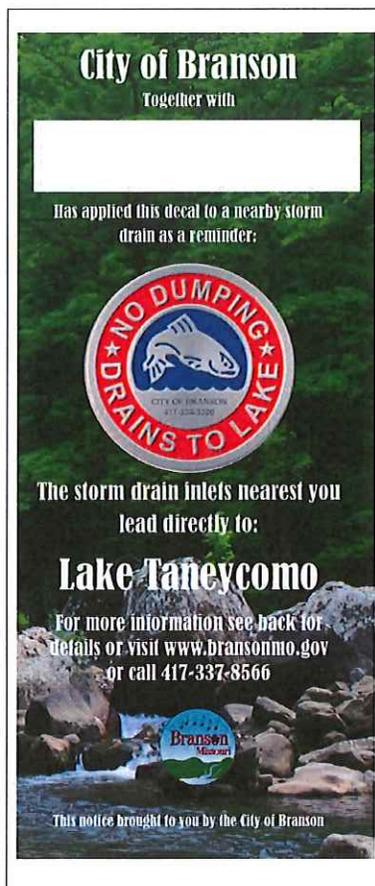


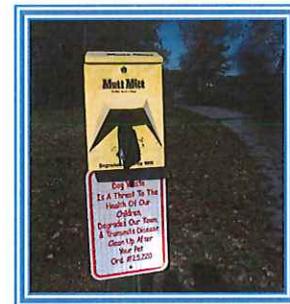
Exhibit 2.1



- Encouraged participation and organized the Adopt-a-Street program wherein we trained 234 participants and removed 115 full trash bags.

Exhibit 1.2

- Maintained ten pet waste stations in city parks and at Branson Landing. Pet waste pick up signs have been posted throughout all of the City parks and trails reminding residents and visitors to pick up after their pets.



- Promote Table Rock Lake Water Quality, Inc.
- Biennial Business and Community Survey was updated to include questions regarding stormwater issues and sent to citizens for response.
- Participated in Taneycomo Cleanup with a total of 99 volunteers who picked up 5 tons of trash and disposed of 19 tires.

No SWMP elements have been changed or refined since permit application. All measurable goals have been met.



Overall Compliance with Permit Conditions:

The City of Branson is complying with permit conditions relating to Public Participation and Involvement. Residents can utilize the “Citizen’s Comment” and “Public Hearing” portion of the City Council and Planning and Zoning meetings as well as post a citizen concern on the city’s website.

Whenever a development is proposed in the City, public hearings are held at the Planning & Zoning meetings. The Planning and Zoning Commission is a volunteer board who are appointed by City Council. They review and approve all developments coming into the city and include in their discussion stormwater and other issues prior to approval of the development. Once approved by Planning & Zoning, their recommendation is forwarded to City Council for final approval where residents have another opportunity to provide questions or comments.

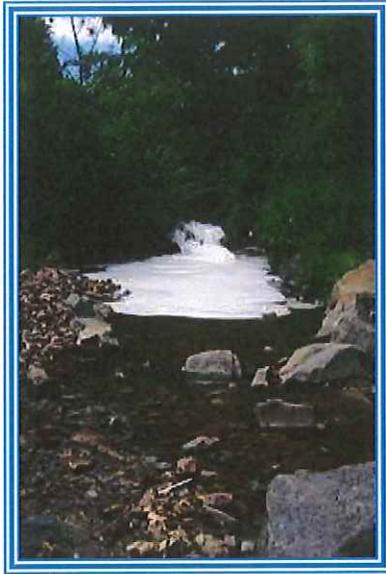
Stormwater Activities Planned During Next Reporting Cycle:

- Continue encouraging use of the city’s recycle center to dispose of household chemicals and recyclable materials through promotion on Facebook and city website.
- Publicize participation in an annual storm drain marking event.
- Encourage groups and citizens to participate in the Adopt-a-Street program through the city website and social media.
- Continue maintaining pet waste stations.
- Post the Lake Taneycomo Watershed Plan to the City’s website upon completion.
- Continue to Co-Sponsor a community-wide lake cleanup with a partnering organization.
- Conduct a Citizen Survey regarding flooding issues within the city limits.

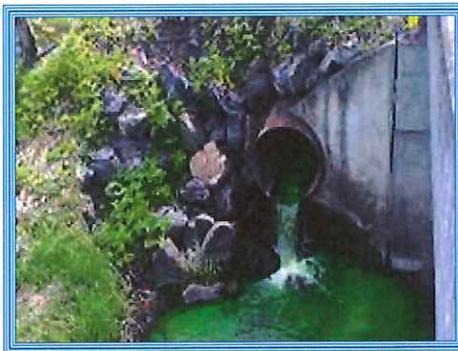
• Minimum Control Measure #3 – Illicit Discharge Detection and Elimination

Summary: The City of Branson is striving to develop, implement and enforce a program to detect and eliminate illicit discharges into the MS4.

Illicit Discharge Detection and Elimination Efforts:



- The GIS mapping division continues to map all recently constructed stormwater piping and has completed mapping of the city storm sewer system. Currently, Branson has approximately 203,775 feet or 38.6 miles of storm sewer infrastructure mapped throughout the City limits.
- Trained 70 city employees from the Engineering, Public Works, Fire, Police, Parks, Utilities and Planning Departments concerning stormwater education by showing the “Rain Check Stormwater Pollution Prevention” for MS4s video.
- Established a web-based reporting tool for illegal discharges/stormwater reporting and developed a response and reporting system to track incidents. Incident information is recorded by Police Dispatch and reported to Stormwater Coordinator. (*Exhibit 3.1*)
- Outfall mapping of Roark Creek proper and its tertiary channels to be utilized for the Outfall Monitoring and Dry Weather Screening Plan.
- Developed an Outfall Monitoring and Dry Weather Screening Plan to be used for inspections twice annually. This utilizes the outfall maps created by the GIS division.
- The GIS division has completed 50% mapping of the storm sewer system.



No SWMP elements have been changed or refined since permit application. All measurable goals were met. No changes are proposed for MCM #3 BMP's or its measurable goals.



Overall Compliance with Permit Conditions:

Branson is complying with permit conditions relating to Illicit Discharge Detection and Elimination. Our GIS stormwater map is being updated continuously to show stormwater discharge points. This map currently shows all developments within the city limits. Construction sites are monitored more closely by Construction Project Managers in the Engineering Department and Building Inspectors.

Results of Information Collected and Analyzed During Reporting Period:

- Marked 26 storm drains and distributed 48 flyers.

Stormwater Activities Planned During Next Reporting Cycle:

- Continue mapping of storm sewer system.
- Continue to improve the web-based reporting tool for illegal discharges/stormwater.
- Implement the Outfall Monitoring and Dry Weather Screening Plan.
- Continue stormwater education and training to 20% of city employees in Engineering, Public Works, Fire, Police, Parks, Utilities and Planning Departments.
- Complete a draft ordinance for illicit discharges.

Minimum Control Measure #4 – Construction Site Stormwater Runoff Control

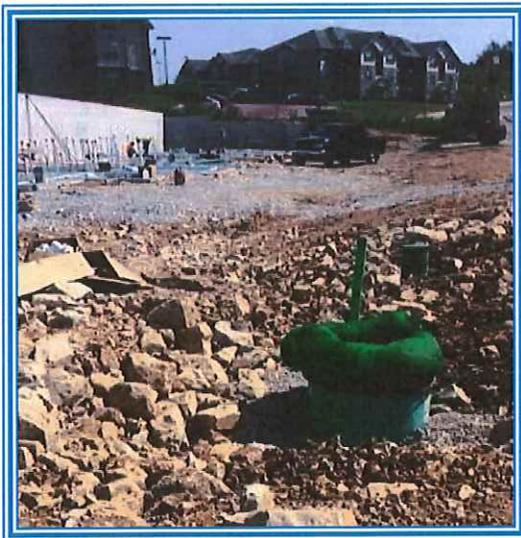
Summary: Branson is striving to develop, implement and enforce a program to reduce pollutants in stormwater runoff from construction activities that result in disturbance of greater than one acre.

Construction Site Runoff Control Efforts:

- Construction plans for commercial construction were reviewed.
- Staff inspected construction sites and enforced construction site runoff control.
- Ordinance was drafted, and is under review by staff, authorizing stormwater runoff plan review, inspection, enforcement and ability to impose fees or penalties.

No SWMP elements have been changed or refined since permit application. All measurable goals were met.

Overall Compliance with Permit Conditions:



Branson has been compliant with the continued implementation of construction site runoff controls by means of regulatory requirements and on-site inspections. There are also measures in place that require developers to submit a site improvement plan which addresses sediment and erosion control. We also reference the MDNR Protecting Water Quality Manual as a guide for site runoff control to engineers, developers and contractors. Other processes that need mentioned prior to construction commencing are that there are several plan review and planning and zoning processes that developers and builders must follow. All subdivision developments must be approved by the Planning & Zoning Commission via plat approval. Upon approval, they are forwarded to

City Council for approval and recording. On individual lots and developments the developer/builder must submit their plans to the Engineering Department for review and approval of the stormwater aspects of their project. The project cannot move forward until the Engineering Department gives final for construction. Sites involving land disturbance activities over one acre in size are not approved until they are approved by MDNR, when applicable.



Stormwater Activities Planned During Next Reporting Cycle:

- Drafted the ordinance authorizing stormwater runoff plan review, inspection, enforcement and ability to impose fees or penalties, out for public comment, and council approval.
- Continue to educate public, employees, contractors and developers regarding requirements for construction site runoff control. (*Exhibit 4.2, 4.3, 4.4*)
- Create construction inspection forms for both contractor and city inspector to ensure compliance with SWPPP.
- Create a post construction inspection checklist.

Summary of the Number of Inspections

- Stormwater coordinators reviewed 32 plans, 28 required comments.

Summary of the Number of Inspections:

- City staff completed 35 inspections to ensure stormwater quantity and control was addressed.



Minimum Control Measure #5 – Post-Construction

Summary: Branson is striving to develop, implement and enforce a program to address stormwater runoff from development and redevelopment projects that disturb greater than one acre. Various BMP's are used to control siltation and erosion of development areas until such time as vegetation can be re-established. The City of Branson requires all developments to meet stormwater detention or retention requirements to help minimize the impacts of flooding, post-construction runoff, including runoff from increased impervious areas created by the development.

Post-Construction Runoff Control Efforts:

- When legal counsel is acquired, they will review the recommended non-structural BMP ordinance.
- The engineering Department has modified the Design Criteria for Public Improvement Projects to include BMP's for stormwater control. Staff is currently reviewing.
- 3 EPA documents have been chosen as educational materials on watershed protection to provide to engineering firms and developers. Materials will be disseminated through the Open for Business program by the end of the fourth year of the permit. Materials will also be posted on City website.
- When legal counsel is acquired they will continue review and make recommendations for ordinance to regulate and enforce post-construction strategies for new and redevelopment projects.
- A web-based reporting tool for illegal discharges has been created and the city has developed a response and reporting system to track complaints.
- Review the city's existing zoning ordinance to consider incorporating appropriate amendments to the zoning code to provide more green space and buffer zones. The amendments will address maximum impervious surface requirements. This is out for public response at this point.
- The report for funding mechanisms for review by Board of Alderman is almost complete. It is under review by city staff.
- When legal counsel is acquired, they will review any proposed amendments to the city's zoning ordinance regarding planned development and overlay zones.
- An evaluation of alternatives to address operation and maintenance for stormwater BMPs to incorporate into stormwater ordinance has been completed. It is currently under review by staff.
- Low Impact measures have been recommended to designers as an alternative to traditional detention facilities

No SWMP elements have been changed or refined since permit application.



Overall Compliance with Permit Conditions:

The BMPs in the City's SWMP seem to be effective for local population, appear to address some of the city's larger potential pollution sources and have integrated well with local management procedures. Branson continues to make the public as well as private development more aware of stormwater quality issues as they relate to the post-construction environment. Plan review continues to recommend post construction methods for projects coming into the City as well as for capital improvement projects funded by the City.

Stormwater Activities Planned During Next Reporting Cycle:

- Present to the Board of Alderman proposed changes to the zoning ordinance to include provisions regarding open space, stream buffer zones, maximum impervious surfaced requirements and overly zones.
- Create a database including new BMP's and the installation specifications

No changes are proposed for MCM #5 BMP's or measurable goals.



Minimum Control Measure #6 – Good Housekeeping for Municipal Operations

Summary: Branson is striving to develop and implement an operation and maintenance program that includes a training component and has the ultimate goal of preventing or reducing pollutant runoff from municipal operations.

Good Housekeeping Efforts:

- Continue promotion of Adopt-a-Street program. (*Exhibit 1.2*)
- Weekly Street sweeping to reduce floatables.
- Continual Street sweeping to reduce floatables – 1304 miles this reporting cycle.
- Trained 25 city employees from the Fire Department concerning stormwater education by showing the “Rain Check Stormwater Pollution Prevention” for MS4s video.
- Used oil recycling – ongoing.
- Continued vehicle maintenance BMPs – new fuel systems installed, new washing area created that discharges to sanitary sewer, maintenance under cover.
- Continued salt storage under cover
- Continued removal of trash, salt and gravel debris from city right-of-way by public works staff while mowing.
- Continued discussion of stormwater issues at weekly Open for Business meetings.
- Continued use and promotion of non-coal tar sealants on parking lots or city streets.

No SWMP elements have been changed or refined since permit application. All measurable goals were met. No changes are proposed for MCM #6 BMP’s or measurable goals.



Overall Compliance with Permit Conditions:

Branson's BMP's seem to be effective for local population, and have integrated well with local management procedures. Branson continues to make progress towards reducing the discharge of pollutants and have begun to make staff in all departments more aware of stormwater quality issues as they relate to municipal operations. Our Parks Department uses covers on materials such as mulch and topsoil to prevent unnecessary runoff. We continue to evaluate and improve our salt storage for snow removal operations. We have a covered area and tarps and bins in place over our outside storage which is monitored and maintained on a regular basis. Pollution prevention and good housekeeping measures are one function of each of our employees' job. This is a daily, on-going routine and employees are reminded to be aware of our own operation and maintenance practices to help and ensure a reduction in the amounts and types of wastes that collect on our streets, parking lots and maintenance areas. City staff also maintains compliance with contractors and developers sites by the enforcement of existing codes and ordinances that assist with prevention.

Results of Information Collected and Analyzed During Reporting Period:

- Approximately 1,304 miles of city streets swept.
- Inlets/catch basins are inspected periodically and cleaned as needed.
- Used oil converted from waste to energy at three city facilities.
- 34 bags of trash removed from city right-of-way.
- Developed an operation and maintenance program for consideration by various city departments.
- 48 employees trained with "Rain Check Stormwater Pollution Prevention" for MS4s video.

Stormwater Activities Planned During Next Reporting Cycle:

- Completion and Review of the Operations and Maintenance Manual Draft
- Continued Stormwater BMP Training of city parks, fire, police, utilities, public works, planning and engineering employees.

Best Management Practices by Year

Year	MCM	BMP Goal Selected	Measurement Method	Responsibility	% Complete	Comments
ALL	MCM 1	Existing educational materials will be identified and appropriate subjects selected for distribution. The City's existing social media pages will be enhanced to engage the public.	Materials assembled.	Engineering	100%	City Facebook page renamed to Branson Recycle and Environment
	MCM 1	Stormwater web page will be updated as an educational tool. Related and supportive websites will be linked.	# links to related websites	Engineering	100%	10 web links posted
	MCM 1	Promote and Co-sponsor an annual Ozarks Water Watch Week with other organizational partners. Water Watch Week is a series of programs designed to engage citizens in water oriented activities that highlight the importance of water quality.	# of events during Water Watch Week	Engineering	100%	Water Watch Week Discontinued by Partner Organization,
	MCM 1	Promote safe disposal of household chemicals at the Household Collection Facility using the "Household Chemical Collections: The Water Connection" brochure at the Household Collection Facility	# brochures distributed, # tons collected	Engineering	100%	4.66 Tons were disposed of through HHW collection, 400 brochures distributed
	MCM 2	Citizens will be encouraged to use the City's recycling center to dispose of household chemicals & recyclable materials.	# vehicles accessing recycle center, # tons of chemicals disposed	Public Works	100%	20,765 vehicles processed thru recycle center drop off
	MCM 2	A community-wide lake cleanup will be organized by a partnering organization and co-sponsored by the City of Branson.	# of participants & waste volume	Engineering		None sponsored this reporting period
	MCM 2	Groups will be organized to participate in an annual storm drain marking event.	# of participants; # storm drains marked;	Engineering	100%	47 citizens participated, 30 storm drains marked

Best Management Practices by Year

Year	MCM	BMP Goal Selected	Measurement Method	Responsibility	% Complete	Comments
	MCM 2	Groups will be encouraged to participate in the adopt-a-street program through the City website and social media.	# participants	Public Works	100%	27 participant,s 35 bags of trash removed
	MCM 2	Community groups will be provided with supplies and maps for distribution of 100 "Dump No Waste, Drains to Stream" doorhangers at businesses and communities.	# distributed	Engineering	100%	310 "Dump No Waste Drains to Stream" brochures distributed
	MCM 2	Ten pet waste stations will be maintained in city parks and at Branson Landing.	Total # pet waste stations maintained	Parks	100%	On-going
	MCM 5	Utilize the Administrative Review Team (ART) process to encourage stormwater runoff control BMP's.	# Plans evaluated by Administrative Review Team	ART	100%	19 sets of plans reviewed
	MCM 6	"Adopt-A-Street" program promoted through press release to reduce floatables.	# participants	Public Works	100	27

Best Management Practices by Year

Year	MCM	BMP Goal Selected	Measurement Method	Responsibility	% Complete	Comments
ALL	MCM6	Annual Cleaning of BaySaver Units.	# units cleaned	Public Works	50	We have found that cleaning of the bay savers is not feasible during the wet periods (Early spring and late fall/winter months) Numerous underground springs have made this next to impossible. Therefore the units will be cleaned during the dry periods/summer months. And if there are dry periods during the spring or fall months they will be cleaned an additional time.

Best Management Practices by Year

Year	MCM	BMP Goal Selected	Measurement Method	Responsibility	% Complete	Comments
ALL	MCM 6	Street sweeping to reduce floatables.	# of cleanings per year	Public Works	100%	Street Sweeper has made 10 complete circuits through out the city street system. This includes additional sweeping of 15 lane miles of Highway 76 Country Blvd in Department of Transportaion sweeping with at least once a week.
	MCM 1	The biennial Business and Community Survey will be updated to include questions regarding stormwater issues.	Survey distributed and # of responses	Human Resources	100%	Results collected
	MCM 2	The biennial Business and Community Survey will be updated to include questions regarding stormwater issues.	Survey distributed and # responses	Human Resources	100%	Results collected
	MCM 3	Complete additional 20% of mapping of total storm sewer system.	# Elements mapped	GIS, Public Works	100%	Complete
	MCM 3	City ordinance prohibiting non-stormwater discharges into storm sewer system presented to Council for consideration.	Ordinance enacted	Board of Aldermen	100%	Ordinance in process of being adopted
	YEAR 2					

Best Management Practices by Year

Year	MCM	BMP Goal Selected	Measurement Method	Responsibility	% Complete	Comments
YEAR 2	MCM 3	Provide stormwater education/training to 20% of employees in Engineering, Public Works, Fire, Police, Parks Utilities & Planning Depts.	# Employees trained	Public Works	100%	30 employees trained in BMP's
	MCM 4	Review of model construction site runoff control ordinances.	Review completed	Public Works, Planning	100%	Reviewed other municipalities
	MCM 5	Prepare a model ordinance designed to regulate and enforce post-construction strategies in new and redevelopment projects.	Review completed	Engineering/Consultant/Legal/\$\$\$	100%	Prepared
	MCM 5	Evaluate potential non-structural BMP ordinances such as codes, policies, green parking lots, swales, open space requirements, or stream buffers.	Evaluation performed	Engineering, Public Works and Planning	100%	Evaluation complete
	MCM 5	Present a draft stream buffer plan for review by other city departments.	Draft completed	Engineering/Public Works and Planning	100%	Draft complete and distributed to other departments
	MCM 5	A neighborhood newsletter will include articles on stormwater and water quality topics.	Newsletter developed and distributed	Planning		No longer distributed
	MCM 6	Development of an operation and maintenance program will be completed by various City Departments.	Program developed	All Depts.	100	City Public Works/Garage continues to maintain vehicles.
	MCM 6	20% of city parks, fire, police, public works, planning, utilities and engineering employees will be trained in stormwater BMPs.	# Employees trained	Engineering	100	30 employees trained in BMP's
	MCM 1	Post "Healthy Lawns, Healthy Waters" (MARC) video to social media and website.	Link(s) posted	Engineering		

Best Management Practices by Year

Year	MCM	BMP Goal Selected	Measurement Method	Responsibility	% Complete	Comments
YEAR 3	MCM 3	Establish a website-based reporting tool for illegal discharges/stormwater reporting and develop a response and reporting system to track complaints.	System developed	Public Works		
	MCM 3	Develop an Outfall Monitoring and Dry Weather Screening Plan.	Plan developed	Public Works		
YEAR 3	MCM 3	Outfall mapping of Roark Creek proper/tertiary channels (i.e. identify stormwater outfalls vs. tributaries).	Length of stream mapped	GIS, Public Works		
	MCM 3	Complete final 20% mapping of storm sewer system.	Mapping completed	GIS, Public Works		
	MCM 3	Provide stormwater education/training to 20% of city employees in Engineering, Public Works, Fire, Police, Planning, Utilities and Parks Depts.	# Employees trained	Public Works		
	MCM 4	Draft ordinance authorizing stormwater runoff plan review, inspection, enforcement and ability to impose fees or penalties.	Ordinance drafted and distributed	Public Works, Planning		
	MCM 5	Legal counsel will review the recommended non-structural BMP ordinance.	Review completed	Legal Counsel		
	MCM 5	Modify the Design Criteria for Public Improvement Projects to include BMP's for stormwater control.	Design Criteria modified	Engineering		

Best Management Practices by Year

Year	MCM	BMP Goal Selected	Measurement Method	Responsibility	% Complete	Comments
YEAR 3	MCM 5	Select educational materials on watershed protection to provide to engineering firms and developers. Materials will be selected and disseminated through the Administrative Review Team (ART) by the end of the fourth year of the permit. Materials will also be posted on city website.	Materials disseminated & posted to website	Engineering/ Public Works		
	MCM 5	Legal counsel to continue review and make recommendations for ordinance to regulate and enforce post-construction strategies for new and redevelopment projects.	Legal review completed	Legal Counsel		
	MCM 5	Establish a website-based reporting tool for illegal discharges and develop a response and reporting system to track complaints.	Reporting form posted to website	Engineering/ Public Works		
	MCM 5	Review the city's existing zoning ordinance to consider incorporating appropriate amendments to the zoning code to provide more green space and buffer zones. The amendments will address maximum impervious surface requirements.	Review completed	Planning		
	MCM 5	Present report for funding mechanisms for review by Board of Alderman.	Presentation to Board	Engineering		
	MCM 5	Legal counsel will review any proposed amendments to the City's zoning ordinance regarding planned development and overlay zones.	Review completed	Legal Counsel		

Best Management Practices by Year

Year	MCM	BMP Goal Selected	Measurement Method	Responsibility	% Complete	Comments
	MCM5	Evaluate alternatives to address operation and maintenance for stormwater BMPs and incorporate into stormwater ordinance.	Evaluation completed	Engineering/ Public Works		
	MCM6	Adoption of operation & maintenance program.	O&M program adopted	Public Works		
	MCM 6	20% of city parks, police, fire, utilities, public works, planning and engineering employees will be trained in stormwater BMPs.	# Employees trained	Public Works		

EXHIBIT 1.1

http://bransonmo.gov/587/Stormwater-Management

ep Stormwater Management

BRANSON

GOVERNMENT SERVICES COMMUNITY VISITING CITIZEN HELP CENTER

Engage With Your City Government

You Are Here: [Home](#) > [Government](#) > [Departments](#) > [Engineering & Public Works](#) > Stormwater Management

Stormwater Management

The Stormwater Division is responsible for the development and management of the stormwater management plan. In 2013, Branson became a regulated Missouri Separate Storm Sewer System (MS4) community and must comply with water quality through the Department of Natural Resources. This plan will include public education and outreach, public involvement and participation and revising of the City's Technical Specifications and Design Criteria for Public Improvement Projects.

Storm Water for Builders and Contractors

- [BMP Installation and Construction](#)
- [Storm Water Pollution Prevention](#)

Reports

- [MS4 Stormwater Management Plan](#)
- [2013-2014 Stormwater Annual Report](#)
- [2014-2015 Stormwater Annual Report](#)

Other Storm Water Information

- [Map of White River \(Table Rock Lake\) Watershed](#)
- [Living with Lands and Waters in the Ozarks](#)

CONTACT US

Kirby Dieterman
MS4 Coordinator
Ph. 417-243-2728
[Email](#)

[Report a Stormwater Concern](#)

FEEDBACK & QUESTIONS

PUBLIC PAYMENTS

AGENDAS & MINUTES

EMPLOYMENT

STAFF DIRECTORY

100%

EXHIBIT 1.2

KEEP BRANSON BEAUTIFUL ADOPT A STREET!

You can HELP THE ENVIRONMENT :
JOIN BRANSON'S ADOPT A STREET PROGRAM

- ⇒ Individuals, organizations, groups, or families welcome
- ⇒ Commit to cleanups 3 times a year
- ⇒ City provides all supplies. You provide time and volunteers.



Find us on Facebook
@ Envirobranson

For more information contact:

Melissa in Public Works
417-243-2725
mford@bransonmo.gov

Rewarded with Your Own
Adopt a Street Sign

City Of Branson
ADOPT A STREET



YOUR NAME HERE
Next XX Miles

EXHIBIT 1.3



City of Branson

Together with

EXHIBIT 2.1

Has applied this decal to a nearby storm
drain as a reminder:



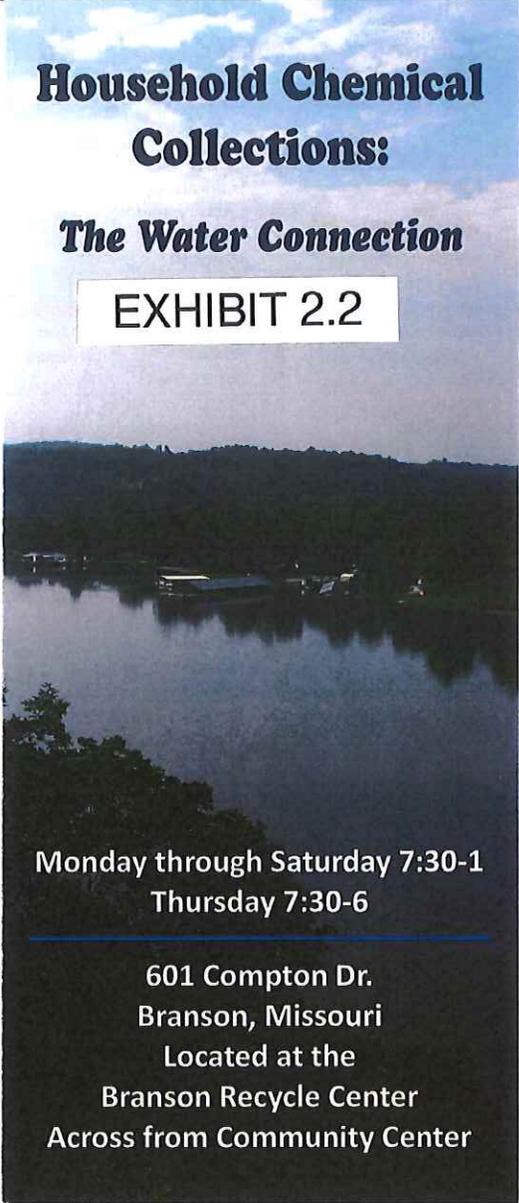
The storm drain inlets nearest you
lead directly to:

Lake Taneycomo

For more information see back for
details or visit www.bransonmo.gov
or call 417-337-8566



This notice brought to you by the City of Branson



**Household Chemical
Collections:**

The Water Connection

EXHIBIT 2.2

Monday through Saturday 7:30-1
Thursday 7:30-6

601 Compton Dr.
Branson, Missouri
Located at the
Branson Recycle Center
Across from Community Center

EXHIBIT 3.1

Kirby Dieterman

From: Becky Bacon
Sent: Friday, March 21, 2014 10:29 AM
To: PD Communications
Cc: Charlie Huston; Mona Menezes
Subject: CITY OF BRANSON STORM DRAIN PROTOCOL

Importance: High

Here is the protocol for handling a storm drain report of non-compliance:

START A CAD INCIDENT - GET ALL THE PERTINENT INFORMATION FROM THE CALLER

UNICODE: FR06 GENERIC FIRE RESPONSE

Advise the FD you have a report of a possible pollutant discharge into the sewer system.

FD will notify the proper City of Branson personnel and handle any OSHA requirements for reporting the incident.

The No dumping decal and information card are posted on the wall by the closet in Comm. Each Officer and FD personnel were given a card which can be used as a reminder of what pollutants are a violation.

ROARK CREEK OUTFALL LOCATIONS



1 inch = 2,000 feet

EXHIBIT 3.2

- ROARK CREEK OUTFALL POINTS**
TYPE
- CONCRETE DRAINAGE STRUCTURE
 - DETENTION, LAKE
 - DRAINAGE CULVERT
 - DRAINAGE CULVERT, RAILROAD
 - DRAINAGE CULVERT, ROADWAY
 - DRAINAGE CULVERT, ROADWAY, RAILROAD
 - DRAINAGE DITCH
 - DRAINAGE DITCH, ROADWAY
 - STORM SEWER OUTFALL
 - TRIBUTARY
 - ROARK CREEK CENTERLINE
 - ROARK CREEK TRIBUTARIES 1ST ORDER
 - ▭ BRANSON CITY LIMITS

MAP COMPILED BY:
GIS DIVISION, ENGINEERING DEPT.
CITY OF BRANSON
7/2016

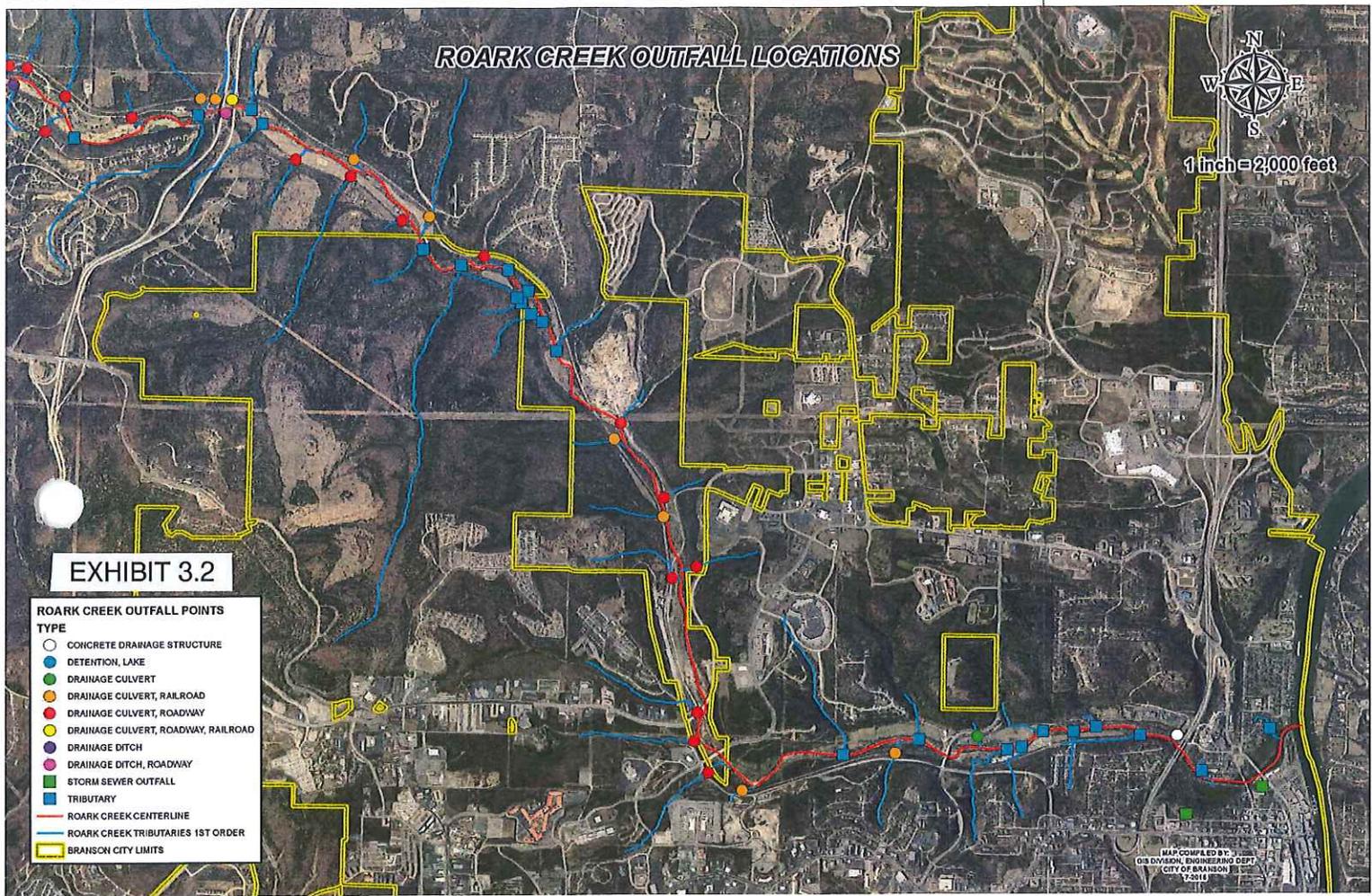
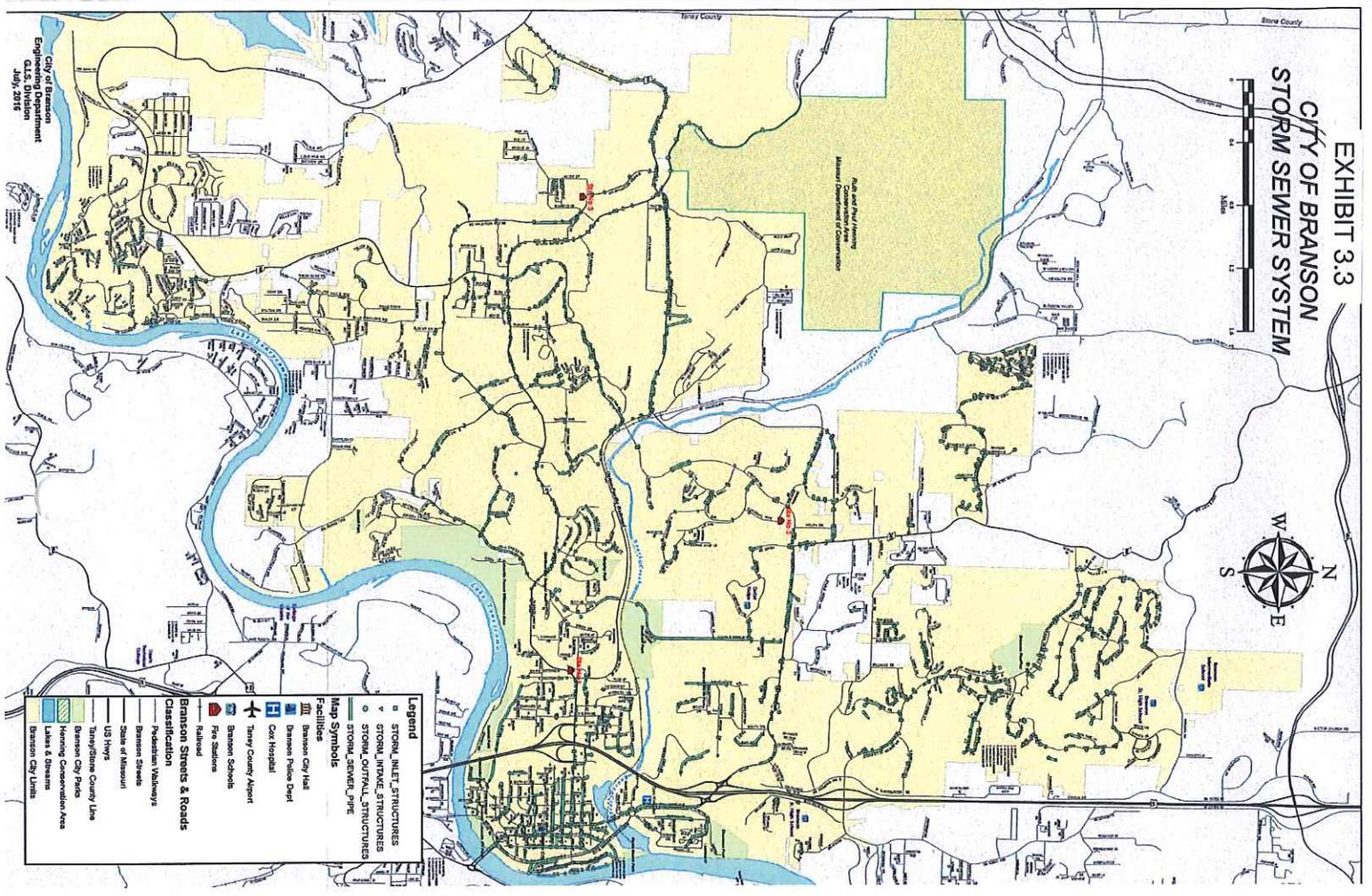


EXHIBIT 3.3 CITY OF BRANSON STORM SEWER SYSTEM



Legend

- ◻ STORM INLET STRUCTURES
- ◻ STORM INTAKE STRUCTURES
- ◻ STORM OUTFALL STRUCTURES
- STORM SEWER PIPE

Map Symbols

- Branson City Hall
- Branson Police Dept
- Cox Hospital
- ✈️ Tansy County Airport
- Branson Schools
- Fire Stations
- Railroad

Branson Streets & Roads Classification

- ▬ Paved/Asphalt Walkways
- ▬ Branson Streets
- ▬ State of Missouri
- ▬ US Highways
- ▬ Thompson County Line
- ▬ Branson City Parks
- ▬ Working Conservation Area
- ▬ Lakes & Streams
- ▬ Branson City Limits

City of Branson
Engineering Department
GIS Division
July, 2015

EXHIBIT 4.1

PURPOSE

- A. The purpose of this ordinance is to control soil erosion on land that is undergoing development for non-agricultural uses and to preserve the natural terrain and waterways of land within the City Limits of Branson Missouri. Soil erosion may result in the loss of valuable top soil, the degradation of water quality and obstruct stormwater flows in storm sewers, road ditches and natural watercourses.
- B. The provisions in this regulation are intended to promote land preservation and the public welfare by guiding, regulating and controlling the design, construction, use and maintenance of any development or other activity that disturbs or breaks the topsoil or results in the movement of earth. Application of the regulations in this document is intended to control soil erosion and sedimentation.
- C. This ordinance shall not constitute a waiver by The City of Branson Missouri of its sovereign immunity. No official or employee of the City of Branson Missouri who enforces the provisions of this ordinance shall have the authority to waive or be deemed to waive any official immunity, nor establish any special duty to any party that may constitute an exception to the public duty doctrine. Damages due to conduct in violation of this Chapter shall be the sole liability of the party or parties in violation and not of the City of Branson Missouri.

SCOPE OF AUTHORITY

Any person, firm, corporation or business proposing to remove any ground vegetation, to disturb or fill the land or to store soil within the city limits of the City of Branson Missouri shall apply to the Engineering Department for approval and issuance of a land disturbance permit. State and Federal permit conditions that are more stringent than the requirements set forth herein shall govern.

Commented [DM1]: A topic for discussion and how we do or don't want to involve the Planning dept.

Commented [KD2R1]: I agree

DEFINITIONS

For the purposes of this article, the following words shall have the definitions hereinafter set forth:

RUNOFF

That part of rainfall that flows off the land into streams or other surface waters.

SUBSTANTIAL RAIN EVENT

A rain event which has a rainfall intensity that causes erosion or a rain event that exceeds one (1.00) inch in a twenty-four (24) hour period.

ACCEPTED OR ACCEPTANCE

A determination by the director that the document under review meets the minimum applicable standards.

EXHIBIT 4.2

After the Storm

*A Citizen's Guide to
Understanding Stormwater*



EXHIBIT 4.3



EPA 841-F-03-003

Protecting Water Quality from URBAN RUNOFF

Clean Water Is Everybody's Business

In urban and suburban areas, much of the land surface is covered by buildings and pavement, which do not allow rain and snowmelt to soak into the ground. Instead, most developed areas rely on storm drains to carry large amounts of runoff from roofs and paved areas to nearby waterways. The stormwater runoff carries pollutants such as oil, dirt, chemicals, and lawn fertilizers directly to streams and rivers, where they seriously harm water quality. To protect surface water quality and groundwater resources, development should be designed and built to minimize increases in runoff.

How Urbanized Areas Affect Water Quality Increased Runoff

The porous and varied terrain of natural landscapes like forests, wetlands, and grasslands traps rainwater and snowmelt and allows them to filter slowly into the ground. In contrast, impervious (nonporous) surfaces like roads, parking lots, and rooftops prevent rain and snowmelt from infiltrating, or soaking, into the ground. Most of the rainfall

The most recent National Water Quality Inventory reports that runoff from urbanized areas is the leading source of water quality impairments to surveyed estuaries and the third-largest source of impairments to surveyed lakes.

Did you know that because of impervious surfaces like pavement and rooftops, a typical city block generates more than 5 times more runoff than a woodland area of the same size?

and snowmelt remains above the surface, where it runs off rapidly in unnaturally large amounts.

Storm sewer systems concentrate runoff into smooth, straight conduits. This runoff gathers speed and erosional power as it travels underground. When this runoff leaves the storm drains and empties into a stream, its excessive volume and power blast out streambanks, damaging streamside vegetation and wiping out aquatic habitat. These increased storm flows carry sediment loads from construction sites and other denuded surfaces and eroded streambanks. They often carry higher water temperatures from streets, roof tops, and parking lots, which are harmful to the health and reproduction of aquatic life.

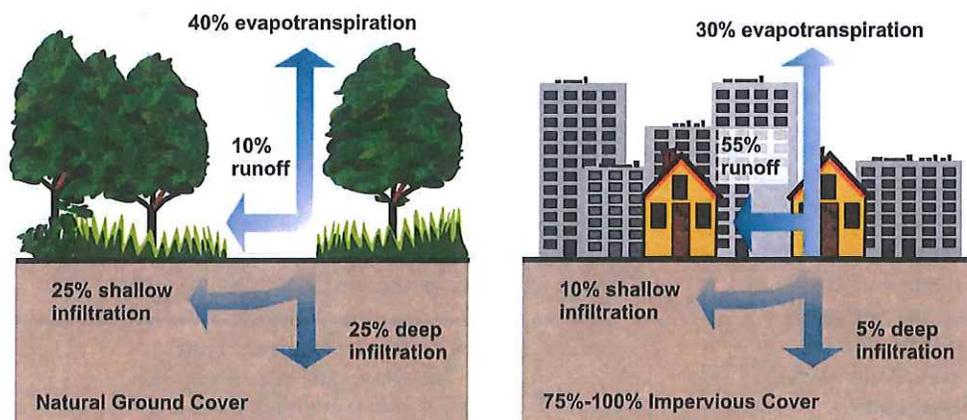
The loss of infiltration from urbanization may also cause profound groundwater changes. Although urbanization leads to great increases in flooding during and immediately after wet weather, in many instances it results in lower stream flows during dry weather. Many native fish and other aquatic life cannot survive when these conditions prevail.

Increased Pollutant Loads

Urbanization increases the variety and amount of pollutants carried into streams, rivers, and lakes. The pollutants include:

- Sediment
- Oil, grease, and toxic chemicals from motor vehicles
- Pesticides and nutrients from lawns and gardens
- Viruses, bacteria, and nutrients from pet waste and failing septic systems
- Road salts
- Heavy metals from roof shingles, motor vehicles, and other sources
- Thermal pollution from dark impervious surfaces such as streets and rooftops

These pollutants can harm fish and wildlife populations, kill native vegetation, foul drinking water supplies, and make recreational areas unsafe and unpleasant.



Relationship between impervious cover and surface runoff. Impervious cover in a watershed results in increased surface runoff. As little as 10 percent impervious cover in a watershed can result in stream degradation.

Developing Your Stormwater Pollution Prevention Plan

A Guide for Construction Sites

EPA-833-R-06-004
May 2007

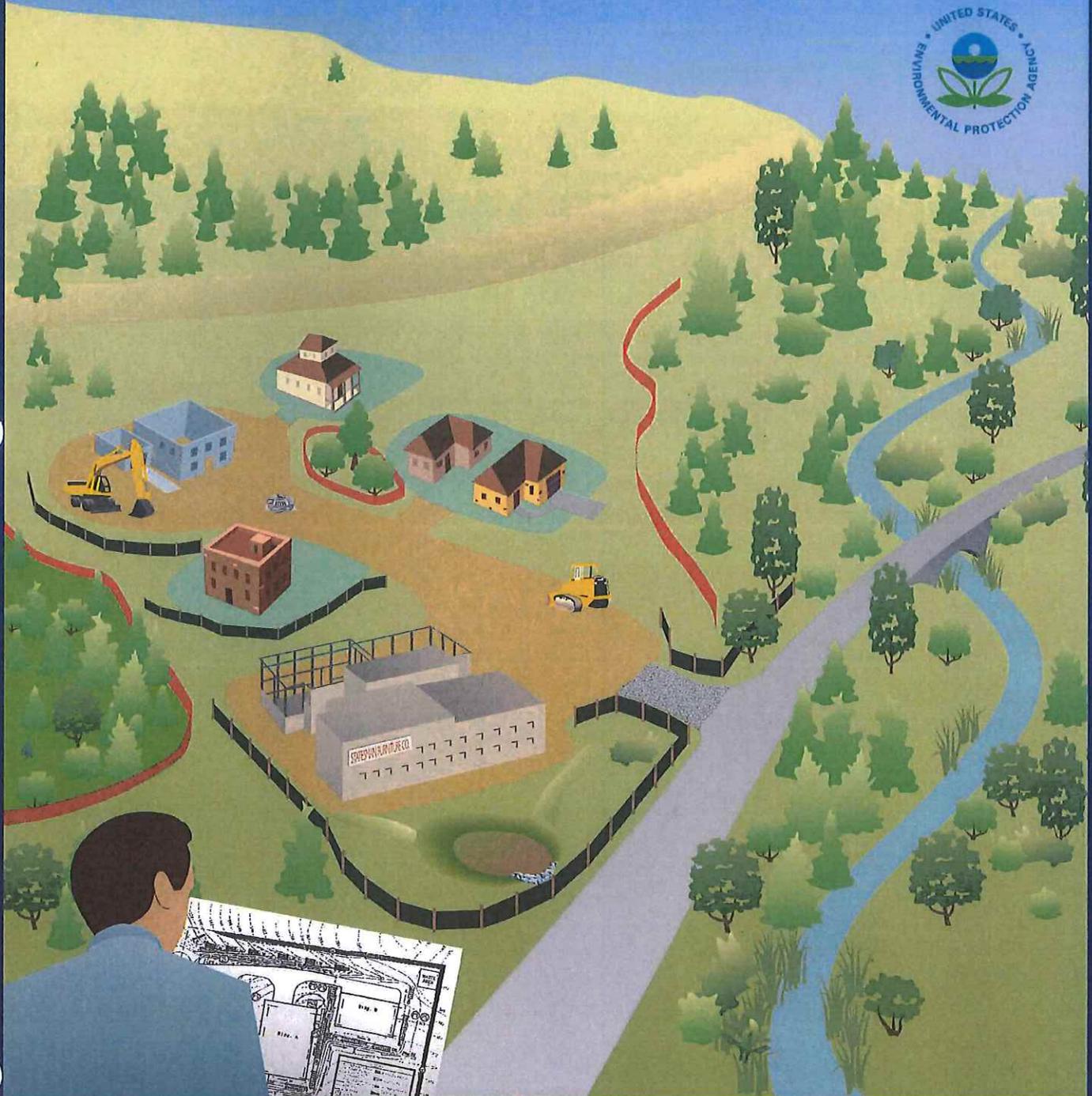


EXHIBIT 6.1

SECTION 1 BACKGROUND AND INTRODUCTION

- 1.1 Objectives
- 1.2 Applicable Regulations
- 1.3 O & M Program Modifications and Annual Reviews
- 1.4 Effective Permit

The Good Housekeeping Operation and Maintenance Program (O&M Program) for the City of Branson was developed to outline operational management and maintenance practices, policies, procedures, and protocols (or Best Management Practices ("BMPs")) for reducing and/or preventing pollutants associated with municipal facilities and activities from entering receiving waters as outlined and/or required by the National Pollutant Discharge Elimination System (NPDES) and an issued NPDES Small Municipal Separate Storm Sewer System (MS4) Permit.

Compliance is a broad word with respect to an issued MS4 Permit and corresponding applicable laws and regulations, which provide the basis of the permit. There are two primary categories for consideration for an MS4 Permit:

Program Effectiveness is built to properly prevent or reduce pollutants from entering receiving waters via stormwater runoff or non-stormwater discharges to meet the requirements of an MS4 Permit.

Documentation provides the specifics of the program, along with evidence the permitted entity is addressing not only the requirements of the MS4 Permit, but also the applicable laws and regulations.

The O&M Program specifically addresses the regulatory requirements outlined for municipal good housekeeping practices for operations and maintenance of facilities and activities, and is also known as Minimum Control Measure Number Six ("MCM #6") in the City's MS4 Permit. Specifically, the O&M Program addresses:

Facilities, activities, and land uses that may contribute pollutants via stormwater runoff or non-stormwater discharges to receiving waters.

Pollution prevention and good housekeeping control measures for reducing or eliminating the discharge of pollutants from municipal facilities and activities through BMPs such as:

- o practices and procedures
- o maintenance and inspection activities
- o assessing goals and effectiveness
- o training and education