



MDNR Stakeholder Presentation

Presented By: Spencer Gould, St. Louis Water Program Manager

8/1/2023

Overview

1. Overall mission
2. Central office responsibilities
3. Requested project and program updates
4. Regional office responsibilities
5. Stormwater and wastewater regulation information
6. Upcoming stormwater and wastewater rule changes
7. Environmental conservation outreach

Generally Focused on Wastewater

About Us

- The Missouri Department of Natural Resources was created on July 1, 1974, under the Omnibus State Reorganization Act of 1974
- Our Mission: protect air, land, water, and mineral resources; preserve our unique natural and historic places; and provide recreational and learning opportunities; while promoting the environmentally sound and energy-efficient operations of businesses, communities, agriculture, and industry for the benefit of all Missourians.
- Our Goal: Help Missouri citizens thrive and maintain a high quality of life by balancing a healthy environment with a healthy economy

What We Value



Stewardship

We care for our resources.

We protect and preserve Missouri's natural and cultural resources for all to enjoy.



Integrity

We strive for excellence by doing the right thing.

We lead with accountability, trust, transparency and pragmatism.



Collaboration

We build relationships to pursue common goals.

We work together to make well-informed decisions to achieve positive results.



Respect

We empower diverse perspectives.

We embrace experiences, knowledge and contributions to create a sense of belonging for all.



Innovation

We implement creative solutions.

We seek and encourage ways to improve all we do.



How Do We Accomplish Our Goals?

- For drinking water, the central office is primarily responsible for:
 - Monitoring and setting limits for contaminants
 - Issuing permits for new and existing public water systems
 - Issuing permits to well drillers
 - Certifying operators
 - Providing support for improving technical, managerial and financial capacity
 - Providing funding opportunities for water system improvement
- Ensure everyone in the state receives quality drinking water that meets or exceeds state and federal Safe Drinking Water Act standards

Safe Drinking Water Act

Objective – “to protect the quality of drinking water in the U.S.”

Goal – “generating national primary drinking water regulations and scientifically based standards for contaminants in public water systems that may cause adverse public health effects”

Missouri Clean Water Law

Policies – “ensures the state’s water quality meets federal standards. The department issues licenses, certifications and permits to make sure sources of water meet all federal and state regulations. We inspect facilities and structures for compliance with these regulations, receive data from facilities, monitor water quality and develop state implementation plans so Missouri will meet federal standards.”

How Do We Accomplish Our Goals?

- For wastewater, the central office is primarily responsible for developing Water Quality Standards (WQS), targeting the Department's compliance actions, and implementing federal Clean Water Act and Missouri Clean Water Law.
 - Water Quality Standards Development
 - Water Quality Monitoring
 - Development of 303(d) List and 305(b) Report
 - Development of TMDLs
 - Watershed-Based Modeling and Planning
 - Permits Issuance
 - Engineering Reviews

Clean Water Act

Objective – “to restore and maintain the **chemical, physical,** and **biological** integrity of the Nation’s waters.”

Goal – “wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water”

Missouri Clean Water Law

Policies – “to conserve the waters of the state and to protect, maintain, and improve the quality thereof for public water supplies and for domestic, agricultural, industrial, recreational and other legitimate beneficial uses and for the propagation of wildlife, fish and aquatic life”

“It is also the policy of this state to strive to meet these objectives while maintaining maximum employment and full industrial development of the state.”

Water Quality-Based Process



What Does Rulemaking Entail?

Triennial Review: Federal regulations require we review our WQS at least once every 3 years

Receive ideas and input from:

- Agricultural
- Industrial
- Mining
- Municipal
- Environmental
- General Public



Central Office Sections

- Water Quality Assessment Section
 - Water Quality Modeling
 - TMDLs
 - Create the 303(d) list
 - Conduct statewide water quality monitoring
- Engineering Section
 - Conduct antidegradation review
 - Review proposed facility plans
 - Issue construction permits
 - Evaluate pilot studies and alternatives/new technologies

Central Office Sections

- Financial Assistance Center
 - Provides financial assistance for drinking water and wastewater infrastructure projects
 - Maintain and manage the State Revolving Funds (SRF) program
 - Provide grants to smaller communities and municipalities
 - Sustain a state Small Borrower Loan program
- Operational Monitoring
 - Monitor public water supplies and samples
 - Laboratory testing
 - Maintain a statewide drinking water database
 - Develop a chronic violators list yearly
 - Issue boil water orders

Central Office Sections

- Operating Permit Section
 - 401 Water Quality Certifications
 - RHD determinations
 - e-Permitting
 - e-Discharge monitoring reports
- Compliance & Enforcement
 - Achieve regulatory compliance with environmental laws through conference and conciliation
 - Utilize compliance tools to formally enforce Missouri laws and regulations
 - Deter noncompliance

Time To Get Into The Weeds

- I requested items of interest from members of the East-West Gateway Water Resources Committees
- I will quickly touch on the following:
 - TMDL process and timelines
 - Department efforts and outcomes with consolidation/regionalization of wastewater services
 - Permitting of new wastewater systems for subdivisions

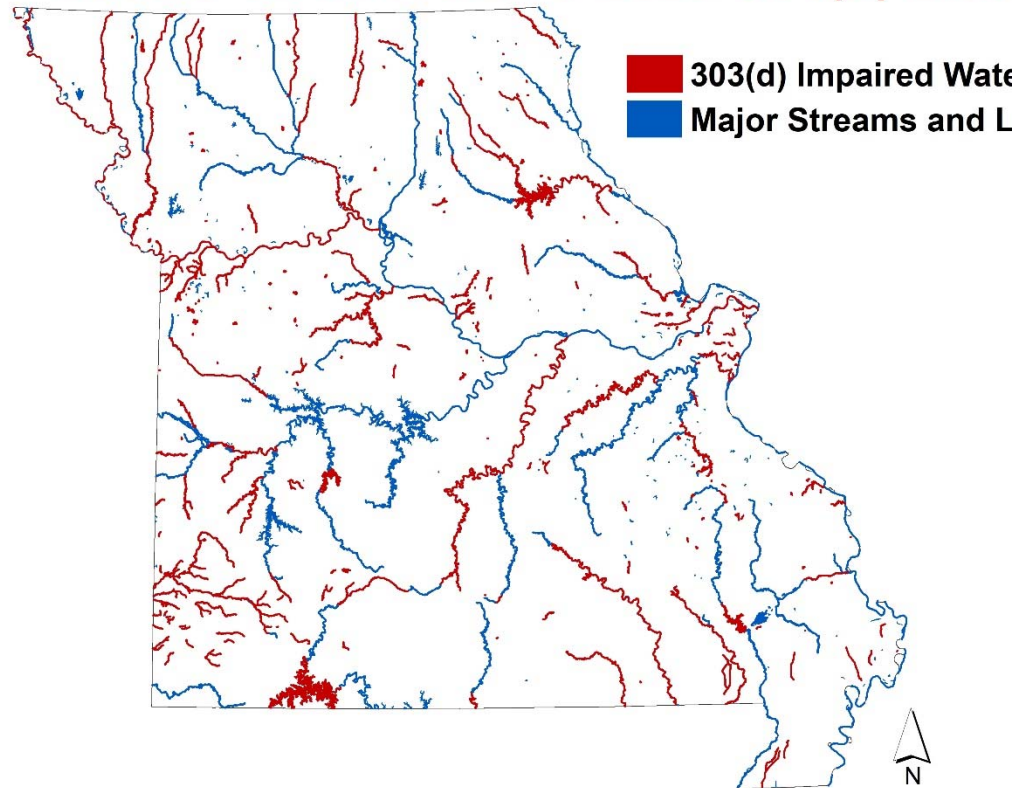
My weeds!



Water Quality Assessment Section

- Section 303(d) of the federal Clean Water Act requires states to identify and list all impaired waters and the pollutants causing the impairments.
- A TMDL is then required for each body of water and pollutant pair on the state's approved 303(d) List.

Waters on Missouri's 2020 303(d) List



Water Quality Assessment Section

Total Maximum Daily Loads

The amount of a pollutant a water body can receive and still meet Water Quality Standards



<https://www.kingarthurflour.com/recipes/gluten-free-pie-crust-recipe>

The TMDL is the Pie.
The allocations are pieces
of the Pie.

“The Math and the Path for Restoration”

“daily means daily”

$$\text{TMDL} = \sum \text{WLA} + \sum \text{LA} + \text{MOS}$$

Water Quality Assessment Section

- Water body impairments are ranked as high, medium or low priority for TMDL development
- Specific to developing the 2022 303(d) list, impairments identified as high priority **and** identified on the 303(d) list must be sent to the EPA prior to the 2024 cycle
 - TMDL is drafted by MDNR
 - Listed for public notice and comment (45 days)
 - Uploaded to the EPA for inclusion in the federal database
 - Final TMDL document is posted
- Beginning with the 2024 303(d) list, a more formalized national 303(d) framework will be implemented.

Water Body	WBID	Pollutant
Big River	2080.00	Cadmium In Sediment
Big River	2080.00	Zinc In Sediment
Cuivre River	152.00	Escherichia Coli
Dutro Carter Creek	3570.00	Escherichia Coli
Eaton Branch	2166.00	Cadmium In Sediment
Eaton Branch	2166.00	Cadmium
Eaton Branch	2166.00	Lead In Sediment
Eaton Branch	2166.00	Lead
Eaton Branch	2166.00	Zinc In Sediment
Eaton Branch	2166.00	Zinc
Harrison County Lake	7386.00	Chlorophyll-A
Koen Creek	2171.00	Lead In Sediment
Little Lost Creek	3279.00	Escherichia Coli
Lost Creek	3278.00	Escherichia Coli
North Fork Cuivre River	158.00	Escherichia Coli
Osage River	1293.00	Escherichia Coli
Salt Pine Creek	2113.00	Lead In Sediment
Salt Pine Creek	2113.00	Zinc In Sediment
Trib to Old Mines Creek	2114.00	Lead In Sediment
Trib to Old Mines Creek	2114.00	Zinc In Sediment
Trib to Old Mines Creek	2114.00	Sedimentation/Siltation
Turkey Creek	3282.00	Cadmium In Sediment
Turkey Creek	3282.00	Cadmium
Turkey Creek	3282.00	Copper In Sediment
Turkey Creek	3282.00	Lead In Sediment
Turkey Creek	3282.00	Lead
Turkey Creek	3282.00	Nickel In Sediment
Turkey Creek	3282.00	Zinc In Sediment
Turkey Creek	3282.00	Zinc
Willow Branch	3280.00	Escherichia Coli

Financial Assistance Section

- Consolidation and regionalization (R&C) efforts
 - Small communities throughout the state often face significant challenges in providing wastewater services at a reasonable cost to users while complying with federal and state regulations.
- MDNR has found that sharing, or even transferring responsibility for the system, is the good way to ensure that they are well-operated and providing proper service to its customers.
 - Regionalization – Sharing infrastructure
 - Consolidation – Centralized ownership
 - Financial Incentives – Increased financial capacity
 - State Revolving Fund (SRF) loans
 - Engineering Report Services Grants (ESRG)
 - Clean Water SRF Regionalization Incentive Grant

Financial Assistance Section

- The department officially launched a Regionalization and Consolidation Initiative in January 2019
- The initiative's overarching goal is to impact 25% of wastewater facilities through regionalization, consolidation and other applicable terminations over a 20-year timeline

Regionalization and Consolidation Progress

Our plan is to encourage the consolidation of 25 percent of water pollution control facilities by 2039.



Updated: 03/2023

Operating Permits Section

- Permitting of new wastewater systems for subdivisions
- Regulated under the *Residential Housing Development Rule* [10 CSR 20-6.030 (1)(A)(2)] and managed by the operating permits section
- Requires any land which is divided or proposed to be divided into three (3) or more lots, whether contiguous or not, to get approval from MDNR
 - Subdivisions, mobile home parks, recreational developments (RV Parks), and multiple family housing units
 - On-site Wastewater Treatment (Septic) in a Subdivision for seven or more lots, each less than five acres and use individual on-site wastewater treatment systems on the individual lots
 - Any expansion of an existing subdivision by three or more lots
- Written approval from MDNR for the method of wastewater treatment is required prior to the sale, lease or the commencement of construction on any lot

Operating Permits Section

- Permitting of new wastewater systems for subdivisions
- Individual on-site wastewater treatment systems are regulated by site-specific permits
 - Systems are evaluated by our engineering section prior to approval
- On-site septic treatment systems approval involves four steps to receive written approval
 1. Geohydrological Evaluation
 2. Soils Report
 3. Preliminary plat map
 4. MDNR Review
- For all sites MDNR also suggests contact the Department of Health and Senior Services and the local on-site wastewater treatment authority for assistance concerning their laws and regulations

What if developers or systems don't reach out?

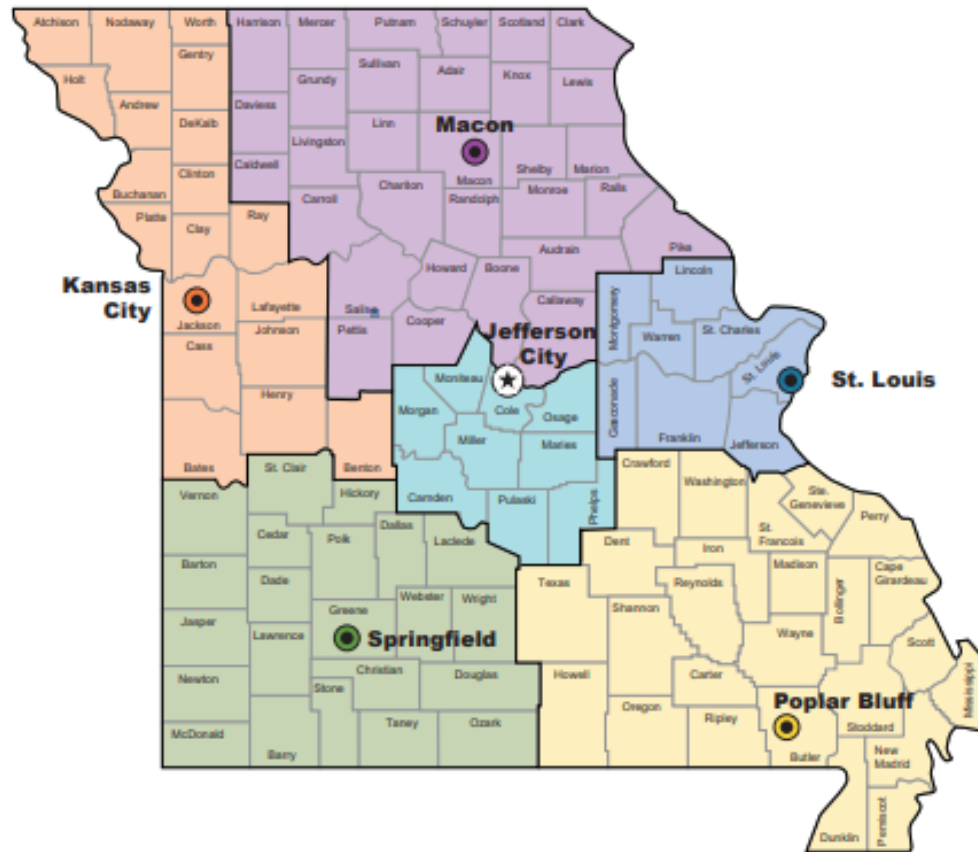


How Do We Accomplish Our Goals?

- The regional office is primarily responsible for verifying facilities in their respective areas are in compliance with:
 - Clean Water Act
 - Safe Drinking Water Act
 - National Pollution Discharge Elimination System (NPDES) Permits
 - In Missouri these are called Missouri State Operating Permits (MSOP)
 - Missouri Safe Drinking Water Law
 - Missouri Clean Water Law
 - Water Quality Standards (WQS)
 - Discharge sample results are used to verify compliance with WQS and NPDES permits
 - Relevant commission regulations

How is that different?

- The regional offices provide the department closer contact with the public.
 - Perform field inspections of facilities
 - Conduct complaint investigations
 - Provide technical assistance and front-line troubleshooting
 - Manage local environmental emergency response
 - Interact with our stakeholders through public and educational outreach



Kansas City Area

● **Kansas City Regional Office**
 500 NE Colbern Rd.
 Lee's Summit, MO 64086-4710
 816-251-0700 FAX: 816-622-7044

St. Louis Area

● **St. Louis Regional Office**
 7545 S. Lindbergh, Ste 210
 St. Louis, MO 63125
 314-416-2960 FAX: 314-416-2970

Northeast Area

● **Northeast Regional Office**
 1709 Prospect Drive
 Macon, MO 63552-2602
 660-385-8000 FAX: 660-385-8090

Southwest Area

● **Southwest Regional Office**
 2040 W. Woodland
 Springfield, MO 65807-5912
 417-891-4300 FAX: 417-891-4399

Southeast Area

● **Southeast Regional Office**
 2155 North Westwood Blvd.
 Poplar Bluff, MO 63901
 573-840-9750 FAX: 573-840-9754

Central Area

★ **Department Central Offices**
 P.O. Box 176
 Jefferson City, MO 65102-0176
 573-751-3443

Central Field Operations
 P.O. Box 176
 Jefferson City, MO 65102-0176
 573-622-3322 FAX: 573-622-3522



MISSOURI
 DEPARTMENT OF
 NATURAL RESOURCES

Regulated Drinking Water Facilities

- Public water systems are defined as a system providing water for human consumption with at least fifteen service connections or regularly serves at least twenty-five individuals
 - Community water systems
 - Non-Transient Non-Community Water Systems
 - Transient Non-Community Water Systems
- SLRO has 3 surface water systems, the rest are groundwater
- We do not regulate private wells

SLRO	Community	NonTransient NonCommunity	Transient NonCommunity	Total Number
# of PWS	200	38	119	357

Regulated Stormwater Facilities

- Regulate Stormwater runoff from:
 - Communities and Municipalities
 - Phase 1 covered large to medium communities
 - Phase 2 expanded to cover smaller communities and municipalities
 - Industrial Categories
 - Based on SIC codes
 - Land Disturbance Sites
 - Phase 1 covered sites 5+ acres
 - Phase 2 expanded to cover all sites greater than 1 acre



Regulated Wastewater Facilities

- MDNR permits are required build, erect, alter, replace, operate, use or maintain existing point sources of water pollution
 - The majority of our permits are for discharging treated wastewater from domestic and industrial facilities
 - Most are site-specific
 - Issued specifically to one facility, its discharges, and the receive stream
- Industrial Sites
- CAFOs
- Land Application Sites



How do we regulate facilities?

Numeric Criteria

Narrative Criteria “free forms”

Table A1-Criteria for Designated Uses and Health Advisory Levels

Criteria for Designated Uses							
POLLUTANT	CAS #	Aquatic Life Protection		Human Health Protection	DWS	IRR/ LWP	GRW
		Acute	Chronic	Fish Consumption			
METALS (µg/L)							
Aluminum (pH 6.5-9.0 SU)	7429905	750					
Antimony	7440360			4,300	6		6
Arsenic	7440382	340	150		50	100	50
Barium	7440393				2,000		2,000
Beryllium	7440417		5		4	100	4
Boron	7440428					2,000	2,000
Cadmium	7440439	Table A2	Table A2		5		5
Chromium (III)	16065831	Table A2	Table A2		100	100	100
Chromium (VI)	18540299	16	11				
Cobalt	7440484					1,000	1,000
Copper	7440508	Table A2	Table A2		1,300	500	1,300
Iron	7439896		1,000				300
Lead	7439921	Table A2	Table A2		15		15

(4) General Criteria. The following water quality criteria shall be applicable to all waters of the state at all times including mixing zones. No water contaminant, by itself or in combination with other substances, shall prevent the waters of the state from meeting the following conditions:

(A) Waters shall be free from substances in sufficient amounts to cause the formation of putrescent, unsightly, or harmful bottom deposits or prevent full maintenance of beneficial uses;

(B) Waters shall be free from oil, scum, and floating debris in sufficient amounts to be unsightly or prevent full maintenance of beneficial uses;

(C) Waters shall be free from substances in sufficient amounts to cause unsightly color or turbidity, offensive odor, or prevent full maintenance of beneficial uses;

(D) Waters shall be free from substances or conditions in sufficient amounts to result in toxicity to human, animal, or aquatic life. However, acute toxicity criteria may be exceeded by permit in zones of initial dilution, and chronic toxicity criteria may be exceeded by permit in mixing zones;



Upcoming Regulation Changes

- Wastewater:
 - Total Phosphorus Effluent Limits
 - Polyfluoroalkyl Substances (PFAS)
- Drinking Water
 - Cybersecurity assessments
 - Lead and Copper rule
 - Lead Service Line Inventory
 - Polyfluoroalkyl Substances (PFAS)
- Emerging contaminants:
 - Pharmaceuticals
 - Micro-plastics
 - Pesticides



Missouri's Water Infrastructure Needs

- Aging infrastructure
 - Exceeding useful life
 - Excess Inflow/Infiltration
- Adjusting for population changes/trends
- Increased Water Quality Standards requirements
- Stormwater infrastructure
 - Flood resiliency
- Addressing non-point source pollution

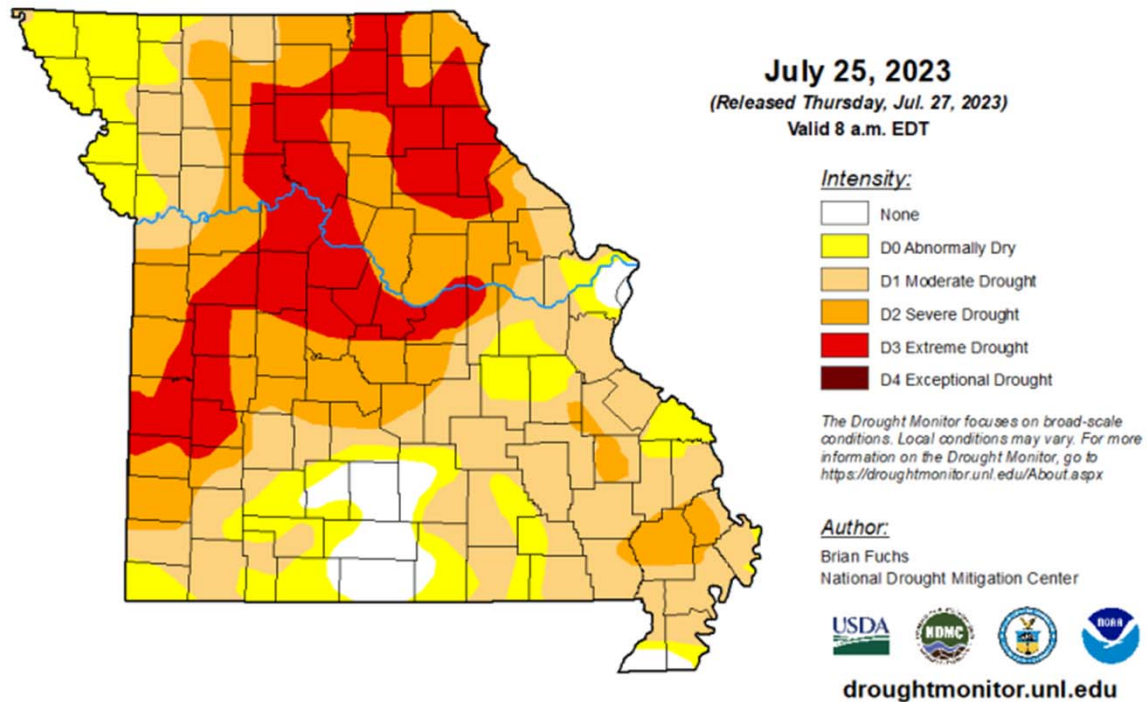
ESTIMATED NEEDS FOR THE NEXT 20 YEARS

Wastewater\$9.5 B

Drinking Water.....\$8.9 B



Drought



Currently 95% of Missouri is experiencing drought, with 20% of the state experiencing extreme drought

Environmental Outreach

- Educational Outreach
- Stream Team
- Emergency Relief
- Earth Day
- State Fair
- Regionalization and consolidation outreach
- Commissions, Boards, and Councils



Key Takeaway

Environmental regulation works, but it is a process!



**The Cuyahoga River:
Once on Fire, Now A
Recreation Destination
June 22, 1969**



**Cuyahoga Valley
National Park Website
50 + years later**

Any Questions?

