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# Jordan River *E. coli* TMDL: *MS4 Permit Modification*

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UTAH DEPARTMENT of  
ENVIRONMENTAL QUALITY  
**WATER  
QUALITY**

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# Permit Modifications: Overview

Provide and document education and outreach given to the target audiences

Maintain a written/mapped inventory of areas in the MS4

Evaluate inventory of potential “high priority” permittee owned / operated facilities

Evaluate and update MS4 SOPs

Promote the use of LID controls for which E. coli has a medium/high pollutant removal

Add E. coli reduction as a criterion for ranking when evaluating the Permittees retrofit plan

# Permit Modification

Education & Outreach

### 3.2.2.1.

Identify potential sources of E. coli in the MS4 and target specific audiences that may be contributing to the E. coli sources.

Provide and document education and outreach given to the target audiences on the impacts to water quality associated with these types of discharges and BMPs that can be implemented to reduce the discharge of E. coli.

### 3.2.2.1.1.

The Co-Permittee can meet the requirements of permit part 3.2.2.1. through contribution to a collaborative program (e.g., storm water coalition) that evaluates, identifies, and targets sources, as well as, provides outreach that addresses E. coli.



**We ♥ our dogs, but their poop - not so much!**  
**Scoop the poop every time!**

## WHY SCOOP?

Unsettling Facts About Dog Waste

-  **Dog waste is NOT fertilizer for your lawn.**  
In fact, it is just the opposite and can be very toxic to your soil. Due to their high-protein diet, dog waste is highly acidic and will actually burn your grass creating brown patches.
-  **Just one gram of dog waste can contain as many as 23 million fecal coliform bacteria.**  
Waste can seep into groundwater and spread salmonella and giardia. This poses a hazard to your pets, your family and your landscape.
-  **Dog fecal matter is a major contributor to stormwater pollution.**  
One out of three households have at least one dog, and all that dog poop left out can be blown into storm drains, lakes, and streams. When in water, the liquefied waste consumes the oxygen and releases ammonia which contaminates our resources as well as harms the fish that reside there.
-  **Your lawn mower doesn't help, in fact can make it worse.**  
Mowers will actually chop up the waste into smaller pieces and spread it further throughout your yard where you, your children, and your pets continue to step in it and then bring it into your home.
-  **The EPA classified dog waste as a dangerous pollutant in the same category as toxic chemicals and oil.**  
The average dog discards approximately three quarters of a pound of waste per day, which adds up to 275 pounds per year. Your yard might be more polluted than you think.
-  **The Centers for Disease Control (CDC) confirms that hookworms, ringworms, tapeworms and Salmonella can be spread by contact with infected dog waste.**  
It can take over one year for dog waste to decay but even when it has visibly disappeared, the parasite eggs it contained can linger on for years in your soil - leaving your family and your pets vulnerable to serious infection.



# Permit Modification

Written or Mapped Inventory

## 3.2.2.2.1.

The Co-Permittee must create a plan to prioritize reduction activities to address the areas and sources identified in the inventory. The plan must include BMPs the permittee will implement over the permit term (structural and non-structural).

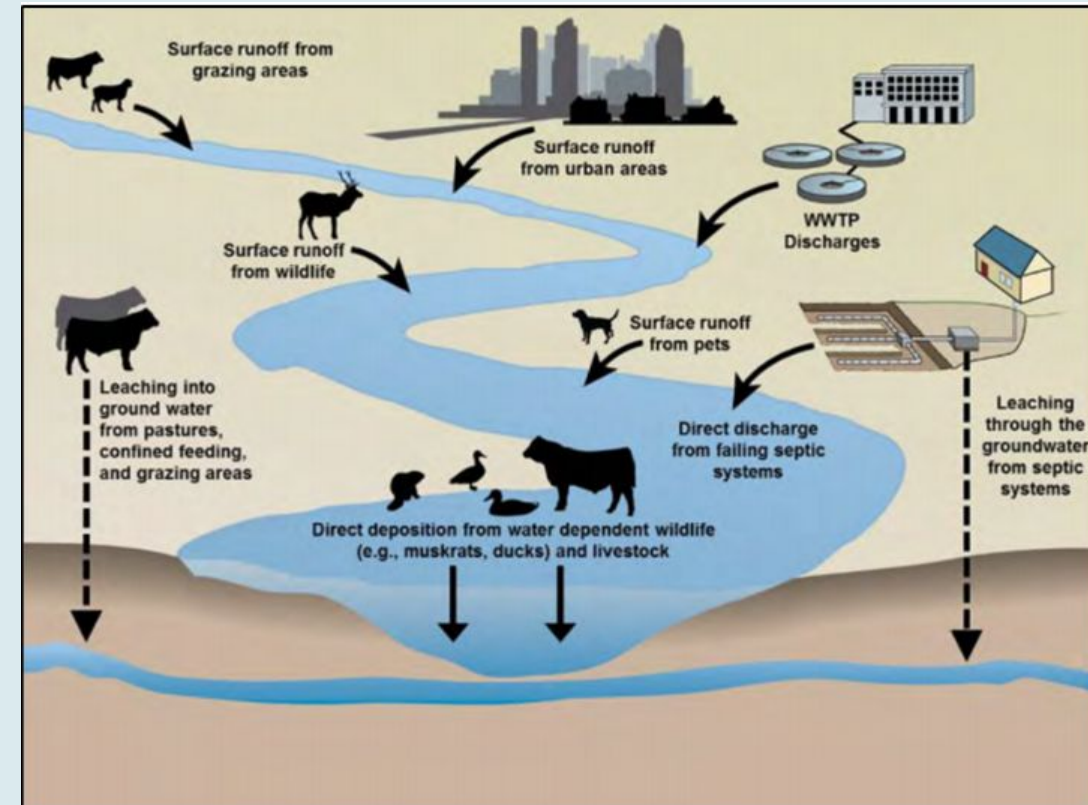
## 3.2.2.2.2.

The Co-Permittee must add the inventoried areas to the priority areas identified in permit part 4.2.3.3.1. and begin inspecting the additional priority areas annually at a minimum and documenting the inspections on an inspection form.

## 3.2.2.2.3.

The Co-Permittee must add the inventoried areas to the priority areas identified in permit part 4.2.6.6.2. for street sweeping and storm sewer system maintenance and begin maintaining the areas at the same frequency.

*Permit Part 4.2.6.6.2. requires that the highest priority areas be maintained at the greatest frequency.*



# Permit Modification

## “High Priority” MS4 Owned / Operated Facilities

### 3.2.2.3.

1. The Permittee must evaluate their written inventory of potential “high priority” permittee owned and/or operated facilities (Permit Part 4.2.6.1.) and identify sites that have potential sources of E. coli.
  - a. Permit Part 4.2.6.1. Requires that the Permittee shall develop and keep current a written inventory of all the below potential “high priority” facilities that are owned or operated by the Permittee and all the associated storm water controls, at a minimum.
2. Permittees must add to their inventory any Permittee owned or operated dog parks, parks with open water, sites with septic, or properties that are known potential sources of E. coli.
3. Sites that have been identified as potential sources of E. coli must have BMPs (structural or nonstructural) that reduce the potential of the discharge of E. coli.
  - a. These BMPs would need to be maintained in the inventory of associated storm water controls per permit part 4.2.6.1.

- Composting facilities
- Equipment storage and maintenance facilities
- Fuel farms
- Hazardous waste disposal facilities
- Hazardous waste handling and transfer facilities
- Incinerators
- Landfills
- Landscape maintenance facilities on municipal property
- Materials storage yards
- Pesticide storage facilities
- Public buildings, including libraries, police stations, fire stations, municipal buildings, and similar Co-Permittee-owned or operated buildings
- Public parking lots
- Public golf course maintenance facilities
- Public swimming pool maintenance facilities
- Public works yards
- Recycling facilities
- Salt storage facilities
- Solid waste handling and transfer facilities
- Street repair and maintenance facilities and or shed sites
- Vehicle storage and maintenance yards
- Co-Permittee-owned and/or maintained structural storm water controls

# Permit Modification

## Evaluation & Update of MS4 SOPs

### 3.2.2.4.

The Co-Permittee must evaluate the potential E. coli generating activities below to determine whether existing SOPs should target reduction of E. coli discharge or if additional SOPs should be developed for the reduction of E. coli discharge from the MS4:

- Roads, highways, and parking lots: Surface cleaning and controlling litter
- Parks and open space: Lake and lagoon maintenance
- Parks and open space: Mowing/Trimming/Planting
- Storm water collection and conveyance system: Inspection and Cleaning of Stormwater Conveyance Structures, Controlling Illicit Connections and Discharges, Controlling Illegal Dumping
- Material storage areas: Solid Waste Collection, Controlling Litter, Controlling Illegal Dumping
- Storm water collection and conveyance system: Water line Maintenance, Sanitary Sewer Maintenance, Spill/Leak/Overflow Control, Response, and Containment.



#### **Vegetated Strip**

Photo from A Guide to Low Impact Development within Utah:  
<https://documents.deq.utah.gov/water-quality/stormwater/updes/DWQ-2019-000161.pdf>



# Permit Modification

## LID Controls that Target E. coli

### 3.2.2.5.

The Co-Permittee must promote the use of Low Impact Development (LID) controls for which E. coli (listed a bacteria) has a medium or high pollutant removal effectiveness, as identified in the Guide to Low Impact Development within Utah, Appendix C on the division's website:

<https://documents.deq.utah.gov/waterquality/stormwater/updes/DWQ-2019-000161.pdf>

Table 9. Structural BMPs for stormwater source control.

BMP	Description	Location within Guide to Low-impact Development in Utah
<b>Rain garden</b>	Rain gardens are shallow bioretention areas with engineered or native soils that allow for infiltration and removal of pollutants.	Appendix C-3
<b>Bioretention cell</b>	Bioretention cells are shallow bioretention areas with engineered soil. They typically differ from rain gardens by having a delineation such as a curb, wall, or other distinct boundary.	Appendix C-10
<b>Bioswale</b>	Bioswales are vegetated open channels designed to convey and treat stormwater runoff. They are appropriate when it is desirable to convey flows away from structures or as an alternate conveyance method to pipes, concrete channels, or <u>curbed gutters</u> .	Appendix C-16

# Permit Modification

E. coli criterion in Retrofit Ranking Plan

## 3.2.2.6.

The Co-Permittee must add potential E. coli reduction as a criterion for ranking when evaluating the Permittees retrofit plan (Permit Part 4.2.6.9.)



### Bioretention Cell

Photo from A Guide to Low Impact Development within Utah:  
<https://documents.deq.utah.gov/water-quality/stormwater/updes/DWQ-2019-000161.pdf>

# Permit Modification

E. coli monitoring at  
Wet-Weather Sites

## 3.2.2.7.

### Phase 1 Permittees Only

The Permittee is required to monitor and analyze E. coli (No./100 mL) at their Wet Weather Monitoring sites that discharge to the Jordan River and its tributaries in Permit Part 5.2.2.4.



# Implementation Timeline

01.

June 23, 2023

## Permit Signed/Effective

Hopefully!!

02.

December 20, 2023

## SWMP Update

Within 180 days to include a written plan (TMDL Compliance Plan) addressing the pollutant reduction requirements of the TMDL per permit part 3.2.

03.

October 1, 2024

## TMDL Compliance Report Due

The reporting will include identification of problem areas for which source control BMPs were developed, the cost, and the anticipated pollutant reduction.

# Resources for MS4 Permit Modification

## **Jordan River E. coli TMDL MS4 Guidance Document**

In Progress

Addresses each permit requirement individually & provides resources for implementation

## **Jordan River E. coli TMDL**

Discusses in depth the sources, locations, and background for the E. coli TMDL

<https://documents.deq.utah.gov/water-quality/watershed-protection/total-maximum-daily-loads/DWQ-2022-032001.pdf>

## **Storm Water Coalition**

Already have some great resources on the website

The image is a collage of three distinct scenes. The top section shows a range of rugged, snow-capped mountains under a clear sky. The middle section features a panoramic view of a city skyline, including a prominent domed capitol building and various skyscrapers. The bottom section depicts a lush green park with trees and a wooden log railing in the foreground, suggesting a scenic overlook or park setting.

# Thank You!

# Current TMDL implementation efforts

## Unhoused Community

- U of U Study: Jordan River Water & Homelessness Project
- SLC Council: temporary sanctioned camping with Nomad Alliance

## Nonpoint Sources

- Projects: reduce erosion, floodplain connectivity, increase vegetation
- Watershed planning
- Agricultural projects with Salt Lake Conservation District

## More:

- Targeting monitoring at known hotspots
- Regional/Statewide riparian ordinance study
- Outreach with local canal companies



# Questions?

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