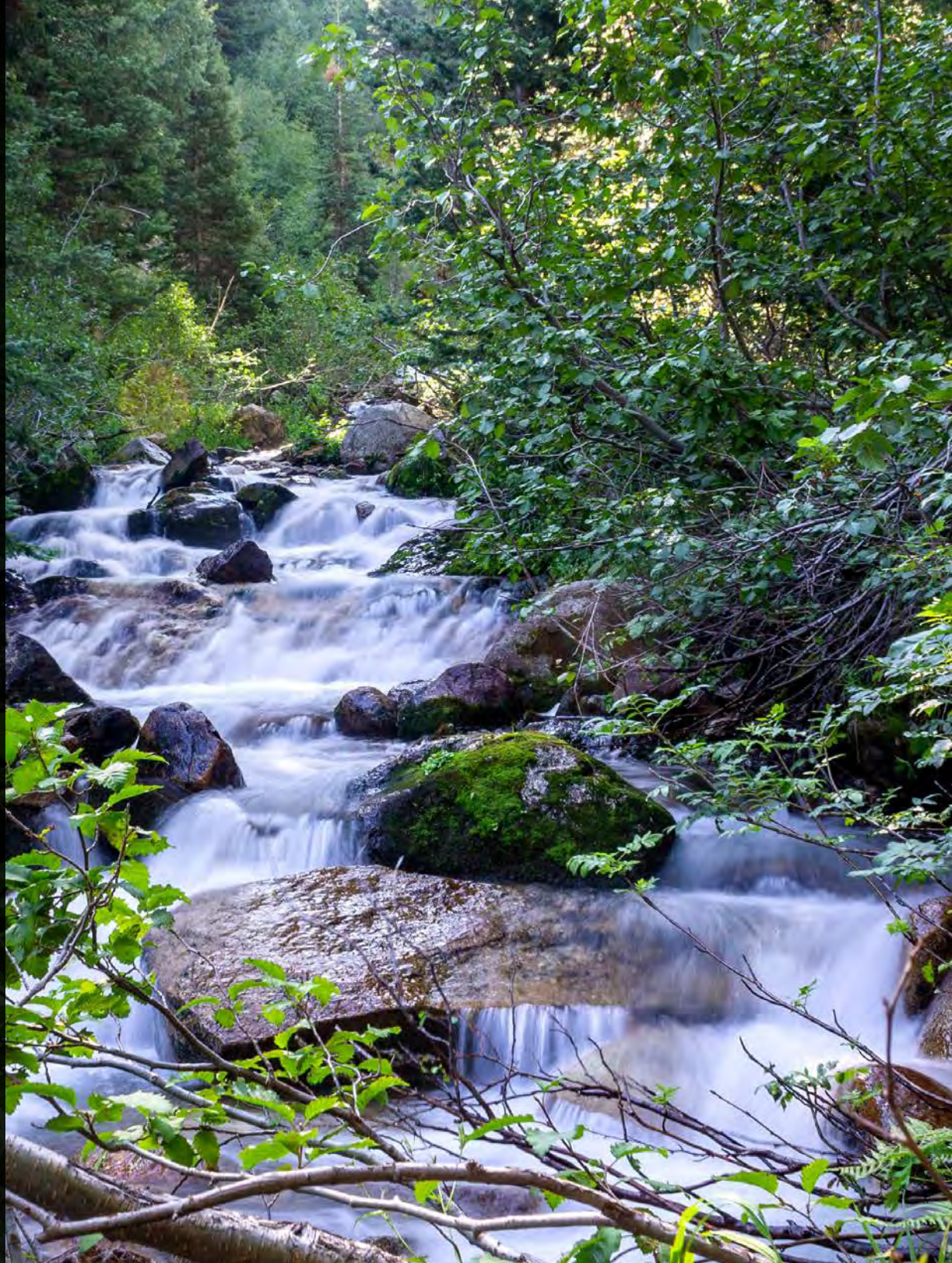




**SALT LAKE
COUNTY
STORMWATER
COALITION**

**ANNUAL
REPORT**

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**July 1, 2022 -  
June 30, 2023**





# Table of Contents

|                                                                                                                                                                                                                                                                                          |    |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| 1. Executive Summary .....                                                                                                                                                                                                                                                               | 3  |
| 2. Record-breaking Spring Runoff and Localized Flood Prevention and Mitigation .....                                                                                                                                                                                                     | 8  |
| 3. Non-Technical Information Programs for the General Public: .....                                                                                                                                                                                                                      | 12 |
| 4. Addressing Barriers to Implementation and Adopting BMP's--Messaging for Education and Outreach Efforts for Specific Audiences: (1) Residents; (2) Institutions, Industrial, and Commercial Facilities; (3) Developers and Contractors; and (4) MS4 Owned or Operated Facilities ..... | 15 |
| 5. Targeted Land Uses and Target Audiences Found Within the Community, Including Specific Pollutants and Pollutant Sources, Potential Impacts, and Recommended Appropriate Actions for Stormwater Pollution .....                                                                        | 20 |
| 6. Promotion of Training Programs for Public Sector Personnel .....                                                                                                                                                                                                                      | 21 |
| 7. Public Engagement through Community Events and Volunteer Opportunities Community Events, Adopt a Storm Drain, and Placement of Lawn Signs .....                                                                                                                                       | 22 |
| 8. Educational Engagement: SLCo Stormwater Coalition Virtual 6, 7, and 8 <sup>th</sup> Grade Water Quality Fair .....                                                                                                                                                                    | 24 |
| 9. Educational Engagement: SLCo Stormwater Coalition 6, 7, & 8 <sup>th</sup> Grade Water Science and Engineering Competition .....                                                                                                                                                       | 25 |
| 10. Educational Engagement: SLCo Stormwater Coalition Curriculum .....                                                                                                                                                                                                                   | 26 |
| 11. Mainstream Media: Television PSAs and UTA Bus Banners .....                                                                                                                                                                                                                          | 26 |
| 12. Outreach and Engagement to targeted audiences through Social Media Platforms .....                                                                                                                                                                                                   | 28 |
| 13. Engagement in Monthly Stormwater Coalition Meetings .....                                                                                                                                                                                                                            | 31 |
| 14. Salt Lake County Health Department Illicit Discharge Detection and Elimination (IDDE) and collection and disposal efforts of Household Hazardous Waste, Recycling and Used Oil .....                                                                                                 | 32 |
| 15. Use of Data and other existing Stormwater Reports .....                                                                                                                                                                                                                              | 34 |
| 16. Stormwater Coalition 2022-23 Budget .....                                                                                                                                                                                                                                            | 35 |

# 1. Executive Summary

The 2022-23 Salt Lake County Stormwater Coalition Annual Report serves to convey the required information and detail the status of compliance regarding permit conditions, as well as provide a review of Stormwater Coalition programs, activities and function within the Jordan Valley MS4 UPDES (Utah Pollutant Discharge Elimination System) permits toward achieving measurable goals for Minimum Control Measures 1) public education and outreach, and 2) public participation and involvement. This report covers the period of July 1, 2022 to June 30, 2023.

## About the SLCo Stormwater Coalition

The Stormwater Coalition was established in 1994 with the purpose of enhancing strategic and collective efforts to comply with Stormwater Permit conditions for Minimum Control Measures (MCMs) 1) public education and outreach, and 2) public participation and involvement. This cohesive group works together with a specific set of objectives to coordinate and combine resources to expand the reach of the municipalities/entities to support MS4's in meeting the requirements of MCMs 1 & 2. Salt Lake County Public Works Engineering Division administers the Stormwater Coalition and serves as a convening organization for coalition member municipalities and organizations. On behalf of the Coalition, Salt Lake County has engaged Social Marketing Consultants (SMC), a public relations and consulting firm, to help meet requirements of the Jordan Valley MS4 UPDES permits and to continue and expand successful implementation and further development of public information, education, participation and involvement.

Stormwater Coalition members contribute to and engage in implementation of evidence-based methods (such as Best Management Practices), outreach practices, shared financial resources, and ideas to address common/shared problems. The Stormwater Coalition engages in partnerships that require stakeholders to contribute and to adopt specific practices in their work together to accomplish a common purpose. The Stormwater Coalition has 21 stakeholder municipalities and entities located within the Jordan River Watershed.



## 2022-23 SLCo Stormwater Coalition Roster

The Stormwater Coalition is composed of 21 stakeholder municipalities and entities located within the Jordan River Watershed. The group is represented by:

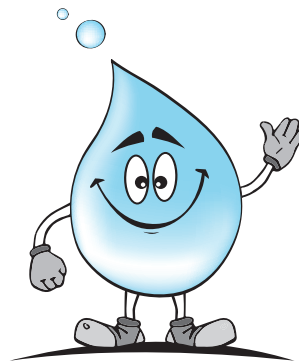
Salt Lake County Public Works Engineering and Flood Control- Robert Thompson, Joshua Mikel, Greta Hamilton  
Bluffdale- Addison Mitton  
Cottonwood Heights- Jeremy Hunter, Matthew Shipp  
Draper- Lucas Fowler  
Herriman- Jonathon Bowers  
Holladay- Joe Bolton  
Midvale- David Clark, Brett Bohman  
Millcreek- Aaron Roberts, DeeJay Allen  
Murray- Lynn Potter, Josh Hill  
Riverton- Tom Beesley  
Salt Lake City- Greg Archuleta, Matthew Hendrix  
Sandy- Dawn Barbee  
South Jordan- Carl Schweizer  
South Salt Lake- Dennis Pay, Corby Talbot  
Taylorsville- Ben White, Wes Butterfield  
West Jordan- Richard Ramirez, Jared Millgate, Angelica Haro  
West Valley City- Dan Johnson, Hilary Venable  
Utah Department of Transportation (UDOT)- Stephanie McGinnis  
Greater Salt Lake Municipal Services District- Mike George, Alex Rudowski, Brianna Ariotti, Tiffany Bork  
Salt Lake County Health Department- Jessica Antezano, Mathias Neville, Rob Larson, Christopher Bowden



Salt Lake County Public Works Flood Control Engineering is the administrator and coordinator of the shared UPDES Countywide MS4 permit, coordinating and creating resources for education, outreach, participation, and involvement (PIE). The Stormwater Coalition is the main entity in convening, combining assets, and creating/developing initiatives, which are crucial for compliance with the MS4 permits.

## The primary goals of the Stormwater Coalition:

1. Increase awareness regarding the significance of nonpoint source stormwater pollution
2. Raise public consciousness regarding stormwater pollutants such as sediments, oil and greases, surfactants, fertilizers, pet waste, industry byproducts and other contaminants from entering the storm drain system through polluted runoff that discharges untreated to water bodies throughout Salt Lake County and the State of Utah
3. Support MS4s in their efforts to affect positive behavior changes, especially among specific audiences in specific neighborhoods and communities where waterways or stream segments are impaired
4. Align efforts with and meet requirements for Minimum Control Measures 1) public education and outreach, and 2) public participation and involvement within the Utah General Stormwater Permit Jordan Valley Co-Permit UTS 000001, issued February 26, 2020; and Jordan River Watershed E. coli TMDLs as approved by EPA February 13, 2023



**SALT LAKE COUNTY  
STORMWATER COALITION**  
**WE ALL LIVE  
DOWNSTREAM**  
[stormwatercoalition.org](http://stormwatercoalition.org)

## Coalition Branding and Messaging

The Coalition utilizes an easily recognizable icon named Droplet as the face and logo of SLCo Stormwater Coalition, providing pollution prevention messaging along with the slogan "We All Live Downstream" and hashtags #WeAllLiveDownstream, #Stormwater, #ScoopThePoop, #KeepTheWaterMoving, #DontTrashOurStormwater, #DoALittleHelpALot #PreventFlooding #EColi, #WaterQuality, etc. pertaining to a specific message, recommended action, or BMP which is the subject of a specific campaign, directed to a specific audience or behavior.

Coalition outreach, education, engagement and messaging efforts include:

- Implement non-technical information programs and messaging to educate the public including residents, homeowners, and businesses about aspects of stormwater pollution and its abatement and control in simple, easy to understand language, including actions that are "doable" for the average SLCo resident.
- Develop and/or provide resources to SLCo municipalities to support implementation of technical education programs for residents, institutions, industrial and commercial facilities, developers, and contractors and MS4-owned or operated facilities on the water quality aspects of stormwater runoff and methods for improvement.
- Develop and/or production of materials and events to engage and educate teachers and students, such as the development of a Stormwater Curriculum aligned to the Utah Core Education Standards and specific to the Upper Jordan River Watershed and delivery of an annual Virtual Water Quality Fair and Water Science and Engineering Competition for 6, 7, and 8<sup>th</sup> graders in SL County
- Outreach and engage through social media platforms, including the Stormwater Coalition website, Facebook, Twitter, Instagram, YouTube, and a Podcast.
- Develop and/or provide resources to SLCo municipalities to support distribution of guidance documents and other items that promote best stormwater management practices for residents and businesses.
- Develop and/or provide resources to SLCo municipalities to support presentations and/or activities to various community and civic events, including community leaders.
- Develop and deliver Public Service Ads/Television Commercials.
- Deliver general SLCo resident stormwater pollution messaging on UTA bus banners.
- Engage municipal stormwater representatives and others in monthly stormwater coalition meetings.
- Support Salt Lake County Health Department efforts and municipal follow up on Illicit Discharge Detection and Elimination (IDDE) and collection and disposal efforts of entities that collect Household Hazardous Waste, Recycling and Used Oil.
- Increase understanding that stormwater public information, outreach and education does not happen in a vacuum. Stormwater initiatives must integrate and incorporate overlapping/dominating environmental, health and social conditions.
- Provide resources for SLCo municipalities to support implementation of training programs for public sector personnel for the protection of stormwater quality.
- Participate in activities other than those named above, that are aligned with the intent and goals of Salt Lake County and Stormwater Coalition members in complying with the UPDES Stormwater Discharge permits.

Through the approaches above, the Salt Lake County Stormwater Coalition will continue to expand its ability to reach prescribed target audiences and the general public with critical stormwater quality and pollution prevention messages. The Coalition will persist in expanding its engagement and outreach along with execution of its strategy to educate students and residents of Salt Lake County about the impacts of stormwater and utilizing their behaviors, beliefs, and attitudes to mitigate potential harms.

Through delivery of non-technical information initiatives; training programs; coalition website and other social media platforms; traditional media and nontraditional media messaging; production/distribution of regulatory and guidance documents; distribution of information and promotional products that enhance the coalition's purpose and messaging; engagement of teachers and students; and continuous improvements in coalition function and efficacy, the Salt Lake County Stormwater Coalition will continue to meet the Jordan Valley MS4 UPDES permits requirements.

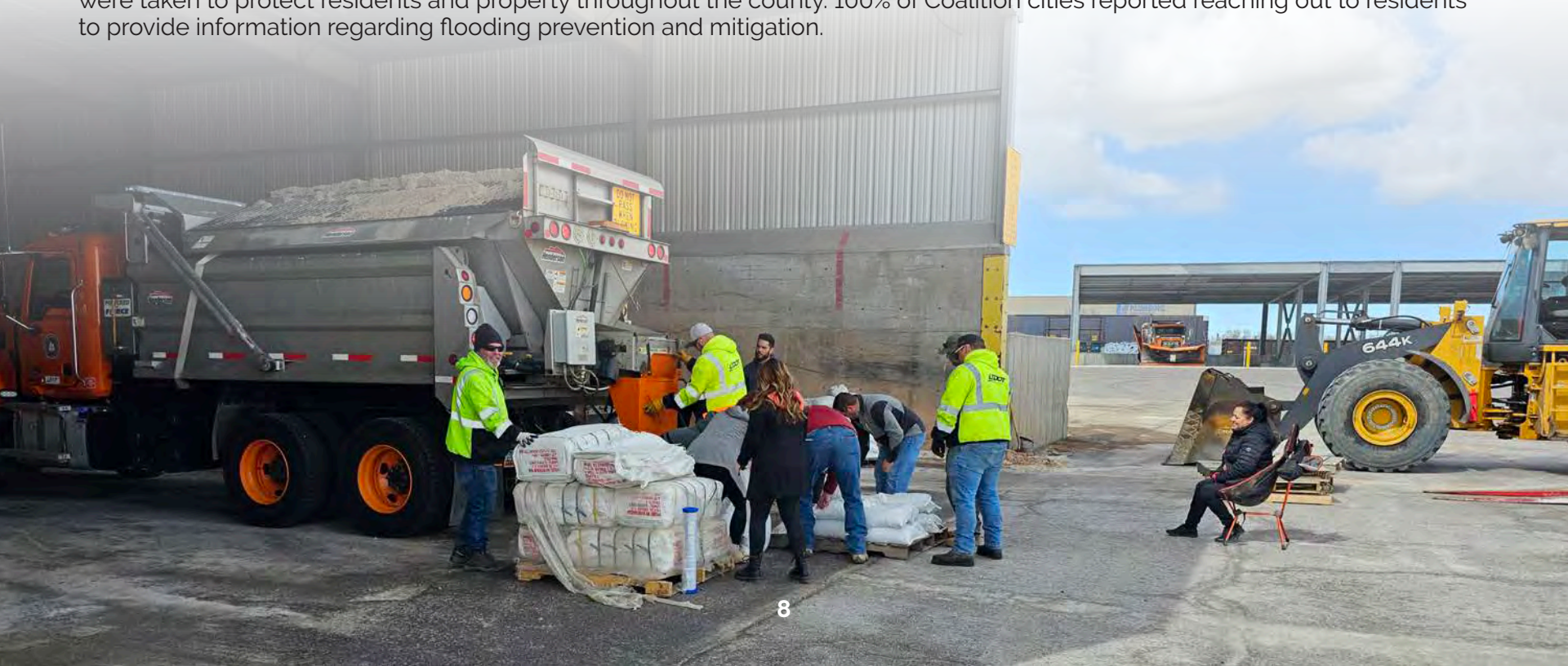


## 2. Record-breaking Spring Runoff and Localized Flood Prevention and Mitigation

Salt Lake County experienced a historic, record-breaking snowpack in the winter of 2022-spring 2023, resulting in extremely high levels of water flowing through SLCo rivers and streams.\* On April 13, 2023, Salt Lake County Mayor Wilson declared a state of emergency in response to flooding that was occurring at the time and the potential of more severe flooding in the days following.

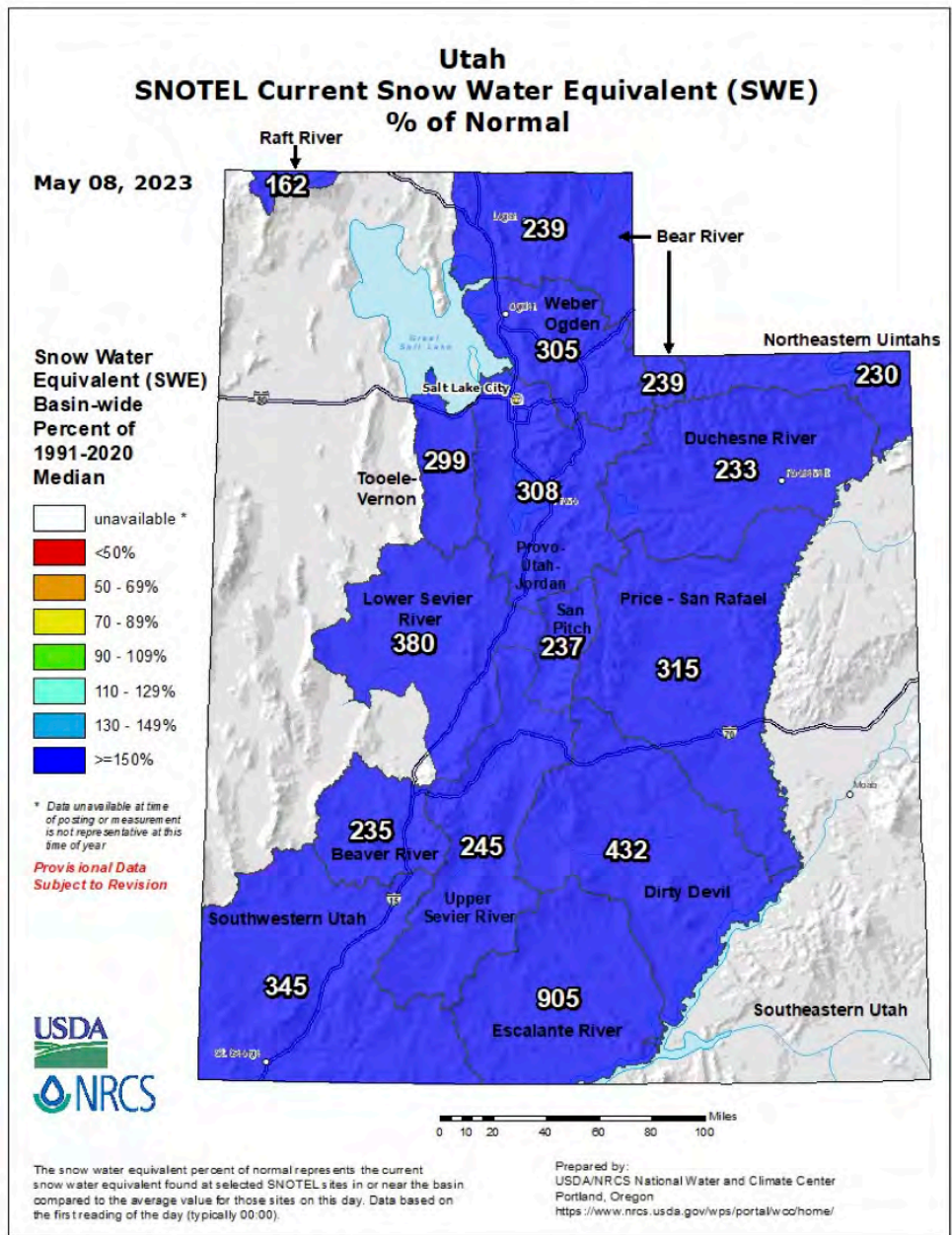
On the 11th of April, Emigration Creek flooded past its banks in multiple locations in Salt Lake City and the Emigration Metro Township, spurring round-the-clock emergency response from both municipalities and Salt Lake County. Hundreds of volunteers came out on April 12th to support their community by filling and placing thousands of sandbags along the creek bed at higher elevations and along 1700 South in Salt Lake City. Salt Lake County Engineering Flood Control, Public Works, and Municipal Services teams worked around the clock to clear debris, manage flows, and prevent additional flooding.

Areas along Red Butte Creek, Emigration Creek, City Creek, Big Cottonwood Creek, Little Cottonwood Creek, and Millcreek were at the highest risk of spring runoff flooding caused by the record-breaking snowpack. An emergency operations center was activated to coordinate the response efforts. The County and Stormwater Coalition Member Municipalities worked closely with each other and with state and federal officials to manage the varying conditions and ensure that all necessary measures were taken to protect residents and property throughout the county. 100% of Coalition cities reported reaching out to residents to provide information regarding flooding prevention and mitigation.

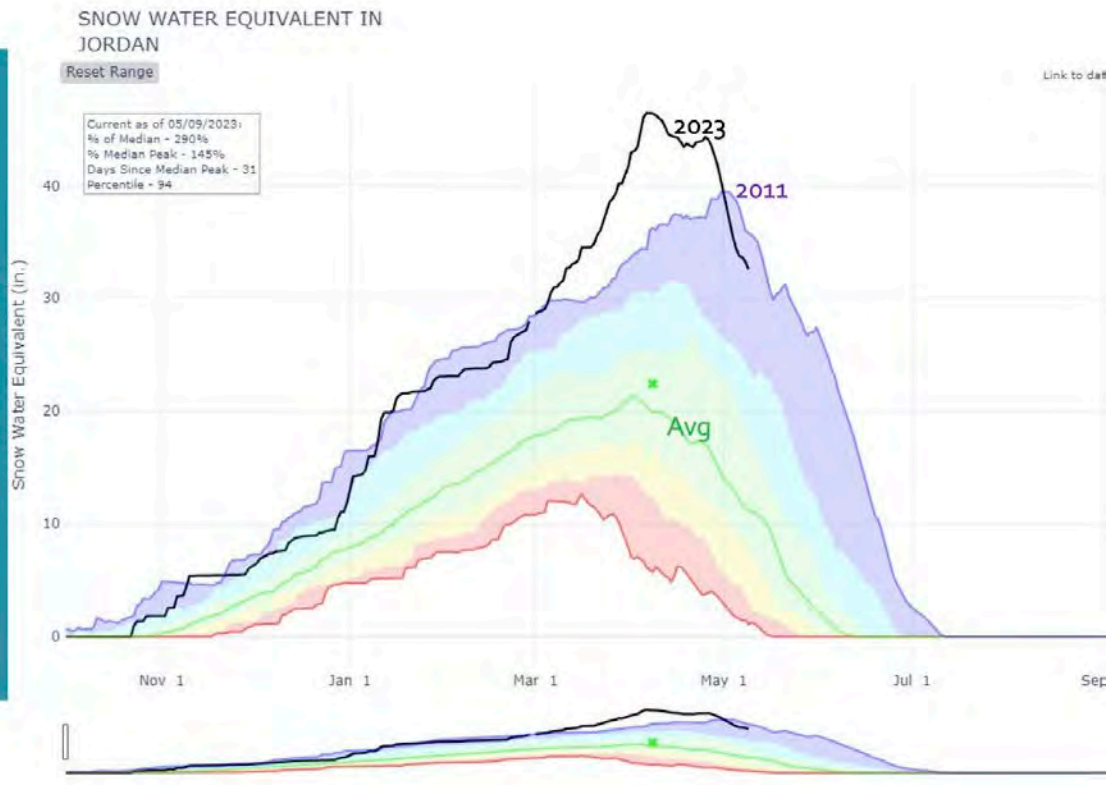




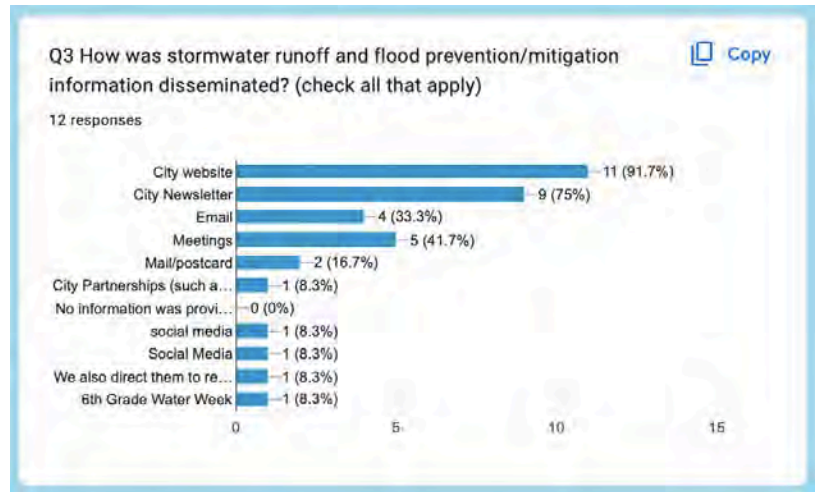
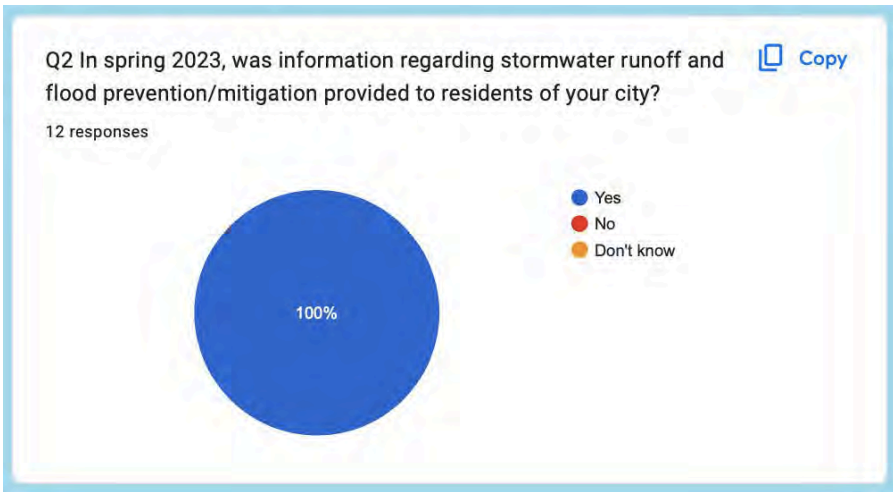
# Utah: Snowpack as in measured in SWE



# Jordan Basin: Snow Water Equivalent (SWE)



After the danger of flooding had passed, SLCo Stormwater Coalition Members were surveyed regarding outreach to residents in their municipalities. Survey results indicated:



On July 10th, Mayor Wilson and Kade Moncur, Flood Control Director officially ended the 88-day period of state of emergency. Mayor Wilson said the emergency declaration was a success: "Our work protected homes, businesses and resulted in very minimal damage, and we had no loss of human life." Salt Lake County reported that damages from flooding were roughly \$4 million compared to the huge 1983 flood in Salt Lake City, in which the damages were calculated at \$621 million to local homes and businesses—adjusted for inflation, \$1.87 billion in today's dollars.

Since the severe flooding in 1983, many improvements have been made to flood control infrastructure. Storm drains and creek beds have been enlarged, reservoirs have been added, flood maps and the associated technologies have been updated, pipe systems were improved to increase capacity all throughout the county to help move water efficiently down the watershed. Maintenance has also been upgraded for drainage ditches, debris basins and detention basins, such as Sugar House Park and Wheeler Historic Farm. Over the 3 month period of runoff, over 500,000 sandbags were filled and placed to mitigate the risk of localized flooding.

\*Typically, Utah's snowpack peaks around the first of April, with a 30-year median of 15.8 inches of water. This year, the peak was 30 inches. This breaks the previous record high, making this year Utah's deepest snowpack on record. According to the Utah Division of Water Resources, in Utah, we get approximately 95% of our water from snowpack. Reservoir storage is dependent upon snowpack and runoff to get through dry years. Extended drought has depleted the reservoirs, and it will take multiple years of above-average snowpack and precipitation to reverse drought impacts.



### 3. Non-Technical Information Programs for the General Public:

Prevalence of E.Coli in the Jordan River -- Based on high concentrations of E.coli present in the Jordan River Watershed, the Utah Department of Environmental Quality Division of Water Quality has completed a Jordan River E.coli Total Maximum Daily Load (TMDL) analysis to determine the amount of E.coli that can be present in any given segment of the Jordan River while still supporting its beneficial uses and meeting state water quality standards. Once the locations and magnitude of exceedances, as well as all potential sources were identified, controls are implemented to reduce pollutant loading until the Jordan River is brought back into compliance with water quality standards. As of June 30, 2023, a TMDL permit modification has been submitted to the Utah Water Quality Board and the Environmental Protection Agency (EPA) for final approval.

The focus of the Jordan River Watershed-wide E. coli TMDL permit modification is on the 14 impaired assessment units within the Jordan River watershed that do not support the drinking water (1C) and infrequent primary contact recreation (2B) beneficial uses for water quality standards due to exceedances in E. coli.

The Jordan River Watershed-wide E. coli TMDL uses a concentration-based approach, with allowable levels of bacteria set as a concentration expressed in bacteria counts/100 mL of water, with a goal that all discharges to surface waters (point and nonpoint source) meet the water quality criteria so standards are met throughout the river. E.coli is the US EPA recommended indicator for fecal pollution in recreational waters. Recreational waters are considered unsuitable for public use when numbers of E. coli bacteria exceed 235 Colony Forming Units (CFU)/100 ml. The organism E. coli is used to detect fecal pollution because it occurs in high numbers in the gastrointestinal tract of all warm-blooded animals and is easily detected using microbiological techniques.

According to the Center for Disease Control (CDC), symptoms of E. coli infection often include severe stomach cramps, diarrhea (often bloody), and vomiting. Some people may have a fever, and most people get better within 5 to 7 days. Most people with an E.coli infection start feeling sick 3 to 4 days after exposure, and infections are commonly very mild, but others are severe or even life-threatening.

About 5 to 10% of people who are diagnosed with E.coli infection develop a potentially life-threatening complication known as Hemolytic Uremic Syndrome (HUS) about 7 days after symptoms first appear. Symptoms of HUS include decreased frequency of urination, feeling very tired, and losing pink color in cheeks and inside the lower eyelids, decreased kidney function and possible kidney failure. Most people with HUS recover within a few weeks, but some suffer permanent damage or die.



**E. Coli Messaging for Public Impact-** There are simple practices shown to reduce amount of E.coli present in a given segment of a waterbody that SLCo residents can enact that may positively impact (reduce E.coli) levels in the Jordan River.

### Message #1: Scoop, bag, and trash pet waste

Pet Waste is a bigger problem than many people realize! A single gram of pet waste contains an average of 23 million fecal coliform bacteria, including E.coli, which can carry diseases which could make water unsafe for contact, or harm human health and the environment. Pet waste also contains nutrients that encourage weed and algae growth. Overly fertile water becomes cloudy, slimy, and green/black, as a result of eutrophication, which causes health concerns for swimmers, boaters, and fish.

### Message #2: Don't feed wild ducks and geese

Hand feeding waterfowl human food (i.e. bread, popcorn, chips, etc.) contributes to a variety of environmental health problems that affect humans and other wildlife. Waterfowl act as hosts for bacterial and pathogenic agents such as E.coli that can infect other waterfowl and humans. When ducks and geese feed on scattered corn or bread, they eat in the same place where they defecate. Droppings contain harmful bacteria that can infect humans. In addition, large concentrations of waterfowl facilitate the spread of disease. Diseases generally not transmissible in a wild setting find overcrowded and unsanitary conditions very favorable.

In some cases, humans have been affected by disease transmitted by waterfowl. The risk of disease transmission is partially due to the fact that large numbers of geese leave large quantities of feces. A single goose can produce up to 1.5 pounds of feces each day. This problem is magnified as these geese have become non-migratory or resident geese due to feeding by humans.

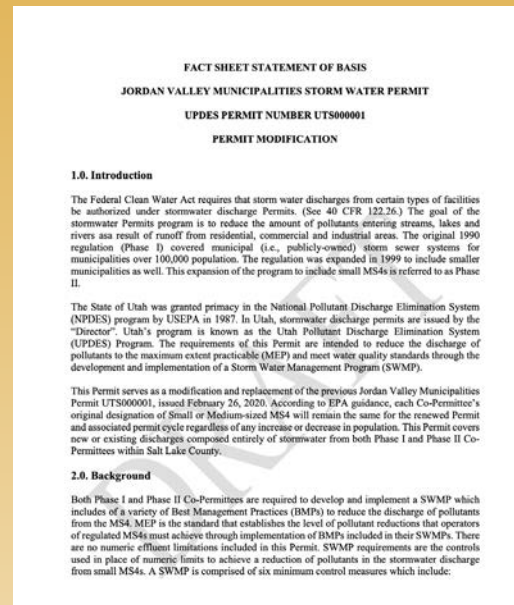
Feeding attracts large numbers of birds creating overpopulation. The accumulation of droppings and feathers increase the risk for disease. Overgrazing of vegetation, soil erosion, and excess droppings leaves recreational areas used by humans unsanitary for use and the elevated bacteria can contaminate the local water supply. Excess nutrients in ponds caused by unnatural numbers of waterfowl droppings can result in water-quality problems such as summer algal blooms. Also, in areas with recreational water where waterfowl congregate to feed, E-coli counts can swell to levels that make the water unsuitable for swimming.



# JORDAN RIVER WATERSHED E. COLI TMDL Report



## REPORT



## PERMIT MODIFICATION

The SLCo Stormwater Coalition utilizes its branded resources and materials to provide Best Management Practices (BMP) information and distributes via various outlets, such as in its television broadcast PSA's, on banners and displays at community events, printed on distributed postcards, reusable grocery bags, and refrigerator magnets, in municipal newsletters and on social media. The branded materials are easy to recognize, and provide messaging regarding easy to adopt behaviors that address nonpoint source stormwater pollution and that meet stormwater permit requirements. Coalition member communities target specific behaviors related to the pollutants that impact the impaired stream segments in their municipality. A universally promoted BMP for residents and homeowners is to pick up and properly dispose of pet waste or, as we say, "Scoop The Poop" to address stream segments that are polluted with E.coli, as a result of canine feces. Planning for the year to come, "Don't Feed Wild Ducks or Geese" messaging and pond-side signs to further address sources of E.coli that can be impacted by direct action of Salt Lake County residents.

Additionally, for Non Technical Information Program resources, the Stormwater Coalition also consistently uses EPA and Utah DWQ guidance for Best Management Practices as a focus for information, education, involvement and outreach efforts.

EPA's Stormwater Smart campaign, for example, is a stormwater public outreach campaign to promote the value of sound stormwater management for creating a community where residents want to live and work. Materials can be used as part of the public education and outreach efforts of stormwater permit programs.

The Stormwater Smart materials are organized to cover a wide range of topics and can be used on several print and social media platforms. In addition, there is a how-to manual with ideas for how to use the tools in ways that connect with residents and businesses. <https://www.epa.gov/npdes/stormwater-smart-outreach-tools>

## 4. Addressing Barriers to Implementation and Adopting BMP's- -Messaging for Education and Outreach Efforts for Specific Audiences: (1) Residents; (2) Institutions, Industrial, and Commercial Facilities; (3) Developers and Contractors; and (4) MS4 Owned or Operated Facilities

The Stormwater Coalition began tailoring messaging for each of the audiences as prescribed in the Utah General Stormwater Permit Jordan Valley Co-Permit in 2021. Targeted groups were defined and segmented. Since then, the delivery of BMP messaging designed and targeted for specific groups is occurring. Moving forward, coalition recognizes that while segmentation and targeting audiences is critical to success, it must also be acknowledged that if these audiences are to actually adopt and sustain the behaviors and practices that will collectively make a difference in stormwater quality, additional barriers must be addressed:

An important consideration is the realization that “What links nearly all present environmental problems is their root cause: human behavior (Foley et al., 2005; IPCC, 2018). Yet this cause also presents a solution: to address these challenges, humans must act differently (Schultz, 2011). In other words, environmental problems are behavioral problems, and environmental solutions must also be behavioral solutions. Whenever one approaches developing an environmental program, what they are doing is developing a behavior change program (Cowling, 2014).”

Apathy and reluctance to change where environmental issues are concerned must also be considered. According to Ipsos Research (Washington D.C.), a nationwide survey conducted in April-May 2023 indicated that about half (49%) of Americans believe climate change\* is mostly caused by human activity, unchanged from 2017 and 2018. Over a quarter (27%) of survey respondents believe it is mostly caused by natural patterns, and 7% believe it is not happening at all. Among those who believe climate change is caused by human activity, the majority (62%) agree that humans could slow or reverse climate change but aren't willing to change their behavior. Along these lines, less than half of Americans say they are likely to make changes in the next year to help limit climate change, such as using public transportation (21%), trading in their car for an electric vehicle (25%), or walking or biking to close locations instead of driving (36%).

\*The coalition is utilizing available data regarding climate change as a proxy issue for likelihood for behavior change regarding water quality issues.

The political and public environments also play an important role in the adoption of new behaviors. Efforts originating with the government often involve laws that demand change, but social pressures, community norms, and systemic barriers can limit individual adherence to such laws. Similarly, change efforts driven by citizens and other nongovernmental entities will flounder if the government opposes or refuses to reinforce the change. To achieve success, the government and public sectors must be willing to recognize a problem, understand it in a similar way, and agree on solutions. The Utah government sector has taken an important step in the process, having developed Utah's Coordinated Action Plan for Water, which was released in November, 2022.

To increase the likelihood of successful adoption of BMP behaviors, behavior change theory details the stages of behavior change and provides strategies for promoting changes that residents are easily able to adopt and more likely continue as a permanent behavior.

The six stages of change are:

1. Pre-contemplation
2. Contemplation
3. Preparation
4. Action (adoption of behavior)
5. Maintenance
6. Relapse/re-adoption

### **Pre-Contemplation:**

This could also be called lack of awareness. At this stage, people are not aware of a negative behavior in which they are engaged. For example, a person may not know that animal waste from their dog can get into storm drains and add potentially harmful E-coli bacteria to local waterways. They may not even be aware that stormwater flows into local waterways untreated. Behavior change messaging needs to start with increasing awareness messaging to be effective. People will not change a behavior they do not even realize is a problem.

### **Contemplation:**

At this stage people are made aware of a problem and the impact of their negative actions. They are not yet ready to adopt a new behavior. However, they are starting to think about it and weigh the pros and cons of adopting a new behavior. At this point a person might say or think "What's in it for me?, or why should I change? Messaging should explain what the new behavior or action is and how to adopt the action. The messages should also explain why it is important to change. The more personal the reason for changing a behavior the more likely people are to adopt a new behavior. Common reasons people change include:

1. Money. The new action will save a person money or at least not cost them more money than their current action.
2. Convenience. The new action is as convenient or more convenient than the current action. One example is recycling paper, plastics, glass, etc. If you have to drive to a recycling center you may be less likely to recycle than if your municipality offers curbside recycling.
3. Time. It takes less time or not much more time to complete the new action.
4. Health. The new action may make you healthier or potentially prevent a possible negative health impact.
5. Simplicity. The new action is easy to complete.

For a person to commit to changing a behavior usually at least one of the above reasons must be in play.





**Preparation:**

This is where people take the information you have provided about what you would like them to do and why they should do it, and they choose to adopt a new behavior. They learn details about what it is they are being asked to do and they prepare to take action. If the action you ask people to take on is too difficult, time consuming, expensive, or too complicated they are far less likely to continue the new behavior. It is important that the actions you promote are simple and singular or that multiple actions are closely connected and make sense to be done together. Bag and trash pet waste is a good example. In this example, when they walk their dog through their neighborhood they are likely going to be "on their own" They have to remember to take a bag with them. They have to know where they can dispose of the bag. Walking your dog thorough your neighborhood you may have to wait until you get home to dispose of the bag. If so, how do you transport the bag? Do you carry it yourself? Do you tie it to your dog's collar? If you are asking people to bag and trash pet waste at a public park, hiking trail, etc. action sponsors can increase the chance of adoption by providing bags and waste receptacles. If people have a good experience the first few times they try something new they are more likely to continue the new action.

**Action:**

In this phase people take the new action for the first time. If it is a positive experience they are more likely to continue they new action.

**Maintenance:**

In this stage people are getting used to the new action. They may create strategies for continued success.

**Relapse:**

Relapse is a part of change. However, continued external messaging can help people choose to adopt the behavior again. Seeing other people engaging in the same positive behavior may also motivate people to change in the first place or to re-engage.

Ergo, the coalition has selected BMPs that are: 1) correlated to the specific audience's typical interaction with stormwater; 2) correlated to one or more pollutants of concern that the specific audience would collectively be able to impact, if the BMP was adopted by a large enough segment of that audience ("most people" in the specific audience); 3) recommended by a reputable source, shown to impact the pollutant of concern if adopted by a large enough segment of that audience (ex: EPA, Utah DWQ, etc.); and "doable" by the audience to which it is targeted, as defined by being singular (asking audience to adopting one specific action at a time), simple/easy to understand what is expected, have no or little financial expense or cost related to the BMP (maybe even a cost savings), convenient for the adopter (not too difficult), and does not require any specialized knowledge on the part of the typical adopter.



In consideration of the factors above, the SLCo Stormwater Coalition BMP's to address specifically identified pollutants of concern, recommended for each of the permit targeted audiences are:

### **(1) SL County Residents:**

1. Bag and trash pet waste- pet waste carries E.coli and other harmful coliform bacteria. Washed into the ground and left on sidewalks, gutters, stream banks, and streets, it is THE main contributor to contamination of the Jordan River. Bag and trash pet waste every time.
2. Pick up and throw away trash from sidewalks, parking lots, streets and gutters. In addition to the trash itself, trash carries harmful bacteria, oils, and chemicals directly into our waterways
3. Sweep and throw away grass clippings, fallen leaves, and other garden waste from sidewalks, gutters and keep away from storm drains. Excess nutrients in our water bodies caused by this "natural" waste adds nutrients that lead to algae blooms, and that are very bad news to fish and other aquatic life, and through a process called Eutrophication, can make humans very sick.
4. In your yard and garden, if you must use fertilizer, use it VERY sparingly. Any fertilizer not absorbed by plants or grass carries the excess nutrients through the ground, then into the aquifers, and finally into our waterways. Any dry or pellet fertilizer that gets onto a hard surface, such as sidewalks or driveways, needs to be swept back onto the lawn or garden, or thrown into the trash. When added to excess nutrients resulting from pet and wild animal waste, decomposing leaves and grass clippings, excess fertilizer causes impaired waterbodies, algae blooms, fish kills, and eutrophication (a cycle of dark, slimy, decaying, putrid water).

### **(2) Institutions, Industrial and Commercial facilities:**

1. Significantly reduce water waste through water-efficient fixtures, technologies and techniques by adopting "WaterSense" practices, such as assessing water-intensive equipment for proper operation and efficiency can help to eliminate water waste. <https://www.epa.gov/watersense/best-management-practices>
2. Develop An Illicit Discharge Detection and Elimination Program that features both responsive and pro-active approaches to IDDE incidents, that addresses comprehensive sources including dry-weather flows, sanitary wastewater or industrial and commercial pollutant entries, failing septic tank systems, vehicle maintenance activities, and others as applicable.
3. Create a company/institutional culture of environmental awareness and stewardship, such as sustainability offices and initiatives on college and corporate campuses; encouraging and incentivizing the development of clubs, volunteer opportunities, community events, etc.; promote and adopt company-wide behaviors through physical/structural, such as company-wide HHW bins, additional trash bins where litter has been a problem, and pet waste bag stations in appropriate locations.

### **(3) Developers and Contractors (construction):**

1. Obtain and comply with General Construction Permit (Utah DWQ)  
<https://deq.utah.gov/water-quality/general-construction-storm-water-updes-permits>
2. Develop a daily practice of Controlling Construction Stormwater Discharges. Everyone on the job can help to prevent stormwater pollution by adopting these practices:
  - Design, install, and maintain effective erosion and sediment controls, and pollution prevention measures, to minimize the discharge of pollutants;
  - Stabilize disturbed areas immediately when construction has ceased and will not resume for more than 14 days;
  - Prohibit the dewatering discharges unless managed by appropriate controls;
  - Prohibit the discharge of: Wastewater from concrete washout or washout/cleanout of stucco, paint, form release oils, other wastewater materials; Fuels, oils, or other pollutants used for vehicles; and soaps or solvents to wash vehicles and equipment.

### **(4) MS4 owned or operated facilities:**

1. Utilize Low Impact Development Principles to conserve natural areas; minimize development impacts; maintain site runoff rate and control small storms, implement integrated management practices (control volume and pollutant loads), and ensure pollution prevention, proper maintenance, and public education programs.
2. 2-Practice Stormwater Pollution Prevention and Good Housekeeping in Municipal Operations and Facilities to assess potential stormwater impacts; to inform the development, implement, and train on a Stormwater Pollution Prevention Plan
3. 3-Emphasize Nutrient Pollution prevention as a critical element to addressing stormwater pollution prevention at MS4 owned and operated facilities, including eliminating or minimizing fertilizer usage, avoiding fertilizer application before or during storms, planting native plants, avoiding overwatering, installing pet waste bagging stations

## 5. Targeted Land Uses and Target Audiences Found Within the Community, Including Specific Pollutants and Pollutant Sources, Potential Impacts, and Recommended Appropriate Actions for Stormwater Pollution



The stormwater coalition is concerned with supporting optimal land use planning, which directly impacts the quantity and quality of stormwater runoff by determining how and where impervious surfaces like roads and buildings are constructed. Low impact development (LID) practices, which focus on sustainable land use and stormwater management techniques, reduce runoff and promote infiltration, thus lessening the burden on stormwater infrastructure and protecting water quality.

The coalition continues to gather and post information, tools, and educational materials for municipal leaders, engineers, planners, and private developers to aid in stormwater management in land use planning and adoption of green infrastructure practices, such as stormwater modeling and (LID) controls to improve their effectiveness in managing runoff and achieving significant pollutant reduction benefits.

Scholarly articles, tips and online tools are listed on the coalition's Land Use webpage at: [stormwatercoalition.org/landuse](http://stormwatercoalition.org/landuse)

## 6. Promotion of Training Programs for Public Sector Personnel

The coalition continues to provide resources for training programs for public sector personnel—municipal operations and public works/utilities departments. The Stormwater Coalition promotes online training program such as, the EPA NPDES permitting program, which offers training courses, workshops, and webinars to explain the regulatory framework and technical considerations of the NPDES permit program. These recorded presentations enable participants to review the material on demand in a self-paced environment, and include topics such as:

- Understanding Nutrient Management Plans
- NPDES Permit Writers' Training for Nutrients
- Construction Inspection Training (English and Spanish)
- NPDES Permit Application Forms
- NPDES Permit Writers' Training (General)
- Permit Writing Tips and Best Practices
- POTW Pretreatment Training Workshops
- Whole Effluent Toxicity Training and Videos
- Combined Sewer Overflow Training

NPDES Stormwater Webcasts (A broad variety including general, construction, industrial, and municipal) Educational opportunities for stormwater personnel are also promoted via the Utah Chapter of the American Public Works Association. One of the largest public works conferences in the west, there are 9 tracks with educational opportunities for all facets of public works Municipal Stormwater Management, Construction, Maintenance, and Operations, Safety, Emergency Management, Technology in Public Works, Water, Sewer and Utilities, and Transportation. Many of these programs are presented by appointed officials from state and local government experts, who have hands-on experience.

The Coalition also posts trainings available from the APWA-Utah Chapter, Certified Inspector of Sediment and Erosion Control (CISEC), and others and announces them at monthly coalition meetings as they become available. Links to EPA courses and more information are available at [stormwatercoalition.org/coalitionmembers](http://stormwatercoalition.org/coalitionmembers) under the Stormwater Training Information section.

## 7. Public Engagement through Community Events and Volunteer Opportunities Community Events, Adopt a Storm Drain, and Placement of Lawn Signs

### Community and Civic Events

The Salt Lake County Stormwater Coalition members provide informational and educational booths, BMP and stormwater pollution prevention materials and presentations, usually during the summer and fall, at community events. In late summer and fall of 2022 and spring of 2023, public events where the Coalition members participated included the Salt Lake County Watershed Symposium, Salt Lake City community events, Millcreek Venture Out Program, Murray City's Earth Day and Health and Safety Fair, Segó Lily Gardens and Water Week Spring Fair, Fort Herriman Towne Days, South Salt Lake Night Out, and other various community events.

#### **Salt Lake County Watershed Symposium**

The Salt Lake County Stormwater Coalition participated in the Salt Lake County Watershed Symposium to promote stormwater best management practices and raise awareness about the importance of managing stormwater for homeowners. 472 participants were in attendance at the event in November 2022, held at the West Valley Cultural Events Center. The Stormwater Coalition launched a new series of outreach materials and provided an informational "break" between education sessions for attendees of the virtual event, hosting conversations and answering specific stormwater questions.

#### **Millcreek Venture Out Program**

Every Friday night in July 2022 and June 2023, Millcreek provided outdoor activities, recreation, clinics, live music, food trucks, community vendors, and outdoor movies. All of the activities are free admission. Millcreek used the events to hand out pet waste and fertilizer information from the

SLCo stormwatercoalition.org website. In addition, Coalition promotional lip balm, dog waste bag holders, pens and reusable bags were handed out to those interested in the Coalition and Millcreek Stormwater programs. During the reporting period, Millcreek also hosted an Earth Day Event at newly established Millcreek Common with 2000+ residents in attendance for education on environmental sustainability and compliance, partnered with the Jordan River Commission on multiple cleanup days, and hosted a Rain Barrel Event in conjunction with Utah Rivers Council, Murray City, and Cottonwood Heights. Millcreek subsidized the purchase of 300+ barrels for Millcreek residents and provided Coalition promotional items and information cards with every barrel purchased.

#### **Murray City's Earth Day and Health and Safety Fair**

Held annually in conjunction with the Murray Police, Fire, SWAT Team, Code enforcement, and City Council, the Murray Health and Safety Fair is utilized to educate and emphasize the importance of clean stormwater to 3,000 + residents. To celebrate Earth day in Murray City, approximately 300 3<sup>rd</sup> grade elementary school students participate with the Murray Stormwater Team in April to do the "urban stew" presentation each year.

#### **Segó Lily Gardens and Water Week Spring Fair**

Sandy City participated in two fairs, the Water Week Spring Fair and Fall Fair at, both held at Sandy's demonstration rain garden, Segó Lily Gardens. Stormwater Quality Coordinator, Dawn Barbee, utilized a watershed model to educate about stormwater. Paul Evans used a backflow display to educate about cross contamination.

#### **Fort Herriman Towne Days**

Herriman City Annual Fort Herriman Towne Days were held June 23<sup>rd</sup> and 24<sup>th</sup>. Along with games, shows and activities, the city provided a booth set up for the Engineering and Public Works Department where they distributed Stormwater promotional items, presented general stormwater and storm drain information and answered questions relating to individuals' specific stormwater concerns.

## South Salt Lake Night Out

SSL Public Works utilized an interactive model of the water cycle at a community gathering at Central Park Community Center on August 1<sup>st</sup> as a venue to deliver information about stormwater BMP's and to provide "seeing-is-believing" proof that soaking up is better than running off.

## Salt Lake City Public Events

Salt Lake City hosted several community events during the reporting period, including: Westpointe Community Night Out on August 22, 2022, where stormwater pamphlets, keep it pure pamphlets, automotive and restaurant bmp pamphlets, FOG pamphlets, 10 top BMP posters, 2022 Water Quality Report & assorted swag were distributed and stormwater issues were discussed with 250 SLC residents; the Avenues Street Fair, spanning 8 blocks of the avenues area of SLC, on September 10, 2022, where 1,000 individuals were in attendance, receiving Storm water pamphlets, Adopt a Storm Drain pamphlets, Keep it Pure pamphlets, automotive and restaurant BMP pamphlets, FOG pamphlets, 2022 Water Quality Report & assorted swag; and Groove in the Grove on September 24, 2022, attended by 100 SLC residents who were offered the same resources and information as stated above. Additional events included: Halloween Fun Fest (10/29/22), where SLC Stormwater Staff members were able to have conversations and share material with about 30 people. Droplet (in costume) was also in attendance, so that was an added visibility that was well received by the public. Presentations and Discussions included Cornell St. Project (10/20/22- 80 high school attendees) McGillis School Adopt a Storm Drain presentation (11/14/22- 24 attendees), and resource tables at Rowland Hall Submerge (2/10-11/2023 - 250 attendees) and SLCo Watershed Symposium (11/16/22- 472 attendees).

## South East Township Days (Greater Salt Lake Municipal Services District- MSD)

SLCo Stormwater Coalition Member, MSD, was an active participant in South East Township Days on August 27, 2022. Bringing together the communities of White City, Sandy Hills, Wilson Canyon and Willow Creek for family-friendly activities, such as a car and motorcycle show, bounce houses, food trucks and children's and youth performing groups interlaced

with health and safety and other booths. During the day-long event, the coalition provided written BMP materials and stormwater pollution prevention promotional items to over 150 individuals in face to face conversations and discussions about the importance of keeping stormwater clean.

## Other Public Events

Salt Lake County Stormwater Coalition members participated in a variety of other public events at the municipal level, which addressed and promoted stormwater education for residents, public, and city and county employees.

## Adopt A Storm Drain

The stormwater coalition continues to support member cities in developing Adopt A Storm Drain programs. South Salt Lake has moved into development of their program and Salt Lake City's program continues to grow. Salt Lake City residents can sign up at <http://www.slc.gov/utilities/adoptastormdrain/>

During the reporting period, lawn signs were developed to act as an additional support and to add visibility to targeted neighborhoods, specifically intended to act as recognition and positive reinforcement for residents who have adopted a storm drain. There is a second lawn sign available for municipalities who do not have an Adopt a Storm Drain program, working to raise awareness and encourage residents to keep the storm drains in their neighborhoods free from yard waste, trash, and debris.



## 8. Educational Engagement: SLCo Stormwater Coalition Virtual 6, 7, and 8<sup>th</sup> Grade Water Quality Fair

The Stormwater Coalition hosted its annual Virtual Water Quality Fair for the 6, 7, and 8<sup>th</sup> grade students on Thursday, May 18<sup>th</sup>, 2023. The online event featured watershed, water quality, and water science learning activities, and virtual exhibits. 2,402 students participated from Murray, Riverton, Salt Lake City, South Jordan, South Salt Lake, and West Jordan. Because many middle school teachers wanted their classes to be able to participate, the Coalition made all sessions available online, so that they could be viewed and activities completed in segments or anytime that would accommodate students being in their science classes for one 45 or 90 minute period on any given day.

All participating classes were provided with activity supplies, which allowed students to have everything they needed to participate along with the video presentations. Topics included:

- Important Factors in Water Quality
- Why Stormwater is So Important—Pervious vs. Impervious Surfaces
- Creating a Watershed Model
- Identifying Macro-Invertebrates
- Determining if an aqueous solution is acidic or basic (pH)
- Water Quality Bingo

The event archive can be viewed at [Stormwatercoalition.org/fair](https://stormwatercoalition.org/fair)

In conjunction with the 2023 Virtual Water Quality Fair, the stormwater coalition hosted a Water Quality Art and Poetry Contest for 6, 7, and 8<sup>th</sup> grade students. Through a contest portal, participants submitted original, digitized artwork or poetry that represented expressions of understanding of watersheds, water quality, and the relationship with water that maintains all life through original creations of poetry and visual art. Judges selected a first, second and third place award for each of the two categories.



*Winning entries of the Stormwater Coalition 2022-23 Water Quality Art and Poetry Contest for 6, 7, and 8<sup>th</sup> graders in Salt Lake County.*

Precious Water  
By: Ryder Peterson

There are a lot of things that are precious to me,  
There's food and school and unknowable things to thee.  
But there is one thing which is the most precious resource,  
It's the thing that gives you energy to go through each course.

It helps you complete you chores and sports,  
It gives you energy to pull up your shorts.  
What could this amazing thing possibly be?  
Well it's the water that is drunk by you and me!

It cleans you as you wash in it,  
It can take out the fire that is lit.  
It rains on your grass making it grow big and strong!  
It is the aid of mother nature,  
It forms the amazing glaciers.

So I thank this precious water,  
For it helps me when the day gets hotter.  
It is such a giving piece of matter,  
Thank you, my precious water.

It sings and dances and stops the dry,  
It forms colorful cotton candy strings in the sky.  
Well now you know what is precious to me,  
Now I wonder what is precious to thee?



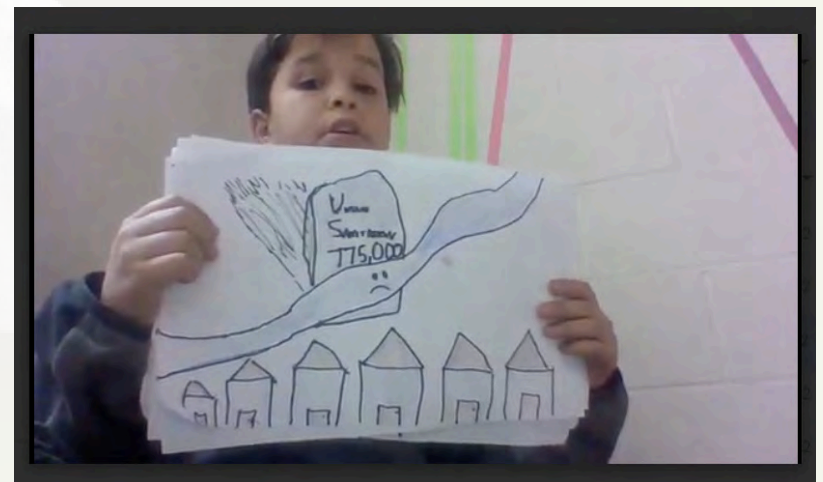
## 9. Educational Engagement: SLCo Stormwater Coalition 6, 7, & 8<sup>th</sup> Grade Water Science and Engineering Competition

Salt Lake County Stormwater Coalition held its annual 6, 7, and 8th Grade Water Science & Engineering Competition in November 2022. With parent permission, students were invited to compete by:

- Selecting a water challenge to address. Some suggestions included: Climate change impact on water availability and quality; Extreme weather events like flooding and droughts; Impaired/polluted waterways; Widespread eutrophication; Lack of access to clean drinking water, washing and toilet facilities; Nonpoint source or polluted runoff, including trash/plastics, pet waste, yard debris; Rising water demand against a backdrop of growing scarcity
- Selecting a presentation category:
  - Big Idea- Present a detailed persuasive narrative. Name the challenge selected and presenting a plan to address it
  - Prototype- Name the challenge selected and designing, building, and demonstrating a model of the solution
  - Experiment- Name the challenge selected and present results for at least 2 attempts to address the challenge.
- Writing an overview of their project
- Creating a bibliography for their project, citing books, periodicals, non-print/electronic and digital sources of the information the informed their project development
- Completing and submitting an online entry form
- Creating and submitting a short amateur video (less than 6 minutes and 2GB or less—phone videos preferred) addressing the water challenge they identified.

Winners were selected in December 2022 by a panel of judges that included scientists and educators. Entries included students from across SL County, and this years awardees included a an entry that addressed Rivers in Africa that are unsafe due to human fecal pollution and an entry for which a prototype was developed that shows filtration of stormwater that (in concept) would be installed under each storm drain to filter stormwater before it flows directly into streams, rivers, and lakes. More information about the SLCo Stormwater Coalition Water Science and Engineering can be found at [stormwatercoalition.org/wsec](https://stormwatercoalition.org/wsec)

*2022-23 Water Science and Engineering Grand Prize winner, 7th grader, Kai- McGillis School*



## 10. Educational Engagement: SLCo Stormwater Coalition Curriculum

The SLCo Stormwater Coalition Stormwater Curriculum is designed to support lessons and activities in the Utah Core Science with Engineering Education (SEEd) Standards to teach 6th graders (or youth approximately 10-13 years of age) about stormwater, its impact on systems, the environment and humans, and how to prevent water pollution. The curriculum may be used by teachers, environmental educators, afterschool personnel, municipal staff, community volunteers, and others, and has a corresponding webpage that features Coalition developed videos, such as Droplet's Ride Down the Upper Jordan River Watershed and the Student Guide to Stormwater at: [stormwatercoalition.org/stormwater-education](https://stormwatercoalition.org/stormwater-education).



# CURRICULUM GUIDE

## 11. Mainstream Media: Television PSAs and UTA Bus Banners

The stormwater coalition utilizes television PSAs that run during morning and evening news segments on local broadcast television networks in order to reach the largest possible audience with stormwater messaging and promotion of adoption of BMPs.



On KUTV Channel 2, a stormwater coalition campaign ran from September 1-29, 2022, and April 16-May 14, 2023. A 30-second PSA featuring Kari Hawker-Diaz was shown a total of 461 times with an estimated 2,582,895 views. Additionally, the Hawker-Diaz feature was also shown on KJZZ, KMYU, Apple TV, Roku, Amazon Firestick, and other devices with an estimated 1,369,931 views over the campaign in the fall of



2022 and spring 2023. Key BMP messages were presented in an email that was distributed to over 25,000 email addresses in the target audience of Salt Lake County residents over the age of 18, whose digital profile indicated an interest in environment, outdoor recreation, gardening, and pets.

SLCo Coalition Director, Josh Mikel had a guest appearance (as Droplet) along with SLCo Stormwater Coalition consultant, Jack Wilbur on the KUTV2 Fresh Living Lifestyle Show on March 30, 2023 to deliver a demonstration regarding common stormwater pollutants and what happens when they reach our local waterbodies (approximately 34,000 views), and Sandy City Stormwater Quality Coordinator, Dawn Barbee appeared on April 26, 2023 with a tabletop model home, equipped with features to highlight possible stormwater management that can be implemented by homeowners and businesses (also approximately 34,000 views).

FOX 13 ran a campaign during the weeks of October 17-December 4, 2022, and March 6-April 2, 2023. Over the course of the campaign, the 15-second PSA was shown 46 times in the fall and 52 times in the spring, reaching approximately 812,293 viewers an average of 2.6 times/viewer. The FOX 13 campaign included PSA's during Good Day Utah 7-8AM, and FOX News at 9, a "VIP" email sent to 71,991 targeted email addresses (Facebook sponsored posts (28,428 impressions) and display ads on FOX13 social media (274,972 impressions) during the campaign period, which posted to the pages of its more than 780,000 followers.

Coalition members Corby Talbot and Lisa Park from the South Salt Lake Public Works Stormwater team, had a guest appearance, demonstrating the water cycle and how pollutants impact stormwater, on the FOX13 The PLACE Lifestyle Show on March 30, 2023 with approximately 28,500 viewers.

The PSA/TV Ad campaign spots from the 2022-23 combined Stormwater TV ad campaign can be viewed at: [stormwatercoalition.org/videos](https://stormwatercoalition.org/videos)

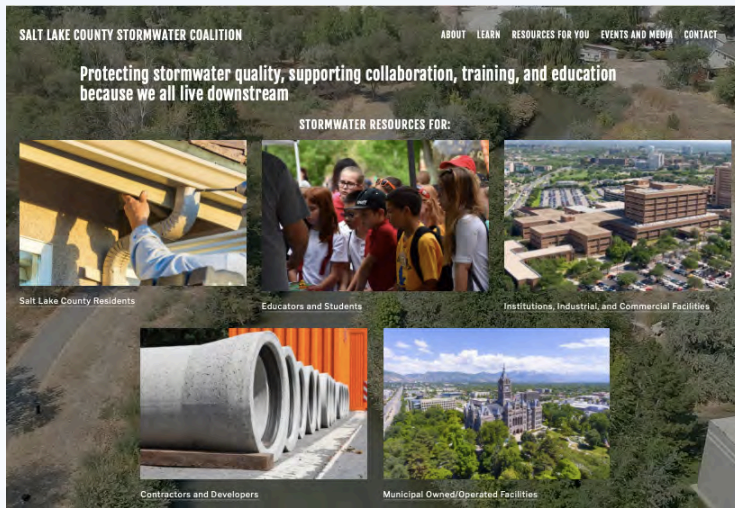
## SLCo Stormwater Coalition Bus Banners

During the 2022-23 reporting period, the SLCo Stormwater Coalition delivered a campaign utilizing side banners on UTA buses for a 4-week period, from October 1-28, 2022, and March 1-28, 2023. The campaign material utilized stormwater BMP messaging on a "Super King" 30" x 216" banner featuring Droplet, the "We All Live Downstream Slogan" and icons and brief messages promoting stormwater pollution prevention, including: yard care, pet waste, household chemical disposal, vehicle maintenance, and proper disposal of trash.

Lamar Advertising, who facilitates all the UTA bus advertising indicates that 31.94% of the population along a given route saw the ads at a frequency of 7.35 time over each of the 4-week periods, for 3,147,647 impressions per each spring and fall, equaling a total of 6,295,294 total impressions for the reporting period.



## 12. Outreach and Engagement to targeted audiences through Social Media Platforms



### Welcome Salt Lake County Stormwater Coalition Members!

#### RESOURCES AND TRAINING INFORMATION FOR SL COUNTY STORMWATER COALITION MEMBERS AND PARTNERS

For documents, graphic images, photos, videos, training resources and meeting information, this is the right place!

Please contact Joshua Mikel at [jmikel@slco.org](mailto:jmikel@slco.org) if you need files associated with this page or have additional resources to share.

#### STORMWATER COALITION MEETING AGENDAS AND NOTES

- [2023-09-20 Stormwater Coalition Meeting Agenda-Notes](#)
  - [SLCo Health Dept. 2022-23 IDDE by City](#)
  - [2023 Spring Virtual Water Quality Fair attendees by city](#)
- [2023-08-16 Stormwater Coalition Meeting Agenda-Notes](#)
  - [Example Spill Response Procedures](#)
  - [Link to "Love Your Watershed- Jordan River Video](#)
- [2023-07-19 Stormwater Coalition Meeting Agenda-Notes](#)
- [2023-06-21 Stormwater Coalition Meeting Agenda-Notes](#)
- [DWQ TMDL E.coli MS4 Permit Modification presentation](#)
- [2023-05-17 Stormwater Coalition Meeting & Social Flyer](#)
- [2023-04-19 Stormwater Coalition Meeting Transcript/Notes](#)
- [2023-03-15 Stormwater Coalition Meeting Agenda-Notes](#)

SLCO STORMWATER COALITION E.COLI WEBSITE

PLEASE  
DON'T FEED  
THE DUCKS AND GEESE



### A. [Stormwatercoalition.org](https://stormwatercoalition.org) website

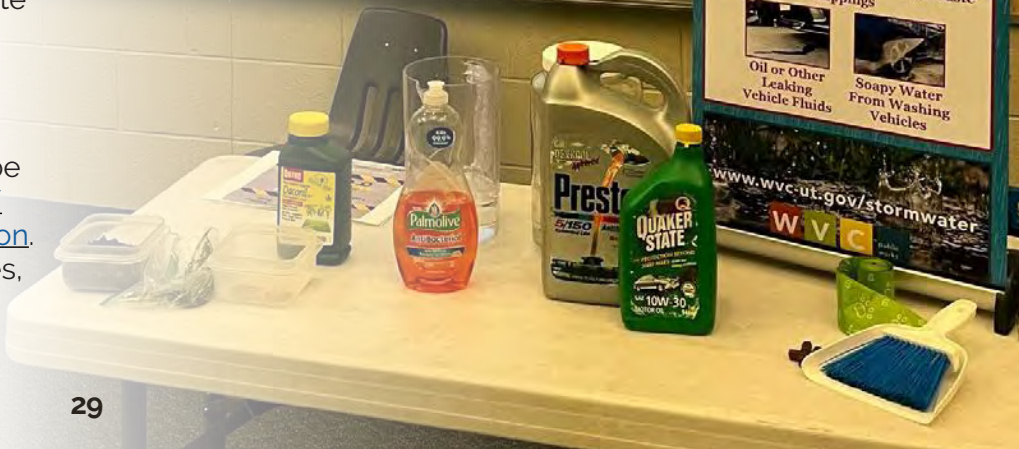
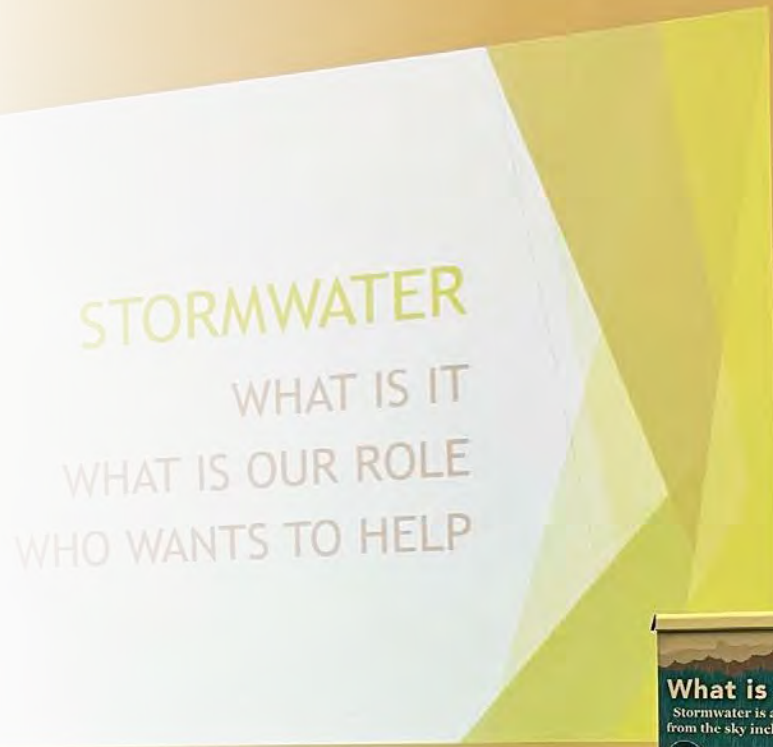
The Stormwater Coalition hosts a website, [stormwatercoalition.org](https://stormwatercoalition.org), which includes a site intended for public viewing and an internal site for coalition members and partners ([stormwatercoalition.org/coalitionmembers](https://stormwatercoalition.org/coalitionmembers)). The site is continuously growing and being refined to provide resources that support the coalition goals and resources requested and needed by Coalition members. The site uses Squarespace as its host platform, which allows for easy editing and additional page creation and customization as needed. The website features specific resources for the general public and targeted stormwater permit prescribed audiences (listed on the dropdown menu of the site's homepage), and has logical navigation for page visitors.

The website is updated weekly, and presents a cadre of the latest updates and new resources. The updates are reviewed by those in attendance at monthly coalition meetings. The site is also reviewed for timeliness and accuracy and any expired content is deleted. New content and/or links that coalition members have identified as quality resources that may be needed by other coalition member cities are posted along with resources, videos, ideas, and training opportunities that meet or exceed the requirements of MCM's 1 and 2.

The site also features a webpage that is a resource for municipal public information specialists, web content managers, and newsletter editors. The [stormwatercoalition.org/communications](http://stormwatercoalition.org/communications) page features information on how to conduct a stormwater pollution prevention campaign, as well as BMP campaign ideas and materials addressing a wide variety of pollutants, pre-written articles, photos and graphics. New content is frequently added to this page and an email is sent to the designated individuals in coalition member cities to keep this information "top of mind" when newsletter content is being created.

Because the [stormwatercoalition.org](http://stormwatercoalition.org) website is the most visible and accessible medium of all coalition communication, we strive to maintain a holistic approach that both interacts with and supports all aspects of the coalition's branding, marketing, social media, videos, written materials and other outreach efforts. We work to ensure that the site reflects the same vision, strategies, and tactics, and that it can be easily identified as a SLCo Stormwater Coalition effort. We strive to ensure that the site is a vehicle for delivery of clear messaging that is achievable, hopeful and (where appropriate) enforceable. The coalition commits, whether in a marketing/messaging effort, outreach campaign, or with items as displays or take-aways at a coalition city event, that all will reflect the unified approach.

Website Posting and Updates of Regulatory Content – As is required in the current stormwater permit, the permit document is posted clearly and prominently on the website home page. Stormwater/UPDES information is regularly posted and updated on the stormwater coalition website. There is a specific page where all regulatory information is posted, and then specific links appear throughout the website, as appropriate. The regulatory content site can be found under the "Learn" section of the website, at: <https://stormwatercoalition.org/stormwater-regulatory-information>. As older documents expire, they are replaced by new ones, and since the page is text-heavy, the most relevant and recent information is listed toward the top of the page.



## **Social Media Management and Content Creation**

The Stormwater Coalition uses Hootsuite Social Media Management to coordinate, pre-schedule SLCo Stormwater Coalition posts. All components are developed in an editorial calendar (planning document) and posted all together for coordination and analytics. The Coalition has Facebook (“We All Live Downstream”), Twitter (@MrDroplet) and Instagram (“wealllivedownstream”) accounts that post 4-5 days/week. The Social Media platforms also feature hashtags #WeAllLiveDownstream, #WaterSense #Drought #Yardcare, #DontTrashOurStormwater, #DoALittleHelpALot, #KeepTheWaterMoving, #RakeEmUp, #ReduceRunoff, #StormwaterCarCare, #ScoopThePoop, and #SLCoStormwaterCoalition.

## **Specific Social Media Campaigns:**

During the 2022-23 reporting year, the SLCo Stormwater Coalition delivered social media campaigns on Facebook, Twitter, and Instagram, designed to act as integrated outreach. Campaigns during the period included:

- Basic Stormwater education for residents – actions for stormwater pollution prevention
- Dangers and causes of E.coli and other bacteria and parasites
- Nutrient pollution and eutrophication
- Pet waste--scoop the poop every time
- Keeping trash and debris picked up and out of storm drains/adopt a storm drain
- Yard care, including composting leaves and grass clippings
- Auto maintenance- fix oil and other fluid leaks
- Fats, Oils, and Grease
- Proper disposal of Household Hazardous Waste

The Stormwater Coalition also maintains a YouTube channel, We All Live Downstream SLCo Stormwater Coalition where its video files are posted. Available videos include historical and newly published PSA's that feature KUTV (Channel 2) meteorologists and other local well-known personalities, educational videos about a wide variety of stormwater and water quality issues, and features from the various projects

of Coalition-hosted youth water science activities and competitions. Videos are also linked to various pages of the [stormwatercoalition.org](http://stormwatercoalition.org) website, and used in social media posts, presentations, trainings and for other occasions, as needed.

## **Social Media Reporting**

Monitoring the stormwater coalition social media activity for the reporting period was accomplished through utilization of Hootsuite Analytics. The Stormwater Coalition uses the data to recruit more followers—seeing what posts had “click throughs” (a proxy indicator for engagement) and make adjustments as needed. Using thematic and overlapping interests will help future campaigns to be successful.

Note: Stormwater Coalition social media platform reports are available at <https://stormwatercoalition.org/coalitionmembers>

SLCo Stormwater Coalition Podcast, Untreated UNTREATED, a Podcast of the Salt Lake County Stormwater Coalition, seeks to provide insight and expertise about stormwater issues that impact all of us. To date, the podcast has eight episodes, including the most recent, which features SLC's Adopt a Storm Drain program. Other episodes include: Why We Care About Stormwater, Pet Waste and Our Waterways, Power Washing Without Polluting, and Macroinvertebrates Can Tell Us a Lot About the Health of Our Waterways. These and future podcast episodes are posted to the Coalition website (bottom banner) and are searchable on Buzzsprout, Apple Podcasts, Spotify, Google Podcasts, Stitcher, I Heart Radio and Google+Alexa.

**SALT LAKE COUNTY STORMWATER COALITION WEBSITE  
STORMWATERCOALITION.ORG**

**FACEBOOK- WE ALL LIVE DOWNSTREAM:  
WWW.FACEBOOK.COM/WEALLLIVEDOWNSTREAM**


**TWITTER  
TWITTER.COM/MRDROPLET**

**INSTAGRAM  
WWW.INSTAGRAM.COM/WEALLLIVEDOWNSTREAM/**

# 13. Engagement in Monthly Stormwater Coalition Meetings

The Salt Lake County Stormwater Coalition works together to meet Minimum Control Measures (MCMs) 1) public education and outreach, and 2) public participation and involvement. Members meet monthly via Zoom online video conferencing. An annual in-person gathering is held at Wheeler Farm in Salt Lake County in May. The group works together with a specific set of objectives to coordinate and combine resources in order to expand the capacity and bandwidth of the municipalities/entities to meet MCMs 1 & 2. The group coordinates and combines resources in order to:

- Strengthen stormwater BMP messaging to targeted audiences
- Gain collective attention and affect change (as in TV PSA's and other media)
- Share expertise, skills, training, and resources in order to achieve MCMs 1 & 2.
- Review Salt Lake County IDDE incidents, as the SLCo Health Department presents noteworthy calls/complaints, to provide each other with ideas and knowledge from similar situations/incidents
- Ensure that Coalition and individual municipal stormwater pollution prevention approaches and materials are effective, culturally sensitive and appropriately tailored for targeted audiences
- Provide a forum for open discussion and mutual support of common best practices, with a ripple effect for the organizations that the coalition members represent. This broadens the base of support and trust.
- Reduce the chance of duplicating efforts where it is unnecessary
- Improve communication across the watershed
- Act as one voice to advocate for environmental policies and regulations that support clean stormwater and education and outreach efforts for the following four audiences: (1) residents, (2) institutions, industrial and commercial facilities, (3) developers and contractors (construction), and (4) MS4-owned or operated facilities.
- Provide evidence-based solutions to address local and individual behaviors that impact stormwater with a singular purpose, working to spread the key message that "We all live downstream".




Salt Lake County Stormwater Coalition  
Zoom Meeting Agenda  
<https://us02web.zoom.us/j/88294582087?pwd=ZERHOXc5d1V3eGE0dHhR1ZwNk4rdz09>  
Meeting ID: 882 9458 2087  
Passcode: 973012  
Wednesday, March 15, 2023 10:30 AM

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Greetings and check-ins

1. Salt Lake County business and announcements
2. Mainstream Media update
  - a. Television & Bus Ad Campaigns running now
  - b. TV Lifestyle shows appearance coming up this spring (3 opps)
    - i. KUTV Fresh Living- Dawn Barbee will show model stormwater home on Thurs, April 13
    - ii. KUTV Fresh Living- Need guest/activity for Wednesday, March 29
    - iii. FOX13 THE PLACE- Need guest/activity/Droplet for Thursday, March 30
3. Stormwater Education/Outreach- Specific BMP's
  - a. See [Coalition Member's webpage](#) for ideas
    - i. EPA Stormwater SMART Resources
      1. Pet Waste
      2. Oil & Grease
      3. Lawn Chemicals
      4. Garbage
      5. MANY more!



4. 2023 6, 7, and 8<sup>th</sup> Grade [Water Quality Fair](#) and [Water Quality Art & Poetry Contest](#)
  - a. Live event- Thursday, May 18<sup>th</sup>. Archive available afterward.
  - b. Outreach materials to coalition members, teachers, flyers, etc. now available
  - c. Coalition Member Judges still needed. If you are interested, please email [Josh](#) or [Kari](#)
  - d. Coalition Members please reach out to schools in your city ☺
5. Coalition Member Social
  - a. Wheeler Farm, Wednesday, May 17<sup>th</sup>, 10:30 @ Wheeler Farm—just to the east of the parking lot.
  - b. Please bring a side (chips, salad, etc.) or dessert (cookies, doughnuts, etc.)
  - c. We'll have a short meeting first, then lunch, then corn hole for anyone who has time to stay
6. SLCo Health Dept. IDDE updates
7. Member roundtable-comments
  - a. New Stormwater position- MSD

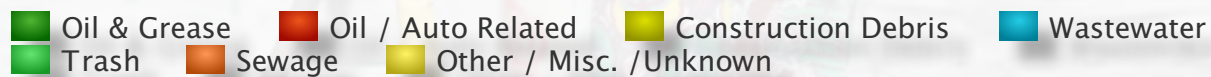
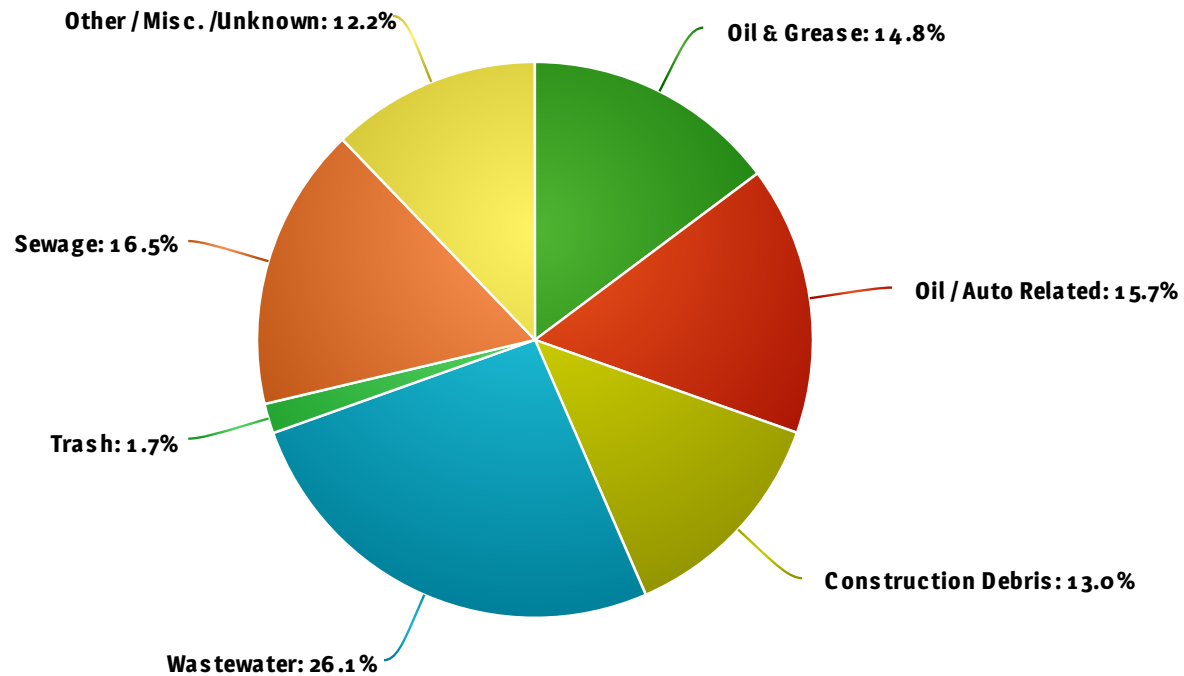
Adjourn

Next meeting via Zoom- Wednesday, April 19, 2023-- 10:30 AM  
<https://us02web.zoom.us/j/88294582087?pwd=ZERHOXc5d1V3eGE0dHhR1ZwNk4rdz09>  
Meeting ID: 882 9458 2087  
Passcode: 973012

Actions/Notes:

# 14. Salt Lake County Health Department Illicit Discharge Detection and Elimination (IDDE) and collection and disposal efforts of Household Hazardous Waste, Recycling and Used Oil

## IDDE DESIGNATION



The pie chart above shows SLCo Health Department reporting for 2022-23 IDDE incidents by type. The total number of incidents reported to the SLCo Health Department during the report period was 126. Of these, 21 warning letters were issued and 27 received notices of violations or greater enforcement action. Incident details and locations can be downloaded as an excel document at <https://stormwatercoalition.org/coalitionmembers> under the header Stormwater Coalition Meeting Agendas and Notes- SLCo Health Dept. 2022-23 IDDE by City.





### Household Hazardous Waste Collection 2017-2023

Salt Lake County Health Department collects and reports household hazardous waste data which includes:

**Green Waste/Compost** – The Salt Lake Valley Landfill reported that from July 2022 to June 2023, the HHW program collected 2,513,984.16 pounds of green waste.

**Used-Oil Collection Program**  
Supporting Utah Department of Environmental Quality, Waste Management and Radiation Control, Salt Lake County Stormwater Coalition, works to inform residents in Salt Lake Valley of where to take used oil and educate business owners on how to dispose of used oil in a safe manner that is safe for the environment. More information about the program can be found at <https://deq.utah.gov/communication/news/used-oil>

| Item (measured in pounds)        | 2022-23   | 2021-22 | 2020-21 | 2019-20   | 2018-19   | 2017-18   |
|----------------------------------|-----------|---------|---------|-----------|-----------|-----------|
| Paint                            | 2,081,809 | 660,918 | 694,000 | 1,172,239 | 756,000   | 807,820   |
| Labpack                          | 11,596    | 17,982  | 24,371  | 449.232   | 29,856    | 28,438    |
| Used Oil                         | 79,814.19 | 109,082 | 48,098  | 41,521    | 135,082   | 182,784   |
| Antifreeze                       | 35,296.27 | 56,447  | 28,333  | 66,350    | 63,835    | 58,140    |
| Fuel                             | 87,470    | 107,960 | 132,497 | 55,927    | 126,086   | 117,339   |
| Fertilizer, Herbicide, Pesticide | 54,103.1  | 71,999  | 67,788  | 66,971    | 61,840    | 56,832    |
| Aerosols                         | 54,103.1  | 34,778  | 34,011  | 60,506    | 31,060    | 30,402    |
| T-OX                             | 49,258    | 86,503  | 69,625  | 41,824    | 72,408    | 74,081    |
| Electronics                      | 80,666.6  | 171,316 | 217,584 | 134,637   | 1,330,320 | 1,453,528 |
| Fluorescent Bulbs                | 4733      | 4,648   | 5,341   | 254,069   | 6,673     | 8,084     |

# 15. Use of Data and other existing Stormwater Reports

The Stormwater Coalition utilizes data that is readily available to quantify the critical conditions linked to stormwater runoff and to identify pollutants of concern to more closely link impairments with needed behavior changes or best management practices that would likely result in improved conditions in impaired waterbodies or stream segments. The list below is representative of the data sources that are utilized in coalition social media, in educational and outreach materials, and inform coalition member efforts that link water quality to targeted and specific neighborhoods and community behaviors.

1. [Jordan River E.coli Main Report 2022-Utah DWQ](#)
2. [Jordan River E.coli TMDL Presentation 2022- Utah DWQ \(YouTube Video\)](#)
3. [Jordan River Dissolved Oxygen TMDL: Watershed Management Program](#)
4. [Nutrient Pollution \(Includes link to Utah's Approach to Nutrient Pollution\)](#)
5. [SLCo GIS open data- Stream Stability- in stream Macros](#)
6. [SLCo GIS open data- Stream Stability- E.coli](#)
7. [Stream Water Quality Dashboard- Salt Lake County](#)
8. [EPA's How's my Waterway?](#)
9. [EPA National Pollutant Discharge Elimination System Resource Page](#)
10. [Stormwater Coalition Public Information Survey Report \(from December 2020\)](#)
11. [Stormwater Coalition Public Information Discussion Groups Report \(from June 2021\)](#)
12. [A Call to Action on Combating Nonpoint Source and Stormwater Pollution - Center for American Progress \(2020\)](#)
13. [Influence of recreation activity on Water Quality Perceptions and Concerns in Utah \(2018\)](#)
14. [2021-22 SLCo Health Dept. Illicit Discharge Detection and Elimination \(IDDE\) Incidents by Municipality \(download excel file under Data, Surveys, Reports on right side of page\)](#)

Additional sources can be found at the end of this document in the End Notes for the 2022-23 Salt Lake County Stormwater Annual Report .

\*Total Daily Maximum Load

## National Pollutant Discharge Elimination System (NPDES)



## A Call to Action on Combating Nonpoint Source and Stormwater Pollution

By Kevin DeGood October 27, 2020, 9:02 am



## Nutrient Pollution Impacts All of Us

### Learn the Basics of Nutrient Pollution

Nutrient pollution is one of America's most widespread, costly and challenging environmental problems.

[Learn about the issue, its sources and its effects](#)

Nutrient pollution, which occurs from an excess of nitrogen and phosphorus in the environment, is a growing problem. This pollution impacts people's health, our environment, opportunities for recreation, and tourism. Nutrient pollution comes from farms, city streets, sewage treatment plants, pet waste, and faulty septic systems. This video aims to build public awareness which is the first step in preventing and reducing nutrient pollution. For more information about Nutrient Pollution visit: <http://www.epa.gov/nutrientpollution>.

## See Utah's approach to addressing Nutrient Pollution

# 16. Stormwater Coalition 2022-23 Budget

The Salt Lake County Stormwater Coalition budget figures below for 2022-23 represent the entire budget, for which the fiscal year runs from January 1 – December 31. Municipalities and other entities contributed to the overall revenue of the Stormwater Coalition, supporting common goals and activities, such as mainstream media/television and UTA bus banners) which reach within Salt Lake County and throughout the Salt Lake Valley.

All expenses support the permit requirements to comply with Jordan Valley Municipalities Permit No. UTS000001, specifically Section 4.2 Minimum Control Measures 1 and 2, public education and information, annual virtual water quality fair, annual water science and engineering competition for 6, 7, and 8th grade students in Salt Lake County, and partnerships for outreach, website, and other social media accounts/management. The total income for the 2022-23 Stormwater Coalition fiscal year: \$194,194.93, and expenses: \$194,194.93 leaving a balance of \$0.00.

## Salt Lake County Stormwater Coalition 2022-23

### Revenue

| Source               | Amount               | Notes                                             |
|----------------------|----------------------|---------------------------------------------------|
| Municipal Agreements | \$ 194,194.93        | Municipalities + UDOT                             |
|                      | <b>\$ 194,194.93</b> | <b>Total 2022-23 Stormwater Coalition Revenue</b> |

### Expenses

| Contract | Provider/Purchase | Account | Cost                 | Notes                                              |
|----------|-------------------|---------|----------------------|----------------------------------------------------|
| TBD      | TBD               | 613020  | \$ 87,694.93         | Television Advertisement                           |
| TBD      | Lamar Advertising | 613020  | \$ 21,000.00         | Bus Banners                                        |
| N/A      | Varies            | 613020  | \$ 10,000.00         | Developmental AD Leave behinds                     |
| N/A      | Supplies          | 613020  | \$ 10,000.00         | Stormwater Quality Fair/Fall WQ Fair               |
| N/A      | Squarespace       | 615020  | \$ 500.00            | Website hosting and maintenance                    |
| PT18100  | SMC Consultants   | 639010  | \$ 65,000.00         | Social Marketing and Social Media advertising      |
|          |                   |         | <b>\$ 194,194.93</b> | <b>Total 2022-23 Stormwater Coalition Expenses</b> |
|          |                   |         | <b>\$0.00</b>        | <b>Balance</b>                                     |

## End notes for the SLCo Stormwater Coalition 2022-23 Annual Report

The following are links to resources used in the writing of this report that are not listed within the sections of the document.

Salt Lake Tribune, July 10, 2023 Salt Lake County's Flooding State of Emergency Comes to an End- July 10, 2023- Andrew Christiansen <https://www.sltrib.com/news/2023/07/10/salt-lake-countys-flooding-state/>

Utah Dept of Natural Resources, Division of Water Resources Snowpack Report <https://water.utah.gov/snowpack/>

Mayor Wilson Declares State of Emergency (April 13, 2023- Flooding)  
<https://slco.org/newsroom/salt-lake-county-mayor-declares-state-of-emergency-for--flooding-due-to-spring-runoff/>

Symptoms of E.coli Infection  
<https://www.cdc.gov/ecoli/ecoli-symptoms.html>

Public Health Impacts of Feeding Waterfowl  
[https://www.ci.milford.ct.us/sites/g/files/vyhlf9226/f/file/file/public\\_health\\_impacts\\_geese.pdf](https://www.ci.milford.ct.us/sites/g/files/vyhlf9226/f/file/file/public_health_impacts_geese.pdf)

US Housing and Urban Development (HUD) Community Resilience Toolkit  
<https://files.hudexchange.info/resources/documents/HUD-Community-Resilient-Toolkit.pdf>

Center for Behavior and the Environment: The Science of Changing Behavior for Environmental Outcomes (RARE)  
[https://behavior.rare.org/wp-content/uploads/2020/12/Rare-GEF\\_Science-of-changing-behavior-introduction.pdf](https://behavior.rare.org/wp-content/uploads/2020/12/Rare-GEF_Science-of-changing-behavior-introduction.pdf)

Guide to Generating Political and Public Will  
[https://academyhealth.org/sites/default/files/ppw\\_toolkit\\_0.pdf](https://academyhealth.org/sites/default/files/ppw_toolkit_0.pdf)

Utah's Coordinated Action Plan for Water (November, 2022)  
[https://gopb.utah.gov/wp-content/uploads/2022/11/2022\\_11-Plan-for-Coordinated-Water-Action-FINAL.pdf](https://gopb.utah.gov/wp-content/uploads/2022/11/2022_11-Plan-for-Coordinated-Water-Action-FINAL.pdf)

Many Americans believe that climate change is mostly caused by human activity, but few report making changes to help limit it (Ipsos Research May 23, 2023)  
<https://www.ipsos.com/en-us/many-americans-believe-climate-change-mostly-caused-human-activity-few-report-making-changes-help>

Equity and Environmental Justice in the Nonpoint Source Program  
<https://www.epa.gov/nps/equity-resources>

EPA NPA Outreach Toolbox- Getting in Step  
<https://cfpub.epa.gov/npstbx/index.html>

National Academies of Sciences, Engineering and Medicine Webinar: How Are We, and How Should We Be, Adapting to Climate Change (video link)

[https://vimeo.com/734768598?embedded=true&source=vimeo\\_logo&owner=2718555](https://vimeo.com/734768598?embedded=true&source=vimeo_logo&owner=2718555)

Reiter SM, Samuel W. Littering as a function of prior litter and the presence or absence of prohibitive signs. *Journal of Applied Social Psychology*. 1980;10(1):45-55. doi: [10.1111/j.1559-1816.1980.tb00692.x](https://doi.org/10.1111/j.1559-1816.1980.tb00692.x) [Google Scholar]

Nutrients in Urban Stormwater Runoff: Current State of the Science and Potential Mitigation Options

<https://link.springer.com/article/10.1007/s40726-018-0087-7>

Study: Lawn fertilizers and pet waste are the major sources of nitrogen and phosphorus pollution in urban waters

<https://environment.umn.edu/news/nitrogen-and-phosphorus-pollution-in-urban-watersheds/>