the Watershed Watch

Newsletter of Salt Lake County Watershed Planning & Restoration

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Upcoming Events

Climate and Health Symposium
SLCo Health Department
April 5-6 (West Jordan)

Integrating Wetlands into Best Practices
Jordan River Commission Training Series
April 19-21 (West Valley City)

2017 UGIC Conference
Utah Geographic Information Council
May 8-12 (Park City)

2017 Waterkeeper Alliance Conference
June 7-11 (Park City)

2017 Salt Lake County Watershed Symposium
Nov 15-16 (West Valley City)

SALT LAKE COUNTY WATERSHED

Watershed Planning and Restoration
2001 S. State Street
Salt Lake City UT 84190
(385) 468-6600
slco.org/watershed

Green, Eco, Urban: a Philosophy

Low Impact Development and its Role in Protecting Water Quality

by Watershed Planning & Restoration Program staff

What if there was a way to design landscapes to improve water quality, reduce flooding events, protect habitat, and enhance aesthetics. All while saving developers and local governments money. Too good to be true, you say? Not when the concepts of Low Impact Development (LID) are applied! Simply put, LID is an innovative approach to stormwater management that is modeled after nature and based on the principle of managing rainfall at the source. The goal is to engineer the built environment to remain a functioning part of an ecosystem rather than existing independently from it. By creating landscape features that mimic a natural hydrologic cycle, LID keeps—and treats—stormwater onsite. Stormwater runoff is slowed down, giving soils a chance to absorb precipitation. As a result, pollutants are filtered, groundwater is recharged, and streams are protected from high volumes of runoff.

Stormwater as a resource

As the LID approach emerged in the mid-1990s, so did a new way of thinking about stormwater as a

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Photo: Central Coast LIDI

Storm drains flow directly into our rivers and streams. Here, a curb-cut directs stormwater into a bioretention facility before it goes down the storm drain. Plants and soils filter the pollutants picked up by runoff, such as road salts, vehicle oil/fluids, etc. In a traditional system runoff goes staight into the storm drain, sending pollutants straight to the stream.

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resource instead of a disadvantage. Rather than the old "drain it quickly" method—directing runoff down the storm drain (which flows directly into our streams)—LID uses a variety of controls to manage stormwater onsite to sustain landscaping and reduce harmful stormwater runoff. Almost all aspects of the urban environment can be integrated into LID design. From a simple rain barrel collecting runoff from a rooftop, to a system of bioretention areas that function as a soil and plant based filtration devices, removing pollutants through treatment processes. Regardless of the technique used, the concept is simple; re-create the physical, chemical, and biological processes that occur in nature. This is the very essence of LID.

Implementing LID

When applied correctly, LID can significantly reduce development and maintenance costs. Potential higher installation costs are outweighed by the long-term benefits such as enhanced property value and re-development potential, greater marketability, improved aesthetics, and energy savings. And, with new stormwater regulations on the horizon, LID can help to address these new regulations, while providing savings in capital costs and tax dollars. Effective March 2019, the updated State UPDES (Utah Pollutant Discharge Elimination System) Permits will require municipalities to retain 90% of stormwater onsite for new development and redevelopment sites equal to or greater than one acre. [*See sidebar for more information*].

The possibilities of LID are practically infinite and the benefits are truly invaluable. It is a flexible and versatile approach to new development and urban retrofitting, and can help communities achieve a balance between public safety, economic development and ecological protection.

For more information, visit www.epa.gov/nps/urban-runoff-low-impact-development. ☐

New County Guidelines for Implementing Low Impact Development (LID)

A Conversation with Salt Lake County Planner Julie Henry

Q: What is prompting LID implementation in Salt Lake County?

JH: The mechanism that will push LID approaches are the updated State UPDES (Utah Pollutant Discharge Elimination System) Permits, which will require municipalities to retain 90% of all stormwater onsite.

Q: Who is affected by the permit updates?

JH: New development and redevelopment projects that disturb greater than or equal to one acre will be *required* to evaluate LID as an approach. Projects less than one acre that are part of residential and commercial subdivisions, are also included.

Q: How would you describe the existing state of LID in Salt Lake County?

JH: Now that there has been a shift in thinking towards LID in the west, SLCo is responding in kind. SLCo's UPDES permit will be renewed in 2019, and we are ahead of schedule in preparing for this change.

Q: What are some benefits of LID?

JH: I see LID as a way of decreasing capital costs for developers and business owners; reducing tax dollars spent on County maintenance of traditional stormwater systems; and improving the quality of our rivers, creeks, and streams.

Q: What are the challenges with LID implementation and maintenance?

JH: With any major shift in thinking, there is uncertainty that can create discomfort and uneasiness. Developers are rightly concerned about the effect these approaches might have on their pocketbooks, work load, where they source materials, and more.

Q: How do we face these challenges?

JH: Municipalities should work closely with developers as they put together their manuals and standards for LID. We should ask questions to understand the work they do and try to make this transition something that is feasible for them.

Q: What tools will SLCo provide to help developers implement LID?

JH: We are in the early stages of creating an LID Manual. We are finding ways to provide incentives and remove barriers for developers and business owners who choose to try new LID approaches. We are building partnerships and more information is being gathered on what will work best in our climate.

Q: How can the public get involved?

JH: When the SLCo LID manual begins to take shape, it will be presented at SLCo Planning Commission meetings later this year or next year. The public is encouraged to attend.

For more information, contact Julie at JHenry@slco.org

Essential Updates to Salt Lake County's Stream and Rain Gauging Program

The Age of Aquarius (and Contrail)

by Watershed Planning & Restoration Program staff

The goal of Salt Lake County's stream and precipitation gauging program is to provide accurate and reliable real-time data on the water level/discharge of streams and precipitation data throughout Salt Lake County. Through a network of gauging stations placed strategically throughout the watershed, we are able to present a view of how water moves throughout the landscape.

What's New

Since 2015, Salt Lake County Watershed has made significant improvements to its gauging program to provide more reliable and accurate data, including:

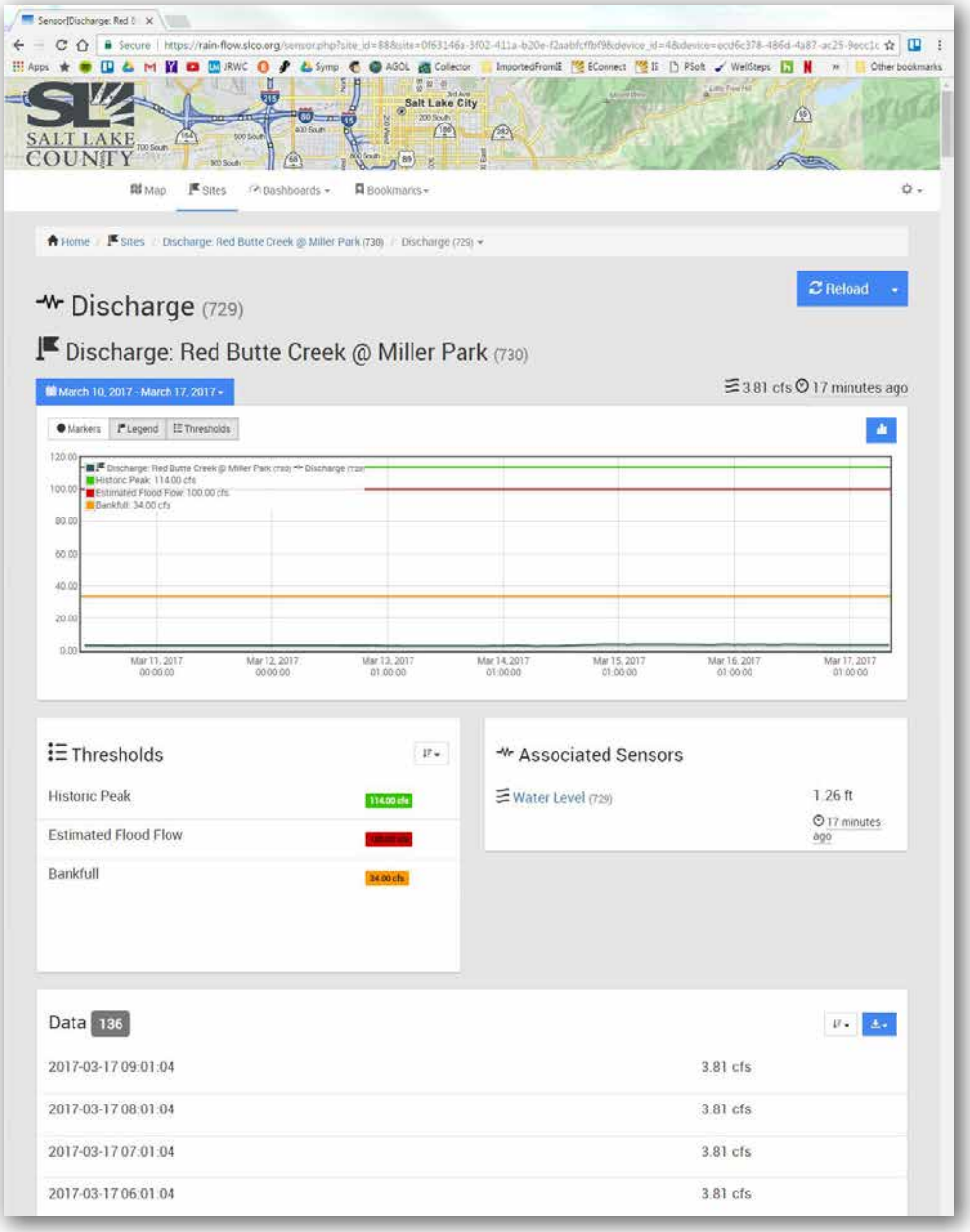
- An updated gauge network (in progress)
- Hardware upgraded to data logging transmitters
- New and updated QA/QC protocols
- Real-time data maintained via the Contrail system
- Stage/discharge relationships (rating curves) now managed with Aquarius software
- New program website, rain-flow.slco.org/home.php

The County currently maintains a network of 17 stream gauges and 15 precipitation gauges. Working with OneRain Inc. the new gauging program website has been developed to bring together many aspects of the program including: real-time data, historic data that has passed QA/QC protocols, updated information on the County's data collection techniques and more. This platform can be used to take a general view of the watershed, or to look at more specific data depending on user interest. The website also displays data from U.S. Geological Survey (USGS) gauging stations that are of interest.

Next steps

We will continue to expand the gauging program with the implementation of data logging transmitters on precipitation sites, water quality data collection for gauges on the Jordan River and confluence tributaries, updated Log-Pearson recurrence interval calculations based on actual gauge data, and published rating curves.

For more information about the program, contact one of our magnificent hydrologic technicians, Alex Hamilton ahamilton@slco.org or Hannah Murphy hmurphy@slco.org. □



Screenshot of the County's new gauging program website. Stream gauge detail includes real-time data, flow thresholds, historic data that has passed new and updated QA/QC protocols, and more. Go to rain-flow.slco.org/home.php.

Inside Salt Lake County's Integrated Watershed Plan

by Watershed Planning & Restoration Program staff

The overriding goal of Salt Lake County's watershed planning includes improving watershed functions and providing high quality surface waters that support the national Clean Water Act goals of fishable and swimmable waters. Published in 2016, the *2015 Salt Lake County Integrated Watershed Plan* (IWP) is a 6-year update to the *2009 Salt Lake Countywide Water Quality Stewardship Plan*.

The IWP provides:

- An updated Section 208 plan
- An updated watershed plan
- A roadmap to guide Salt Lake County's watershed improvement

Plan Update Process

The IWP does not reiterate all of the baseline information reported in 2009. Rather, it identified whether and how resource conditions, or the applicable resource regulations, had changed since the 2009 Plan was adopted. Conditions that had changed very little or not at all (including soils and geology, groundwater, and geomorphology) are incorporated by reference, but not addressed directly. As such, the two plans work hand-in-hand.

The plan update process included the following tasks:

- Review the 15 priority implementation recommendations called for in the 2009 Plan, and evaluate projects completed from 2009 through 2015
- Update the current watershed conditions to reflect changes since 2009
- Add new plan components to address current and salient issues within Salt Lake County (including climate change, the energy-water nexus, and environmental justice)
- Include pilot studies to dig deeper into issues affecting water quality and watershed challenges
- Identify 14 *new* priority implementation recommendations as the focus for the next 10-year planning cycle

Get a copy

Both plans are available online at slco.org/watershed/watershed-planning.

Printed copies of the 2015 Integrated Watershed Plan are also available. Contact Lynn Berni at lberni@slco.org or (385) 468-6643. ☐

Don't dump landscape debris on streambanks

Spring has sprung! When sprucing up your landscape this spring, *please* don't dump your green waste (grass clippings, pruned branches, leaf piles), trash or construction debris along streams. Stream levels rise dramatically during spring runoff and storm events, and any debris stored on or near streambanks can get picked up carried downstream.

Keep it out of the stream When debris in streams blocks culvert openings or gets hung up on bridges, it can cause flooding and property damage for you and your downstream neighbors. In addition, excess amounts of organic matter (grass, leaves, etc.) depletes dissolved oxygen in water as it decomposes. This can have serious impacts on fish, insects, and other aquatic life.

Keep it off the banks Debris piles will smother and eventually kill existing riparian (streamside) vegetation. This degrades wildlife habitat and accelerates bank erosion when there are no longer plant roots helping to stabilize the banks. Excess erosion, in turn, leads to property damage and potential property loss, and degraded aquatic habitat.

Bottom line, be a good stream steward and properly dispose of your debris. This will go a long way toward protecting stream health and preventing property damage.

Learn more about recycling green waste at slco.org/recycle