

**CITY OF BOULDER  
WATER RESOURCES ADVISORY BOARD  
INFORMATION ITEM**

**MEETING DATE: November 16, 2015**

<b>AGENDA TITLE:</b> Watershed Sustainability and Outreach Program Efforts Update
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<b>PRESENTER/S</b>
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Jeff Arthur, Director of Public Works for Utilities Bret Linenfelser, Water Quality Environmental Services Manager Russ Sands, Watershed Sustainability and Outreach Supervisor MaryAnn Nason, Water Conservation and Outreach Coordinator Lauren Shuler, Infrastructure Resilience and Outreach Coordinator Candice Owen, Stormwater Quality Engineer
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**EXECUTIVE SUMMARY**

The purpose of this Information Item is to provide the Water Resources Advisory Board (WRAB) a summary of various sustainability and outreach initiatives that are being developed and implemented by the Watershed Sustainability and Outreach (WSO) Program that was created in 2014 as part of the Public Works, Utilities, Water Quality and Environmental Services (WQES) Group. This item does not require WRAB action and is intended to provide WRAB with a background on the WSO Program and related initiatives the WSO Program has helped lead.

**BACKGROUND:**

In early 2013, at a staff presentation on flood outreach, WRAB suggested combining drought and flood outreach planning efforts to be more adaptive to outreach needs whether it was a wet year or a dry year. Ironically, 2013 turned out to be both, shifting from drought to flood in a single year. At the same time, staffing changes in the WQES Group opened new opportunities to combine key programs that could improve flood and drought outreach as well as allowing for broader planning outside of disaster preparedness. This led to the development of the Watershed Sustainability and Outreach (WSO) Program.

The WSO Program was formalized in the spring of 2014 with a core mission of enhancing collaboration and leveraging existing WQES Group Programs including the Water Conservation Program, Stormwater Quality Program, Education and Outreach Program and related utility efforts. In 2015, as a result of City Council's directive and flood related utility rate increases, an Infrastructure Resilience and Outreach Coordinator position was added to the WSO Program. This expanded WSO Program duties beyond water conservation, stormwater and education to also include enhanced support for wastewater infrastructure improvements and community engagement related to reducing Inflow and Infiltration (I&I).

The WSO Program consists of seven temporary and full-time equivalent (FTE) staff and one supervisor. The Program supports a range of activities including regulatory compliance, fieldwork, construction project support, sample collection, data analysis, planning, I&I reductions, graphic design work and community outreach across all three utilities (Water, Wastewater and Stormwater/Flood). The Program also works to seamlessly integrate city Utility goals into larger planning initiatives through thoughtful coordination with other Departments, partner organization and regional efforts.

## **WSO PROGRAM ASSESSMENTS AND IMPACTS**

An assessment of the economic, environmental and social impacts of the WSO Program is as follows:

**Economic**- The WSO Program has and continues to help save the city money through streamlined Program efforts that allowed new staff to be added without requesting additional budget or FTEs. These include the following:

- Permanent Stormwater Quality Engineer position for environmental compliance, permitting and water quality.
- Temporary Education and Compliance Specialist position to assist with on-site spill response, state reporting and related illicit discharge prevention.
- Temporary Communications Assistant position to assist with graphic design, event planning and outreach.

Costs avoided by adding staff include reduced risk for regulatory non-compliance which can carry fines of up to \$1,000 per day per infraction. Communication support has also reduced the need for contractor design and event planning support which can be costly and more time consuming than having in-house support. The Infrastructure & Resilience Outreach Coordinator position, the only FTE created using new budget, also works to reduce wastewater treatment (and related energy) costs associated with I&I.

The WSO Program has been able to effectively leverage funds to help make dollars go farther by integrating multiple program goals into existing programs, reducing the cost of implementing any single program on its own.

**Environmental**- The WSO Program has enhanced environmental compliance in addition to increased support for the city's environmental goals as follows:

- Enhanced coordination on stormwater spill response (creek spills; compliance; enforcement).
- Increased outreach on environmental issues which support city values and state requirements.
- New work and pilot studies to evaluate and support improved water quality in Boulder Creek.
- Continued commitment to water conservation and the wise use of water across the city.
- Cross-program partnerships that help meet and coordinate multiple environmental goals.

WSO Program work also supports City Council goals around larger environmental initiatives (initiatives?) such as Boulder's Climate Commitment, city resilience, etc.

**Social**- The WSO Program works to support community values and goals including:

- Projects to support water efficiency in low-income housing with Boulder Housing Partners.
- Work to improve water quality in Boulder Creek in support of recreation.
- Enhanced flood outreach for the Community Rating System (CRS) to reduce flood insurance costs.
- Leading regional stormwater protection outreach efforts through the Keep It Clean Partnership (KICP).
- Support of local food through low-water gardens and related pilot projects.
- Coordination with Boulder Valley School District on environmental education and outreach.

Because the WSO Program is rooted in outreach, most initiatives have a community engagement component (some of which are mandated by state and/or federal regulation).

## **ANALYSIS**

The creation of the WSO Program is forward-thinking and responsive to larger industry trends where topics like water quality, water conservation, infrastructure, climate change and watershed health are increasingly looked at holistically. Addressing multiple programmatic goals through a single effort helps leverage funds and increase effectiveness. As an example, Stormwater outreach efforts aimed at reducing runoff can be combined with water conservation outreach that works to reduce outdoor irrigation. Sometimes over irrigation can also seep into a home's foundation causing sump pumps to run, opening-up new conversations around properly directing discharges to storm sewer (or to land), not the sanitary. In these ways, efforts initiated from one program can be leveraged to address to a broader range of city concerns at a reduced cost than funding separate, stand-alone outreach efforts.

Aside from programmatic costs, outreach efforts are often accompanied by additional costs for marketing, graphic design and event planning. In 2008, although minimal at the time, all the Water Conservation Program, Stormwater Quality Program and Education and Outreach Program graphic design work and event coordination was contracted. In 2013, contracted Water Conservation and Flood Outreach marketing efforts alone cost the city roughly \$30,000. Today, the WSO Program has reduced costs while increasing deliverables, using in-house resources to produce nearly 100 graphic design pieces across utilities in 2015 and organizing multiple, high impact events.

Having in-house capabilities supports, not only desired outreach goals but, helps comply with regulatory and/or programmatic requirements for community engagement. Stormwater outreach fulfills the city's Municipal Separate Storm Sewer (MS4) Permit needs just as designing the city's required Consumer Confidence Report fulfills EPA requirements for public notification. Flood safety materials and seminars help support the city's CRS score; reducing flood insurance rates for city residents. Of course, CRS efforts also speak to larger city planning efforts where the WSO Program has been effective at collaborating to leverage efforts and achieve greater success. Additional examples follow:

- **Water, Energy and Climate**

The WSO Program focuses on highlighting the connections between water and energy through partnerships with the city's Local Environmental Action Division (LEAD) and the Boulder County's Partners for a Clean Environment (PACE). For example, the water conservation commercial assessment tool also built on PACE energy assessment experience to add-in energy metrics. This close coordination with LEAD and PACE has led to developing a single PACE contract each year as well as ensuring that both water and energy are assessed on any PACE audit that's performed.

The WSO Program also coordinates to ensure that hydroelectric production and larger water conservation and water resource goals are woven into city climate planning. In 2015, the WSO Program helped conceptualize, design and inform the city's new climate commitment document, ensuring that water was an integrated component. The draft of "Boulder's Climate Commitment" can be found at [www.boulderclimate.com](http://www.boulderclimate.com), is now open for public comment and is being shared both locally through city planning efforts and nationally through the Urban Sustainability Directors Network.

- **Climate, 100RC and Water Resources**

The inclusion of the city into the Rockefeller Foundation's *100 Resilient Cities* (100RC) heightened the opportunity for staff collaboration. Resilience builds on the concepts of being adaptive to both long-term stresses such as aging infrastructure and short terms shocks like flood

and drought. The WSO Program supports resilience efforts by coordinating on events like the 2014 commemorative flood event, and is increasingly working on climate related resilience efforts.

To a larger extent, resilience planning depends on the city's ability to forecast future climate impacts such as increases in temperature. This is also critical to water resource planning and WSO Program efforts to update the city's Water Efficiency Plan using updated climate projections. As part of the 100RC efforts, the WSO Program is helping to identify if city policy can be developed to establish an agreed upon range for temperature projections through 2050 (e.g. 2-6°F by 2050); similar to how the city has agreed upon population projections. However, this effort will likely require larger staff support from multiple workgroups.

Because city staff may need a primer to provide a base understanding of climate modeling prior to being able to support any policy decision, WSO staff are working to develop a series of climate workshops. Outside of helping to inform climate projection policy, these workshops aim to pair staff with climate scientists, perform a tabletop exercise on climate related disaster preparedness and help layout a framework for scenario planning and vulnerability assessments.

- **Drought, Flood and Personal Resilience**

Building on water conservation plans to better utilize Center for ReSource Conservation (CRC) support during a drought, staff coordinated with the CRC to assist with door-to-door flood outreach in 2014. The success of those efforts and the wet spring of 2015 lead staff to implement a range of new flood outreach efforts aimed at engaging the community. From pasting a sixty-foot "don't stand on bridges" message on one of the bridges in the civic center area to providing free weather radios to the public, the WSO Program raised awareness that floods can happen again and won't always happen the same way.

Beyond awareness, personal resilience was promoted; helping customers understand the steps they can take to better protect themselves and their homes from disasters. Originally conceived as a home site-visit to provide recommendations for resilience, staff ultimately landed on a personal resilience seminar. Free floor drain checks, information on sewer laterals and sump pump education were focus areas, helping to support city goals around both flood outreach and reducing I&I.

Because seminar feedback showed that over 80% of attendees would like an in-home assessment if one were offered, a site assessment option continues to be explored. Staff are in the process of applying for a federal grant to develop countywide "Resilience Assessments" in partnership with Boulder County and local flood nonprofit BoCo Strong. Funding would be used to develop measurable resilience metrics, support I&I reductions and provide customers with landscape recommendations that help mitigate both minor flooding and drought conditions.

As noted earlier, many of the efforts listed here have increasingly been done with CRS outreach requirements in mind. Not only have flood outreach materials helped gain CRS points, but stormwater outreach efforts done for KICP also count for CRS credit; a connection that was not made in previous years.

- **Stormwater Pollution Prevention, I&I, Water Conservation and KICP**

Stormwater outfalls provide an interesting nexus for multiple WSO Program projects. Dry weather flows from outfalls can be indicative of over irrigation or potential cross-connections with the sanitary sewer and staff is working to help mitigate both. Adding stormwater runoff messaging to water conservation outreach materials helps make connections to over irrigation. However, staff also work to identify stormwater and wastewater infrastructure issues. Heavy I&I

loading in the Gunbarrel area initiated smoke testing to look for cross-connections which, if verified, are sources of I&I as well as potential stormwater pollution from sanitary sewer overflows.

Specific requirements under the state's Regulation 85 require specific stormwater outreach to educate the public about nutrient impacts to surface water. Staff, working on behalf of both the city and KICP, developed a new campaign to "go easy on the fertilizer," educating customers about the negative impacts nutrients can have on streams. The *Green is the New PiNK* campaign (which stands for P-N-K or Phosphorus, Nitrogen and Potassium) is now promoted by KICP and the CRC at landscaping seminars and during irrigation audits. The campaign is also supported as a component of the CRC's Garden-in-a-Box program which provides discounted, low-water xeriscape plants to customers.

In support of local Agriculture, staff has also worked with CRC to offer a low-water, vegetable garden. Due to concerns of potentially increased fertilizer use, vegetable gardens are a prime target for nutrient messaging. Of course, the end goal is enhanced water quality regardless of the pollutant. To that end, a 2016 residential rain garden pilot program is being developed with CRC to educate customers about the benefits of rain gardens and provide tools and materials for creating their own rain gardens. This outreach effort helps support greater community knowledge about water quality, even if small backyard rain gardens may be limited in their practical capacity to treat runoff.

- **Green Infrastructure Opportunities and City Planning**

Larger green infrastructure investments may assist with flood mitigation and/or to help meet the requirements of the Boulder Creek Total Maximum Daily Load for *E.coli* bacteria, which is aimed at reducing bacteria in Boulder Creek. However, green infrastructure is a much broader planning discussion with implications and side benefits related to multiple departments.

While proprietary best management practices (BMPs) like in-ground storm sceptors can help, it's the above ground BMPs that help support larger community goals such as tree health, habitat or helping to combat heat island effects. Recommendations to explore green infrastructure options will be included as part of the water quality component to the 2015 Stormwater Master Plan update. Additionally, staff contracted with the Brendle Group to evaluate the best green infrastructure BMPs to install in Colorado's climate and to help quantify the cross-benefits of these installations to other city programs.

- **Advancing the Conversation Around Watershed Sustainability**

Continued local and regional collaboration emphasizes the importance of watershed protection and sustainability which leverages resources from multiple entities. To promote these efforts regionally, staff are building on the success of the city-developed 2015 Watershed Summit, by coordinating a larger, state-wide effort in 2016. The next Watershed Summit is planned for June 9, 2016 at the Denver Botanic Gardens and will cover a range of water related issues. The city has partnered with Denver Water, the City of Aurora, the One World One Water Center and the Colorado Water Conservation Board (CWCB) to develop an executive planning team lead by WSO Program staff. A \$10,000 CWCB grant has been awarded to support the event.

## **NEXT STEPS**

The WSO Program will work to continue to advance multiple city efforts through many of the initiatives noted above. Staff will return to WRAB in December 2015 to discuss specific stormwater program efforts and again in early 2016 to discuss the Efficiency Plan update and related climate modeling.