

CIVIL SOURCE

The blooming
cherry blossoms
on Salt Lake
City's Capitol
Hill



PRESIDENT'S MESSAGE

SARAH ALBANO [\[SALBANO@INTEGRAL-CORP.COM\]](mailto:SALBANO@INTEGRAL-CORP.COM)

Spring is here! (or it was and maybe will be next week) I hope that everyone is enjoying having more light in the evening.

We are still accepting nominations for leadership at the Section and Branch levels for 2024-2025 and for the following awards:

- Project of the Year (<\$10 Million and >\$10 Million)
- Engineer of the Year
- Engineer Educator of the Year
- Fresh Face

You can find the forms for nominations here:

<https://sections.asce.org/utah-section/2024-nomination-forms>

or send me [\[salbano@integral-corp.com\]](mailto:salbano@integral-corp.com) or LeeAnn Miller [\[miller@woodburycorp.com\]](mailto:miller@woodburycorp.com) an email. We have extended the deadlines to March 31, 2024.

We are rapidly approaching the upcoming student competitions:

- Intermountain Southwest ASCE Student Symposium (Utah State University, April 11-13, 2024, see flyer) – we are still seeking volunteers and judges for this event next month.
- ASCE Civil Engineering Student Championships (Brigham Young University, June 20-22, 2024).

Spring in
the Wasatch



ISWS 2024
**VOLUNTEERS
NEEDED**

APRIL 11-13, 2024



YOUR HELP IS NEEDED!




- JUDGES
- COORDINATORS
- VOLUNTEERS

FOR MORE INFO VISIT:

[HTTPS://STUDENTSYMPOSIUM.ASCE.ORG/INTERMOUNTAIN-SOUTHWEST/](https://studentsymposium.asce.org/intermountain-southwest/)





Bioretention Cells or Rain Gardens


Alternative approaches to infiltration for 80th Percentile Storm

New development often faces challenges in meeting stormwater treatment requirements when unsuitable soil types or high groundwater limit traditional stormwater infiltration. This article explores a few alternatives including bioswales, underground systems, and hydrodynamic separator systems providing a quick comparison for engineers interested in learning about alternative compliance methods. Always refer to the local regulatory agency for approval of alternative methods.

1. Bioswales:

Brief Description: Bioswales, or vegetated channels, slow, capture, and filter stormwater runoff through the use of special soil media and plantings designed to uptake pollutants from stormwater runoff.

Pros and Cons: Bioswales can offer a sustainable and aesthetically pleasing stormwater management solution when designed, installed, and maintained correctly. They can enhance urban landscaping with greenery, effectively capture and filter pollutants, and can be incorporated into a variety of landscapes. However, they may require considerable space to meet the volumes required, limiting their use in dense urban areas. Regular maintenance is also crucial for optimal performance. Lack of maintenance can lead to reduced pollutant removal, an increased risk of flooding, and aesthetic degradation. Additionally, effectiveness can decrease in colder climates.



Basins Swales Strips

2. Underground Stormwater Systems:

Brief Description: Underground stormwater systems utilize chambers or tanks to store and treat stormwater before releasing it to the collection system. Often used for detention purposes, when designed for stormwater treatment, they are also an effective alternative to infiltration methods. Impermeable membranes can be incorporated to separate stormwater from groundwater, allowing for adaptation to high groundwater areas.

Pros and Cons: Underground stormwater systems are space-efficient, utilizing sedimentation, filtration, and controlled release for effective treatment. These systems seamlessly integrate under various surfaces, like parking lots, sports fields, or sidewalks, optimizing land use without compromising effectiveness. Collaboration with manufacturers and regulatory agencies can help ensure the system will meet the required treatment measures. When incorporated, impermeable



Stormwater
detention vault



Stormwater
Systems

membranes prevent groundwater intrusion, making them suitable when high groundwater conditions are present. Though initial installation costs may be higher, long-term benefits often outweigh the initial investment. Periodic maintenance is crucial, but the enclosed system allows for easier monitoring, helping owners understand when maintenance is due.

Unlike bioswales that require media replacement, maintenance usually only requires having chambers vacuumed or replacing filters which limits impacts on business functions and landscaping.

Model STC -
Stormceptor
System



3. Hydrodynamic Separator (e.g., Stormceptor, Barracuda):

Brief Description: Hydrodynamic Separator Systems, like Stormceptor and Barracuda, consist of a precast chamber using gravitational and centrifugal forces to extract pollutants and sediments from stormwater runoff.

Pros and Cons: Stormwater separator systems have a compact design suitable for limited spaces and have been shown to be effective at pollutant removal. They require less frequent maintenance, but initial costs may be higher. Potential untreated water bypass is a concern during high-flow events. Engineers should consider this concern when designing the overall collection system to limit bypass events. Additionally, specific design features vary from manufacturer to manufacturer, engineers should

should carefully consider these differences to select an appropriate system for their situation. Maintenance typically includes vacuuming out the chamber to remove sediments, making it easy for owners to monitor their systems.

Conclusion: Alternative methods provide innovative solutions for treating the 80th percentile storm when infiltration is challenging. Engineers may find that a combination of alternatives will best ensure effective and sustainable stormwater treatment. Additional alternatives are available, working with local regulatory agencies to determine what challenges have been experienced with existing systems, and what methods are working well in the area can help narrow down which method or combination of methods will best meet the project needs.

Resource for Engineers: For more information on alternative stormwater management systems, “A Guide to Low Impact Development within Utah” from the Utah Department of Environmental Quality is a good place to start. It can be found at: <https://deq.utah.gov/water-quality/low-impact-development> In addition, you can visit the Low Impact Development Center (LIDC) at <https://lowimpactdevelopment.org/> It provides valuable resources, research, and case studies.



Tree box filters are boxes, either elevated or below grade at the curb line

Southern Utah Branch Update - March 2024

February Luncheon Recap

Our February Luncheon featured presentations by Redi-Rock in both Washington City and Cedar City. We were pleased to have Matt Willis and Kyson Spendlove present on Redi-Rock retaining wall systems, engineering tools, software, and case study applications. We were thrilled to see strong attendance, including approximately 20 students from SUU at the Cedar City presentation.

Southern Utah APWA/ASCE Conference

The annual Southern Utah APWA/ASCE conference was held March 6-8 in Santa Clara, Utah. We saw a great turnout for the event, which featured a variety of informative presentations. Topics included good partnering practices,



Redi-Rock
Presentation

effective team building, the I-15 Exit 11 interchange project, the use of GIS in public works, capstone presentations by SUU civil engineering and construction management students, and updates from public works offices in the St. George area.

Branch Awards Announced

The Southern Utah Branch is proud to announce our 2024 award recipients.

- Engineer of the Year: Cody Nielson, Bowen Collins & Associates (BC&A), Recognized for his outstanding work on several projects, including:
 - Washington County Water Conservancy District (WCWCD) Ash Creek Pipeline Project
 - WCWCD Cottam Well Tank Project
 - Ash Creek Special Service District Confluence Park Water Reclamation Facility Project (including design of a new wastewater treatment plant in LaVerkin, Utah)

Engineer
of the
Year



- **Project of the Year:** Cottam Well Tank Project, designed by BC&A for the WCWCD
 - This project involved the construction of a new 36-foot tall, 120-foot diameter culinary water tank.
 - BC&A's innovative use of an AWWA D110 Type II (prestressed) design minimized wall thickness, significantly reducing construction costs while maintaining structural integrity.
 - The tank was successfully constructed and is currently in service.



Cottam
Well
Tank
Project



MOUNTAIN
DELL DAM
5 MILES
EAST OF
SALT LAKE
CITY

Wasatch Front Branch

DIMOND ZOLLINGER (DIMOND.ZOLLINGER@SLCGOV.COM)

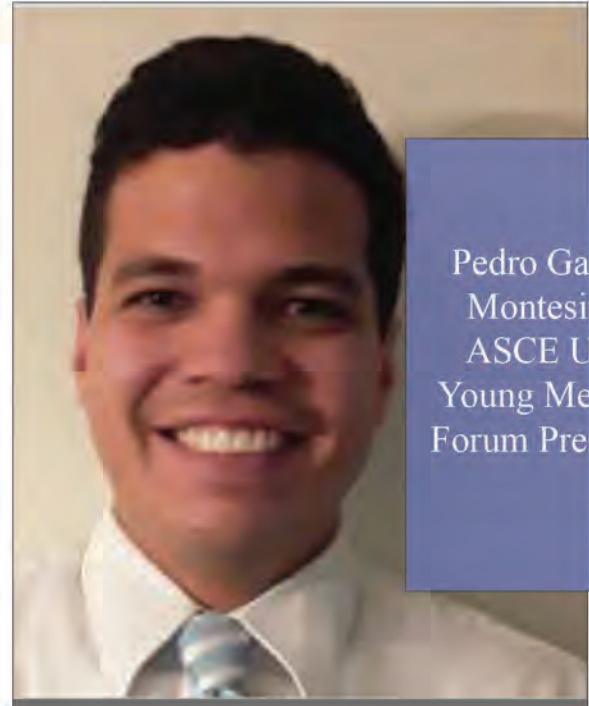
- **March Activity**
 - Tour of Salt Lake City's Mountain Dell Dam and Parleys Water Treatment Plant
 - March 22, 2024
 - 11:30-1:00
- **April Activity**
 - Presentation – Wuda Ogwa (Bear River) Massacre Site Ecological Restoration: Taking Land Back to 1863
 - April 19, 2024
 - 11:30-1:00
 - Westech Campus
- **WFB ASCE Scholarship Submittals due April 30, 2024**

Young Member Forum

February was a busy month for the Utah Young Member Forum!

Firstly, I (Pedro) attended the 2024 WRYMC in Seattle. It was a great opportunity to connect and learn from young and “young-older” leaders in other ASCE Young member groups and chapters within Region 8. We are excited for WRYMC 2025, which will take place in San Diego. If you are interested in attending next year representing our Utah YMF at WRYMC, do not hesitate to reach out. We are still looking for a president-elect who will represent our YMF in San Diego next year.

We had a great social at the Sugarhouse Quarters, where we had fun and the opportunity to connect with other professionals. More events are coming up, so stay tuned.



Pedro Garcia
Montesinos
ASCE Utah
Young Member
Forum President

Finally, our Utah Young Member Forum attended the 2024 ASCE Legislative Fly-in. Our past president (Anna Lisonbee), government relations chair (Katherine Colburn), and I (Pedro Garcia Montesinos) participated in the event whose objective is advocate for the ASCE priority issues, among these:

- Federal Aviation Administration Reauthorization
- Water Resources Development Act Reauthorization
- Resilient infrastructure, and
- Workforce and education.

We met with the staff of senators and house representatives at their offices around the United States Capitol. This was a wonderful experience where the ASCE provided all the tools necessary to connect with your legislators and maintain a relationship with them towards the benefit of the country’s infrastructure. Do not hesitate to reach out if you want to get involved in advocacy (asceutahymf@gmail.com).

Pedro Garcia Montesinos
ASCE Utah Young Member Forum President



SENATORS AND
HOUSE
REPRESENTATIVES
AT THEIR OFFICES
AROUND THE
UNITED STATES
CAPITOL.

SAVE THE DATE
Fri. June 28th



ASCE

UTAH SECTION

2024
ANNUAL MEETING

JOIN US FOR ANOTHER AMAZING ASCE ANNUAL EVENT!