

## REVITALIZING BOISE USING GREEN STORMWATER INFRASTRUCTURE

### Historic Downtown Undergoes Significant Effort to Increase Canopy Cover

Since 2009, the City of Boise has implemented 28 projects to revitalize historic downtown in a healthy and sustainable way. By adopting innovative and cost-effective solutions to long-standing challenges such as stormwater management and low tree canopy cover, Boise has emerged as a leader in green stormwater infrastructure.

In the past, the city struggled to grow trees to maturity in its urban core. Its urban forest provided limited public and environmental benefits. Its trees were typically planted in small 4' by 4' wells, and in combination with extremely

decisions on the ground.

The partners, which include public, private and non-profit entities, identified 1,500 potential planting sites and explored green stormwater infrastructure solutions to low tree canopy and stormwater management challenges. They concluded that the short life span and poor health of the urban forest was a result of high soil compaction and limited soil volumes. "We need more soil volume. We need a place for tree roots, so that they can get what they need to grow to a more significant size and offer



hot and dry summers, this resulted in poor health and long-term damage. In addition to this, the storm drain system drained largely untreated runoff directly to Boise River through a series of large pipes that were already under capacity.

This presented a set of challenges for Boise's urban foresters, city planners and construction companies. These diverse groups decided to join forces and form a strategic partnership to create a long-term plan for their urban forest. This partnership, led by the Treasure Valley Canopy Network, resulted in the completion of an urban tree canopy assessment and an in-depth study of ecosystem services, which informed strategic management

ecosystem services, including air quality, stormwater management and many others," said Brian Jorgenson, Boise City Forester. His collaboration with the Network partners led to a vision for greater tree canopy through the use of suspended pavement systems such as Silva Cells.

The vast quantities of healthy soil contained within the Silva Cell system serve two important functions: growing large trees and treating rainwater on-site. Over 100 trees have been planted in Silva Cells in Boise thus far, totaling about 100,000 cubic feet of soil, which will nurture their long-term growth and also provide runoff reduction and improved water quality. "As of today, we have not seen

any bypass of the catch basins. They are performing quite well in controlling runoff,” noted Jason Korn, Ada County Highway District (ACHD) Stormwater Quality Specialist.

Several Silva Cell installations are part of the capital improvement plan that was created in partnership with Capital City Development Corporation (CCDC), City of Boise, and ACHD. As part of that plan, Silva Cells have been installed at City Hall, Westside streetscapes, Old Boise streetscapes, and in other places across downtown. With these projects, the City of Boise is seeking to increase urban tree canopy from 10 percent to 25 percent over the next 10 years, which will add to the revitalization of downtown and incentivize private redevelopment. “In the long term,” said Brian, “we should have healthier, larger trees for more years to come.”

#### Installation Summary

Average soil volume per tree: 400 ft<sup>3</sup> (11 m<sup>3</sup>)

Number of Trees: >100

Installation Date: Various

Installation type: Trees, Trees & Stormwater

Project Site: Plaza, Streetscape

Project Designers: (various) Jensen Belts, City of Boise, Harmony Design Engineering, Quadrant Consulting

Contractors: Guho Corp.

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