



Low Impact Development Opportunities

LID Strategies with Water Quality Benefits



Healthy Tree Canopies

Urban Forestry

Water-loving Trees



Bioretention

Storm Gardens

Flow-through Planters



Constructed Wetlands

Revitalized Riparian Buffers



Dispersion to Storm Gardens

Vegetated Filter Strips

Level Spreaders



Vegetated Roofs

Vegetated Walls

Building Temperature Regulation



Permeable Pavements

Boardwalks

Decks and Platforms

Porous Concrete

Riverfront Park presents a series of challenging opportunities for water conservation, educational outreach, and stormwater management benefits through conservation strategies.

Low impact development (LID) is primarily a stormwater management technique which emphasizes treatment and disposal as close to where precipitation falls as possible. The techniques are referred to as Best Management Practices (BMP's) which work together to provide treatment and flow control for stormwater runoff. The conservation strategies and LID strategies indicated on these sheets can be implemented with the Riverfront Park Master Plan to provide a rich Park experience, protect the quality of the Spokane River, and make a more efficient park landscape.

Education Opportunities



Photovoltaic Power

Geothermal Heating/Cooling

Wi-fi & Mobile Website



Center for Stormwater Education

Water Quality Education

Missoula Floods Educational
Playscape



Laboratory Facilities

Test Plots and Monitors

Water Conservation



Rainwater Harvesting

Dispersion to Stormgardens

Water Filtration



Reduced Irrigation Demand

Weather-based Irrigation Controls



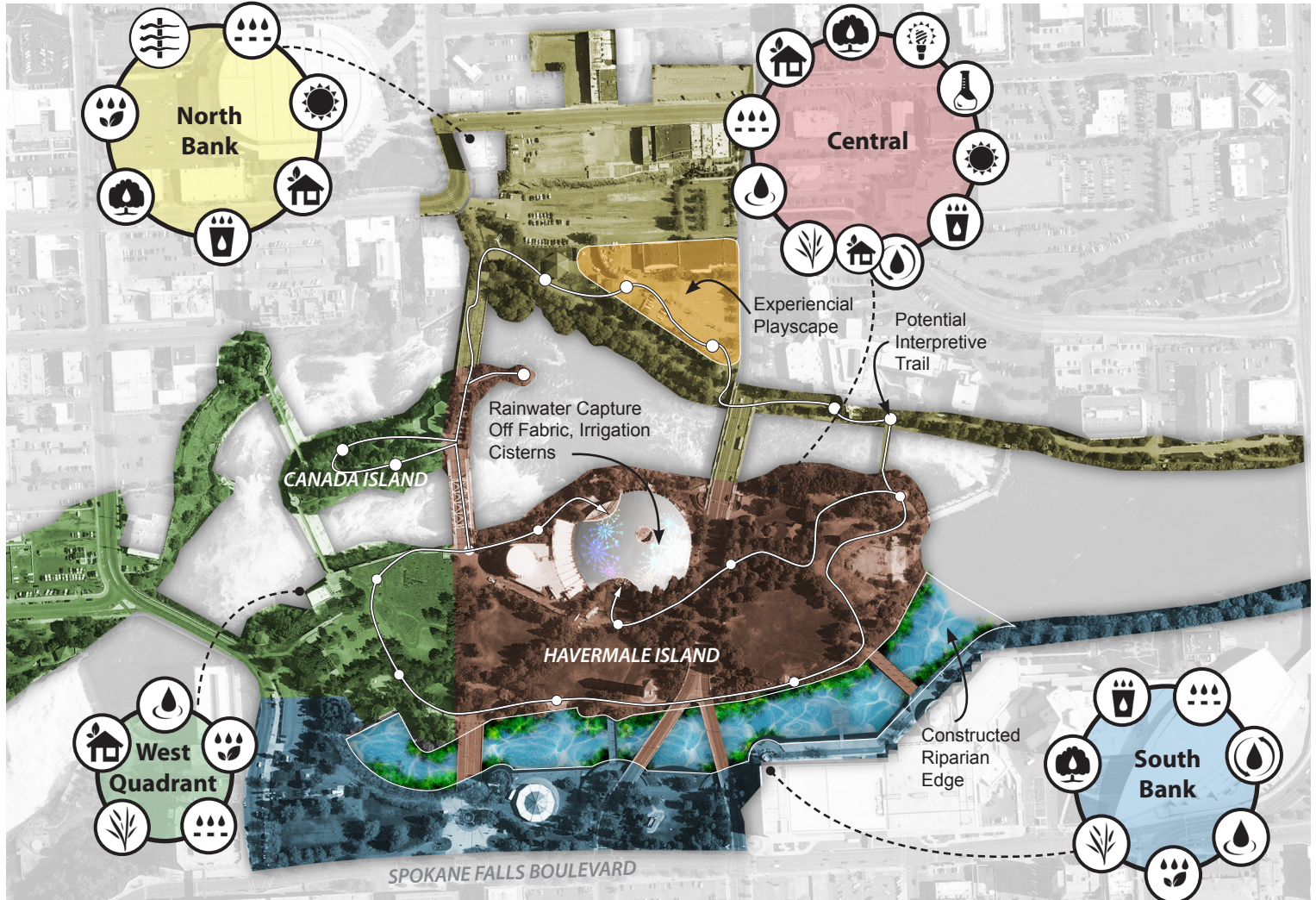
Efficient Landscape Irrigation

Rainwater Re-use

Low Impact Development Opportunities



Low Impact Development Potential



West Quadrant

The highly urbanized West Quadrant consists of basalt cliffs, shallow soils, and Avista's facilities. This area may be suited to similar strategies as the North Bank and Central depending upon the subsurface conditions. LID BMP's are especially suitable on the portion north of the river.

North Bank

The North Bank sits over bedrock. Isolated gravel lenses may exist that allow for potential stormwater infiltration. Plans for this area include new streets, parking, buildings, and park amenities which provide an opportunity for implementing LID for stormwater treatment and flow control. In areas where infiltration is not available, underdrains may be used to implement BMP's such as bioretention and pervious pavements.

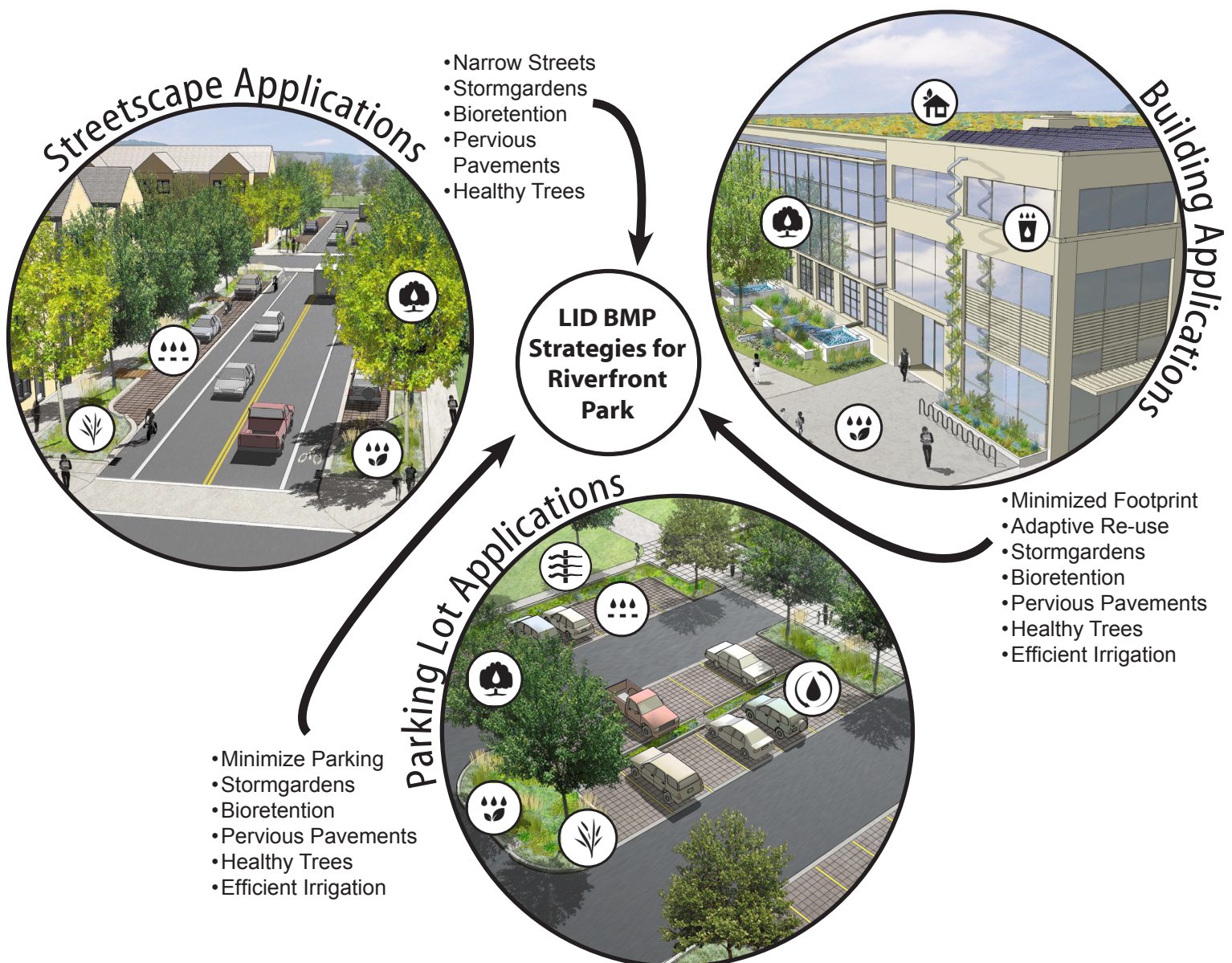
South Bank

The South Bank is the most heavily used part of Riverfront Park. Multiple events serve hundreds of thousands of people throughout the year and heavily impact the landscape and its ability to treat stormwater. The South Bank may be best suited for pervious pavements with underdrains in highly impacted areas, isolated and protected bio-retention plantings, water conservation and education opportunities.

Central

The Central portion of Riverfront Park on Havermale Island is dominated by the soil cap covering the island from the remediation efforts of Expo '74. Little is known about the subsurface conditions and soil cap conditions except that there are many buried utilities and railroad elements underlying the soil. Infiltration of stormwater runoff into the existing soils may be not available, therefore future development may consider liners and underdrains to implement LID BMP's.

Low Impact Development Applications

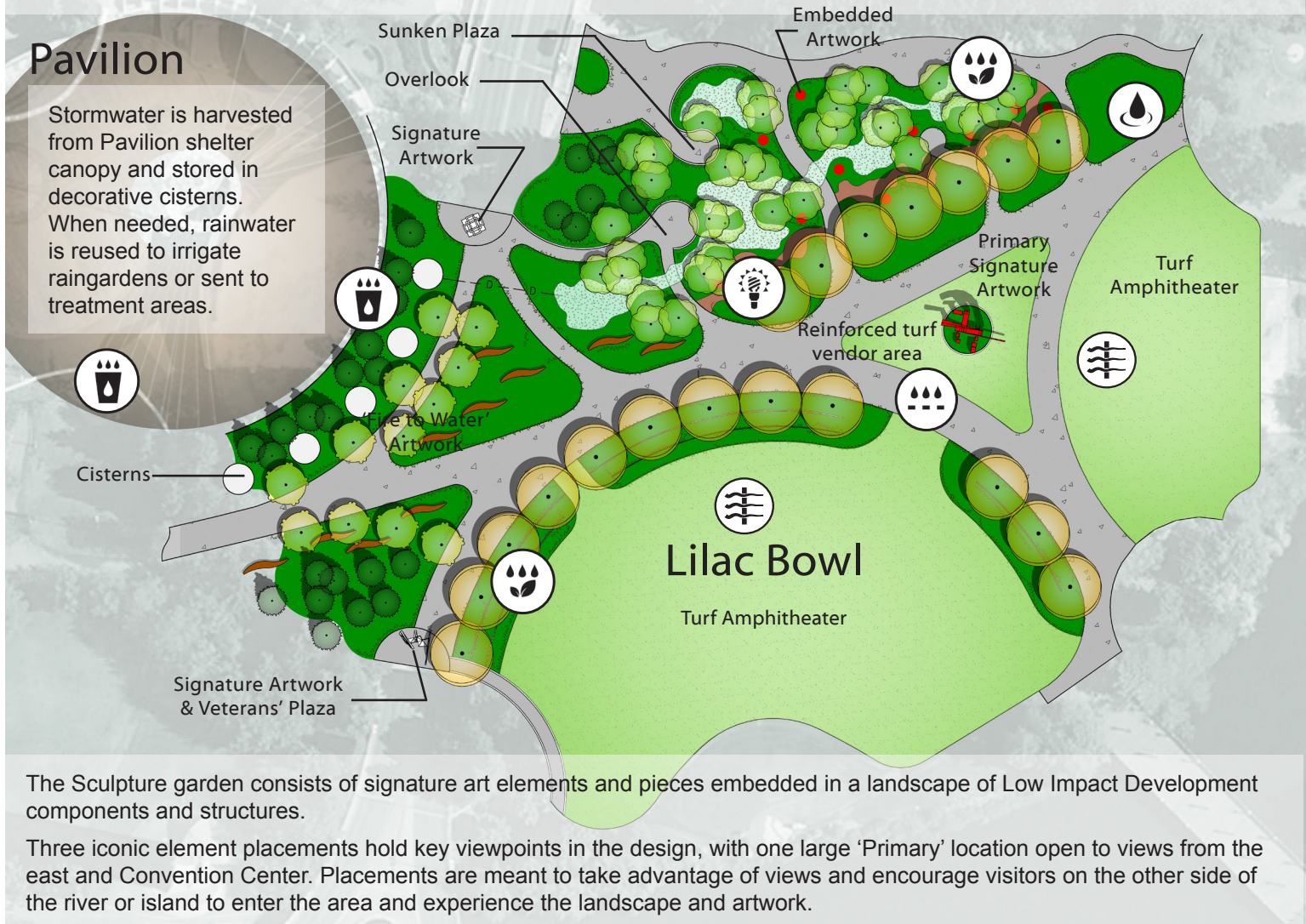


Sculpture Garden Conceptual Site Plan

Embedded artwork, while still significant, will sit more lightly on the park and be integrated into landscape features. Possible embedded artwork includes sculptural use of different rock types and using the Sunken Plaza retaining wall for interpretation of soil organisms and processes.

Pavilion

Stormwater is harvested from Pavilion shelter canopy and stored in decorative cisterns. When needed, rainwater is reused to irrigate raingardens or sent to treatment areas.



The Sculpture garden consists of signature art elements and pieces embedded in a landscape of Low Impact Development components and structures.

Three iconic element placements hold key viewpoints in the design, with one large 'Primary' location open to views from the east and Convention Center. Placements are meant to take advantage of views and encourage visitors on the other side of the river or island to enter the area and experience the landscape and artwork.



This area consists of more embedded artwork placed in a natural feeling landscape with pathways crossing through low-maintenance plantings and raingardens. After passing through the raingarden, pollutants have been removed, the stormwater is either infiltrated to the aquifer or sent to an existing discharge to the river.



All walkways in the sculpture garden are permeable surfaces that allow stormwater to infiltrate to gravel galleries or raingardens. In addition, high traffic turf areas utilize reinforced geogrids to prevent soil compaction, improve infiltration, and reduce maintenance.



Artwork and interpretive boards educate the public about the benefits of LID, stormwater treatment, and water quality. A bark or gravel pathway traverses through the space for a natural feel.



Stormwater from walkways can also sheet flow to gently sloped turf areas for treatment through a Best Management Practice (BMP) called dispersion.



Irrigation demand in the sculpture garden landscape is reduced by using drought-tolerant groundcovers and meadow grasses instead of turf.



Specially designed artist panels incorporate into retaining walls, forming raingarden spillways in a terrace garden that frames the back of the Lilac Bowl. Stormwater from walkways flows through the terraced raingarden for treatment and infiltration.



Sculpture Garden

Conceptual LID Strategies



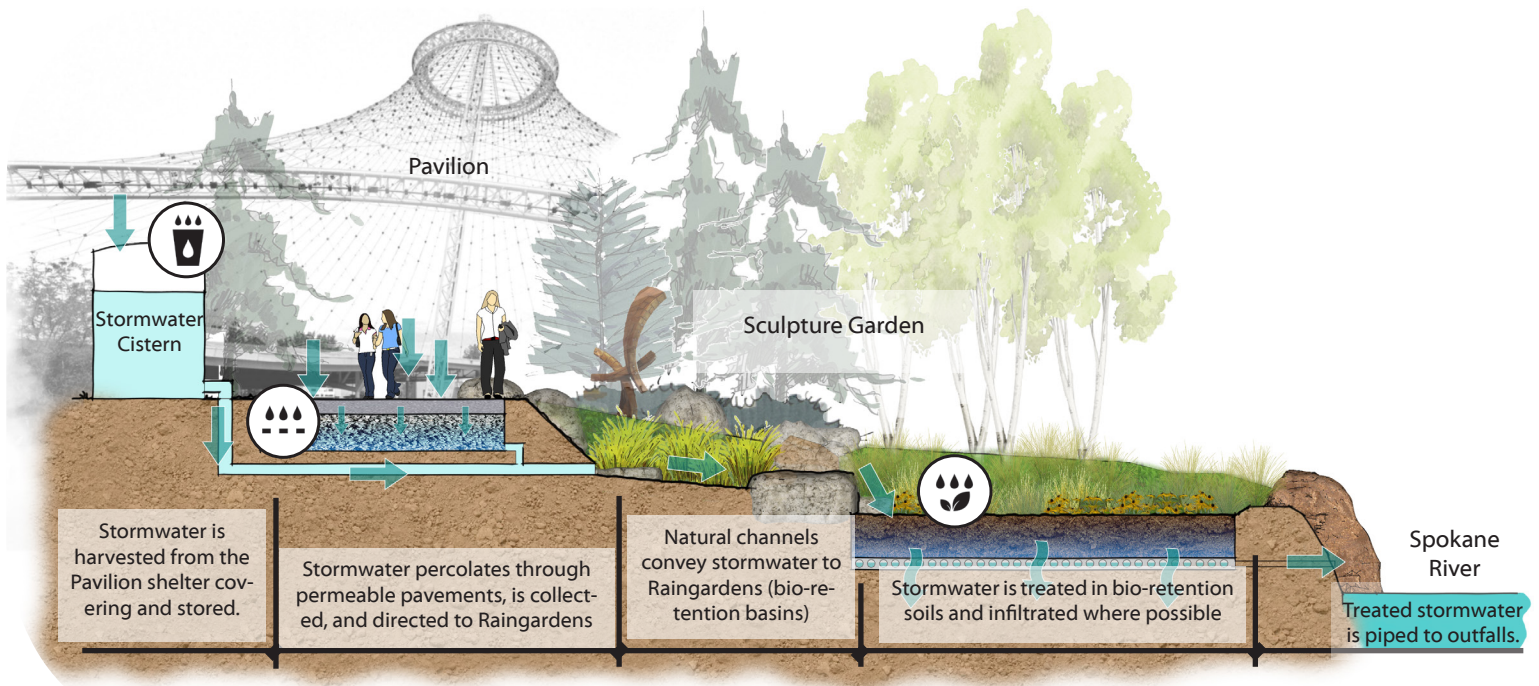
Embedded Artwork



Primary Signature Artwork



Primary Signature Artwork



Raingardens are also known as bio-retention areas

Decorative Stormwater Cisterns

Artists' Stormwater Panels

