MILLER PARK BIRD REFUGE AND NATURE PARK

Trail Access Improvements & Historic Structures Preservation

AVAILABLE CONSTRUCTION BUDGET: $280,000

PROJECT BACKGROUND

Located in the Yalecrest National Historic District of Salt Lake City, Miller Park is a 8.75-acre beloved naturalistic park with environmental, historical, and cultural significance and Red Butte Creek as its central feature. It provides critical riparian habitat and a space for people to get away from the everyday bustle of Salt Lake City. It also has significant history associated with it, with the construction of the stairs and bridges by the Civilian Conservation Corps dating back to the 1930s. Established as a bird refuge and nature park in 1935, the linear park has seen several modifications to improve safety and the general park experience. Following the Red Butte oil spill, the park was improved to revitalize a section of degraded creek and nearby habitat to a more natural state, including planting native vegetation, enhancing habitat, and improving public access. In 2018, Miller Park was identified as the site of a citizen capital improvement program project. The project focused on two primary goals:

1. **Preserve historic structures, such as the WPA (Works Progress Administration) masonry walls, foot bridge, and stairways constructed during the Great Depression**

2. **Improve the accessibility of the trail system that navigates the park**

STONE WALL PRESERVATION

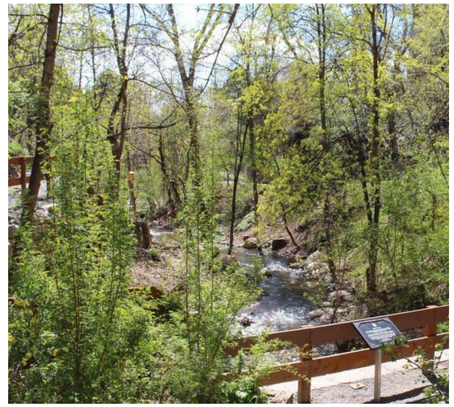
In support of the project's goal of preserving Miller Park's historic stone walls, the consulting team hired a structural and geotechnical engineer to review and analyze the park walls. The engineers identified the following general conditions (listed below) that could contribute to a future wall failure. These issues, and associated solutions are documented on the following boards.

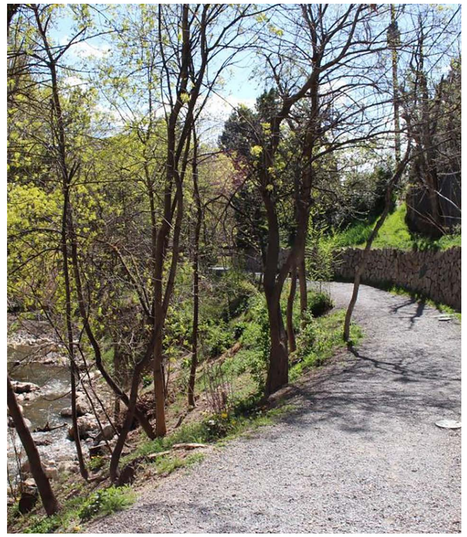
- **Structures have been constructed (on parks property and private property) that add additional loads to historic stone walls**
- **Drainage from adjacent properties are impacting some segments of wall by increasing hydrostatic pressure behind walls or undercutting foundations**
- **Developing cracks in stone walls should be re-pointed**
- **Wall foundations have been exposed in certain areas**
- **Trees above walls add additional loads to historic stone walls**

TRAIL ACCESSIBILITY

Trail accessibility for Miller Park was also analyzed. Conditions were compared against relative standards for natural open space settings including the Americans with Disability Act Design Guidelines (ADAAG) and the Outdoor Developed Area Accessibility Guidelines. Based on these guidelines, the following issues were noted:

- **Trail running slopes exceed 5% near the Bonneview entrance, posing issues to trail users of all ages and abilities**
- **Trail cross slopes exceed 2% in some areas, posing challenges to trail users of all ages and abilities**
- **Stairs on the east side of the park pose barriers to enhanced wheelchair accessibility through the park**
- **Drainage from adjacent properties could threaten trail access if left unaddressed, or require costly repair projects in the future**





A SLOPE ISSUES

STEEP CROSS SLOPES
Some segments of the trail have steep cross slopes (higher than 2%) that limit the accessibility of the park.

B WALL FOUNDATION ISSUES

EXPOSED WALL FOUNDATIONS
In some locations, prior trail improvements have exposed foundations for the historic stone walls, potentially compromising their stability.

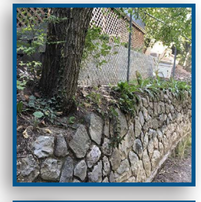
C DRAINAGE ISSUES

CONCENTRATED RUNOFF
Some locations with concentrated runoff from adjacent properties are causing erosion and damage to retaining walls

D MAINTENANCE ISSUES

DEBRIS & SOIL BUILD-UP
Chain-link fences on adjacent properties are collecting debris and retaining soil at multiple locations. These “debris dams” trap water behind the walls and could contribute to potential failures.

E ADDITIONAL LOADS ON STONE WALLS

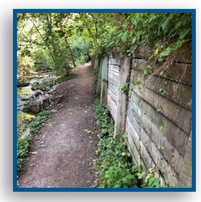


TREES ADJACENT TO TOP OF WALL
Mature trees growing near the top of retaining walls apply additional loads and threaten the longevity of the walls

LOADS FROM ADJACENT STRUCTURES
Several adjacent properties contain structures, including walls, sheds, decks, etc. that contribute to loads on park retaining walls. Some structures sit on private lands while others are on park property.

F DEVELOPING INFRASTRUCTURE PROBLEMS

FAILING CRIB WALLS
In some locations, crib walls are eroding or have been washed away by flooding.



FAILING TIMBER WALLS
Timber walls are bulging and being undermined by drainage from adjacent properties. Without corrective actions, trail access could be affected.

G ACCESSIBILITY ISSUES

NO ADA ACCESS
Park entrances at Bonneview Drive and 900 South are not ADA compliant; additionally, there is no continuous loop of accessible trail through the park

STAIRS
The stairs on the east side of the creek serve as a major barrier to wheelchairs. In addition, handrails, treads, and risers could be improved to better accommodate trail users.

EXISTING CONDITIONS + IMPROVEMENT OPPORTUNITIES

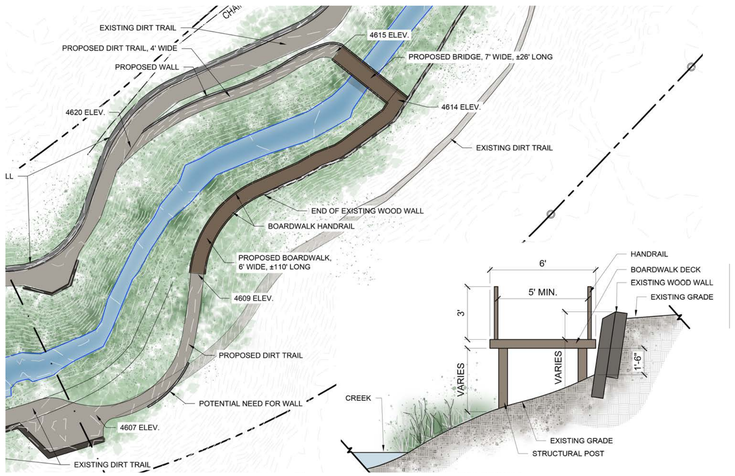
MILLER PARK TRAIL ACCESS IMPROVEMENTS & HISTORIC STRUCTURES | SALT LAKE CITY, UT

alta PLANNING + DESIGN

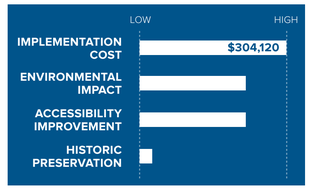
Salt Lake City Parks & Public Lands

G - ACCESSIBILITY IMPROVEMENTS

G-1 CONSTRUCT WHEELCHAIR ACCESSIBLE LOOP WITH BRIDGE AND BOARDWALK

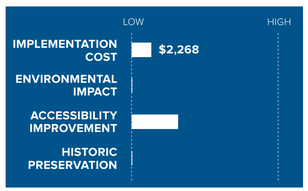


PROJECT DESCRIPTION
Construct a bridge over the creek near the north end of the park that connects to a boardwalk. Connect boardwalk to the trail system on the east side of the creek, bypassing the existing stairway and creating a wheelchair accessible loop.

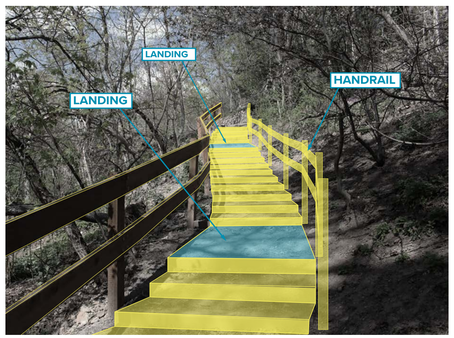


G-2 CONSTRUCT ACCESSIBLE ENTRANCE AT BONNEVIEW DRIVE

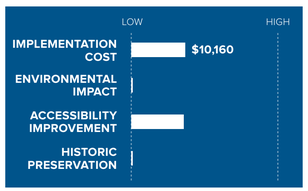
PROJECT DESCRIPTION
Add curb cut and ramp from Bonneview Drive; coordinate with Streets department.



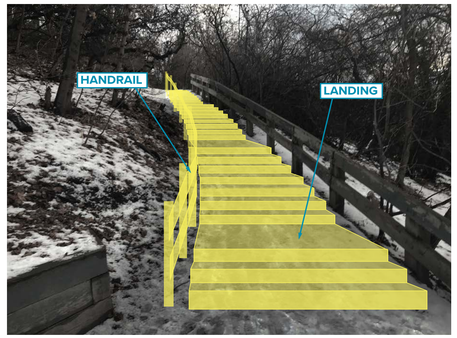
G-3 RECONSTRUCT STAIRS ON EAST SIDE OF CREEK



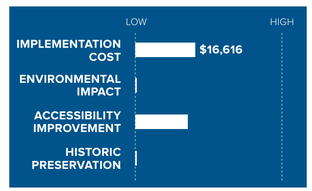
PROJECT DESCRIPTION
Reconstruct stairs to make risers even and treads a consistent length; include a handrail on upslope side and 2-3 landings. Alternative: decommission stairs and upper trail if bridge and boardwalk are constructed (See G-3).



G-4 CONSTRUCT NEW STAIRS ON EAST SIDE OF CREEK



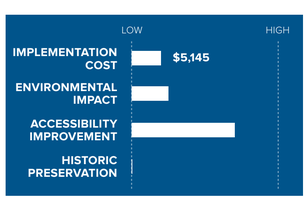
PROJECT DESCRIPTION
Construct new stairs stairs and handrail to make steep slope more accessible; include a handrail on upslope side and 2-3 landings.



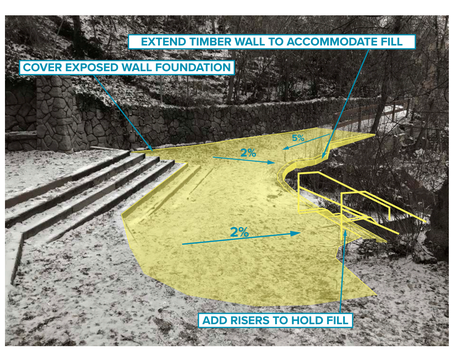
A - TRAIL SLOPE IMPROVEMENTS

A-1 CORRECT CROSS SLOPE

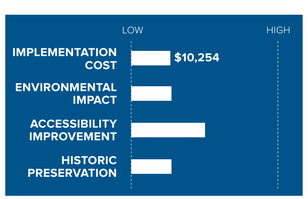
PROJECT DESCRIPTION
Near the entrance at Bonneview Drive, the trail's cross slope should be corrected to be ADA compliant; doing so will require the addition of stairs and handrails to meet the proposed grade and potentially retaining timbers on the downslope side.



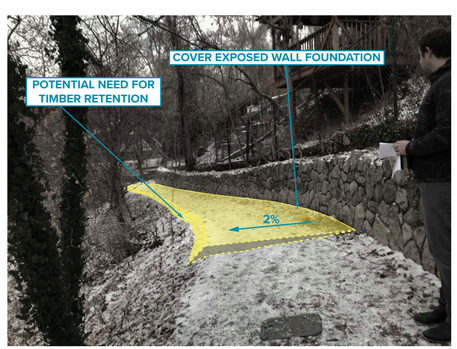
A-2 / B-3 CORRECT SLOPES AND COVER EXPOSED FOUNDATION



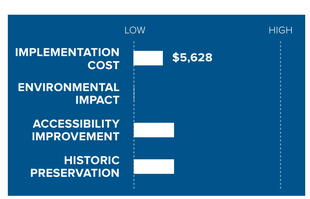
PROJECT DESCRIPTION
Near the entrance at 900 S there is an opportunity to improve both running and cross slopes for accessibility; cover 2-3 risers on the upslope side and height or reconstruct the existing timber retaining wall below the trail.



A-3 / B-4 CORRECT CROSS SLOPE AND COVER EXPOSED FOOTING



PROJECT DESCRIPTION
A significant stretch of the trail on the east side of the creek (±100 LF) should be filled to cover exposed rock wall foundation and correct a steep cross slope. Timber retention may be needed on the downslope side of the trail.



IMPROVEMENT PROJECTS

MILLER PARK TRAIL ACCESS IMPROVEMENTS & HISTORIC STRUCTURES | SALT LAKE CITY, UT

INDICATES NEED FOR COORDINATION WITH ADJACENT PROPERTY OWNERS

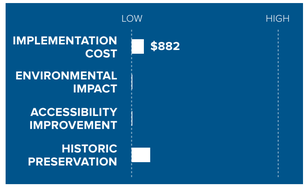
alta PLANNING + DESIGN

SALT LAKE CITY Parks & Public Lands

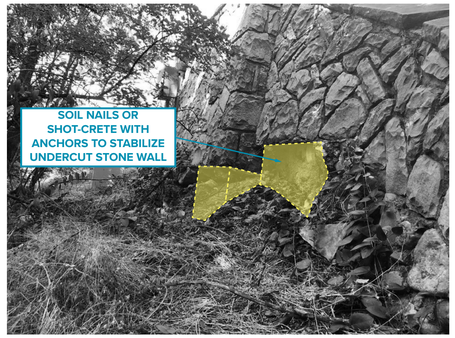
B - WALL FOUNDATION PROTECTION

B-1 FILL TO COVER EXPOSED WALL FOUNDATION

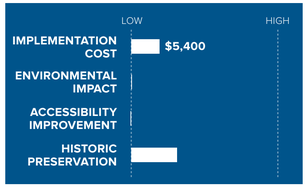
PROJECT DESCRIPTION
Infill 4-6" with crushed fines where needed to cover exposed wall foundation and undermining; address runoff issue causing the erosion with adjacent property owners.



B-2 FILL TO COVER EXPOSED WALL FOUNDATION



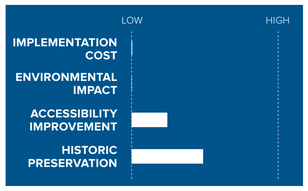
PROJECT DESCRIPTION
Stabilize exposed foundation with soil nails or shot-crete with anchors. Revegetate and cover foundations where slopes allow.



C - DRAINAGE

C ADDRESS CONCENTRATED DRAINAGE

PROJECT DESCRIPTION
Coordinate with property owners to prevent concentrated drainage from private property onto park property where it can cause damage including erosion, rutting, and undermining of retaining walls.



D- MAINTENANCE

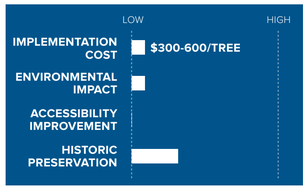
D KEEP FENCES CLEAR OF DEBRIS

PROJECT DESCRIPTION
Coordination with individual property owners is needed to maintain downslope fences and keep them free of debris to prevent buildup of debris and water behind walls.

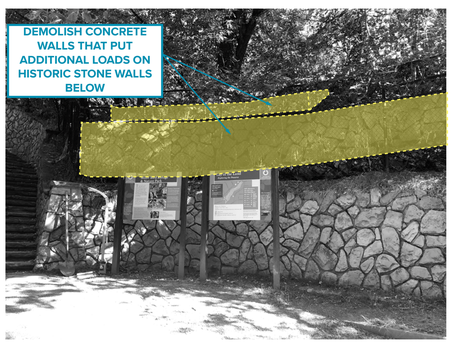
E - MANAGE STRUCTURAL LOADS ON HISTORIC WALLS

E REMOVE TREES GROWING AT TOP OF RETAINING WALLS (MULTIPLE LOCATIONS)

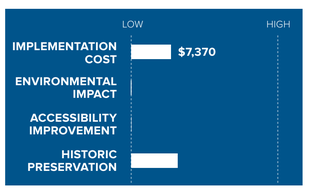
PROJECT DESCRIPTION
Remove any non-native trees on park property growing within 5 ft. of the back of structural walls.



E-1 REMOVE STACKED CONCRETE WALL



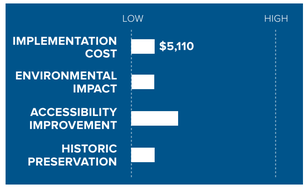
PROJECT DESCRIPTION
Remove the stacked concrete retaining wall adjacent to the 900 S entrance and return the slope to its original profile. This wall places additional loads on the stone walls below and does not possess historic significance. Re-point cracks in stone walls.



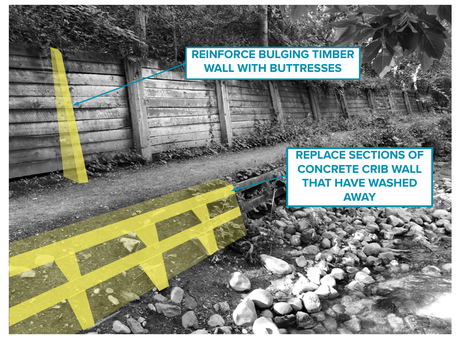
F - TRAIL PROTECTION

F-1 CRIB WALL REPAIRS

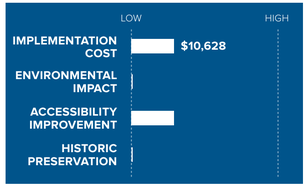
PROJECT DESCRIPTION
Repair and replace eroding crib wall. Backfill crib wall with appropriate material and place geo-synthetic reinforcement grid for stability.



F-2 TIMBER AND CRIB WALL REPAIRS



PROJECT DESCRIPTION
Fortify bulging section of timber wall on the east side of the creek with buttresses. Concentrated drainage from the adjacent private property should be resolved. Replace the segments of concrete crib wall on the creek-side of the trail that have washed away.



MISCELLANEOUS PROJECTS

- IRRIGATION HEAD AND VALVE BOX RELOCATION
- SELECTIVE STONE REPLACEMENT IN WALLS
- WHEELCHAIR RUB RAIL ALONG CONSTRAINED TRAIL SEGMENTS

IMPROVEMENT PROJECTS

MILLER PARK TRAIL ACCESS IMPROVEMENTS & HISTORIC STRUCTURES | SALT LAKE CITY, UT

INDICATES NEED FOR COORDINATION WITH ADJACENT PROPERTY OWNERS

alta PLANNING + DESIGN

SALT LAKE CITY Parks & Public Lands

ARE THERE OTHER ISSUES RELATED TO HISTORIC STRUCTURES OR ACCESSIBILITY?

OTHER IDEAS?

MILLER PARK TRAIL ACCESS IMPROVEMENTS & HISTORIC STRUCTURES | SALT LAKE CITY, UT

alta PLANNING + DESIGN

SALT LAKE CITY Parks & Public Lands