



## 5.0 RIPARIAN CORRIDOR VISION

### Summary of Stakeholder Input

This section provides a summary of the input received during public outreach activities throughout the planning process. Because the RCS public outreach activities centered around a series of two public workshops, the input received is summarized below according to public workshop.

#### Public Workshop 1

During the first public workshop, much of the input received focused on questions about the information collected as part of the RCS planning process and concerns regarding past resource management activities by the City along the riparian corridor. A number of participants expressed concern over the proposed vegetation management within the canyon for fire control. Others questioned the inclusion of the concrete channel through lower City Creek into the study area, as well as the origin of the suds-laden water that enters City Creek from storm drains during storm events. Concerns about future seismic activity, the continued use of gabion basket retaining walls along the creek, and the continued need for the road along lower City Creek

were also expressed by those who attended the first public workshop.

Participants also provided a number of suggestions for consideration in the RCS management plan. These included suggestions for incorporating scientific decision-making criteria into the process, maximizing the use of the study area as an educational destination, and recognizing City Creek as an easy escape from downtown. In addition, some suggested that the vision statement may require two sections to acknowledge the differences between upper and lower City Creek. Another suggestion was to consider user fees to help pay for management and maintenance of the City Creek RCS.

The following is a summary of the questions asked and the responses received on the workshop response forms that were distributed at the first public workshop.

What Riparian Corridor Functions Are Important To You?

- Cooler temperatures, channel stability, wildlife habitat, shading, floodplain connectivity, biodiversity and aesthetics.

What Concerns Do You Have For The Riparian Corridor?

- I have no concerns about City Creek through Memory Grove or the area downstream. It is clearly an urban area where the riparian corridor strictly functions for aesthetic purposes. Upstream of Memory Grove, I have the following concerns: Lack of herbaceous vegetation cover, soil erosion, unstable/hardened stream banks, inappropriate or problematic in-stream structures, invasive weeds, fear of City fire prevention efforts.

What Suggestions Do You Have For Restoration and Remediation Projects?

- City Creek canyon is largely undeveloped except for the area immediately downstream of Memory Grove. Between Memory Grove and Bonneville Drive, the riparian corridor suffers from many of the same problems as Parleys Creek within Parleys Park or Sugar House Park. If managers want to restore some function to this



section, they could consider creating designated trails to concentrate use and allow for revegetation. The corridor is so narrow that it would be difficult to maintain the road on the west side and unpaved trails on the east side. An option would be to completely close the east side of the creek to people and concentrate them on the west side road. Depending on how wide the road needs to be, the City could remove some of the asphalt and replace it with a more natural trail so that hikers and bikers are separated. Otherwise, I'd like to see managers remove and/or replace existing man-made structures such as poorly built bridges, rip

rap, failing culverts, and hardened stream access points. I'd like to see revegetation of the herbaceous and shrub layer, and removal of invasive weeds (if possible).

The City Creek riparian corridor is . . .

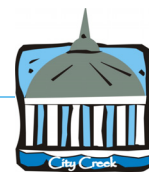
- a valuable Salt Lake City amenity and functions for a number of purposes including recreation, water supply and wildlife habitat. It is unique in that it is managed primarily by one entity: Salt Lake City. Therefore, there are fewer competing interests and more opportunity for consistent management along the length of the corridor.

We envision a riparian corridor that . . .

- can sustain cool summer temperatures and clean water. I also envision a corridor that is restored and maintained for a diversity of wildlife including coldwater fish, birds, amphibians, and macro-invertebrates. I envision a sharp distinction in management between the area below and above Bonneville Drive. The area below could be managed for people, and the area above could be managed for wildlife and water quality.

## Public Workshop 2

During public workshop 2, maps of individual stream reaches were posted for review and comments. Participants with interest in specific reaches were asked to review the relevant maps and provide reach-specific input on comment forms attached to the maps. The comment forms asked the question "What riparian function, values, or improvement projects do you think are high priority within this stream reach specifically?" Input gathered during this exercise is included in Appendix C, which also provides maps, data, and recommendations for individual stream reaches.



A variety of other more general concerns and questions were also expressed during the second public workshop. Several participants expressed concern regarding the oil pipelines and other “wet” utilities that cross City Creek in light of the recent petroleum pipeline failure at Red Butte Creek. Another concern regarded the numerous “bridges” (utility culverts) that cross the creek and are not safe or well designed for pedestrian use. Some participants indicated that they feel that riparian corridors and off-leash dog areas are not compatible; other participants expressed that maintaining water access for dogs is very important to them. One participant questioned what happens to the stream banks once invasive vegetation is removed.

Suggestions from participants included making sure there is an appropriate location for dogs to access the creek, installing local shut-off valves on petroleum pipelines that cross the creek, and protecting stream-side restoration areas with temporary fencing until established. Additional suggestions included using goats for weed control in the canyon and considering the feasibility of installing small-scale hydro-electric systems in the underground portions of the creeks. Another suggestion from a participant was to maintain some more dynamic bank erosion areas, low-lying shrubs,

and standing dead trees for wildlife habitat.

Workshop participants also encouraged adding more information about the fire fuel break study, existing water quality reports, and geology information to the RCS document. Following the second workshop, several additional sets of written comments were received from subcommittee members and other interested stakeholders. Most of these comments suggested specific edits or additions to the RCS report that have been incorporated in this final RCS document.

### Meeting with City and County Management Entities

Salt Lake City owns and manages the entire City Creek riparian corridor within the RCS study area. Salt Lake County’s Engineering and Flood Control Division maintains the debris basins adjacent to Bonneville Boulevard. Because these entities are major stakeholders within the corridor, a meeting was held with City and County staff on April 30, 2010 to discuss the RCS process and obtain input.

The Memory Grove area, which encompasses study reaches LCC\_R01A through LCC\_02B, is managed and maintained by the City’s Parks Division. Priorities

identified by Parks Division staff included recreational safety, particularly along the paved trail on the western bank of the creek that receives shared use among people walking, biking, roller-blading, jogging, and dog-walking. Various staff at the April 30 meeting also indicated an interest in maintaining adequate width on this paved trail to accommodate emergency vehicles. Parks staff also explained that no “official” trails exist on the east side of the creek upstream of the brown footbridge in reach LCC\_R01B; existing trails in this area are all user-created. Some interest was expressed in the possibility of creating a formal trail access point somewhere near the downstream end of reach LCC\_R01A that would link eastern Bonneville Boulevard to the paved trail on the west side of the creek via a new footbridge. This could facilitate efforts to reclaim user-created trails in this area and improve bank and slope stability.

County Flood Control staff indicated an interest in establishing a more defined, stabilized access ramp at the upper debris basin to facilitate dredging access. However, City and County staff agreed that the idea of establishing a fishing access ramp in this location would not be feasible or compatible with the use of the basin as a debris and flood control structure. Space





### City Creek vision statement:

*The City Creek riparian corridor is a thriving ecosystem and highly valued destination in Salt Lake City that provides an escape from the urban environment for people, plants, and wildlife. Our community appreciates the corridor for its solitude and revitalizing atmosphere, as well as for the educational and recreational benefits of this unique riparian area and free-flowing stream. Through ongoing cooperative efforts, the community has supported the riparian ecosystem and it is restored to the extent possible, promoting stewardship of the environment and providing education on the functions of a sustainable natural ecosystem featuring fish and wildlife habitat, visual aesthetics, native vegetation, and excellent stream water quality.*

*To achieve this vision, the following riparian corridor functions must be realized:*

- *A well-connected vegetative corridor provides a diverse habitat for native wildlife and migrating bird species*
- *Healthy, mature vegetation provides a canopy to cool air and water temperatures; mid-level vegetation and ground cover allow for diverse fish and wildlife habitat, erosion control, and filtration of sediment and pollutants.*
- *An uninterrupted flow of clean, clear water supports a healthy native cold water fishery and a riparian ecosystem of native plants.*
- *Stream banks are stable but allow for natural stream dynamics within acceptable limits.*
- *The stream is recognized as a valuable asset by the community, with trash, debris and noxious weeds kept out of the stream bed and riparian corridor.*
- *Preserved open space compliments the riparian corridor and provides a promenade for diverse outdoor enthusiasts, while allowing for safe and accessible public enjoyment of the stream environment for all abilities.*
- *Storm water conveyances are designed and upgraded to improve stream stability and water quality.*
- *Infrastructure along the stream is replaced as appropriate to reduce stream channel constrictions and improve stream bed and bank stability.*

*These goals will be achieved with cooperation between the City and the community using science based decision making criteria and consistent management along the entire length of the City Creek riparian corridor. Accomplishment of rehabilitation projects will depend on their prioritization and available funding. Priorities for the riparian corridor below Bonneville Boulevard will emphasize public access for recreational and educational or interpretive opportunities. Priorities for the riparian corridor above Bonneville Boulevard will emphasize preservation and protection of riparian corridor functions to maximize water quality and habitat for fish and wildlife, while allowing for diverse recreational opportunities. Grant funding opportunities for implementation of rehabilitation projects will be pursued through collaborations between the City, community members, property managers, and agency stakeholders. Rehabilitation measures will use progressive approaches and involve nearby schools for implementation.*

constraints in the area already present a challenge in accommodating trail head parking and flood control equipment access.

The upper portion of the RCS study area (reaches UCC\_R09 through UCC\_R11C) is managed by the City's Watershed Division. Priorities in this area include ensuring that City Creek Canyon Road is maintained in a safe condition to allow ready access to the CCWTP by City vehicles and equipment. Vegetation management to control invasive weeds and to reduce fire risk along the roadway are other concerns in this area. The City is also interested in improving roadway safety in this portion of the canyon.

### City Creek Riparian Corridor Vision Statement

Public and stakeholder input were used to develop a vision statement for the City Creek riparian corridor. The vision statement uses introductory text that describes the desired future condition of the corridor, followed by supporting text that identifies more specific targets and objectives. The closing text of the vision statement provides general guidance on how to achieve the desired future condition for the corridor. The City Creek riparian corridor vision statement is intended to be a "living" and adaptive planning



tool that may grow or adjust as public awareness and active stewardship of the corridor becomes more established.

## Riparian Corridor Priorities

Priorities for funding and implementing improvement projects will vary depending on perspective, scale, and anticipated implementation approach. For example, in a stream reach that currently is in good condition except for the presence of a small amount of trash, stream cleanup may be the highest-priority project for the reach. However, when considered from the perspective of the entire riparian corridor, other reaches that have more substantial trash problems may be higher-priority areas for stream cleanup efforts.

In Table 5.1 relevant improvement projects are summarized by reach, and relative needs are identified by project type from the perspective of the entire riparian corridor. For example, baseline assessment results suggest that some of the areas with the highest densities of invasive plants occur in reaches LCC\_R01A, LCC\_R01C, and LCC\_R01D02A. Therefore, these reaches are identified as the highest-need reaches for invasive plant removal/control efforts. As another example, reaches UCC\_10C, LCC\_R01B,



and LCC\_R01D02A were identified as the reaches with the greatest percent of their reach length containing gabions; hence, these reaches are noted as the highest-need reaches for gabion basket retrofit efforts within the corridor. Similar guidance regarding corridor-scale recommendations for improvements at stream crossings and streambed protection structures is provided in Table 5.2. If funding were to become available for a specific type of improvement measure (e.g., storm drain outlet improvements), the information in Table 5.1 could be used to help decide where within the corridor to focus efforts.

In some cases support and funding for improvement efforts may develop for a specific stream reach or property within the riparian corridor. In these cases information about reach-specific priorities and needs will be necessary to help guide project choices. Toward this end, the information gathered during the baseline assessment and stakeholder outreach activities was used to identify recommendation lists for improvement efforts for individual stream reaches. Constraints and opportunities unique to individual reaches were also defined. Where stakeholders provided reach-specific input, their priorities for



**Table 5.1. Relative need for various improvement measures by study reach. <sup>a</sup>**

REACH NUMBER	REACH DESCRIPTION	IMPROVEMENT MEASURE									
		Stream Cleanup - Hand	Mechanized Trash Removal	Invasive Plant Removal	Revegetation - Shrub	Revegetation - Understorey	Storm Drain/Runoff Improvement	Gabion Basket Retrofit	Grade Control/Bed Structure Protection	Slope/Bank/Rill Stabilization	Access Control/Trail Stabilization
UCC_RO9	Pleasant Valley			medium							low
UCC_R10A	Pipeline	low	low	low							low
UCC_R10B	Eagles Rest			low				low		low	medium
UCC_R10C	Water Crest			low			low	high			medium
UCC_R11A	Elbow Turn	low	medium	medium			low	low		low	medium
UCC_R11B	Hidden Falls	low	low	low				low			medium
UCC_R11C	Guard Shack Gate Area	high		medium	low	low	high	medium	high	medium	medium
LCC_RO1A	Below Bonneville Boulevard	med	medium	high	medium	medium	medium	medium		high	high
LCC_RO1B	Upper Freedom Trail Area	med	high	medium	high	high	high	high	medium	high (gully)	high
LCC_RO1C	Lower Freedom Trail Area	med		high	high	high	medium	medium	low		high
LCC_RO1DO2A	Upper Memory Grove Park	low	low	high		high	high	high	low		high
LCC_RO2B	Lower Memory Grove Park	high		medium	medium	low					medium

<sup>a</sup> Relative needs are identified from the perspective of the entire riparian corridor; e.g., the highest-need reaches for stream cleanup are those assessed as having the worst trash problems in the corridor.

those stream reaches were also summarized. This reach-specific information is provided in Appendix C. Approximate cost estimates for improvement measures are provided in Appendix D.

For improvement projects where ecological restoration is the primary objective, recently proposed restoration standards (Palmer et al. 2005) can provide some scientific guidance regarding project design and prioritization (see sidebar on page 5-8).

### Riparian Enhancement Potential

An important consideration when selecting projects for implementation is the potential for a given study reach to fully meet certain riparian enhancement functions or objectives. This “riparian enhancement potential” varies depending on the position of the reach in the watershed, the extent of infrastructure development adjacent to the reach, and the frequency/proximity of road crossings or

other features that interrupt longitudinal connectivity. Projects intended to enhance the riparian functions of wildlife habitat, floodplain storage, travel corridors/connectivity, water quality, or streambank stability will typically be the most effective and provide the greatest benefit-to-cost ratio when they are implemented in reaches with high riparian enhancement potential.

One important factor affecting riparian enhancement potential is impervious cover percentage. As discussed in Chapter 3, the





**Table 5.2. Recommended improvements to stream crossings and streambed protection structures in the study area.**

REACH	DESCRIPTION	POTENTIAL FISH BARRIER	RECOMMENDATION <sup>a</sup>	RELATIVE NEED FOR IMPROVEMENT
Between UCC_R11B and UCC_R11C	wood plank footbridge	no	remove or repair to eliminate safety concern	low
UCC_R11C	concrete sill/old gage and concrete wall	yes	remove concrete structures; replace with fish-passable vortex rock weir(s) and/or rock step-pool(s)	high
UCC_R11C	concrete and rubble bed structure and concrete walls	yes	remove concrete structures; replace with fish-passable vortex rock weir(s) and/or rock step-pool(s)	high
UCC_R11C	narrow concrete sill and concrete piers	no	remove concrete structures; replace sill with vortex rock weir; stabilize banks with vegetated rock	medium-low
LCC_RO1B	narrow concrete sill and concrete wingwalls	no	remove concrete structures; replace sill with vortex rock weir; stabilize banks with vegetated rock	medium-low
LCC_RO1B	cemented bed structure	yes	replace with fish-passable vortex rock weir(s) and/or rock step-pool(s)	medium-high
LCC_RO1B	concrete block/boulder/rubble bed structure	unlikely	replace with fish-passable vortex rock weir(s) and/or rock step-pool(s)	low
LCC_RO1B	two long concrete pieces in bed	no	remove; install vortex rock weir if bed protection is needed	low
LCC_RO1B	concrete flume (stream gage)	yes	install vortex rock weir(s), rock-lined tailwater pool, and/or rock step-pool(s) to allow fish passage	medium
LCC_RO1C	concrete utility crossing	no	monitor condition; if feasible replace with full-span structure	low
LCC_RO1D_O2A	concrete utility crossing	no	monitor condition; if feasible replace with full-span structure	low
LCC_RO1D_O2A	concrete footbridge	no	remove and replace with full-span structure	medium

<sup>a</sup> no recommendations are included for replacement of the grouted rock drop structures in reaches LCC\_RO1C and downstream (see Table 3.6); if, in the future, fish passage becomes a priority in this area, improvements should be considered at that time.

conversion of watershed area to impervious surfaces results in reduced groundwater infiltration and increased, more rapid surface runoff. These changes tend to cause increased erosion, degraded water quality, and reduced baseflow. Impervious cover is commonly used as an index of the extent of urban

development and as a predictor of stream health (Schueler and Brown 2004). Within the City Creek RCS study area, the relative amount of impervious cover within the contributing drainage area remains fairly constant within the upper subwatershed (Reach UCC\_11C and upstream). No storm drains

from urbanized areas empty into these upper reaches. Storm drains from the urbanized Avenues and Capitol Hill neighborhoods begin to empty into City Creek beginning in reach LCC\_R01A. The relative influence of impervious surfaces increases with distance downstream such that the



**Criteria proposed by Palmer et al. (2005) for ecologically successful river restoration:**

- The restoration design is based on a guiding image of a more dynamic, ecologically healthy stream
- The stream’s ecological condition is measurably improved
- Resilience is increased and the ecosystem is more self-sustaining after the restoration effort
- Implementation of the restoration effort does not inflict lasting harm to the ecosystem
- Pre- and post-restoration monitoring is conducted and results are made publicly available

downstream-most reaches are ranked lowest in terms of relative hydrologic integrity (Table 5.3). Hence, this ranking factor tends to favor reaches in the upper subwatershed. Another advantage of project implementation within upstream reaches is that many project benefits (e.g., water quality, floodplain storage, streambank stability, invasive species

removal) translate into downstream improvements well beyond the localized implementation area.

Another factor affecting riparian enhancement potential is the lateral extent of undeveloped corridor width. In most of the City Creek study reaches, the northern/western side of the riparian corridor is highly influenced by paved roads and paved trails that limit the lateral width of continuous natural riparian vegetation. Roads, paved sidewalks, or graveled vehicle access areas also affect the eastern side of the corridor in portions of some reaches (Table 5.3). Those reaches that are the most tightly confined by infrastructure will have relatively limited potential for floodplain re-establishment, floodplain storage, or natural channel migration. The overall area of high quality habitat for riparian-dependent wildlife and bird species will also be limited relative to study reaches with wider undeveloped corridor widths. Improvement projects focused on enhancing these types of riparian functions will tend to be most effective in reaches with minimal infrastructure constraints.

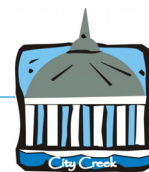
Longitudinal integrity also influences riparian enhancement potential within the City Creek corridor. The debris basins and culverts at Bonneville Boulevard create barriers that interrupt the free migration of fish and wildlife

through the riparian corridor. These structures also interrupt transport and storage of woody debris, sediment, nutrients, and organic matter. Above the Bonneville Boulevard crossing, the corridor remains intact for more than 3 miles up to the CCWTP. Below Bonneville Boulevard, a total length of about 1 mile of channel between the lower debris basin outlet and the conduit inlet at the bottom of reach LCC\_R02B is uninterrupted by culvert pipes. Therefore, the reaches in the upper subwatershed have greater relative potential in terms of fish and wildlife habitat and functions involving nutrient and energy cycling (Table 5.2).

Although few culvert pipes affect longitudinal integrity within the City Creek RCS study area, a number of concrete and grouted rock bed stabilization structures in the corridor create significant vertical elevation drops that may impede fish passage. Reaches influenced by these structures will have lower relative potential in terms of fish habitat; however, if this structures are replaced or improved with fish-passable alternatives, riparian potential can be restored.

The factors affecting riparian enhancement potential for the different study reaches are summarized in Table 5.3. This information can be used to help guide decisions regarding improvement efforts in hopes of





**Table 5.3. Factors affecting relative riparian enhancement potential by reach. Table key: + = high relative to other study reaches, o = average relative to other study reaches, - = low relative to other study reaches.**

REACH NUMBER	REACH DESCRIPTION	FACTORS AFFECTING RIPARIAN ENHANCEMENT POTENTIAL			
		Relative Hydrologic Integrity <sup>a</sup>	Relative Extent of Undeveloped Corridor Width <sup>b</sup>	Relative Corridor Length Uninterrupted by Culverts <sup>c</sup>	Relative Length Uninterrupted by Bed Structures Likely to Impede Fish Passage <sup>d</sup>
UCC_RO9	Pleasant Valley	+	+	+	+
UCC_R10A	Pipeline	+	+	+	+
UCC_R10B	Eagles Rest	+	o	+	+
UCC_R10C	Water Crest	+	o	+	+
UCC_R11A	Elbow Turn	+	o	+	+
UCC_R11B	Hidden Falls	+	o	+	+
UCC_R11C	Guard Shack Gate Area	+	-	+	o
LCC_RO1A	Below Bonneville Boulevard	o	-	o	o
LCC_RO1B	Upper Freedom Trail Area	o	o	o	o
LCC_RO1C	Lower Freedom Trail Area	o	o	o	-
LCC_RO1DO2A	Upper Memory Grove Park	-	o	o	-
LCC_RO2B	Lower Memory Grove Park	-	-	o	-

<sup>a</sup> Qualitatively assessed based on relative influence of storm drains conveying water from impervious areas to each study reach.

<sup>b</sup> Qualitatively assessed based on relative amount of existing infrastructure within 50 and 100 feet of the annual high water level; see infrastructure tables in Appendix C.

<sup>c</sup> Qualitatively assessed based on relative length of uninterrupted channel connected to the reach.

<sup>d</sup> Qualitatively assessed based on number and size of bed structures likely to impede or bar fish passage.

achieving the greatest relative benefit for a given implementation investment. However, significant and important benefits can be achieved even in study reaches rated as having relatively low enhancement potential. The rankings in Table 5.2 should be used as just one piece of information along with other factors such as community interest and support, funding availability, and relative project need (Table 5.1) when selecting efforts for implementation.

## Implementation Approaches

Implementation of the recommended riparian corridor improvement projects will be a long-term effort that will require continued awareness, interest, and support from stakeholders and the community. It will also require significant financial investment. As described in the vision statement, the intent is to pursue funding through collaborations between the City, community members, property

managers, agency stakeholders, and nearby schools.

To help guide, coordinate, and support the long-term implementation of enhancement efforts, the establishment of a City Creek riparian corridor working group or watershed committee is recommended. Ideally, membership in this working group would include representatives from the City, as well as State, County, and federal government entities, local property owners and community residents, and nonprofit groups. The working group could be a



forum for continued involvement by interested members of the existing RCS Subcommittee and RCS workshop attendees.

One local example of a successful “working group” approach to achieving watershed enhancement goals is the East Canyon Watershed Committee ([www.eastcanyoncreek.org](http://www.eastcanyoncreek.org)).

This committee consists of a group of stakeholders interested in the health of East Canyon Creek and its watershed. The group has been in existence for more than 10 years and includes representatives from State, County, municipal, and regional government entities, local property owners and community residents, nonprofit environmental groups, and the Snyderville Basin Water Reclamation District. The committee essentially functions as an “umbrella” organization to help coordinate, facilitate, support, and guide improvement efforts, and also provides an information-sharing forum. The East Canyon Watershed Committee has successfully guided and coordinated a wide variety of watershed and stream improvement efforts, including several recent streambank stabilization projects. Grant funds from a number of sources (Nonpoint Source Implementation [Clean Water Act Section 319] Grant Program, Natural Resources Conservation Service (NRCS) Wildlife Habitat Incentive Program, and

Environmental Protection Agency Water Quality Cooperative Agreement program [Clean Water Act Section 104 (b)(3)]) have supported their efforts. The East Canyon Watershed Committee currently includes education, monitoring, and stream restoration working groups that focus on projects addressing those specific issues.

Another example of an established working group is the Jordan River Watershed Council ([www.waterresources.slco.org/html/jwrc/jrwc.html](http://www.waterresources.slco.org/html/jwrc/jrwc.html)). This group also consists of a broad mix of stakeholders, and the Jordan River Watershed Council has helped coordinate riparian enhancement efforts along the Jordan River. It may be possible to establish a City Creek-specific subgroup as a component of this council. The results of the ongoing Jordan River TMDL project may also spur interest in improvement projects that would provide water quality benefits.

Certain riparian corridor improvement efforts could be modeled on existing partnering approaches that have proven successful. For example, each spring Salt Lake City partners with the Bonneville Cooperative Weed Management Area (CWMA) and environmental groups to encourage volunteers to participate in weed pulling efforts in the City Creek watershed. This effort has been highly

successful in removing Dyer’s woad from much of the canyon, and past DPU efforts have also successfully removed saltcedar from side drainages. These ongoing weed control efforts could be expanded to focus specifically on the invasive understory and tree species that currently pose the greatest threat to native riparian plants. Volunteer revegetation efforts could also be incorporated as appropriate.

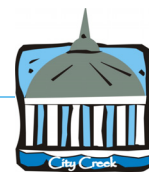
During RCS subcommittee meetings and public workshops, attendees provided suggestions for several other types of implementation approaches. One suggestion was to involve local artists and school children in projects, and to emphasize educational and interpretive elements. The idea of a user fee to fund riparian maintenance activities was also mentioned.

## Other Management Guidelines and Efforts

Implementation of the RCS recommendations will need to be integrated with other ongoing management efforts and previously established guidelines within the City Creek corridor. Specific relevant guidelines and projects are described below.

### City Creek Master Plan (SLCC 1986)

In 1986 the City prepared a planning document to address



land use and circulation issues from the top of City Creek Canyon down to the North Temple–State Street intersection. The document recommends that the planning policy for City Creek Canyon above Bonneville Boulevard emphasize preservation and limited public recreation, while the policy for areas below Bonneville Boulevard emphasize preservation of the formal Memory Grove Park to depict the City’s heritage and serve as a link between the central business district and the upper canyon. The 1986 plan also recommends that areas extending beyond the formally maintained park be retained in their natural state with only limited improvements to increase hillside stability, enhance recreation opportunities, and define public/private property boundaries (SLCC 1986). These policies appear to be compatible with the priorities proposed in the City Creek riparian corridor vision statement.

Some relevant specific items proposed in the 1986 plan for areas within the RCS study area include:

- Retain one lane of Bonneville Boulevard free of motor vehicle traffic
- Extend the Freedom Trail to Bonneville Boulevard

- Focus on upgrading and maintaining existing Memory Grove facilities rather than constructing new facilities
- Restore and revegetate hillside cut and fill areas, and prohibit future hillside cuts/fills
- Monitor landslide potential and stabilize areas as necessary
- Provide safe access for all types of traffic without widening Canyon Road
- Prohibit residential development and commercial recreation
- Revegetate and stabilize banks around debris basin
- Implement drainage improvements along Bonneville Boulevard
- Clean up neglected areas by removing abandoned utility poles/wires, concrete chunks, and other debris along Canyon Road

### **Salt Lake City Watershed Management Plan (Bear West 1999)**

This document updates an original 1988 plan developed to protect the seven major Wasatch Mountain canyons east of Salt

Lake Valley, including City Creek, that serve as major municipal water sources. The 1999 plan includes a desired future condition statement that emphasizes maintenance of excellent water quality and prioritizes water quality first and other canyon uses second. Other elements of the desired future condition include healthy streams and riparian areas, ecological balance, and minimal pollution. The 1999 plan emphasizes the use of a watershed education program to help limit potential degradation associated with recreational use of the canyons. It also recommends exploring alternative funding sources for City Creek such as a user-fee booth or annual pass program.

### **City Creek Shaded Fuel Break Project**

In 2006 concerns about the potential for wildfire in City Creek Canyon prompted the U.S. Forest Service to conduct a fuels load assessment of the area. The assessment found that fuel accumulations and loads were high, and recommended several different fuel reduction treatments for different parts of the canyon (Corbin et al. 2007). As its highest priority, the study recommended that a shaded fuel break be implemented along the roadway corridor to reduce brush density and ensure safe access and evacuation routes for fire fighters and public users of the canyon.





In 2009 and 2010, the City held several public meetings about the idea of a shaded fuel break and established a Citizen’s Review Committee to ensure that concerns about potential impacts to the visual, recreation, plant, and wildlife resources of the area were addressed. Three test plots have been proposed for implementation in fall 2010, and detailed baseline monitoring of vegetation and bird communities at these sites has been completed. The shaded fuel break technique entails selectively thinning vegetation to reduce fuel loads, while retaining large trees and a shaded canopy. Efforts will be limited to the north side of the City Creek Canyon Road; springs and riparian areas on the south (stream) side of the road will not be affected, and no conflicts with the recommendations of the RCS are anticipated. More information on the shaded fuel break project can be found at: <http://www.sl.gov.com/Utilities/firesuppression.htm>.

## Action Items

A variety of specific action items are recommended for implementation. These items are grouped by overall goal and listed below. Following the adoption of a working group or other organizational framework, more detailed project priorities will be determined, allowing for development of funding approaches and grant



applications. The DPU will include riparian corridor projects in annual budgets based on available funding and system needs, and by referring to the prioritized lists in this document. Priorities established in this City Creek study will be included, along with priorities on other streams, to provide direction for City project implementation. To the extent possible, DPU’s implementation efforts will be balanced among all four of the City’s creeks (City, Red Butte, Emigration, and Parleys) and the Jordan River.

### Goal: Continue Public Outreach and Establish Implementation Working Group

- promote involvement of multiple agencies/ organizations in working group to facilitate communication regarding project ideas and potential funding sources (e.g., schools with needs for volunteer projects, U.S. Army Corps of Engineers in-lieu mitigation funds, etc.)
- encourage community/ school groups, residents, and local businesses to participate in the Utah “Adopt a Waterbody” program
- encourage community members to participate in citizen water quality monitoring in coordination with the Utah Department of Environmental Quality’s statewide Monitoring Council
- establish organizational structure to guide implementation of riparian corridor improvement efforts



- partner with the existing Friends of City Creek Canyon group to support and expand their ongoing Memory Grove trash cleanup and volunteer weed pull efforts

### Goal: Increase Public Awareness

- stencil storm drain inlets using lettering that includes stream names (e.g., “Do not dump: drains to City Creek”); coordinate this effort with the established Salt Lake County Stormwater Coalition

- prepare informational insert to distribute in utility bills; insert should include a map of stream corridors and public access points and information on riparian corridor functions and the RCS process
- conduct a riparian corridor-focused activity during the City’s established annual “Water Week” event

### Goal: Manage and Reduce Impervious Surfaces

- protect existing undeveloped lower subwatershed areas through pursuit of open space and conservation easement acquisitions and/or appropriate re-zoning efforts
- promote/require use of progressive long-term stormwater BMPs that reduce the hydrologic impacts of new developments; coordinate this effort with the Salt Lake City Division of Sustainability and Environment
- coordinate and partner with existing organizations involved with storm water management
- work with internal City management and maintenance entities (roads, parks, watershed, water treatment divisions) to ensure progressive storm water BMPs are followed

### Goal: Improve Riparian Corridor Aesthetics

- promote volunteer stream cleanups





- remove over-sized trash items from publicly owned riparian corridor areas
- ensure continued internal compliance with BMPs to reduce transfer of weed seeds such as washing tires/treads when vehicles and equipment are moved between areas; encourage use of similar practices by Salt Lake County and the Utah Department of Transportation
- promote invasive plant removal by targeting and publicizing one high-priority species per year
- ensure funding and labor will be available for multi-year follow-up treatments and long-term maintenance/monitoring of revegetated areas
- initiate invasive plant removal/control efforts beginning upstream and working downstream, utilizing an integrated weed control strategy

**Goal: Improve Riparian Habitat through Control of Invasive Plant Species and Restoration of Native Plant Communities**



**Goal: Improve Riparian Functions through Improvements to Storm Drain and Stream Crossing Infrastructure**

- budget for and implement identified improvements at stream crossings and streambed hardening structures
- budget for and implement identified storm drain outfall improvement projects

The City Creek riparian corridor currently provides a wealth of riparian functions and community benefits. Many opportunities exist to enhance these functions and benefits. With dedication on the part of all stakeholders, the vision for the corridor can be achieved.