

Blueprint Jordan River

Acknowledgements



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- The Fieldstone Foundation
- Utah County
- Utah Department of Transportation
- West Valley City

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I. Background and Natural History

Background

Blueprint Jordan River is essentially a public vision for the Jordan River corridor's future. Key community leaders worked for several years to organize and obtain the resources to initiate this process. Salt Lake County was the central player in this effort, while mayors and staff from the 15 cities and 3 counties through which the Jordan River flows contributed political and financial support to get the Blueprint underway. Numerous studies have been completed in the past, outlining environmental opportunities, measuring water quality and other river profile indicators, identifying recreational needs and much more. Many of these studies are still valid and their recommendations were useful throughout the Blueprint process. A main objective of the Blueprint Jordan River process was to review the existing studies and incorporate those ideas which are most valid for future development and restoration of the Jordan River corridor. In addition to past planning efforts and studies, Salt Lake County completed three other studies in tandem with the Blueprint process, which informed our efforts:

- The Jordan River Trail Master Plan
- The Water Quality Stewardship Plan
- The Open Space Acquisition Plan

The Blueprint is not meant to serve as a clearinghouse for scientific studies, nor is it meant as a comprehensive guide to all Jordan River issues. In fact, it recommends an in-depth study of the river's ecosystem to better inform future management of the corridor. Rather than a system-wide inventory of ecological assets and management recommendations, the Blueprint was designed as a public visioning effort to capture the collective imagination of residents to build an appreciation for the important environmental, social and economic role the river has played and can play in our region. The Blueprint conveys the "Big Ideas" that are possible and lays out a framework for how those may be implemented over the coming decades. No small ideas were included, only the bold and ambitious.

Some of those "Big Ideas" include:

- A 50-plus mile, unobstructed "blue-green" trail from the Utah Lake to the Great Salt Lake for boaters, cyclists, pedestrians and wildlife enthusiasts
- A 7,300-acre linear nature preserve with premier wildlife viewing tours
- A return to a more historic river corridor with meanders, wetlands, improved water quality and water flow, and rich biodiversity
- Regional transportation access to the corridor, including east-west connecting trails and several new TRAX and frontrunner stops that bring recreational users to the trail for day-long excursions
- Several new "river centers" with recreational-support facilities and dining opportunities in previously industrial areas



The possibilities really are endless, but we must start somewhere. All good things begin with a vision of what may come and the Blueprint is the impetus for accomplishing what some consider impossible -- transforming the Jordan River into a one-of-a-kind quality-of-life amenity for the region's citizens for generations to come.

Natural History

CONTEXT

The Jordan River flows over 50 miles from Utah Lake north to the Great Salt Lake wetlands. The water in the Jordan River comes from its headwaters at Utah Lake and the many springs and mountain tributaries that feed the river throughout the corridor. The river flows through three counties -- Utah, Salt Lake and Davis -- and 15 cities, all of which have had different uses and visions for the river.

The Jordan River is centrally located between the Wasatch and Oquirrh Mountain Ranges, whose mountain streams and creeks feed the Jordan River. For any improvements to water quality and flow to be successful, these tributaries need to be taken into account and managed so that waters feeding the Jordan River will not be impaired.

What was once a meandering wildlife corridor, rich with biodiversity and a source of food and materials for Native Americans and early settlers, has been compromised. Population growth has led to numerous demands on the Jordan River. These demands have caused the degradation of the natural environment. In many places the river has been channelized and straightened. Land uses near the river have displaced numerous wetlands and the native vegetation necessary to support a healthy river system, in turn diminishing regional quality of life.

HISTORY

Approximately 16,000 years ago, the Salt Lake Valley and much of Utah was covered by the ancient Lake Bonneville. As Lake Bonneville water levels receded, Utah Lake and the Great Salt Lake remained behind as remnants. The Jordan River emerged by winding through old unconsolidated Lake Bonneville sediments traveling toward the Great Salt Lake. Eventually, the Jordan River established a riparian habitat complete with oxbows, wetlands, ponds and abundant wildlife.

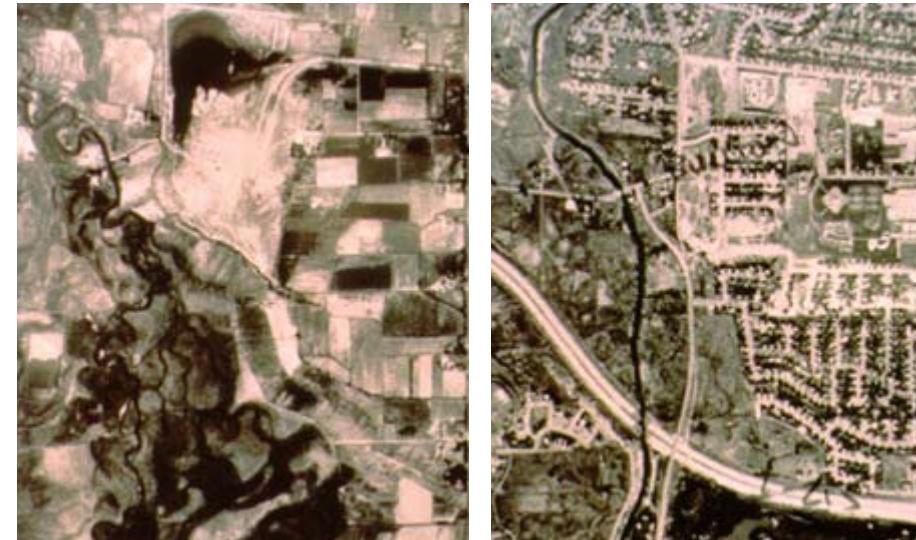
Historically, the Jordan River was a meandering stream that crossed a wide floodplain. This floodplain provided approximately 12,500 acres of wetland habitat for wildlife and fish. Willow trees dominated the landscape and provided nesting, resting and feeding for a variety of birds. This type of lowland riparian environment is of critical importance and has been identified by the Utah Division of Wildlife

Resources as the single most important habitat type in the State of Utah for birds.

In 1847, settlers entered the Salt Lake Valley. Since then, the Jordan River has been degraded by human impacts. Dredging and straightening have deepened and narrowed the river channel, reducing the historic floodplain. Developments have encroached into areas that once were prime and diverse habitat. Domestic, industrial and agricultural discharges have polluted the river. Recent years have brought a new public appreciation for the river's value, inspiring restoration efforts. Today, we must accelerate those efforts and create a beautiful, vibrant and sustainable river corridor which will further distinguish Utah as a world-class destination for outdoor activity.

SOURCES

The Jordan River Natural Areas Forum 2003 Strategic Plan.
The Jordan River Natural Conservation Corridor Report (2001)



THE JORDAN RIVER CORRIDOR IN MURRAY IN 1937 (LEFT) AND IN 1990 (RIGHT)

II. Public Process

Public involvement was a critical component to the Blueprint Jordan River visioning process. Interested citizens, who outlined their vision for the Jordan River corridor, joined in a shared mission with technical planning staff, steering committee members and policy makers. It is imperative that the public “buy-in” to the Blueprint Jordan River Vision, and that the project’s sponsors know the community’s values to create a corridor that meets community needs and has the political support necessary for implementation. Public involvement is important so that the planners can narrow the field of alternatives. In addition, through the process the public comes to understand the tradeoffs and compromises inherent in project development, so many sectors of the community are satisfied with the project outcome. Most importantly, the public is an endless source of passion and creative ideas that lead to the best ultimate solutions. Envision Utah, a non-profit, non-partisan entity with extensive experience in grassroots planning, facilitated the Blueprint public process, leading committee meetings, running workshops, analyzing input and survey results and, ultimately, drafting the Blueprint Report.

Steering Committee

A Steering Committee composed of planners, state legislators, county commissioners, community development directors, leaders from private, non-profit, and governmental organizations, and other community leaders from Davis, Salt Lake, and Utah Counties guided the Blueprint Jordan River process. The Committee represented 16 different cities and environmental, recreational, economic development, transportation, and other interests relating to the Jordan River and its trails.

Workshops and Online Surveys

Between May and June, 2008, 258 people participated in six workshops, 150 in several focus groups, and 880 in an online survey. An additional 800 people participated in four open houses and a web survey in September 2008. These outlets allowed participants to voice their preferences for river and trail vision scenarios, future economic development opportunities, recreational possibilities, and environmental restoration.

At each workshop, participants completed the survey using key pads that displayed real-time results on a screen. Participants were randomly assigned to tables with maps of relevant sections of the river. Each participant identified preferred areas of nature preservation, along with areas for regional activity center development, recreation and trail improvement, and civic and educational expansion.



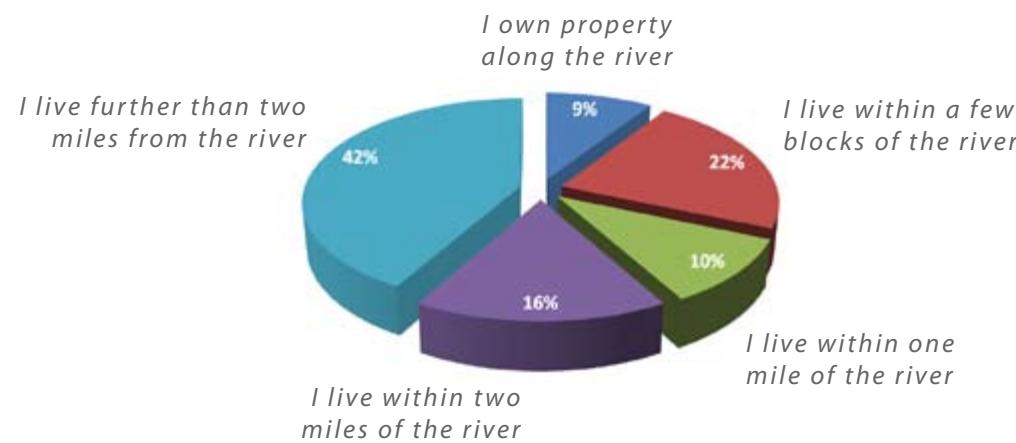
CITIZENS AND COMMUNITY LEADERS PARTICIPATE
IN A SALT LAKE CITY WORKSHOP

The Blueprint Jordan River website featured the workshop surveys, in both English and Spanish, for visitors to complete outside of the formal workshops. The survey was also administered to focus groups with different areas of interest, including transportation, economic development, and landowner issues. We found a shared vision among focus groups, workshop attendees, and online participants.

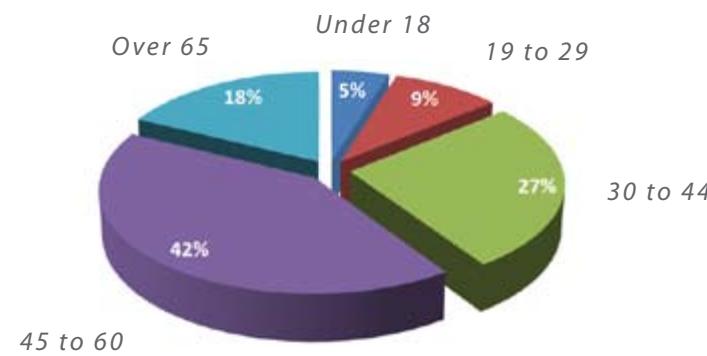
Survey Analysis

The Blueprint Jordan River survey captured public preference and vision for how the river should be used. The following results are categorized by question type. Survey participants were most likely to be Caucasian, between 45 and 60 years old, residents of their community for more than 20 years, living further than two miles from the river, and using the river a few times per year or less. Eight percent of participants identified themselves as Hispanic/Latino, reflecting our targeted effort to reach out to this constituency.

Proximity of Residence to Jordan River



Age of Survey Participants



Nature and the Environment

Survey participants were very clear about the importance of natural habitat and environmental protection along the river corridor. Residents identified river and wildlife habitat as the two most important components of the river corridor. Habitat preservation, restoration, and other components of wildlife-compatibility, including river crossings and wildlife viewing facilities, were all seen as important components of the Jordan River.

When asked to define a vision for the river, residents touted a future green corridor. In support of this vision, participants were most concerned about the quality of the water and health of the river system, and preferred large buffers between the river and development along the entire river and its tributaries. Participants even identified a preserved natural corridor as the best long-term economic use of the river.

WHAT DO YOU THINK? i

Jordan River Utilization for Long-Term Economic Development

Preserve as Natural Area



Provide More Shopping



3%

Promote Tourism & Recreation



19%

Encourage Job Growth



5%

Other



7%

Vision Scenarios for the Jordan River



Recreation

Survey participants focused on recreational uses of the river and its trail. Participants identified multi-use trails -- including facilities for pedestrians, bikes, equestrian uses, and non-motorized watercraft -- as the most important recreational activities that the river corridor should support. Respondents pointedly discouraged allowing motorized vehicles on the river trails and promoted better accommodations for bikes and pedestrians. One specific accommodation mentioned was using trailheads and perpendicular trails to draw people to the river and better connect it with nearby neighborhoods and commercial developments. Another accommodation focused on increasing the safety of using the trail through increased patrolling, though a majority of participants reported feeling safe using the river and its facilities.

Important Recreational Activities

Trails

43%



Wildlife Viewing Areas

34%



Canoeing & Kayaking

9%



Parks

6%



Fishing

5%



Golf Courses

2%

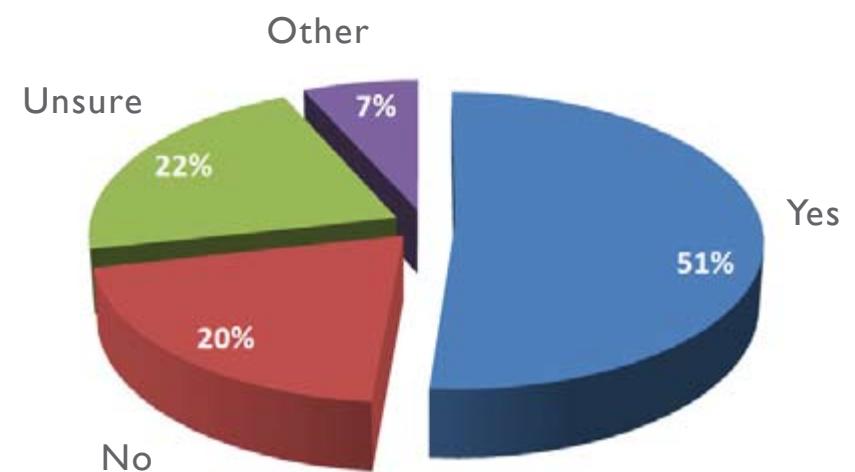


Sports Fields

1%



Do You Feel Safe Using the Jordan River Parkway?



PARTICIPANTS DISCUSS THE JORDAN RIVER VISION

Map Analysis

During the workshops, 258 participants produced 39 maps consisting of almost 600 drawn symbols and written notes. Envision Utah staff counted and considered each notation. The most indicated items among all of the maps were areas outlined for nature preservation. Participants placed nature preserve symbols on almost every region along the river. Nature preserves were found on 35 of the 39 maps and comprised 32% of all mapped items. Wildlife viewing areas (18 of 39 maps, 6% of mapped items) and nature centers (15 of 39 maps, 5% of mapped items) were also prevalent among the maps.

Participants stated strong support for recreational activities. Boat launch symbols, represented on 19 of the 39 maps, were drawn in strategic places along the entire river corridor. Participants also recommended trail completion and connections. Twenty-three maps contained references to connecting either specific portions of the Jordan River Parkway or making a concerted effort to complete a continuous trail from Utah Lake to the Great Salt Lake. Many references were also made to connecting other regional trails to the parkway. Nine percent of all mapped items were related to trail recreation. Only 7 of the 39 maps mentioned trail crime and safety as significant concerns.

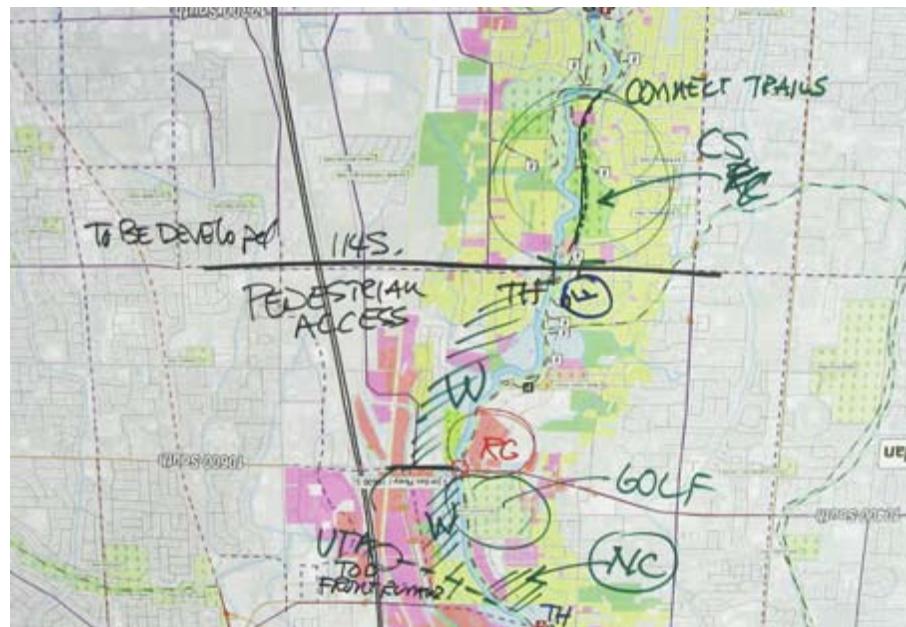
Regional activity centers, or areas of economic activity relating to river recreation and tourism, was a third area of prominence. Regional activity centers were often indicated at major roads that intersect the river and on sites along the river that have potential for redevelopment. Activity centers were outlined on 27 maps and encompassed 10% of all mapped items.



MANY CITIES ALONG THE CORRIDOR PARTICIPATED IN WORKSHOPS



DISCUSSION BRINGS THE GROUP TO A CONSENSUS



WORKSHOP MAPS SERVE AS THE BASIS FOR THE BLUEPRINT

Vision Statement for the Jordan River Corridor

The Jordan River Corridor will become recognized as a valued regional amenity that brings people together and links them with the natural world, providing unique and memorable experiences for residents and visitors alike. With the Jordan River as its heart, this 50-mile-long greenway will connect the freshwater Utah Lake with the marshlands and saline waters of the vast and scenic Great Salt Lake.

Meandering through the center of the highly urbanized Salt Lake Valley, the Jordan River corridor will be a continuous system of natural areas, recreation and nature trails, and parks, providing a wealth of opportunities for people to experience and learn about the natural world and enjoy the outdoors. With its rich complex of riparian, wetland, and upland habitats, the greenway will provide an abundance of important and diverse habitats supporting a wide variety of wildlife. Through protection, enhancement, and restoration of its diverse habitats, the greenway will function as an important migration corridor for wildlife and provide unique opportunities for people to view, study, and enjoy wildlife in an urban area.

Rundown industrial areas will be reborn into welcoming river centers where residents can enjoy a meal overlooking the river, take a rejuvenating walk during the lunch hour or rent recreational equipment. These “centers” will become places for community gathering and neighborhood renewal.

Through extensive surveys, workshops and open houses, the public has expressed a strong desire to preserve the remaining undeveloped areas along the Jordan River and rehabilitate the river’s natural functions. Residents support a healthier and more natural river system that provides diverse, high-quality habitat for native plants and animals and places for people to view wildlife, learn about nature, recreate, gather for community activities and events, and contemplate the beauty and wonder of this amazing and unique resource.

For the Jordan River vision to become a reality, local, state, and federal government partners, with the help of community members and organizations, must cooperate to integrate stormwater management, flood control, water quality improvements, habitat restoration, and appropriate recreation amenities into a comprehensive package of best management practices. The public envisions this lake-to-lake greenway as a system of wildlife areas, parks, and trails for biking, boating, jogging, strolling, and learning. Capitalizing on this shared vision, the Jordan River corridor will be treasured as a very special place that greatly enhances our shared quality of life for generations to come.



NATURAL FEATURES COMPRIZE THE CORE OF THE VISION

Common Themes

Envision Utah staff analyzed maps and survey data to identify common themes. The following themes give a clear picture of the priorities and preferences of workshop and survey participants.

Environment

In both the mapping exercises and the surveys, participants identified environmental and natural components of the river as very significant issues. Nature preserves and wildlife areas dominated the maps, while wildlife-compatibility and ecosystem health and preservation were quite prominent in the survey results. Based on this public priority, environmental and wildlife impacts should be carefully considered when thinking about other aspects of use for the Jordan River.



Environment Research Team:

Ben Bloodworth	Joe Donaldson	Boyd Miller	Ray Wheeler
Adriaan Boogaard	Sage Fitch	Natalie Rees	Ed Woolford
Laura Briefer	Kim Hersey	Emy Storheim	Scott Zeidler
Marcy DeMillion	Eric McCulley	Lorna Vogt	

Visual Simulation I: Nature Preserves



UNDEVELOPED RIVER CORRIDOR....

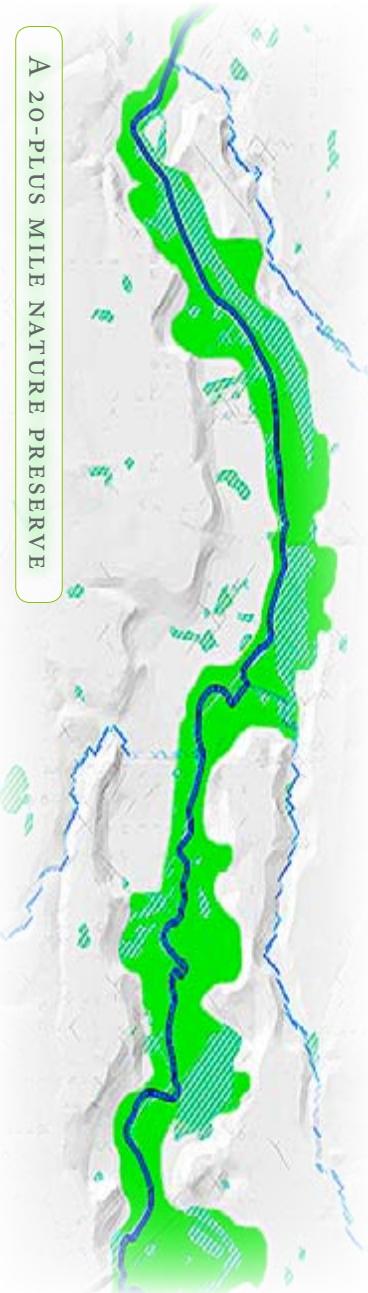
BEFORE



.... BECOMES A NATURE PRESERVE

AFTER

A 20-PLUS MILE NATURE PRESERVE





MULTI-USE REGIONAL TRAIL SYSTEM

Visual Simulation 2: Recreational Amenities



AN UNDERUTILIZED SECTION OF THE RIVER



.... BECOMES A DESTINATION FOR KAYAKERS

AFTER

Recreation

Another common public theme was a preference for recreational activities. The maps featured boat launches, trail connections, and other references that promoted developing the river corridor for pedestrians, bikers, equestrians, and aquatic recreation. The survey results also showed a significant preference for developing a multi-use trail along the corridor, connected with the rest of the region through a network of trails. There was also agreement that the public feels safe using the river and trail.

Recreation Research Team:

Dan Bergenthal

Dan Fazzini

Margie Gendler

Roch Horton

Lynn Larson

Scott Peters

Tammy Robinson

Susie Schoer

Bronson Tatton

Jennifer Wiglama

Sonia Witte



Equestrian



Kayak



Rowing



Hiking

Building Community

Finally, the maps and the survey results bring to light the public's vision of utilizing the river's natural assets as a regional quality-of-life amenity. Participants felt that preserving the river corridor would best support long-term community and economic development.

Residents strongly supported regional activity centers along the river that take advantage of natural resource and wildlife appreciation and recreational opportunities to increase the area's economic base. Economic development may be the by-product of environmental preservation and support of recreational activities, key areas of focus for the Jordan River's future.

Building Community Research Team:

Erick Allen	Jared Gerber	Chris Liechty	Keith Snarr
Dan Boles	Chris Gilbert	Doug Meldrum	Tham Soekotjo
Tom Burdett	John Hilke	Jim McNulty	Sue Stahle
Bob Farrington	Christie Hutchings	Steve Pastorik	Brian Tucker
Mike Florence	Ralph Lee	Brian Preece	

Visual Simulation 3: Urban Renewal



A DEGRADED STRETCH OF THE RIVER

BEFORE



.... BECOMES A REVEGETATED, MIXED-USE DEVELOPMENT WITH TRANSPORTATION ENHANCEMENTS

AFTER



REDEVELOPMENT NODES

The Vision

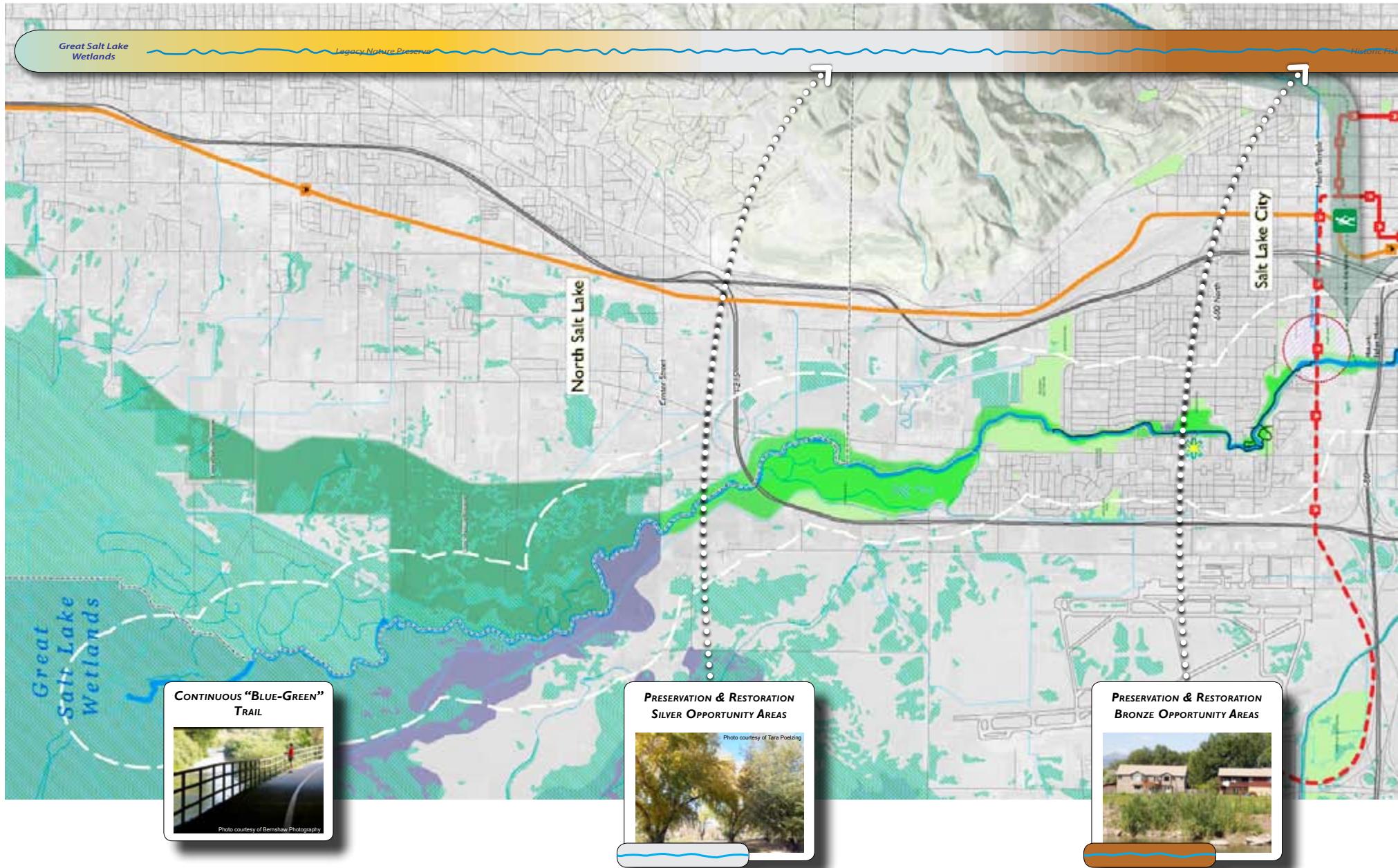
Northern Section

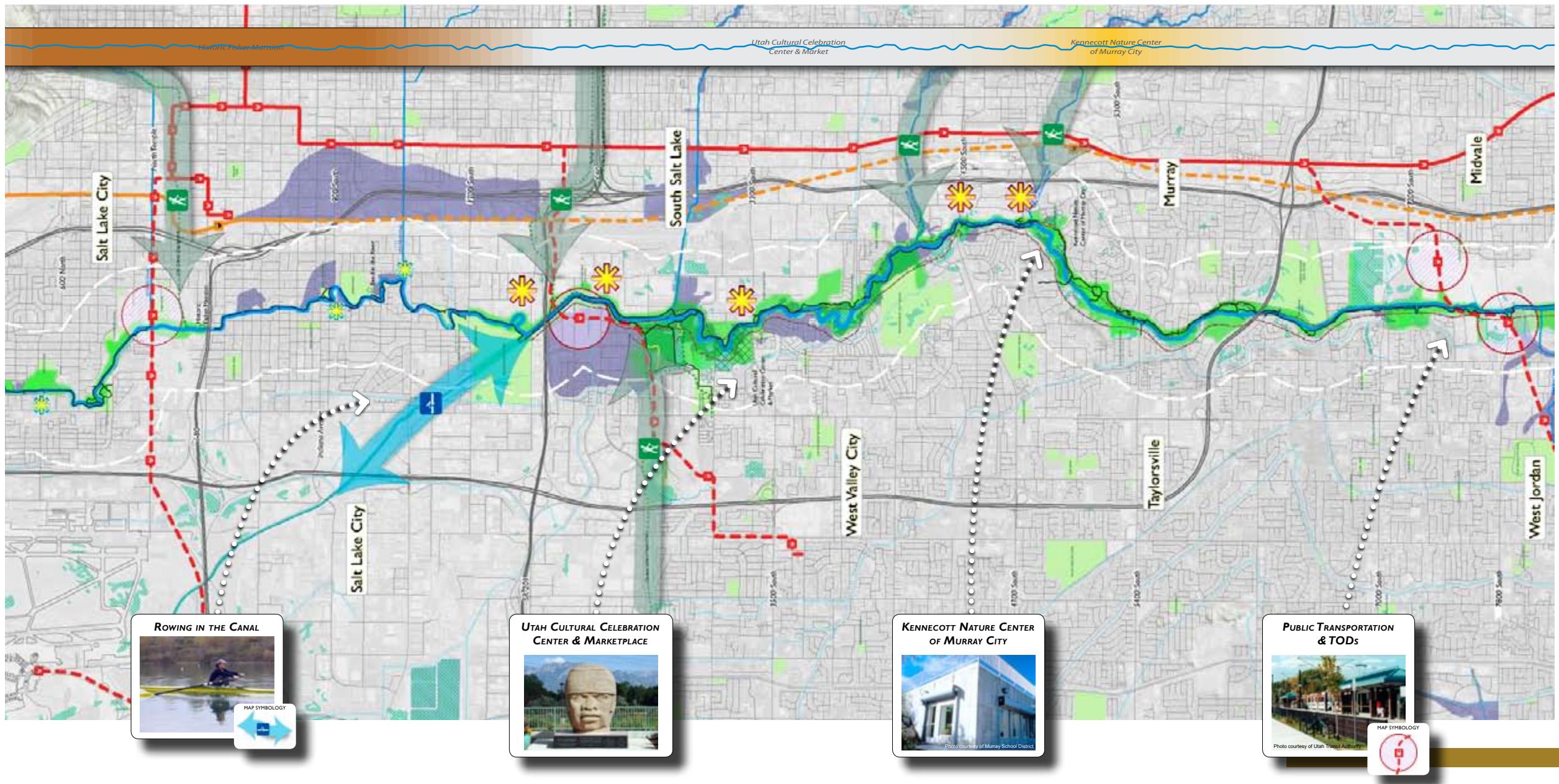
LEGEND

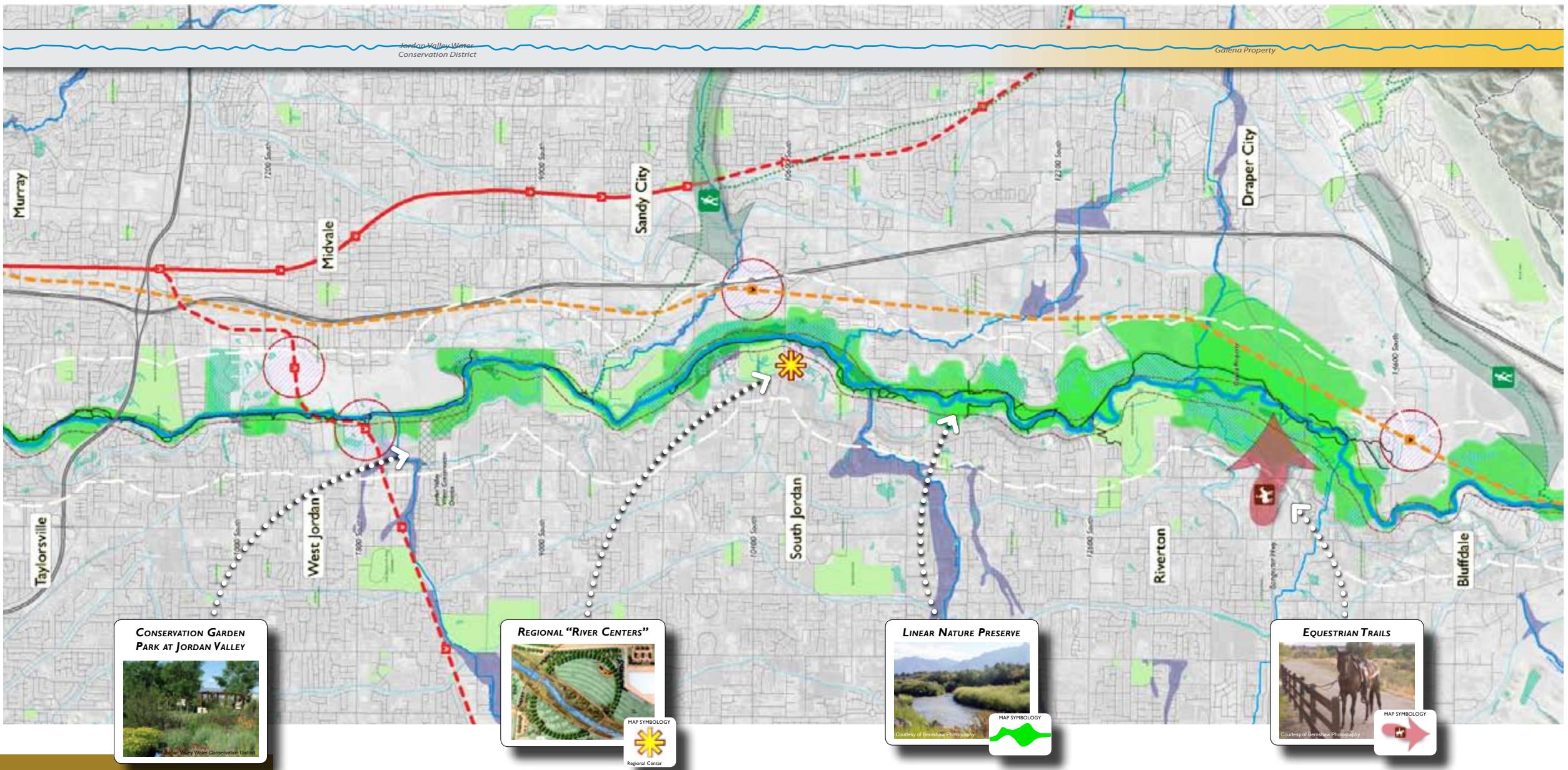
- Jordan River
- Major Stream
- Minor Stream
- Meander Corridor (Historical)
- Canal
- Regional Trails (Existing and Proposed)
- Lakes
- Wetlands (Existing & Historical)
- Floodplains (100 Year)
- TRAX Station (Existing & Proposed)
- FrontRunner Station (Existing & Proposed)
- TRAX (Existing)
- TRAX (Proposed)
- FrontRunner (Existing)
- FrontRunner (Proposed)
- Street/Highway
- Interstate

SCALE

1" = 1 Mile



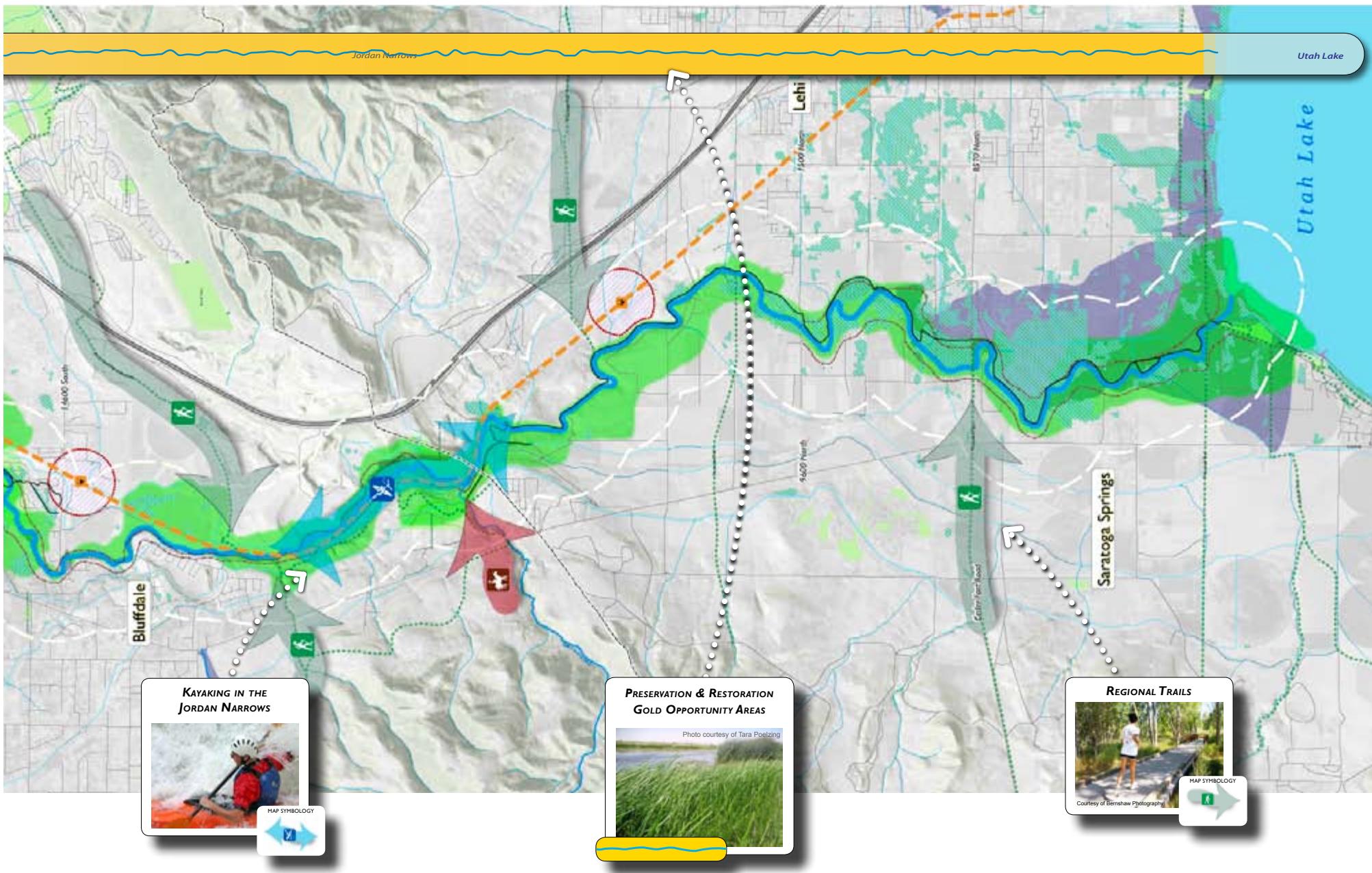




13 Blueprint Jordan River

The Vision

Southern Section



LEGEND

- Jordan River
- Major Stream
- Minor Stream
- - - Meander Corridor (Historical)
- Canal
- Regional Trails (Existing and Proposed)
- Lakes
- Wetlands (Existing & Historical)
- Floodplains (100 Year)
- TRAX Station (Existing & Proposed)
- FrontRunner Station (Existing & Proposed)
- TRAX (Existing)
- TRAX (Proposed)
- FrontRunner (Existing)
- FrontRunner (Proposed)
- Street/Highway
- Interstate

SCALE

1" = 1 Mile



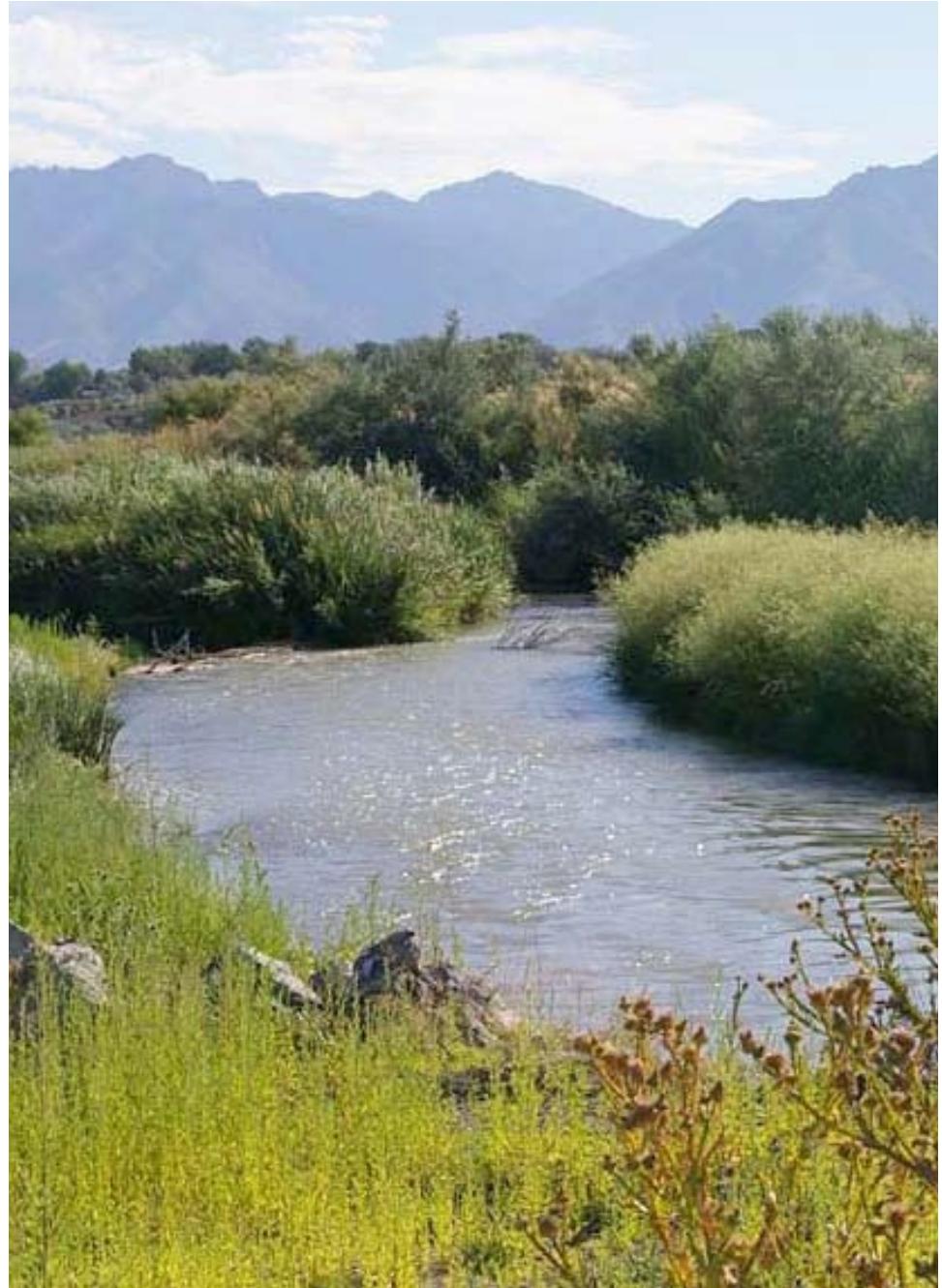
Vision Principles



V.2 Guiding Principles

The **Guiding Principles** are a set of ten statements that encapsulate the Blueprint Jordan River Vision:

1. Preserve and rehabilitate natural river features and functions to the greatest extent possible
2. Establish buffers between the river and the built environment
3. Restore riparian and in-stream habitats
4. Replace structural water conveyance devices with alternatives that allow for flood management plus improvements for water quality, recreation, and habitat
5. Reduce the use of hardscapes and impermeable surfaces in and near the corridor
6. Manage stormwater on site
7. Balance needs for development, recreation, and public access with river protection
8. Incorporate the river's natural and cultural history into designs for riverfront features, public art, education, and signage
9. Apply design standards for complementary development and redevelopment in the corridor to support increased visibility and recreational use of the river
10. Encourage regional transportation planning to connect communities to the river corridor, emphasizing non-automobile travel

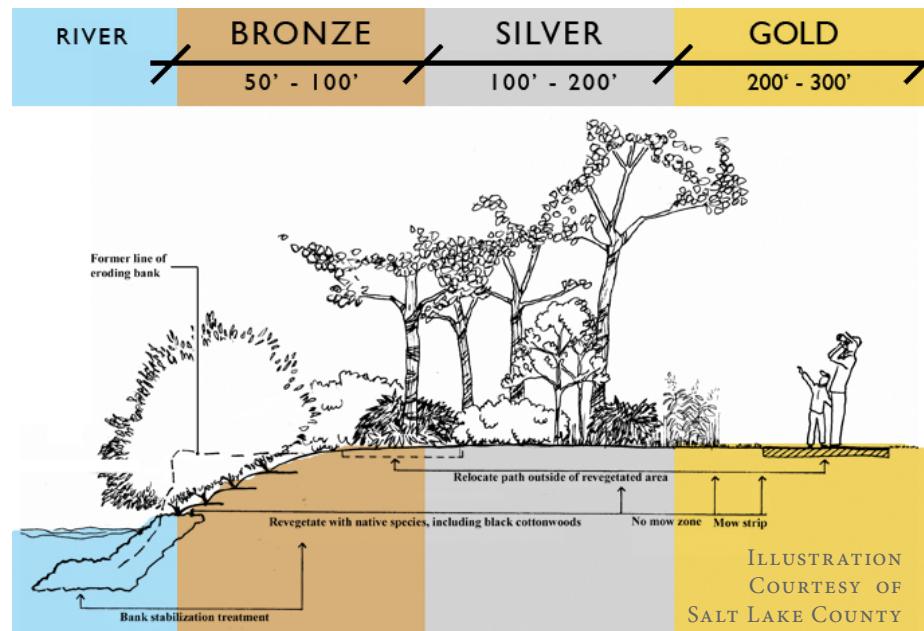


THE BLUEPRINT ALLOWS FLEXIBLE IMPLEMENTATION

THE JORDAN RIVER NATURAL CORRIDOR

The centerpiece of the Blueprint is the Jordan River natural corridor, a linear nature preserve stretching over 20 miles and encompassing thousands of acres of open space and natural area parks. Connecting Utah Lake to the Great Salt Lake, the greenway will feature unique and varied environmental opportunities along its entire length. This linear preserve would represent a monumental achievement and be a natural wonder that would rival the Wasatch Mountains in drawing people for recreation, relaxation, and enjoyment of Utah's natural beauty. The Blueprint recommends a flexible framework for environmental policies that take those varying conditions into account.

Building on the 2002 Salt Lake City Winter Olympics, lands within the greenway are classified into three general levels of environmental opportunity: Gold, Silver, and Bronze. Lands classified as Gold have the greatest potential for providing high quality habitat and valuable opportunities for ecological restoration. Each category has an associated list of species which either currently inhabit or could soon inhabit the river corridor in a given area, and a set of policy recommendations to ensure the stability and enhancement of each.



AN ILLUSTRATION OF THE BLUEPRINT'S THREE LEVELS OF ENVIRONMENTAL OPPORTUNITY



Levels of Environmental Opportunity (as shown in vision maps)

TERMINOLOGY

"Best Management Practices"

Development "Best Management Practices" (BMPs): For development near the River, including transportation and utility infrastructure, design standards (or BMPs) can mitigate the impact of hardscapes and buildings on water quality and natural aesthetics. Reducing stormwater runoff into the river or other sensitive water bodies is the main purpose of most BMPs. BMP techniques include: permeable pavements, bioengineered ponds and wetlands, bioswales, oil separators, greenroofs, and rain gardens/planters that capture and process runoff.

CASE STUDY

SALT LAKE COUNTY

CLEAN-UP AND RESTORATION PROJECT

3900 South Jordan River



BEFORE RESTORATION



DURING DEBRIS REMOVAL



AFTER RESTORATION



NATIVE VEGETATION RETURNS

GUIDING PRINCIPLE I:

Preserve and rehabilitate natural river features and functions to the greatest extent possible

RESTORE A MORE NATURAL RIVER FLOW

The Blueprint calls for river flow that more closely resembles a natural flow regime. This means studying and developing a flow management strategy for releases from Utah Lake and diversions to the surplus canal to more closely mimic natural flows while respecting existing water rights. Improving river flow brings more opportunities for habitat and recreation and supports water quality goals.

IT'S ALL ONE WATERSHED

The Jordan River's future health relies on proper upstream water management. Stormwater guidelines and erosion controls affect the water quality of every tributary which, in turn, affects water quality of the Jordan River. Improving the water quality of each of the tributaries and managing the confluences where tributaries meet the Jordan is an important part of the vision.

The Jordan River has been altered by dams, stream channelization, and other flood control structures. While fully restoring the ecological functions and features of the Jordan River may, in some locations, be impossible, there are many opportunities to repair or preserve critical areas which would support a more naturally functioning and ecologically diverse river. By planning and implementing the steps outlined below, many sensitive natural river features of the Jordan River can be protected and restored.

Many urban rivers retain or redevelop river banks that are full of ecologically friendly features. Retaining or restoring features such as wetlands and vegetated banks will reduce the negative impacts of the built environment. Poorly planned development near a river can degrade a river's natural processes and fragment wildlife habitat. For example, when impervious surfaces are increased, the amount and velocity of stormwater entering the river enlarges it and erodes the stream banks. This erosion and increase in sedimentation, in turn, disturbs wildlife habitat and the stream's natural functions.

The following approaches will help rehabilitate and preserve natural river features and functions:

- I.1 Remove or partially remove floodwalls, rip rap, and other concrete structures wherever possible. These hard surfaces do not allow the natural meander of the stream or the natural filtration that organic materials provide.
- I.2 Regrade river banks to more natural and functional slopes. A more natural slope helps to absorb and slow run-off before it reaches the river. This provides for natural filtration and helps to reduce the sedimentation that would otherwise occur in the river.
- I.3 Create a more naturally meandering stream alignment. A meandering stream bed slows the river and creates habitat that supports a healthier ecosystem.
- I.4 Create and maintain wetlands. Wetlands provide flood water storage and habitat and filter water returning to the water table
- I.5 Stabilize stream banks. Plant material, carefully designed and limited rock toe protection, and rootwad revetment can be used to stabilize the stream banks, which, in turn, reduces the sediment that washes into the river.
- I.6 Reestablish floodplains. Floodplains provide for flood water storage (protecting downstream property), are prime areas for wildlife habitat and urban forests, and accommodate recreational greenways.
- I.7 Control the river grade with a step-pool grade control system. A step-pool control grade system allows the grade of the river bed to be controlled through a series of drops and pools that help slow erosion plus provide water aeration.
- I.8 Control the type of plants that grow in the river corridor through vegetation management. Removing exotic and invasive species and planting native and adapted species provides habitat, promotes healthy stream function, and beautifies the corridor.

GUIDING PRINCIPLE 2: Establish buffers between the river and the built environment

BUFFERS MATTER

Buffer recommendations accompany each of the environmental opportunity areas: Gold, Silver, and Bronze. Gold opportunity areas enable humans to observe river systems and wildlife from a distance. Trails are well off the river, with a 300-foot buffer enabling environmental systems to develop and thrive without the stress of human encroachment.

In silver areas, the buffer may ebb and flow, ranging from 100-200 feet, depending on the environmental characteristics or opportunities present, as well as the history of human land use along the river. The trail may move in and out along the river, sensitive to environmental and developmental constraints and opportunities.

Bronze areas are heavily influenced by residential growth along the river, but they would be well served by creating buffers that stabilize the stream bed and banks, provide layback areas, and support native vegetation.

The Blueprint identifies buffers as Gold, Silver or Bronze:

- Gold represents a 300-foot buffer. A 300-foot buffer on each side of the river is compatible with wildlife habitat.
- Silver represents a 100 to 200-foot buffer. A 100 to 200-foot buffer on each side of the river filters pollutants that otherwise would flow into the river. The Silver zone can generally accommodate low-impact human activities, but provides some additional protection for the river.
- Bronze represents a 50 to 100-foot buffer. A 50 to 100-foot buffer on each side of the river provides bank stabilization and erosion control. The first 25 to 50 feet of buffer are generally considered the most important because this streamside zone generally includes a canopy of trees and vegetation that overhang the river. Ideally, the canopy is a mature riparian forest. This zone should always be kept free of development.

Generally, the steeper the slope leading up to the river, the wider the buffer should be because steeper slopes have faster runoff. Wider buffers will slow and control runoff before it erodes land and enters the stream.

These suggested buffers should be maximized in critical areas and may be narrower along river stretches that extend through highly urbanized areas. Planning ordinances will need to outline proper buffer widths for each section of the river, and re-development plans should take into account widening the buffer whenever and wherever possible.

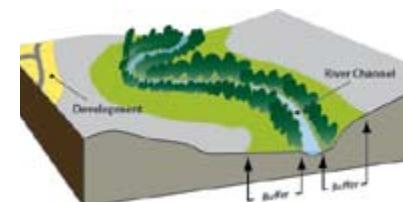


BUFFERS ARE INCONSISTENT ALONG THE RIVER

TERMINOLOGY

“Buffer”

Buffers serve as natural boundaries between local waterways and existing development. They help protect water quality by filtering pollutants, sediment, and nutrients from runoff. Other benefits of buffers include flood control, stream bank stabilization, stream temperature control, and room for lateral movement of the stream channel. Good aquatic buffer ordinances specify the size and management of the stream buffer and are a specific planning tool to protect stream quality and aquatic habitat (Source: EPA 2006).



EXAMPLE OF STREAM BUFFER

TERMINOLOGY

"Mitigation Banking"

Mitigation areas become environmental opportunities. Mitigation sites are locations where developers, cities, and transportation authorities offset damage from construction by improving other areas. Along the river, several projects ranging in size from the 2,225 acre Legacy Nature Preserve to the 35-acre UDOT site at 12300 South present opportunities to rehabilitate degraded river areas turning them into wildlife and recreational oases.



WETLAND RESTORATION IN MIDVALE (OLD SHARON STEEL SITE)

GUIDING PRINCIPLE 3: **Restore riparian and in-stream habitats**

Rehabilitating riparian and in-stream habitats will help establish and maintain healthy water quality and hydrological cycles and improve streamside habitat that leads to expanded recreational opportunities and economic benefits. Restoring habitat will attract wildlife and the recreational enthusiasts who will, in turn, support protecting and managing the river corridor.

An important component of riparian habitat is the urban forest. Forest canopies shade and cool the river and provide habitat particularly for Neotropical songbirds, migrating avian species, and nesting birds. A healthy canopy structure with under and upper story trees supports a remarkable diversity of plant and animal species, and the canopy supports healthier aquatic habitat that is essential both for water quality and for human enjoyment of the river.

PARKS

Many parks exist within the river corridor, and their purposes range from areas specifically designed to support and encourage native habitat to areas that support extensive recreation like golf courses and ball fields. The Blueprint encourages all parks in the corridor to improve management practices where possible to enhance the viability of environmental functions within and along the river.



SNAIL CROSSING PAVED TRAIL



YELLOW-BREASTED CHAT



BOARDWALK AND INTERPRETIVE SIGNS IN RIPARIAN AREA



NATURAL VEGETATION BUFFERS NEAR A PARK OR GOLF COURSE

GUIDING PRINCIPLE 4:

Replace structural water conveyance devices with alternatives that allow for flood management plus improvements for water quality, recreation, and habitat

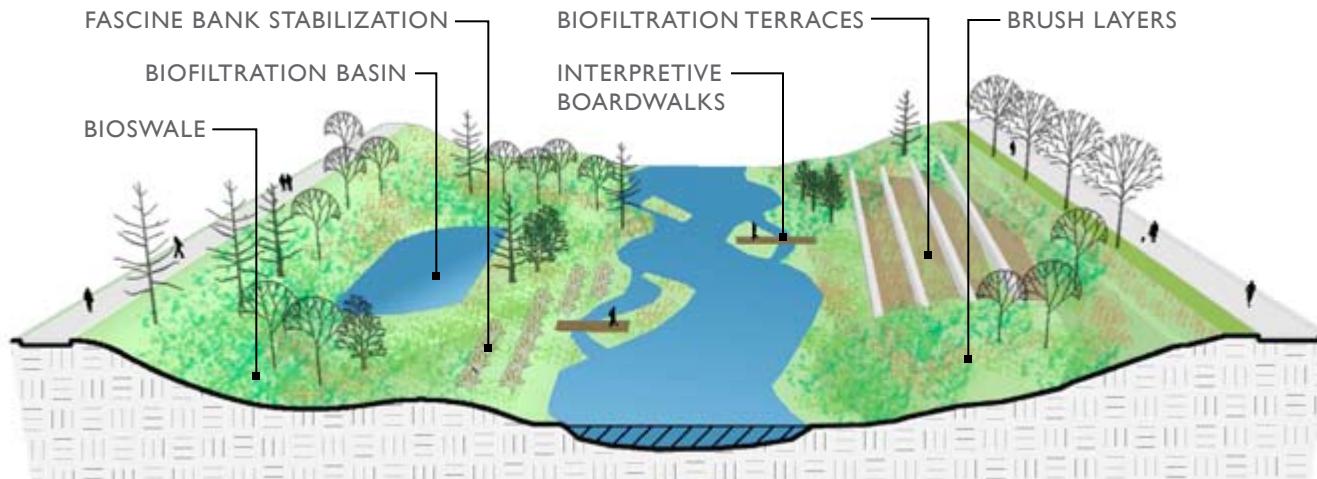
Since the time the Salt Lake Valley was settled, the Jordan River and its tributaries have been diverted, dammed, ditched, and drained. This approach to managing the water resource was intended primarily to control flooding but has resulted in habitat loss and degraded water quality. Throughout the country, many urban river corridors are undergoing a transformation from “hard” engineering solutions to “soft” engineering solutions. Throughout the valley, a variety of non-structural stormwater techniques could be used to reduce, retain, slow down, and filter flood water and stormwater before it reaches the Jordan River.

ENGINEERING A NATURAL RIVER

Cities and counties around the nation are re-engineering rivers that were channelized, straightened, and otherwise controlled

as strictly water conveyance structures. Engineers, biologists, and city planners are incorporating innovative as well as age-old bioengineering techniques to create natural river structures that support healthy function. The river channel can be reconfigured; logs, boulders and other materials can be added to slow or speed up the flow of the river; and ponds can be incorporated to capture flood waters. All restoration projects along the river should use tested ‘best management practices’ to manage flows as well as create better habitat within and alongside the river. Successful use of non-structural bioengineered water management techniques requires the cooperation of an implementation team that includes engineers, planners, landscape architects, and hydrologists to properly implement a management strategy.

Maintenance costs of non-structural water management techniques can also be less expensive than typical hard management techniques. Vegetation such as trees, bushes and grasses mature over time, becoming more stable rather than deteriorating. In the long term this can save communities a significant amount of money.



CONCEPTUAL RIVER CROSS SECTION UTILIZING NATURAL WATER CONVEYANCE TECHNIQUES



ERODING BANK ALONG THE RIVER

Environmental Opportunities

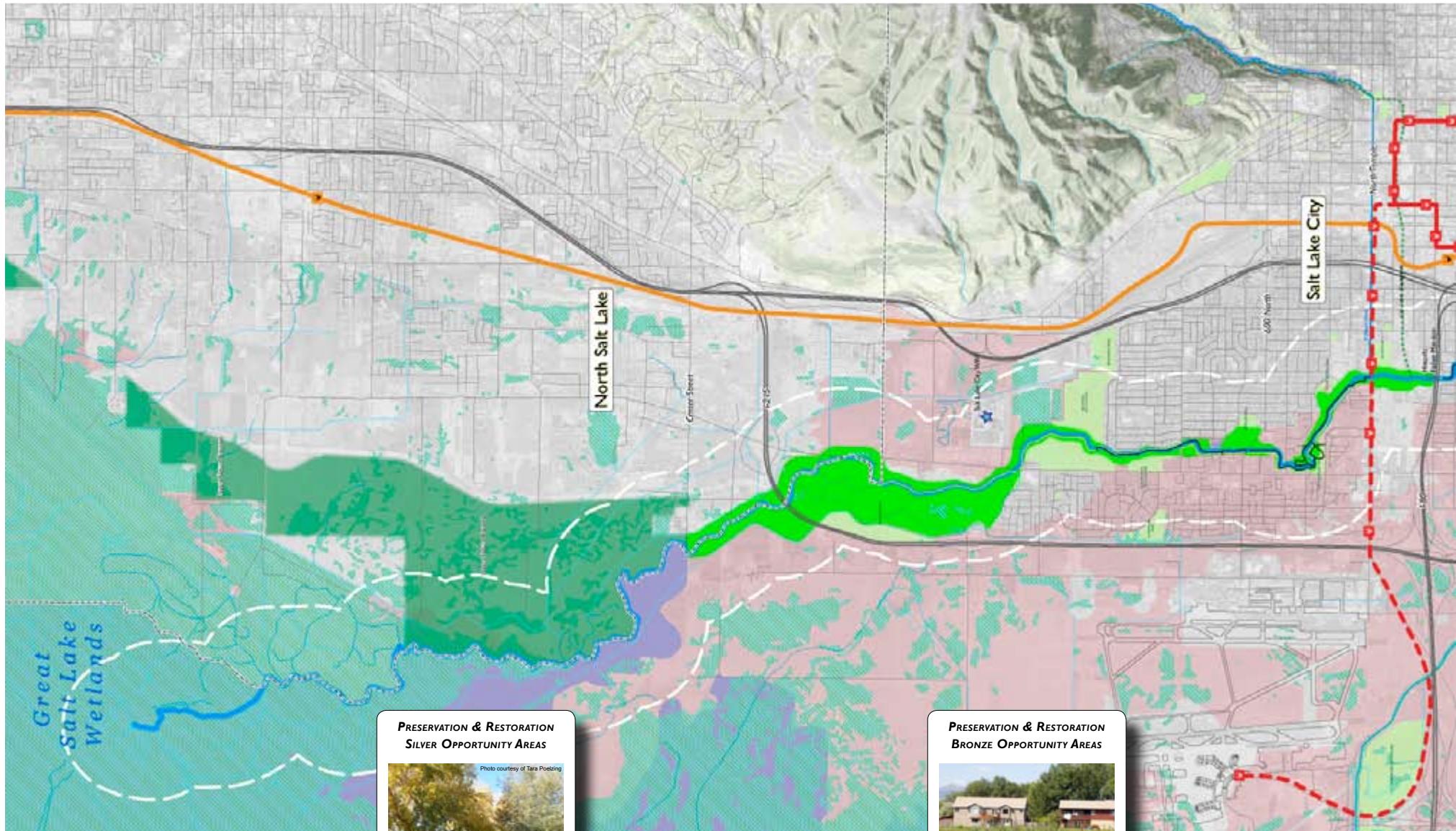
Northern Section

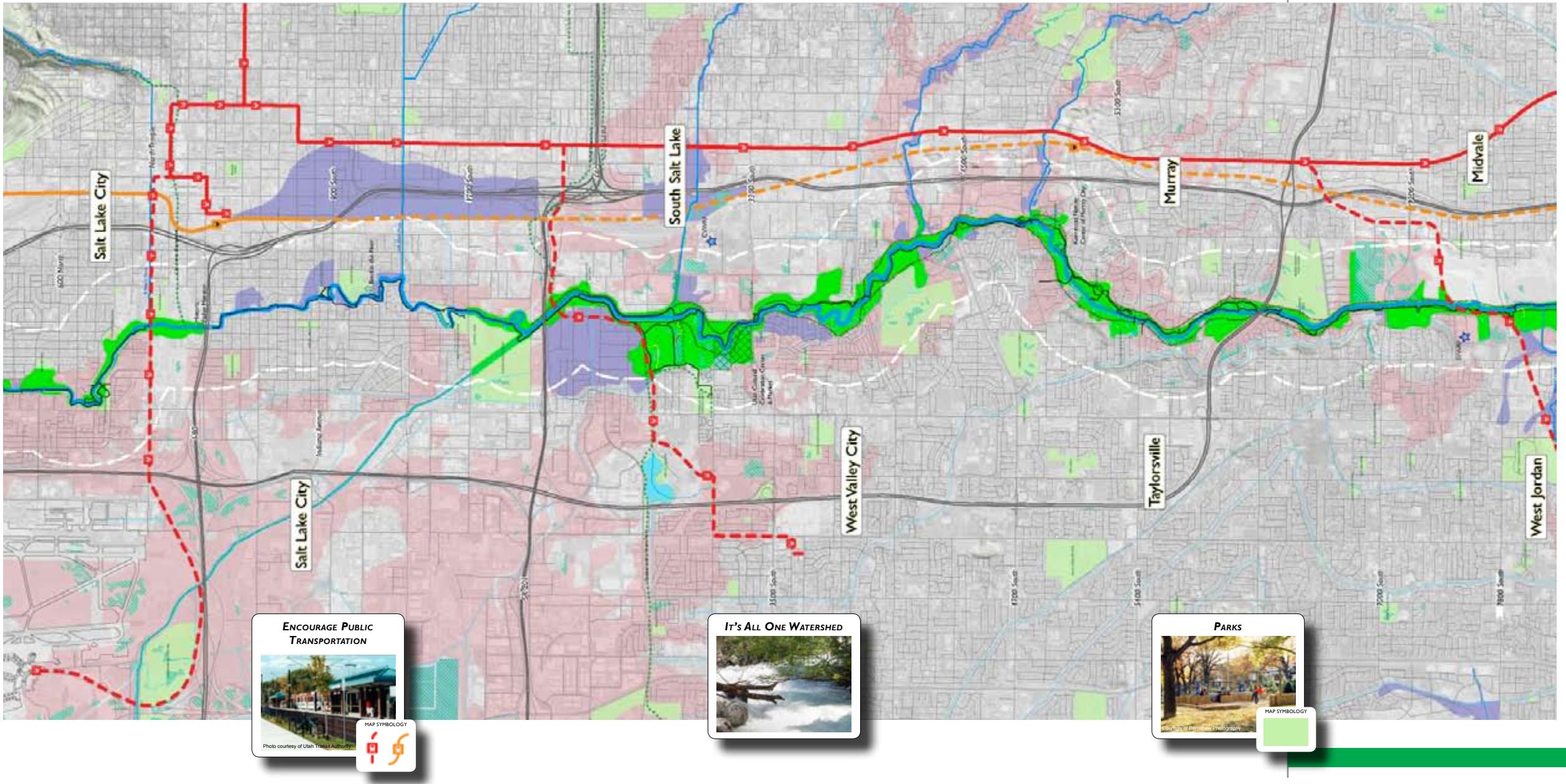
LEGEND

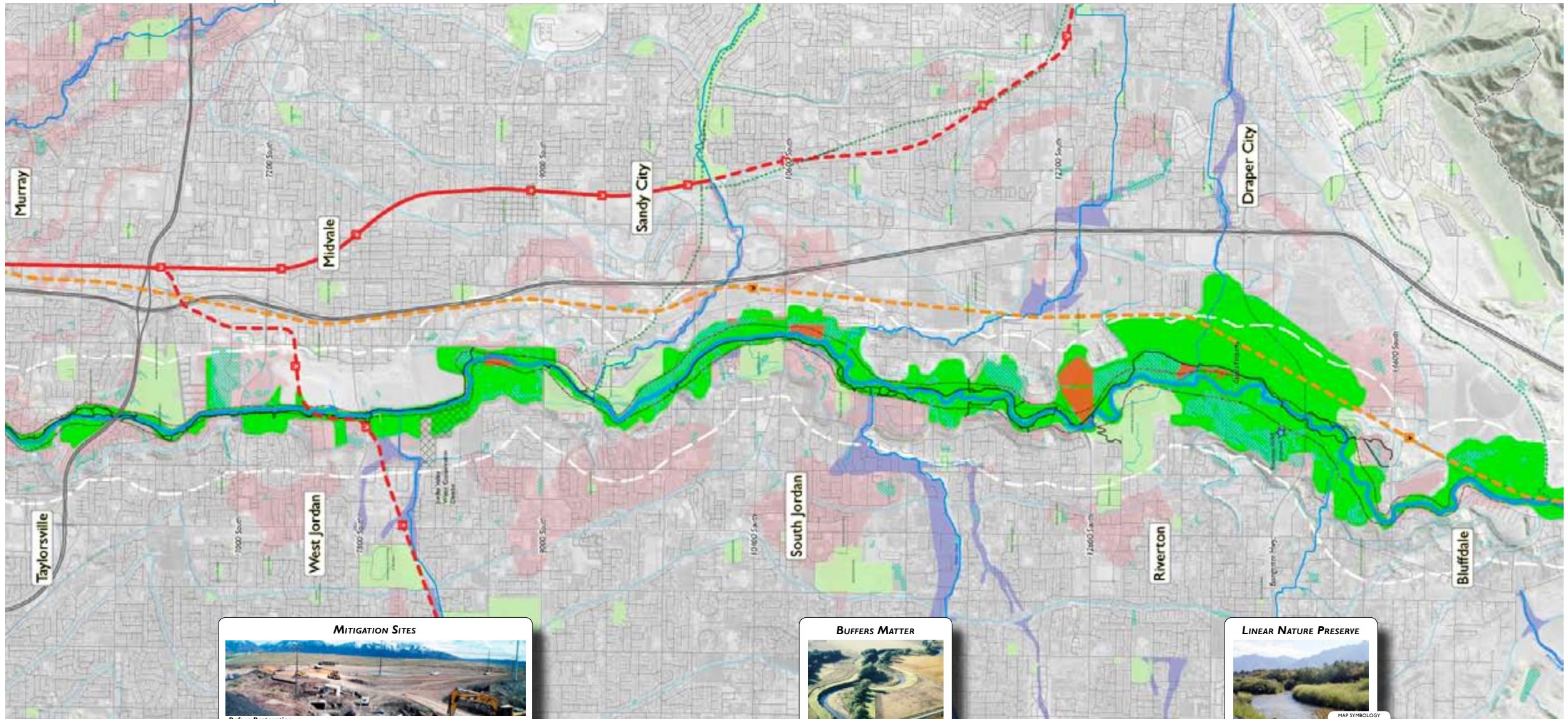
- Jordan River
- Major Stream
- Minor Stream
- - - Meander Corridor (Historical)
- Canal
- Regional Trails (Existing and Proposed)
- Lakes
- Wetlands (Existing & Historical)
- Floodplains (100 Year)
- TRAX Station (Existing & Proposed)
- FrontRunner Station (Existing & Proposed)
- TRAX (Existing)
- - - TRAX (Proposed)
- FrontRunner (Existing)
- FrontRunner (Proposed)
- Street/Highway
- Interstate

SCALE

1" = 1 Mile

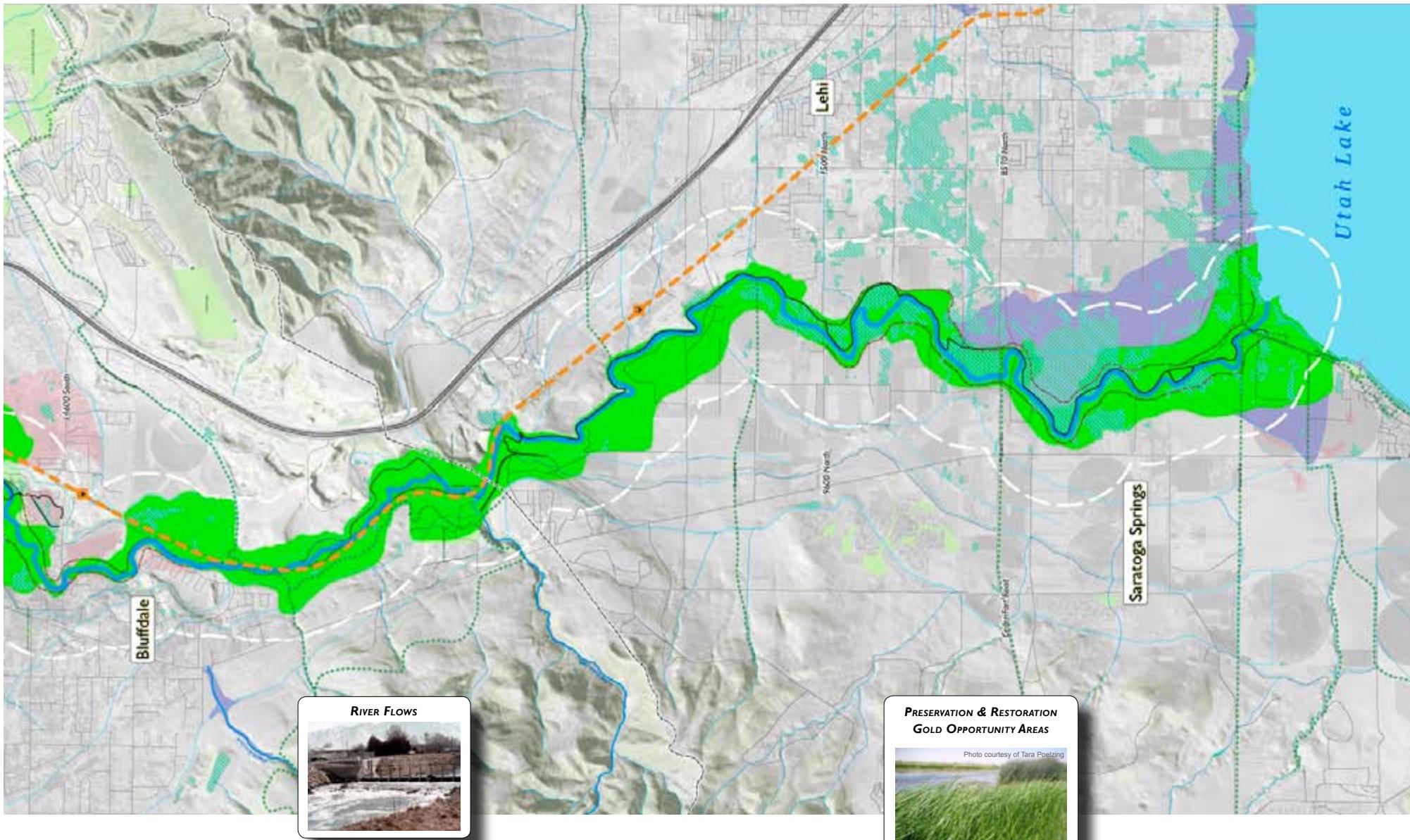






Environmental Opportunities

Southern Section



LEGEND

- Jordan River
- Major Stream
- Minor Stream
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SCALE

1" = 1 Mile



GUIDING PRINCIPLE 5:

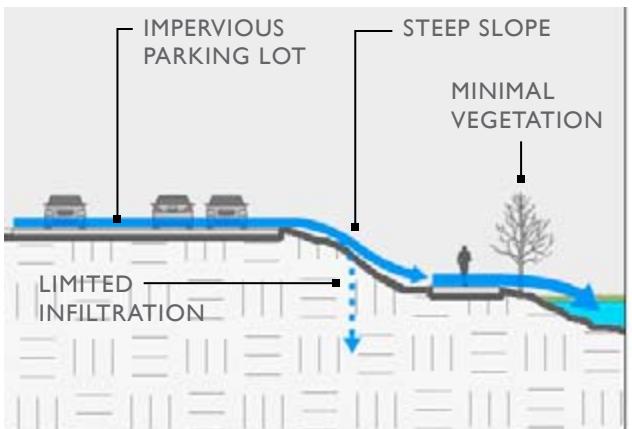
Reduce the use of hardscapes and impermeable surfaces in and near the corridor

A hardscape can be defined as a rooftop, driveway, sidewalk, parking lot, or road. These surfaces prevent rain or snow melt from filtering into the groundwater and replenishing streams or rivers in a slow and healthy manner. Hard surfaces also degrade rivers by increasing the amount, velocity, and temperature of water runoff into the river. Paved surfaces add to the pollution problem when stormwater washes fertilizers, roadway pollutants, and other contaminants into the river.

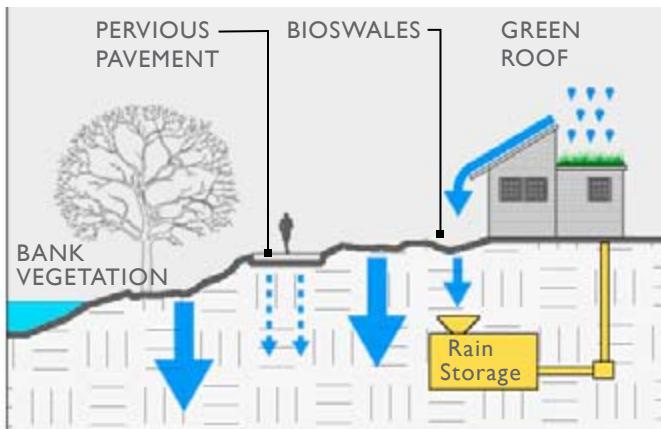
River-friendly developments seek to manage stormwater by integrating the built environment with the natural system. Techniques such as infiltration, storage, and evaporation are used to mimic the natural hydrology of the development site. Permeable pavers, rain gardens, and buffer zones are examples of engineering technologies that would help to maintain a proper ecological balance while managing runoff from impervious surfaces.

River-friendly development design includes minimizing the total impervious area and using permeable surfaces wherever possible. When developing or redeveloping, the following techniques could be used to minimize the impacts of hardscapes:

- 5.1 Employ river-friendly development design that reduces the total amount of paved surfaces. Designing roads, parking lots and driveways to minimize the unnecessary pavement allows a site to have more permeable surfaces that can filter stormwater.
- 5.2 Remove obsolete buildings from the river floodplain to help the river regain some of its natural river functions.
- 5.3 Use green (vegetated) roofs to mitigate the effects of stormwater by filtering and absorbing rainfall that would have otherwise run off an impervious roof.
- 5.4 Change zoning to reduce the number of parking spaces where public transportation is available.
- 5.5 Direct impervious rooftop run off to penetrable areas such as yards, planters, rain gardens or other vegetated areas.
- 5.6 Use permeable pavement, an alternative form of paving that allows for water to infiltrate through the surface. Depending on the area conditions, this technique could replace concrete or asphalt with grid blocks, porous concrete or one of the many alternative options available.



UN-DESIRABLE: HARD SURFACES AND MINIMAL VEGETATION INCREASE POTENTIAL FOR POLLUTED RUN-OFF INTO THE RIVER



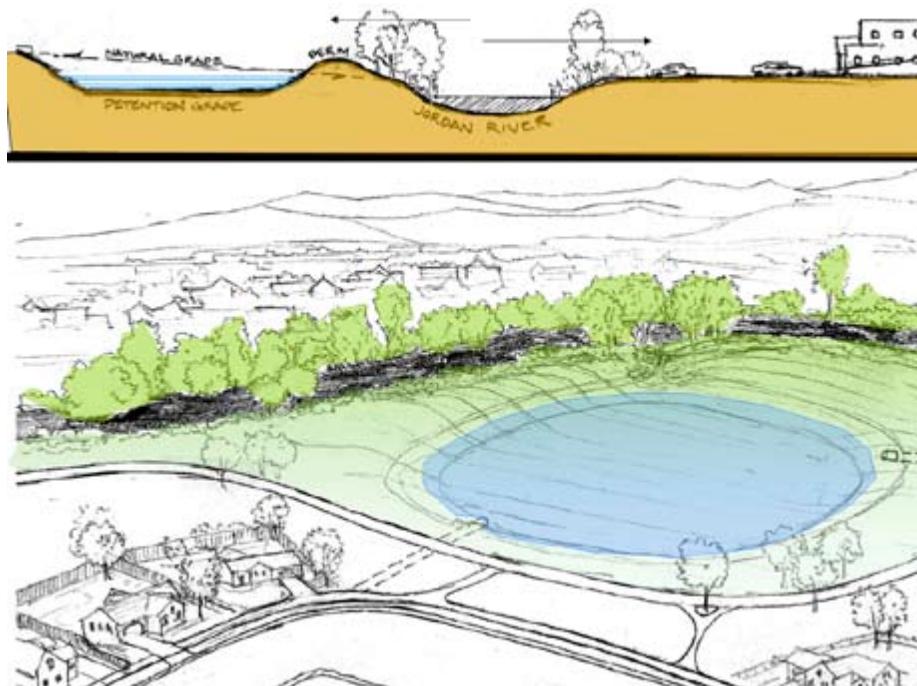
DESIRABLE: VEGETATION, POROUS SURFACES, GREEN ROOFS, AND UNDERWATER STORAGE TANKS IMPROVE WATER QUALITY

GUIDING PRINCIPLE 6: **Manage stormwater on site**

Stormwater degrades water quality by conveying pollutants from developed areas to the Jordan River. Generally, stormwater runoff contains pollutants in the form of fertilizers, pesticides, sediments, oils, pet waste, and just about anything that runs from sidewalks, streets, and gutters into storm drains. In addition to carrying pollutants to the river, stormwater pouring from drains into the river increases stream velocities that result in sedimentation and erosion.

Managing stormwater on-site allows a more ecologically-friendly riverfront design. In the past, it was not uncommon for untreated stormwater to be sent directly into the river system. Managing stormwater on-site involves capturing, filtering, and slowly releasing stormwater to the system. Stormwater management sites serve the added purpose of providing space for vegetation and trees.

A good stormwater management plan heavily depends on good site design. Each site will need to be studied to determine the best strategy for the conditions. Buildings, landscaping, soils, hydrology, and location are all important factors that need to

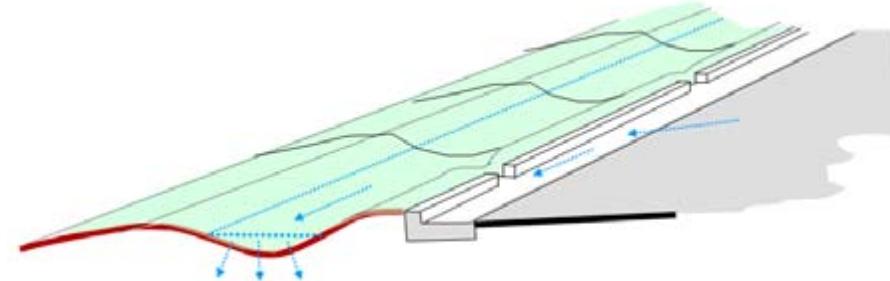


BIORETENTION PONDS FILTER WATER BEFORE IT ENTERS THE RIVER

be taken into account when designing a site. In most cases, permeable surfaces are integrated into the site and take into account parking and landscaping requirements. Creative on-site stormwater management systems can benefit the owner of the development through positive publicity and a more attractive facility.

Some of the practices in use for on-site stormwater management include the following:

- 6.1 Green (vegetated) roofs that absorb and hold stormwater in their growing and drainage layers.
- 6.2 Bioretention ponds are constructed wetlands that utilize layers of sand, soil and plant material to filter pollutants from the water.
- 6.3 Filtration trenches and rain gardens are engineered areas around built structures and in parking lots that capture, filter, and slowly release stormwater. Other low-cost techniques include swales to direct water to low-lying areas where it filters through the soil.



BIOSWALES ABSORB WATER FROM PAVED SURFACES

IMPLEMENTATION TOOLS

Best Practices in Stormwater Management Installation Techniques



BIOFILTRATION SWALES AND STRIPS



EXTENDED DETENTION BASINS



CONTINUOUS DEFLECTION SEPARATORS (CDS)



MEDIA FILTERS



INFILTRATION BASINS



OIL/WATER SEPARATORS



WET BASINS

GUIDING PRINCIPLE 7: **Balance needs for development, recreation,** **and public access with river protection**

Increasing recreational use of the river and trails is somewhat of a “catch 22.” The more use the river gets, the better the funding and support for preserving and managing it. On the flip side, too much use, or uses that are too intensive, will ruin the experience for many and degrade the river’s habitat and ecosystem functions. Given this balancing act, the Blueprint strongly discourages any motor vehicles on or near the river and encourages non-automobile access of the river by east-west connecting trails, bike lanes, bicycle-pedestrian bridges, and improved access to the river from future UTA bus, TRAX, and Frontrunner stops. The following are “Big Ideas” for recreational use of the Jordan River corridor:

CONTINUOUS “BLUE-GREEN” TRAIL FROM UTAH LAKE TO THE GREAT SALT LAKE

The Blueprint strongly endorses the completion of the multi-use surface trail for pedestrians, cyclists, and equestrian, and for the removal of the remaining barriers to lake-to-lake boating for kayaks, canoes, and other non-motor boats. Discontinuous trail segments, fractured by hazards and impassable elements within the river corridor, prevent water trail users from enjoying a continuous trip on the Jordan River. One of the most important keys to improving the functional level of the water trail corridor is to eliminate obstacles by negotiating hazard removal, negotiating and developing appropriate portage facilities around the hazards, and improving safety and awareness through signage and education efforts. Most of these recommendations are detailed in Salt Lake County’s Trails Master Plan (<http://www.recreation.slco.org/planning/>).

MOUNTAIN BIKE PARK

Strategically located in West Jordan, and with great regional accessibility by trails and public transportation, a mountain bike park would be similar to a skate park with ramps, obstacles, etc. Recreational facilities that support greater non-motorized vehicle use of our natural resources are beneficial to the river’s profile and popularity. A mountain bike park near the river will emphasize the connection between river and mountains that is a theme of the Blueprint.

RAGING WATERS

This regional water park is probably the most used recreational facility near the river



BOATERS AND TUBERS ENJOY THE RIVER

in the summer. Expanding the park and opening up its eastern boundary to greater interaction with the river could promote mainstream visibility and water use of the river. Imagine riding the “Lazy River” parallel to the real river. This represents a fun way to increase visibility of the river and grow its constituency.

RIVER PLAY AREAS

The Outdoor Retailer’s annual conference is in need of an on-the-water venue for its summer show. Should recreational plans for the Jordan River provide such a venue, it would go a very long way toward securing the continued selection of Salt Lake City as host for the Outdoor Retailer’s shows. This is a major opportunity uniquely available to the Wasatch Front region.

WILDLIFE VIEWING

The Great Salt Lake and Jordan River are part of a major migratory flyway for a substantial number of bird species. The habitats along this flyway offer unique opportunities for birders. The Jordan River is literally a desert oasis for many shorebirds

and raptors (birds of prey). Wildlife viewing, and birding in particular, is a popular national pastime with a significant presence and economic impact (it is a strong and growing industry, bringing hundreds of millions of dollars into the state annually). Supporting and enhancing wildlife viewing opportunities may be the river's best hope for long-term viability before it is "loved-to-death." Nature Centers and Tours provide the infrastructure, education, and interpretation needed for wildlife viewing to succeed.

CYCLING TOUR

Supported and promoted cycling events are an excellent way to introduce people to the river. With targeted brochures and support facilities, a Lake-to-Lake tour could be promoted through the Visitor's Bureau via national recreational publications. Someday soon, those individuals who come to Utah for cycling trips may add the Jordan River to their list of trails to ride.

BOATING - KAYAKING, ROWING, CANOEING

Launches and portages need to be developed with safe, flexible, functional, and ADA accessible designs that meet water trail user needs at different flow levels of the river and that accommodate boating parties of varying sizes and skill levels. A comprehensive water trail map should be incorporated as part of the Salt Lake County standard trailhead sign design. In addition, the County should make mapping available online and in a printed format that water trail users can employ to plan trips to the river. These maps could take the form of a guide booklet or large foldout map and include information on the history of the river, flora and fauna found along the river, and cultural information.

EQUESTRIAN TRAILS

Equestrian trails accommodate equestrians and their horses, but also serve as an alternative path for pedestrians and cyclists on mountain bikes. Equestrian trails are always unpaved, soft-surface trails, and therefore restrict the use by in-line skaters and bicyclists. Equestrian trailheads have similar requirements as the multi-purpose trailheads, with the additional needs for parking to accommodate horse trailers and the trucks that pull them. Other desired facilities are loading/unloading platforms and ramps, tie-up areas, access to fresh water for horses, and small corrals (as site constraints allow). Signage should clearly indicate trailheads that accommodate equestrian use.



THE BLUEPRINT PROMOTES TRAILS FOR PEOPLE OF ALL ABILITIES AND AGES TO ENJOY



THE JORDAN RIVER OFFERS MANY PLACES FOR QUIET SOLITUDE

Recreation & Tourism Opportunities

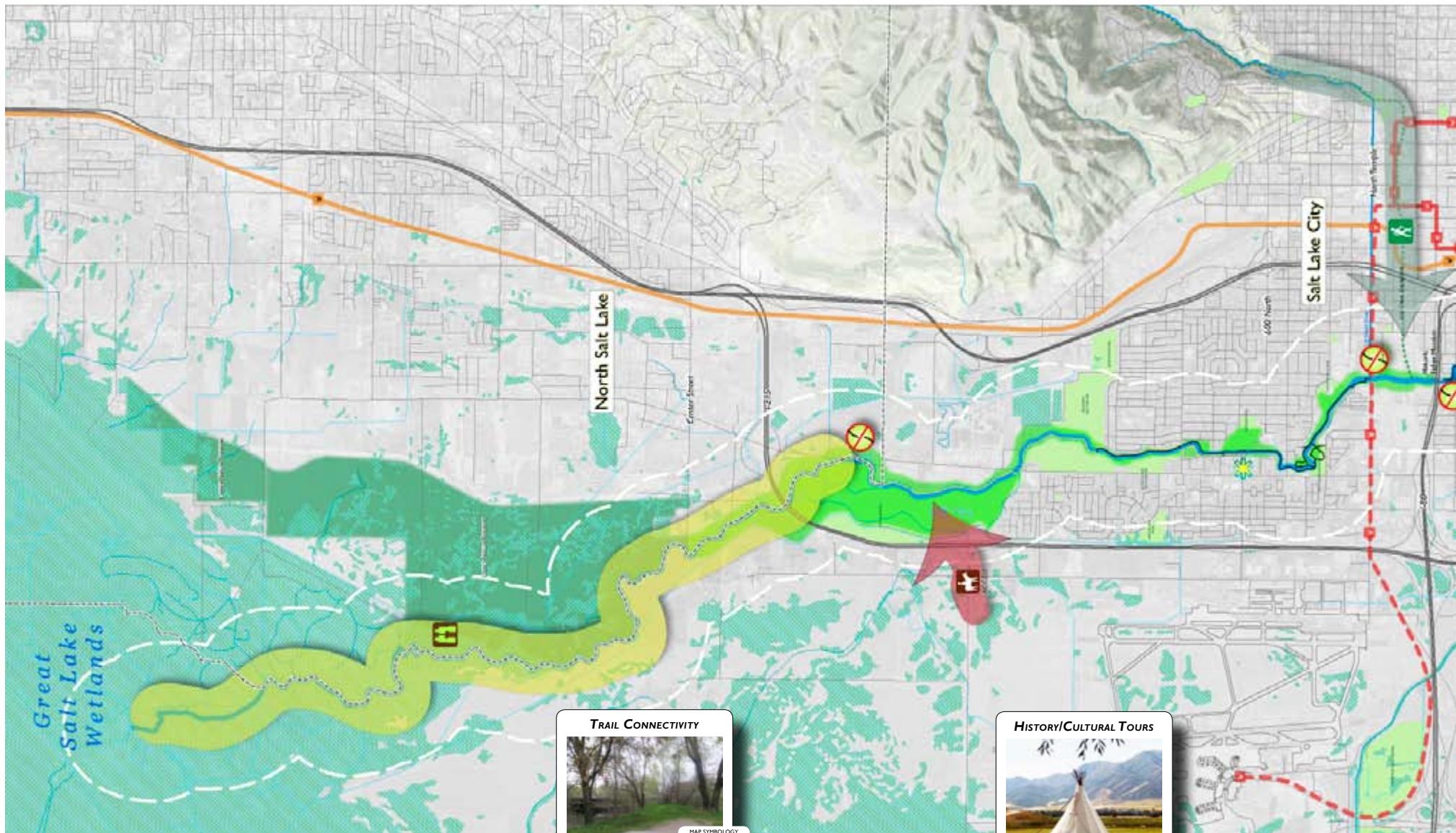
Northern Section

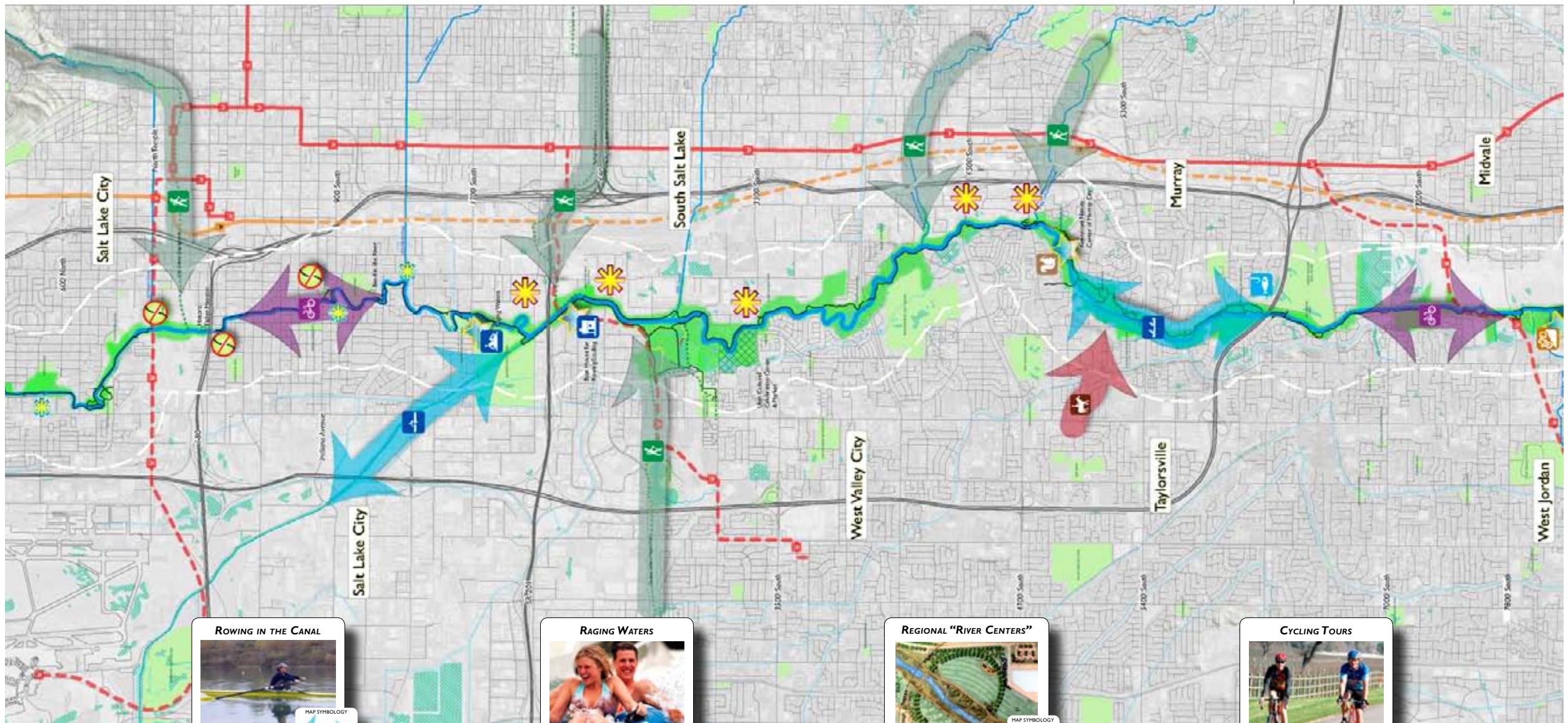
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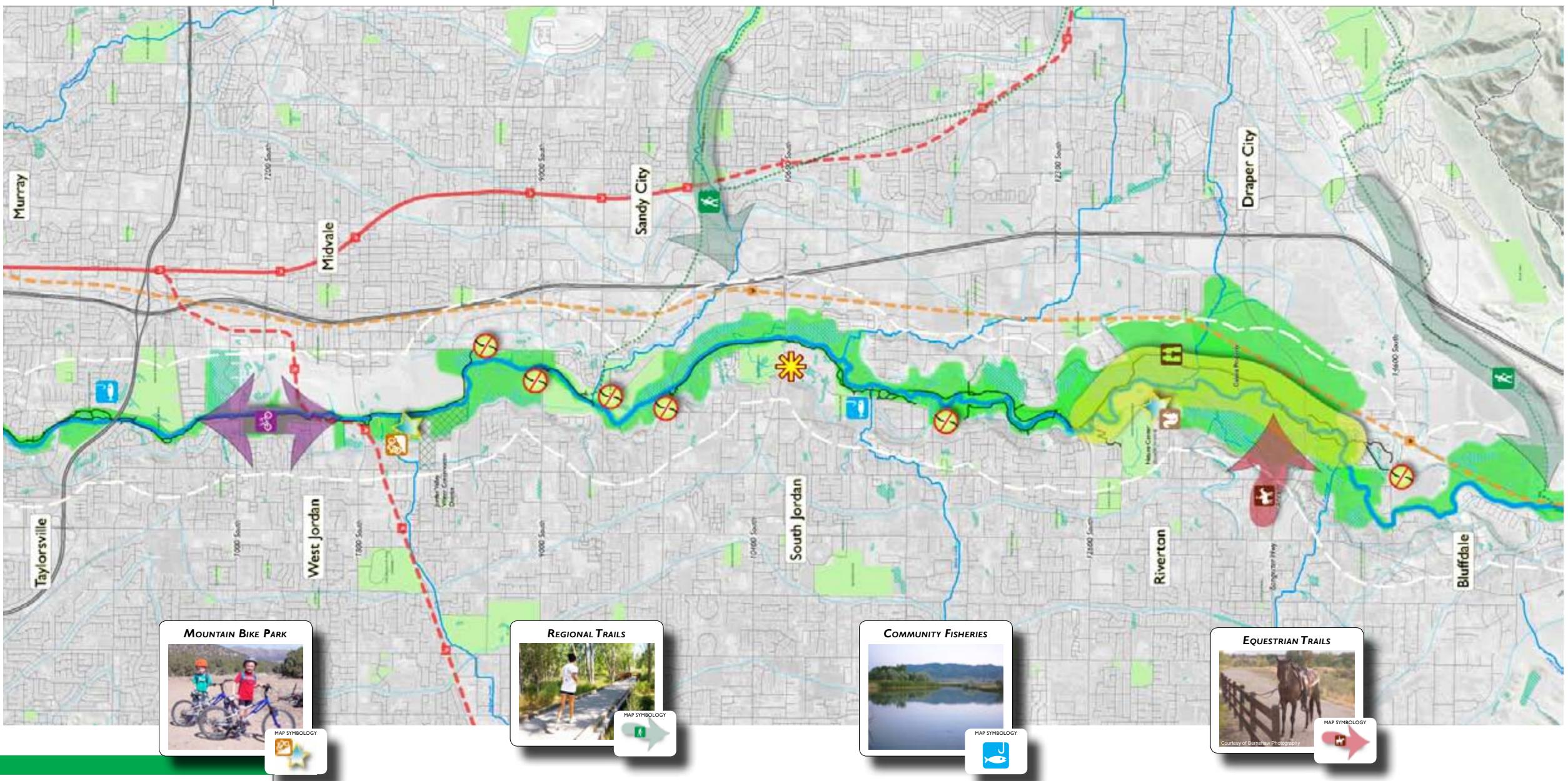
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SCALE

1" = 1 Mile

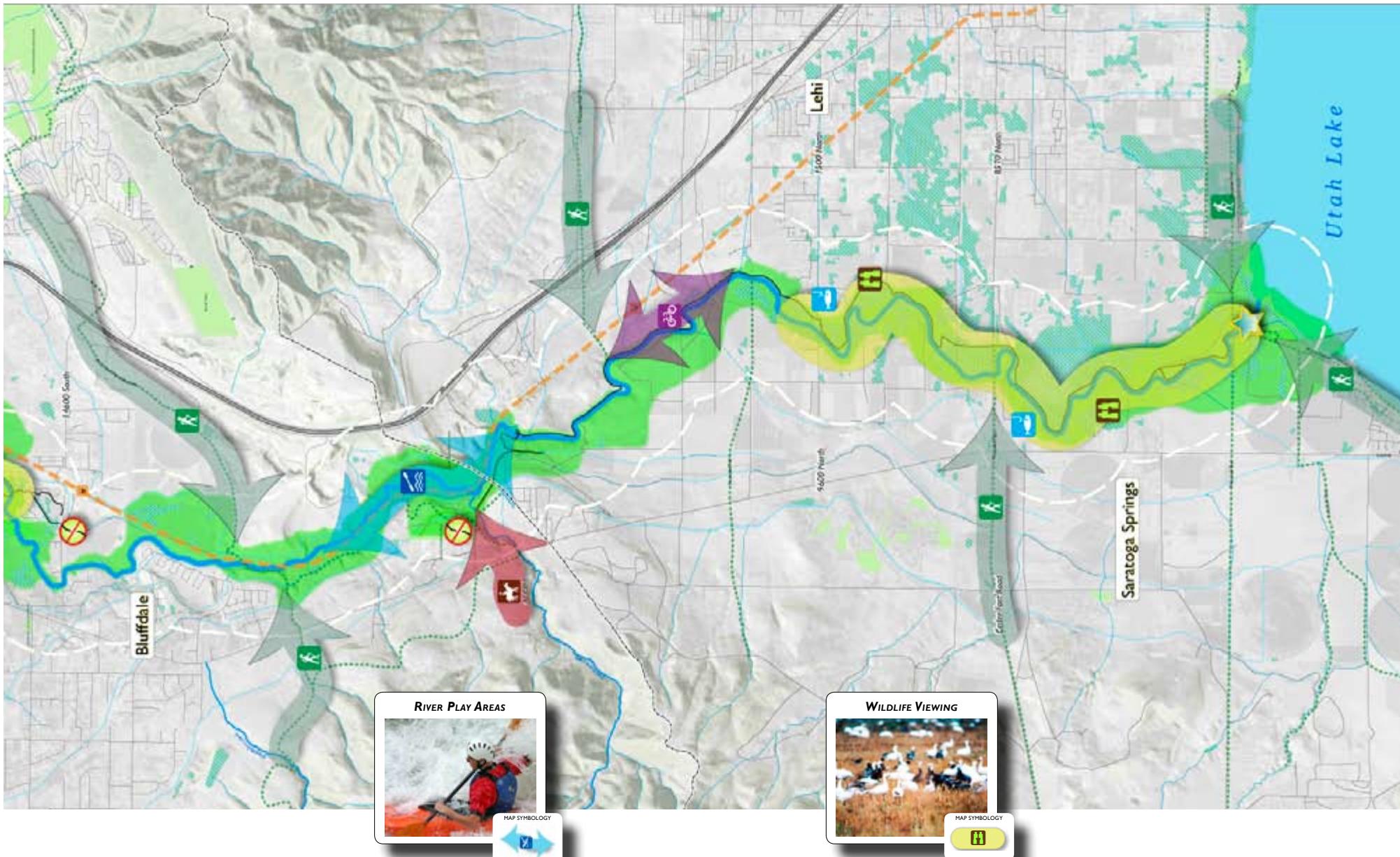






Recreation & Tourism Opportunities

Southern Section



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TERMINOLOGY

"Place-Based Education"

"The process of using the local community and environment as a starting point to teach concepts in language arts, mathematics, social studies, science, and other subjects across the curriculum. Emphasizing hands-on, real-world learning experiences, this approach to education increases academic achievement, helps students develop stronger ties to their community, enhances students' appreciation for the natural world, and creates a heightened commitment to serving as active, contributing citizens. Community vitality and environmental quality are improved through the active engagement of local citizens, community organizations, and environmental resources in the life of the school."

- David Sobel

GUIDING PRINCIPLE 8:

Incorporate the river's natural and cultural history into designs for riverfront features, public art, education, and signage

The Jordan River corridor provides residents throughout the region opportunities to experience a living river and learn how its waters and shores relate to human and ecosystem health and quality of life. Positive experiences will lead to individual, institutional, and political behavior changes that, in turn, support the river. Educating neighboring communities to the river's importance will help build the constituency necessary to achieve the long-term vision of the corridor as a healthy, functioning ecosystem. Building an appreciation for the river's environmental benefits will increase public support for the Blueprint and develop a new sense of community-stewardship. Enhancing awareness and local stewardship will contribute to the health of the river through clean-up programs and political support for water quality improvements and habitat preservation and restoration.

Environmental educational programs will foster stronger student achievement and better schools through place-based application of concepts taught both in school and along the river. These programs incorporate civic responsibility through a grassroots approach to community involvement, which will contribute to community growth and strength. Improvements to the river's ecosystem and surrounding communities will bear direct economic benefits to those neighborhoods and the larger region as property values increase and social problems diminish. In essence, strengthening ties between the community and the river will help revitalize neighborhoods, enhance quality of life, and spur an economic renaissance in under-valued communities, while achieving the broader goal of restoring the river's ecosystem.

JORDAN VALLEY WATER CONSERVANCY DISTRICT'S CONSERVATION GARDEN (DEMONSTRATION GARDEN & FACILITIES)

- Located next to the Jordan River in West Jordan, the Conservation Garden embodies the place-based, environmental education philosophy advocated through the Blueprint. This strategic center educates citizens about their watershed, the nexus between the built and natural environments, and the importance of water conservation, water quality, and sustainable practices for living. This facility provides critical education about water-wise landscaping and other water management practices that affect our long-term survival as a mountain-desert metropolitan area.

MURRAY CITY/KENNECOTT NATURE CENTER - This public/private facility brings together education and conservation practices. Corporate sponsorships represent a key opportunity in protecting and revitalizing the Jordan River. The Kennecott Nature Center of Murray provides opportunities for thousands of children from the Murray School District and selected Granite fourth-grade classes to enjoy observing and learning about nature up close and hands on. It enriches our community through an appreciation of nature and fosters stewardship of our natural resources. The 1,600 square foot center is located on the river's second largest wetland site and overlooks a beautiful bend in the river. Through a generous initial donation from the Kennecott Utah Copper Corporation, the efforts of the Murray Education Foundation, and the assistance of many community donors, the dream for this environmental education center was realized. It is a unique partnership with the Murray School District, Murray City and Kennecott Utah Copper Corporation working together to manage the costs of upkeep, staff and operation

HISTORY/CULTURE TOUR - The river has a long and mixed history. From a place of shelter and source of food for Native Americans, then an industrial pipeline, to its current state, the river tells the story of Western expansion and our relationship with the land. Guided (or audio) tours for boaters or hikers could follow interpretive signs and visit distinct sites along the course of the river, including archeological artifacts, old irrigation diversions, Gardner Village, water reclamation facilities, Jordan Valley Water Conservancy District, Murray Nature Center and other key points along the river's length.



ILLUSTRATION OF POSSIBLE OUTDOOR CLASSROOM NEAR THE RIVER

GUIDING PRINCIPLE 9:**Apply design standards for complementary development and redevelopment in the corridor to support increased visibility and recreational use of the river**

Improving development standards near the river will benefit the region and the surrounding neighborhoods through greater river health, enhanced property values, and improved quality of life. Good development practices can mitigate impacts on habitat and water quality in existing communities and in new potential development areas. Compatible development mitigates potential impacts on water quality, soil erosion, wildlife, and the overall experience of trail and river use. The river is an amenity to the surrounding neighborhoods and should not be an afterthought in local and regional planning efforts. By focusing on sustainable development, neighborhoods can be revitalized along with the river. Improving the quality of development and design through the river corridor can spur economic growth and increase tax revenue for local governments to re-invest in communities and restoration of the river.

Land Use and Development Policy Framework

Salt Lake County has recently completed detailed studies addressing water quality, a Jordan River trail master plan, and open space acquisition. While incorporating the findings of these studies, the Blueprint focused primarily on current and future land use throughout the more than 50-mile long river corridor.

The Blueprint relies on existing geographic information system (GIS) data and local scientific expertise to identify a range of environmental opportunities along the river and within the corridor. The existing data in the Environmental Vision Map include the river's historic meander corridor, wetlands, floodplains, and hydric soils, which are good indicators of locations that have experienced sustained saturation, flooding, or ponding during a growing season. These data correspond with richness in habitat and wildlife and tend to correspond with priority areas identified by other studies for preservation, recreation, or other purposes. While a thorough evaluation

of the ecological values and status of environmental resources should be undertaken, the existing data tell a story about the river, its history, and, most importantly, opportunities to shape the river corridor's future.

Based on existing land categories and current studies, the following are recommended as a Policy-Framework for Blueprint Jordan River:

POLICY 1 - All undeveloped land within the flood plain and land that has wetland or habitat restoration, creation, or preservation potential should be preserved as open space.

POLICY 2 - Areas that are planned for development that conflict with Policy 1 should be priority areas for land acquisition and protection.

POLICY 3 - Any land within the river corridor (i.e., within one-half mile of the river) that is not designated as "Open Space" or recommended for preservation in Policies 1 and 2 should be subject to the application of strategies for low-impact development and sustainable landscaping



CONCEPTUAL MIXED-USE DEVELOPMENT NEXT TO THE RIVER



Levels of commercial development supported near the river.

I don't support any level of commercial activity near the river.



Small vendors near the trail.



Small visitor centers with restrooms, water, snacks, information, bike/boat rentals, and equipment.



Small clusters of one-story restaurants and recreation-services buildings.



Mixed-use developments with one to two story buildings, including restaurants, hotels, condos and outdoor-recreation businesses.



GUIDING PRINCIPLE 10: Encourage regional transportation planning to connect communities to the river corridor, emphasizing non-automobile travel

For Wasatch Front residents who do not live within walking distance of the river, parking lots at trailheads for automobiles remain the number one option for accessing the river and parkway. The public vision for increasing access to the river is a combination of new east-west connecting trails and bike lanes, improved bike-pedestrian crossings parallel to existing bridges, and new UTA stops near the river. Parking facilities should be frequent but small, with proper design to limit their visual and physical impact. The Jordan River corridor is also a linear transportation corridor connecting communities and building a sense of place and connection to the natural environment. Some of the components of a successful regional transportation network include:

REGIONAL TRAILS

Regional trails connecting residents to the river directly from their neighborhoods show promise for increased usage and viability of the river trail system. They will help to build a vital constituency that supports efforts to revitalize and protect the river. New trail connections can connect communities, reinvigorate neighborhoods, improve health and recreation opportunities, and connect residents to surrounding water-bodies and mountains, which will enhance our regional quality of life.

BIKE LANES

Major roads that cross the river should incorporate bike lanes to encourage regional connectivity and provide safe pathways for cyclists to access the river corridor for commuting, local trips and recreation.

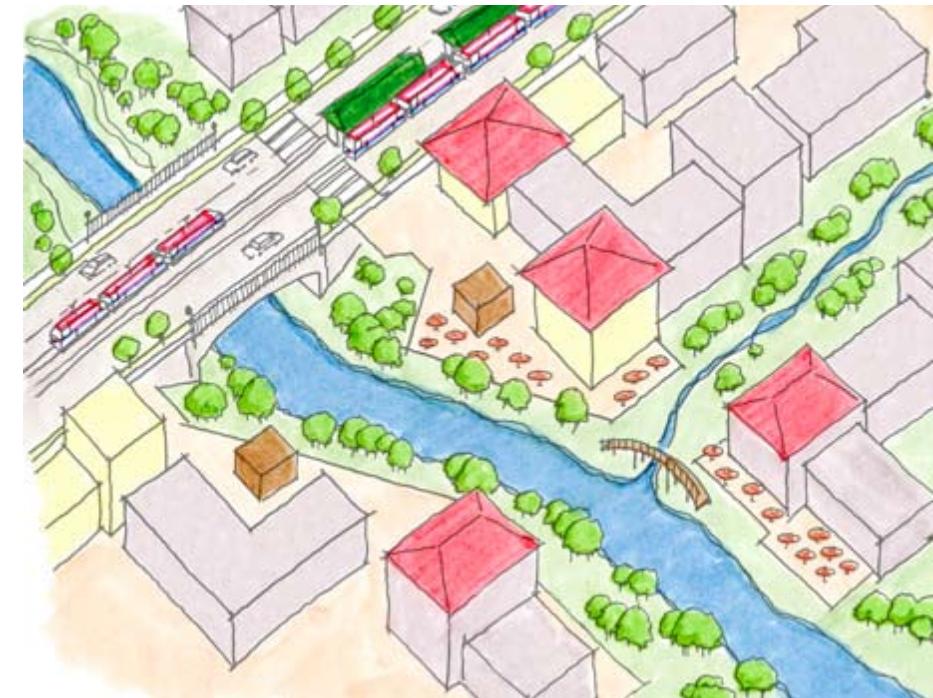
PUBLIC TRANSPORTATION AND TODs

New rail stops near the river represent multiple opportunities for the future of the river and our region. Frontrunner and TRAX stops will open up the river corridor to both residents and tourists staying in our regional urban centers, such as Salt Lake City, Provo and Ogden. New rail stops also provide ways for residents to enjoy the river without having to drive and use limited parking facilities that impact the natural environment. Rail stops provide a development opportunity as nodes of activity naturally intensify around fixed transit routes and stops. These “transit-ori-

ented developments” (TODs) are natural centers for river-related businesses, such as restaurants, recreational shops, rental facilities, and visitor centers. Catching a train to visit the Jordan River may be a popular pastime in the foreseeable future.

BALANCED PARKING SOLUTIONS

New parking facilities will continue to provide access for numerous residents and should be designed to provide ease of access and needed amenities. At the same time, new parking facilities should incorporate best practices for stormwater management and landscaping.



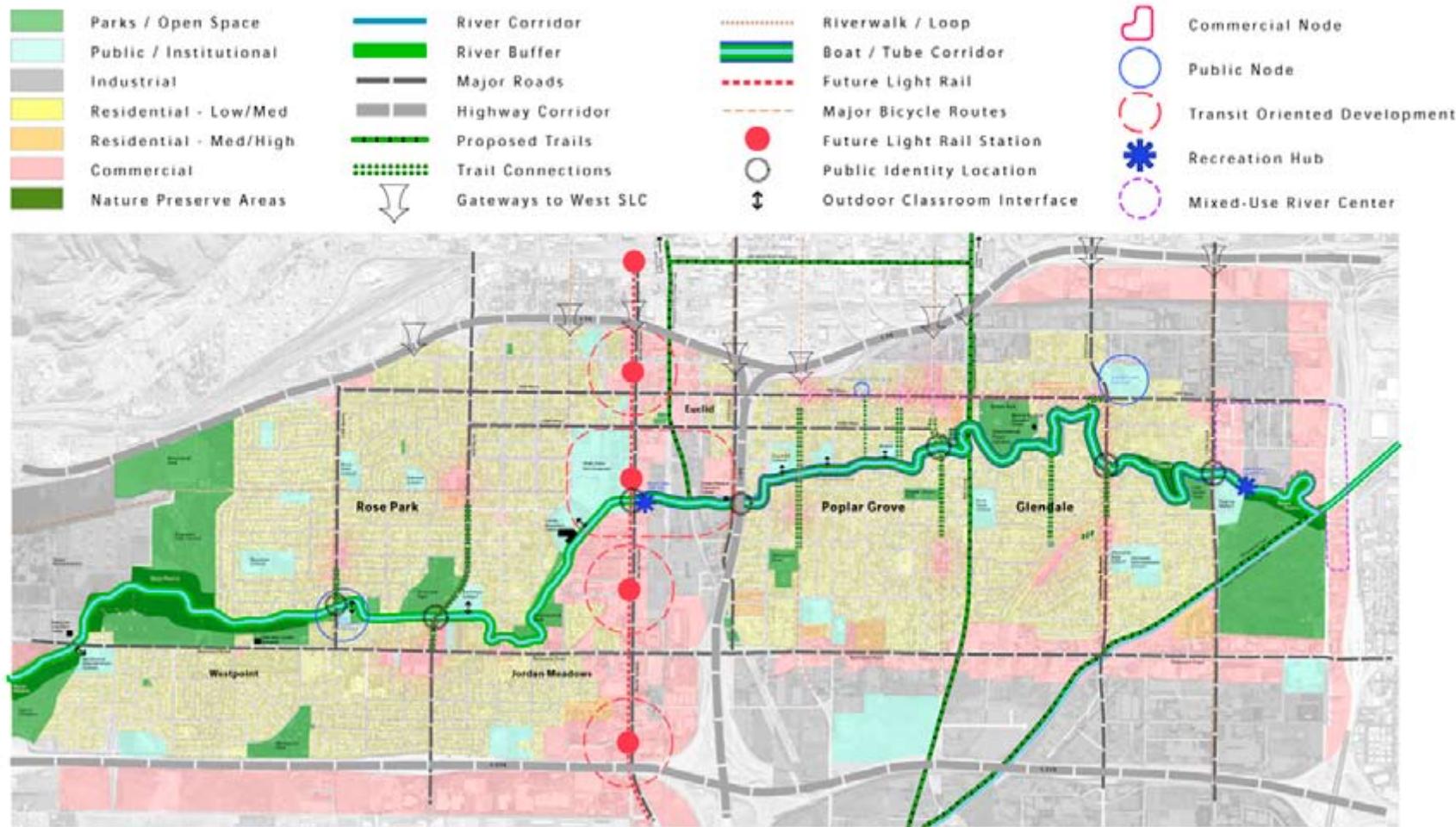
A CONCEPTUAL ILLUSTRATION OF A FUTURE TRAX STOP ON NORTH TEMPLE NEAR THE JORDAN RIVER

SALT LAKE CITY FOCUS GROUP

In July of 2008, a focus group was compiled to address the portion of the Jordan River that lies within the Salt Lake City limits proper. It was thought that this section of the river required special attention due to its close proximity to urban development, constrained potential for improvement, and general condition of maintenance. Participants including city officials, community leaders, city planning and parks representatives, and west side residents gathered for a series of workshops

comprised of a design charrette, vision session, and follow-up meetings. Some featured concepts of the plan include constructing outdoor classrooms where the river and public schools interface, highlighting river crossings with public art installations that create community identity, improving river connections to public and commercial activity nodes, and implementing river center developments at appropriate locations.

Jordan River - Salt Lake City Focus Area



Environment & Development

Future Land Use Opportunities & Conflicts

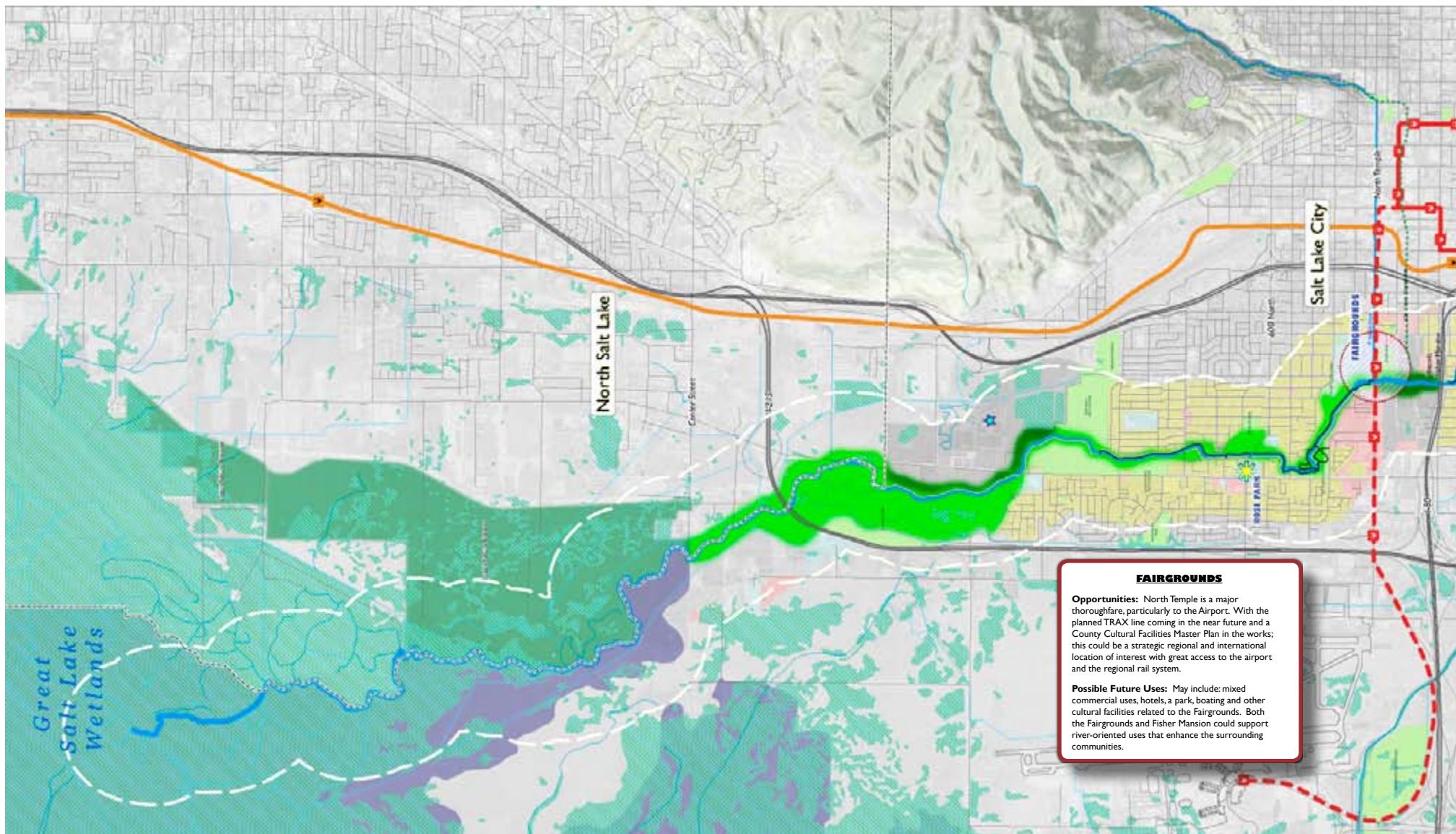
Northern Section

LEGEND

- FUTURE LAND USES**
- Residential
 - Mixed Use
 - Commercial / Office
 - Public / Institutional
 - Industrial
- Jordan River**
- Major Stream**
- Minor Stream**
- Meander Corridor (Historical)**
- Canal**
- Regional Trails (Existing and Proposed)**
- Lakes**
- Wetlands (Existing & Historical)**
- Floodplains (100 Year)**
- TRAX Station (Existing & Proposed)**
- FrontRunner Station (Existing & Proposed)**
- TRAX (Existing)**
- TRAX (Proposed)**
- FrontRunner (Existing)**
- FrontRunner (Proposed)**
- Street/Highway**
- Interstate**

SCALE

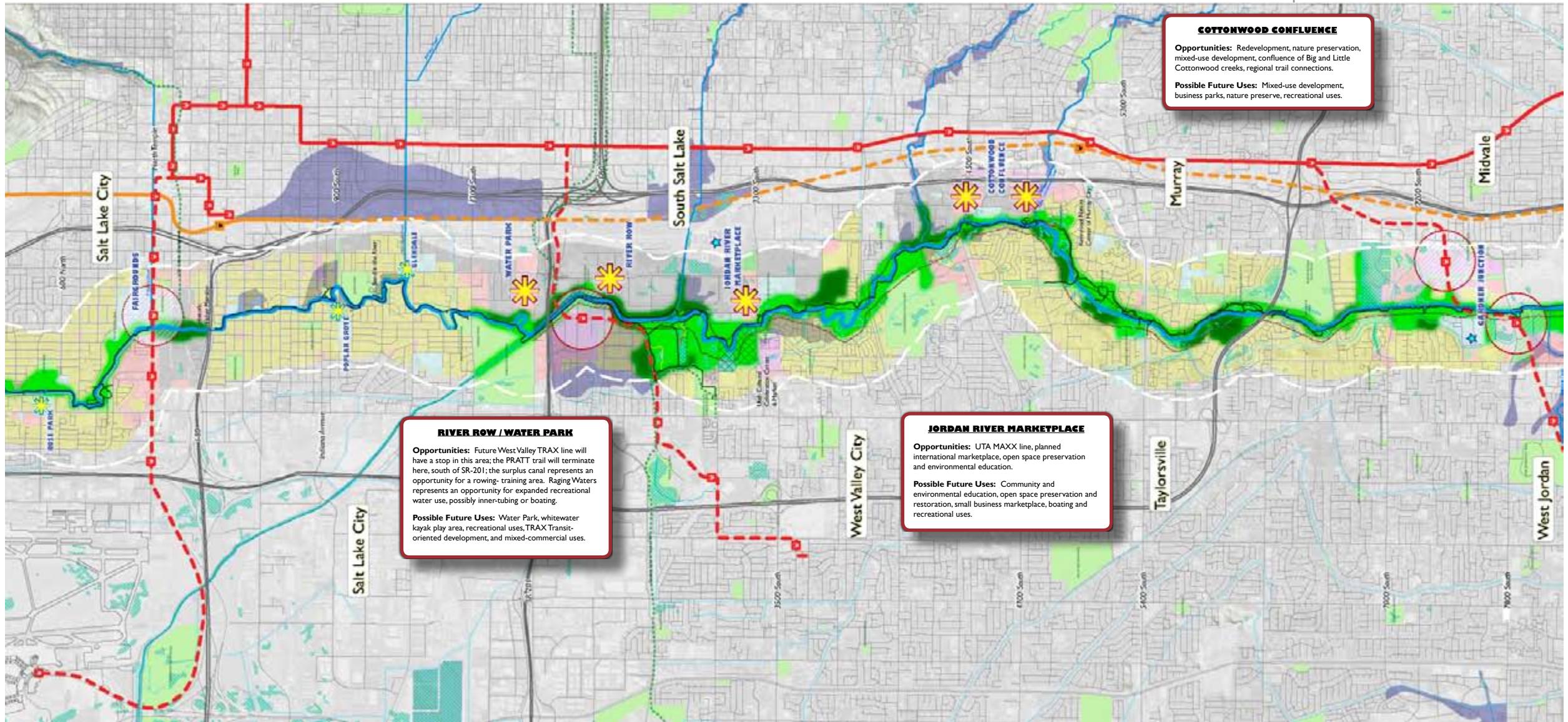
1" = 1 Mile

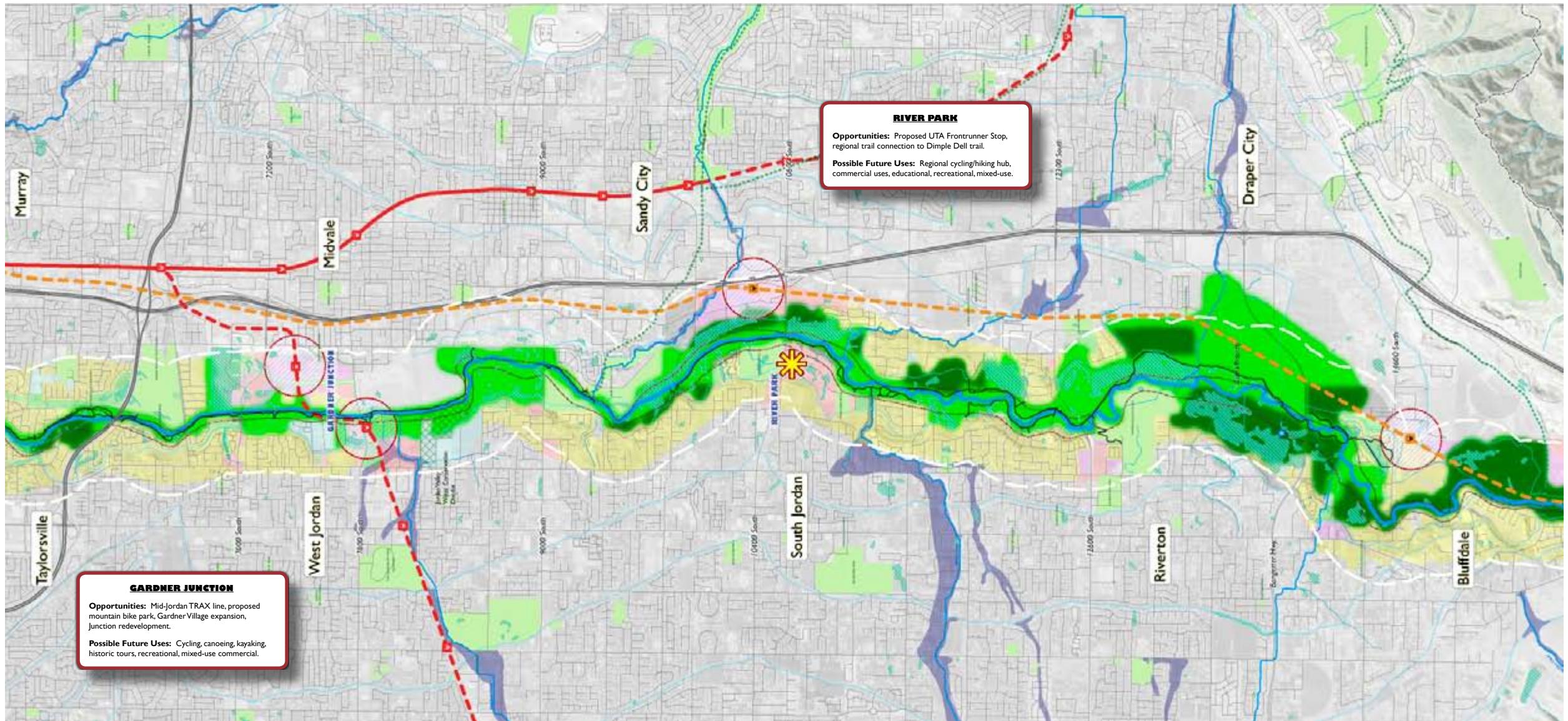


FAIRGROUNDS

Opportunities: North Temple is a major thoroughfare, particularly to the Airport. With the planned TRAX line coming in the near future and a County Cultural Facilities Master Plan in the works; this could be a strategic regional and international location of interest with great access to the airport and the regional rail system.

Possible Future Uses: May include: mixed commercial uses, hotels, a park, boating and other cultural facilities related to the Fairgrounds. Both the Fairgrounds and Fisher Mansion could support river-oriented uses that enhance the surrounding communities.

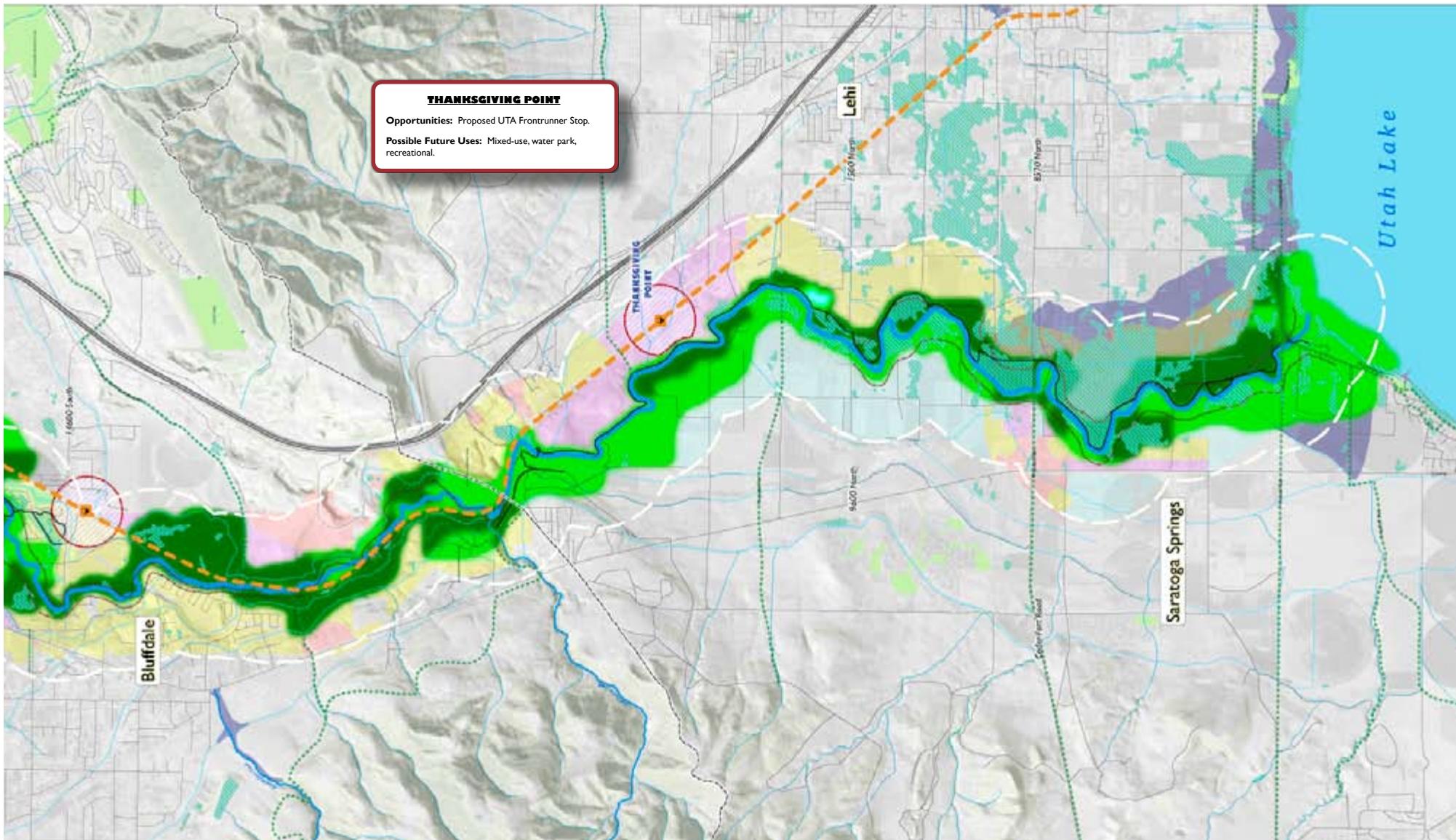




Environment & Development

Future Land Use Opportunities & Conflicts

Southern Section



LEGEND

FUTURE LAND USES	
Residential	
Mixed Use	
Commercial / Office	
Public / Institutional	
Industrial	
Jordan River	
Major Stream	
Minor Stream	
Meander Corridor (Historical)	
Canal	
Regional Trails (Existing and Proposed)	
Lakes	
Wetlands (Existing & Historical)	
Floodplains (100 Year)	
TRAX Station (Existing & Proposed)	
FrontRunner Station (Existing & Proposed)	
TRAX (Existing)	
TRAX (Proposed)	
FrontRunner (Existing)	
FrontRunner (Proposed)	
Street/Highway	
Interstate	

SCALE

1" = 1 Mile



V. Action Plan

The Blueprint's Action Plan is divided into two sections: Part I - Rehabilitating the river, and Part II - Building and Connecting Communities.

Part I focuses on the natural environment and reversing the impact of development and industry on the river's ecosystem. It includes a range of environmental goals from improving hydrologic functions to re-engineering wetlands and improving water quality. Many of these guidelines come from Salt Lake County's excellent Water Quality Stewardship Plan, which provides a more comprehensive set of scientific data and framework for improving water quality region wide. An overarching environmental goal for the Jordan River is to continue scientific studies to assist in providing data for better management of natural resources.

Part II provides guidelines for future land development, transportation projects, recreational facilities/programs and educational infrastructure. It tries to strike a balance between increased human activity and the environmental impact of increased recreational users of the river corridor. We believe that some environmental impacts are an unavoidable consequence as more residents enjoy the river and become a concerned constituency for protecting the river. Without greater visibility and use, the river corridor may continue to be an afterthought.

This is the universal dilemma of natural resource managers: greater use and popularity of a natural amenity can lead to degradation, but greater visibility can also lead to better resources for protection and maintenance. Let us not forget what makes the Jordan River special: it is a unique ecological oasis in an arid and rapidly urbanizing area. We must protect and develop the corridor to enhance its natural potential and long-term prospects for becoming a signature element of our region.

PART I: REHABILITATING THE RIVER

A. FLOOD CONTROL AND HYDROLOGY

Flood control and hydrology are natural functions of a healthy river system. The Jordan River can provide these important elements using natural stream channel design techniques. In general, a river bed with more natural river channel features will produce a more stable river flow, resulting in natural flood control. The Jordan River corridor provides this function and can be enhanced through natural stream channel design techniques.

PRINCIPLE

The Jordan River is a key element of our watershed. The river provides flood control, habitat, and hydrological and aesthetic services to our communities. The Blueprint encourages proper flood control and water conveyance while providing clean water, wildlife habitat, and recreational uses.

BACKGROUND

A portion of our watershed surface waters drain directly into the Great Salt Lake, but the majority drain into the Jordan River. The release of water from Utah Lake to the Jordan River is managed for flood control purposes and to supply water for irrigation and other uses in accord with water rights. In addition to the Utah Lake inflow, the Jordan River receives water from the Wasatch and Oquirrh Mountains' tributary system and two major waste water treatment plants. In addition the river is part of a ground water recharge area.



THE JORDAN RIVER IS A UNIQUE OASIS IN A RAPIDLY URBANIZING REGION

A. Flood Control and Hydrology Goals

1

Develop comprehensive water quality data, measurements, and models

- A. Develop a hydrologic and water quality model for water quality planning and compliance
- B. Develop a wetland delineation that goes beyond existing data
- C. Conduct a geomorphic assessment of the river channel on which to base context specific restoration goals
- D. Develop an inventory and functional analysis of segments of the river and its corridor that are interrupted or disconnected

2

Develop a flow management plan such that the flows more closely resemble a natural flow regime

- A. Develop a flow management strategy for releases from Utah Lake and diversions to the surplus canal
- B. Increase in-stream flows which fully support the beneficial uses of the river, including the corridor's ecological systems, in-stream recreation and aesthetics, domestic water supply and irrigation
- C. Examine the options for acquisition or transfer of water rights to be used for enhancing instream flows
- D. Pursue these strategies in close collaboration with water right holders and respect their existing rights

3

Restore the river channel and buffers along the river to improve and protect water quality, enhance hydrologic function, and support goals for vegetation, wildlife, and habitat

- A. Restore natural river channel profile by increasing connectivity between the Jordan River and its historic floodplain
- B. Restore oxbows and meanders where possible to improve immediate river environment, provide increased habitat for fish and other wildlife, provide storage for seasonal flood flows and provide increased wetland habitat
- C. Improve and protect wetlands, channel bed and riverbank stability to prevent degradation from erosion and sediment transport due to urban development and channelization

4

Improve flood conveyance capacity to safely store and transport flood waters within the river corridor

- A. Conduct a feasibility study to identify specific canals that may be operated and maintained as flood control facilities
- B. Conduct flood control activities in a sustainable way to promote stable channel conditions
- C. Dredge as needed to maintain flood control capacity
- D. Preserve lands within the 100 year flood plain for water storage and conveyance

5

Control pollution to meet state standards

- A. Reduce pollutant loads to improve water quality to support aquatic habitat, water supply and social functions
- B. Develop regional wastewater planning procedure requirements to enhance, improve and protect water quality functions

6

Encourage land uses near the river that enhance water quality

- A. Provide open space to preserve the river and its tributaries, as open space provides impervious surfaces which aid filtration and slow runoff to the river
- B. Encourage all cities within the river corridor to adopt river buffer standards
- C. Avoid placing development within the stream corridor, meander corridor, wetlands or floodplain of the river
- D. New developments should incorporate best management practices for development along the river corridor
- E. Implement recommended management practices for golf courses and parks along the river
- F. Reduce grazing, off-road vehicle use and illegal dumping along the river



GARBAGE ACCUMULATES ALONG THE JORDAN RIVER, DEGRADING WATER QUALITY AND ECOSYSTEM HEALTH



HISTORICALLY FLOW MANAGEMENT HAS CREATED MANY HEAVILY CHANNELIZED AREAS



NATURAL MEANDERS CAN REDUCE THE SPEED OF WATER FLOW AND IMPROVE SURROUNDING HABITATS

B. Stormwater Management Goals



WATER RUNNING OVER IMPERVIOUS SURFACES COLLECTS POLLUTANTS AND DRAINS INTO THE JORDAN RIVER



ELEVATED WALKWAYS ENABLE PEOPLE TO ENJOY THE RIVER AREA WHILE PRESERVING WETLANDS FOR NATURAL STORMWATER FILTRATION

B. STORMWATER MANAGEMENT

The quality and quantity of water volume coming from the Jordan River watershed area has a significant impact on the waters that flow into the Jordan River.

PRINCIPLE

Incorporating river-friendly design principles into the development activities would be beneficial to the environment within the Jordan River corridor. Stormwater management should pursue strategies that improve and maintain water quality for long-term viability.

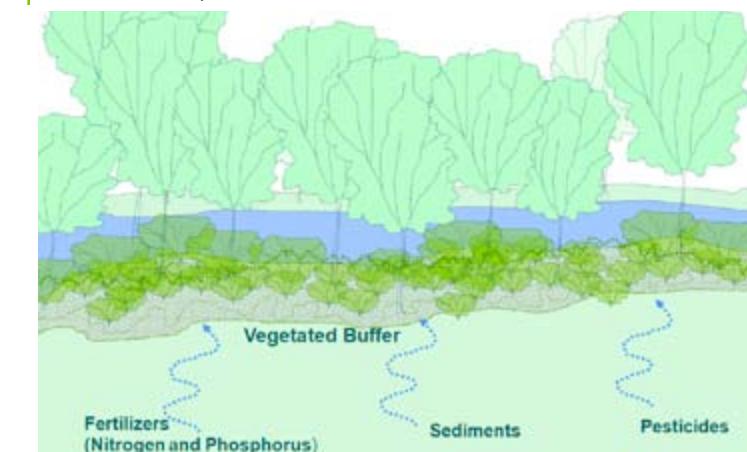
BACKGROUND

Stormwater degrades the quality of the water by conveying pollutants to the Jordan River. Stormwater discharges are generated from surface area runoff. After snow or rainfall, water flows off impervious surface areas such as paved streets, parking lots, and building rooftops. This runoff often contains many pollutants that adversely affect the quality of the water in the Jordan River. Water-sensitive urban design offers an alternative to the traditional conveyance approach of stormwater management. Incorporating river-friendly designs into the built environment minimizes the detrimental effects of impervious surfaces, thus mitigating impacts to the natural water balance.

GOALS AND RECOMMENDATIONS

Critical steps are necessary to bring about the stormwater management vision for the Jordan River. Many experts and citizens outlined the necessary steps to realize the vision. The table [at right] prioritizes the goals and recommendations for implementing the vision for the Jordan River. Many of these ideas have been developed in conjunction with Salt Lake County's Water Quality Stewardship Plan, which can be found at: www.waterresources.slco.org

- | | |
|----|--|
| 1 | Protect water quality through better stormwater management |
| 2 | Manage runoff and peak flows to reduce erosion and sedimentation and slow the rate of pollutant entry into the river |
| 3 | Integrate stormwater treatment into open lands to naturally filter water runoff |
| 4 | Integrate stormwater treatment into developed areas to filter stormwater runoff |
| 5 | Add to the value of developments while reducing the costs of construction |
| A. | Incorporate porous pavement and roadways to allow groundwater recharge |
| B. | Increase storage capacity for stormwater flow through bio-retention ponds, bio-swales and other techniques |
| C. | Utilize natural structures such as bio-swales instead of "hard engineered" structures to filter and convey water back into the water table |
| D. | Incorporate features such as water frontage, open space, and enhanced ecological systems to increase marketability of developments |
| E. | Establish multijurisdictional stormwater districts |



VEGETATED BUFFERS AND DETENTION SYSTEMS CLEAN STORMWATER RUN-OFF BEFORE IT ENTERS THE RIVER

C. Vegetation and Habitat Goals

C. VEGETATION AND HABITAT

A crucial part of the corridor vision is to reestablish the habitat and vegetation that once lined the river's banks. Since settlement of the three counties began, the natural vegetation has been colonized or replaced with invasive species, such as Russian Olive.

PRINCIPLE

Proper habitat with native vegetation will promote a riparian wildlife community and add aesthetic value to the surrounding community. The Blueprint seeks to create a linear nature preserve over 50 miles in length and preserve thousands of acres of open space.

BACKGROUND

The Jordan River corridor is extremely important to migratory species both regionally and internationally. The corridor acts as a place for resting, nesting, and feeding for a variety of lowland and upland species. Riparian habitat is important in Utah because it is very scarce, coverings less than 1% of the landscape, yet its role in the landscape is so significant it has been referred to as the "aorta of an ecosystem" (Wilson, 1979).

1 Protect and improve the health of existing desirable plant species

- A. Develop an inventory of native and desirable vegetation patches
- B. Preserve and enhance areas to increase biodiversity
- C. Retain genetic representation of native plants on a landscape level

2 Control noxious and invasive plant species

- A. Work to further develop a noxious weed inventory for the corridor
- B. Develop and implement weed control strategies based upon ecologically sound practices
- C. Treat noxious weeds in a phased manner and continue to maintain noxious weed-free areas

- D. Establish site appropriate vegetation utilizing saplings, seeds or root masses

3 Restore native plant communities and ecosystems to the fullest possible richness, diversity, and health

- A. Create an ecosystem profile of optimum species composition
- B. Conduct an environmental assessment of riparian corridor
- C. Identify restoration potential of specific parcels within corridor
- D. Publish best practices for long term ecosystem management

4 Restore wildlife habitat

- A. Diversify plant and shrub age class with a multi-story vegetation cover
- B. Plant species appropriate for desirable wildlife
- C. Promote biological diversity though use of many native plant species

5 Enhance fish habitat

- A. Plant appropriate vegetation "on bank" for river shading to lower water temperatures
- B. Restore or enhance existing emergent marsh areas for fish spawning

6 Stabilize river banks to improve water quality

- A. Plant appropriate vegetation "on bank" to establish roots to hold bank from erosion
- B. Establish and enhance existing ponds and wetlands for filtration and incorporate them into stormwater management

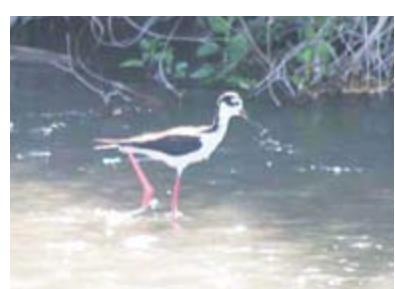
7 Develop community partnerships and involvement

- A. Acquire or place conservation easements on and protect small, high-value wetlands
- B. Work with federal, state, and local agencies to obtain grant monies to deal with noxious and invasive plants
- C. Encourage botanical education opportunities at select sites
- D. Demonstrate vegetation management successes
- E. Encourage urban forestry programming and municipal tree management adjacent to Jordan River corridor

Within the Mountain West, 82% of the total species of birds are either totally or partially dependent on riparian habitats, and 51% of avian species are completely dependent upon riparian vegetation.



REVEGETATION EFFORTS ALONG THE JORDAN RIVER PROVIDE BANK STABILIZATION



BLACK-NECKED STILT THRIVES IN HIGH-QUALITY JORDAN RIVER RIPARIAN HABITATS

PART 2: CONNECTING AND BUILDING COMMUNITIES

D. CIRCULATION AND CONNECTION: MAKING THE CORRIDOR ACCESSIBLE

It is imperative that the river is well connected to the surrounding neighborhoods and communities to ensure that the Jordan River is accessible to all who wish to use it. This includes connections with the regional trail system, an increase in the bicycle, pedestrian, and equestrian facilities, and bringing multi-transportation options to the Jordan River corridor.

PRINCIPLE

A broad range of transportation improvements will make traveling on and getting to the Jordan River corridor easier. A lake-to-lake paved trail will not only be a vital recreational facility, but an efficient north-south transportation route for pedestrians and cyclists. Removing unnecessary diversion structures and creating more river access points will make river travel more convenient. Improved equestrian riding facilities will help to make the corridor a more enjoyable place to ride horses.

BACKGROUND

The Jordan River is centrally located and should be accessible to many people living in the surrounding region. While access to the river and the parkway trail has significantly improved over the last few years, the Blueprint aims to make the river corridor a vital transportation and recreation amenity to the surrounding cities and the state.

GOALS AND RECOMMENDATIONS

To bring about the Blueprint's circulation and connection vision, the goals and recommendations outlined in the table below should be implemented. They were developed in collaboration with the public, steering committees and planning groups.



A FAMILY BIKING OVER A BRIDGE SPANNING THE JORDAN RIVER

D. Circulation and Connection Goals

1

Integrate the Jordan River Trail system into the regional trail system

- A. Work with each city to build east/west trail connections to the Jordan River Parkway
- B. Increase regional trail access to the river
- C. Incorporate the Jordan River into the regional trail system

2

Provide balanced parking solutions

- A. Incorporate additional small parking lots
- B. Locate parking areas within 330 feet, but not adjacent to, the Jordan River Parkway
- C. Provide reserved parking for boaters to accommodate boat transport

3

Increase safety for users of the Jordan River corridor

- A. Institute neighborhood watch programs
- B. Provide "Neighborhood Watch" signage
- C. Provide above or below grade roadway crossings

4

Design automobile bridges crossing the river to be in harmony with the river corridor

- A. Improve roadway bridges to include safe pedestrian and bicycle crossing areas
- B. Improve bridges to be more aesthetically pleasing
- C. Require new construction of bridge pilings at a spacing of 25 feet to allow passage of rowing shells

5

Increase the use of transit trips to the river

- A. Enhance transit facilities within the river corridor
- B. Incorporate river-friendly amenities into stops that are near the river
- C. Work with the Utah Transit Authority (UTA) to increase the marketing for river recreation trips

- D. Promote non-auto commutes by using the trail system and UTA to increase bike and transit mode split
- E. Develop recreational transit routes with river themes

6

Improve river crossings to be more river friendly

- A. Allow for adequate bicycle and pedestrian crossings
- B. Require that bridges are wildlife compatible
- C. Identify river crossings with improved signage

7

Improve bicycle access on routes that lead to river access points

- A. Add bike lanes to major roadways which lead to river access points

8

Increase the mobility of boats on the river

- A. Design in-river structures to allow boat passage
- B. Increase signage to identify boat portage zones
- C. Provide launching facilities that will allow the launch of any type of non-motorized boat and accommodate wheelchair access

9

Enhance the identity of the communities, businesses, and attractions along the river through signage

- A. Identify unique characteristics of communities through individual themes
- B. Identify historical sites, landmarks and other places of interest

10

Encourage accessibility to the corridor through signage

- A. Provide north/south address coordinates to trail users
- B. Identify regional trail connections
- C. Identify cities and communities with signage
- D. Work with communities to develop clear signage that is consistent throughout the corridor



TRAIL DISCONTINUITY
CREATES OBSTACLES FOR
PEDESTRIANS, WHILE A LACK
OF ADEQUATE SIGNAGE CAN
MEAN THAT IMPORTANT TRAIL
CLOSURES ARE DISREGARDED



BICYCLISTS HAVE DIFFICULTY
ACCESSING SOME TRAIL
SEGMENTS

E. Building Community

Creating a balance between the natural elements of a restored river corridor and urban activity centers is a critical component to the Blueprint . Generating a lively, safe and sustainable public resource, while maintaining a healthy ecosystem are important aspects to any urbanized area. The Blueprint creates a vision that enhances surrounding communities and the natural environment adjacent to the river through stewardship and sound design.

PRINCIPLE

The vision for the Jordan River corridor is to develop linear nature parks, with small developed nodes. These centers seek to achieve a balance between the natural and the urban environment. These centers would provide urban and commercial activity within the corridor, bringing more people to the river.

BACKGROUND

Many areas in the country have implemented riverfront design guidelines and plans that integrate the built urban areas with the natural environment. Environmentally sensitive development or redevelopment includes many public amenities, such as trails and parks, adding new life into a city and improving quality of life for its residents.



RIVER-FRIENDLY DEVELOPMENT TECHNIQUES
SHOULD BE TAKEN INTO CONSIDERATION FOR
FUTURE PROJECTS ALONG THE JORDAN RIVER



IF DEVELOPMENT IS TOO CLOSE TO THE RIVER, IT CAN DAMAGE THE ECOSYSTEM AND NEGATIVELY IMPACT THE VIEWSHED

E. Building Community Goals

1

Create incentives for development with “river-friendly” design

- A. Fast-track proposed developments that incorporate environmentally sensitive design
- B. Provide incentives, such as density bonuses, reduced landscaping requirements, reduced impact and application fees, and reduced setback requirements for the provision of open space
- C. Encourage the use of permeable surfaces such as porous pavement
- D. Utilize performance zoning to achieve clustering and design flexibility

2

Protect natural water systems, such as streams, wetlands, and springs, within urban developments

- A. Utilize design principles such as daylighting and clustering to avoid the displacement of natural water features

3

Design and locate buildings to limit visual impact

- A. Obscure buildings with native vegetation
- B. Cluster development away from the river

4

Work with existing communities to reduce the impact of developments on the ecosystem

- A. Institute a native tree planting campaign to expand canopy and provide river habitat
- B. Target improvements during expansion and or redevelopment

5

Landscaping grant program

- A. Provide landscaping throughout the city if the owner agrees to maintain it

6

Establish “good neighbor” standards within overlay zone

- A. Create a one-page self-evaluation form for neighborhoods along the river to assess issues such as landscaping or automobile maintenance

- B. Educate landowners along the river about best practices pertaining to weeding, trash, dumping, oil changes, etc.

7

Maintain housing available to a variety of incomes

- A. Promote inclusionary housing using density bonuses, a tool used to create affordable housing

8

Bolster the surrounding neighborhoods and promote the river as a natural asset

- A. Explore better use of the State Fairgrounds in conjunction with the river

9

Acquire land for environmental stewardship with public-private partnerships

- A. Identify key partners
- B. Promote stewardship efforts through corporate sponsorships

10

Commercial uses within the corridor should be clustered into river centers to reduce impact on the natural environment and create synergistic commercial benefits

- A. Brand and clearly define river centers and include appropriate retail types
- B. Promote recreation-oriented businesses, which cater to uses such as: biking, jogging, hiking, wildlife viewing, non-motor boating, roller-skating, and horseback riding
- C. Promote dining, lodging, and other “supporting” businesses
- D. Incorporate into river centers mixed-use development concepts

F. Recreation and Tourism Goals



THE JORDAN RIVER HOLDS GREAT POTENTIAL TO KAYAKERS AND OTHER WATER ENTHUSIASTS

1

Promote the river as a regional quality-of-life amenity and recreational destination

- A. Develop water trails for canoeing, kayaking and rowing
- B. Complete surface trails lake to lake for walking, jogging, skating, and bicycling
- C. Include soft equestrian surface trails
- D. Coordinate bicycle, walking and running events
- E. Promote lake-to-lake boat trips with associated launch facilities

F.	Create urban fisheries
G.	Develop and maintain family picnic areas and playgrounds
H.	Develop kayak and canoe courses
I.	Develop the Surplus Canal as a rowing area
J.	Consider a slalom course with hydraulic features and timing gates
2	Provide natural areas and waterways that endure, captivate and lead to healthy lifestyles
A.	Enhance existing recreational opportunities
B.	Promote biological diversity by establishing many native plant species
3	Identify unique and outstanding characteristics of the river
A.	Promote the corridor as an urban bird watching area
B.	Educate the public about the Jordan River's role as a major western migratory bird flyway
C.	Designate and develop wildflower centers along the corridor
4	Place profiles of the Jordan River with relevant media outlets
A.	Promote the corridor on appropriate websites
B.	Inform active and environmentally conscious travelers of the corridor via travel guides such as Lonely Planet Guide or Moon Handbooks
C.	Disseminate Jordan River information via local visitors bureaus
D.	Target guided cycling tours
E.	Create a DVD to distribute through State and community organizations
F.	Develop a comprehensive website with events, volunteer opportunities, and maps of facilities
5	Serve active travelers by developing local businesses
A.	Identify infrastructure needed to support recreational businesses
B.	Identify leasing contractual requirements
C.	Provide example business plans

G. Education and Interpretation Goals

The Jordan River corridor will provide residents throughout the region opportunities to experience a nearby river and learn how its waters and shores intertwine with human and ecosystem health and quality of life. Positive experiences will lead to individual, institutional, and political behavior change that, in turn, support the river.

PRINCIPLE

Educational opportunities are important to inform the public about the river corridor. This will help create a place for people to connect with water and nature within an urban setting.

BACKGROUND

Educating neighboring communities about the importance of the Jordan River will help build the constituency necessary to achieve the long-term vision of the corridor as a healthy, functioning ecosystem. Building an appreciation for the river's environmental benefits will increase the public's support of the Blueprint and help develop a sense of community and stewardship of the river. Enhancing awareness and local stewardship through student led research, community tree planting, and clean ups will contribute to the health of the river, enhancing political support for water quality improvements and habitat preservation and restoration.

Many environmental education programs have increased student achievement and participation and the Jordan River provides a wonderful place-based approach allowing students to better apply concepts taught in school. Environmental education programs have increased student achievement and better schools through place-based application of concepts taught both in the classroom and along the river.



PUBLIC ART RELATING TO THE RIVER CAN CREATE COMMUNITY IDENTITY

- | | |
|----|--|
| 1 | Support environmental education and stewardship programs by developing necessary infrastructure |
| A. | Develop an inter-connected system of interpretive signs and trails |
| B. | Create a system of nature centers and environmental education facilities housing educators and naturalists |
| C. | Develop an educational infrastructure map identifying schools, nature centers, trails, historic properties and their inter-connections |
| 2 | Integrate river educational topics into the core curriculum for schools at all levels |
| A. | Develop a river "focused" environmental education program with the school districts and institutions such as Bend-in-the-River, Clark Planetarium, and Hogle Zoo |
| 3 | Provide education opportunities and programs focused on the benefits of a healthy river ecosystem |
| A. | Coordinate with local environmental education organizations to engage in youth restoration service project programs |
| B. | Coordinate with Utah Society for Environmental Education to develop a non-formal educational program based on national guidelines |
| 4 | Encourage appropriate public art projects along the river corridor that promote and bring attention to the river |
| A. | Place murals and artwork strategically throughout the corridor contributed by art or neighborhood groups |
| 5 | Establish partnerships between government, community agencies, and particularly, youth-oriented programs relevant to the Jordan River's natural resources |
| A. | Develop programs through each neighborhood to foster park management skills and volunteer network. |
| B. | Institute "urban ranger" programs such as the program developed by the City of South Jordan |
| C. | Inquire with Jordan Valley Water Conservancy District about expanding educational programs |
| 6 | Integrate environmental restoration programs into core curriculum |
| A. | Offer classes in riparian ecosystem restoration management at both the adult and K-12 levels |



EDUCATIONAL SIGNS PROMOTE CONSERVATION AND STEWARDSHIP



ALONG THE JORDAN RIVER PARKWAY, A RETAINING WALL AND HIGHWAY OVERPASS HAS BEEN TURNED INTO PUBLIC ART

VI. Implementation Framework

BACKGROUND

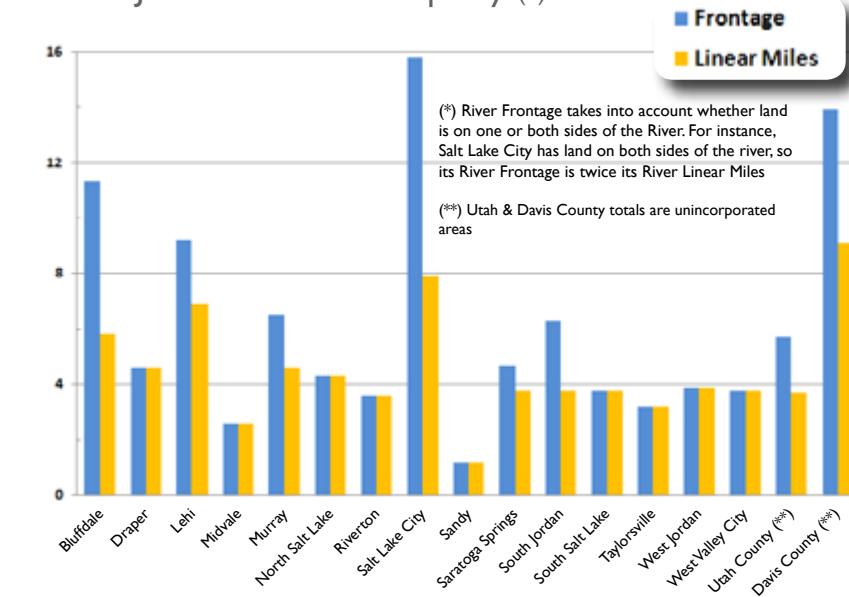
The primary themes of Blueprint Jordan River are environmental protection, recreational opportunity, and responsible economic development. Preservation of the Jordan River is the top concern for the majority of Blueprint participants. For project implementation to occur, a model has to be identified for balancing habitat preservation with recreational and economic development. The model also needs to weigh the needs of the fifteen municipalities and three counties involved in the project. Each city and county possesses different river frontages, land areas, and potential for development or preservation along the river corridor.

In the fall of 2008, an Implementation Committee explored various models and made recommendations for the Blueprint. The Committee included a balanced representation of groups with interests in environmental, recreational, and development opportunities. Committee members included scientists, conservationists, state employees, recreational business owners and advocates, community leaders, planners, economic development officials, and transportation representatives. Some members of the Implementation Committee explored various river projects across the country and reported back to the group which authority structures and funding mechanisms would be most appropriate for the Jordan River. In addition to creating recommendations for long-term implementation, the Committee also identified short-term bridging steps to enable the project to move forward.

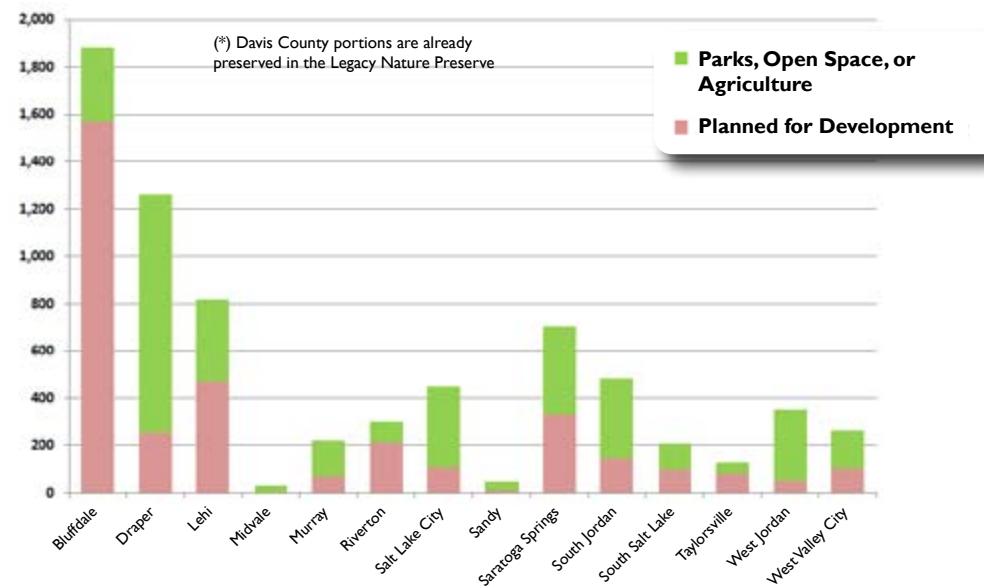
Implementation Committee Members:

Hilary Arens	Bob Farrington	Mike Mower	Wesley Smith
Mickey Beaver	Wendy Fisher	Bob Murri	Soren Simonson
Jerry Benson	Robert Grow	Ann Ober	Brandon Weston
Tom Burdett	Bruce Heath	Lynn Pett	David Wilde
Dale Carpenter	Eric Hutchings	Reed Price	
Elli Cosky	Steve Jensen	Jim Schulte	

River Frontage compared to Linear Mileage for each Jordan River Municipality (*)



Future Land Use by Municipality Within the Proposed Jordan River Natural Corridor, Per Current General Plans (*)



Long-Term Implementation

The Implementation Committee reviewed several national case studies of similar river projects. These projects utilized three general categories of implementation models: (1) non-profit organizations, (2) cooperative parks and planning arrangements, and (3) formal commissions and/or authorities.

MODEL PROJECTS

(I) NON-PROFIT ORGANIZATION

Non-profit organizations are the coordinating bodies for several river projects across the country. The Charles River Watershed Association in Weston, Massachusetts, is an example of a successful non-profit organization serving a multi-jurisdictional river area. The Charles River Watershed Association (CRWA) has been in existence for over forty years and is respected for its efforts to educate the public, monitor and improve water quality, promote river-friendly development, and pursue policy change. As the river ecosystem has improved, recreational use has greatly increased.

Using a non-profit organization to oversee and coordinate Blueprint Jordan River implementation would have both benefits and drawbacks. An independent organization could be formed with local officials and stakeholders serving as board members. With the appropriate board structure, the organization could fairly represent stakeholder interests along the Jordan River. The organization could act as a coordinating body for different organizations working on the river, including groups focused on environment, recreation, and economic development and redevelopment.

Because the organization would not have any formal authority over the river, individual cities would still retain full authority over areas within their jurisdiction. Although this level of autonomy could be viewed as beneficial, it would likely be disadvantageous, as implementation would occur in a piece-meal fashion.

Without dedicated funding and recognized authority, a Jordan River organization would likely be slow to enact change. Given the current pressures facing the Jordan River, such a delay in action could be detrimental to the Vision.

CHARLES RIVER WATERSHED ASSOCIATION, MA

"Protecting the health, beauty, and accessibility of the Charles River"

BACKGROUND

The Charles River is 80 miles long and passes through 23 Massachusetts municipalities, including Boston. Amid concerns regarding habitat degradation and flooding hazards, the Charles River Watershed Association (CRWA) was formed in 1965. The CRWA is a non-profit group with a strong focus on advocacy, education, policy, and science-based management. The CRWA's efforts have led to major improvements to ecosystem health. The Massachusetts Department of Conservation and Recreation maintains the Charles River Reservation, a popular 20-mile linear park and trailway.



THE CHARLES RIVER IS A POPULAR LOCATION FOR SAILING, CANOEING, AND KAYAKING.

AUTHORITY STRUCTURE

As a non-profit 501(c)(3) organization, CRWA is led by a Board of Directors. Staff members represent a wide range of fields, including law, science (water quality, watershed science, system modeling), urban restoration, landscape design, and community outreach. Although the CRWA has no official authority over the Charles, it is respected in the region and comments on permitting processes and new developments. The CRWA has strong public support and a reputation for sound science and successful litigation. Developers respect the CRWA's influence and often modify development plans according to CRWA recommendations.

FUNDING SOURCES

In 2007, the CRWA received approximately 1/3 of its funding from memberships and individual donations and 1/3 from private foundations. The remaining 1/3 was split among government grants, in-kind donations, and corporations.

ADDITIONAL INFORMATION

www.crwa.org

JORDAN RIVER MITIGATION

UTA and UDOT have conducted mitigation projects in areas adjacent to the Jordan River. These projects involve conserving and restoring habitat areas to compensate for lands affected by current or future transportation projects. UDOT's Galena Wetland Mitigation Bank, completed in 2005, created approximately 25 acres of functional wetland along the Jordan River between 12300 South and the Bangerter Highway. The Jordan River also joins into UDOT's 2,225-acre Legacy Nature Preserve, which was created to mitigate for the effects of the Legacy Parkway.

In 2008, UTA worked with Murray City and Salt Lake County on an ecosystem restoration project along the Jordan River at approximately 5400 South. UTA's restoration efforts will compensate for the wetlands affected by the Mid-Jordan TRAX line.

As the region develops further, the need for mitigation opportunities is likely to continue. If mitigation efforts can be coordinated, they could represent an effective mechanism for conserving and restoring valuable stretches of open space along the Jordan River.

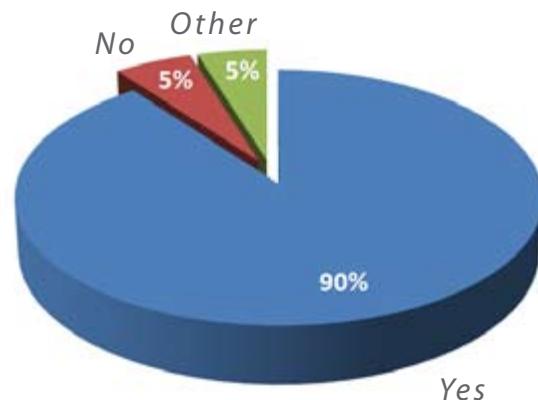
(2) COOPERATIVE PARKS AND PLANNING ARRANGEMENT

Cooperative and collaborative arrangements between parks and planning departments have been used successfully for multi-jurisdictional river projects. For the American River Parkway in Sacramento, California, the planning and management responsibilities are shared across departments and agencies of Sacramento County, the State of California, and the cities of Sacramento and Rancho Cordova. The County Planning and Community Development Department has spearheaded development of the Parkway Plan. Because the parkway includes county and state lands, the day-to-day management is shared between the Sacramento County Department of Regional Parks and the California Department of Parks and Recreation. Individual cities review development plans and administer land-use policy.

If a similar model were directly translated to the Jordan River, it could mean that the principles of the Blueprint are adopted by the different municipalities, while the Parks Departments of Utah, Salt Lake, and Davis Counties oversee management. As an advantage to this model, individual cities would adopt the Blueprint principles but maintain autonomy and authority within their jurisdictions. However, following the American River model, management responsibilities would likely be shared among three different counties. This scenario could potentially create a situation in which authority is too dispersed to facilitate successful, coordinated implementation efforts and adequate funding.

Blueprint Jordan River Survey Question:

Do you support establishing nature preserves (such as the Legacy Nature Preserve) along the Jordan River in currently undeveloped areas?



AMERICAN RIVER PARKWAY, CA

BACKGROUND

The American River flows through three California counties. The 29-mile-long parkway has been established in Sacramento County in the lower, more urbanized stretch of the river. The parkway is a multi-jurisdictional open space greenbelt and includes parts of the cities of Sacramento and Rancho Cordova, as well as the Folsom Lake State Recreational Area and unincorporated Sacramento County lands.

The parkway includes an extensive trail system for bicyclists and pedestrians, as well as boating access points, equestrian trails, and parks. Sacramento County adopted the American River Parkway Plan in 1962. The plan has since undergone a series of revisions and is referenced in the general plans of Rancho Cordova and Sacramento City. The work of many non-profit American River organizations further promotes conservation, recreation, and parkway principles.



AN EXTENSIVE TRAIL NETWORK RUNS THE ENTIRE 29-MILE LENGTH OF THE AMERICAN RIVER PARKWAY.

AUTHORITY STRUCTURE

The Sacramento County Department of Regional Parks acts as the parkway manager for approximately $\frac{1}{4}$ of the parkway, with the California Department of Parks and Recreation managing the remaining section. These two entities manage day-to-day operations. The Sacramento County Planning and Community Development Department is primarily responsible for long-range parkway policies. The Sacramento and Rancho Cordova Planning Departments are responsible for administering of the plan within their respective jurisdictions.

FUNDING SOURCES

Historically, the Sacramento County General Fund has been the primary source of funding for the parkway. Income has also been generated by transient occupancy tax, state and federal grants, state and local bonds, private donations, property tax, and park user fees. Non-profit organizations such as the American River Parkway Foundation also contribute their fundraising efforts to parkway improvements.

ADDITIONAL INFORMATION

www.planning.saccounty.net/american-river-parkway/index.html

(3) COMMISSION OR AUTHORITY

Several multi-jurisdictional river projects have created a formal, centralized entity, either a state authority or a commission, to oversee implementation. A successful example of a river authority is the San Antonio River Authority (SARA) in Texas. SARA oversees four counties and has a multi-disciplinary structure that includes parks, watershed management, utilities, and planning and development. Formation of a Jordan River Authority is a possible implementation model. Although the previous Provo-Jordan River Authority was short-lived, the success of the Utah Transit Authority (UTA) demonstrates that where there is strong public support, an authority structure can be quite successful. UTA receives solid funding from sales tax revenues. A Jordan River Authority would benefit from similarly solid funding. An authority would also have the ability to coordinate river-wide implementation in a cohesive, consistent fashion.

Since jurisdictions may be hesitant to relinquish control to an authority, a commission may be an appropriate alternative. The Utah Lake Commission, which is developing guiding principles for development, recreation, and preservation around Utah Lake, represents one potential commission structure. Participating municipalities are on the Governing Board and pay membership fees according to their amount of shoreline, population, and land area. These fees cover 50% of operating costs; state government organizations cover the rest. A similar method for dividing funding among Jordan River's cities and relevant State agencies may be a possibility for implementing the Blueprint. The commission would receive a steady source of funding for operational costs and could pursue public bonds, grants, and private contributions for new projects.

Blueprint Jordan River Survey Question:

Do you support establishing nature preserves (such as the Legacy Nature Preserve) along the Jordan River in currently undeveloped areas, and if so, by what means?



SAN ANTONIO RIVER AUTHORITY, TX

"Water brings us together"

BACKGROUND

The multi-jurisdictional San Antonio River Authority (SARA) was created in 1937 by the Texas Legislature. SARA is charged with the preservation and management of the San Antonio River and its tributaries in four counties. SARA operates and manages three parks and two river access points.

Total park area managed by SARA includes approximately 500 acres of land and 4,000 acres of water surface.



THE SAN ANTONIO RIVER WALK OFFERS SHOPPING, DINING, AND BOATING OPPORTUNITIES.

SARA is also involved with efforts to enhance San Antonio's famous Riverwalk, a city park maintained by the San Antonio Dept. of Parks and Recreation. In 2003, SARA established the San Antonio River Foundation (SARF), a non-profit 501(c)(3) organization. SARF is contributing to efforts to expand San Antonio's Riverwalk into a 15-mile-long linear park. Projects such as the Riverwalk are subject to review by the San Antonio River Commission (SARC), which advises the San Antonio City Council.

AUTHORITY STRUCTURE

SARA is governed by a twelve-member Board of Directors who represent Goliad, Karnes, Bexar, and Wilson counties. The General Manager of SARA is responsible for all SARA divisions, including Watershed Management (water quality, flood prevention), Operations (engineering, water/wastewater utilities, park service), Planning & Development, and Intergovernmental & Community Relations.

FUNDING SOURCES

SARA bylaws include the ability to levy an ad valorem tax uniformly across the district. This tax revenue is used for maintenance and operations. Much of SARA's revenue is from utility and flood services, federal and state appropriations, interlocal agreements, and grants and private donations.

ADDITIONAL INFORMATION

www.sara-tx.org, www.sariverfoundation.org, and www.sanantonio.gov/rivercommission

CASE STUDY

UTAH TRANSIT AUTHORITY (UTA)

BACKGROUND

Formed in 1970 to serve Sandy, Salt Lake City, and Murray, UTA's service area now includes six counties and a network of light rail, commuter rail, and buses.

AUTHORITY STRUCTURE

A sixteen-member Board of Trustees oversees the UTA general manager. City and county governments from within the service area appoint board members.

FUNDING SOURCES

The largest source of revenue for UTA is the local option sales tax and varies by city and county. UTA is able to bond independently.

ADDITIONAL INFORMATION

www.rideuta.com/



UTA TRAX, LIGHT RAIL

TRANSPORTATION ENHANCEMENT FUNDS

In Utah, federal Transportation Enhancement (TE) Funds are administered by the Utah Department of Transportation. Any of twelve designated activities can qualify for TE funds, including acquisition of scenic easements and provisions of facilities, safety, and education for bicyclists and pedestrians.

Over \$2 million in federal TE funds have already been utilized for trail development along the Jordan River. TE funds will likely continue to be a valuable resource for implementing the Vision.

ADDITIONAL INFORMATION
www.enhancements.org and
www.fhwa.dot.gov/environment/te/index.htm

POTENTIAL FUNDING SOURCES

Project funding options will vary depending on the type of authority structure that is implemented. A combination of funding sources will be required to meet project needs. Some potential options include:

- Public Bonds
- Sales Tax Revenues
 - » ZAP (Zoo, Arts, and Parks Funds)
- Property Taxes/Special Service Districts
- Redevelopment Districts/Tax-increment Financing
- Mitigation
- Corporate Sponsorships
- Private Foundations
- User Fees
- Federal and State Grants
 - » Open Space and Critical Lands Acquisition (Utah Division of Forestry, Fire, and State Lands)
 - » Urban and Community Forestry Assistance (Utah Division of Forestry, Fire, and State Lands)
 - » LeRay McAllister Critical Land Conservation Fund (Utah Quality Growth Commission)
- Natural Resource Conservation Service
- Environmental Protection Agency

Some aspects of implementation can also proceed without direct funding. For instance, the creation of a multi-jurisdictional stormwater district and/or stormwater utility fee would reduce run-off and improve Jordan River water quality.

COMMITTEE RECOMMENDATIONS

Although the three models discussed here have all been employed for successful multi-jurisdictional river projects, the Jordan River represents a unique situation because of its size and the number of different municipalities along its banks. The Implementation Committee believes that a single management entity, either an authority or commission, would be the most effective structure for promoting effective implementation across all municipalities. Based on survey results, the public appears willing to support a similar structure.

UTAH LAKE COMMISSION

"Awake Utah Lake"

BACKGROUND

Utah Lake is over 95,000 acres in size and has nine different cities and unincorporated Utah County lands along its shoreline. The lake area contains valuable wetland habitat and is one of the last remaining natural habitats of the June sucker, a federally endangered fish. In the cities surrounding Utah Lake, the rapid pace of development threatens to further degrade water quality and ecosystem health.

The Utah Lake Commission (ULC) was formed in 2007 to work toward environmental protection, recreational opportunities, and responsible economic development in the area. The ULC is in the process of developing a Master Plan guiding document for the lake. Once the document is established, the ULC will review development proposals and agency actions and offer recommendations for compliance with the Master Plan.

AUTHORITY STRUCTURE

The current ULC governing board members are appointed elected officials from fourteen cities and Utah County, as well as appointed representatives of various Utah state environmental resource agencies. The ULC governing board oversees the Executive Director and receives advice from the Technical Advisory Committee. Membership is open to municipalities that sign the ULC Interlocal agreement. Municipalities and organizations that do not wish to sign the Agreement or are not able to do so, are invited to participate in the Public Advisory Group.

FUNDING SOURCES

Operational costs are provided by a combination of state and local sources. The State of Utah covers 35% of operational costs; this expense is shared equally by the Dept. of Natural Resources, Division of Forestry, Fire, and State Lands, and the Dept. of Environmental Quality. The Central Utah Water Conservancy District pays 15%. The remaining 50% of funds comes from participating municipalities, calculated according to land area, population, and length of lake shore. The percentage of the total for all municipalities is used to weight total payment. The ULC has the authority to issue bonds and intends to pursue state and federal grants for future projects.

ADDITIONAL INFORMATION

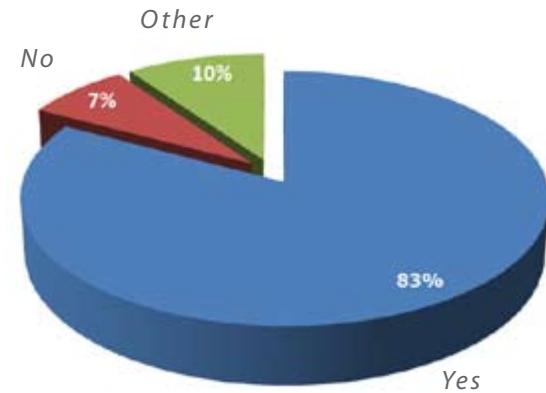
www.utahlakecommission.org/

Blueprint Jordan

River Survey

Question:

The Utah Legislature recently created the Utah Lake Commission to coordinate long-term management and planning among the municipalities around the lake. Would you support the creation of a Jordan River Commission to serve a similar role?



A central, single management entity is recommended for a number of reasons. If a non-profit organization such as CRWA were used as an implementation strategy, the organization would initially have little power and funding and would be very slow to enact change. If a collaborative parks/planning arrangement similar to the American River Parkway were used, authority would likely be too dispersed to achieve the unified Vision. A single management entity would be in the best position to obtain funding, acquire lands, and coordinate Jordan River preservation, development, and maintenance.

Since the previous Provo-Jordan River Parkway Authority was short-lived, steps need to be taken to ensure that the future Jordan River management entity has staying power. Current organizations such as the Utah Lake Commission or Utah Transit Authority can be examined as potential models. The eventual structure of the Jordan River authority or commission will need to be a hybrid model, unique to the situation at hand. The benefits and drawbacks to creating a state authority versus a commission will need to be carefully weighed to balance the need for funding and power with the desire of municipalities to retain local jurisdictional authority. The recommended Jordan River management entity would have the following features:

STRUCTURE

- Representation from all 15 municipalities and 3 counties along the Jordan River
- Cross-departmental collaboration and representation
- Divisions, committees, or representatives from the areas of planning,

community and economic development, stormwater management, flood control, water quality, wildlife resources, parks, safety, etc.

- A public advisory committee to meet regularly and be open to stakeholders and interest groups who would like to communicate their concerns to the management entity

RESPONSIBILITIES

- Manages all aspects of the proposed Jordan River Natural Corridor of approximately 7,300 acres
- Directs open space acquisition and easements, and coordinates mitigation projects
- Preserves undeveloped land within the proposed Jordan River Natural Corridor (nearly 3,800 acres of land that is slated for development and 3,500 acres of designated open space)
- Reviews development plans along the corridor and makes recommendations to municipalities regarding building design and permitting
- Coordinates recreational amenities and education/research programs
- Pursues grants and outside funding opportunities

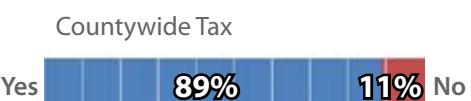
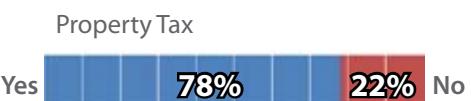
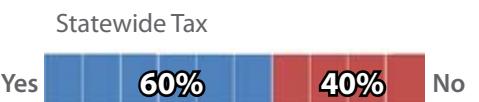
FUNDING SOURCES

- Receives dedicated funding, potentially through sales tax revenue, property tax revenue, or city/county general funds
- Possesses the ability to utilize bonds for capital improvement projects
- Receives funding from participating municipalities, perhaps in amounts that are proportional to river frontage, population, area, open space area, planned regional river centers, etc.

WHAT DO YOU THINK?

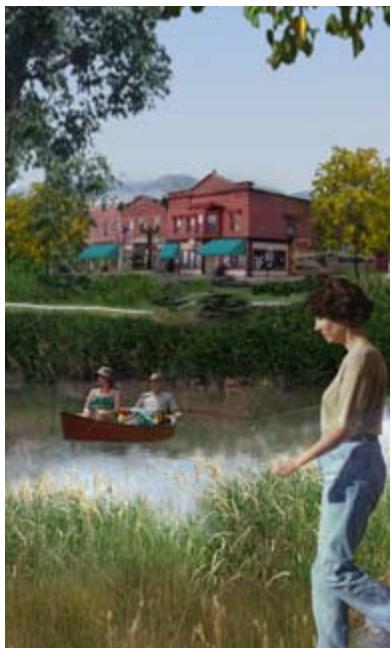


If you generally support the creation of a Jordan River Commission, how would you fund it?



JORDAN RIVER DEVELOPMENT PROJECTS

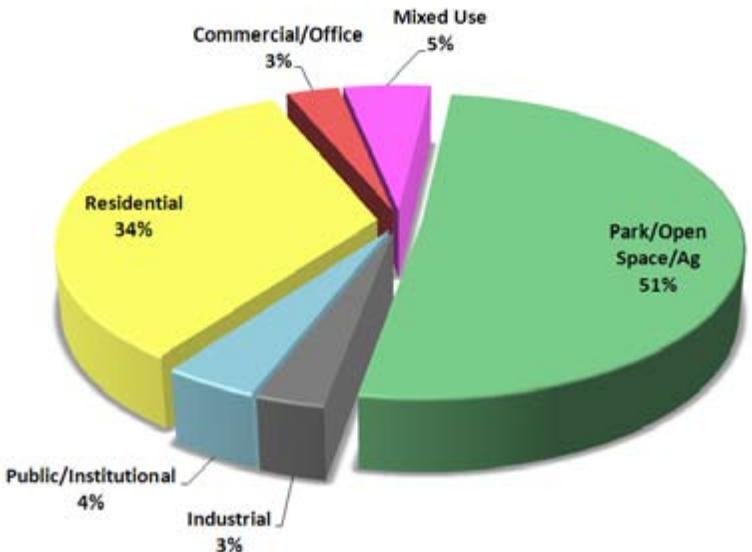
Current and proposed developments include the mixed-use developments of River Park in South Jordan, the Midvale Riverwalk, and the Jordan River Marketplace in West Valley City. If the developers and architects working on these projects and future developments were able to consult with a single Jordan River management entity, the most consistent and river-friendly designs could be encouraged.



RIVER-FRIENDLY DESIGN
IS ENCOURAGED IN THE
BLUEPRINT

An effective Jordan River management entity cannot be formed and funded overnight. During the transition period, the Implementation Committee recommends that progress continue on the Blueprint Jordan River project via the following bridging steps:

1. Preserve current open space. Within the proposed Jordan River natural corridor, there are approximately 7,300 acres of undeveloped land. Of this land, nearly 3,800 acres is slated for development. As much open space as possible should be conserved by ensuring that land designated as open space remains that way, and that land slated for development is protected. This step is a top priority and involves working with municipalities to share the open-space vision and identify the highest priority lands for acquisition and protection. Survey results indicate that the public is willing to pay for open space acquisition if it goes to protecting the river.



FUTURE LAND USE WITHIN THE PROPOSED JORDAN RIVER NATURAL CORRIDOR, ACCORDING TO CURRENT ZONING

2. Create a dedicated staff position to coordinate project implementation by pursuing funding opportunities, moderating committee meetings, and communicating the Vision. Depending on funding and space availability, this staff person could be housed within a government agency or non-profit organization.

3. Assemble an advisory committee with local government appointees at its core to meet regularly to select an appropriate management structure and oversee implementation during the transition period.
4. Reach out to economic development groups and recreation organizations in nearby cities. Economic benefits and recreational opportunities exist not just for areas directly adjacent to the river, but also for communities with lateral trail connections. Communicating the Vision to as many groups as possible will build community support for the management entity and its implementation goals.
5. Incorporate the Blueprint into local government general plans.

CONCLUSION

The Jordan River is a valuable regional asset with unlimited potential. Through the public visioning process, a shared vision for the river has emerged. The residents of the Wasatch Front overwhelmingly support the preservation of remaining open areas along the river for future generations to enjoy as a natural setting for recreation, relaxation and wildlife. In order for this vision to become a reality five key goals must be accomplished:

1. The bulk of the remaining Open Space along the river must be protected
2. Water quality must improve (we endorse the recommendations of Salt Lake County's Water Quality Stewardship Plan). This will entail improved water treatment and stormwater management practices, as well as stricter development standards within $\frac{1}{2}$ mile of the river.
3. The trail must be completed through the 15 municipalities without gaps and the water way must be convenient to navigate with no hazardous obstructions
4. An over-arching entity must be formed to ensure that the Blueprint is implemented
5. There must be a variety of dedicated funding sources for capital projects, maintenance, and open space acquisition

There are great examples of these types of projects succeeding across the country. Implementing the Blueprint is imperative to our region's quality-of-life and competitive edge in the future. We are optimistic that it can be done.



We're part of something bigger

The Jordan River plays a vital role in our valley. We at Rio Tinto have a close relationship with the Jordan River—it feeds into Oquirrh Lake at Daybreak as well as the Kennecott Inland Sea Shorebird Reserve adjacent to the Great Salt Lake. We congratulate the Blueprint partners and the public on their efforts to create a lasting and viable vision along this important river.



Rio Tinto's Andy Kirby, Manager, Engineering Planning, Kennecott Land, maintains ecology at Oquirrh Lake in Daybreak. For more information, visit www.kennecottland.com.



Rio Tinto's Ann Neville, Senior Advisor, Biological Resources, Kennecott Utah Copper, manages wetland habitat at the Inland Sea Shorebird Reserve by the Great Salt Lake. For more information, visit www.kennecott.com.

RioTinto