

# POUDRE RIVER DOWNTOWN

# Master Plan



OCTOBER 2014



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## Acknowledgements

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# I. Master Plan Overview



**Executive Summary**

The Cache la Poudre River is treasured by a community that values it for a variety of recreational activities and the tranquility of a natural corridor, while also depending on it as a water source for municipal and agricultural uses. Moreover, the Poudre River corridor serves numerous other functions such as carrying flood flows, providing vital habitat within and along the river, enhancing water quality, and regulating climate. The Downtown reach of the river – the section from Shields Street to Mulberry - is a gateway feature that greets visitors as they enter the City from both the north and east.

This Master Plan envisions nearly three miles of sustainable river corridor (Shields Street to Mulberry Street) that provides habitat, recreation, and flood mitigation benefits. This is a long-term plan consisting of numerous elements that will take many years to complete. This plan integrates improvements to support many high-quality and safe recreational experiences, better protection against flood damage, and restored habitat connectivity for optimal river health and resiliency. Physical improvements which support sustainable use of the river corridor by the community will allow people to continue to enjoy their river, but in a way that supports a functioning ecosystem by providing connected habitat for fish, terrestrial wildlife, trees and plants, while also enhancing protection of the community during floods.

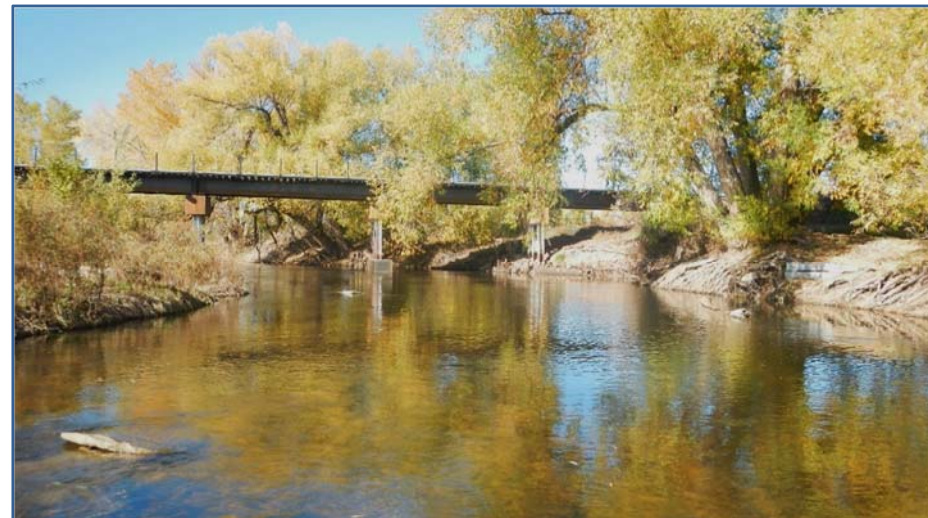


**Figure 1.1 Poudre River Looking West to the Shields Street Bridge**

For many years, the City of Fort Collins has actively sought to preserve the Poudre River corridor for the benefit of nature, people and flood protection. A substantial portion of the river’s floodplain has been placed in public ownership, as open space within the City’s system of Natural Areas. On-going improvements at McMurry Natural Area near Shields Street, as well as the recent addition of the 31-acre natural area upstream of Mulberry Street, at the site of the old Link ‘n Greens Golf Course, demonstrates the

City’s continuing commitment to enhance the environmental and habitat value along the river.

The Poudre River Trail system is a jewel that is the envy of many communities and was recently lauded by visiting officials from the U.S. Environmental Protection Agency. With respect to other recreation enhancements, the City has established four parks adjacent to the river. Two of these parks, Lee Martinez and Buckingham, have been cornerstones of their respective neighborhoods for many years. The City is currently planning improvements to Heritage, Lee Martinez and Legacy Parks to better celebrate the river and enhance a wide variety of recreational opportunities near the river.



**Figure 1.2 Poudre River Looking Northwest at the Burlington Northern-Santa Fe Railroad Bridge**

The City of Fort Collins has long been a leader in flood awareness and protection. This is particularly true along the river where flood mitigation measures have been continually planned and implemented since the 1970s. The City is recognized by the Federal Emergency Management Agency as one of the most flood resistant communities in the country. This was most fortunately demonstrated during the recent Flood of September 2013, during which the river experienced its highest flood flow in more than 80 years, but suffered only minor damage to both private property and public infrastructure.

While the City has realized remarkable achievements along the Poudre River, much more can be done in numerous areas, especially with regard to the beneficial functions of reconnecting the river to its floodplain, flood resilience, habitat enhancements, and providing opportunities for people to responsibly access and enjoy the river. Indeed, much work will need to be

accomplished in order to accommodate and balance future demands that will be placed on the river.

In recent decades, water rights along the river have been utilized to a greater extent, thereby reducing the water available for in-stream habitat and recreation purposes. At the same time, particularly during the summer, thousands of people throng to the area to swim, tube, picnic, walk, bike, fish, bird watch, and generally enjoy the river corridor. A survey conducted in 2008 determined that over 500,000 people a year use the river corridor, with much of that use occurring in the downtown area. Over the last few years, City staff has noticed a dramatic increase in summer use. The City expects this trend to continue, especially with the Fort Collins Museum of Discovery and the Mason Street Transportation Corridor projects, as well as various downtown residential redevelopment and infill projects.

Several unmet flood mitigation needs exist, particularly reducing the potential for flood flows to overtop College Avenue/Hwy 287 during large floods and eliminating a recognized flow split along Vine Drive during large flood events.

Careful planning and thoughtful foresight now will provide the basis for implementing future improvements which seek to maximize the three equally important themes of the Downtown river corridor: (1) **Enhanced Habitat**; (2) **Improved Recreational Opportunities**; and (3) **Increased Flood Mitigation**.

The City has been diligent with, and continues to be dedicated to, working with all facets of the community, and its broad spectrum of interests, to rehabilitate and enhance the downtown portion of the Poudre River corridor.



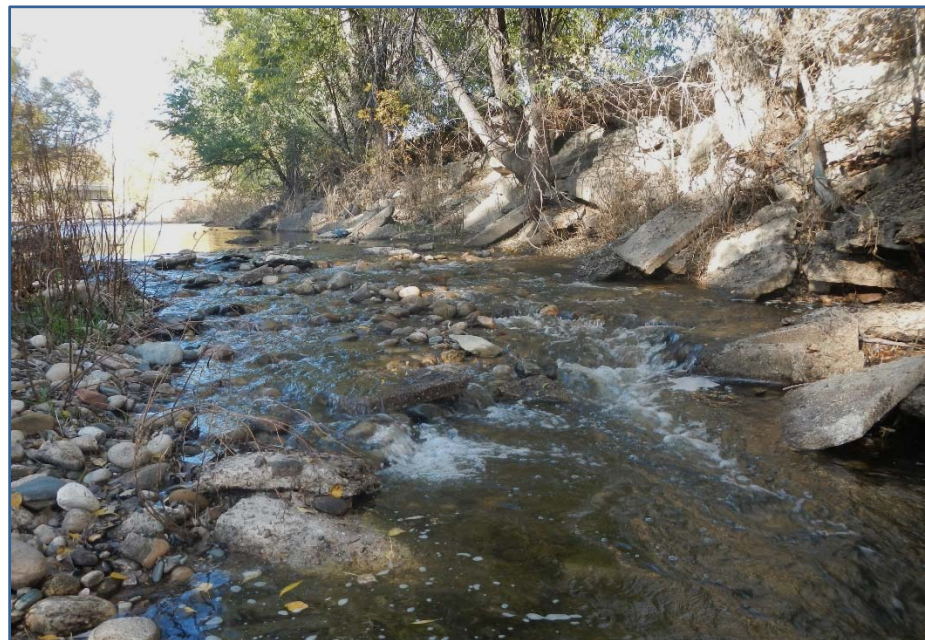
**Figure 1.3 Poudre River Looking South to the Mulberry Street Bridge**



## Purpose and Need

During the planning process members of the community, stakeholders, City Council and City staff have repeatedly expressed the importance of the Poudre River to our community, and described it as “the lifeblood of our city”, a “jewel”, the “heart of our city” and said that they’re “glad that the Poudre River is getting the attention it deserves”. These words illustrate the emotional connection that our community has with the Poudre River, and the river’s importance as a part of our city.

This project is intended to design and facilitate a beautiful river corridor that provides recreation and flood mitigation, while also restoring and preserving vital habitat.



**Figure 1.4 Concrete Rubble in Channel Bed and on Eroding Bank Downstream of Linden Street**

The Poudre River Downtown Master Plan was envisioned with multiple goals in mind. Two of the goals are conserving nature and providing recreational opportunities. Sometimes pursuing both simultaneously can result in conflict. It is clear, however, that the quality of the recreational experience is closely associated with the quality and health of the natural environment.

The river provides a focus for people’s health and wellbeing and there are many associated physical and mental benefits for those people pursuing various recreational activities. The Poudre River also serves as a valuable resource for educating school children and the public alike, thus promoting the ideals of environmental sustainability and wildlife conservation.



**Figure 1.5 Lake Canal Diversion Structure near Lee Martinez Park**

Flood-related challenges and opportunities are primarily linked to constrictions of the river channel, and structures that have been placed in the river, both of which inhibit flood flows. There are opportunities to relieve constrictions and modify structures to reduce flood damage and flooding impacts to private property and buildings, as well as public infrastructure.

In addition, constrictions of the river channel have generally resulted in the river being disconnected from the floodplain and have adversely impacted riparian habitat, while in-channel structures are impediments to aquatic and boating connectivity up and down the river. Modifications to these features would substantially improve aquatic and riparian habitat, overall stream health and function, and the floating/boating experience.

High public use of the Poudre River through Downtown Fort Collins reflects the intrinsic attractiveness of the river as well as the success of community-funded improvements. Building on this success, and delivering a world class example of a healthy working river, will require further improvements related to biological health and resiliency, recreational access, flood conveyance and floodplain connectivity.

## Project Mission

### *Stewardship – Experience – Sustainability – Education*

The Poudre River Downtown Project will plan and design integrated, and to the extent possible, mutually supportive improvements related to habitat, recreation and flood mitigation.

## Primary Objectives

### **Habitat**

- Purchase land from willing sellers.
- Conserve and restore the existing riparian ecosystem to promote river health and resiliency.
- Deliver continuous, connected aquatic and riparian habitat for fish, wildlife, trees and plants.
- Achieve and maintain diverse and sustainable native fish, wildlife and plant populations.

### **Recreation**

- As a guiding principle, trails will be located and designed with the goal of minimizing or eliminating negative impacts or damage to the environment.
- Provide a mix of active and passive recreational amenities both in and along the river which encourage a safe, healthy, outdoor lifestyle.
- Provide community gathering places and promote connectivity between recreational opportunities along the river corridor.

### **Flood Mitigation**

- Improve public safety and protect properties from damaging floods
- Eliminate 100-year flood overtopping of College Avenue and, if possible, eliminate the 100-year flow split along Vine Drive.
- Reconnect the river to its floodplain while maximizing the beneficial environmental and recreational uses of the river corridor.

## Outreach and Engagement

The Fort Collins community’s connection to the Poudre River is wide ranging and deeply emotional. In an effort to ensure that the spectrum of opinions, views, and visions held by the community is represented in the Poudre River Downtown Project Master Plan, a broad cross-section of community members and city staff were invited to share their thoughts about this plan. This community engagement occurred through many avenues and numerous occasions throughout the planning process, including: inter-departmental staff meetings and a design charrette, public open houses and focused stakeholder outreach meetings, project website development, presentations to and discussions with numerous City Boards, and City Council work sessions.

Outreach for the Poudre River Downtown Project Master Plan extended to both state and federal agencies in the form of site visits, meetings and



correspondence. In particular, Colorado Parks and Wildlife and the U.S. Army Corps of Engineers were engaged in the planning effort.

A list of specific outreach and engagement events and a summary of the feedback received can be found in the Appendix.



**Figure 1.6 Day on the River with City Staff and the Consultant Team**

Several primary themes emerged from the outreach and engagement process. These themes gravitated around:

- stewardship of existing riparian and aquatic habitat;
- habitat enhancement along the riparian corridor;
- improving aquatic connectivity;
- improving access to the river;
- providing recreational opportunities within and along the river;
- desire for a whitewater park; and
- enhancing health and safety along the river through flood mitigation.

### Relationship to Other Planning Documents

The river and lands along the Poudre River have been the focus of a variety of planning and management efforts through the years. Preparation of the Poudre River Downtown Master Plan has included review of these other planning documents. The current Master Plan has incorporated the ideas and concepts of these previously-adopted plans in an effort to promote consistency and continuities across the broad planning spectrum with the City. These other planning documents include:

**Framework for Environmental Action (1992).** This plan identified action for the Poudre River corridor including development of a land acquisition program, natural areas plan, and mitigation manual.

**City Land Use Code (1997).** This code established a variety of river protection regulations including land use districts and a development buffer zone, which extends 300 feet from both sides of the river in most areas with a smaller buffer in the downtown core.

**Cache La Poudre River Master Drainageway Plan (2001).** This plan identified flood hazards and estimated potential flood damages along the Poudre River from Taft Hill Road to I-25. The plan also evaluated alternatives and estimated potential costs for protecting property, public safety, and other resources within the study area.

**Poudre River Enhancement Plan (2003).** This plan identified improvements directed at improving habitat along the river from Lincoln Avenue upstream to College Avenue, with particular focus on the reach from Lincoln Avenue to Linden Street. The plan also identified the need for a levee between Lincoln and Linden; the Oxbow Levee has since been constructed.

**North College Corridor Plan (2007).** The mission of this planning effort is to catalyze ongoing improvements to remove constraints and foster desirable development and redevelopment. Among other things, this plan promotes development activity that strengthens relationships – such as the corridor to Downtown; and development and activity to the natural environs of the river, canal corridors, and other outdoor spaces such as future drainageways.

**North College Drainage Plan (2008).** This plan developed alternatives to mitigate local flooding in the area north of Vine Drive between the UPRRR and Lemay Avenue, particularly along North College Avenue. The resulting plan included an integrated system of large storm sewers, detention facilities, an open channel/swale, and water quality features.

**Fort Collins Park Policy Plan (2008).** The purpose of the Parks and Recreation Policy Plan Update is to assess the park and recreation needs of the Fort Collins community, evaluate the City's current services, and provide clear and implementable recommendations to deliver the level of service needed to meet the community's changing needs for the next ten years.

**City Plan Fort Collins (updated 2011).** The City's comprehensive City Plan was first completed in 1997, updated in 2004, and updated again on February 15, 2011 and titled: "City Plan Fort Collins." *City Plan Fort Collins* contains an array of principles and policies that underscore the community's support for the Poudre River ecosystem, Flood Management and Parks and Recreation. The following are pertinent principles and policies:

- Stormwater and Flood Management - *Principle ENV 18*
- Poudre River Corridor - *Principles ENV 24, 25, 26, 27, 28 & 29*

- Downtown District – *Principle LIV 32*
- Open Lands, Parks, Water Corridors – *Principle LIV 44*
- Poudre River Corridor Overlay – *Principle LIV 45*
- Parks and Recreation – *Principles CPR 4 & 5*

*(The full text of each of the Principles listed above is provided in the Appendix of this document)*

### **Cache la Poudre River Natural Areas Management Plan (updated 2011).**

The *Cache la Poudre River Management Plan Update* is divided into two parts. Part I (Chapters 1 - 6) provides broad background, context, overarching management goals, objectives, and strategies for all natural areas along the river including a broad review of management since the first management plan was adopted in 2002 and the new management zoning system. Part II (Chapters 7 - 13) describes key issues, actions, and management zones for each planning unit or individual natural area.

**Old Town Basin Water Quality Master Plan (2012).** This plan evaluated existing water quality features in the Old Town Basin, identified under-served areas, and formulated a plan of water quality facilities intended to meet federal, state and local water quality treatment requirements.

**Fort Collins Master Street Plan (Amended 2013).** The Fort Collins street master plan identifies anticipated roadway enhancements, including street realignment and widening needs, and potential grade separated rail crossings.

**Lincoln Corridor Plan (2014).** This plan seeks to provide an enhanced level of amenities along Lincoln Avenue that restores its importance as a primary entry to the heart of the City, as well as providing an important connection from Downtown to the east and northeast. This plan also identifies a priority list of related neighborhood improvements.

**Fort Collins River Downtown Redevelopment Zone Guidelines (2014).** These guidelines provide enhanced design standards for the R-D-R zone district in an effort to better address neighborhood, site, and building attributes, while maintaining the agricultural-industrial character of this unique portion of the City.

### Supporting Studies

As part of the Poudre River Downtown planning effort, several supporting studies encompassing a range of specific disciplines were completed by the project's consultant team. These studies included an aquatic habitat analysis, a geomorphic assessment of the river subsequent to the 2013 Flood, an evaluation of historical resources, and a Phase II environmental assessment for the area between College Avenue and the BNSF Railroad. The reports produced by the consultant team are cited below.



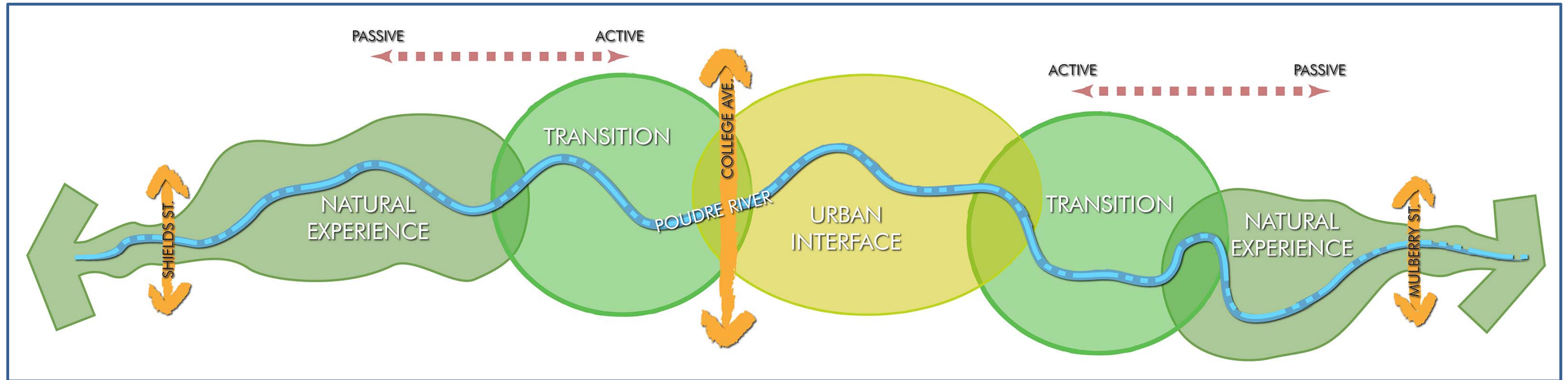


Figure 1.7 Land Use Transition Concept



Figure 1.8 Land Use Transition Diagram



- Anderson Consulting Engineers, “Poudre River Downtown Project, Qualitative Geomorphic Assessment of the Cache La Poudre River, Shields Street to Mulberry Street,” December 19, 2013.
- Miller Ecological Consultants, “Habitat Inventory Results for Cache La Poudre River in Fort Collins and Summary of Fish Presence and Swimming Speeds,” January 28, 2014.
- Tatanka Historical Associates, “Historic Structures along the Cache La Poudre River Corridor, Mulberry Street to Shields Street,” December 27, 2013.
- Walsh Environmental, “Phase II Environmental Site Assessment, Poudre River Downtown Project, Fort Collins, Colorado,” May 30, 2014.

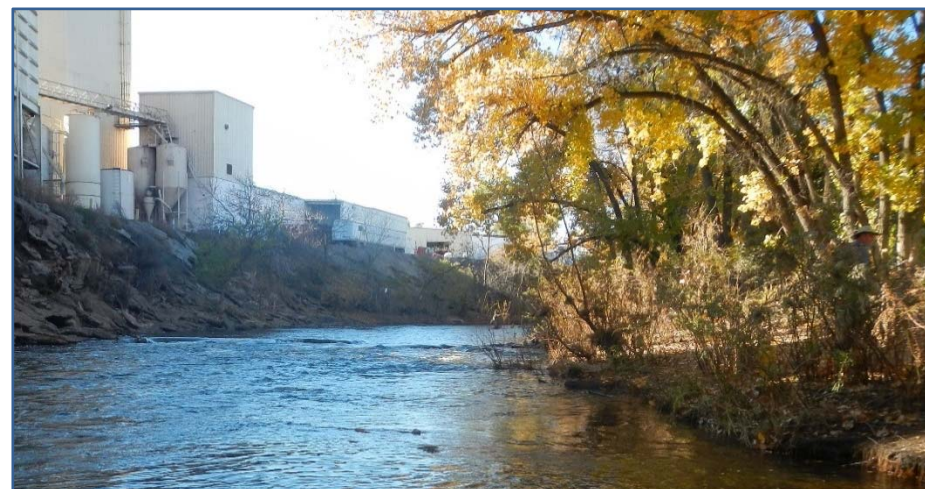
### Land Use Transitions

The downtown reach of the Poudre River provides multiple opportunities for the adjacent urbanized environment to interface with the natural environment within the riparian corridor. At a macro-scale, this can be envisioned by considering land use transitions moving both laterally (into and out of the river corridor) and longitudinally (starting in the core downtown area and traveling both east and west along the river corridor). Progressive zones which provide transitions from areas of more human activity to areas which emphasize habitat and the natural environment are illustrated with the Land Use Transition Concept and Land Use Transition Diagram provided in Figures 1.7 and 1.8 (at left).

The land use transition zones (Natural, Transition, Urban Interface) are conceptual, not absolute. The concept of transitioning from Natural to Urban was considered throughout the master planning process, but there are numerous instances where specific sites blur the lines. For example, the Gustav Swanson Natural Area is located within the Urban Interface Zone due primarily to the proximity and intensity of surrounding urbanized development, but the site will remain a natural riparian forest supporting urban wildlife habitat and passive human use. Conversely, the McMurry Natural Area is located within the Natural Use Zone and recreational uses such as boating, fishing, picnicking are encouraged. The blending of land uses, which blurs transition zones, is also illustrated in Figure 1.9 where multiple land uses co-exist on opposite banks of the river between Linden Street and Lincoln Avenue.

Considering these transitions at a finer level of detail requires thoughtful consideration of the context that includes existing natural resources, requirements for sustainable habitat, aquatic and terrestrial wildlife activities, human behavior, and surrounding land uses. One of the most challenging aspects of promoting riparian habitat health in an urban setting

is the ability to provide a continuum of habitat such that contiguous wildlife movement up and down the river is supported along at least one river bank and within the river itself.



**Figure 1.9 Variations in Land Use and Character on Opposing Channel Banks within the Reach between Linden and Lincoln**

### Character Zones

The Character Zone Map provided in Figure 1.10 was prepared in an effort to better define areas which would best support habitat stewardship and enhancements, areas where human activity could be focused and access to the river provided, and approaches for resolving potential challenges in sensitive areas where humans and wildlife will likely interact. The Character Zones are generally defined as follows:

**Habitat Conservation Area** - A zone emphasizing conservation and preservation of sensitive habitat.

**Protection Area** - A zone which prioritizes protecting existing habitat while allowing trail-side activities.

**Natural Experience Area** - A zone which encourages visitors to connect with nature and enjoy low-impact recreation.

**Focal Recreation Area** - A zone supporting a variety of recreational opportunities.

**Park Natural Feature** - A zone that is a blend of nature, recreation and stormwater improvements.

**Urban Area** - A zone which includes existing development and adjacent land suitable for future development.

Much time was spent debating the location and extent of the Character Zones, particularly the Focal Recreation Zone. Opinions varied widely on this subject. Passionate arguments were made by participants with respect to increased recreational use of the river, both for and against. Some felt strongly that the river should be preserved and enhanced as a natural resource with limited passive recreational use, while others felt that additional recreational opportunities in and around the river would add to the vibrancy and culture of the City. Compromises were made and the character zones attempt to strike a balance serving both perspectives.

As with the land use transition zones, the character zone boundaries are not absolute. The size and shape of each zone will likely be refined in the future as specific projects are carried toward implementation.

### Overview of the Poudre River Downtown Master Plan

The Master Plan Overview Map, presented in Figure 1.11, represents the culmination of the master planning process for the Poudre River Downtown Project. Preparation of the Master Plan Overview Map considered the needs voiced by the community, and requirements identified by professionals with expertise covering a wide range of scientific and social disciplines, including stormwater quality enhancement measures identified in previous stormwater master plans. For detailed information, reference is made to the ‘Master Plan by Reach’ descriptions provided in the following section.





Figure 1.10a Character Zone Map (West Side)





Figure 1.10b Character Zone Map (East Side)



Poudre River Downtown Master Plan



Figure 1.11a Master Plan Overview Map (West Side)



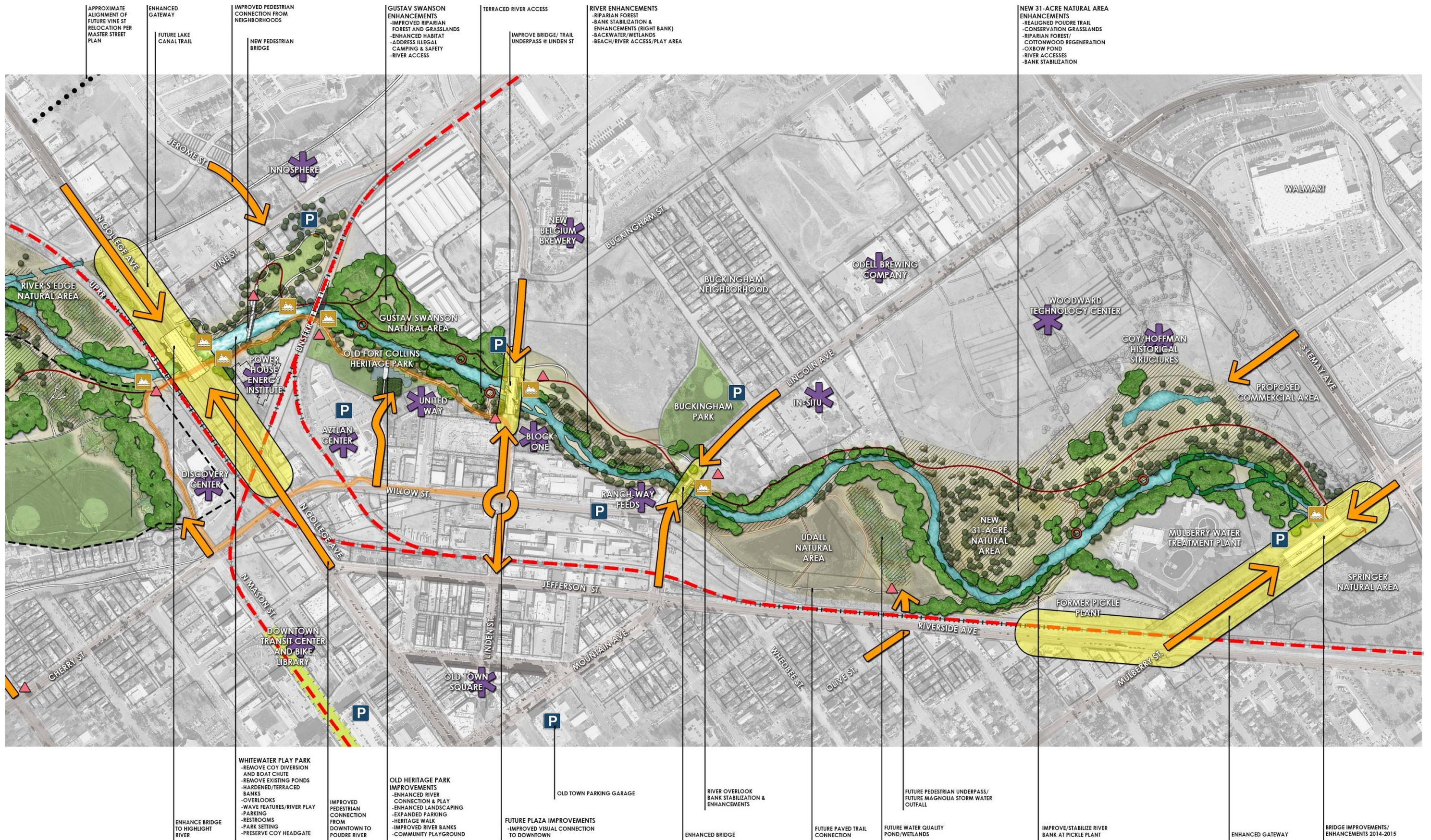


Figure 1.11b Master Plan Overview Map (East Side)



## II. Master Plan by Reach



# REACH 1

## Shields Street to Salyer Natural Area





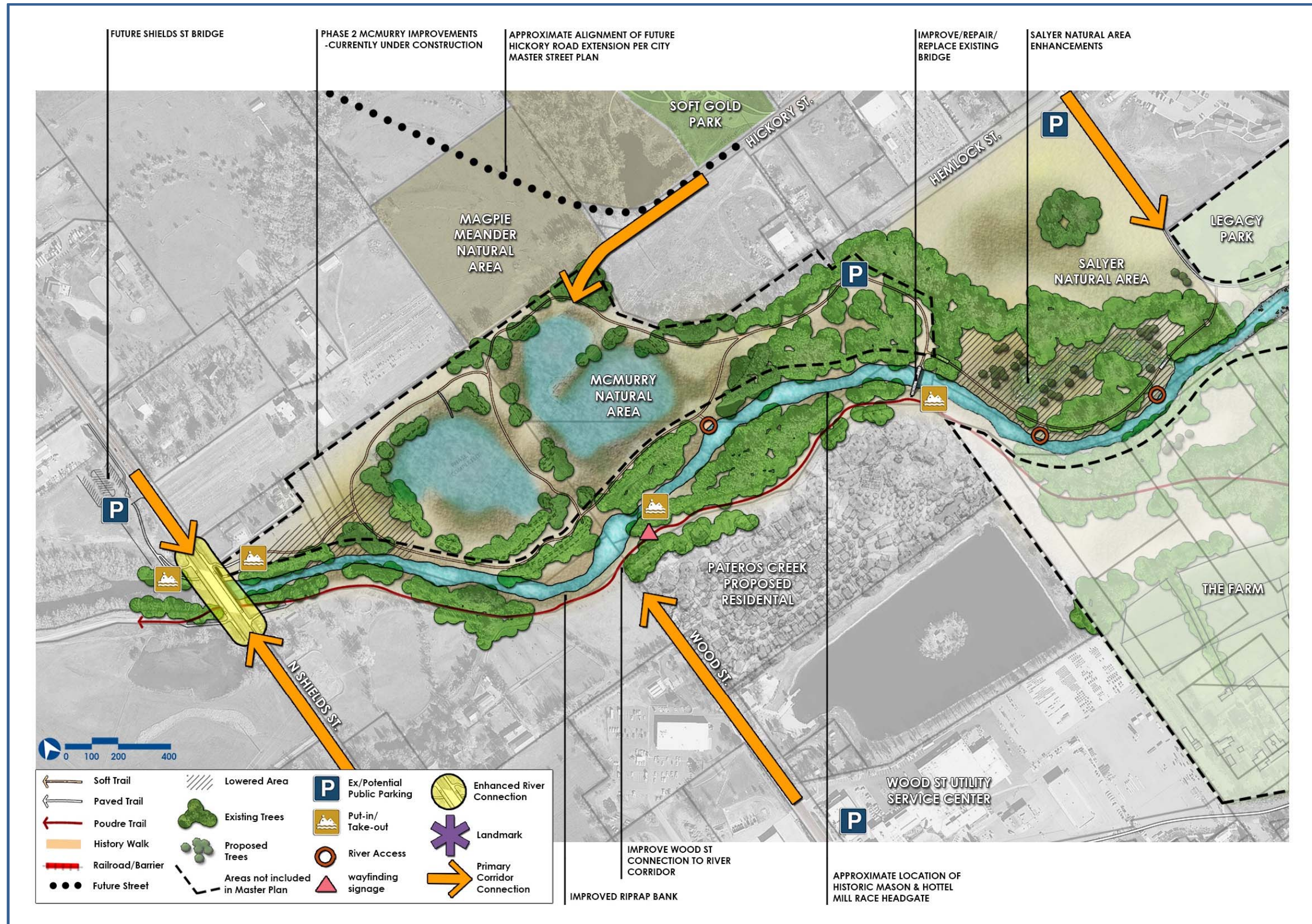


Figure 2.1 Master Plan for Reach 1



## Reach 1 – River Retreat

Retreat: *a place of refuge, seclusion, and privacy.*

The richness and life of the Poudre River attracts wildlife and people to the river. As a community, we are devoted to preserving and protecting the Poudre River environment and integrating the visitor’s experience with nature. With this in mind, the emphasis in this river reach is placed on protection and enhancement of natural habitat, creating and improving sustainable access to the river, and creation of special places for people to experience and interact with nature.

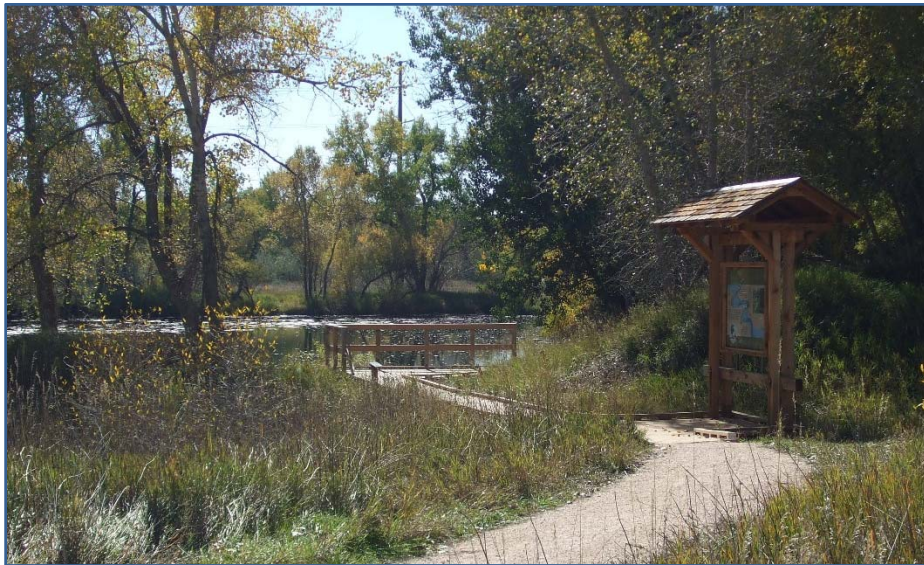


Figure 2.2 Typical River Access/Overlook



Figure 2.3 Mink Sighting along the Poudre River (photo by Norm Keally)

## Background and Fundamental Opportunities

The Poudre River begins its course through Fort Collins’ urban center as it passes under Shields Street. This is a beautiful stretch of the river corridor that feels rural in character due to the presence of McMurry Natural Area, Salyer Natural Area, the mature cottonwood forest, and the larger privately owned parcels adjacent to the corridor.

The City and County have either attended to or are currently addressing several of the safety, flood mitigation, bank stabilization and habitat restoration objectives in this reach as part of other projects. This project complements previous efforts and places emphasis on the provision of sustainable trails and access to the river.

Outside of the river itself, the most distinct features found in this reach are the McMurry Ponds which encourage people to explore away from the river’s edge. Visitors routinely participate in a wide range of activities from: solitary nature reflection; birding; socializing with groups of friends; playing in the water; walking with family, friends and dogs; fishing; floating the river; kayaking the ponds; and picnicking.

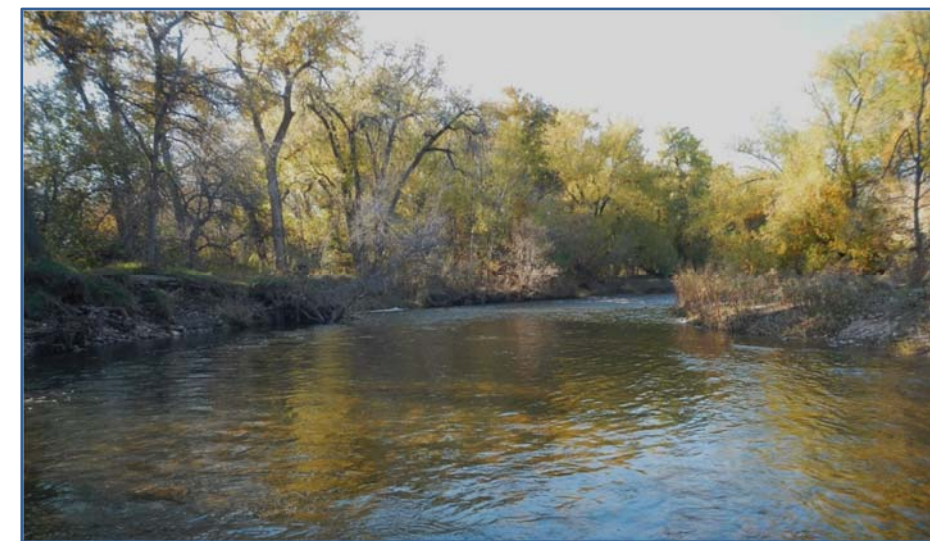


Figure 2.4 Poudre River Looking West (McMurry Natural Area is on right)

The greenway corridor constricts as it crosses east past Shields Street. There may be opportunities to expand the corridor through land acquisition from willing landowners. The expansion would help provide opportunities to: protect properties from flooding; reconnect the floodplain to its overbank areas; enhance and restore the river ecosystem, and provide for additional recreation opportunities. Opportunities for expansion of the river greenway in this reach include:

- Lowering the near-river portion of the Salyer Natural Area to reconnect this area to the river during 2-year to 5-year flow events.

- Potential land acquisitions from willing landowners in areas that directly adjoin the river and/or that adjoin public lands.

## Related Projects

- Shields Street Bridge replacement, including parking and river access points.
- Poudre-o-meter – a combined river access/flood level demonstration feature located just downstream of the Shields Street Bridge.
- The McMurry Natural Area Ecological Restoration Project was completed in Spring 2014.
- Vegetative landscaping improvements for exposed riprap on the south bank of the river near Wood Street.
- Private Development. Natural area buffers located within adjacent private properties will require designs intended to blend with the existing river character.

## Flood Mitigation and Bank Stabilization

Specific issues and potential opportunities associated with flood mitigation and bank stabilization include the following:

- Insurable structures are located within the regulatory (100-year, aka 1% annual chance of occurrence) floodplain in the upper and middle portion of this reach. In addition, at approximately mid-reach, a residential development is proposed in the near overbank south of the river. Consequently, particular care will be required to ensure that any project which includes improvements within the river corridor (i.e., floodway) do not increase 100-year water surface elevations.
- Opportunities for reducing 100-year flood elevations should be investigated in conjunction with future improvements within this reach. On-going and potential future improvements through McMurry and Salyer Natural Areas, which are intended to reconnect the river to its floodplain by lowering extensive portions of the overbank, will promote reduction in flood elevations and will help to maintain stable banks and support riparian vegetation.
- Lowering the river bank at the upstream end of Salyer Natural Area to allow higher flows to enter the proposed backwater wetland area during larger events.
- Bank improvement options for the areas illustrated in Figure 2.5 include: rock toe protection and revegetation in areas where river migration and/or bank retreat is not acceptable; or bio-stabilization for areas where river movement and/or bank retreat is acceptable.



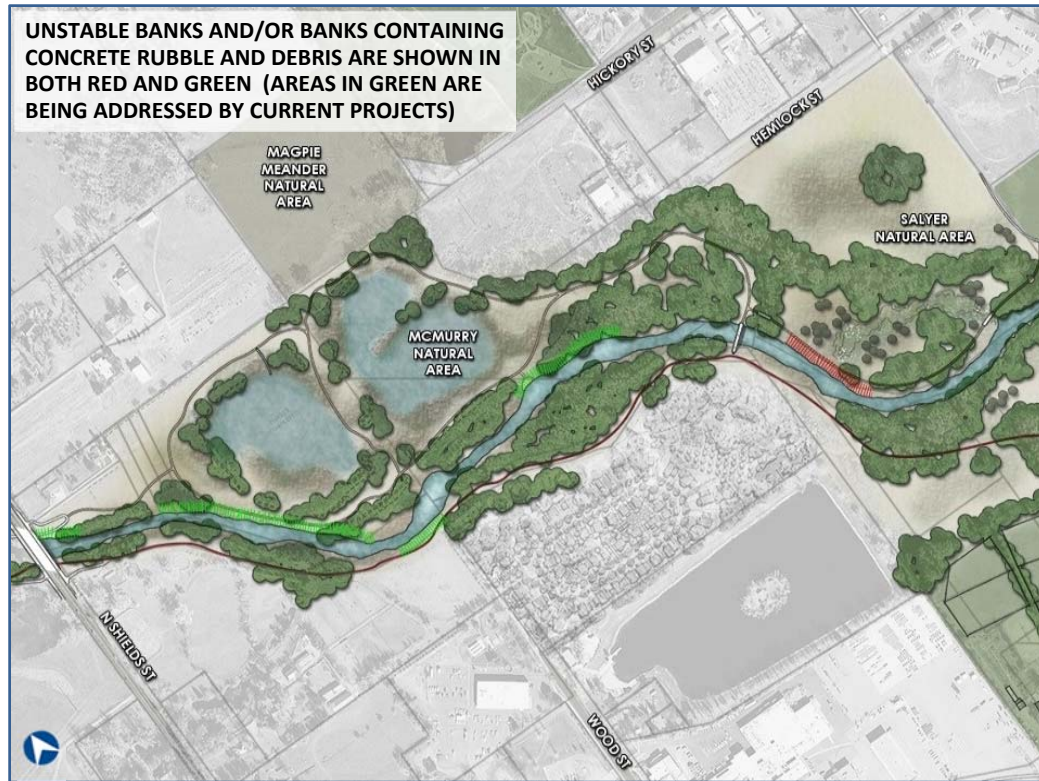


Figure 2.5 Bank Stabilization Needs Map for Reach 1

- The south river bank includes a section of exposed riprap armoring near the proposed extension of Wood Street (shown in Figure 2.6). A plan has been developed, as part of the McMurray Natural Area Ecological Restoration Project, to enhance this river bank; the City Stormwater Department will take the lead on implementing this plan. Ultimately, this bank will be enhanced to blend with the natural surroundings by adding soil cover and installing willow plantings.

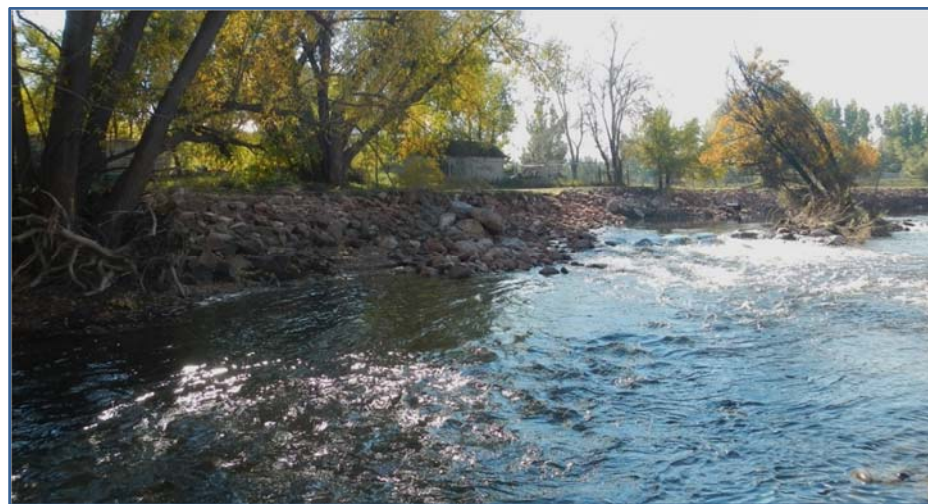


Figure 2.6 Exposed Riprap Bank Armoring near Wood Street

### Habitat/Ecological Restoration and Protection

McMurry Natural Area restoration projects were completed in Spring 2014 and helped meet the following objectives:

- Protecting existing high quality riparian forests, wetlands, and native plants.
- Improving stream banks by lowering high banks and reconnecting the floodplain to river (for 2 to 5+ year events), removing rubble/debris, and repairing severely eroding banks.
- Improving riparian habitat and connectivity, both lateral and longitudinally, by creating wetlands, expanding riparian forest and shrub cover, and increasing diversity for native birds, amphibians, and other wildlife.

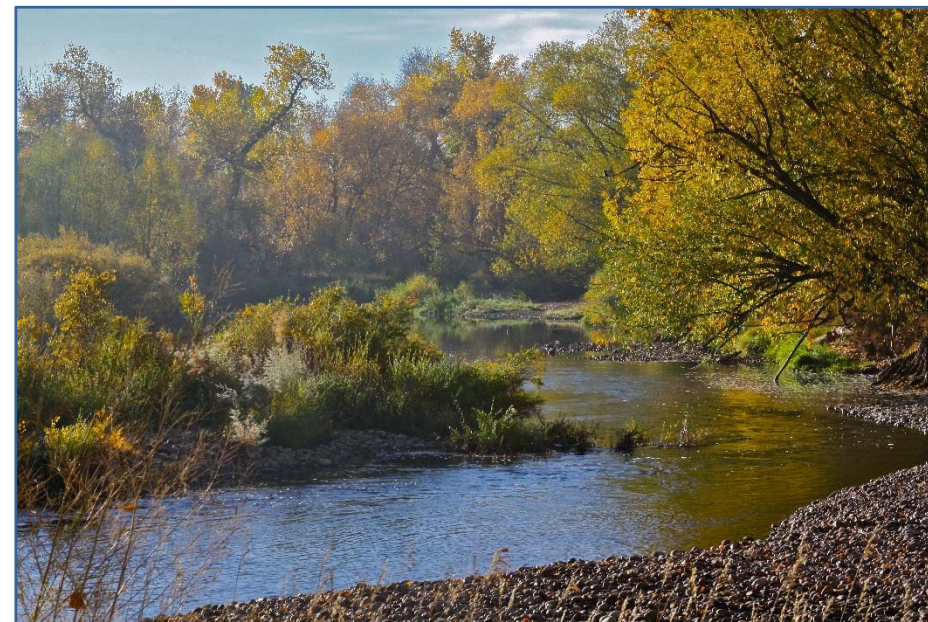


Figure 2.7 Early Fall on the Poudre River (photo by Norm Keally)

- Moving the trail back from river's edge to improve corridor for small riparian mammals.
- Maintaining backwater channel habitat.
- Removing concrete rubble from channel banks.
- Maintaining in-stream habitat connectivity and diversity.
- Providing specified public access area for protection of near shore vegetation, and re-establish near shore vegetation to contribute to in-stream productivity.

Potential opportunities for improvements in Salyer Natural Area include:

- Increasing diversity by enhancing the mosaic of native riparian plant communities.
- Creating backwater channel wetlands.
- Enhancing 2-year to 5-year overbank flooding opportunities.
- Protecting existing native plant zones, particularly in northern portion of this natural area.
- Stabilizing actively eroding banks and re-establish riparian vegetation.

### Recreation and Access

Specific issues and potential opportunities associated with recreation and access include the following:

- Creating settings where people are encouraged to interact with and learn about nature and local heritage. Potential interpretive and educational topics for this section of the river include: wetlands; water birds; hydrology; flood level awareness at the "Poudre-o-meter" at McMurry (Figure 2.8); and the historic Mason & Hottel Mill Race.



Figure 2.8 Poudre-o-meter at McMurry Natural Area

- Designating and creating beaches and river access areas in both McMurry Natural Area and Salyer Natural Area; these areas could be identified and managed as anticipated high-use, focal points.
- Providing sustainable trail connections.



- Collaborating with Larimer County on the design and reconstruction of the Shields Street Bridge to include pedestrian river access, a trailhead parking lot, and other amenities consistent with visitor needs.
- A large concrete headgate structure (Figure 2.9), that appears to be associated with the historic Mason & Hottel Mill Race (Auntie Stone’s Mill Race), is located where a line drawn due north from Loomis Street meets the trail and south bank of the river. Design and install interpretive signs describing this structure’s original function and historical significance. Further information concerning this structure is provided in the Historical Structures report (Tatanka, 2014).



**Figure 2.9 Historic Mason & Hottel Mill Race Headgate Structure**

- Improving the physical and visual connection to and from Shields Street to the river. This could be accomplished with additional signage, trail connections, bridge enhancements, and/or landscape enhancements.
- Providing way finding signs to assist visitors in navigating between various destinations along the river.
- Developing improved river access areas including safe areas for water based recreation including tubing, playing, nature art, splashing, etc. Three river accesses are illustrated on the master plan for this reach.
- The trail along the north river bank crosses a stream and has become devoid of vegetation through the years due to heavy visitor use (Figure 2.10). This area will continue to be a place where people can get muddy and wet.



**Figure 2.10 Tributary Stream at McMurry Natural Area Showing Impacts Caused by Heavy Visitor Use**

- Improving trail connection between Soft Gold Park and the river. Soft Gold Park is a Neighborhood Park located north of the river greenway, adjacent to Magpie Meander Natural Area, which provides additional recreational use opportunities. Park features include: parking, trails, restrooms, picnic shelter, basketball, in-line hockey, a ball field, a multi-purpose open turf play area, a dog park, and a BMX area.
- The existing pedestrian bridge located at the east edge of McMurry Natural Area should be renovated or replaced to provide a safe and accessible route across the river (Figure 2.11).



**Figure 2.11 McMurry Pedestrian Bridge, Note Non-Compliant Railing**

- A recurring comment is that there is a general lack of public access to the river from areas on the north side of the river. To address this issue, the master plan recommends development of additional potential parking in Legacy Park and/or Salyer Natural Area. Parking should be consolidated where possible to preserve the natural river environment.
- The following table provides a summary of both existing and proposed public parking located within or near the river corridor in this reach. Parking in these areas is provided for multiple uses and is not guaranteed for river use.

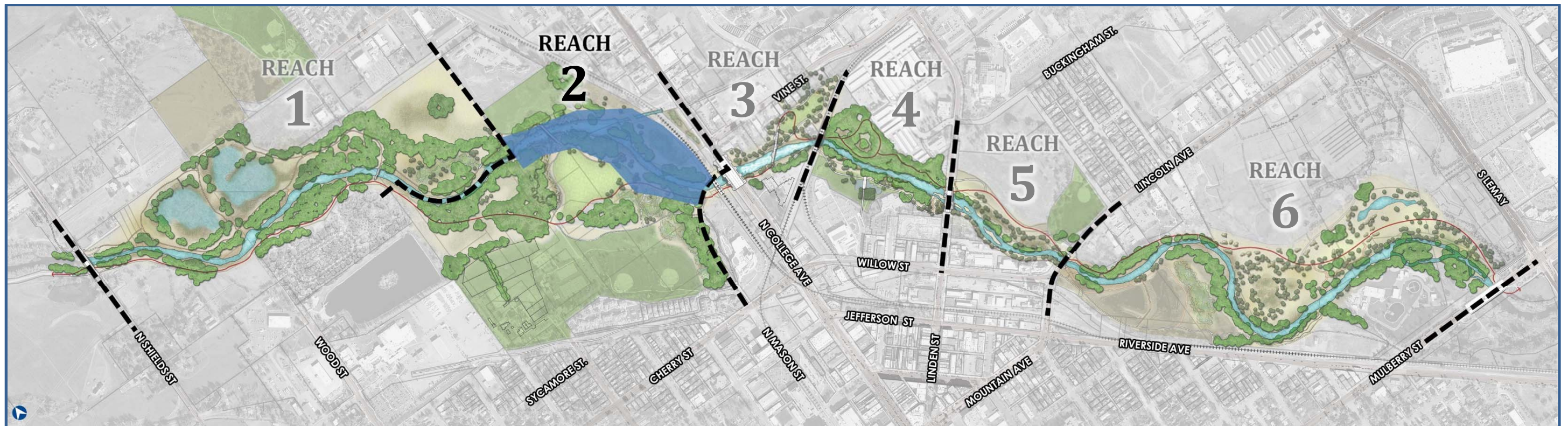
Parking Location	Number of Spaces
Shields Street, Larimer County (gravel)	42 (proposed)
Utility Service Center (paved)	TBD
McMurry Natural Area (gravel)	6 to 8
Soft Gold Park (paved)	29

- Larimer County is currently designing a new parking lot west of Shields Street, on the north side of the river. The new parking lot will include a total of 42 spaces.
- Wood Street could be extended north to serve the proposed residential development (Pateros Creek) located east of Wood Street, south of the river. Wood Street could be designed to accommodate on-street parking (parallel or diagonal) in order to provide convenient public parking for trail and river users.
- The master plan illustrates a potential public parking lot within the existing Utility Service Center parking lot. This parking area, if provided, should open to the public and signed appropriately.
- Bike parking spaces should be provided in close proximity to each river put-in/take-out. The location and number of spaces will vary depending on individual site characteristics.



# REACH 2

## Lee Martinez Park to the Museum of Discovery





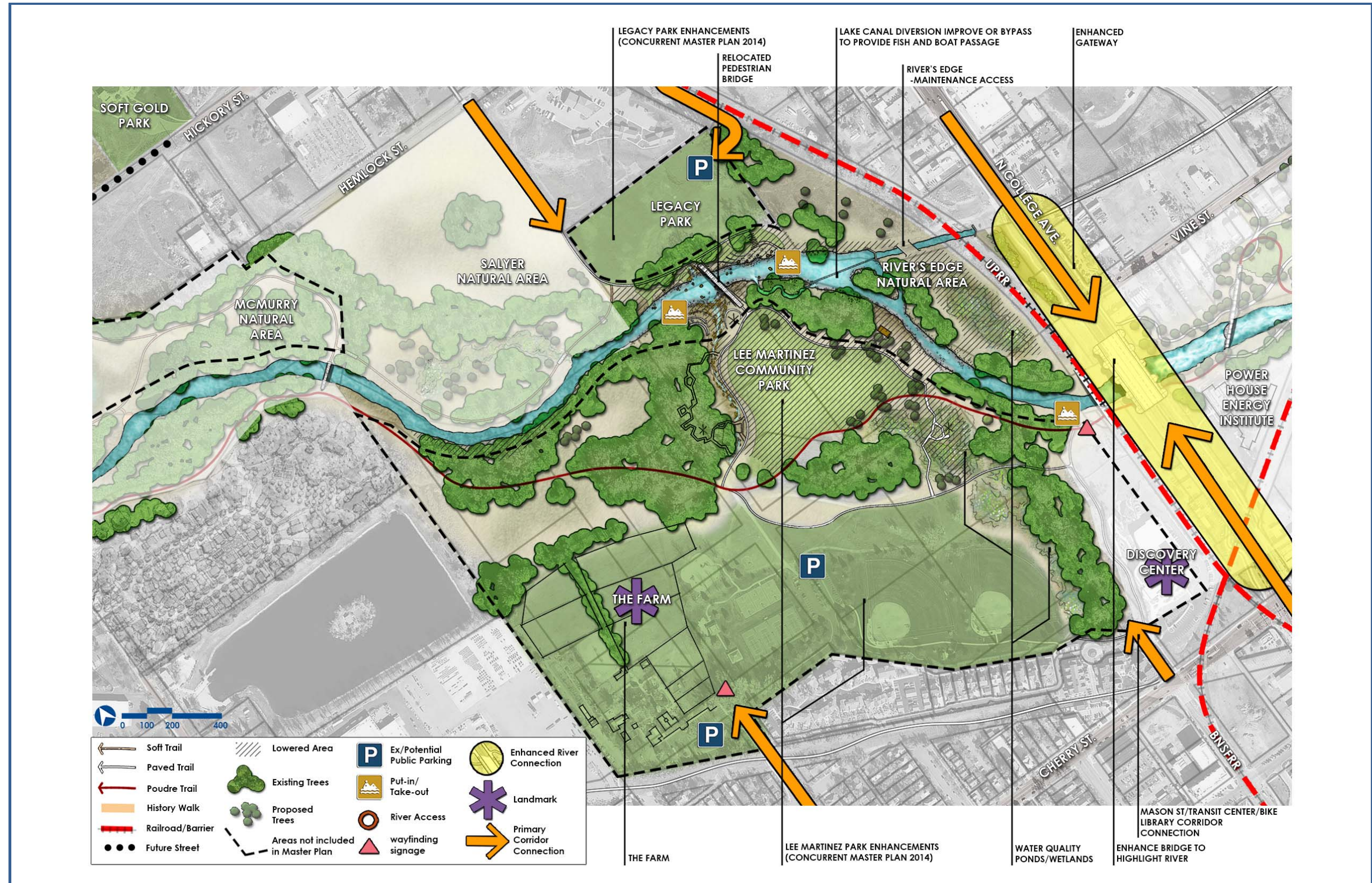


Figure 2.12 Master Plan for Reach 2



**Reach 2 – River Parks**

*Park: a place to reconnect with the outdoor world, to recreate with family and friends, and to gather with the community.*

Two significant parks in our community, Legacy Park and Lee Martinez Park, meet the river in this location, creating a unique intersection of park and river. The master plan envisions a symbiotic relationship between river, natural area and park in this location, creating places to explore the river edge, study ecology and local history, enjoy fishing, playing, swimming, or simply watching tubers float past. Both parks will incorporate a variety of amenities, trails, and stopping points that are carefully integrated into the riparian areas along the river’s edge, bringing the community close to the water. Launches for tubes, canoes and kayaks will provide places to touch and enter the river. Along the river edge, groves of trees and understory plantings will create a graceful transition from park to river. Today, Legacy Park suffers from isolation, as it is a relatively unknown park with challenging access. The Hickory Bridge would be relocated to link Legacy Park with Lee Martinez Park, improving access, and providing an overlook to the river.



**Figure 2.13** Students Exploring Magpie Natural Area near the Poudre River (photo by Jessica Miller)



**Figure 2.14** Plains Cottonwood along the Poudre River

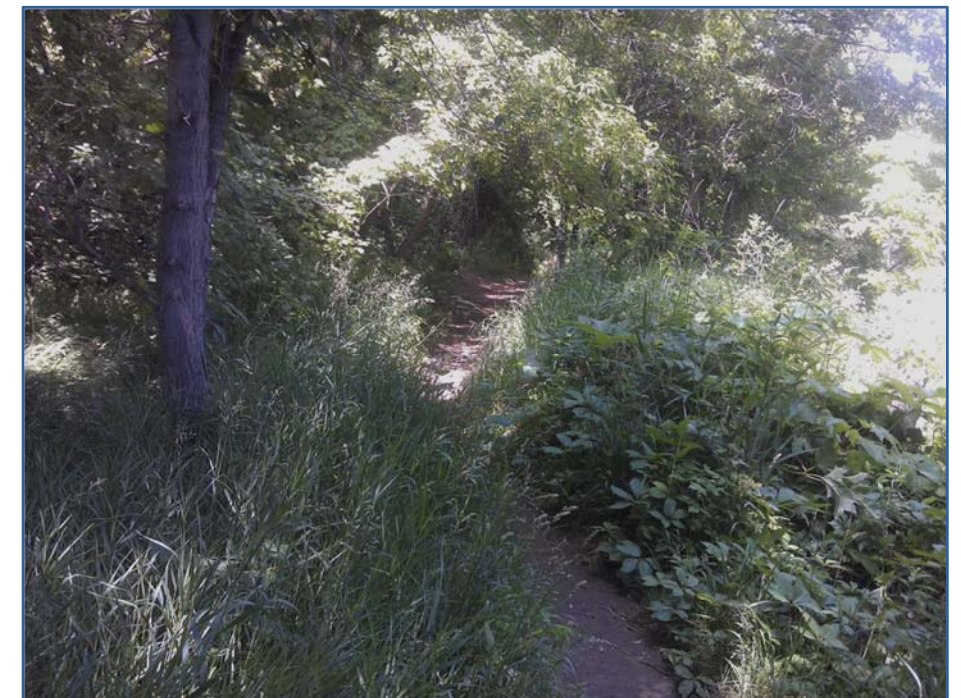


**Figure 2.15** Eastern Screech Owl (photo by Aran Meyer)

**Background and Fundamental Opportunities**

This section of the river is flanked by Lee Martinez Park, Legacy Park, Rivers Edge Natural Area, The Farm, and The Museum of Discovery Museum. Other prominent man-made features found within the river corridor include the Hickory Pedestrian Bridge, the Lake Canal Diversion Structure, and the Union Pacific Railroad trestle bridge.

A unique and wonderful aspect of this river reach is the native riparian forest found in the west portion of Lee Martinez Park, which is the most expansive tree gallery within the project area. According to Colorado Natural Heritage mapping of riparian areas in the lower Poudre River watershed, this is one of only a handful of contiguous forests greater than 15 acres in size remaining between the mouth of the canyon and Greeley. It is a wild and magical place that is home to a diverse collection of wildlife, and is a place where people go to “escape” from the city to experience nature’s beauty and wonder (Figure 2.16).



**Figure 2.16** View of the Riparian Forest in Lee Martinez Park

It’s also interesting to note that within the City of Fort Collins there are a total of three public parks having direct access to the Poudre River and two of the parks are located in this reach on opposing sides of the river. For this reason, these parks offer unique recreational and educational opportunities that cannot be found in other parks. At the same time these parks should be carefully integrated into the riparian corridor to respect and preserve the natural beauty found here.

Opportunities for expansion of the river greenway in this reach include potential land acquisitions from landowners in areas that directly adjoin the river and/or public lands using the City’s “Willing Seller - Willing Buyer” program.





**Figure 2.17 Informal River Access and Play Area on the North River Bank Directly Upstream of the Hickory Pedestrian Bridge**

**Related Projects**

- Legacy Park and Lee Martinez Park (which includes The Farm and the Museum of Discovery) will be master planned by the City’s Park Planning Department as part of a separate effort and public process.
- The Old Town Basin Water Quality Master Plan (2012) identifies the need for water quality pond expansion in Lee Martinez Park.
- The North College Drainage Plan (2008) identifies the need for a large water quality pond in River’s Edge Natural Area.
- Museum of Discovery’s master plan that includes future improvements on museum grounds.
- The tree dump in Lee Martinez Community Park is identified as an area to mitigate, make improvements to the flood plain, and enhance natural and recreational opportunities.

**Flood Mitigation and Bank Stabilization**

Specific issues and potential opportunities associated with flood mitigation and bank stabilization include the following:

- There are a limited number of insurable structures located within or close to the regulatory floodplain in the lower portion of this reach. Consequently, particular care will be required to ensure that any project

which includes improvements within the river corridor (i.e., floodway) do not increase 100-year water surface elevations.

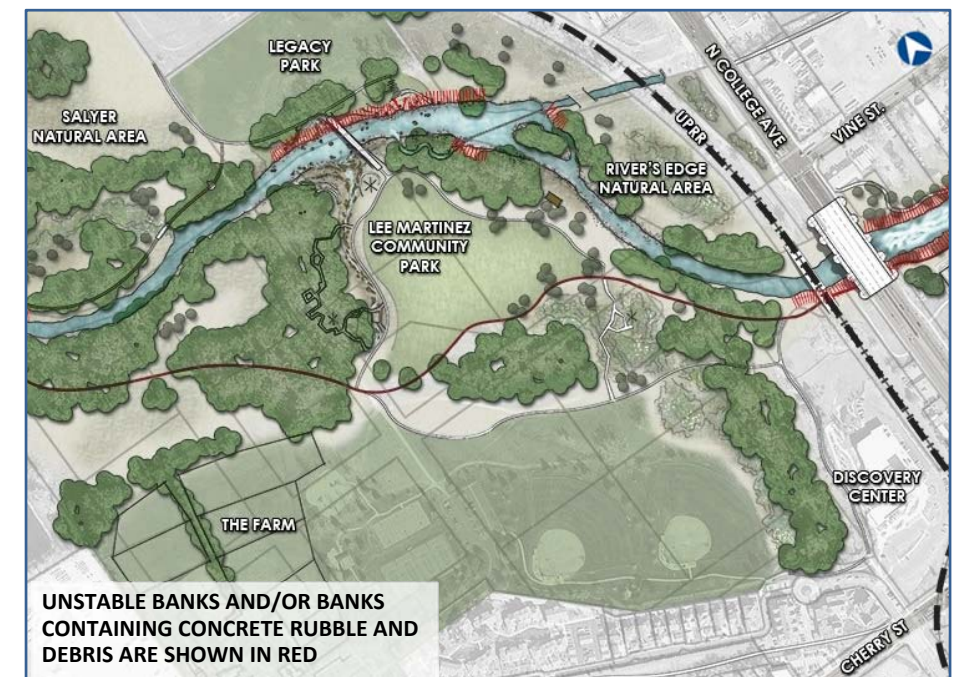
- Currently, 100-year flows would overtop College Avenue; however, the solution for eliminating overtopping of College Avenue requires that tailwater be reduced in the reach downstream of College. Improvements required to eliminate overtopping of College Avenue are addressed in Reach 3.
- Even with the proposed downstream improvements, College Avenue may still overtop if a sufficient amount of woody debris collects on the numerous wooden piers associated with the UPRR Bridge. It is recommended that discussions be held with the UPRR in an effort to reduce the number of bridge piers and/or implement an emergency maintenance program which would remove woody debris from the bridge piers in an expedited manner during flood events.
- Other opportunities for reducing 100-year flood elevations should be investigated in conjunction with future improvements within this reach. Proposed improvements through Lee Martinez Park, which are intended to reconnect the river to its floodplain by lowering the grade of the tree dump site, will promote the reduction in flood elevations (Figure 2.18).



**Figure 2.18 View of the Mounded Tree Dump Site in Lee Martinez Park**

- Implementing the previously identified water quality pond improvements within Lee Martinez Park, while exploring opportunities to enhance and protect valuable bird habitat and avoiding encroachments into usable park space.

- Implementing the previously identified water quality pond improvements within the River’s Edge Natural Area, while incorporating both wetland and upland habitat enhancements.
- Lowering the bank elevation and improving the hardened (riprap) river bank in Legacy Park by replacing the riprap with boulder toe erosion protection, burying the existing riprap, or a combination of both. In either case, the upper bank should be vegetated with native grasses and shrubs along with trees planted on the upper bank.
- Creating a cobble point bar, underlain with native sand and gravel, on the right bank of the river on the inside bend upstream of the Lake Canal Diversion Structure, and incorporating alternating bars consisting of cobble, gravel and sand in order to narrow the width of the channel in the relatively straight reach downstream of the Hickory Bridge.
- Stabilizing the south channel bank in the vicinity and upstream of the UPRR Bridge by installing rock riprap toe protection (backfilled) with vegetative cover (grasses, shrubs and/or willows) along the upper bank.
- Optional bank improvements for the areas illustrated in Figure 2.19 above include:
  - Rock riprap toe protection (backfilled and/or buried) with revegetation (native grasses, willows and shrubs); or
  - Stacked boulder toe protection with revegetation (native grasses, willows and shrubs).



**Figure 2.19 Bank Stabilization Needs Map for Reach 2**



**Habitat/Ecological Restoration and Protection**

Specific issues and potential opportunities associated with habitat/ecological restoration and protection include the following:

- Protecting large and continuous patches of native riparian forest and wetland mosaics.
- Improving ecological diversity of the riparian forest understory and upland shrub habitat for native bird species.
- Removing of undesirable non-native tree/plant species.
- Burying existing riprap on the river bank in Legacy Park and revegetating with native grasses, willows and shrubs (Figure 2.20).



Figure 2.20 Exposed Riprap on the North Bank at Legacy Park

- Improving travel corridors for riparian wildlife by providing a combination of a vegetated river’s edge, larger offsets to parking and trails from the river, and providing designated river access and recreation areas. Wildlife connectivity would be improved; however, limited fragmentation may persist.
- Designing future stormwater quality ponds to integrate habitat features and prevent or minimize impact to mature forest and high quality bird habitat.

- Providing in-stream cover in the backwater upstream of the Lake Canal Diversion Structure to improve aquatic habitat structure.
- The Lake Canal Diversion Structure, in its current form (Figure 2.21), causes significant impact to the river’s health. The diversion dam prevents fish passage and causes unnatural pooling that extends nearly 1,300 feet upstream, negatively impacting fish habitat.
  - Short-term opportunities include: Providing fish and boat passage to avoid bank erosion due to portage activities, by either modifying the west end of the diversion dam, or creating a bypass channel.
  - Long-term opportunities include: Evaluating potential of removing the diversion dam which could help improve river health. If the ditch company is willing to explore opportunities with the City, and if the water rights and delivery rights of the ditch company can be protected, there may be opportunities to evaluate alternative diversion structure designs and water delivery options.



Figure 2.21 Lake Canal Diversion Dam

**Recreation and Access**

Specific issues and potential opportunities associated with recreation and access include the following:

- Lee Martinez Park and Legacy Park will be master planned as part of a separate public design process.
- Lee Martinez Park is defined as a Community Park in the Parks and Recreation Policy Plan and currently includes the following amenities:

- Trails
- Parking
- Tennis Courts (4) - lighted
- One Shelter (drop-in only)
- Playground
- Ball Diamonds (2) – lighted
- Basketball Courts (3) – lighted
- The Farm
- Museum of Discovery
- As part of Lee Martinez Park, The Farm has provided family fun since 1985, and serves as an educational and interactive experience for Fort Collins residents and visitors. Features include:
  - Farm animals
  - Hands-on experiences
  - Interactive family fun
  - Birthday party rentals
  - Museum & The Farm Store
  - Hayrides (routed through Parks and Natural Areas)
  - Pony rides
  - Special events
- Strengthen the relationship between the Museum of Discovery, Parks, Natural Areas, the river and downtown by incorporating educational and demonstration areas.
- Legacy Park currently includes a gravel parking area and a small shelter, but the majority of the site is currently undeveloped. The Legacy Park site is utilized for community events such as the Sustainable Living Fair and the Poudre River Festival.
- The section of river between Lee Martinez and Legacy Park is unique in that it is the only place in the city having public parks on both sides of the river, and is already very popular for recreation. Improved amenities should enhance the swimming, wading tubing/boating, and play experience while protecting the environment from further degradation caused by intensive use. River bank improvements should be designed to withstand the existing and anticipated use of this area. Bank stabilization and other improvements may include hardscape/stone terraces, ADA river access, picnic shelters, benches and other features intended to support river-related recreation.
- The Lake Canal diversion dam backs up water in this reach, so the river is generally deeper and slower moving, and this has become a favorite area for swimmers (Figure 2.17).
- Formalizing put-ins/take-outs for boaters and tubers at the following three locations:



- Lee Martinez Park across from Legacy Park
- East end of Legacy Park
- Upstream of the UPRR Bridge in Lee Martinez Park
- Preserving the existing riparian forest in the northwest section of Lee Martinez Park, as it is a valuable refuge for wildlife and a peaceful setting people.
- Removing the existing Hickory Pedestrian Bridge and relocating it to provide a direct connection between Lee Martinez Park and Legacy Park.
- Potential interpretive and educational topics for this section of the river include: local railroad history, bird nesting and migration, water quality needs, and local settlement history (the mill race which served Auntie Stone’s Mill passed through Lee Martinez Park).



Figure 2.22 Bullock’s Oriole near the Poudre River (photo by Aran Meyer)

- Significant opportunity exists to announce the river’s presence and to strengthen the connection to the river by providing consistent and recognizable way finding signs. Specific examples include:
  - Installing signage at the north end of the Mason Street Corridor to direct visitors to the Poudre River Trail/Greenway.
  - Cherry Street. The existing way finding sign is mounted on a power pole east of Sherwood Street. This sign should be updated or replaced in order to include directional information for the Poudre River Trail/Greenway.

The following is a summary of the existing public parking located within or near the river corridor in this reach. Parking in these areas is provided for multiple uses and is not guaranteed for river use. Additional parking may be required with increased use of the river corridor and surrounding areas.

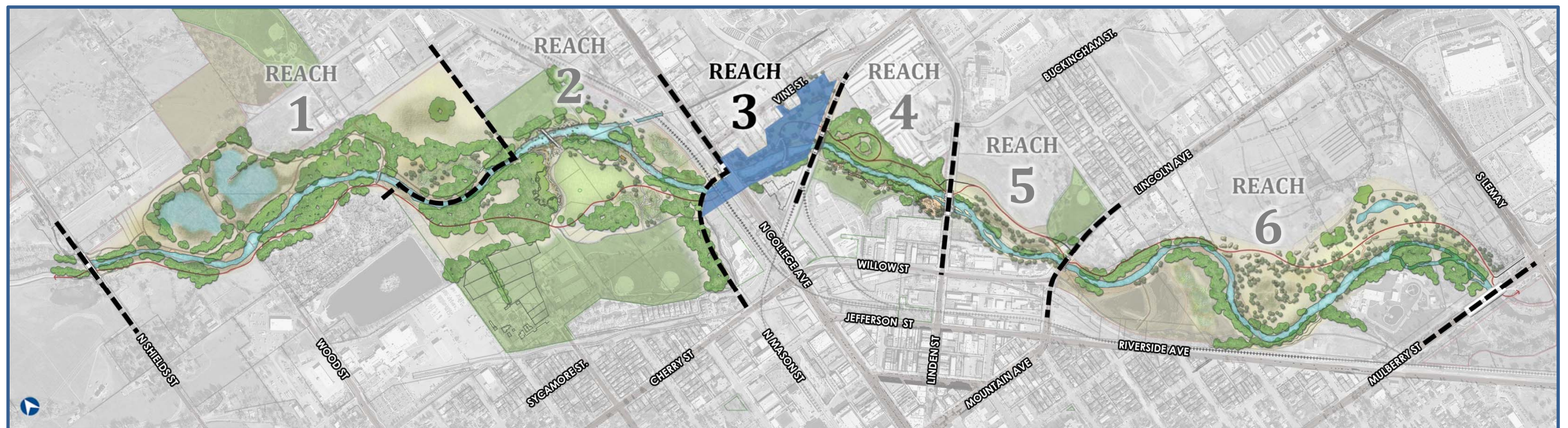
Parking Location	Number of Existing Spaces
Lee Martinez Park (paved)	70
The Farm (paved)	41 (approx.)
Legacy Park (gravel)	20 to 30
Fort Collins Museum of Discovery (paved)	85

- Where appropriate, bicycle parking spaces should be provided in close proximity to each river put-in/take-out and other significant stopping points. The location and number of spaces will vary depending on individual site characteristics.



# REACH 3

## Museum of Discovery to BNSF Railroad





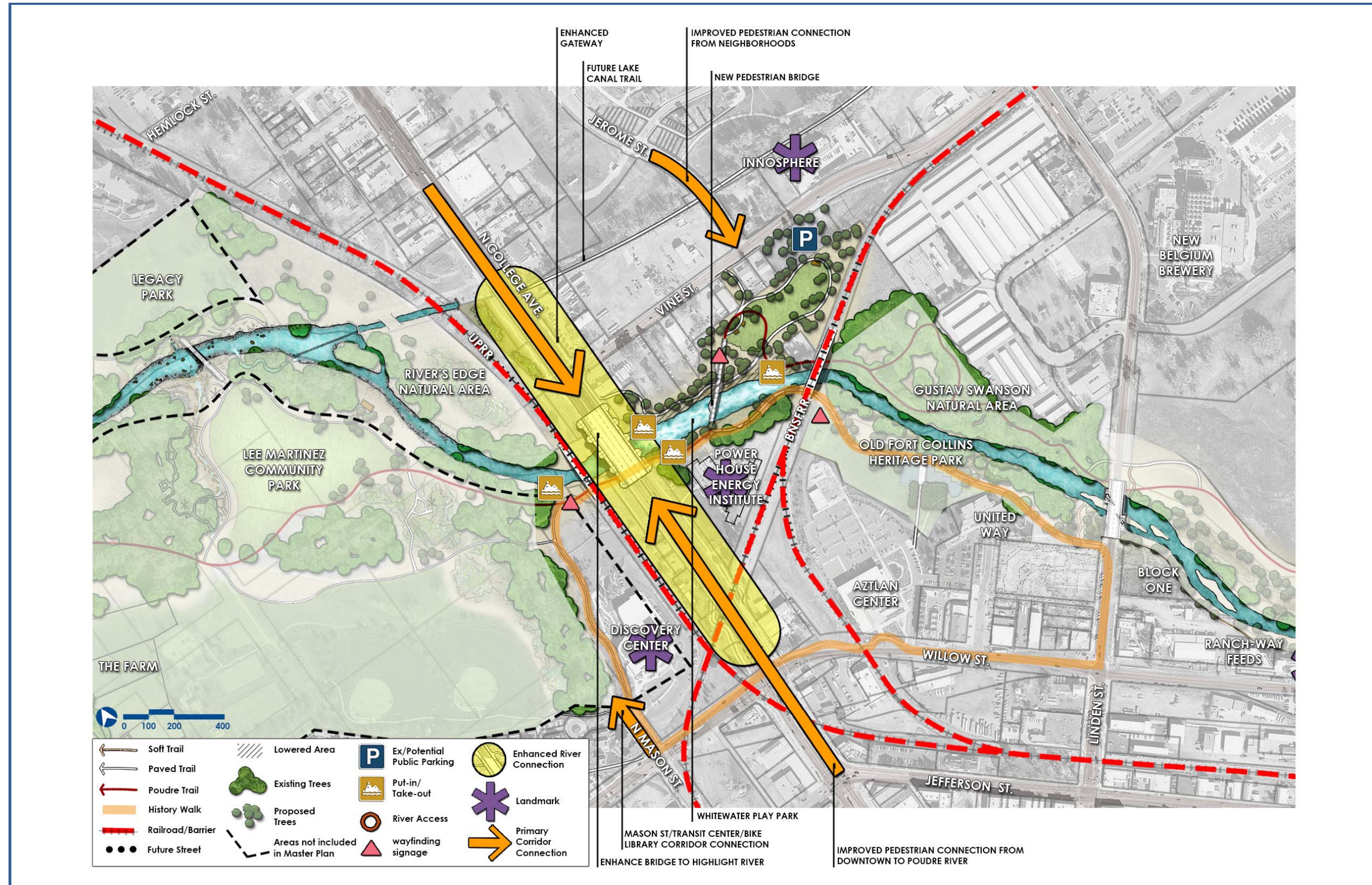


Figure 2.23 Master Plan for Reach 3





Figure 2.24 Conceptual Site Plan for Reach 3





Figure 2.25 Character Sketch, View Looking Southeast from the College Avenue Bridge





Figure 2.26 Character Sketch, View Looking South between College Avenue and BNSFRR



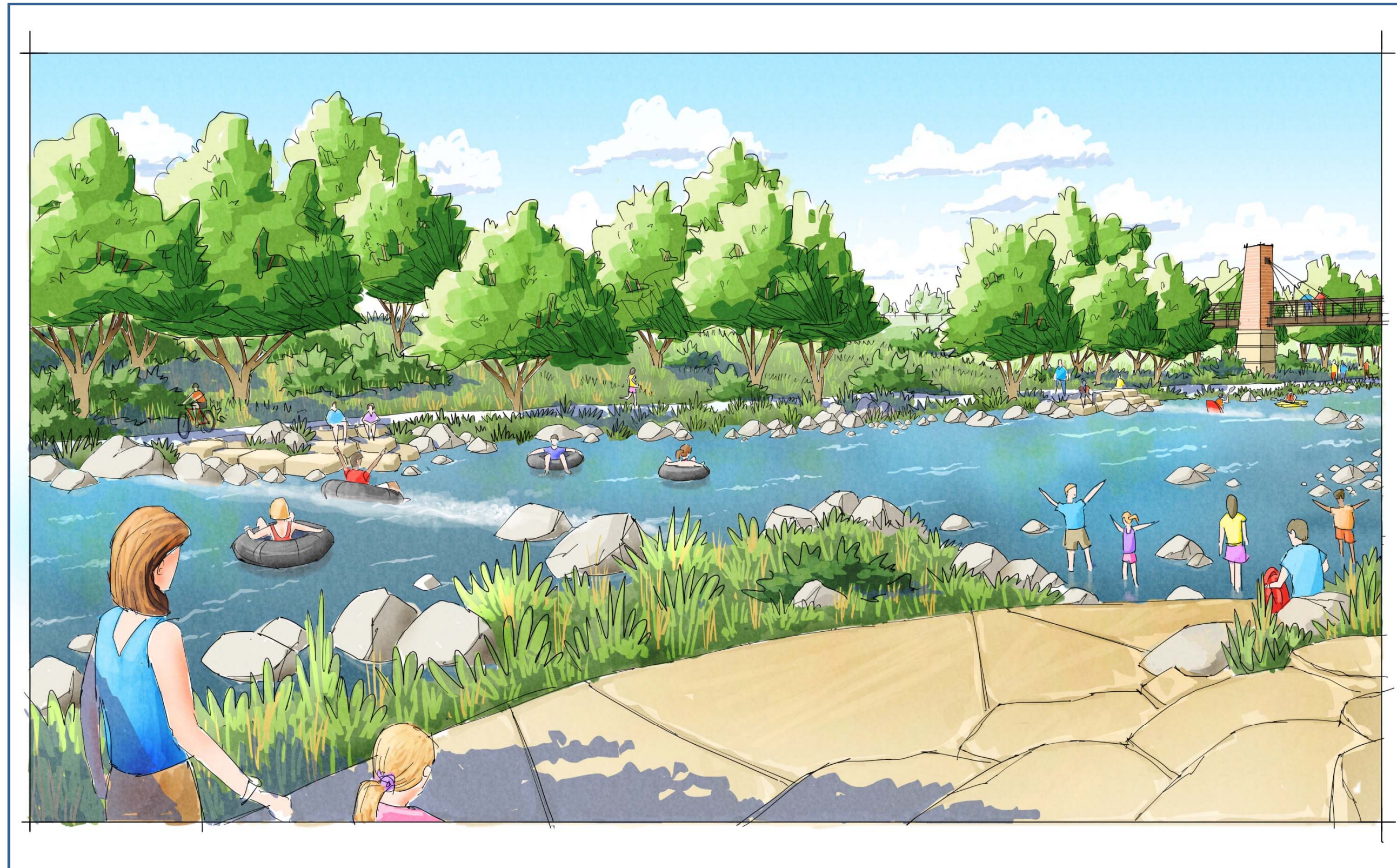


Figure 2.27 Character Sketch, View Looking North between College Avenue and BNSFRR



### Reach 3 – Poudre Play Park

*Whitewater: a stretch of frothy water with a broken foamy surface, as in rapids.*

Many things come together in this stretch of the river. One of the City’s most traveled streets, College Avenue, intersects with the city’s most iconic natural resource, the Poudre River. Industry and nature wrestle for elbow room. Plants, people and animals compete for sparse amounts of ground along the river’s edge. Fish and floaters co-inhabit the waters. These contrasting relationships create one of the project’s toughest design challenges and greatest opportunities.



**Figure 2.28 Raccoon in the River (photo by Norm Keally)**

Another master plan feature is a new bridge that will provide a much-needed pedestrian connection between Downtown, the emerging high tech district along Vine, and residential neighborhoods north of the river. The bridge will also be a great place to stop and watch people playing in the river. Below the bridge, the river channel will be transformed into the City’s first whitewater play park including two wave features and shallow play areas along the banks for young and old alike. Improvements within the river will be designed to prevent floods from overtopping College Avenue and to re-establish aquatic habitat connectivity through this reach.

The south bank of the river will be reshaped into a vibrant space with a series of terraces and a variety of places to walk, play, sit, sunbathe, people watch, and to interact with the river. Conversely, the north bank of the river will be park-like and more natural in character, to support wildlife habitat and connectivity, as well as activities associated with the whitewater play park and trails.



**Figure 2.29 Riparian Forest near Poudre River (photo by Zoe Whyman)**

The character envisioned for this reach is depicted by the site plan and sketches presented on the preceding pages.

#### Background and Fundamental Opportunities

Reach 3 is located east of Lee Martinez Park and north of Downtown Fort Collins, and is surrounded by considerable urban development. Consequently, the river and its floodplain are highly altered and influenced by structures including bridges, two railroads, concrete flood walls, a diversion structure and adjacent private development. Channelization of the river is extreme between College and the BNSF Railroad Bridge (Figure 2.30). Likewise, limited riparian forest habitat and a minimal corridor for wildlife movement reflect the most acute confinement on the river’s 12-mile journey through Fort Collins.

The master plan envisions a major remodel of this river reach, creating an active and vibrant setting where people are encouraged to engage with and play in the river in an urban setting.



**Figure 2.30 View Looking East Just Downstream of College Avenue**

The transformation would begin by removing the existing Coy Ditch Diversion structure and boulder-lined “boat chute” (Figure 2.31). After removing these structures, the river channel would be narrowed to a more natural, sustainable width and deepened by implementing a variety of terraces to improve natural river function, increase flood capacity, to provide additional space for bank improvements and riparian habitat. Changes to channel cross section in this area are illustrated in Figure 2.32 (provided on the following page). The improved channel would be stabilized by constructing four in-stream sloping rock features, two of which would incorporate whitewater wave features and “holes”. An added benefit is that the new sloping rock features would be designed to allow fish passage creating aquatic connectivity that hasn’t existed in this reach of the river since the Coy Diversion was constructed.



**Figure 2.31 Coy Diversion Structure (left photo), Boat Chute (right photo)**



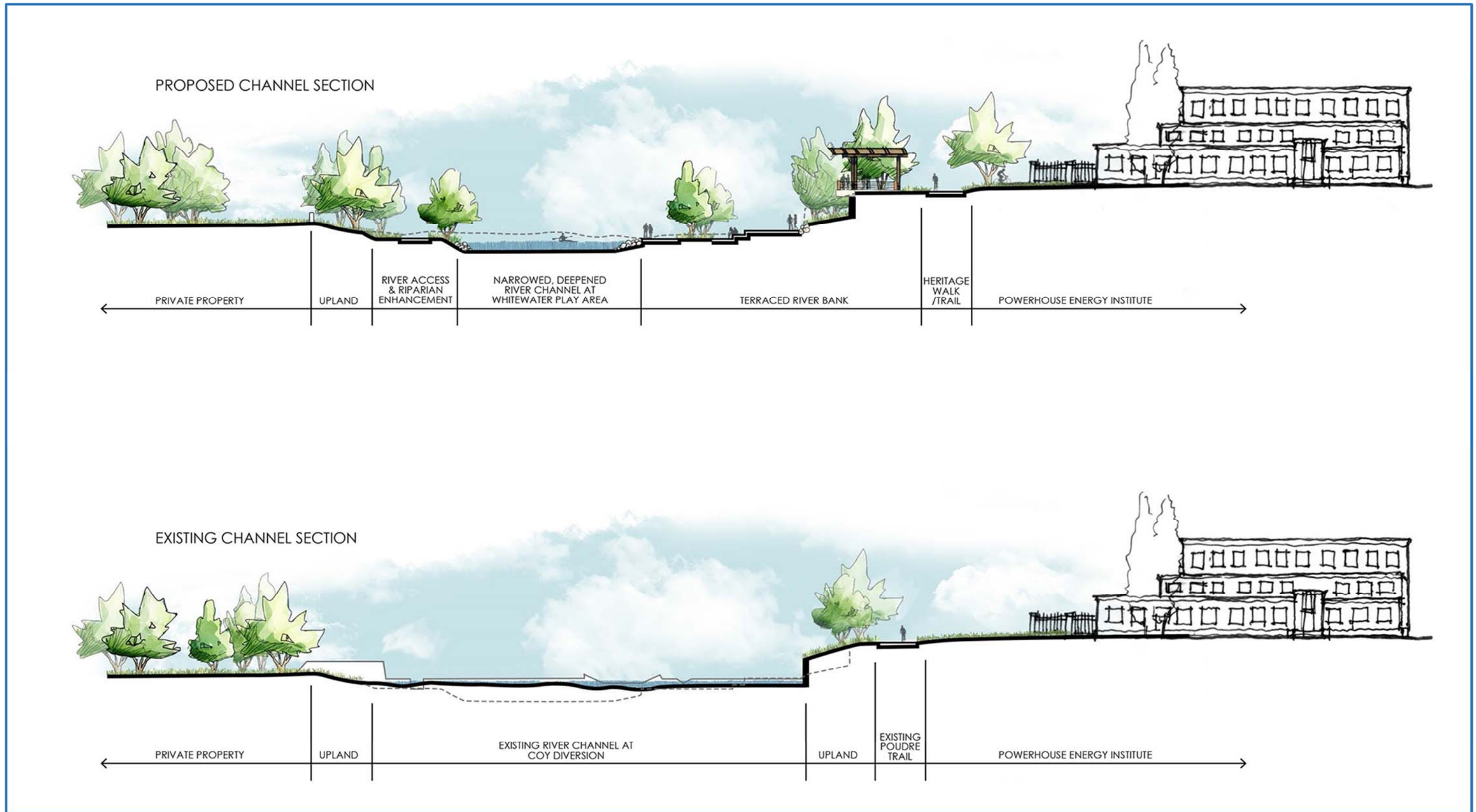


Figure 2.32 Cross Section Comparison of the Existing and Proposed Channel East of College Avenue



Additional space on the river banks, created by narrowing the river channel, may incorporate: a river overlook; terraced seating areas on the south river bank; ADA river access; put-in/take-out areas, habitat enhancements; and a pedestrian bridge over the river between College and the BNSF Bridge. Facilities such as parking, restrooms, new trails and trail improvements, the pedestrian bridge, terraced viewing areas, put-in/take-out areas and water play areas would be needed to support the anticipated use of this area.

Opportunities for expansion of the river greenway in this reach include potential land acquisitions from landowners in areas that directly adjoin the river and/or public lands using the City’s “Willing Seller - Willing Buyer” program. Specific examples could include:

- Consider purchasing private property located between the river and Vine Street, between College Avenue and the BNSF Railroad, in order to remove existing structures from the floodway and to create visitor amenities, such as additional open space and parking.
- Explore the possibility of purchasing the existing Xcel property and relocating Xcel’s existing natural gas pump station to a location near Vine Street. If successful, this area could be converted to a combination of habitat and recreational features.

**Related Projects**

- Private Development. Natural area buffers located within adjacent private properties shall be designed to blend with the existing river character. Refer to the City Land Use Code for natural area buffer standards and requirements.

**Flood Mitigation and Bank Stabilization**

Specific issues and potential opportunities associated with flood mitigation and bank stabilization include the following:

- There are numerous insurable structures located within the regulatory floodplain north of the river through of this reach. Consequently, particular care would be required to ensure that any project which includes improvements within the river corridor (i.e., floodway) do not increase 100-year water surface elevations.
- Currently, 100-year flows overtop College Avenue. Removal of the Coy Ditch Diversion structure and the boat chute, while lowering the channel bed through this reach, would eliminate overtopping of College Avenue during the 100-year flood (provided adequate real-

time maintenance is provided at the UPRR Bridge upstream of College Avenue).

- Currently, 100-year flows spill east along Vine Drive, requiring the definition of a regulatory split flow path from Linden Street to Dry Creek, near Lemay Avenue. It appears that by removing the Coy Diversion and the boat chute, as well as implementing a combination of additional improvements (which include opening up the north overbank under the BNSFRR Bridge and reducing the floodplain constriction at Linden) it would be possible to eliminate the 100-year flow split along Vine Drive or reduce the split to nuisance/non-regulatory flood levels.
- Other opportunities for reducing 100-year flood elevations should be investigated in conjunction with future improvements within this reach.
- Bank stabilization and improvements for the areas illustrated in Figure 2.33 include revegetation of both banks along with either rock riprap toe protection or, where banks are near vertical, stacked boulder toe protection.

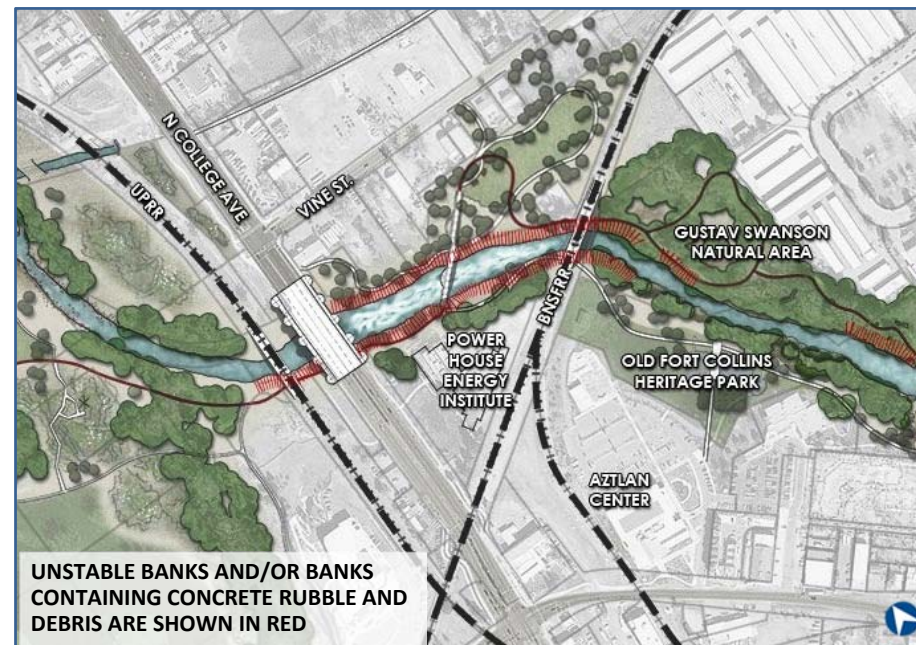


Figure 2.33 Bank Stabilization Needs Map for Reach 3

**Habitat/Ecological Restoration and Protection**

Specific issues and potential opportunities associated with habitat/ecological restoration and protection include the following:

- The Coy Diversion structure and boat chute significantly impact fish passage and create a large upstream pool within the river. In addition, these structures are unattractive and visually dominant features in the landscape. Fish passage and aquatic habitat improvements would be integrated into the recreational improvements when both the Coy Diversion and boat chute are removed.
- Existing river banks near the Coy Diversion are dominated by vertical concrete walls, a variety of rail fences, and steep slopes. Remove, replace, mask or enhance walls and fences where possible to create an attractive corridor.

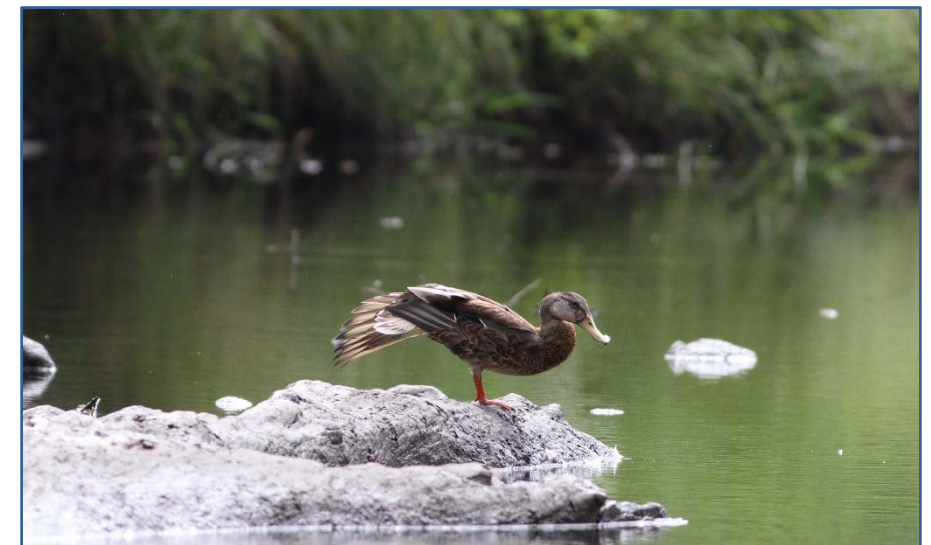


Figure 2.34 Mallard Hen Perched in the River (photo by Norm Keally)

- If compatible with other improvements within this reach, lowering the Poudre River Trail along the south side of the river would reconnect the river to at least a narrow portion of the floodplain.
- This stretch of the river is envisioned as an area that can accommodate visitor use that is higher than adjoining reaches. Wildlife connectivity improvements would be provided along the river banks to the greatest extent possible, although some fragmentation will likely remain.
- Wildlife connectivity is currently provided beneath College Avenue by the bridge’s northernmost span and can be enhanced by improving vegetation along the north bank.
- Improving the backwater and poor fish habitat condition upstream of Coy Diversion Structure by reconfiguring/modifying/lowering the in-stream structures.



- Creating riffles and pools similar to those present in the river upstream and downstream of this reach.
- This area contains a significant amount of non-native vegetation. As the area is improved, non-native vegetation will be replaced with native species.
- Historically, the John G. Coy Ditch flowed through two small ponds in the Gustav Swanson Natural Area. However, water is no longer being diverted at the Coy Diversion, and as a result the ditch and the ponds have dried up. The ditch and the ponds should be filled and these areas should be restored to blend with the surroundings.

### Recreation and Access

Specific issues and potential opportunities associated with recreation and access include the following:

- The area north of the river is envisioned to have a park-like setting that is blended into the natural river setting. Activities and amenities may include a beach, river play, unstructured imaginative natural play areas, picnic shelters, restrooms, trails and parking.
- The historic character, architectural forms and materials found in the Power House Energy Institute could be incorporated into an iconic pedestrian bridge and hardscape features within the river corridor to blend the old and the new.
- Potential interpretive/educational topics for this section of the river include: historic power generation techniques, geothermal, coal, demonstration water wheel, in-stream flow measurements, Coy ditch, irrigation, the grotto, old water works facility (Gustav Swanson), etc.
- Approximately 9 feet of fall exists within the channel between College Avenue and the Burlington Northern Santa Fe Railroad Bridge making this the most suitable location for a whitewater play park in the project area. The master plan includes two whitewater wave features, each having 1.5 to 2 feet of fall.
- It is proposed that the College Avenue Bridge and areas surrounding the bridge be enhanced to highlight river's presence and to reinforce the downtown gateway. Improvements could include: architectural bridge treatments, enhanced bridge railings, streetscape improvements, appropriate lighting, signage, public art, etc. Bridge detailing and character should incorporate materials and forms found in the recently constructed Lake Canal pedestrian bridges and "tree like" vertical features on the west side of College Avenue near Vine Drive.

- The experience of walking along College Avenue to the river should be enhanced. Streetscape treatments should extend up to and across the Gateway Bridge.
- The Grotto near the Power House Energy Institute is a designated historic landmark/landscape. Originally, the Grotto acted a cooling pond for the Power Plant prior to putting the water back in the river. Future grotto enhancements should honor the original historic design intent.
- Blind spots and sharp turns are a safety concern where the existing Poudre Trail crosses under the BNSF Railroad Bridge. Options for realigning the trail to address this issue should be evaluated.
- Providing a trail connection to Gustav Swanson Natural Area under the north side of BNSF Railroad Bridge. There is a long range opportunity to locate the trail in a new culvert under the BNSF farther away from the river which could enhance wildlife connections along the river and provide additional flood conveyance and mitigation.
- A new iconic pedestrian bridge (i.e. suspension bridge) is illustrated in the master plan downstream of the College Avenue Bridge which would greatly improve the north/south connection across the river and provide a unique overlook for the river.
- A "History Walk" is planned along the River, Linden Street, and Willow Street. Representatives from the City, Museum of Discovery and CSU should coordinate needs and opportunities.
- There are no existing public parking spaces located within or near the river corridor in this reach, and public parking would be needed to support increased use associated with the whitewater park. Fortunately, the City Stormwater Department owns a lot abutting the south side of Vine Drive which can accommodate a new parking lot.
- Where appropriate, bike parking spaces should be provided in close proximity to river put-in/take-outs and other significant stopping points. Location and number of spaces would vary depending on individual site characteristics.
- Where lighting is required for safe access, it will be low level, down directional, accent type lighting that will terminate at 11 p.m. Lighting would be confined to areas such as stairs, and other areas with potential safety concerns.
- Provide ADA river access and accessible fishing.



Figure 2.35 Bank Erosion, Concrete Rubble, and Exposed Plastic Turf Mat on South Bank, West of the BNSF Railroad

### Phase II Environmental Site Assessment

As part of this master planning effort, a Phase II Environmental Site Assessment was completed for the reach between College Avenue and the BNSF Railroad. The primary objective of this assessment was to determine whether or not construction of river improvements through this reach might be expected to encounter non-aqueous phase liquid (NAPL) contamination from the nearby Poudre River–Aztlán Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Removal Action Site. Based on this assessment, there were no indications that NAPL contamination in the underlying bedrock was present or would be encountered.

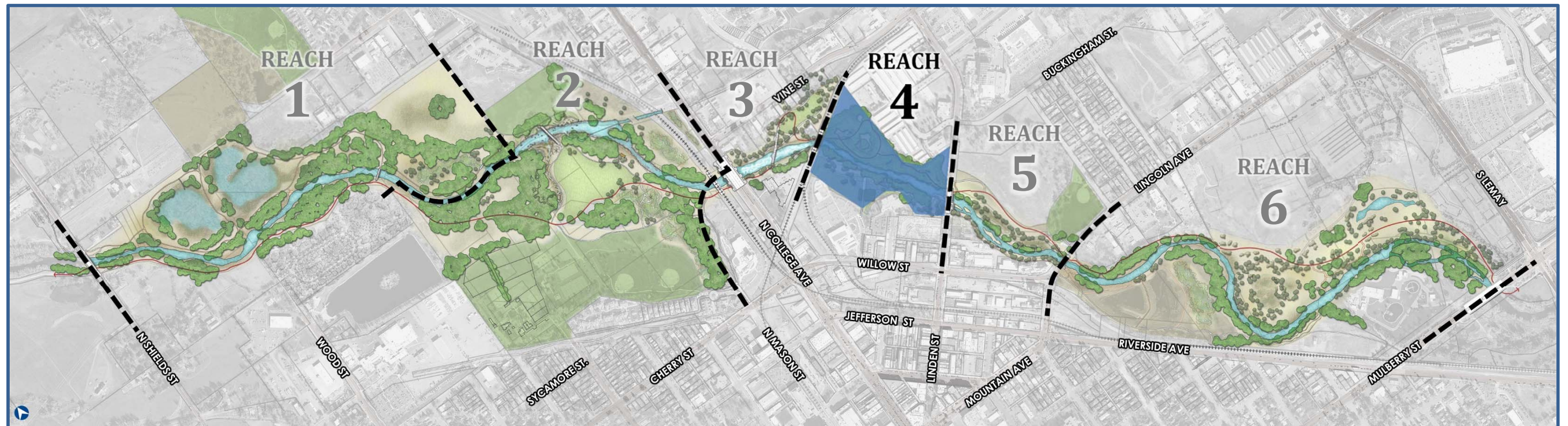
Other contaminants, not associated with the NAPL plume, were identified during the subsurface investigation; however, most of these substances were present at levels below USEPA/State standards, or established background levels. Some potential contaminants of concern were identified, including asbestos, petroleum hydrocarbon and polycyclic aromatic hydrocarbon compounds, and arsenic.

Due to the possibility of encountering one or more of these compounds in the soil, it is recommended that the previously-approved Soil Characterization and Management Plan for the site be followed during construction. If contaminated soils are encountered during construction, it is recommended that these soils be managed in accordance with a Materials Management Plan which is aimed at limiting exposure and ensuring proper disposal of all impacted materials (Walsh, 2014).



# REACH 4

## BNSF Railroad to Linden Street





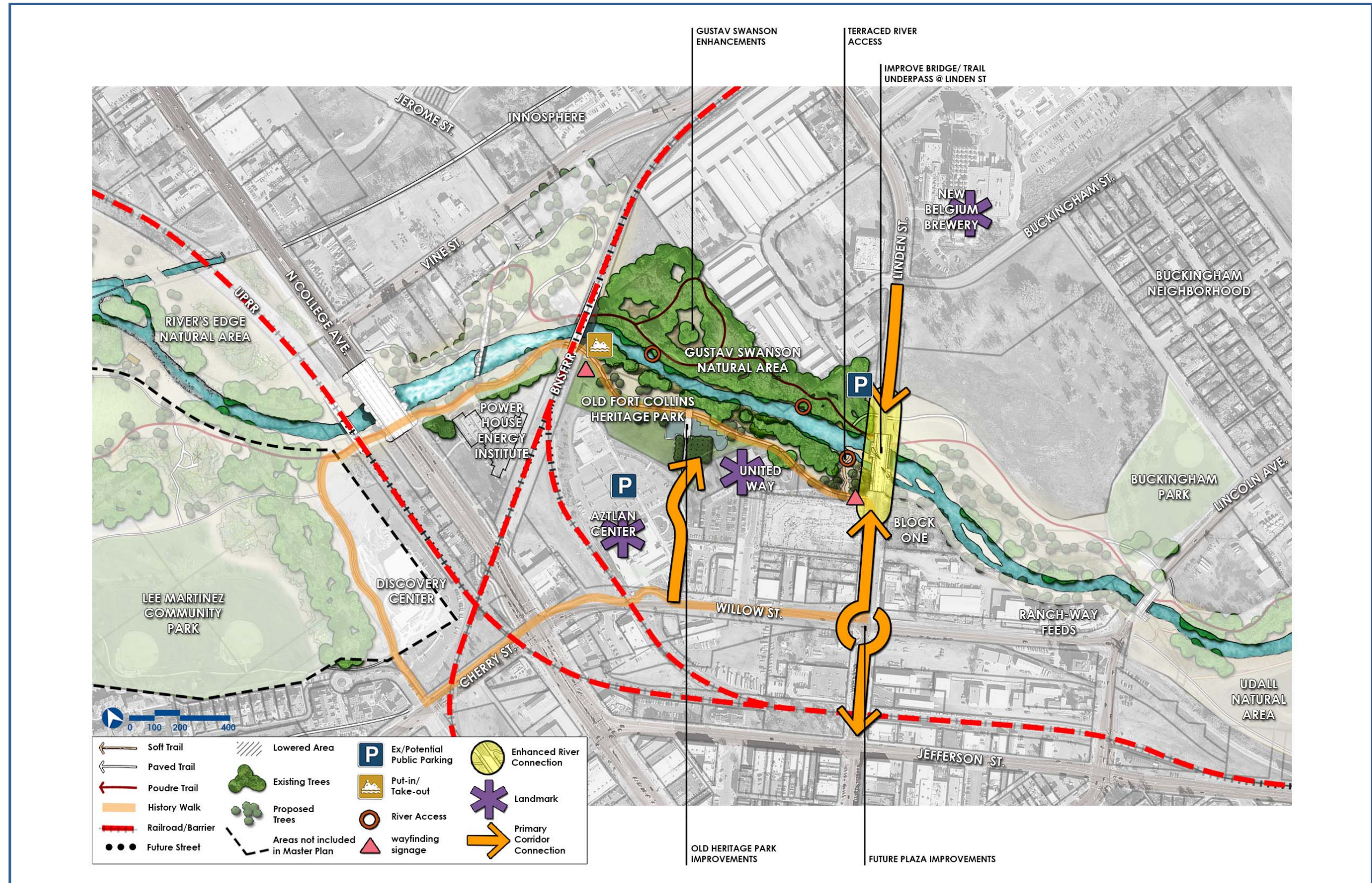


Figure 2.36 Master Plan for Reach 4





Figure 2.37 Conceptual Site Plan for Reach 4



**Reach 4 – Fort Roots**

Root: *the basic cause, source, or origin of something.*

On August 20, 1864 Lieutenant Colonel William Collins signed the order setting aside the present location of Fort Collins as the new military reservation. Since that time the aspirations of many great people have shaped and reshaped our city. Our present is clearly a product of our past.

This stretch of the river is rooted in the same ground where Camp Collins once stood and it presents a unique opportunity to highlight the historic origin of Fort Collins, and the unique relationship of the waterway and railways to the agricultural and urban environment. Many of our City’s stories will be told along the “History Walk” that loops through downtown along the river, Willow Street, and along to Linden Street.



**Figure 2.38 Poudre River Draped in Fall Colors (photo by Bruce Barber)**

Linden Street, with its direct line of sight between Downtown and the Poudre River, represents the best opportunity to create a strong visual and physical link between Downtown, the River, and New Belgium Brewery. To reinforce this link, the master plan envisions a significant makeover of the Linden Street Bridge to proclaim the river’s presence, and new spaces on both sides of the bridge to access and enjoy the river.

Old Fort Collins Heritage Park would be reimagined and renovated adding another spark to the diverse river experience, and enriching the downtown environment. The previous riparian restoration of the south bank will be preserved. One put-in/take-out will be carefully blended into the south bank immediately downstream of the Burlington Northern Santa Fe (BNSF)

Railroad Bridge at a location where the bank has been degraded by visitor use and a sustainable treatment is needed.

The Gustav Swanson Natural Area will continue to be managed for its natural values, and will be connected with areas to the west via the proposed pedestrian underpass at the BNSF Railroad.



**Figure 2.39 Yellow Warbler in a Young Cottonwood (photo by Aran Meyer)**

Improvements for this reach are represented in the site plan presented on the preceding page.

**Background and Fundamental Opportunities**

This reach is located north of Downtown Fort Collins, east of the BNSF Railroad Bridge and west of Linden Street. Like Reach 3, it is surrounded by considerable urban development; the river and its floodplain have been highly altered and influenced by structures including bridges and private development. The river is bordered on the north by Gustav Swanson Natural Area, and on the south by Old Fort Collins Heritage Park/Northside Aztlan Community Center, United Way and the recently constructed Legacy Apartments.

Portions of Old Heritage Park and Northside Aztlan Community Center were identified as part of the Poudre River-Aztlan Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) Site. Historical uses of properties adjacent to these sites included a coal gasification plant, a gas station, a land fill and a petroleum distribution facility. Per an order from EPA, focused removal actions reduced exposure and migration of NAPL (non-aqueous phase liquid) contaminants to the public and river waters. As part of the cleanup, significant site reclamation occurred. Restoration of the

riverbed and both banks, as well as extensive revegetation with native plants along both banks, was completed to improve overall habitat quality. The presence of these underground contaminants limits the city’s ability to disturb and reshape the ground within Old Heritage Park, the south river bank, and the adjacent channel bed.

Opportunities for expansion of the river greenway in this reach include:

- Potential land acquisitions from landowners in areas that directly adjoin the river and/or public lands using the City’s “Willing Seller - Willing Buyer” program.
- Other opportunities to enhance the corridor, Downtown culture, and local vibe should be evaluated if and when adjacent properties become available.



**Figure 2.40 River Access/Small Beach with Sentinel Boulders at the Gustav Swanson Natural Area**

**Related Projects**

- The Master Plan for Old Fort Collins Heritage Park will be developed by the Park Planning Department as part of a separate public process.
- Private Development. Natural area buffers located within adjacent private properties shall be designed to blend with the existing river character. Refer to the City Land Use Code for natural area buffer standards and requirements.



### Flood Mitigation and Bank Stabilization

Specific issues and potential opportunities associated with flood mitigation and bank stabilization include the following:

- There are no insurable structures located within the regulatory floodplain through this reach; however, there are numerous insurable structures located adjacent to the floodplain north of the river. Consequently, care will be required to ensure that any project which includes improvements within the river corridor (i.e., floodway) does not increase 100-year water surface elevations such that private property or insurable structures are adversely impacted.
- Currently, 100-year flows would spill east along Vine Drive starting west of the BNSFRR, requiring the definition of a regulatory split flow path from Linden Street to Dry Creek, near Lemay Avenue. It appears that a combination of improvements, including widening of the north overbank through the BNSFRR Bridge, and elimination of the floodplain constriction upstream of Linden Street, along with lowering/removal of the Coy Diversion and boat chute would likely eliminate (or reduce to nuisance/non-regulatory flood levels) this 100-year flow split.
- Other opportunities for reducing 100-year flood elevations within this reach are not likely practical given the presence of contaminated soils in the Aztlan Site and the contaminant mitigation countermeasures along the southwest bank through much of this reach. However, future improvements should investigate the possibility of incorporating additional flood mitigation elements.
- Bank stabilization and improvements for the areas illustrated in Figure 2.41 include revegetation of both banks along with either rock riprap toe protection or, where banks are near vertical, stacked boulder toe protection.

### Habitat/Ecological Restoration and Protection

Specific issues and potential opportunities associated with habitat/ecological restoration and protection include the following:

- Severely eroding and steep banks specifically in the vicinity of the BNSFRR’s Linden Street Bridge and at the informal river access point with the Gustav Swanson Natural Area should be stabilized and replanted with native vegetation.
- Protecting and improving diversity of existing forest and shrubs, as well as enhancing riparian grasslands.

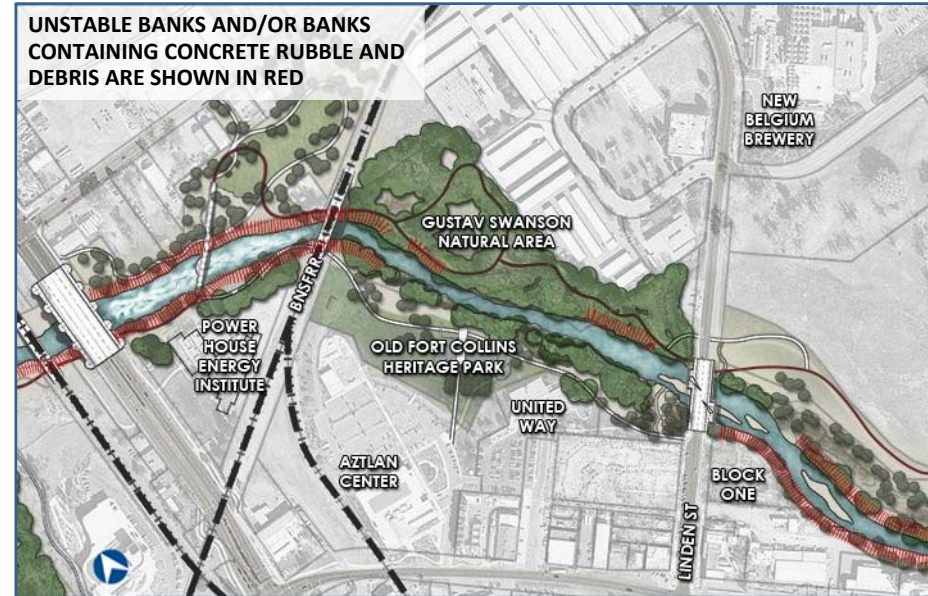


Figure 2.41 Bank Stabilization Needs Map for Reach 4

- It would be beneficial to create riffles and pools similar to those present in the river upstream and downstream of this reach. However, the possibilities for this occurring are limited due to the previous CERCLA remediation efforts.
- Similarly, improving lateral connectivity to the south bank floodplain at high flows will not be possible in this reach due to the CERCLA remediation measures.
- Removing concrete rubble, along with reshaping and vegetating banks, to improve near shore aquatic habitat.
- Creating low vegetated bench features along the river’s edge to reduce the channel width in over-widened areas, where feasible, and providing riparian habitat enhancements.

### Recreation and Access

Specific issues and potential opportunities associated with recreation and access include the following:

- Upgrading the Linden Street Bridge (i.e., vertical monuments, architectural treatments, enhanced railings, appropriate lighting, signage, public art, and elevated river overlook areas) is suggested to strengthen the visual connection between Downtown Fort Collins and the Poudre River.



Figure 2.42 Volunteers Planting Native Shrubs and Trees along the River Bank

- Providing way finding signs within the river corridor to make visitors aware of the local destinations and attractions.
- Adding bank enhancements, landscape treatments, and park amenities along the Poudre Trail to create a more inviting atmosphere within Old Fort Collins Heritage Park, with the understanding that improvements must comply with CERCLA requirements for the site.
- Adding a terraced river access area on the right bank upstream of Linden Street to provide a connection from Linden Street to the river.



- Developing a “Poudre Interpretive Walk” on the south side of the river. Portions of this area are associated with the earliest historic roots of the City and were part of the original Fort/Encampment site. The Heritage Walk would extend between Linden Street and the Museum of Discovery, telling Fort Collins’ story using the character of the downtown alleys with brick pavers, seating areas, and interactive/interpretive features. The Heritage Walk would be incorporated into future improvements within Old Fort Collins Heritage Park.



Figure 2.43 Birders near the Poudre River

- Potential interpretive and educational topics for this section of the river include: the river’s history, the “Fort”, founding of the city, local railroad history, agricultural use of the river, and early industry.
- Providing wheelchair access to the river’s edge where possible.
- Including one put-in/take-out area immediately downstream of the BNSF Railroad Bridge on the south bank.
- Providing two small river access points on the north river bank.
- Strengthening pedestrian connections to the river greenway at Linden Street from the north and south, and through the Aztlan Center/Old Fort Collins Heritage Park from the south, to provide identifiable, safe and attractive access to the river.

- Regrading under the existing Linden Street Bridge, or replacing the bridge, in order to accommodate routing of the Poudre Trail under the northernmost bridge span would eliminate the at-grade crossing at Linden Street; the only at-grade street crossing for the trail within the project area.
- The following is a summary of the existing and proposed public parking located within or near the river corridor in this reach. Parking in these areas is provided for multiple uses and is not guaranteed for river use. Additional parking may be required with increased use of the river corridor and surrounding areas.

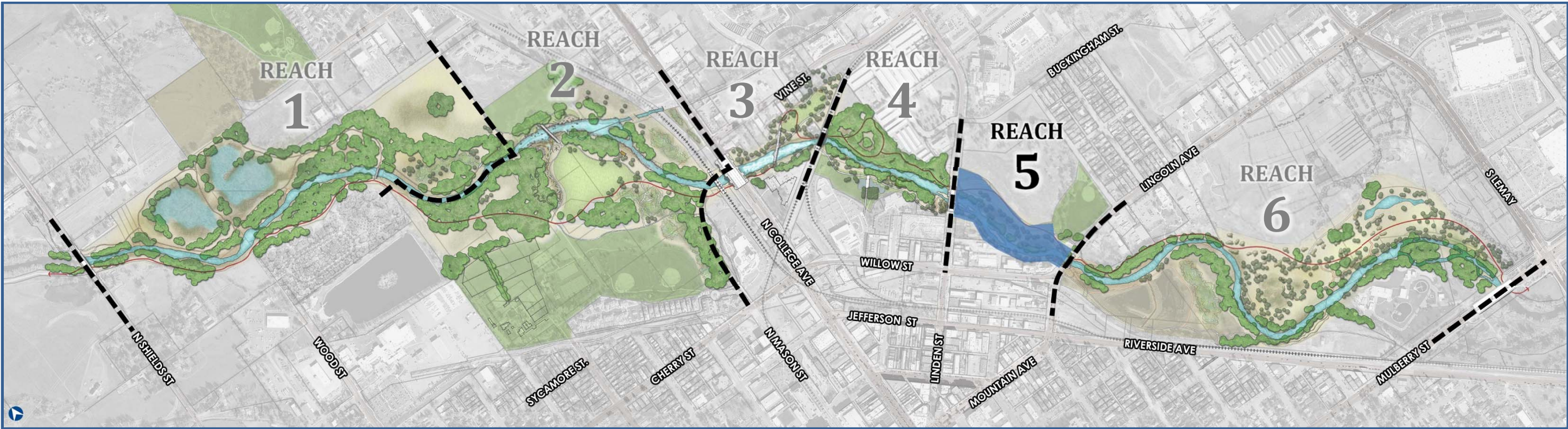
Parking Location	Number of Existing Spaces
Aztlan Center (paved)	180
Gustav Swanson Natural Area (paved)	10 to 12
Linden Street (on-street parking south of the river – paved)	68

- Adding on-street parking on Linden Street north of the river.
- Where appropriate, bike parking spaces should be provided in close proximity to each river put-in/take-out. The location and number of spaces will vary depending on individual site characteristics.



# REACH 5

## Linden Street to Lincoln Avenue





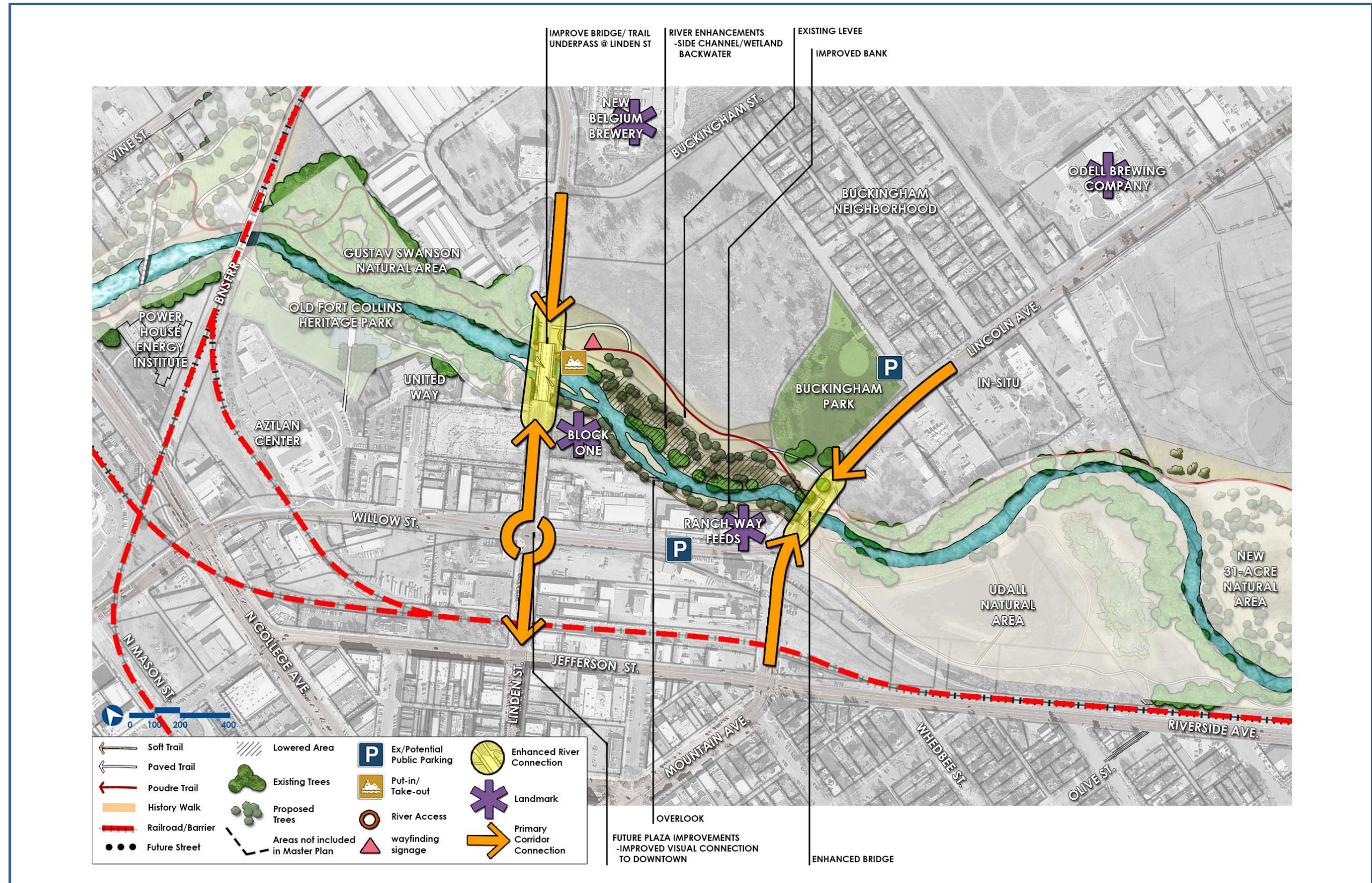


Figure 2.44 Master Plan for Reach 5



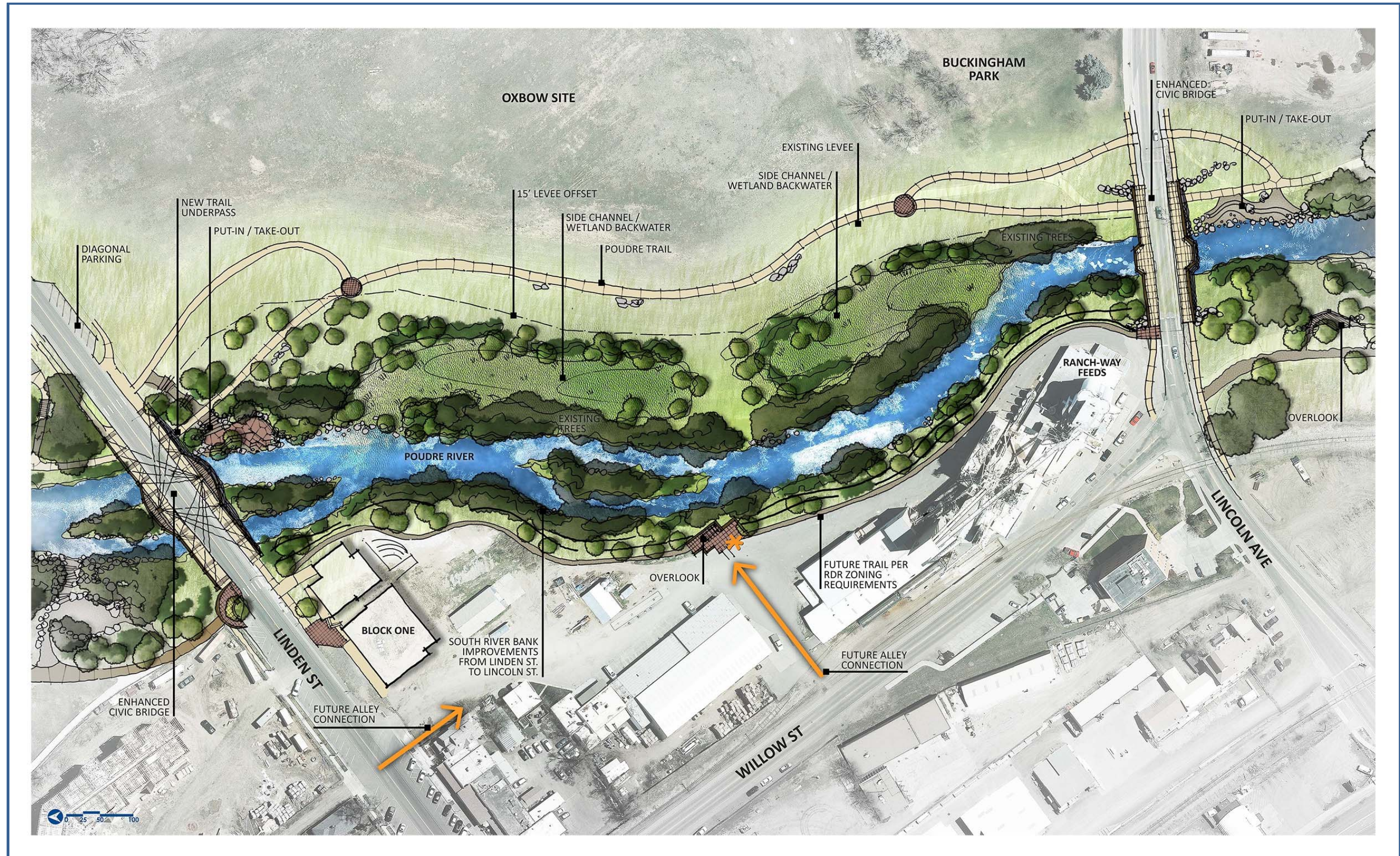


Figure 2.45 Conceptual Site Plan for Reach 5



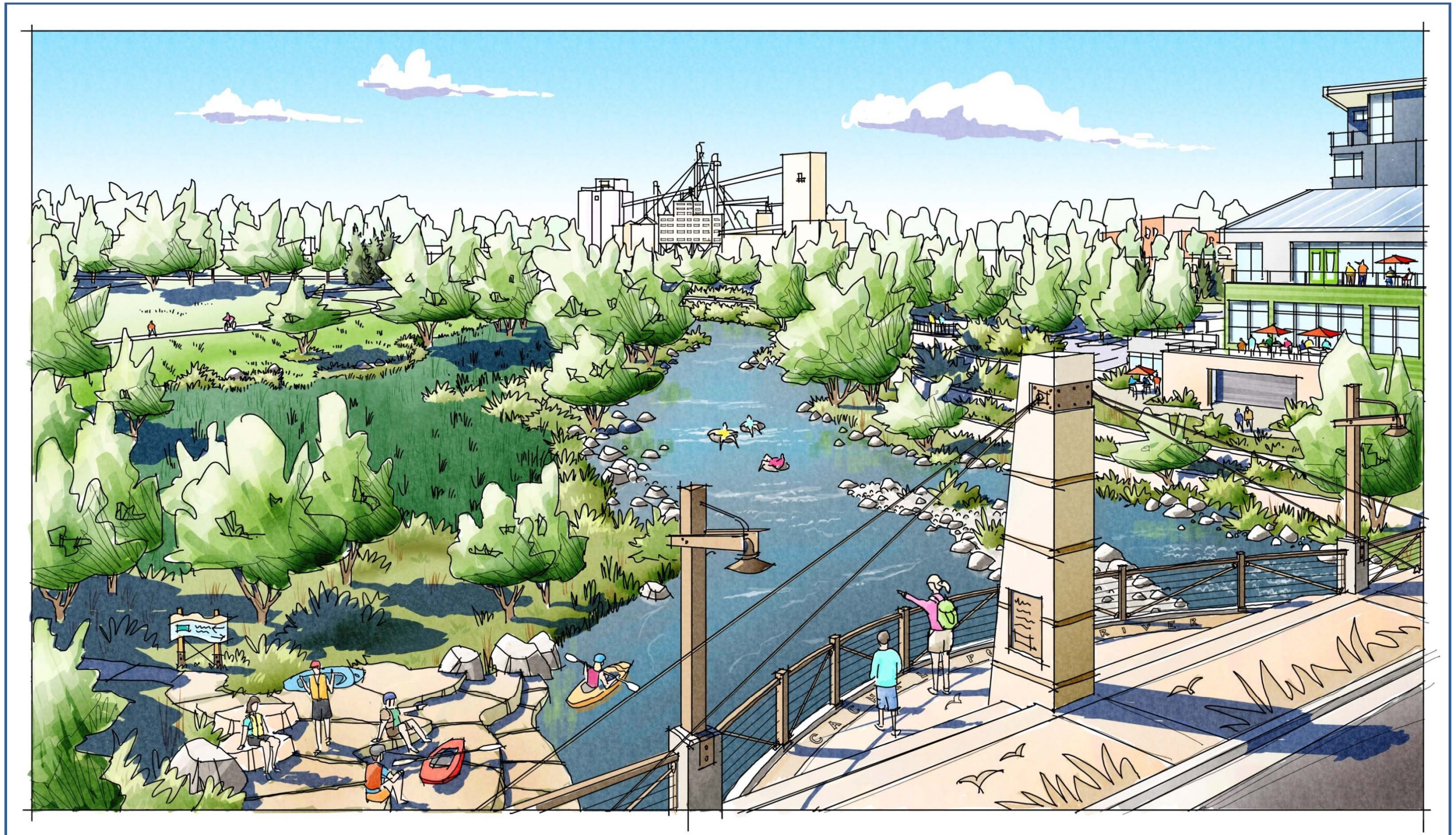


Figure 2.46 Character Sketch, View Looking Southeast from the Linden Street Bridge



## Reach 5 – River District

River District: *This district is “intended to reestablish the linkage between Old Town and the River through redevelopment in the Cache la Poudre River corridor.”*

It's a place unlike any other in Fort Collins. Here, the river, industry, art and history come together creating a new and interesting vibe, and another dimension to downtown Fort Collins. Long-time agri-industrial businesses work in partnership with new entrepreneurs. Modern housing, restaurants, shops and office buildings reflect the District's historic past and celebrate its future. This area is emerging as the next new opportunity to foster the ongoing success of downtown Fort Collins.

The City Land Use Code and the River District Design Guidelines recognize the distinct possibilities in this district and encourage new developments to engage the river's south edge with trail connections, outdoor seating, dining, and other urban river edge treatments. Over time, as private properties on top of the south bank redevelop, the river frontage could be transformed into animated urban space overlooking the river.

As part of this project, the steep south river bank will be cleaned-up, stabilized, re-vegetated and become a place that fits the river character and of which the community can be proud.



**Figure 2.47 Outdoor Education at a Wetland Area near the Poudre River**

Dramatic changes will also be seen on the north bank of the river. The space between the river and the levee will be re-contoured to form a lowland area evoking a remnant river channel that will sustain an ecologically diverse

wetland backwater area. With the exception of the put-in/take-out near Linden Street, the entire north bank will be devoted to riparian habitat creation. In addition, the Poudre Trail will be rerouted under the Linden Street Bridge removing the last remaining at-grade street crossing in Downtown Fort Collins. The before and after photos will be considerably different!



**Figure 2.48 Snapping Turtle near the Poudre River (photo by Norm Keally)**

The character envisioned for this reach is depicted by the site plan and sketch presented on the preceding pages.

### Background and Fundamental Opportunities

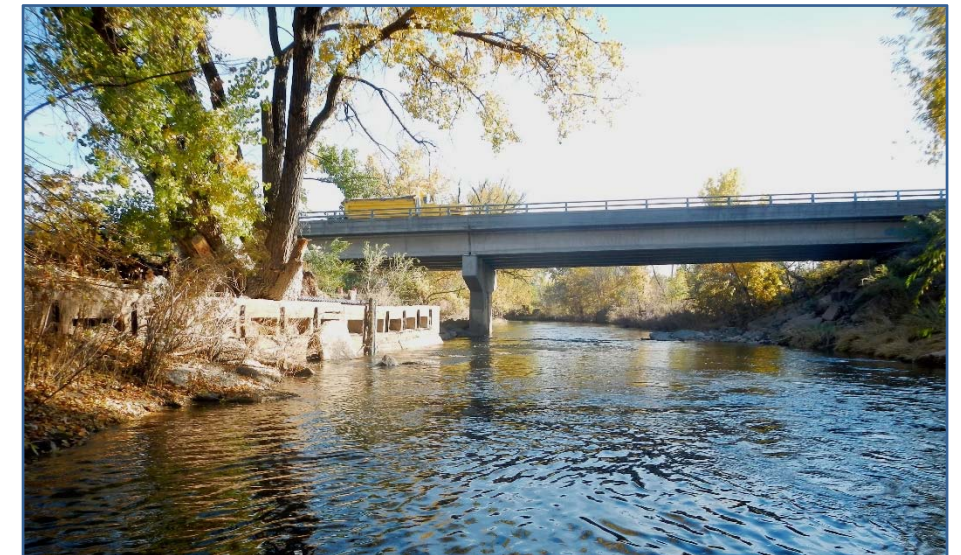
This reach is located in the City's "River District" which is described in the City's Land Use Code as an area *“intended to reestablish the linkage between Old Town and the River through redevelopment in the Cache la Poudre River (the "River") corridor. This District offers opportunities for more intensive redevelopment of housing, businesses and workplaces to complement Downtown. Improvements should highlight the historic origin of Fort Collins and the unique relationship of the waterway and railways to the urban environment as well as expand cultural opportunities in the Downtown area.”*

In this reach the river is bordered by considerable urban development along the southwest bank. Like reaches upstream, the river and its floodplain are highly altered and influenced by structures including bridges, the levee, and adjacent private development. Channelization of the river is extreme, and associated riparian forest habitat and wildlife movement are impacted by the acute confinement of the river corridor.

The transformation of this area will support each of the primary project objectives (habitat restoration, flood mitigation, recreation); however, the

emphasis in this Reach is placed on habitat restoration. When completed the northeast overbank areas will be lowered and converted into a side channel and backwater wetland having a diverse wetland mosaic that will enhance opportunities for natural processes to drive ecosystem renewal. In addition, the steep southwest bank will be cleaned up, terraced/stabilized and re-vegetated adding beauty and improving the River's health.

- Opportunities for expansion of the river greenway in this reach include potential land acquisitions from landowners in areas that directly adjoin the river and/or public lands using the City's "Willing Seller - Willing Buyer" program.



**Figure 2.49 Historic Concrete Structure Obstructing the Upstream Side of the Lincoln Avenue Bridge**

### Related Projects and Documents

- Poudre River Enhancement Plan (2003). Many of the ideas presented in the Poudre River Enhancement Plan (2003) have been carried forward in this master plan. However some modifications have been made to address public comments and current circumstances.
- The City's Land Use Code, Section 4.17 – River Downtown Redevelopment District, identifies both opportunities and requirements associated with improvements specific to this reach.
- The newly-adopted Fort Collins River Downtown Redevelopment Zone Guidelines (2014) provides enhanced design standards for this area in an effort to better address neighborhood, site, and building attributes, while maintaining the agricultural-industrial character of this unique portion of the City. In addition, specific streetscape improvements are identified for Willow Street.





**Figure 2.50 Adjacent Industrial Land Use and Concrete Rubble along Southwest Bank**

- The recently-adopted Lincoln Corridor Plan (2014) seeks to provide an enhanced level of amenities along Lincoln Avenue that restores its importance as a primary entry to the heart of the City, as well as providing an important connection from Downtown to the east and northeast. This plan also identifies a priority list of related neighborhood improvements.

- Private Development. Natural area buffers located within adjacent private properties should be designed to enhance and blend with proposed river improvements. Refer to the City Land Use Code for natural area buffer standards and requirements.

**Flood Mitigation and Bank Stabilization**

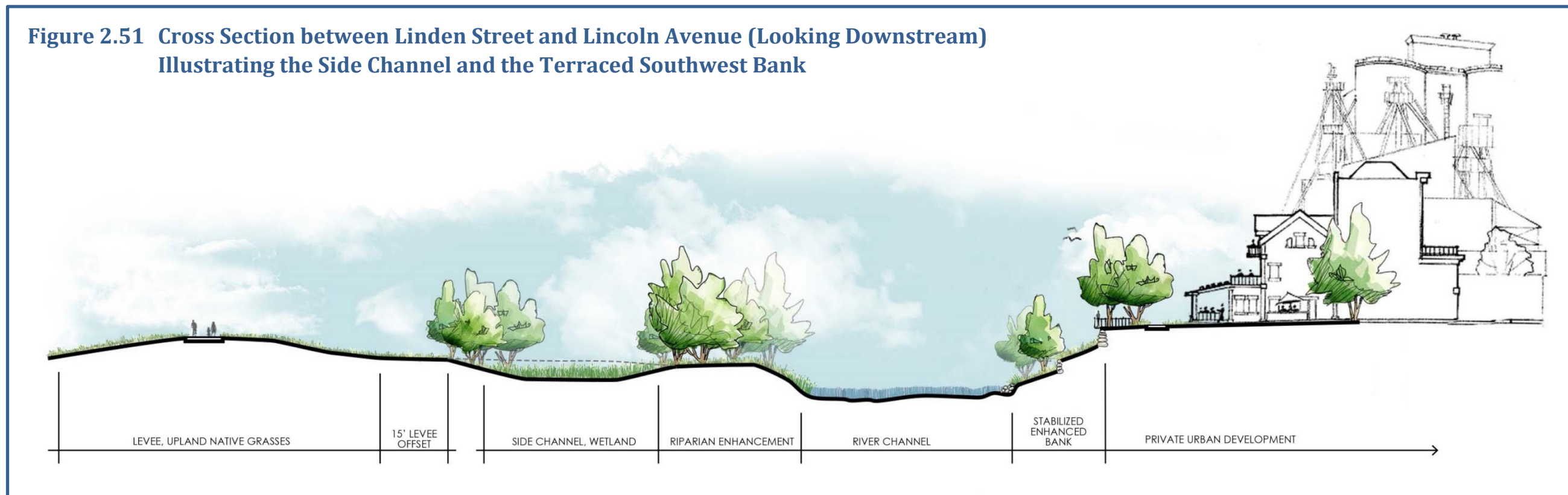
Specific issues and potential opportunities associated with flood mitigation and bank stabilization include the following:

- There are no insurable structures located within the regulatory floodplain through this reach. However, the Buckingham Neighborhood and other existing buildings, houses, and infrastructure to the northeast are protected from flooding by the Poudre River during a 100-year event by a regulatory levee which spans this entire reach. Freeboard requirements along the levee must be maintained in order to preserve the levee’s regulatory status with FEMA. Consequently, particular care will be required to ensure that any project which includes improvements within the river corridor (i.e., floodway) do not increase 100-year water surface elevations.
- Implementing the Poudre River Enhancement Project (PREP) Plan, or a modestly altered version of that plan. Features included in the PREP Plan are: bank stabilization improvements, in conjunction with limited riparian vegetation enhancements, along the southwest bank;

stabilization and vegetative improvements along the northeast bank; and the creation of a secondary slough-like channel located between the river channel and the levee. The secondary channel would greatly expand the riparian habitat corridor and provide flood flow conveyance when flows in the river exceed roughly a 2-year event. This flood mitigation benefit may lower 100-year flood levels and may allow for additional habitat enhancements along the southwest bank. These improvements are represented in the cross section illustrated in Figure 2.51.

- Removing the historic concrete structure currently located on northeast river bank upstream of Lincoln Avenue to increase the flood conveyance capacity of the channel and the Lincoln Avenue Bridge.
- Extending the bank stabilization and restoration techniques used adjacent to the Block One Development to create a cohesive appearance along the southwest bank between Linden Street and Lincoln Avenue.
- Other opportunities for reducing 100-year flood elevations within this reach are not currently practical due to limitations with respect to the presence of the Oxbow Levee, as well as private landownership and current land use along the southwest bank. However, future improvements should investigate the possibility of incorporating additional flood mitigation elements.

**Figure 2.51 Cross Section between Linden Street and Lincoln Avenue (Looking Downstream) Illustrating the Side Channel and the Terraced Southwest Bank**





- Bank stabilization and improvements for the areas illustrated in Figure 2.52 include revegetation of both banks along with either rock riprap toe protection or, where banks are near vertical, stacked boulder toe protection. The southwest bank within this reach will require special treatment with terracing of two or more stacked boulder installations (forming low walls similar to those used along Block One), as shown in Figure 2.51. The northeast bank through this reach would be an appropriate location for incorporating root wad installations (in conjunction with rock riprap toe protection).

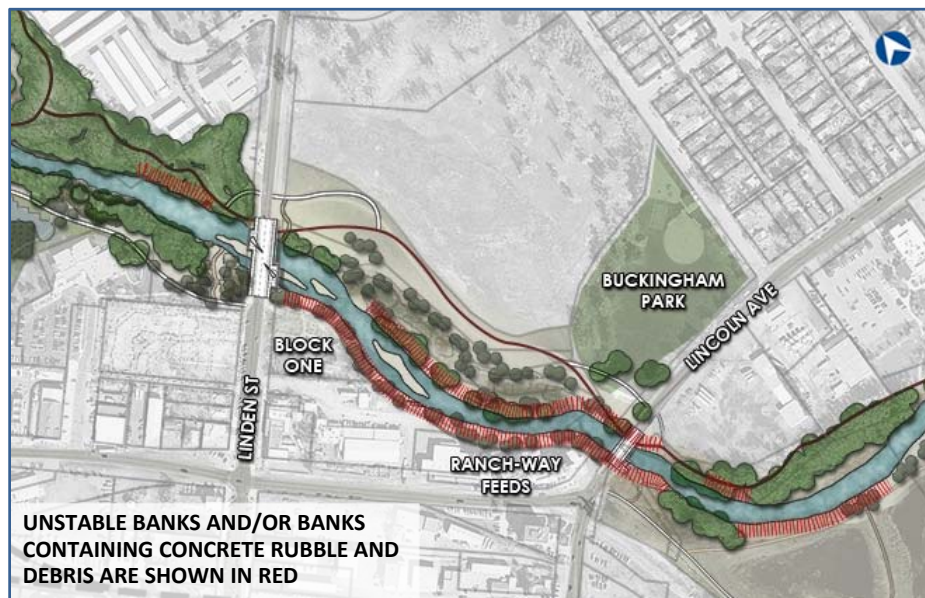


Figure 2.52 Bank Stabilization Needs Map for Reach 5

### Habitat/Ecological Restoration and Protection

Specific issues and potential opportunities associated with habitat/ecological restoration and protection include the following:

- Lowering floodplain and expand riparian and upland vegetation width between river and the soft trail on the northeast bank (Figure 2.51).
- Replacing concrete rubble and riprap with bank treatments that include natural elements and improving edge habitat for riparian and aquatic species on the southwest bank.
- Integrating additional wetland and backwater habitat features into proposed enhancements while improving lateral connectivity to floodplains at high flows.
- Improving wildlife travel corridor/buffer near the river's edge and creating a designated visitor access area along the northeast bank.

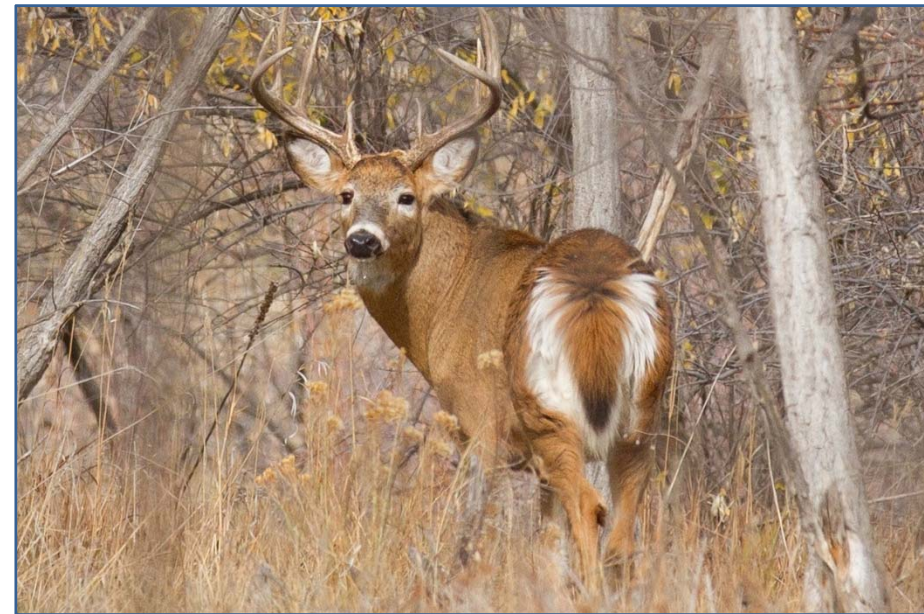


Figure 2.53 White-Tailed Buck in a Poudre River Forest (photo by Norm Keally)

- Creating low vegetated bench features along the river's edge to reduce the channel width in over-widened areas, where feasible, and providing riparian habitat enhancements.
- Improving in-stream cover for native aquatic species.
- Expanding the riparian forest on the northeast bank, where possible, while maintaining a minimum offset of 15 feet from the toe of the levee for all woody plantings.

### Recreation and Access

Specific issues and potential opportunities associated with recreation and access include the following:

- Providing a trail spur to connect with the Poudre Trail underpass at Linden Street identified in Reach 4.
- The high steep bank on southwest side limits access to the river, but offers an opportunity for a public overlook (as shown in Figure 2.45) to coincide with future alley improvements southwest of the river.
- Incorporating visual buffering and noise reduction with southwest bank improvements.
- Potential interpretive and educational topics for this section of the river include: Auntie Stone's Mill (which is incorporated in the Ranch-Way Feeds facility) and the Poudre stream gage.

- Utilizing the bridges that bookend this reach to celebrate and announce the river's presence, and to strengthen the relationship between the river and Downtown Fort Collins.
- Upgrading these bridges (i.e., vertical monuments, architectural treatments, enhanced railings, lighting, signage, public art, and elevated river overlook areas) to strengthen the visual connection between Downtown Fort Collins and the Poudre River, and provide safe, accessible and convenient multi-modal connections to the river. Views of the bridges from the street and the greenway corridor should be considered in their design (Figures 2.45 and 2.46).
- Including one put-in/take-out for tubers and boaters on the northeast bank directly downstream of Linden Street (Figures 2.45 and 2.46).
- Buckingham Park is served by 24 on-street parking spaces located along the west side of 1<sup>st</sup> Street, northeast of the river. There are no other public parking spaces located near the river at Lincoln Avenue. If possible, Lincoln Avenue should be designed to accommodate on-street parking in close proximity to the river. Alternatively, the City may consider purchasing property near the Lincoln Avenue Bridge in order to construct a small trailhead and parking for the greenway corridor.



Figure 2.54 Outdoor Education on the Poudre River (photo by Ellen Heath)

- The River Downtown Redevelopment Zone Guidelines align with additional on-street parking to be constructed on Willow Street. This parking would be relatively close to the river and could accommodate trail users.



# REACH 6

## Lincoln Avenue to Mulberry Street





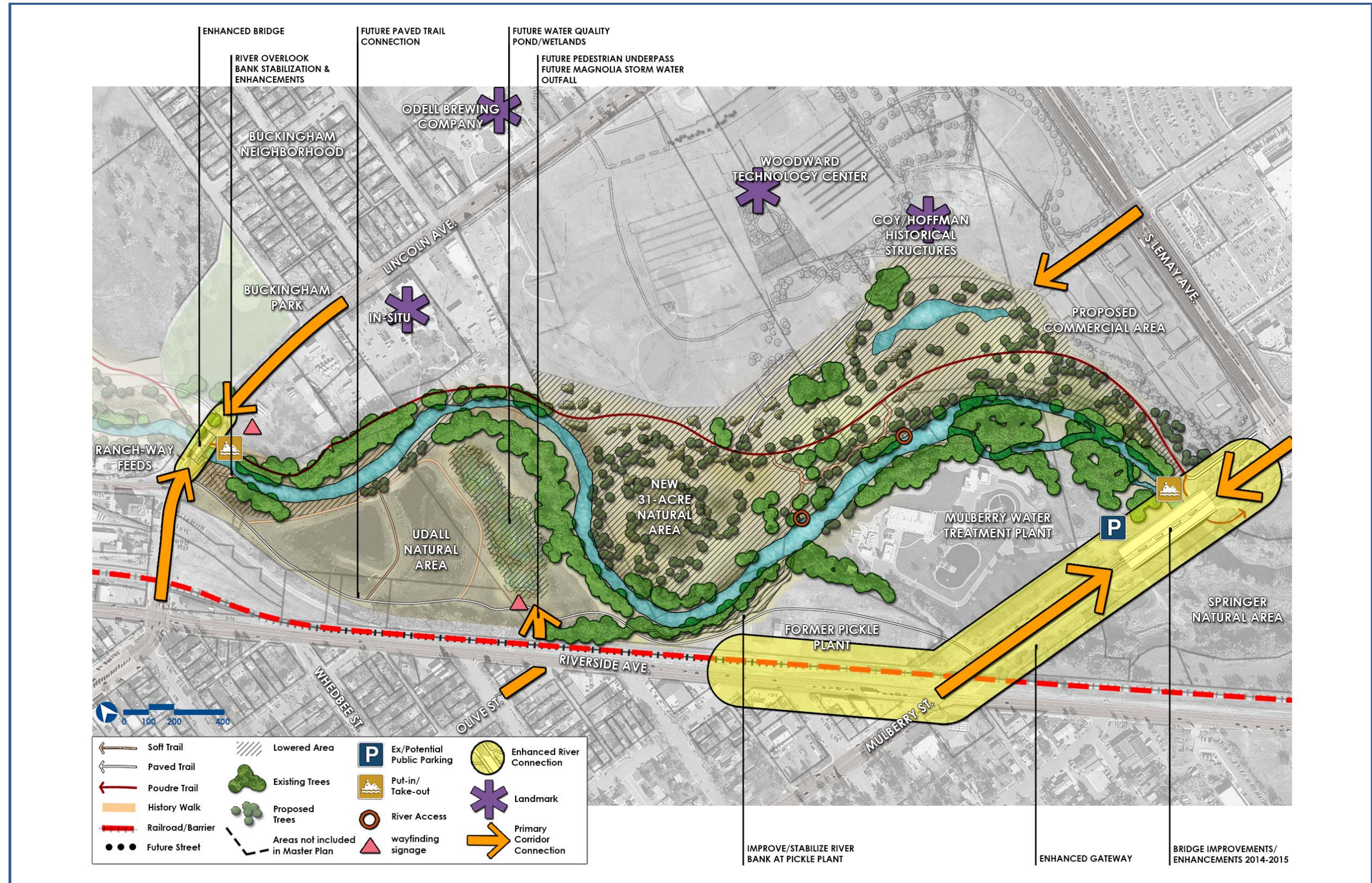


Figure 2.55 Master Plan for Reach 6

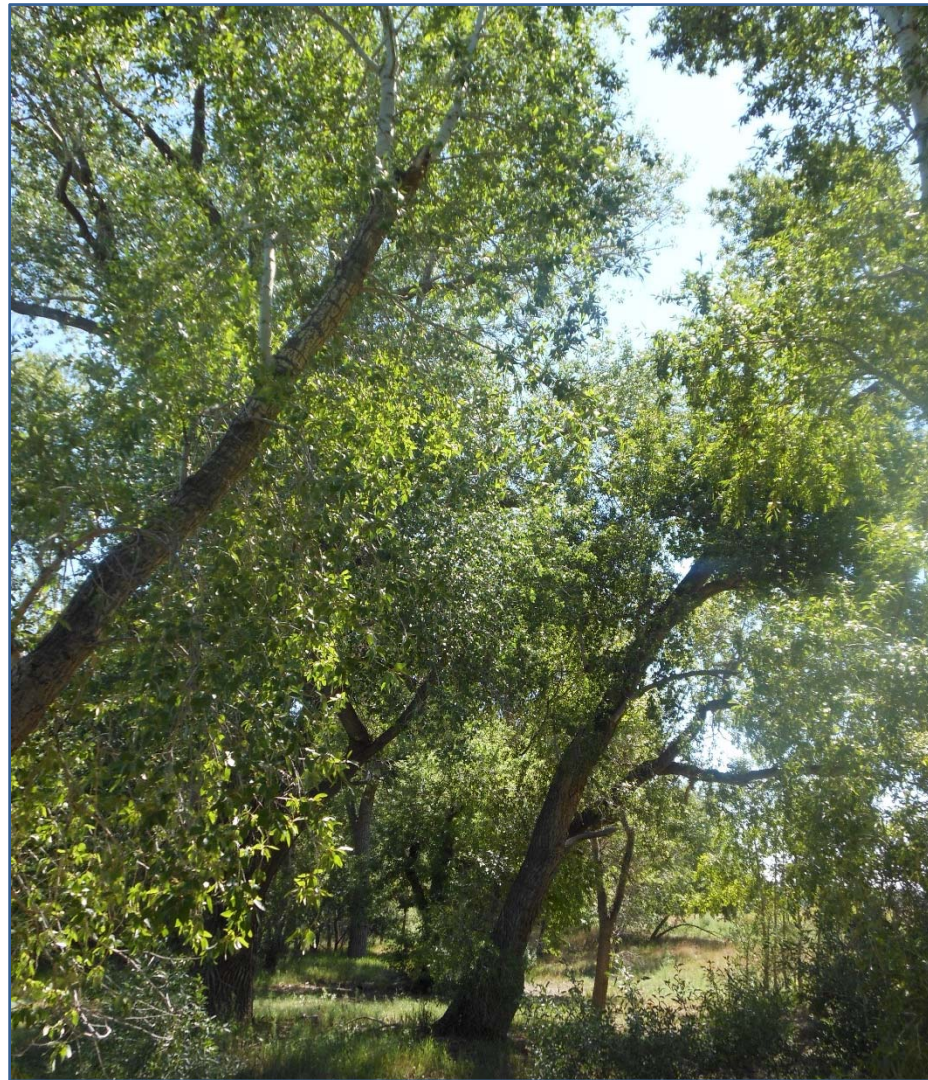


**Reach 6 – Lincoln District**

Lincoln District: *a budding industrial and brewery district.*

The Lincoln District is growing and already reflects an eclectic mix of existing uses – historic neighborhoods, breweries, retail, industrial, and natural areas, as well as a developing technology campus.

The expansive river greenway formed by the Udall Natural Area and the new 31-acre natural area stands in contrast to confined areas upstream. The wide open spaces of the 31-acre natural area will be restored to a “natural” functioning river ecosystem, and a lush Cottonwood gallery will be re-established along the river. Like Reach 1 emphasis in this river reach is placed on: restoration and enhancement of natural habitat, creating and improving sustainable access to the river, and creation of special places for people to experience and interact with nature.



**Figure 2.56 Poudre River Cottonwood Grove**

Important downtown gateways bookend this reach of the river and the City has plans for major renovations of both. The new designs for the Mulberry and Lincoln gateways seek to restore their importance as primary entries to the heart of the City.



**Figure 2.57 Fishermen of Different Breeds Working the Poudre River (photo by Norm Keally)**

**Background and Fundamental Opportunities**

This western portion of this reach is bordered by a collection of industrial sites on the north, and the Udall Natural Area on the south. A change in character is found to the east as the greenway transitions into the newly acquired and enhanced 31-acre Natural Area, the former Pickle Plant Site, and the Mulberry Wastewater Treatment Facility.

A majority of the significant changes in this reach are currently taking place in the newly acquired Natural Area. This 31-acre natural area was formerly part of the Link-n-Greens Golf Course and was conveyed to the City by Woodward, Inc. in 2013. The new Natural Area is included in this master plan, but its conversion to a natural area is occurring now. These improvements, combined with the existing ponds and upland areas within the Udall Natural Area offer an important respite for wildlife.

Improvements to the high steep banks adjacent to the former Pickle Plant and Udall Natural Area are anticipated as part of this Master Plan, as well as a new river overlook/outdoor classroom on the southwest river bank downstream of Lincoln Avenue.

The master plan also identifies a new trail underpass of Riverside Avenue and the UP Railroad, at the intersection with Olive Street, providing a convenient, separated-grade linkage from the residential neighborhoods

southwest of Riverside Avenue to the Udall Natural Area and the Poudre River.

Opportunities for expansion of the river greenway in this reach include potential land acquisitions from landowners in areas that directly adjoin the river and/or public lands using the City’s “Willing Seller - Willing Buyer” program. Expansion of the river greenway would provide space for improving the riparian corridor and the trail users’ experience of the river environment.



**Figure 2.58 Side Channel Flowing Past the Mulberry Wastewater Treatment Facility**

**Related Projects and Documents**

- Potential Solar Farm at former Pickle Plant site.
- Magnolia Street Stormwater Outfall Project.
- Mulberry Street (State Hwy 14) Bridge and Streetscape Improvements.
- Lincoln Corridor Plan.
- Previous Cache La Poudre River Restoration planning within the Udall Natural Area.
- Woodward Technology Center development.
- Private Development. Natural area buffers located within adjacent private properties should be designed to blend with the natural river setting. Refer to the City Land Use Code for natural area buffer standards and requirements.



### Flood Mitigation and Bank Stabilization

Specific issues and potential opportunities associated with flood mitigation and bank stabilization include the following:

- There are several insurable structures located within the regulatory floodplain north of the river through of this reach. Consequently, particular care will be required to ensure that any project which includes improvements within the river corridor (i.e., floodway) does not increase 100-year water surface elevations.
- Proposed bank improvements along the Udall Natural Area may provide modest reductions in 100-year flood elevations. Other opportunities for reducing 100-year flood elevations within this reach are limited due to the close proximity of the dedicated water quality ponds within the Udall Natural Area and the presence of private property north of the river. However, future improvements should investigate the possibility of incorporating additional flood mitigation elements.



Figure 2.59 Steep High Bank Adjacent to the Former Pickle Plant Site

- A portion of the City’s Mulberry Wastewater Treatment Facility, including several insurable structures, are located within the regulatory floodplain southwest of the river, directly upstream of Mulberry Street. While the wastewater treatment plant’s buildings and facilities have been flood proofed, particular care will be required to ensure that any project which includes improvements within the river corridor (i.e., floodway) does not increase 100-year water surface elevations.
- Flood mitigation measures are currently being implemented as part of the new 31-acre Natural Area Project. These consist primarily of lowering a significant portion of the overbank north and east of the river, thereby reconnecting the river to the floodplain.
- Flood levels should be reduced when CDOT completes the replacement of the Mulberry Bridge (project for completion in 2015).
- Opportunities for eliminating overtopping of Lemay Avenue during the 100-year flood are being addressed by the City and CDOT as part of another project.
- Investigating wetland and habitat enhancements in conjunction with the planned water Quality pond enlargement in the Udall Natural Area.
- Bank stabilization and improvements for the areas illustrated in Figure 2.60 include revegetation of both banks along with either rock riprap toe protection or, along steeper banks, stacked boulder toe protection. The southwest bank along the Pickle Plant Site will require special treatment with earthen terracing (as shown in Figure 2.62, provided on the following page) or terracing of two or more stacked boulder installations (as identified previously in Figure 2.51 for Reach 5). The banks through this reach provide opportunities for incorporating root wad installations (in conjunction with rock riprap toe protection).

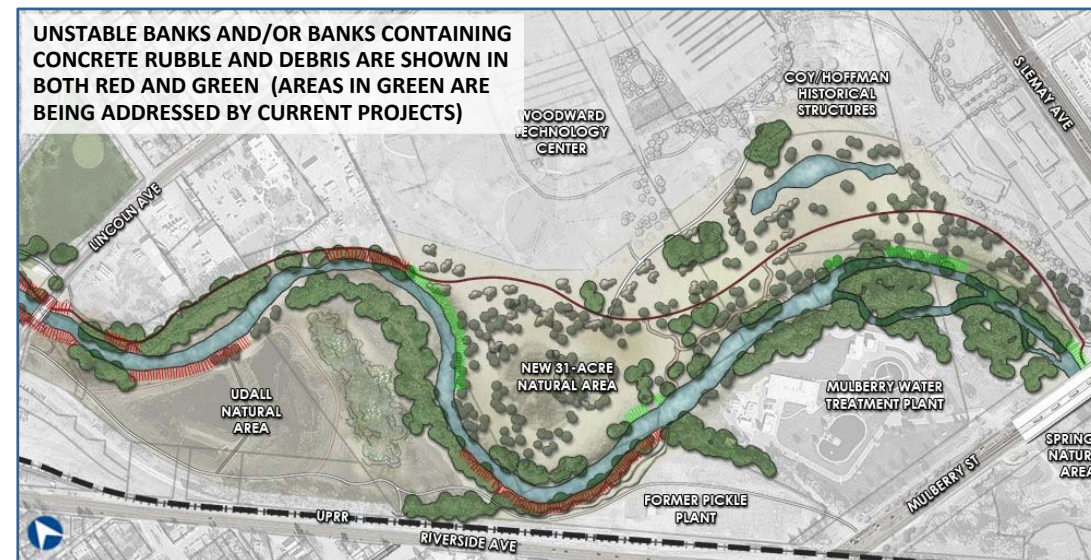


Figure 2.60 Bank Stabilization Needs Map for Reach 6

### Habitat/Ecological Restoration and Protection

Specific issues and potential opportunities associated with habitat/ecological restoration and protection include the following:

- The new 31-acre Natural Area is being converted from a golf course to a natural area. Changes include: re-grading (lowering) much of the site to improve lateral connectivity to floodplains at high flows, an oxbow pond, wetlands, expansion of the riparian forest (native tree plantings), riparian grasslands, native landscape restoration, and realignment of the Poudre Trail away from the river.
- Increasing the upland vegetation buffer between the river and urban development within the western portion of this reach.
- Restoring the southwest riverbank directly downstream of Lincoln Street to: increase riparian forest width and enhance in-channel wetlands.
- Removing old automobiles, concrete rubble, and other non-natural materials from the riverbank and improving near shore aquatic habitat, including in-stream cover.
- Relocating the large storm drain outfall and headwall located downstream of Lincoln Avenue back away from the river channel, and creating an outfall pool.
- Protecting existing riparian forest and the wetland mosaic, including offsetting trails to maintain buffers.
- Re-grading and improving the southwest river bank at the Pickle Plant Site using a natural terraced treatment.
- Integrating upland shrub plantings along the edge of the forest to increase structural diversity for improved riparian bird habitat.
- Creating low vegetated bench features along the river’s edge to reduce the channel width in over-widened areas, where feasible, and providing riparian habitat enhancements.

### Recreation and Access

Specific issues and potential opportunities associated with recreation and access include the following:

- Incorporating a public education feature in the Udall Natural Area concerning the treatment of stormwater runoff in a natural setting.
- Incorporating a river overlook with the planned bank restoration in the Udall Natural Area.



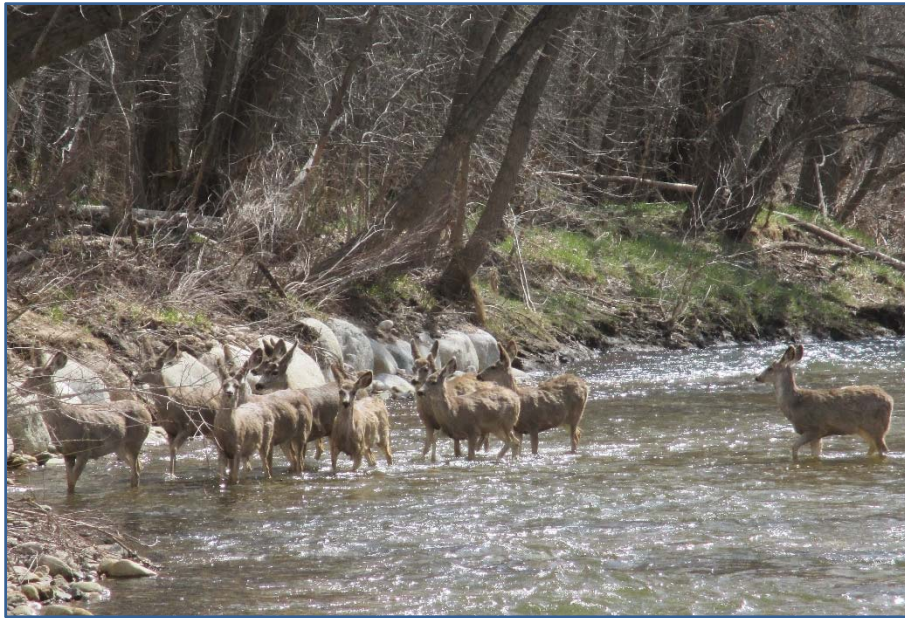


Figure 2.61 Deer Crossing the Poudre River

- Providing visual and sound damping buffers, to the extent possible, between the Poudre Trail and the adjacent industrial sites in the northwestern portion of this reach. This leg of the trail is one of the least inviting sections within the entire master planning area due to the

adjacent chain link fencing, outdoor storage of industrial equipment and materials, and noise.

- Including two put-ins/take-outs in this reach; with one to be located on the northeast bank downstream of Lincoln Avenue, and the other to be located on the north bank upstream of Mulberry Street. (It is worth noting that access to public parking is limited at both locations, as well as along this entire reach.)
- Providing two small river access points on the north river bank across from the Wastewater Treatment Facility that will be served by soft surface connecting trails.
- Access to the river corridor between Lincoln and Mulberry is limited due to private ownership of adjacent property, the presence of the UP Railroad paralleling Riverside Avenue, and a lack of intervening streets and bridges crossing the river. Where possible, trail connections to the Poudre Trail should be pursued.
- Providing a trail underpass of Riverside Avenue and the UP Railroad at the Olive Street intersection. This underpass would connect the historical residential neighborhood to the southwest with the Udall Natural Area and the Poudre River. This project should be designed and

coordinated with the proposed Magnolia Street Stormwater Outfall Project.

- The intersection of Mulberry and Riverside represents an opportunity to create a gateway to Downtown Fort Collins. Improvements could include enhanced streetscaping, gateway monuments, lighting, and public art. These improvements should be designed in conjunction with the potential solar farm and CDOT’s Mulberry Street Bridge Project.
- Adding on-street parking near the river along Lincoln Avenue, or consider purchasing property near the Lincoln Avenue Bridge to construct a trailhead and a parking area.
- Informal gravel parking is available near the entrance to the Mulberry Wastewater Treatment Facility, but street access to that site is challenging.
- Several parking spaces have been designated as “Trail Parking” in front of Home Depot along the east side of Lemay Avenue; however this does not provide convenient access to the river. More convenient parking opportunities should be pursued.

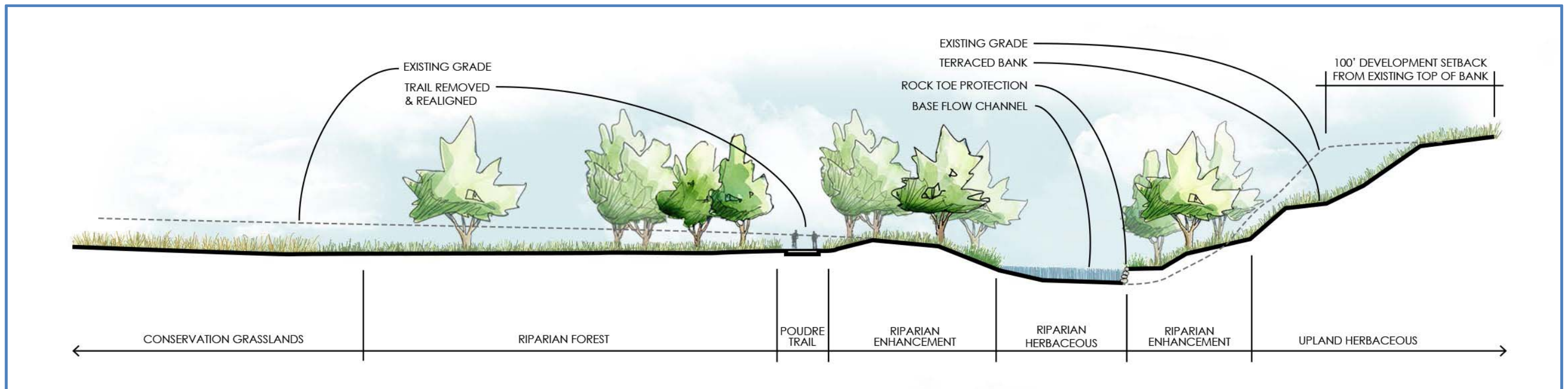
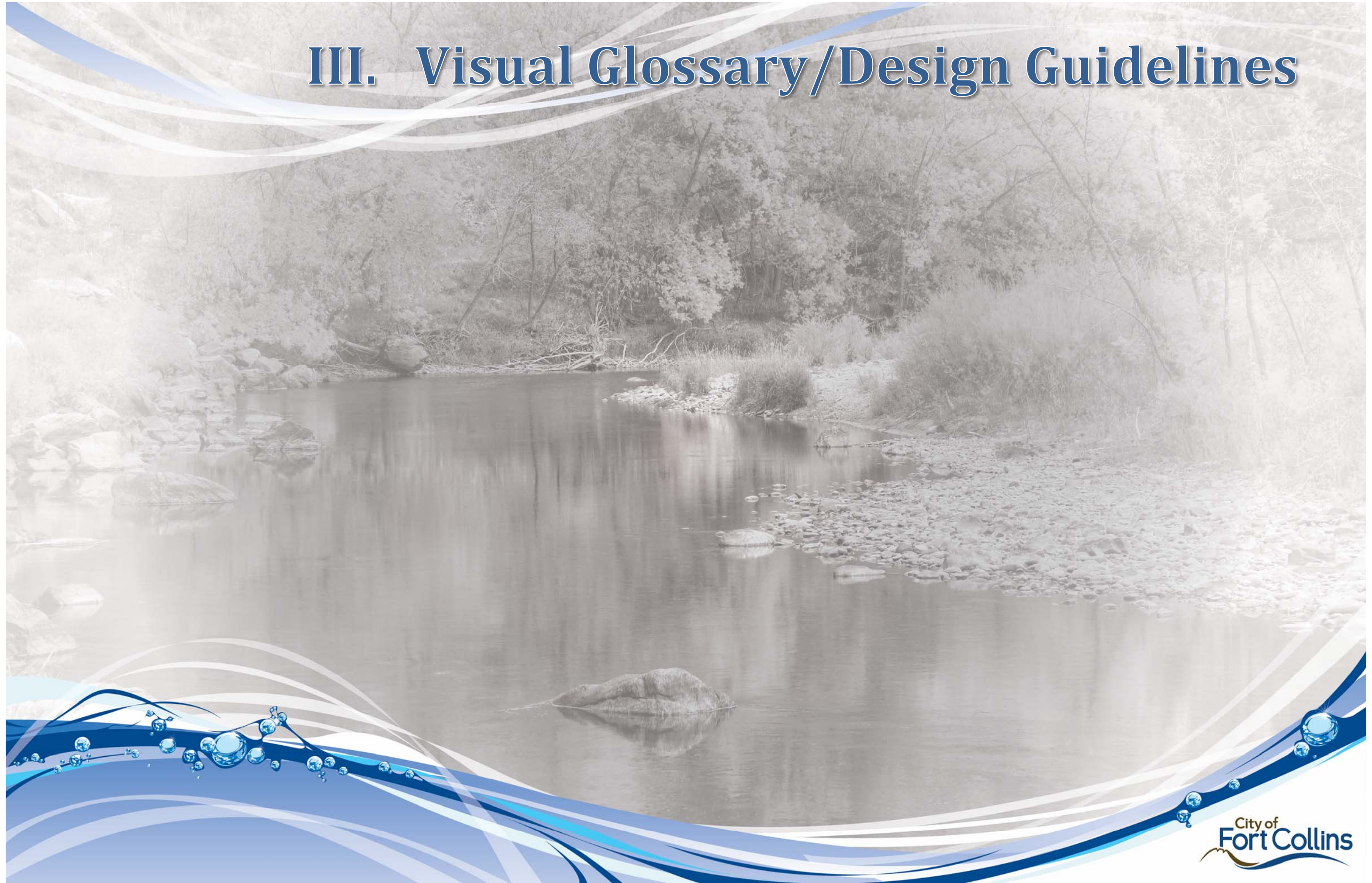


Figure 2.62 Cross Section (Looking Downstream) Illustrating the Terraced Bank Adjacent to the Pickle Plant Site and Lowering of the Northeast Overbank



# III. Visual Glossary/Design Guidelines





## River Bed Stabilization

A number of specific reaches of the Poudre River through Fort Collins have incised downstream of irrigation diversion structures. This has resulted in over-steepened bed slopes which generally preclude the passage of fish and other aquatic species, particularly in the upstream direction, and typically cannot easily be navigated by boaters and floaters. In order to reduce the local river bed slope in these areas, thereby reconnecting aquatic habitat and promoting safe passage for humans, a series of sloping rock features are envisioned in these locations.

On the Poudre River, these features may consist of a crest formed by small to moderate size boulders, followed downstream by a field of rock riprap placed at no greater than an 8 to 10 percent slope. This riprap should be backfilled with native gravel and cobble bed material to produce a bed surface that is natural in appearance and texture. Small to moderate size boulders should be placed randomly within the riprap field such that they protrude above the plane of the bed, creating an uneven channel bed surface and providing shelter zones that promote fish passage. The maximum vertical transition across any one of these sloping rock features should be less than 2 feet. Shallow pools should be formed at the downstream end of these features to provide water depth variability, particularly during low flows, and to control hydraulic conditions during larger flow events.

Two sloping rock features are shown in the accompanying photographs:

1. A single sloping rock feature operating under a moderate flow rate.
2. A series of two sloping rock features (A and B) operating under a moderate flow rate in a recently stabilized river reach.





### River Bank Stabilization and Restoration

In many places through Fort Collins, the Poudre River’s banks have been altered by any number of historical impacts, and/or they show signs of erosion or bank retreat. Generally through confined areas, such as the Poudre Downtown reach, bank instabilities or bank movement are not acceptable for a variety of reasons. Overall goals of river bank stabilization and restoration are to create banks that are stable, safe for ingress/egress under emergency conditions, ecologically functioning, and aesthetically pleasing. To achieve these goals, stream banks should not be unnaturally steep and should have native vegetation to provide riparian and aquatic habitat value. Ideally, the stream banks would allow overbank flooding at progressively higher levels, reflecting typical conditions for an alluvial stream. Depending on local geomorphic conditions and available space, stream bank improvements may include removing concrete and other debris, re-grading steep eroded banks, creating low and mid-level terraces, and planting with native trees, shrubs, and herbaceous species.

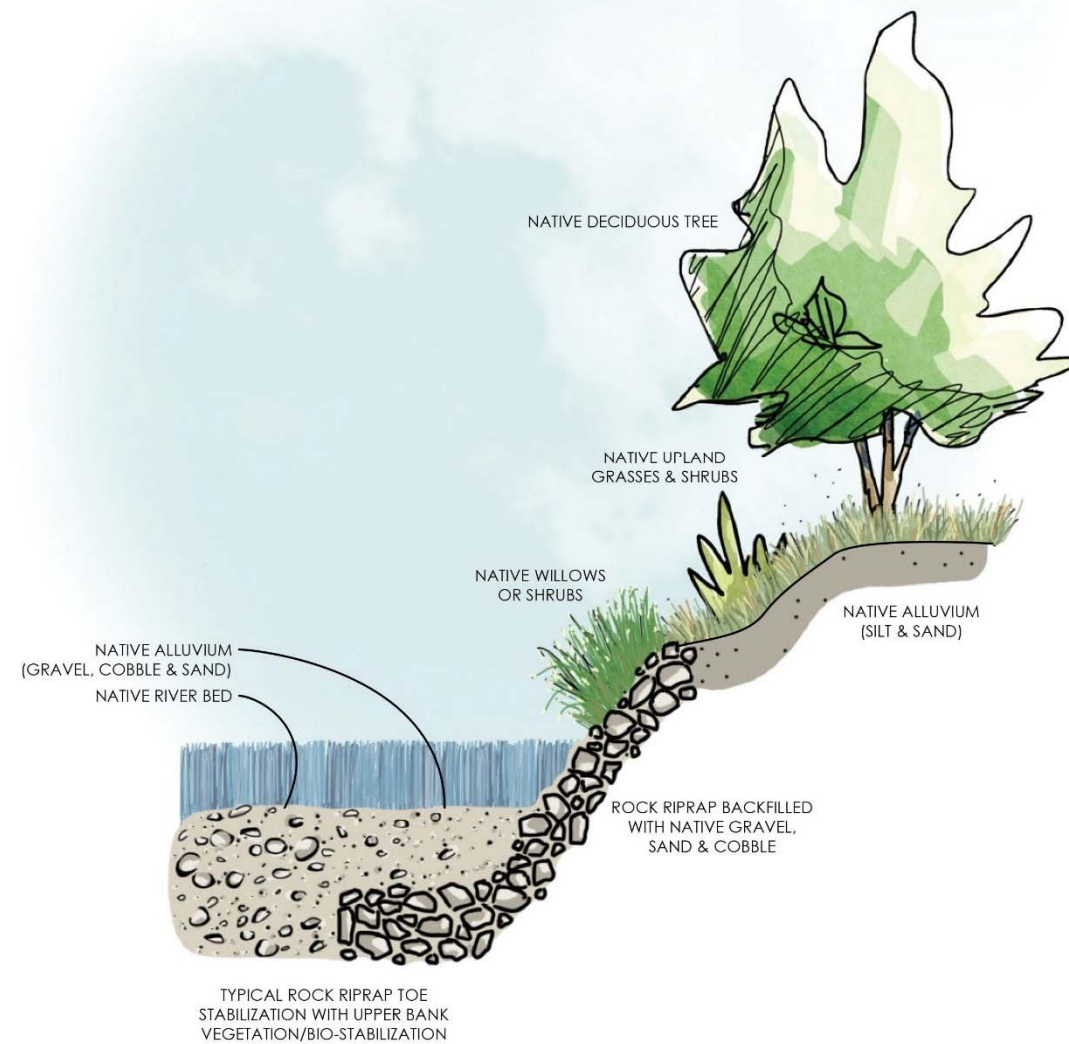
In natural settings, lateral river bank stability is often afforded by an interweaving root matrix of streamside trees, shrubs and willows; this condition cannot be replicated in the short-term by a stream bank improvement project. In lieu of a live root matrix, river bank stabilization is promoted by the installation of hardened toe materials overlain with native plantings. The hardened materials provide short-term stabilization, while the native plantings are intended to provide long-term stability, streamside shade and cover, and biotic mass in the riparian zone.

#### Rock Riprap Toe Stabilization

Within the Poudre Downtown reach, hardened toe protection will generally take the form of rock riprap or stacked boulders. With the former, the rock riprap should be backfilled with native gravel, sand and cobble to provide further stability, promote a more natural surface appearance, and offer an initial substrate for establishing streamside vegetation such as willows or shrubs. The backfilled riprap can be fully buried to create a softer surface for ingress and egress, but maintenance will be required as the finer cover soils (such as sand and silt) will likely be carried away during even low annual flow events.

The accompanying photographs show the southwest bank of the Poudre River, along the Northside – Aztlan Community Center:

1. Soon after installation of the CERCLA remediation measures and rock riprap toe protection.
2. After eight years of vegetation re-establishment along the bank.



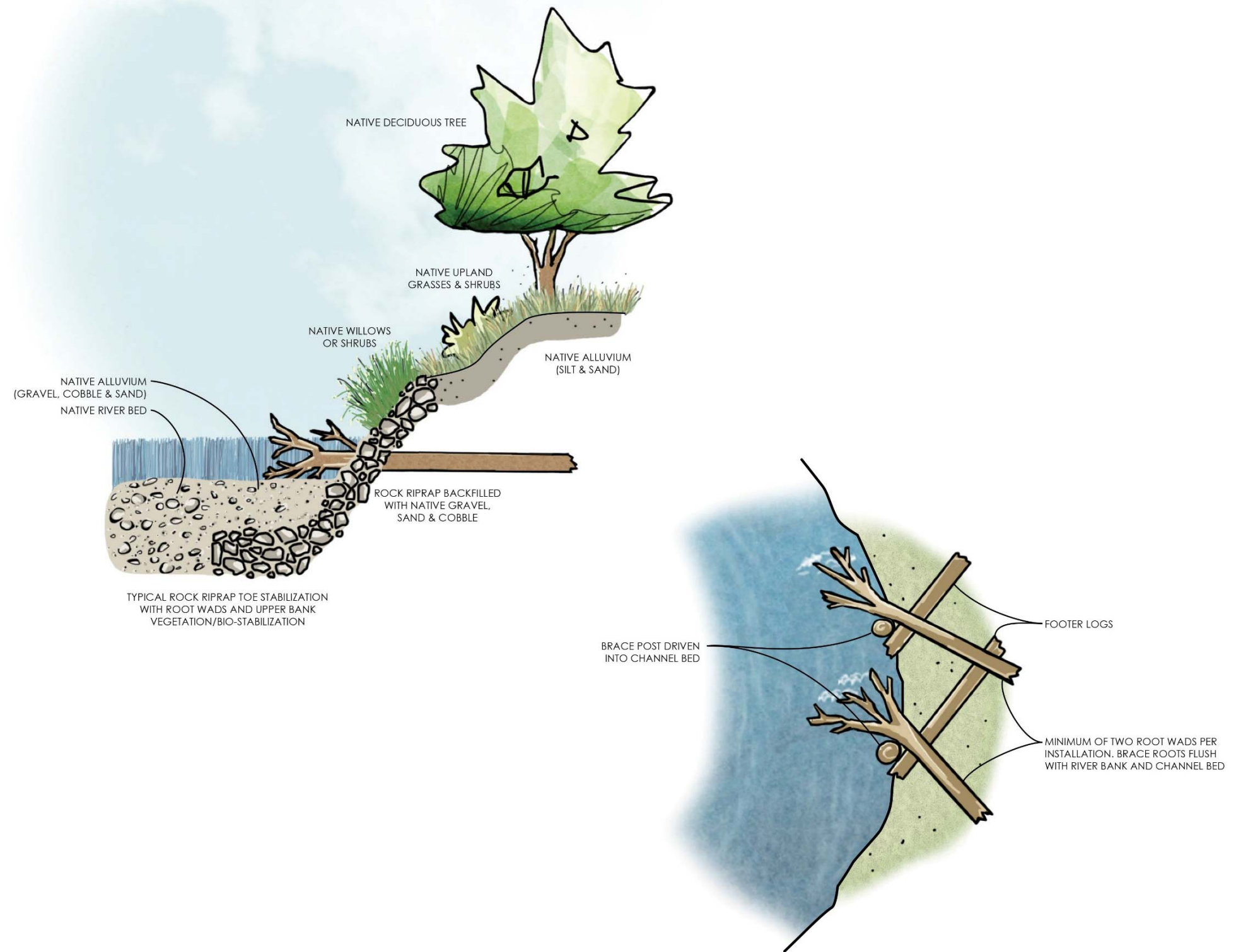


**River Bank Stabilization and Restoration (continued)**

In general, it is beneficial to add wood and biotic mass to the river in order to promote the health of aquatic species.

**Rock Riprap Toe Stabilization with Root Wads**

In locations where conditions allow, root wads can be installed along with rock riprap toe protection, with the woody materials providing physical cover, disrupting local flow patterns, promoting the formation of local scour holes, and delivering immediate biota loading. These features cannot be built in all locations, as robust root wad installations designed to withstand severe flow conditions require a large construction disturbance zone. In addition, installing these root wads, such as those shown here, are relatively labor intensive compared to placing standard riprap.





### River Bank Stabilization and Restoration (continued)

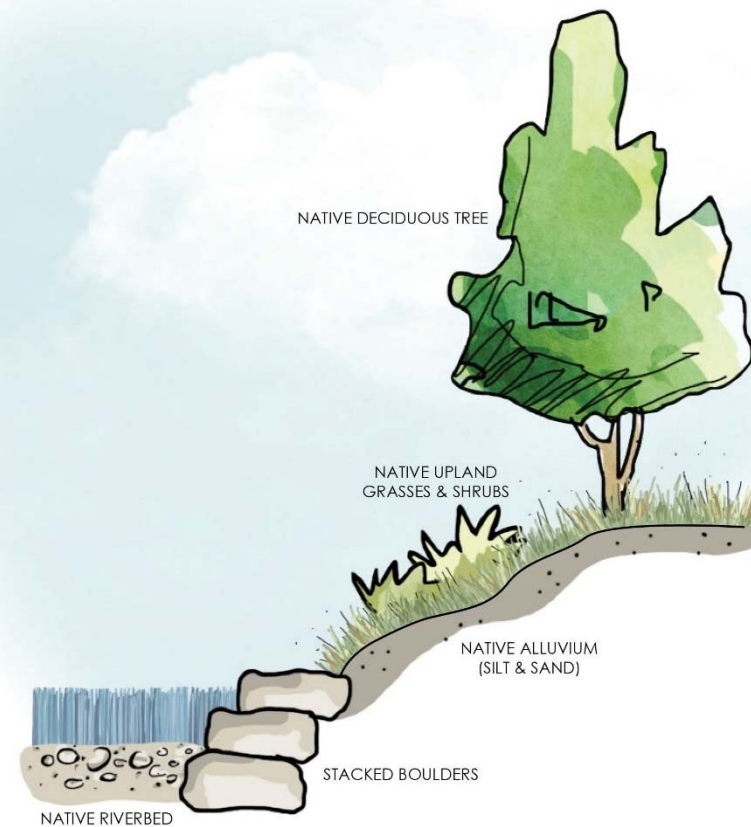
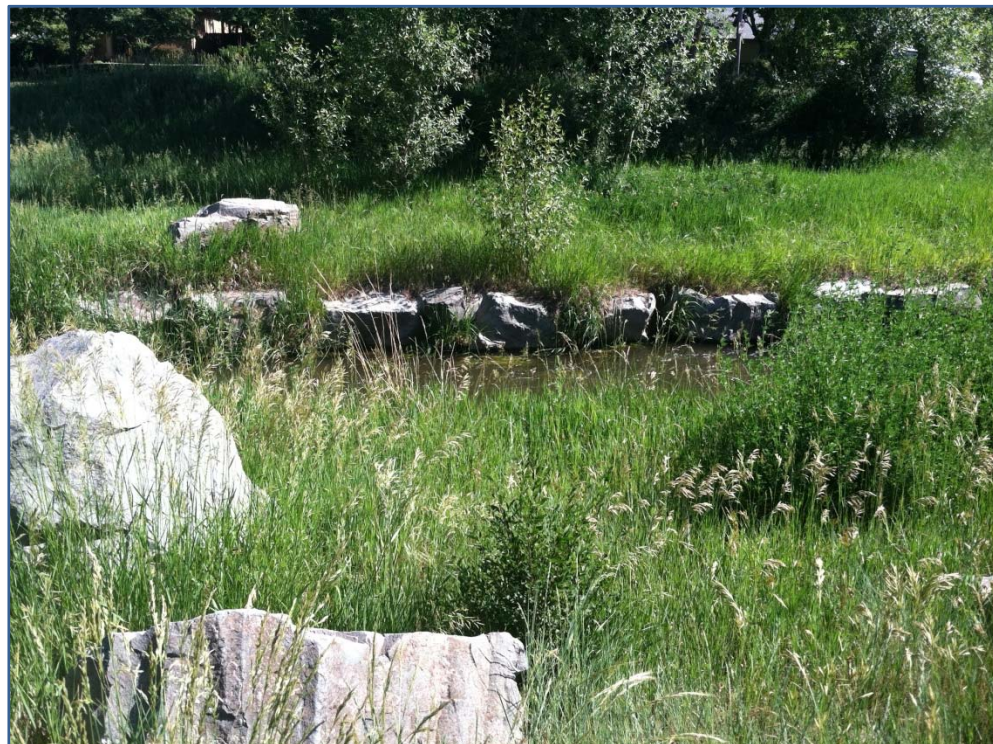
In many locations, existing river banks may be too steep to support a stable rock riprap installation. In these cases, alternative bank toe stabilization measures need to be identified.

#### *Stacked Boulder Toe Stabilization*

As an alternative to rock riprap in locations where the banks are steep, stacked boulders can be used to provide the requisite hardened toe protection. Where banks are exceedingly tall and space is not available to move the top of bank back away from the river, multiple offset stacked boulder groups can be used. This results in a bank treatment which essentially consists of a series of two or more stacked boulder walls.

The near-channel, stacked boulder toe can also be utilized as a hardened access point to the river by increasing the batter of the stacked boulders, providing a stepped river edge that is conducive to ingress/egress and seating.

The accompanying photographs show a recently completed stacked boulder toe installation, prior to the establishment of mature vegetation. However, it is evident that most of the existing mature vegetation was preserved during construction.

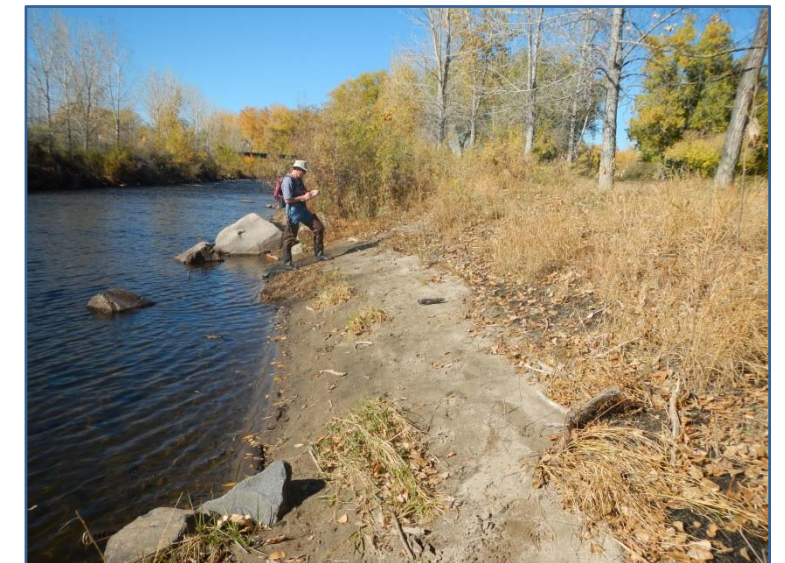
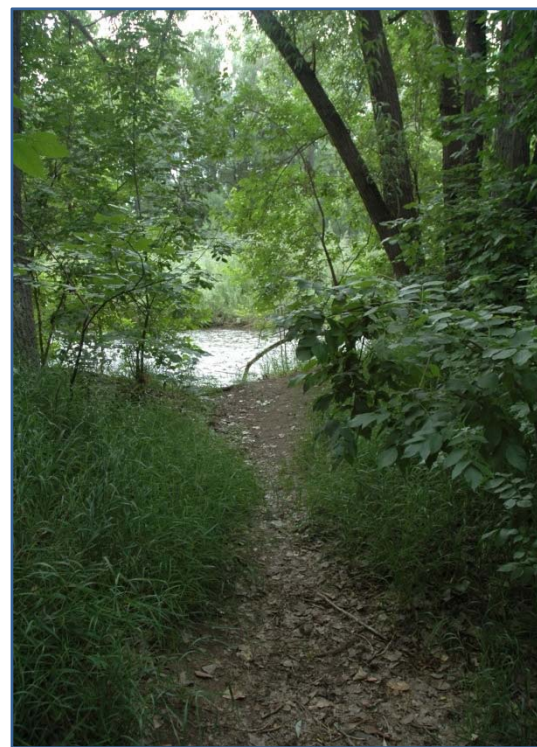


TYPICAL STACKED BOULDER TOE STABILIZATION WITH UPPER BANK VEGETATION/BIO-STABILIZATION



### River Access

River access areas are envisioned as informal spaces that are natural in character and are accessed from either the river or the trails. They are typically separated from vehicular access and their use is less intensive as compared to Put-ins/Take-outs. The scale of each river access will vary depending on its location, site specific features and anticipated use. Trails connecting to these areas (other than the Poudre Trail) should be narrow, soft paved and roughly perpendicular to the river bank in order to minimize impacts to habitat connectivity along the river.

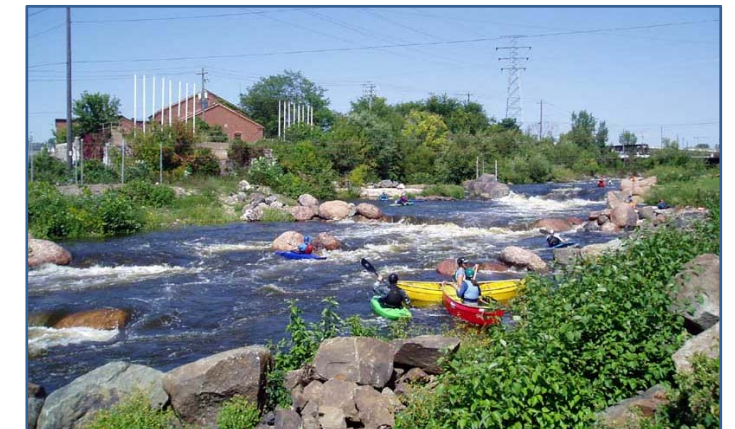
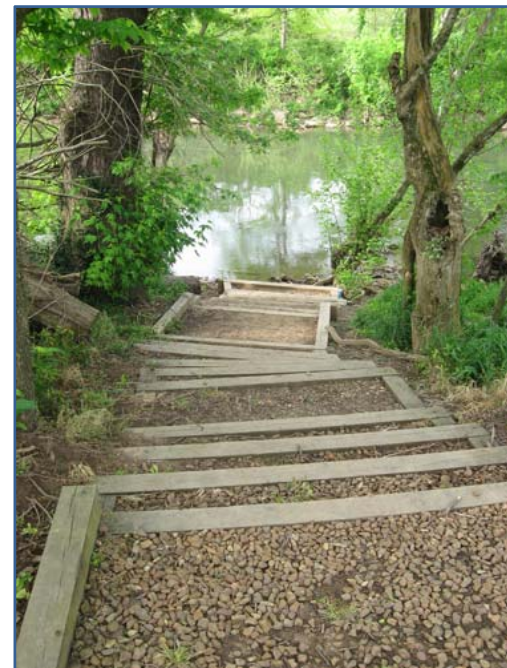




### Put-Ins/Take-Outs & In-Channel Whitewater Features

Put-ins/Take-outs are planned in areas where more intensive recreational access to the river is anticipated. They are typically associated with major street crossings, parks and/or trailhead parking lots. The scale and character of each Put-in/Take-out will vary depending on its setting, physical site characteristics, and anticipated use. Trails connecting to these areas may be paved or soft, and where practical they should be roughly perpendicular to the river bank in order to minimize impacts to habitat connectivity along the river. Width of connecting trails will depend on anticipated use.

The primary objective for the whitewater park is to create a fun and dynamic place to kayak, float, wade and play in the Poudre River that also meets the project's joint goals of habitat improvement and flood mitigation. The whitewater park should provide recreation opportunities for all of the visitors to the river corridor, not just those who choose to enter the river, and it should be constructed from natural materials that complement the remainder of the restoration project. The improvements should also include solutions to address fish passage or flood mitigation.





# IV. Project Formulation, Phasing and Costs



## Project Formulation and Prioritization

Based on all of the planning work conducted for the Poudre River Downtown Project, the River Team – a group consisting of City staff and members of the consultant team – developed a list of project elements intended to address the objectives and opportunities identified along the entire study reach, from Shields Street to Mulberry Street. These project elements were specific items that would eventually need to be grouped into bundled projects for purposes of implementation. All suggestions received as a result of the outreach and engagement efforts were carefully considered, with particular emphasis placed on stakeholder feedback and public comments. The list of potential project elements was compiled in the context of previous and on-going planning efforts across all City departments.

An initial list of more than 30 project elements and/or concepts was developed, such as: river bank habitat enhancements at Legacy Park; trail underpass at Linden Street; modify/lower the Coy Diversion; tree dump remediation; and many others. These items represented improvements necessary to promote completion of the Master Plan, but excluded enhancements that would be implemented by other City projects or on-going projects by other entities. Each of the project elements were evaluated by the River Team using a decision matrix which utilized the following nine objectives:

- Conserve and restore riparian ecosystem;
- Aquatic connectivity;
- Terrestrial connectivity;
- Protect properties from damaging floods;
- Eliminate overtopping of College Avenue and the Vine Flow Split;
- Reconnect the river to its floodplain
- Provide a mix of recreational opportunities in and along the river;
- Provide community gathering places; and
- Connectivity between recreational opportunities along the river.

The results of this evaluation served to identify project elements which would meet multiple objectives, and attempted to find common ground where conflicting priorities were inevitable.

Given this evaluation, the potential list of project elements was refined and a number of additional project components, concepts, and action items identified, resulting in a more robust inventory of more than 40 elements. These potential project elements were then prioritized by each member of the River Team using a ranking/scoring system. The results of this effort were compiled and a composite project element priority list prepared.

## Project Grouping and Phasing

Each of the items on the resulting priority list was evaluated with respect to location, proximity to other project elements, and types of construction required. Project groupings were defined with the primary objective of ensuring that no section of the river channel would be disturbed more than once during the course of implementing this Master Plan. The resulting project grouping is shown in the Project Roster provided at the end of this section. The location and approximate extent of the grouped projects are identified in Figure 4.1.

Phasing of the projects was determined based on the previously identified priority of the individual project elements, as well as logical sequencing of adjacent or related projects. The phasing priority indicated in the Project Roster, as well as in Figure 4.1, provides only a guide for implementing the numerous Poudre River enhancement projects which comprise this Master Plan. Many other factors may influence the actual project implementation sequence, such as opportunities to dovetail with other roadway, utility, stormwater, or development projects.

## Opinion of Project Implementation Costs

An opinion of project implementation cost was identified for each of the items within the Project Roster based on a concept-level understanding of specific construction items required for each project. Costs for the College to BNSFRR Project were refined to a higher degree than the other projects, due to a need to support preliminary budgeting efforts for what was envisioned as the initial project to be carried forward from this Master Plan. The resulting concept-level opinion of implementation cost associated with each project is provided in the Project Roster provided at the end of this section.





Figure 4.1a Project Phasing Map (West Side)



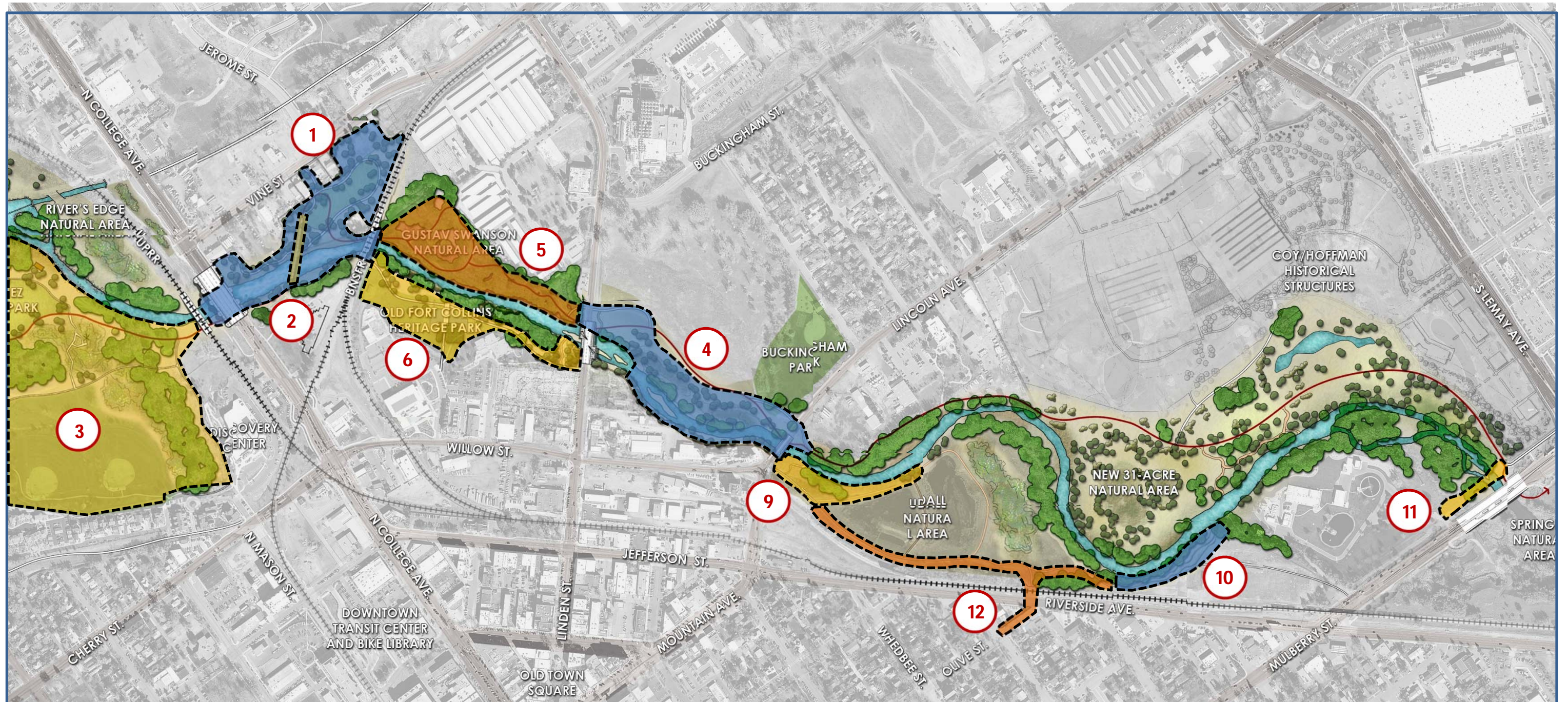


Figure 4.1b Project Phasing Map (East Side)



**Project Roster**  
(Including Opinion of Implementation Costs)

PROJECT ID	DESCRIPTION	COST (\$1,000)	TOTAL COST (\$)
<b>1</b>	<b>MUSEUM OF DISCOVERY TO BNSF RAILROAD (w/ WHITEWATER PARK)</b>		<b>\$6,000,000</b>
	Site Demolition, including removal of Coy Diversion and Boat Chute	170	
	Earthwork and Dewatering, including Coy Ponds	370	
	River Habitat Enhancements/Stabilization	760	
	Sloping Rock Features	300	
	Whitewater Features	940	
	Landscape Restoration	290	
	Foundation for Pedestrian Bridge East of College Ave	150	
	Parking Lot along South Side of Vine, w/ Vault Toilet	700	
	Miscellaneous Site Improvements, including new/modified trails, trail crossings under railroad, Heritage Walk, retaining walls, terraced access features, signage, flow measurement device, utilities/lighting, etc.	1,500	
	Hazardous Materials Remediation	670	
	Mobilization	150	
<b>2</b>	<b>ICONIC PEDESTRIAN BRIDGE EAST OF COLLEGE AVENUE</b>		<b>\$1,500,000</b>
	New Pedestrian Bridge East of College Ave	1,500	
<b>3</b>	<b>LEE MARTINEZ PARK / LEGACY PARK CORRIDOR</b>		<b>\$6,400,000</b>
	River Bank Habitat Enhancements at Legacy Park	400	
	River Play Improvements/Cobble Trail along Legacy and Lee Martinez Parks	300	
	Lower/Remediate Tree Dump Area, Reconnect Floodplain	600	
	Wild Zone Natural Play Zone in Tree Dump Area	500	
	Lee Martinez Park Improvements	2,000	
	Remove/Relocate Hickory Pedestrian Bridge	350	
	Reconfigure Parking and Access to Legacy Park	460	
	Regrade Portion of Legacy Park to Reconnect Floodplain	120	
	Legacy Park Improvements	1,000	
	Modify Lake Canal Diversion Structure for Fish and Tubing Passage	490	
	River Put-ins / Take-outs at Lee Martinez and Legacy (3)	180	
<b>4</b>	<b>PREP AREA – LINDEN STREET TO LINCOLN AVENUE</b>		<b>\$3,200,000</b>
	Implement Poudre River Enhancement Plan between Linden and Lincoln	2,350	
	Trail Underpass at Linden Street	270	
	South Bank Overlook	230	
	River Put-ins / Take-outs Downstream of Linden and Lincoln (2)	120	
	Construct Parking Lot (or On-Street Parking) East of Linden and Lincoln (2)	230	

PROJECT ID	DESCRIPTION	COST (\$1,000)	TOTAL COST (\$)
<b>5</b>	<b>GUSTAV SWANSON NATURAL AREA</b>		<b>\$810,000</b>
	North Bank Habitat Enhancements/Stabilization between BNSFR and Linden	350	
	Miscellaneous Site Improvements (trail spurs, river access, plantings, etc)	460	
<b>6</b>	<b>OLD FORT COLLINS HERITAGE PARK</b>		<b>\$1,750,000</b>
	Old Fort Collins Heritage Park Enhancements	810	
	Expanded Parking at Aztlan Center	350	
	River Put-in / Take-out Downstream of BNSFR	180	
	Terraced River Access Upstream of Linden	230	
	Heritage Walk	180	
<b>7</b>	<b>SALYER AND MCMURRY NATURAL AREAS</b>		<b>\$1,340,000</b>
	Salyer Natural Area Restoration / Improvements	580	
	Modify / Replace Existing McMurry Bridge	350	
	River Bank Enhancements/Stabilization	230	
	River Put-in / Take-out Near McMurry Bridge	60	
	River Accesses in McMurry and Salyer Natural Areas (3)	120	
<b>8</b>	<b>WOOD STREET AREA</b>		<b>\$60,000</b>
	River Put-in / Take-out Near Woods St	60	
<b>9</b>	<b>UDALL PROPERTY</b>		<b>\$350,000</b>
	South Bank Habitat Enhancements through Udall Property	350	
<b>10</b>	<b>PICKLE PLANT SITE</b>		<b>\$1,800,000</b>
	South Bank Habitat Enhancements through Pickle Plant Property	1,800	
<b>11</b>	<b>MULBERRY STREET AREA</b>		<b>\$240,000</b>
	River Put-in / Take-out Upstream of Mulberry St	120	
	Expand Existing Parking Area Upstream of Mulberry St (gravel)	120	
<b>12</b>	<b>RIVERSIDE AVENUE / OLIVE STREET</b>		<b>\$6,300,000</b>
	Riverside/UPRR Underpass at Olive	6,000	
	Trail Connection along UPRR, Lincoln to Pickle Plant Site	300	
	<b>FUTURE OPPORTUNITIES</b>		
	College Avenue Bridge Enhancements	1,000	
	Linden Street Bridge Enhancements	1,500	
	Second Phase Park Improvements along Vine (Reach 3)	1,400	
	Opportunities Fund for Maintaining In-Stream Flows	unknown	
	Willing Seller Property Acquisition	unknown	
	Other Opportunities Identified in the Reach Descriptions (Section II)	unknown	



# Appendix





## Outreach and Engagement

**Day on the River** – July 1, 2013 - The River Team and the consultant team spend a full day touring the project corridor.

**Stakeholders Listening Session** – July 9, 2013 – included representatives from Poudre Heritage Alliance, CSU Campus Recreation, Poudre Paddlers, Rocky Mountain Flycasters, Save the Poudre, UniverCity Connections, Colorado Water Trust, Museum of Discovery, New Belgium Brewery, North Fort Collins Business Association, Colorado Parks and Wildlife, The Neenan Company, Odell Brewing, Woodward, Fort Collins Downtown Development Authority, Ranch-Way Feeds, ELCO, Fort Collins Truck Sales, Mountain Whitewater Descents, and Fort Collins Community Action Network.

**Design Charette** – July 11 & 12, 2013 - The consultant team facilitated a two-day design charette with the River Team to kick-off the design process and to discuss big picture opportunities and issues related to the project. Attendees included staff members from Natural Areas, Parks & Recreation, Stormwater Department, Water Department, Planning and key members of the consultant team.

**River Team Meetings** – periodic meetings have taken place throughout the master planning process. Attendees included representatives from Natural Areas, Parks & Recreation and Stormwater.

**Meetings and Discussions with Other City Departments** – Lindsay Ex/Planning, Matt Zoccali/Utilities - Regulatory and Government Affairs, Donny Dustin/Water Department, Adam Jokerst/Water Department.

**Poudre River Projects Open House** – June 26, 2013

The public was invited to learn about and give input on over 25 projects happening in the Cache la Poudre River corridor. This Master Plan was represented alongside other construction projects, trail closures, drought and fire work, habitat restoration, flood mitigation and planning efforts.

**Project Open House #1/Whitewater Park Meeting** – September 5, 2013 Participation was extensive with approximately 175 people participating in the open house. During the open house questionnaires were distributed to attendees and 84 responses were received.

**An online “virtual” open house** presented the same information and posed the same feedback questions. Nineteen (19) people participated online.

**Board Meetings.** John Stokes presented the conceptual master plan to the following City boards and commissions.

- Natural Resources Advisory Board – Sept 18, 2013
- Land Conservation and Stewardship Advisory Board – Sept 18, 2013

- Parks and Recreation Board – Sept 25, 2013

**Colorado Parks and Wildlife (CPW) and U.S. Army Corp of Engineers (USACOE)** – River Team representatives and the consultant team attended two on-site meetings with CPW and USACOE to discuss early ideas for the project.

- Terrestrial Habitat and Wildlife Connectivity Site Visit – Aug 14, 2013 – CPW, City NA Staff, and key members of the consultant team
- Aquatic Habitat and Connectivity Site Visit – Sept 27, 2013 – CPW, USACE, City NA Staff, and key members of the consultant team

**ELCO and Lake Canal** - John Stokes attended meetings with ELCO and Lake Canal.

**Vine Drive Property Owners** – John Stokes attended meetings with individual property owners along Vine Drive.

**Kayaker Meeting** – River Team representatives and key members of the consultant team hosted three meetings with a small group of the kayaking community.

- Hydrology meeting – Aug 23, 2013
- Whitewater park options – Dec 2, 2013
- Project cost and schedule – Aug 25, 2014

**Public Open House #2** – February 27, 2014

**The online “virtual” open house** web site will be updated presenting the same information and posed the same feedback questions.

**Additional Presentations to Stakeholder Groups**

- Presentation at a Save the Poudre event – Mar 25, 2014
- Meeting with Save the Poudre board members – Mar 26, 2014
- Presentation to the North College Business Association – Mar 26, 2014
- Presentation to DDA – Apr 10, 2014
- Presentation to Trout Unlimited and Rocky Mountain Flycasters – Apr 21, 2014
- Presentation to the FC Convention and Visitors Bureau – Apr 22, 2014
- Additional meetings with: Downtown Business Association, Commission on Disabilities, Transportation Board, Planning and Zoning Commission, and Chamber of Commerce

**Additional Presentations to Boards and Commissions**

- Site walk with the Land Conservation and Stewardship Board and the Natural Resources Advisory Board – May 2, 2014

- Presentation to the Land Conservation and Stewardship Board – May 14, 2014
- Presentations to the Water Board and Planning and Zoning Board – June 5, 2014

**Council Work Session** – John Stokes gave a brief project overviews to City Council – Oct 8, 2013 and July 8, 2014.

**Follow Up Presentations to Boards and Commissions**

- Natural Resources Advisory Board – Aug 20, 2014
- Parks and Recreation Board – Aug 27, 2014
- Land Conservation and Stewardship Advisory Board – Sept 10, 2014
- Water Board – Sept 18, 2014

**Master Plan Adoption by City Council** – Planned for October 2014

## Public Comments

Comments received during the public outreach process include several recurring themes which are briefly summarized below. The comments received were insightful, represented diverse points of view, and greatly influenced the development of the project goals and master plan.

Comments Regarding Master Plan

- The plans are thoughtful ...can hardly wait to see them implemented!
- Like the offerings which came together with much thought!

Importance of the Poudre River

- This project represents a great opportunity for the community to rediscover the lifeblood of our city – The Cache La Poudre River!
- Glad the Poudre River is getting the attention it deserves....the jewel not every town can own!
- Love the idea of creating a community focused river corridor. The Poudre is the heart of our city and the concepts presented all appear to enhance this great treasure of ours.

Collaboration

- Impressed by the collaboration and plan. Eager to support and keep track of the project’s many phases.

Public Process

- Some said that they were impressed by the number of people who came to the Open Houses, and that they enjoyed the public process.



Balanced Approach

- Improvements need to balance benefits related to flood damage/safety, public parks and recreation opportunities and river function (aquatics and wildlife)
- Multiuse to promote habitat for fish, birds and inverts as well as recreation is a must....balance must be achieved. More water in stream is needed for all things.
- This is an extremely managed system, with many constraints, and many opportunities. There should be considerable ability to please almost everyone, as long as everyone is reasonable.
- Flood mitigation, habitat and recreation are all important. These are all things that are good for Fort Collins.

Beautification

General beautification of the area is important to make it more of an inviting area to recreate and appreciate.

Connections / Access to River

- Promote commercial/ retail connecting from Maple to Conifer to better connect social, economic, and ecological values of the downtown river area.
- Improve bike access to northern community and provide more access to Vine Drive.
- Make canoe put-in and take-out places readily accessible by auto near major road intersections.
- Some liked the idea of an iconic bridge that will bring people and make downtown an even better place to be.

Restoration/Habitat

- Support restoration opportunities, and would like to see more restoration action.
- Naturalize river corridor as much as possible, include flood plains.
- Remove all concrete in the riverbanks, and create a more natural appearance.
- Habitat restoration is a priority. Community benefit secondary (recreation).
- Do not clear vegetation for “Views”! Increase (not decrease) riparian vegetation.

Flood Mitigation

- Reduce flood potential on East Vine.
- The 2013 flood occurred during the master planning process and heightened the interest in the impacts of potential flooding.

River Flows

- With most of the proposed actions based on current river flows, some asked how the City plans to manage for the variability in river flow based on future water demands.
- Some community members would like to see some acknowledgement of the impact of water withdrawals on the Poudre in town to educate and possibly generate more public support to mitigate these.
- Explore management options to maintain current river flows, or even increase flows if possible.

Concerns about Additional Recreation

- Excited about the recreation projects but concerned about the additional draw this may have and the impact “extra” people have on the tranquility of the Poudre River today.
- Minimize parking lots, asphalt; concrete structures/surfaces along the corridor....people need further exercise, let them ride/walk further to access the corridor (except for vehicles of handicapped).

Support for Additional Recreation

- Create an area that attracts people to the Poudre River.
- This town sorely needs a revitalized river corridor for ALL, kayakers and non-kayakers.
- Would love some swimming holes, rope swings and other activities that cater to families.

Support Whitewater Park

- Please consider a whitewater park. It offers economic and community benefits.
- Whitewater parks are good for communities. Supporters encouraged City Council members to familiarize themselves with other whitewater parks in: Colorado; Casper, WY; Charles City, IA; and Farmington, NM.
- After 20 years of watching the topic of a whitewater recreation project come up and down, several participants were excited that the Poudre River Downtown Project will see it through to completion.
- The proposed whitewater park will be a unique opportunity to show case our active community that cherishes boating. Please don’t let this

project fail our community and families. Will use this for decades to come!

- Small children up to centurions partake in the fun and activities these places provide. It is truly an opportunity for our community to have an amazing experience.

Concerns about Whitewater Park

- Several participants would prefer not to have a whitewater park because of concerns about overuse of the river. However, if a whitewater park is built they would prefer that it be located just east of College.
- Some would prefer not to have a whitewater park if habitat can’t be adequately maintained.
- Concerns were expressed about the intensity of development between College and the Burlington Northern Railroad Bridge. Some recommended that the current design for this specific portion of the proposed project be scaled back considerably. The river can still offer some kayak and rafting “whitewater features” and some parking, but blend restoration more harmoniously with the existing natural areas and make a few family-friendly water features too.
- With the limited flows, it doesn’t make sense to focus on the whitewater park. Focus instead on trying to return the river to a natural state while providing access for people to enjoy as they see fit (hiking, biking, fishing, picnics, etc.).
- The full blown whitewater park does not seem feasible. Some expressed concerns about the City investing a significant amount of money into something that gets used 30-40 days of the year. Sometimes less during low water years. Invest it in natural areas or parks that a larger segment of the population can enjoy, not just the Kayakers.

Boating and Tubing

- Would like to see friendly portages around diversion dams and coy ditch. Hauling a 40 lb. boat up a steep rocky bank is no fun. Also, if boating/ tubing is a goal, the river hazards need to be managed from a RECREATION stand point as well as a flood stand point.
- Encourage family canoeing by rebuilding obstructions that now require portaging. Especially restore access near Mulberry Street and Shields Street.
- Would like the whole section between Shields and Mulberry be usable, connected and safe for tubing.



## Relationship to 'City Plan Fort Collins'

**City Plan Fort Collin (2011)** – The City’s comprehensive City Plan was first completed in 1997, updated in 2004, and updated again on February 15, 2011 and entitled “City Plan Fort Collins.” *City Plan Fort Collins* contains an array of principles and policies that underscore the community’s support for the Poudre River ecosystem, Flood Management and Parks & Recreation. The following are pertinent principles and polices:

### **STORMWATER AND FLOOD MANAGEMENT**

**Principle ENV 18:** The City will minimize potentially hazardous conditions associated with flooding, recognize and manage for the preservation of floodplain values, adhere to all City mandated codes, policies, and goals, and comply with all State and Federally mandated laws and regulations related to the management of activities in flood prone areas.

#### **Policy ENV 18.1 – Balance Environmental, Human and Economic Concerns**

Recognize and manage floodplains with the intent to provide a balance between economic, environmental, and human (including safety) considerations within floodplain lands.

#### **Policy ENV 18.2 – Manage Risks**

Seek to minimize risk to life and property by structural and non-structural design or modification of actions in the floodplain where it is not otherwise practical to place structures and human activities outside of the floodplain. Discourage new development in the 100-year floodplain to avoid additional modifications and structural controls.

#### **Policy ENV 18.3 – Minimize Flood Damage**

Recognize that maintenance, restoration, and enhancement of the natural resources and the beneficial functions of floodplains is a concurrent goal with reducing human and wildlife vulnerability to flood damage.

#### **Policy ENV 18.4 – Manage Floodplain**

Require structures and facilities that are unavoidably located in the floodplain to be designed to be consistent with the intent of the standards and criteria of the City of Fort Collins and the National Flood Insurance Program.

#### **Policy ENV 18.5 – Provide Education**

Inform the public about the hazards of flooding and develop and disseminate the most accurate information obtainable on local flood hazards. Educate the public about the natural and beneficial functions and uses of floodplains.

#### **Policy ENV 18.6 – Modify Detention Requirements for Redevelopment**

Modify detention requirements to allow for greater flexibility of options for meeting National Pollutant Discharge Elimination System (NPDES) rules and create mechanisms to satisfy detention requirements through a more holistic approach that includes Low Impact Development (LID) tools and satisfying such requirements on a sub-watershed basis rather than exclusively on an individual parcel specific basis.

### **POUDRE RIVER CORRIDOR**

**Principle ENV 24:** The City will support a healthy and resilient Cache la Poudre ecosystem, and protect, enhance and restore the ecological values of the River.

#### **Policy ENV 24.1 – Support Ecological Resilience**

Support a healthy river ecosystem that is resilient; i.e., a river ecosystem that has the capacity to persist and adapt over time in the face of natural and human-caused challenges. Protect or enhance opportunities for natural processes to drive ecosystem renewal.

#### **Policy ENV 24.2 – Conserve Natural Features**

Conserve and protect important natural areas and natural values within the Poudre River Corridor. This will include acquiring land for public natural areas and conservation easements to protect natural area values on privately-owned lands, establishing appropriate cooperative agreements with adjacent landowners, developing and applying development regulations and design standards, and promoting public education and outreach programs, and other techniques as appropriate.

#### **Policy ENV 24.3 – Provide Natural Area Protection Buffers**

Maintain natural area protection buffers along both banks of the Poudre River to protect natural features and scenic qualities, and to account for the natural instability of the River channel. The buffer should be a minimum of three hundred (300) feet wide, beginning at the outer limits of the river bank, or areas of riparian vegetation. One known exception to this general policy is the stretch of the river between North College Avenue and Lincoln Avenue, where a narrower minimum buffer distance is more appropriate due to the constraints of existing development and the area’s proximity to downtown.

#### **Policy ENV 24.4 – Restore and Enhance**

Restore or enhance degraded or disturbed areas of the Poudre River Corridor to improve natural habitat conditions, biodiversity, and aesthetic and recreational values. Restoration and enhancement projects may be performed cooperatively with adjacent private landowners and volunteer community groups.

#### **Policy ENV 24.5 – Coordinate to Provide Adequate Instream Flows**

Work to quantify and provide adequate instream flows to maintain the ecological functionality, recreational, and scenic values of the Cache la Poudre River through Fort Collins.

**Principle ENV 25:** The City will provide enhanced recreation opportunities within the Poudre River Corridor, with an emphasis on scenic values, heritage education, and interpretation while avoiding or minimizing impacts to environmentally sensitive areas.

#### **Policy ENV 25.1 – Minimize Impacts**

Locate and design recreational features within the Poudre River Corridor in a way that avoids or minimizes impacts to natural areas, wildlife habitat, water quality, and other environmental values.

#### **Policy ENV 25.2 – Integrate Parks and Recreation Sites**

In addition to existing facilities such as Lee Martinez Park, the *Parks and Recreation Policy Plan* identifies future recreation facilities in the Poudre River Corridor. Place emphasis on integrating natural, environmental, historic, and cultural values within new public recreation sites.

#### **Policy ENV 25.3 – Extend the Poudre River Trail**

Extend the Poudre River Trail system downstream to Harmony Road and then to Greeley through partnerships with Larimer County, Weld County, and other Northern Colorado interests. Location and design will account for and avoid or minimize impact to environmentally sensitive areas.

#### **Policy ENV 25.4 – Develop Trail/Path Linkages**

Develop additional trails or paths, as appropriate, to link the Poudre River Corridor to adjacent city neighborhoods and districts to provide public access within the Poudre River Corridor. These trail/path connections will be located and designed to avoid or minimize impacts to environmentally sensitive areas.

**Principle ENV 26:** The City will manage the Poudre River floodplain to minimize potentially hazardous conditions while promoting natural processes associated with flooding, erosion, and channel migration to occur over time as appropriate.



**Policy ENV 26.2 – Integrate Watershed and Stormwater Management**

Design stormwater systems within the Poudre River watershed to minimize the introduction of human-caused pollutants. Educational programs and demonstration projects will be pursued to enhance public understanding of pollution prevention efforts.

**Policy ENV 26.3- Ensure Setbacks for Channel Instability and Improve Channel Migration**

Apply buffer zones and consider vertical and lateral channel stability with new development and redevelopment to ensure adequate setbacks are provided to account for lateral migration of the River channel across the floodplain and vertical degradation. The resiliency of the Poudre River ecosystem is tied directly to the ability of the channel to migrate back and forth across the floodplain. Therefore, make efforts to protect the capacity of the channel to move laterally across the landscape and to seek opportunities to improve or restore the function of channel migration.

**Policy ENV 26.4 – Development in the Floodplain**

The Poudre River 100-year floodplain will be protected by implementing best management conservation techniques and floodplain regulations. Floodplain regulations shall promote public safety, protect the Poudre River corridor, and allow natural hydraulic and hydrologic processes to occur.

**Principle ENV 27: Historic landmarks, cultural landscapes, and scenic and aesthetic qualities will be protected within the Poudre River Corridor.**

**Policy ENV 27.1 – Protect Historic Landmarks and Cultural Landscapes**

Protect historic landmarks and significant cultural landscapes within the Cache la Poudre River National Heritage Area, which extends for 45 miles and includes the lands within the River’s 100-year floodplain. Protection of the historic and cultural resources will be accomplished using land acquisition, local landmark designation, conservation easements, land use policies, and development and design standards.

**Policy ENV 27.2 – Maintain and Enhance Visual Resources**

Locate and design development within the Poudre River Corridor to best maintain or enhance views of the River, its natural setting, the protected corridor features, and the foothills and mountains.

**Policy ENV 27.3 – Develop Landscape Guidelines**

Develop guidelines for landscape treatment and streetscapes within the Poudre River Corridor that include the use of materials that are native to

the Poudre River Corridor and will integrate developed areas within the natural context of the River corridor.

**Policy ENV 27.4 – Restore and Enhance**

Restore or enhance degraded or disturbed areas of the Poudre River Corridor to improve ecological conditions, aesthetics, and recreation access. Restoration and enhancement projects may be performed cooperatively with private landowners and volunteer community groups.

**Principle ENV 28: The City will encourage learning and community awareness of the Poudre River’s historic, cultural and natural heritage through education and interpretation.**

**Policy ENV 28.1 – Support Educational and Environmental Learning Opportunities**

Support and provide historical, cultural, and environmental learning opportunities in the Poudre River Corridor. The Cache la Poudre River National Heritage Area was formed to provide for the interpretation of the unique and significant contributions of cultural and historic lands, waterways, and structures to our national heritage. Integrate education with interpretation, which may include interpretive trails and educational facilities as well as outdoor laboratories for lessons on wildlife habitat, gravel extraction and reclamation, floodplain management, rural heritage, farming, pollution prevention, and conservation/reconstruction of historic sites and structures.

**Principle ENV 29: The City will collaborate with gravel mining interests to ensure that mining operations are conducted to meet community values and restore ecological function.**

**Policy ENV 29.1 – Gravel Mined Land Purchases**

Evaluate areas along the Poudre River that have been mined for gravel for acquisition for public open lands purposes.

**Policy ENV 29.2 – Reclaim Gravel Mined Areas**

Collaborate with gravel mining interests to develop innovative approaches to gravel mine reclamation that will provide wildlife habitat, restoration of native landscapes, recreational opportunities, water storage, and other public values.

**DOWNTOWN DISTRICT**

**Principle LIV 32: The Downtown will serve as a focal point and primary destination and activity center for the community, with the design of buildings, streets, parking areas, and public spaces reinforcing the area’s unique and distinctive character.**

**Policy LIV 32.3 – Encourage After-Hour Activities**

Encourage uses that expand the range of activities, such as entertainment (cinema, music, and live theater), restaurants, hotel/convention facilities, and residential uses, for all segments of the population, including families, students, retirees, couples, and singles. By incorporating a mix of uses within the Downtown District, a more active environment will be created during working hours and at night.

**Policy LIV 32.5– Maintain Visual Character**

Maintain and reinforce the visual distinctiveness of Downtown and its component sub-districts. With new buildings and public spaces, respect and be sensitive to the design integrity by enhancing visual continuity and sense of place through the use of building materials and design features sensitive to the character of Downtown and by reflecting excellence and high quality in their design.

**Policy LIV 32.8 – Design for Safety**

Provide a sense of security and safety for users through the design of buildings, parking areas, and streets. Add to a secure 24-hour Downtown environment for employees, students, and visitors by collectively addressing adequate lighting, visibility, and location of public facilities.

**Policy LIV 32.9– Design to Enhance Activity**

Design streets and public spaces Downtown to be attractive, accessible, functional, and designed to enhance pedestrian and bicycle activity:

- a. Use public art, landscaping, way finding signage, and other street features to create a comfortable and pleasant environment for the pedestrian while also providing continuous and clearly-expressed pedestrian circulation linkages to interconnect the Downtown District with surrounding neighborhoods and districts.
- b. Ensure that city streets and gathering spaces will link and provide connections between Old Town, the Civic Center, surrounding neighborhoods, and the Poudre River.

**OPEN LANDS, PARKS, WATER CORRIDORS**

**Principle LIV 44: Open Lands, Parks, and Water Corridors form an interconnected system that provides habitat essential to the conservation of plants, animals, and their associated ecosystems; serves the needs for drainage and water conveyance; and provides opportunities for recreational, educational, environmental, transportation, and other activities.**



**Policy LIV 44.1 – Maintain System of Open Lands**

Maintain a system of publicly-owned open lands to protect the integrity of wildlife habitat and conservation sites, protect corridors between natural areas, conserve outstanding examples of Fort Collins' diverse natural heritage, and provide a broad range of opportunities for educational, interpretive, and recreational programs to meet community needs. (Also see the Open Lands section in the Environmental Health chapter.)

**Policy LIV 44.2 – Provide Parks Facilities**

Maintain and facilitate the development of a well balanced system of parks, trails, and recreation facilities to provide a variety of recreational opportunities, as identified in the *Parks and Recreation Policy Plan* (2008). (Also see the Culture, Parks and Recreation chapter's Parks and Recreation section.)

**Policy LIV 44.3 – Retain Water Corridors**

Retain water corridors to provide adequate drainage in order to maintain the safety of lives and property and provide land for recreation, habitat conservation, and wildlife movement. Water corridors help define the edges of the community and form parts of community separators and other open lands, in addition to serving their primary function as drainage corridors. (Also see the Stormwater and Water Resources sections of the Environmental Health chapter.)

**Policy LIV 44.4 – Utilize Buffers**

Utilize buffers and other requirements for development along water corridors and near other natural features to preserve, protect, enhance, and restore important wildlife habitat, riparian areas, wildlife corridors, and other natural features, and to maintain channel stability, water conveyance, and flood protection.

**Policy LIV 44.5 – Interconnect Trails/Paths**

Integrate a trail/path system that connects open lands, parks, and water corridor areas, excluding motorized vehicles (except emergency and maintenance vehicle access). Pay special attention to environmentally sensitive trail design, location, and construction.

**POUDRE RIVER CORRIDOR OVERLAY**

**Principle LIV 45: Adjacent land uses will be carefully managed to ensure that the diverse community values of the Poudre River Corridor are protected and enhanced.**

**Policy LIV 45.3 – River Segments**

The Poudre River Corridor has distinct segments containing unique characteristics, opportunities, and constraints as defined below and shown in Figure LIV 5.

**2. Community River Segment (Shields Street to College Avenue)**

In this segment, existing neighborhoods are located in close proximity to existing public parks and natural areas and the recreational trail along the river. This segment should emphasize convenient access and way finding for residents to the river corridor for both active and passive recreational and leisure opportunities. The cottonwood forests, adjacent wetlands and ponds, and associated wildlife habitat in close proximity to downtown make this an ideal section for people of all ages to experience the natural setting of the Poudre River. Natural habitat and floodplain values will be preserved and protected.

**3. Historic and Cultural Core Segment (College Avenue to Lemay Avenue).**

This segment of the river includes many of the community's oldest and most significant historic and cultural features, the Old Town Historic District, and Downtown. It also contains innovative, and integrated, stormwater and natural area features. Land uses in the area should be more flexible than in other river segments and emphasize connecting the river to Downtown, providing multi-purpose spaces that celebrate the historic relevance of the river to the community, continuing the important and unique relationship between the waterway and surrounding urban environment, and maintaining those natural elements of the river as it passes through Downtown. The natural and beneficial floodplain functions will be protected. Natural habitat, wildlife movement, and flood hazards will be managed to protect public safety while maintaining recreational values. Redevelopment opportunities are permitted and shall be harmonious with the river corridor and its values.

**PARKS AND RECREATION**

**Principle CPR 4: The City will maintain and provide a variety of high quality recreational opportunities to the community through an interconnected and diverse network of parks, trails, recreation facilities, public spaces, and natural areas.**

**Policy CPR 4.1 - Provide World-Class Facilities**

Maintain and facilitate the development of a well-balanced system of parks, trails, and recreation facilities to provide a variety of recreational opportunities, as identified in the *Parks and Recreation Policy Plan* (2008).

**Policy CPR 4.2 – Interconnect the System**

Support an interconnected regional and local system of parks, trails and open lands, and promote community interaction. Where environmentally appropriate, line irrigation ditches and storm drainageways with trails to connect to destinations such as schools, open lands, and Neighborhood Centers. Special attention must be paid to environmentally sensitive trail design, location and construction. (Also see the Environmental Health chapter's Open Lands section.)

**Policy CPR 4.3 – Adhere to Best Management Practices**

Follow Environmental Best Management Practices for the maintenance of parks and recreation facilities, such as water conservation and the use of untreated water for irrigation purposes in appropriate areas, managing turf and adhering to policies for weed and pest control, utilizing low emission equipment and providing renewal energy opportunities, reducing solid waste through composting and recycling, and certifying sanctuary areas through Audubon International.

**Policy CPR 4.4 – Forge and Maintain Partnerships**

Develop and maintain effective public and private partnerships to provide a comprehensive system of parks, common open lands, and outdoor spaces.

**Principle CPR 5: The City will adapt parks and recreation facilities to meet the range of needs of a changing community.**

**Policy CPR 5.1 - Address Changing Needs**

Seek input from the public, and review recreation trends to adapt existing facilities and programs and provide new types of parks and recreation facilities and programs that meet the needs of a changing population and community (e.g., increasing recreational options for the growing senior population, providing coordinated recreational/ cultural activities for youth, providing more frequent resting places along sidewalks, etc.).

**Policy CPR 5.2 – Provide Multi-Purpose Lands**

Maintain and develop partnerships among City departments (e.g., Parks and Recreation, Open Lands, Transportation, Stormwater, etc.) and other organizations to provide multi-purpose parks and open lands to maximize and leverage available resources. (Also see the Environmental Health and Transportation chapters.)





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