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Executive Summary

A young participant at the public kick-off meeting held on April 19th, 2012 at the Denver Children’s Museum.
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Background
An EPA Brownfields Area-wide Planning grant was awarded to the City and County of Denver (Denver), in Partnership with the Greenway Foundation and the Colorado Brownfields Foundation, in late 2010. As one of 23 grant recipients nation-wide, this funding has allowed for extensive study of the potential cleanup and reuse of river-oriented development and neighborhood revitalization along the urbanized South Platte River corridor in Denver. The project study area is a 0.5-mile wide corridor along the 11-mile stretch of the river (corridor) from the southern to northern city boundaries (totaling 3,500 acres), with a specific focus on five opportunity areas along the river. This corridor study area includes about 7,500 residents - just over 1% of Denver’s population of 620,000 - and roughly 21,000 employees - about 4% of Denver’s workforce of 560,000. With an extensive history of industrialization along the river corridor, there is great potential for environmental cleanup and subsequent reuse or redevelopment of property.

This study demonstrates potential implementation of neighborhood and station area plans that relate to the South Platte River and how transformation of riverfront sites could benefit property owners, investors, the surrounding neighborhood, and the broader community. Denver’s previously adopted plans provide high level policy guidance for future land uses, and touch on specific river stretches or topics. By contrast, this study explores the details of urban design, site feasibility and potential economic and fiscal benefits associated with reuse, infill and redevelopment as complementary areas of focus. For example, the River North (RINO) and River South (RISO) Greenway Master Plans and current river vision implementation efforts focus primarily on opportunities for improving the greenway as a community recreational and natural resource, including in-stream improvements and natural riparian conditions along the river edges. The term greenway describes a system of parks, natural areas, recreational spaces and the continuous trail system that runs along either side of the river channel. This study’s conceptual designs and financial analysis of specific sites along the river demonstrates how plans might be implemented, and how this resulting new development could relate to Denver’s evolving greenway.

This study aims to encourage economic development and investment along the corridor by studying five catalytic sites within opportunity areas along the river. A three step process was conducted with a strong emphasis on stakeholder and neighborhood engagement throughout the project. These steps included 1) a corridor analysis to better understand the physical nature of properties adjacent or near the urbanized river and to identify opportunity areas for reinvestment, 2) selection of five catalytic sites within these opportunity areas, and 3) conceptual study of the opportunity areas and especially the specific catalytic site. Over 25 property owners were contacted and invited to participate, followed by eight public meetings where input was collected for developing concepts that would benefit both the property owners and the surrounding neighborhood.

Corridor Analysis
A corridor mapping analysis shows that predominant land uses within the corridor today are industrial land (25%), transportation (15% as freeways, roads and rail, including rail transit) and large single uses and parking areas (including entertainment venues such as Mile High Stadium and Elitch Gardens). Only 4% of the study area is residential, with only three small neighborhoods that touch the riverfront. Some of the residential areas have limited access to the river due to roads or railways that provide transport throughout Denver, but also physically separate residential neighborhoods from the river. Existing parks and natural areas comprise 8% of the study area, the result of significant riverfront reclamation efforts and reuse of multiple former brownfield sites by the Green-
way Foundation and the City and County of Denver over the past 35 years. The five catalytic sites were selected using specific criteria to identify some of the best opportunities for reuse and neighborhood revitalization along the corridor. Criteria included underutilized sites that had a potentially strong relationship to the river, and that were potentially catalytic and beneficial to the surrounding area and adjacent greenway. The review of each catalytic site explored ideal orientation of new development to the river, site access and neighborhood circulation for pedestrians and vehicles, and innovative opportunities for capturing and sustainably treating stormwater generated from the impervious surfaces. Innovative opportunities include green infrastructure treatment areas for stormwater within landscaped areas such as treelawns along the adjacent streets or planters within plazas and promenades.

**Opportunity Areas & Catalytic Sites**

1. River North
The River North neighborhood is an aging industrial area near downtown Denver that is gradually transitioning to a mixed use redevelopment district along the South Platte River. Current industrial uses include an auto salvage yard and light manufacturing, including the growth of artisan fabrication shops associated with the RiNo Arts District. A planned commuter rail station will soon be constructed and serve the area in 2016. The neighborhood is bisected by Brighton Boulevard, a four-lane arterial that serves as a gateway from I-70 and Denver International Airport to downtown. Recognizing the market trends for mixed use redevelopment, Denver Parks and Recreation purchased a 2-acre brownfields parcel next to the river and developed conceptual park designs in 2011.

A 5.5-acre catalytic site was selected between the park property and Brighton Boulevard to explore the potential relationship among the river, the park and new development. Detailed redevelopment concepts demonstrate how employment flex space, retail and residential uses could be accommodated on the site while maximizing the relationship to the park and the river. The preferred alternative includes 333 new residential units, over 43,600 gross square feet (g.s.f.) of office / flex space and 23,500 g.s.f. of ground level retail. Potential fiscal and economic benefits of this $73M investment include 217 construction jobs, 188 permanent jobs with an average salary of $63,400, and 633 onsite residents that could spend $2.4M on taxable goods in Denver. The combined sales tax, property tax and occupational privilege tax generated from onsite business activity and off-site spending are estimated at $513,000 annually. The River North Greenway Master Plan recommends realignment of Arkins Court around the Park. This recommendation was incorporated into the design concept, creating a shared boundary with the selected catalytic site. The preferred redevelopment alternative shows this street realignment with additional east/west streets that would improve connectivity from Brighton Boulevard to the future park. The benefits of this alternative include:

- A more active and safe park environment with more eyes on the park from adjacent development and visibility from the street
- Development that benefits from the beautiful views of the river and Rocky Mountains, as well as direct access to the park
- An expanded street grid for greater neighborhood connectivity

2. Water Street
Water Street is in the Jefferson Park neighborhood and serves as a gateway to downtown and the Central Platte Valley. A mixed industrial and residential district built in the early 20th century, the area was redeveloped in the 1990’s into the Downtown Aquarium. The adjacent Fishback Park property was subject to a leaking underground storage tank cleanup and the
aquarium building property was remediated under the Colorado Voluntary Cleanup Program. Much of this subarea along the river is a large surface parking lot that serves the aquarium, or special events such as Denver Broncos games. The parking lot and Water Street have the look of investment and care with mature landscaping, street trees and well maintained pavement. However, the 400-stall parking lot is rarely more than two-thirds full, and the street becomes empty and quiet after museum visitation and restaurant dining dies down during the evening hours.

Infill development of the Water Street parking area could result in a more exciting and dynamic place along the South Platte River by introducing residential development and ground level retail. The building fronts would be oriented to Water Street with the existing Fishback Park and greenway trail on the other side of the street. Structured parking would be located to the rear of the development where it could also serve as a buffer between I-25 and the pedestrian zone along the street. The concept would yield 384 residential units and 12,450 g.s.f. of retail/restaurant to complement the museum and the new residential development.

Potential fiscal and economic benefits of this $75M investment include 225 construction jobs, 30 permanent retail and restaurant jobs with an average annual salary of $23,200, and 755 on-site residents that could spend nearly $3M each year on taxable goods in Denver. The combined sales tax, property tax and employee tax generated from onsite business activity and off-site spending is estimated at $389,000 annually.

3. **Zuni & Lower Colfax Avenue**

This site is located between Zuni Street and the river, just south of Old Colfax. The site has been the home for various industrial activities including an industrial dry cleaners, auto service, insulation manufacturing and rail sidings. Views from the site are dominated to the north by the Colfax Avenue viaduct, and by I-25 interchange ramps and freeway to the east. Industrial properties currently line the river, and the Xcel power plant symbolizes decades of prior industrial use along this stretch of the river. However, the area is in transition, with a number of recent or pending transformational changes. The West Rail line - a 12.1 mile light rail extension between Downtown Denver and the City of Golden - will open in the spring of 2013. The Decatur Federal station platform will be the second stop from Downtown, and is being constructed just ½ mile to the west from the Zuni site. Lakewood Gulch was recently improved into an expansive greenway trail and floodway zone that connects to the South Platte River corridor. Improvements to the South Platte River and the gulch have resulted in the removal of significant acreage near the Decatur Federal station from the floodplain. Xcel Energy is planning to decommission the power plant and sell other properties in the area.

A Decatur – Federal Station Area planning process is nearing completion and adoption by the City, which will provide guidance for transforming this area near the river into a dynamic transit oriented development. It is envisioned that new development will be oriented toward an enhanced greenway on the west side of the river.

Through coordination with the Decatur – Federal planning team, the South Platte Corridor team engaged the public to discuss future riverfront conditions and how new development should relate to the river. This stretch of the river is unique in Denver given the direct frontage of developable property along the river, whereas the majority of the river in Denver is fronted by existing streets, highways, or railways. The preferred alternative for a 4.8-acre catalytic site between Zuni and the river shows an adaptive and flexible concept that combines adaptive reuse of a historic building with office, residential and commercial ground level uses fronting Zuni and Old Colfax.

The project yields 12,000 g.s.f. of retail,
51,600 g.s.f. of office and 320 residential units. The largest building is a residential building with a shared parking structure that is oriented toward a pedestrian promenade along the river that also provides emergency fire lane access. A street that currently dead ends at the river (14th Avenue) is also proposed as a pedestrian zone / fire lane, which provides an enhanced pedestrian connection between Zuni Street and the river, and plaza-like frontage for residential and office uses. Potential fiscal and economic benefits of this $84M investment includes 252 construction jobs, 57 permanent office and retail jobs with an average annual salary of $48,300, and 600 onsite residents that could spend nearly $2.3M each year on taxable goods in Denver. The combined sales tax, property tax and employee tax generated from on-site business activity and off-site spending are estimated at $400,000 annually.

4. Alameda
Just south of Alameda Avenue on the west side of the river is a large 8-acre commercial block with industrial warehouses, offices and a church. This site is impacted by historic landfilling and trash dumping that was typical to this area along the river. The non-residential employment uses have experienced decline over the past few years, with most of the aging buildings currently vacant or underutilized. At the owners’ request, the focus of study for this site is on adaptive reuse and exploration of creative reinvestment and business clustering strategies. Property owners could capitalize on the river-front location and explore investment opportunities that could attract new business with office and light assembly or warehouse needs, education facilities, human services, retail and other non-residential uses.

The site has an appearance of an aging urban industrial complex within a large expanse of parking pavement that blends into the surrounding streets. Coordinated reinvestment could give new life to the complex and make it more attractive and competitive with newer facilities in other parts of the metro region. Public input related to this site encouraged beautification through landscaping, and new businesses such as bike shops or a café that might attract more people using the river for recreational activities.

Landscaping improvements could beautify and unify the site, and help it relate visually to the greenway across South Platte River Drive. New walkways would provide intersite connectivity and encourage uses that might relate and link from one building to another. Building façade upgrades could highlight entrances and new windows while reinforcing ideals of sustainability, creativity, emerging technology, adaptability and trend-setting for the future. The results of this study encourage property owner collaboration to further explore how this site could reemerge as a significant employment district in the center of Denver, and potentially inspire additional investment on vacant and underutilized sites within the neighborhood. A fiscal and economic impact analysis was not conducted at this time given the uncertainty of future uses on the site, and the current non-taxable religious use as the predominant active use on the block.

5. Evans & Huron
The Overland neighborhood is a mixed residential and industrial area with a major highway and railway that bisect the neighborhood. The area is characterized by multiple, long term industrial activity that involves paint shops and potential long-term solvent uses. The area is also impacted by a known off-site chromium groundwater plume being cleaned under State regulatory supervision. A small pocket of retail and light industrial uses touches the east river bank within an otherwise residential district between the highway and the river.

The South Platte River Trail runs along the Overland Golf Course on the east side of the river, and along Pasquinel’s Landing
EXECUTIVE SUMMARY

Park that flanks the north side of Evans Avenue. The trail continues south of Evans to Grant Frontier Park, only one block away. This riverside section of the neighborhood will soon benefit from a current Public Works project to upgrade the street with 8-foot sidewalks along a quarter mile stretch of Evans Avenue. These improvements will be added to both sides of the street between the greenway and the light rail station located on the opposite side of the highway and railway corridor. This improved connectivity will extend over the existing viaduct to make walking and biking safer and the station more accessible.

The catalytic site study explores the potential of converting the small 5.2-acre pocket of light industrial/commercial next to the river into a mixed use residential development that interfaces with an enhanced greenway. The preferred alternative shows the potential improvements gained from realigning South Platte River Drive to the current Huron Street alignment to expand the greenway and simplify the street network. The suggested development type applies to the north and south sides of Evans, including three-story walkup townhomes with tuck under parking that faces the River (Huron Street) and the opposing Galapago Street, and three story mixed use buildings with ground level commercial fronting Evans. The project yields 192 residential units and 26,000 g.s.f. of retail or office on the ground level. Retail uses on the corner of Evans and Huron could take advantage of the greenway amenity with walk-out patio spaces for a small riverside restaurant or coffee shop. Potential fiscal and economic benefits of this $27M investment include 78 construction jobs, 59 permanent office and retail jobs with an average annual salary of $46,000, and 365 on-site residents that could spend over $1M each year on taxable goods in Denver. The combined sales tax, property tax and employee tax generated from onsite business activity and off-site spending is estimated at $244,000 annually.

Summary of Fiscal and Economic Benefits

Four sites were included in a fiscal and economic impact analysis, resulting in a total potential investment of nearly $260M that could generate 773 construction jobs and provide space for 352 permanent employment positions with an average annual projected salary of $55,370 in Denver. This represents an increase of 1.7% to the existing employment of 21,000 along the river corridor. About 1,230 new residents would live near the river in these developments, a 16% increase above the current residential population of 7,500 in the corridor. These new residents could spend $8.7M each year on taxable goods purchased in Denver. The combined sales tax revenues from consumer spending, business spending, on-site sales, and property and employee tax revenues from the new commercial areas is projected at over $1.5M annually.

Sustainability and Healthy Living

With more people living, working and visiting destinations along the South Platte River, several key goals related to healthier living and sustainability could be achieved. These benefits are likely to extend beyond catalytic development sites into the surrounding neighborhoods.

- More Walking, Less Driving - New housing, jobs and shopping near transit stations within walking distance of the river will generate more use for the South Platte Greenway trail and rail transit.
- More active use of the greenway equates to more eyes and ears on the river corridor, making it a safe and inviting place to be during the day and evening hours.
- New development near the river can serve to enhance public access along the river and create increased connectivity for surrounding neighborhoods to safely walk or bike to the greenway.
- Greenway improvements and new development will increase the desirability and value of surrounding neighborhoods.
- Redevelopment of aging urban areas

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creates an opportunity to capture and improve the quality of stormwater before it flows from the site into streams and rivers.

- Redevelopment creates an opportunity to pursue inclusionary housing options for all stages of life and income along the river corridor. This will further increase the potential of people living closer to the places they regularly visit with convenient access to rail transit and cycling routes.

**Summary of Potential Environmental Challenges to Revitalization and Brownfield Opportunities:**
The industrial and commercial land use history of properties adjacent to the South Platte River, discussed throughout the report, pose perceived and in some cases documented environmental challenges to revitalization of the corridor. To the extent possible, this report collected existing environmental information from multiple sources including various types of site development reports offered by a few willing property owners, public domain environmental database sources, and government records. With the exception of the Zuni site which was the subject of an EPA targeted brownfields assessment, the information gathered was far from complete.

For the purposes of this report, significant data gaps dictated making multiple assumptions about potential environmental conditions without confirmational investigations. All of the catalytic sites had multiple significant potential sources for soil and groundwater impacts onsite and adjacent to properties that will likely require a robust field investigation phase to identify and characterize recognized environmental conditions. The research shows that in order to redevelop the catalytic sites and most other properties along the river, extensive environmental due diligence work will need to be conducted to determine if properties are in fact environmentally impacted, and if so, to what extent. The next step is to then determine the appropriate environmental cleanup necessary for a given proposed development.

The costs of these extensive studies will likely inhibit redevelopment as it creates significant uncertainty about the actual development costs, potential investment returns, and timeline for redevelopment completion. To assist in overcoming this hurdle to corridor revitalization, particularly for for-profit entities, one of the report recommendations is for the City and County of Denver’s Brownfields Program to pursue an EPA brownfields assessment grant to fund environmental site assessments and cleanup planning on behalf of prospective purchasers and consenting property owners.

The redevelopment of the South Platte River Corridor is a major focus for the City and County of Denver from the City’s ongoing partnership with the Urban Water Initiative, the partnership between the City and Greenway Foundation on the South Platte River Vision Implementation Plan and association river improvement projects, and the Mayor’s Smart Jobs Development program which has the river corridor as one of three areas of focus. A brownfields assessment grant would fill a key niche around all of these initiatives.
1. Introduction

Photo courtesy of John Ruberry
The South Platte River has been an integral part of Denver’s history and economy, beginning with the discovery of Colorado gold in 1858 and a flurry of log cabins built along the river. The fledgling frontier settlement struggled until a new railway was completed in 1870 that connected Denver to the new transcontinental railway in Cheyenne, Wyoming. That same year, a new Kansas Pacific railway put Denver on the map as the regional hub within the nation’s rapidly growing transcontinental railway system. Railway connections brought rapid investment, growth and new industries lining the river to process minerals, agricultural goods and to manufacture new products. Freight supplies, curious tourists and new residents poured into the city which stimulated the economy and ignited growth from a population of about 4,800 in 1870 to 35,000 by 1880 (Gehling, “The Pike’s Peak Gold Rush,” 2009).

Railway networks branched into the mountains to transport lead, gold, silver and other ore to new smelter sites near the South Platte in Denver. Coal was also transported from mines to supply power to factories and to be converted to gas for lighting and heating.

Multiple railways and spurs, rail yards, maintenance facilities, roads and highways dominated portions of the river corridor to serve the growing industries along the river (see opposing regional map image).

In the late 19th and early 20th century, major rivers were commonly used for drainage and landfills for dumping chemical waste, garbage and raw sewage. Early railroad cars dumped their waste alongside the river, and gravel quarries were dug along its banks and later converted to landfills that leached contaminants. A number of abandoned gas stations, smelters, and coal-fired plants have lined the banks of the South Platte as well.

This treatment of the river occurred for decades before public health risks were better understood, and environmental laws and regulations were passed to protect water ways and property. Although such practices are no longer allowed, contamination from previous uses likely remains in the soil and groundwater of many properties.

Over the last 36 years, the City and County of Denver, in partnership with The Greenway Foundation, has worked to reduce these impacts to the South Platte River and

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Public Service Gas Works in 1916 near the river just west of Downtown Denver. Buildings from the Zang Brewery are visible in the background. The site has been converted into a surface parking area serving the Pepsi Center arena and Elitch Gardens theme park.

the surrounding area including the creation of over a dozen parks, numerous natural areas, white-water boat chutes and a multi-use trail system. Denver’s 11-mile stretch of the South Platte River Trail is part of a much larger regional trail system that extends further north and South into neighboring communities. Major trails that connect to the South Platte Corridor include the Cherry Creek Trail, Lakewood Gulch Trail and Weir Gulch Trails. Improvements to the water quality of the South Platte have also occurred, in particular since the enactment of the Federal Clean Water Act which required all discharges to surface water to be permitted. Additional improvements to water quality have been realized through the installation of water quality improvement features in areas draining to the river, development of best management practices to control exposure of pollutants to stormwater, and implementation of infrastructure maintenance programs intended to prevent pollutants in

(Left:) The City and County of Denver (yellow) is shown within the Metropolitan region (grey). Railways and highways converge in Denver along the South Platte Corridor.

(Below) Confluence of South Platte River and Cherry Creek circa 1974, prior to improvements and creation of Confluence Park.

(Below) View of Confluence Park with Central Platte Valley redevelopment in the mid-ground, and Downtown Denver in the background.
the sanitary sewers from reaching storm sewers. These enhancements have been a key factor in the economic resurgence of several areas adjacent to the River, the most notable being the Central Platte Valley near downtown Denver.

**Central Platte Valley - A Local Model for Riverfront Cleanup and Reuse**

As passenger and freight rail use declined in the 1980’s, multiple rail companies were motivated to consolidate underutilized parallel railways that had long comprised a vast rail yard between downtown and the river. While conducting a comprehensive planning effort for the area, Denver worked with the railroad companies to create what is know as the Consolidated Main Line (CML), which opened up extensive acreage to be sold to a master developer. A master planning and rezoning effort ensued, coupled with public investment to remove viaducts, build new bridges and restore the river. Public investment has resulted in extensive environmental remediation, park and river improvements that spurred surrounding real estate development in the

**(Left)** The Central Platte Valley continues to evolve as a significant reinvestment area to the north of downtown Denver. Redevelopment areas include the Commons Master Plan (A), The Commons West (B), Prospect (C), Coors Field (D), The Pepsi Center (E), Elitch Gardens (F) the Downtown Aquarium (G), The Children’s Museum (H) and Mile High Stadium (I). The historic Union Station (J) is being converted into a multimodal hub to connect existing light rail (2002) and bus transit, and future commuter rail that will open in 2016 to connect downtown Denver to the Denver International Airport.

**(Upper Right)** Commons Park under construction in the 1990’s following an extensive 10-year comprehensive planning process in the Central Platte Valley, consolidation of multiple railway lines, and completion of the Commons Master Plan.

**(Lower Right)** Planning under the administration of Mayor Wellington Webb led to a rebirth of the Central Platte Valley. Commons Park and the nearby Confluence Park have spurred surrounding development in the Central Platte Valley on vacated railways and industrial yards.
SECTION 1. INTRODUCTION

1990’s. To date, public reinvestment in the Central Platte Valley is estimated at $300 Million and $500 Million into the Denver Union Station hub. Although a figure for total private investment is not available, numerous residential and commercial mixed use projects have been completed or are currently under design or construction.

The South Platte River Corridor Today
Despite the continuing success of revitalization efforts in the Central Platte Valley, many environmental challenges remain within and alongside the river corridor. Although significant progress has been made in recent decades, more can be done to improve the river as an amenity and resource and use it to attract new development and investment at other locations along the corridor. Although most of the original factories and industrial yards along the river no longer exist, owners hoping to redevelop river sites into attractive mixed use areas near the river must face the possibility of dealing with remnant hazardous materials and regulatory liability.

Denver’s present day population is 620,000 with over 560,000 employees, including 110,000 that work in downtown Denver. The City is expected to grow by 160,000 new residents and about the same number of employees by the year 2035. Much of this growth is expected to occur in the City’s designated areas of change where more housing and jobs can be served by a growing rail transit network (see Blueprint Denver Map in appendix A). Railways once brought coal and raw metal ore to an industrialized river, but new rail investment is now helping to attract private investment in housing and commercial development near several transit stations that are within walking distance of the river.

Transit oriented development (TOD) near the existing river trail provides the opportunity to locate development near existing services and amenities where open space, walking, biking, and transit are in abundant supply.

With continuing public investment in rail transit and greenway enhancements, significant housing and job growth is likely to occur along the South Platte River corridor, which presents an opportunity to further clean up brownfields and transform the river environment. Renewed development could create exciting urban environments where more people could enjoy the river as an amenity.

To encourage reinvestment in areas of change along transit corridors, Denver adopted several station area and neighborhood plans that recommend higher intensity mixed use development near the stations. The old zoning code has been replaced with a new form-based zoning code and map that were adopted in 2010. The five catalytic site concepts are consistent with current zoning or plan recommendations as a demonstration of current land use policy and zoning regulation.

Project Purpose
The purpose of this study is to encourage community revitalization and appropriate redevelopment along the South Platte River within the City of Denver. This document presents detailed study of redevelopment and reuse concepts for properties at five different areas along the river, and explores how this reinvestment could benefit the surrounding neighborhood, relate to the greenway and catalyze revitalization around them. The findings are based upon extensive input from property owners, stakeholders, neighbors and the general public. Urban design studies and market analyses provide valuable pre-development insights that, if implemented, could create
significant economic development and community revitalization along the corridor. This study demonstrates how private investment could help to clean up and re-use potentially contaminated sites along the river corridor, and how these sites could transform into healthy and vibrant places to live, work, recreate and visit.

Study recommendations provide strategies for transformation of underutilized or environmentally impaired areas (potential brownfields) into urban riverside environments offering residential, employment and recreational uses. Anticipated public benefits that could result from private investment include restoration of the South Platte River’s ecological integrity, implementation of the River Greenway Master Plans, and sustainable growth of jobs and housing.

**Project Funding**
The South Platte Corridor Study was funded by a $175,000 grant from the EPA’s Brownfields Area-Wide Planning Pilot Program. This grant was awarded in October, 2010. The project was originally scoped to study three catalytic sites along the river, but in early 2012 the project received an additional $75,000 from the EPA’s Home-
to improve water quality runoff into the river

**Project Goals**
This study has six major goals for continued reinvestment and revitalization of the river corridor:

1. Demonstrate how potential brownfield sites can redevelop and relate to the river / greenway, and revitalize the surrounding area
2. Demonstrate how to create more public spaces along the river
3. Demonstrate how Denver’s recently-adopted land use plans and form-based zoning code can be applied to specific sites along the corridor
4. Encourage economic development associated with new development and reuse that results in new jobs and housing along the river
5. Encourage community revitalization by exploring appropriate new development and how it relates to existing neighborhoods
6. Demonstrate how innovative on-site stormwater management can be used

**Project Structure**
The South Platte Corridor Study was designed to accomplish the project goals by building upon previous planning studies and public engagement efforts.

**Project Partners**
The process relied on regular coordination between project partners including city agencies, the Greenway Foundation and the Colorado Brownfields Foundation. Agency partners attended monthly meetings, contributed edits and comments to project scope working drafts, and supported the proposal review and consultant selection process. This collaborative approach helped to align the various perspectives and responsibilities covered by each respective agency during the project inception and throughout the project execution and public outreach stages. Community Planning and Development assigned two planners to co-manage the project with approximately 2 full time employee (FTE) time spent over a two-year period.

**The Greenway Foundation**
The Greenway Foundation has worked in a successful partnership with the City on
multiple greenway and river restoration projects since its inception in 1976. This partnership continued with the Foundation receiving $15,000 as a sub-grant recipient to support the project development, public outreach and coordination with current river implementation projects.

The Colorado Brownfields Foundation
The Colorado Brownfields Foundation (CBF) was awarded $13,065 to support the project with technical assistance related to real estate, redevelopment and brownfields issues. The organization also contributed 80 hours of services through their Technical Assistance for Brownfields (TAB) funding. CBF provided project messaging strategies, stakeholder and public education support, assistance in review of existing environmental data, property observation screenings, and assistance in the development of potential environmental remediation cost estimates that were critical to the success of the project.

Consultant Team
The Wenk consultant team was selected through a very competitive proposal and interviewing process following a project definition and scoping exercise by the project partner team. The Wenk team was selected based on their experience in planning and urban design for clean up and reuse along industrialized river corridors. They also demonstrated applied knowledge of green infrastructure and how to integrate water quality areas as amenities in a higher density transit oriented development setting. Also added to the team were architectural services (including urban design and 3-D modeling) development and real estate market specialization and public engagement expertise.

The River Technical Advisory Committee (RTAC) was organized to review development concepts to assure that environmental interpretations and infrastructure assumptions were plausible and consistent with latest information and knowledge. Committee members were comprised primarily of engineers from Public Works and the consultant team to meet on an as needed basis.

Advisory Committee
This group represented diverse interests related to the river, and was thoughtfully selected with input and approval from project partners and four city council members. Advisory committee members met on four separate occasions over a five month period to weigh in on the process and review concepts prior to public meetings.

Private for-profit interests included commercial and residential real estate brokers, developers, lenders, manufacturing associations, industrial property owners and commercial general contractors. Non profit entities included Trust for Public Lands, Audubon Society, Trout Unlimited, Denver Public Health, FRES, Urban Land Conservancy, Denver Housing Authority and CDOT. Denver City agency representatives were also invited to participate in these meetings.

Project Approach
The primary components of the project approach are summarized in the following four project steps, as well as a description of the public engagement process.

Step 1. Corridor Analysis
An extensive corridor analysis was a critical first step that was conducted to better understand how the South Platte River relates to the adjacent urban environment. This initial examination of the corridor established a cohesive picture and understand-
**SECTION 1. INTRODUCTION**

The purpose of this step was to demonstrate how new development could transform sites along the river to create a healthier and more vibrant urban environment. These conceptual planning studies explored opportunities for neighborhood connection, revitalization, and stabilization, and provided strategies and options for redevelopment of the catalytic sites along the river. A proforma analysis of each concept was created to demonstrate project feasibility based on reasonable assumptions for land value, clean up costs, site improvement costs and building construction costs.

**Step 2. Catalytic Site Selection**

With the major emphasis of this project focused on study of catalytic redevelopment sites, selecting the right sites was of key importance. The corridor-wide analysis led to the identification of five opportunity areas with a catalytic site identified within each area.

**Step 3. Detailed Study of Catalytic Sites**

The purpose of this step was to demonstrate how new development could transform sites along the river to create a healthier and more vibrant urban environment. These conceptual planning studies explored opportunities for neighborhood connection, revitalization, and stabilization, and provided strategies and options for redevelopment of the catalytic sites along the river. A proforma analysis of each concept was created to demonstrate project feasibility based on reasonable assumptions for land value, clean up costs, site improvement costs and building construction costs.

Strategies for innovative on-site stormwater management were recommended specific to each site with reference to potential environmental conditions, existing area drainage studies, and potential future drainage projects identified in the City’s storm drainage master plan.

**Area-wide Green Infrastructure Study**

A separate water quality study was conducted by Wenk for a 100-acre study area surrounding a catalytic site in the River North neighborhood (RiNo). This expanded focus on stormwater management explores innovative opportunities for consolidated green infrastructure and other stormwater management strategies at a sub-regional scale. This project was funded separately by the EPA and the Urban Drainage and Flood Control District with significant involvement by the City (See Section 3 - Green Infrastructure Concepts).

**Step 4. Economic Analysis**

To augment the economic analysis component of the South Platte Corridor Study, a collaborative fiscal and economic impact modeling effort was undertaken with the Denver Office of Economic Development to evaluate the potential benefits of the catalytic site concepts along the corridor.

This joint effort was made possible by purchase of a proprietary software model license called SiteStats™ – an Economic and Fiscal Impact Analysis tool developed by Development Research Partners with grant funds. A SiteStats™ perspective looks at multiple economic and fiscal benefits that extend from construction activity, from the economic buying power of those who live, work or visit a project. Hypothetical spending is analyzed to explore potential local economic benefits and revenues generated for the City and County of Denver. The model also estimates the total of property taxes and onsite retail sales as assumed in the catalytic site studies. This analysis is featured in Sections 3 through 7 as part of the catalytic site summaries. The reporting of fiscal and economic benefits provides additional perspective for how catalytic site cleanup and reuse might benefit adjacent neighborhoods, including those with existing environmental justice challenges.

**Stakeholder and Public Engagement**

One of the most important aspects of this study is the ongoing process of gaining feedback about the project from property owners, residents and other stakeholders from the community. This process identi-
fied specific properties that may be under-utilized in evolving market areas in Denver. By involving the surrounding residents and stakeholders in the process, these exploratory concepts were intended to benefit not only individual property owners, but also the surrounding community and the City of Denver as a whole.

Reaching out to the property owners prior to involving the broader community was a key first step following the preliminary corridor analysis. After identifying potential catalytic sites, in-person and telephone interviews were conducted with 25 property owners. These owners generally responded favorably to the invitation to participate and explore opportunities for future development. Some stated a preference to keep their light industrial businesses and properties intact for the near and mid-term future, while others expressed a potential interest to sell property for redevelopment in the short term. The consultant team members explained during the interviews that historic industrialization and landfiling along the river could present a barrier to reuse of property. This planning process presented an opportunity to gain new information and ideas to anticipate potential contamination, and to understand how to position their properties as the real estate market evolves. It was made clear to all property owners and neighborhood residents that any concepts resulting from this study would be non-binding to the property owners and made available for voluntary implementation.

Community Priorities
The project engaged numerous residents, area stakeholders, as well as diverse organizations and foundations with an interest in the future well-being of Denver’s river corridor. From March to September 2012, several stakeholder interviews and eight public events were organized to provide ample opportunity for public input and to ensure that the surrounding neighborhoods were engaged. Public meetings consisted of a kick-off meeting, three neighborhood workshops, two presentations at neighborhood meetings, a concept review meeting, and a final presentation meeting. Public feedback gathered from these events served as a guide to the consultant team and influenced the evolving design concepts. Stakeholder and public input is referenced in Sections 3 through 7 as part of the catalytic site concept overviews, and Appendix C provides a summary of the public meetings.

Neighborhood Engagement
Public participation was key to develop an understanding of how catalytic site reuse and redevelopment could benefit the surrounding neighborhoods and complement the South Platte greenway. To provide an open and transparent process, three key outreach methods were employed:

- Bi-lingual flyers in Spanish and English were mailed to property owners living within 1,000 feet of each catalytic site prior to the neighborhood workshops.
- An email invitation list of over 1,000 contacts was assembled from previous planning efforts along the river including greenway master plans and station area plans. Notice was also distributed to Denver’s registered neighborhood organizations. Bi-lingual emails were sent prior to each public meeting.
- A project website was set up with project background information, events and City staff contact information.
- Public meeting sign in sheets were provided to gather the contact information
SECTION 1. INTRODUCTION

of new participants and add them to the growing email contact list.

This inclusive process provides a basis for the findings, design concepts and feasibility analysis contained in this study. It is anticipated that the report will serve as a valuable implementation reference to the City, and provide insight that informs potential private investment.
2. Corridor Analysis and Catalytic Site Selection
The South Platte River corridor is a complex network of built-up land uses, vacant sites, redeveloped sites, extensive freight and public transit railways, public streets, highways and parks along the river banks. To better understand the relationship between these uses and the river, an extensive corridor analysis of existing conditions was conducted by the project team. This section provides an overview of this analysis in three general steps, including plans and policies review, economic investment analysis and existing conditions analysis.

**Plans and Policies Review**

The first step in the analysis was to collect information from existing plans and studies that touch on areas along the river or other specific river topics. A complete list of these plans and the general relevance to this project is provided in Appendix D. An opportunity area map graphic is provided in each of the catalytic site summaries. The Catalytic site studies in Sections 3 through 7 refer to key plan recommendations or existing neighborhood components that relate to each study area and a specific catalytic site. Additional references are made to plan recommendations and zoning. Some of the more significant plans that are referenced include:

- **Blueprint Denver** – Denver’s integral land use and transportation plan was adopted in 2002. Blueprint Denver designates areas of change where infill and redevelopment could be served by higher capacity transit service and existing infrastructure (See Blueprint Denver Map in Appendix A).
- **Greenway Master Plans** – Denver Parks and Recreation and the Greenway Foundation engaged stakeholders and the public to explore greenway natural areas and recreation opportunities along the South Platte River in Denver. This important planning effort initiated an ongoing collaborative effort between citizens, property owners, Denver City agencies, the Greenway Foundation and numerous other public and private organizations committed to a naturally healthy and prosperous South Platte River. Following completion of the master plans, several projects were prioritized for funding, detailed planning, design and construction by 2015. These focus areas for greenway improvements relate to each of the catalytic sites selected in this study (See page 21).
- **Decatur Federal Station Area Plan** – This is a plan in progress that will recommend new land uses and densities within a half mile surrounding the Decatur-Federal station along the West Rail line, set to open in 2013. This planning process presents a unique opportunity to present findings from the South Platte Corridor Study and recommend land uses to be considered for City adoption when the plan is completed in 2013 (See Section 4 Zuni & Old Colfax).
- **JumpStart 2013** - Denver’s Office of Economic Development (OED) has released JumpStart 2013 - the City’s new economic development strategic plan that identifies measures to effectively recruit new employers to the city. Mayor Hancock’s administration has identified ‘Key Strategic Projects’ in Denver, including the South Platte River Corridor as an opportunity for coordination with stakeholders to develop and implement a strategies for brownfields remediation to encourage redevelopment and job creation. The plan includes measures to assure affordable and workforce housing near transit and to reduce energy consumption in commuting.

**Economic Investment Analysis**

The figure on the opposing page shows building permits for residential and commercial projects as a representation of private investment from 2005 to 2011. With the exception of the Central Platte Valley (Area A) there has been little commercial investment along the river compared to other neighborhoods in the City, and almost no residential investment. The catalytic site studies in Sections 3 through 7 demonstrate specific opportunities for private development investment to take ad-
With the exception of the Central Platte Valley (Area A) there has been little commercial investment along the river compared to other neighborhoods in the City, and almost no residential investment.
SECTION 2. CORRIDOR ANALYSIS AND CATALYTIC SITE SELECTION

vantage of the public greenway and transit investments along the river corridor. New development could further transform the river into a vibrant place with the energy and activity generated by new housing, jobs and retail areas that attract more people to Denver’s reemerging river amenity.

Environmental Justice and Equitable Development Planning

This area-wide planning process continues Denver’s efforts to revitalize the corridor with a focus on equitable development planning for disadvantaged communities. Disproportional environmental impacts borne by disadvantaged neighborhoods are referred to as environmental justice communities. An equitable planning approach explores how new investment could benefit adjacent neighborhoods along the corridor. Prior to environmental laws and regulations, communities along the South Platte Corridor were at greater risk to cumulative pollution problems from industrial activity. With support from State and Federal programs, the City has reduced pollution point sources from industrial uses, and worked to clean up a number of brownfield sites along the river. These efforts include extensive environmental remediation, and park and river improvements in partnership with the Greenway Foundation as described in Section 1. This area-wide planning study demonstrates how new development could further mitigate these impacts by creating a vision for new investment along the river that could foster neighborhood revitalization.

The South Platte River bisects the City of Denver and flows through 14 of the City’s 77 neighborhoods. Nearly all of these 14 neighborhoods trail Denver as a whole with respect to a wide variety of socioeconomic indicators. In 2000, nearly all of the neighborhoods along the river corridor had a higher concentration of minority populations than Denver as a whole, and are disadvantaged compared to city-wide figures for educational attainment, births to teen mothers, crime and household income.

As featured in the following mapping analysis, residential areas next to the river are rather limited within the study area given the preponderance of industrial and transportation infrastructure along the riverfront. Industrial uses were typically built on large tracts of property with very little street connectivity to provide convenient access between residential areas and the river. For these limited residential zones and some industrial districts, disinvestment along the river corridor contributes to crime rates where fallow sites or inactive zones between highways and railways can attract illicit activity. Urban camping along...
**Right:** Nearly all of the neighborhoods along the river corridor had a higher concentration of minority populations than Denver as a whole, and are disadvantaged compared to city-wide figures for educational attainment, births to teen mothers, crime and household income (indicated as bolded figures or percentage values). Sources: 2006-2010 data is from the 2006-2010 American Community Survey; 2007 data is from the Piton Foundation (piton.org); 2010 data is from the 2010 Decennial Census.

**Lower Left:** The Sun Valley public housing project—shown amid heavy industrial uses—is one of only a few residential districts that actually touches the river. The river is widespread—especially in areas with limited new investment - with reports of theft, burglary and vandalism. While conditions have greatly improved along the river with major greenway investments, some neighborhoods lack convenient access to the river, and other amenities that may be within the statistical neighborhood, but are not accessible due to a disconnected local street network. In general, activating the greenway with new development would benefit adjacent disadvantaged neighborhoods by:

1. Improving the vitality of the greenway amenity along the river edge.
2. Increasing the number of people living and working along the river to increase demand for services such as healthy food, and possibly provide for such uses in a mixed use setting.
3. Improving access to the river through improved street circulation and bike / pedestrian connectivity.

Sections 3 through 7 highlight the area opportunities associated with each catalytic site that was selected and studied as part of this project. This approach considers how the surrounding neighborhoods might benefit from investment and revitalization along the riverfront.

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Existing Conditions Analysis
With the exception of a few well-known parks along the greenway, many stretches of the river are obscured by raised viaducts, bridges and major highways or roads. An existing conditions analysis helped to answer the question of ‘What is along the River Today?’ and provided the basis for identifying the catalytic sites. The analysis required an in-depth corridor-wide mapping analysis as well as tours of the corridor by team members. This collective understanding of the corridor provides new perspective useful for exploring revitalization and investment opportunities.

The following maps were created using GIS mapping layers and hand drawn overlays to compare the relationship between existing land uses, utilities, infrastructure and the river.

Above: Railway and highway infrastructure at Park Avenue and I-25. Site A. was one of several potential areas considered for more detailed study to explore how new development could relate to the river. Below: Site A shown within the broader area with the Central Platte Valley to the west and River North Neighborhood to the east. A full list of sites that were considered for detailed study is provided in Appendix E.

Image Source: Bing Maps
(Left) Existing Parks and recreational areas comprise 8% of the study area. Well-known areas include Commons Park & Confluence Park (A), Johnson Habitat Park (B) and Overland Golf course (C).

(Right) Established residential areas cover just 4% of the study area, and account for 1.2% of Denver’s population of 620,000. Only four residential areas actually touch the greenway including A. River North—a mixed residential/industrial neighborhood, B. The Central Platte Valley Redevelopment, C. Sun Valley and D. The Overland Neighborhood.
SECTION 2. CORRIDOR ANALYSIS AND CATALYTIC SITE SELECTION

(Left) Industrial and commercial areas are the largest land use category covering 26% of the study area. Industrial businesses provide services, jobs and products, and generate property and sales tax revenues that are critical to the City and County of Denver.

(Right) 10% of the study area is comprised of large single uses and parking areas. These include A. The RTD bus maintenance facility, B. Entertainment uses Elitch Gardens and the Pepsi Center, C. Sports Authority Field at Mile High Stadium (Denver Broncos), D. Auraria Campus, E. Central Platte Industrial campus, and F) the Xcel Energy power plant.

Image Source: Colorado Aerial Photography
(Left) 10% of the corridor is devoted to transportation infrastructure including freeways, major arterials, freight rail and light rail.

(Right) A composite of transportation infrastructure, large single uses and parking, and industrial zoning comprising nearly half of the study area (45%). These areas are likely to remain in their current uses into the foreseeable future.
With so much of the corridor area devoted to stable industrial uses, transportation infrastructure and large single uses, there are relatively few opportunities for river-front reuse and redevelopment.

**Selection Criteria for 5 Catalytic Sites**

The highlighted red areas were identified as sites that could be explored for reuse and revitalization between the established uses along the corridor. Selection criteria were created by the project partners to identify areas that represent some of the best opportunities for reuse and investment along the river corridor. These criteria include:

- Strong relationship to river
- Underutilized property
- Site connectivity to adjacent neighborhoods
- Potential to draw people to the river
- Potentially transformative and catalytic to the surrounding area
- Adequate size and shape for meaningful reuse and redevelopment
- Potential for rail transit access
- A strong relationship to the existing greenway and regional trail system

Over a dozen candidate sites along the river were evaluated using these criteria. At the end of this analysis and following public input, the highest-ranking opportunity areas were identified:

A. **River North** - a mixed industrial and residential area within minutes from downtown that will be served by commuter rail in 2016.

B. **Water Street** - an underutilized large parking lot at the edge of the Central Platte Valley redevelopment area

C. **Zuni & Lower Colfax** - an aging industrial site that directly fronts the river, and lies within walking distance of one existing light rail station, and the soon-to-open Decatur Federal Station.

D. **Alameda & Platte River Drive** - a large block filled with 40 to 50 year old light industrial, office warehouse and religious buildings.

E. **Evans Avenue** - A pocket of small 60 year old commercial / light industrial commercial buildings on the north and south sides of Evans Avenue, positioned between the greenway and surrounding residences in the Overland neighborhood.

These opportunity areas were presented at the April 2012 public kick-off meeting (see an outline of all public meetings in Appendix C). Meeting participants agreed that the areas deserved further study and exploration, and provided a list of issues and opportunities that should be considered when conducting detailed site analysis and design (See summary of public comments in Sections 3 through 7).
**Rail Transit Station Areas**

Existing and future rail transit station areas within walking distance of the river are highlighted over the five opportunity areas. Each circle is one mile in diameter, or 1/2 mile surrounding each station area.

- A. 38th & Blake Station Area
- B. Denver Union Station
- C. Auraria West Campus Station*
- D. Decatur Federal Station
- E. Alameda Station
- F. Broadway Station
- G. Evans Station

* Two additional stations are located between B. Denver Union Station and C. Auraria West Campus to serve the Mile High Stadium and the Pepsi Center / Elitch Gardens.

**Pedestrian Crossings** (Right) Although the stations listed above are within a 1/2 mile walking distance of the river, some station platforms would not be accessible without a pedestrian crossing over the river or railway. The map to the right shows existing bridges (white), existing underpasses (fuchsia) and proposed bridges (green). In most cases, funding for proposed bridges has not been identified.
SECTION 2. CORRIDOR ANALYSIS AND CATALYTIC SITE SELECTION

Greenway investments
A number of South Platte greenway planning and design efforts are underway that are leading to phased work for the development of exciting recreational places along the river. The five catalytic sites were selected with the following areas in mind to encourage a strong connection between new development and the greenway:

A. River North Park (Arkins Park)
Creating a community with a focus on the South Platte River is an opportunity in northern Denver, and one that Denver Parks and Recreation put in place with the acquisition of 2 acres of land near the river in 2010. The park space will include passive and active recreational spaces, informal gathering areas, bike and pedestrian trails that connect to the Platte River greenway, and re-use of an existing building into a park pavilion for events like “Movies in the Park” and concerts.

Project improvements will include strides to naturalize the river bank by reducing the side slopes along the river to the extent possible. This will create an area for new wetlands and riparian habitats that lead to water quality improvements with self-sustaining native vegetation. Significant to this park development will also be a pedestrian bridge crossing the river near 35th Avenue. The bridge will connect current and future development to the park and help to activate the spaces it connects.

B. Confluence Park
The confluence of the South Platte River and Cherry Creek is the historic birthplace of Denver. The revitalization of the river began in the 1970’s with the construction of Shoemaker Plaza, the regional trail and the cantilevered ramps. The existing ramps do not meet current accessibility or trail standards and capital improvements to these assets will be made starting in 2013. The City and County of Denver has also undertaken a master plan of the entire Confluence Park area to more fully understand pedestrian circulation patterns, areas for special events, new mixed-use development potential, locations for waterway crossings and areas for interacting with the water. Landscape and water quality improvements will also be identified. The goal is to ultimately develop a cohesive plan for the entire Confluence Park area.

C. Sun Valley
Sun Valley is one of the areas along the South Platte River where families reside, making park space in this area a critical entry point to the South Platte River greenway. This community has the lowest annual household income in Denver at $12,400, and one of the highest percentages of ethnic or racial minority residents at 89%. These citizens have experienced a disproportionate share of impacts related to heavy industrial uses and isolation from a disconnected street network near the river. The intent is to create a place where children and their parents can be active in play while learning valuable lessons about the environment around them. Weir Gulch and Lakewood Gulch both feed into the River in this neighborhood and provide trail connections to neighborhoods west of Sun Valley. These regional connections will be enhanced by a series of wetland water quality basins. Small backwater areas will be created near the gulch confluences with the river to help improve fish and macroinvertebrate habitats, and to improve water quality. Recreational highlights of the park areas include an interactive spray ground with shade sculptures, natural play spaces with boulders and sand, an improved section of regional trail for bikes and pedestrians, an overlook bridge crossing Weir Gulch, and community gathering spaces for socialization and informal play.

D. Johnson-Habitat
The redevelopment of Johnson-Habitat Park will educate children and adults of the important role that the South Platte River plays in nature and their daily lives. The valuable natural amenity that the river offers will be celebrated with a new environmental educational facility and a diverse recreational area as a national model of community cooperation and success. Rec-
reational and educational highlights of the planned park improvements include an outdoor classroom, riverbank and upland area enhancements, boating and fishing access improvements, river overlooks, an urban tent camping area, interpretive trails and new section of regional bike trail, water access, public gathering space, active recreational areas, and play area improvements. The park areas are intended to be interactive and hands-on, while providing a sense of adventure for visitors. Activities that are inviting, exciting, and fun enhance learning and fitness, including the award winning South Platte River Environmental Education (SPREE) program.

**E. Grant Frontier / Pasquinel’s Landing**
Boating, tubing, fishing and wildlife watching in an urban environment are the focus of Grant Frontier Park and Pasquinel’s Landing. Providing multi-use river access facilities will provide a new recreational destination for residents of southern Denver. Existing drop structures will be reconstructed into multiple drop structures that will provide state-of-the-art boating and fishing experiences through the length of these park spaces. Multiple boat launches and river access points will provide options for experiencing the river. The project areas will also improve wildlife habitat and water quality by laying back the side slopes and creating new wetland and riparian habitats with native vegetation.
Sustainability and Healthy Living

With more people living, working and visiting destinations along the South Platte River, several public benefits related to healthier living and sustainability could be achieved. These benefits relate to the potential for reduced automobile use in walkable developments near transit, trails and existing services in Denver. New walkable development next to the river could serve to revitalize adjacent neighborhoods by creating more neighborhood activities and destinations that would be accessible by foot, cycling or transit.

Denver’s Living Streets Initiative documents several key trends and growing national awareness related to healthy living and the built environment. Over two-thirds of American adults and one-fifth of American children are obese or overweight. The prevalence of obesity has doubled and the number of overweight children nation-wide has tripled over a 25-year period, from 1980 to 2004 (Centers for Disease Control and Prevention, 2009).

Colorado was recently ranked as the fittest of 50 states in 2010 with an obesity rate of 19.1 percent compared to the national figure of 34 percent. However, childhood obesity in Colorado increased 23% between 2003 and 2007 – the second-fastest rate of increase in the nation behind Nevada (CalorieLab, Inc., 2011).

While there may be many reasons for this large increase, one major reason is a lack of physical activity, and the built environment is believed to play a major role in the sedentary behavior of Americans. Over 55% of American adults do not meet the recommended levels of physical activity (150 minutes of moderate to vigorous physical activity per week) and 25% reported no physical activity at all (Department of Health and Human Services, Healthy People 2010, 2000).

The presence and condition of sidewalks, safe crossings, traffic-calming features, and design of roads can encourage or impede physical activity. Wide roads and fast-moving cars are major barriers to walkability, while land use and zoning patterns tend to isolate many Americans from grocery stores, retail centers, and employment centers, leaving most people with little option but to drive.

Having shops and services near one’s residence was the best predictor of not being obese in a study of the health benefits associated with mixed use development. The study found that the relative risk of being obese increased by 35% between the most and least mixed areas (Frank et al., 2004).

Other related findings:

- Mixed land use, street connectivity, and residential density are the built environment attributes most consistently related to total physical activity. Street connectivity creates shorter routes to destina-
tions and higher density supports local retail and may provide social support, and perceived safety that encourages physical activity.

- People walk and exercise more if they live near mixed use communities that are well connected with a street network that is safe for walking and biking (Saelens et al., 2003).
- People who use public transit are three times more likely to be physically active than motorists (Lachappelle and Frank, 2009).
- Residents of walkable neighborhoods with sidewalks and connected streets did about 35 to 45 minutes more moderate physical activity per week and were substantially less likely to be overweight (Sallis et al., 2009).
- In regards to social capital, residents of pedestrian-oriented environments reported a much stronger sense of community (Lund, 2002). Even pedestrian activities like dog walking can serve as an opportunity for informal social interactions, but only when walkable, connected streets are available.
- After San Francisco reduced traffic lanes to slow down cars and accommodate other users on Valencia Street, nearly 40% of Mission District merchants reported increased sales, and 60% reported more area residents shopping locally (San Francisco State University).
- Living close to parks, trails, retail areas and recreation facilities is also related to greater use of facilities and more recreational physical activity (Dannenberg et al., 2011).
- Greenhouse gas emissions are 43% less for households living in compact, mixed-use neighborhoods and 78% less in central business districts (FTA and Center for Transit-Oriented Development, 2008). The City of Portland estimates that its transit and bicycle infrastructure investments since 1993 have resulted in a 12.5% reduction in per capita CO2 emissions from 1993 to 2005, which translates to carbon savings of $28M to $78M annually (City of Portland, Office of Sustainable Development, 2005).
- The average American household spends 19% of its income on transportation costs. This rises to 25% in auto-dependent exurbs, compared to only 9% in neighborhoods with transportation options (Center for Transit Oriented Development, 2009).
- Transportation sources account for 70% of the nation’s oil consumption and 30% of total U.S. greenhouse gas emissions (Energy Information Administration, 2009).

**Improvements to Water Quality**

When older parts of the city developed, little consideration was given for stormwater quality. Today’s regulatory standards require capturing the first flush of rainfall to remove pollutants from stormwater runoff before they enter rivers and streams. Typical pollutants include solids (such as soil particles), petroleum hydrocarbons from automobiles, nitrogen and phosphorus, pathogens, metals and synthetic organics. Redevelopment and reuse of aging urban areas creates an opportunity to improve stormwater quality by removing pollutants before the runoff enters waterways.
SECTION 2. CORRIDOR ANALYSIS AND CATALYTIC SITE SELECTION

Each catalytic site presented in this study recommends innovative solutions for capturing and enhancing the quality of stormwater on or near the site. Instead of using pipes (gray infrastructure) to dispose of stormwater, green infrastructure uses the natural retention and adsorption capabilities of vegetation and porous soils to collect and treat stormwater runoff. Green infrastructure integrates on-site natural features, landscaped areas, and small-scale engineered hydrologic controls to promote pollutant removal and reduce stormwater runoff volumes and peak flows in receiving waterways. Rain gardens, stormwater planters, bioswales, permeable pavers, and tree box filters are green infrastructure techniques that can provide for enhanced water quality, reduced flooding, improved air quality, increased aesthetics, and lower long-term maintenance costs.

The evolution of the South Platte Corridor in Denver presents an opportunity for continued revitalization in Denver to create more sustainable development patterns and healthier neighborhoods. The corridor provides access to an expanding greenway and rail transit network as well as convenient access to amenities and services available in Denver. The goals of Denver’s Living Streets Initiative and Blueprint Denver will be significantly advanced through revitalizing efforts along the South Platte Corridor.
3. River North Catalytic Site
Section 3. River North Catalytic Site

River North Opportunity Area
The River North (RiNo) opportunity area runs north to south from 38th Street to Denargo Street along the river (to the west) and the Union Pacific railway (to the east). The center spine of the area is Brighton Boulevard which provides connection between downtown and I-70. This aging industrial neighborhood is known for the emerging RiNo Art District, and the nearby pioneer development – TAXI - a creative office and residential community on the west side of the river on Ringsby Court.

Recently adopted land use plans recommend higher density mixed used development that could replace significant portions of existing commercial and industrial properties. These plans include Blueprint Denver, the River North Neighborhood Plan and the 38th & Blake Station Area Plan. These adopted plans define the general location, character and intensity of mixed residential, commercial and industrial districts. In 2010, many of the recommended land uses from these plans were applied to properties as part of Denver’s city-wide zoning code update and rezoning process.

Two new projects are currently under construction that will add over 500 new residential units in the southern half of the RiNo opportunity area. These include the first phase of Denargo Market - a residential mixed-use development with ground level retail to be constructed near 29th Street and Brighton, and a 200-unit apartment complex at 32nd Street and Brighton. Multiple property assemblages by investors throughout the area further indicate that the area is poised to transform from an aging industrial district to a mixed use community near the river. Residents in River North are located just minutes away from downtown Denver by vehicle, bicycle (via the South Platte River Trail) or bus.

Existing Area Conditions
The blocks north of 35th Street contain smaller parcels with a mix of older single family homes from the early 1900’s, and commercial / industrial buildings built from the 1940’s to the 1970’s. South of 35th Street, the parcels are much larger, with fewer structures and virtually no residential development. The area north of 35th Street is a more complex ownership pattern that is less likely to redevelop with larger projects and taller building heights. The larger parcels to the south are due in part to the lack of cross streets between 35th and 31st Streets west of Brighton. These larger parcels more conducive to larger development projects where structured parking with surrounding higher density buildings could be situated.

Many of the existing streets in River North lack curb, gutter, sidewalk and stormwater...
River North Opportunity Area is located along Brighton Boulevard between the River and the Union Pacific Railway. Image Source: Bing Maps
SECTION 3. RIVER NORTH CATALYTIC SITE

drainage systems. Redevelopment in the neighborhood would improve these streets to meet current service levels, and could present an opportunity to explore water quality treatment in the right-of-way, or green streets. Brighton Boulevard is an arterial street with over 16,000 vehicle trips per day, and a forecast of over 25,000 trips by the year 2025 (Denver Regional Council of Governments). This high level of visibility provides an opportunity to create ground level retail and other commercial services along the corridor. However, direct access to new development should be provided on side streets rather than on Brighton to minimize interference with traffic flows and to reduce the number of conflicting turns.

Public Investments

The Regional Transportation District’s (RTD) FastTracks program will bring commuter rail service through the River North neighborhood in 2016 to connect downtown Denver and the Denver International Airport along the East Rail Line. The River North station at 38th and Blake will be the first stop from the downtown Union Station transit hub. RTD will construct a pedestrian crossing at 38th Street to connect the station to a park-n-ride lot on the west side of the tracks. The City of Denver is also studying the potential of a second pedestrian bridge between 35th and 36th Streets to improve connection between the station and the river south of 38th Street. The City is investing over $40 Million in planning, design and installation of infrastructure improvements surrounding the transit station (See Appendix F). These include street and sidewalk improvements to provide safer pedestrian access to the station, and major storm drainage improvements to convey regional stormwater flows to the river. As described in the Corridor Analysis, Denver Parks recently purchased a 2-acre brownfield property for a future park near the river in response to recent redevelopment trends. Studies of this future park included exploring the possibility of relocating Arkins Court away from the river along the Delgany Right-of-Way alignment to expand the greenway (see above image).

The Catalytic Site

The catalytic site selected for conceptual study is located on the east side of the river, adjacent to the City’s future park parcel (see above graphic). The site is
fronted by Brighton Boulevard to the east, and 35th Street to the north. This location is within walking distance of the proposed pedestrian bridge between 35th and 36th Streets as a direct walking route to the future rail station. Study of this site has provided the opportunity to explore how development could relate to a new public park next the river, and how this integral relationship could benefit the development, the park and the surrounding neighborhood.

**Existing Site Conditions**

The majority of this 5.6-acre site is an outdoor auto salvage yard, with five small to moderate sized buildings fronting Brighton Boulevard. The main building is a nicely detailed 1941 Streamline Moderne brick office/warehouse with decorative stepped brick pilasters, a horizontal band of steel windows and projecting steel awnings. There are no residential housing units on the property. Views of downtown and mountains to the southwest would add to the scenic value of development located next to a new riverside park.

At over 800 feet long, the site is equivalent in size to two city blocks, but is only fronted on two sides by Brighton Boulevard and 35th Street. New east / west streets would be essential to serve new development, reduce conflict with north / south bound traffic along Brighton Boulevard and provide additional connections to the future park. Currently, vehicle parking is located in front of the buildings along the street with no designated parking lot entrance. Vehicles pull in and out of head-in parking and back out directly into the closest southbound travel lane.

The existing utility infrastructure is adequate for site development, although several utility upgrades would be required to support mixed use redevelopment, as summarized below:

- A 12” water line runs along Brighton Boulevard. Additional looping of the water line through the site will likely be required to meet the current Uniform Fire Code to place an adequate number of hydrants around new buildings.
- Sewer lines would need to be extended into the site to direct sewage flows from new buildings to the 42” sanitary collector line in 35th Avenue.
- Stormwater Sewers: There are minimal storm sewers serving the site. A new 100-year capacity storm drain would be required to convey water from the site to the river. This would reduce the on-site detention requirement from 100-year service to 10-year rainfall event service level.

**Neighborhood Input:**

Public feedback collected at the neighborhood workshops served as a valuable reference to the consultant team as concepts were developed for the site. Alternatives were created that could make redevelopment both catalytic and beneficial to the neighborhood. Key takeaways from the public meetings include the following suggestions:

- Existing buildings should be preserved and reused to the extent possible to keep key elements of the RiNo...
SECTION 3. RIVER NORTH CATALYTIC SITE

- New development should support the growth and prominence of the RiNo Art District by creating studio and gallery opportunities for artists, and outdoor spaces for civic art features.
- The proposed scale, density and mix of uses of the concepts appear to be incompatible with the light industrial nature of art studios. Eight story buildings that are predominantly residential could be cost prohibitive for new artists and small businesses seeking to locate in the district. If area rents rise too high, established artists and business owners may move to a different neighborhood.
- Questions were raised relating to the feasibility and benefits of water quality enhancement in the right-of-way. This treatment would require professional design, as well as on-going maintenance and irrigation by a managing authority.

Preferred Alternatives

The consultant team developed two alternative concepts that responded to neighborhood input, and tested the feasibility of the preferred alternative through a financial proforma analysis. The concepts demonstrate how new mixed use development could relate to a new park, and how the neighborhood could better access the river by re-establishing the street grid and creating stronger pedestrian connections. Both alternatives would include the following urban design elements:

- New east / west streets would be introduced at 33rd and 34th streets to re-establish the street grid. These streets would disperse local traffic, reduce congestion on Brighton Boulevard, and establish more pedestrian connections to the river from Brighton Boulevard.
- Provide access to interior block parking to prevent turning conflicts with north / south traffic flows along Brighton Boulevard.
- A portion of Arkins Court is shown being vacated from 32nd to 35th Streets – a street that currently runs at the top of the river bank. The street would be converted to open park land next to the river that would provide an amenity for future residents. For the purpose of keeping a redundant parallel route along Brighton, Arkins Court could only be vacated once the Delgany street realignment has been completed from 31st Street to 35th Streets.
- The development costs listed on page 40 include a realigned Arkins Court along the Delgany right-of-way alignment. This new street would serve the west side of the new development and the east edge of the park, and allow for the vacation of Arkins Court along the river and conversion into greenway / park expansion.
- Commercial uses such as retail, flex office, studios and gallery space-fronting Brighton Boulevard would be provided in each alternative to serve the new residents and to capture business from the high traffic volumes along Brighton Boulevard.
- The fall in grade across the site toward the river (from east to west) could provide an extra floor of parking accessible from the realigned Arkins Court.
- A pedestrian bridge over the river is shown at 35th Street to connect the existing TAXI development to the park and pedestrian route toward the future commuter rail station (this concept is not currently funded).
- A proposed pedestrian bridge (at 35th or 36th Street) would further expand the walkability of the RiNo district and improve neighborhood connectivity on both sides of the River.
- Reuse of the existing Streamline Moderne building would allow for the area’s history to “remain,” helping to preserve RiNo’s unique mixed industrial character.
Green Infrastructure Concepts
Concepts for green stormwater infrastructure were further explored in a separately funded study to demonstrate how private and public investment could result in more efficient and sustainable solutions for stormwater management. The River North Consolidated Green Infrastructure Study provides a sub-regional analysis of the neighborhood and demonstrates the following opportunities for the catalytic site:

- The potential to enhance water quality in the right-of-way tree lawn area (between the sidewalk and the street curb).
- Storing water detention in vaults under new local streets (private or public) or under the future park. Grant funding of the park parcel does not allow for water quality or detention to be treated or stored on the park property.
- Stormwater management in the right-of-way would allow for more efficient use of the property for development, and create consolidated green infrastructure facilities that could be more efficient to maintain.
SECTION 3. RIVER NORTH CATALYTIC SITE

Alternative 1: C-MX-8 Less Than Full Build-out

This concept explores a Phase I building program on the north block (between 34th and 35th Streets) that represents present-day market opportunities for moderate density residential and commercial development. With a large supply of new residential units currently under construction south of 32nd Avenue, a full build-out of C-MX-8 zoning (Commercial Mixed Use, eight-story building height) on another competing residential project does not seem likely in the next five years.

A Phase I project with employment and a smaller mix of residential development could make more sense as a near-term development opportunity. This project could be introduced at a competitive price point by scaling back the height (and resulting cost per square foot of the buildings), and by limiting the structured parking to a two-level deck. These cost factors would significantly influence the lease or purchase price of new development. This approach would logically phase the lower density as the first phase on the north block in response to the current market. Later, a possibly higher density phase could respond to a potentially stronger residential market. This strategy is consistent with the neighborhood preference for a less intensive development scheme on the north end of the site near 35th Street. Both alternatives share the same development program for the Phase II - south block development. This second phase is assumed to be a longer term opportunity after some of the current projects under construction in the area are built out and fully occupied.

About 40 percent of the new development in Phase I (53,000 s.f.) would be flex space and retail commercial building space that could attract small businesses, light manufacturing and artisans. A 73,000 s.f., 80-unit residential building fills the remaining 60 percent of the development program. This building could house around 150 residents that would increase the local population and bring more eyes on the future park during evening hours and weekends. Parking would be provided by a 2-level parking garage that could take advantage of the change in grade across the site.

Demand for this program represents current or near term market demand in the next 5 years. The new commercial build-
Alternative 1 Development Yields

First Phase (north block):

- 80 Residential Units (73,000 GSF)
- 43,600 GSF Office / Flex Space / Studios / Galleries
- 9,500 GSF Retail / Restaurant / Gallery renovation of existing building
- 185 parking spaces in a two level parking garage.

Second Phase (south block):

- 250 Residential Units
- 14,000 GSF Retail / Restaurant / Gallery
- 270 parking spaces in a 3-level garage

**Left:** Art integrated into a building and landscape draws attention to a low impact design (LID) for on-site stormwater management.  
**Near Right:** Public art combined with stormwater quality / detention in Portland.  
**Far Right:** A low impact design art feature collects water from a roof downspout to reduce flows into the storm drainage system.
Existing Condition: Arkins Court fronts the river corridor and Delgany Street stops at a ‘T’ intersection at 35th Street. The 800 foot-long site fronts Brighton Boulevard, an important gateway corridor to Downtown Denver from I-70.
Alternative 1 is shown with a fully developed park with east-side street frontage along a new Delgany alignment, and the addition of new 34th and 33rd Streets that connect the neighborhood from Brighton Boulevard to the future park. Alternative 1 shows a phase 1 block on the north (foreground, between 34th and 35th Streets) that includes mixed employment and residential at a moderate density ranging from two to five stories. This scale and use mix are consistent with the neighborhood preference for less intensive development along 35th Street that could provide affordable spaces for art studios and other light industrial business uses. The second phase (north block between 33rd and 34th Streets) is assumed to be a longer-term opportunity after residential development currently under construction in the area has been completed and occupied.
Alternative 2 – Fully Utilized C-MX-8 Zoning

This alternative illustrates full utilization of the C-MX-8 zoning entitlement for an eight story building applied in two phases. Phase II is the same in Alternative 1 and Alternative 2. The greater densities and higher price of this alternative could be in direct competition with projects in the area such as Denargo Market. This potential for over-saturation of the market suggests that this alternative is more of a mid to long-term development opportunity in the next 10 to 15 years.

First Phase (north block):
- 275 Residential Units (251,000 GSF)
- 10,000 GSF Retail / Restaurant / Gallery renovation of existing building
- 265 parking spaces in a two level parking garage.

Second phase (south block):
- 250 Residential Units
- 14,000 GSF Retail / Restaurant / Gallery
- 270 parking spaces in a multi-level garage
This rendering of Alternative 2 depicts full utilization of the C-MX-8 (commercial mixed use, eight-story) zoning for an eight-story building in Phases I and II. Market demand for this higher density residential mixed use application may be 10 to 15 years out as a longer-term development opportunity, compared to the flex space commercial Phase I of Alternative 1 that represents a near to mid-term opportunity.
**SECTION 3. RIVER NORTH CATALYTIC SITE**

**Relationship to the River**
The section drawing above further illustrates how new development and a new park could relate to the river. The riverside park is shown with Arkins Court realigned to the Delgany alignment in order to directly connect the park to the River, and to provide access and observation to the ‘rear’ portion of the park. The new park would provide the benefits of exceptional southwestern views of the mountains, a direct view of the River as well as a recreational amenity at its front door. The development would increase safety by putting ‘eyes on the park’, and generating activity. Great Outdoors Colorado grant funding used to purchase the park land allows for some of the typical right-of-way uses such as the new street’s park-side sidewalk, landscaping and on-street parking. The grant restricts non-park right-of-way uses such as a vehicle travel lane in the street on the park land.

**Stormwater Management Opportunity**
Although the grant funding also restricts use of the park for surface water quality and/or detention, the new park could incorporate subsurface stormwater detention from the catalyst site and surrounding area, allowing for more development density on private property. This increase of value for private development could provide some of the funding necessary to develop the park through a payment-in-lieu fee, or direct negotiation with the city.

- Consolidated detention within a public space would replace the need for on-site detention on nearby development.
- Consolidated green infrastructure located off-site could strengthen urban design goals by increasing density and walkability by creating more attractive recreational facilities.
- Consolidated green infrastructure can be less expensive to construct and maintain, and more effective at removing pollutants and managing flooding compared to multiple stormwater facilities located on individual parcels.
- Stormwater fees captured from developers could be used to construct and maintain district stormwater facilities while also funding park and public space.
<table>
<thead>
<tr>
<th>Total Investment</th>
<th>$73,170,000</th>
<th>Includes construction costs, tenant improvements, and personal property such as computer systems and equipment.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction Jobs</td>
<td>217</td>
<td>Total temporary employment related to site work and building construction.</td>
</tr>
<tr>
<td>Employment</td>
<td>188</td>
<td>Potential number of jobs located in new office, flex-space or retail buildings.</td>
</tr>
<tr>
<td>Average Annual Wage</td>
<td>$63,400</td>
<td>Based on average employment wages by industry in Denver.</td>
</tr>
<tr>
<td>New Housing Units</td>
<td>333</td>
<td>Includes a mix of studio, 1 bedroom and 2 bedroom units.</td>
</tr>
<tr>
<td>New On-site Residents</td>
<td>633</td>
<td>Based on Denver’s multi-family household size average of 1.9 persons per household.</td>
</tr>
<tr>
<td>Annual Household Income</td>
<td>$11,172,000</td>
<td>Estimated household income is based on the assumption that housing payments are 30% of total income.</td>
</tr>
<tr>
<td>Annual Taxable Goods Purchased in Denver</td>
<td>$2,396,000</td>
<td>Projection based upon Denver residents spending 28% of their household consumer income on taxable goods, and purchasing 77% of taxable goods from retail stores in the City.</td>
</tr>
<tr>
<td>Sales Tax Revenues(^1)</td>
<td>$238,400</td>
<td>1. Includes a) sales tax from annual taxable goods purchased in Denver by on-site residents, b) sales tax revenues generated from onsite retail sales (at $360 per s.f. with 60% of taxable retail sales, and c) business spending on taxable materials. 2. Total property taxes of residential and commercial development. 3. Denver’s monthly Occupational Privilege Tax in Denver is $9.75 per employee, with $5.75 paid by the employer and $4.00 paid by the employee.</td>
</tr>
<tr>
<td>Property Tax Revenues(^2)</td>
<td>$252,800</td>
<td></td>
</tr>
<tr>
<td>Occupational Privilege Tax(^3)</td>
<td>$22,000</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>$513,000</td>
<td></td>
</tr>
</tbody>
</table>

**Table 3.1 Fiscal and Economic Benefits**

Fiscal and economic impact projections were generated in the SiteStats™ model for Alternative 1: C-MX-8 Less Than Full Buildout - Phases I and II. An investment of over $73M could result in 217 temporary construction jobs, and 188 permanent jobs related to the flex space and retail commercial areas. The projected average annual wage of $63,400 is based on Denver’s average wages for these industry sectors.

With an estimated household income of $35,500, the 655 new on-site residents are projected to spend about 20% of their household consumer income on goods sold in Denver, resulting in the purchase of about $2.4M of taxable goods within Denver City Limits. The annual sales tax revenue generated from this consumer spending coupled with on-site sales and business spending is estimated at $238,400. Property tax revenues for on-site residential and commercial uses are estimated at $252,800. This figure is based on Denver’s 28.419 mill levy for general fund and governmental funds, and does not include additional revenues within the city-wide average mill levy of 74.954 that includes all tax districts.

*Left: Installation of underground stormwater detention pipes.*
### Table 3.2 - Redevelopment Feasibility

A summary of the cost proforma analysis for Alternative 1, showing a potential total investment and return on investment for both phases. The complete analysis is provided in 2012 dollars, and shows that mixed use building in both phases is economically feasible, with the assumption that acquisition of multiple parcels is feasible. Land acquisition costs (Row 1) are based on present day assessed values. Site improvements (Row 2) includes environmental remediation of assumed conditions.
### Table 3.3 - River North Action Plan

*This implementation guide assumes voluntary participation by property owners to sell property or combine into a single ownership entity for future development. The timing of the implementation steps below are therefore dependent upon the interests of property owners and their collective will to pursue redevelopment.*

<table>
<thead>
<tr>
<th>Task</th>
<th>Type</th>
<th>Timing</th>
<th>Lead</th>
<th>Potential Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Property assemblage</td>
<td>Site Improvement</td>
<td>Short</td>
<td>Developer, Land owners</td>
<td>Private Investment</td>
</tr>
<tr>
<td>Conduct environmental assessment of all lands</td>
<td>Environmental</td>
<td>Short</td>
<td>Developer, Land owner or City</td>
<td>Private Investment, EPA Assessment Grants, State and Federal Targeted Brownfields Assessments *</td>
</tr>
<tr>
<td>Conduct risk-based environmental remediation through the state’s voluntary cleanup program appropriate for the intended redeveloped land use.</td>
<td>Environmental</td>
<td>Short-Mid</td>
<td>Developer</td>
<td>Private investment, State &amp; Federal Cleanup Grants **</td>
</tr>
<tr>
<td>Design surface and sub-surface detention in the park for adjoining development in return for park land dedication and funding</td>
<td>Public Improvement</td>
<td>Short-Mid</td>
<td>City</td>
<td>CIP, City Staff resources ***</td>
</tr>
<tr>
<td>Establish design standards for stormwater quality treatment in the right-of-way</td>
<td>Regulatory</td>
<td>Short-Mid</td>
<td>City</td>
<td>CIP, City Staff resources (in-kind)</td>
</tr>
<tr>
<td>Establish stormwater district and funding mechanism to allow for private stormwater detention on public or district-owned lands</td>
<td>Regulatory</td>
<td>Short-Mid</td>
<td>City</td>
<td>CIP, City staff resources, special improvement district bonds, Federal or State grants</td>
</tr>
<tr>
<td>Consider art installations by local RiNo artists as part of site planning, programming and feasibility analysis</td>
<td>Coordination</td>
<td>Short-Mid</td>
<td>Developer</td>
<td>n/a</td>
</tr>
<tr>
<td>Design the Arkins Court realignment and negotiate the dedication of right-of-way from adjoining property owners</td>
<td>Public Improvement</td>
<td>Short-Mid</td>
<td>City</td>
<td></td>
</tr>
<tr>
<td>Construct the park and incorporate subsurface detention in the park for adjoining development in return for park land dedication and funding.</td>
<td>Public Improvement, Coordination</td>
<td>Short-Long</td>
<td>City, Developer</td>
<td>In-lieu stormwater fees</td>
</tr>
<tr>
<td>Construct phase 1 of the development</td>
<td>Site Improvement</td>
<td>Short-Long</td>
<td>Developer</td>
<td>Private Investment ***</td>
</tr>
<tr>
<td>Construct phase 2 of the development</td>
<td>Site Improvement</td>
<td>Long</td>
<td>Developer</td>
<td>Private Investment ***</td>
</tr>
</tbody>
</table>

* State and EPA Targeted Brownfields Assessments can be conducted for eligible non-profit and government entities at eligible sites. As indicated in the report, one of the report recommendations is for the City to obtain an EPA brownfields assessment grant focused on the river corridor from which environmental site assessment activities could be conducted on behalf of eligible for-profit entities such as bonafide prospective purchasers and eligible property owners at eligible sites.

** EPA cleanup grants, Colorado 1306 cleanup fund grant, Colorado Brownfields Revolving Loan Fund (CBRLF) grant are available for eligible non-profit or local government entities. CBRLF provides low interest rate loans for cleanup activities to all eligible entities including for-profit entities.

*** Community Development Block Grant Program (CDBG), New Markets Tax Credit Program (NMTC), Tax Increment Financing (TIF) as possible funding sources for infrastructure development, project construction and may include environmental cleanup funding. For-profit entities are only eligible for NMTC and TIF.
SECTION 3. RIVER NORTH CATALYTIC SITE
4. Water Street Catalytic Site
Water Street Opportunity Area

Water Street is the location of some of Denver’s most sought after public and private destinations that were established as part of the Denver Central Platte Valley redevelopment in the 1990’s. These include the Downtown Aquarium, the Children’s Museum, the REI Flagship Store and Confluence Park where the Cherry Creek Bike Path meets the South Platte River Trail. Highly visible on the opposite side of the river is Elitch Gardens, a downtown amusement park and the Pepsi Center, home of the Denver Nuggets and Colorado Avalanche. The Water Street area lies between Downtown and I-25 at the base of the Jefferson Park neighborhood, making it an attractive infill opportunity.

The area was historically a mix of industrial and residential development. The Zang Brewery complex operated next to the river until the early 20th century with a residential neighborhood to the north that included employee housing for the Brewery (see aerial image below). Planning and construction of I-25 (also known as the Valley Highway) in the late 1950’s resulted in the replacement of a number of existing homes, and isolated some of the remaining

An 1933 aerial image showing homes and businesses that were impacted by I-25 (black lines). The Water Street study area is shown in red.
Water Street Opportunity Area, an underutilized site amid Denver’s successful riverfront redevelopment efforts in the Central Platte Valley. Image Source: Bing Maps
homes between the freeway and Water Street. For the next few decades, the riverside industry continued to deteriorate and houses in the residential area became rentals in a holding pattern for redevelopment. In the 1980’s the majority of the remaining buildings and homes were demolished and the site was converted in the 1990’s into a surface parking area for the aquarium.

Public Investments
Planning and redesign of the nearby Confluence Park are underway, including an update of the bike ramps, bridges and park program to meet increasing demand for this site (See Appendix F). The River North Greenway Master Plan recommends a future pedestrian bridge over the South Platte River that would connect Fishback Park and Elitch Gardens (Point A in the site image). Although funding has not been identified for this bridge, this new connection would make the Pepsi Center / Elitch Gardens light rail station more accessible to new residents and visitors on the north / west side of the river.

The Catalytic Site
While busy and active during the daytime hours - especially during peak tourism in the summer - Water Street activity dies down during the evening after the aquarium closes, and very few people are seen in the area. The aquarium’s 8-acre, 800-stall parking lot is on the north side of Water Street, and is rarely more than two thirds full on a busy day. A portion of the lot is leased to the REI flagship store for overflow parking. Although this area has been significantly improved since its mid-century decline, the full vision depicted in the 1991 Central Platte Valley Plan has not been achieved. Additional investment and infill development could add more energy, vibrancy and over-all success to the area. Blueprint Denver identifies the site as an area of change, and the Central Platte Valley Plan recommends mid-rise residential mixed use. This somewhat forgotten opportunity is compelling given the park and trail amenities that are already in place, and given the site’s close proximity to Denver’s prominent Lower Downtown district (LoDo) and Commons Park further downstream to the northeast.

Introducing residential infill development could transform the quiet evening hours...
into a more vibrant place with more people and a greater variety of daytime and evening activity. Without the presence of people into the evening hours, the greenway feels dark, empty and less safe for public use. New residents could greatly benefit from a location next to some of Denver’s most sought after public and private destinations, including the existing parks and greenway. Located between the edge of Downtown and the Lower Highland and Jefferson Park neighborhoods, the potential to complete a mixed use urban neighborhood near downtown is unmatched in the South Platte Corridor Study. New Water Street improvements and varied building configurations could create an active street with opportunities for ground floor retail, as well as courtyards and festivals in the park that can further activate the site.

Public Input
Participants at the neighborhood workshop responded enthusiastically to the preliminary infill development concepts that were introduced. The design team was encouraged to consider the future function and safety of an existing cycling route along Water Street from Jefferson Park / Highlands to Downtown, as local traffic and pedestrian activity would increase considerably with new development. Green spaces along the right-of-ways for water quality enhancement were supported for the sustainability value as well as the aesthetic value. These areas could relate visually and thematically to the greenway and park across the street.

Preferred Alternative
The preferred alternative demonstrates how Water Street could be activated with mixed use development near existing amenities and downtown Denver. Several mixed use buildings are oriented along the street with many units enjoying an open view of the river, with downtown or the mountains in the background. Parking areas are oriented to the rear of these buildings, and serve as a sound barrier and visual buffer between I-25 and Water Street. A new parking garage with retail fronting the street is proposed on the southwest end of the site to serve the aquarium, which would make the infill development on the remaining 7 acres of the site possible.

• An improved streetscape and new residential population could help to extend the activity from REI to Water Street and into the Jefferson Park Neighborhood, providing increased economic activity and a greater use of Fishback Park.
• An infill development along Water Street is potentially a near-term opportunity given its single ownership structure, its location adjacent to existing neighborhoods and close proximity to previous infill projects.
• Stormwater could be detained under private streets and beneath surface parking lots tucked behind buildings. Water quality could be enhanced within the development landscaping areas and within the right-of-way in tree lawns.
• Water Street could become a more active commercial and pedestrian oriented street with the addition of residential and ground-level retail development. Streetscape improvements would have the opportunity to make meaningful connection from the development to popular destinations.
SECTION 4. WATER STREET CATALYTIC SITE

Development Yields
- 384 Residential Units (73,000 GSF)
- 12,450 GSF Commercial / Retail
- 295 Structured parking spaces
- 32 Surface parking spaces

A. Restaurant: 4,500 s.f.
B. Surface parking
C. Area not studied
D. Retail/restaurant: 7,000 s.f.
E. Parking garage: 412 spaces
F. Residential mid rise: 157 Units
G. Townhomes (wrapped): 51 Units
H. Corner retail/restaurant: 945 s.f.
I. Parking garage: 253 spaces
J. Residential mid rise: 112 units
K. Townhomes (wrapped): 26 units
L. Podium garage: 140 spaces
M. Apartments: 38 units
N. Surface & tuck-under parking: 48 spaces
**Lower Left:** Existing site condition shows an expansive 8-acre parking area between I-25 and Water Street. The small parcel to the west (A) is a vacant lot owned by the City of Denver. REI and Confluence Park are visible in the background beyond Speer Boulevard.

**Below:** The proposed architectural massing would help to define the street, suggesting an activated river corridor with ground level retail and residential units facing the street (Buildings A and B). Commercial uses are proposed directly facing the Aquarium, including a retail building with a parking garage to the rear that replaces the former surface parking areas (Structure C). Residential buildings with a small amount of retail are proposed on the eastern edge of the site (Buildings D, E & F).

New side streets would create an interior fire lane and access to parking areas and side-facing walk-up residential units. Landscaped areas along the streets would provide areas for ‘linear rain gardens’ that could filter out stormwater pollutants while providing a visual amenity. These water quality features could be designed with plant materials and trees to visually relate to the park across the street, and to reinforce the theme of clean water flowing into the river.
Reference Images

Images representing possible building types and placemaking opportunities applicable to the river corridor were provided at public workshops to serve as a reference to participants. A worksheet was provided with specific questions about development forms, styles, intensities, and riverside activities. Worksheet questions invited reference to the image numbers, resulting in a blend of written comments and images in support of a particular theme or idea. These comments guided the consultant team toward completion of preferred alternative, such as the final Water Street concept depicted on the opposing page.

Relationship to the River

(Right) A detail of the residential mixed use buildings between Speer Boulevard (background) and the aquarium parking garage (not visible). A double row of street trees would create a unique street identity while adding shade and comfort to this key pedestrian zone. Portions of this wide pedestrian sidewalk zone and the courtyard space (within the building in the foreground) could be converted to rain garden planters that filter stormwater pollutants from the drives and street, while adding to the beauty of an enhanced Water Street corridor.

Street trees on both sides of Water Street provide shade and visual appeal for a unique identity and inviting pedestrian experience near the river. Changes in pavement patterns designate pedestrian crossing areas, reduce traffic speeds to make the street more ideal as a shared cycling route. A designated cycling pathway connects the bike route on Water Street to the greenway trail.

Existing Relationship to the River
The Aquarium parking lot spans a distance of over 1,000 ft along the north side of Water Street. Street improvements from the 1990’s development of the Aquarium include a detached 5-foot sidewalk, a tree lawn with street trees, and landscaping between the sidewalk and the parking lot that provides a partial visual screen. While the street is in good condition and still feels relatively new, the area appears to be underutilized with an over-supply of parking. This is especially apparent during the evening hours after the Aquarium is closed for business.
Potential Relationship to the River

A key element for successful relationship between infill development along Water Street and the river is the enhanced parkway streetscape, with a pedestrian realm that creates an attractive environment for walking, sitting, shopping and dining. Ground level retail would add vitality to the street while the upper residential stories take advantage of the views and convenient access to the existing park and trail along the river. Stormwater could be captured and enhanced within or next to the right-of-way in rain gardens that provide an attractive visual amenity as part of the streetscape.
### Table 4.1 - Fiscal and Economic Benefits

Fiscal and economic impact projections generated in the SiteStats™ model show a total private investment of over $75M that could result in 225 temporary construction jobs, and 30 permanent jobs related to the retail/restaurant commercial uses. The projected average annual wage of $23,200 is based on Denver’s average wages for this industry sector.

With an estimated household income of $38,500, 755 new on-site residents are projected to spend about 20% of their household consumer income on goods sold in Denver, resulting in the purchase of nearly $3M of taxable goods within Denver City Limits. The annual sales tax revenues generated from this consumer spending coupled with on-site sales and business spending is estimated at $203,000. Property tax revenues for on-site residential and commercial uses estimated at $182,300. This figure is based on Denver’s 28.419 mill levy for general fund and governmental funds, and does not include additional revenues within the city-wide average mill levy of 74.954 that includes all tax districts.
Table 4.2 - Redevelopment Feasibility  
A summary of the cost proforma analysis for Water Street infill development, showing a plausible total investment and return on investment for both phases. The complete analysis is provided in 2012 dollars, and shows that mixed use buildings are economically feasible. Land acquisition costs (Row 1) are based on present day assessed values. Site improvements (Row 2) includes environmental remediation of assumed conditions.
**SECTION 4. WATER STREET CATALYTIC SITE**

*Table 4.3 - Water Street Action Plan* This implementation guide assumes voluntary participation by the property owner to initiate any future development. Any development and the timing of suggested implementation steps below is therefore entirely dependent upon the interests of the owner.

<table>
<thead>
<tr>
<th>Task</th>
<th>Type</th>
<th>Timing</th>
<th>Lead</th>
<th>Potential Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shared parking analysis - consider long term parking needs and</td>
<td>Site Planning</td>
<td>N/A</td>
<td>Developer, Land</td>
<td>Private Investment</td>
</tr>
<tr>
<td>potential efficiencies</td>
<td></td>
<td></td>
<td>owners</td>
<td></td>
</tr>
<tr>
<td>Review existing environmental data and conduct assessment for</td>
<td>Environmental</td>
<td>Short</td>
<td>Developer, Land</td>
<td>Private Investment, EPA Assessment</td>
</tr>
<tr>
<td>residential standard</td>
<td></td>
<td></td>
<td>owner</td>
<td>Grants, State and Federal Targeted</td>
</tr>
<tr>
<td>Study increased traffic impacts on Water Street based on new</td>
<td>Site Planning</td>
<td>Short</td>
<td>Developer, City</td>
<td>Brownfields Assessments</td>
</tr>
<tr>
<td>activity. Assure that cycling route needs are accommodated.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Study capacity of existing utilities including water, sewer, power</td>
<td>Site Planning</td>
<td>Short</td>
<td>Developer, City</td>
<td>Private, City Staff Resources</td>
</tr>
<tr>
<td>natural gas, etc.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Study increased demand for existing bus route and explore</td>
<td>Public Improve-</td>
<td>Short</td>
<td>Developer, City,</td>
<td>RTD Service covered by Increased User</td>
</tr>
<tr>
<td>potential of increase of service level during peak demand hours</td>
<td>ment</td>
<td></td>
<td>RTD</td>
<td>fees</td>
</tr>
<tr>
<td>Study feasibility of a future pedestrian bridge over the South</td>
<td>City</td>
<td>Short-Mid</td>
<td>City</td>
<td>Developer, Business Improvement District,</td>
</tr>
<tr>
<td>Platte to connect Water Street to the Existing Pepsi Center Light</td>
<td></td>
<td></td>
<td></td>
<td>City</td>
</tr>
<tr>
<td>Rail Station</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Explore potential of a metropolitan district that could provide</td>
<td>Regulatory</td>
<td>Short-Mid</td>
<td>City</td>
<td>CIP, City staff resources, special</td>
</tr>
<tr>
<td>funding mechanisms to allow for private stormwater detention on</td>
<td></td>
<td></td>
<td></td>
<td>improvement district bonds, Federal or</td>
</tr>
<tr>
<td>public or district-owned lands, and to provide funding for</td>
<td></td>
<td></td>
<td></td>
<td>State grants</td>
</tr>
<tr>
<td>construction and operation of shared parking structures.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conduct risk-based environmental remediation through the state’s</td>
<td>Environmental</td>
<td>Short-Mid</td>
<td>Developer</td>
<td>Private investment, State &amp; Federal</td>
</tr>
<tr>
<td>voluntary cleanup program appropriate for the intended</td>
<td></td>
<td></td>
<td></td>
<td>Cleanup Grants **</td>
</tr>
<tr>
<td>redeveloped land use.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construct development</td>
<td>Site Improvement</td>
<td>Short-Long</td>
<td>Developer</td>
<td>Private Investment ***</td>
</tr>
</tbody>
</table>

* State and EPA Targeted Brownfields Assessments can be conducted for eligible non-profit and government entities at eligible sites. As indicated in the report, one of the report recommendations is for the City to obtain an EPA brownfields assessment grant focused on the river corridor from which environmental site assessment activities could be conducted on behalf of eligible for-profit entities such as bonafide prospective purchasers and eligible property owners at eligible sites.

** EPA cleanup grants, Colorado 1306 cleanup fund grant, Colorado Brownfields Revolving Loan Fund (CBRLF) grant are available for eligible non-profit or local government entities. CBRLF provides low interest rate loans for cleanup activities to all eligible entities including for-profit entities.

*** Community Development Block Grant Program (CDBG), New Markets Tax Credit Program (NMTC), Tax Increment Financing (TIF) as possible funding sources for infrastructure development, project construction and may include environmental cleanup funding. For-profit entities are only eligible for NMTC and TIF.
5. Zuni & Lower Colfax Avenue Catalytic Site
SECTION 5. ZUNI & LOWER COLFAX CATALYTIC SITE

**Zuni & Lower Colfax Opportunity Area**
The Zuni Street east riverfront area lies within a transitioning industrial location in a rare setting along the river where properties directly front the river, as opposed to fronting a street that fronts the river. The introduction of a new light rail line and station provides an opportunity to create a mixed use residential environment that would be within walking distance of two light rail stations. Stations include the existing Auraria West campus stop, and the future Decatur Federal light rail station which opens in April, 2013.

**Current Planning Context**
A separate public engagement and planning process occurred simultaneously with the South Platte Corridor Study for the Sun Valley neighborhood and the Decatur Federal station by the Denver Livability Partnership, made possible through a concurrent Federal Partnership grant funded by HUD’s Sustainable Communities Initiative and DOT’s TIGER II grant program. Detailed study of a catalytic site on the east side of the river complements the more general land use and transportation study of the station area plan. The primary focus of the station area plan is to provide policy recommendations for land use, development intensity, as well as a framework for multi-modal circulation. This plan was adopted by the City on April 22, 2013 to guide future land use, infrastructure investments, and rezoning decisions. The Sun Valley community has the lowest annual household income in Denver at $12,164, and the highest percentage of ethnic or racial minority residents at 92.3%. These citizens have experienced a disproportional share of impacts related to heavy industrial uses and isolation from a disconnected street network near the river.

The existing Sun Valley neighborhood will eventually be relocated into this new neighborhood as a mixed-income community developed by the Denver Housing Authority. The new housing area will replace former heavy industrial uses and be situated closer to the rail station with connected streets, safe walking routes and convenient access to the greenway.

The adopted station area plan and this catalytic site study provide valuable cross reference between higher level policy recommendations, and detailed feasibility study of an important site on the east bank of the river. This dual focus has provided an opportunity to test the ideal building...
The Zuni catalytic site (A) is highlighted below to show its walking distance between two light rail stations. The site is shown within an early concept graphic of the Decatur / Federal Station Area Plan. See www.denvergov.org/decaturfederal for the most current station area planning documents.
height and form to encourage private investment and reuse of the site. It has also helped to determine the recommended land use and greenway recommendations in the plan for the site and surrounding area on the east bank of the river. In response to the favorable public reaction to the findings of this study, the Decatur-Federal plan was adopted with a land use recommendation of transit oriented development for the catalytic site area on the east bank, with a maximum building height of up to 12 stories.

**Existing Conditions**

The east side of the river is an industrial and warehouse commercial district void of any residential development. Some of the buildings are empty and in need of reinvestment, repair or demolition. Former uses include industrial cleaners, auto service, insulation manufacturing and rail sidings. A recent U.S. EPA Targeted Brownfields Assessment (TBA) was conducted on a portion of this site. The results of this assessment informed the study and financial analysis of the catalytic site.

Xcel Energy owns surrounding properties on both sides of the river, including a five story power plant with 200ft smoke stacks, and a system of cooling towers on the east side of the river near 13th Avenue. On the west bank is a dormant tank site with 50 ft tall by 100 ft diameter fuel tanks, and an active transformer lot that lies just to the north of Sun Valley Homes. These features are highly visible and iconic of the area’s industrial character. In December 2012, Xcel announced plans to pursue the decommissioning of the Zuni power plant by 2015, which may open up some property along the river for redevelopment, pending regulatory approval. While the details and timing of these significant changes are not finalized, the transformative nature of these changes is already influencing the local planning efforts and stakeholder interest to introduce mixed use development near the light rail service lines. This approach is likely to result in an adopted plan that could support and encourage future rezoning of some riverfront properties, and provide investor confidence to move for-
ward with development planning.

Public Investments
Recent public investment in light rail and floodway improvements also make the area more attractive for residential and employment mixed use development. The Urban Drainage and Flood Control District recently worked in partnership with the City of Denver to remove 365 acres from the floodplain along the river corridor and Lakewood Gulch confluence (See Appendix F). This improvement allows the West Rail Line to open in 2013 and allows for new development near the river.

The partnership also has significantly transformed Lakewood Gulch from an urban ditch into an important green space with an improved trail and water feature at the confluence with the South Platte River. The natural vegetation in a green space area will also serve to infiltrate runoff water from surrounding impervious areas to improve water quality that enters the river courses.

Public Input
A joint public river-front Focus Group meeting was held for the Decatur Federal station plan and the South Platte Corridor study to invite input on how development should relate to a unique stretch of river where property directly touches the river bank (see image on opposing page). Virtually all other properties along the entire river corridor in Denver are separated from the river by an existing street, highway or rail- way. Invitees included Decatur-Federal plan participants on the west side of the river, and the La Alma/Lincoln Park neighborhood association on the east side. Flyers were circulated to businesses within 1,000 ft of the river on the east bank surrounding the catalytic site. The workshop was attended by about 60 participants, including a mix of residents, property owners and public officials. The workshop activities encouraged discussion of a variety of potential riverfront conditions that could be considered in the area, including:

- Preferred land use: residential, office, commercial / entertainment, industrial / manufacturing / flex space
- Riverfront utilization: private, activity node, private or public or a mix, trail and green space
- Building orientation: front door facing river, back door facing river, double frontage where buildings face the river and opposing street
- Relationship of buildings to the greenway: large setback, moderate setback, minimal setback
- Open space: passive recreation, active recreation, and greenway enhancements
- Open space programming or landscap-
ing applied to residual spaces: examples include volleyball or basketball under freeway viaducts, performance venues, versatile spaces for festivals and gatherings

- River bank treatment: promenade, natural edge and park edge

Following a small group exercise where reference images were discussed and notes recorded, participants supported a variety of riverside conditions and experiences that would create an active and well visited riverfront. These include passive and active recreation experiences, natural and developed edges, public gathering spaces, destinations to attract regional visitors, varying building setbacks, residential and commercial employment land uses, including shopping and dining experiences.

Less support was expressed for light industrial land uses, and no support expressed for privatizing the river front area exclusively for the adjacent development. This critical input served as the basis for design of the catalytic site concept for the South Platte Corridor Study, and greenway and urban design concepts for the Decatur-Federal Station Area planning process.

An early concept graphic from the Decatur—Federal planning process depicting the potential for a variety of river front building types, setbacks, open space activities and recreational experiences. The Zuni site is highlighted to show the relationship of this site to the river front context. See www.denvergov.org/decaturfederal for the most current station area planning documents.
Preferred Alternative

The Zuni catalytic concept would transform the site into an exciting redevelopment project that is oriented to the river. A pedestrian promenade would provide public access to the river front (A), and also serve as a fire lane. The new building fronting the river (B) would provide walk-up residential or commercial units on the ground level with a small entry courtyard (C) that would open to the promenade. Upper story residential units would look out over the promenade, the river, and the recently improved Lakewood Gulch to the west (D). The existing three-story brick and timber frame warehouse building fronting Zuni (E) would be repurposed into a residential building with ground level retail or restaurant. Another mixed use building would front Lower Colfax and the river to the north (F) providing opportunities for a ground floor restaurant overlooking the river with residential above. A two-story office building with a double parking deck would fill the lower portion of the site next to the light rail line (H). The existing building on the corner (G) is a multi-story self storage facility that is likely to stay in place. 14th Avenue is shown as a pedestrian-only corridor and fire lane (I) that would include seating, street trees, lighting and rain gardens to collect and enhance stormwater quality. This would create an inviting approach to the river where a plaza and stair seating would create the opportunity to launch a kayak or eat lunch by the river.

Development Yields

- 340 parking spaces
- 12,000 GSF Retail/Restaurant
- 51,600 GSF Office
- 320 Residential Units
SECTION 5. ZUNI & LOWER COLFAUX CATALYTIC SITE

(Above) Existing Condition: Aging buildings show signs of extensive industrial use from the late 19th Century to present. The riverbank is owned by the City of Denver, and was recently restored with native vegetation for bank stabilization and wildlife habitat. The newly constructed light rail bridge is shown in the foreground next to the recently improved Lakewood Gulch / Platte River confluence.

(Right) The Zuni site transformation is shown next to an operating light rail line and across from the improved Lakewood Gulch floodplain with mature landscaping. Important urban design considerations include a) a pedestrian zone / fire lane that connects Zuni to the river with a stepped plaza that provides for interaction with the river, b) a pedestrian promenade between the private building entrance spaces and the river, c) fully enclosed parking, and d) varied building heights along the river that would provided views of downtown from the Lakewood Gulch trail, e) renovation and reuse of an existing brick and heavy timber structured warehouse.
SECTION 5. ZUNI & LOWER COLFAX CATALYTIC SITE

Existing Relationship to the River
The property fronting the east (right) side of the river does not provide public access to the river front. An existing private service drive provides access to the interior of the site for parking, shipping and delivery. A public greenway trail currently exists on the west side of the river.

Potential Relationship to the River
Three new zones could be created between new residential mixed use buildings fronting the river. These include 1. a possible new greenway trail closer to the river bank on City-owned property, 2. a semi-public river promenade (public access easement on private land), and 3. a private zone where ground level residential could create enclosed entry courtyards, or a corner business could invite customers into the building through a more open courtyard area. The river promenade zone is shown at 45 ft wide, and the private zone at 30 ft for a total building setback distance of 75 feet from the river bank.
### Table 5.1 - Redevelopment Feasibility

Summary of the cost proforma analysis for Zuni & Old Colfax Avenue infill development, showing a plausible total investment and return on investment. The complete analysis is provided in 2012 dollars, and shows that mixed use building in both phases is economically feasible, with the assumption that acquisition of multiple parcels is feasible. Site improvements (Row 2) include environmental remediation of assumed conditions.

<table>
<thead>
<tr>
<th>Item</th>
<th>Total Cost All-In: HC&amp;SC</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land &amp; Closing</td>
<td>$3,000,000</td>
<td>Listing Price</td>
</tr>
<tr>
<td>Site Improvements</td>
<td>$2,500,000</td>
<td>Includes demo, remediation, utility upgrades, roadway and stormwater improvements.</td>
</tr>
<tr>
<td>Building 1/Phase I</td>
<td>$13,500,000</td>
<td>Hard &amp; Soft Costs. 120 affordable (55% AMI) units. Stick construction.</td>
</tr>
<tr>
<td>Building 2/Phase II</td>
<td>$24,000,000</td>
<td>Hard &amp; Soft Costs</td>
</tr>
<tr>
<td>Office: Core &amp; Shell</td>
<td>$4,644,000</td>
<td>220 market rate/mixed income units. Stick construction.</td>
</tr>
<tr>
<td>Office: TI</td>
<td>$1,032,000</td>
<td>Incubator space; very little tenant improvement</td>
</tr>
<tr>
<td>Retail: Core &amp; Shell</td>
<td>$390,000</td>
<td></td>
</tr>
<tr>
<td>Retail: TI</td>
<td>$150,000</td>
<td></td>
</tr>
<tr>
<td>Restaurant: Core &amp; Shell</td>
<td>$540,000</td>
<td></td>
</tr>
<tr>
<td>Restaurant: TI</td>
<td>$330,000</td>
<td></td>
</tr>
<tr>
<td>Parking</td>
<td>$5,780,000</td>
<td>Structured for full build-out. Surface for Phase I.</td>
</tr>
<tr>
<td>Total</td>
<td>$55,866,000</td>
<td></td>
</tr>
<tr>
<td>Contingency/Placemaking</td>
<td>$2,793,300</td>
<td>7%</td>
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<tr>
<td><strong>TOTAL DEVELOPMENT COSTS</strong></td>
<td><strong>$58,659,300</strong></td>
<td></td>
</tr>
</tbody>
</table>

5-year Internal Rate of Return 15%-25% Depends upon market conditions for debt & equity

- Debt Assumption 1: 1. Tax Exempt Bonds (4% Low Income Housing Tax Credits)
- Debt Assumption 2: 2. Section 108 Loan, 3. Traditional Debt
- Debt Assumption 3: Equity Assumptions: A. 4% LIHTC, B. TIF
- Debt Assumption 4: 3. Historic Tax Credits (older warehouse buildings)
- Debt Assumption 4: 4. Grants (environmental cleanup & NSP)
- Stabilized Cash-on Cash 12% Varies

The complete analysis is provided in 2012 dollars, and shows that mixed use building in both phases is economically feasible, with the assumption that acquisition of multiple parcels is feasible. Site improvements (Row 2) include environmental remediation of assumed conditions.
### Table 5.2

**Fiscal and Economic Benefits**

Fiscal and economic impact projections generated in the SiteStats™ model show a total private investment of over $84M that could result in 252 temporary construction jobs, and 57 permanent jobs related to the proposed retail and office commercial uses. The projected average annual wage of $48,400 is based on Denver’s average wages for this industry sector.

With an estimated household income of $35,500, 629 new on-site residents are projected to spend about 20% of their household consumer income on goods sold in Denver, resulting in the purchase of nearly $2.3M of taxable goods within Denver City Limits. The annual sales tax revenues generated from this consumer spending coupled with on-site sales and business spending is estimated at $179,400. Property tax revenues for on-site residential and commercial uses estimated at $212,840. This figure is based on Denver’s 28.419 mill levy for general fund and governmental funds, and does not include additional revenues within the city-wide average mill levy of 74.954 that includes all tax districts.

<table>
<thead>
<tr>
<th>Table 5.2 Fiscal and Economic Benefits</th>
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<tbody>
<tr>
<td><strong>Total Investment</strong></td>
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<tr>
<td><strong>Construction Jobs</strong></td>
</tr>
<tr>
<td><strong>Employment</strong></td>
</tr>
<tr>
<td><strong>Average Annual Wage</strong></td>
</tr>
<tr>
<td><strong>New Housing Units</strong></td>
</tr>
<tr>
<td><strong>New On-site Residents</strong></td>
</tr>
<tr>
<td><strong>Annual Household Consumer Income</strong></td>
</tr>
<tr>
<td><strong>Annual Taxable Goods Purchased in Denver</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Sales Tax Revenues</strong></th>
<th>$179,400</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Property Tax Revenues</strong></td>
<td>$212,840</td>
</tr>
<tr>
<td><strong>Occupational Privilege Tax</strong></td>
<td>$6,700</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>$400,000</td>
</tr>
</tbody>
</table>

1. Includes a) sales tax from annual taxable goods purchased in Denver by on-site residents, b) sales tax revenues generated from onsite retail sales (at $360 per s.f. with 60% of taxable retail sales, and c) business spending on taxable materials. 2. Total property taxes of residential and commercial development. 3. Denver’s monthly Occupational Privilege Tax in Denver is $9.75 per employee, with $5.75 paid by the employer and $4.00 paid by the employee |

* State and EPA Targeted Brownfields Assessments can be conducted for eligible non-profit and government entities at eligible sites. As indicated in the report, one of the report recommendations is for property owners at eligible sites.
This implementation guide assumes voluntary participation by multiple property owners to sell property or combine ownership into a single shared entity to position an assemblage for future development. The timing below is therefore entirely dependent upon the interests of property owners and their collective will to pursue redevelopment.

<table>
<thead>
<tr>
<th>Task</th>
<th>Type</th>
<th>Timing</th>
<th>Lead</th>
<th>Potential Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finalize phasing and funding strategies</td>
<td>Site Improvement</td>
<td>Short</td>
<td>Developer, Land owners</td>
<td>Private Investment, Private non-profit</td>
</tr>
<tr>
<td>Develop an environmental remediation strategy based on existing</td>
<td>Environmental</td>
<td>Short</td>
<td>Developer, Land owner</td>
<td>Private Investment, EPA Assessment Grants, State and Federal Targeted Brownfields Assessments *</td>
</tr>
<tr>
<td>Phase I and Phase II environmental assessments</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Study increased traffic impacts on Zuni Street based on potential</td>
<td>Study / Site Planning</td>
<td>Short</td>
<td>Developer, City</td>
<td>Private, City Staff Resources (in-kind)</td>
</tr>
<tr>
<td>new growth. Assure that pedestrian and cycling connectivity to rail</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>stations is addressed and assess needs for sidewalk and traffic</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>signal upgrades.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coordinate with RTD to integrate adjacent property into a</td>
<td>Site improvement</td>
<td>Short</td>
<td>Developer, RTD, City</td>
<td>Private, RTD, City Staff</td>
</tr>
<tr>
<td>coordinated site plan.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conduct risk-based environmental remediation through the state’s</td>
<td>Environmental</td>
<td>Short-Mid</td>
<td>Developer</td>
<td>Private investment, State &amp; Federal Cleanup Grants**</td>
</tr>
<tr>
<td>voluntary cleanup program appropriate for the intended</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>redeveloped land use.</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction (in one or two phases)</td>
<td>Site Improvement</td>
<td>Mid -Long</td>
<td>Developer</td>
<td>Private Investment***</td>
</tr>
</tbody>
</table>

* State and EPA Targeted Brownfields Assessments can be conducted for eligible non-profit and government entities at eligible sites. As indicated in the report, one of the report recommendations is for the City to obtain an EPA brownfields assessment grant focused on the river corridor from which environmental site assessment activities could be conducted on behalf of eligible for-profit entities such as bonafide prospective purchasers and eligible property owners at eligible sites.

** EPA cleanup grants, Colorado 1306 cleanup fund grant, Colorado Brownfields Revolving Loan Fund (CBRLF) grant are available for eligible non-profit or local government entities. CBRLF provides low interest rate loans for cleanup activities to all eligible entities including for-profit entities.

*** Community Development Block Grant Program (CDBG), New Markets Tax Credit Program (NMTC), Tax Increment Financing (TIF) as possible funding sources for infrastructure development, project construction and may include environmental cleanup funding. For-profit entities are only eligible for NMTC and TIF.
A joint public river-front Focus Group meeting was held in May 2012 for the Decatur Federal station plan and the South Platte Corridor study planning processes. The meeting activities invite input on how development should relate to a unique stretch of river where property directly touches the river bank.
6. Alameda Avenue Catalytic Site
Alameda Avenue Study Area

The Alameda study area is part of an existing light industrial district at the center of the river corridor. Services and industry sectors include contracting, printing, hardware and lumber supplies, stone distribution, carpet and tile, and many others. The City’s tax base is supported by the property and sales tax revenues generated from these properties. Much of this area along the west bank of the river was historically operated as a landfill, which is estimated to range in depth from 20 to 40 feet.

In contrast to the other opportunity areas, the west side of the river at Alameda is not likely to transition from industrial to mixed residential and commercial uses. This is due to the predominant industrial uses in the area and the great distance and difficulty of the walking route to the existing light rail station. Mixed use projects are being planned adjacent to the Alameda light rail station where walking and cycling to the station are more convenient and desirable. As shown in the area diagram (on the opposing page), light rail service is within a ½ mile as the crow flies, but not as the pedestrian walks or cyclist bikes. This route is dominated by intensive automobile and truck travel, with a significant impediment to walking in major freeway interchange intersections at I-25 / Sante Fe and Alameda. The stretch where Alameda passes under a railway bridge near the light rail station is perhaps the most challenging with only one attached sidewalk on the north side of the street.

Public Investments

To the south of the area is Johnson Habitat Park, one of the current focus areas for river implementation by the Greenway Foundation and Denver Parks and Recreation (see page 24). This park will be redesigned and reworked to become a natural area with outdoor educational and campground activities for youth programs, including scouting and other organizations (See Appendix F). The native areas will help to absorb rainfall and reduce stormwater runoff and associated pollutants into the river.

Another possible greenway enhancement is a future phase for the reconstruction associated with I-25 and the Alameda overpass, located just north of Alameda on the west side of the river. This former commercial property is the current staging area for con-
Although the Alameda light industrial site is within a half mile of the Alameda light rail station, the walking route along the I-25 interchange and under the existing railways is not accessible or desirable for frequent pedestrian activity. Image Source: Bing Maps
construction equipment during CDOT’s phase I reconstruction of I-25 and the Alameda Bridge (see Area A on page 77 graphic). Following CDOT’s construction activity, this triangular 1.3-acre site and a portion of South Platte River Drive from Alameda to Cedar Avenue will be converted to a green space water quality / detention area next to the river.

The Catalytic Site
This 11-acre site is roughly the equivalent of 2 1/2 city blocks that lines about one quarter of a mile along South Platte River Drive. The site includes a mix of larger commercial buildings that date from the late 1950’s to the mid - 1980’s, which are surrounded by asphalt parking and loading areas that extend to the adjacent streets. The building uses include light industrial, office, and a church that is located on the southeast corner of the site.

The church operates a small charter school during the day, and draws about 150 patrons for Sunday services and select weeknight activities. Most of the commercial properties are vacant, and seem to be slow in attracting new tenants. Property owners expressed an interest to explore reuse strategies for the site but were not supportive of any redevelopment alternatives.

Public Input
Opinions about the potential of this site were collected at a public workshop and at a presentation made to the Athmar Park Neighborhood meeting. Common themes of feedback include 1. a desire to see some investment in the site to increase the beauty and vibrancy of the area, 2. to add green vegetation and landscaping areas along the streets and within the site, and 3. to introduce commercial uses that might relate to potential growth of greenway activity, such as a café or bike shop.

Preferred Alternative
A reuse and reinvestment strategy was developed that is consistent with the owners’
preference to explore new uses for the existing buildings, and to explore more efficient use of parking areas for mixed commercial and light industrial use. The overall goal is to position the area to be more competitive in today’s commercial / light industrial market, and to prevent further decline on the site. Reinvestment could attract specialized uses and encourage surrounding infill development of more commercial, industrial, even mixed residential uses as allowed by current zoning.

The following strategies could be pursued by the collective ownership on the block to develop a cohesive site theme, and position the properties to be more competitive in today’s expanding light industrial market.

- Landscaped areas and walkways could be introduced between parking areas and along streets. Some of the green areas could be established as porous landscape rain gardens that absorb stormwater and remove pollutants before releasing runoff to the South Platte River (see page 78).
- Although the site is separated from the river by South Platte River Drive, the addition of green areas with street trees and site vegetation would create a strong visual relationship between the site and the river.
- Architectural facades could be added to enhance the appearance and marketability of the buildings. Enhanced entrances, pronounced building corners, new entrances, windows (real or implied), integrated signage areas could improve the building relationships to the street, and to each other.
- Property owners could work together to attract a new tenant mix that could benefit from shared parking agreements. For example, the church’s peak uses are on Sunday and select weekend evenings. The underutilized parking area during weekday business hours could be leased by commercial uses on the site, and vice versa.
- Property owners could explore business clusters that could benefit from other shared facilities, including food preparation industries, shipping and handling companies, printing and light assembly.
- A unified campus approach could allow for the church to lease or purchase properties as its membership and programs expand. The site could also be converted to a private school campus.
- Johnson Habitat Park program areas could be reserved for use by the church’s educational and religious programs.
The existing condition of the Alameda block shows industrial and institutional buildings surrounded by parking areas that blend into the surrounding streets.
The Alameda site shown with building façade, landscape and streetscape improvements. The addition of green landscaping could help the site portray a new image and better relate to the river greenway and nearby Johnson Habitat Park.
SECTION 7. ALAMEDA AVENUE CATALYTIC SITE

Existing Relationship to the River
The site is paved with parking and loading areas that blend into the adjacent paved surface of South Platte River Drive.

Potential Relationship to the River
Landscaped areas and walkways introduced between parking areas and the street could include porous landscape rain gardens that absorb stormwater and remove pollutants before releasing runoff to the South Platte River. The addition of green areas with street trees and site vegetation creates a stronger visual relationship between the site and the river.
7. Evans Avenue Catalytic Site
Evans & Grant Frontier Park

The Evans catalytic site lies within the Overland neighborhood in south-central Denver, the City’s first recorded settlement in 1858. The residential area is divided by a major highway (Santa Fe Drive) and railway corridor that replaced some of the early residential with transportation with industrial uses on the east side. The industrial areas are characterized by multiple, long-term industrial activity that involves paint shops with potential long-term solvent uses, fabrication, construction yards and light manufacturing. The area is also impacted by a known off-site chromium groundwater plume that is currently being mitigated under State regulatory supervision.

In 2000, the T-REX light rail and freeway project added a light rail station to this corridor with a small park-n-ride on the east side of the railway. The Overland neighborhood now has rail transit service that connects north to downtown Denver and south to the neighboring cities of Englewood, Centennial and Littleton.

An Evans Station Area Plan was adopted in 2009 with recommendations for new mixed used infill and redevelopment for areas within a half mile of the station. Properties recommended for transit oriented development include aging industrial areas near the rail station, properties fronting Evans Avenue and other arterial streets, and existing commercial properties fronting the river. The mixed use areas range from three to five stories, and are reflected in Blueprint Denver as areas of change.

To further encourage investment in the neighborhood and generate more transit ridership, the plan also recommends an option to convert single-unit homes into two-unit homes in the traditional residential neighborhoods.

As with other station area plans, many properties surrounding the station were rezoned in June 2010 to encourage private investment in transit-oriented development. A new five-story mixed use development is being built across from the station that will provide affordable and market rate housing.

Contained within the west side of Santa Fe Drive and the river to the west is a small residential pocket that lies within a quarter to half mile walking distance from the Ev-
Evans Avenue crosses the river near the cross alignment of Huron / South Platte River Drive. A small pocket of retail and light industrial development was built in the 1960’s directly fronting the river on the east bank in what is otherwise a small residential neighborhood. The west side of the river is stable industrial with little to no residential development. Two parks book-end this mix of commercial industrial and vacant lots, with Pasquinel’s Landing to the north, and Grant Frontier Park to the south. Image Source: Bing Maps
ans rail station. However, walking or biking to the station has been described by residents as an uncomfortable experience due to the limited sidewalk width that is provided on only one side of the viaduct. The sidewalks along Evans Avenue that connect the river greenway to the viaduct have been substandard for years, with utility poles lining the center of the walk, sections that are too narrow for walking and biking or segments in disrepair.

**Public Investments**

In response to this need, the City of Denver recently began a $4 Million improvement project to Evans Avenue and the viaduct to improve conditions for pedestrians between the river and the light rail station, including passage over the Santa Fe viaduct. By the end of summer 2013, there will be an 8-foot wide walking and cycling path on both sides of the street and the viaduct, and utilities will be buried underground to eliminate safety hazards. The project will also upgrade the traffic signal at South Platte River Drive and Evans, and make surface and structural improvements to the viaduct at Santa Fe (See Appendix F).

As described in Section 2—Greenway Investment, Denver Parks and Recreation in partnership with the Greenway Foundation is working with the Overland neighborhood to design improvements to the existing Grant Frontier and Pasquinel’s Landing.
Parks. The 8-foot wide greenway trail that runs through the parks will also be widened to 12 feet, making the parks more accessible and safe for cyclists, joggers and walkers of all abilities and ages.

**The Catalytic Site**
The catalytic site straddles both sides of Evans Avenue near the river, and is a collection of multiple parcels owned by 13 different property owners. The properties are predominantly small businesses with small 1960’s era commercial buildings and a few vacant lots. Some of the buildings are void of tenants, while others have been occupied continuously for years. The newest commercial building is a light manufacturing aluminum building that was constructed in 2008.

**Public input**
Input from the neighborhood stated a clear preference for three story development as allowed by current zoning, rather than the five story development on portions of the site recommended in the adopted Evans Station Area Plan. Also desired are retail uses on the ground level fronting a realigned Huron Street. This could create an attractive atmosphere for dining near the greenway, and opportunities for purchasing groceries, cycling repair and rentals, refreshments and other business opportunities associated with the greenway. When presented with the option to reduce the paved footprint of South Platte River Drive, participants strongly supported the idea of pulling the street away from the river and realigning closer to the Huron alignment.

**Preferred Alternative**
Two alternatives were studied to test redevelopment feasibility, including a five-story building scheme next to the river with three-story buildings facing the residential side of the block, and an all three story alternative. The three story alternative proved to be the only feasible option due to the higher costs associated with structured parking and a taller five-story building.
Preferred Alternative

The Evans site could be converted into a three-story mixed use development with ground level commercial buildings fronting Evans Avenue (A), and three-story walk up units fronting the River (Huron Street) and Galapago Street on the opposing block face (B). The concept plan shows the potential to realign South Platte River Drive from its current river edge location (C) to the Huron alignment (D). Private investment could make this realignment possible and provide more space for an expanded public greenway that would enhance the connection between Grant Frontier Park to the south and Pasquinel’s Landing to the north. Surface parking would be located behind buildings in the block interior, as well as under the rear portion of each walk up residential unit (E). Stormwater quality could be treated in rain gardens.

Development Yields

Both Blocks
- 192 Residential Units (160,850 GSF)
- 26,000 GSF Office Flex / Retail

| Residential | Commercial | Parking | Park / Courtyard | Water Quality Treatment |
along the street (F) which could also improve the streetscape aesthetic and enhance storm-water quality before draining into the South Platte River. Water detention could be stored in underground vaults beneath the surface parking (G), or as surface enhancement to the greenway (H). Investment in realignment of Huron Street and creating a landscaped median and attractive streetscape along Evens Avenue (I) are considered key to maximizing lease rates and attracting new residents and commercial tenants to the neighborhood. Streetscape enhancements are shown in the three-dimensional rendering below, including street trees, linear rain gardens, and plaza areas near the greenway with vertical elements marking arrival at the river from east Evans. The greenway is expanded with the street pulled back to the Huron alignment, and the trail is improved as a continuous experience between Grant Frontier and Pasquinel’s Landing parks.
Existing Relationship to the River
The existing condition along the river south of Evans, showing South Platte River Drive near the greenway trail on the river side, and the road pavement that blends into parking areas in front of the buildings without any streetscape vegetation or existing sidewalk separation.

Potential Relationship to the River
The potential relationship of new development fronting a new street along the Huron alignment. South Platte River Drive is replaced by additional greenway area that could also serve as a water quality retention area for the new development.
Table 7.1
Fiscal and Economic Benefits
Fiscal and economic impact projections generated in the SiteStats™ model show a total private investment of over $27 Million that could result in 78 temporary construction jobs, and 59 permanent jobs related to the proposed retail and office/flex commercial uses. The projected average annual wage of $46,000 is based on Denver’s average wages for this industry sector.

With an estimated household income of $26,000, 377 new on-site residents are projected to spend about 20% of their household consumer income on goods sold in Denver, resulting in the purchase of about $1M of taxable goods within Denver City Limits. The annual sales tax revenues generated from this consumer spending coupled with on-site sales and business spending is estimated at $143,800. Property tax revenues for on-site residential and commercial uses estimated at $93,000. This figure is based on Denver’s 28.419 mill levy for general fund and governmental funds, and does not include additional revenues within the city-wide average mill levy of 74.954 that includes all tax districts.

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Investment</td>
<td>$26,585,000</td>
<td>Includes construction costs, tenant improvements, and personal property such as computer systems and equipment.</td>
</tr>
<tr>
<td>Construction Jobs</td>
<td>79</td>
<td>Total temporary employment related to site work and building construction</td>
</tr>
<tr>
<td>Employment</td>
<td>59</td>
<td>Potential number of jobs located in new office, flex-space or retail buildings</td>
</tr>
<tr>
<td>Average Annual Wage</td>
<td>$46,000</td>
<td>Based on average employment wages by industry in Denver</td>
</tr>
<tr>
<td>New Housing Units</td>
<td>192</td>
<td>Includes a mix of studio, 1 bedroom and 2 bedroom units</td>
</tr>
<tr>
<td>New On-site Residents</td>
<td>377</td>
<td>Based on Denver’s multi-family household size average of 1.9 persons per household</td>
</tr>
<tr>
<td>Annual Household Consumer Income</td>
<td>$4,700,000</td>
<td>Estimated household income is based on the assumption that housing payments are 30% of total income</td>
</tr>
<tr>
<td>Annual Taxable Goods Purchased in Denver</td>
<td>$1,000,000</td>
<td>Projection based upon Denver residents spending 28% of their household consumer income on taxable goods, and purchasing 77% of taxable goods from retail stores in the City</td>
</tr>
<tr>
<td>Sales Tax Revenues¹</td>
<td>$143,800</td>
<td>1. Includes a) sales tax from annual taxable goods purchased in Denver by on-site residents, b) sales tax revenues generated from onsite retail sales (at $360 per s.f. with 60% of taxable retail sales, and c) business spending on taxable materials. 2. Total property taxes of residential and commercial development. 3. Denver’s monthly Occupational Privilege Tax in Denver is $9.75 per employee, with $5.75 paid by the employer and 4.00 paid by the employee</td>
</tr>
<tr>
<td>Property Tax Revenues²</td>
<td>$93,000</td>
<td></td>
</tr>
<tr>
<td>Occupational Privilege Tax³</td>
<td>$6,800</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>$241,000</td>
<td></td>
</tr>
</tbody>
</table>
### Table 7.2 - North Evans Phase 1 Redevelopment Feasibility

A summary of the cost proforma analysis for the North Evans infill development, showing a plausible total investment and return on investment (for Phases 1 and 2). The complete analysis is provided in 2012 dollars, and shows that mixed use building in both phases is economically feasible, with the assumption that acquisition of multiple parcels is feasible. Land acquisition costs (Row 1) are based on present day assessed values. Site improvements (Row 2) includes environmental remediation of assumed conditions.

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land</td>
<td>$1,089,300</td>
<td>Current county valuation of land and improvements. Actual property value to be determined by willing sellers through voluntary land transaction.</td>
</tr>
<tr>
<td>Site Improvements</td>
<td>$1,401,510</td>
<td>Includes demolition, environmental remediation assumptions, utility upgrades, roadway improvements, stormwater, and off-site landscaping costs</td>
</tr>
<tr>
<td>Building C</td>
<td>$1,290,680</td>
<td>Type 5 (2 story above commercial) $92 /s.f.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Commercial space - $65 /s.f.</td>
</tr>
<tr>
<td>Building D</td>
<td>$1,277,200</td>
<td>Type 5 (2 story above commercial) $92 /s.f.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Commercial space - $65 /s.f.</td>
</tr>
<tr>
<td>Commercial Tennant Improvements</td>
<td>$445,500</td>
<td>$45 per s.f.</td>
</tr>
<tr>
<td>Total Hard Costs</td>
<td>$ 7,037,490</td>
<td></td>
</tr>
<tr>
<td>Soft Costs</td>
<td>$1,884,212</td>
<td>Includes 20% soft costs (engineering, architectural, surveying, marketing, financing costs, consultants, etc.) and 5% developer fee</td>
</tr>
<tr>
<td>Contingency</td>
<td>$422,249</td>
<td>5% hard cost &amp; 5% soft cost contingencies</td>
</tr>
<tr>
<td><strong>Total Project Costs</strong></td>
<td><strong>$10,433,251</strong></td>
<td></td>
</tr>
<tr>
<td>Total Residential Units</td>
<td>59</td>
<td>Units ranging from 360-1,170 s.f. - Studios, 1 Bedroom, 2 Bedroom units</td>
</tr>
<tr>
<td>Total Commercial Space</td>
<td>9,900</td>
<td>net s.f.</td>
</tr>
<tr>
<td>Net Operating Income</td>
<td></td>
<td>Residential rents $1.49-1.50 per s.f.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Commercial rents $1.34 per s.f.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Residential vacancy 5%, Commercial vacancy 5%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Expenses $4.50 per s.f.</td>
</tr>
<tr>
<td>5 year Internal Rate of Return</td>
<td>43.6%</td>
<td></td>
</tr>
<tr>
<td>Stabilized Cash on Cash Return</td>
<td>11.8%</td>
<td></td>
</tr>
</tbody>
</table>

Table 7.2 - North Evans Phase 1 Redevelopment Feasibility A summary of the cost proforma analysis for the North Evans infill development, showing a plausible total investment and return on investment (for Phases 1 and 2). The complete analysis is provided in 2012 dollars, and shows that mixed use building in both phases is economically feasible, with the assumption that acquisition of multiple parcels is feasible. Land acquisition costs (Row 1) are based on present day assessed values. Site improvements (Row 2) includes environmental remediation of assumed conditions.
<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Land</td>
<td>$3,572,600</td>
<td>Current county valuation of land and improvements. Actual property value to be determined by willing sellers through voluntary land transaction.</td>
</tr>
<tr>
<td>Site Improvements</td>
<td>$2,464,851</td>
<td>Includes demolition, environmental remediation assumptions, utility upgrades, roadway improvements, stormwater, and off-site landscaping costs</td>
</tr>
<tr>
<td>Type 2 Building</td>
<td>$892,500</td>
<td>1x - Type 2 building, 3 story walk-ups - $85 / s.f.</td>
</tr>
<tr>
<td>Type 3 Building</td>
<td>$777,600</td>
<td>2x - Type 2 building, 3 story with tuck under parking - $ 90 / s.f.</td>
</tr>
<tr>
<td>Type 4 Building</td>
<td>$2,461,500</td>
<td>5x - Type 4 building, 2 story, tuck under walkups - $ 90 / s.f.</td>
</tr>
<tr>
<td>Building A</td>
<td>$1,893,060</td>
<td>Type 5 (2 story above commercial) $ 92 / s.f.</td>
</tr>
<tr>
<td>Building B</td>
<td>$1,393,900</td>
<td>Type 5 (2 story above commercial) $ 92 / s.f.</td>
</tr>
<tr>
<td>Commercial Tenant Improvements</td>
<td>$607,500</td>
<td>Commercial space - $65 /s.f.</td>
</tr>
<tr>
<td>Commercial Tenant Improvements</td>
<td>$607,500</td>
<td>$45 per s.f.</td>
</tr>
<tr>
<td>Total Hard Costs</td>
<td>$14,086,411</td>
<td></td>
</tr>
<tr>
<td>Soft Costs</td>
<td>$3,841,097</td>
<td>Includes 20% soft costs (engineering, architectural, surveying, marketing, financing costs, consultants, etc.) and 5% developer fee</td>
</tr>
<tr>
<td>Contingency</td>
<td>$845,185</td>
<td>5% hard cost &amp; 5% soft cost contingencies</td>
</tr>
<tr>
<td><strong>Total Project Costs</strong></td>
<td><strong>$22,345,293</strong></td>
<td></td>
</tr>
<tr>
<td>Total Residential Units</td>
<td>133</td>
<td>Units ranging from 360-1,170 s.f. - Studios, 1 Bedroom, 2 Bedroom units</td>
</tr>
<tr>
<td>Total Commercial Space</td>
<td>13,500</td>
<td>net s.f.</td>
</tr>
<tr>
<td>Net Operating Income</td>
<td>$1,528,691</td>
<td>Residential rents $1.48-1.50 per s.f.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Commercial rents $1.34 per s.f.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Residential vacancy 5%, Commercial vacancy 5%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Expenses $4.60 per s.f.</td>
</tr>
<tr>
<td>5 year Internal Rate of Return</td>
<td>40.3%</td>
<td></td>
</tr>
<tr>
<td>Stabilized Cash on Cash Return</td>
<td>10.2%</td>
<td></td>
</tr>
</tbody>
</table>

**Table 7.3 - South Evans Phase 2 Redevelopment Feasibility** A summary of the cost proforma analysis for the South Evans infill development, with Phase I assumptions also applicable to Phase 2. The redevelopment of North and South Evans is feasible based on the probability that rents would be on the lower side of the market, but would take advantage of the river and improved greenway amenities.
**SECTION 7. EVANS AVENUE CATALYTIC SITE**

**Table 7.4 - Evans Action Plan** This implementation guide assumes voluntary participation by multiple property owners to sell property or combine ownership into a single shared entity to position an assemblage for future development. The timing below is therefore entirely dependent upon the interests of property owners and their collective will to pursue redevelopment.

<table>
<thead>
<tr>
<th>Task</th>
<th>Type</th>
<th>Timing</th>
<th>Lead</th>
<th>Potential Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>Voluntary property assemblages to be created on north and / or south sides of Evans.</td>
<td>Site Improvement</td>
<td>Short</td>
<td>Developer, Land owners</td>
<td>Private Investment, Private non-profit</td>
</tr>
<tr>
<td>Conduct environmental Phase I and Phase II assessments</td>
<td>Environmental</td>
<td>Mid</td>
<td>Developer, Land owner or City</td>
<td>Private Investment, EPA Assessment Grants, State and Federal Targeted Brownfields Assessments *</td>
</tr>
<tr>
<td>Design Huron Street realignment and consider cost feasibility relative to scale of redevelopment and phasing on north / south sides of Evans</td>
<td>Site Improvement</td>
<td>Mid</td>
<td>Developer, City</td>
<td>Private, City Staff Resources (in-kind)</td>
</tr>
<tr>
<td>Developer to work with Denver Public Works, Parks &amp; Recreation and Community Planning and Development to vacate South Platte River Drive, expand the greenway.</td>
<td>Site Improvement</td>
<td>Mid-Long</td>
<td>Developer, City</td>
<td>Private investment &amp; City staff resources **</td>
</tr>
<tr>
<td>Developer to work with Denver Public Works, Parks &amp; Recreation and Community Planning and Development to enhance the Evans streetscape and median improvements</td>
<td>Site Improvement</td>
<td>Mid-Long</td>
<td>Developer, City</td>
<td>Private investment &amp; City staff resources **</td>
</tr>
<tr>
<td>Conduct risk-based environmental remediation through the state’s voluntary cleanup program appropriate for the intended redeveloped land use.</td>
<td>Environmental</td>
<td>Short-Mid</td>
<td>Developer</td>
<td>Private investment, State &amp; Federal Cleanup Grants **</td>
</tr>
<tr>
<td>Construct development phase I</td>
<td>Site Improvement</td>
<td>Mid-Long</td>
<td>Developer</td>
<td>Private Investment ***</td>
</tr>
<tr>
<td>Construct development phase II</td>
<td>Site Improvement</td>
<td>Mid-Long</td>
<td>Developer</td>
<td>Private Investment ***</td>
</tr>
</tbody>
</table>

* State and EPA Targeted Brownfields Assessments can be conducted for eligible non-profit and government entities at eligible sites. As indicated in the report, one of the report recommendations is for the City to obtain an EPA brownfields assessment grant focused on the river corridor from which environmental site assessment activities could be conducted on behalf of eligible for-profit entities such as bonafide prospective purchasers and eligible property owners at eligible sites.

** EPA cleanup grants, Colorado 1306 cleanup fund grant, Colorado Brownfields Revolving Loan Fund (CBRLF) grant are available for eligible non-profit or local government entities. CBRLF provides low interest rate loans for cleanup activities to all eligible entities including for-profit entities.

Additional cleanup and contaminated materials management costs associated with the known chromium groundwater plume would be the responsibility of Powers Engineering, Inc., the responsible party, who is under a RCRA Corrective Action order with CDPHE. Activities should be coordinated with CDPHE prior to undertaking.

*** Community Development Block Grant Program (CDBG), New Markets Tax Credit Program (NMTC), Tax Increment Financing (TIF) as possible funding sources for infrastructure development, project construction and may include environmental cleanup funding. For-profit entities are only eligible for NMTC and TIF.
8. Results and Lessons Learned
The City and County of Denver has gained significant value from this area-wide planning opportunity made possible by the EPA Brownfields Area-wide Planning Grant. It has allowed Denver to explore a new approach to planning that is proactive, explorative and implementation-minded. Engaging stakeholders in conceptual site design and feasibility studies within the context of neighborhood revitalization has resulted in findings that have already started to benefit multiple City agencies, property owners, and prospective developers and investors.

Summary of Deliverables and Potential Benefits
A summary of deliverables and the resulting benefits of conducting this study is provided in the following lists.

Deliverables
- A documented corridor analysis provided a comprehensive overview of current land use and transportation along the river corridor, including the identification of over a dozen development opportunities near the river that could result in clean up and reuse of brownfields (see Appendix E).
- Five priority areas for potential investment, reuse and redevelopment were identified.
- A detailed vision for investment, reuse and redevelopment at five catalytic sites has been shaped with public input, and documented for future use.
- Multiple stakeholders and neighborhood residents have been engaged, including over 25 property owners of the five catalytic sites. Owners now have access to new information that could inspire conversations with neighbors, investors, developers, and city officials about the timing and approach to future implementation. The study provides a vision for future redevelopment that is supported by a plausible market analysis.
- The market analysis includes site preparation and infrastructure costs, as well as an estimate of environmental remediation costs based on assumptions from limited research of available environmental records and property observations.
- Site screenings and observations of properties by the Colorado Brownfields Foundation provided a better understanding of site characteristics and potential environmental conditions. These observations were paired with public records and translated into plausible cleanup cost assumptions that are useful for market feasibility analysis.
- Fiscal and economic projections related to potential catalytic site investments were provided using the SiteStats™ model. The City’s new capacity to apply this model to future brownfields area-wide planning will broaden the discussion for potential reuse and revitalization of underutilized properties in Denver (see Table 8.1 on page 101).

Potential Benefits
- New housing, jobs and shopping near transit stations within walking distance of the river will generate more use of the South Platte Greenway trail and public transit.
- More people living and working in new and exciting destinations along the river corridor are likely to generate more regional visitation as the river corridor is further transformed into an exciting sequence of recreational, entertainment and greenway activities.
- More eyes and ears on the river corridor would make it a safe and inviting place to be during the day and evening hours.
- New development near the river could serve to enhance public access along the river and create increased connectivity for surrounding neighborhoods to safely walk or bike to the greenway.
• Greenway improvements and new development would increase the desirability and value of surrounding neighborhoods.

• Although this study does not look specifically at affordable and mixed income housing opportunities within catalytic site studies, inclusionary housing options should be implemented to provide for all stages of life and income along the river corridor. This would increase the potential of people living closer to the places they regularly visit with convenient access to rail transit and cycling routes.

**Key Lessons Learned**

Study of the corridor, as well as the five catalytic sites and surrounding neighborhood area has provided a better understanding of cleanup and reuse opportunities along the river corridor. The findings from this study relate to the six project goals identified in the introduction:

1. **Demonstrate how potential brownfield sites can redevelop and relate to the river / greenway, and revitalize the surrounding area**

   A healthy and revitalized urban river corridor requires

   • More people living, working and visiting the river with a variety of activities and destinations. More people equates to activated parks, promenades and plazas with more activity during the day time and evening hours during the week and weekends, with consideration of year round activities.

   • Development that fronts the river, and does not back onto the river. A pedestrian friendly street or river promenade provides a public face to the river, with more activity, visitation and eyes on the greenway from adjacent development.

   • Rethinking how streets and existing urban forms relate to the river corridor. Where appropriate and feasible, the greenway can be enhanced and as a greater amenity for new development if roadways are pulled away from the river.

   2. **Demonstrate how to create more public spaces along the river**

   • Understanding was gained through extensive public involvement that no one-size-fits-all setback is appropriate for the urbanized river corridor. An ideal relationship between new development and the river requires careful study of existing conditions and neighborhood context.

   • Three of the five sites illustrated how new development would activate existing and newly-purchased park land, giving these parks greater importance and exposure (1. River North, 2. Water Street and 3. Evans).

   • The Zuni and Lower Colfax Avenue site illustrated how new public access could be provided along a semi-public river promenade.

3. **Demonstrate how Denver’s recently-adopted land use plans and form-based zoning code can be applied to specific sites along the corridor.**

   • Area-wide planning can serve as a demonstration for potential implementation of existing plans and initiatives. The catalytic site studies point to a path forward for the river corridor and other areas in Denver – where much of the City’s future growth could occur in through redevelopment of aging or underutilized urban areas.

   • Meaningful engagement for stakeholders and the public can be achieved to develop detailed urban design concepts, while testing concept feasibility through proforma analysis based on today’s market. This process creates a compelling demonstration for redevelopment along the river for property
owners, neighborhoods, and City agencies.

4. **Encourage economic development associated with new construction that grows both jobs and housing along the river**
   - Property owners respond to a message of optimism; concerns of government involvement in development can be allayed with the offering of urban design services and an open and transparent dialog.
   - Critical conversations around redevelopment and property owner rights require tact and prudence in order to have a successful dialog. Some owners sought assurance that the City would not require sale of property for redevelopment. Property owners were reassured that they could choose to continue their current use, and that they should not feel threatened or pressured by this study. Owners’ privacy was respected by only sharing detailed conditions with property owners, internal agencies and EPA grantors.
   - Four of the five sites were included in a fiscal and economic impact analysis, resulting in a total potential investment of nearly $260 M that could generate 773 construction jobs and provide space for 352 permanent employment positions with an annual projected salary of $54,159 in Denver. This represents an increase of 1.7% to the existing employment of 21,000 along the river corridor. About 1,230 new residents would live near the river in these projects, a 16% increase above the current residential population of 7,500 in the corridor. These new residents could spend $8.7M each year on taxable goods purchased in Denver, which would increase sales tax revenues collected in Denver. The combined sales tax revenues from consumer spending, business spending, and on-site sales, and property and occupation tax revenues from the new commercial areas is projected at over $1.5M annually (see Table 8.1).
   - Area-wide planning can be integral to encourage and guide successful infill development. This study demonstrates how it can directly tie point to economic prosperity and sustainable growth that increasingly relies upon an expanding public transit system.
   - A proactive area-wide planning approach creates an early discussion about urban design opportunities and potential infrastructure and park improvements. This detailed planning is typically initiated by private developer applications in site planning or general development plan review. A more proactive area-wide planning approach could cultivate more development applications with greater certainty about the collective vision of future development opportunities.

5. **Encourage community revitalization by exploring appropriate new development and its relationship to existing neighborhoods**
   - Because there is extensive presence of major transportation infrastructure along the river corridor, limited opportunities exist for new development to relate directly to the river. These opportunities are smaller scale and more targeted to site-specific circumstances compared to the larger scale of the Central Platte Valley redevelopment.
   - Some sites that could be redeveloped are more isolated, and not as potentially catalytic as other sites that are adjacent to existing residential or potential new mixed use neighborhoods.
   - This study has provided vision and open communication between public and private sectors. This process has demonstrated that the City has an interest in the river corridor, and has served to further expand and refine the
river corridor vision based on property owner and public input. Conversations are already taking place about near-term and long-term potential of the opportunity areas identified along the corridor. The concepts could also serve to inform substantive discussions toward private and public partnerships regarding infrastructure investments, River Vision Implementation projects, and property owner plans.

6. **Demonstrate innovative on-site storm water management to improve water quality runoff into the river**
   - Water quality trenches or rain gardens in public areas could serve as both an amenity and a tool to improve water quality prior to draining into the South Platte River.
   - To meet stormwater detention requirements on limited redevelopment sites, detention vaults may be placed under parking areas, drives or open space areas. Utilizing these areas would allow a higher development yield to improve project financial performance and over-all feasibility.
   - Water quality areas can be landscaped with vegetation and trees to visually complement the greenway environment.

7. **Understand the environmental conditions that are present at each catalytic site as a first step in promoting their ultimate redevelopment and/or reuse.**
   - The process of conducting site screenings and observations of properties paired with public records was a valuable process that served as a basis for environmental assumptions and estimated remediation costs. This process could be replicated in support of other area-wide planning projects in the City prior to any public or private Phase I or Phase II environmental assessment.
   - More detailed environmental assessment data, including extensive Phase II Environmental Site Assessments, will be needed prior to initiating redevelopment at each site. Given the likely environmental challenges that many of the catalytic sites could potentially face, and the limited return on investment, the project corridor could greatly benefit from a themed brownfields assessment grant award to assist in the implementation of the shared vision for catalytic redevelopment that is articulated in the South Platte Corridor Study.
   - The potential environmental conditions that may exist at catalytic sites as well as prevalent corridor wide will be a hurdle to corridor revitalization. Extensive environmental due diligence investigations, e.g. phase I & II environmental site assessments, asbestos building inspections, etc., will be needed prior to initiating redevelopment at each site. All of the catalytic sites had multiple significant potential sources for soil and groundwater impacts onsite and adjacent to properties that will likely require a robust field investigation phase to identify and characterize recognized environmental conditions. The costs of these extensive studies will likely inhibit redevelopment as it creates significant uncertainty about the actual development costs, potential investment returns, and timeline for redevelopment completion. To assist in overcoming this hurdle to corridor revitalization, particularly for for-profit entities, a report recommendations is for the City and County of Denver’s Brownfields Program to pursue an EPA brownfields assessment grant to fund environmental site assessments and cleanup planning on behalf of prospective purchasers and consenting property owners throughout the corridor.
   - The redevelopment of the South Platte River Corridor is a major focus for the
City and County of Denver from the City’s ongoing partnership with the Urban Waters Federal Partnership, the partnership between the City and Greenway Foundation on the South Platte River Vision Implementation Plan and associated river improvement projects, and the Mayor’s Smart Jobs Development program which has the river corridor as one of three focus areas. A brownfields assessment grant would fill a key niche around all of these initiatives to create local jobs, improve quality of life, and protect Coloradoans' health by revitalizing this urban river and its surrounding communities.
A summary of projected fiscal and economic benefits from the SiteStats™ model that could result from investment in four of the catalytic sites. The model was not used for the Alameda Site given the different focus on thematic reuse, and the non-profit nature of the existing Church. Once filled with new businesses, the other properties will generate more jobs in addition to the property tax revenues and potential sales tax revenues.

* An equivalent residential unit (ERU) is based on 1,000 s.f. of non-residential building area as a comparable occupancy standard to residential development. This figure does not represent equivalency in standard impacts in daily vehicle trips, water use, sanitary or solid waste, or other typical impact fee measurements. The purpose of this ERU is to construct a total density metric useful for common comparison of people per acre that would have access to the greenway and rail transit (See total units per Acre**).
SECTION 8. RESULTS AND LESSONS LEARNED