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# list of figures and tables

## introduction & context
1.1 Focus Areas
1.2 North Denver Cornerstone Collaborative Area

## discovery & analysis
2.1 Primary Study Area
2.2 Block Structures
2.3 Building Structures
2.4 Existing Land Use
2.5 Concept Future Land Use per Elyria Swansea Neighborhoods Plan
2.6 Existing Average Daily Traffic
2.7 Bicycle Networks
2.8 Existing Street Conditions
2.9 RTD Transit Service
2.10 School Enrollment
2.11 Walk Audit Results

## framework assessment
3.1 Connections and Barriers
3.2 Residential Neighborhoods & Energy Centers
3.3 Connectivity Framework

## 40th avenue
4.1 Alternative Cross Section with Bike Lanes
4.2 Preferred Cross Section
4.3 Columbine to Clayton Plan View
4.4 Columbine to Clayton Section
4.5 Clayton to Steele Plan View
4.6 Clayton to Steele Section
4.7 Steele to Cook Plan View
4.8 Steele to Cook Section
4.9 Cook to Monroe Plan View
4.10 Cook to Monroe Section
4.11 Monroe to Jackson Plan View
4.12 Monroe to Jackson Section
4.13 Jackson to Colorado Plan View
4.14 Clayton Street Multi-Use Path Detail

## north industrial area
5.1 North Industrial Area Aerial
5.2 Topography
5.3 Land Ownership & Planned I-70 Alignment
5.4 Existing Business, Buildings & Planned I-70 Alignment
5.5 Land Ownership & 43rd Avenue Extension
5.6 Potential Near Term Development
5.7 Potential Long Term Development
5.8 Buildout Option Aerial
5.9 Pedestrian Connection Investigation
5.10 Potential Tunnel Options
5.11 Bridge Option
5.12 38th & Blake Bridge Example
albion street connections
6.1 Albion Street Aerial
6.2 303 Artway & ULC Collaboration
6.3 Albion Street Street View
6.4 Albion Street Truck Routing
6.5 Albion Street Sight Distance Analysis
6.6 Albion Street Crossing
6.7 Future Development Integration

monroe / market lead
7.1 Market Lead Existing Conditions Aerial
7.2 Monroe Street Extension Topography
7.3 40th Avenue Plan & Profile Investigation A
7.4 40th Avenue Plan & Profile Investigation B
7.5 Market Lead Alignment Alternative
7.6 Market Lead Alignment Preferred Alternative
7.7 Parcel Acreage
7.8 Development Mix
7.9 Retail Potential
7.10 Residential Potential
7.11 Industrial Potential
7.12 Across the Market Lead
7.13 42nd Avenue Plan & Profile
7.14 41st Avenue Plan & profile

tables
4.1 Water Quality by 40th Avenue Corridor Segment
The 40th & Colorado Next Steps Study is an implementation planning study led by the City and County of Denver Public Works Department for the 40th & Colorado Station area, which is near I-70 and Colorado Boulevard along the University of Colorado A-Line Commuter Rail. This study builds on the recommendations of the Elyria Swansea Neighborhoods Plan, adopted in 2015, and specifically identifies the physical transportation improvements that will enable a more connected community.

The 40th & Colorado study area, depicted below, is comprised of four major planning areas centered around the 40th & Colorado Station.

Focus Area 1 40th Avenue from York Street to Colorado Boulevard
Focus Area 2 Industrial development north of the 40th & Colorado Station
Focus Area 3 Albion Street and mixed-use development east of Colorado Boulevard
Focus Area 4 Future developments adjacent to the station area

Figure 1.1 Focus Areas
The Study examines potential land use development in the area, especially as it relates to transportation changes and access improvements considered as part of this study. Pedestrian, bike and transit mobility are key components of the future connectivity framework for the area and fundamental to meeting the interests of the community, as identified in the Neighborhoods Plan.

The four Focus Areas were evaluated within the context of the broader study area that extends west to York Street and east to Dahlia Street, north to I-70 and south to 38th Avenue. The Study identifies the transportation facilities and mix of land uses that drive mobility needs and constraints through the area and examines the facility improvements and changes within each Focus Area that enhance connectivity and improve local mobility.

This document is organized into nine chapters. The first four chapters outline the planning process, planning context, discovery and analysis and framework assessment for the study area and are intended to give a deeper understanding of the physical conditions, planning efforts and analysis that supports the specific recommendations in each of the Focus Areas. The subsequent four chapters deal specifically with the characteristics of each Focus Area and the unique projects and concepts that were identified through the planning process for each area. Each Focus Area chapter includes an overview, specific description and details of the recommended projects and their benefits to the area. The final chapter is the project summary chapter and is intended to be a quick reference as well as a comprehensive list of recommended projects throughout the study area. This section includes a map highlighting the location of each project, as well as a table listing the project details relevant to implementation.
planning process
planning process

planning and outreach process

Fundamental to the planning process for the 40th & Colorado Next Steps Study was a vibrant stakeholder, community and agency engagement strategy. It was imperative to continue the dialogue started with residents, schools, businesses and property owners in the neighborhood planning process to ensure that the implementation planning in the Next Steps Study process aligned with the community’s interests.

The Next Steps Study was conducted over a thirteen-month period, from September 2015 through October 2016 and included several key phases of work: conditions analysis, study and design of alternatives, draft recommendations and final recommendations and documentation. During each phase of work, City Council members, city staff, stakeholders and the community provided input and direction to the project team through committee meetings, public meetings, events and interviews.

project management team

The Project Management Team (PMT) consisted of city staff and consultant team members from a broad range of City and County of Denver Departments. This committee was intentionally organized to ensure representation from:

- Community Planning and Development
- NDCC
- Parks and Recreation
- Public Works Transportation
- Office of Economic Development
- Storm Water Management and Water Quality
- Denver Environmental Health
- Public Works Planning and Sustainability

The composition of this group ensured that study outcomes met the community needs identified in earlier planning processes. The PMT kicked off the study process with a tour of the study area and discussion of key issues to be addressed through the study. PMT members provided guidance throughout the study process.
**stakeholder advisory group**

Area stakeholders were identified for participation in the Stakeholder Advisory Group (SAG). This group was reflective of the four Focus Areas with representatives from Elyria Swansea, Park Hill and Clayton neighborhoods, area businesses and property owners, Councilman Albus Brooks’ office, RTD, Urban Land Conservancy, BikeDenver, WalkDenver, area schools and others. Four meetings were held between December 2015 and July 2016 at key project milestones and numerous stakeholder interviews enhanced the larger meetings.

**technical working group**

Stakeholder input was supplemented by the technical input and guidelines from the Technical Working Group (TWG), comprised of key city departments and related agencies. This group informed the data collection, analysis and recommendations phases of the project. The TWG met two times during key phases: November 18, 2015 and April 19, 2016.

**community engagement and workshops**

Community engagement was integrated with the planning process, and the project team participated in numerous events to share ideas and gather input. Public meetings included three North Denver Cornerstone Collaborative (NDCC) Town Halls during the study process, a Platte to Park Project Open House and the University of Colorado A-Line Commuter Rail Station Opening Event. Additionally, the project team held three project-specific Community Workshops tied directly to project milestones between December 2015 and November 2016.
community workshop #1

The purpose of this workshop was to introduce the purpose of the project to the community, review the schedule for the project and, most importantly, to discuss the current connectivity conditions within the study area and better understand the community’s needs with its input. After the presentation, attendees moved to three tables for workshop discussions and mapping of community needs.

community workshop #2

The purpose of this workshop was to present the developing connectivity strategy, possible options for 40th Avenue and concepts for the Monroe/Market Lead area. The concepts for bike, pedestrian and water quality improvements along 40th Avenue were presented as well as concepts to increase connectivity to the University of Colorado A-Line Commuter Rail Station. Attendees were able to ask questions and give their opinions and feedback on the information presented, along with being able to engage with staff members at map stations and around project boards.

community workshop #3

The purpose of this workshop was to share the study recommendations and draft document to ensure that those recommendations reflected community input, supported the Elyria Swansea Neighborhoods Plan and garnered the support of the community.

40th & Colorado station community opening event

A celebration at the new station was held on opening day of the University of Colorado A-Line Commuter Rail. At the 40th & Colorado Next Steps Study booth, attendees from the neighborhood provided significant input on connectivity to the station from their neighborhoods.
planning context
planning context

The 40th & Colorado Study Area sits between Denver International Airport (DIA) and the northern edge of Downtown Denver and is under the umbrella of the NDCC. The NDCC is a coordinated effort to ensure integrated planning and deliberate connections among projects and maximize opportunities to rebuild a connected community (see Figure 1.2 for location). An initiative of Mayor Michael B. Hancock, NDCC strategically aligns six different redevelopment projects in the historically-rich neighborhoods of Globeville, Elyria and Swansea including:

- Globeville and Elyria Swansea Neighborhoods Plans
- National Western Center
- Brighton Boulevard Corridor
- River North
- I-70 Reconstruction
- Transit-Oriented Development at RTD Stations along the East, Gold and North Metro lines

previous studies and plans

Several City and County of Denver plans and concurrent studies influenced the development of the 40th & Colorado Next Steps Study: the Elyria and Swansea Neighborhoods Plan adopted in February 2015, the Denver Environmental Health Impact Assessment “How Neighborhood Planning Affects Health in Globeville and Elyria Swansea” adopted in September 2014 and current water quality and green infrastructure programs.
elyria and swansea neighborhoods plan

The Elyria and Swansea Neighborhoods Plan establishes a vision and identifies recommended next steps and strategies to achieve the vision of the Elyria and Swansea communities. The vision is divided into four Guiding Principles for the neighborhood: Unique, Strong, Connected and Healthy. Key recommendations found under the Connected Principle were the basis for evaluation and study in the Next Steps Study. Key community recommendations include:

- Need for better connectivity; a walkable and bikeable neighborhood
- Railroad tracks disrupt connections and are not safe (47th and York, Market Lead)
- New RTD stations are difficult to access from local neighborhood street
- Sidewalks are older and less than 5 feet wide, or sidewalks and curb and gutter are missing
- Need pedestrian connections for safe routes to Bruce Randolph & Swansea schools
- Need better bicycle facilities within neighborhood
- Bicycles should be a better transportation option
- 40th Avenue is an impediment to both cyclists and pedestrians
- Redevelop Market Lead to improve connections between the neighborhood and station
- New streets to access industrial and employment north of the 40th Station are needed
- More bus stops; better bus stop facilities and sidewalks connecting to stops
- Bus connector to future rail stations
- Increase activities for kids and create connections to green space and parks
- Incorporate water quality improvements throughout the neighborhood

denver environmental health impact assessment

A Health Impact Assessment (HIA) was conducted by Denver Environmental Health in 2013-2014, in conjunction with the Elyria and Swansea Neighborhoods Plan, to determine which elements in the built environment were shaping residents’ health. Key elements included limited vehicle connectivity, heavy freight traffic, lack of sidewalks and bike infrastructure and scarcity of trees and green infrastructure. These factors can contribute to health impacts including a high number of vehicle crashes resulting in injuries to pedestrians and cyclists; respiratory conditions related to poor air quality; chronic diseases related to physical inactivity including obesity, diabetes, and cardiovascular disease; and mental stress. The HIA revealed that residents of Elyria and Swansea suffer from these conditions at higher rates than Denver overall, including the many children and youth in the community.
Health equity refers to the opportunity to lead healthy, productive lives regardless of ethnicity, income or where we live. Some differences in health between neighborhoods can be traced to unequal physical, economic and social conditions and are systemic and avoidable (The Colorado Trust). Physical conditions that impact health in Elyria Swansea include the quality of transportation infrastructure, environment and housing, public safety and parks and recreation. Elyria Swansea has been identified by the U.S. Environmental Protection Agency (EPA) as an environmental justice community, meaning it has historically been disproportionately exposed to environmental risks, including pollution, while receiving fewer benefits. Health equity and environmental justice are both rooted in a concern for just and equitable treatment and access to the benefits of society, including redevelopment as envisioned by the 40th and Colorado Next Steps Study.

**water quality and green infrastructure**

The City and County of Denver is committed to making green infrastructure an integral part of its stormwater management strategy. In the summer of 2016, Denver City Council passed a stormwater rate increase providing a sustainable source of funding to grow the water quality program and build a robust portfolio of regional, sub-regional and site-scale green infrastructure projects. The water quality program aims to reduce the adverse impacts of stormwater runoff to its rivers, streams, lakes and drainageways through its targeted near-term (6 year) and long-term (12 year) Water Quality Capital Improvement Program (WQ-CIP). The WQ-CIP presents a toolbox of green infrastructure strategies and projects that will be led by Denver Public Works, as well as projects that can be included in other city plans and projects. This will require thoughtful implementation and coordination by all City agencies as each department works to implement their own vision and plans. The focus is on identifying green infrastructure opportunities that target multiple pollutants at once while also providing additional city benefits such as increased open space, climate resiliency, improved air quality, urban heat island mitigation, better connectivity and enhanced community livability. Green infrastructure (GI) opportunities can occur on a number of different scales and have been identified from large (regional) and subregional through smaller site-scale practices. Regardless of scale, green infrastructure design mimics nature and uses vegetation, soils and roots to slow, filter and treat stormwater runoff.

"Increase the urban tree canopy and green infrastructure to improve air and water quality." — HIA
Recommendations in this Next Steps Study are the result of thorough existing conditions analysis and robust community input. This chapter details findings from the existing conditions phase, focusing on two major categories: land use and mobility.

Both land use patterns and mobility networks have a significant impact on the character of the area. Mobility investigations include examining current conditions of sidewalks, vehicle networks, bicycle routes and pedestrian movements. Land use investigations include examining current land use mixes, future land use concepts, building structures and block layouts.

Although influences for this Next Steps Study are recognized from surrounding neighborhoods and city-wide changes, the primary study area extends from York Street to Dahlia Street and from I-70 to 35th Avenue. Figure 2.1 depicts the primary study area.
land use

The urban grid is oriented north-south in this area of the city, as seen in Figure 2.2. Buildings generally front long block faces, creating comfortable and pedestrian-friendly street frontages. However, there are larger ‘super blocks’ along 40th Avenue that disrupt the urban grid and pose challenges to neighborhood connectivity. These disruption points occur along the short end of the blocks, which is not conducive to redeveloping street frontage. Finally, I-70 to the north is a major barrier for neighborhood accessibility.

As depicted in Figure 2.3, a mix of large footprint commercial and institutional buildings are surrounded by smaller residential buildings both north and south of 40th Avenue. This mix leads to inconsistent neighborhood character and contributes to a strong sense of segmentation.

Residential and smaller commercial uses create human-scale, walkable streets leading towards 40th Avenue. However, few of these streets actually connect to 40th Avenue, instead ending at these ‘super blocks.’ Vacant land or surface parking near the station creates an opportunity for infill development and would provide a better transition between residential uses and industrial employment near the station. North of the station, large-format, industrial buildings account for just 30% of lot coverage, suggesting opportunity for infill development.
Land use within the study area today includes commercial and industrial uses along 40th Avenue at York Street and between the Market Lead and Colorado Boulevard (see Figure 2.4). At the station, commercial and industrial uses are prevalent north to I-70 and south to 38th Avenue. This pattern is similar along 40th Avenue between Clayton Street and York Street with commercial and industrial uses extending north past the commuter rail tracks and south to 38th Avenue. Single-family residential uses occupy the center of the study area, supported by Bruce Randolph Middle and High School and other neighborhood schools.

The Elyria Swansea Neighborhoods Plan recommends that the existing industrial land within the general station area change to Mixed-Use, Industrial Mixed Use or Transit Oriented Development. Figure 2.5 depicts the proposed future land uses. Heights are recommended as high as eight stories in the immediate station area, transitioning to three to five stories west toward the Market Lead and stable single-family residential neighborhood streets. The Neighborhoods Plan recommends protecting the residential neighborhood while encouraging an employment mix in the station area.
40th Avenue is the transportation spine of the study area. It moves over 13,000 vehicle trips per day (ADT) with approximately 10% of those being truck trips. Traffic volumes are projected to increase to 18,000 ADT or more by 2040, according to Denver Regional Council of Governments (DRCOG). The designated truck route also serves as a key transit corridor linking business and residences to Downtown Denver and serving as access to the 40th and Colorado Station. Figure 2.6 also shows ADT along other routes in the area.

40th Avenue currently lacks any bicycle facilities and is missing sidewalks in many locations. Denver Moves: Enhanced Bikeways recommends key improvements, including a proposed regional trail along the 39th Avenue alignment, bike lanes along Steele Street, improvements along Clayton Street and designation of 40th Avenue as a shared roadway.

Today, the lack of consistent pedestrian infrastructure forces many to walk in the street, presenting a clear safety hazard. Seen in Figure 2.7, pedestrians have limited options to cross 40th Avenue. There are currently three signalized crossings along the length of 40th Avenue between York Street and Colorado Boulevard: Jackson, Clayton and Steele Streets.

The signalized crossing of 40th Avenue at Clayton Street provides local neighborhood access across 40th Avenue and to Bruce
existing sidewalks and street conditions

Figure 2.8 Existing street conditions along 40th Avenue. Deteriorating or absent sidewalks, curb ramps and other infrastructure contribute to a poor pedestrian environment.

rtd transit service

Figure 2.9 RTD Transit Service. The study area is served by three transit lines: Route 44 along 40th Avenue, Route 24 from neighborhoods to 40th Avenue and Route 40 service to the 40th & Colorado Station. Numbers in this figure represent combined ridership at selected stops. Ridership is as high as 3,500 riders per day along 40th Avenue.

Randolph School. Pedestrians are currently prohibited from crossing the east leg of the intersection, and a marked crosswalk is not provided in that location.

The Steele Street and 40th Avenue intersection has a high volume of vehicular turning movements from 40th Avenue to northbound Steele Street, which results in pedestrian and vehicular conflicts at the crosswalks. The inconsistent sidewalk network, combined with the heavy truck traffic and a commuter rail crossing, can make walking along Steele Street uncomfortable and unsafe. Figure 2.8 depicts examples of the poor existing sidewalk and street conditions along 40th Avenue.

Pedestrian access to the 40th & Colorado station is limited to the intersection of 40th Avenue and Jackson Street, forcing pedestrians across 40th Avenue and over the bridge at Jackson Street in order to access the station. Recent sidewalk improvements extend along Jackson Street from 40th Avenue to the station platform. The walkshed analysis performed as part of the Elyria Swansea Neighborhoods Plan confirms the main pedestrian access to the station is from the area south of 40th Avenue, with the remainder of the neighborhood cut off from the station by the Market Lead.

In addition to commuter rail service, this area is served by three bus lines. RTD service routes and ridership are detailed in Figure 2.9.
mobility

At 22% the childhood obesity rate in Elyria Swansea is among the highest in the City. The ability to be physically active in one’s neighborhood is a key factor in reducing childhood obesity.

Many studies show that communities of color like Elyria Swansea, tend to have fewer public resources and infrastructure than other communities. For such communities, improvements in the built environment, including places to exercise (i.e., walking or biking to school), can help to reduce these health disparities.

Source: Denver Environmental Health

safe routes to school

Bruce Randolph Middle and High School serves the Globeville and Elyria Swansea neighborhoods and pulls students from six elementary schools, as depicted in Figure 2.10. According to Denver Public Schools, 56% of the students who go to Bruce Randolph School live within two miles of the school. This is significantly higher than the citywide average of 33% of middle school students who attend their local school, and one of the highest in the City (Denver Public Schools).

Steele Street, north of 40th Avenue, is used by over 400 students to walk to and from Bruce Randolph School. The existing sidewalk, however, is only a three-foot rollover. Additionally, observations done near school start and end times revealed that many students cross 40th Avenue at unsignalized mid-block locations between Clayton and Steele Streets.
During the course of the Next Steps Study, Denver Environmental Health teamed with Safe Routes to School to perform walk audits (see Figure 2.11) and gather community input on walk conditions around Bruce Randolph School and Swansea Elementary School. The walk audit and Denver Public Schools identified several key findings that became part of the existing conditions review for the Next Steps Study.

Safe Routes to School is a nationally proven program to increase student walking and biking to school. Studies find that infrastructure improvements (i.e. sidewalks, crosswalks and signage) increase student walking and biking by 18% and reduce injury crashes near schools by 44%.
framework assessment
barriers

Community connectivity constraints are the result of particular land use and block configurations found within the study area, coupled with limited pedestrian mobility and poor pedestrian facilities and walking environment.

Figure 3.1 depicts the institutional or industrial large lot land uses located along 40th Avenue (indicated in orange). These blocks act as barriers that prevent connectivity from neighborhoods to the south and limit local north-south access to the arterials of York and Steele Streets. North of 40th Avenue, connectivity is limited to Clayton and Steele Streets. Through access on local streets, such as Milwaukee Street, is truncated by the University of Colorado A-Line Commuter Rail. Signalized pedestrian and automobile crossings of the rail line exist at only Steele and Clayton Streets, making the majority of north-south neighborhood streets discontinuous and reinforcing neighborhood reliance on Steele Street. Additionally, the existing Market Lead ditch near the 40th & Colorado Station prevents east-west connectivity across 41st, 42nd and 43rd Avenues.
The Influence Area, Figure 3.2, encompasses two University of Colorado A-Line Commuter Rail stations: 38th & Blake and 40th & Colorado. Both station areas (indicated in purple) are characterized as “high energy activity centers” with employment and residential uses that are anticipated to intensify over time. A stable residential land use pattern is dominant between the two station areas (indicated in yellow), with some existing industrial use edges. Minimizing the connectivity barriers that lie between these two station areas and strengthening alternative pedestrian connections within the neighborhood are critical to positive growth, improved station access and pedestrian connectivity to Bruce Randolph School and other neighborhood destinations.
opportunities

An analysis of the transportation framework indicates the need for greater connectivity options than just the 40th Avenue “spine,” which carries truck and transit traffic and lacks adequate pedestrian facilities and a welcoming environment. As shown in Figure 3.3, several key changes to the study area create the opportunity to expand this local framework and significantly change mobility options through the neighborhood.

The City and County of Denver’s recent purchase of the Market Lead presents an opportunity to increase access from the neighborhood to the 40th & Colorado Station. By filling the Market Lead and eliminating the existing ditch, there is an opportunity to extend 42nd Avenue from Clayton east to 40th & Colorado Station. With a filled Market Lead, potential land use changes within the Lead become possible and make the extension of Monroe Street from 42nd to 40th Avenue a desired connection, an additional “entryway” to the station area.
Dedicated bicycle and pedestrian facilities along the 42nd Avenue and Monroe Street extensions lead to stronger, more visible alternative neighborhood connections to the 40th & Colorado Station. The extension of a Monroe Street bike and pedestrian facility south of 40th Avenue to 39th Avenue creates a direct link to the station area from the 39th Avenue Open Channel regional bike facility that will follow the Market Lead behind Bruce Randolph School and west. Residents from south of 40th Avenue can utilize a regional bike/pedestrian facility to Monroe or Jackson Street connections into the station area.

West of Steele Street, Clayton Street bike and pedestrian enhancements could create a strong link from Swansea Elementary over the future I-70 “lid,” south to 42nd Avenue and as far south as the Open Channel regional bike facility.

Filling the Market Lead and rebuilding portions of the street grid, including 42nd Avenue and Monroe Street, create the opportunity to develop enhanced bike and pedestrian connections in the neighborhood. Extending those connections to the adjacent future regional bike/pedestrian facility along the 39th Avenue Open Channel increases local mobility options to other neighborhood destinations as well. The connectivity framework analysis underlies the work conducted within the four Focus Areas for the Next Steps Study.
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### SUPPORTING PROJECTS

<table>
<thead>
<tr>
<th>PROJECT</th>
<th>TIMING / TRIGGERS / DEPENDENCIES</th>
<th>COST</th>
<th>BENEFITS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A</strong> 40th Ave. Cross Section</td>
<td>Either simultaneously or in two phases, west of Steele St. and east of Steele St. Dependent on final design of Monroe St. alignment</td>
<td>$11.3M</td>
<td>☮️ ₿ ₳ ⚖️</td>
</tr>
<tr>
<td><strong>B</strong> Clayton St. Multi-Use Path</td>
<td>I - 70 Construction Cover Started</td>
<td>$1.4M</td>
<td>☮️ ₿ ₳ ⚖️</td>
</tr>
<tr>
<td><strong>C</strong> Multi-Use Connector to 39th Ave.</td>
<td>P2P Construction Started</td>
<td>$300K</td>
<td>☮️ ₿ ₳ ⚖️</td>
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**KEY BENEFIT TYPE:**
- ☮️ Community Amenity
- ₿ Connectivity
- ₳ Economic Development
- ⚖️ Water Quality

### KEY PROJECTS

<table>
<thead>
<tr>
<th>PROJECT</th>
<th>TIMING / TRIGGERS / DEPENDENCIES</th>
<th>COST</th>
<th>BENEFITS</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1</strong> Pedestrian Activated Crossing at Bruce Randolph School</td>
<td>Could be done independently of 40th Ave. reconstruction</td>
<td>$350K</td>
<td>☮️ ₿ ₳ ⚖️</td>
</tr>
<tr>
<td><strong>2</strong> New Crosswalk at Clayton St.</td>
<td>Set curb line in final location. Could be done independently of 40th Ave. reconstruction</td>
<td>$65K</td>
<td>☮️ ₿ ₳ ⚖️</td>
</tr>
<tr>
<td><strong>3</strong> Driver Feedback Signs on 40th Ave.</td>
<td>Can be installed prior to the Albion St midblock crossing project or at the same time</td>
<td>$25K</td>
<td>☮️ ₿ ₳ ⚖️</td>
</tr>
<tr>
<td><strong>4</strong> Driver Feedback Signs on Steele St.</td>
<td>Can be installed at anytime</td>
<td>$25K</td>
<td>☮️ ₿ ₳ ⚖️</td>
</tr>
</tbody>
</table>
existing conditions

roadway capacity and lane widths

40th Avenue from York Street to Colorado Boulevard is generally a three-lane section within 80 foot of right of way (ROW). Most complete street elements are missing in this corridor today. DRCOG’s FOCUS model projects approximately 18,000 vehicles per day traveling along 40th Avenue in the study area by the year 2040, and the corridor remains a designated truck route and high volume bus transit corridor.

Future traffic volumes and access needs were evaluated to determine the appropriate number of travel lanes and turn lane locations for the corridor. An initial investigation revealed that removing the center left turn lane along the entire length of 40th Avenue and retaining a two-lane cross section resulted in negative impacts to local neighborhood access and still required lengthy turn pockets at all major intersections due to the consistent truck and bus traffic in the corridor. The transition between two and three lanes was determined to be of no benefit in the future design.

Lane widths today along 40th Avenue are 12 feet, which is consistent with a heavy truck and transit corridor. Based on stakeholder input, a more narrow lane configuration was desired by the community. A ten foot travel lane alternative was reviewed with CCD’s PW Transportation and Mobility technical staff and RTD transit operations staff and was determined to be feasible for through-lanes (edge of pan to the lane line) and left turn lanes (lane line to lane line).

pedestrian mobility

Today there are discontinuous five foot sidewalks along portions of 40th Avenue from York Street to Colorado Boulevard. Many locations along the corridor have no sidewalks at all. The Elyria Swansea Neighborhoods Plan identified the addition of wider than usual sidewalks and a stronger pedestrian environment as some of the highest priorities in this area. Additionally, the crossings of 40th Avenue were identified by community members in the Next Steps Study process as key to enabling student access to Bruce Randolph School.

bicycle accommodation and mobility

Currently, there are no bicycle facilities along the 40th Avenue corridor from York Street to Colorado Boulevard. The Elyria Swansea Neighborhoods Plan and Denver Moves envisioned a regional bicycle facility along 40th Avenue from the 38th & Blake Station area west to the 40th & Colorado station area. During the development of the Next Steps

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**PLANNING OVERVIEW**

The Elyria Swansea Neighborhoods Plan recommends 40th Avenue as a primary transportation corridor and “main street” to the surrounding neighborhood. As such, there are various competing interests for the 80’ ROW typically found between York Street to Colorado Boulevard. Truck and traffic travel demand, pedestrian and bicycle mobility, safe routes to school, transit access, parking supply and water quality improvements are all important corridor considerations.

Stakeholders and members of the public identified criteria to be weighed in the decision-making process:

- Enhance pedestrian environment and improve pedestrian mobility
- Increase bicycle facilities and mobility
- Integrate water quality improvements
- Increase transit access and improve rider street-side experience

The collection of projects recommended in this focus area are specifically designed to achieve these goals.
Study, the Platte to Park Stormwater Drainage Project (P2P) identified a new regional bike facility to be located along the alignment of 39th Avenue from west of York Street, along the Open Channel drainage configuration and east along 39th Avenue to Jackson Street. The development of this concept for regional bike connectivity created an opportunity to prioritize pedestrian mobility along the 40th Avenue ROW and locate better bicycle facilities on the 39th Avenue Open Channel facility for regional bike connectivity. This concept of the 40th and 39th Avenue corridors working in tandem informed the recommended cross sections and overall connectivity framework.

Various cross-sections examining the accommodation of bicycles on 40th Avenue were discussed with City technical staff, area stakeholders and the public. One such example is shown in Figure 4.1. In order to accommodate bicycles on this truck route, a behind curb, two-way cycle track was evaluated for the south side of the street. The combination of ten feet for cycle track and 14 feet for biodetention swale left little room for the more significant pedestrian accommodation desired by the community. It was decided the remaining five foot sidewalks were not in keeping with the intent of the Neighborhoods Plan, and a ten foot multi-use path was most appropriate for local pedestrian and bicycle access along the corridor.
TREATING STORMWATER

Treating storm runoff is critical to improving the health of Denver’s waterways. Streets are a major source of stormwater runoff and also represent the largest source of urban pollutants including sediments, heavy metals, automotive fluids, nutrients and trash. Without filtration, streets carry these pollutants directly to the storm drain system, which then conveys them to rivers and streams. Filtering the first ½” of stormwater coming off of roadways treats the problem at its source.

Example of a stormwater planter in Denver

drainage and detention

Focus Area 1 is located within Denver Drainage Basins 4500-01 (Montclair). Stormwater generally drains from southeast to northwest through the area, utilizing both street conveyance for surface flow as well as underground pipe conveyance. 40th Avenue currently serves the area as a primarily off-site drainage corridor, with a 45- to 66-inch diameter trunk line flowing west towards its eventual outfall to the South Platte River at Globeville Landing Park. The existing pipe serves drainage laterals in 39th Avenue, 38th Avenue, Madison Street and Adams Street. The existing drainage system was constructed in the 1940s and is considered to be undersized and unable to meet current Denver drainage criteria standards. Upsizing of the system has been proposed by numerous drainage studies, including Denver’s Storm Drainage Master Plan.

water quality

Water quality improvements were identified as a goal of the Next Steps Study and incorporating water quality elements into the 40th Avenue cross section, within the ROW, was integral to the concept design. Several Best Management Practices (BMPs) were selected to provide required treatment volumes, create a compatible urban design context along the corridor and establish a consistent landscape buffer, including street trees. Adjacent land use and mix was also an influencing factor in the application of BMPs by corridor segment and include a green buffer adjacent to Bruce Randolph School, transit amenities combined with streetscape through the residential areas and pedestrian-oriented treatments for commercial zones closer to the 40th & Colorado Station.

When planning for water quality treatment integration, a general rule of thumb is to assume two to three percent of the total impervious area within the ROW would be allocated to water quality treatment. Table 4.1 illustrates the impervious surface by corridor segment, the water volume storage by facility type and the percent of water quality treatment out of the total surface area. The table illustrates that the current percent treated far exceeds the two to three percent rule, but gives plenty of flexibility for the changes typically associated with final design and construction. Constraints to fully integrating planned water quality facilities often include the discovery of unknown physical constraints, changes in assumed design intent, cost control and value engineering, limitations based on project phasing and/or changes in the assumptions related to adjacent land uses. The concept design provides allowance for these possible changes in final design.
The following BMPs were integrated within the 40th Avenue corridor concept design:

**Trapezoidal Grass Swale** is a vegetated drainageway that collects and slowly conveys runoff. The shallow longitudinal slope slows flow, promotes sedimentation and fits well with the shallow longitudinal slope of the roadway. The requirement for grade control within the channel will be reduced by the stops and starts associated with curb cuts and other pedestrian access crossings. This is a low cost BMP that provides a landscape buffer to the adjacent school and fits where no parking is allowed along 40th Avenue. If final design identifies surplus treatment volume, the Trapezoidal Grass Swale can revert to a simple grass tree-lawn and street trees, similar to what exists on site now. There is no base flow anticipated, but the section shows an underdrain to reduce the chances of developing a wetland condition and to increase the potential for regular landscape maintenance by maintenance personnel.

**Permeable Paving** consists of concrete block pavers with open, non-grouted joints on a gravel subgrade. The joints are filled with a permeable material, like sand. The detail is intended to accommodate low movement parking while facilitating stormwater infiltration from rainwater falling directly on the pavers and draining to the pavers from the adjacent travel lanes. The pavers decrease the effective imperviousness of the roadway and provide particulate pollutant removal. This is a relatively high cost BMP but comes with the advantage of providing a dual use (Water Quality and Parking) in a limited cross-sectional area. The parking also complements the adjacent residential uses, which may redevelop as multi-family over time. If final design identifies surplus treatment volume, then a percentage of the proposed Permeable Paving can revert to match the roadway paving design. Permeable paving can be maintained by using a vacuum truck and
Sidewalk Stormwater Planter (SSP) does not typically require a special maintenance district for upkeep. **Sidewalk Stormwater Planters (SSP)**, according to the Ultra-Urban Green Infrastructure Guidelines, are intended to provide water quality treatment of runoff from the street and adjacent pedestrian zone (sidewalk). Each planter uses structural concrete walls and/or curbs to isolate a low-lying vegetated area below the street’s flow-line elevation. The vegetated area lies on top of a sand bed and an underdrain pipe. Stormwater enters from the curb side and infiltrates vertically through the sand bed. This is a high-cost BMP that fits with the anticipated commercial redevelopment of the district where on-street parking is limited to the north side of the street and pedestrian traffic will be relatively heavy. The inside open dimension of these SSPs will be wide enough to allow trees to be planted in the BMP. If final design identifies surplus treatment volume then a number of SSPs can revert to more conventional landscape planters similar in size and appearance to the remaining SSPs. The landscape component of the SSP is typically maintained by a special business district.
40th avenue cross section

Figure 4.2 illustrates the preferred cross-section for 40th Avenue. It is referred to as the Pedestrian and Transit Priority section and includes ten foot through travel lanes and retention of a center turn to accommodate turning movements at key intersections and median refuges at other locations. Pedestrian amenities include a ten foot multi-use path on the south side of the street and eight foot wide sidewalks along the north. Water quality is addressed by the addition of a bioretention swale through portions of the corridor and permeable pavers in locations where on-street parking is suggested to support an active street frontage. A six foot tree lawn and landscape, street lighting and improved transit stops and amenities are core elements of the pedestrian environment.

40th Avenue was segmented and specific cross-sections were designed for each segment based on adjacent land use and travel characteristics. In subsequent pages, a plan view (birds eye) layout illustrates the accommodation of elements of each cross section for the length of the corridor.

york to columbine

This segment of 40th Avenue was recently reconstructed as part of the University of Colorado A-Line Commuter Rail construction project and includes significant drainage infrastructure and a realignment of 40th Avenue to accommodate the east rail track. Reconstruction of this segment was deemed infeasible and not cost effective due to these recent changes.
columbine to clayton (A1)

The land uses in this segment are large and institutional in nature and have off-street parking lots negating the need for on-street parking. There are also three other constraints in this segment: maintaining the drop off/pick up area on the north side, leaving the existing large mature trees and canopy on the north side in place and significant narrowing of available right of way on the south side near Columbine Street. The plan view of this segment is shown in Figure 4.3.
Incorporating the land use characteristics and the constraints into the overall preferred cross section resulted in the cross section for this segment shown in Figure 4.4. This segment includes a ten foot detached sidewalk on both sides of the street. There is a ten foot amenity zone on the both sides of the street with turf and street trees and an additional 14 foot bioretention swale with street trees on the south side. There is no on-street parking in this segment.

Figure 4.4 Columbine to Clayton Section
clayton to steele (A2)

The land uses in this segment are commercial/residential on the north side and institutional (Bruce Randolph School) on the south side. This led to a section with on-street parking provided on the north side and no on-street parking on the south side. There is also an additional five foot of ROW available on the north side of the street that is not present in the other segments that allowed for the inclusion of ten foot sidewalks on both sides of 40th Avenue.

The plan view of this segment shown in Figure 4.5 illustrates these improvements.

Figure 4.5 Clayton to Steele Plan View
The cross section view of this segment and the proposed improvements are shown in Figure 4.6. This segment includes a ten foot detached sidewalk on both sides of the street. There is an eight foot amenity zone on the north side with turf and street trees; the south side of the street includes a 14 foot bioretention swale with street trees. The north side of the street includes an on-street parking lane with an option for permeable paving. The permeable pavers allow for a dual purpose for the on-street parking area, maximizing the productive use of available ROW.
The land uses on both sides of 40th Avenue in this segment are commercial/residential. Land uses led to the determination that on-street parking should be provided on both sides of 40th Avenue in this segment. Water quality infrastructure is integrated into the on-street parking area through the use of permeable pavers, resulting in a leveraged use of that space. The plan view of this segment, shown in Figure 4.7, illustrates these improvements.
The cross section view of this segment and the proposed improvements are shown in Figure 4.8. This segment includes an eight foot detached sidewalk on the north side of the street and a ten foot detached sidewalk on the south side of the street. There is an eight foot amenity zone on both sides of the street with turf and street trees. There are parking lanes on both sides of the street with permeable paving. The permeable pavers allow for a dual purpose for the on-street parking area, maximizing the productive use of available ROW.
**Cook to Monroe (A4)**

The land uses on both sides of 40th Avenue between Cook Street and Madison Street are residential/commercial. A unique feature in this segment is the changing topography, with the land surface generally rising eastward from Cook Street. Seen in Figure 4.9, the street and alley connections on the south side currently exist, yet connection on the north side is absent. It is the intent of this design to keep access as it is today. Due to the changing topography and lack of access on the north side, on-street parking on the north side was not included. 40th Avenue crosses the current Market Lead, just east of Monroe Street, via a bridge. Even after filling the Market Lead, removing the bridge, and lowering the profile and elevation of 40th Avenue in this segment, some form of retaining walls or ground slope would be required on the north side to account for the difference in elevation between existing homes and the future elevation of 40th Avenue.
The cross section view of this segment and the proposed improvements are shown in Figure 4.10. This segment includes an eight foot detached sidewalk on the north side of the street and ten foot shared use path on the south side. There is an eight foot amenity zone of trees with turf and a retaining wall that runs adjacent to the sidewalk on the north side to allow for the construction of an accessible sidewalk. The south side of the street includes a seven and a half foot amenity zone with turf and trees. There is a parking lane on the south side of the street with an option for permeable paving.
monroe to jackson (A5)

This segment of 40th Avenue currently has commercial/industrial land uses and is anticipated to be among the first segments where redevelopment could occur. A more urban feel to this segment is also anticipated and the potential use of the Ultra-Urban Green Infrastructure Guidelines for water quality could be an option. Due to the multitude of existing driveways on the north side of 40th Avenue in this segment, on-street parking is not currently shown on the north side of the street. If redevelopment resulted in consolidated or fewer driveways on the north side, on-street parking may be included on the north side as well as the south side. The plan view of this segment is shown in Figure 4.11.
The cross section view of this segment and the proposed improvements are shown in Figure 4.12. This segment includes a ten foot detached sidewalk on both sides of the street. An amenity zone on both sides of the street includes alternating stormwater planters and street tree planters. The amenity zone on the north is 12 feet, including the six foot wide stormwater planter or street tree planter. The amenity zone on the south is seven and a half feet wide, including alternating five foot wide planters. There is a parking lane on the south side of the street, with an option for permeable paving.
This segment of 40th Avenue was recently reconstructed as part of the University of Colorado A-Line Commuter Train construction project to accommodate the anticipated traffic volumes and movements at the 40th Avenue/Colorado Boulevard intersection. Complete reconstruction of this segment was deemed infeasible and not cost effective due to these recent changes. However, minor changes to improve pedestrian connectivity and mobility are recommended. The plan view of this segment is shown in Figure 4.13.

This segment includes curb and gutter and an attached sidewalk on the south side of the street from Jackson Street to Harrison Street. The width of the walk is 18’ from Jackson Street to the mid block alley tapering to a seven foot width at Harrison Street.
clayton street multi-use path

Clayton Street is one of the only neighborhood streets between York Street and Colorado Boulevard that provides continuous local access from 40th Avenue north, under I-70 and to Swansea Elementary and the 47th Avenue neighborhood. Clayton Street is also the proposed “cover” for the I-70 reconstruction and will someday be a park connection to uses north of I-70.

The initial investigation of available ROW indicates that it should be possible to expand the existing sidewalk on the west side of Clayton Street between 40th Avenue and the proposed I-70 cover to an eight to ten foot wide multi-use path. There are relatively few intersections and driveway crossings and, with a few modifications in the area of Dunham Park to avoid several mature trees, it appears feasible at the conceptual level.

This important local street should act as a multi-modal north/south spine and enable a safe pedestrian crossing of the commuter rail line. The integration of a ten foot multi-use path along the west side of Clayton Street increases local connectivity north/south, particularly to 42nd Avenue, which links residents and employees east/west to the station area. A crosswalk and curb ramps at 40th Avenue on the east side of the Clayton Street/40th Avenue intersection would make this intersection a key pedestrian link across 40th Avenue, particularly for school children.

multi-use connector to 39th avenue

The extension of the Clayton Street multi-use path south of 40th Avenue was discussed with stakeholders and identified as a key bicycle connection to the regional facility along 39th Avenue and the Open Channel. The extension of this facility from the Clayton Street crossing south along the edge of the Bruce Randolph and Geo Tech Industry properties creates another important community connection and potentially supports future development of the Geo Tech site.
supporting projects

1 pedestrian activated crossing at bruce randolph school

This project involves installing a mid-block crossing of 40th Avenue near Milwaukee Street that would more easily connect the neighborhoods north of 40th Avenue to Bruce Randolph School. Elements include curb ramps on both sides of 40th Avenue, a raised median in the center of 40th Avenue, pedestrian/school crossing signs, and an activated device (either a hybrid beacon signal or RRFB installation) to allow for safe crossings. The exact location and configuration of the crossing will be determined by an engineering study.

2 new crosswalk at clayton street / 40th avenue

There are currently no curb ramps, marked crosswalk or pedestrian signals that facilitate crossing 40th Avenue on the east side of Clayton Street. This project would add a marked crosswalk, pedestrian signals and curb ramps on the north and south sides of 40th Avenue on the east side of the intersection and supporting infrastructure (curb/gutter/sidewalk) on the north side of 40th Avenue.

3 driver feedback signs on 40th avenue

Community input and observations in the 40th Avenue corridor indicated that vehicles might be exceeding the speed limit of 40th Avenue, particularly in the school zone. The installation of driver speed feedback signs in the school zone adjacent to Bruce Randolph School on 40th Avenue would help to address this issue by reinforcing the speed limit and encouraging compliance. Research has shown that these devices can have a small but positive effect on speed limit compliance. The signs use radar to measure vehicle speed and displays it to drivers to encourage compliance with the posted speed limit.

4 driver feedback signs on steele street

Community input and observations in the Steele Street corridor indicated that vehicles might be exceeding the speed limit, particularly in the school zone. The installation of driver speed feedback signs in the school zone around Bruce Randolph School on Steele Street south would help to address this issue by reinforcing the speed limit and encouraging compliance. Research has shown that these devices can have a small but positive effect on speed limit compliance. The signs uses radar to measure vehicle speed and displays it to driver to encourage compliance with the posted speed limit.
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north industrial area
**2: north industrial area**

**PROJECT**

<table>
<thead>
<tr>
<th>PROJECT</th>
<th>TIMING / TRIGGERS / DEPENDENCIES</th>
<th>COST</th>
<th>BENEFITS</th>
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<td><strong>D</strong> 43rd Ave. Extension</td>
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<tr>
<td><strong>E</strong> Overpass Pedestrian Connection</td>
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<td><img src="image" alt="Community Amenity" />, <img src="image" alt="Economic Development" /></td>
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**KEY BENEFIT TYPE:** ![Community Amenity](image), ![Economic Development](image), ![Connectivity](image), ![Water Quality](image)

**BENEFITS:** ![Benefit](image), ![No Benefit](image)

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*JANUARY 2017 FINAL REPORT | FOCUS AREA 2: NORTH INDUSTRIAL AREA*
existing conditions

Focus Area 2 presents significant opportunities to increase activity at the 40th and Colorado Station. Projects within this area concentrate on creating better connections in the pedestrian networks and preparing the area for development options that can catalyze the area. Projects in this area include the extension of 43rd Street and investigations into the best methods for creating a cohesive pedestrian experience at the station.

PLANNING OVERVIEW

The North Industrial Area is approximately 36.7 acres (1,597,920 sq. ft.) bounded by I-70 to the north, the Market Lead to the west, the University of Colorado A-Line Commuter Rail tracks to the south and Colorado Boulevard on the east. The area has extremely limited access with only one point of vehicular entry at 46th Avenue from the north by way of an I-70 underpass. Figure 5.1 depicts an aerial view of the North Industrial Area.

The area is comprised of thirty Assessor-identified properties under 23 distinct ownerships. The area is zoned I-A, UO-2 Industrial – Light and is improved with 450,000 square feet of older industrial buildings with an average year of construction of 1966.

The overall density of development is relatively low with only 28% of the land area improved by buildings. The 2015 Total Assessed Value was $24,795,900, contributing $397,738 in property tax.

land use

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The overall density of development is relatively low with only 28% of the land area improved by buildings. The 2015 Total Assessed Value was $24,795,900, contributing $397,738 in property tax.
topography and drainage

As seen in Figure 5.2, the area is constrained by topography and man-made barriers. Colorado Boulevard is approximately 20 feet above the general existing grade within the industrial area and a significant slope separates the area, making the prospect of a functional vehicular connection from the east unlikely. Additionally, the topographic low is along the northwest boundary adjacent to the BNSF rail and Market Lead, resulting in the flow of surface water to an area that lacks the capacity to address water quality or detention. Storm drains throughout the area are almost non-existent, with a small ten inch line serving the buildings along the western portion of the site. Flows in excess of the existing storm drain capacity currently travel along the surface into the Market Lead located along the western edge of the site. However, the Market Lead is not designed as a drainage facility and currently experiences frequent flooding. Future upsizing of the existing system along 45th Avenue, as well as the addition of an interior site drainage system, are proposed in Denver’s Storm Drainage Master Plan.

Figure 5.2 Topography

additional considerations

The Colorado Boulevard overpass creates a ‘wall’ along the eastern portion of the site. It is located 20 feet above existing developed land.

The existing BNSF railroad spur is located in a ditch at the western edge of the site.

The North Industrial Area generally slopes from east to west from an elevation 5250 feet (base of retaining slopes along Colorado) to 5220 feet at the upper edge of the BNSF railroad spur.
Figure 5.3 Land Ownership & Planned I-70 Alignment

property ownership

Figure 5.3 shows that approximately 30% of the land in the North Industrial area is under single ownership. The configuration and fact that it is contiguous creates a potential for coordinated, larger scale redevelopment to occur.

The North Industrial Area is currently only accessible from the north along Garfield Street, which will likely be removed during the I-70 reconstruction, making additional access to this area critical for existing and future uses. There are several two and three acre parcels that could be re-purposed without having to assemble land, while smaller, undevelopable parcels along the commuter rail tracks create an opportunity to acquire that land for a new potential street connection.
land uses

The North Industrial Area is currently occupied by a wide range of businesses without any specific continuity in use as illustrated in Figure 5.4. While there are three larger (approximately 60,000 – 80,000 square feet) and architecturally interesting buildings in the area, most buildings are small and not of significance from a redevelopment perspective. The area is home to several marijuana grow businesses, which occupy some of the larger properties.
key projects

I-70 Construction

During I-70 reconstruction, the City should work with industrial landowners and residents to minimize adverse effects of trucks using 43rd Avenue to access this area.

KEY

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<th></th>
<th>Name</th>
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<tr>
<td>A</td>
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<td>D</td>
<td>C70 Jackson LLC</td>
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<td>E</td>
<td>Devito Clark LLC</td>
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TOTAL 1.62 AC

43rd Avenue Extension

The extension of 43rd and Garfield Streets rebuilds the local street grid and creates the opportunity for successful TOD infill. Development opportunities associated with I-MX or M-X development include residential, office or hotel uses.

Figure 5.5 Land Ownership & 43rd Avenue Extension

43rd street extension

Vehicular access is critical to maintaining access during I-70 reconstruction as well as supporting the viability of future redevelopment. Based on the existing development pattern, the most efficient point of modified access would be the extension of 43rd Avenue to Garfield Street alignment and extend Garfield Street north to 44th Avenue.

Figure 5.5 shows that construction of a 43rd Avenue extension would require the acquisition of approximately 1.44 acres of ROW from five property owners. This strategy will allow the existing site users to continue operating during I-70 construction and open up the possibility of new industrial development along Garfield Street while setting up the possibility for longer-term redevelopment.
Preliminary site testing/development feasibility was considered assuming several infrastructure development scenarios. Two preferred options include: Phase 1 Short Term Development - modified access from 43rd Avenue to Garfeld Street (Figure 5.6) and Phase 2 Long Term Development - extension of 43rd Avenue further into the North Industrial Area creating a connection to Jackson Street (Figure 5.7).

The goal of the 43rd Avenue extension to Garfield Street is to establish the development grid south of 44th Avenue, making Garfield Street a through street and enhancing vehicular traffic along the length of the roadway. Assuming continuity in ownership and continued light industrial use, the resulting land parcel east of Garfield Street might support up to 40,000 square feet in single story light industrial uses. While this investment is the lowest cost in terms of land acquisition and construction, the balance of the North Industrial Area infrastructure remains unchanged and there is no anticipated public investment to inform any change in development patterns outside of the Garfield Street frontage.
phase 2: long term development option

The long-term preferred development options in the North Industrial Area include development along Jackson Street and Garfield Street. This scenario could support more than 257,000 square feet of new development.

**KEY**

- Proposed Street
- Future Private Drive
- Potential New Industrial Building

|  |  |  |  |  |  |  |  |  |  |  |
|---|---|---|---|---|---|---|---|---|---|
| 1 | 13,000 SF |
| 2 | 13,000 SF |
| 3 | 13,000 SF |
| 4 | 13,000 SF |
| 5 | 25,000 SF |
| 6 | 60,000 SF |
| 7 | 60,000 SF |
| 8 | 60,000 SF |

**water quality and drainage considerations**

- 39 acre study area
- 80% impervious surfaces
- 40 hour Water Quality Capture Volume (WQCV) drain time

Under the above assumptions, this area requires an additional capacity of 5 acre-feet, which can be satisfied with a 1.5 acre pond at a depth of 6.5 feet.

When the 43rd Avenue ROW is established further east into the North Industrial Area along 43rd Avenue, not only are the benefits of Garfield Street realized, but the connection also creates a rationale for Jackson Street to be developed. These changes in turn solidify an organized land use pattern, create new frontages and increases vehicular circulation in the otherwise constrained area. While many factors will influence development outcomes over time, this strategy sets the stage for a block system with the potential to realize a variety of buildings and ultimately a higher intensity development outcome. With new frontages along 43rd Avenue, 44th Avenue and Jackson Street, site testing identifies the potential for more than 257,000 square feet of new industrial development. However, the street and block network will allow for a range of uses and densities to evolve with market demand. While currently buried deep within this isolated land area, new frontages along 43rd Avenue will create more easily accessed land parcels that are highly visible due to their direct adjacency to the 40th & Colorado Station.
The topographic low in the North Industrial Area is along the northwest boundary adjacent to the BNSF rail and Market Lead, resulting in the flow of surface water to an area that lacks the capacity to address water quality or detention. This is significant as water quality and detention will be required for redevelopment. However, the area’s physical constraints may significantly increase the cost of detention and be a limiting factor in higher density development outcomes. Water quality and detention options near 46th Avenue could pay in lieu for stormwater, allowing for maximum on-site density. While it would be subject to significant policy and political factors, the North Industrial Area does currently offer the potential to establish a regional detention solution as is common in private industrial parks. Such an approach would capture development flows in a common facility in the northwest part of the North Industrial Area, thereby enabling greater site coverage on the individual development parcels. Figure 5.8 depicts what a potential buildout option would look like.
pedestrian connection investigations

As part of the mobility connections investigations, a conceptual level investigation into the possibility and methods of crossing the RTD and Union Pacific Rail Road (UPRR) tracks with either an underpass or an overpass to connect the north and south sides of the station area was performed on the two areas identified in Figure 5.9.

tunnel option

An underpass option was first evaluated by replacing the existing drainage box culvert that is generally aligned with Monroe Street with a pedestrian underpass tunnel approximately ten foot high and 14 foot wide and 150 foot long within Investigation Area 1 (see Figure 5.10). There was significant concern over the length of the underpass tunnel in terms of personal safety and security issues and also with the length of ramping required at each end of the tunnel to get back to existing grade and connect with other sidewalk and bicycle facilities.
Tunneling would require lengthy ramping to meet existing grades.

Alternate option to ramp up on north side of railroad tracks.
A 3-level helical ramp is necessary for space efficiencies on the south side.

**potential conflicts**
- Commuter Rail overhead contact and messenger wires realignment
- RTD & UPRR track minimum vertical clearance
- Detention basin and riprap outfall at south helical ramp
- Existing box culverts at north switchback ramp
- Existing building and ROW conflicts at switch back ramp

**bridge option**

The possibility of constructing a bridge over the RTD and UPRR tracks to connect the north side and south side of the station area was also investigated. A north/south pedestrian bridge across the tracks would further encourage transit oriented development (TOD) in Focus Area 2 and increase the likelihood for high tech, custom manufacturing. Figure 5.11 illustrates a potential bridge over the tracks. One of the challenges with a bridge is that the clearance from the existing top of the rail to the bottom of the bridge structure is a minimum of 27 feet. This leads to fairly long access ramps on either side of the structure. In order to save space on the south side of the tracks, a helical (circling) ramping system was assumed. The alignment consists of a three-level helical ramp element at the south side of tracks, clear span of approximately 200 feet, and two-level switchback ramp at the north side of tracks. The helical ramp is envisioned as a reinforced concrete structure with a central pier column and cantilevered decks. The bridge would be a prefabricated steel box truss. The switchback ramp is anticipated to be supported by continuous retaining walls of
reinforced concrete or Mechanically Stabilized Earth (MSE). Caisson-type foundations and reinforced concrete walls have also been assumed. As the 40th & Colorado Station bridge concept develops, it might be beneficial to consider some of the recently constructed bridge facilities that include elevator and stair systems for vertical circulation as an alternative to ADA-graded approach ramps. Several examples have been constructed recently in the Denver Metro region, including one at 38th Avenue/Blake Street as shown in Figure 5.12. Although elevator systems are expensive in themselves and involve additional operations and maintenance, this type of configuration can involve a much smaller site footprint, thereby resolving many of the potential conflicts identified above.
supporting projects

wayfinding and ROW enforcement

One of the challenges to developing this area is that it is difficult to locate from the surrounding roadway system. Implementing a wayfinding system to the area could start to make the area more identifiable and easier to find. Also, defining and enforcing the public ROW consistently will help set the stage for key projects in the area and manage expectations about private use of public ROW.
albion street connections
3: Albion Street Connections

**PROJECT TIMING / TRIGGERS / DEPENDENCIES**

<table>
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<tr>
<th>PROJECT</th>
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<th>COST</th>
<th>BENEFITS</th>
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<td>F Albion St. Traffic Calming</td>
<td>Further study should be begun as soon as feasible</td>
<td>N/A</td>
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<td>6 Albion St. Mid-Block Crossing</td>
<td>Construction of the proposed Urban Land Conservancy development on the west side of Albion St near Smith Rd would be a good time to realign the shared use path and create this midblock crossing</td>
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**KEY BENEFIT TYPE:**

- ☝️ Community Amenity
- ☄️ Connectivity
- $ Economic Development
- ☀️ Water Quality

**BENEFITS:** ☃️ Benefit ☀️ No Benefit
existing conditions

PLANNING OVERVIEW

Focus Area 3 is located east of Colorado Boulevard and is an emerging residential and mixed-use node linked to the 40th & Colorado Station via a pedestrian path under the Colorado Boulevard bridge to the station platform. Albion Street today provides direct truck access through the residential area and, according to residents in the area, travel speeds far exceed the posted limits. Safe pedestrian crossings, a visible pedestrian environment and convenient connectivity to the station and surrounding uses are important improvements for this area.

During the construction and since the opening of the University of Colorado A-Line commuter rail, mixed-use development east of Colorado Boulevard along Albion Street has increased significantly, making the area an emerging TOD community located just a walk away from the 40th & Colorado Station (see Figure 6.1). DelWest’s affordable housing project, Park Hill Station, along with the 404 Apartments increased the existing residential use in the area by an additional 500 units or more.

Urban Land Conservancy (ULC) launched plans for its 40th & Colorado TOD project, Park Hill Village West, centered at its nine-acre site just east of Colorado Boulevard. Future site design of the ULC development is based on a year and a half community engagement process identifying neighborhood priorities of increased mobility and connectivity. Affordable housing, community service office space and fresh food retail components of the development will create a community asset and destination, increasing the demand for bike and pedestrian access to the area. In September 2015, ULC also unveiled its proposal for an art-themed...
urban trail using bikeways and pedestrian paths throughout Park Hill and to the 40th & Colorado Station, among other area destinations. The project is designed to increase community connectivity and highlight community visionaries, local artists and the unique history of the neighborhood. The Next Steps Study examined ways to ensure the integration of the proposed Artway alignment with other station area connectivity improvements in order to leverage the joint efforts. The proposed alignment, illustrated in Figure 6.2, travels along Albion Street to the pedestrian path under Colorado Boulevard to the platform. From there, the Artway potentially continues along 42nd Avenue to the future extension of the Monroe Street multi-use path to 40th Avenue or the 39th Avenue bike and pedestrian facilities. The integration of the Artway alignment with the proposed Next Steps Study connectivity improvements is an important feature of the cohesive connectivity framework for the study area.

The first phase of the 303 Artway project is underway with an art installation at the pedestrian path under Colorado Boulevard and the entrance to the 40th & Colorado Station.
Figure 6.3 Albion Street has a residential character that is inconsistent with a Truck Route. More housing is being constructed along the street today.

albion st traffic calming

Due to ROW constraints during the design of the University of Colorado A-Line Commuter Rail system, Smith Road was realigned to follow the Albion Street alignment to the intersection of Albion Street and Colorado Boulevard. Historically, Smith Road continued west under Colorado Boulevard to what is now Jackson Street west of Colorado Boulevard. The realignment of this busy truck route has resulted in Albion Street being used by more trucks and has higher volumes than it was designed to accommodate. In addition, Albion Street is not currently designated as a truck route. This situation has created a difficult environment for pedestrians attempting to cross Albion Street to access the 40th & Colorado Station (Figure 6.3). Albion Street today provides direct truck access through the residential area and, according to residents in the area, travel speeds exceed the posted limits.
In order to address this issue, a cursory investigation into removing truck traffic from Albion Street was conducted. Because no land uses along this stretch of Albion Street and Smith Road utilize trucking, trucks only need to travel this section of roadway when there is no alternative to reach their destinations. Two potential alternate routes were developed after examining the existing roadway systems, shown in Figure 6.4. By utilizing either 48th Avenue and/or the I-70 frontage roads, truck traffic could avoid Albion Street altogether. The two routes add approximately one half to one mile to a truck trip through the area as compared to the current route of utilizing Albion Street and Smith Road. Another option to address this issue (shown as arrows in Figure 6.4) is to extend 40th Avenue east of Albion Street and connect it to Dahlia Street and design the extension to safely accommodate truck traffic.

Further study of these three options should be performed in the near-term to determine their viability and any necessary signage or enforcement to implement a change.
In order to create a safe pedestrian and bicycle crossing of Albion Street, it is important to evaluate the ability of drivers and crossing users to see each other and make proper decisions such as yielding to users in the crosswalk or waiting for vehicles that are too close to the crosswalk to yield to pass by. An engineering investigation of stopping sight distance was undertaken to determine the most northern location a pedestrian crossing could be located while providing for adequate sight distance. The appropriate stopping sight distance for drivers traveling along Albion Street/Smith Road was determined to be 200 feet based on a 30 mph design speed. The green triangle in Figure 6.5 represents the sight triangle of a driver traveling southbound being able to see 200 feet ahead without their vision being obstructed by oncoming vehicles or other impediments. The blue and magenta triangles represent the sight triangle of users of the crossing and their being able to see at least 200 feet upstream of the crossing to be able to determine if vehicles traveling towards them would be able to stop and yield if they entered the crosswalk. The combination of these three sight triangles defines the northernmost location a crossing could be located without violating stopping sight distance factors.
Once the location of the proposed crossing is established, an analysis of the crossing conditions needs to be completed to determine the configuration of the crossing and the traffic control devices that would be implemented at the crossing location. The existing three-lane section of Albion Street creates room for a raised median in the center lane at the crossing location (see Figure 6.6). The raised median greatly increases crossing mobility and safety by allowing pedestrians and bicyclists to cross one lane of traffic at a time with a safe refuge in the middle of the street. On-street parking is not currently allowed near the proposed crossing location and would not be allowed in the future to preserve sight lines and visibility. The City and County of Denver Pedestrian Crossing Guidelines were referenced to determine likely traffic control devices that would be installed at the proposed crossing location. Based on those guidelines, it is likely that a marked crosswalk with Pedestrian crossing signs and Rapid Rectangular Flashing Beacons (RRFB) could be installed at the crossing. The RRFBs would face approaching traffic and flash when a person wanted to cross Albion Street, warning approaching drivers to slow down and yield. Another device that could be installed near the crossing location are Driver Feedback Signs, which use radar to measure the speed of approaching traffic and display that speed to drivers in order to emphasize the speed limit and encourage compliance. More analysis of this specific location to determine the potential effectiveness of Driver Feedback Signs would need to be performed prior to implementation.
seen in figure 6.7, the proposed location for the pedestrian crossing was also sited to work with potential site development and detention configurations for the ULC site. The crossing location enables a pedestrian connection adjacent to the existing detention facility at the northern end of the site, or works well with an east/west pedestrian spine through the site and linking to the pedestrian underpass of Colorado Boulevard. The pedestrian movement through the northern end of the site is complimented by east/west connectivity at the southern end of the site with the City’s recently improved pedestrian crossing near 404 Apartments. Flexibility in development details and site programming are important considerations for future conditions in the area.
monroe / market lead
4: monroe / market lead

**Project Timings, Triggers, and Dependencies**

<table>
<thead>
<tr>
<th>PROJECT</th>
<th>TIMING / TRIGGERS / DEPENDENCIES</th>
<th>COST</th>
<th>BENEFITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>G 42nd Ave. Extension</td>
<td>Should be coordinated with the Supporting Project B</td>
<td>$300K</td>
<td><img src="Benefit" alt="Benefit" /> <img src="People" alt="People" /> <img src="Money" alt="Money" /> <img src="Environment" alt="Environment" /></td>
</tr>
<tr>
<td>H Monroe/Market Lead Roadway</td>
<td>Redevelopment north of 40th Ave would trigger this project. This project needs to be done in conjunction with Key Project</td>
<td>$1.9M</td>
<td><img src="Benefit" alt="Benefit" /> <img src="People" alt="People" /> <img src="Money" alt="Money" /> <img src="Environment" alt="Environment" /></td>
</tr>
<tr>
<td>I Monroe St. Multi-Use Path</td>
<td>Key Project needs to be completed prior to this project in order to provide for a safe pedestrian crossing and to ensure adequate infrastructure for pedestrians and bicycles</td>
<td>$450K</td>
<td><img src="Benefit" alt="Benefit" /> <img src="People" alt="People" /> <img src="Money" alt="Money" /> <img src="Environment" alt="Environment" /></td>
</tr>
<tr>
<td>8 Improved Pedestrian Crossing of Steele St. at 42nd Ave.</td>
<td>Should be coordinated with the Key Project E and/or Supporting Project</td>
<td>$625K</td>
<td><img src="Benefit" alt="Benefit" /> <img src="People" alt="People" /> <img src="Money" alt="Money" /> <img src="Environment" alt="Environment" /></td>
</tr>
<tr>
<td>9 Improved Pedestrian Crossing of Steele St. at 39th Ave.</td>
<td>In conjunction with the construction of the P2P shared use path</td>
<td>$145K</td>
<td><img src="Benefit" alt="Benefit" /> <img src="People" alt="People" /> <img src="Money" alt="Money" /> <img src="Environment" alt="Environment" /></td>
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<td>10 Pedestrian / Bike Connection across Market Lead</td>
<td>Near term if Key Project not slated to be completed in the near term</td>
<td>$75K</td>
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</tbody>
</table>

**Key Project Benefits**

- Community Amenities
- Connectivity
- Economic Development
- Water Quality

**Supporting Project Benefits**

- ![Benefit](Benefit)
- ![People](People)
- ![Money](Money)
- ![Environment](Environment)
existing conditions

PLANNING OVERVIEW

The Market Lead between 40th and 42nd Avenue was identified in the Globeville/Elyria Swansea Neighborhoods Plan as a significant barrier between existing residences and 40th & Colorado Station. This portion of the Market Lead was acquired by the CCD in 2016. The purpose of this portion of the Next Steps Study is to determine how the City can leverage its recent investment to stimulate economic growth in the area. Projects in this Focus Area are focused on balancing connectivity options and development opportunities.

A multidimensional approach was used to evaluate strategies to leverage the City’s investment in the Market Lead, including property owner interviews, infrastructure alternatives and land use and massing analysis. An iterative conceptual design testing process examined multiple land use and street design scenarios along the Market Lead (boundaries shown in Figure 7.1), evaluate the tradeoffs of each intervention.

A series of interviews were held with property owners in the immediate Station Area. The interviews brought visibility to transactions in the area, indicating that speculative real estate capital is making its way to the area. Furthermore, several property owners indicated that they either have plans for or would like to see redevelopment of their properties, but a lack of clarity regarding future public improvements has delayed their ability to complete design. When considering development options, most owners had familiarity with the Globeville Elyria Swansea Neighborhoods Plan and discussed visions for mixed use development including higher density residential developments with the proximity to the 40th & Colorado Station being a significant value driver.
detention and drainage

The Monroe Street Extension Area, shown in Figure 7.2, straddles Denver Drainage Basins 4500-01 and 0060-02. Storm water from the area currently drains into the Market Lead to the west; however, the Market Lead is not designed as a drainage facility and currently experiences frequent flooding. Future redevelopment of the station area and Monroe Street will require drainage system upgrades as well as an adequate outfall system instead of the Market Lead. The 2014 Denver Storm Drainage Master Plan proposes to drain this area to the north through an improved pipe network, which would maintain existing drainage patterns. However, the more recent 2015 drainage discussions propose to drain this area to the west along 39th Avenue. While the 39th Avenue drainage alignment would need to buck grades along Monroe Street to achieve positive drainage, draining to this alignment would alleviate the current Market Lead and downstream drainage issues, while also utilizing a new drainage facility as much as possible. The detention ponds adjacent to the station handle water quality for the station area north of 41st Avenue between Monroe Street and Colorado Boulevard today. Future station area development will require additional water quality treatments.

water quality and drainage considerations

- 34 acre study area
- 80% impervious surfaces
- 40 hour Water Quality Capture Volume (WQCV) drain time

Under the above assumptions, this area requires additional capacity of 4.4 acre-feet.
A key consideration of creating a new Monroe Street between 40th Avenue and 41st Avenue is where they will intersect and how to match the elevations of both streets to create an optimized connection. 40th Avenue at the proposed Monroe Street alignment is significantly higher than the existing elevation of the 41st Avenue/Monroe Street intersection. This poses a challenge to redevelopment and to integration of land uses into the streetscape. In order to address this existing condition, an investigation into the possibility of lowering 40th Avenue to create a lower Monroe Street/40th Avenue intersections was conducted. Two scenarios were investigated. The first assumes that the driveways along 40th Avenue east of the Market Lead would remain in place and their connection to 40th Avenue would need to be maintained. It also assumes that the existing Cook Street/40th Avenue intersection elevation would need to be
maintained. Figure 7.3 shows the results of that investigation. The elevation of the 40th Avenue/Monroe Street intersection in this scenario would be lowered by approximately two and a half feet. This represents the maximum amount of lowering possible given current constraints.

The other scenario investigated the maximum amount of lowering that could be achieved if the driveway elevations along 40th Avenue east of the Market Lead were not held (assuming redevelopment) and that only the elevations of the Cook Street/40th Avenue intersection on the west and the Jackson Street/40th Avenue intersection on the east would need to be maintained. Figure 7.4 shows the results of that investigation. The elevation of the 40th Avenue/Monroe Street intersection in this scenario would be lowered by approximately seven and a half feet. This represents the maximum amount of lowering possible if current constraints did not exist.
market

The Denver Metro region is one of the nation’s top economies and the real estate markets are near record highs across all asset classes. Factors influencing the economic performance and, in turn, real estate demand include high net in-migration of more than 30,000 residents annually, low unemployment (3.8% vs 4.9% for the US in August 2016), industry diversity and increasing wage growth. The result has been a strong demand for services and housing supply, the latter of which has been constrained in recent years by an after effect from the great recession and construction defects liability in Colorado.

Housing demand in Denver across all sectors is projected to remain strong for several years and there is strong demand for affordable housing. While there is some concern about over-building in the apartment market, the expectation is a brief after effect followed by continued absorption.

Demographics immediately adjacent to the 40th & Colorado Station are currently weak relative to Metro Denver as a whole from a population and income perspective. Nearby industrial uses are not significant job creators and not materially influenced by the area’s population base. There are limited services in the area, which is largely related to the historic absence of households and discretionary income to support local business.

Limited investment in housing and retail services has been seen in recent years on the east side of Colorado Boulevard, much of which has been subsidized though low income housing tax credits and other forms of subsidy. As housing demand continues, pockets of infill development have been seen nearby, however, a wholesale pattern of redevelopment has yet to materialize. Projects at this location are considered speculative when compared to locations in more established areas, and such risk will influence ultimate pricing and positioning.

Provided the metro economy continues to perform well, as housing growth continues in the area, the demand for retail to serve everyday shopping needs of the area residents will only increase. These factors, when combined with public investment in the transit area, should have a continued positive influence on the prospect for development around the 40th & Colorado Station area.
Balancing station connectivity and the potential for redevelopment along the Market Lead is integral to leveraging the Market Lead investment to catalyze redevelopment near the station. The widths of Market Lead and the future Monroe Street were carefully studied, as seen in Figures 7.5 and 7.6, in order to create an urban design vision that balances the need for strong station connectivity while maintaining a developable parcel of land along the Market Lead.

This study recommends creating a multi-modal connection along a new Monroe Street between 42nd and 40th Avenues, with the option of extending this intervention south to 39th Avenue either as a multi-modal street or a pedestrian/bicycle connection with the intent of linking to the future pedestrian and bicycle facility along the 39th Avenue Drainage Project.
Monroe Street should become a ‘Neighborhood Gateway’ linking bicycles and pedestrians along an improved 40th Avenue and the future 39th Avenue bicycle facility to the Station. Monroe Street should be designed as a pedestrian-friendly urban street that creates a safe, convenient and intuitive connection to the Station. In order to achieve this, Jackson Street should remain the primary bus and automobile access to the Station. Monroe Street should include a narrow curb-to-curb width with on-street parking and bulb-outs at intersections; wide, detached sidewalks; ample shade trees; water quality treatments (where feasible) and an off-street bicycle facility. New buildings should front Monroe Street with primary facades and pedestrian entries. Off-street parking and service areas should be located behind buildings.

Widening the existing Monroe Street ROW between 41st and 42nd Avenues to accommodate a comfortable pedestrian zone along the eastern side of the street and a multi-use path along the western side of the street is depicted in Figure 7.7. The eastern edge of Monroe Street would remain with ROW expansion occurring to the west into Market Lead. This street section would continue south to 40th Avenue. A wide setback along the western edge would allow for a double row of trees along the multi-use path creating a grand, iconic entry to the Station. Narrow drive lanes and on-street parking are intended to slow traffic and discourage cut-through traffic that should otherwise use Jackson Street.
The intent of this study is to further the land use recommendations set forth in the Elyria Swansea Neighborhoods Plan and provide a vision for how the Market Lead could be redeveloped (see Figure 7.8). 42nd Avenue should be extended across the Market Lead, connecting neighborhoods to the west of the Market Lead and north of the railroad tracks to the Station. A neighborhood park with pedestrian connections should be created along the 41st Avenue alignment. Access to future development parcels should limited along Monroe Street. The Market Lead could be leveraged to actually ‘Lead the Market’ by providing an opportunity for market rate development in a location where the current market is affordable.

With the proposed Monroe Street section provided above, the remaining Market Lead parcel depth will be approximately 100 to 109 feet. This plan studied several development scenarios and tested this parcel depth to verify that low density residential, industrial, commercial or mixed use development were achievable. While any number of redevelopment scenarios are possible, this plan tested a mixed use retail/co-working development at the intersection of 40th Avenue and Monroe Street, residential development on either side of the 41st Avenue Park, and a multi-story industrial development close to the Station at the southwest corner of 42nd Avenue and Monroe Street.
<table>
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<tr>
<th>12'</th>
<th>12'</th>
<th>12'</th>
<th>7'</th>
<th>10'</th>
<th>10'</th>
<th>7'</th>
<th>6'</th>
<th>8'</th>
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<tbody>
<tr>
<td>Setback</td>
<td>Multi-Use</td>
<td>Amenity</td>
<td>Parking</td>
<td>Drive</td>
<td>Drive</td>
<td>Parking</td>
<td>Amenity Sidewalk</td>
<td></td>
</tr>
</tbody>
</table>

109' Lot Depth

77' Future R.O.W.

34' Curb-to-Curb

16.5' Pedestrian Zone

Figure 7.9 Retail Potential
retail / co-working

Figure 7.9 shows a mixed-use retail/co-working development at the northwest corner of 40th Avenue and Monroe Street to anchor the Gateway to the Station while providing visibility for retail tenants along 40th Avenue. Active ground floor uses with ample windows are located on the first level to provide “eyes on the street” and create a pleasing pedestrian environment. Off-street parking is located along an existing alley behind the building.
Figure 7.10 Residential Potential
The physical dimensions of the remaining Market Lead could readily accommodate the residential development shown in Figure 7.10. Factors that will inform the nature of residential development at the Market Lead include the costs associated with constructing different densities of development, parking and achievable rents or price points. Structures greater than 3 stories in this location will likely require increased costs to accommodate below grade or podium parking and elevator service, each of which significantly increases costs. Based on our investigation, three story walk-ups or townhouses with tuck-under parking were the most likely scenario for the Market Lead given the block dimensions and vision set forth in the Elyria Swansea Neighborhoods Plan for the Market Lead to serve as a transition from lower density residential to the west to higher density mixed use near the station.
Figure 7.11 Industrial Potential
Industrial uses and workforce jobs are an important component of a healthy city, especially along multi-modal corridors that provide connections to other stations with workforce and affordable housing. In addition, in the wake of the recession, small scale, light industrial uses, including 3D printing, manufacturing, screen printing and brewery facilities have become more prevalent in urban areas as entrepreneurs and millennials start their own businesses. As existing industrial land is converted to other ‘higher and best land uses’, the City can encourage multi-story industrial buildings near train stations as a tool to maintain clean, light industrial businesses, creating workforce jobs near train stations. There is potential for the City to partner with a developer to create a multi-story industrial prototypical project at this site that is highly visible from the University of Colorado A-Line Commuter Rail. This study test fit a three story podium building with parking located at ground level with liner retail/artist space along Monroe Street with two levels of light industrial use above, as illustrated in Figure 7.11.
across the market lead

As the Market Lead fills and develops, it is imperative to consider connectivity options for all transportation modes. 41st and 42nd Avenues will be constructed as new streets. Both of these streets do not currently connect between Madison Street and Monroe Street (see Figure 7.12). The Market Lead is depressed through the area and creates a connectivity barrier for east/west travel. A concept level engineering investigation was undertaken to determine what it would take to connect them if the Market Lead were filled and they were extended across it. Figures 7.13 and 7.14 illustrate this investigation, showing it would be relatively easy to connect 42nd Avenue across the Market Lead for motor vehicles, pedestrians and bicycles and to connect 41st Avenue across the Market Lead for pedestrians and bicycles.
supporting projects

8 improved pedestrian crossing of Steele Street at 42nd Avenue

The only place in the project area to utilize a traffic signal to cross Steele Street south of the railroad crossing is currently at 40th Avenue where there is a significant amount of vehicular turns resulting in pedestrian/vehicle conflicts. One way to mitigate this and to enhance neighborhood connections is to create a new signalized crossing of Steel Street at 42nd Avenue. This location makes sense because 42nd Avenue is recommended to be extended across the Market Lead to the east to the 40th & Colorado Station platform. This project would create a fully signalized intersection that is coordinated with the railroad crossing protection to allow for safe and convenient pedestrian connectivity across Steele Street to the 40th & Colorado Station Area.

9 improved pedestrian crossing of Steele Street at 39th Avenue

Once the 39th Avenue trail is constructed, from York Street to Steele Street will be necessary to develop a protected crossing of Steel Street at 39th Avenue. Before that project is constructed, a protected crossing of Steele Street at 39th Avenue could have near-term benefits. Current observations in the area have shown that students cross midblock between 39th Avenue and 40th Avenue on a regular basis. This project would construct the crossing before the P2P trail completion to facilitate student crossing of Steele Street at a protected location. The project would create a fully signalized, hybrid signal or activated device crossing and a raised median to facilitate pedestrian crossings of Steele Street and to connect the future improvements to the east with the shared use path system on the west.

10 pedestrian/bike connection across Market Lead at 42nd Avenue

If the extension of 42nd Avenue across the Market Lead is not completed in the near-term, it is possible to create an inexpensive pedestrian connection across the Market Lead at 42nd Avenue to provide pedestrian and bicycle access to the station platform and surrounding area. This crossing would result in fewer pedestrians utilizing the 40th Avenue/Steele Street intersection. The project could be completed by filling in a portion of the Market Lead and constructing a concrete or asphalt sidewalk/path on top of it.
<table>
<thead>
<tr>
<th>PROJECT</th>
<th>TIMING / TRIGGERS / DEPENDENCIES</th>
<th>COST</th>
<th>BENEFITS</th>
</tr>
</thead>
<tbody>
<tr>
<td>A 40th Ave. Cross Section</td>
<td>Either all at once or two packages, west of Steele and east of Steele. Dependent on final design of Monroe St. alignment</td>
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<td>I-70 cover construction started</td>
<td>$1.4M</td>
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<td>C Multi-Use Connector to 39th Ave.</td>
<td>P2P construction started</td>
<td>$300K</td>
<td><img src="community_amenity" alt="Community Amenity" /> <img src="economic_development" alt="Economic Development" /> <img src="water_quality" alt="Water Quality" /></td>
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<td>D 43rd Ave. Extension</td>
<td>Prior to I-70 construction to provide for alternate access into Focus Area 3 during construction period</td>
<td>$1.7M</td>
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<td>E Overpass Pedestrian Connection</td>
<td>Redevelopment in Focus Area 3 would trigger further evaluation of this project</td>
<td>$9.4M</td>
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<tr>
<td>F Albion St. Traffic Calming</td>
<td>Further study for removing trucks from Albion St. should begin as soon as feasible</td>
<td>N/A</td>
<td><img src="community_amenity" alt="Community Amenity" /> <img src="economic_development" alt="Economic Development" /> <img src="water_quality" alt="Water Quality" /></td>
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<td><img src="community_amenity" alt="Community Amenity" /> <img src="economic_development" alt="Economic Development" /> <img src="water_quality" alt="Water Quality" /></td>
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<td>I Monroe St. Multi-Use Path</td>
<td>Key Project needs to be completed before this project in order to provide for a safe pedestrian crossing and to ensure adequate infrastructure is in place for pedestrians and bicycles north of 40th Ave.</td>
<td>$450K</td>
<td><img src="community_amenity" alt="Community Amenity" /> <img src="economic_development" alt="Economic Development" /> <img src="water_quality" alt="Water Quality" /></td>
</tr>
<tr>
<td>1 Pedestrian Activated Crossing at Bruce Randolph School</td>
<td>Could be done independently of 40th Ave. reconstruction</td>
<td>$350K</td>
<td><img src="community_amenity" alt="Community Amenity" /> <img src="economic_development" alt="Economic Development" /> <img src="water_quality" alt="Water Quality" /></td>
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<tr>
<td>2 New Crosswalk at Clayton St.</td>
<td>Set curb line in final location. Could be done independently of Key Project</td>
<td>$65K</td>
<td><img src="community_amenity" alt="Community Amenity" /> <img src="economic_development" alt="Economic Development" /> <img src="water_quality" alt="Water Quality" /></td>
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<td>3 Driver Feedback Signs on 40th Ave.</td>
<td>Can be installed prior to Supporting Project or at the same time</td>
<td>$25K</td>
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<tr>
<td>4 Driver Feedback Signs on Steele St.</td>
<td>Can be installed prior to Supporting Project or independently</td>
<td>$25K</td>
<td><img src="community_amenity" alt="Community Amenity" /> <img src="economic_development" alt="Economic Development" /> <img src="water_quality" alt="Water Quality" /></td>
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<tr>
<td>5 Wayfinding Improvements and ROW Enforcement</td>
<td>Can be performed any time</td>
<td>$10K</td>
<td><img src="community_amenity" alt="Community Amenity" /> <img src="economic_development" alt="Economic Development" /> <img src="water_quality" alt="Water Quality" /></td>
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<tr>
<td>6 Albion St. Mid-block Crossing</td>
<td>Construction of the proposed ULC development on the west side of Albion St near Smith Rd would be a good time to realign the shared use path and create this midblock crossing</td>
<td>$145K</td>
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<td>7 Driver Feedback Sign on Albion St.</td>
<td>Near term project while the Albion St traffic calming is studied</td>
<td>$25K</td>
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<tr>
<td>10 Pedestrian / Bike Connection across Market Lead</td>
<td>Near term if Key Project is not completed in the near term</td>
<td>$75K</td>
<td><img src="community_amenity" alt="Community Amenity" /> <img src="economic_development" alt="Economic Development" /> <img src="water_quality" alt="Water Quality" /></td>
</tr>
</tbody>
</table>