41st & Fox
Next Steps Study

OCTOBER 2021
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Overview

The 41st & Fox Next Steps Study is a planning study led by the City and County of Denver’s Departments of Transportation & Infrastructure (DOTI) and Community Planning & Development (CPD) for the 41st & Fox Station Area, a portion of the Globeville neighborhood separated by surrounding I-70 and I-25 highway infrastructure and the BNSF/RTD rail corridor. This study builds on the City’s 2009 41st & Fox Station Area Plan (SAP) that established the vision and recommendations for transforming the area into a high density, mixed-use, walkable neighborhood served by transit and future transportation infrastructure improvements. Today this area remains a mix of residential, industrial, and commercial uses with limited vehicular, truck, and emergency service access at the 44th Avenue Bridge and the 38th Avenue/Fox Street/Park Avenue intersection and I-25 interchange. In response to growing development interest and existing access limitations, the city adopted the 2018 Rules & Regulations Fox Station East that limit the trip generation associated with new development in the Fox Station Area, making the evaluation of future infrastructure alternatives an important “next step” for this area. See Figure ES-5 at the end of the Executive Summary on page ES-6 for a map of the recommendations that are a result of this study.

Next Step Study Recommendations

The Next Steps Study investigates the feasibility, cost, and concept design of potential infrastructure solutions that address access, mobility, and drainage challenges. The future transportation strategy for the Fox Station area should be grounded in the development of a complete and cohesive network of multi-modal connections that strengthen community connectivity and access as well as provide effective future Transportation Demand Management (TDM) strategies. These improvements would strengthen the connectivity of this area to the rest of the Globeville neighborhood with equitable access to the 41st & Fox station and future retail, services, and employment in the area, while also addressing the trip generation concerns of stakeholders and property owners.

The conceptual transportation framework recommendations consists of a series of near to mid-term pedestrian, bicycle and transit infrastructure mobility improvements, such as the 44th Avenue Bridge, that increase multimodal connectivity and TDM opportunities. There are also long-term infrastructure options that address vehicle capacity and access, such as new connections under I-70 or I-25. Figure ES-4 charts the Estimated Cost and Transportation Benefits of the near-, mid-, and long-term projects, while ES-5 at the end of
this chapter shows a map overview of the projects and their relative locations. The main catalyst to move in and out of the 41st & Fox Station area continues to be the 38th Avenue/Park Avenue/Fox Street intersection. Improvements to this intersection, along with increased multi-modal connectivity within the area and to the surrounding neighborhoods, are recommended to be prioritized to ensure successful development of the area. The Northern Connections at the 47th Avenue Bridge and the Interstate 70 Tunnel are being evaluated further from both a transportation and land use perspective.

Finally, the urban heat island challenges that exist in the Fox Station Area and the importance of providing safe, comfortable, multimodal transportation options for the residents highlights an important need to work closely with the Green Infrastructure team experts at DOTI. All near-, mid-, and long-term projects should follow the Ultra-Urban Green Infrastructure Guidelines to meet regulatory requirements to control water quality from streets, increase the tree canopy to mitigate the urban heat island effect, and enhance the livelihood for all people who may live, work, and play in the 41st & Fox Station Area in the future.
Land Use and Transportation Demand Management

The Station Area Plan (SAP) articulated a long-term vision of Transit-Oriented Development (TOD) around the 41st & Fox Station. The SAP land use vision suggested a significant increase in density and intensity of land uses in the area. All potential development generates new trips as people living, working, and visiting the development travel to and from the area. Therefore, a critical element of this vision was recommended improvements to the area’s connectivity. Additionally, Blueprint Denver 2019’s Future Places maps envision the 41st & Fox Station Area to be a Community Center and High Residential areas.

Some percentage of trips to, from, and within this area will be walking, on a bicycle, or on transit, while some trips will be by car. Improvements to the pedestrian, bicycle, and transit networks are a critical element of realizing the TOD vision in this area. Because of the uniquely constrained vehicle network in this area, the relationship between the expected future vehicle trip generation and the vehicle trip capacity is a critical aspect of this Next Steps Study.

For the purpose of evaluating the potential vehicle trips generated by future development in the study area, this analysis considers two scenarios: Balanced Uses, which includes a blend of planned development, SAP recommendations, and preservation of existing single family residential, student housing, and industrial uses, and Residential-Heavy Uses, which assumes a residential-heavy skew for the purpose of testing the impact of maximum vehicle trip generation.

These scenarios are not intended to illustrate expected or intended buildout; instead, they are intended to inform an understanding of the order of magnitude of vehicle trips that the adopted policy found in the SAP may be expected to generate. One critical mitigating factor in vehicle trip generation is Transportation Demand Management (TDM), which is a group of strategies that reduce vehicle trips by shifting expected trip generation from cars to other modes such as bicycle, transit, walking, or carpool. This analysis includes three possible levels of future TDM investment: No TDM achieved, Moderate TDM, and High TDM. Figures ES-1 to ES-3 on page ES-4 illustrate the relationship between vehicle trip generation and trip capacity based on these scenarios and levels of TDM investment. Additional information on the trip generation scenarios and assumptions are detailed in Chapter 4: Land Use and Development.
These ranges of trip generation are intended to inform the general relationship between the vehicle trips that the study area may generate with the vehicle capacity in the future. For the purpose of this analysis, the current daily vehicle trip capacity is set to be 25,000 trips per the Fox Station East Rules and Regulations from 2018. In either the Balanced Uses or the Residential-Heavy Uses scenarios, the range of expected trip generation is approximately double the current vehicle trip capacity of 25,000 daily vehicle trips.

The near/mid-term investments in the infrastructure network detailed in this study could increase the existing daily vehicle capacity from zero to an estimated 10,000 trips approximately. The total amount of trips added to the Fox Station Area will be determined on a per-project basis and will be determined by a detailed design. It is anticipated that projects in the category could increase the maximum trips to a total of 33,000 to 35,000 vehicle trips. Even with the most aggressive TDM investment, potential development would result in vehicle trips that exceed the vehicle capacity by 15,000 to almost 20,000 daily trips.

This study identified two potential long-term infrastructure improvements to increase trip capacity in the 41st and Fox Station Area, tunnels under either I-70 or I-25 to create connections to the north and south of the study area respectively. Trip capacity may increase by approximately 18,000 as a result of one of the projects being completed, although final trip capacity will be determined by a future detailed design. Through thoughtful integration of near-, mid-, and long-term infrastructure improvements, with at least a moderate TDM program, vehicle capacity could be met for the station area.
Estimated Project Cost and Transportation Benefits

Based on stakeholder feedback and technical analysis of opportunities and constraints, potential improvements associated with these investigations are summarized below for the 41st & Fox Station Next Steps Study. Figure ES-4 summarizes the project benefits by the project cost, and highlights if the project is a near-, mid-, or long-term project. All projects are conceptual and unique, meaning that future opportunities exist to explore one or multiple of the projects identified as recommendations from this study. Project costs are estimated at a conceptual level and will require further refinement and scope analysis to realize each project’s true potential to contribute meaningfully to the transportation network in the Fox Station Area. Figure ES-4 shows each of the project recommendations along with their estimated cost and benefits.

* The Northern Connection to the Fox Station Area includes either a Full-Modal Connection at 47th Avenue or the I-70 Tunnel.
Figure ES-5 | 41st & Fox Next Steps Study Recommendation Map

Near/Mid-Term Improvements
Long-Term Improvements
Study Purpose

The purpose of this study is to address the feasibility, cost, and concept design of the transportation recommendations identified in the SAP. This study also evaluates potential development envisioned by the SAP and whether the transportation recommendations would be able to accommodate the additional vehicular trips. The 41st & Fox SAP, which is summarized in the Study Background section of this chapter, envisioned this area as a high-density, mixed-use, walkable neighborhood with improved pedestrian connections, including connections to the Regional Transportation District’s (RTD) 41st & Fox station. The SAP also suggested several infrastructure investments to support the kind of development articulated in the plan. This Next Steps Study, informed by the SAP, stakeholder feedback, additional studies, and technical analyses in the area assesses opportunities for mobility options, multi-modal access, and related drainage solutions. This Study details a transportation framework comprised of near-, mid-, and long-term infrastructure improvements that increase the trip capacity for the area around the 41st & Fox Station, enhances multimodal connectivity, and introduces opportunities for Transportation Demand Management (TDM) that can encourage people to substitute driving trips by walking, riding a bicycle, and using public transit more.

Study Area

The 41st & Fox Station area includes the portion of the Globeville neighborhood that is bounded by the BNSF railroad tracks and RTD commuter rail lines to the west, I-70 to the north and I-25 to the east and south (see Figure 1.1). This area is distinctly separated by the historic development of the railroads, highways, and industrial development patterns. While enabling regional mobility, these facilities act as physical barriers to local residents and businesses and severely limit local connectivity.

![Figure 1.1 | 41st & Fox Next Steps Study Area](image-url)
Study Background

The Next Steps Study builds upon the work in several plans, policies, and studies that provide guidance that applies to the study area. This section first outlines the documents that directly impact the 41st & Fox Station Area, followed by city-wide or neighborhood plans and studies.

41st & Fox Station Area Plan (2009)

The 2009 41st & Fox Station Area Plan (SAP) articulates a vision of developing into “the focal point of a diverse, transit supportive and environmentally sustainable urban center.” The vision included five primary goals: improving pedestrian connections, creating opportunities to add more housing, jobs, and services, incorporating plazas, parks, and open space into redevelopment areas, capitalizing on the station area’s proximity to Downtown, and balancing the needs of new development and existing uses.

Realizing this vision would require a significant transformation of the area, with building heights ranging from 5-20 stories in the 112 acres of estimated developable land. To accommodate these potential future land uses and intensities, the SAP proposes a revised street grid and block pattern and supporting future roadway access at 44th Avenue or 46th Avenue extending west to the Sunnyside neighborhood. The SAP noted that further study is necessary to determine which of the roadway access alternatives should be implemented, and that bridges would be necessary to connect the area over the railroad tracks. Early analysis as part of this study found that a significant increase in residential redevelopment in Sunnyside across from the 41st & Fox Station and higher density infill along Inca Street between 40th Avenue and 44th Avenue limit opportunities to land a bridge crossing without significantly impacting residences. The horizontal distance required to connect to the existing surface elevation east of the tracks at 44th Avenue would bring the bridge landing down near the Quigg Newton housing site and increase vehicular traffic into the core of the Sunnyside residential neighborhood. Additionally, plans for the Fox Iron Works property within the Fox Station area at 44th Avenue impacts the opportunity to establish the bridge elevation required to clear the BNSF railroad and RTD commuter tracks. During the initial screening, the constructability challenges and neighborhood impacts were key to the determination to drop the 44th Avenue and 46th Avenue bridge crossings from further consideration.

The implemented alternative should enhance access and capacity for vehicles to the Fox Station Area and prioritize bicycle and pedestrian access across I-25. The proposed roadway access and street grid improvements are integral to the envisioned growth and density. See Figure 1.2 to see the Land Use and Circulation Plan published in the SAP.

Above: Two examples of implementation recommendations from the 41st and Fox Station Area Plan to highlight what transit oriented development may look like for the area.
**Figure 1.2 | Land Use and Circulation Plan Concept, from Fox Station Area Plan (2009)**

Legend:
- Pedestrian Shopping District (2-8 stories)
- Pedestrian Shopping District (2-5 stories)
- Mixed-Use Office/Residential (3-20 stories)
- Urban Residential (2-12 stories)
- Urban Residential (2-8 stories)
- Urban Residential (1-3 stories)
- Single Family / Single Family Duplex
- Proposed Open Space/ Parks/ Plaza
- Pedestrian Plaza
- Proposed Ped. Bridge /Potential Future Vehicular Access
- Transit Platform and Pedestrian Bridge
- Future RTD Structured Parking
- FasTracks Gold Line
- Existing Bus Routes
- Existing Park
- Historically Significant Buildings
- 38th Avenue Improvements
- 46th Avenue Improvements
- 44th Avenue Improvements
- Intersection Improvements
- Pedestrian Connection Improvements
- Funded New Pedestrian/Bike Bridge over 38th Ave.
- Pedestrian Plaza
- Priority Street for Pedestrian/Bike Improvements
- Off-Street Multi-Use Path

*Note: It is likely that only one of the connections shown, either 44th or 46th Avenue, would be constructed pending further study.*
41st & Fox Station - East Rules & Regulations (2018)

Some of the improvements to the transportation network recommended by the SAP have been completed, such as commuter rail service coming to the 41st & Fox RTD station and the pedestrian bridge connecting the rail platform to the Sunnyside neighborhood at 41st Street. However, most of the remaining infrastructure improvements have not moved forward.

Development interest in the Fox Station area is emerging, and the transportation infrastructure remains limited; the sidewalk network is incomplete, bicycle connections to leverage the pedestrian bridge at the station platform or the South Platte River multiuse trail are lacking, and vehicular access is constrained. The limited vehicular access poses a challenge to providing adequate emergency service operations, particularly to dense development in the future.

Recognizing these concerns, DOTI and CPD adopted regulations to manage development and trip generation in the Fox Station area. The 2018 Rules and Regulations limit new development to ensure vehicle trip generation does not exceed the existing roadway capacity in the area. Under these trip regulations, a maximum of 25,000 daily vehicle trips are allocated to the Fox Station area if no additional roadway infrastructure improvements are built. When the Rules & Regulations were adopted, the existing land use in the area generated 13,700 trips per day, leaving just over 11,000 remaining trips to be allocated to future development in the area (refer to Figure 1.3). With no investments to the vehicle infrastructure to expand vehicle capacity, current policy dictates that once the remaining trips have been reserved by projects, permits for additional development will not be approved.

In addition to providing a vehicle trip generation limit for the area, the Rules & Regulations also require all new development to implement aggressive TDM plans to minimize vehicle trip generation from new development. Finally, if new infrastructure is built, the trip capacity as outlined by the 2018 Rules and Regulations could be reassessed.

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**Figure 1.3 | 41st & Fox Next Steps Study Existing Condition, as of October 2019**

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Additional Relevant Previous or Concurrent Plans and Studies

Several existing planning documents mention or include analyses of the study area. Summaries of the following planning efforts, as related to 41st & Fox Next Steps Study, are detailed below.

**Northwest Drainage Subarea and Transportation Study (2012)**
The Northwest Denver Sub-Area Drainage and Transportation Study (NDSDT) includes parts of the Sunnyside, Globeville, and Highland Neighborhoods. The study area is generally bounded by I-70, I-25, 32nd Avenue, and Federal Boulevard. A primary purpose of the study is to ensure that drainage and transportation improvements are compatible and complementary. This study sets the foundation for the drainage technical analyses related to the 38th Avenue Underpass.

**Globeville Neighborhood Plan (2014)**
The Globeville Neighborhood Plan sets a vision for the entirety of Globeville. Because this plan was completed five years after the 41st & Fox Station Area Plan, the majority of the recommendations for this station area reinforce the goals and recommendations of the Station Area Plan. Primary goals of the Globeville Neighborhood Plan include:

- Reinforce and enhance Globeville’s unique sense of place
- Effective storm drainage and water quality management
- Improve access to jobs, housing, services, and education
- A connected street network
- A walkable, bikeable, and transit-rich Globeville
- Address traffic operations and roadway maintenance issues

**Transit Oriented Development Strategic Plan (2014)**
The 2014 Transit Oriented Development (TOD) Strategic Plan updated the 2006 plan by the same name, and it intended to guide city-led actions needed for successful TOD in Denver. It provided a foundation to guide public and private investment at rail stations. The 41st & Fox Station was categorized as part of the Innovation typology in the General Urban context. The Action Plan for this area was to “Consider a more detailed infrastructure analysis and financing plan to provide more specific direction on catalytic projects.”

**Blueprint Denver (2019)**
The City and County of Denver’s Blueprint Denver identifies the study area as being within the Urban Center Neighborhood Context. The portion of the study area closest to the railroad is classified as Community Center, which Blueprint Denver defines as areas that provide, “a mix of office, commercial and residential uses...[and are] accessible to a larger area of surrounding neighborhood users by a variety of transportation options including high-capacity transit and the transit priority street network. Pedestrian priority areas are typical and people riding bicycles have access with high ease of use bicycle facilities.” The areas to the east of the Community Center are classified as Residential High-Medium and Residential-High. These areas include a mix of uses, including multi-unit residential uses, and they both are intended to have continuous pedestrian and bicycle facilities.

**Denver Moves Transit (2019)**
This plan encourages first and final mile services, programs, and technologies to increase options for transit access and utilization. It recommends evaluating curb lane management and off-street parking strategies to support multi-modal mobility options and infrastructure investments.

**City and County of Denver Transportation Demand Management Plan (2021)**
The City and County of Denver Transportation Demand Management (TDM) Plan was conducted concurrently with the 41st & Fox Station Next Steps Study. It guided discussions on the role of TDM in the area. The TDM Plan identifies and explores the collection of strategies to shift travel behavior away from single-occupant vehicle trips. The strategies include services, infrastructure, parking management, subsidies and education, and it sets policy to formalize the use of TDM strategies in new development. The plan resulted in Rules and Regulations and an Ordinance to implement the goals and targets detailed in the plan.
Planning & Outreach Process
Process and Schedule

The City and County of Denver’s Department of Transportation & Infrastructure (DOTI) and the Department of Community Planning and Development (CPD) developed this study in collaboration with the local community, including residents, businesses, and other critical stakeholders. The process, which began in March of 2019 and finished in the spring of 2021, included four distinct phases, illustrated in Figure 2.1: research and analysis of existing conditions, establishing and analyzing infrastructure alternatives and development outcomes, drafting recommendations, finalizing the documentation of the study, and final approval with DOTI and CPD.

**Figure 2.1 | Project Timeline**

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Discovery & Analysis | Alternatives & Scenario Development | Draft Recommendations | Final Analysis & Documentation

Partners

Each phase included meetings, workshops, and updates with appropriate city leadership and departments, stakeholders, property owners, and the community.

Project Management Team

The Project Management Team (PMT) consisted of a broad range of city staff, public agency representation, and consultant team members. This group led the technical input and review of key study outcomes, ensured consistency with community needs and priorities and provided guidance on infrastructure and policy recommendations. This committee was organized to ensure representation from multiple City of Denver departments and external partner agencies, listed below:

Department of Transportation & Infrastructure (DOTI), Community Planning and Development (CPD), North Denver Cornerstone Collaborative (NDCC), Parks & Recreation (DPR), Department of Finance (DOF), Economic Development & Opportunity (DEDO), Regional Transportation District (RTD), and Colorado Department of Transportation (CDOT).

The engagement of stakeholders and community was essential to developing a comprehensive and transparent study strategy and an inclusive approach to findings and recommendations.

Attendees of the stakeholder and community engagement
Stakeholder Working Group

The Stakeholder Working Group (SWG) consisted of residents, business owners, neighborhood associations, and community organizations in or adjacent to the study area. The SWG guided the direction of the study by representing key community interests and needs and ensuring local voices were represented in the planning process. This committee was organized to ensure representation from:

- Auraria Higher Education Center
- Bicycle Colorado
- Central Denver Ironworks
- Central Street Capitol
- Colorado Motor Carriers Association
- Denver City Council, Districts 1, 9, and At-Large
- Denver Public Schools
- Denver Streets Partnership
- Denver Urban Renewal Authority
- Elyria Swansea / Globeville Business Association
- Fox North
- Globeville Civic Partners
- Globeville First
- Neighborhood Residents & Property Owners
- Shopworks Architecture
- Sunnyside United Neighbors, Inc

The group kicked off the study with a tour of the study area where the project team shared preliminary analysis and stakeholders shared experiences and priorities related to the study. The group met four times at key milestones throughout the project and was critical to discovery and analysis of existing conditions, the development of study goals and alternatives, and the determination of study recommendations.

Property Owners

Property owners and developers in the area participated in forums to address concerns around transportation infrastructure, trip capacity and development patterns. Future growth scenarios, financial tools and funding capacity that involved private development were a key aspect of these conversations.
Community Engagement

Communication with the community was instrumental to the success of the study, including the Globeville and Sunnyside residents and Registered Neighborhood Organizations (RNOs). The project team hosted three community meeting events designed to encourage residents to share their firsthand experiences and provide input transportation infrastructure improvements for the 41st & Fox Study Area.

Community Meeting #1

**Study Kick-Off**

*July 9, 2019*

*41st & Fox Station*

The kick-off meeting provided the community with foundational information about the study and the focus areas. This outreach opportunity also allowed for the project team to learn about specific connectivity needs in the community from the residents. This initial meeting was held July 9, 2019 at the 41st & Fox Station and reached community members who came for the meeting, as well as transit users who joined traveling to/from the station. Participants gathered to learn about the study purpose and approach and relevant existing conditions related to the key investigation areas.

Community Questionnaire

A community questionnaire was administered online and at the first community meeting. Most respondents were residents from Sunnyside and Globeville between the ages of 36-50. The respondents indicated that although their trips originated from the station area or surrounding neighborhood, most of the trips were made using cars, followed by biking, walking, and then transit. In terms of desire, respondents voiced a preference to bike or walk to and from the area, followed by car and transit modes. Refer to Figure 2.2 below for the results.

![Figure 2.2 | Summary of Community Questionnaire Results](image)

**WHO TOOK THE SURVEY?**

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**ORIGIN OR DESTINATION**

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**TRANSPORTATION HABITS**

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<tr>
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**PRIMARY TRANSPORTATION MODE**

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**TRANSPORTATION PREFERENCE**

Most people use a car, but many would prefer to bike, walk and use transit!
Community Meeting #2

Community Workshop
October 3, 2019
Garden Place Academy

The second meeting was formatted as a community workshop organized around the three primary infrastructure investigations. The workshop was held October 3, 2019 at Garden Place Academy in the Globeville neighborhood. In addition to project staff, representatives from Denver Urban Renewal Authority (DURA), RTD, NDCC, and the Elevate Denver General Obligation Bond team were present to provide additional community resource information. Attendees were asked to rotate through workshop sessions at each of the investigations. The input from the second public event greatly informed the development of the draft recommendations.

Community Meeting #3

Open House
February 18, 2020
Laradon Hall

During the final community meeting, the project team shared the draft recommendations for review and input. The meeting took place at Laradon Hall in the Globeville neighborhood on February 18, 2020. The meeting began with a discussion-based presentation to outline high-level details pertaining to infrastructure improvements that were deemed feasible during this study. After the presentation, community members discussed the infrastructure options in more detail with project staff and offered feedback on concept designs. Input from the community and stakeholders shaped the details of the final recommendations.
Existing Conditions

This chapter details the analysis of existing conditions in the area, focusing on land use, health and environment, mobility, and drainage in the Fox Station study area. Figure 3.1 provides a map of the study area in the broader context of northern Denver.

Figure 3.1 | 41st & Fox Study Area Context Map

The Fox Station area, part of the Globeville neighborhood, is located just north of downtown but is physically separated by the historical barriers of I-25 to the south and east, I-70 to the north and the BNSF freight rail/RTD commuter rail corridor to the west. These physical edges severely limit local and emergency service connectivity to the 44th Avenue bridge crossing, the 38th Avenue underpass, and the Fox Street intersection with Park Avenue. The BNSF/RTD rail corridor also acts as a barrier to stormwater from the adjacent Sunnyside neighborhood, directing runoff along the tracks to the 38th Avenue underpass during larger rain events.
**Land Use & Development**

**Current Land Uses**

The 41st & Fox Station Area, which is approximately 120 acres, includes a mix of industrial, commercial, and residential uses. There are 1.2 million square feet of industrial and commercial use within the study area.

At the north, the “Fox North” parcel (formerly the Denver Post printing facility), comprises roughly 40 acres of land abutting I-70. The northern portion of the study area is also within Operable Unit 3 of the Vasquez Boulevard and I-70 Superfund Site. On the site of the former Argo Smelter, there are ongoing environmental investigations with a proposed cleanup plan for soils and groundwater expected for public review in 2021.

To the south and along Fox Street, there are commercial businesses such as banks, restaurants and motels near the intersection of 38th Avenue/Fox Street/Park Avenue. Parcels to the east of the intersection are occupied by the industrial uses owned by Community College of Denver and privately-owned student housing.

There are a variety of residential uses in the study area. While there are some single-unit residential uses scattered throughout the site, the majority of one-story, single-unit homes on small lots are clustered in the northeast portion of the study area. Over time, some of these residential lots have been re-purposed for light industrial uses such as auto storage, sales, or repairs. There are also several multi-unit residential buildings, which are primarily student housing in the southeast portion of the study area. Roughly 420 residential dwelling units exist in the study area with an associated population of about 1,000 residents.

The study area is within the Globeville neighborhood, which is divided into four parts by the I-70 and I-25 interchange. The study area comprises the southwest quadrant of the neighborhood and is connected only to the southeast quadrant of Globeville by the 44th Avenue bridge. In the southeast quadrant of Globeville, 44th Ave jogs to the north and becomes 45th Avenue, which is Globeville’s main street.

The majority of the southeast quadrant of the Globeville neighborhood is single-unit residential use that extends north under I-70, and east to Washington Street. East of I-25 and the Fox Station area, Globeville is home to Garden Place Academy located at 44th Avenue and Lincoln Street, as well as commercial and retail uses that line 45th Avenue to Washington Street. The Globeville neighborhood is served by two parks; Argo Park located north of I-70 and Globeville Landing Park east of Washington Street and the South Platte River. There are no parks within the study area.

To the west, the Sunnyside neighborhood is separated from the study area by the BNSF/RTD railroad corridor. The blocks adjacent to the rail corridor are largely industrial, though they are beginning redevelop into other uses. West of these industrial uses is a concentration of single and multi-unit residential. Quigg Newtown Homes, an affordable housing community managed by the Denver Housing Authority (DHA), accounts for approximately 29 acres between Lipan Street and Navajo Street. Several multi-family higher density developments have been recently constructed along Inca Street, in proximity to the bicycle/pedestrian bridge serving the 41st & Fox RTD station. Commercial uses exist along 38th Avenue and are scattered throughout the residential core of the neighborhood. In the north end of the Sunnyside neighborhood, industrial uses occupy the majority of parcels near I-70 and the east along the rail lines. Park space in Sunnyside is typically limited to neighborhood parks including Ciancio Park, Columbus Park, and 46th and Pecos Park. Refer to Figure 3.2 for a map of current land use conditions.

---

**Figure 3.2 | Existing Land Use & Development Patterns**

**Legend**

- Residential (Single Unit)
- Residential (Multi-family Unit)
- Commercial
- Mixed-Use
- Industrial
- Transportation/Utilities
- Office
- Public
- Park/Open Space
- Parking
- Vacant
- Study Area
Current Zoning

Current zoning in this area allows a mix of higher density commercial, mixed-use, and industrial uses. Several parcels have been rezoned in the last few years in alignment with the 41st & Fox Station Area Plan. Refer to Figure 3.3 for a map of current zoning and the images below for precedent examples that align with the zoning classes.

Examples of building height and massing that could occur based upon Station Area Plan land use designation are provided below:

Moderan Cap Hill | 8 Stories

Alexan on 20th | 12 Stories

Figure 3.3 | Current Zoning, as of Fall 2020

Note: Not all Zone Districts are labeled in Figure 3.3.

Legend

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<th>Description</th>
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<td>T</td>
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Mobility & Transportation

Roadway Network and Operations

Vehicle access to the 41st & Fox study area is limited to two points: 44th Avenue bridge over I-25 and the intersection of 38th Avenue/Fox Street/Park Avenue/I-25 Interchange.

44th Avenue is designated a neighborhood collector providing direct roadway access from Washington Street to Fox Street, through historic Globeville along 45th Avenue. Today, this local neighborhood connector carries roughly half of the capacity of this two-lane facility. Community feedback revealed that the neighborhood is especially concerned with cut-thru truck traffic, vehicle speed, and pedestrian and bicyclist safety than the overall traffic volumes.

Fox Street is the primary north-south roadway through the study area and is a designated neighborhood collector from 39th Avenue to 44th Avenue. Internal study area traffic is relatively low with Fox Street carrying roughly 4,000 average daily trip per day in the northern segment. The southern segment of Fox Street, between 38th Avenue and 39th Avenue is a designated arterial, widening at 39th Avenue to accommodate increased volumes near the intersection of 38th Avenue/Fox Street/Park Avenue/I-25 Interchange.

Anywhere between 15,000 and 20,000 vehicles pass through this intersection in a day. The predominant movements at this intersection are southbound turns from 38th Avenue to Park Avenue, and westbound movement onto 38th Avenue from I-25 and Park Avenue.

To the west, 38th Avenue is a designated arterial that provides the primary vehicle connection to Sunnyside and neighborhoods west of the study area. 38th Avenue connects to Pecos Street which provides full access to I-70 at the north end of Sunnyside.

Daily traffic volumes are greatest along the edges of the study area and significantly diminish within the site interior. An average of 280,000 cars travel daily on I-25 at the eastern border of the Fox Station area. The segment of I-25 passing by the Fox Station area and Globeville neighborhood is the busiest segment of I-25 within Denver. At the north end of the study area, I-70 carries another 143,000 cars per day west of I-25, past the Fox Station area.

Refer to Figure 3.4 for a map of the roadway network and Average Daily Traffic (ADT) from the 2018 Traffic Impact Study for the Fox North Development.

Figure 3.4 | Roadway Network and Traffic Counts from the Fox North Development Traffic Impact Study (2018)
Transit and Shared Systems

The 41st & Fox Station is a stop for three of RTD’s commuter rail lines, G Line, B Line, and N Line. The G Line provides service between Union Station to Wheat Ridge. The B Line provides service between Union Station to Westminster at 72nd Avenue and Federal Boulevard. The N Line provides service between Union Station to Thornton. The G Line operates every 15 minutes during the day, and every 30 minutes during the early morning and late evening. The B Line operates every 30 minutes during the morning and evening peak, and every 60 minutes the rest of the day. The N Line operates every 30 minutes every day of the week.

Bus transit service in the study area is limited. As a result of the N Line opening in September 2020, Route 8 was discontinued. In the southern portion of the study area, the RTD Route 38 runs along 38th Avenue and heads south on Park Avenue West, offering connections into Sunnyside and downtown Denver. Additionally, the Regency Shuttle runs a fixed-route shuttle from the student housing community in the south of the study area to the Auraria Campus downtown.

Several other transit options exist in the surrounding context but getting to bus stops for these routes can be challenging due to the limited access points in and out of the study area. These transit options include RTD Route 12 along Washington and Route 48 on Brighton Boulevard, which serve the area to the east. Additionally, RTD bus Routes 19 and 52 pass through the Sunnyside neighborhood to the west. Refer to Figure 3.5 for a map of the transit and shared systems.

Figure 3.5 | Public Transit and Shared Systems
Bicycle Networks

The existing bicycle network within the study area is limited and not well connected to the surrounding regional network. The only existing infrastructure in the Study Area is a striped bicycle lane on 44th Avenue, west of I-25, and lanes do not connect to other bicycle-related infrastructure in the Fox Station Area. An example of regional connections exists immediately adjacent to the Fox Station Study Area. On Inca Street, a 12-foot multi-use path exists. The multi-use path provides a bridge over 38th Avenue and a connection to the South Platte River Trail and the regional bicycle network. On the east side of railroad tracks, however, access to the South Platte River Trail is less apparent. Bicyclists must cross the three-legged intersection of 38th Avenue/Fox Street/Park Avenue West and ride on a shared use sidewalk through this area. Refer to Figure 3.6 for a map of the existing and proposed bicycle network.

Figure 3.6 | Existing and Proposed Bicycle Network, from Denver Moves: Bicycles (2015)
Pedestrian Networks

The existing pedestrian environment varies throughout the Fox Station Study Area. Existing industrial land uses typically do not provide sidewalks. Many of the residential areas contain three-foot “rollover” curb sidewalks that are attached to the roadway.

On Fox Street, the sidewalk conditions vary depending on which side of the street you are on. The west side of Fox Street is representative of a complete sidewalk network per Denver Moves: Pedestrians and Trails Standards, while the east side of the sidewalk has existing gaps in the network.

Overall, approximately 19,000 linear feet of sidewalk exists in the Fox Station Study Area, while an estimated 16,000 linear feet of sidewalk is missing in 2019. Completed sidewalks account for approximately 52 percent of the total length of all sidewalks in the Fox Station Study Area. Refer to Figure 3.7 for a map of existing and missing sidewalks, and a ten-minute walkshed from the Fox and 41st RTD Commuter Rail Station based on the existing sidewalk network.

Figure 3.8 | Elevate Denver GO Bond Pedestrian Projects

With voter approval in 2017, Denver's General Obligation Bond Program (GO Bond, Elevate Denver) was approved and numerous sidewalk improvements within the Fox Station Area were identified. The bulk of these improvements are within the Globeville neighborhood, as shown in Figure 3.8. Through this study, the GO Bond program, and neighborhood feedback, a set of recommendations to improve sidewalks were identified.

The improvements include projects on 44th Avenue at locations east and west of the bridge over I-25 to improve pedestrian access to Garden Place Academy. A project to install a set of stairs will improve connections from 44th Avenue to Broadway, formalizing a safe connection of a social trail. Finally, sidewalk improvements on Broadway from 44th to 45th Avenues will be installed as part of the GO Bond program.
Parking
Public on-street parking is readily available throughout the study area. Nearly all of the 1,137 identified on-street parking spots in the study area are unrestricted, free spaces. Only eleven spaces on the east side of Fox Street, between 39th and 40th Avenues adjacent to retail, are 1-hour restricted parking spaces. Recent parking occupancy study in the area revealed that no street segment was over 50 percent parking occupancy at any of the three surveyed times (6AM, 1PM, and 7PM). Average parking utilization averaged 10 percent between July to December 2019. In addition to on-street parking, a majority of the industrial properties and the student housing community offer private off-street parking on-site. Refer to Figure 3.9 for a map of parking lots.

The RTD 41st & Fox Station includes a 500 space surface parking Park-n-Ride (PnR) lot adjacent to the station. These spaces are available on a first-come, first-served basis and are for the specific use of transit passengers. Current utilization count during this study indicated roughly 50 percent utilization rate of this lot. As part of the G Line planning process with the Federal Transit Administration, RTD projected a need for 500 additional parking spaces by 2030, for a future total of 1,000 spaces. RTD will consider future parking need based on existing utilization and in coordination with any future development plans at the station.

Flooding at 38th Avenue Underpass
The 41st & Fox Study area sits in the Globeville-Utah Junction Basin. Due to the railroad and interstates, much of this area remains generally clear of flooding risk, except for the underpass on 38th Avenue. When flooding occurs, the underpass fills with stormwater making it unpassable to vehicles, effectively shutting down this western access point to the 41st & Fox Station area until the stormwater drains. Refer to Figure 3.10 for a map of Existing Stormwater System and 100-Year Inundation Area.

Today’s flooding of the 38th Underpass has been an identified drainage issue for years and has been the focus of multiple drainage studies in the past. The city currently has long-term plans to improve drainage conditions at the underpass by diverting flood waters away from the area with large drainage pipes.
Blueprint Denver 2019: Measuring Equity

Blueprint Denver (adopted 2019) focused on advancing the vision for all Denver’s neighborhoods to be complete, with more equitable access to amenities and quality-of-life infrastructure throughout the City. Blueprint Denver includes details of several measures of equity across the city, illustrated in Figure 3.11.

The Access to Opportunity measure reflects the goal for all neighborhoods to be complete with equitable access to a high quality of life. According to this measure, portions of the study area have less access to opportunity based on education, poverty, access to parks and grocery stores, access to healthcare, child obesity, life expectancy, and access to centers and corridors.

Blueprint Denver also measures Vulnerability to Displacement, which includes factors that can predict how vulnerable a population is to involuntary displacement. This measure shows that the study area is vulnerable to displacement based on education, percent of renters versus owners, and median household income.

The Housing and Jobs Diversity measure evaluates if an area provides an inclusive range of housing and employment options. The study area lacks diversity in housing options that contain between two and 19 units, at a range of costs, and in income-restricted affordable units. Compared to the citywide average, the study area has more manufacturing jobs.

Future investment in this area should be informed by the area’s vulnerability to displacement and other challenges to equity identified by these measures. Infrastructure investments and other development should factor in measures to mitigate displacement and prioritize furthering equity.

Figure 3.11 | Blueprint Denver Equity Maps - for more information see Blueprint Denver 2019
From Left to Right: Access to Opportunity, Vulnerability to Displacement, Housing Diversity

Legend
- Study Area
- RTD Rail Line
- RTD Rail Station
Land Use and Development
**Land Use Policy and Trip Generation**

The Station Area Plan (SAP) articulated a long-term vision of transit-oriented development around the 41st & Fox Station, which is illustrated and explained in the Introduction chapter of this study. The SAP land use vision suggested a significant increase in density and intensity of land uses in the area. All development generates new trips as people living, working, and visiting the development travel to and from the area. Therefore, a critical element of this vision was recommended improvements to the area's connectivity.

Some percentage of trips to, from, and within this area will be walking, on a bicycle, or on transit, while some trips will be by car. Improvements to the pedestrian, bicycle, and transit networks are a critical element of realizing the transit-oriented development vision in this area. As detailed in the Introduction chapter of this study, the vehicle network in this area is uniquely constrained. Because of the constrained transportation network in this area, the relationship between the expected future vehicle trip generation and the vehicle trip capacity is a critical aspect of this Next Steps Study.

**Trip Generation Scenarios**

For the purpose of evaluating the potential vehicle trips generated by future development in the study area, this analysis considers two land use scenarios:

- **Balanced Uses**: This scenario yields moderate vehicle trip generation. It includes a blend of planned development, Station Area Plan recommendations, and preservation of existing single family residential, student housing and industrial uses. The Balanced Uses scenario assumes five, eight, and 12 story residential structures with ground-floor retail or mixed-use along Fox Street and adjacent to the 41st & Fox Station. It preserves existing student housing structures and related uses and maintains residential options east of Fox Street and north of 44th Avenue, reflective of community input. The Balanced Uses scenario also accommodates future large format mixed-use retail and the pending Fox Ironworks project on either side of the RTD parking lot, the Fox North development plan as of October of 2019. This scenario yields approximately 300,000 square feet of retail, over one million square feet of office, and 6,000 residential dwelling units.

- **Residential-Heavy Uses**: This scenario has a residential-heavy skew for the purpose of testing the impact of maximum trip generation. It assumes that the Station Area Plan is fully built out, resulting in more than 346,000 square feet of retail, approximately 322,000 square feet of office, and more than 16,000 residential dwelling units.

These scenarios are not intended to illustrate expected or intended buildout; instead, they are intended to inform an understanding of the order of magnitude of vehicle trips that the adopted policy found in the SAP may be expected to generate.

**Estimated Trip Generation**

The Balanced Uses and Residential-Heavy Uses scenarios informed a calculation of the range of daily vehicle trips that development in the study area could be expected to generate. One critical mitigating factor in vehicle trip generation is Transportation Demand Management (TDM), which is a group of strategies that reduce vehicle trips by shifting expected trip generation from cars to other modes such as bicycle, transit, walking, or carpool.

The city’s Transportation Demand Management Plan, which yielded regulations that require TDM reductions for larger development projects, is summarized in the Introduction section of this study. Given the transit-oriented vision of the SAP, the area’s access to rail, its proximity to downtown, its constrained vehicle access, and citywide transportation goals, the 41st & Fox station area is an appropriate location for TDM measures.
This analysis includes three possible levels of future TDM investment:

- **No TDM Achieved:** If the study area developed with only small projects that did not trigger the citywide TDM requirements, or if TDM strategies were not successful, development would result in the highest trip generation. This level assumes trip reduction resulting from a mix of uses in proximity to a train station but no additional TDM reductions.

- **Moderate TDM:** If the study area developed and all new projects successfully implemented citywide TDM requirements, development would result in fewer vehicle trips than in the No TDM Required level. This level assumes trip reduction resulting from a mix of uses in proximity to a train station as well as expected reductions from successfully implementing some TDM strategies.

- **High TDM:** If a more comprehensive TDM program was implemented in the study area, including extensive public and private investment, vehicle trip generation could be further reduced. This level assumes a robust program that includes strategies such as transit passes being available to everyone who works or lives in the area, parking fees for non-residential uses, unbundled parking with residential uses, secure bike storage, car share parking, an assigned transportation coordinator with TDM branding and messaging, and pedestrian and cyclist wayfinding. This suite of investments could result in the lowest vehicle trip generation.

Vehicle trip generation estimates were calculated using the Institute of Transportation Engineers (ITE) Trip Generation rates. Because ITE rates are based on suburban examples that over-estimate trip generation in areas that have a mix of uses and access to other modes of transportation, this analysis assumes reductions from the ITE rates for all three levels of TDM investment, including the No TDM Required level. Figure 4.1 illustrates reductions from ITE rates to estimate vehicle trip generation for various land uses in the study area, and Figure 4.2 details the estimated daily vehicle trips for the two land use scenarios at the three TDM levels.

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**Figure 4.1 | TDM Reductions from ITE**
Vehicle Trips Generation and Vehicle Trip Capacity

These ranges of trip generation are intended to inform the general relationship between the vehicle trips that the study area may generate with the vehicle capacity in the future. For the purpose of this analysis, the current daily vehicle trip capacity is assumed to be 25,000 trips per the Fox Station East Rules and Regulations from 2018. The Rules and Regulations define that capacity as “the expected maximum number of vehicular daily trips that the infrastructure roadway system can accommodate within or adjacent to the Area... before reaching an unacceptable level of congestion.” In either the Balanced Uses or the Residential-Heavy Uses scenarios, the range of expected trip generation is approximately double the current vehicle trip capacity of 25,000 daily vehicle trips.

The near/mid-term investments in the infrastructure network detailed in the Transportation Framework and Implementation Strategy Chapter could increase the existing daily vehicle capacity from a range of approximately zero to an estimated maximum of 10,000 trips. This may increase the trip capacity for the station area to a total estimate of up to 35,000 vehicle trips. The final total amount of trips added to the Fox Station Area will be determined by a future detailed design. Even with the most aggressive TDM investment, potential development would result in vehicle trips that exceed the vehicle capacity by 15,000 to almost 20,000 daily trips.

Larger investments, which the Transportation Framework and Implementation Strategy Chapter describes as long-term include infrastructure investments of a tunnel under I-70 or I-25. A project of this magnitude, coupled with a moderate TDM program may accommodate vehicle trips within the range of what the area is expected to generate, somewhere up to an estimated 60,000 vehicle trips. Future detailed designs will confirm the amount of trips that could be added by a project of this magnitude and the impact on the station area. A full buildout of the area with largely residential uses would still be expected to slightly exceed vehicle capacity. However, since residential uses are most sensitive to TDM investment, successful implementation of a moderate TDM program may reduce vehicle trips below the vehicle capacity with long-term investments in place.

Figures 4.3 - 4.5 | Vehicle Trip Generation & Trip Capacity, with TDM and Infrastructure Investment Options
Implementation and Financial Tools

To increase vehicular trip capacity and make progress towards achieving the collective vision in and around the 41st & Fox Station Area, additional and improved transportation infrastructure will need to be addressed. This section identifies types of potential implementation or infrastructure financing and funding tools that can be considered to support needed investment in public infrastructure in the Study Area. This section also identifies the recommended funding tools for the Study Area and briefly reviews the tools that are not recommended for the Study Area.

Utilizing a combination of public and private infrastructure funding tools and the collective partnership efforts of the city, external organizations, and the community will be important for implementing the transportation infrastructure recommendations that are presented in this Next Steps Study.

Overview: Implementation Financing Strategies

Implementation strategies generally fall into three categories: regulatory changes, public investment, and partnerships. Each serves a different role, but are important to successfully achieve the vision for the 41st & Fox Station Area. These implementation strategies are described further below.

Regulatory Changes

Most community development comes from private investment. The city can ensure private investment advances community goals by adopting or amending appropriate city-specific regulations. These regulations may include rules, requirements, procedures, fees, or laws. An example of regulations focused on supporting the vision for this area are the Transportation Demand Management (TDM) requirements.

Public Investment

To ensure community members have access to all of the amenities that make a complete neighborhood, public infrastructure and public facilities will need to complement private investment. Examples include street reconstruction, bicycle lane installations, and park improvements. The city, or one or more other governmental entities, typically takes the lead in designing, constructing, and coordinating funding for these projects and may use a variety of public funding mechanisms or partnerships with the private sector. New streets, utilities, open space, and other major public infrastructure associated with new development are typically led and funded by private developers or through public-private partnerships (see Partnerships below). Some strategies may require detailed studies and further assessment to identify appropriate solutions that must consider existing and projected mobility demands. These studies will inform future needs and capacities and determine project costs and funding eligibility.

Partnerships

Where neither the city nor the private sector can alone achieve the vision, partnerships offer an opportunity to work together to advance community goals. Many partnerships focus on services, with the city working alongside an outside organization to provide for community needs. Other partnerships can provide infrastructure through public-private financing arrangements. There are many different potential partners identified for specific recommendations throughout the study to accomplish many different goals.
Potential Public Infrastructure Funding Tools

The next part of this section provides an overview of potential funding tools explored to fund public infrastructure improvements at the 41st & Fox Study Area. Stakeholder input throughout the Next Steps Study process identified potential financing and funding tools that can be used, either alone or in combination, to help fund public infrastructure that is anticipated to be needed for the 41st & Fox Station Study Area. The scale, timing, and source of these potential funding strategies are directly related to the type and timing of future development.

**Potential Funding Tools:**
- Special Districts
- Charter Districts (i.e., Local Maintenance Districts and Local Improvement Districts)
- State and Federal Transportation Grants
- Tax Increment Financing (TIF)
- Direct City and County of Denver Investment

**Special Districts**

Special Districts are quasi-municipal corporations and political subdivisions of the State of Colorado created pursuant to Colorado statute and can serve as a financing mechanism for the installation, operation and maintenance of public infrastructure. Examples of special districts include metropolitan districts (Metro Districts), business improvement districts (BIDs), and general improvement districts (GIDs). The process to create a special district is fairly prescriptive as reflected in the Colorado Revised Statutes. A Metro District is authorized to be created by City Council’s approval of a service plan, whereas BIDs and GIDs are authorized instead by City Council’s approval of a creation ordinance after the submission of a petition signed by a certain percentage of property owners located within their respective proposed boundaries. Residents in the Study Area and the city can explore the use of Special Districts to assist in financing the necessary infrastructure investments in the Study Area. Special districts can be authorized to use various funding tools to help fund public infrastructure. These funding tools may include issuing debt, levying *ad valorem* property taxes, and imposing fees and charges. Before the issuance of debt or the levying of *ad valorem* property taxes, a special district is first required to obtain the approval by the qualified electors of the respective special district pursuant to an election held in conformance with State law. Furthermore, the issuance of debt and the levying of property taxes is subject to applicable federal, state, and local regulations and requirements. When these special district revenue tools are utilized, the funds collected can help pay for infrastructure (or services) benefiting the public.

**Charter Districts**

The City and County of Denver has charter- and Denver Revised Municipal Code-mandated processes to establish and use Local Improvement Districts (LIDs) and Local Maintenance Districts (LMDs), which are commonly referred to as “charter districts.” Charter districts may be used to help finance the construction and maintenance of certain public infrastructure through the imposition of special assessments. For example, LIDs are typically utilized to construct neighborhood improvements, including streets, sidewalks, and alleys. LMDs are typically utilized to operate, maintain, repair, and replace a variety of streetscape improvements. Charter districts may be initiated either by petition of area property holders or, for more limited purposes, by unilateral initiation by the Manager of the Department of Transportation and Infrastructure.
State and Federal Transportation Funding

Grant funding could help finance short and long-term transportation infrastructure or programs such as the Transportation Improvement Program (TIP) that is administered by the Denver Regional Council of Governments (DRCOG). The TIP program from DRCOG is an example of a reoccurring major grant opportunity that could be utilized to fund infrastructure related projects. Project examples included in DRCOG’s 2020 TIP include roadway projects, TDM programs, traffic signal projects, and more. DRCOG’s TIP is only one example of a grant opportunity that could be explored to fund infrastructure investments. Opportunities from the State of Colorado and other agencies should be considered for the 41st & Fox Station Area.

Tax Increment Financing (TIF)

The Denver Urban Renewal Authority (DURA) can utilize Tax Increment Financing (TIF) to help pay for needed investment in public infrastructure. For TIF to be utilized in the Study Area, DURA would have to complete a Conditions Assessment to determine if the Study Area meets the State’s requirements for the use of TIF, and City Council would have to approve both the creation of an Urban Renewal Area and the establishment of TIF. Unlike for a special district, when TIF is used, the rate of property taxation is not increased. Instead, the increased incremental property and/or sales taxes collected on new development are shared by the city with DURA to help pay for public infrastructure. TIF is typically established for property taxes and/or for retail sales taxes. TIF tax collections can be pledged for the repayment of bonds to pay for public infrastructure.

Direct City Investment

It is recommended that the City and County of Denver explore the infrastructure funding tools available to the city for the Study Area improvements, which include the City and County of Denver’s Capital Improvement Program (CIP), General Obligation Bonds (GO Bonds), Tax Increment Financing (TIF), and Federal and/or State of Colorado Funding opportunities. These more direct city investment tools are described further in the table below.

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<tr>
<td>General Obligation Bonds (“GO Bond”)</td>
<td>The city studies the feasibility of GO Bond programs in roughly 10-year cycles. If major Study Area improvements are identified as a high enough citywide priority, GO Bond proceeds could fund such infrastructure investment. The issuance of GO Bonds requires citywide voter approval in a general election, with the most recent electoral authorization having occurred in 2017. GO Bonds typically contribute to major infrastructure improvements.</td>
</tr>
<tr>
<td>Tax Increment Financing (TIF)</td>
<td>The city can partner with the Denver Urban Renewal Authority (DURA) to provide financial assistance through Tax Increment Financing (TIF) for redevelopment projects that enhance neighborhood vitality and help drive economic growth. TIF is a financing tool that allows incremental property and/or sales taxes to supplement the required financing of the redevelopment project. See the TIF section above for more details.</td>
</tr>
<tr>
<td>U.S. Federal and State of Colorado Funding Possibilities</td>
<td>The city can partner with Colorado Department of Transportation (CDOT) and the Federal Highway Administration (FHWA) to help fund infrastructure or programmatic initiatives (for example: TIP funding). This type of funding helps with highway interchanges and safety improvements, enhanced mobility, and stormwater management. State transportation funding and Federal funds can be identified for infrastructure investments and may require a local government match.</td>
</tr>
</tbody>
</table>
Certain Infrastructure Funding Tools Not Recommended to be Overlaid Across Entirety of the 41st and Fox Study Area

Based on the varied property ownership, land use, and other considerations that make up the Study Area, some of the infrastructure funding tools explored through this study may not be appropriate to be overlaid across the entirety of the Study Area to support the financing or funding of infrastructure within its boundaries. Subject to a case-by-case analysis, the infrastructure funding tools referenced in this section may be appropriate to assist with the financing, construction and/or operation and maintenance of discretely-identified public infrastructure needed for the Study Area. However, due in part to logistical challenges, statutory limitations and operational/governance constraints, it is not recommended that the following list of infrastructure funding tools be utilized on an overlay basis across the entirety of the Study Area:

- **Metropolitan District(s):** Currently, there are two Metro Districts with boundaries in a portion of the Study Area, the West Globeville Metro District No. 1 and the West Globeville Metropolitan District No. 2 (Existing Districts). Due to the broad and diverse property ownership across the entire Study Area, adding additional Metro Districts unrelated to the Existing Districts may create challenges to the creation of a Metro District, and could result in impractical implementation and governance issues.

- **Business Improvement Districts (BIDs):** With residential land uses being so integral to TOD, it was determined that BIDs would not be a beneficial solution as residential properties cannot be a part of a BID.

- **General Improvement Districts (GIDs):** The broad and diverse property ownership in the Study Area introduces challenges for the implementation of GIDs since agreement is needed between and among the property owners to petition for the formation of a GID.

A Collective Approach

A holistic approach, combining regulatory, public investment, and partnership strategies, should be utilized to affirm infrastructure implementation and funding strategies that best address the phased needs for solving infrastructure improvements in the Study Area to maintain safety and mobility while achieving the vision for the Study Area. Further, realization of the vision for the Study Area will require commitment from and collaboration with local, state, and federal partners, stakeholders, and community members, for funding, planning, design, regulation, policymaking, and/or construction. These infrastructure funding and implementation tools used concurrently could maximize the ability to fund needed investment in public infrastructure and achieve the community vision in the Study Area.
Transportation Framework and Implementation Strategy
The transportation framework for the 41st & Fox Station area establishes a cohesive network of multi-modal streets that strengthen the grid, increase mobility to and from the RTD station and improve neighborhood connectivity. The framework is the culmination of the recommendations of the alternatives investigated in this Next Steps Study, along with community-driven options for mobility derived through the course of this study. The combination of improvements leverage RTD’s Commuter Rail investment, improve the opportunity for effective transportation demand management practices (TDM), and increase emergency service access and local connectivity.

This transportation framework chapter consists of a series of near- to mid-term infrastructure improvements to encourage multimodal connectivity and TDM opportunities. These near- to mid-term improvements should be followed with long term infrastructure options that address vehicle capacity and access.

Pedestrian, bicycle, and transit mobility improvements comprise the near and mid-term improvements and include:

- 44th Avenue Bridge multi-modal improvements
- 44th Avenue multi-modal improvements
- Huron Street alignment
- Fox Street multi-modal improvements
- Huron Street Overpass of 38th Avenue
- 38th Avenue/Park Avenue/Fox Street intersection improvements
- 47th Avenue Bridge (pedestrian/bicycle bridge only)

Long term infrastructure options increase vehicle capacity and access to the Fox Station area and include:

- 47th Avenue Bridge (full-modal)
- I-70 Underpass
- I-25 Underpass
- 38th Avenue/Park Avenue/Fox Street Roundabouts Alternative
- Storm Drainage Master Plan: Project J Drainage Solution (Note: This project would reduce or eliminate flooding conditions at the 38th Avenue Underpass at the Union Pacific Railroad crossing)
Figure 5.1 | Transportation Framework Overall Recommendations
**Context**

The 44th Avenue bridge is the neighborhood connection between the southwest and southeast quadrants of Globeville, providing a connection from the station area over I-25 to Washington Street. The width of 44th Avenue through the area varies, but the bridge over I-25 is the most constrained section of the corridor. The existing bridge is 46’ wide and accommodates two 12’ travel lanes, two 6’ bike lanes and a 6’ sidewalk on the south side separated by a jersey barrier (See Figure 5.2). While the jersey barrier provides pedestrian protection from auto traffic, the configuration makes cyclists uncomfortable traveling over the bridge. Pedestrian, bicycle, and auto traffic operate at the same elevation.

Just east of I-25, an existing social trail connects the 44th Avenue bridge to the intersection of 44th Avenue and Broadway. Improvements to this connection to the bridge are funded and will be constructed through the Elevate Denver GES Sidewalk Program.

**Community Guidance**

- Accommodate separate modes of travel with physical barriers for protection.
- Improve connection to be more attractive and comfortable.
- Maintain the configuration on the south to allow connection with the social trail.

**Recommendation**

Changes to the 44th Avenue bridge are designed to address safety and comfort for all users and include separated and protected bike and pedestrian facilities on the south side of the bridge. This design reflects community desires for a protected facility and aligns with the improvements to the sidewalk and stair design that will tie to 44th Avenue at Broadway.

The recommended cross section for the bridge includes two 10’ travel lanes, 2’ pan, a 10’ two-way protected cycle track and an 8’ sidewalk on the south side of the bridge, separated with vertical protection (see Figure 5.3).
Figure 5.4 | 44th Avenue Bridge Recommendation

**Phasing** | **Cost Estimates** | **Additional Benefit**
--- | --- | ---
Near/Mid-Term | $1 Million | • Provides local bicycle and pedestrian facilities for safety and comfort of all users
• Improves local connectivity and access to the 41st & Fox Station
• Reconnects Globeville neighborhood
44TH AVENUE

Framework Goal

Extend 44th Avenue west to the future alignment of Huron Street and include multi-modal improvements consistent with the 44th Avenue Bridge improvements.

Context

44th Avenue today extends west from the 44th Avenue bridge to Fox Street. The right-of-way transitions from 46’ at the bridge to 60’ west of Delaware Street. There are social trails but no sidewalks between the bridge and Delaware Street. From Delaware west to Fox Street there are 5’ sidewalks on both the north and south side of the street, on-street parking, and directional bike lanes.

Community Guidance

- Strengthen street grid connections.
- Create comfortable multi-modal streets for all users.
- Provide comfortable connection to the station.

Recommendation

The extension of 44th Avenue west to intersect with the future Huron Street alignment creates a continuous, comfortable local connection within the Globeville neighborhood. 44th Avenue becomes a key east-west multi-modal spine for the community that extends from Washington Street all the way to the RTD 41st & Fox Station. The 44th Ave cross-section includes wider sidewalks, a two-way protected bike lane on the south side of the street consistent with the bridge treatments and an additional tree lawn and tree canopy on the north side of the street where right-of-way allows. Figure 5.5 shows a recommended cross section for 44th Avenue.

Figure 5.5 | Recommended Cross-Section of 44th Avenue from Delaware to Huron Street, looking East
### Phasing

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<th>Additional Benefit</th>
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<tbody>
<tr>
<td>Near-Term</td>
<td>$4-5 Million</td>
<td>• Improves local bicycle and pedestrian facilities</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Strengthens local street grid</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Improves neighborhood connectivity to 41st &amp; Fox Station</td>
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</tbody>
</table>

**Figure 5.6 | 44th Avenue Recommendation**
**HURON STREET ALIGNMENT**

**Framework Goal**

Establish a local alternative for pedestrian, bicycle, and local vehicle access through the area and to and from the 41st & Fox Station.

**Context**

Huron Street is not an existing street in the network today. The right of way of a future Huron Street alignment runs the length of the study area from the Fox North property at I-70 along the east side of the rail tracks to 38th Avenue and consists primarily of unutilized land, RTD property, or the backside of existing businesses.

There are environmental risks to be considerate of throughout the study area due to past land use practices, including bulk petroleum fuel mixing, battery manufacturing, and ore smelting. The Denver Department of Public Health and Environment (DDPHE) is producing a separate study that will focus on the environmental risks associated with the future street grid in the study area.

The Huron Street alignment passes through what is today the RTD 41st & Fox Station busway at the station. The reconfiguration of RTD’s parking lot and busway operation is assumed to be a possible future condition through joint redevelopment of the site and reconfiguration of platform access within that site development. As of Fall 2020, RTD is not planning for the redevelopment of the station or the reconfiguration of access or busway.

**Community Guidance**

- Create a stronger grid network west of Fox Street.
- Create another local route into the area that separates I-25 related traffic from local traffic.

**Recommendation**

The Huron Street alignment presents a unique opportunity to improve pedestrian and bicycle circulation to and from the 41st & Fox Station and to strengthen the street grid for future TDM implementation. The development of Huron Street, in coordination with the improvements to 44th Avenue and the 44th Avenue bridge, establish a direct, comfortable local connection to the station and surrounding neighborhoods.

The proposed Huron Street right of way would extend from the Fox North site south to just shy of 38th Avenue and could be achieved through coordination with site plan development, acquisition of the RTD parcel north of the 41st & Fox Station that is adjacent to the rail tracks, and dedication of land through redevelopment of parcels along the proposed of Huron Street.

The 55’ cross section of Huron Street should accommodate two-way local and emergency service vehicles, dedicated bike and pedestrian facilities, and street amenities. Continuation of the two-way protected bike lane from the 44th Avenue bridge is recommended for continuity. See Figure 5.7 for the recommended cross-section of the Huron Street alignment.

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*Figure 5.7 | Cross-Section: Huron Street (55-foot ROW Recommendation)*
### Phasing

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<tbody>
<tr>
<td>Near-Term</td>
<td>$8 Million</td>
<td></td>
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</table>
• Improves local bicycle and pedestrian connectivity  
• Strengthens local street grid  
• Provide direct access to the 41st & Fox Commuter Rail Station |
Context

The Fox Station area suffers from limited access and challenges with bike and pedestrian safety through the 38th Avenue/Park Avenue/Fox Street intersection. The concepts presented in the recommendations section require additional study and analysis to verify if a full multimodal overpass is possible. At the least, an overpass that provides pedestrian and bicyclist connections should be an attainable goal.

Community Guidance

- Improve bike and pedestrian safety and crossing alternatives.
- Strengthen local access and street grid.
- Include infrastructure for all modes.

Recommendation

Implementation of a future Huron Street creates the opportunity to extend the street over the 38th Avenue underpass and create an alternate local multi-modal street with direct access to the station. The Huron Street access point enables bikes and pedestrians to avoid movement through the 38th Avenue/Park Avenue/Fox Street intersection and creates resiliency in the transportation system, particularly for critical emergency service vehicles.

The layout of the proposed overpass spans the existing depressed 38th Avenue profile and runs parallel to the existing rail corridor on the east side of the tracks. The bridge would need to be elevated to meet minimum clearances at 38th Avenue. Concept level work suggests an overpass to be about 75’ in long elevated to be about 16 to 17 feet high. Coordination with RTD would be required if the design of a connection would fall within RTD right-of-way.

See Figures 5.9 and 5.10 on the following page for graphics that depict the Huron Street Overpass of 38th Avenue.
<table>
<thead>
<tr>
<th>Phasing</th>
<th>Cost Estimates</th>
<th>Additional Benefit</th>
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</table>
| Mid-Term | $4 Million | • Provides alternate local multi-modal access to the area  
  • Creates direct bike/pedestrian connection between the station area  
    and South Platte River trail on the east side of the tracks  
  • Strengthens local street grid |
Context
Fox Street is the primary north-south connection through the Fox Station area and is the primary vehicular link between the two access points to the area; the 44th Avenue bridge and the 38th Avenue/Park Avenue/Fox Street intersection. Fox Street is a commercial corridor with 80’ right of way that accommodates 12’ lanes for truck, bus, and vehicular travel through the area and to the RTD 41st & Fox Station. There are parking lanes and intermittent sidewalks along both sides of the street with the widest sidewalks located near the station between 40th and 41st Avenues. An additional 20’ of right of way along the eastern length of the street is often used for front door parking for commercial businesses.

Community Guidance
- Consider Fox Street a “main street” through the study area linking 38th Avenue/Park Avenue to future uses at Fox North.
- Accommodate all users and provide distinct facilities for both pedestrians and bicycles.
- Provide flexibility in the design of the street to allow for changes in land use and travel needs.

Recommendation
The recommended cross section for Fox Street serves all modes of travel as desired by stakeholders and community members and is based on the cross section identified in the Fox North Infrastructure Master Plan. The recommended Fox Street cross section reduces the two travel lanes to eleven feet but still accommodates future bus and truck traffic. Curb and gutter are recommended where missing today. Bi-directional bikes lanes and sidewalks located behind the tree lawn are an important element of this roadway as the “main street” through the area. The parking lane is changed to manage the curb lane on both sides of the street to allow for future flexibility in use or designation of this space for such things as ride-share services, truck delivery zones, managed on-street parking hours, transit, and other multi-modal use improvements.

Street grid improvements between Fox Street and Huron Street are important to strengthening the functionality of the grid and ensuring easy multi-modal access to the station from future redevelopment. Cross street connections are recommended at 39th Avenue, 40th Avenue, 41st Avenue within RTD’s station area, 42nd Avenue, 43rd Avenue, and 44th Avenue.
**Figure 5.13** | Recommended Cross-Section for Fox Street, from Fox North IMP

**Figure 5.14** | Fox Street Recommendation

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**Phasing** | **Cost Estimates** | **Additional Benefit**
--- | --- | ---
Near-Term | $2-4 Million | • Accommodates all modes and users  
• Strengthens TDM opportunities  
• Provides flexibility in right-of-way design to accommodate future land use changes
Context

The 38th Avenue/Park Avenue/Fox Street intersection is part of a complex transportation node that is the “front door” to the Fox Station area. Improvements to this node, along with increased multi-modal connectivity within the area and to the surrounding neighborhoods, are recommended to be prioritized to ensure successful development of the area. This node operates as three distinct intersections that are coordinated by traffic signal operations, as depicted in Figure 5.15.

- (1) 39th Avenue/Fox Street,
- (2) I-25 ramp/Fox Street,
- (3) 38th Avenue/Park Avenue/Fox Street.

This intersection also plays a critical role in facilitating bicycle and pedestrian movement to and from the station and surrounding area. However, the large radii at the intersection, high-speed turning movements and crossing distances make navigating this intersection confusing and dangerous for pedestrians and cyclists. Cyclists trying to access the South Platte River Trail must either navigate this intersection at grade, crossing seven lanes of 38th Avenue to travel along Park Avenue to the trail, or cross over the 41st & Fox Station bridge to the Inca Street shared-use path west of the tracks to the trail entrance.

Community Guidance

- This intersection is confusing for everyone - cars, bikes, and people walking.
- The current intersection is not a good entrance to the Fox Station area.
- It is challenging to connect to regional trails, even though they are so close.
Recommendations

Near to mid-term improvements to the 38th Avenue Park Avenue/Fox Street intersection are designed to provide operational clarity for local traffic and to isolate regional vehicular movements, address bike/pedestrian safety through the intersection and accommodate the addition of Huron Street as a fourth leg of the intersection:

- Reduce the operational complexity of the intersection.
- Separate or distinguish local vehicle movements from regional vehicle movements associated with I-25.
- Improve connectivity for pedestrians and cyclists and safety of all users.
- Improve emergency access.
- Increase vehicular capacity of the intersection.

Near/Mid Term Recommendation (Intersection Improvements)

Near to mid-term improvements to the 38th Avenue/Park Avenue/Fox Street intersection are designed to provide operational clarity for local traffic and to isolate regional vehicular movements, address bike/pedestrian safety through the intersection and accommodate the addition of Huron Street as a fourth leg of the intersection. See Figure 5.18.

39th Avenue/Fox Street:

- Reduce pedestrian crossing distances across the south leg of the intersection by narrowing the Fox Street roadway cross section to 4 lanes between 39th Ave and the I-25 ramps,
- Restripe 39th Avenue to include 10’ travel lanes and directional bike lanes and complete sidewalks,
- Extend 39th Avenue through to Huron Street in coordination with future redevelopment of the site.

Fox Street/I-25 ramps:

- Improve the pedestrian crossing distance across Fox Street by narrowing the Fox Street roadway cross section to four lanes,
- Improve the pedestrian crossing of the northbound Fox Street to southbound I-25 ramps by making the pedestrian refuge island larger, aligning the crosswalk with the driver’s field of vision, making the crosswalk perpendicular to the roadway to shorten the crossing distance,
- Consider installation of a HAWK signal and/or raised table crossing at the pedestrian crossing of the ramp double free right ramp lanes,
- Shorten the pedestrian crossing distance across Fox Street by narrowing the Fox Street roadway cross section,
Fox Street between 38th Avenue and the I-25 southbound Ramps

- Separate ramp turning movement from local vehicle movements to eliminate driver distraction of merging and weaving decisions,
- Clearly delineate lane usage and improve lane alignment to clarify travel paths and lane destinations.

38th Avenue/Park Avenue/Fox Street

- On the east side of Fox Street, remove the I-25 ramp related traffic movement from the local intersection traffic. Isolating the ramp movement does not impact ramp capacity but helps clarify appropriate travel paths for regional and local travel.
- Use smaller curb radii at the intersection to reduce right turning vehicle speeds and improve pedestrian safety,
- Maintain eastbound to northbound double left turns to maintain traffic capacity,
- Separate right turns from the intersection to create single decision crosswalk areas to simplify driver and pedestrian yielding decisions,
- Create perpendicular pedestrian crosswalks across the right turn lanes that are located upstream from the curves, so the crosswalks are clearly in the driver’s field of vision and to separate the driver’s yielding decision points from each other (yield to pedestrians in the crosswalk, yield to through vehicles on 38th Avenue),
- Consider raised table crossings and HAWK signal installation at pedestrian crossings of right turn lanes.

Huron Street:

- Add Huron Street as a fourth leg to the 38th Avenue/Park Avenue/Fox Street intersection to provide an alternate access and to help separate local and regional trips,
- Include bicycle and pedestrian facilities along Huron Street to improve multimodal connectivity. This is anticipated to be in the form of an unbalanced cross section with pedestrian and bicycle facilities included on the right side of Huron Street as one travels from the intersection towards the Fox Station Area to match with the proposed cross section of Huron Street and the overpass of 38th Avenue,
- Access control in the form of implementing Huron Street as a ¾ movement intersection should be considered to simplify traffic operations and to reinforce its use for local trips.
Long-Term Option (Roundabout Alternative)

Capacity constraints remain a problem for the full development of the Fox Station area. In the future, as land uses mature and traffic patterns stabilize, modifying the 38th Avenue/Park Avenue/Fox Street/ and the Fox Street/I-25 SB Ramps intersections to change the intersection type from traffic signal control to roundabout intersections should be considered. The roundabout intersections may offer increased vehicular capacity and improved vehicular safety as compared to traffic signal control and could accommodate build out of the Fox Station area. Future development and traffic modelling indicates that the demand for travel through the intersections will shift to a more balanced mix of demand from the west, south and north, enabling the roundabouts to potentially enhance this connection point. The construction of Huron Street acts as a complementary improvement for pedestrian and bicycle connectivity in the area and helps minimize impacts to pedestrian and bicycle connectivity that are associated with roundabout operations. Additionally, multi-lane entries to the roundabouts should be signalized with HAWK signals to allow for safe pedestrian and bicycle travel through the roundabouts. Future roundabout decisions will require more in-depth analysis as well as design coordination and approvals by CDOT.

Figure 5.19 | 38th Ave/Park Ave/Fox St Intersection Long-Term Option (Roundabout Alternative)

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Phasing</th>
<th>Cost Estimates</th>
<th>Additional Benefit</th>
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<tbody>
<tr>
<td>38th Ave/Park Ave/ Fox Street</td>
<td>Near/Mid-Term (Intersection Improvements)</td>
<td>$10-12 Million</td>
<td>• Improves operational clarity&lt;br&gt;• Increases bicycle and pedestrian access and safety&lt;br&gt;• Improves regional trail access</td>
</tr>
<tr>
<td>Intersection</td>
<td>Long-Term (Roundabout Alternative)</td>
<td>$15-20 Million</td>
<td>• May increase vehicular trip capacity into and out of the area</td>
</tr>
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I-70 TUNNEL & 47TH AVENUE BRIDGE

Framework Goal
Increase multi-modal access to the Fox Station area from the north.

Context

44th Avenue and 46th Avenue Crossings:
During this Next Steps Study, previous study recommendations for northern crossings at 44th Avenue and 46th Avenue were evaluated and dropped from further consideration due to constructability challenges and neighborhood impacts. Recent residential redevelopment in Sunnyside across from the 41st & Fox Station and higher residential infill along Inca Street between 40th Avenue and 44th Avenue limit the opportunity to land a bridge crossing without significantly impacting residences or the Quigg Newton housing site and increasing traffic into the core of the Sunnyside residential neighborhood. Additionally, plans for the Fox Iron Works property within the Fox Station area at 44th Avenue impact the opportunity to establish the bridge elevation required to clear the BNSF railroad and RTD commuter tracks.

47th Avenue Crossing:
Two documents describe an alternative east-west crossing of the rail corridor at 47th Avenue: The Northwest Denver Sub-Area Drainage and Transportation Study and the Fox North Infrastructure Master Plan. The layout of an east-west vehicular bridge at 47th Avenue would parallel the existing I-70 overpass just outside the CDOT right-of-way. It would span the rail corridor and thread between the electric transmission pole and I-70 bridge structure.

To provide adequate clearance above the westernmost railroad tracks and to meet ADA requirements, the proposed bridge profile elevation would touch down approximately 400 feet west of the 47th Ave. and Jason St. intersection. Costly land acquisition, complex utility conflicts, and considerable railroad coordination would be required for this bridge crossing. Finally, Sunnyside residents have expressed concerns about increasing neighborhood traffic.

I-70 Crossing:
The Next Steps Study explored additional options to connect the Fox Station area to the north, including bridging over I-70 or tunneling under I-70, rather than traversing the rail corridor. Minor approach grading would be necessary at each end of the tunnel to achieve required clearance under I-70 and future design would be determined in coordination with CDOT and future study of this section of the I-70 corridor. The underpass alignment would be with Huron Street in the Fox North development, just west of the existing Denver Post building, and extend under I-70 just east of the railroad corridor to the existing private driveway crossing of the BNSF freight tracks north of I-70.

Connectivity to the north would allow for vehicular access to the I-70 interchange at Pecos Street or the I-25 interchange at 58th Avenue, while through-connectivity for vehicles along 48th into Globeville would remain limited due to the existing railroad tracks. Bike and pedestrian access with a northerly connection would link with future 48th Avenue bike and pedestrian improvements in the northern portion of the Globeville neighborhood.

This option involves costly land acquisition, utility conflicts, and railroad coordination.

Figure 5.20 | Cross-Section: Full Modal 47th Ave. Bridge or I-70 Tunnel Conceptual Design *
* The Northern Connection to the Fox Station Area includes either a Full-Modal Connection at 47th Avenue or the I-70 Tunnel.
Community Guidance

- A cul-de-sac at Jason Street due to bridge impacts would be detrimental to uses in the area.
- Pedestrian and bicycle connections would be beneficial in any direction, but future opportunities should prioritize east-west connections.
- Increasing vehicle traffic through Sunnyside or Globeville is a neighborhood concern.

Recommendations

Near/Mid Term: Pedestrian/Bicycle Bridge

A pedestrian/bicycle bridge is recommended to connect the Fox Station area and Sunnyside neighborhoods at 47th Avenue. This facility increases connectivity over the railroad corridor and leverages future bicycle and pedestrian improvements within the neighborhoods and the Fox Station area. Future design of the facility would require coordination between RTD, BNSF railroad, Fox North development and the Sunnyside neighborhood.

Long-Term: Full-Modal 47th Avenue Bridge or Tunnel Under I-70

The long-term vehicular connection to the north is undergoing further study including a multi-modal 47th Avenue Bridge as well as a multi-modal underpass of I-70 that would increase vehicular capacity to the Fox Station area. The 47th Avenue Bridge would connect the Sunnyside and Globeville neighborhoods and provide access to the I-70 and Pecos interchange. A multi-modal underpass of I-70 would provide access to 48th Avenue, the Pecos interchange at I-70, and the 58th Avenue interchange at I-25. The underpass would align with the Huron Street alignment in the Fox North development.

The design of either facility, or any alternative options that would come out of further study, should provide dedicated facilities and lighting for safe bicycle and pedestrian mobility, as well as vehicle, truck, and transit movement. The recommended cross section for the connection should be designed to be consistent with pedestrian and bicycle treatments within the Fox Station area and address lighting and safety considerations for all users.

Recommendation | Phasing | Cost Estimates | Additional Benefit
--- | --- | --- | ---
47th Avenue Bridge (Pedestrian/Bicycle Only) | Near/Mid-Term | $12 Million | • Improves bicycle and pedestrian connectivity between Sunnyside and Globeville neighborhoods  
• Strengthens framework for future TDM programs and practices

Full Modal 47th Avenue Bridge or I-70 Tunnel | Long-Term | $60 Million | • Improves multi-modal access at the northern end of the station area  
• May increase vehicular trip capacity up to 18,000 trips  
• Requires further feasibility study to identify opportunities and constraints  
• Future detailed designs will confirm additional trip capacity benefits
Figure 5.25 | Aerial of Area and Existing Constraints for a Northern Connection, both North/South and East/West
I-25 TUNNEL

Framework Goal
Increase vehicular access from the south.

Context
Limitations on access and vehicle capacity within the Fox Station area spurred the investigation of alternative access opportunities at the southern end of the area, as well as to the north. Access on the south side of the 41st & Fox Station area was considered beneficial to land use patterns in the area and supportive of the area’s proximity to downtown.

Community Guidance
• Any points of new access should accommodate all users and modes,
• A connection at Old Globeville Road would create a strong alternative neighborhood connection.

Recommendation
The Huron Street overpass of 38th Avenue creates not only an access at 38th Avenue/Park Avenue/Fox Street, but it creates the possibility of extending the alignment south to tunnel under I-25 to the intersection with Globeville Rd. and Park Avenue. The I-25 tunnel creates an entirely new point of access to the area and provides an estimated additional daily vehicular trip capacity of up to 18,000 trips per day. The full capacity increases require future detailed designs to further to understand to feasibility of the project and potential benefits. A new underpass may relieve traffic loading onto and off Fox Street and reduce anticipated future delays at the intersection of 38th Avenue/Park Avenue/Fox Street.

The layout of the potential I-25 tunnel extends perpendicular to I-25 and is directly south of 38th Avenue and west of Park Avenue. The underpass would span 250’ under fourteen lanes of I-25 traffic. Horizontal curves would be needed to connect the underpass with the proposed roadway alignment to Globeville Road intersection with Park Avenue. Horizontal constraints include existing underground storm and sanitary utilities along I-25 and adjacent RTD right-of-way limits to the west. Tunneling under I-25 would require extensive coordination and approvals from CDOT and RTD.

The cross section would be designed to carry vehicle, truck and bus traffic and accommodate bike and pedestrian mobility.

Figure 5.26 | Conceptual Cross-Section: I-25 Tunnel
**Figure 5.28** | I-25 Underpass Tunnel Conceptual Design

**Figure 5.27** | Aerial of the 38th Ave/Park Ave/Fox St Intersection

<table>
<thead>
<tr>
<th>Phasing</th>
<th>Cost Estimates</th>
<th>Additional Benefit</th>
</tr>
</thead>
</table>
| Long-Term    | $60 Million   | • Improves multi-modal access at the southern end of the station area  
• May increase vehicular trip capacity up to 18,000 trips  
• Requires further feasibility study to identify opportunities and constraints  
• Future detailed designs will confirm additional trip capacity benefits |
**Context**

Drainage conditions within the 41st & Fox Station Area generally meet the city’s drainage criteria and the station area experiences no major inundation during a large rain event (refer to Figure 5.28 for a diagram of the 100-Year potential inundation areas for the Fox Station area). The 38th Avenue underpass, however, has been the focus of drainage studies in the past and remains a key community flood concern today. Flooding occurs when stormwater runoff from the Sunnyside neighborhood fills the underpass making it impassable. Additionally, stormwater carried along the railroad flume carries water over the tracks above the underpass, and when this flume is poorly maintained, dumps water into the underpass. Under these conditions, this point of access into and out of the Fox Station area is effectively shut down.

Additionally, the downstream drainage system to the South Platte River is undersized to adequately convey the stormwater flow during major storm events. Figure 5.29 displays the widths of the primary downstream pipes that service the 38th Avenue underpass and convey water to the South Platte River.

**Community Guidance**

- Flooding of the 38th Avenue underpass is a community safety concern, and emergency operations suffer,
- Residents are frustrated by the mobility closures on 38th Avenue,
- Drainage improvements to the underpass should be coupled with pedestrian and bicycle improvements.
Recommendation

Near-Term: Coordination with BNSF Railroad

Many near-term solutions were evaluated to improve flood conditions immediately, including upsizing the existing drainage pipe within the underpass, diverting surface runoff and pumping stormwater from the underpass. However, because the tributary area draining to the underpass covers a large portion of the Sunnyside neighborhood, diverting or pumping these amounts was deemed infeasible and upsizing only the underpass pipe was ineffective in flood prevention as a stand-alone drainage project. To effect immediate improvements, coordination with BNSF railroad in minor improvements to the railroad’s drainage system and the regular maintenance of the railroad flume and tracks crossing over the 38th Avenue underpass is recommended. These near-term actions will reduce the potential for clogging of the flume and prevent stormwater spilling from the rail yard down into the underpass.

Long-term: Improve Storm Drainage System

The solution to flooding of the 38th Avenue underpass is an improved drainage system upstream of the underpass serving not only the 38th Avenue underpass but also the Sunnyside and Globeville neighborhoods. This recommendation confirms improvements identified in the Globeville Stormwater Systems Study (GSSS) and Denver’s city-wide Storm Drainage Master Plan (SDMP). Drainage infrastructure improvements west of Inca Street along either Jason or Kalamath Streets will divert water to the south under I-25 and to the South Platte River before it can reach the underpass. This solution is referred to as Project J, the Northwest Subarea Interceptor Storm Drain.

<table>
<thead>
<tr>
<th>Phasing</th>
<th>Cost Estimates</th>
<th>Additional Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long-Term</td>
<td>$30-37 Million</td>
<td>• Eliminate flooding at the 38th Avenue underpass</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Improves stormwater management in Sunnyside and Globeville neighborhood (see GSSS)</td>
</tr>
</tbody>
</table>
The implementation of the Fox Station Area Transportation Framework is organized into two timeframes for improvements: near- to mid-term (2-9 years) and long-term (10-20 years). All the recommendations benefit from prioritizing the 38th Avenue/Park Avenue/Fox Street intersection that serves as the “front door” to the 41st and Fox Station area. Increased multi-modal connectivity within the area and to the surrounding neighborhoods should be prioritized to ensure successful development of the area.

The urban heat island challenges that exist in the Fox Station Area and the importance of providing safe, comfortable, multimodal transportation options for residents highlights an important need to work closely with the Green Infrastructure experts at DOTI. All infrastructure projects should follow the Ultra-Urban Green Infrastructure Guidelines to meet regulatory requirements to control water quality from streets, increase the tree canopy to mitigate the urban heat island effect, and enhance the livelihood for all people who may live, work, and play in the 41st & Fox Station Area in the future. Environmental risks exist throughout the study area due to past land use practices, including bulk petroleum fuel mixing, battery manufacturing, and ore smelting. The Denver Department of Public Health and Environment (DDPHE) is producing a separate study that will focus on the environmental risks associated with the future street grid in the study area.

**Near/Mid-Term**

The near- to mid-term implementation strategy specifically strengthens local connectivity through improvements to the pedestrian and bicycle network and re-establishes the Fox Station area as a connected part of the Globeville neighborhood. Pedestrian and bicycle improvements make the 41st & Fox Station comfortably accessible from as far east as Washington Street and the National Western Center, as well as the South Platte River trail east and south of the station area. The 47th Avenue (pedestrian/bicycle only) bridge may increase multi-modal connectivity between Globeville and Sunnyside neighborhoods. The future Huron Street overpass and street alignment address access constraints for emergency service vehicles while also creating a comfortable multi-modal alternative connection to the area, avoiding the at-grade crossing of the 38th Avenue/Park Avenue/Fox Street intersection. The near to mid-term implementation strategy effectively increases person trip capacity to and from the 41st & Fox Station, leverages the proximity of the area to downtown Denver and builds a strong framework for effective TDM practices and programming, supporting future land use changes.

**Long-Term**

The long-term implementation strategy addresses increased multi-modal connectivity and vehicular capacity for the area through the addition of a tunnel at the north end of the Fox North development under I-70 or a full-modal bridge on 47th Avenue, and a tunnel under I-25 south of the Huron Street overpass of 38th Avenue.

Although costly, either of these connections directly increase access and vehicular capacity for the entire station area by an estimate of up to 18,000 trips and tie effectively to the surrounding street network. Either option carries a high-level cost estimate of $60 million, making them longer term solutions for the area and part of a coordinated future funding strategy. Decisions regarding any future bridge or tunnel improvements should also be made in coordination with land use planning, development patterns, and related travel demand for the station area.

**Drainage**

The long-term implementation strategy also includes the infrastructure improvements to address flooding of the 38th Avenue underpass. The Project J pipe improvement captures stormwater runoff from the Sunnyside neighborhood before it enters the underpass ensuring that the 38th Avenue underpass remains accessible during major rain events. This drainage improvement is important to addressing emergency service access and public safety to and from the Fox Station area, but also critical in managing stormwater for the surrounding neighborhood.

The near-, mid-, and long-term recommendations, estimated costs, and associated community benefits are summarized in Table 5.1 and illustrated in Figures 5.31 and 5.32.
<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Phasing</th>
<th>Cost Estimates</th>
<th>Additional Benefit</th>
</tr>
</thead>
<tbody>
<tr>
<td>44th Avenue Bridge</td>
<td>Near/Mid-Term</td>
<td>$1 Million</td>
<td>• Provides local bicycle and pedestrian facilities for safety and comfort of all users.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Improves local connectivity and access to the 41st &amp; Fox Station.</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>• Reconnects Globeville neighborhood.</td>
</tr>
<tr>
<td>44th Avenue</td>
<td>Near/Mid-Term</td>
<td>$4-5 Million</td>
<td>• Improves local bicycle and pedestrian facilities.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Strengthens local street grid.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Improves neighborhood connectivity to 41st &amp; Fox Station.</td>
</tr>
<tr>
<td>Huron Street</td>
<td>Near/Mid-Term</td>
<td>$8 Million</td>
<td>• Improves local bicycle and pedestrian connectivity.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Strengthens local street grid.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Provide direct access to the station.</td>
</tr>
<tr>
<td>Huron Street Overpass of 38th Avenue</td>
<td>Near/Mid-Term</td>
<td>$4 Million</td>
<td>• Provides alternate local multi-modal access to the area.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Creates direct bike/pedestrian connection between the station area and S. Platte River trail on the east side of the tracks.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Strengthens local street grid.</td>
</tr>
<tr>
<td>Fox Street</td>
<td>Near/Mid-Term</td>
<td>$2-4 Million</td>
<td>• Accommodates all modes and users.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Strengthens TDM opportunities.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Provides flexibility in right-of-way design to accommodate future land use changes.</td>
</tr>
<tr>
<td>38th Avenue/ Park Avenue/ Fox Street</td>
<td>Near/ Mid-Term (Intersection Improvements)</td>
<td>$10-12 Million</td>
<td>• Improves operational clarity.</td>
</tr>
<tr>
<td></td>
<td>Long-Term (roundabout alternative)</td>
<td>$15-20 Million</td>
<td>• Increases bicycle and pedestrian access and safety.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Improves regional trail access.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• May increase vehicular trip capacity into and out of the area.</td>
</tr>
<tr>
<td>Full-Modal 47th Avenue Bridge or I-70 Tunnel</td>
<td>Long-Term</td>
<td>$60 Million</td>
<td>• Improves multi-modal access at the northern end of the station area.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Could increase vehicular trip capacity by up to 18,000 trips.</td>
</tr>
<tr>
<td>47th Avenue Bridge (Pedestrian/Bicycle Only)</td>
<td>Near/Mid-Term</td>
<td>$12 Million</td>
<td>• Improves bicycle and pedestrian connectivity between Sunnyside and Globeville neighborhoods.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Strengthens framework for future TDM programs and practices.</td>
</tr>
<tr>
<td>I-25 Tunnel</td>
<td>Long-Term</td>
<td>$60 Million</td>
<td>• Improves multi-modal access at the southern end of the station area.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Could increase vehicular trip capacity by up to 18,000 trips.</td>
</tr>
<tr>
<td>SDMP Project J</td>
<td>Long-Term</td>
<td>$30-37 Million</td>
<td>• Eliminate flooding at the 38th Avenue underpass.</td>
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</tr>
</tbody>
</table>
**Figure 5.33 | Estimated Project Cost and Transportation Benefits**

*The Northern Connection to the Fox Station Area includes either a Full-Modal Connection at 47th Avenue or the I-70 Tunnel.*