A-4. Appendix Chapter 4: Community and Social Analysis

Appendix A-4 supplements Chapter 4 and presents results from the analysis of impacts on the social characteristics and conditions within the study area. Results for the No-Build Alternative are presented for the purpose of establishing a basis to compare Project alignment and design options. Topics covered include land use, communities, property, cultural resources, visual quality, economics, and safety and security. Potential operating-phase (long-term) and construction-phase (short-term) impacts are also evaluated, and potential avoidance, minimization, and mitigation measures are presented. Project alignment and design options evaluated in this appendix are illustrated and described in Appendix A-2 of Chapter 2 of this Supplemental Draft EIS. The Build Alternative carried forward for the Project is presented in Chapter 2 of this Supplemental Draft EIS.

Community engagement and feedback received during the formal public comment period (as described in Chapter 9, Consultation and Coordination) for this Supplemental Draft EIS will be used to inform and refine recommended avoidance, minimization, and mitigation measures that will be identified in the next phase of the Project.

This Supplemental Draft EIS evaluates social characteristics and conditions for impacts: land use plan compatibility, community facilities and community character and cohesion, displacement of residents and businesses, cultural resources, visual and aesthetics, economic effects, and safety and security. Specifically, this appendix includes the following sections:

- ***Section 4.1*** reviews current comprehensive plans for the Cities of Minneapolis, Robbinsdale, Crystal, Brooklyn Park, and Hennepin County for land use and plan compatibility with the Project.
- ***Section 4.2*** describes the communities along the Project Alignment (the Cities of Minneapolis, Robbinsdale, Crystal, and Brooklyn Park). The analysis is based on the following three criteria: changes to community facilities access, changes to community character, and changes to community cohesion.
- ***Section 4.3*** describes the partial and full property acquisitions and relocations associated with the Project.
- ***Section 4.4*** describes cultural resources and discusses potential impacts that could result from implementation of the Project. This section also describes the process of consultation pursuant to 54 USC § 306108 of the NHPA (hereafter referred to as Section 106) and the development of an amendment to the Section 106 MOA.
- ***Section 4.5*** assesses the existing visual and aesthetic conditions along the Project alignment and design options and identifies potential impacts on the visual character of areas adjacent to the Project.
- ***Section 4.6*** summarizes an approach to capture potential economic effects associated with the Project.
- ***Section 4.7*** assesses potential safety and security impacts associated with the Project. This section also summarizes recent safety and security policies and recommendations for potential mitigation measures.

The study area represents a geographic area used to identify resources, and it varies based on the resource being evaluated. The basis for each study area begins with the LOD, which is defined as the study area for direct physical impacts from the Project. In some cases, the study area extends beyond the LOD to assess the potential extent of impacts on adjacent resources. The study area considered for each area of analysis in this appendix is summarized in Table A4-1. Greater detail is provided in each section of this appendix.

Table A4-1 Summary of Defined Study Areas: Community and Social Analysis

Resource Evaluated	Study Area Definition	Basis for Study Area
Land use plan compatibility	Jurisdictions in which the Project would be located	Project compatibility with overall city plans
Community facilities/community character and cohesion	½-mile radius around LRT stations; ¼ mile on either side of Project Alignment	A ½-mile radius is commonly used to represent the distance transit users are willing to walk to access an LRT station; for Project Alignment, a ¼-mile radius captures direct impact
Relocation of residents and businesses	Within the Project's LOD	Areas reflecting direct impacts on properties
Cultural resources	*Architecture/History APE:* within the LOD and 500 feet on either side of Project Alignment; ¼-mile radius around LRT stations, OMF, new bridges/structures, and the modification of existing bridges/structures *Archaeological APE:* the proposed construction limits and a 500-foot radius from the construction limits of LRT stations, park-and-rides, and OMF	APE as agreed upon by SHPO
Visual/aesthetics	Properties immediately adjacent to and in visual proximity to the various Project components, including guideway, LRT stations, park-and-rides, TPSSs, new bridges, and any other infrastructure elements	Properties and features visible to and from the Project components
Economic effects	Cities of Minneapolis–St. Paul–Bloomington MSA	Area reflecting direct, indirect, and induced economic impacts from the Project
Safety and security	Areas within and adjacent to the Project's LOD	Areas of potential safety and security concerns associated with the Project

4.1 Land Use Plan Compatibility

The Council reviewed land use planning information for the communities impacted by the Project. Because of Council requirements, each community has updated its comprehensive plan since the 2016 Final EIS was completed. Therefore, the information included in this section is focused primarily on changes made to existing and future land use plans made after the 2016 Final EIS was completed.

Various impacts such as noise, community cohesion, economic development, and visual quality have a relationship to land uses in the study area and are considered in other sections of this Supplemental Draft EIS.

4.1.1 Regulatory Context and Methodology

NEPA (42 USC § 4321 et seq.) and MEPA (Minn. Stat. ch. 116D) form the general basis of consideration for discussing land use issues. Local municipalities have policies addressing land use, including comprehensive plans, as well as official controls including zoning and subdivision codes that regulate development.

This section focuses on the compatibility of the Project with local and regional land use planning on a broader scale. To assess land use plan compatibility, the Council reviewed each city's comprehensive and land use planning documents and land use maps to determine consistency with the Project. This included evaluating existing land use adjacent to LRT station locations, identification of LRT-related policies, and any ongoing planning efforts that might be impacted by the Project.

The Council's assessment of the Project's compatibility with existing and planned land uses was based on the land use inventories and comprehensive planning documents for the Cities of Minneapolis, Robbinsdale, Crystal, and Brooklyn Park. Comprehensive plans are locally approved planning documents that guide planning policy and land use. Hennepin County's land use plans and policies were also reviewed to evaluate Project alignments with regional land use planning and regional transit policies.

The Council also obtained specific land use data from existing and planned land use maps for each Project city. Land use planning information was reviewed to evaluate compatibility with the LRT station locations.

4.1.2 Study Area

The study area for land use compatibility is defined as the jurisdictions in which the Project would be located.

4.1.3 Affected Environment

This section summarizes land use in comprehensive plans and other planning documents. All communities in the study area have updated their comprehensive land use plans since the 2016 Final EIS was completed.

4.1.3.1 Local Plans and Policies

The Council reviewed local and regional plans and policies to determine their compatibility with the Project. The Project is consistent with local and regional plans as discussed below.

The Cities of Brooklyn Park, Crystal, and Robbinsdale have adopted TOD zoning ordinances because of work done through the FTA TOD planning grant.

City of Brooklyn Park

The Project is compatible with the City of Brooklyn Park's local land use planning policies. The City of Brooklyn Park 2040 Comprehensive Plan acknowledges that CR 81 is planned for use as a transit corridor and has updated the future land use map to reflect LRT station area plans. These station areas include Oak Grove Pkwy, 93rd Ave N, 85th Ave N, Brooklyn Blvd, and 63rd Ave N. The City of Brooklyn Park's Station Area Plan was adopted in July 2016, and specific overlay zoning in these areas has been developed. Minimum density for development within one-half mile of station areas is 20 units per acre.

Along the Project Alignment Development/Redevelopment Areas within one-half mile of LRT stations are mapped as LRT Overlay district. Underlying primary zoning districts will govern land uses in these locations, except that residential development occurring in the overlay must be at a minimum of 20 dwelling units per acre. The overlay indicates that residential development should be well-connected to and accessible by those traveling by LRT.

Additionally, the City of Brooklyn Park 2040 Comprehensive Plan includes Station Area Plans with primary initiatives for each of the five stations in the City of Brooklyn Park portion of the Project Alignment. The vision for these LRT station areas is to reinforce and strengthen the unique characteristics of each of the neighborhoods surrounding the

five stations. The plans identify infrastructure improvements, redevelopment options, and opportunity sites within one-half mile of each stop. The LRT station locations would provide access to employment centers and other major destinations in the City of Brooklyn Park, which would be compatible with these goals. The City of Brooklyn Park's 2040 Comprehensive Plan indicates the future land uses and characteristics at five LRT stations as shown in Table A4-2.

Table A4-2 Future Land Uses and Characteristics for LRT Station Areas in the City of Brooklyn Park

Station Area	Future Land Uses and Characteristics
Oak Grove	■ Parking ramp and TOD liner ■ Street network ■ Grand boulevard ■ Future development
93rd Ave N	■ Improved pedestrian connections ■ Incentivize TOD
85th Ave N	■ Hennepin County Brooklyn Park Branch Library ■ North Hennepin Community College Master Facilities Plan (2015) ■ Civic plaza ■ Long-term redevelopment sites
Brooklyn Blvd	■ Pedestrian connections ■ TOD overlay ■ Short-term redevelopment sites
63rd Ave N	■ A local ethnic marketplace or pop-up market space ■ Long-term redevelopment sites ■ Pedestrian enhancements at the intersection

City of Crystal

The Project is compatible with the City of Crystal's local land use planning policies. The City of Crystal 2040 Comprehensive Plan references the 2016 Alignment. Land use changes around the LRT stations since the 2016 Final EIS was published are minimal.

The City of Crystal relies on Metro Transit for public transit service. The following public transit implementation items are identified in the City of Crystal's 2040 Comprehensive Plan:

- Monitor and, as needed, participate in any Metro Transit consideration of modifying, expanding, or eliminating transit service to the city
- Exercise the City of Crystal's land use authority and any applicable municipal consent powers regarding any such changes in service or new facilities proposed by Metro Transit
- Continue to assist with the development of the Project

Beginning in 2015, Hennepin County and the City of Crystal collaborated on a station area plan for the Bass Lake Rd Station. The plan identified opportunity sites, improvements to Bass Lake Rd between the LRT station and W Broadway Ave, park ideas, and redevelopment options around the LRT station. Land use suggestions, placemaking, and strategies to achieve health equity are also discussed. The LRT station would provide additional access to employment centers and commercial and retail destinations in Downtown Crystal and would be compatible with the City of Crystal's goals and policies.

City of Robbinsdale

The Project is compatible with the City of Robbinsdale's local land use planning policies. The City of Robbinsdale 2040 Comprehensive Plan was adopted before the Project Alignment was identified, but the plan acknowledged that the 2016 Alignment for the Project was being altered.

The City of Robbinsdale's 2040 Comprehensive Plan recognizes that an LRT station would be located on the western edge of Downtown Robbinsdale between 40th Ave N and 42nd Ave N. The LRT station would provide additional access to employment centers and commercial and retail destinations in Downtown Robbinsdale. The Project Alignment would include an additional LRT station in Southeast Robbinsdale, located on CR 81 near the North Memorial Medical Center. The North Memorial Medical Center is the City of Robbinsdale's largest employer and provides a variety of medical services to the region.

Land use planning information was reviewed for the LRT stations in the City of Robbinsdale. Changes to current land use are minimal around the LRT stations (since the 2016 Final EIS was published). The transportation chapter of the City of Robbinsdale 2040 Comprehensive Plan mentioned, "City policies should provide for efficient alternative choices of transportation (including transit), which reduce congestion within neighborhoods and commercial areas. Significant regional transit infrastructure investment is expected with the Blue Line Light Rail Extension."

The City of Robbinsdale's 2040 Comprehensive Plan indicates that future land uses near the Downtown Robbinsdale Station include downtown businesses (retail, commerce, entertainment, and employment), TOD, and future development. Future land uses near the proposed North Memorial Medical Center Station include North Memorial Medical Center, other medical services, and Theodore Wirth Pkwy and surrounding parks and open spaces.

City of Minneapolis

The transportation chapter of *Minneapolis 2040*—the City of Minneapolis's Comprehensive Plan[1]—states that public transit is essential to providing transportation and accessibility that aid in combating climate change and reducing economic disparities. Additionally, *Minneapolis 2040* indicates that the City of Minneapolis will continue to play an active role in the development of transitway projects within and across borders, including this Project. Future land use and built form guidance in *Minneapolis 2040* was prepared in part to support future planned transit service. The "Map of Planned Transitways and Transit Stations" in *Minneapolis 2040* includes the Project in the Increased Revenue Scenario.

Land use on both sides of the Project Alignment west of N James Ave is predominantly urban neighborhood. A mix of urban commercial, retail, and residential uses abut W Broadway Ave with a larger concentration of higher-density mixed-use commercial and residential land use between N 26th Ave and N James Ave. *Minneapolis 2040* indicates that future land uses will remain the same with a focus on community and destination mixed land uses centered near the N Penn Ave intersection, the location of the proposed Penn Ave Station.

For the four alignment options evaluated in the City of Minneapolis, LRT would be center-running and follow W Broadway Ave from the Cities of Minneapolis/Robbinsdale border to N Knox Ave. Land uses associated with the four alignment options in the City of Minneapolis are described in the following sections.

21st Ave N Alignment Option

Land uses along this segment of 21st Ave N are urban commercial, institutional, and vertical mixed use along the south side, and residential uses of varying densities along the north side. *Minneapolis 2040* indicates that future land

uses on the south side of 21st Ave N will continue to consist of mixed use, while the north side will continue to consist of urban neighborhood.

W Broadway Ave Alignment Option

Land uses along this segment of W Broadway Ave, which includes the proposed Emerson/Dupont Station, consist primarily of urban commercial, institutional, and vertical mixed use. *Minneapolis 2040* indicates that future land uses on both sides of W Broadway Ave will continue to consist of mixed use.

Lyndale Ave N Alignment Option

Land uses along this section of Lyndale Ave N are a mix of commercial and residential uses. South of N Plymouth Ave, I-94 is directly adjacent to the east side of Lyndale Ave N and commercial and industrial uses are along the west side. As this alignment option crosses I-94, it enters Downtown Minneapolis with its mix of commercial and industrial uses. Future land uses along this alignment option are not anticipated to change.

East of I-94 Alignment Option

Current land uses along the East of I-94 option include I-94 along the west side, and commercial (office and institutional) and industrial (production) uses along the east side (west of N Washington Ave). Entering Downtown Minneapolis, commercial and industrial land uses continue along both sides of this alignment option. Future land uses along the East of I-94 option are anticipated to remain a mix of industrial, commercial, and mixed use.

4.1.3.2 Hennepin County Plans and Policies

The *Hennepin County 2040 Comprehensive Plan* continues to support the Project. *Mobility 2040*, detailed in the County's Comprehensive Plan, provides guidance for Hennepin County's transportation system. Transit is a significant portion of *Mobility 2040*, which highlights the following five goals guiding transit development in the county:

1. Improve safety, reliability, and comfort for all transportation users
2. Provide affordable transportation choices and convenient access to destinations
3. Improve the transportation system to enhance quality of life, health, livability, and competitiveness
4. Create a transportation system that protects and enhances the environment
5. Preserve and modernize our transportation system

The alignments under evaluation are compatible with Hennepin County's *Mobility 2040* transit goals.

The following Hennepin County programs would provide support related to the Project:

- ***Bottineau Community Works:*** BCW identifies and pursues community and economic opportunities within the future Project area. It works with community stakeholders to maximize the economic development value of the Project. Project cities have been participating in BCW, which was established in 2015 to partner with cities in the northwest Twin Cities Metropolitan Area to identify and pursue community and economic development opportunities "beyond the rails."[2]
- ***Transit-Oriented Development Program:*** This program "aims to create walkable, mixed-use, human-centered communities around high-quality transit service." The program is being leveraged as part of the Project.[3]
- ***Affordable Commercial Incentive Fund:*** This program supports longer-term affordable commercial space in development projects to support small businesses and wealth-building opportunities.
- ***Hennepin County Regional Railroad Authority:*** "The HCRRA seeks to improve rail modes of transportation to enhance mobility as a key part of our transportation system."[4]

4.1.4 Environmental Consequences

This section identifies the long-term (operating-phase) and short-term (construction-phase) planning and policy-related impacts from the No-Build and Project alignment and design options.

4.1.4.1 Operating-Phase (Long-Term) Impacts

The Project remains consistent with the local and regional planning policies. The following sections describe potential long-term planning and policy impacts.

No-Build Alternative

The No-Build Alternative would not fulfill the key goals of the city and regional plans described above. These plans indicate support for the enhancement, development, and implementation of transit improvements. In addition, these plans prioritize diversity of transportation modes and the efficiency of land use offered by transit.

Project Alignment and Design Options

The Project is compatible with the regional land use planning policies and local comprehensive plans and land use and other planning policies of the Cities of Minneapolis, Robbinsdale, Crystal, and Brooklyn Park.

4.1.4.2 Construction-Phase (Short-Term) Impacts

Construction-phase impacts are defined as the temporary impacts that occur during Project construction only. The following sections describe potential short-term planning and policy impacts.

No-Build Alternative

No construction-phase impacts would occur with the No-Build Alternative. Therefore, this alternative would have no construction-related land use compatibility issues.

Project Alignment and Design Options

Construction-phase impacts could include temporary noise, dust, and visual impacts; impacts to land use; or traffic detours resulting in traffic increases through residential neighborhoods. These impacts would not pose compatibility issues with comprehensive plans, land use plans, or other planning policy documents.

4.2 Community Amenities, Character, and Cohesion

This section summarizes the potential impacts from the Project to community amenities, community, character, and community cohesion.

4.2.1 Regulatory Context and Methodology

No specific laws or executive orders regulate how impacts to community amenities, character, and cohesion resulting from transit projects are evaluated. NEPA (42 USC § 4321) and MEPA (Minn. Stat. ch. 116D) form the general basis of consideration of these social impacts.

Information on the community amenities identified in this section was provided by Hennepin County records of community destinations and resources and enriched by community outreach.[5] Information on community access was summarized from descriptions of transit, pedestrian, bicycle, and vehicular traffic conditions in Chapter 3, Transportation. The Council obtained information on community character from comprehensive plans for the Cities

of Minneapolis, Robbinsdale, Crystal, and Brooklyn Park. Comprehensive plan compatibility is reviewed in Section 4.1. Neighborhood and community impact topics are shown in Table A4-3.

Table A4-3 Neighborhood and Community Impacts Topics and Criteria

Topic	Criteria[a]
Community amenities	■ Physical property acquisition and/or displacement of the facility ■ Noise and vibration impacts to individual community amenities ■ Changes to roads and transit service serving community amenities ■ Changes to parking serving community amenities
Community character	■ Noise and vibration impacts to neighborhoods ■ Visual changes within neighborhoods
Community cohesion	■ Changes to the local road network ■ Changes to the bicycle and pedestrian network ■ Changes to parking

[a] All criteria are derived from findings in this Supplemental Draft EIS for the respective environmental categories.

Parks are subject to evaluation in the context of Section 4(f) of the USDOT Act of 1966 and Section 6(f) of the LWCF Act of 1965. Section 4(f) and Section 6(f) resources are specifically addressed in Chapter 8, Summary of Supplemental Draft Section 4(f) and 6(f) Evaluation.

4.2.2 Study Area

The study area for community amenities, community character, and community cohesion is the area within one-half mile of the LRT stations and one-quarter mile along the Project Alignment.

4.2.3 Affected Environment

This section identifies community amenities within the study area, describes the general character of each Project city, and identifies key existing barriers and connections. The analysis in this section is organized by Project city from north to south.

4.2.3.1 City of Brooklyn Park

The City of Brooklyn Park is characterized by residential neighborhoods in a low- to medium-density suburban environment. Residential neighborhoods often have winding internal circulation streets and are typically separated by major cross-community connectors, including 63rd Ave N, W Broadway Ave, Brooklyn Blvd, and 85th Ave N. I-94 and TH 169 are major barriers separating residential areas. The City of Brooklyn Park does not have any individually named neighborhoods within its boundaries.

Commercial and industrial activities in the area include the Parksquare Shopping Center and Starlite Center located at Brooklyn Blvd and W Broadway Ave. Other areas of commercial activity include Target's North Campus, which is located east of the Oak Grove Pkwy Station. The Project Alignment within the City of Brooklyn Park would include its terminus at Oak Grove Pkwy Station and the future site of the OMF. This area is currently undeveloped, and TH 610 would separate the site of future OMF development from existing residential neighborhoods to the south.

Community amenities are located along the City of Brooklyn Park portion of the Project Alignment, including assisted care, professional services, pharmacies, restaurants, and places of worship. North Hennepin Community College and the City of Brooklyn Park branch of the Hennepin County Library are located at the intersection of 85th Ave N and W Broadway Ave. The Rush Creek Regional Trail, part of the Three Rivers Park District, is directly north of the OMF.

Community amenities and park resources are presented in Table A4-4 and Table A4-5, respectively, and mapped in Figure A4-1.

Table A4-4 Community Amenities in the City of Brooklyn Park

Facility Name	Station Area	Address	Facility Type
NW Suburban Integration District	93rd Ave N	9201 W Broadway Ave	School
Ebenezer Community Church	93rd Ave N	9200 W Broadway Ave	Place of worship
Prestige Home Health Care LLC	93rd Ave N	9019 Nevada Ave N	Assisted care
Berean Baptist Church	85th Ave N	8825 W Broadway Ave	Place of worship
Hennepin County Library: Brooklyn Park	85th Ave N	8500 W Broadway Ave	Library
Mt Noodles	85th Ave N	8459 W Broadway Ave	Restaurant
China Bowl	Brooklyn Blvd	8089 Brooklyn Blvd	Restaurant
Panda Garden	Brooklyn Blvd	8089 Brooklyn Blvd	Restaurant
Phuong Trang Restaurant (Pho 99)	Brooklyn Blvd	8072 Brooklyn Blvd	Restaurant
Affordable Dentures	Brooklyn Blvd	8066 Brooklyn Blvd	Dental clinic
Cajun Deli Brooklyn Park	Brooklyn Blvd	8038 Brooklyn Blvd	Restaurant
Dragon Star Supermarket	Brooklyn Blvd	8020 Brooklyn Blvd	Grocery
Vietnam House	Brooklyn Blvd	7962 Brooklyn Blvd	Restaurant
Tii Cup	Brooklyn Blvd	7958 Brooklyn Blvd	Restaurant
Revive Brooklyn Park Church	Brooklyn Blvd	7849 W Broadway Ave	Place of worship
United Central SDA Church	Brooklyn Blvd	7831 Brooklyn Blvd	Place of worship
Cub Pharmacy	Brooklyn Blvd	7555 W Broadway Ave	Pharmacy
Empowerment Healthcare Stanley	Brooklyn Blvd	7549 Hampshire Ave N	Assisted care
CVS Pharmacy #16213	Brooklyn Blvd	7535 W Broadway Ave	Pharmacy
Empowerment Healthcare Rylee's	Brooklyn Blvd	7517 69th Ave N	Assisted care
North Hennepin Community College	85th Ave N	7411 85th Ave N	School
Fortunate Homes LLC	Brooklyn Blvd	7409 Louisiana Ave N	Assisted care
Sisaket Asian Market	Brooklyn Blvd	7324 Lakeland Ave N	Grocery
Primus Incorporated	Brooklyn Blvd	7309 Kentucky Ave N	Assisted care
American Furniture Mart	Brooklyn Blvd	7308 Lakeland Ave N	Other
Brooklyn Park Fire Station 3-West	Brooklyn Blvd	7301 W Broadway Ave	Fire station
Prince Of Peace Lutheran Church	Brooklyn Blvd	7217 W Broadway Ave	Place of worship
Evergreen Apartments	Brooklyn Blvd	7108 W Broadway Ave	Assisted care
ComfortHomes Realty LLC [a]	Brooklyn Blvd	7040 Lakeland Ave N	Founder/CEO
Golden Touch Health Care LLC	63rd Ave N	330 County Rd N	Assisted care
Nasha Shkola	85th Ave N	6717 85th Ave N	School
Northern Light Church of Christ	85th Ave N	6717 85th Ave N	Place of worship
Cathie's Childcare	63rd Ave N	6441 Edgewood Ave N	Daycare
Golden Touch Health Care LLC	63rd Ave N	6433 Georgia Ave N	Assisted care
Strategies Africa, Inc.	63rd Ave N	6248 Lakeland Ave N	Cultural organization
DATAAIM, Inc.	63rd Ave N	6248 Lakeland Ave N	IT services
Dominion Income Tax	63rd Ave N	6248 Lakeland Ave N	Financial services
The Church in Brooklyn Park	63rd Ave N	6241 W Broadway Ave	Place of worship
Prairie Seeds Academy ESY	63rd Ave N	6200 W Broadway Ave	School
Prairie Seeds High, Middle, Elementary Schools	63rd Ave N	6200 W Broadway Ave	School

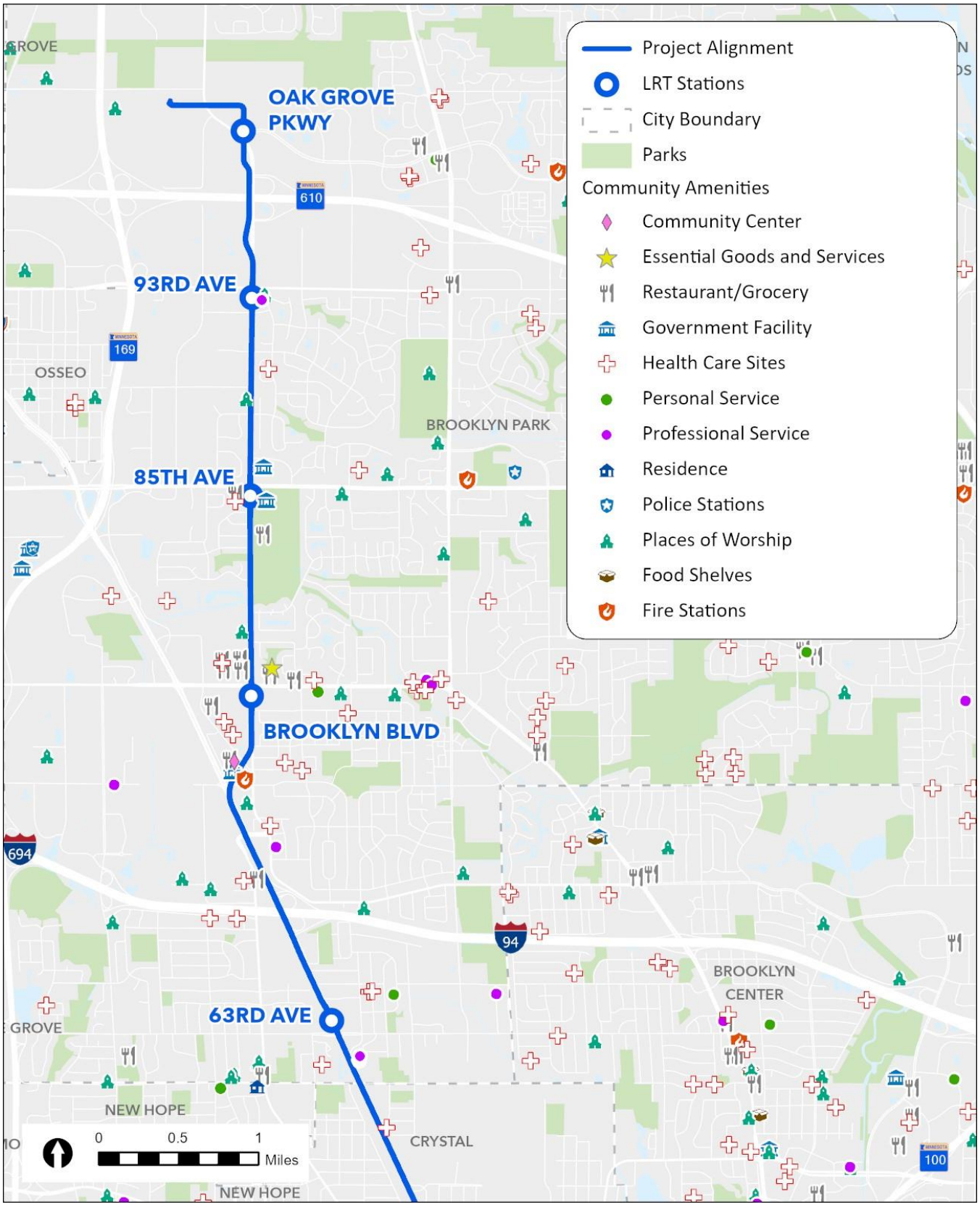
[a] Organization supports minority-owned businesses.

Table A4-5 Parks in the City of Brooklyn Park

Park	Acres	Station Area	Amenities
Oak Grove Park	67.8	Oak Grove Pkwy	Horseshoe court, playground
Rush Creek Regional Trail	232.8	Oak Grove Pkwy	Multi-use trail
Brooklyn Acres Park	5.4	93rd Ave N	Playground
North Hennepin Community College	74.9	85th Ave N	Soccer/softball fields, gym
Hamilton Park	18.6	85th Ave N	Playground, softball field, tennis court
College Park	5. 9	85th Ave N	Skating rink (winter), playground
Tessman Acres Park	7.6	85th Ave N	Playground
Park Brook Elementary	9.6	Brooklyn Blvd	Basketball court, playground, soccer/softball fields
Park Lawn Park	3.2	Brooklyn Blvd	Basketball court, playground
Tessman Park	16.2	Brooklyn Blvd	Playground
Edgewood Park	3.3	63rd Ave N	Playground
Lakeland Park	9.7	63rd Ave N	Basketball court, cricket pitch, softball, playground
Prairie Seeds Academy	10.0	63rd Ave N	Sports field
Southbrook Park	8.7	63rd Ave N	Walking path

Within the neighborhood and community study area.

Figure A4-1 Community Amenities and Parks in the City of Brooklyn Park



4.2.3.2 City of Crystal

The City of Crystal comprises 14 officially recognized neighborhoods. The six neighborhoods adjacent to the Project Alignment are Lions Park, Skyway, Becker, Twin Oaks, Welcome Park, and Cavanagh Oaks. These neighborhoods are residential, with a mix of neighborhood commercial and industrial land uses concentrated at Crystal Town Center located at the intersection of Bass Lake Rd and W Broadway Ave. Low-density, auto-oriented land uses have heavily influenced the existing development patterns in the Cities of Crystal and Brooklyn Park. This portion of the Project reflects primarily highway-oriented regulations and traditional suburban development forms.

Bass Lake Rd (east-west) and CR 81 (north-south) are major connections. The CPKC (east-west) and BNSF (north-south) railways are barriers for movement between neighborhoods. The Crystal Airport interrupts the grid pattern of the surrounding neighborhoods directly northeast of the proposed Bass Lake Rd Station.

Community amenities in the City of Crystal include restaurants, medical amenities, pharmacies, professional services, places of worship, and assisted care. Becker Park is adjacent to the proposed Bass Lake Rd Station. Community amenities and park resources are presented in Table A4-6 and Table A4-7, respectively, and mapped in Figure A4-2.

Table A4-6 Community Resources in the City of Crystal

Resource Name	Station Area	Address	Facility Type
Walgreens #5883	Bass Lake Rd	6800 Bass Lake Rd	Pharmacy
K&E Ethnic Food Market	Bass Lake Rd	5600 Bass Lake Rd	Grocery
N&V Helpful Hear Care	Bass Lake Rd	6000 Bass Lake Rd	Health care
LaVien Tax & Accountant Services	Bass Lake Rd	6000 Bass Lake Rd	Financial services
Bass Lake Residence	Bass Lake Rd	5802 56th Ave N	Assisted care
Amazing Love Assisted Living	Bass Lake Rd	5724 Bass Lake Rd	Assisted care
Herzing University	Bass Lake Rd	5700 W Broadway Ave	School
Northwest Family Clinics: Crystal Urgent Care	Bass Lake Rd	5700 Bottineau Blvd	Urgent care
Crystal Gallery Urgent Care	Bass Lake Rd	5502 W Broadway Ave	Urgent care
West Metro Fire-Rescue District Station 1	Bass Lake Rd	5354 Douglas Dr N	Fire station
North-Suburban Emergency Assistance Response	Bass Lake Rd	5209 W Broadway Ave	Food shelf
H&B Building	Bass Lake Rd	5170 W Broadway Ave	Other
Cornerstone Church Crystal	Bass Lake Rd	5000 W Broadway Ave	Place of worship
Full Proof Ministry C.O.G.I.C.	Robbinsdale	4835 W Broadway Ave	Place of worship
Jin's Chow Mein	Bass Lake Rd	129 Willow Bend	Restaurant
African Foods & Gift	Bass Lake Rd	117 Willow Bend	Grocery store

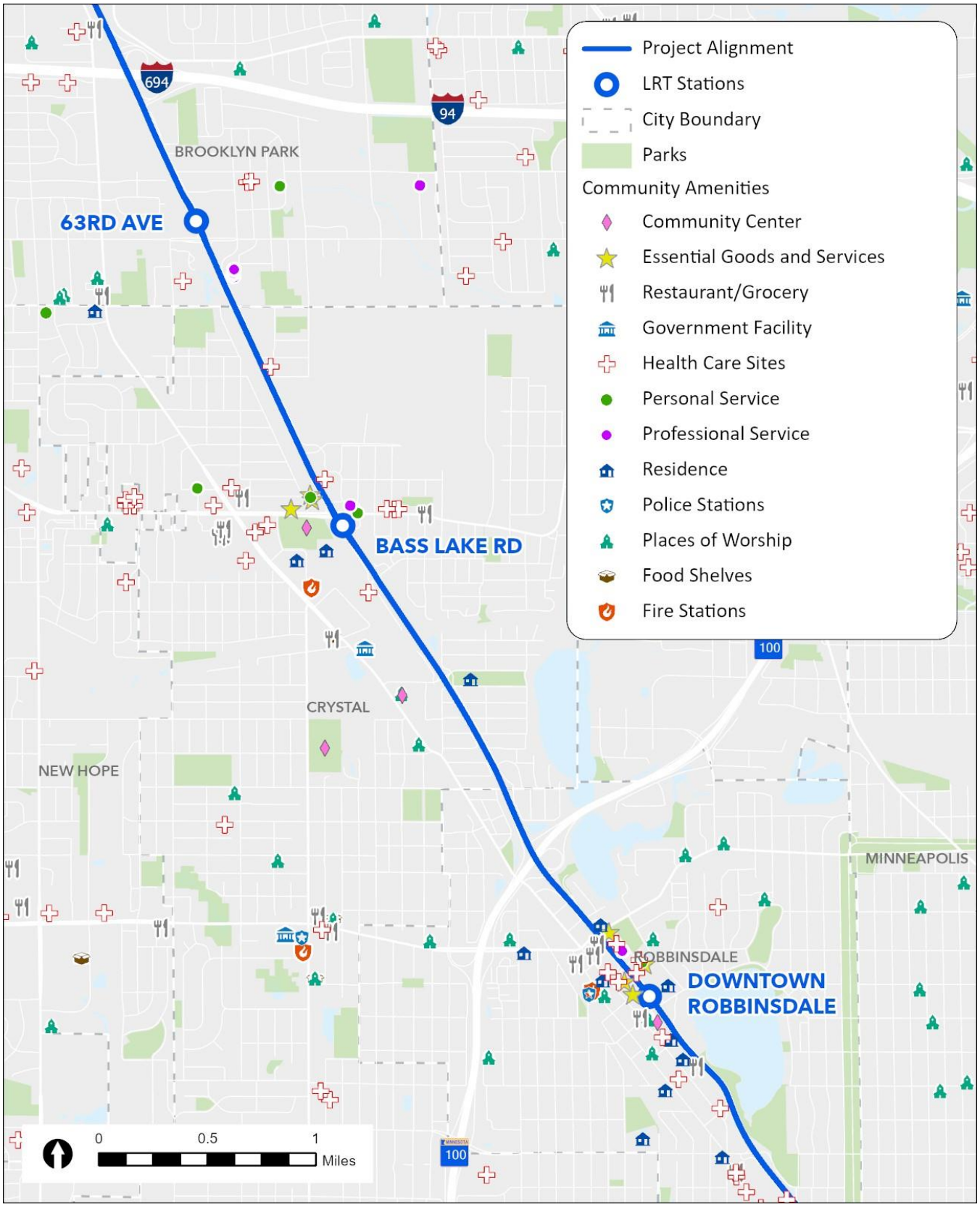
Within the neighborhood and community study area.

Table A4-7 Parks in the City of Crystal

Park	Acres	Station Area	Amenities
North Lions Park	12.6	63rd Ave N	Ballfield, tennis, basketball, volleyball, skating rink (winter), picnic shelter, sledding
Skyway Park	4.0	63rd Ave N	Ballfields, playground, picnic shelter, basketball court
North Bass Lake Park	2.3	Bass Lake Rd	Playground, picnic shelter, basketball court
Becker Park	12. 2	Bass Lake Rd	Playground, splash pad, picnic area, walking/biking paths, skating rink (winter), basketball, pickleball
Soo Line Park	1.1	Bass Lake Rd	Playground, community garden
Cavanagh Park	8.9	Bass Lake Rd	Sports fields, playground, picnic shelter
Welcome Park	9.5	Robbinsdale	Ballfields, playground, basketball court, skating rink (winter)

Within the neighborhood and community study area.

Figure A4-2 Community Amenities and Parks in the City of Crystal



4.2.3.3 City of Robbinsdale

The City of Robbinsdale is primarily residential, with a commercial and industrial activity and has no officially designated neighborhoods within its boundaries. Residential neighborhoods have a suburban residential character with a grid street pattern. Existing development in the City of Robbinsdale reflects the history of W Broadway Ave as a commercial streetcar corridor, with strips of auto-oriented commercial activity developed more recently. Commercial and industrial activities are concentrated along CR 81 and around the Downtown Robbinsdale area, which is an important community asset and a destination for both residents and visitors to the area.

Primary connectors within the City of Robbinsdale include CR 81, N 36th Ave, N 42nd Ave, and TH 100. Residential neighborhoods are cohesive within themselves but are separated by TH 100, CR 81, and the BNSF right-of-way. The grid street pattern is also interrupted by several lakes within the city boundaries. Crystal Lake, Ryan Lake, and South Twin Lake present natural barriers that influence access and connectivity within the city.

Several community amenities are located along the City of Robbinsdale portion of the Project Alignment, including restaurants, medical amenities, pharmacies, groceries, food shelves, and places of worship. The Victory Memorial Pkwy intersects with the Project Alignment near the Lowry Ave Station and passes near other park resources, including Lakeview Terrace Park and the Twin Lakes Boat Launch. Community amenities and park resources are presented in Table A4-8 and Table A4-9, respectively, and mapped in Figure A4-3.

Table A4-8 Community Amenities in the City of Robbinsdale

Resource Name	Station Area	Address	Facility Type
Faith Evangelical Free Church	Downtown Robbinsdale	4505 Halifax Ave N	Place of worship
TotalCare Assisted Living Services	Downtown Robbinsdale	4301 France Ave N	Assisted care
Redeemer Evangelical Lutheran Church	Downtown Robbinsdale	4201 Regent Ave N	Place of worship
Robbinsdale United Church of Christ	Downtown Robbinsdale	4200 Lake Rd	Place of worship
Northside Asian Market & Deli	Downtown Robbinsdale	4165 Hubbard Ave N	Grocery
CVS Pharmacy #1129	Downtown Robbinsdale	4152 Lakeland Ave N	Pharmacy
Lakeview Elementary and Preschool	Downtown Robbinsdale	4110 Lake Dr N	School
Robbinsdale Police and Fire Department	Downtown Robbinsdale	4101 Hubbard Ave N	Police station
Fresenius Medical Care Robbinsdale Dialysis	Downtown Robbinsdale	4094 Lakeland Ave N	Dialysis center
Sacred Heart Catholic Church	Downtown Robbinsdale	4087 W Broadway Ave	Place of worship
Clear Lakes Dental	Downtown Robbinsdale	4080 W Broadway Ave	Dental clinic
Sacred Heart	Downtown Robbinsdale	4050 Hubbard Ave N	School
Robbinsdale Food Market	Downtown Robbinsdale	4005 W Broadway Ave	Grocery
Elim Lutheran Church	Downtown Robbinsdale	3978 W Broadway Ave	Place of worship
Lao Evangelical Lutheran Church	Downtown Robbinsdale	3978 W Broadway Ave	Place of worship
Bethel Robbinsdale	Downtown Robbinsdale	3900 Hubbard Ave N	Place of worship
Mai Thai Restaurant	Downtown Robbinsdale	3839 Lakeland Ave N	Restaurant
Good Samaritan Specialty Care	Downtown Robbinsdale	3815 W Broadway Ave	Nursing home
Hy-Vee	Lowry Ave	3505 CR 81	Pharmacy, grocery, restaurant

Resource Name	Station Area	Address	Facility Type
Allina Health Everyday Clinic: Robbinsdale	Lowry Ave	3505 CR 81	Clinic
North Memorial Hospice Care	Lowry Ave	3500 France Ave N	Hospice
Robbinsdale Dialysis of DaVita	Lowry Ave	3461 W Broadway Ave	Dialysis center
North Memorial Health Cancer Center	Lowry Ave	3435 W Broadway Ave	Pharmacy
Community Dental Care Robbinsdale	Lowry Ave	3359 W Broadway Ave	Dental clinic
North Memorial Health	Lowry Ave	3300 Oakdale Ave N	Hospital
Robbinsdale North Memorial Health Pharmacy	Lowry Ave	3300 Oakdale Ave N	Pharmacy
St. Therese Transitional Care Unit North	Lowry Ave	3300 Oakdale Ave N	Nursing home
Trevilla Of Robbinsdale Inc.	Lowry Ave	3130 Grimes Ave N	School
Robbinsdale A Villa Center	Lowry Ave	3130 Grimes Ave N	Nursing home

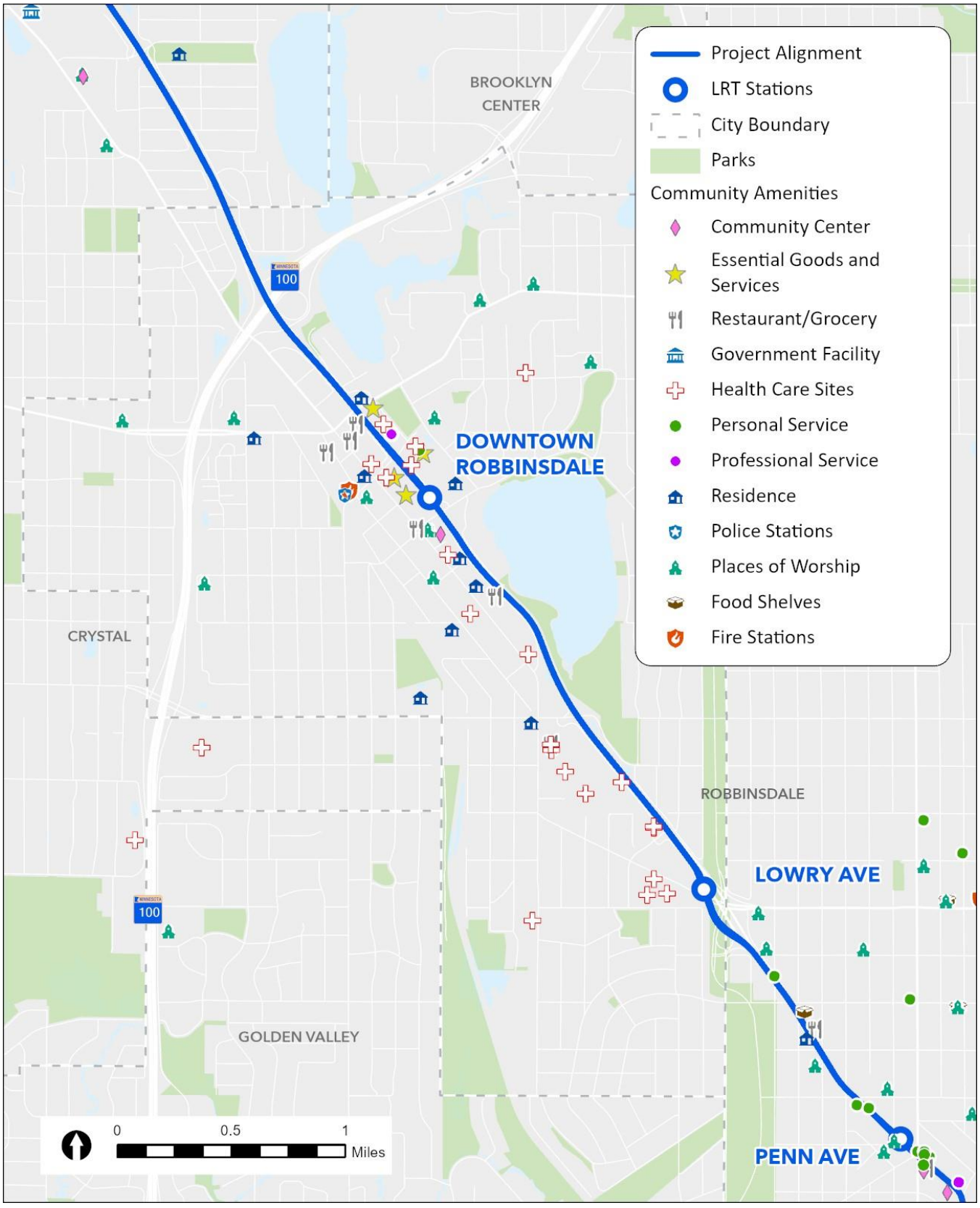
Within the neighborhood and community study area.

Table A4-9 Parks in the City of Robbinsdale

Park	Acres	Station Area	Amenities
Twin Lakes Boat Access	2.1	Robbinsdale	Boat launch
Triangle Park	1.0	Robbinsdale	Picnic area, baseball, playground
Spanjers Park	4.5	Robbinsdale	Sports field
Mielke Park	0.8	Robbinsdale	Picnic area
Lee Park	6.7	Robbinsdale	Picnic area, sports fields, playground, walking path
Sanborn Park	8.8	Robbinsdale	Picnic area, sports fields, playground, tennis, basketball court, walking path, horseshoe court, fishing dock, skating rink (winter)
Hollingsworth Park	3.9	Robbinsdale	Picnic area, fishing dock, walking path
Lakeview Terrace Park	26.0	Lowry Ave/Robbinsdale	Sports fields, playground, picnic area, walking path, boat launch
Manor Park	3.7	Lowry Ave	Picnic area, sports fields, playground, tennis, walking path, wading pool
Parkview Park	0.3	Lowry Ave	Playground
Graeser Park	1.8	Robbinsdale	Picnic area

Within the neighborhood and community study area.

Figure A4-3 Community Amenities and Parks in the City of Robbinsdale



4.2.3.4 City of Minneapolis

Within the City of Minneapolis, the Project passes through six officially designated neighborhoods: North Loop, Sumner-Glenwood, Near North, Hawthorne, Jordan, and Willard-Hay. North Loop is a mixed-use downtown neighborhood that has experienced redevelopment of warehouse buildings into apartments, condominiums, lofts, offices, and artist studio spaces in recent decades. The remaining residential neighborhoods are characterized by richly diverse, dense, urban areas with a grid street pattern. Pockets of commercial and industrial development are scattered throughout the area, concentrated in the North Loop neighborhood and along W Broadway Ave.

Olson Memorial Pkwy (TH 55) (east-west) and I-94 (north-south) provide vehicle connections to the area but act as barriers to connectivity between neighborhoods. Other key connections include N Washington Ave, N Plymouth Ave, Lyndale Ave, Glenwood Ave, and W Broadway Ave. The Mississippi River forms a natural barrier at the eastern edge of several eastern neighborhoods.

Several community amenities are located within the study area, including restaurants, medical amenities, fire stations, food shelves, and places of worship. Park and trail amenities are also scattered throughout the area, including basketball courts, picnic areas, and walking paths. Multi-use trails (Theodore Wirth Pkwy, Victory Memorial Pkwy, and the Cedar Lake Trail) provide connections for bicyclists and pedestrians. The City of Minneapolis Farmers Market is located within the study area, which is held outdoors from May to October.

Temporary street festivals take place within the study area. Street festivals, such as the Juneteenth Minnesota Block Party and Open Streets—West Broadway, close off W Broadway Ave and provide space for residents to gather, share music and food, and learn more about their community.

Community amenities and park resources are presented in Table A4-10 and Table A4-11, respectively, and mapped in Figure A4-4.

Table A4-10 Community Amenities in the City of Minneapolis

Resource Name	Station Area	Address	Facility Type
Parkway United Church of Christ	Lowry Ave	3120 Washburn Ave N	Place of worship
The Purpose Church	Lowry Ave	3001 Russell Ave N	Place of worship
Good News Minneapolis Church	Lowry Ave	3000 W Broadway Ave	Place of worship
Zang Xiong	Penn Ave	2903 Penn Ave N	Daycare
City Life Works	Penn Ave	2827 Newton Ave N	Place of worship
Calvary Evangelical Church (Good in the 'Hood)	Penn Ave	2827 Newton Ave N	Place of worship, food shelf
Yang M Moua	Lowry Ave	2816 W Broadway Ave	Daycare
Lao Cultural Center Building	Lowry Ave	2648 W Broadway Ave	Food shelf
True Vine Missionary Baptist Church	Penn Ave	2639 Thomas Ave N	Place of worship
The Church of Saint Anne: St. Joseph Hiển	Penn Ave	2627 Queen Ave N	Place of worship
KIPP Legacy Academy	Penn Ave	2620 Russell Ave N	School
Iglesia Vino Nuevo El Rey Jesus Minnesota	Emerson-Fremont	2519 Lyndale Ave N	Place of worship
Neng Lee Xiong	Penn Ave	2514 N Irving Ave	Daycare

Resource Name	Station Area	Address	Facility Type
Minnesota Internship Center Unity Campus	Emerson-Fremont	2507 Fremont Ave N	School
New Salem Baptist Church	Emerson-Fremont	2507 Bryant Ave N	Place of worship
Early Childhood Family Education	Emerson-Fremont	2410 Girard Ave N	School
End Time Apostolic Church	Emerson-Fremont	2401 Aldrich Ave N	Place of worship
All Nations Seventh-Day Adventist Church	Penn Ave	2315 24th Ave N	Place of worship
Holding Forth the Word of Life	Emerson-Fremont	2304 Emerson Ave N	Place of worship
Agape Child Care Development Center	Emerson-Fremont	2304 Emerson Ave N	School
Morning Star Assembly of God	Penn Ave	2229 W Broadway Ave	Place of worship
Iglesia Pentecostes Alfa y Omega	Emerson-Fremont	2226 Lyndale Ave N	Place of worship
Plymouth Youth Center	Penn Ave	2210 Oliver Ave N	School
Family Baptist Church (SOAR Campus, Operation Living Hope)	Emerson-Fremont	2201 Girard Ave N	Place of worship, school, food shelf
River Of Life Lutheran Church	Emerson-Fremont	2200 Fremont Ave N	Place of worship
United Deliverance Temple	Emerson-Fremont	2119 Lyndale Ave N	Place of worship
Liberty Community Church	Emerson-Fremont	2100 Emerson Ave N	Place of worship
Garden Of Gethsemane Church	Penn Ave	2054 James Ave N	Place of worship
Faith Tabernacle Gospel Fellowship	Emerson-Fremont	2025 4th St N	Place of worship
North Minneapolis Salvation Army	Emerson-Fremont	2024 Lyndale Ave N	Food shelf
Sanctuary Covenant Church	Emerson-Fremont	2018 Aldrich Ave N	Place of worship
World Harvest Christian Church	Emerson-Fremont	2015 Girard Ave N	Place of worship
Real Believers Faith Center	Emerson-Fremont	2010 Fremont Ave N	Place of worship
Mount Olive Church of God in Christ	Emerson-Fremont	2006 James Ave N	Place of worship
New Creation Church	Penn Ave	1922 25th Ave N	Place of worship
Northpoint Health And Wellness Center	Penn Ave	1835 Penn Ave N	Food shelf, medical/lab
Community Missionary Baptist Church	Penn Ave	1832 Penn Ave N	Place of worship
Saint Andrew's Episcopal Church	Emerson-Fremont	1832 James Ave N	Place of worship
North Minneapolis Christian Fellowship	Emerson-Fremont	1823 Emerson Ave N	Place of worship
Vietnamese Catholic Church	Emerson-Fremont	1814 Dupont Ave N	Place of worship
Greater Mount Vernon Missionary Baptist Church	Emerson-Fremont	1800 Dupont Ave N	Place of worship
Al-Maa'uun	Emerson-Fremont	1729 Lyndale Ave N	Free meals
Masjid An-Nur	Emerson-Fremont	1729 Lyndale Ave N	Place of worship
Ascension Catholic	Emerson-Fremont	1726 Dupont Ave N	School
Ascension Catholic Church	Emerson-Fremont	1723 Bryant Ave N	Place of worship
Harold Mezile North Community YMCA	Emerson-Fremont	1711 W Broadway Ave	Free meals
Visitation Monastery: Girard	Emerson-Fremont	1619 Girard Ave N	Place of worship
Elizabeth Hall International	Emerson-Fremont	1601 Aldrich Ave N	School
Visitation Monastery of Minneapolis	Emerson-Fremont	1527 Fremont Ave N	Place of worship

Resource Name	Station Area	Address	Facility Type
Franklin Middle School	Plymouth	1501 Aldrich Ave N	School
North Academy Arts & Communication	Emerson-Fremont	1500 James Ave N	School
Broadway High School	Emerson-Fremont	1250 W Broadway Ave	School
Temple Shiloh International Ministries	Emerson-Fremont	1201 W Broadway Ave	Place of worship
United Faith Pentecostal Church	Plymouth	1156 Aldrich Ave N	Place of worship
High Praise Ministries	Plymouth	1130 7th St N	Place of worship
MTS Banaadir Academy	Plymouth	1130 7th St N	School
Tabernacle of Praise E&H Ministry	Plymouth	1121 12th Ave N	Place of worship
Douglas Chapel	Plymouth	1118 6th St N	Place of worship
Four Directions Charter School	Emerson-Fremont	1113 W Broadway Ave	School
Minneapolis Fire Department Station 4	Plymouth	1101 6th St N	Fire station
Yuan Yuan	Emerson-Fremont	1010 W Broadway Ave	Restaurant
Salvation Army Harbor Light Center	Target Field	1010 Currie Ave	Free meals
North Minneapolis Human Services Center	Plymouth	1001 Plymouth Ave N	Office
Summit Academy OIC	Plymouth	935 Olson Mem Hwy	School
Bethune	Plymouth	919 Emerson Ave N	School
Dong Hae Korean Grill & Sushi	Plymouth	903 S Washington Ave	Restaurant
Urban Life Christian Center	Emerson-Fremont	815 21st Ave N	Place of worship
Northpoint Workforce Center	Emerson-Fremont	800 W Broadway Ave	Office
HCMC North Loop Clinic Pharmacy	Plymouth	800 Washington Ave N	Pharmacy/clinic
Jun Szechuan Kitchen & Bar	Target Field	730 N Washington Ave	Restaurant
Institute For New Americans	Target Field	730 Hennepin Ave	School
Kindee Thai Restaurant	Target Field	719 S 2nd St	Restaurant
The Sanctuary Covenant Church	Emerson-Fremont	710 W Broadway Ave	Office
Cub Pharmacy	Emerson-Fremont	701 W Broadway Ave	Pharmacy
Walgreens #16275	Target Field	655 Nicollet Mall	Pharmacy
Dayton At Gaviidae YMCA	Target Field	651 Nicollet Mall	Free food box
Minneapolis North Memorial Health Clinic	Target Field	651 Nicollet Mall	Clinic
Walgreens #15983	Emerson-Fremont	627 W Broadway Ave	Pharmacy
Prodeo Academy	Target Field	620 Olson Mem Hwy	School
Metro Schools College Prep	Target Field	620 Olson Mem Hwy	School
Broadway Chow Mein	Emerson-Fremont	609 W Broadway Ave	Restaurant
Lyndale Manor	Emerson-Fremont	600 18th Ave N	Assisted care
Sumner Library	Plymouth	611 Van White Mem Blvd	Library
Life Time Academy	Target Field	600 1st Ave	School
Sharing & Caring Hands Clinic	Target Field	525 N 7th St	Clinic, food shelf
Hennepin Energy Recovery Center	Target Field	505 N 6th Ave	Public works
Target Field Station Parking Ramp	Target Field	435 N 5th St	Other
Minneapolis Farmers Market	Target Field	312 E Lyndale Ave N	Grocery
Minneapolis Central Library	Target Field	300 Nicollet Mall	Library
Institute of Production and Recording	Target Field	300 N 1st Ave	School

Resource Name	Station Area	Address	Facility Type
Twin Cities International Schools	Plymouth	277 12th Ave N	School
Wow Bao: North Loop	Plymouth	217 W Broadway Ave	Restaurant
Yoga Center of Minneapolis	Target Field	212 3rd Ave N	School
Capsule Pharmacy	Target Field	117 Washington Ave N	Pharmacy
Salvation Army: Metro Area	Target Field	53 Glenwood Ave	Food shelf
Social Services Office: Minneapolis	Target Field	53 Glenwood Ave	Food shelf
YouthLink/Youth Opportunity Center	Target Field	41 12th St N	Food shelf
Origami Restaurant	Target Field	30 1st St N	Restaurant
International Dermal Institute	Target Field	15 S 5th St	School

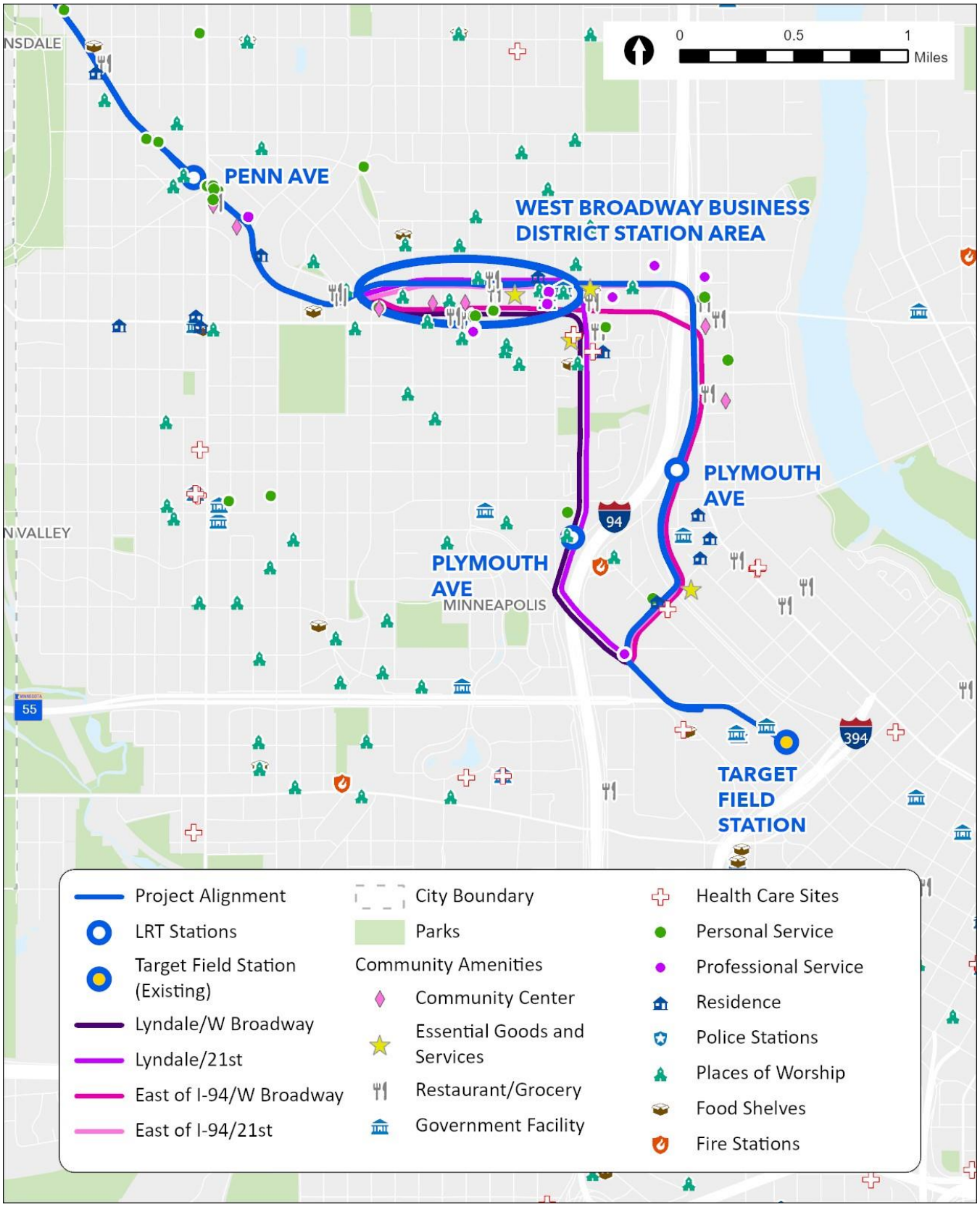
Within the neighborhood and community study area.

Table A4-11 Parks in the City of Minneapolis

Park	Acres	Station Area	Amenities
Bethune Park	12.2	Plymouth	Basketball court, picnic area, playground, wading pool
Sumner Field	4.2	Plymouth	Walking path
North Commons Park	25.7	Emerson-Fremont	Baseball, football, soccer, softball fields, basketball, tennis courts, biking path, skating rink (winter), picnic area, playground, wading pool, walking path, water park
Glen Gale Park	1.5	Emerson-Fremont	Horseshoe pit, playground
Cleveland Park	1.4	Lowry Ave	Baseball, softball fields, basketball court, picnic area, playground, wading pool
Theodore Wirth Pkwy	679.5	Penn Ave/Lowry Ave	Multi-use trails
Victory Memorial Pkwy	100	Lowry Ave	Multi-use trails
Cottage Park	0.5	Emerson-Fremont	Playground
Hall Park	6.2	Plymouth	Basketball court, biking path, picnic area, playground, wading pool, walking path
Glenview Terrace/ Valley View Park	18.6	Penn Ave	Biking path, picnic area, walking path

Within the neighborhood and community study area.

Figure A4-4 Community Amenities and Parks in the City of Minneapolis



4.2.4 Environmental Consequences

This section identifies the long- and short-term direct impacts to neighborhoods and communities from the Project. The Council's evaluation of neighborhood and community effects includes an assessment of changes to community amenities access, community character, and community cohesion. This analysis considers evaluation measures that are based on the analysis of other environmental categories documented in this Supplemental Draft EIS. Refer to other sections of this Supplemental Draft EIS for additional information regarding transportation (Chapter 3), land use plan compatibility (Section 4.1), visual quality and aesthetics (Section 4.5), noise (Section 5.6), and vibration (Section 5.7).

4.2.4.1 Operating-Phase (Long-Term) Impacts

Long-term impacts to community amenities, character, or cohesion are described in the following sections for the No-Build and Project alignment and design options.

No-Build Alternative

No changes to community amenities, character, or cohesion within communities are anticipated under the No-Build Alternative.

Project Alignment and Design Options

This section summarizes the potential impacts of the Project on community amenities, community character, and community cohesion. Analysis in this section is organized by Project city (i.e., the Cities of Minneapolis, Robbinsdale, Crystal, and Brooklyn Park) from north to south and identifies the significance of impact to community amenities, community character, and community cohesion as described in Table A4-12. Generally, options where there are a greater number of community amenities and resources adjacent to the Project Alignment would experience more potential impacts over the long term. The approach for analysis of impacts to community amenities, character, and cohesion shown in Table A4-12 was refined to identify impacts for the Build Alternative (see Chapter 4, Section 4.2.3).

Table A4-12 Approach for Analysis of Impacts to Community Amenities, Character, and Cohesion

Impact Category	Additional Analysis Required (yes/no)	Rationale
Community amenities	Yes	■ Analyze acquisitions and relocations of identified community amenities ■ Summarize results of noise and vibration impacts and identify specific impacts to identified community amenities ■ Identify roadway access changes adjacent to identified community amenities ■ Explore impact of parking changes to adjacent community amenities
Community character	Yes	■ Summarize results of noise and vibration impacts to community character ■ Evaluate neighborhood-level impacts to visual character
Community cohesion	Yes	■ Identify alterations to roadway, bicycle, and pedestrian network impacting community cohesion ■ Explore impact of parking changes to community cohesion

4.2.4.2 Construction-Phase (Short-Term) Impacts

Construction-phase impacts are defined as the temporary impacts that occur during Project construction only.

No-Build Alternative

No construction-phase impacts would occur with the No-Build Alternative. Therefore, this alternative would have no construction-related impacts to community amenities.

Project Alignment and Design Options

Although temporary in nature, construction-phase impacts could affect community amenities, character, and cohesion. Traffic detours could increase traffic through residential neighborhoods or change access to community amenities. Similarly, sidewalk closures and detours could affect pedestrian traffic patterns, particularly for people with limited mobility. Construction impacts such as increased levels of noise and dust could temporarily affect neighborhood character, primarily in areas that are relatively quiet. Fenced-in construction work sites could also present physical and visual barriers to connectivity and community character. The presence of large construction equipment could be perceived as visually disruptive, resulting in temporary effects on community character, particularly in residential settings.

4.2.5 Avoidance, Minimization, and Mitigation Measures

Although the Council does not anticipate that impacts associated with the Project would be severe enough to affect overall community character and cohesion, mitigation would be implemented as required for specific locations where long-term operational impacts and short-term construction impacts are anticipated.

4.2.5.1 Long-Term Mitigation Measures

No mitigation measures are warranted for long-term neighborhood and community impacts because the effectiveness of mitigation measures identified for specific environmental categories (including, but not limited to, noise, vibration, visual quality and aesthetics, transit, roadways and traffic, parking, and pedestrian and bicyclist considerations) would likely prevent adverse impacts on community character and cohesion. Specific mitigation for the long-term impacts such as property acquisitions and displacements, visual quality, and noise are discussed in other sections of this Supplemental Draft EIS Appendices (Section 3.4, Pedestrians and Bicyclists; Section 3.5, Parking in *Appendix Chapter 3: Transportation* in Appendix A-3; Section 4.3, Acquisitions and Relocations; Section 4.5, Visual/Aesthetics in this Appendix Chapter 4; Section 5.6, Noise, and Section 5.7, Vibration in in Appendix A-5).

4.2.5.2 Short-Term Mitigation Measures

Potential mitigation options for short-term construction impacts could include deliberate construction staging or phasing, signage, and signal control requirements during construction for roads, trails, and sidewalks to maintain access to neighborhoods and community amenities throughout the construction period. Potential BMPs would include working with residents and community facility managers to provide alternative access, giving residents and community amenities adequate notice about construction plans and phasing, and alerting the public to detours and access changes.

Mitigation measures for short-term impacts to community amenities would be identified in the Construction Mitigation Plan and Construction Communication Plan, which would be implemented by the Council prior to and during construction. Mitigation measures included in the Construction Communication Plan may be developed as the Project advances to construction.

In addition, the Council could develop and implement a Construction Mitigation Plan, including a Construction Staging Plan to be reviewed with the appropriate partners and stakeholders. A Construction Communication Plan and a Construction Noise Plan could also be developed to ensure that construction updates are shared in a timely manner.

4.3 Acquisitions and Relocations

The Project would require the acquisition (both partial and full) of real property to include permanent and temporary easements for the construction and operation of the Project. This includes acquisitions of land not currently dedicated to transportation purposes, which would require the relocation of current residents and businesses. This section summarizes acquisitions and relocations required for the Project.

4.3.1 Regulatory Context and Methodology

Specific regulations govern the displacement and relocation of residents and businesses resulting from publicly funded transportation projects. Public agencies are required by law to compensate landowners for property acquired for public use. Acquisition of property required for the Project would be in accordance with the Uniform Act (Public Law 91-646), 49 CFR Part 24 (the implementing regulations); FTA's Circular 5010.1D, Grants Management; and Minn. Stat. ch. 117. The objective of the Uniform Act is to provide fair and equitable treatment of people whose real property is acquired or who are displaced in connection with federally funded projects; to ensure that relocation assistance is provided; and to ensure that decent, safe, and sanitary housing is available within the displaced person's financial means.

The analysis in Section 4.3.4.1 identifies parcels that would be acquired to accommodate the Project. Parcel impacts, building acquisitions, and relocations have been estimated using the LOD and approximate right-of-way requirements for the Project. The following types of impacts and transactions are discussed in this section:

- ***Parcel impacts:*** Any area of a property that would overlap with the LOD for the Project. This includes full and partial impacts.
- ***Partial acquisition:*** Purchase of a portion of an overall property. A partial acquisition could include a fee-simple or easement acquisition.
- ***Full acquisition:*** Purchase of all fee-simple landownership rights of a property.
- ***Relocation:*** Relocation results from full acquisition and conversion of the existing land use to a transportation use. Relocations are measured by housing units or businesses, not tax parcels. For example, the acquisition of an apartment building on a single tax parcel with six units would result in six residential relocations.
- ***Easement:*** An easement provides for the temporary (during construction) or permanent use of a property for a particular purpose. Temporary and permanent easements are not discussed in this draft and would be included as Project design progresses.

4.3.2 Study Area

The study area for displacement of residents and businesses is defined as the area within the LOD of the Project, which provides a conservative estimate of right-of-way requirements.

4.3.3 Affected Environment

Development along the Project Alignment includes primarily residential, commercial, public, and industrial uses. Existing land uses are identified and described in Section 4.2.3 and the specific regulations associated with parkland

acquisition are described in Chapter 8, Summary of Supplemental Draft Section 4(f) and 6(f) Evaluation. Utilities and potential utility relocations are discussed in Section 5.1.

4.3.4 Environmental Consequences

This section identifies potential long-term (operating-phase) and short-term (construction-phase) parcel impacts from the No-Build and Project alignment and design options.

4.3.4.1 Operating-Phase (Long-Term) Impacts

The operating phase of the Project would require the permanent acquisition of right-of-way from residential, commercial, and industrial properties and permanent easements on park properties.

No-Build Alternative

The No-Build Alternative would not require acquisition of any properties for the Project.

Project Alignment and Design Options

The operating phase of the Project would likely have long-term impacts to residential, commercial, industrial, institutional, park, agricultural, and undeveloped properties in the study area because of permanent property acquisitions. As design advances, the Project would consider modifications or adjustments to avoid property impacts or lessen the severity of the impact. Land use types included in each of these categories are shown in Table A4-13.

Table A4-13 Land Use Categories for Acquisitions and Relocations

Land Use Category	Land Use Types
Residential	Single-family residential, multifamily residential, mixed-use residential
Commercial	Retail and other commercial, offices, mixed-use commercial
Industrial	Industrial facilities, utilities
Institutional	Public and institutional, including libraries, schools and colleges, churches, police/fire stations, other cultural centers
Park and recreational	Publicly owned park and recreational facilities
Agricultural	Agricultural lands in active production, urban farms
Undeveloped	Vacant, undeveloped land, empty lots

City of Brooklyn Park

Along the City of Brooklyn Park portion of the Project Alignment, the Project would impact a total of 158 parcels, including 99 partial residential impacts and the relocation of two commercial businesses south of the Brooklyn Blvd Station. Full and partial acquisitions of undeveloped property would be required for the site of the future OMF. Parcel impacts, acquisitions, and relocations for the City of Brooklyn Park are shown in Table A4-14.

Table A4-14 Acquisitions and Relocations Required for the City of Brooklyn Park

Land Use Category	Parcel Impacts (acres)	Parcel Impacts (count)	Partial Parcel Impacts (count)	Full Parcel Acquisitions (count)	Building Acquisitions (count)	Relocations (count)
Residential	3.4	99	99	-	-	-
Commercial	8.8	23	21	2	2	2
Industrial	2.3	6	6	-	-	-

Land Use Category	Parcel Impacts (acres)	Parcel Impacts (count)	Partial Parcel Impacts (count)	Full Parcel Acquisitions (count)	Building Acquisitions (count)	Relocations (count)
Institutional	2.3	5	5	-	-	-
Park and recreational	0.2	2	2	-	-	-
Agricultural	-	-	-	-	-	-
Undeveloped	50.4	23	21	2	-	-
Total	**67.4**	**158**	**154**	**4**	**2**	**2**

City of Crystal

Two design options are currently under consideration in the City of Crystal (see Appendix A-2). For either of these options, the Project would impact a total of 19 parcels, including six partial impacts to residential property and the acquisition of four commercial properties adjacent to the Bass Lake Rd Station. The total acreage of residential and commercial parcel impacts is slightly higher for the at-grade design option at Bass Lake Rd than for the interchange design option, but there would be no difference in the number of required acquisitions between the two options. Parcel impacts, acquisitions, and relocations for the City of Crystal are shown in Table A4-15.

Table A4-15 Summary of Acquisitions and Relocations Required for the City of Crystal

Land Use Category	Parcel Impacts (acres)	Parcel Impacts (count)	Partial Parcel Impacts (count)	Full Parcel Acquisitions (count)	Building Acquisitions (count)	Relocations (count)
Residential	0.0–0.1	6	6	-	-	-
Commercial	3.6–3.7	8	4	4	4	7
Industrial	0.3–0.4	1	1	-	-	-
Institutional	-	-	-	-	-	-
Park and recreational	-	-	-	-	-	-
Agricultural	-	-	-	-	-	-
Undeveloped	0.7–0.8	4	3	1	-	-
Total	**4.7–4.9**	**19**	**14**	**5**	**4**	**7**

Ranges presented from lowest-highest to show range of parcel and building impacts associated with the City of Crystal design options.

City of Robbinsdale

Four design options for LRT station and park-and-ride locations are under consideration in Downtown Robbinsdale (see Appendix A-2). Depending on the option selected, total parcel impacts in the City of Robbinsdale would total 1.6–2.7 acres, nearly all of which would be partial impacts to residential or commercial properties that would not result in relocations. Parcel impacts, acquisitions, and relocations in the City of Robbinsdale are shown in Table A4-16.

A comparison of impacts associated with individual design options under consideration in Downtown Robbinsdale is provided in Table A4-17. Most impacts south of downtown are limited to small strips along the existing right-of-way and minor impacts to residential yards and commercial parking lots. South of Downtown Robbinsdale, impacts to three residential properties would require the reconstruction of residential garages but would not impact primary structures.

Table A4-16 Acquisitions and Relocations Required for the City of Robbinsdale

Land Use Category	Parcel Impacts (acres)	Parcel Impacts (count)	Partial Parcel Impacts (count)	Full Parcel Acquisitions (count)	Building Acquisitions (count)	Relocations (count)
Residential	0.1–0.5	16–17	16–17	-	-	-
Commercial	0.1–2.5	6–11	6–10	0–1	0–1	0–6
Industrial	-	-	-	-	-	-
Institutional	0.1–1.2	3	3	-	-	-
Park and recreational	-	-	-	-	-	-
Agricultural	-	-	-	-	-	-
Undeveloped	-	-	-	-	-	-
Total	**1.6–2.7**	**25–28**	**24–29**	**0–1**	**0–1**	**0–6**

Ranges presented from lowest to highest to show range of parcel and building impacts associated with the City of Robbinsdale design options.

Table A4-17 Acquisitions and Relocations for Downtown Robbinsdale

Downtown Robbinsdale Station Location and Park and Ride Design Options	Key Acquisitions and Relocations
LRT station location south of 41st Ave N, park-and-ride location at U.S. Bank site	■ 8 parcels impacted, totaling 2.5 acres ■ Relocation of U.S. Bank
LRT station location south of 41st Ave N, park-and-ride location at URC site	■ 11 parcels impacted, totaling 1.4 acres ■ Relocation of 6 commercial businesses in the URC ■ Minor commercial impacts
LRT station location south of 40th Ave N plus park-and-ride location at U.S. Bank site	■ 11 parcels impacted, totaling 2.4 acres ■ Relocation of U.S. Bank
LRT station location south of 40th Ave N, park-and-ride location adjacent to Elim Church	■ 12 parcels impacted, totaling 1.7 acres ■ No building acquisitions required ■ Elim Church parking lot would be fully impacted but no impacts to the building ■ Minor impacts to parking lot of adjacent apartments (Robbins Landing)

City of Minneapolis

Eight alignment and design options are currently under consideration in the City of Minneapolis (see Appendix A-2). Parcel impacts, acquisitions, and relocations in the City of Minneapolis are shown in Table A4-18. Table A4-19 describes acquisitions and relocations for the City of Minneapolis, including comparisons between alignment and design options and impacts from the two common Project Alignment sections.

Table A4-18 Acquisitions and Relocations Required for the City of Minneapolis

Land Use Category	Parcel Impacts (acres)	Parcel Impacts (count)	Partial Parcel Impacts (count)	Full Parcel Acquisitions (count)	Building Acquisitions (count)	Relocations (count)
Residential	1.4–2.9	50–80	43–68	5–13	4–13	4-10
Commercial	2.5–7.0	36–55	22–30	11–24	11–24	11-28
Industrial	0.3–2.8	4–7	2–4	0–4	0–4	0-4
Institutional	0.8–2.3	9–13	8–9	1–4	1–4	1-4
Park and recreational	0.0–0.1	0–4	0–4	-	-	-

Land Use Category	Parcel Impacts (acres)	Parcel Impacts (count)	Partial Parcel Impacts (count)	Full Parcel Acquisitions (count)	Building Acquisitions (count)	Relocations (count)
Agricultural	0.00–0.01	0–2	0–2	-	-	-
Undeveloped	0.4–0.5	15–19	15–18	0–1	-	-
Total	**5.4–15.6**	**114–180**	**90–135**	**17–46**	**17–45**	**16–46**

Ranges presented from lowest-highest to show range of parcel and building impacts associated with the City of Minneapolis alignment and design options.

Table A4-19 Acquisitions and Relocations for the City Minneapolis

City of Minneapolis Alignment and Design Options	Key Acquisitions and Relocations
Cities of Minneapolis/ Robbinsdale border to N Knox Ave	■ Only one alignment option under consideration ■ 87 parcels impacted, totaling 3.2 acres ■ 13 building acquisitions, including 8 commercial and 3 residential relocations ■ Notable acquisitions and relocations include KMOJ radio station, Monte's Auto Repair, a furniture store, Morning Star Assembly of God, several restaurants, and three residential properties
W Broadway Ave options vs. 21st Ave N options	■ In general, options where the alignment follows W Broadway Ave a greater number of parcels would be impacted than an alignment along 21st Ave N, most of which would be partial impacts to parcels directly along the right-of-way ■ An alignment along W Broadway Ave would require a greater number of building acquisitions ■ Notable acquisitions and relocations along W Broadway Ave would include Amstar, Winner, and Marathon service stations; several health facilities; the ZaRah Wellness Center; and several commercial businesses including restaurants and salons ■ Notable acquisitions and relocations along 21st Ave N would include restaurants, Merwin Liquors, the historic Bell Lofts, and several single-family residences (some of which are tax-forfeit properties under Hennepin County ownership)
One-station options vs. two-station options	■ In general, options with two LRT stations would have greater total count of parcel impacts (including partial impacts) than one-station options ■ Two-station options would require a greater number of full parcel and building acquisitions and relocations ■ Certain impacts that would require a full parcel acquisition in the two-station option may require only a partial acquisition in the one-station option (or vice versa). Examples of properties with different magnitudes of impact from these options include Merwin Liquors, Cub Grocery and Pharmacy, Popeyes, Mini Pac Grill, Amstar, the Historic Bell Lofts, a medical facility, and several single-family residences.
Lyndale Ave N options vs. E of I-94 options	■ On average, options where the alignment follows Lyndale would impact a greater number of parcels than an alignment east of I-94, but most of these would be smaller, partial impacts to residential properties ■ An alignment east of I-94 would require a greater number of full parcel and building acquisitions

City of Minneapolis Alignment and Design Options	Key Acquisitions and Relocations
	■ Notable acquisitions and relocations along W Lyndale Ave would include Merwin Liquors, partial impacts to Hall Park, and acquisition along the back of residential lots along W Lyndale Ave in the Near North neighborhood ■ Notable acquisitions and relocations east of I-94 would include the Metro Transit Instruction Center, two industrial properties, and one multifamily residence
East to Target Field Station	■ Only one alignment option under consideration east of Lyndale Ave N and east of I-94 options to Target Field Station ■ 2 parcels impacted, totaling 0.2 acre ■ Relocation of Wells Fargo Bank and partial impact to Metro Transit Heywood facility

4.3.4.2 Construction-Phase (Short-Term) Impacts

Construction activities would result in short-term impacts primarily because of activities requiring temporary construction easements. In addition, Project construction would likely require temporary modification or closure of some existing property access. Refer to Sections 3.3, 3.4, and 3.5 in Appendix A-3 and Section 4.6 of this appendix for further discussion of construction impacts related to access closures and impacts to on-street parking.

4.3.5 Avoidance, Minimization, and Mitigation Measures

Loss of private residential property would be mitigated by payment of fair-market compensation and provision of relocation assistance in accordance with the Uniform Act. For residential displacements, the following would be provided:

- Relocation advisory services to displaced tenants and owner occupants
- Minimum 90 days written notice to vacate prior to requiring possession
- Reimbursement for moving expenses
- Payments for the added cost of renting or purchasing comparable replacement housing

For non-residential displacements, the following would be provided:

- Relocation advisory services
- Minimum 90 days written notice to vacate prior to requiring possession
- Reimbursement for moving and reestablishment expenses

Although the law requires a minimum of 90 days written notice to vacate for residential and nonresidential displacements, the displaced owners would have been previously contacted by a right-of-way agent and an appraiser. Relocation advisory services would ensure that relocation activities are coordinated with the owners.

Several other reimbursable/incidental expenses related to relocation may also be provided to residents and businesses if determined to be actual, reasonable, and necessary.

Properties affected by temporary easements would be restored to an acceptable pre-construction condition depending on the individual easement need and agreement.

4.4 Cultural Resources

The information in this section is based on the *Cultural Resources Technical Report*, which is provided in Appendix A-4. The objective of the *Cultural Resources Technical Report* is to evaluate the potential effects of the No-Build Alternative and the Project alignment and design options on cultural resources. NEPA requires federal agencies to consider the impacts of their actions on cultural resources, and the NHPA, as amended (54 USC § 300101 et seq.), requires agencies to consider the effects of their undertakings on historic properties.

For the purposes of this section, "cultural resource" is synonymous with "historic property." Locations important to communities that are not historic are addressed in Section 4.2. Historic properties are buildings, structures, districts, objects, and sites that are listed in or eligible for listing in the NRHP. CEQ's Regulations for Implementing the Procedural Provisions of NEPA (40 CFR Parts 1500–1508) encourage integration of the NEPA process with other planning and environmental reviews, such as Section 106. CEQ regulations also clarify that, under NEPA, "impact" is synonymous with "effect" (40 CFR § 1508.8(g)). For consistency with the Section 106 regulations, "effect" is used throughout this section.

Because federal policy and guidance encourage "coordination" and "integration" between NEPA and Section 106, FTA applies the Section 106 process for this Project to fulfill the requirements for the consideration of effects on cultural properties under NEPA.

This section includes an overview of the regulatory context and methodology used for the analysis, a summary of the Project's Section 106 consultation process to date, an evaluation of existing historic properties, and a summary of the historic properties or potentially historic properties that could be potentially affected by the design (for cumulative impacts, see Chapter 6).

4.4.1 Regulatory Context and Methodology

This section describes the regulatory context and methodology for the historic properties assessment under Section 106. This section also describes the methodologies used to determine the architecture/history and archaeological APEs, the methods used to identify historic properties and evaluate them for the NRHP, how effects on historic properties are assessed, and how adverse effects are resolved under Section 106.

The Council would apply for FTA funding for the Project and would seek permits for construction from USACE; therefore, this Project is a federal undertaking and must comply with Section 106 and other applicable federal mandates. Section 106 requires federal agencies to consider the effects of their actions on historic properties before undertaking a project. FTA is the Federal Lead Agency for the Project. The Council is the Project's local Lead Agency and Project sponsor. USACE is a federal Cooperating Agency for the Project, responsible for implementing NEPA and related laws and Section 404 of the Clean Water Act. Pursuant to 36 CFR § 800.2(a)(2), USACE has also designated FTA as the Federal Lead Agency responsible for fulfilling its collective Section 106 obligations for the Project. FHWA is also a federal Cooperating Agency for the Project and has designated FTA as the Federal Lead Agency under Section 106.

FTA's Section 106 compliance is achieved through consultation with SHPO, Native American tribes, local governments, and other interested parties. Section 106 directs that the responsible federal agency shall:

- Initiate the Section 106 process by determining whether the action is an undertaking, notifying SHPO and Native American tribes, and developing a plan to involve the public (36 CFR § 800.3)

- Identify historic properties that are listed, or eligible for listing, in the NRHP by determining an APE, conducting a survey to identify historic properties, and evaluating historic properties under NRHP criteria (36 CFR § 800.4)
- Assess the effects of the undertaking on historic properties by applying the criteria of adverse effect and consulting with SHPO, Native American tribes, and the public [36 CFR §§ 800.5 and 800.11(e)]
- Resolve any adverse effect(s) by continuing consultation with Section 106 consulting parties to explore measures that avoid, minimize, or mitigate the adverse effect(s), and develop a Section 106 Memorandum of Agreement to document agreed-upon measures (36 CFR § 800.6)

As part of the Section 106 review for the 2016 Alignment reviewed in the 2016 Final EIS, FTA consulted with the SHPO and other interested parties with assistance from the MnDOT Cultural Resources Unit to define an APE, conduct surveys to identify and evaluate historic properties within the APE, assess effects of the Project on historic properties, and resolve adverse effects to historic properties. The measures FTA agreed to implement to avoid, minimize, and mitigate adverse effects on historic properties identified in the 2016 Final EIS are documented in the *Memorandum of Agreement between the Federal Transit Administration and the Minnesota Historic Preservation Office Regarding the METRO Blue Line Extension Light Rail Transit Project, Hennepin County, Minnesota* (MOA), which was executed on Aug. 23, 2016, and amended Sept. 20, 2022 (Appendix A-4). The MOA included stipulations outlining the process for changing the APE because of substantive changes to the design, completing additional historic property identification and evaluation, and assessing effects to newly identified historic properties or new effects to previously identified historic properties.

As of publication of this Supplemental Draft EIS, the FTA in consultation with SHPO and other Section 106 consulting parties completed the following tasks:

- Revised the APE to reflect the potential effects of the Project Alignment and to align with APEs for similar FTA transit projects throughout the region and nationally, in accordance with Stipulation III.A of the MOA
- Initiated supplemental surveys to identify potential historic properties (potentially eligible architecture/history properties and archaeological resources within the revised APE), in accordance with Stipulation I of the MOA
- Reopened Section 106 consultation with formal letters and a consultation meeting on Aug. 7, 2023

Several alignment and design option locations were initially under consideration (see Section 2.3 of the Supplemental Draft EIS), so supplemental surveys encompassed a larger study area to cover the potential APEs for the options. Technical reports documenting the results of the reconnaissance architecture/history surveys and archaeological assessment are provided in Appendix A-4. Review and analysis of the design options under consideration, combined with input from study area residents, businesses, and stakeholder agencies, resulted in the selection of the Build Alternative. To inform evaluation, a preliminary assessment of the effects that the Project could have on historic properties or potential historic properties (properties identified as potentially eligible for listing in the NRHP) was completed. The Supplemental Final EIS will include a finding of effect of the Project on historic properties (per Stipulation I.C of the MOA) and avoidance, minimization, or mitigation measures to resolve adverse effects, if identified.

The Project would be seeking permits and/or approvals from State agencies that may include MnDOT, DNR, MPCA, and MDH. Therefore, the Project must also comply with Minnesota laws, including MEPA, the Minnesota Field Archaeology Act (Minn. Stat. 138.31–138.42), the Minnesota Historic Sites Act (Minn. Stat. 138.661–138.669), and the Minnesota Private Cemeteries Act (Minn. Stat. 307.08), as applicable.

4.4.1.1 Area of Potential Effects

The Project has two APEs, one for architecture/history properties and one for archaeological resources, which are the geographic areas within which an undertaking could directly or indirectly cause alterations in the character or use of historic properties. The APE for the Project was originally defined in 2011 and refined in 2018 by FTA based on the former preferred alternative reviewed in the 2016 Final EIS. Although the Project traverses almost all the same municipalities and has similar features (stations, park-and-ride facilities, OMF), the 2016 Alignment has altered, a substantive change as defined in Stipulation III.A of the MOA necessitating a reexamination of and a revision to the APE. Based on the potential effects of the Project Alignment and to align with APEs for similar FTA transit projects throughout the region and nationally, changes to the parameters of the previously defined APE were identified in consultation with SHPO. The rationale for the updated architecture/history and archaeological APEs can be found in the Project Section 106 Compliance Plan in Appendix A-4. As design of the Project advances, FTA may revise the APE as appropriate in consultation with SHPO.

Architecture/History Area of Potential Effects

The updated APE for architecture/history properties includes the following:

- ***Alignment:*** 200 feet on either side of the Project Alignment
- ***LRT stations:*** 500-foot radius from the center point of the station
- ***OMFs:*** 750-foot buffer from the perimeter of the OMF site
- ***New structures or replacements of an existing bridge with a profile no more than 12 feet above an existing grade:*** 200-foot buffer from the perimeter of the structure (assumes the potential for pile driving)
- ***New locations or replacements of an existing bridge with a profile no more than 12 feet above (higher) an existing grade:*** 500-foot buffer from the perimeter of the structure (assumes the potential for pile driving)
- ***Modification to existing collector (local) streets, major arterial streets, and highways:*** construction limits/LOD
- ***New and relocated/realigned collector (local), major arterial streets, and highways:*** first tier of properties directly fronting the roadway and intersections
- ***New surface parking facilities (no buses), modification to existing surface parking facilities (no buses), and new access roads:*** first tier of adjacent properties
- ***Pedestrian (ADA-compliant) ramps, sidewalk and trail improvements, pedestrian enhancements, utility lines (above and below grade) except for high-voltage transmission lines, and borrow/fill and floodplain/stormwater/wetland mitigation areas:*** construction limits/LOD
- ***Noise walls (no pile driving):*** 100-foot buffer of the construction limits/LOD

Archaeological Area of Potential Effects

The updated APE for archaeology includes all areas of proposed construction activities or other potential ground-disturbing activities associated with construction and is the same as the construction limits/LOD.

4.4.1.2 Identification and Evaluation of Historic Properties

Section 106 gives equal consideration to historic properties listed in or determined eligible for listing in the NRHP. The NRHP Criteria for Evaluation (36 CFR Part 63) are used to evaluate a historic property to determine whether it possesses historic significance, is of sufficient age, and retains sufficient integrity to convey any potential significance. A historic property can be eligible for the NRHP individually, as part of a historic district, or both.

FTA evaluates the significance of each historic property in relation to the following NRHP eligibility criteria:

- ***Criterion A:*** association with events that have made a significant contribution to broad patterns of history

- ***Criterion B:*** association with the life of a historically significant person
- ***Criterion C:*** embody the distinctive characteristics of a type, period, or method of construction; represent the work of a master; possess high artistic values; or represent a significant and distinguishable entity whose components may lack individual distinction
- ***Criterion D:*** has yielded, or is likely to yield, information important in history or prehistory (this generally is understood to refer to archaeological significance)

To be eligible for listing in the NRHP, a property must be 50 years old, or, if it is less than 50 years old, must possess exceptional significance. A property must also retain sufficient integrity to convey its significance.

To identify historic properties within the Project's updated architecture/history and archaeological APEs, two architecture/history surveys and one archaeological literature review and assessment have been completed since 2022. The architecture/history investigations document previously identified or evaluated historic properties and included field surveys to document previously unidentified properties more than 50 years of age within the Project's APEs. The archaeological literature review and assessment included research to document previously identified historic properties and a field visit to assess the potential for the APE to contain unknown intact archaeological resources.

These additional studies were completed in accordance with Stipulation I of the existing MOA, which includes a process for identifying and evaluating additional historic properties, if needed, if there are changes in the Project and/or modifications to the Project's APEs as Project engineering advances.

4.4.1.3 Standards Used to Assess and Resolve Adverse Effects

Per 36 CFR § 800.5(a)(1), "an adverse effect on a historic property is found when an undertaking could alter, directly or indirectly, any of the characteristics of a historic property that qualify the property for inclusion in the National Register in a manner that would diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association." A preliminary assessment of the effects that the Project could have on historic properties or potential historic properties (properties identified as potentially eligible for listing in the NRHP) was completed.

The Project's MOA includes a process for resolving any newly identified adverse effects (Stipulation XIV), if needed, as Project engineering advances. An amended MOA will document effects to historic properties identified within the revised APEs and measure to avoid, minimize, or mitigate adverse effects, if identified.

4.4.1.4 Section 106 Coordination and Consultation

Consulting parties in the Section 106 process include local governments, SHPO, Native American tribes, and other interested organizations and individuals.

In accordance with 36 CFR § 800.8, the Section 106 consultation process outreach activities and events have been coordinated with the NEPA process and other outreach activities for the Project. Tasks completed as part of the Section 106 process were completed in consultation with SHPO and other consulting parties. Additional consultation with SHPO and the Section 106 consulting parties would continue throughout the Section 106 process. See Section 9.9.2 of the Supplemental Draft EIS and copies of Section 106 correspondence included in this appendix for further detail regarding Section 106 consultation completed for the Project.

4.4.2 Affected Environment

Several alignment and design option locations were initially under consideration (see Section 2.3 of the Supplemental Draft EIS), so supplemental cultural resources studies encompassed a larger study area to cover the potential APEs for the options. Technical reports documenting the results of the reconnaissance architecture/history surveys and archaeological assessment are attached to this appendix. Table A4-20 below summarizes the number of historic properties and potential historic properties (properties identified as potentially eligible for listing in the NRHP) within the APE for all alignment and design option locations considered.

Table A4-20. Historic and Potential Historic Properties by Alignment and Design Option Locations

Location (City)	Alignment and Design Option Locations	Historic Properties	Potential Historic Properties
Brooklyn Park	Integrating W Broadway Ave (CR 103/130) and associated roadway reconstruction into the Project definition	1	0
Crystal	CR 81/Bass Lake Rd intersection design: at-grade	2	0
Crystal	CR 81/Bass Lake Rd intersection design: grade separated	2	0
Crystal	CR 81 lane configuration	2	0
Robbinsdale	Downtown Robbinsdale station location: north or south of 40th Ave N	0	2
Robbinsdale	Downtown Robbinsdale station location: south of 41st Ave N	0	1
Robbinsdale	Downtown Robbinsdale park-and-ride location: US Bank	0	1
Robbinsdale	Downtown Robbinsdale park-and-ride location: Upper Robin Center	1	0
Robbinsdale	Downtown Robbinsdale park-and-ride location: Elim Church	0	1
Minneapolis	Track routing on W Broadway Ave approximately between Knox Ave N and Lyndale Ave N or I-94	3	5
Minneapolis	Track routing on 21st Ave N approximately between Knox Ave N and Lyndale Ave N or I-94	1	4 (Lyndale option)/ 5 (East of I-94 option)
Minneapolis	Track routing on Lyndale Ave N	0	1
Minneapolis	East side of I-94 location: adjacent to I-94 right-of-way	0	2
Minneapolis	Track routing on E Lyndale Ave N/TH 55	0	0
Minneapolis	Track routing on N 7th St	0	1

Review and analysis of the design options under consideration, combined with input from study area residents, businesses, and stakeholder agencies, resulted in the selection of a Build Alternative. A total of 11 NRHP-listed or -eligible properties have been identified in the Project's architecture/history and archaeological APE for the Build Alternative. All are architecture/history properties; no NRHP-listed or -eligible archaeological resources have been identified in the Project's archaeological APE to date. Additional studies completed to date to identify historic properties within the updated APEs include a Phase I architecture/history survey and an archaeological literature review and assessment. These studies were completed in accordance with Stipulation I of the existing MOA. As a result of the studies, FTA has identified nine potentially eligible properties within the APEs, all of which are architecture/history properties. These properties will be evaluated to determine if they are eligible for listing in the NRHP. Determinations of eligibility for these properties will be included in the Supplemental Final EIS. Furthermore, the supplemental studies have identified two areas with the potential to contain unknown archaeological resources within the archaeology APE. Further survey of these locations will be completed to determine if archaeological sites

that are eligible for listing in the NRHP are present within the APE. The results of these surveys will be included in the Supplemental Final EIS.

4.5 Visual/Aesthetics

The information in this section is based on the *Visual Quality Technical Report*, which is provided in Appendix A-4. The objective of the *Visual Quality Technical Report* is to evaluate the Project's potential effects on visual quality, including the character of the natural and built visual features of the visual study area, and how the Project is visually perceived by affected populations in the study area.

4.5.1 Regulatory Context and Methodology

This section contains the definitions and assessment methodology used to determine the visual/aesthetic impacts of the Project.

4.5.1.1 Definition of Terms

Terminology defined in Table A4-21 has been divided into segments to better describe the process of identifying and analyzing the visual/aesthetic features of the Project.

Table A4-21 Visual/Aesthetics Terminology and Definitions

Term	Definition
Visual features	The components of the natural, built, or Project environments that are capable of being seen.
Natural visual features	The land, water, vegetation, and animals that compose the natural environment. Although natural features may have been altered or imported by people, features that are primarily geological or biological in origin are considered natural.
Built visual features	The buildings, structures, and artifacts that compose the surrounding built environment, also known as the cultural environment. These are features that were constructed by people.
Project visual features	The physical components, including new bridges, which compose the Project environment. These are constructed features that would be placed in the environment as part of the Project.
Visual quality	Visual quality refers to what viewers like and dislike about the visual features that compose a particular scene. Visual quality is inherently subjective—different viewers may evaluate visual features differently. In general, people respond favorably to scenes that create a sense of perceived harmony, order, and coherence. Based on the developed urban and suburban context of the study area, specific features were identified as higher-quality visual features when they exemplified one of the following characteristics: ■ A remnant natural feature exemplary of pre-settlement conditions ■ A visually distinct natural or built feature that stands out from the surroundings, and that contributes physically and symbolically in a positive way to the overall community's visual quality ■ A natural or built feature that is an integral component of the broader physical pattern of the community and is generally regarded positively
Affected population	The viewers who occupy land adjacent to the Project—in either the long or short term. These people are those who live, work, shop, recreate, dine, or commute through the area. They can also be characterized by their association with a specific adjacent land use, including residential, commercial, industrial, agricultural, recreational, and institutional parcels. An example of a long-term viewer would be a homeowner with property along the transitway. An example of a short-term viewer would be a runner using a trail in a park adjacent to the transitway.

Term	Definition
General visual context	The term "general visual context" is the appearance of the nearby surroundings from the vantage point of a person from ground level (i.e., as one would perceive it from a car, train, bus, bicycle, or on foot). The Project would be located in developed urban and suburban areas with a wide range of development patterns.

4.5.1.2 Assessment Methodology

The methodology that the Council used to evaluate aesthetics and visual quality impacts is based on the FHWA *Guidelines for the Visual Impact Assessment of Highway Projects*[6], which describes four phases used to assess visual impacts: establishment, inventory, analysis, and mitigation. These four phases are described in detail in the *Visual Quality Technical Report*.

Visual Character and Quality

The visual impacts of a project are determined by assessing the visual resource changes that would occur as the result of the project and by predicting viewers' responses to those changes. Visual resource change is the sum of the change in visual character and the change in visual quality. This change can be determined by assessing the compatibility of a project with the visual character of the existing landscape and then comparing the visual quality of the existing resources with the projected visual quality after the project is implemented.

Visual character refers to the description of physical attributes of the study area. It is descriptive and non-evaluative, which means that it is based on defined attributes that are neither good nor bad in and of themselves. A change in visual character cannot be described as having good or bad attributes until it is compared with the viewer's response to that change. Both natural and artificial landscape features contribute to the visual character of an area or view.

Visual quality is the value that viewers place on the existing visual character of the affected environment based on their visual preferences. FHWA defines the following three aspects of visual perception, which determine the visual quality of a particular scene:

- When viewing the components of a scene's natural environment, viewers inherently evaluate the natural harmony of the existing scene to determine whether the composition is harmonious or inharmonious.
- When viewing the components of the cultural environment, viewers evaluate the scene's cultural order to determine whether the composition is orderly or disorderly.
- When viewing the project environment, viewers evaluate the coherence of the project components to determine whether the project's composition is coherent or incoherent.

According to FHWA guidelines, people typically perceive the landscape from or to a linear transportation feature as a composition, and the more the composition meets their visual preferences and expectations, the more they like it. The more they like it, the more memorable, or vivid, it becomes. Therefore, it is useful to evaluate whether the new composition would be as vivid as the existing one and whether the improvements would enhance or detract from the original scene.

Viewer Groups

The population affected by a project is referred to as viewers. Viewer response is composed of two elements: viewer sensitivity and viewer exposure. These elements combine to form a method of predicting how a viewer might react to visual changes brought about by a project. Viewer sensitivity is defined both as the viewers' concern for scenic quality and the viewers' response to change in the visual resources that make up the view. **Viewer exposure** is

typically assessed by measuring the number of viewers exposed to the resource change, the type of viewer activity, the duration of the view, the speed at which the viewer moves, and the position of the viewer.

Low viewer sensitivity results when there are few viewers who experience a defined view, or when they may be less focused on the view, such as a freeway commuter on the freeway. Low viewer sensitivity is also related to viewer expectations resulting from what viewers are used to seeing along the Project.

High viewer sensitivity results when there are many viewers who have a view of frequent or long duration. High viewer sensitivity is also related to familiarity with a view, such as when viewing a resource from a residence, a recreational site, or a commuter route. For example, recreational and residential viewers tend to have extended viewing periods and may be more concerned about changes in views.

The study area for the Project includes several types of viewer groups, such as LRT users, roadway users, pedestrians, residents, workers, and recreational users. A detailed description of these viewer groups is provided in the *Visual Quality Technical Report*.

Levels of Visual Impact

According to FHWA guidelines, impacts are defined as either changes to the environment, measured by the compatibility of the impact, or changes to viewers, measured by sensitivity to the impact. Together, the compatibility and sensitivity determine the degree of the impact, which is defined as a beneficial, adverse, or neutral change to visual quality. For example, a project may benefit visual quality by enhancing visual resources and/or views and improving the experience of visual quality. Similarly, a project may adversely affect visual quality by degrading visual resources or obstructing or altering desired views.

Key Viewpoints

KVPs represent specific locations within a landscape unit (defined in Section 4.5.2.2) from which the project would be visible. Within the landscape unit, KVPs were used to characterize the existing visual conditions and to represent examples of visual character and visual quality. They were also used to determine impacts by demonstrating how the Project would change the views within the landscape unit.

The visual impact assessment included evaluating photographic documentation of several key views of the Project. KVPs were selected at critical viewpoints, along commonly traveled routes, or at other likely observation points to document the existing conditions of the study area. For some locations, both an existing-condition photograph and a simulated-condition drawing were provided.

Simulation vantage points were selected to provide representative public views from Project components that would be the most visible to the various types of sensitive receptors that would be located within the landscape units identified for the Project. Alternatively, selection was based on the sensitivity of the resource or locations of key vertical features of the Project that could change the visual character or views of an affected area.

Assessing Visual Change

The visual impacts of the Project were determined by evaluating the changes to existing visual resources that would occur because of Project implementation and assessing the anticipated viewer response to those changes. Aesthetic impacts were determined based on direct field observation from multiple vantage points, including from neighboring

properties and roadways, evaluation of existing visual character, and review of Project plans and features. Visual impact assessment was also based on photographic documentation of several key views of the Project.

4.5.2 Study Area and Affected Environment

The visual study area is the right-of-way for the Project, including adjacent properties with a visual connection to the transitway, properties that include residential, commercial, and park properties. In select instances, the Council expanded the analysis to account for specific features that were visible by field observation along the Project Alignment because of topography, physical scale, architectural distinction, or other considerations.

The visual study area includes a diverse array of development patterns, park and natural areas, railways, highways, and local roads. A summary of the general visual context and a listing of identified higher-quality and unique visual features are provided in Section 4.5.3.

4.5.2.1 Project Setting

As described in Chapter 1, Purpose and Need, the character of the area surrounding the Project transitions from a less dense suburban setting at the terminus in the City of Brooklyn Park, which carries through the Cities of Crystal and Robbinsdale to the moderately dense urban setting in North Minneapolis and connecting at the transportation hub in urban Downtown Minneapolis. The study area includes a variety of land use patterns that have been influenced by the transportation-oriented history of the study area. Low-density land uses have heavily influenced existing development patterns in the Cities of Brooklyn Park and Crystal, which primarily reflect highway-oriented regulations and traditional suburban development forms. In the Cities of Robbinsdale and Minneapolis, electric streetcar service provided by Twin City Rapid Transit helped shape early development with concentrations of commercial and moderate-density residential development around downtown Robbinsdale and in the W Broadway Ave corridor in the City of Robbinsdale.

4.5.2.2 Landscape Units

A landscape unit is a portion of the regional landscape. These units are commonly used to divide long, linear projects into logical geographic areas for visual impact assessment purposes. Landscape units generally are made up of areas with similar visual characteristics, although smaller locations within each landscape unit might differ from the overall unit's character. For the purposes of this visual quality analysis, the study area is divided into three landscape units: City of Brooklyn Park, Cities of Crystal/Robbinsdale, and City of Minneapolis. The general visual context of and a list of higher-quality visual features within each landscape unit are described in detail in the *Visual Quality Technical Report*.

4.5.2.3 Viewsheds

A viewshed is a subset of a landscape unit; this subset comprises all the surface areas visible from an observer's viewpoint. The limits of a viewshed are defined as the visual limits of the views located from the Project. The viewshed also includes the locations of viewers likely to be affected by visual changes resulting from the addition of Project features. The study area for the Project includes the areas that could potentially have views of the Project features and the areas that LRT users could potentially view as they travel through the landscape.

Figure A4-5 shows the landscape units and KVPs evaluated in this assessment.

Figure A4-5 Landscape Units and Key Viewpoints in the Visual/Aesthetics Study Area

4.5.3 Environmental Consequences

The Council determined visual impacts of the Project by evaluating potential changes to existing visual resources that could occur because of Project implementation and assessing anticipated viewer responses to those changes.

4.5.3.1 Operating-Phase (Long-Term Impacts)

The following is an analysis of the long-term visual and aesthetic impacts associated with the Project. The *Visual Quality Technical Report* (Appendix A-4) provides additional information, including impacts to "higher-quality visual features," existing-condition photographs, and a sketch-up of each KVP.

No-Build Alternative

The No-Build Alternative would not result in alteration of the visual quality and character of the study arear.

Project Alignment and Design Options

According to the FHWA guidelines described in Section 4.5.1, the degree of visual impact is defined as a beneficial, adverse, or neutral change to visual quality. The anticipated visual effects during operation of the Project would generally be consistent with existing, similar features, and neutral visual effects are anticipated to result from implementation of the Project along most segments. For KVPs where the Project would have adverse impacts to visual quality, significance of impact is identified, and potential mitigation measures are identified in Section 4.5.4.

City of Brooklyn Park Landscape Unit

In the City of Brooklyn Park Landscape Unit, most of the Project would have neutral effects to visual quality. Most of the transitway would be located in the center of W Broadway Ave and would be generally level with adjacent land uses. At some locations, such as the new bridge over the intersection of 73rd Ave N and CR 81, the trackway would be elevated, resulting in potential visual intrusions to adjacent sensitive receptors (e.g., residential land uses). Visual intrusions for sensitive receptors at these locations would result from both the altered viewshed for residents viewing the Project area and LRVs and the ability for LRT users to view the residential land uses from passing LRVs. Other impacts to visual quality and character would also be associated with the proposed OMF site.

Table A4-22 describes the level of visual sensitivity for viewer groups, the degree of visual change, and the level of impact for each KVP, and identifies any alignment and design options that are shown in individual KVPs. Visual impacts because of the Project would generally be neutral.

Impacts to the resources identified as "higher-quality visual features" of the City of Minneapolis Landscape Unit are described in the *Visual Quality Technical Report* and are summarized in Table A4-23. Visual impacts to these resources because of the Project would generally be neutral.

Table A4-22 Changes to Existing Visual Quality and Character in the City of Brooklyn Park Landscape Unit

Description of View, Higher-Quality Visual Feature, or Primary Project Visual Feature	Level of Visual Sensitivity	Degree of Visual Change in Quality or Character	Level of Impact
KVP 1 (view southwest toward the proposed OMF, from Rush Creek Regional Trail)	Moderately high	Substantially altered	Adverse
KVP 2 (view east toward the proposed OMF, from 101st Ave)	Moderate	Substantially altered	Adverse
KVP 3 (view northwest toward the proposed 73rd Ave N/CR 81 bridge, from W Broadway Ave at 74th Ave N)	Moderate	Character unaltered and quality altered	Neutral
KVP 4 (view east toward proposed 73rd Ave N/CR 81 bridge, from the southwest corner of CR 81 and 73rd Ave N)	Moderate	Character unaltered and quality altered	Neutral
KVP 5 (view north toward the proposed 73rd Ave N/CR 81 bridge, from CR 81 at Prince of Peace Lutheran Church)	Moderate	Character unaltered and quality altered	Neutral
KVP 6 (view south from Lakeland Ave N toward proposed 63rd Ave N Station and park-and-ride garage)	Low	Character and quality unaltered	Neutral

Source: *Visual Quality Technical Report* SEH 2023 included in Appendix A-4.

Table A4-23 Summary of Impact at Higher-Quality Visual Features and Primary Project Visual Features in the City of Brooklyn Park

Higher-Quality Visual Feature or Primary Project Visual Feature	KVP	Level of Impact
OMF	KVPs 1 and 2	Adverse
Rush Creek Regional Trail	N/A	Adverse
W Broadway Ave Bridge over TH 610	N/A	Neutral
Hennepin County Library: Brooklyn Park	N/A	Neutral
Shingle Creek	N/A	Neutral
73rd Ave N/CR 81 bridge	KVPs 3, 4, and 5	Adverse
63rd Ave N park-and-ride	KVP 6	Adverse

Source: SEH 2023.

Cities of Crystal/Robbinsdale Landscape Unit

In the Cities of Crystal/Robbinsdale Landscape Unit, the Project area transitway would be located in the center of the roadway, removing the median from CR 81. The impact on visual quality would be neutral because of the existing character of the roadway. The Project Alignment would generally be level with adjacent land uses. However, at some locations, such as the new bridges over the CPKC right-of-way and TH 100, the trackway would be elevated and would result in similar visual intrusions to adjacent sensitive receptors (residential land uses) as described below.

Where sensitive receptors are located adjacent to the Project, visual intrusions would result from changes to vehicle travel in the area, the introduction of new light sources from LRVs and LRT stations, and the altered viewshed for residents viewing the Project and LRVs. Additionally, the ability for LRT users to view the residential land uses from passing LRVs could also constitute a visual intrusion. Visual intrusions for sensitive receptors would result from the altered viewshed for residents viewing the Project. Passengers on the LRT would also have visual intrusions to the residential land uses from passing LRVs. At locations where moderate visual effects are anticipated, including where

sensitive receptors are located adjacent to the Project, transitway elements added may be visually screened or softened using landscaping where adequate space permits.

Table A4-24 identifies identify the level of visual sensitivity for viewer groups, and the degree of visual change and impact for each KVP. Visual impacts because of the Project would generally be neutral.

Impacts to the resources identified as "higher-quality visual features" of the Cities of Crystal/Robbinsdale Landscape Unit are described in detail in the *Visual Quality Technical Report* and are summarized in Table A4-25. Visual impacts to these resources because of the Project would generally be neutral.

Table A4-24 Changes to Existing Visual Quality and Character in the Cities of Crystal/Robbinsdale Landscape Unit

Designation and Description of View	Level of Visual Sensitivity	Degree of Visual Change in Quality or Character	Level of Impact	Alignment and Design Option(s)
KVP 7 (view east from the southwest corner of Bass Lake Rd and CR 81 toward Bass Lake Rd Station showing the interchange option)	High	Character unaltered, quality moderately altered	Neutral	Bass Lake Rd Interchange design options
KVP 8 (view south along CR 81 from the northeast corner of Bass Lake Rd and CR 81 looking toward the proposed Bass Lake Rd Station showing the at-grade option)	High	Character unaltered, quality moderately altered	Neutral	Bass Lake Rd At-Grade design options
KVP 9 (view southeast along CR 81 from Twin Oak Dr toward the proposed Downtown Robbinsdale Station)	Low	Character and quality not substantially altered	Neutral	Robbinsdale Station and Park-and-Ride design options
KVP 10 (view to the west from Lakeland Ave toward the proposed Downtown Robbinsdale Station)	Low	Character and quality not substantially altered	Neutral	Robbinsdale Station and Park-and-Ride design options
KVP 11 (view north from Parker Station Flats toward Crystal Lake)	Low	Character and quality not substantially altered	Neutral	N/A
KVP 12 (view south from Lakeview Terrace Park at CR 81)	Low	Character and quality not substantially altered	Neutral	N/A

Table A4-25 Summary of Impact at Higher-Quality Visual Features and Primary Project Visual Features in the Cities of Crystal/Robbinsdale Landscape Unit

Higher-Quality Visual Feature or Primary Project Visual Feature	KVP	Level of Impact
BNSF Rail	N/A	Neutral
City of Crystal gateway area	KVPs 5 and 6	Neutral
CR 81 Bridge over CPKC	N/A	Neutral
City of Robbinsdale gateway monument	N/A	Neutral
40th Streetscape	N/A	Neutral
Elm Lutheran Church	N/A	Neutral
Birdtown Flats	N/A	Neutral
Parker Station Flats	N/A	Neutral
Lakeview Terrace Park and Crystal Lake	N/A	Neutral

Source: SEH 2023.

City of Minneapolis Landscape Unit

The City of Minneapolis Landscape Unit is bound by Target Field to the east and by the Cities of Minneapolis/ Robbinsdale city limits to the northwest. Impacts to the resources identified as "higher-quality visual features" of the City of Minneapolis Landscape Unit are described in detail in the *Visual Quality Technical Report*. Considering the existing industrial character of the visual context east of I-94 approaching downtown, it is anticipated that neutral visual impacts would occur in that area.

Table A4-26 describes the level of visual sensitivity for viewer groups, the degree of visual change, and the level of impact for each KVP, and identifies any alignment and design options that are shown in individual KVPs. Visual impacts because of the Project would generally be neutral.

Impacts to the resources identified as "higher-quality visual features" of the City of Minneapolis Landscape Unit are described in the *Visual Quality Technical Report* and are summarized in Table A4-27. Visual impacts to these resources from the Project would generally be neutral.

Table A4-26 Changes to Existing Visual Quality and Character in the City of Minneapolis Landscape Unit

Designation and Description of View	Level of Visual Sensitivity	Degree of Visual Change in Quality or Character	Level of Visual Impact	Alignment and Design Option(s)
KVP 13 (view south from Victory Memorial Dr toward the proposed flyover bridge)	High	Character unaltered, quality moderately altered	Neutral	N/A
KVP 14 (view northwest from Theodore Wirth Pkwy toward the proposed flyover bridge)	High	Character unaltered, quality moderately altered	Neutral	N/A
KVP 15 (view northwest from northeast corner of Queen Ave N and W Broadway Ave)	Moderate	Character and quality unaltered	Neutral	N/A
KVP 16 (view southeast from corner of Penn Ave N and W Broadway Ave)	Moderate	Character unaltered, quality moderately altered	Neutral	N/A

Designation and Description of View	Level of Visual Sensitivity	Degree of Visual Change in Quality or Character	Level of Visual Impact	Alignment and Design Option(s)
KVP 17 (view west from corner of Logan Ave N and W Broadway Ave toward Capri Theater)	Moderately high	Character unaltered, quality moderately altered	Neutral	N/A
KVP 18 (view eastward on W Broadway Ave near Morgan Ave N)	High	Character and quality moderately altered	Neutral	N/A
KVP 19 (view eastward from Irving Ave N and W Broadway Ave)	Moderately high	Character and quality unaltered	Neutral	N/A
KVP 20 A (view west toward JXTA Skate-able Plaza and "We Are the North" Mural at W Broadway Ave at Emerson Ave N) with station	Moderate	Character and quality unaltered	Neutral	W Broadway Ave alignment and design options
KVP 20 B (view west toward JXTA Skate-able Plaza and "We Are the North" Mural at W Broadway Ave at Emerson Ave N) without station	Moderate	Character and quality unaltered	Neutral	W Broadway Ave alignment and design options
KVP 21 A (view southwest from Bryant Ave N and W Broadway Ave) with station	Moderate	Character and quality unaltered	Neutral	W Broadway Ave alignment and design options
KVP 21 B (view southwest from Bryant Ave N and W Broadway Ave) without station	Moderate	Character and quality unaltered	Neutral	W Broadway Ave alignment and design options
KVP 22 A (view east from Bell Building apartments and sidewalk at 21st Ave N) with station	Moderately high	Character and quality moderately altered	Neutral	21st Ave N alignment and design options
KVP 22 B (view east from Bell Building apartments and sidewalk at 21st Ave N) without station	Moderately high	Character and quality moderately altered	Neutral	21st Ave N alignment and design options
KVP 23 (view southwest from residences and sidewalk at 21st Ave N and 1st St N)	Moderate	Character moderately altered; quality substantially altered	Adverse	21st Ave N alignment and design options
KVP 24 (view southwest from N 18th Ave and Lyndale Ave N toward Masjid An-Nur Mosque)	Moderately high	Character not substantially altered; quality substantially altered	Adverse	Lyndale Ave N alignment and design options
KVP 25 (view north toward the Hall Park pedestrian bridge from Lyndale Ave N between N 14th Ave and N 18th Ave)	Moderately high	Character and quality unaltered	Neutral	Lyndale Ave N alignment and design options
KVP 26 (view northeast toward 4th St Saloon and ramp up to proposed I-94 flyover bridge from W Broadway Ave and N 4th St)	Moderate	Character moderately altered; quality substantially altered	Adverse	East of I-94 alignment and design options
KVP 27 (view northwest across the proposed new I-94 and W Broadway Ave bridge toward 21st Ave N from W Broadway Ave and Washington Ave N)	Moderate	Character and quality moderately altered by flyover ramp and bridge	Neutral	21st Ave N alignment and design options

Designation and Description of View	Level of Visual Sensitivity	Degree of Visual Change in Quality or Character	Level of Visual Impact	Alignment and Design Option(s)
KVP 28 (view northeast toward midrise residential and mixed-use redevelopment and renovated streetscape from N 10th Ave and N 4th St)	Moderate	Character and quality unaltered	Neutral	East of I-94 alignment and design options

Table A4-27 Summary of Impact at Higher-Quality Visual Features and Primary Project Visual Features in the City of Minneapolis

Higher-Quality Visual Feature or Primary Project Visual Feature	KVP	Level of Impact
Grand Rounds, Theodore Wirth Pkwy and Victory Memorial Dr	N/A	Neutral
Minneapolis Public Schools and Community Education Head Quarters	N/A	Neutral
Blossoms of Hope Public Art Transit Stop	KVP 17	Neutral
The Capri Theater	KVP 18	Neutral
Traditional West Broadway Corridor commercial buildings	KVP 21	Neutral
Juxtaposition Arts Skate-able Art Plaza and Mural	N/A	Neutral
Friedman's department store	N/A	Adverse
4th St Saloon Gateway Mural	N/A	Neutral
North Minneapolis Youth Leadership Building (former church)	N/A	Adverse
Bell Building	N/A	Adverse
Lyndale Ave N pedestrian bridge	KVP 27	Neutral
Hall Park	N/A	Neutral
Masjid An-Nur Mosque	KVP 24	Adverse
Metro Transit headquarters	N/A	Neutral
HERC site landscaping	N/A	Neutral
Ford Building	N/A	Neutral
Target Field Station Mixed-Use TOD	N/A	Neutral

Source: SEH 2023.

4.5.3.2 Construction-Phase (Short-Term) Impacts

Anticipated visual effects during construction of the Project would be similar to the appearance of typical roadway projects including the temporary presence of heavy equipment, traffic control measures, and construction activities. Areas where construction activities for Project features would be particularly noticeable to sensitive viewer groups include the following:

- Construction of the new bridge for the transitway over TH 610 would be highly visible to travelers along eastbound TH 610.
- The Bass Lake Rd interchange design location option would be disruptive and highly visible to travelers along CR 81.
- Users of Theodore Wirth Pkwy, Victory Memorial Dr, and Hall Park would likely perceive construction activity as undesirable and not consistent with their anticipated recreational experience. Construction of the bridge and elevated Lowry Ave Station would be visible to Grand Rounds users.

In general, the potential short-term impacts that would occur during Project construction would be associated with construction staging areas, concrete and form installation, removal of existing vegetation, lights and glare from construction areas, and generation of dust and debris in the study area, as described in further detail below.

Temporary construction activities are anticipated to include partial or complete road and lane closures, vehicle and pedestrian detours, construction material deliveries, and transport of construction equipment. In general, construction staging areas would most likely be located adjacent to the Project Alignment, where the presence of construction equipment and earthmoving activities are not anticipated to be visually intrusive and would be compatible with the surrounding landscape. Where the transitway passes along recreation areas and residential neighborhoods, construction activities, such as grading, vegetation removal, and lighting of work areas, would likely be perceived as visually disruptive.

Construction impacts would be temporary, and construction staging areas would be restored to pre-Project conditions after construction is completed. At locations where greater visual effects are anticipated, the loss of existing vegetation on side slopes for grading or access purposes would be replaced to the extent feasible. Where applicable, mitigation measures would be implemented to further reduce the impacts of construction of the Project on sensitive viewer groups in the study area.

4.5.4 Avoidance, Minimization, and Mitigation Measures

The following sections identify potential mitigation measures that could reduce the impacts of the Project on sensitive viewer groups in the study area.

4.5.4.1 Operating-Phase (Long-Term) Mitigation Measures

Potential long-term mitigation measures to reduce operation-phase impacts are identified in Table A4-28.

Table A4-28 Potential Long-Term Mitigation Measures

Measure	Description
Minimize operational night lighting	To minimize impacts to sensitive receptors resulting from nighttime operational lighting to the extent feasible and consistent with safety and security, all permanent exterior lighting could be designed and installed so that (1) the lighting does not cause excessive reflected glare and (2) illumination of the Project and its immediate vicinity is minimized.
Visual screening of Project facilities	To the extent feasible, Project facilities would be sited to avoid locations in proximity to residences, parks, or other sensitive visual receptors. Where avoidance is not feasible, or where greater visual or privacy effects are anticipated to result from the introduction of new physical features of the Project, such as where the elevation of the Project Alignment would be higher than adjacent residences, potential efforts could include screening or softening the view using landscaping or walls where adequate space permits. Potential landscape treatments would be selected for consistency with applicable local policies, consideration for agency maintenance budgets and staffing, and compatibility with the character of the parks and surrounding neighborhoods.

Measure	Description
Context-sensitive, aesthetic facility design enhancement	Applying contextually sensitive aesthetic design enhancements to the development of Project facilities such as LRT station canopies, railing systems, retaining walls, noise walls and bridges, as well as to the reconstruction (where required) of study area streetscapes would help mitigate visual impacts by allowing facilities to enhance and complement the existing built environment, especially in areas of high use. The 2008 West Broadway Alive Small Area Plan includes references to enhancing the avenue's appearance by integrating culturally relevant public art, wayfinding, plantings, and decorative pedestrian lighting into new public streetscapes and redevelopment projects. The Council may update design guidelines for key structures focusing on bridges and retaining walls. The guidelines are included within the *Visual Quality Guidelines for Key Structures.*[a] The Council developed the guidelines, reflecting various coordinating efforts with affected local jurisdictions. The Council has used the guidelines in the advancement of the Project's design and development. The guidelines could help to ensure a consistent aesthetic element for key structures throughout the Project Alignment, while allowing for some flexibility in wall treatments.

[a] Council, 2016a.

4.5.4.2 Construction-Phase (Short-Term) Mitigation Measure Options

Potential short-term mitigation options to reduce construction-phase impacts could include the following:

- Locate staging areas in places where their visibility would be minimal and provide temporary construction screens or barriers to limit views into them from nearby residential areas, community facilities, recreational areas and trails, or other public open spaces from which they would be seen by visually sensitive viewers
- Use construction methods that minimize the need to remove vegetation to accommodate construction activities
- Shield light sources used in nighttime construction to reduce lighting impacts for residential areas
- Restore areas disturbed during construction

4.6 Economic Effects

This section focuses on the effects that the Project may have on the level of economic activity within the region. Economic impacts refer to the broader effects that a project would have on the local and regional economy. The implementation of this Project is expected to result in direct, indirect, and induced effects related to the short-term construction activity, long-term O&M activities, and long-term economic development activities or broader economic impacts. In addition to the direct effects associated with construction, O&M, and economic development activities, the increase in expenditures and employment would generate additional economic activity in the form of indirect effects because of spending at supplier firms and induced effects from increases in household spending by workers. All these effects may be realized to varying degrees throughout the region and be expressed in terms of increased economic output, earnings, and employment.

4.6.1 Regulatory Context and Methodology

This section contains the definitions and assessment methodology used to determine the economic impacts of the Project.

4.6.1.1 Regulatory Context

The Major Capital Investment Projects Final Rule (published in the *Federal Register* on Jan. 9, 2013) specifically includes criteria for assessing economic development effects for fixed-guideway transit projects. The final rule calls for documentation of the degree to which a project would have a positive impact on local economic development as part of the FTA review process.

The implementation and construction, continuing operation, and market reaction to the availability of the Project would affect the level of economic activity in the regional economy. Project construction would create a short-term increase in total wages paid during the Project's construction cycle while the ongoing O&M activities following construction would result in potential long-term growth in employment and associated labor income.

These jobs represent the direct effects of investment in the Project. The earnings of these new construction and transit workers would translate into a proportional increase in consumer demand through the purchase of goods and services in the region. A further increase of new employment across a wide variety of industrial sectors and occupational classifications is expected as employers hire to meet this increase in local consumer demand. This type of hiring represents the Project's indirect impact.

The Project is expected to have positive effects on commercial and residential development located near LRT stations. The Project would contribute to the positive economic impacts by encouraging and supporting higher-density residential and commercial land uses around LRT stations. The Council expects that new development around station areas could also capture an increasing share of residential and employment growth as densities increase. Focused development in areas with existing infrastructure accrues benefits to the taxing jurisdictions. National experience with fixed-rail transit systems has demonstrated that transit investment has had positive effects on residential and commercial development near the LRT stations. National studies have shown that business output and personal income are positively affected by transit investment, growing rapidly over time. These transit investment impacts (see Sections 4.6.3 and 4.6.4) create savings to business operations and increase the overall efficiency of the economy, positively affecting business sales and household incomes.

4.6.1.2 Methodology

The following sections describe the methodology and context for the assessment of economic effects.

Assess Existing Economic Conditions

A starting point for any economic impact analysis is to develop an understanding of the current economic conditions within the study area. As described in Chapter 1, Purpose and Need, the Cities of Minneapolis and St. Paul and the region are all experiencing significant population and employment growth. This growth is expected to continue at least through 2040.

While these larger geographic areas would experience overall growth and the associated benefits from this growth, the study area contains numerous smaller geographies with varying socioeconomic conditions. As Project planning progresses and additional details become available, specific information on the socioeconomic conditions within these sub-geographic areas that would be affected by the transportation facility would be updated. Developing a more detailed understanding of the socioeconomic conditions would allow for a more robust analysis of the overall impacts of the Project. In general, the greater amount of accurate and detailed information would lead to more accurate and reliable estimates of the potential economic impacts of the Project.

Estimate Direct Effects by Alternative and by Phase

The foundation of the economic impact analysis would be the anticipated direct capital investments, employment, or other similar factors for the Project. As discussed in Chapter 2 (Alternatives), the potential alternatives include a No-Build Alternative and Project Alignment with multiple alignment and design options. Should these options differ in terms of capital investments, employment, or other factors used to estimate the Project's impacts, a separate analysis may be warranted for each option.

In addition to estimating economic impacts for each option, it is necessary to estimate the impacts of the various phases of the Project. In the short term, the primary driver of economic impacts is construction. For this analysis, the construction phase includes the actual construction of the transportation facilities as well as other related investments/costs such as engineering for final design and the purchase of properties along the Project Alignment.

In the long term, there are two categories for estimating economic impacts. First, there are the potential impacts related to the O&M of the transportation facility over time. This would include expenditures for both labor and materials to operate and maintain the facility as well as revenues from its users (ridership).

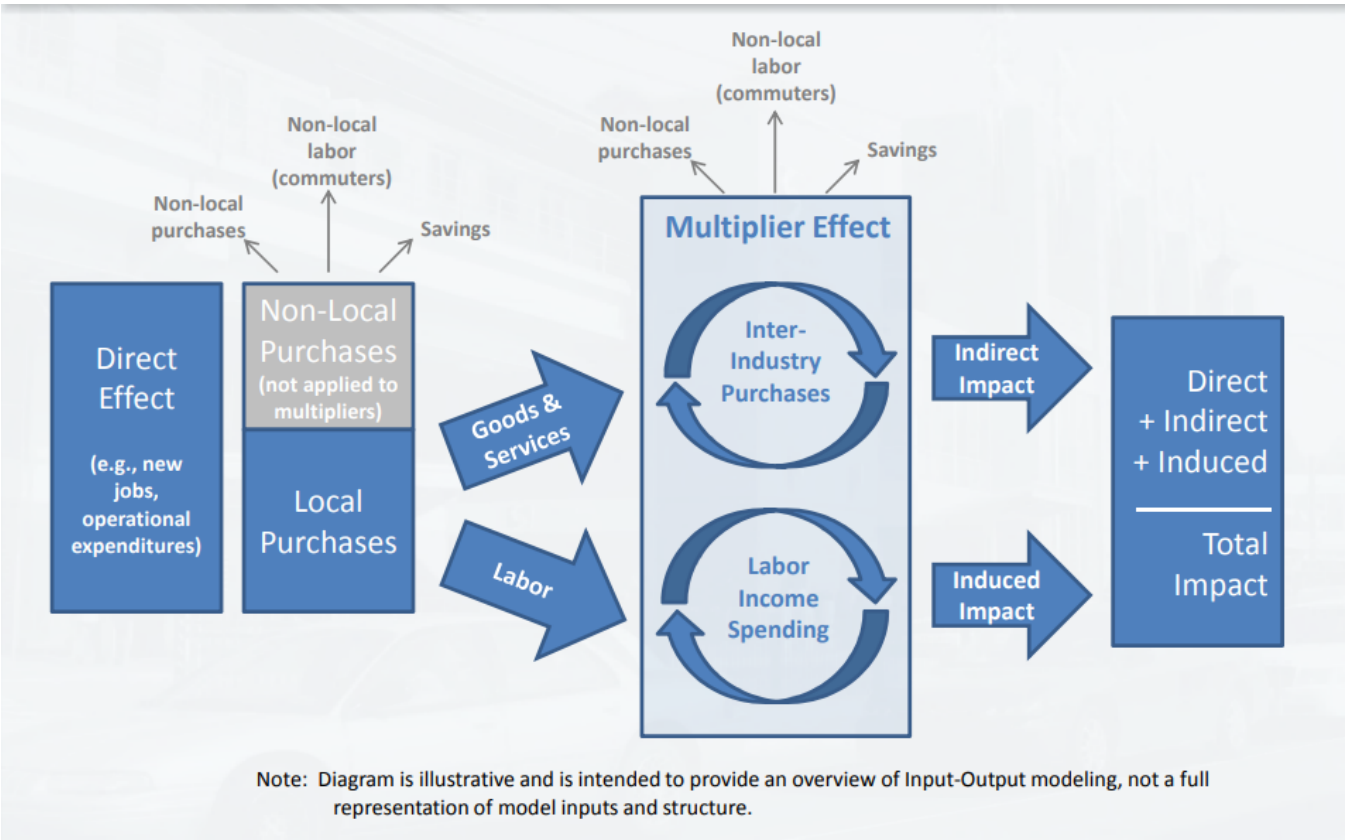
The second category of long-term economic impacts comes from the increase in economic activity associated with operation of the transportation facility. These broader economic effects may include increased activity because of the following factors:

- Increase in the number of visitors (customers) to businesses near LRT stations/stops
- Increase in access to employment (employees) for residents (businesses)
- Increase in desirability of properties, resulting in increases in property values

Estimate Economic Impacts

Using the estimated direct effects as inputs into an "input/output" model, subsequent spending would result in estimates for indirect and induced effects throughout the regional economy. As shown in Figure A4-6, the direct effects, measured in terms of expenditures or jobs, flow through the economy, generating additional spending. This additional spending results in what is called the multiplier effect. The multiplier effect refers to the fact that any direct spending or job creation leads to multiple iterations of additional spending.

Figure A4-6 Input/Output Illustration



Total economic impacts are calculated as the sum of the direct, indirect, and induced effects, where:

- Direct effects are changes in economic activity occurring as a direct consequence of the action or decision to invest (e.g., construction at the site)
- Indirect effects are changes in economic activity resulting from changes in sales from suppliers to directly affected businesses (e.g., manufacturing of construction equipment)
- Induced effects are changes in economic activity resulting from spending by workers of directly and indirectly affected businesses (e.g., groceries purchased by construction workers)

The economic effects associated with construction, operation, and maintenance expenditures for the Project may be measured using regional multipliers from the U.S. Department of Commerce, Bureau of Economic Analysis, or using an IMPLAN (IMpact for PLANning) model. In either case, multipliers are used to measure the total change or impact (direct plus indirect and induced effects) with estimates presented in terms of output or production, employment, and labor income or earnings.

Special Considerations

The following are special considerations:

- ***Commercial real estate occupancy rates:*** Construction of transit facilities is generally associated with changes to the use of commercial and residential real estate near LRT stations or stops. This consideration would build on the information presented in Section 4.3 to weigh potential losses and gains in productive commercial real estate along the Project Alignment.

- ***Tax revenues:*** The Project may impact State and local tax revenues in several ways. These range from lost revenue because of existing properties being removed as potential right-of-way needed for the Project that would be permanently converted from private property to public property to increased property values as new developments occur (e.g., properties used for parking converted to productive uses). This analysis may assume that transportation-network improvements included in the No-Build Alternative are also included in the Project. Therefore, this section focuses only on the additional incremental economic impacts attributable to the Project.
- ***Source of funding:*** To isolate the economic effects of the Project on the region's economy, it is necessary to distinguish existing funding sources that would be spent with or without the Project from those external funding sources that would not be spent locally except for the current Project.

Table A4-29 describes sources of funding that are planned for the Project and indicates whether these funds represent new funding that would be invested in the region only if the Project is constructed.

Table A4-29 Potential Funding Sources for Project

Funding Source	Funding Share	New or Existing Funding Source
Federal 5309 New Starts	49%	New
Hennepin County	51%	New
Total funding	100%	NA
Percentage of new funding	49%	FTA Capital Investment Grant New Starts funding

In considering the economic impacts of constructing the transportation facility, identifying the sources of funds used for the capital expenditures allows funds available for use elsewhere in the region to be distinguished from funds that would be new injections of funding to the region due solely to the construction of this Project.

Applying multipliers for the construction industry to the amount of capital expenditures from new sources of funding allows estimates of the net output, earnings, and employment impacts generated by the Project in the short term. Because certain activities related to the Project's construction would occur in multiple years, economic impacts would be estimated for each year of construction based on the level of capital expenditure and the type of construction occurring each year.

4.6.2 Study Area

The study area for assessing the economic development effects related to this Project is the Cities of Minneapolis–St. Paul–Bloomington MSA. MSAs, which are designated by the U.S. Office of Management and Budget, are defined as geographic regions with "a core area containing a substantial population nucleus, together with adjacent communities having a high degree of economic and social integration with that core."[7]

The Cities of Minneapolis–St. Paul–Bloomington MSA includes seven counties: Hennepin, Ramsey, Dakota, Anoka, Washington, Scott, and Carver.

4.6.3 Environmental Consequences

This section identifies estimates of the potential economic impacts associated with the different alternatives as well as the different Project phases.

4.6.3.1 Operating-Phase (Long-Term) Impacts

The Project would create jobs and additional earnings because of O&M expenditures. An estimate of O&M costs is not yet available for the Project; as the Project design progresses, O&M expenditure estimates would be developed. Qualitatively, it is assumed that O&M funding would be procured primarily from local funds and Project-generated funds. Although these expenditures would originate from local sources, they represent spending that would not take place except for the implementation of this service. The expansion of transit service associated with the Project would expand economic activity in the counties of the Cities of Minneapolis–St. Paul–Bloomington MSA, thus generating recurring net economic impacts (long term). Other potential sources of federal funding for maintenance exist because grants could be applied for to fund preventive maintenance in later years. If future federal funds are received and applied to maintenance activities, they could generate additional net economic effects on the local and state economies through increased employment and earnings.

No-Build Alternative

The No-Build Alternative consists of the future programmed transportation system without the Project. The output, earnings, and employment would be unchanged under the No-Build Alternative.

Project Alignment and Design Options

The anticipated positive effects of local O&M spending for the Project will be developed for the Supplemental Final EIS. Increased earnings generated by implementation would result in positive economic impacts to the local economy, both through direct hiring to fill transit jobs and indirectly as these transit workers spend their earnings, thus creating additional consumer demand and jobs to meet that demand.

Conversely, economic effects from the investment in the construction and operation of a dedicated guideway transit system may include induced development, especially near station areas (see also Chapter 6, Indirect Impacts and Cumulative Effects). The opportunities for new development and redevelopment along the Project, if allowed to unfold in response to traditional market forces, could cause property values and associated taxes to quickly increase. This may result in current and local prospective property owners being priced out of the market, potentially displacing them from their homes and businesses.

4.6.3.2 Design- and Construction-Phase (Short-Term) Impacts

Design- and construction-phase impacts are defined as the temporary impacts that occur during Project development and construction only. Short-term impacts from the Project are described in the following sections.

No-Build Alternative

The No-Build Alternative consists of the future programmed transportation system without the Project. The output, earnings, and employment would be unchanged under the No-Build Alternative.

Project Alignment and Design Options

The Project has the potential to cause both positive and negative economic impacts during the design and construction phases.

Short-Term Positive Economic Impacts

Design and construction of the Project represent substantial capital investment in the local economy and therefore generate a positive economic impact. This spending would increase the employment, earnings, and output for the

duration of the construction process. Capital cost estimates and construction values for an analysis would be developed after 30 percent design is achieved.

Total capital expenditures are divided into the five major categories described in Table A4-30.

Table A4-30 Capital Expenditure Categories

Expenditure Category	Definition
General construction	Guideway elements, stations, storage, and inspection facilities, sitework, systems, and Project contingencies
Vehicles	Vehicle manufacturing and assembly
Right-of-way	All rights-of-way, land, and existing improvements
Professional services	Real estate services, engineering and design, legal fees, and other agency costs
Finance charges	The hedge costs, capitalized interest that accrues during the construction period, delay reserves, unavailability insurance, and costs of issuance; these costs are paid over the life of the bonds

The regional economic impact of these expenditures varies substantially by activity and depends on the amount of goods and services procured locally. Unless specific expenditures can be identified as being used to purchase goods and services from outside the economic region, expenditures on construction-related goods and services would be assumed to be purchased locally.

The purchase of vehicles would not occur locally. Transit vehicles are not manufactured in the Cities of Minneapolis–St. Paul–Bloomington MSA, which limits the impact this purchase could have in the region. Because no local labor is assumed to produce the vehicles, no local impact generated by their purchase would be realized. There would likely be some assembly required upon delivery of the LRVs, and it is possible that a component of the LRVs would be made by a local supplier; however, these possibilities represent a negligible share of the LRVs' cost and are therefore excluded from this analysis.

Right-of-way expenditures shown are for real property only; the transaction costs, legal services, and required relocation assistance associated with these expenditures are included in the professional services (i.e., engineering, design, and other agency costs) cost category. Labor is not associated with the right-of-way expenditures; therefore, there would be no economic impact to the pure land costs. Professional services costs would be purchased in the local economy and would have an impact in the region. Finance charges would be included in the capital cost of the Project. However, because the primary costs would not be purchased in the local economy, there would be no impact to the region. Consequently, only two types of capital expenditures are expected to affect the regional economy: construction and professional services costs.

Currently, insufficient information is available to quantify the positive effect of construction and professional services on the regional economy. As the Project design advances, cost estimates for these categories would be developed, and the economic input/output model(s) can be applied to understand the magnitude of short-term positive impacts. It is anticipated that there would be minor differences between the various alignment and design options in terms of short-term positive economic impacts, as each of these options represents a significant influx of funding for design and construction activities.

Short-Term Negative Economic Impacts

In addition to the positive regional economic impacts of the short-term investment in design and construction of the Project, certain negative economic impacts may occur during construction. The disruption in access to businesses because of construction activities may reduce the number of customers visiting businesses along the Project. Furthermore, the perception of business accessibility may keep customers away from businesses. Specifically, access to business may not be directly affected in certain cases or during certain periods of construction, but customers may believe that the Project is "closed for business" because of construction activity.

For the Cities of Brooklyn Park, Crystal, and Robbinsdale, this effect would be observed in the commercial and retail areas along the Project. In the City of Minneapolis, construction-related business impacts would be greatest along W Broadway Ave; therefore, the W Broadway Ave alignment option would likely have the greatest potential for short-term negative economic impacts.

4.6.4 Tax Revenue Effects

Construction would require the acquisition of some private land and/or improvements for easements, right-of-way, parking, and LRT station facilities. These acquisitions would remove properties from the existing local tax base. The annual tax revenue associated with the loss of properties because of right-of-way purchase, displacement, and relocation will be developed for the Supplemental Final EIS and the amount of right-of-way to be acquired is subject to change as the Project proceeds into final design. However, as of the publication of this Supplemental Draft EIS, the largest number of total parcel acquisitions (including building removals) would be on the W Broadway Ave and East of I-94 alignment options, indicating that the greatest initial tax revenue effects would be associated with these alignment options.

Estimated loss of annual revenue reported may be based on the assessed values prepared by the Hennepin County Assessor's Office. County assessments rely on their internal policy of developing property values and tend to undervalue the true cost of purchasing right-of-way. The property tax revenue lost is actual value that would be removed from the taxing jurisdictions' tax rolls. The right-of-way acquisition costs described in the Project capital cost estimate will be based on the Council's experience in acquiring right-of-way representing substantially greater values than assessed values for tax purposes. Therefore, right-of-way acquisition costs assume that the property would be purchased for a price above the tax-assessed value, because speculation and market forces increase the parcels' sales price, as discussed above.

4.6.5 Broader Economic Impacts

Beyond the economic impacts directly associated with the construction or O&M of the facility, broader economic impacts also occur because of increased economic activity along the entire Project Alignment. These types of impacts tend to provide the greatest long-term economic and socioeconomic impacts. These may include the following:

- Fiscal impacts for the State, county, and city governments because of increased overall economic activity
- Residential impacts because of increased access for workers to employment opportunities and housing opportunities (accessibility, affordability, and quality)
- Impacts to local businesses because of increased access to workers and customers

4.6.6 Avoidance, Minimization, and Mitigation Measures

The following sections identify potential mitigation measures that could reduce the negative economic impacts of the Project.

4.6.6.1 Operations Phase (Long-Term) Mitigation Measures

Hennepin County, with the support of the Council, initiated a process to directly address the displacement concerns associated with property value increases and the economic effects of development speculation along the Project. This anti-displacement effort involved close coordination with key Project stakeholders and members of the public to understand the concerns related to displacement caused by the Project and identify strategies to avoid or mitigate the potential for displacement. These strategies include potential policy changes, redirection of area resources, and shifting the narrative around affected neighborhoods. A copy of the *Blue Line Extension Anti-Displacement Recommendations* report can be found at yourbluelineext.org.

4.6.6.2 Design- and Construction Phase (Short-Term) Mitigation Measures

A series of tools are available to offset the potential impacts to businesses during construction; several of these tools have been implemented on other LRT projects in the area. These tools include the following:

- ***Construction contract measures***: includes requirements for maintaining business access during construction, setting allowable work hours for contractors, including staffing requirements for an outreach and communications team, identifying acceptable staff parking areas, and potentially incentivizing construction contractors based on business owner feedback
- ***Project communications measures***: includes providing community outreach coordinators to act as liaisons between the business community and Project contractors, and development of a specific Construction Communication Plan that could include "open for business" signage or similar tools to communicate the status of businesses to customers and the public
- ***Parking assistance measures***: could include temporary and/or permanent improvements to off-street parking resources adjacent to or near businesses, and potentially other temporary and/or permanent parking improvements in the Project area
- ***Business assistance programs***: could include no-interest, forgivable loans to businesses that experience and document construction-related loss of sales because of construction; investment funds to facilitate disadvantaged business growth opportunities to support locally and minority-owned businesses to the Project; and marketing and consulting support for local businesses during construction. These efforts would be coordinated with the Anti-Displacement Working Group recommendations (see Chapter 7, Environmental Justice)

4.7 Safety and Security

This section describes the operating-phase (long-term) and construction-phase (short-term) effects of the Project on safety and security. This section includes an overview of the regulatory context and methodology used for the analysis, an assessment of existing conditions related to safety and security, a description of the anticipated impacts of the Project, and a description of mitigation measures to implement with the Project.

4.7.1 Regulatory Context and Methodology

The Council, as the owner and operator of the Project, follows safety and security policies that establish minimum requirements for facilities based on local, State, and federal codes or standards; the Council's guidance; and the SSAP for the Project.

4.7.1.1 Policy and Planning Background

In 2018, the FTA published 49 CFR Part 673, the ASP rule. This rule requires that all modes not overseen by another regulatory agency (e.g., FRA) must be governed by an agency safety plan. Metro Transit applies a mode-specific ASP to comply with 49 CFR Part 673. Additionally, Metro Transit has a long-standing practice of maintaining an SSAP for all three of its modes: commuter rail, LRT, and BRT.

The LRT ASP (Revision 3, July 2022)[8] documents how safety is integrated into operations and supporting activities. The purpose of the LRT ASP is to provide Metro Transit with a comprehensive safety outline, including reference to any current policies, procedures, and activities that maximize safe operation and ensure that all required regulatory demands and agency safety requirements are satisfied. The ASP is a useful management tool that identifies both corporate and departmental safety procedures and provides clearly defined safety responsibilities at all levels within the agency.

In June 2022, the Council endorsed the SSAP,[9] which is available on the Metro Transit website. The SSAP work began in response to customer feedback and intentional reflection within the agency. The SSAP summarizes the steps that Metro Transit is taking to make transit feel safer and more welcoming and identifies the following areas of work:

- Improving conditions on the system
- Training and supporting employees
- Engaging customers and partners

Forty action items have been identified that would support Metro Transit's work in these areas. The SSAP continues to be updated as implementation occurs on these action items and public engagement continues.

Other applicable codes, standards, and guidance are identified in Table A4-31.

Table A4-31 Applicable Safety and Security Codes, Standards, and Guidance

Applicable Code, Standard, or Guidance
NFPA 130, *Standard for Fixed Guideway Transit or Passenger Rail Systems*
International Fire Code, 2021 edition
2014 Minnesota State Building Code, as amended by the Cities of Minneapolis, Robbinsdale, Crystal, and Brooklyn Park
NFPA 101, *Life Safety Code,* as well as ISO standards
ANSI and ASTM Standards
49 CFR Parts 214, 219, 220, 222, 225, 228, 233, 234, 235, and 236 and 49 CFR § 229.125
Minnesota Chapter 312 (House File 3172/Senate File 2785), Safety and Operational Standards for Freight Rail Operations
FTA Circular C5800.1, *Safety and Security Management Guidance for Major Capital Projects,* governing the safety and security process from planning through commencement of revenue service
The Council's Regional Transitway Guidelines,[10] Station and Support Facility Design Guidelines User Guide Supplement, [11] and Metro LRT Design Criteria, [12] which provide technical guidance for the design of transitway facilities
Metro Transit's SSAP for the Project, which includes safety and security guidance, requirements, and measurable actions for the operating system.
FTA's ASP (49 CFR Part 673)

4.7.1.2 Definition of Terms

Safety and security are defined within the context of this Supplemental Draft EIS as follows:[13]

- ***Safety*** means the freedom from harm resulting from unintentional acts or circumstances.
- ***Security*** means the freedom from harm resulting from intentional acts or circumstances.

In response to a survey conducted by Metro Transit, safety and security were further defined by riders as follows:

- "Getting where I need to go without harm."
- "Feeling that I don't need to worry about being robbed or injured."
- "Being able to ride the train without fear or anxiety of being assaulted."
- "Being transported to and from my destination while suffering no mental or physical health consequences."
- "If people don't have to be afraid to be who they are, they are safe. If people can exist in a space without experiencing harm, harassment, or violence, they are safe."

4.7.2 Study Area

The study area for the safety and security evaluation includes planned facilities within the LOD for the Project.

4.7.3 Affected Environment

This section describes the existing safety and security conditions of the study area, including current conditions for bicycle and pedestrian safety, freight rail crossings, emergency service providers, accessibility, and personal safety.

4.7.3.1 Emergency Service Providers

Public safety and security in the study area is provided by the police departments, fire departments, and emergency response units of the Cities of Minneapolis, Robbinsdale, Crystal, and Brooklyn Park. Additionally, community organizations in the study area provide personal safety trainings, violence prevention, and restorative justice work that relates to community safety and security. Emergency medical services are located in each city, including North Memorial Hospital located directly adjacent to the proposed Lowry Ave Station in the City of Robbinsdale. Continued access by emergency service providers is a priority of the Project during construction and operation of the Project.

Through the municipal police and fire departments, each community in the study area has developed an Emergency Operations Plan for all types of emergencies. Metro Transit Police currently provide roving security for the bus transit facilities in the Metro Transit service area (that is, the area with existing Metro Transit bus service). Transit police routinely patrol bus routes, bus stops, and transit centers. Transit police officers currently travel along the METRO Blue and Green Lines to provide security at LRT stations and on LRVs and would provide similar services for the Project.

4.7.3.2 Freight Railroads

There are currently two active freight railways in the study area: BNSF and the CPKC (for more information about existing freight rail operations, see Section 3.6). In the City of Robbinsdale, N 42nd Ave crosses the BNSF railway three blocks west of the guideway, and the study area includes the approach for evaluation of a potential quiet zone. Table A4-32 lists the existing railroad crossings in the study area.

Table A4-32 Railroad Crossings (Existing Conditions)

Location	Crossing Type	Railway	Crossing Control	Type of Crossing	Project City
73rd Ave N/CR 81/West Broadway	Freight rail	BNSF	Four quadrant gates, median	At-grade	Brooklyn Park

Location	Crossing Type	Railway	Crossing Control	Type of Crossing	Project City
63rd Ave N park-and-ride location	Freight rail	BNSF		Elevated pedestrian crossing	Brooklyn Park
63rd Ave N/CR 81	Freight rail	BNSF	Four quadrant gates, median	At-grade	Crystal
CR 81/South of 63rd Ave N	Freight rail	CPKC		On structure over railway	Crystal
Bass Lake Rd/CR 81	Freight rail	BNSF	Four quadrant gates, median	At-grade	Robbinsdale
CR 81/42nd Ave N	Freight rail	BNSF	Four quadrant gates, median	At-grade	Project City

In March 2016, FTA issued a final rule for SSO program for fixed guideway public transportation systems not regulated by FRA (49 CFR Part 674). This final rule replaces existing regulations and significantly strengthens SSOA authority to prevent and mitigate accidents and incidents on rail transit systems to help ensure the safety of riders and workers. Under this final rule, each SSOA is required to have the enforcement authority, legal independence, and financial and human resources for overseeing the rail transit agencies within their jurisdiction. In addition, SSOAs must train and certify personnel responsible for performing safety oversight activities and would continue to conduct triennial audits of the safety programs established by each rail transit system. States have 3 years from the effective date of the final rule to implement an approved SSO program. All Metro Transit LRT lines fall under the jurisdiction of the Minnesota SSOA, which is part of the Minnesota Department of Public Safety and is governed by 49 CFR Part 659.

4.7.4 Environmental Consequences

This section identifies the operating-phase (long-term) and construction-phase (short-term) impacts to safety and security from the Project. Given adherence to Metro Transit design criteria and the oversight of security personnel, the Council does not expect the Project to cause adverse impacts related to safety and security.

4.7.4.1 Operating-Phase (Long-Term) Impacts

Potential long-term impacts of the Project could include the following:

- ***Impacts to freight railroads:*** As described in Section 3.6, long-term impacts to freight rail resources would be minimal. The Project includes a pedestrian bridge over the BNSF tracks near 63rd Ave N; a bridge crossing over the CPKC tracks with CR 81; and construction of at-grade crossings at W Broadway Ave, 63rd Ave N, and Bass Lake Rd. These crossings would require modifications of the existing street signal system, which in turn would require coordination with BNSF's railroad signal preemption. The bridge crossing with CR 81 would require coordination, design reviews, permits, and agreements with CPKC, but would not result in any long-term impacts as there is an existing bridge in this location.
- ***Impacts to emergency vehicle response times:*** In most cases, emergency vehicle signal preemption would allow emergency vehicles to progress with no delay. In locations where there would be at-grade light-rail crossings of roads, emergency response times could increase on some occasions because of delay to emergency vehicles while LRVs are in the crossing. These delays could increase fire, emergency medical services, and police response times on routes using the crossings. Potential measures that could preempt or alleviate these impacts are identified in Section 4.7.5.
- ***Impacts to pedestrian safety:*** As discussed in Section 3.2, the Project would provide several long-term improvements to pedestrian safety, comfort, and accessibility. Station platforms would be pedestrian-

accessible from existing sidewalks, and several station designs propose to modify or add new sidewalks, plazas, and crossings of roadways.

- ***Impacts to bicycle safety:*** As discussed in Section 3.3, the Project would provide several long-term improvements to cyclist safety, comfort, and accessibility. Segments would either retain the same level of BLTS or be improved. Segments along W Broadway Ave in the City of Brooklyn Park and along N 7th St in the City of Minneapolis show the largest improvements in BLTS results. Under an East of I-94/21st Ave N alignment option, bicycle access would be removed from 21st Ave N.
- ***Personal safety and security:*** Many factors influence public perception of personal safety and security in transit that directly influence the experience of all who interact with the Project. The Council views safety and security concerns, including crime, untreated mental illness, chemical addiction, and unsheltered homelessness as direct reflections of larger social issues currently facing the region. A safe and secure transit system requires region-wide commitments to addressing the root causes of these challenges, and should involve the application of an anti-racist, equity lens to conversations around safety, security, and policing. Significant improvements are needed to provide effective interventions to protect the health and safety of riders and employees and to provide social service and health care services for those who need support and treatment.[14]

4.7.4.2 Construction-Phase (Short-Term) Impacts

Construction activities would result in temporary increased congestion along adjacent roads because of temporary lane and road closures, shifts in roadway alignments, and detours. This temporary increase in roadway congestion could affect access and response times for emergency service providers. However, provisions would be made to maintain required access during established periods or to keep one lane of traffic open on main arterials. Increased delay for emergency response vehicles during construction would be minimized through coordination with the affected emergency service providers.

Both federal OSHA and Minnesota OSHA standards for safety of construction site personnel would be maintained to minimize and/or avoid injuries to construction workers. As appropriate, access to construction sites might be limited by fencing and security gates where practical to prevent inadvertent access by those without access clearance. Specific construction safety and security management activities would be identified in the Project's safety plan, which would be incorporated into construction contract specifications.

As part of the Project, construction activities would occur close to active freight railways. Short-term freight operations impacts and mitigation are addressed in Section 3.6. All contractors would prepare a Project safety and health program along with a site-specific safety plan to ensure that contractor and subcontractor personnel comply with the specified safety practices, codes, and regulations as described in the Project's safety plan.

4.7.5 Avoidance, Minimization, and Mitigation Measures

This section describes potential mitigation options to reduce long- and short-term safety and security impacts from the Project.

4.7.5.1 Operating-Phase (Long-Term) Mitigation Measures

Avoidance of safety issues at LRT stations related to the Project would be achieved through implementation of the Project's SSAP[15] and the Metro Light Rail Transit Design Criteria.[16] The purpose of the SSAP is to consider safety and security when designing, constructing, and operating the Project. The plan covers requirements for safety and security design criteria, hazard analyses, threat and vulnerability analyses, construction safety and security, operational staff training, and emergency response measures. These plans and programs also specify actions and requirements of the Council and Metro Transit Police to maintain safety and security during operation of the Project.

Incident Prevention and Management

The design of the Project would include safeguards in the catenary system to help minimize the possibility of sparking occurring in the overhead catenary wires. Electrical sparks, or arcing, occurs when there is a gap between the overhead contact wire and the vehicles pantograph. Numerous safeguards are included in the design of the Project to address and minimize electrical sparking. Ice cutters would be used to maintain positive contact between the contact wire and pantograph during winter weather. Additionally, Metro Transit would regularly inspect pantographs for grooves along the pantograph's carbon strip (as it does on its existing light-rail lines) that could cause arcing.

The Council's OEMP for light rail was developed to help identify, respond to, and resolve emergency situations in an efficient, controlled, and coordinated manner. During normal revenue service emergency planning, the Council would plan, schedule, conduct, and evaluate at least one tabletop and one full-scale emergency-preparedness exercise annually. In advance of operation of the Project, several drills would be planned, conducted, and documented in an emergency-preparedness exercise plan. Emergency-preparedness training exercises would be designed to ensure rail equipment familiarization, situational awareness, passenger evacuation, coordination of functions, and hands-on instruction. Training exercises would be coordinated with public safety agencies and the freight railroads. Additional information is provided in the SSAP and the Council's OEMP.

In addition, the Council maintains an emergency-preparedness exercise plan. The emergency-preparedness exercise plan would be carried out by the FLSSC. In advance of operation of the Project, several drills would be planned, conducted, and documented in the emergency-preparedness exercise plan. Emergency-preparedness training exercises would be designed to address areas such as rail equipment familiarization, situational awareness, passenger evacuation, coordination of functions, communications, and hands-on instruction. The FLSSC would coordinate training exercises with the Council and the freight railroad owners and operators, as appropriate. During normal revenue service, the FLSSC would coordinate training exercises to evaluate emergency preparedness. The exact nature of emergency-preparedness exercises would be developed in coordination with the FLSSC prior to construction but could include one tabletop and one full-scale emergency-preparedness exercise, on an annual basis.

To help avoid or minimize delays, the Council would coordinate with emergency service providers by providing them with the light-rail operating schedule and identifying alternative crossing routes. Additional coordination would occur through the FLSSC, as described in the Project's SSAP.[17]

Station Design Elements

Station areas would be designed according to the Project design criteria, incorporating as appropriate BMPs for safety and security, cognizant of Project budget, stakeholder requirements, and technical constraints. LRT stations would include emergency equipment, public address systems, video cameras, emergency telephones, and closed-circuit television. The public address system, with both speakers and signs, would convey information to people with disabilities in compliance with ADA requirements.

Lighting for LRT station areas and park-and-ride facilities, as well as vehicular and pedestrian circulation areas, would be consistent with the Metro Light Rail Transit Design Criteria[18]. Emergency lighting would be provided in all public areas, including platforms, pedestrian facilities, vehicular traffic areas, bus loading zones, and park-and-ride lots.

Safety and security within the proposed right-of-way would be the joint responsibility of Metro Transit and local law enforcement authorities. Metro Transit has its own licensed police force to address public safety on and near the

transit system. Transit police would routinely patrol the LRT stations and Project Alignment as well as nearby bus routes and bus stops. Transit police officers routinely patrol the system traveling between LRT stations and in LRVs. In addition, the Three Rivers Park District Department of Public Safety and the Minneapolis Park Police Department are the law enforcement agencies responsible for providing a safe environment on the regional trails in the study area.

At-Grade LRT Crossings

Twenty-four new LRT crossings at-grade with existing roads would be introduced as part of the Project. LRVs would sound horns or bells and when approaching at-grade roadway crossings, except in locations where a quiet zone is implemented. In these locations, additional safety measures (for example, non-traversable medians) would be installed in accordance with the Quiet Zone Final Rule (49 CFR Part 222). See Section 3.6 for more information on freight and Section 3.4 for more information on vehicular traffic.

Where mid-block at-grade light-rail crossings may be added, crossings would be designed based on the Metro Light Rail Transit Design Criteria[19] and would include traffic signals with an audible warning to notify pedestrians of a train's arrival and detectable warnings and signs. Refer to Section 3.4 for more information on pedestrian and bicycle facilities.

Mid-block at-grade light-rail crossings would be equipped with U-shaped crossings, which is a crossing safety control measure that promotes slower crossing speeds and forces sidewalk and trail users to face the direction that LRVs would come from before entering the crossing, and other safety features. The design of specific pedestrian and bicycle safety features would be made during the engineering phase of the Project and finalized prior to construction.

Video Surveillance

Visible surveillance cameras can serve as a crime deterrent if people believe they are being observed. A video surveillance system would also enable Metro Transit to monitor the LRT stations and park-and-rides remotely and in real time. Recorded video provided by camera systems can also play a crucial role in post-event law enforcement investigations and prosecutions.

Metro Transit's Real Time Information Center is part of a team of sworn officers and non-sworn personnel who monitor cameras for most of the day and evening and help submit video needed for evidence. Supervisors in the Rail Control Center, which is always staffed, can also access the cameras. Efforts to install new cameras with instant-replay capabilities, 360-degree views, audio, and high-definition footage began in 2020. The cameras are now in use on all of Metro Transit's LRVs. Metro Transit is implementing actions identified in the SSAP[20] including the possible expansion of real-time camera usage.

In addition to LRVs, police and supervisors can view live video from each of Metro Transit's 44 light-rail and commuter rail platforms. Cameras provide a quick and effective response to incidents by reducing time to gather information or conduct interviews of passengers.

Personal Safety and Security Measures

Several long-term mitigation measures to improve personal safety across the Metro Transit system have already been identified in the updated SSAP and ASP. Ongoing efforts, including those described in Table A4-33, should be continued in support of the Project.

Table A4-33 Areas of Work and Ongoing and Completed Actions Identified in the SSAP [a]

Area of Work	Ongoing Actions
Improving conditions on the system	■ Budgeting more positions for the police department, public facilities, and staff who communicate with customers in real time (e.g., Text for Safety) ■ Assigning officers to regularly patrol the transit network and to specialized units, including the Critical Asset Protection on light rail, Transit Response Unit, and Homeless Action Team ■ Increasing investment in the Homeless Action Team and partnering with the Metro Housing and Redevelopment Authority to extend housing vouchers to individuals in need ■ Establishing and increasing staffing for the Real Time Information Center and installing new, high-definition cameras in LRVs ■ Improving real-time information available to customers by investing in new technology ■ Replacing cloth seats with easier-to-clean plastic seats in LRVs
Training and supporting employees	■ Providing training for employees that supports safety and security, such as aerosol certification and de-escalation training, Red Kite resilience training, apprenticeship and mentorship, and annual Professional Operator Development, including training on mental health ■ Establishing and/or coordinating the Transit Safety & Security Committee, Bus Barrier Committee, and Equity and Inclusion Team employee engagement ■ Providing free and confidential access to trained counselors through the Council's Employee Assistance Program resources
Engaging customers and partners	■ Engaging in emergency management planning and mutual-aid response to strengthen relationships with local, State, and federal partners ■ Coordinating with governments and social services to address homelessness (e.g., Homeless Action Team's work and participation in Minnesota Interagency Council on Homelessness) ■ Tasking Metro Transit's Champion Facilities Committee to work with customers, local law enforcement, and city officials to reduce unwanted activity within and around transit stops ■ Sharing transit crime data and information with regional law enforcement agencies ■ Partnering with the Transit Accessibility Advisory Committee to create new closed captioned and multi-lingual "How to Ride" videos and on-board advertisements that encourage respectful riding behaviors

[a] Areas of work and examples of work already accomplished or currently underway as of June 22, 2022 (Council 2022).

4.7.5.2 Construction-Phase (Short-Term) Mitigation Measures

Short-term mitigation measures shown in Table A4-34 could be implemented as part of the Project.

Table A4-34 Potential Construction-Phase (Short-Term) Mitigation Measures

Potential Mitigation Measure
Coordinate with emergency service providers to provide schedule for construction activities and identify detour routes to minimize delay for emergency response vehicles
Develop and implement strategies for clear communication of Project activities with communities, partners, and other impacted parties
Maintain required access during established periods or keep one lane of traffic open on main arterials as would be described in the Construction Mitigation Plan
Maintain federal OSHA and Minnesota OSHA standards for safety of construction site personnel to minimize and/or avoid injury to construction workers

Potential Mitigation Measure
Require contractors to prepare safety and health programs along with a site-specific safety plan to ensure that, while on the work site and construction activities, contractor and subcontractor personnel comply with the specified safety practices, codes, and regulations.

[1] City of Minneapolis, Minneapolis 2040. 2020.
[2] Hennepin County: Bottineau Community Works. Accessed March 12, 2023.
[3] Hennepin County: Transit Oriented Development. Accessed March 12, 2023.
[4] Hennepin County Regional Railroad Authority. Accessed at https://www.hennepin.us/your-government/leadership/rra.
[5] Community amenities include medical facilities, religious places of worship, food shelves, and civic buildings, as well as private businesses and nonprofit organizations identified during public engagement events hosted by the Liberian Business Association and Asian Media Access in 2021. Attendees identified community resources that include important community and cultural as priorities for protection against potential project impacts.
[6] Federal Highway Administration. 2015. *Guidelines for the Visual Impact Assessment of Highway Projects.* January. FHWA Document FHWA-HEP-15-029. Accessed at https://www.environment.fhwa.dot.gov/env_topics/other_topics/VIA_Guidelines_for_Highway_Projects.aspx
[7] U.S. Census Bureau. 2021. About [the Office of Management and Budget]. https://www.census.gov/programs-surveys/metro-micro/about.html.
[8] Metropolitan Council. 2022a. Agency Safety Plan, Revision 3. July. Accessed at https://metrocouncil.org/Council-Meetings/Committees/Metropolitan-Council/2022/7-27-22/0711_2022_195-Attachment_Safety-Plan.aspx
[9] Metropolitan Council. 2022b. Safety & Security Access Plan. Accessed at https://www.metrotransit.org/public-safety
[10] Metropolitan Council. 2016. Regional Transitway Guidelines. Available at https://metrocouncil.org/Transportation/System/Transit/Studies/Regional-Transitway-Guidelines/Regional-Transitway-Guidelines-Chapters.aspx
[11] Metropolitan Council. 2012. Station and Support Facility Design Guidelines User Guide Supplement. Accessed at http://www.metrocouncil.org/Transportation/Publications-And-Resources/ Transit/Station-and-Support-Facility-Design-Guidelines-Use.aspx
[12] Metropolitan Council. 2015. Metro Light Rail Transit Design Criteria.
[13] Metropolitan Council. 2022b. Safety & Security Access Plan. Accessed at https://www.metrotransit.org/public-safety
[14] Metropolitan Council. 2022b. Safety & Security Access Plan. Accessed at https://www.metrotransit.org/public-safety
[15] Metropolitan Council. 2022b. Safety & Security Access Plan. Accessed at https://www.metrotransit.org/public-safety
[16] Metropolitan Council. 2015. Metro Light Rail Transit Design Criteria.
[17] Metropolitan Council. 2022b. Safety & Security Access Plan. Accessed at https://www.metrotransit.org/public-safety
[18] Metropolitan Council. 2015. Metro Light Rail Transit Design Criteria.
[19] Metropolitan Council. 2015. Metro Light Rail Transit Design Criteria.
[20] Metropolitan Council. 2022b. Safety & Security Access Plan. Accessed at https://www.metrotransit.org/public-safety