4 Community and Social Analysis

This chapter updates the discussion in the *Bottineau Transitway Draft Environmental Impact Statement* (Draft EIS) (March 2014) assessing the impacts of the No-Build Alternative and the proposed METRO Blue Line Light Rail Transit (BLRT) Extension project on the social characteristics and conditions within the proposed BLRT Extension project study area. Operating-phase (long-term) and construction-phase (short-term) impacts are identified for the No-Build Alternative and the proposed BLRT Extension project. The alternatives are described and illustrated in **Chapter 2 – Alternatives**.

Changes to This Chapter since the Draft Environmental Impact Statement Was Published

This Final Environmental Impact Statement (Final EIS) evaluates a number of different 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:

- **Section 4.1** – This section reviews the most current comprehensive plans for the cities of Minneapolis, Golden Valley, Robbinsdale, Crystal, and Brooklyn Park for land use and plan compatibility with the proposed BLRT Extension project.
- **Section 4.2** – This section describes each of the communities along the proposed BLRT Extension project (the cities of Minneapolis, Golden Valley, Robbinsdale, Crystal, and Brooklyn Park). The analysis of long-term and short-term direct neighborhood and community effects anticipated from the revised definition of the proposed BLRT Extension project is based on the following three criteria: changes to community facilities access; changes to community character; and changes to community cohesion.
- **Section 4.3** – This section updates the partial and full property acquisitions and displacements affected by the limits of disturbance (LOD) associated with the proposed BLRT Extension project.
- **Section 4.4** – This section describes cultural resources and discusses impacts that would result from the implementation of the proposed BLRT Extension project as defined in this Final EIS. This section also describes resolution of adverse effects by exploring alternatives that avoid, minimize, or mitigate the adverse effects through project design, consultation with Section 106 consulting parties, and development of a Section 106 Memorandum of Agreement (MOA).
- **Section 4.5** – This section assesses the existing physical character of the revised definition of the proposed BLRT Extension project study area including physical development, vegetation and other natural features, and visually sensitive landmarks and views. Potential impacts on the visual character of the areas adjacent to the proposed BLRT Extension project are also evaluated.
- **Section 4.6** – This section focuses on the potential economic effects associated with the revised definition of the proposed BLRT Extension project and its effect on the local economy. These effects would be realized to varying degrees throughout the region in terms of increased economic output, earnings, and employment.
- **Section 4.7** – This section assesses the potential safety and security impacts to light rail transit (LRT) users, area residents, rail corridor visitors, and construction workers for the revised definition of the proposed BLRT Extension project.

The study area represents a geographic area used to identify resources, and varies based on the resource being evaluated. The basis for each study area begins with the LOD, which has been defined as the estimated area where construction would occur for the proposed BLRT Extension project. In some cases the study area extends beyond the LOD to understand the potential extent of impacts on adjacent resources. The study area considered for each area of analysis in this chapter is summarized in **Table 4.0-1**. Greater detail is provided in each section of this chapter. For reference, conceptual engineering plans are located in **Appendix E**.

Table 4.0-2 summarizes the effects of the proposed BLRT Extension project on the social characteristics and conditions, as well as the Metropolitan Council's (Council) minimization and mitigation commitments, which become a part of the proposed BLRT Extension project upon issuance of the Record of Decision.

Table 4.0-1. Summary of Defined Study Areas – Social Analysis

Resource Evaluated	Study Area Definition	Basis for Study Area
Land Use Plan Compatibility	Jurisdictions in which the transitway would be located	Project compatibility with overall city plans
Community Facilities/ Community Character and Cohesion	½ mile radius around stations ¼ mile on either side of alignments	A half-mile radius is commonly used by transit planners to represent the distance transit users are willing to walk to access an LRT station; for alignments, a quarter-mile captures direct (within 300 feet) impacts
Displacement of Residents and Businesses	Within the LOD	Area reflecting direct impacts on properties
Cultural Resources	*Architecture/History Area of Potential Effects (APE)*: Within the LOD and 500 feet on either side of alignments; 0.25-mile radius around stations, Operations and Maintenance Facility (OMF), new bridges/structures, and the modification of existing bridges/structures; and 500-foot radius around bridges/structures for the modification of piers *Archaeological APE:* For LRT alignments on an existing rail corridor, the railroad right-of-way; for LRT alignments not along an existing rail corridor, the proposed construction limits; and a 500-foot radius from the construction limits of proposed stations, park-and-rides, and OMF	APE as agreed upon by the Minnesota Historic Preservation Office (MnHPO)
Visual/Aesthetics	The immediate area of properties adjacent to and in visual proximity to the various project components, including track alignments, stations, park-and-rides, traction power substations (TPSSs), new bridges, and any other infrastructure elements	Properties and features visible from the proposed BLRT Extension project components
Economic Effects	Minneapolis–St. Paul–Bloomington Metropolitan Statistical Area (MSA)	Area reflecting direct economic impacts from the proposed BLRT Extension project
Safety and Security	Within and adjacent to the LOD	Reflects direct impacts and proximity of proposed alignments to places that attract persons of special concern relative to safety and security

Table 4.0-2. Summary of Impacts, Commitments, and Mitigation Measures – Social Analysis

Category		Summary of Impacts and Mitigations
Land Use Plan Compatibility (Section 4.1)	Operating-Phase (Long-Term) Direct Impacts	■ No adverse impacts identified
	Construction-Phase (Short-Term) Impacts	■ None anticipated
	Mitigation Measures	**Operating-Phase (Long-Term):** ■ The proposed BLRT Extension project will be compatible with land use planning policy documents, therefore no mitigation measures will be needed
Community Facilities/ Community Character and Cohesion (Section 4.2)	Operating-Phase (Long-Term) Direct Impacts	■ Impacts associated with the proposed BLRT Extension project were not severe enough to affect overall community character and cohesion, or the accessibility to and use of community facilities
	Construction-Phase (Short-Term) Impacts	■ Traffic detours could increase traffic through residential neighborhoods or change access to community facilities ■ Sidewalk closures and detours could affect pedestrian traffic patterns ■ Construction impacts such as increased levels of noise and dust could temporarily affect neighborhood character, primarily in areas that are relatively quiet ■ The presence of large construction equipment could be perceived as visually disruptive, resulting in temporary effects on community character, particularly in residential settings ■ A temporary easement from Theodore Wirth Regional Park would be required to construct the LRT guideway ■ Construction of the proposed BLRT Extension project would require a temporary occupancy of Sochacki Park: Sochacki Management Unit for construction access and staging. ■ Construction of the proposed BLRT Extension project would require a temporary occupancy of Becker Park to reconstruct the sidewalk and trail from the park to the Bass Lake Road Station. ■ Construction of the proposed BLRT Extension project would require a temporary occupancy of Three Rivers Park to construct the OMF.
	Mitigation Measures	**Construction-Phase (Short-Term):** ■ Develop and implement the Construction Mitigation Plan and a Construction Communication Plan. Specific mitigation measures included in the Construction Communication Plan will be site-specific and may include: • Issuing construction updates and posting them to the proposed BLRT Extension project website • Providing advance notice of roadway closures, driveway closures and utility shutoffs • Conducting public meetings • Establishing a 24-hour construction hotline • Preparing materials with applicable construction

Table 4.0-2. Summary of Impacts, Commitments, and Mitigation Measures – Social Analysis

Category		Summary of Impacts and Mitigations
		• Addressing property access issues • Assigning staff to serve as liaisons between the public and contractors during construction ■ Develop and implement a construction staging plan, which will be reviewed with the appropriate jurisdictions and railroads. Components of the staging plan include traffic management plans and a detailed construction timeline ■ Restoration and as applicable, enhancement of affected proposed BLRT Extension project area park facilities
Displacement of Residents and Businesses (Section 4.3)	Operating-Phase (Long-Term) Direct Impacts	■ Acquisitions of 292 parcels • 14 total acquisitions, 278 partial acquisitions • About 46.7 acres of permanent easement, and 28.9 acres of temporary easement ■ Displacement of 10 businesses; no displacements of residential, industrial, or public land uses
	Construction-Phase (Short-Term) Impacts	■ 28.9 acres of temporary easements
	Mitigation Measures	■ Non-residential displacements (to be conducted in accordance with the provisions of the Uniform Relocation Act and Minnesota Statutes [Minn. Stat.] 117): • Relocation advisory services • Minimum 90 days written notice to vacate prior to requiring possession ■ Reimbursement for moving and reestablishment expenses

Table 4.0-2. Summary of Impacts, Commitments, and Mitigation Measures – Social Analysis

Category		Summary of Impacts and Mitigations
Cultural Resources (Section 4.4)	Adverse Effects	■ Adverse effect on the Wayman African Methodist Episcopal (AME) Church, Floyd B. Olson Memorial Statue, Osseo Branch Historic District, Homewood Historic District, Theodore Wirth Segment of the Grand Rounds Historic District, and the West Broadway Avenue Residential Historic District ■ No adverse effect (with implementation of mitigation measures) on Sumner Branch Library, Labor Lyceum, Sacred Heart Catholic Church, Robbinsdale Waterworks, and Hennepin County Library – Robbinsdale Branch
	Mitigation Measures	■ Implement Section 106 Memorandum of Agreement measures that will include the following mitigation measures: • Design the proposed BLRT Extension project to the Secretary of the Interior's Standard for the Treatment of Historic Properties for the Minneapolis-Golden Valley segment, and the Robbinsdale segment • Consult with MnHPO and the MOA concurring parties on the proposed BLRT Extension project design in the segments listed above • Preconstruction design review at the 30 percent, 60 percent, 90 percent, and 100 percent phases • Development of a Construction Protection Plan • Implementation of noise mitigation measures for the Sacred Heart Catholic Church, Hennepin County Library-Robbinsdale Branch, and West Broadway Avenue Residential Historic District • National Register of Historic Places nomination forms for Floyd B. Olson Memorial Statue and Wayman AME Church • Interpretation of historic properties • Historic property treatment plans
Visual/Aesthetics (Section 4.5)	Operating-Phase (Long-Term) Direct Impacts	■ Adverse impacts to higher-quality visual features in the following settings: • View to west toward Penn Avenue, from center Olson Memorial Highway (Trunk Highway [TH] 55) median • View to east-southeast toward Olson Memorial Highway bridge over the BNSF Railway (BNSF) rail corridor, from Wirth Park Trail • Boulevard and median trees along Olson Memorial Highway west of Interstate Highway 94 (I-94) • View to west toward proposed Plymouth Avenue Station and bridge, from Plymouth Avenue North and Washburn Avenue North • View to south toward existing BNSF tracks and proposed LRT tracks, from Plymouth Avenue North bridge • View to north toward proposed Plymouth Avenue Station, from Plymouth Avenue bridge • View to southeast toward proposed Plymouth Avenue Station and bridge, from Theodore Wirth Regional Park Chalet • View to northeast toward Bassett Creek and proposed Golden Valley Road Station, from Theodore Wirth Regional Park Golf Course • View to west toward proposed Golden Valley Road Station, from Golden Valley Road and Theodore Wirth Parkway

Table 4.0-2. Summary of Impacts, Commitments, and Mitigation Measures – Social Analysis

Category		Summary of Impacts and Mitigations
		• View to west toward proposed Golden Valley Road Station, from Theodore Wirth Parkway at Golden Valley Road • Theodore Wirth Regional Park and Golf Course • Bassett Creek and Bassett Creek Lagoons • Sochacki Park and South Halifax Park • View to east toward proposed Robbinsdale Station, from 42nd Avenue • View to southeast toward proposed wall and fence, from adjacent residential alley • View to southeast toward proposed Bass Lake Road station and pedestrian bridge, from Bottineau Boulevard (County Road 81) • View to northwest toward proposed Bass Lake Road station and pedestrian bridge, from southeast quadrant of the Bass Lake Road/Bottineau Boulevard intersection • View to northeast toward proposed Bass Lake Road pedestrian bridge, from southwest quadrant of the Bass Lake Road/Bottineau Boulevard intersection • Bass Lake Road pedestrian overpass • Green boulevard on west side of West Broadway Avenue between 47th Avenue and TH 100 • Residential neighborhood between Bass Lake Road and 63rd Avenue • View to south toward proposed 63rd Avenue Station, from trail adjacent to Bottineau Boulevard • View to southeast toward proposed 63rd Avenue Station, from adjacent neighborhood west of 63rd Avenue • View to north toward proposed 73rd Avenue/Bottineau Boulevard bridge, from Bottineau Boulevard at 71st Avenue • View to north toward proposed 73rd Avenue/Bottineau Boulevard bridge, from southeast corner of Bottineau Boulevard and 71st Avenue • View to south toward proposed 73rd Avenue/Bottineau Boulevard bridge, from Bottineau Boulevard at 73rd Avenue • View to southwest toward proposed OMF, from Rush Creek Regional Trail • 63rd Avenue park-and-ride • 73rd Avenue/Bottineau Boulevard bridge • OMF • Rush Creek Regional Trail
	Construction-Phase (Short-Term) Impacts	■ Construction-phase (short-term) impacts would be associated with construction staging areas, concrete and form installation, removal of some of the existing vegetation, lights and glare from construction areas, and generation of dust and debris in the proposed BLRT Extension project area

Table 4.0-2. Summary of Impacts, Commitments, and Mitigation Measures – Social Analysis

Category		Summary of Impacts and Mitigations
	Mitigation Measures	**Operating-Phase (Long-Term):** ■ Follow design guidelines for key proposed BLRT Extension project elements ■ Design and implement landscaping at appropriate locations throughout the proposed BLRT Extension project corridor ■ Minimize operational lighting at night (while maintaining safety/security of LRT facilities) ■ Provide visual screening as appropriate for certain proposed BLRT Extension project facilities **Construction-Phase (Short-Term):** ■ Minimize visual disruption from construction activities, including minimizing light disturbance ■ Restore areas disturbed during construction
Economic Effects (Section 4.6)	Operating-Phase (Long-Term) Direct Impacts	■ Loss of tax revenues caused by right-of-way acquisition would be a recurring loss on an annual basis, partially offset by increases in other tax revenues
	Construction-Phase (Short-Term) Impacts	■ None identified
	Mitigation Measures	■ No mitigation required
Safety and Security (Section 4.7)	Operating-Phase (Long-Term) Direct Impacts	■ Adherence to transitway design guidelines and the oversight of security personnel would result in no adverse impacts related to safety and security
	Construction-Phase (Short-Term) Impacts	■ Construction activities would result in temporary increased congestion along adjacent roads as a result of temporary lane and road closures, shifts in roadway alignments, and detours that could affect access and response times for emergency service providers
	Mitigation Measures	**Operating Phase (Long-Term):** ■ Metro Transit will provide security at and around the transit stations ■ Transit rider, pedestrian, and bicycle safety features will be incorporated into design and maintained and enforced over time ■ Conform to FTA's Rail Fixed Guideway Systems; State Safety Oversight Program for Safety and Security Guidance for Recipients with Major Capital Projects (Circular C 5800.1), covered under 49 CFR Part 633 – Project Management Oversight ■ Conform to the State of Minnesota rail safety regulations that went into effect in July 2014 as part of MN Chapter 312 ■ Implement the proposed BLRT Extension project's *Safety and Security Management Plan* (*SSMP*) (Council, 2014a) and the Metro Light Rail Transit Design Criteria (Council, 2015c) to avoid potential safety issues at new light rail stations, including emergency equipment and appropriate lighting for public areas

Table 4.0-2. Summary of Impacts, Commitments, and Mitigation Measures – Social Analysis

Category		Summary of Impacts and Mitigations
		■ Install fencing where substantial grade changes exist adjacent to sidewalks, trails, and side platform areas, and between the light rail alignment or freight rail alignment when adjacent to a trail or sidewalk, to prevent pedestrian and bicycle encroachment on light rail tracks and accidental falls from station platforms ■ Design at-grade LRT crossings of sidewalks and trails per the Metro Light Rail Transit Design Criteria (Council, 2015c) to include flashing light signals with an audible warning to notify pedestrians of a train's arrival and detectable warnings and signs ■ Design shared freight rail and light rail crossings to meet Federal Railroad Administration (FRA) requirements for at-grade crossings, including requirements for train horn Quiet Zones as described in the Train Horn Quiet Zone Final Rule (49 CFR Part 222), where applicable ■ Maintain emergency vehicle access to areas within the vicinity of the proposed BLRT Extension project ■ Coordinate with affected emergency service providers providing the light rail operating schedule and identification of alternative crossing routes ■ Design LRT facilities within the vicinity of freight rail facilities in accordance with the Metro Light Rail Transit Design Criteria which includes design standards and specifications to provide security and/or enhance safety, such as safeguards to prevent derailments, emergency guardrails, and corridor protection barriers ■ Install intrusion detection for possible freight derailment, and corridor protection, where LRT is jointly operating with freight rail ■ Include safeguards in the catenary system for the proposed BLRT Extension project to help minimize the possibility of sparking occurring in the overhead catenary wires ■ Metro Transit will regularly inspect pantographs for grooves along the pantograph's carbon strip (as it does on its existing light rail lines), which could cause arcing ■ Where the light rail alignment is adjacent to a freight rail alignment, the light rail alignment will be primarily on segregated right-of-way, in accordance with the National Electric Safety guidelines ■ Plan, schedule, conduct, and evaluate at least one tabletop and one full-scale emergency preparedness exercise annually ■ In advance of operation of the proposed BLRT Extension project, a number of drills will be planned, conducted, and documented in an emergency preparedness exercise plan

Table 4.0-2. Summary of Impacts, Commitments, and Mitigation Measures – Social Analysis

Category		Summary of Impacts and Mitigations
		Construction-Phase (Short-Term): ■ Develop and implement a Construction Mitigation Plan, which includes a construction staging plan and a Construction Communications Plan Coordinate with emergency service providers on required detour routes and lane closures to minimize increases in travel and response times; maintain required access during established periods or keep one lane of traffic open on main arterials as 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 ■ Contractors will prepare a proposed BLRT Extension project safety and health program 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 as described in the proposed BLRT Extension project's *SSMP* ■ Develop and implement freight rail operation coordination plans to facilitate coordination between the proposed BLRT Extension project and the affected freight railroads during construction activities affecting freight rail operations

4.1 Land Use Plan Compatibility

The Council reviewed land use planning information for the proposed BLRT Extension project communities. During this review, the Council determined that the land use plans were mostly unchanged from the Draft EIS phase of the proposed BLRT Extension project. Therefore, the information included in this section is primarily based on the information in the Bottineau Transitway Draft EIS *Land Use Plan Compatibility Technical Report* (HCRRA, 2014).

4.1.1 Regulatory Context and Methodology

No specific laws or executive orders regulate the consideration of land use impacts as part of preparing federal environmental review documents. The National Environmental Policy Act (NEPA) (41 USC § 4321) and the Minnesota Environmental Policy Act (MEPA) (2007 c 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.

Note that various impacts, including noise, community cohesion, economic development, and visual quality, have a relationship to the land uses in the land use study area and are considered in other sections of this Final EIS. Although these impacts might require mitigation at the site level, this section focuses on the compatibility of the proposed BLRT Extension project with local and regional land use planning documents on a broader scale.

4.1.2 Study Area

The study area for land use is defined as the jurisdictions in which the proposed BLRT Extension project would be located. The Council obtained specific land use data from existing and planned land use maps for the cities of Minneapolis, Golden Valley, Robbinsdale, Crystal, and Brooklyn Park. These land use maps are drawn from each city's comprehensive plan, which is a locally approved planning document that guides planning policy and land use. The Council's assessment of the compatibility of the proposed BLRT Extension project with existing and planned land uses was based on the land use inventories and plans in cities' adopted comprehensive plans.

4.1.3 Affected Environment

4.1.3.1 Planning Context

This section summarizes comprehensive plans and land use and other planning documents, which are the basis for the Council's evaluation of the land use compatibility of the proposed BLRT Extension project. Comprehensive plans are updated every 10 years; the comprehensive plans below have not changed since the publication of the Draft EIS in 2014. The Council's *Transportation Policy Plan* (*TPP*) (Council, 2015a) has been updated since the publication of the Draft EIS; however, the conclusions in the current *TPP* (*Thrive MSP 2040 Transportation Policy Plan*) (Council, 2014b) are consistent with those in the *2030 Transportation Policy Plan* (Council, 2010) that was evaluated in the Draft EIS. The land use policy in the current *2040 TPP* (Council, 2015a) is substantially

stronger than in the previous 2030 plan. It contains density targets and activity levels that reinforce station areas as focal points for growth.

In addition to comprehensive planning that is consistent with the *TPP* process, the communities along the proposed BLRT Extension project have been participating in Hennepin County's proposed BLRT Extension project Community Works program. This program was established in 2014 to leverage this important regional transit investment by partnering with cities along the proposed BLRT Extension project to help plan for and implement critical changes "beyond the rails." The program goals include:

- Re-envision the proposed BLRT Extension project corridor as a multi-modal transit corridor that supports LRT, pedestrian, and bicycle connections.
- Maximize and strategically align public and private investments in the proposed BLRT Extension project corridor to support transit-oriented development through catalytic investments in life-cycle housing, commercial development, and public infrastructure.
- Promote economic opportunity by improving access to jobs and supporting business recruitment and expansion along the proposed BLRT Extension project corridor.
- Enhance livability in the proposed BLRT Extension project corridor by improving public spaces, supporting the creation of healthy communities, and connecting people to key destinations, including employment centers, educational institutions, and regional amenities.

4.1.3.2 Local and Regional Plans and Policies

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

The transportation chapter of *The Minneapolis Plan for Sustainable Growth* (City of Minneapolis, 2009) states that enhanced transit services are the means to efficiently meet the needs of the traveling public. The plan also calls for ongoing investment and development of corridors served by light rail, commuter rail, streetcars, and buses. Additionally, the future Transitway System map in the *Minneapolis Plan for Sustainable Growth* acknowledges potential, proposed BLRT Extension project routes, noting that transitway alignments and station locations are still under review and are subject to change.

The *City of Golden Valley Comprehensive Plan 2008–2018* (City of Golden Valley, 2008) includes the goal of enhancing transit use. A supporting objective is to support local and regional transit provider plans and programs that benefit residents and visitors in the community.

An objective of the *City of Robbinsdale 2030 Comprehensive Plan* (City of Robbinsdale, 2010) is to provide an effective choice of transportation modes for the city's residents. The plan states that transit corridors provide the potential for concentrations of residential uses that could accommodate the regional projections for increased population. The plan also states that the city should coordinate all future downtown redevelopment with a transit hub, exclusive busway, and LRT plans. In addition, the transitway is included on the city of Robbinsdale's Transit Routes map (Figure 4G of the comprehensive plan). The transportation chapter of the city of Robbinsdale's

comprehensive plan acknowledges the proposed BLRT Extension project planning efforts, expressing a preference for LRT.

It is a policy of the *City of Crystal, Minnesota Comprehensive Plan Update Through the Year 2030* (City of Crystal, 2011) to plan and invest in multi-modal transportation choices, based on the full range of costs and benefits, to slow the growth of congestion and serve the region's economic needs. A strategy supporting this policy is to expand the transit system. The Public Transit chapter of the city of Crystal's comprehensive plan supports the development of the proposed BLRT Extension project with LRT as the preferred transit technology.

The *City of Brooklyn Park 2030 Comprehensive Plan* (City of Brooklyn Park, 2008) acknowledges that Bottineau Boulevard is currently being studied by Hennepin County and Metro Transit for use as a transit corridor. The plan states that the city encourages a thorough analysis of the corridor to provide the most cost-effective and efficient mode of transit and to construct it in a timely manner. In addition, the city of Brooklyn Park's comprehensive plan recognizes that changes would be necessary to implement the policies and objectives of the plan, including the consideration of transit overlay districts in areas where the city plans to have transit connections in the future, such as Bottineau Boulevard. Additionally, the plan calls for promoting transit-oriented development where possible and encouraging commercial higher-density residential uses along transit routes. The proposed 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.

Hennepin County's *2030 Transportation Systems Plan* (*TSP*) (Hennepin County, 2011c) is one of the four planning elements of the *Hennepin County Comprehensive Plan* (Hennepin County, 2011b), which includes regional plans for wastewater and sewage systems, regional park systems, and surface water management.

The *TSP* states five central transportation goals, and the development of transitways is addressed as a strategy to achieve three of these goals. Goal 3 identifies the need to "provide mobility and choice to meet the diversity of transportation needs, as well as to support health objectives throughout the county." Continuing the progress of environmental documentation for the proposed BLRT Extension project is explicitly listed as a transit strategy to meet this goal, which also includes targets for improving regional accessibility and the number of jobs accessible via transit service. Goals 4 and 5 address increasing spatial efficiency of land use and reducing the region's environmental footprint through increased development along key transit corridors. The *TSP* also lists the dedicated transitway as one of multiple strategies to achieve a 50-percent increase in transit ridership by 2030.

The Hennepin County *Sustainable Development Strategy* (Hennepin County, 2011a) outlines the County's Housing, Community Works, and Transit Departments' approaches to aligning resources and targeting development to "integrate multi-modal transportation, economic development, housing, and community choices." Specifically, the *Strategy* addresses the agency partnerships, funding sources, and innovative problem-solving used to fund and implement transitways; encourage sustainable, mixed-use development; and apply the sustainable development strategy to transit corridors in the planning, engineering, and design phases of the project.

Hennepin County, in partnership with the Bottineau Boulevard Partnership, also prepared the *Bottineau Land Use Planning Framework* (Hennepin County, 2012). Although the *Framework* is unlike the aforementioned local comprehensive planning documents because the county does not have land use planning administrative authority, it clearly states the county and Partnership's priority for increased development along the Bottineau Transitway.

The *Framework* creates a land use planning "to do" list for the corridor, outlines local and best practices regarding land use planning around transit, and specifically emphasizes the Federal Transit Administration's (FTA) non-financial rating methodology, 40 percent of which is based on land use and economic development measures. The *Framework* states that "a strong land use planning process and subsequent adoption of new policies can increase this score and make a transit project more likely to receive federal funding."

The Council's *2040 TPP* envisions further development of the regional transit system, with opportunities for expanding and improving bus service and transit facilities. In addition, the *2040 TPP* (Council, 2015a) shows the Twin Cities region moving toward a regional system of transitways to improve service in high-demand corridors, meet mobility needs, and increase transit system ridership. A *transitway* is defined in the *2040 TPP* as a combination of infrastructure and transit service improvements that allows transit customers to avoid congestion on roads and connect to regional activity centers and boosts the potential for transit-oriented development.

Choice, Place and Opportunity: An Equity Assessment of the Twin Cities (Council, 2014c) is a Fair Housing and Equity Assessment (FHEA) funded through a Region Sustainable Communities Regional Planning Grant by the US Department of Housing and Urban Development (HUD). The FHEA analyzed the region's racial and ethnic diversity, identifying Areas of Concentrated Poverty (ACPs) and High Opportunity areas, describing public investments and policies as well as the jurisdiction's fair housing landscape. This information, gathered through both community engagement and secondary data sources, provided a full picture of regional equity and access to opportunity. HUD's guidance encourages regions to consider types of transportation infrastructure investments (freeways, transit, fixed bus, recreational trails, and other non-vehicular transportation modes) in relation to a region's housing needs assessment, noting that transportation infrastructure plays a significant role in shaping opportunities within regions, from individual circumstances such as areas of health, employment and education, to collective measures such as prosperity, competitiveness and environmental quality. As noted within the Council's FHEA, a key policy direction for the region is to continue to strengthen the transit connections between lower-income residents and opportunities such as jobs and education.

4.1.4 Environmental Consequences

4.1.4.1 Operating-Phase (Long-Term) Impacts

The conclusions from the Draft EIS have not changed since its publication in March 2014. The proposed BLRT Extension project remains consistent with the local and regional planning policies. For the purposes of this Final EIS, the conclusions of the Draft EIS are summarized below.

No-Build Alternative

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

Proposed BLRT Extension Project

Overall, the proposed BLRT Extension project would be compatible with the local comprehensive plans and land use and other planning policies of the cities of Minneapolis, Golden Valley, Robbinsdale, Crystal, and Brooklyn Park. Although the city of Golden Valley's comprehensive plan does not specifically mention the proposed BLRT Extension project, LRT would be compatible with the transit goal and objective of the city's comprehensive plan. The proposed BLRT Extension project would also be compatible with regional land use planning policies.

4.1.4.2 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, there would be no construction-related land use compatibility issues with this alternative.

Proposed BLRT Extension Project

Construction-phase impacts generally include:

- Traffic detours resulting in traffic increases through residential neighborhoods
- Noise, dust, and visual impacts due to construction
- Temporary effects on land use due to staging areas

These impacts would not pose compatibility issues with comprehensive plans, land use plans, or other planning policy documents. Negative impacts such as those listed above are addressed under other topic areas (see **Section 3.3 – Vehicular Traffic**, **Section 4.2 – Community Facilities/ Community Character and Cohesion**, **Section 4.5 – Visual/Aesthetics**, **Section 5.6 – Noise**, **and Section 5.10 – Air Quality/Greenhouse Gas Emissions**).

4.1.5 Avoidance, Minimization, and/or Mitigation Measures

Because the proposed BLRT Extension project will be compatible with land use planning policy documents, no avoidance, minimization, or mitigation measures will be needed.

4.2 Community Facilities/Community Character and Cohesion

The information in this section is based on the information provided in the proposed BLRT Extension project's *Transportation Technical Report* (Council, 2015d), *Noise and Vibration Technical Report* (Council, 2016d), and *Visual Quality Technical Report* (Council, 2016b). For information on

coordination regarding community facilities, see **Chapter 8 – Amended Draft Section 4(f) and 6(f) Evaluation**.

4.2.1 Regulatory Context and Methodology

No specific laws or executive orders regulate how impacts to community character, cohesion, and community facilities resulting from transit projects are evaluated. NEPA (41 USC § 4321) and MEPA (2007 c 116D) form the general basis of consideration of these social impacts. The Council obtained community data from comprehensive plans for the cities of Minneapolis, Golden Valley, Robbinsdale, Crystal, and Brooklyn Park. The Council reviewed and evaluated the information from the technical reports cited above to assess direct effects on community character and facilities.

Community facilities near the proposed BLRT Extension project include schools, colleges, libraries, community centers, parks, medical facilities, places of worship, funeral chapels, police and fire departments, and a food bank. The Council assumed that community facilities and park resources more than 300 feet from the proposed BLRT Extension project alignment would experience no direct impacts. This distance was used because 300 feet is the unobstructed screening distance for FTA noise impact assessments and would allow identification of noise impacts to community facilities and park resources.

The analysis of long-term and short-term direct neighborhood and community effects is based on the following three criteria, each of which uses a variety of measures as indicators of effect: changes to community facilities access, changes to community character, and changes to community cohesion. **Table 4.2-1** summarizes the measures used in this analysis for each of the neighborhood and community effects criteria. The evaluation measures are based on the findings in this Final EIS for the following environmental categories: transportation (**Chapter 3**), land use plan compatibility (**Section 4.1**), displacement of residents and businesses (**Section 4.3**), visual quality and aesthetics (**Section 4.5**), noise (**Section 5.6**), and vibration (**Section 5.7**).

Table 4.2-1. Neighborhood and Community Impacts Criteria and Measures

Criteria	Measure[1]
Community Facilities	■ Physical property acquisition and/or displacement of the facility ■ Noise and vibration impacts to community facilities ■ Changes to roads and transit service that can affect transit access to community facilities
Community Character	■ Noise and vibration impacts to residences and business within a neighborhood ■ Visual changes within a neighborhood; property conversion (that is, acquisitions of existing public or private property and its conversion to a publicly owned transportation or related facility) ■ New at-grade light rail crossings of roads and bicycle/pedestrian facilities
Community Cohesion	■ Introduction of new physical barriers ■ Changes to the local road network ■ Changes to the bicycle and pedestrian network, and changes to parking

[1] All measures are derived from findings in this Final EIS for the respective environmental category. All changes are compared to the No-Build Alternative.

In addition to being evaluated as community facilities, parks are also subject to evaluation in the context of Section 4(f) of the Department of Transportation Act of 1966, which governs the use of publicly owned park and recreation lands open to the public, government-owned wildlife lands, and historic resources. In addition to the protection provided by Section 4(f), Section 6(f) of the Land and Water Conservation Fund Act of 1965 (LWCF) stipulates that any land or facility planned, developed, or improved with LWCF funds cannot be converted to uses other than parks, recreation, or open space unless land of at least equal fair market value and reasonably equivalent usefulness is provided. Section 4(f) and Section 6(f) resources are specifically addressed in **Chapter 8 – Amended Draft Section 4(f) and 6(f) Evaluation**.

4.2.2 Study Area

For operating-phase (long-term) impacts, the study area for community facilities/community character and cohesion is defined as the area within a half-mile of the proposed transit stations and one-fourth of a mile along the light rail alignment not in the station areas. A half-mile radius is commonly used by transit planners to represent the distance that transit users are willing to walk to access an LRT station. For areas along the proposed BLRT Extension project corridor that are not within a half-mile radius of a transit station, the Council evaluated community character and facilities within one-fourth of a mile of the transitway alignments. As indicated in **Section 4.2.1**, no direct impacts were assumed by the Council to occur beyond 300 feet of the proposed BLRT Extension project alignment.

4.2.3 Affected Environment

This section describes each of the neighborhoods and communities in the study area, including a summary of the general characteristics of each community (that is, city) and a description of existing community facilities.[1] This section includes a description of the existing community character (for example, development patterns, important physical features, and residential neighborhoods) as well as existing major community connections and barriers (for example, highways, freight rail alignments, and trails).

4.2.3.1 City of Minneapolis

Within the City of Minneapolis, the proposed BLRT Extension project would pass through five officially designated neighborhoods: North Loop, Sumner-Glenwood, Near-North, Harrison, and Willard-Hay. The North Loop is a mixed-use downtown neighborhood. The remaining neighborhoods are primarily urban in character with a grid street pattern and residential housing in a variety of densities along the proposed BLRT Extension project alignment.

Table 4.2-2 describes the existing community character (for example, development patterns, important physical features, and residential neighborhoods), and community connections and

[1] For this analysis, communities are defined as the cities within which the neighborhood and community study area lies (that is, the cities of Minneapolis, Golden Valley, Robbinsdale, Crystal, and Brooklyn Park). Community facilities include land and building uses that are frequently used by the public, such as schools, colleges, libraries, community centers, medical facilities, places of worship, funeral chapels, and police and fire departments. Community facilities can be either publicly or privately owned.

barriers in the study area in the City of Minneapolis, by proposed light rail station areas. **Table 4.2-3** lists the existing community facilities in the study area in the City of Minneapolis, and **Table 4.2-4** lists the park resources. Both community facilities and parks are mapped in **Figure 4.2-1**.

Table 4.2-2. Community Character – City of Minneapolis[1]

Neighborhood[2]	Station Area	Community Character[3]	Community Connections and Barriers
North Loop	Van White Boulevard Station	■ The neighborhood has experienced redevelopment of warehouse buildings into apartments, condominiums, lofts, offices, and artist studio spaces. ■ The Minneapolis Farmers Market is located in this neighborhood.	■ I-94 borders the neighborhood along its western border, and Interstate Highway 394 (I-394) borders the neighborhood along its southern and most of its eastern border; both highways present connectivity challenges. ■ Olson Memorial Highway and Glenwood Avenue are also east-west connections through the neighborhood. ■ The Cedar Lake Trail provides an east-west pedestrian and bicyclist connection through the southern half of the neighborhood.
Sumner-Glenwood	Van White Boulevard Station	■ Olson Memorial Highway bisects the neighborhood, with I-94 serving as the eastern boundary. ■ North of Olson Memorial Highway, the neighborhood is made up of predominantly single-family detached and low-rise apartment buildings. ■ A regional commercial use, International Market Square, is located along the neighbor-hood's southern border. ■ A charter school, vocational school, and public library are located on Olson Memorial Highway.	■ I-94 is a north-south connection along the eastern border of the neighborhood, but it limits connectivity to and from the neighborhood. ■ Van White Memorial Blvd, Bryant Avenue N, and West Lyndale Avenue N provide north-south connections through the neighborhood. ■ Olson Memorial Highway is an east-west connection that bisects the neighborhood and limits connectivity. ■ Glenwood Avenue is an east-west connection along the eastern border of the neighborhood and provides many access points to the neighborhood.
Near-North	Van White Boulevard and Penn Avenue Stations	■ Richly diverse, predominantly residential neighborhood with acres of beautiful parkland and easy access to growing retail opportunities along West Broadway Avenue (County State-Aid Highway [CSAH] 103).	■ Olson Memorial Highway is an east-west connection that forms the southern boundary of this neighborhood.

Table 4.2-2. Community Character – City of Minneapolis[1]

Neighborhood[2]	Station Area	Community Character[3]	Community Connections and Barriers
Harrison	Van White Boulevard and Penn Avenue Stations	■ A mix of land uses including residential, neighborhood commercial, and industrial. ■ The neighborhood is bordered by Theodore Wirth Regional Park, Olson Memorial Highway, I-394, and I-94. ■ Features include Bassett Creek Park along Bassett Creek.	■ Olson Memorial Highway is an east-west connection, but it limits north-south connectivity within the neighborhood. ■ Glenwood Avenue is the major east-west connection through the neighborhood and provides connections throughout the neighborhood. ■ I-94 is a north-south connection that also limits connectivity to and from the neighborhood. ■ Bassett Creek Trail and the Luce Line Extension provide several north-south and east-west pedestrian and bicyclist connections within the neighborhood.
Willard-Hay	Penn Avenue Station	■ Richly diverse, predominantly residential neighborhood with acres of beautiful parkland and easy access to growing retail opportunities along West Broadway Avenue.	■ Olson Memorial Highway is an east-west connection that forms the southern boundary of this neighborhood.

[1] Within the neighborhood and community study area.
[2] Formally designated by the city of Minneapolis.
[3] Applies to the entire neighborhood and not just the study area.

Table 4.2-3. Community Facilities – City of Minneapolis[1]

Community Facility	Neighborhood/ Station Area	Distance[2]	Address	Facility Type
Sharing and Caring Hands	North Loop/ Van White	< 300 feet	525 7th Street North	Community service center
Greater Lake Country Food Bank	North Loop/ Van White	> 300 feet	554 8th Avenue North	Food bank
Fire Station 4	North Loop/ Van White	> 300 feet	1101 6th Street North	Fire station
Phyllis Wheatley Community Center	Sumner-Glenwood/ Van White	> 300 feet	1301 10th Avenue North	Community center
Heritage Park Senior Services Center	Sumner-Glenwood/ Van White	> 300 feet	1015 4th Avenue North	Senior center
Bethune Community School	Near-North/ Van White	> 300 feet	919 Emerson Avenue North	School
Glenwood Lyndale Community Center	Sumner-Glenwood/ Van White	< 300 feet	555 Girard Terrace	Community center
Sumner Library	Near-North/ Van White	< 300 feet	611 Van White Memorial Boulevard	Library
Harvest Preparatory School	Near-North/ Van White	< 300 feet	1300 Olson Memorial Highway	School
Wayman AME Church	Near-North/ Van White	< 300 feet	1221 7th Avenue North	Place of worship
Lao Assistance Center	Harrison/Van White/Penn Avenue	> 300 feet	503 Irving Avenue North	Community service center
Jehovah's Witnesses	Near-North/Van White/Penn Avenue	> 300 feet	701 Humboldt Avenue North	Place of worship
Fire Station 16	Harrison/Van White/Penn Avenue	> 300 feet	1600 Glenwood Avenue	Fire station
Zion Baptist Church	Near-North/Van White/Penn Avenue	< 300 feet	621 Elwood Avenue North	Place of worship
La Creche Early Childhood Center	Near-North/Van White/Penn Avenue	< 300 feet	1800 Olson Memorial Highway	Child care
Redeemer Lutheran Church	Harrison/ Penn Avenue	> 300 feet	1800 Glenwood Avenue	Place of worship
Joint Heirs with Christ Faith	Harrison/ Penn Avenue	> 300 feet	500 Newton Avenue North	Place of worship
Minneapolis Central Church	Harrison/ Penn Avenue	> 300 feet	1922 4th Avenue North	Place of worship
United Christian Ministries	Near-North/ Penn Avenue	> 300 feet	1919 8th Avenue North	Religious organization
Bryn Mawr Health Care Center	Harrison/ Penn Avenue	> 300 feet	275 Penn Avenue North	Medical facility

[1] Within the neighborhood and community study area.
[2] Indicates distance from the proposed BLRT Extension project alignment.

Table 4.2-4. Park Resources – City of Minneapolis

Park	Acres	Neighborhood/ Station Area	Distance[1]	Facilities
Sumner Field	4.8	Sumner-Glenwood/ Van White Boulevard	> 300 feet	Walking trail
Humboldt Triangle Park	0.3	Near-North/Van White Boulevard/ Penn Avenue	< 300 feet	Picnic tables
Mary McLeod Bethune Park	12.2	Near-North/Van White Boulevard/ Penn Avenue	> 300 feet	Basketball court, picnic area, play field, playground, wading pool
Lovell Square	1.3	Near-North/Van White Boulevard/ Penn Avenue	> 300 feet	Walking path, picnic area, tot-lot playground
Barnes Place	0.6	Near-North/Van White Boulevard/ Penn Avenue	< 300 feet	Green space
Harrison Park	6.9	Harrison/Van White Boulevard/Penn Avenue	< 300 feet	Baseball field, basketball court, picnic area, playground, soccer field, softball field, tennis court, wading pool
Theodore Wirth Regional Park	759	Penn Avenue	Adjacent	Fishing pier, boat launch, volleyball courts, playground, picnic area/pavilion, snowboard park, trails, golf courses and clubhouse, Eloise Butler Wildflower Garden, Quaking Bog, cross-country skiing
Farwell Park	1.1	Willard-Hay/Penn Avenue	> 300 feet	Picnic area, playground

[1] Indicates distance from the proposed BLRT Extension project alignment.

Figure 4.2-1. Officially Recognized Neighborhoods and Primary Community Features along the Proposed BLRT Extension Project in the City of Minneapolis

4.2.3.2 City of Golden Valley

The City of Golden Valley does not have any officially designated neighborhoods within its boundaries. The proposed BLRT Extension project would travel through the city parallel to the BNSF rail corridor from Olson Memorial Highway to 34th Avenue. **Table 4.2-5** describes the existing community character (for example, development patterns, important physical features, and residential neighborhoods), and community connections and barriers in the study area in the City of Golden Valley, by proposed light rail station area. **Table 4.2-6** lists the existing community facilities in the study area in the City of Golden Valley, and **Table 4.2-7** lists the park resources. Both community facilities and park resources are mapped in **Figure 4.2-2**.

Table 4.2-5. Community Character – City of Golden Valley[1]

Station Area	Community Character	Community Connections and Barriers
Plymouth Avenue Station	■ Land uses consist generally of parkland to the west and residential neighborhoods to the east. ■ Residential areas are cohesive among themselves but not across the BNSF rail corridor or parkland, and some have limited vehicular access to the parks.	■ Theodore Wirth Parkway, part of the Grand Rounds Scenic Byway, provides an important connection to Golden Valley Road and connects parkland to nearby neighborhoods. ■ BNSF rail corridor presents a barrier between the residential neighborhoods and park land. ■ Cross streets are limited to Golden Valley Road, Theodore Wirth Parkway, Plymouth Avenue, and Olson Memorial Highway, all of which pass over the existing BNSF rail corridor on bridge structures. ■ Grade-separated roadway crossings provide pedestrians and bicyclists with the only formal crossings of the rail corridor. Residential neighborhoods in the City of Golden Valley have a suburban character with curvilinear streets.
Golden Valley Road Station	■ Land uses consist generally of parkland to the west and residential neighborhoods to the east. ■ Residential areas are cohesive among themselves but not across the BNSF rail corridor or parkland, and some have limited vehicular access to the parks.	■ Theodore Wirth Parkway, part of the Grand Rounds Scenic Byway, provides an important connection to Golden Valley Road and connects parkland to nearby neighborhoods. ■ BNSF rail corridor presents a barrier between the residential neighborhoods and park land. ■ Cross streets are limited to Golden Valley Road, Theodore Wirth Parkway, Plymouth Avenue, and Olson Memorial Highway, all of which pass over the existing BNSF rail corridor on bridge structures. ■ Grade-separated roadway crossings provide pedestrians and bicyclists with the only formal crossings of the rail corridor. Residential neighborhoods in the City of Golden Valley have a suburban character with curvilinear streets

[1] Within the neighborhood and community study area.

Table 4.2-6. Community Facilities – City of Golden Valley[1]

Community Facility	Station Area	Distance[2]	Location	Facility Type
Golden Valley Public Safety Fire Station #3	Golden Valley Road Station	> 300 feet	Fire Station #3 Driveway	Fire station
St. Margaret Mary Catholic Church and Loveworks Academy	Golden Valley Road Station	> 300 feet	2225 Zenith Avenue	Place of worship

[1] Within the neighborhood and community study area.
[2] Indicates distance from the proposed BLRT Extension project alignment.

Table 4.2-7. Park Resources – City of Golden Valley

Park	Acres	Station Area	Distance[1]	Facilities
Theodore Wirth Regional Park	759	Plymouth Avenue/Golden Valley Road Stations	Adjacent	Fishing pier, boat launch, volleyball courts, playground, picnic area/pavilion, snowboard park, trails, golf courses and clubhouse, Eloise Butler Wildflower Garden, Quaking Bog, cross-country skiing
Sweeney Lake Park	0.9	Plymouth Avenue/Golden Valley Road Stations	> 300 feet	Dock, canoe launch, sun shelter
Valley View Park	5.5	Golden Valley Road Station	> 300 feet	Picnic areas, open fields, walking and cycling paths
Glenview Terrace Park	5	Golden Valley Road Station	Adjacent	Play equipment, walkways/trails, tennis court
Sochacki Park: Rice Lake Management Unit	9	Golden Valley Road Station	> 300 feet	Trail, wooden boardwalk, overlook across scenic pond
Sochacki Park: Mary Hills Management Unit	15.7	Golden Valley Road Station	Adjacent	Trails, picnic areas, benches

[1] Indicates distance from proposed BLRT Extension project alignment.

Figure 4.2-2. Primary Physical and Community Features along the Proposed BLRT Extension Project in the City of Golden Valley

4.2.3.3 City of Robbinsdale

The City of Robbinsdale does not have any officially designated neighborhoods within its boundaries. The proposed BLRT Extension project would travel through the city parallel to the BNSF rail corridor from about 34th Avenue to 26th Avenue. **Table 4.2-8** describes the existing community character (for example, development patterns, important physical features, and residential neighborhoods), and community connections and barriers in the study area in the City of Robbinsdale, by proposed light rail station area. **Table 4.2-9** lists the existing community facilities in the study area in the City of Robbinsdale, and **Table 4.2-10** lists the park resources. Both community facilities and park resources are mapped in **Figure 4.2-3**.

Table 4.2-8. Community Character – City of Robbinsdale[1]

Station Area	Community Character	Community Connections and Barriers
Robbinsdale Station	■ Parkland and residential neighborhoods are located on both sides of the proposed BLRT Extension project alignment. ■ Residential neighborhoods have a suburban residential character with a grid street pattern. ■ Residential neighborhoods are cohesive within themselves but are separated by major roads (Trunk Highway [TH] 100, Bottineau Boulevard) and the BNSF rail corridor.	■ Cross-community connections are provided by 36th Avenue, 39½ Avenue, and 42nd Avenue. ■ Major roads (TH 100, Bottineau Boulevard) and the BNSF rail corridor present a barrier between the residential neighborhoods. ■ The grid street pattern is somewhat interrupted by several lakes within the city boundaries. ■ The lakes also present natural barriers that influence access and connectivity within the city.

[1] Within the neighborhood and community study area.

Table 4.2-9. Community Facilities – City of Robbinsdale[1]

Community Facility	Station Area	Distance[2]	Location	Facility Type
Bethel World Outreach	Robbinsdale Station	< 300 feet	3900 Hubbard Avenue North	Place of worship
Elim Lutheran Church	Robbinsdale Station	> 300 feet	3978 West Broadway Avenue	Place of worship
Sacred Heart Catholic Church and School	Robbinsdale Station	> 300 feet	4087 West Broadway Avenue	Place of worship/ school
Robbinsdale Police Department	Robbinsdale Station	< 300 feet	4101 Hubbard Avenue North	Police department
Redeemer Lutheran Church	Robbinsdale Station	> 300 feet	4201 Regent Avenue North	Place of worship

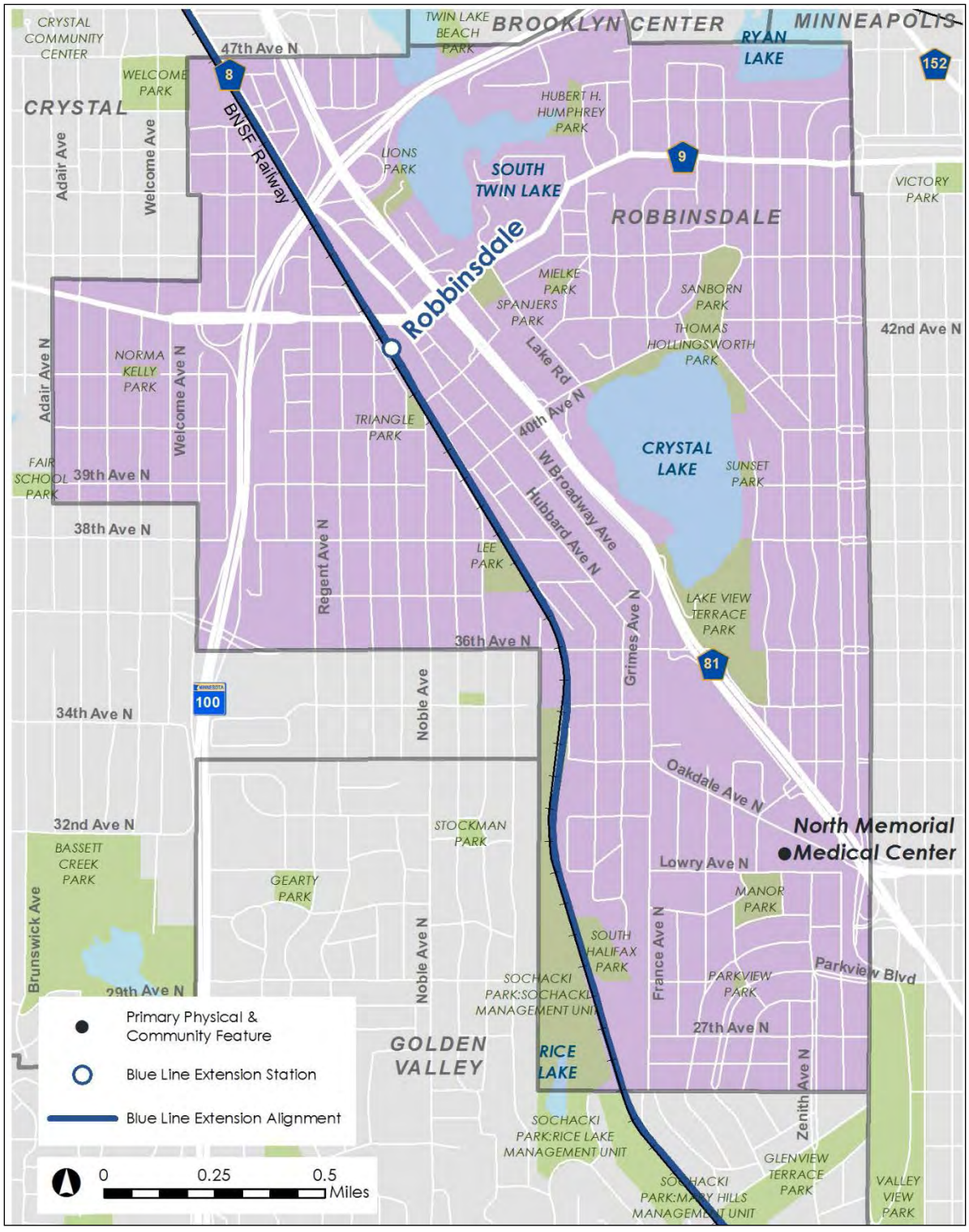
[1] Within the neighborhood and community study area.
[2] Indicates distance from the proposed BLRT Extension project alignment.

Table 4.2-10. Park Resources – City of Robbinsdale

Park	Acres	Station Area	Distance[1]	Facilities
Parkview Park	0.3	Golden Valley Road Station	> 300 feet	Playground equipment, picnic area
Sochacki Park: Sochacki Management Unit	37.4	Golden Valley Road Station	Adjacent	Picnic area, picnic pavilion, paths/trails
South Halifax Park	4	Golden Valley Road Station	Adjacent	Playground equipment, tot equipment, half-court basketball, paths/trails
Lakeview Terrace Park	30	Robbinsdale Station	> 300 feet	Ball fields, playground equipment, tot equipment, picnic area, paths/trails, tennis courts, concession stand, boat access
Lee Park	6.7	Robbinsdale Station	Adjacent	Ball field, playground equipment, tot equipment, picnic area, picnic pavilion, paths/trails,
Thomas Hollingsworth Park	4.4	Robbinsdale Station	> 300 feet	Picnic area, path/trail, fishing dock
Triangle Park	1	Robbinsdale Station	Adjacent	Ball field, playground equipment, picnic area, wading pool
Mielke Park	0.7	Robbinsdale Station	> 300 feet	Picnic area
Spanjers Park	2.5	Robbinsdale Station	> 300 feet	Ball field, picnic area, paths/trails

[1] Indicates distance from the proposed BLRT Extension project alignment.

Figure 4.2-3. Primary Physical and Community Features along the Proposed BLRT Extension Project in the City of Robbinsdale



4.2.3.4 City of Crystal

The City of Crystal comprises 14 officially recognized neighborhoods. The six neighborhoods that would be adjacent to the proposed BLRT Extension project are Welcome Park, Cavanagh Oaks, Twin Oaks, Becker, Lions Park, and Skyway. **Table 4.2-11** describes the existing community character (for example, development patterns, important physical features, and residential neighborhoods), and community connections and barriers in the study area in the City of Crystal, by proposed light rail station area. **Table 4.2-12** lists the existing community facilities in the study area in the City of Crystal, and **Table 4.2-13** lists the park resources. Both community facilities and parks are mapped in **Figure 4.2-4**.

Table 4.2-11. Community Character – City of Crystal[1]

Neighborhood[2]	Station Area	Community Character[3]	Community Connections and Barriers
Welcome Park	Robbinsdale and Bass Lake Road Stations	■ The neighborhood is generally residential but includes mix of residential, neighborhood commercial, and industrial land uses.	■ Canadian Pacific Railway (CP) (east-west orientation) and BNSF (north-south orientation) rail corridors present a barrier for movement between neighborhoods.
Cavanagh Oaks	Bass Lake Road Station	■ The neighborhood is generally residential but includes mix of residential, neighborhood commercial, and industrial land uses.	■ CP (east-west orientation) and BNSF (north-south orientation) rail corridors present a barrier for movement between neighborhoods ■ Bottineau Boulevard is a north-south connection that also limits connectivity in the neighborhood.
Twin Oaks	Bass Lake Road Station	■ The neighborhood is generally residential but includes mix of residential, neighborhood commercial, and industrial land uses. ■ Crystal Airport is located just north of this neighborhood. ■ Bottineau Boulevard is a north-south connection. ■ Bass Lake Road is an east-west connection.	■ CP (east-west orientation) and BNSF (north-south orientation) rail corridors present a barrier for movement between neighbor-hoods. ■ Both Bottineau Boulevard and Bass Lake Road limit connectivity between neighborhoods.
Becker	Bass Lake Road Station	■ The neighborhood is generally residential but includes mix of residential, neighborhood commercial (Crystal Shopping Center), and industrial land uses. ■ Bottineau Boulevard is a north-south connection. ■ Bass Lake Road is an east-west connection	■ CP (east-west orientation) and BNSF (north-south orientation) rail corridors present a barrier for movement between neighbor-hoods. ■ Both Bottineau Boulevard and Bass Lake Road limit connectivity between neighborhoods.

Table 4.2-11. Community Character – City of Crystal[1]

Neighborhood[2]	Station Area	Community Character[3]	Community Connections and Barriers
Lions Park	Bass Lake Road Station	■ The neighborhood is generally residential but includes mix of residential, neighborhood commercial, and industrial land uses. ■ Bottineau Boulevard is a north-south connection. ■ Bass Lake Road is an east-west connection.	■ BNSF rail corridor (north-south orientation) presents a barrier for movement between neighbor-hoods. ■ Both Bottineau Boulevard and Bass Lake Road limit connectivity between neighborhoods.
Skyway	Bass Lake Road Station	■ The neighborhood is generally residential but includes mix of residential, neighborhood commercial, and industrial land uses. ■ Bottineau Boulevard is a north-south connection. ■ Bass Lake Road is an east-west connection. ■ Crystal Airport is located in this neighborhood.	■ BNSF rail corridor (north-south orientation) presents a barrier for movement between neighbor-hoods. ■ Both Bottineau Boulevard and Bass Lake Road limit connectivity between neighborhoods.

[1] Within the neighborhood and community study area.
[2] Formally designated by the city of Minneapolis.
[3] Applies to the entire neighborhood and not just the study area.

Table 4.2-12. Community Facilities – City of Crystal[1]

Community Facility	Neighborhood/ Station Area	Distance[2]	Location	Facility Type
Doug Stanton Ministries	Welcome Park/ Bass Lake Road Station	> 300 feet	4947 West Broadway Avenue	Place of worship
Washburn-McReavy Funeral Chapel	Welcome Park/ Bass Lake Road Station	> 300 feet	5125 West Broadway Avenue	Funeral chapel
Conquerors Christian Center	Becker/Bass Lake Road Station	< 300 feet	5250 Hanson Court	Place of worship
Crystal Medical Center	Skyway/Bass Lake Road Station	< 300 feet	5706 Lakeland Avenue	Medical facility

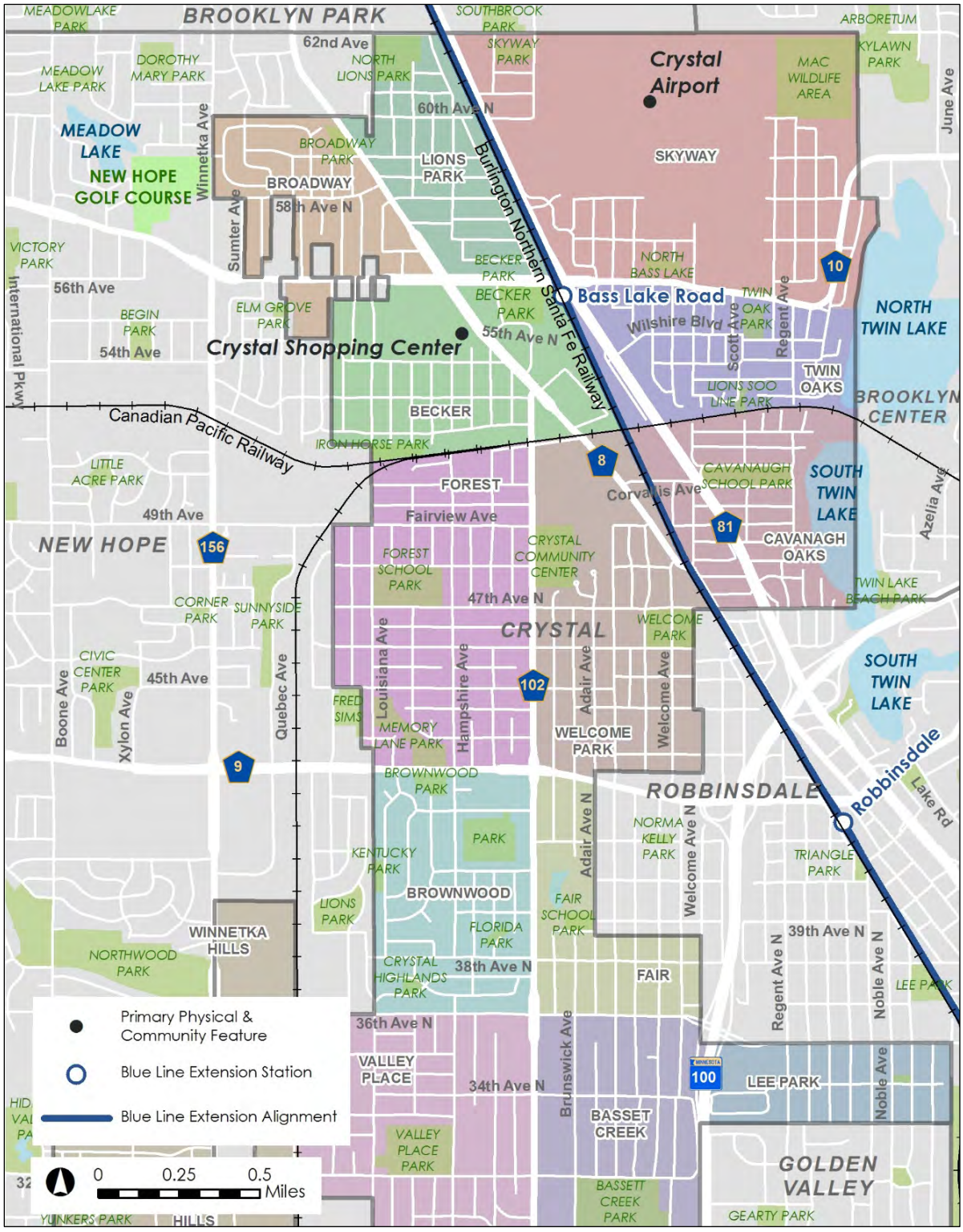
[1] Within the neighborhood and community study area.
[2] Indicates distance from the proposed BLRT Extension project alignment.

Table 4.2-13. Park Resources – City of Crystal

Park	Acres	Neighborhood/ Station Area	Distance[1]	Facilities
Welcome Park	9.5	Welcome Park/Bass Lake Road Station	< 300 feet	Basketball court, skating rink, hockey rink, warming house, tennis courts, baseball fields, playground, soccer field
Cavanagh Park	4.8	Cavanagh Oaks/Bass Lake Road Station	> 300 feet	Playground, picnic shelter, softball fields
Lions Soo Line Park	0.5	Twin Oak/Bass Lake Road Station	> 300 feet	Playground
Becker Park	12.4	Becker/Bass Lake Road Station	Adjacent	Basketball court, playground, tennis courts, softball fields, playground, trails, picnic tables, horseshoe courts, activity center
North Bass Lake Park	1.5	Skyway/Bass Lake Road Station	> 300 feet	Basketball court, playground, picnic shelter
Skyway Park	3.5	Skyway/Bass Lake Road Station	> 300 feet	Half-court basketball, playground, softball field, picnic shelter
North Lions Park	12	Lions Park/Bass Lake Road Station	< 300 feet	Basketball court, tennis courts, warming house, playground, trail, barbeque grills, volleyball courts, softball and baseball fields

[1] Indicates distance from the proposed BLRT Extension project alignment.

Figure 4.2-4. Officially Recognized Neighborhoods and Primary Physical and Community Features along the Proposed BLRT Extension Project in the City of Crystal



4.2.3.5 City of Brooklyn Park

The City of Brooklyn Park does not have any officially designated neighborhoods within its boundaries. Neighborhoods that would be east and west of the proposed BLRT Extension project are separate and cohesive in relation to themselves but not across major roads. **Table 4.2-14** describes the existing community character (for example, development patterns, important physical features, and residential neighborhoods), and community connections and barriers in the study area in the City of Brooklyn Park, by proposed light rail station area. **Table 4.2-15** lists the existing community facilities in the study area in the City of Brooklyn Park, and **Table 4.2-16** lists the park resources. Both community facilities and park resources are mapped in **Figure 4.2-5**.

Table 4.2-14. Community Character – City of Brooklyn Park[1]

Station Area	Community Character	Community Connections and Barriers
63rd Avenue Station	■ Neighborhoods that would be east and west of the proposed BLRT Extension project are separate and cohesive in relation to themselves but not across major roads. ■ Neighborhoods have a low- to medium-density suburban character.	■ 63rd Avenue is an important cross-community connector that links neighborhoods. ■ BNSF rail corridor and Bottineau Boulevard present barriers between the residential neighborhoods. ■ I-94 presents a barrier to north-south travel within the city.
Brooklyn Boulevard Station	■ Neighborhoods that would be east and west of the proposed BLRT Extension project are separate and cohesive in relation to themselves but not across major roads. ■ Neighborhoods have a low- to medium-density suburban character.	■ West Broadway Avenue (north-south) and Brooklyn Boulevard (east-west) serve as important cross-community connectors that link neighborhoods. ■ I-94 presents a barrier to north-south travel within the city.
85th Avenue Station	■ Neighborhoods have a low- to medium-density suburban character with higher-density town homes in the area of 85th Avenue. ■ North Hennepin Community College and a future Hennepin County library (currently under construction) are near the location of the proposed 85th Avenue Station. ■ The existing neighborhoods have winding internal circulation streets and generally would not face the proposed BLRT Extension project on West Broadway Avenue.	■ West Broadway Avenue (north-south) and 85th Avenue (east-west) serve as important cross-community connectors that link neighborhoods. ■ I-94 presents a barrier to north-south travel within the city.
93rd Avenue Station	■ Neighborhoods have a low- to medium-density suburban character. ■ The existing neighborhoods have winding internal circulation streets and generally would not face the proposed BLRT Extension project on West Broadway Avenue.	■ West Broadway Avenue (north-south) and 93rd Avenue (east-west) serve as important cross-community connectors that link neighborhoods. ■ I-94 presents a barrier to north-south travel within the city.

Table 4.2-14. Community Character – City of Brooklyn Park[1]

Station Area	Community Character	Community Connections and Barriers
Oak Grove Parkway Station	■ The existing area near the proposed BLRT Extension project north of TH 610 is currently undeveloped. ■ Future development, including commercial uses, is planned for the area north of TH 610 along the proposed BLRT Extension project near the Oak Grove Parkway Station.	■ TH 610 separates the future development area from the neighborhoods to the south.

[1] Within the neighborhood and community study area.

Table 4.2-15. Community Facilities – City of Brooklyn Park[1]

Community Facility	Station Area	Distance[2]	Location	Facility Type
Grace Lutheran Church	63rd Avenue/ Brooklyn Boulevard Stations	> 300 feet	6810 Winnetka Avenue North	Fire station
Parenting with Purpose	Brooklyn Boulevard Station	> 300 feet	7111 West Broadway Avenue	Place of worship
Brooklyn–Crystal Cemetery	Brooklyn Boulevard Station	> 300 feet	Across from 7217 West Broadway Avenue	Cemetery
Prince of Peace Lutheran Church	Brooklyn Boulevard Station	> 300 feet	7217 West Broadway Avenue	Place of worship
Brooklyn Park Evangelical Free Church	Brooklyn Boulevard Station	< 300 feet	7849 West Broadway Avenue	Place of worship
North Hennepin Community College	85th Avenue Station	< 300 feet	7411 85th Avenue North	College
Future Hennepin County Library	85th Avenue Station	> 300 feet	85th Avenue and West Broadway Avenue	Public library
Step by Step Montessori School	85th Avenue Station	> 300 feet	8401 West Broadway Avenue	School/child care
Berean Baptist Church	85th Avenue/ 93rd Avenue Stations	< 300 feet	8825 West Broadway Avenue	Place of worship

[1] Within the neighborhood and community study area.
[2] Indicates distance from the proposed BLRT Extension project alignment.

Table 4.2-16. Park Resources – City of Brooklyn Park

Park	Acres	Station Area	Distance[1]	Facilities
Southbrook Park	9	63rd Avenue Station	> 300 feet	Picnic area, path and trail, nature area
Edgewood Park	3.6	63rd Avenue Station	> 300 feet	Playground
Lakeland Park	10.2	63rd Avenue Station	> 300 feet	Ball fields, playground, skating and hockey rinks, picnic pavilion, park activity building, tennis, basketball, game courts
Streifel Park	1.3	Brooklyn Boulevard Station	> 300 feet	Ball field, playground
Park Lawn Park	5	Brooklyn Boulevard Station	> 300 feet	Playground, basketball, path and trail
Unknown park	10.9	Brooklyn Boulevard/ 85th Avenue Stations	Adjacent	Trail
Tessman Acres Park	6.2	Brooklyn Boulevard/ 85th Avenue Stations	> 300 feet	Playground, picnic area, path and trail
North Hennepin Community College Trail	—	85th Avenue Station	Adjacent	Trail
North Hennepin Community College Ball Fields	5.8	85th Avenue Station	Adjacent	Ball fields
College Park	6	85th Avenue Station	Adjacent	Playground, skate rink, picnic pavilion, park activity building
Brooklyn Acres	5.6	93rd Avenue Station	> 300 feet	Playground, picnic area, path and trail
Rush Creek Regional Trail	5.22	Oak Grove Parkway Station	Adjacent	Paved and turf trail

[1] Indicates distance from the proposed BLRT Extension project alignment.

Figure 4.2-5. Primary Physical and Community Features along the Proposed BLRT Extension Project in the City of Brooklyn Park

4.2.4 Environmental Consequences

This section identifies the long-term and short-term direct impacts to neighborhoods and communities from the proposed BLRT Extension project. The Council's evaluation of neighborhood and community effects includes an assessment of changes to community facilities access, community character, and community cohesion. This analysis considers evaluation measures that are based on the analysis for other environmental categories documented in this Final EIS. Refer to these other sections of this Final EIS for additional information regarding transportation (**Chapter 3**), land use plan compatibility (**Section 4.1**), displacements of residences and businesses (**Section 4.3**), 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

No-Build Alternative

There would be no impacts to community facilities, character, or cohesiveness within communities from the No-Build Alternative.

Proposed BLRT Extension Project

This section summarizes the direct impacts of the proposed BLRT Extension project on community facilities, community character, and community cohesion. The analysis in this section is organized by community (that is, the cities of Minneapolis, Golden Valley, Robbinsdale, Crystal, and Brooklyn Park) from south to north.

City of Minneapolis

As shown in **Table 4.2-17** and summarized below, there would be no adverse impacts to community facilities, community character, or community cohesion in the City of Minneapolis from the proposed BLRT Extension project.

- **Community Facilities.** There are 20 community facilities and eight parks in the study area in the City of Minneapolis (see **Tables 4.2-2, 4.2-3, and 4.2-4 and Figure 4.2-1**). Based on measures described in **Table 4.2-17**, the proposed BLRT Extension project would not disrupt the function of community facilities or parks along the alignment in the City of Minneapolis.
- **Community Character.** Neutral impacts to visual character are anticipated as a result of station and TPSS construction, since these features would be designed to complement their surroundings, with variations in design that are consistent with the context of each station and TPSS location. However, the Council anticipates that station features would also include passenger information displays, lighting, and security systems, which could alter the visual quality and character of the view for sensitive viewer groups. Visual impacts to the Olson Memorial Highway center median would be adverse. Also, partial acquisition of some residential, commercial, and industrial parcels is anticipated. Specifically, the proposed BLRT Extension project would require partial acquisition from 18 residential parcels (0.2 acre), two commercial

parcels (0.08 acre),[2] and one industrial parcel (1.83 acres). These acquisitions would not result in displacements nor would they change the overall land use of the surrounding areas.

- These changes would be confined to limited areas and would not adversely impact the overall community character in the City of Minneapolis portion of the study area.
- **Community Cohesion.** Although changes in the local roadway, pedestrian, and bicycle networks would occur, existing roadway and sidewalk/trail connectivity and access would be maintained or improved, and there would be no adverse impacts to community cohesion in the study area in the City of Minneapolis.

Table 4.2-17. Impacts to Community Facilities, Community Character, and Community Cohesion – City of Minneapolis

Neighborhood/ Station Area	Impact Category	Long-term Effects by Impact Criteria/Measure
North Loop/ Van White Boulevard Station	Community Facilities	■ *Property acquisition and displacement:* None. ■ *Noise and vibration impacts*: No adverse impacts after mitigation. ■ *Changes in roadway access:* The proposed BLRT Extension project would be in-street-running in Olson Memorial Highway. Modification of 7th Street/Olson Memorial Highway would reduce approach lanes to reduce overall pedestrian and bicyclist crossing lengths. The proposed BLRT Extension project would reduce the number of through lanes over I-94. Crossings (both vehicular and pedestrian) would be restricted to traffic-signal-controlled intersections. ■ *Changes in transit access:* Benefit of improved transit access for Sharing and Caring Hands and the Greater Lake Country Food Bank.
	Community Character	■ *Noise and vibration impacts:* No adverse impacts after mitigation. ■ *Visual changes*: Neutral impacts are anticipated as a result of station and TPSS construction, since these features would be designed to complement their surroundings, with variations in design that are consistent with the context of each station and TPSS location. Station features would also include passenger information displays, lighting, and security systems, which could alter the visual quality and character of the view for sensitive viewer groups. Visual impacts to the Olson Memorial Highway center median would be adverse, since trees would need to be removed for the transitway alignment. However, trees at the highway edges would remain and would continue to support the "gateway" appearance of the proposed BLRT Extension project corridor. ■ *Property conversion, acquisitions, and displacements*: None. ■ *New at-grade light rail crossings of roadways and pedestrian/bicycle facilities*: New at-grade crossing of 7th Street would be controlled by existing traffic signal.

[2] The two commercial parcels are associated with connecting the proposed BLRT Extension project to the existing Target Field Station and are not presented in **Table 4.2-17**.

Table 4.2-17. Impacts to Community Facilities, Community Character, and Community Cohesion – City of Minneapolis

Neighborhood/ Station Area	Impact Category	Long-term Effects by Impact Criteria/Measure
	Community Cohesion	■ *New physical barriers:* None. ■ *Changes to the local roadway network:* Modification of 7th Street/Olson Memorial Highway would reduce approach lanes to reduce overall pedestrian and bicyclist crossing lengths. The proposed BLRT Extension project would reduce the number of through lanes over I-94 on Olson Memorial Highway; however, no degradation in traffic operations is anticipated. ■ *Changes to the pedestrian and bicycle network:* Pedestrian and bicyclist crossings would be improved at 7th Street/Olson Memorial Highway intersection. ■ *Changes to vehicular parking:* None.
Sumner-Glenwood/ Van White Boulevard Station	Community Facilities	■ *Property acquisition and displacement:* None. ■ *Noise and vibration impacts:* No adverse impacts after mitigation. ■ *Changes in roadway access:* The proposed BLRT Extension project would be in-street-running in the median of Olson Memorial Highway with vehicular and pedestrian access across Olson Memorial Highway at existing traffic signals only. The proposed BLRT Extension project would modify southbound West Lyndale Avenue North configurations to better accommodate vehicle traffic flow. ■ *Changes in transit access:* Benefit of improved transit access for Glenwood Lyndale Community Center.
	Community Character	■ *Noise and vibration impacts*: No adverse impacts after mitigation. ■ *Visual changes*: Neutral impacts are anticipated as a result of station and TPSS construction, since these features would be designed to complement their surroundings, with variations in design that are consistent with the context of each station and TPSS location. Station features would also include passenger information displays, lighting, and security systems, which could alter the visual quality and character of the view for sensitive viewer groups. ■ *Property conversion, acquisitions, and displacements*: None. ■ *New at-grade light rail crossings of roadways and pedestrian/bicycle facilities:* New at-grade crossings of Lyndale Avenue North, Bryant Avenue North, and Van White Memorial Boulevard would be controlled by existing traffic signals.
	Community Cohesion	■ *New physical barriers:* None. ■ *Changes to the local roadway network:* Crossings of Olson Memorial Highway (both vehicular and pedestrian) would be restricted to traffic-signal-controlled intersections (Lyndale Avenue North, Bryant Avenue North, and Van White Memorial Boulevard). ■ *Changes to the pedestrian and bicycle network:* Improved boulevard section (10 feet on each side of Olson Memorial Highway), six-foot sidewalks on both sides, provision for a 10-foot cycle track to be built by others. ■ *Changes to vehicular parking:* None

Table 4.2-17. Impacts to Community Facilities, Community Character, and Community Cohesion – City of Minneapolis

Neighborhood/ Station Area	Impact Category	Long-term Effects by Impact Criteria/Measure
Near-North/ Van White Boulevard and Penn Avenue Stations	Community Facilities	■ *Property acquisition and displacement:* None. ■ *Noise and vibration impacts:* No adverse impacts after mitigation. ■ *Changes in roadway access:* The proposed BLRT Extension project would be in-street-running in the median of Olson Memorial Highway with vehicular and pedestrian access across Olson Memorial Highway at existing traffic signals only (Humbolt Avenue North, Morgan Avenue North, and Penn Avenue). ■ *Changes in transit access:* Benefit of improved transit access for Sumner Library, Harvest Preparatory School, Wayman AME Church, Jehovah's Witnesses, Zion Baptist Church, and La Creche Early Childhood Center.
	Community Character	■ *Noise and vibration impacts:* No adverse impacts after mitigation. ■ *Visual changes:* Neutral impacts are anticipated as a result of station and TPSS construction, since these features would be designed to complement their surroundings, with variations in design that are consistent with the context of each station and TPSS location. Station features would also include passenger information displays, lighting, and security systems, which could alter the visual quality and character of the view for sensitive viewer groups. ■ *Property conversion, acquisitions, and displacements:* None. ■ *New at-grade light rail crossings of roadways and pedestrian/bicycle facilities:* New at-grade crossings of Humbolt Avenue North, Morgan Avenue North, and Penn Avenue would be controlled by existing traffic signals.
	Community Cohesion	■ *New physical barriers:* None. ■ *Changes to the local roadway network:* Crossings of Olson Memorial Highway (both vehicular and pedestrian) would be restricted to traffic-signal-controlled intersections (Humbolt Avenue North, Morgan Avenue North, and Penn Avenue). ■ *Changes to the pedestrian and bicycle network:* Addition of new, signalized pedestrian and bicycle crossings east of James Avenue North and east of Oliver Avenue North. Improved boulevard section (10 feet on each side of Olson Memorial Highway), 6-foot sidewalks on both sides, and provision for a 10-foot cycle track to be built by others. ■ *Changes to vehicular parking:* Loss of 25 on-street parking spaces. Loss of off-street parking would not adversely affect surrounding neighborhoods because there would be adequate parking supply to meet the needs of the existing land uses (for more information on parking impacts, see **Section 3.5**).

Table 4.2-17. Impacts to Community Facilities, Community Character, and Community Cohesion – City of Minneapolis

Neighborhood/ Station Area	Impact Category	Long-term Effects by Impact Criteria/Measure
Harrison/Van White Boulevard and Penn Avenue Stations	Community Facilities	■ *Property acquisition and displacement:* The proposed BLRT Extension project would require partial acquisition of three parcels. The proposed BLRT Extension project would not result in displacements. ■ *Noise and vibration impacts:* No adverse impacts after mitigation. ■ *Changes in roadway access:* The proposed BLRT Extension project would be in-street-running in the median of Olson Memorial Highway with vehicular and pedestrian access across Olson Memorial Highway at existing traffic signal at Penn Avenue. The proposed BLRT Extension project would add a traffic signal at Thomas Avenue North. ■ *Changes in transit access:* Benefit of improved transit access for United Christian Ministries.
	Community Character	■ *Noise and vibration impacts:* No adverse impacts after mitigation. ■ *Visual changes:* Neutral impacts are anticipated as a result of station and TPSS construction, since these features would be designed to comple-ment their surroundings, with variations in design that are consistent with the context of each station and TPSS location. Station features would also include passenger information displays, lighting, and security systems, which could alter the visual quality and character of the view for sensitive viewer groups. ■ *Property conversion, acquisitions, and displacements:* The proposed BLRT Extension project would require partial acquisition of three residential parcels (0.01 acre). These acquisitions would not change the overall land use of the surrounding areas. ■ *New at-grade light rail crossings of roadways and pedestrian/bicycle facilities: A*t-grade intersection of Penn Avenue and Thomas Avenue North would be controlled by a new traffic signal.
	Community Cohesion	■ *New physical barriers:* None. ■ *Changes to the local roadway network:* The proposed BLRT Extension project would be in-street-running in the median of Olson Memorial Highway with vehicular and pedestrian access across Olson Memorial Highway at existing traffic signal at Penn Avenue. The proposed BLRT Extension project would add a traffic signal at Thomas Avenue North. ■ *Changes to the pedestrian and bicycle network:* Improved boulevard section (10 feet on each side of Olson Memorial Highway), 6-foot sidewalks on both sides, and provision for a 10-foot cycle track to be built by others. ■ *Changes to vehicular parking:* Loss of 50 on-street parking spaces. Loss of off-street parking would not adversely affect surrounding neighborhoods because there would be adequate parking supply to meet the needs of the existing land uses (for more information on parking impacts, see **Section 3.5**).

Table 4.2-17. Impacts to Community Facilities, Community Character, and Community Cohesion – City of Minneapolis

Neighborhood/ Station Area	Impact Category	Long-term Effects by Impact Criteria/Measure
Willard-Hay/ Penn Avenue Station	Community Facilities	■ *Property acquisition and displacement:* The proposed BLRT Extension project would require partial acquisition of 16 parcels along Olson Memorial Highway. The proposed BLRT Extension project would not result in displacements. ■ *Noise and vibration impacts:* None. ■ *Changes in roadway access:* The proposed BLRT Extension project would be in-street-running in the median of Olson Memorial Highway with vehicular and pedestrian access across Olson Memorial Highway at existing traffic signal at Penn Avenue. The proposed BLRT Extension project would add a traffic signal at Thomas Avenue North. ■ *Changes in transit access:* None.
	Community Character	■ *Noise and vibration impacts:* None. ■ *Visual changes:* Neutral impacts are anticipated as a result of station and TPSS construction, since these features would be designed to complement their surroundings, with variations in design that are consistent with the context of each station and TPSS location. Station features would also include passenger information displays, lighting, and security systems, which could alter the visual quality and character of the view for sensitive viewer groups. ■ *Property conversion, acquisitions, and displacements:* The proposed BLRT Extension project would result in the partial acquisition of 15 residential parcels (0.19 acre) and one industrial parcel (1.83 acres). These acquisitions would not change the overall land use of the surrounding areas. ■ *New at-grade light rail crossings of roadways and pedestrian/bicycle facilities: A*t-grade intersection of Penn Avenue and Thomas Avenue North would be controlled by a new traffic signal.
	Community Cohesion	■ *New physical barriers:* None. ■ *Changes to the local roadway network:* The proposed BLRT Extension project would be in-street-running in the median of Olson Memorial Highway with vehicular and pedestrian access across Olson Memorial Highway at existing traffic signal at Penn Avenue. The proposed BLRT Extension project would add a traffic signal at Thomas Avenue North. ■ *Changes to the pedestrian and bicycle network:* Improved boulevard section (10 feet on each side of Olson Memorial Highway), 6-foot sidewalks on both sides, and provision for a 10-foot cycle track to be built by others. ■ *Changes to vehicular parking:* Loss of eight on-street parking spaces. Loss of off-street parking would not adversely affect surrounding neighborhoods because there would be adequate parking supply to meet the needs of the existing land uses (for more information on parking impacts, see **Section 3.5**).

City of Golden Valley

As shown in **Table 4.2-18** and summarized below, there would be direct impacts to community facilities and community character in the City of Golden Valley from the proposed BLRT Extension project.

- **Community Facilities.** There are two community facilities and six parks in the study area in the City of Golden Valley (see **Tables 4.2-5, 4.2-6, and 4.2-7 and Figure 4.2-2**). Based on the measures described in **Table 4.2-18**, none of the community facilities would be adversely affected by the proposed BLRT Extension project. However, right-of-way acquisition would impact park resources.
- **Community Character.** Neutral impacts to visual character are anticipated as a result of station and TPSS construction, since these features would be designed to complement their surroundings, with variations in design that are consistent with the context of each station and TPSS location. However, the Council anticipates that station features would also include passenger information displays, lighting, and security systems, which could alter the visual quality and character of the view for sensitive viewer groups. Visual impacts to Theodore Wirth Regional Park and Golf Course and Mary Hills Management Unit of Sochacki Park would be adverse. Also, a full acquisition of industrial property (one parcel, 2.02 acres) and partial acquisition of residential (one parcel, 0.05 acre), commercial (one parcel, 0.23 acre), industrial (one parcel, 5.57 acres), and public (four parcels, 2.11 acres) properties are anticipated. These acquisitions would not change the overall land use of the surrounding areas, and would not displace any residents. These changes would be confined to limited areas and would not adversely impact the overall community character in the City of Golden Valley.
- **Community Cohesion.** The proposed BLRT Extension project would have a positive effect on local roadway, pedestrian, and bicycle networks in the City of Golden Valley. Existing roadway and sidewalk/trail connectivity and access would be maintained or improved, and there would be no adverse impacts to community cohesion in the City of Golden Valley.

Table 4.2-18. Impacts to Community Facilities, Community Character, and Community Cohesion – City of Golden Valley

Station Area	Impact Category	Long-term Effects by Impact Criteria/Measure
Plymouth Avenue Station	Community Facilities	■ *Property acquisition and displacement:* The proposed BLRT Extension project would require total acquisition of one parcel and partial acquisition of two parcels. The proposed BLRT Extension project would not result in displacements. The permanent easements would not affect park facilities or recreational use. ■ *Noise and vibration impacts:* No adverse impacts after mitigation. ■ *Changes in roadway access:* None. ■ *Changes in transit access:* Benefit of improved transit access for Theodore Wirth Regional Park.
	Community Character	■ *Noise and vibration impacts:* No adverse impacts after mitigation. ■ *Visual changes:* Neutral impacts are anticipated as a result of station and TPSS construction, since these features would be designed to complement their surroundings, with variations in design that are consistent with the context of each station and TPSS location. Station features would also include passenger information displays, lighting, and security systems, which could alter the visual quality and character of the view for sensitive viewer groups. ■ *Property conversion, acquisitions, and displacements:* The proposed BLRT Extension project would require total acquisition of one industrial parcel (2.02 acres) and partial acquisition of one industrial parcel (5.57 acres) and one public parcel (1.19 acres). These acquisitions would not change the overall land use of the surrounding areas or affect park or recreational uses. ■ *New at-grade light rail crossings of roadways and pedestrian/bicycle facilities:* None.
	Community Cohesion	■ *New physical barriers:* None. ■ *Changes to the local roadway network:* None. ■ *Changes to the pedestrian and bicycle network:* Existing Theodore Wirth Regional Park trail would be relocated from BNSF right-of-way to park property. ■ *Changes to vehicular parking:* None.

Table 4.2-18. Impacts to Community Facilities, Community Character, and Community Cohesion – City of Golden Valley

Station Area	Impact Category	Long-term Effects by Impact Criteria/Measure
Golden Valley Road Station	Community Facilities	■ *Property acquisition and displacement:* The proposed BLRT Extension project would require partial acquisition of five parcels including 0.23 acre from St. Margaret Mary Catholic Church. The proposed BLRT Extension project would not result in displacements. ■ *Noise and vibration impacts:* No adverse impacts after mitigation. ■ *Changes in roadway access:* None. ■ *Changes in transit access:* Benefit of improved transit access for Theodore Wirth Regional Park, Glenview Terrace Park, and Sochacki Park: Mary Hills Management Unit.
	Community Character	■ *Noise and vibration impacts:* No adverse impacts after mitigation. ■ *Visual changes:* Neutral impacts are anticipated as a result of station and TPSS construction, since these features would be designed to complement their surroundings, with variations in design that are consistent with the context of each station and TPSS location. Station features would also include passenger information displays, lighting, and security systems, which could alter the visual quality and character of the view for sensitive viewer groups. Visual impacts to Theodore Wirth Regional Park and Golf Course and Sochacki Park: Mary Hills Management Unit would be adverse, since views to the BNSF right-of-way might be opened up by grading and vegetation thinning for the transitway. The additional features, including the catenary wires, support poles, tracks, TPSS, and light rail vehicles, would add visual intrusions to the perceived natural character of these parks beyond the existing railroad and overhead utilities. ■ *Property conversion, acquisitions, and displacements:* The proposed BLRT Extension project would require partial acquisition of three public parcels (0.92 acre), one commercial parcel (0.23 acre), and one residential parcel (0.05 acre). These acquisitions would not change the overall land use of the surrounding areas or affect park or recreational use. ■ *New at-grade light rail crossings of roadways and pedestrian/bicycle facilities:* None.
	Community Cohesion	■ *New physical barriers:* None. ■ *Changes to the local roadway network:* Improvement to the Golden Valley Road and Theodore Wirth Parkway would improve vehicular, bicycle, and pedestrian access. ■ *Changes to the pedestrian and bicycle network:* As part of the Golden Valley Road park-and-ride, trailhead improvements would provide improved pedestrian and bicycle access. ■ *Changes to vehicular parking:* Addition of a 100-space park-and-ride at the Golden Valley Road Station.

City of Robbinsdale

As shown in **Table 4.2-19** and summarized below, there would be no adverse impacts to community facilities, community character, or community cohesion in the City of Robbinsdale from the proposed BLRT Extension project.

- **Community Facilities.** There are five community facilities and nine parks in the study area in the City of Robbinsdale (see **Tables 4.2-8, 4.2-9, and 4.2-10 and Figure 4.2-3**). Based on the measures described in **Table 4.2-19**, none of these facilities would be adversely affected by the proposed BLRT Extension project.
- **Community Character.** Full and partial acquisition of commercial and residential property is anticipated. Specifically, the proposed BLRT Extension project would require partial acquisition from one residential parcel (0.01 acre) and full acquisition of one vacant, undevelopable residential parcel (0.53 acre). The full acquisition of the residential parcel would not result in a displacement. The proposed BLRT Extension project would result in the full acquisition of five commercial parcels (4.37 acres) and partial acquisition of four commercial parcels (0.13 acre). These acquisitions would not change the overall land use of the surrounding areas, and would not displace any residents. Neutral impacts are anticipated as a result of station and TPSS construction, since these features would be designed to complement their surroundings, with variations in design that are consistent with the context of each station and TPSS location. However, the Council anticipates that station features would also include passenger information displays, lighting, and security systems, which could alter the visual quality and character of the view for sensitive viewer groups. These changes would be generally confined to the areas directly adjacent to the existing BNSF rail corridor and would not adversely impact the overall community character in the City of Robbinsdale.
- **Community Cohesion.** Although some changes in the local roadway network in the City of Robbinsdale would occur as a result of the proposed BLRT Extension project, existing roadway and sidewalk/trail connectivity and access would be maintained or improved, and there would be no adverse impacts to community cohesion in the City of Robbinsdale.

Table 4.2-19. Impacts to Community Facilities, Community Character, and Community Cohesion – City of Robbinsdale

Station Area	Impact Category	Long-term Effects by Impact Criteria/Measure
Robbinsdale Station	Community Facilities	■ *Property acquisition and displacement:* The proposed BLRT Extension project would require full acquisition of six parcels and partial acquisition of five parcels. Partial acquisition (0.06 acre) from Sacred Heart Catholic Church would occur. The proposed BLRT Extension project would not result in displacements. ■ *Noise and vibration impacts:* Severe impacts to one sensitive receptor after mitigation. No community facilities impacted. ■ *Changes in roadway access:* The at-grade crossing of the BNSF rail corridor at 39½ Avenue would be closed to mitigate noise impacts to sensitive receptors. The at-grade crossing closure would not result in adverse impacts to traffic and emergency response time. ■ *Changes in transit access:* Benefit of improved transit access for Bethel World Outreach, Elim Lutheran Church, Sacred Heart Catholic Church and School, Robbinsdale Police Department, Washburn McReavy Funeral Home, and Redeemer Lutheran Church.
	Community Character	■ *Noise and vibration impacts:* Severe impacts to one sensitive receptor after mitigation. Sacred Heart Catholic Church and School and Washburn McReavy Funeral Home would be impacted. ■ *Visual changes:* Neutral impacts are anticipated as a result of station and TPSS construction, since these features would be designed to complement their surroundings, with variations in design that are consistent with the context of each station and TPSS location. Station features would also include passenger information displays, lighting, and security systems, which could alter the visual quality and character of the view for sensitive viewer groups. ■ *Property conversion, acquisitions, and displacements:* The proposed BLRT Extension project would require full acquisition of five commercial parcels (4.37 acres) and one vacant residential parcel (0.53 acre) and partial acquisition of four commercial parcels (0.13 acre) and one residential parcel (0.01 acre). These acquisitions would not change the overall land use of the surrounding areas. ■ *New at-grade light rail crossings of roadways and pedestrian/bicycle facilities:* New at-grade light rail/roadway crossings at all existing at-grade freight rail/roadway crossings (except 39½ Avenue), which would be controlled by flashing lights and gates to allow for safe crossings by pedestrians and vehicles and to maintain acceptable traffic operations.
	Community Cohesion	■ *New physical barriers:* None. ■ *Changes to the local roadway network:* The at-grade crossing of the BNSF rail corridor at 39½ Avenue would be closed to mitigate noise impacts to sensitive receptors. The at-grade crossing closure would not result in adverse impacts to traffic and emergency response time. ■ *Changes to the pedestrian and bicycle network:* None. ■ *Changes to vehicular parking:* The proposed BLRT Extension project would result in a loss of on-street parking (nine spaces) and off-street parking (56 spaces). Addition of a 550-space park-and-ride at the station.

City of Crystal

As shown in **Table 4.2-20** and summarized below, there would be no adverse impacts to community facilities, community character, or community cohesion in the City of Crystal from the proposed BLRT Extension project.

- **Community Facilities.** There are four community facilities and eight parks in the study area in the City of Crystal (see **Tables 4.2-11**, **4.2-12, and 4.2-13 and Figure 4.2-4**). Based on measures described in **Table 4.2-20**, none of these facilities would be adversely affected by the proposed BLRT Extension project.
- **Community Character.** Neutral impacts are anticipated as a result of station and TPSS construction, since these features would be designed to complement their surroundings, with variations in design that are consistent with the context of each station and TPSS location. However, it is anticipated that station features would also include passenger information displays, lighting, and security systems, which could alter the visual quality and character of the view for sensitive viewer groups. In addition, the visual quality of the area adjacent to the pedestrian bridge would be altered. Acquisition of some commercial and residential properties is anticipated. Specifically, the proposed BLRT Extension project would require partial acquisition from two residential parcels (0.24 acre), two commercial parcels (0.11 acre), and two industrial parcels (0.05 acre). Four full acquisitions of commercial parcels (2.08 acres) would be needed. These acquisitions would not change the overall land use of the surrounding areas, and would not displace any residents. These changes are not anticipated to affect the community character of the area surrounding the proposed BLRT Extension project in the City of Crystal.
- **Community Cohesion.** Although changes in the local roadway and pedestrian networks would occur, existing roadway and sidewalk/trail connectivity and access would be maintained or improved, and there would be no adverse impacts to community cohesion in the study area in the City of Crystal.

Table 4.2-20. Impacts to Community Facilities, Community Character, and Community Cohesion – City of Crystal

Neighborhood/ Station Area	Impact Category	Long-term Effects by Impact Criteria/Measure
Welcome Park/ Bass Lake Road Station	Community Facilities	■ *Property acquisition and displacement:* The proposed BLRT Extension project would require full acquisition of one parcel and partial acquisition of four parcels. The proposed BLRT Extension project would result in one displacement. ■ *Noise and vibration impacts:* No impacts after mitigation. No community facilities impacted. ■ *Changes in roadway access:* None. ■ *Changes in transit access:* Benefit of improved transit access for Crystal Medical Center.
	Community Character	■ *Noise and vibration impacts:* No impacts after mitigation. ■ *Visual changes:* Neutral impacts are anticipated as a result of station and TPSS construction, since these features would be designed to complement their surroundings, with variations in design that are consistent with the context of each station and TPSS location. Station features would also include passenger information displays, lighting, and security systems, which could alter the visual quality and character of the view for sensitive viewer groups. ■ *Property conversion, acquisitions, and displacements:* The proposed BLRT Extension project would require full acquisition of one commercial parcel (0.65 acre) and partial acquisition of one commercial parcel (0.10 acre), two industrial parcels (0.05 acre), and one residential parcel (0.21 acre). These acquisitions would not change the overall land use of the surrounding areas. ■ *New at-grade light rail crossings of roadways and pedestrian/bicycle facilities:* New at-grade light rail/roadway crossings at all existing at-grade freight rail/roadway crossings, which would be controlled by flashing lights and gates to allow for safe crossings by pedestrians and vehicles and to maintain acceptable traffic operations.
	Community Cohesion	■ *New physical barriers:* None. ■ *Changes to the local roadway network:* The proposed BLRT Extension project would reconfigure the West Broadway Avenue/Vera Cruz Avenue North intersection to a roundabout in order to continue to provide full access to the surrounding neighborhood; provide additional gates and medians at the rail crossing. ■ *Changes to the pedestrian and bicycle network*: Pedestrian facilities at the reconstructed West Broadway Avenue/Vera Cruz Avenue North intersection would be improved by the proposed BLRT Extension project. ■ *Changes to vehicular parking:* The proposed BLRT Extension project would add a 170-space park-and-ride at the Bass Lake Road Station.

Table 4.2-20. Impacts to Community Facilities, Community Character, and Community Cohesion – City of Crystal

Neighborhood/ Station Area	Impact Category	Long-term Effects by Impact Criteria/Measure
Cavanagh Oaks/ Bass Lake Road Station	Community Facilities	■ *Property acquisition and displacement:* None. ■ *Noise and vibration impacts:* Severe impacts to one sensitive receptor after mitigation. No community facilities impacted. ■ *Changes in roadway access:* None. ■ *Changes in transit access:* None.
	Community Character	■ *Noise and vibration impacts:* Severe impacts to one sensitive receptor after mitigation. ■ *Visual changes:* Neutral impacts are anticipated as a result of station and TPSS construction, since these features would be designed to complement their surroundings, with variations in design that are consistent with the context of each station and TPSS location. Station features would also include passenger information displays, lighting, and security systems, which could alter the visual quality and character of the view for sensitive viewer groups. ■ *Property conversion, acquisitions, and displacements:* None. ■ *New at-grade light rail crossings of roadways and pedestrian/bicycle facilities:* New at-grade light rail/roadway crossings at all existing at-grade freight rail/roadway crossings, which would be controlled by flashing lights and gates to allow for safe crossings by pedestrians and vehicles and to maintain acceptable traffic operations.
	Community Cohesion	■ *New physical barriers:* None. ■ *Changes to the local roadway network:* None. ■ *Changes to the pedestrian and bicycle network:* None. ■ *Changes to vehicular parking:* The proposed BLRT Extension project would add a 170-space park-and-ride at the Bass Lake Road Station.

Table 4.2-20. Impacts to Community Facilities, Community Character, and Community Cohesion – City of Crystal

Neighborhood/ Station Area	Impact Category	Long-term Effects by Impact Criteria/Measure
Twin Oaks/Bass Lake Road Station	Community Facilities	■ *Property acquisition and displacement:* The proposed BLRT Extension project would require full acquisition of three parcels and partial acquisition of two parcels. The proposed BLRT Extension project would result in four displacements. ■ *Noise and vibration impacts:* No impacts after mitigation. No community facilities impacted. ■ *Changes in roadway access:* None. ■ *Changes in transit access:* None.
	Community Character	■ *Noise and vibration impacts:* No impacts after mitigation. ■ *Visual changes:* Neutral impacts are anticipated as a result of station and TPSS construction, since these features would be designed to complement their surroundings, with variations in design that are consistent with the context of each station and TPSS location. Station features would also include passenger information displays, lighting, and security systems, which could alter the visual quality and character of the view for sensitive viewer groups. The visual quality of the area adjacent to the pedestrian bridge would be altered. ■ *Property conversion, acquisitions, and displacements:* The proposed BLRT Extension project would require full acquisition of three commercial parcels (1.43 acres) and partial acquisition of one residential parcel (0.03 acre) and one commercial parcel (0.10 acre). These acquisitions would not change the overall land use of the surrounding areas. ■ *New at-grade light rail crossings of roadways and pedestrian/bicycle facilities:* New at-grade light rail/roadway crossings at all existing at-grade freight rail/roadway crossings, which would be controlled by flashing lights and gates to allow for safe crossings by pedestrians and vehicles and to maintain acceptable traffic operations.
	Community Cohesion	■ *New physical barriers:* None. ■ *Changes to the local roadway network:* None. ■ *Changes to the pedestrian and bicycle network:* The proposed BLRT Extension project would add pedestrian enhancements at Bottineau Boulevard and Bass Lake Road. ■ *Changes to vehicular parking:* The proposed BLRT Extension project would add a 170-space park-and-ride at the Bass Lake Road Station.

Table 4.2-20. Impacts to Community Facilities, Community Character, and Community Cohesion – City of Crystal

Neighborhood/ Station Area	Impact Category	Long-term Effects by Impact Criteria/Measure
Becker/Bass Lake Road Station	Community Facilities	■ *Property acquisition and displacement:* None. ■ *Noise and vibration impacts:* No impacts after mitigation. No community facilities impacted. ■ *Changes in roadway access:* None. ■ *Changes in transit access:* Benefit of improved transit access for Conquerors Christian Center.
	Community Character	■ *Noise and vibration impacts:* No impacts after mitigation. ■ *Visual changes:* Neutral impacts are anticipated as a result of station and TPSS construction, since these features would be designed to complement their surroundings, with variations in design that are consistent with the context of each station and TPSS location. Station features would also include passenger information displays, lighting, and security systems, which could alter the visual quality and character of the view for sensitive viewer groups. The visual quality of the area adjacent to the pedestrian bridge would be altered. ■ *Property conversion, acquisitions, and displacements:* None. ■ *New at-grade light rail crossings of roadways and pedestrian/bicycle facilities:* New at-grade light rail/roadway crossings at all existing at-grade freight rail/roadway crossings, which would be controlled by flashing lights and gates to allow for safe crossings by pedestrians and vehicles and to maintain acceptable traffic operations.
	Community Cohesion	■ *New physical barriers:* None. ■ *Changes to the local roadway network:* None. ■ *Changes to the pedestrian and bicycle network:* The proposed BLRT Extension project would add pedestrian enhancements at Bottineau Boulevard and Bass Lake Road. ■ *Changes to vehicular parking:* The proposed BLRT Extension project would add a 170-space park-and-ride at Bass Lake Road Station.
Lions Park/Bass Lake Road Station	Community Facilities	■ *Property acquisition and displacement:* None. ■ *Noise and vibration impacts:* None. ■ *Changes in roadway access:* None. ■ *Changes in transit access:* None.

Table 4.2-20. Impacts to Community Facilities, Community Character, and Community Cohesion – City of Crystal

Neighborhood/ Station Area	Impact Category	Long-term Effects by Impact Criteria/Measure
	Community Character	■ *Noise and vibration impacts:* None. ■ *Visual changes:* Neutral impacts are anticipated as a result of station and TPSS construction, since these features would be designed to complement their surroundings, with variations in design that are consistent with the context of each station and TPSS location. Station features would also include passenger information displays, lighting, and security systems, which could alter the visual quality and character of the view for sensitive viewer groups. The visual quality of the area adjacent to the pedestrian bridge would be altered. ■ *Property conversion, acquisitions, and displacements:* None. ■ *New at-grade light rail crossings of roadways and pedestrian/bicycle facilities:* New at-grade light rail/roadway crossings at all existing at-grade freight rail/roadway crossings, which would be controlled by flashing lights and gates to allow for safe crossings by pedestrians and vehicles and to maintain acceptable traffic operations.
	Community Cohesion	■ *New physical barriers:* None. ■ *Changes to the local roadway network:* None. ■ *Changes to the pedestrian and bicycle network:* None. ■ *Changes to vehicular parking:* The proposed BLRT Extension project would add a 170-space park-and-ride at the Bass Lake Road Station.
Skyway/Bass Lake Road Station	Community Facilities	■ *Property acquisition and displacement:* None. ■ *Noise and vibration impacts:* None. ■ *Changes in roadway access:* None. ■ *Changes in transit access:* None.
	Community Character	■ *Noise and vibration impacts:* None. ■ *Visual changes:* Neutral impacts are anticipated as a result of station and TPSS construction, since these features would be designed to complement their surroundings, with variations in design that are consistent with the context of each station and TPSS location. Station features would also include passenger information displays, lighting, and security systems, which could alter the visual quality and character of the view for sensitive viewer groups. The visual quality of the area adjacent to the pedestrian bridge would be altered. ■ *Property conversion, acquisitions, and displacements:* None. ■ *New at-grade light rail crossings of roadways and pedestrian/bicycle facilities:* New at-grade light rail/roadway crossings at all existing at-grade freight rail/roadway crossings, which would be controlled by flashing lights and gates to allow for safe crossings by pedestrians and vehicles and to maintain acceptable traffic operations.
	Community Cohesion	■ *New physical barriers:* None. ■ *Changes to the local roadway network:* None. ■ *Changes to the pedestrian and bicycle network:* None. ■ *Changes to vehicular parking:* The proposed BLRT Extension project would add a 170-space park-and-ride at the Bass Lake Road Station.

City of Brooklyn Park

As shown in **Table 4.2-21** and summarized below, there would be no adverse impacts to community facilities, community character, or community cohesion in the City of Brooklyn Park from the proposed BLRT Extension project.

- **Community Facilities.** There are nine community facilities and 12 parks in the study area in the City of Brooklyn Park (see **Tables 4.2-14, 4.2-15, and 4.2-16 and Figure 4.2-5**). Based on the measures described in **Table 4.2-21**, none of these facilities would be adversely affected by the proposed BLRT Extension project.
- **Community Character.** Neutral impacts are anticipated as a result of station and TPSS construction, since these features would be designed to complement their surroundings, with variations in design that are consistent with the context of each station and TPSS location. However, the Council anticipates that station features would also include passenger information displays, lighting, and security systems, which could alter the visual quality and character of the view for sensitive viewer groups. Visual impacts would be adverse at the 63rd Avenue park-and-ride. The acquisition of some residential, commercial, and industrial property is anticipated. Specifically, the proposed BLRT Extension project would require partial acquisition from 34 residential parcels (16.16 acres) of which two residential parcels (14.69 acres) are undeveloped land that are zoned residential. Partial acquisition of 14 commercial parcels (3.38 acres) and two industrial parcels (1.07 acres) would also be required. Two full acquisitions of commercial parcels (5.91 acres) and one industrial parcel (0.55 acre) would be needed. These acquisitions would not change the overall land use of the surrounding areas, and would not displace any residents. These changes would not adversely impact the overall community character in the City of Brooklyn Park.
- **Community Cohesion.** Although changes in the local roadway, pedestrian, and bicycle networks in the City of Brooklyn Park would occur as a result of the proposed BLRT Extension project, existing roadway and sidewalk/trail connectivity and access would be maintained or improved, and there would be no adverse impacts to community cohesion in the City of Brooklyn Park.

Table 4.2-21. Impacts to Community Facilities, Community Character, and Community Cohesion – City of Brooklyn Park

Station Area	Impact Category	Long-term Effects by Impact Criteria/Measure
63rd Avenue Station	Community Facilities	■ *Property acquisition and displacement*: The proposed BLRT Extension project would require partial acquisition of two parcels. The proposed BLRT Extension project would not result in displacements. ■ *Noise and vibration impacts*: None. ■ *Changes in roadway access*: The proposed BLRT Extension project would add a new traffic signal at the 63rd Avenue North and Louisiana Avenue intersection. ■ *Changes in transit access*: None.
	Community Character	■ *Noise and vibration impacts*: None. ■ *Visual changes*: Neutral impacts are anticipated as a result of station and TPSS construction, since these features would be designed to complement their surroundings, with variations in design that are consistent with the context of each station and TPSS location. Station features would also include passenger information displays, lighting, and security systems, which could alter the visual quality and character of the view for sensitive viewer groups. Visual impacts would be adverse at the 63rd Avenue park-and-ride. ■ *Property conversion, acquisitions, and displacements*: The proposed BLRT Extension project would require partial acquisition of one residential parcel (0.02 acre) and one industrial parcel (0.17 acre). These acquisitions would not change the overall land use of the surrounding areas. ■ *New at-grade light rail crossings of roadways and pedestrian/bicycle facilities*: New at-grade light rail/roadway crossings at all existing at-grade freight rail/roadway crossings, which would be controlled by flashing lights and gates to allow for safe crossings by pedestrians and vehicles and to maintain acceptable traffic operations.
	Community Cohesion	■ *New physical barriers*: None. ■ *Changes to the local roadway network*: The proposed BLRT Extension project would add a new traffic signal at the 63rd Avenue North and Louisiana Avenue intersection. ■ *Changes to the pedestrian and bicycle network*: The proposed BLRT Extension project would add pedestrian enhancements at Bottineau Boulevard and the BNSF freight tracks. ■ *Changes to vehicular parking*: With the proposed BLRT Extension project, the existing 565-space park-and-ride would continue to serve the 63rd Avenue Station.

Table 4.2-21. Impacts to Community Facilities, Community Character, and Community Cohesion – City of Brooklyn Park

Station Area	Impact Category	Long-term Effects by Impact Criteria/Measure
Brooklyn Boulevard Station	Community Facilities	■ *Property acquisition and displacement*: The proposed BLRT Extension project would require total acquisition of three parcels and the partial acquisition of 44 parcels. The proposed BLRT Extension project would result in two displacements. ■ *Noise and vibration impacts*: None. ■ *Changes in roadway access*: The proposed BLRT Extension project would add a new traffic signal at the West Broadway Avenue and 75th Avenue North intersection. Crossings of West Broadway Avenue (both vehicular and pedestrian) would be restricted to traffic signal controlled intersections. ■ *Changes in transit access*: None.
	Community Character	■ *Noise and vibration impacts*: None. ■ *Visual changes*: Neutral impacts are anticipated as a result of station and TPSS construction, since these features would be designed to complement their surroundings, with variations in design that are consistent with the context of each station and TPSS location. Station features would also include passenger information displays, lighting, and security systems, which could alter the visual quality and character of the view for sensitive viewer groups. ■ *Property conversion, acquisitions, and displacements*: The proposed BLRT Extension project would require total acquisition of two commercial parcels (5.91 acres) and one industrial parcel (0.55 acre) and partial acquisition of 31 residential parcels (1.45 acres) and 13 commercial parcels (3.36 acres). These acquisitions would not change the overall land use of the surrounding areas. ■ *New at-grade light rail crossings of roadways and pedestrian/bicycle facilities*: New at-grade light rail crossings of 76th Avenue North and Brooklyn Boulevard would be controlled by existing traffic signals. All non-signalized intersections would be closed to vehicular, pedestrian and bicycle traffic crossing West Broadway Avenue.
	Community Cohesion	■ *New physical barriers*: None. ■ *Changes to the local roadway network*: The proposed BLRT Extension project would add a new traffic signal at the West Broadway Avenue and 75th Avenue North intersection. Crossings of West Broadway Avenue (both vehicular and pedestrian) would be restricted to traffic-signal-controlled intersections. ■ *Changes to the pedestrian and bicycle network*: None. ■ *Changes to vehicular parking*: The proposed BLRT Extension project would result in the loss of 175 off-street parking spaces.

Table 4.2-21. Impacts to Community Facilities, Community Character, and Community Cohesion – City of Brooklyn Park

Station Area	Impact Category	Long-term Effects by Impact Criteria/Measure
85th Avenue Station	Community Facilities	■ *Property acquisition and displacement:* None. ■ *Noise and vibration impacts*: None. ■ *Changes in roadway access*: The proposed BLRT Extension project would close access at 84th Avenue and West Broadway Avenue to maintain pedestrian safety. A new signalized intersection at College Park Avenue would be added. This access change is not expected to affect community facilities near the 85th Avenue Station. Crossings of West Broadway Avenue (both vehicular and pedestrian) would be restricted to traffic-signal-controlled intersections. ■ *Changes in transit access*: None.
	Community Character	■ *Noise and vibration impacts*: None. ■ *Visual changes*: Neutral impacts are anticipated as a result of station and TPSS construction, since these features would be designed to complement their surroundings, with variations in design that are consistent with the context of each station and TPSS location. Station features would also include passenger information displays, lighting, and security systems, which could alter the visual quality and character of the view for sensitive viewer groups. ■ *Property conversion, acquisitions, and displacements*: None. ■ *New at-grade light rail crossings of roadways and pedestrian/bicycle facilities*: New at-grade light rail crossings of 85th Avenue North, College Park Avenue, and Maplebrook Parkway North would be controlled by existing traffic signals. All non-signalized intersections would be closed to vehicular, pedestrian and bicycle traffic crossing West Broadway Avenue.
	Community Cohesion	■ *New physical barriers*: None. ■ *Changes to the local roadway network*: The proposed BLRT Extension project would close access at 84th Avenue and West Broadway Avenue to maintain pedestrian safety. A new signalized intersection at College Park Avenue would be added. This access change is not expected to affect community facilities near the 85th Avenue Station. Crossings of West Broadway Avenue (both vehicular and pedestrian) would be restricted to traffic-signal-controlled intersections. ■ *Changes to the pedestrian and bicycle network*: None. ■ *Changes to vehicular parking*: None.

Table 4.2-21. Impacts to Community Facilities, Community Character, and Community Cohesion – City of Brooklyn Park

Station Area	Impact Category	Long-term Effects by Impact Criteria/Measure
93rd Avenue Station	Community Facilities	■ *Property acquisition and displacement*: The proposed BLRT Extension project would require partial acquisition of two parcels. The proposed BLRT Extension project would not result in displacements. ■ *Noise and vibration impacts*: None. ■ *Changes in roadway access*: The proposed BLRT Extension project would add a new traffic signal at the West Broadway Avenue and 94th Avenue North intersection. Crossings of West Broadway Avenue (both vehicular and pedestrian) would be restricted to traffic-signal-controlled intersections. ■ *Changes in transit access*: None.
	Community Character	■ *Noise and vibration impacts*: None. ■ *Visual changes*: None. ■ *Property conversion, acquisitions, and displacements*: The proposed BLRT Extension project would require partial acquisition of one commercial parcel (0.02 acre) and one industrial parcel (0.90 acre). These acquisitions would not change the overall land use of the surrounding areas. ■ *New at-grade light rail crossings of roadways and pedestrian/bicycle facilities*: New at-grade light rail crossings of 93rd Avenue North and 94th Avenue North would be controlled by existing traffic signals. All non-signalized intersections would be close to vehicular, pedestrian, and bicycle traffic crossing West Broadway Avenue.
	Community Cohesion	■ *New physical barriers*: None. ■ *Changes to the local roadway network*: The proposed BLRT Extension project would add a new traffic signal at the West Broadway Avenue and 94th Avenue North intersection. Crossings of West Broadway Avenue (both vehicular and pedestrian) would be restricted to traffic-signal-controlled intersections. ■ *Changes to the pedestrian and bicycle network*: None. ■ *Changes to vehicular parking*: None.

Table 4.2-21. Impacts to Community Facilities, Community Character, and Community Cohesion – City of Brooklyn Park

Station Area	Impact Category	Long-term Effects by Impact Criteria/Measure
Oak Grove Parkway Station	Community Facilities	■ *Property acquisition and displacement*: The proposed BLRT Extension project would require partial acquisition of two parcels. The proposed BLRT Extension project would not result in displacements. ■ *Noise and vibration impacts*: None. ■ *Changes in roadway access*: The proposed BLRT Extension project would reconstruct 101st Avenue North and Oak Grove Parkway to accommodate the needs of the OMF site; reconstruct West Broadway Avenue from TH 610 to north of Oak Grove Parkway to accommodate the desired location of the proposed BLRT Extension project alignment, station location, and park-and-ride parking structure; and install a new traffic signal at West Broadway Avenue/Main Street to provide a second access point to the park-and-ride. ■ *Changes in transit access*: None.
	Community Character	■ *Noise and vibration impacts*: None. ■ *Visual changes*: Neutral impacts are anticipated as a result of station and TPSS construction, since these features would be designed to complement their surroundings, with variations in design that are consistent with the context of each station and TPSS location. Station features would also include passenger information displays, lighting, and security systems, which could alter the visual quality and character of the view for sensitive viewer groups. ■ *Property conversion, acquisitions, and displacements*: The proposed BLRT Extension project would require partial acquisition of two undeveloped residential parcels (14.69 acres). This acquisition would not change the overall land use of the surrounding areas. ■ *New at-grade light rail crossings of roadways and pedestrian/bicycle facilities:* New at-grade light rail crossings of Main Street and Oak Grove Parkway would be controlled by the new traffic signals. All non-signalized intersections would be closed to vehicular, pedestrian, and bicycle traffic crossing West Broadway Avenue.
	Community Cohesion	■ *New physical barriers*: None. ■ *Changes to the local roadway network*: The proposed BLRT Extension project would reconstruct 101st Avenue North and Oak Grove Parkway to accommodate the needs of the OMF site; reconstruct West Broadway Avenue from TH 610 to north of Oak Grove Parkway to accommodate the desired location of the proposed BLRT Extension project alignment, station location, and park-and-ride parking structure; and install a new traffic signal at West Broadway Avenue/Main Street to provide a second access point to the park-and-ride. ■ *Changes to the pedestrian and bicycle network*: Reconstructed roadway system around the Oak Grove Parkway Station would have new pedestrian facilities. ■ *Changes to vehicular parking*: The proposed BLRT Extension project would add an 850-space park-and-ride.

4.2.4.2 Construction-Phase (Short-Term) Impacts

Construction-phase impacts are defined as the temporary impacts occurring during project construction.

No-Build Alternative

There would be no construction impacts from the No-Build Alternative.

Proposed BLRT Extension Project

Although temporary in nature, construction-phase impacts could affect community facilities, character, and cohesion. Traffic detours could increase traffic through residential neighborhoods or change access to community facilities. Similarly, sidewalk closures and detours could affect pedestrian traffic patterns. Construction impacts such as increased levels of noise and dust could temporarily affect neighborhood character, primarily in areas that are relatively quiet. The presence of large construction equipment could be perceived as visually disruptive, resulting in temporary effects on community character, particularly in residential settings.

A temporary easement from Theodore Wirth Regional Park would be required to construct the LRT guideway north of Olson Memorial Highway where it transitions from the street right-of-way to the BNSF rail corridor. Further discussion of park impacts is provided in **Chapter 8 – Amended Draft Section 4(f) and 6(f) Evaluation**.

Construction of the proposed BLRT Extension project would require temporary occupancy of Sochacki Park for construction access and staging affecting in 6.17 acres of parkland for an estimated duration of 18 months. In addition to restoring the park to its pre-construction condition, mitigation commitments have been made and accepted by the various jurisdictional entities including the cities of Golden Valley and Robbinsdale, and the Three Rivers Park District (see **Chapter 8 – Amended Draft Section 4(f) and 6(f) Evaluation**).

A temporary occupancy of Becker Park would be needed to reconstruct the sidewalk and trail from the park to the Bass Lake Road Station affecting 0.1 acre of parkland for an estimated duration of 12 months.

In addition, a temporary occupancy of Three Rivers Park in the City of Brooklyn Park would be needed to construct the OMF affecting 1.1 acres of parkland for an estimated duration of 12 months.

4.2.5 Avoidance, Minimization, and/or Mitigation Measures

Although the Council does not anticipate that impacts associated with the proposed BLRT Extension project will be severe enough to affect overall community character and cohesion, mitigation will be implemented 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 prevent adverse impacts. Specific mitigation for the long-term impacts such as property acquisitions and displacements, visual quality, and noise are discussed in other sections of this Final EIS (**Section 3.4 – Pedestrians and Bicyclists, Section 3.5 – Parking, Section 4.3 – Displacement of Residents and Businesses, Section 4.5 – Visual Quality and Aesthetics, Section 5.6 – Noise,** and **Section 5.7 – Vibration**).

4.2.5.2 Short-term Mitigation Measures

Short-term construction impacts will be mitigated by the use of deliberate construction staging or phasing, signage, and signal control requirements during construction for roads, trails, and sidewalks to maintain access to neighborhoods and community facilities throughout the construction period. Although specific mitigation plans have not yet been developed, best management practices (BMPs) will include working with residents and community facility managers to provide alternative access, giving residents and community facilities adequate notice about construction plans and phasing, keeping access to bus stops open, and alerting the public to detours.

Specific mitigation measures for short-term impacts to land use related to temporary construction easements and other construction activities will be identified in the Construction Mitigation Plan and Construction Communication Plan, which would be implemented by the Council prior to and during construction. The purpose of the Construction Communication Plan would be to prepare project-area residents, businesses, and commuters for construction; listen to their concerns; and develop plans to reduce harmful or disruptive effects. Specific mitigation measures included in the Construction Communication Plan would be site-specific and could include the following:

- Issue construction updates and post them on the BLRT Extension project website
- Provide advance notice of roadway closures, driveway closures, and utility shutoffs
- Conduct public meetings
- Establish a 24-hour construction hotline
- Prepare materials with applicable construction information
- Address property access issues
- Assign staff to serve as liaisons between the public and contractors during construction

In addition, the Council would develop and implement a Construction Mitigation Plan, which will include a construction staging plan (staging plan) that will be reviewed with the appropriate jurisdictions and railroads, and the contractor would be required to secure the necessary permits and follow the staging plan, unless otherwise approved; and also include a construction communication plan and a construction noise plan.

4.3 Displacement of Residents and Businesses

The proposed BLRT Extension 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 transitway. The proposed BLRT Extension project would require additional land beyond that already dedicated to transportation purposes. This section summarizes the land acquisition and easements, and residential and commercial displacements, which would be required for the proposed BLRT Extension 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. Any acquisition of property required for the proposed BLRT Extension project would be in accordance with the Uniform Relocation and Real Property Acquisitions Policies Act of 1970 as amended (Uniform Act or URA) (Public Law 91–646), 49 CFR Part 24 (the implementing regulations); FTA's Circular 5010.1D *Grants Management*; and Minn. Stat. 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 following types of real estate transactions and impacts are discussed in this section:

- **Full Acquisition** – Purchase of all fee-simple landownership rights of a property.
- **Partial Acquisition** – Purchase of a portion of an overall property. A partial acquisition would include fee-simple or easement acquisitions. See the fourth item below for a description of easement property rights.
- **Displacement** – Displacement results from full acquisitions and the conversion of the existing land use to a transportation use. Displacements are measured by housing unit or business, not tax parcel. For example, the acquisition of an apartment building on a single tax parcel with six units would result in six residential displacements.
- **Easement** – An easement provides for the temporary (during construction) or permanent use of a property for a particular purpose. The proposed BLRT Extension project would require both temporary and permanent easements within the proposed BLRT Extension project limits. A temporary easement might be purchased from a property owner for the purpose of storing materials and equipment, providing access to construction areas, site grading, or other construction-related activities. Properties affected by temporary easements would be restored to an acceptable pre-construction condition depending on the individual easement need and agreement. Alternately, a permanent easement might be purchased from a property owner to permanently locate infrastructure on the property without completely diminishing the property owner's use of the land. Examples of uses provided by permanent easements include stormwater management, drainage channels or storm drains, utilities, slope/grading, and subsurface/tunnels.

The analysis in **Section 4.3** identifies the location, size, and number of parcels and type of property that might be required to accommodate the proposed BLRT Extension project. The proposed acquisitions have been estimated using the LOD and approximate right-of-way requirements for the proposed BLRT Extension project.

4.3.2 Study Area

The study area for displacement of residents and businesses is defined as the area within the LOD, which provides a conservative estimate of right-of-way requirements. These requirements have been identified for the proposed BLRT Extension project and are presented in **Section 4.3** of this Final EIS.

4.3.3 Affected Environment

Development along the proposed BLRT Extension project alignment includes residential, commercial, industrial, park, and transportation uses. Existing land uses along the proposed BLRT Extension project alignment are identified and described in **Section 4.1** of this Final EIS.

Parklands, and the specific regulations associated with parkland acquisition, are described in **Chapter 8 – Amended Draft Section 4(f) and 6(f) Evaluation**. Utilities and potential utility relocations are discussed in **Section 5.1**.

4.3.4 Environmental Consequences

4.3.4.1 Operating-Phase (Long-Term) Impacts

The operating phase of the proposed BLRT Extension 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 proposed BLRT Extension project.

Proposed BLRT Extension Project

Parcel Impacts

Table 4.3-1 summarizes the total and partial property acquisitions by city and by current land use. Property acquisitions required for the proposed BLRT Extension project would affect 292 parcels with a combined area of 75.54 acres of permanent and temporary easements. Of the 75.54 acres, about 28.86 acres would be temporary easements, most commonly involving a strip of land needed to allow for construction activities to occur.

The proposed BLRT Extension project would require 14 total acquisitions including commercial and industrial parcels, with one vacant, undevelopable residential property, spread throughout the proposed BLRT Extension project corridor. The largest number of acquisitions would occur in the City of Crystal. The largest acquisition of property (calculated as total acreage) would occur in the City of Robbinsdale.

Table 4.3-1. Partial and Full Acquisitions Required for the Proposed BLRT Extension Project

Type	Land Use	Minneapolis	Golden Valley	Robbinsdale	Crystal	Brooklyn Park	Total
Full acquisitions[1] (parcels)	Residential	0	0	1[2]	0	0	1
	Commercial	0	0	5	4	2	11
	Industrial	0	1	0	0	1	2
	Public	0	0	0	0	0	0
	Total	**0**	**1**	**6**	**4**	**3**	**14**
Partial acquisitions[3] (parcels)	Residential	18	15	76	64	34	207
	Commercial	2	2	4	16	18	42
	Industrial	2	1	0	11	4	18
	Public	1	4	4	1	1	11
	Total	**23**	**22**	**84**	**92**	**57**	**278**
Total acreage – permanent right-of-way and easements	Residential	0.2	0.05	0.54	0.24	16.16	17.19
	Commercial	0.08	0.23	4.5	2.19	9.29	16.29
	Industrial	1.83	7.59	0.00	0.05	1.62	11.09
	Public	0.00	2.11	0.00	0.00	0.00	2.11
	Total	**2.11**	**9.98**	**5.04**	**2.48**	**27.07**	**46.68**
Total acreage – temporary easements	Residential	0.54	1.04	2.27	1.17	0.84	5.86
	Commercial	0.00	0.30	0.45	1.06	1.67	3.48
	Industrial	0.11	0.00	0.00	0.85	0.59	1.55
	Public	0.29	10.0	6.40	0.10	1.18	17.97
	Total	**0.94**	**11.34**	**9.12**	**3.18**	**4.28**	**28.86**

Source: Council, 2016

[1] Because some properties are unoccupied or vacant, not all full acquisitions would result in displacements.

[2] This acquisition is a vacant, undevelopable parcel that is zoned residential and would not result in a displacement.

[3] Partial acquisitions include both temporary easements and permanent easements or acquisitions.

Displacements

The proposed BLRT Extension project would require 10 commercial displacements. These displacements are described below.

Residential

The proposed BLRT Extension project would not displace any residential properties. One residential property would require a full acquisition, but the property is unoccupied.

Commercial

A total of 10 commercial operations would be displaced by the proposed BLRT Extension project in three of the corridor cities: the cities of Robbinsdale, Crystal, and Brooklyn Park. **Table 4.3-2** summarizes the commercial displacements.

Table 4.3-2. Commercial Displacements by City Required for the Proposed BLRT Extension Project

City	Location	Property Description	Number of Businesses Displaced
City of Robbinsdale	4740 42nd Avenue N	Sawhorse	1
	4719 42nd Avenue N	EMI Audio	1
	4165 Hubbard Avenue N	Oriental Grocery	1
City of Crystal	4900 West Broadway Avenue	Steve O's Restaurant	1
	5501 Lakeland Avenue N	Office building	4
City of Brooklyn Park	7308 Lakeland Avenue N	Furniture store	1
	7300 Lakeland Avenue N	Dentist office	1
		Total	**10**

Industrial

The proposed BLRT Extension project would not displace any industrial properties.

Public

The proposed BLRT Extension project would not displace any public properties.

Operations and Maintenance Facility

In addition to the right-of-way needed to construct the proposed BLRT Extension project alignment as shown in **Table 4.3-1**, the proposed BLRT Extension project would require the construction of an OMF. The OMF site north of 101st Avenue (see **Chapter 2**, **Figure 2.5-4**) consists of an undeveloped parcel owned by the city of Brooklyn Park. Two parcels would be required, and the total acreage required would be 10.4 acres. No displacements would be required to construct the OMF.

TPSS

Potential locations for the TPSS sites are shown in **Chapter 2**, **Figure 2.5-5**. A total of 17 potential TPSS locations have been identified along the proposed BLRT Extension project alignment. The TPSS locations, as shown in **Figure 2.5-5,** are represented by areas with a 300-foot diameter. These areas would be refined through the Engineering phase of project development to reduce impacts to surrounding properties and resources and to balance safety, reliability, cost, and operational efficiencies. TPSS sites would be about 4,000 square feet and would be able to accommodate a single-story building about 40 feet by 20 feet. Although most TPSSs would be located within existing transportation right-of-way, there might be cases in which they would be sited on property not part of public rights-of-way.

4.3.4.2 Construction-Phase (Short-Term) Impacts

Construction activities would result in short-term impacts primarily from the use of temporary construction easements. In addition, proposed BLRT Extension project construction would likely require temporarily modifying or closing existing property accesses. Refer to **Section 3.3**, **Section 3.4**, **Section 3.5**, and **Section 4.6** of this Final EIS for further discussion of construction impacts related to access closures.

4.3.5 Avoidance, Minimization, and/or Mitigation Measures

- Loss of private residential property will be mitigated by payment of fair market compensation and provision of relocation assistance in accordance with the Uniform Act and Minn. Stat. 117.

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

- Relocation advisory services including identification of relocation sites based on the business owners' preferences to retain their client base and/or continue to serve a similar population
- 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 non-residential displacements, the displaced owners will be contacted by a right-of-way agent and an appraiser prior to that. Advisory services would ensure that relocation activities are coordinated with the owners. There are a number of other reimbursable incidental expenses related to relocation that might also be provided to residents and businesses if determined to be actual, reasonable, and necessary.

4.4 Cultural Resources

This section describes the long-term direct and indirect and short-term (construction) direct and indirect effects of the No-Build Alternative and the proposed BLRT Extension project on cultural resources. NEPA requires federal agencies to consider the impacts of their actions on cultural resources, and the National Historic Preservation Act of 1966 (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* means the same as *historic property*. Historic properties are buildings, structures, districts, objects, and sites that are listed in or eligible for listing in the National Register of Historic Places (NRHP). The Council on Environmental Quality's (CEQ) *Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act* (40 CFR Parts 1500–1508) encourage integration of the NEPA process with other planning and environmental reviews, such as 54 USC § 306108 of the NHPA (hereinafter referred to as Section 106). CEQ regulations also clarify that, under NEPA, *impact* is synonymous with *effect* (40 CFR Part 1508.8). For consistency with the Section 106 regulations, *effect* is used throughout this section.

Because federal policy and guidance encourages "coordination" and "integration" between NEPA and Section 106, FTA used the Section 106 process for this project to fulfill the requirements for the consideration of effects on cultural properties under NEPA. For this reason, this section of the Final EIS includes identification of commitments and mitigation measures included in the proposed BLRT Extension project's Section 106 MOA (see **Section 4.4.4** and **Appendix H**).

This section includes an overview of the regulatory context and methodology used for the analysis; a summary of the proposed BLRT Extension project's Section 106 consultation process; an evaluation of existing historic properties; an assessment of the anticipated effects on historic properties; and a description of avoidance, minimization, and mitigation measures to implement with the proposed BLRT Extension project (for cumulative impacts, see **Chapter 6**).

Appendix H includes documentation of the Section 106 consultation process, including copies of the proposed BLRT Extension project's consultation materials (also see **Section 4.4.1.4**). A list of reports and studies on historic properties studies is provided in the *Cultural Resources Evaluation Supporting Documentation Technical Memorandum* (Council, 2016a) (for instructions on how to access the technical memorandum, see **Appendix H**). The reports summarized in this memorandum, combined with correspondence with MnHPO in **Appendix H**, provide documentation of FTA's efforts to identify historic properties (also see **Section 4.4.2**).

Appendix H includes the *Section 106 Assessment of Effects and Final Determination of Effect for Historic Properties* (*Assessment of Effect Report*) (FTA and MnDOT CRU, 2016), which documents FTA's findings of effect for all identified historic properties (also see **Section 4.4.3**) and its overall determination of effect for this project. Documentation of MnHPO's concurrence with those findings is provided in **Appendix H**.

4.4.1 Regulatory Context and Methodology

This section describes the regulatory context and methodology for the historic properties assessment under Section 106. After an introduction summarizing the Section 106 process, this section describes the methodologies used to determine the architecture/history and archaeological areas of potential effects (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 proposed BLRT Extension project and would seek permits for construction from the US Army Corps of Engineers (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 proposed BLRT Extension project. The Council is the proposed BLRT Extension project's local Lead Agency and project sponsor. USACE is a federal Cooperating Agency for the proposed BLRT Extension project, responsible for implementing NEPA and related laws and Section 404 of the Clean Water Act. Pursuant to 36 CFR Part 800.2(a)(2), USACE has also designated FTA as the Federal Lead Agency responsible for fulfilling their collective Section 106 obligations for the proposed BLRT Extension project.[3]

FTA's Section 106 compliance was achieved through consultation with MnHPO, Indian 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 MnHPO and Indian tribes, and developing a plan to involve the public (36 CFR Part 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 Part 800.4);
- Assess the effects of the undertaking on historic properties by applying the criteria of adverse effect and consulting with MnHPO, Indian tribes, and the public [36 CFR Parts 800.5 and 800.11(e)]; and
- 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 MOA to document agreed-upon measures (36 CFR Part 800.6).

The Minnesota Department of Transportation (MnDOT) Cultural Resources Unit (CRU) is aiding FTA in many aspects of the Section 106 process for the proposed BLRT Extension project, per 36 CFR Part 800.2(a)(3). FTA detailed these responsibilities in a letter to MnDOT, included in **Appendix H**. FTA in consultation with MnHPO defined the proposed BLRT Extension project's architecture/history and archaeological APEs, identified and evaluated historic properties, assessed

[3] In a letter dated March 30, 2015, USACE recognized FTA as the Federal Lead Agency pursuant to 36 CFR Part 800.2(a)(2) to act on USACE's behalf for meeting the requirements of Section 106.

the effects of the proposed BLRT Extension project on historic properties listed in or eligible for inclusion in the NRHP, and resolved adverse effects.

The proposed BLRT Extension project is also using funding from the state of Minnesota and political subdivisions of the state and is seeking permits for construction from several state agencies, including MnDOT, the Minnesota Department of Natural Resources, the Minnesota Pollution Control Agency, and the Minnesota Department of Health. Therefore, the proposed BLRT Extension project must also comply with Minnesota laws, including the Minnesota Environmental Policy Act of 1973, 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 proposed BLRT Extension project has two APEs, one for architecture/history properties (**Figure 4.4-1 and Figure 4.4-2**) and one for archaeological properties (**Figure 4.4-3 and Figure 4.4-4**), which are the geographic areas within which an undertaking could directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist.[4] The rationale for the architecture/history and archaeological APEs can be found in the *Bottineau Transitway – Draft Environmental Impact Statement Research Design for Cultural Resources* (HCRRA, 2011), which is included in the *Cultural Resources Evaluation Supporting Documentation Technical Memorandum*. The proposed BLRT Extension project's MOA includes a process for modifying the APE, if needed, to account for changes in project effects as project engineering advances.

A. Architecture/History Area of Potential Effects

The APE for architecture/history properties includes (see **Figure 4.4-1 and Figure 4.4-2**):

- **Alignment** – 500 feet on either side of the proposed alignment;
- **Stations and OMFs** – 0.25-mile radius from the center point of the station or OMF area;
- **New structures** (new or replacement bridges, pedestrian bridge, etc.) – 0.25-mile radius from the structure (assumes the potential for pile driving);
- **Existing structures; modification** (widening/reconstruction of existing structures) – 0.25-mile radius from the structure (assumes the potential for pile driving); and
- **Existing structures; pier modification only** (moving piers to allow the LRT to go under) – 500-foot radius from the structure (assumes using drilling and no pile driving).

[4] The architecture/history and archaeological APEs that MnHPO concurred with were developed in 2011, prior to the preparation of the Draft EIS for the project and prior to the Council's selecting the locally preferred alternative (LPA). For this reason, the APEs included several alignment alternatives that were considered during the development of the Draft EIS but were not selected as part of the LPA and have been dropped from further consideration. Therefore, these other alignment alternatives are not shown in **Figure 4.4-1 through Figure 4.4-4**.

Figure 4.4-1. Architecture/History APE – South of Bass Lake Road

Figure 4.4-2. Architecture/History APE – North of Bass Lake Road

B. Archaeological Area of Potential Effects

The APE for archaeology includes all areas of proposed construction activities or other potential ground-disturbing activities associated with construction (see **Figure 4.4-3 and Figure 4.4-4**):[5]

- **Alignment** (within an existing rail corridor) – Existing railroad right-of-way;
- **Alignment** (outside an existing rail corridor) **–** LOD for the proposed BLRT Extension project (ranges from 55 to 550 feet in width);
- **Stations** – 500-foot radius from the center point of the station; and
- **Park-and-Ride Stations and OMFs** – 500-foot radius from the potential limit of disturbance.

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 evaluated 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, or represent the work of a master, or 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).

[5] **Figure 4.4-3 and Figure 4.4-4** show the location of the LPA and the corresponding archaeological APE. As the proposed BLRT Extension project design has advanced since the archaeological APE was established, several slight revisions have been made to the project design but not to the project scope. As a result, as shown in **Figure 4.4-4**, several small portions of the LPA are now located outside the existing archaeological APE. However, the Phase IA archaeological investigation conducted for the project (see the next paragraph in this section [**Section 4.4.1.2**]) identified known archaeological sites within an area extending 1 mile beyond the archaeological APE, so known archaeological sites have been identified for the portions of the current LPA that are outside the archaeological APE. No known historic properties were identified. The portion of the LPA outside the APE, from and including the 93rd Avenue Station and its park-and-ride facility to the OMF site, also were previously surveyed at a Phase I level for another project, and no historic properties were identified (Woodward-Clyde, 1994). MnDOT CRU also examined the portions of the LPA outside the present APE again on January 12, 2016, through the use of its Minnesota Model (MnModel) and confirmed that these areas have low archaeological site potential. Based on the previous archaeological assessments completed for the project, the 1994 survey by Woodward-Clyde, and MnModel data, FTA has determined that there is low potential for archaeological resources to exist, but would incorporate measures covering unanticipated discoveries during construction in its Section 106 MOA for the project.

Figure 4.4-3. Archaeology APE – South of Bass Lake Road

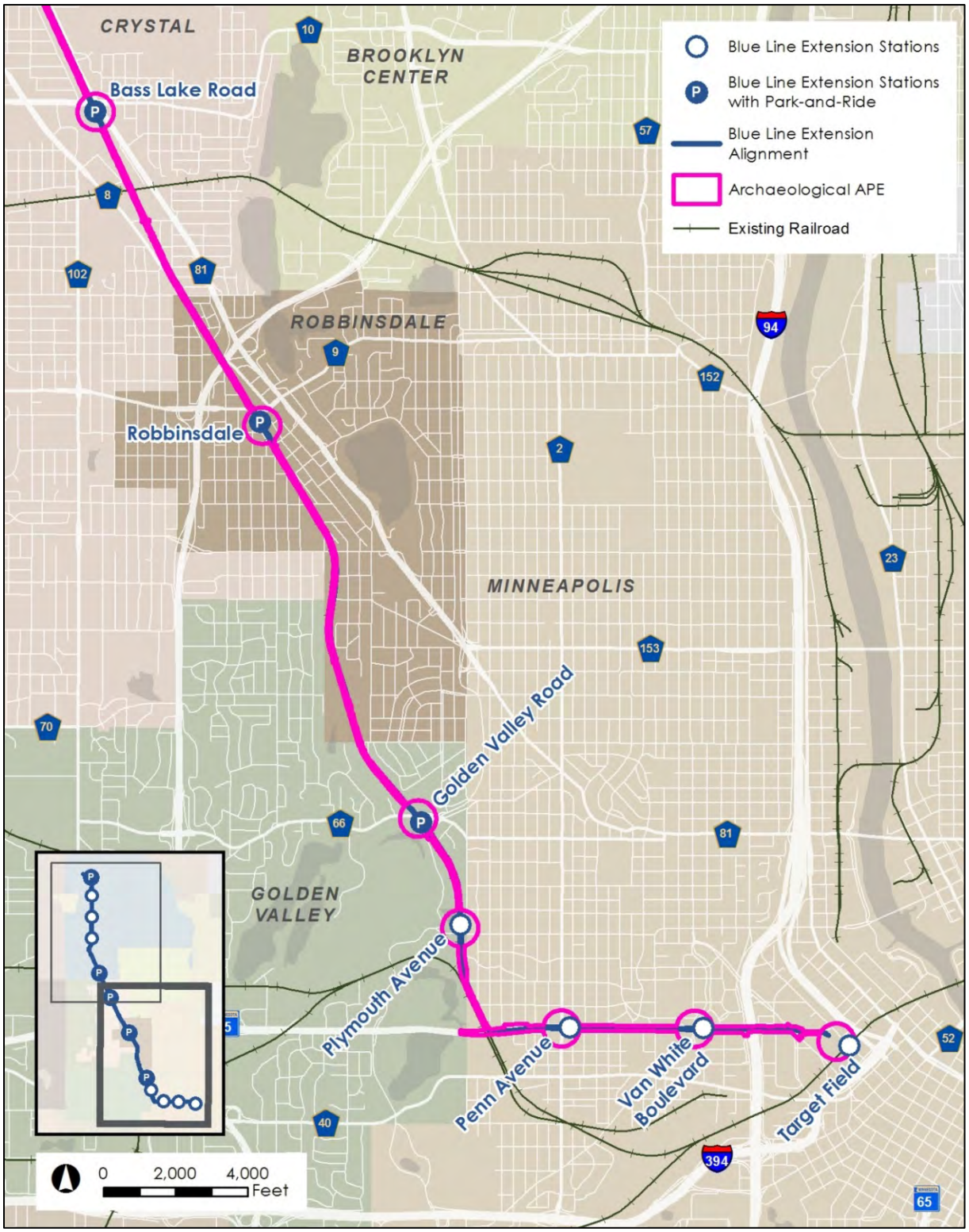


Figure 4.4-4. Archaeology APE – North of Bass Lake Road

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 proposed BLRT Extension project's architecture/history and archaeological APEs, two architecture/history surveys, one archaeological survey, and one cultural landscape study have been completed since 2011. These investigations documented previously identified or evaluated historic properties and included field surveys to document any previously unidentified properties more than 50 years of age within the proposed BLRT Extension project's APEs. **Appendix H** lists the surveys and investigations conducted in support of the proposed BLRT Extension project as well as a description of each eligible or listed property. A list of, and instructions on how to access, reports associated with the historic properties studies is provided in the *Cultural Resources Evaluation Supporting Documentation Technical Memorandum* in **Appendix H**.

The proposed BLRT Extension project's MOA includes a process for identifying and evaluating additional historic properties, if needed, if there are changes in the proposed BLRT Extension 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

FTA and MnDOT CRU used the criteria of adverse effect described in 36 CFR Part 800.5(a)(1) to assess the proposed BLRT Extension project's effects on historic properties. Per 36 CFR Part 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 full discussion of the proposed BLRT Extension project's effects on each historic property is provided in **Appendix H**.

The proposed BLRT Extension project's MOA includes a process for resolving any newly identified adverse effects, if needed, as project engineering advances.

4.4.1.4 Section 106 Coordination and Consultation

Agency Coordination and Public Involvement

Section 106 consultation continued with MnHPO and other consulting parties since publication of the Notice of Intent to prepare an EIS and through development of the Section 106 MOA. The Section 106 process tasks conducted to date include identifying the architecture/history and archaeological APEs; identifying historic properties and determining their eligibility for the NRHP; assessing project effects on historic properties and making findings of effects, including a final determination of effect; and developing a Section 106 MOA that lists measures to avoid, minimize, and mitigate adverse effects on historic properties. Stipulations in the Section 106 MOA would guide the proposed BLRT Extension project's implementation.

To comply with Section 106 requirements, MnDOT CRU, on FTA's behalf, submitted the architecture/history and archaeological APEs; the results of the surveys and investigations completed for the proposed BLRT Extension project, including NRHP eligibility determinations; and preliminary determinations of effect to MnHPO for concurrence and to other Section 106 consulting parties for comment. FTA submitted the final determinations of effect to MnHPO for concurrence and to other Section 106 consulting parties for comment.

MnHPO concurred with the proposed BLRT Extension project's APEs, NRHP eligibility determinations, and final determination of effect on historic properties. Letters from MnHPO are provided in **Appendix H**. Additional consultation with Section 106 consulting parties occurred throughout the Section 106 process, and documentation of these consultation efforts is also provided in **Appendix H**. Pursuant to the Section 106 regulations [36 CFR Part 800.6(a)(1)], the Advisory Council on Historic Preservation (ACHP) was notified of the final determination of an adverse effect and was provided an opportunity to enter into the consultation process. In their letter dated March 15, 2016, the ACHP formally declined to participate in the consultation process. The Section 106 consulting parties for the proposed BLRT Extension project are MnHPO; USACE; Hennepin County; the cities of Minneapolis, Golden Valley, Robbinsdale, Crystal, and Brooklyn Park; and the Minneapolis Park and Recreation Board (MPRB). The signatories and invited signatories to the proposed BLRT Extension project's Section 106 MOA are FTA, MnHPO, MnDOT, and the Council.

In accordance with 36 CFR Part 800.8, FTA and the Council coordinated Section 106 consultation efforts with the NEPA process and related outreach activities and events. In particular, FTA and the Council incorporated opportunities for the public to review information and provide comments related to steps in the Section 106 process, as appropriate, into public meetings related to the NEPA and design and engineering processes, such as open houses. At these meetings, information was shared summarizing the steps in the Section 106 process, historic properties identified, and effects on historic properties. A list of meetings related to agency coordination and public involvement efforts is included in **Table 4.4-1**.

Table 4.4-1. Meetings Related to the Section 106 Process

Date	Meeting Type	Purpose
June 6, 2015	Section 106 consulting parties meeting	Provide Section 106 process overview, proposed BLRT Extension project overview, and Section 106 findings through the Draft EIS.
July 10, 2015	Section 106 consulting parties meeting	Discuss potential effects on historic properties and present Theodore Wirth Cultural Landscape Study
July 16, 2015	Section 106 consulting parties meeting	Discuss potential effects on historic properties and present Theodore Wirth Cultural Landscape Study
October 19, 2015	Public open house in the City of Crystal	Environmental review process. Included boards with information on historic properties in the APE in the City of Crystal and potential, proposed BLRT Extension project effects on these properties.
October 20, 2015	Public open house in the City of Brooklyn Park	Environmental review process. Included boards with information on historic properties in the APE in the City of Brooklyn Park and potential, proposed BLRT Extension project effects on these properties.
October 21, 2015	Public open house in the City of Robbinsdale	Environmental review process. Included boards with information on historic properties in the APE in the City of Robbinsdale and potential, proposed BLRT Extension project effects on these properties.
October 28, 2015	Public open house in the City of Golden Valley	Environmental review process. Included boards with information on historic properties in the APE in the City of Golden Valley and potential, proposed BLRT Extension project effects on these properties.
October 29, 2015	Public open house in the City of Minneapolis	Environmental review process. Included boards with information on historic properties in the APE in the City of Minneapolis and potential, proposed BLRT Extension project effects on these properties.
February 4, 2016	Section 106 consulting parties meeting	Review FTA's effects findings and final determination of effect for the proposed BLRT Extension project and consult on unresolved adverse effects.
March 7, 2016	Section 106 consulting parties meeting	Presentation: Information share to Homewood neighborhood residents on proposed BLRT Extension project effects on the Homewood Residential Historic District.
March 10, 2016	Section 106 consulting parties meeting	Consultation on unresolved adverse effects.
March 24, 2016	Section 106 consulting parties meeting	Consultation on unresolved adverse effects.

Tribal Coordination

In January 2012, FTA sent letters to potentially affected Indian tribes, requesting that they identify any concerns about the proposed BLRT Extension project's potential effects and inviting them to participate in public Scoping meetings and/or schedule a separate meeting to discuss any specific tribal issues and concerns. Letters were sent to the following tribes:

- Fond du Lac Reservation Tribal Council
- Keweenaw Bay Indian Community
- Grand Portage Reservation Council and Tribal Historic Preservation Office
- Mille Lacs Band of Ojibwe
- Upper Sioux Indian Community
- Standing Rock Sioux Tribe
- White Earth Tribal Council
- Bois Forte Reservation Tribal Council
- Prairie Island Indian Community Council
- Lower Sioux Indian Community Council
- Red Lake Tribal Council
- Shakopee Dakota Community Council
- Three Affiliated Tribes
- Bad River Band of Lake Superior Chippewa
- Flandreau Santee Community
- Lac Courte Oreilles Band of Lake Superior Chippewa Indians of Wisconsin
- Lac du Flambeau Band of Lake Superior Chippewa Indians of Wisconsin
- Lac Vieux Desert Band Ketegitigaaning Ojibwe Nation
- Red Cliff Band of Lake Superior Chippewa Indians
- Sokaogon Chippewa (Mole Lake)
- Spirit Lake Tribal Council
- St. Croix Chippewa Indians of Wisconsin
- Turtle Mountain Band of Chippewa
- Northern Cheyenne Tribe
- Fort Peck Tribes
- Leech Lake Band of Ojibwe
- Santee Sioux Nation
- Sisseton-Wahpeton Oyate of the Lake Travers Reservation

Copies of the letters are provided in **Appendix H**. The tribes also received copies of the Draft EIS and were invited to comment on the document. Comments were received from one tribe, and FTA provided the tribe with the additional information requested. However, no further correspondence was received in response, and no other tribes expressed an interest in meeting or participating in the Section 106 process.

To date, no historic properties significant to tribes have been identified within the proposed BLRT Extension project's APE. If such properties are identified in the future or as unanticipated discoveries during construction, consultation would proceed per the terms of the Section 106 MOA.

4.4.2 Affected Environment

A total of 17 NRHP-listed or -eligible properties have been identified in the proposed BLRT Extension project's architecture/history and archaeological APEs. All are architecture history properties; no NRHP-listed or -eligible archaeological properties have been identified in the proposed BLRT Extension project's archaeological APE. **Table 4.4-2 and Table 4.4-3** list these historic properties, which are shown in **Figure 4.4-5 and Figure 4.4-6**.

4.4.2.1 Architecture/History Properties

The 17 architecture/history resources identified within the proposed BLRT Extension project's architecture/history APE include seven historic districts, nine properties that are individually eligible for or listed in the NRHP, and one property that is both individually eligible for the NRHP and eligible as a contributing element to a historic district. **Figure 4.4-5 and Figure 4.4-6** show the locations of the 17 architecture/history properties identified within the proposed BLRT Extension project's architecture/history APE.

4.4.2.2 Archaeological Properties

No previously recorded or reported archaeological sites, nor any new sites, have been identified within the archaeological APE to date. One area of archaeological potential was identified within the APE for the locally preferred alternative (LPA); however, the area of potential is outside the LOD, so it would not be affected by the proposed BLRT Extension project unless there is a change to the LOD as the proposed BLRT Extension project's design advances. The proposed BLRT Extension project's MOA includes measures for continuing review of the proposed BLRT Extension project's design to verify that no ground-disturbing activities would affect this area.

Because of the sensitive nature of archaeological properties, **Figure 4.4-3 and Figure 4.4-4** illustrate the archaeological APE but do not show the exact location of any previously recorded or reported archaeological site or materials, nor any areas of archaeological potential.[6]

[6] These properties are considered sensitive historic resources under Section 304 of the NHPA, as amended. In accordance with Section 304, information on these sensitive historic resources could cause a significant invasion of privacy and/or put the resources at risk to harm and is not included in this Final EIS. To help preserve these sensitive resources, names, locations, and areas of significance of archaeological sites are not disclosed.

Figure 4.4-5. Location of Historic Properties Identified within the Architecture/History APE – South of Bass Lake Road

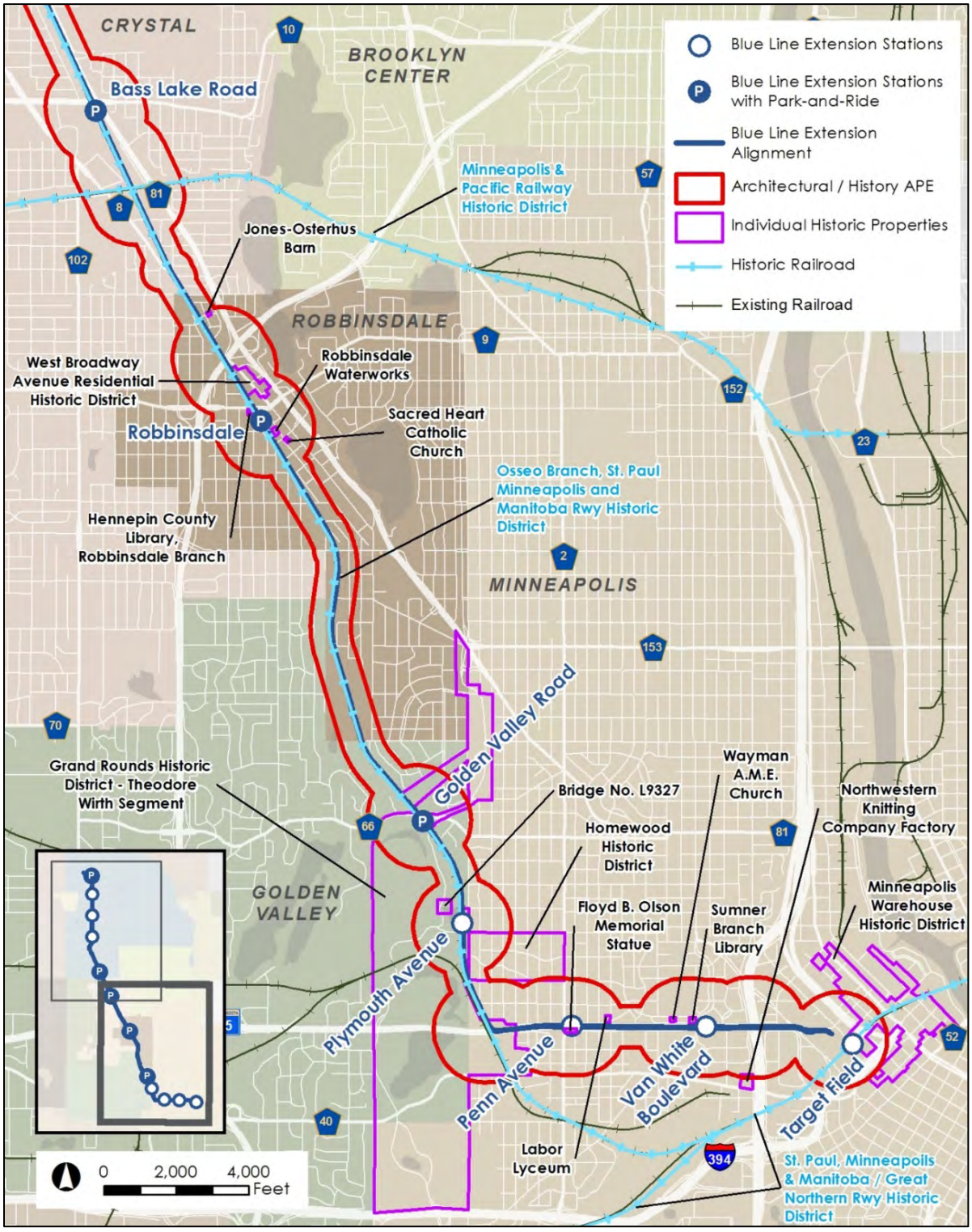


Figure 4.4-6. Location of Historic Properties Identified within the Architecture/History APE – North of Bass Lake Road

4.4.3 Environmental Consequences

This section identifies the long-term and short-term direct and indirect effects on historic properties from the No-Build Alternative and the proposed BLRT Extension project. Direct effects include those that physically alter, damage, or destroy all or part of the historic property, as well as ownership changes. Indirect effects include changes in a property's use or physical features within the property's setting that contribute to its historic significance; the introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic features; or neglect of the property that causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe (36 CFR Part 800.5).

Direct effects generally occur at the same time and place as the proposed action, while indirect effects might occur at the same time as the proposed action or later in time and might be farther removed in distance from the proposed action, but are still reasonably foreseeable (40 CFR Part 1508.8). Long-term effects are those that would continue to occur after construction is complete, while short-term effects are those that are associated with the proposed action's construction activities and would be temporary in duration.

Short-term construction effects are addressed in the respective section for each resource addressed in this Final EIS. For a description of cumulative impacts, see **Chapter 6**.

4.4.3.1 No-Build Alternative

There would be no long-term direct, long-term indirect, or short-term effects on the identified historic properties from the No-Build Alternative.

4.4.3.2 Proposed BLRT Extension Project

In accordance with 36 CFR Part 800.5, FTA, in consultation with MnHPO and other consulting parties, reviewed proposed BLRT Extension project elements and applied the criteria for an adverse effect under Section 106 to determine whether the proposed BLRT Extension project would cause any adverse effects on historic properties within the proposed BLRT Extension project's APEs. This consultation considered anticipated long-term or short-term direct and indirect effects on the identified historic properties from construction and operation of the proposed BLRT Extension project. See **Section 4.4.1.3** for a description of the criteria and process used to reach a determination of effect.

Table 4.4-2 and Table 4.4-3 summarize the effects on historic properties considered and the rationale for the finding of effect for each property, as determined through the Section 106 process. They also include measures that have been, or would be, integrated into the proposed BLRT Extension project's design to avoid and minimize effects, as well as mitigate adverse effects, on historic properties. These measures are documented in the proposed BLRT Extension project's Section 106 MOA.

The *Assessment of Effects Report* in **Appendix H** contains a detailed discussion of the proposed BLRT Extension project's effects on each historic property, including the rationale and final finding of effect for each property. It also includes the final overall Section 106 determination of effect of the proposed BLRT Extension project on historic properties. **Appendix H** also includes the proposed BLRT Extension project's Section 106 MOA.

Table 4.4-2. Historic Properties Adversely Affected by the Proposed BLRT Extension Project

Inventory Number	Site Name	Property Address	NRHP Status	NRHP Eligibility Criteria and Area of Significance	Rationale for Adverse Effect Finding and Avoidance/Minimization/Mitigation Measures
Table Notes					
■ Properties are listed by property type (districts then individual properties), then by their occurrence along the proposed BLRT Extension project alignment from south/east to north/west. ■ A Section 106 MOA is documentation that commits FTA and the Council to implement measures to avoid, minimize, and/or mitigate adverse effects on historic properties. For information on avoidance/minimization/mitigation measures specific to an individual property or historic district, see the Section 106 MOA in **Appendix H**. ■ Assessing visual impacts under NEPA and potential visual impacts to inform a determination of effect under Section 106 are two separate processes that could have similar or different conclusions. The results of an evaluation of impacts to visual quality and aesthetics per NEPA are provided in **Section 4.5**. ■ Under FTA guidance, historic properties are designated as noise- or vibration-sensitive depending on the land use of the property, not their designation as historic. Properties of national significance with considerable outdoor use required for site interpretation would be in Category 1. Historic properties that are currently used as residences would be in Category 2. Historic buildings with indoor use of an interpretive nature involving meditation and study would be in Category 3, including museums, significant birthplaces, and buildings in which significant historical events occurred. Most downtown areas have buildings that are historically significant because they represent a particular architectural style or are prime examples of the work of a historically significant designer. If the buildings or structures are used for commercial or industrial purposes and are located in busy commercial areas, they are not considered noise- or vibration-sensitive, and the noise and vibration impact criteria do not apply. Similarly, historical transportation structures, such as terminals and railroad depots, are not considered noise- or vibration-sensitive land uses. For additional information on noise, see **Appendix F – Noise and Vibration Technical Report**.					
Historic Districts					
HE-RRD-002 (including segments HE-BPC-0084, HE-CRC-0238, HE-RBC-0304, HE-MPC-16389)	Osseo Branch Line of the St. Paul, Minneapolis & Manitoba Railroad / Great Northern Railway Historic District[1]	Minneapolis, Golden Valley, Robbinsdale, Crystal, Brooklyn Park	Eligible	■ Criterion: A ■ Area of Significance: • Transportation	■ Effects Considered: • Removal of track and the existing alignment's infrastructure, and its reconstruction 25 feet west of the present alignment. • Introduction of LRT-related infrastructure to the district, including two LRT tracks of a higher speed design, overhead power system, five stations, three vertical circulation towers, multiple TPSS and signal bungalows, retaining walls, the reconstruction of bridges over the corridor, and a protection barrier system between freight rail and LRT. The barrier system will include a mix of tall walls, grade separations supported by retaining walls, and ditches. • Removal of vegetation within and along the historic district. • Removal and replacement of the existing high-voltage transmission line (HVTL) from the eastern edge of the corridor to the western side of the right-of-way, including replacement of steel-truss towers with monopoles.

Table 4.4-2. Historic Properties Adversely Affected by the Proposed BLRT Extension Project

Inventory Number	Site Name	Property Address	NRHP Status	NRHP Eligibility Criteria and Area of Significance	Rationale for Adverse Effect Finding and Avoidance/Minimization/Mitigation Measures
					• Possible redevelopment of properties near light rail stations in the vicinity of the historic district. ■ Rationale for Adverse Effect Finding: • The historic alignment and contributing track structure would be removed, the alignment would be relocated, and two new LRT tracks would be placed in the historic district, along with a substantial amount of new infrastructure, resulting in the substantial alteration and destruction of a significant portion of the eligible historic district (over 60 percent of the length of this linear historic district), thereby altering characteristics of the Osseo Branch that qualify it for inclusion in the NRHP in a way that would diminish its integrity of design, materials, setting, workmanship, feeling, and association. ■ Avoidance/Minimization Measures: • Implement Section 106 MOA measures.
XX-PRK-0001	Grand Rounds Historic District, Theodore Wirth Segment	Minneapolis, Golden Valley, Robbinsdale	Eligible	■ Criteria: A and C ■ Areas of Significance: • Community Planning and Development • Entertainment/ Recreation • Landscape Architecture	■ Effects Considered: • Acquisition and permanent use of portions of the historic district (within the Theodore Wirth Regional Park element) totaling over 2 acres. • Alterations to portions of the historic district (all within Theodore Wirth Regional Park) including the portion of the BNSF right-of-way within the district, including removal of vegetation, alteration of topography, and the construction of project infrastructure, including two stations, two vertical circulation towers, and a 100-space park-and-ride lot. • Demolition and reconstruction of two bridges in the park. • Relocation of the existing HVTL from the eastern edge of the BNSF right-of-way corridor to the western side. • Relocation, narrowing, and channelizing a segment of Bassett Creek from its existing channel to a new channel, including replacing a natural earthen bank with a retaining wall. • Relocation of an existing non-historic park trail from the BNSF right-of-way into park land.

Table 4.4-2. Historic Properties Adversely Affected by the Proposed BLRT Extension Project

Inventory Number	Site Name	Property Address	NRHP Status	NRHP Eligibility Criteria and Area of Significance	Rationale for Adverse Effect Finding and Avoidance/Minimization/Mitigation Measures
					• Alterations to the visual character of the district, and viewsheds and views within the district, including designed viewsheds, resulting from the introduction of project infrastructure. • Possible redevelopment outside, but adjacent to, the district around the two new stations (Plymouth Avenue and Golden Valley Road stations), which would be visible from this historic district and thereby alter its setting. • Noise from light rail vehicles (LRVs) and station operations. • Increases in vehicular traffic along roads that access this segment of the historic district. ■ Rationale for Adverse Effect Finding: • Direct effects would physically alter the entire eastern edge of the contributing Theodore Wirth Regional Park element, as well as its northern edge where Theodore Wirth Parkway, another contributing element to the district, enters the park. In addition, two historic entry points to the Theodore Wirth Segment are also being demolished and reconstructed, or substantially altered from natural to developed spaces. • The proposed BLRT Extension project would introduce new contemporary elements into portions of the district in the form of formal, engineered structures such as retaining walls, the LRT guideway and overhead power system, stations, vertical circulation towers, a parking lot, and other elements to the otherwise naturalistic setting of the park's landscape. • Key viewsheds and views within the park would be altered by introduction of proposed BLRT Extension project elements, including the most prominent viewshed within it, from the Theodore Wirth Chalet. • Collectively, the direct and indirect effects of the proposed BLRT Extension project on the Theodore Wirth Segment of the historic district would alter characteristics of this segment of the district that qualify it for inclusion in the NRHP in a way that would diminish its integrity of

Table 4.4-2. Historic Properties Adversely Affected by the Proposed BLRT Extension Project

Inventory Number	Site Name	Property Address	NRHP Status	NRHP Eligibility Criteria and Area of Significance	Rationale for Adverse Effect Finding and Avoidance/Minimization/Mitigation Measures
					design, setting, materials, workmanship, feeling, and association. ■ Avoidance/Minimization Measures: • Implement Section 106 MOA measures.
HE-MPC-12101	Homewood Residential Historic District (HRHD)	Bounded by Penn, Oak Park, Xerxes, and Plymouth Avenues, Minneapolis	Eligible	■ Criterion: A ■ Areas of Significance: • Community Planning and Development • Social History	■ Effects Considered: • Direct physical effects, including: – Construction of a retaining wall and the reconstruction of a small portion of a street within the HRHD. – Visual changes resulting from the reconstruction of Plymouth Avenue Bridge and Plymouth Avenue Station, as well as the introduction of other project infrastructure within the BNSF rail corridor directly west of the district, which would be visible from the district. – Relocation of the existing HVTL from the eastern edge of the BNSF right-of-way corridor to the western side. – Noise from LRVs and station operations. – Possible redevelopment of properties adjacent to or within the district. ■ Rationale for Adverse Effect Finding: • The district is a Category 2 noise receptor per FTA criteria, and a noise analysis indicates that, without mitigation, LRT operations would cause a moderate noise impact to three residences in the district, resulting in a diminishment of the district's integrity of setting and feeling. ■ Avoidance/Minimization Measures: • Implement Section 106 MOA measures.
HE-RBC-158	West Broadway Avenue Residential Historic District	West Broadway Avenue, between 42nd Avenue North and TH 100, Lakeland	Eligible	■ Criterion: C ■ Area of Significance: • Architecture	■ Effects Considered: • Visual changes from the proposed BLRT Extension project's alignment along an elevated roadbed adjacent to the western boundary of the district, and the proposed BLRT Extension project's bridge over TH 100, as well as from the blocking of a viewshed from the district across the existing BNSF freight track by the proposed BLRT Extension project guideway's higher elevation.

Table 4.4-2. Historic Properties Adversely Affected by the Proposed BLRT Extension Project

Inventory Number	Site Name	Property Address	NRHP Status	NRHP Eligibility Criteria and Area of Significance	Rationale for Adverse Effect Finding and Avoidance/Minimization/Mitigation Measures
		Avenue North to the BNSF right-of-way, Robbinsdale			• Noise from LRVs and station operations. • Potential changes in traffic patterns in the district. ■ Rationale for Adverse Effect Finding: • The introduction of project infrastructure along an elevated alignment immediately adjacent to the district would sever the district's visual connection across the existing BNSF freight rail track to areas to the west and introduce new, incompatible elements into the district's immediate setting, which would diminish the historic district's integrity of setting and feeling. • The district is a Category 2 noise receptor per FTA criteria. A noise analysis indicates that, without mitigation, the proposed BLRT Extension project would cause a severe auditory impact to some residences in the historic district. Although implementation of a Quiet Zone[2] would eliminate the severe auditory impacts, two residences would still have moderate impacts, which would thereby diminish the district's integrity of setting, feeling, and association. • Collectively, as a result of the blocking of historic views from the district and the introduction of out-of-scale elements, and since two residences would still have moderate impacts with implementation of Quiet Zones, the direct and indirect effects of the proposed BLRT Extension project on the historic district would alter its characteristics that qualify it for inclusion in the NRHP in a way that would diminish its integrity of setting, feeling, and association. ■ Avoidance/Minimization Measures: • Implement Section 106 MOA measures.

Table 4.4-2. Historic Properties Adversely Affected by the Proposed BLRT Extension Project

Inventory Number	Site Name	Property Address	NRHP Status	NRHP Eligibility Criteria and Area of Significance	Rationale for Adverse Effect Finding and Avoidance/Minimization/Mitigation Measures
Individual Properties					
HE-MPC-8290	Wayman African Methodist Episcopal (AME) Church	1221 7th Avenue North, Minneapolis	Eligible	■ Criterion: C ■ Area of Significance: • Architecture	■ Effects Considered: • Noise from LRVs and station operations. • Possible redevelopment of properties adjacent to the church, and the church itself. ■ Rationale for Adverse Effect Finding: • A station-area planning study completed in coordination with the proposed BLRT Extension project identifies the church as part of a group of properties around the Van White Boulevard Station proposed to be rezoned to allow for increased density and mixed-use development in order to create a planned neighborhood commercial zone around the station. As a result, development pressure created in part by the construction and operation of the proposed BLRT Extension project could lead to changes to the setting of the church and potential alteration or demolition of this property. Although new development in the setting would not alter characteristics that qualify the church for the NRHP, alteration would likely diminish the property's historic integrity, and demolition would destroy the historic property. ■ Avoidance/Minimization Measures: • Implement Section 106 MOA measures.
HE-MPC-9013	Floyd B. Olson Memorial Statue	Olson Memorial Highway at Penn Avenue North, Minneapolis	Eligible	■ Criterion: C ■ Area of Significance: • Art	■ Effects Considered: • Visual changes, including the construction of a new station and proposed BLRT Extension project infrastructure, which would be highly visible from the Memorial, and the obstruction of views and visual relationship of the statue to, from, and with Olson Memorial Highway, with which it is historically associated, by project infrastructure. • Possible redevelopment of adjacent properties and within the NRHP-eligible boundaries of this historic property.

Table 4.4-2. Historic Properties Adversely Affected by the Proposed BLRT Extension Project

Inventory Number	Site Name	Property Address	NRHP Status	NRHP Eligibility Criteria and Area of Significance	Rationale for Adverse Effect Finding and Avoidance/Minimization/Mitigation Measures
					■ Rationale for Adverse Effect Finding: • The construction of the Penn Avenue Station directly in front of the statue would disrupt the visual connection between the statue and Olson Memorial Highway, further diminishing the property's integrity of setting, feeling, and association. • A station-area planning study completed in coordination with the proposed BLRT Extension project identifies the historic property for redevelopment in order to increase density around the Penn Avenue Station and proposes to incorporate the statue itself into a small plaza within the future redevelopment on the property. The planning study also identifies the redevelopment of adjacent properties. This redevelopment of the historic property would destroy the immediate setting of the historic property and severely alter or sever its critical visual connection with Olson Memorial Highway, which is an important aspect of its integrity of association. The redevelopment of adjacent properties would further diminish the visual connection to the statue and, as a result, its association with Olson Memorial Highway. • Indirect effects of the proposed BLRT Extension project on this historic property would alter the characteristics that qualify it for inclusion in the NRHP in a way that would diminish its integrity of location, design, setting, materials, workmanship, feeling, and association. ■ Avoidance/Minimization Measures: • Implement Section 106 MOA measures.

Source: FTA and MnDOT CRU (2016)

[1] The Osseo Branch Line of the St. Paul, Minneapolis & Manitoba Railroad / Great Northern Railway is the historical name for the BNSF Railway.

[2] Quiet Zones are locations, at least one-half mile in length, where the routine sounding of horns has been eliminated because of safety improvements at at-grade crossings, including modifications to the streets, raised median barriers, four quadrant gates, and other improvements designed and implemented as a part of the proposed BLRT Extension project and consistent with Quiet Zone readiness. Horns are sounded in emergency situations at these locations. Municipalities must apply to FRA for approval of Quiet Zones.

Table 4.4-3. Historic Properties Not Adversely Affected by the Proposed BLRT Extension Project

Inventory Number	Site Name	Property Address	NRHP Status	NRHP Eligibility Criteria and Area of Significance	Rationale for Adverse Effect Finding and Avoidance/Minimization/Mitigation Measures
Table Notes					
■ Properties are listed by property type (districts then individual properties), then by their occurrence along the proposed BLRT Extension project alignment from south/east to north/west. ■ Assessing visual impacts under NEPA and potential visual impacts to inform a determination of effect under Section 106 are two separate processes that could have similar or different conclusions. The results of an evaluation of impacts to visual quality and aesthetics per NEPA are provided in **Section 4.5**. ■ Under FTA guidance, historic properties are designated as noise- or vibration-sensitive depending on the land use of the property, not their designation as historic. Properties of national significance with considerable outdoor use required for site interpretation would be in Category 1. Historic properties that are currently used as residences would be in Category 2. Historic buildings with indoor use of an interpretive nature involving meditation and study would be in Category 3, including museums, significant birthplaces, and buildings in which significant historical events occurred. Most downtown areas have buildings that are historically significant because they represent a particular architectural style or are prime examples of the work of a historically significant designer. If the buildings or structures are used for commercial or industrial purposes and are located in busy commercial areas, they are not considered noise- or vibration-sensitive, and the noise and vibration impact criteria do not apply. Similarly, historical transportation structures, such as terminals and railroad depots, are not considered noise- or vibration-sensitive land uses. For additional information on noise, see **Appendix F – Noise and Vibration Technical Report**.					
Historic Districts					
HE-MPC-0441	Minneapolis Warehouse Historic District	Bounded by 1st Avenue North, 1st Street North, 10th Avenue, and 6th Street, Minneapolis	Listed	■ Criteria: A and C ■ Areas of Significance: • Architecture • Commerce	■ Effects Considered: • Direct effects from the Target Field Station were considered and accounted for in the Section 106 review for the construction of that station.[1] • Introduction of project infrastructure to the district's setting and possible redevelopment of properties within and adjacent to the western/ southwestern portions of the district. ■ Rationale for No Adverse Effect Finding: • Potential effects were addressed as part of the Section 106 review for the already-built Target Field Station.[1]
XX-RRD-010 (including HE-MPC-16387)	St. Paul, Minneapolis & Manitoba Railroad / Great Northern Railway Historic District	Minneapolis	Eligible	■ Criterion: A ■ Area of Significance: • Transportation	■ Effects Considered: • Direct effects from the Target Field Station were considered and accounted for in the Section 106 review for the construction of that station.[1] • Introduction of project infrastructure to the district's setting. ■ Rationale for No Adverse Effect Finding: • Potential effects were addressed as part of the Section 106 review for the already-built Target Field Station.[1]

Table 4.4-3. Historic Properties Not Adversely Affected by the Proposed BLRT Extension Project

Inventory Number	Site Name	Property Address	NRHP Status	NRHP Eligibility Criteria and Area of Significance	Rationale for Adverse Effect Finding and Avoidance/Minimization/Mitigation Measures
HE-CRC-199	Minneapolis & Pacific (M&P) Railway / Minneapolis, St. Paul & Sault Ste. Marie Railway Historic District	Crystal	Eligible	■ Criterion: A ■ Area of Significance: • Transportation	■ Effects Considered: • Direct physical effects from the relocation and reconstruction of the existing diamond crossing where the BNSF freight rail track crosses the historic Soo Line Railway to about 25 feet west of its present location. • Indirect visual effects resulting from the introduction of a new 1,260-foot-long LRT bridge and associated LRT infrastructure that would be constructed over this linear historic district. ■ Rationale for No Adverse Effect Finding: • The historic at-grade crossing where the realigned BNSF freight rail track would cross the former Soo Line Railway mainline track would be maintained and reconstructed in-kind and within the historic right-of-way limits of both rail lines, and would not diminish the historic district's ability to convey its significance. • The LRT guideway would pass over the historic district on a bridge with a sufficiently large span to avoid directly affecting the historic district. The visual effect of the bridge would be limited to a short segment of this approximately 386.5-mile-long linear historic district and, therefore, would not diminish the district's integrity of setting, feeling, or association.
Individual Properties					
HE-MPC-8125	Northwestern Knitting Company Factory	718 Glenwood Avenue, Minneapolis	Listed	■ Criterion: A ■ Areas of Significance: • Commerce • Engineering • Industry • Invention	■ Effects Considered: • Introduction of project infrastructure that might be visible at a distance in some views from the property. • Possible redevelopment around the Van White Boulevard Station, the property's setting, which would be visible from this property. ■ Rationale for No Adverse Effect Finding: • Project infrastructure would be located over 1,000 feet from this historic property, and any visual effects of project infrastructure on the property would be negligible and would not alter the characteristics qualifying the property for inclusion in the NRHP.

Table 4.4-3. Historic Properties Not Adversely Affected by the Proposed BLRT Extension Project

Inventory Number	Site Name	Property Address	NRHP Status	NRHP Eligibility Criteria and Area of Significance	Rationale for Adverse Effect Finding and Avoidance/Minimization/Mitigation Measures
					• Station-area planning studies indicate that introduction of the proposed BLRT Extension project could catalyze redevelopment in the vicinity, changing the property's setting. However, transit development is an indirect catalyst for redevelopment, and, if these areas are redeveloped, it would not change views from the historic property in a manner that would diminish its setting in a way that would affect its ability to convey its historic significance.
HE-MPC-8081	Sumner Branch Library	611 Emerson Avenue North, Minneapolis	Listed	■ Criteria: A and B ■ Areas of Significance: • Education • Social History	■ Effects Considered: • Introduction of project infrastructure and trains to the immediate setting, which would be highly visible from the property. • Noise from LRVs and station operations. • Potential changes in access to the property. • Possible redevelopment of properties adjacent to the library and the library itself. ■ Rationale for No Adverse Effect Finding: • Project infrastructure, including the Van White Boulevard Station, would be added to the immediate setting of the library, but the nature and scale of this infrastructure combined with its distance from the property would allow views of the library to remain intact. To ensure that the library's visual prominence is not diminished, project infrastructure in vicinity of the library would be designed in accordance with *The Secretary of the Interior's Standards for the Treatment of Historic Properties* (36 CFR Part 68) (*SOI's Standards*), and a construction protection plan would be prepared and implemented.[2] • A station-area planning study completed in coordination with the proposed BLRT Extension project identifies the library as part of a group of properties around the Van White Boulevard Station proposed to be rezoned to allow for increased density and mixed-use development in order to create a planned neighborhood commercial zone around the station. Although redevelopment of nearby properties could cause changes to the library's

Table 4.4-3. Historic Properties Not Adversely Affected by the Proposed BLRT Extension Project

Inventory Number	Site Name	Property Address	NRHP Status	NRHP Eligibility Criteria and Area of Significance	Rationale for Adverse Effect Finding and Avoidance/Minimization/Mitigation Measures
					setting, it would not alter the characteristics of the library that qualify it for inclusion in the NRHP. Because the library is in public ownership and use, it is unlikely to be subjected to redevelopment. Moreover, the library is also designated a local landmark by the city of Minneapolis, which designation provides further protection through design review requiring alterations to meet the *SOI's Standards* and setting a high threshold for demolition. ■ Avoidance/minimization measures: • Implement Section 106 MOA measures.
HE-MPC-7553	Labor Lyceum	1800 Olson Memorial Highway, Minneapolis	Eligible	■ Criterion: A ■ Areas of Significance: • Social History • Politics/ Government	■ Effects Considered: • Introduction of project infrastructure and trains to the immediate setting, which would be highly visible from the historic property. • Noise from LRVs and station operations. • Potential changes in access to the property. • Possible redevelopment of nearby properties. ■ Rationale for No Adverse Effect Finding: • Although the proposed BLRT Extension project infrastructure would be added to the immediate setting of this historic property, the nature and scale of this infrastructure, combined with its distance from the property, would allow views of the Labor Lyceum to remain intact. To ensure that the visual prominence of the Labor Lyceum is maintained and its integrity of setting, feeling, and association is not diminished by the proposed BLRT Extension project, the Council would design the proposed BLRT Extension project's infrastructure in the vicinity of this historic property in accordance with the *SOI's Standards*.[2] • Although station-area planning studies have indicated a strong potential for redevelopment to be catalyzed by the proposed BLRT Extension project around the Penn Avenue Station (which is located 930 feet away) and in the vicinity of this historic property, the Labor Lyceum itself is not among the properties identified in the station-area plan for redevelopment. If redevelopment does occur around the Penn Avenue Station, it could lead

Table 4.4-3. Historic Properties Not Adversely Affected by the Proposed BLRT Extension Project

Inventory Number	Site Name	Property Address	NRHP Status	NRHP Eligibility Criteria and Area of Significance	Rationale for Adverse Effect Finding and Avoidance/Minimization/Mitigation Measures
					to changes in the setting of the Labor Lyceum, but not in a manner that would alter characteristics of the property that qualify it for the NRHP. • Per FTA criteria, the Labor Lyceum is a Category 3 noise receptor, and a noise analysis indicates that LRT operations would not result in a noise impact to this historic property. • A traffic and access analysis indicates that there would be no change in vehicular access to this property as a result of project construction, and a minor change in pedestrian access resulting from removing a crosswalk would not alter the characteristics of the property that qualify it for the NRHP. ■ Avoidance/minimization measures: • Implement Section 106 MOA measures.
HE-GVC-0050	Bridge No. L9327	Theodore Wirth Parkway over Bassett's Creek, Golden Valley	Eligible individually and as a contributing element to the Grand Rounds Historic District (GRHD)	■ Criterion: C (individual) ■ Area of Significance: • Engineering ■ Criteria: A and C (GRHD) ■ Areas of Significance: • Engineering (individual) • Community Planning and Development • Entertainment/ Recreation • Landscape Architecture	■ Effects Considered: • Visual changes to the setting of the bridge resulting from the removal of vegetation and the introduction of new visual elements in the form of formal, engineered structures such as retaining walls, the LRT guideway and overhead power system, and potential illumination at night from the Plymouth Avenue Station, in contrast to the otherwise naturalistic, park setting of the bridge. • Noise from LRVs and station operations. ■ Rationale for No Adverse Effect Finding:[3] • The removal of vegetation and introduction of project elements to the setting of the bridge would cause minor indirect visual effects on Bridge No. L9327; however, they would not alter any of the characteristics of the bridge that qualify it individually for inclusion in the NRHP in a manner that would diminish its historic integrity. • In addition, per FTA criteria, the bridge is not a noise-sensitive property, so noise from proposed BLRT Extension project operations would not affect the characteristics that qualify the bridge for the NRHP.

Table 4.4-3. Historic Properties Not Adversely Affected by the Proposed BLRT Extension Project

Inventory Number	Site Name	Property Address	NRHP Status	NRHP Eligibility Criteria and Area of Significance	Rationale for Adverse Effect Finding and Avoidance/Minimization/Mitigation Measures
HE-RBC-1462	Sacred Heart Catholic Church	4087 West Broadway Avenue, Robbinsdale	Eligible	■ Criterion: C ■ Area of Significance: • Architecture	■ Effects Considered: • The introduction of project infrastructure to the setting of the church, including the guideway and a large, multi-level park-and-ride structure, which would be highly visible from the historic property. • Noise from LRVs and station operations. • Possible redevelopment of properties in the church's setting. ■ Rationale for No Adverse Effect Finding: • Given the distance of project elements from the historic property, when also considered with their nature and scale, the proposed BLRT Extension project would cause a negligible change to the property's setting and would not diminish its integrity of feeing or associations. To ensure that the property's visual prominence is not diminished, project infrastructure in vicinity of the church would be designed in accordance with the *SOI's Standards*. • Per FTA criteria, the church is a Category 3 noise receptor. A noise analysis indicates that, without mitigation, the proposed BLRT Extension project would cause a severe auditory impact to this historic property from LRT horns at nearby grade crossings, but that the implementation of Quiet Zones would sufficiently reduce auditory impacts to the church. Therefore, the proposed BLRT Extension project would include the infrastructure to implement Quiet Zones for the 40th Avenue North, 41st Avenue North and 42nd Avenue North grade crossings to avoid an adverse auditory effect on the church. The city of Robbinsdale would be responsible for applying to FRA for these Quiet Zones. ■ Avoidance/minimization measures: • Implement Section 106 MOA measures.

Table 4.4-3. Historic Properties Not Adversely Affected by the Proposed BLRT Extension Project

Inventory Number	Site Name	Property Address	NRHP Status	NRHP Eligibility Criteria and Area of Significance	Rationale for Adverse Effect Finding and Avoidance/Minimization/Mitigation Measures
HE-RBC-286	Robbinsdale Waterworks	4127 Hubbard Avenue North, Robbinsdale	Eligible	■ Criterion: A ■ Areas of Significance: • Community Planning and Development • Politics/ Government	■ Effects Considered: • The introduction of project infrastructure adjacent, and in close proximity, to the waterworks, including the alignment, the Robbinsdale Station, and a large, multi-level park-and-ride structure that includes street-level transit-oriented development and a parking ramp about 200 feet northwest of the waterworks. • Noise and vibration from LRVs and station operations. • Possible redevelopment of properties in the waterworks' setting. ■ Rationale for No Adverse Effect Finding: • Although the proposed BLRT Extension project would introduce a variety of new elements adjacent to the historic property and also within its setting, they would not diminish the ability of the water tower to serve as the visual focal point of downtown Robbinsdale. To ensure that the proposed BLRT Extension project elements do not diminish the setting, association, or feeling of the waterworks; that the visual prominence of the water tower is not diminished; and that the property would maintain its stature as the visual anchor of downtown Robbinsdale, the Council would design its infrastructure in the vicinity of the waterworks in accordance with the *SOI's Standards*.[2] • A vibration analysis indicates that construction and operation of the proposed BLRT Extension project would not affect the property; however, the Council would prepare and implement a construction protection plan to document measures to be taken to avoid any direct effects on the waterworks during project construction. • Per FTA criteria, the waterworks is not a noise-sensitive property, so noise from proposed BLRT Extension project operations would not affect characteristics that qualify the waterworks for inclusion in the NRHP. • Given the proximity of the waterworks to the Robbinsdale Station, station-area planning studies have indicated a strong potential for redevelopment to be catalyzed by this station in the vicinity of the historic property. If new development were to occur, it could change the setting of the waterworks;

Table 4.4-3. Historic Properties Not Adversely Affected by the Proposed BLRT Extension Project

Inventory Number	Site Name	Property Address	NRHP Status	NRHP Eligibility Criteria and Area of Significance	Rationale for Adverse Effect Finding and Avoidance/Minimization/Mitigation Measures
					however, it would not alter the characteristics of the waterworks that qualify it for inclusion in the NRHP. It is unlikely that the waterworks itself would be subjected to any redevelopment pressure because it is in public ownership and use, and, because it serves an infrastructure use, it would be cost-prohibitive to relocate its function elsewhere. ■ Avoidance/minimization measures: • Implement Section 106 MOA measures.
HE-RBC-024	Hennepin County Library, Robbinsdale Branch	4915 42nd Avenue North, Robbinsdale	Listed	■ Criterion: A ■ Area of Significance: • Education	■ Effects Considered: • Introduction of project infrastructure, including the guideway, the Robbinsdale Station, and a large, multi-story park-and-ride structure, which would be highly visible from the property because they would be located immediately across Railroad Avenue from the library, within and extending beyond the BNSF right-of-way to the east. • A portion of 42nd Avenue North, including sidewalks and the boulevard, would also be reconstructed in front of the library along the boundary of the historic property. • Noise and vibration from LRVs and station operations. • Changes in access to the library. ■ Rationale for No Adverse Effect Finding: • A vibration analysis indicates that construction and operation of the proposed BLRT Extension project would not affect the historic property; however, the Council would prepare and implement a construction protection plan to document measures to be taken to avoid any direct effects on the property during project construction. • The amount of proposed BLRT Extension project elements, when their size, scale, and massing is considered, would alter the property's setting. This infrastructure would also significantly change the property's viewshed toward downtown Robbinsdale because the park-and-ride structure would introduce a large visual barrier that is much larger than the existing development within the library's setting. As a result, this would diminish

Table 4.4-3. Historic Properties Not Adversely Affected by the Proposed BLRT Extension Project

Inventory Number	Site Name	Property Address	NRHP Status	NRHP Eligibility Criteria and Area of Significance	Rationale for Adverse Effect Finding and Avoidance/Minimization/Mitigation Measures
					the setting of the library and its feeling and association. To minimize the visual effects of project elements on the library and to avoid an adverse visual effect, the Council would design the proposed BLRT Extension project's infrastructure in the vicinity of the library in accordance with the *SOI's Standards*.[2] • Given the proximity of the library to the Robbinsdale Station, station-area planning studies have indicated a strong potential for redevelopment to be catalyzed by this station in the vicinity of the historic property. If new development were to occur, it could change the setting of the library; however, most views of any potential development would be screened by the proposed BLRT Extension project's park-and-ride structure. • The proposed BLRT Extension project would also cause minor changes in access to the library from the downtown, thereby preventing westbound vehicles from turning onto Railroad Avenue to access the library, but motorists could still access the library by driving around the block and via the alley adjacent to the library. Access from the west and south would not change. • Per FTA criteria, the library is a Category 3 noise receptor. A noise analysis indicates that, without mitigation, the proposed BLRT Extension project would cause a severe auditory impact to this historic property from LRT horns at nearby grade crossings, but that the implementation of a Quiet Zone would sufficiently reduce auditory impacts to the library. Therefore, the proposed BLRT Extension project would include the infrastructure to implement Quiet Zones for the 40th Avenue North, 41st Avenue North and 42nd Avenue North grade crossings to avoid an adverse auditory effect on the library. The city of Robbinsdale would be responsible for applying to FRA for these Quiet Zones. ■ Avoidance/minimization measures: • Implement Section 106 MOA measures.

Table 4.4-3. Historic Properties Not Adversely Affected by the Proposed BLRT Extension Project

Inventory Number	Site Name	Property Address	NRHP Status	NRHP Eligibility Criteria and Area of Significance	Rationale for Adverse Effect Finding and Avoidance/Minimization/Mitigation Measures
HE-RBC-264	Jones-Osterhus Barn	4510 Scott Avenue North, Robbinsdale	Eligible	■ Criterion: C ■ Areas of Significance: • Agriculture • Architecture	■ Effects Considered: • The closest proposed BLRT Extension project infrastructure to the barn would be located a half block (about 190 feet) to the west, so the introduction of proposed BLRT Extension project infrastructure, such as support poles and catenary wires, might be minimally visible from the property. • Changes in vehicular traffic in nearby streets. ■ Rationale for No Adverse Effect Finding: • The proposed BLRT Extension project infrastructure would only be minimally, if at all, visible from the property and would result in a negligible change in one view from the barn. • A traffic and access analysis indicates there would be no change in pedestrian/bicycle access to the property. Given the street network, there is no potential for cut-through traffic to access stations past the barn (the barn is located more than a half mile from the nearest proposed BLRT Extension project station), and projections for 2040 indicate that only an additional 50 cars would use the nearby portion of West Broadway Avenue if the proposed BLRT Extension project were built compared to if it were not constructed. • The proposed BLRT Extension project would not alter any of the characteristics qualifying the Jones-Osterhus Barn for inclusion in the NRHP in a manner that would diminish its historic integrity, including its setting, feeling, and association.

Source: FTA and MnDOT CRU (2016)

[1] FTA and MnHPO (2012). *Section 106 Programmatic Agreement Between the Federal Transit Administration and the Minnesota State Historic Preservation Office Regarding the Construction of the Interchange Project Minneapolis, Minnesota.* This agreement documents the stipulations with which the Interchange project would be implemented in order to take into account the effects of the undertaking on historic properties.

[2] The *SOI's Standards* are a series of concepts about maintaining, repairing, and replacing historic materials as well as designing new additions or making alterations. The *SOI's Standards* offer four distinct approaches—preservation, rehabilitation, restoration, and reconstruction—to the treatment of historic properties with guidelines for each approach. Federal agencies use the *SOI's Standards* and appropriate guidelines to facilitate their preservation responsibilities. More information can be found at www.nps.gov/tps/standards.htm.

[3] The bridge is also located within, and is a contributing element to, the Grand Rounds Historic District, which would be adversely affected by the undertaking (see the entry in **Table 4.4-2**). However, the effects on the bridge as a contributing element to the historic district would be limited to those described under its individual significance.

4.4.4 Avoidance, Minimization, and/or Mitigation Measures

This section describes the measures proposed to resolve the proposed BLRT Extension project's adverse effects, including measures to avoid, minimize, or mitigate adverse effects. These measures were developed by FTA and the Council in consultation with MnHPO and other consulting parties. The proposed BLRT Extension project's measures to resolve adverse effects, including mitigation measures, are specified in the project's Section 106 MOA (**Appendix H**).

Based on results of the effects assessments and implementation of the measures included in the Section 106 MOA, FTA has determined, in consultation with MnHPO and other consulting parties, the proposed BLRT Extension project's effects on historic properties. The determination of effects from the Section 106 process was used to determine impacts pursuant to NEPA.

- **No adverse effect.** The proposed BLRT Extension project would have no adverse effect on 11 historic properties, including five for which adverse effects would be avoided through implementation of MOA measures: Sumner Branch Library; Labor Lyceum; Sacred Heart Catholic Church; Robbinsdale Waterworks; and Hennepin County Library, Robbinsdale Branch.
- **Adverse effect.** The proposed BLRT Extension project would have an adverse effect on six properties, including four historic districts and two individual properties. As a result of the proposed BLRT Extension project's adverse effect on these six properties—the Osseo Branch of the St. Paul, Minneapolis & Manitoba Railroad / Great Northern Railway Historic District; Grand Rounds Historic District, Theodore Wirth Segment; Homewood Residential Historic District; West Broadway Avenue Residential Historic District; Wayman AME Church; and Floyd B. Olson Memorial Statue—FTA has determined that the proposed BLRT Extension project would have an adverse effect on historic properties.

The following sections summarize the measures specified in the proposed BLRT Extension project's Section 106 MOA that the Council would implement to avoid, minimize, and mitigate the proposed BLRT Extension project's effects on historic properties. **Section 4.4.4.2** includes projects for which measures have been developed to avoid an adverse effect, and **Section 4.4.4.1** includes properties that would be adversely affected by the proposed BLRT Extension project.

4.4.4.1 Historic Properties Not Adversely Affected, with Implementation of Avoidance Measures

Measures have been developed to avoid an adverse effect from the proposed BLRT Extension project on the following historic properties. Measures to avoid the adverse effect on the historic properties are included in the Section 106 MOA (**Appendix H**) and summarized below.

Sumner Branch Library (HE-MPC-8081)

Avoidance Measure. Design Preferred Alternative elements in the vicinity of the historic property in accordance with the *SOI's Standards* (36 CFR Part 68), to be reviewed by MnHPO and consulting parties in order to avoid adverse visual effects.

Avoidance Measure. Develop a Construction Protection Plan detailing the measures to be implemented during construction of the Preferred Alternative to avoid adverse effects.

Labor Lyceum (HE-MPC-7553)

Avoidance Measure. Design Preferred Alternative elements in the vicinity of the historic property in accordance with the *SOI's Standards* (36 CFR Part 68), to be reviewed by MnHPO and consulting parties in order to avoid adverse visual effects.

Sacred Heart Catholic Church (HE-RBC-1462)

Avoidance Measure. Incorporate Quiet Zones at nearby grade crossings to avoid adverse auditory effects.

Avoidance Measure. Design Preferred Alternative elements in the vicinity of the historic property in accordance with the *SOI's Standards* (36 CFR Part 68), to be reviewed by MnHPO and consulting parties in order to avoid adverse visual effects.

Robbinsdale Waterworks (HE-RBC-286)

Avoidance Measure. Design Preferred Alternative elements in the vicinity of the historic property in accordance with the *SOI's Standards* (36 CFR Part 68), to be reviewed by MnHPO and consulting parties in order to avoid adverse visual effects.

Avoidance Measure. Develop a Construction Protection Plan detailing the measures to be implemented during construction of the Preferred Alternative to avoid adverse effects.

Hennepin County Library, Robbinsdale Branch (HE-RBC-024)

Avoidance Measure. Design Preferred Alternative elements in the vicinity of the historic property in accordance with the *SOI's Standards* (36 CFR Part 68), to be reviewed by MnHPO and consulting parties in order to avoid adverse visual effects.

Avoidance Measure. Incorporate Quiet Zones at nearby grade crossings to avoid adverse auditory effects.

Avoidance Measure. Develop a Construction Protection Plan detailing the measures to be implemented during the proposed BLRT Extension project construction to avoid adverse effects.

4.4.4.2 Historic Properties That Would Be Adversely Affected

The proposed BLRT Extension project would have an adverse effect on the following historic properties. Measures to avoid, minimize, and mitigate the adverse effect on the properties and districts are included in the Section 106 MOA (**Appendix H**) and summarized below.

Osseo Branch Line of the St. Paul, Minneapolis & Manitoba Railroad / Great Northern Railway Historic District (XX-RRD-002, HE-MPC-16389, HE-RBC-304, HE-CRC-0238, HE-BPC-0084)

Mitigation. Complete Phase II level inventory and evaluation of historic railroad line(s) in Minnesota. This survey will evaluate either one mainline across the entire state of Minnesota or up to a total of five shorter mainlines and/or branch lines.

Mitigation. Incorporate interpretation of the Osseo Branch Line into the final design of the proposed BLRT Extension project.

Grand Rounds Historic District, Theodore Wirth Segment (XX-PRK-0001)

Mitigation. Design Preferred Alternative elements within, and in the vicinity of, the historic property in accordance with the *SOI's Standards* (36 CFR Part 68), to be reviewed by MnHPO and consulting parties in order to avoid and minimize adverse direct effects and indirect visual effects.

Mitigation. Develop a Construction Protection Plan detailing the measures to be implemented during construction of the Preferred Alternative to avoid and minimize adverse effects.

Mitigation. Prepare guidance for future preservation activities within the Grand Rounds Historic District: Theodore Wirth Segment to mitigate the direct physical and indirect visual adverse effects to the Grand Rounds Historic District. This guidance will take the form of two plans: (1) a preservation plan will include an overall vision for historic preservation of this portion of the historic district, strategies to guide historic preservation efforts to achieve the overall vision, and objectives for implementing each strategy and (2) a treatment plan will be prepared to guide preservation activities for up to twelve different historic features, or feature types within the planning area. The plans shall be prepared in accordance with the *SOI's Standards* (36 CFR Part 68); the *SOI's Standards for Preservation Planning*; and the National Park Service's (NPS) *Guidelines for the Treatment of Cultural Landscapes*, Preservation Briefs, and Preservation Tech Notes.

Mitigation. Incorporate interpretation of the Theodore Wirth Segment into the design of the Preferred Alternative's Plymouth Avenue and Golden Valley Road stations. If the final Preferred Alternative scope of work includes a trailhead for the Golden Valley Road Station at the intersection of Theodore Wirth Parkway, interpretation shall also be included in the design of the trailhead.

Homewood Residential Historic District (HE-MPC-12101)

Mitigation. Design Preferred Alternative elements within, and in the vicinity of, the historic property in accordance with the *SOI's Standards* (36 CFR Part 68), to be reviewed by MnHPO and consulting parties in order to avoid and minimize adverse direct effects and indirect visual effects.

Mitigation. Develop a Construction Protection Plan detailing the measures to be implemented during construction of the Preferred Alternative to avoid adverse effects.

Mitigation. Conduct interior testing of three residences within the district to determine whether operation of the Preferred Alternative would result in auditory impacts exceeding interior noise level criteria (45 A-weighted decibels [dBA] day-night sound level [L_{dn}]) and, if so, develop a Noise Mitigation Plan in accordance with the *SOI's Standards* to mitigate adverse auditory effects.

West Broadway Avenue Residential Historic District (HE-RBC-158)

Mitigation. Design Preferred Alternative elements in the vicinity of the historic property in accordance with the *SOI's Standards* (36 CFR Part 68), to be reviewed by MnHPO and consulting parties in order to avoid adverse visual effects.

Mitigation. Incorporate Quiet Zones at nearby grade crossings to avoid adverse auditory effects.

Mitigation. Conduct interior testing of two residences within the district to determine whether operation of the Preferred Alternative with Quiet Zones would still result in auditory impacts exceeding interior noise level criteria (45 dBA L_{dn}) and, if so, develop a Noise Mitigation Plan in accordance with the *SOI's Standards* to mitigate adverse auditory effects.

Mitigation. Develop a Construction Protection Plan detailing the measures to be implemented during construction of the proposed BLRT Extension project to avoid adverse effects.

Wayman African Methodist Episcopal (AME) Church (HE-MPC-8290)

Mitigation. Prepare an NRHP nomination form, in conformance with the guidelines of NPS, for the property. This form will be submitted to MnHPO for review and any recommendations made by MnHPO will be incorporated into the final form.

Floyd B. Olson Memorial Statue (HE-MPC-9013)

Mitigation. Design Preferred Alternative elements in the vicinity of the historic property in accordance with the *SOI's Standards* (36 CFR Part 68), to be reviewed by MnHPO and consulting parties in order to minimize adverse visual effects.

Mitigation. Develop a Construction Protection Plan detailing the measures to be implemented during construction of the Preferred Alternative to avoid adverse effects.

Mitigation. Prepare a Historic Property Treatment Plan in accordance with the *SOI's Standards* (36 CFR Part 68) and NPS's *Guidelines for the Treatment of Cultural Landscapes* to mitigate adverse effects on the historic property. The plan will determine the artist's and/or community's intent on the property's original orientation; provide recommendations on location, setting, orientation and site size for the property to improve and enhance its setting and strengthen its association with Olson Memorial Highway; and establish design parameters to improve and enhance the setting of the property on its current site, or in a new location.

Mitigation. Based on the conclusions in the Historic Property Treatment Plan, design and construct the selected alternative for the historic property. The site improvements shall be designed in accordance with the *SOI's Standards for the Treatment of Historic Properties* (36 CFR Part 68) and NPS's *Guidelines for the Treatment of Cultural Landscapes*, Preservation Briefs and Tech Notes.

Mitigation. Prepare an NRHP nomination form, in conformance with the guidelines of NPS, for the property. This form will be submitted to MnHPO for review and any recommendations made by MnHPO will be incorporated into the final form.

4.5 Visual/Aesthetics

The information in this section is based on the information in the *Visual Quality Technical Report* (Council, 2016b), which is provided in **Appendix F**. The objective of the *Visual Quality Technical Report* is to evaluate the proposed BLRT Extension project's potential effects on visual quality, including on the character of the natural visual features of the visual study area, on the character of the built visual features of the study area, and as visually perceived by the affected population in the study area.

4.5.1 Regulatory Context and Methodology

4.5.1.1 Definition of Terms

Visual Features

The term *visual features* refers to the components of the natural, built, or project environments that are capable of being seen, as described in further detail below.

- **Natural visual features** include the land, water, vegetation, and animals that compose the natural environment. Although natural features might have been altered or imported by people, features that are primarily geological or biological in origin are considered natural.
- **Built visual features** include 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** include the geometrics, structures, and fixtures that compose the proposed BLRT Extension project itself. These are the constructed features that would be placed in the environment as part of the proposed BLRT Extension project.

Visual Quality

The term *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 might 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 visual study area, the Council identified specific features 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; or
- 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 term *affected population* is defined as the viewers who occupy land adjacent to the proposed project—either long term or short term. These people can be characterized by their association with a specific adjacent land use, including residential, commercial, industrial, transportation, 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.

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; that is, as one would perceive it from a car, train, bus, or bicycle or on foot. The proposed BLRT Extension project would pass through 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 Federal Highway Administration's (FHWA) *Guidelines for the Visual Impact Assessment of Highway Projects* (FHWA, 2015), 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* (Council, 2016b).

Visual Character and Quality

The visual impacts of a proposed 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 proposed 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 is descriptive and non-evaluative, which means it is based on defined attributes that are neither good nor bad themselves. A change in visual character cannot be described as having good or bad attributes until it is compared with the viewer 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's 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 proposed 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 might be less focused on the view, viewers 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 in the proposed BLRT Extension project area. For example, because a portion of the proposed BLRT Extension project corridor has historically been a rail corridor, viewers that are roadway users are accustomed to seeing rail as a dominant visual feature in the landscape in areas where the corridor is visible from, or intersects with, roads.

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 commuting. For example, recreational and residential viewers tend to have extended viewing periods and might be more concerned about changes in views than a commuter would be.

The visual study area for the proposed BLRT Extension project includes several types of viewer groups, such as LRT users, roadway users, Grand Rounds 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's guidelines, *visual 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 could benefit visual quality by enhancing visual resources and/or views and improving the experience of visual quality. Similarly, a project could adversely affect visual quality by degrading visual resources and/or obstructing or altering desired views.

Assessing Visual Change

The Council determined the visual impacts of the proposed BLRT Extension project by evaluating the changes to existing visual resources that would occur as a result of implementing the proposed BLRT Extension project and assessed the anticipated viewer responses to those changes. The Council determined the aesthetic impacts from the proposed BLRT Extension project based on making direct field observations from multiple vantage points, including from neighboring properties and roads; evaluating the existing visual character; and reviewing proposed project plans and features. The Council's visual impact assessment was also based on photographically documenting the existing conditions for several key views of the proposed BLRT Extension project corridor.

Key views represent specific locations within a landscape unit (defined in **Section 4.5.3.2**) from which the proposed BLRT Extension project would be visible. Within the landscape unit, key views 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 proposed BLRT Extension project would change the views within the landscape unit.

4.5.2 Study Area

The visual study area is defined as the right-of-way for the proposed BLRT Extension project corridor and the adjacent properties with a visual connection to the transitway, properties which include residential, commercial, and park properties. In select instances, the Council expanded the extent of analysis to account for specific features that were visible by field observation along the proposed transitway as a result of topography, physical scale, architectural distinction, or other considerations.

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

4.5.3 Affected Environment

4.5.3.1 Project Setting

As described in **Chapter 1** – **Purpose and Need**, the character of the area surrounding the proposed BLRT Extension project alignment transitions from downtown Minneapolis to a moderately dense urban setting in north Minneapolis and then to a less-dense suburban setting starting in the cities of Golden Valley, Robbinsdale, and Crystal and extending through the City of Brooklyn Park at the north end of the proposed BLRT Extension project corridor. The proposed BLRT Extension project area includes a variety of land use patterns that have been influenced by the transportation-oriented history of the corridor. Low-density, auto-oriented land uses have heavily influenced existing development patterns in the corridor, and the presence of the existing rail lines have also influenced the development patterns and settings in much of the proposed BLRT Extension project corridor.

Much of the proposed BLRT Extension project area, in particular the Golden Valley area, includes substantial park setting along the corridor. These areas are located primarily to the west of downtown Minneapolis, between the intersection of Olson Memorial Highway with Theodore Wirth Regional Park and continuing through the City of Golden Valley. Residential neighborhoods are located along the proposed BLRT Extension project in the cities of Minneapolis, Robbinsdale, Crystal, and Brooklyn Park. In the City of Brooklyn Park and the northern part of the City of Crystal, development adjacent to the proposed BLRT Extension project includes highway-oriented commercial activity. Development in the City of Brooklyn Park also includes mixed commercial and retail, commercial office and corporate, and institutional uses.

4.5.3.2 Landscape Units and Viewshed

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 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 four landscape units: Minneapolis, Golden Valley, Robbinsdale/Crystal, and Brooklyn Park (see **Figure 4.5-1**). 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*.

A *viewshed* is a subset of a landscape unit comprising all the surface areas visible from an observer's viewpoint. The viewshed also includes the locations of viewers who are likely to be affected by visual changes resulting from the addition of project features. The study area for the proposed BLRT Extension project includes the areas that could have views of project features and the areas which LRT users could view as they travel through the landscape.

Figure 4.5-1. Landscape Units in the Visual Study Area

4.5.4 Environmental Consequences

The Council determined the visual impacts of the proposed BLRT Extension project by evaluating the changes to existing visual resources that would occur as a result of implementing the proposed BLRT Extension project and assessing the anticipated viewer responses to those changes.

4.5.4.1 Key Views

The Council's visual impact assessment included evaluating photographic documentation of several key views of the proposed BLRT Extension project corridor. Key views 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 are provided.

Simulation vantage points were selected by the Council to provide representative public views from the proposed BLRT Extension 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 proposed BLRT Extension project that could change the visual character or views of an affected area.

A location map of each key view point along with the associated photographs and simulations is provided in the *Visual Quality Technical Report*. Additional key views were evaluated by the Council at several of the locations proposed for noise walls. A location map of each noise wall along with the associated photographs is provided in the *Visual Quality Technical Report*.

4.5.4.2 Visual Impact Assessment

The following sections describe the anticipated changes in visual quality and character from the proposed BLRT Extension project.

4.5.4.3 No-Build Alternative

The No-Build Alternative reflects existing and committed improvements to the regional transit network for the horizon year of 2040, not including the proposed BLRT Extension project. The No-Build Alternative is based on the Council's *2040 TPP*. With the No-Build Alternative, there would be no alteration of the visual quality and character of the corridor. Therefore, there would be no visual impacts, and no mitigation would be required.

4.5.4.4 Proposed BLRT Extension Project

Operating-Phase (Long-Term) Impacts

According to the FHWA guidelines described in **Section 4.5.1.2**, the degree of a visual impact is defined as a beneficial, adverse, or neutral change to visual quality. The anticipated visual effects during operation of the proposed BLRT Extension project would generally be consistent with existing, similar features, resulting in neutral impacts to visual quality in most segments. The proposed BLRT Extension project would not substantially obstruct project-area views or substantially alter the existing visual character of the proposed BLRT Extension project corridor. However, in some areas, the proposed BLRT Extension project would have adverse impacts to visual quality.

A summary of key view points (KVPs), as analyzed in the *Visual Quality Technical Report*, is provided in **Table 4.5-1,** which includes a summary of changes to the existing visual quality and character, as shown in the associated photographic documentation (see **Appendix F**). Impacts to existing views and higher-quality visual features resulting from the addition of primary project features as a result of implementing the proposed BLRT Extension project is provided below in **Table 4.5-2**. Where applicable, **Table 4.5-2** also references the associated photographic documentation (KVPs).

Table 4.5-1. Summary of Changes to Existing Visual Quality and Character (Photographic Documentation)

Landscape Unit	Designation and Description of View	Degree of Visual Change in Quality and Character	Level of Visual Sensitivity
Minneapolis	OMH 1 (view to the west toward Penn Avenue, from center Olson Memorial Highway median)	Altered	Moderate
	KVP 1 (view to the east toward the Olson Memorial Highway bridge over the BNSF rail corridor, from the Wirth Lake Boardwalk)	Not substantially altered	High
	KVP 2 (view to the east-southeast toward the Olson Memorial Highway bridge over the BNSF rail corridor, from the Wirth Park Trail)	Altered	High
Golden Valley	KVP 3 (view to the northwest toward the existing BNSF tracks and proposed LRT tracks, from Farwell Avenue and Xerxes Avenue North)	Not substantially altered	Moderately high
	KVP 4a (view to the west toward the proposed Plymouth Avenue Station and bridge, from Plymouth Avenue North and Washburn Avenue North)	Altered	Moderately high
	KVP 4b (view to the south toward the existing BNSF tracks and proposed LRT tracks, from the Plymouth Avenue North bridge)	Altered	Moderate
	KVP 4c (view to the north toward the proposed Plymouth Avenue Station, from the Plymouth Avenue bridge)	Substantially altered	Moderate
	KVP 5 (view to the southeast toward the proposed Plymouth Avenue Station and bridge, from the Theodore Wirth Regional Park Chalet)	Altered	High
	KVP 6a (view to the north toward the proposed Golden Valley Road Station, from the Theodore Wirth Regional Park Golf Course)	Not substantially altered	High
	KVP 6b (view to the northeast toward Bassett Creek and the proposed Golden Valley Road Station, from the Theodore Wirth Regional Park Golf Course)	Altered	High
	KVP 7 (view to the west toward the proposed Golden Valley Road Station, from Theodore Wirth Parkway near the intersection of Zenith Avenue)	Not substantially altered	Moderately high
	KVP 8 (view to the west toward the proposed Golden Valley Road Station, from Golden Valley Road and Theodore Wirth Parkway)	Altered	High
	KVP 8a (view to the west toward the proposed Golden Valley Road Station, from Theodore Wirth Parkway at Golden Valley Road)	Altered	Moderately high

Table 4.5-1. Summary of Changes to Existing Visual Quality and Character (Photographic Documentation)

Landscape Unit	Designation and Description of View	Degree of Visual Change in Quality and Character	Level of Visual Sensitivity
Robbinsdale/ Crystal	KVP 9 (view to the northwest toward downtown Robbinsdale, from 41st Avenue and Hubbard Avenue)	Not substantially altered	Moderate
	KVP 10 (view to the north toward the proposed Robbinsdale Station, from 41st Avenue)	Not substantially altered	Moderate
	KVP 11 (view to the east toward the proposed Robbinsdale Station, from 42nd Avenue)	Altered	Moderate
	KVP 12 (view to the southeast toward the proposed wall and fence, from the adjacent residential alley)	Altered	Moderately high
	KVP 21 (view to the southeast toward the proposed Bass Lake Road station and pedestrian bridge, from Bottineau Boulevard)	Altered for visual quality; not substantially altered for visual character	Moderate
	KVP 22 (view to the northwest toward the proposed Bass Lake Road station and pedestrian bridge, from the southeast quadrant of the Bass Lake Road/Bottineau Boulevard intersection)	Altered for visual quality; not substantially altered for visual character	Moderate
	KVP 23 (view to the northeast toward the proposed Bass Lake Road pedestrian bridge, from the southwest quadrant of the Bass Lake Road/Bottineau Boulevard intersection)	Altered for visual quality; not substantially altered for visual character	Moderate
Brooklyn Park	KVP 13 (view to the south toward the proposed 63rd Avenue Station, from the trail adjacent to Bottineau Boulevard)	Altered for visual quality; not substantially altered for visual character	Moderate
	KVP 14 (view to the southeast toward the proposed 63rd Avenue Station, from the adjacent neighborhood west of 63rd Avenue)	Altered	Moderately high
	KVP 15 (view to the north toward the proposed 73rd Avenue/Bottineau Boulevard bridge, from Bottineau Boulevard 81 at 71st Avenue)	Altered for visual quality; not substantially altered for visual character	Moderate
	KVP 16 (view to the northeast toward the proposed 73rd Avenue/Bottineau Boulevard bridge, from 71st Avenue)	Not substantially altered	Moderate
	KVP 17 (view to the north toward the proposed 73rd Avenue/Bottineau Boulevard bridge, from the southeast corner of Bottineau Boulevard and 71st Avenue)	Altered for visual quality; not substantially altered for visual character	Moderate

Table 4.5-1. Summary of Changes to Existing Visual Quality and Character (Photographic Documentation)

Landscape Unit	Designation and Description of View	Degree of Visual Change in Quality and Character	Level of Visual Sensitivity
	KVP 18 (view to the south toward the proposed 73rd Avenue/Bottineau Boulevard bridge, from Bottineau Boulevard at 73rd Avenue)	Altered for visual quality; not substantially altered for visual character	Moderate
	KVP 19 (view to the east toward the proposed OMF, from 101st Avenue)	Substantially altered	Moderate
	KVP 20 (view to the southwest toward the proposed OMF, from Rush Creek Regional Trail)	Substantially altered	Moderately high

For each view described in the table, the *Visual Quality Technical Report* in **Appendix F** includes a "before-project" existing condition photograph and a computer-generated sketch-up simulation of the conceptual "after-project" condition.

Table 4.5-2. Summary of Impacts from Primary Project Visual Features and to Higher-Quality Visual Features

Landscape Unit	Description of View, Higher-Quality Visual Feature, or Primary Project Visual Feature	Photographic Documentation[1]	Level of Impact
Minneapolis	OMH 1 (view to the west toward Penn Avenue, from center Olson Memorial Highway median)	OMH 1	Adverse
	KVP 1 (view to the east toward the Olson Memorial Highway bridge over the BNSF rail corridor, from the Wirth Lake Boardwalk)	KVP 1	Neutral
	KVP 2 (view to the east-southeast toward the Olson Memorial Highway bridge over the BNSF rail corridor, from the Wirth Park Trail)	KVP 2	Adverse
	Ford Building	Not applicable	Neutral
	HERC Landscaping	Not applicable	Neutral
	Metro Transit Headquarters	Not applicable	Neutral
	Boulevard and median trees along Olson Memorial Highway west of I-94	See photographic documentation of OMH 1 above	Adverse
	Sumner Library	Not applicable	Neutral
	Seed Academy and Wayman AME Church	Not applicable	Neutral
	Zion Baptist Church	Not applicable	Neutral
	Floyd B. Olson Memorial	Not applicable	Neutral
	Harrison Neighborhood gateway sculptures	Not applicable	Neutral
Golden Valley	KVP 3 (view to the northwest toward the existing BNSF tracks and proposed LRT tracks, from Farwell Avenue and Xerxes Avenue North)	KVP 3	Neutral
	KVP 4a (view to the west toward the proposed Plymouth Avenue Station and bridge, from Plymouth Avenue North and Washburn Avenue North)	KVP 4a	Adverse
	KVP 4b (view to the south toward the existing BNSF tracks and proposed LRT tracks, from the Plymouth Avenue North bridge)	KVP 4b	Adverse
	KVP 4c (view to the north toward the proposed Plymouth Avenue Station, from the Plymouth Avenue bridge)	KVP 4c	Adverse
	KVP 5 (view to the southeast toward the proposed Plymouth Avenue Station and bridge, from the Theodore Wirth Regional Park Chalet)	KVP 5	Adverse

Table 4.5-2. Summary of Impacts from Primary Project Visual Features and to Higher-Quality Visual Features

Landscape Unit	Description of View, Higher-Quality Visual Feature, or Primary Project Visual Feature	Photographic Documentation[1]	Level of Impact
	KVP 6a (view to the north toward the proposed Golden Valley Road Station, from the Theodore Wirth Regional Park Golf Course)	KVP 6a	Neutral
	KVP 6b (view to the northeast toward Bassett Creek and the proposed Golden Valley Road Station, from the Theodore Wirth Regional Park Golf Course)	KVP 6b	Adverse
	KVP 7 (view to the west toward the proposed Golden Valley Road Station, from Theodore Wirth Parkway near the intersection of Zenith Avenue)	KVP 7	Neutral
	KVP 8 (view to the west toward the proposed Golden Valley Road Station, from Golden Valley Road and Theodore Wirth Parkway)	KVP 8	Adverse
	KVP 8a (view to the west toward the proposed Golden Valley Road Station, from Theodore Wirth Parkway at Golden Valley Road)	KVP 8a	Adverse
	NW 1a (view to the northwest toward the proposed noise barrier on the east side of the alignment roughly across from the southern extent of Sochacki Park)	NW 1a	Potentially adverse
	NW 1b (view to the southeast toward the proposed noise barrier on the east side of the alignment roughly across from the southern extent of Sochacki Park)	NW 1b	Potentially adverse
	Plymouth Avenue bridge over Bassett Creek and BNSF rail corridor	See photographic documentation of KVPs 4a, 4b, 4c, and 5 above.	Neutral
	Theodore Wirth Regional Park and Golf Course	See photographic documentation of KVPs 5, 6a, and 6b above.	Adverse
	Bassett Creek and Bassett Creek Lagoons	Not applicable	Adverse
	Theodore Wirth Parkway	See photographic documentation of KVPs 7, 8, and 8a above.	Neutral
	Glenview Terrace/Valley View Park	Not applicable	Neutral
	Sochacki Park and South Halifax Park	Not applicable	Adverse

Table 4.5-2. Summary of Impacts from Primary Project Visual Features and to Higher-Quality Visual Features

Landscape Unit	Description of View, Higher-Quality Visual Feature, or Primary Project Visual Feature	Photographic Documentation[1]	Level of Impact
Robbinsdale/ Crystal	KVP 9 (view to the northwest toward downtown Robbinsdale, from 41st Avenue and Hubbard Avenue)	KVP 9	Neutral
	KVP 10 (view to the north toward the proposed Robbinsdale Station, from 41st Avenue)	KVP 10	Neutral
	KVP 11 (view to the east toward the proposed Robbinsdale Station, from 42nd Avenue)	KVP 11	Adverse
	KVP 12 (view to the southeast toward the proposed wall and fence, from the adjacent residential alley)	KVP 12	Adverse
	KVP 21 (view to the southeast toward the proposed Bass Lake Road station and pedestrian bridge, from Bottineau Boulevard)	KVP 21	Adverse
	KVP 22 (view to the northwest toward the proposed Bass Lake Road station and pedestrian bridge, from the southeast quadrant of the Bass Lake Road/Bottineau Boulevard intersection)	KVP 22	Adverse
	KVP 23 (view to the northeast toward the proposed Bass Lake Road pedestrian bridge, from the southwest quadrant of the Bass Lake Road/Bottineau Boulevard intersection)	KVP 23	Adverse
	NW 2a (view to the northwest toward the proposed noise barrier from 36th Avenue to 41st Avenue on the east side, and from 36th Avenue to the southern border of Lee Park on the west side)	NW 2a	Neutral (east) or potentially adverse (west)
	NW 2b (view to the southeast toward the proposed noise barrier from 36th Avenue to 41st Avenue on the east side)	NW 2b	Neutral
	NW 3a (view to the northwest toward the proposed noise barrier from West Broadway Avenue to Corvallis Avenue on the east side)	NW 3a	Neutral
	NW 3b (view to the southeast toward the proposed noise barrier toward from West Broadway Avenue to Corvallis Avenue on the east side)	NW 3b	Neutral
	Bass Lake Road pedestrian overpass	See photographic documentation of KVPs 21, 22, and 23 above.	Adverse
	Sacred Heart Catholic Church	Not applicable	Neutral

Table 4.5-2. Summary of Impacts from Primary Project Visual Features and to Higher-Quality Visual Features

Landscape Unit	Description of View, Higher-Quality Visual Feature, or Primary Project Visual Feature	Photographic Documentation[1]	Level of Impact
	Historic Robbinsdale Public Library	Not applicable	Neutral
	West Broadway Avenue and BNSF rail bridges over TH 100	Not applicable	Neutral
	Green boulevard on west side of West Broadway Avenue between 47th Avenue and TH 100	Not applicable	Adverse
	Bottineau Boulevard bridge over CP rail corridor	Not applicable	Neutral
	City of Crystal gateway area	Not applicable	Neutral
	Residential neighborhood between Bass Lake Road and 63rd Avenue	See **Appendix A**	Adverse
Brooklyn Park	KVP 13 (view to the south toward the proposed 63rd Avenue Station, from the trail adjacent to Bottineau Boulevard)	KVP 13	Adverse
	KVP 14 (view to the southeast toward the proposed 63rd Avenue Station, from the adjacent neighborhood west of 63rd Avenue)	KVP 14	Adverse
	KVP 15 (view to the north toward the proposed 73rd Avenue/Bottineau Boulevard bridge, from Bottineau Boulevard 81 at 71st Avenue)	KVP 15	Adverse
	KVP 16 (view to the northeast toward the proposed 73rd Avenue/Bottineau Boulevard bridge, from 71st Avenue)	KVP 16	Neutral
	KVP 17 (view to the north toward the proposed 73rd Avenue/Bottineau Boulevard bridge, from the southeast corner of Bottineau Boulevard and 71st Avenue)	KVP 17	Adverse
	KVP 18 (view to the south toward the proposed 73rd Avenue/Bottineau Boulevard bridge, from Bottineau Boulevard at 73rd Avenue)	KVP 18	Adverse
	KVP 19 (view to the east toward the proposed OMF, from 101st Avenue)	KVP 19	Adverse
	KVP 20 (view to the southwest toward the proposed OMF, from Rush Creek Regional Trail)	KVP 20	Adverse
	63rd Avenue park-and-ride	See photographic documentation of KVPs 13 and 14 above.	Adverse
	73rd Avenue/Bottineau Boulevard bridge	See photographic documentation of KVPs 15, 16, 17, and 18 above.	Adverse

Table 4.5-2. Summary of Impacts from Primary Project Visual Features and to Higher-Quality Visual Features

Landscape Unit	Description of View, Higher-Quality Visual Feature, or Primary Project Visual Feature	Photographic Documentation[1]	Level of Impact
	OMF	See photographic documentation of KVPs 19 and 20 above.	Adverse
	Interstate Highway 694 (I-694) bridge over BNSF rail corridor and Bottineau Boulevard	Not applicable	Neutral
	Shingle Creek	Not applicable	Neutral
	West Broadway Avenue bridge over TH 610	Not applicable	Neutral
	Rush Creek Regional Trail	Not applicable	Adverse

[1] A summary of photographic documentation locations is presented in **Table 4.5-1** for locations where a current condition photograph and a simulation exist. These photographs, simulations, and other photographic documentation can be found in **Appendix F – Visual Quality Technical Report**.

"Not applicable" indicates that photographic documentation was not developed for that particular feature.

Summary of Visual Impacts for the Minneapolis Landscape Unit

In the Minneapolis Landscape Unit, the proposed BLRT Extension project would run along Olson Memorial Highway, a highway that currently accommodates a relatively high amount of traffic. Although Olson Memorial Highway to the west of I-94 is envisioned as a "gateway" corridor to downtown Minneapolis, the *Minneapolis Near Northside Master Plan* (City of Minneapolis, 2000) envisioned that LRT could be accommodated within the median without sacrificing the overall desired character of the corridor. The construction of the transitway within the existing median would alter its existing green character, which is considered a "higher-quality visual feature," resulting in adverse impacts to visual quality in that location. Impacts to "higher-quality visual features" 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, the Council anticipates that neutral visual effects would occur in that area.

Neutral impacts are anticipated as a result of station and TPSS construction, since these features would be designed to complement their surroundings, with variations in design that are consistent with the context of each station and TPSS location. However, the Council anticipates that station features would also include passenger information displays, lighting, and security systems, which could alter the visual quality and character of the view for sensitive viewer groups. Coordination with stakeholders would continue throughout the project design process for stations and to address the siting of TPSSs to maintain neutral visual impacts. This process could include development of additional visual screening as required.

Impacts to the resources identified as "higher-quality visual features" of the Minneapolis Landscape Unit are described in detail in the *Visual Quality Technical Report*. Visual impacts to these resources as a result of the proposed BLRT Extension project would generally be neutral. However, where visual impacts would be adverse, mitigation measures would be implemented to further reduce the impacts of operation of the proposed BLRT Extension project on sensitive viewer groups in the proposed BLRT Extension project area.

Summary of Visual Impacts for the Golden Valley Landscape Unit

In the Golden Valley Landscape Unit, the proposed BLRT Extension project would use the existing BNSF right-of-way between 34th Avenue and Olson Memorial Highway. The transitway would closely parallel the existing rail corridor and, for this reason, would be an addition to an existing transportation corridor. Thus, the addition of LRT to this corridor would be compatible with the existing land use. The implementation of LRT would bring a substantially increased frequency of vehicles passing through the area.

Impacts to visual quality would range from neutral to adverse. In some locations, the tracks would be in a depressed cut section and shielded by the topography and vegetation. However, in other locations, residential and park areas on both the east and west sides of the corridor, areas which are considered "higher-quality visual features" as described in **Section 4.5.1.1**, have an increased visual connection based on their close proximity to each other and the varying degrees of openness of the existing vegetation. Both temporary and permanent impacts to the vegetation along the BNSF right-of-way could alter the views and degree of screening of adjacent neighborhoods and parks. At

locations where adverse visual effects are anticipated, transitway elements added to the rail corridor might be visually screened or softened using landscaping where adequate space permits.

Neutral impacts are anticipated as a result of station and TPSS construction, since these features would be designed to complement their surroundings, with variations in design that are consistent with the context of each station and TPSS location. However, the Council anticipates that station features would also include passenger information displays, lighting, and security systems, which could alter the visual quality and character of the view for sensitive view groups. Coordination with stakeholders would continue throughout the project design process for stations and to address the siting of TPSSs to maintain neutral visual impacts. This process could include development of additional visual screening as required.

Impacts to the resources identified as "higher-quality visual features" of the Golden Valley Landscape Unit are described in detail in the *Visual Quality Technical Report*. Visual impacts to these resources as a result of the proposed BLRT Extension project would generally be neutral. However, where visual impact would be adverse, mitigation measures would be implemented to reduce the impacts of operation of the proposed BLRT Extension project on sensitive viewer groups in the proposed BLRT Extension project area.

Summary of Visual Impacts for the Robbinsdale/Crystal Landscape Unit

In the Robbinsdale/Crystal Landscape Unit, the proposed BLRT Extension project would use the existing BNSF right-of-way. Impacts to visual quality would generally be neutral because the transitway would closely parallel the existing rail corridor and, for this reason, would be a modification to an existing dedicated rail corridor rather than the introduction of a new rail corridor. The implementation of LRT would bring a substantially increased frequency of vehicles passing through the area, and the effects on visual quality would generally be neutral. At locations where adverse visual effects are anticipated, including where sensitive receptors are located adjacent to the corridor as described in further detail later in this section, transitway elements added to the rail corridor could be visually screened or softened using landscaping where adequate space permits.

Where sensitive receptors are located adjacent to the corridor, existing views would be altered as a result of the increased frequency of vehicles passing through the area, the introduction of new sources of light from LRT vehicles and stations, and the altered viewshed for residents viewing the LRT corridor and vehicles. The ability for LRT users to view the residential land uses from passing LRT vehicles would also result in altered views. For example, in the City of Crystal between the proposed Bass Lake Road Station and the proposed 63rd Avenue Station, many existing residences already have a partial or full view of the existing rail corridor. Existing vegetation provides visual screening of the existing BNSF rail corridor and would also provide visual screening of the proposed LRT vehicles.

However, in order to construct the proposed LRT alignment, vegetation removal, such as tree clearing, would be required for portions of the BNSF right-of-way. Therefore, alteration of existing views for sensitive receptors at these locations would also result from the removal of vegetation, and impacts to visual quality would be adverse. For those areas outside the BNSF right-of-way,

coordination with the city of Crystal has been initiated by the Council and would continue throughout the project design process to address the need for revegetation and/or landscaping and other aesthetic treatments to soften or offset the visual effects of tree clearing. Where visual impacts would be adverse, mitigation measures would be implemented to further reduce the impacts of operation of the proposed BLRT Extension project on sensitive viewer groups in the proposed BLRT Extension project area.

For the majority of the LRT alignment, the trackway would be generally level with the adjacent land. However, at some locations, such as at the new bridges over the CP rail corridor and TH 100, the trackway would be elevated and would result in similar altered views for adjacent sensitive receptors (residential land uses) as described previously in this section. Where visual impacts would be adverse, mitigation measures would be implemented to further reduce the impacts of operation of the proposed BLRT Extension project on sensitive viewer groups in the proposed BLRT Extension project area.

Neutral impacts are anticipated as a result of station and TPSS construction, since these features would be designed to complement their surroundings, with variations in design that are consistent with the context of each station and TPSS location. However, the Council anticipates that station features would also include passenger information displays, lighting, and security systems, which could alter the visual quality and character of the view for sensitive viewer groups. Coordination with stakeholders would continue throughout the project design process for stations and to address the siting of TPSSs to maintain neutral visual impacts. This process could include development of additional visual screening as required. Some proposed BLRT Extension project features within the Robbinsdale/Crystal Landscape Unit would result in adverse effects on visual quality, such as the Bass Lake Road pedestrian overpass; impacts resulting from addition of this feature are described in the *Visual Quality Technical Report*. Where visual impacts would be adverse, mitigation measures would be implemented to further reduce the impacts of operation of the proposed BLRT Extension project on sensitive viewer groups in the proposed BLRT Extension project area.

Impacts to the resources identified as "higher-quality visual features" of the Robbinsdale/Crystal Landscape Unit are described in detail in the *Visual Quality Technical Report*. Visual impacts to these resources as a result of the proposed BLRT Extension project would generally be neutral. However, where visual impacts would be adverse, mitigation measures would be implemented to further reduce the impacts of operation of the proposed BLRT Extension project on sensitive viewer groups in the proposed BLRT Extension project area.

Summary of Visual Impacts for the Brooklyn Park Landscape Unit

In the Brooklyn Park Landscape Unit, the proposed BLRT Extension project would use the existing right-of-way of West Broadway Avenue. For much of the corridor, the transitway would be located in the center of the roadway and would have neutral effects on visual quality.

For the majority of the LRT alignment, the trackway would be generally level with the adjacent land. However, at some locations, such as at the new bridge over the 73rd Avenue/Bottineau Boulevard intersection, the trackway would be elevated, resulting in altered views for adjacent

sensitive receptors (residential land uses) as a result of the increased frequency of vehicles passing through the area, the introduction of new sources of light from LRT vehicles and stations, the altered viewshed for residents viewing the LRT corridor and vehicles, and the ability for LRT users to view the residential land uses from passing LRT vehicles. However, where visual impacts would be adverse, mitigation measures would be implemented to further reduce the impacts of operation of the proposed BLRT Extension project on sensitive viewer groups in the proposed BLRT Extension project area.

Neutral impacts are anticipated as a result of station and TPSS construction, since these features would be designed to complement their surroundings, with variations in design that are consistent with the context of each station and TPSS location. However, the Council anticipates that station features would also include passenger information displays, lighting, and security systems, which could alter the visual quality and character of the view for sensitive viewer groups. Coordination with stakeholders would continue throughout the project design process for stations and to address the siting of TPSSs to maintain neutral visual impacts. This process could include development of additional visual screening as required.

Some proposed BLRT Extension project features within the Brooklyn Park Landscape Unit would result in adverse effects on visual quality, features such as the 63rd Avenue park-and-ride, the 73rd Avenue/Bottineau Boulevard bridge, and the OMF; impacts resulting from addition of these features are described in the *Visual Quality Technical Report*. Where visual impacts would be adverse, mitigation measures would be implemented to further reduce the impacts of operation of the proposed BLRT Extension project on sensitive viewer groups in the proposed BLRT Extension project area. Further, the new OMF and related project elements, including landscaping and visual screening, would be designed in coordination with the city of Brooklyn Park and the Three Rivers Park District and in accordance with local zoning ordinances.

Impacts to the resources identified as "higher-quality visual features" of the Brooklyn Park Landscape Unit are described in detail in the *Visual Quality Technical Report*. Visual impacts to these resources as a result of the proposed BLRT Extension project would generally be neutral. Where visual impacts would be adverse, mitigation measures would be implemented to further reduce the impacts of operation of the proposed BLRT Extension project on sensitive viewer groups in the proposed BLRT Extension project area.

Construction-Phase (Short-Term) Impacts

The anticipated visual effects during construction of the proposed BLRT Extension 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 proposed BLRT Extension project features would be particularly noticeable to sensitive viewer groups include the following.

- The reconstruction of the Olson Memorial Highway Bridge over I-94 to create adequate width for the transitway would be highly visible to travelers along I-94 and Olson Memorial Highway.
- Users of Theodore Wirth Regional Park, Sochacki Park, and South Halifax Park would likely perceive construction activity as undesirable and not consistent with their anticipated recreational experience. The reconstruction of the westbound Olson Memorial Highway bridge over the BNSF rail corridor and depressed transitway with retaining walls curving onto Olson Memorial Highway would be highly visible to travelers along Olson Memorial Highway. Additionally, there might be temporary grading for the construction of retaining walls or other features that would affect slopes and vegetation.
- The reconstruction of the BNSF bridge over TH 100 to create adequate width for the transitway would be highly visible to travelers on northbound TH 100. Where the transitway passes along residential neighborhoods, the construction activity would likely be perceived as more visually disruptive to these typically peaceful residential settings.
- The construction of the new bridge for the transitway over TH 610 would be highly visible to travelers on eastbound TH 610.

In general, the short-term impacts that would occur during project construction would be associated with construction staging areas, concrete and form installation, removal of some of the existing vegetation, lights and glare from construction areas, and generation of dust and debris in the proposed BLRT Extension project area.

Temporary construction activities are anticipated by the Council 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 be located adjacent to the existing BNSF rail corridor and proposed BLRT Extension project corridor, 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 proposed BLRT Extension project would pass 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 in those typically more peaceful residential settings.

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 proposed BLRT Extension project on sensitive viewer groups in the proposed BLRT Extension project area.

Conclusions and Recommendations

The proposed BLRT Extension project would not cause a substantial change to the visual character of the proposed BLRT Extension project corridor as a whole. Neutral visual effects are anticipated to result from implementation of the proposed BLRT Extension project along most segments. However, adverse effects on visual quality would occur in some areas, such as the Olson Memorial Highway median and areas where recreational and residential uses are located along or in the vicinity of the proposed BLRT Extension project corridor. At locations where adverse visual effects are anticipated, project elements added to the rail corridor might be visually screened or softened using landscaping where adequate space permits, and the loss of existing vegetation on side slopes for grading or access purposes would be replaced to the extent feasible.

Several local plans address aesthetic and visual resources in the proposed BLRT Extension project area, and applicable policies include the establishment of design and landscape guidelines. The MPRB, the Three Rivers Park District, the Sochacki Park Joint Powers Board, and the affected communities would be involved in the selection of landscape treatments that would be consistent with applicable local policies and that would be compatible with the character of the parks and surrounding neighborhoods. In general, lost vegetation for disturbed areas outside of the BNSF right-of-way would be replaced with vegetation of a similar type where feasible, and, where new physical features of the proposed BLRT Extension project are introduced, efforts would be made to screen or soften the view.

4.5.5 Avoidance, Minimization, and Mitigation Measures

Implementation of Mitigation Measures 1 through 3, described below, would help to reduce the impacts of operation and construction of the proposed BLRT Extension project on sensitive viewer groups in the proposed BLRT Extension project area.

Operating-Phase (Long-Term) Mitigation Measures

Mitigation Measure 1: 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 will be designed and installed so that (a) the lighting does not cause excessive reflected glare and (b) illumination of the proposed BLRT Extension project and its immediate vicinity is minimized.

Mitigation Measure 2: Visual Screening of Project Facilities

To the extent feasible, project facilities have been 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 proposed BLRT Extension project, such as where the elevation of the LRT alignment would be higher than adjacent residences, efforts will be made to screen or soften the view using landscaping or walls where adequate space permits. Landscape treatments will 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.

The Council has prepared design guidelines for key structures throughout the proposed light rail alignment, focusing on bridges and retaining walls. Those guidelines are included within the *Visual Quality Guidelines for Key Structures*, part of the Metro Transit Light Rail Design Criteria (Council, 2015c). These guidelines were developed by the Council, reflecting various coordinating efforts with affected local jurisdictions. The guidelines have been used by the Council in the advancement of the proposed BLRT Extension project's design and development. The guidelines have and will help to ensure a consistent aesthetic element for key structures throughout the proposed BLRT Extension project alignment, while allowing for some flexibility in wall treatments.

Construction-Phase (Short-Term) Mitigation Measures

Mitigation Measure 3: Minimize Visual Disruption from Construction Activities

Follow the Council's design guidelines to address construction impacts where appropriate and practical; these include:

- Locate staging areas in places where their visibility will 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 will 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 local and regional effects of the proposed BLRT Extension project through economic impact analysis. Implementation of the proposed BLRT Extension project is anticipated by the Council to result in direct, indirect, and induced economic impacts related to the construction and long-term expenditures for operations and maintenance (O&M). These effects would be realized to varying degrees throughout the region in terms of increased economic output, earnings, and employment. A benefit/cost analysis was not performed.

4.6.1 Economic Conditions

The Major Capital Investment Projects – Final Rule (published in the Federal Register on January 9, 2013) specifically includes language for economic development as a selection criterion 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.

As described in **Chapter 1** of this Final EIS, the proposed BLRT Extension project study area, the cities of Minneapolis and St. Paul, and the region are experiencing significant population and employment growth, which is expected to continue through 2040. The proposed BLRT Extension project would provide increased mobility to both residents and visitors within the project study

area and is expected by the Council to contribute to this growth. New transportation capacity could create competitive advantages for businesses located in the project study area. The proposed BLRT Extension project would also provide a critical connection in the region's transportation system by providing an important link in Metro Transit's long-range plan. This would connect the City of Minneapolis and the region's northwestern communities with existing LRT on the METRO Green Line, future LRT on the METRO Green Line Extension, bus rapid transit on the METRO Red Line, the Northstar commuter rail line, and local and express bus routes.

The implementation and construction, continuing operation, and market reaction to the availability of this improved transit service would influence economic activity in the local economy. Construction of these facilities would expand local earnings for the duration of the proposed BLRT Extension project's construction cycle. Operating the proposed BLRT Extension project would also expand earnings, but, unlike the one-time construction impacts, the new jobs required to operate and maintain the proposed BLRT Extension project would have long-term recurring impacts. These jobs represent the direct effects of investment in the proposed BLRT Extension 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 by the Council as employers hire to meet this increase in local consumer demand. This type of hiring represents the proposed BLRT Extension project's indirect impact.

The proposed BLRT Extension project is also expected by the Council to have positive effects on commercial and residential development located near transit stations. The proposed BLRT Extension project would contribute positive economic impacts by encouraging and supporting higher-density residential and commercial land uses around transit 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 the residential and commercial development near the 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.

4.6.2 Regulatory Context and Methodology

The area of economic effect selected for this analysis is the Minneapolis–St. Paul–Bloomington MSA. The economic effects associated with construction, operation, and maintenance expenditures for the proposed BLRT Extension project were measured using regional multipliers from the US Department of Commerce, Bureau of Economic Analysis (BEA). Derived from the Regional Input-Output Modeling System (RIMS II), multipliers measure the total change (direct plus indirect effects) in output, employment, and earnings that results from an incremental change relative to a particular industry. The data set was constructed by BEA to reflect the local Minneapolis–St. Paul–Bloomington MSA economy. The multipliers are based on the 2007 Benchmark Input-Output Table

for the nation and 2013 regional accounts data; they represent the version available at the time this analysis was prepared (BEA, 2015).

Tax revenue impacts (see **Section 4.6.5**) were quantified by examining the right-of-way needed for the proposed BLRT Extension project that would be permanently converted from private property to public property. This analysis assumes that transportation-network improvements included in the No-Build Alternative are also included in the proposed BLRT Extension project. Therefore, this section focuses only on the additional incremental economic impacts attributable to the proposed BLRT Extension project.

In addition, the short- and long-term impacts of the proposed BLRT Extension project were analyzed using the Council's REMI-PI[7] regional economic model. The REMI-PI model uses computable general equilibrium and new economic geography techniques to project forward time-series of economic and demographic outcomes. The REMI-PI projections are informed by data on the region's industry mix, costs and productivity, and analysis of regional competitiveness within the national economy. Employment, migration, and population outcomes directly flow from projected economic performance. The REMI-PI model was run to supplement the economic impacts analysis. Results of the REMI-PI analysis are discussed qualitatively as a relative comparison to the analysis conducted using the RIMS II multipliers, which was the primary economic impacts modeled considered for the proposed BLRT Extension project.

4.6.3 Output, Earnings, and Employment Effects from Capital Expenditures

This section describes the anticipated economic impacts from capital expenditures. Construction of the proposed BLRT Extension project represents substantial capital investment in the local economy. This spending would increase the employment, earnings, and output for the duration of the construction process. Capital cost estimates and construction values for this analysis are presented in 2015 dollars, thereby providing a common reference year for expenditures.

4.6.3.1 Capital Expenditures

The capital expenditures for construction of the proposed BLRT Extension project are shown in **Table 4.6-1**. The costs represent the gross capital expenditures for the proposed BLRT Extension project capital cost categories are represented differently in the analysis presented in **Section 4.6**. The analysis requires that certain costs associated with real estate acquisition be reclassified as professional service.

[7] REMI-PI is the Policy Insight economic model developed by Regional Economic Models, Inc., a tool used to predict the economic effects of policy decisions.

Table 4.6-1. Summary of Proposed BLRT Extension Project Capital Costs

In year-of-expenditure (YOE) dollars

General Construction Cost[1]	Vehicles	Right-of-Way[2]	Professional Services[3]	Finance Charges[4]	Total
$1,017,601,972	$136,245,070	$65,496,959	$247,086,752	$30,000,000	$1,496,430,753

Source: Council, 2016c

[1] Includes contingency costs.

[2] Right-of-way estimate is based on the Council appraisal estimates. This cost does not reflect true acquisition estimate. No add-on, relocation, or professional services costs are included. Other associated real estate costs are included in professional services.

[3] Professional services include real estate services, engineering, legal fees, and other agency costs.

[4] Finance charges include hedge costs, capitalized interest that accrues during the construction period, delay reserves, unavailability insurance, and costs of issuance.

Total capital expenditures are divided into the following five major categories:

- **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 finance charges associated with the proposed BLRT Extension project include 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. Construction goods and services would be purchased in the local economy. Although not every building material required for the proposed BLRT Extension project is produced locally, the RIMS II multipliers reflect the supplier linkages for the industry and thus account for this leakage from the local economy. Leakage represents purchases made by local suppliers from sources outside the region.

The purchase of vehicles would not occur locally. Transit vehicles are not manufactured in the Minneapolis–St. Paul–Bloomington MSA, which limits the impact this purchase could have in the region. Since 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 vehicles, and it is possible that a component of the vehicle would be made by a local supplier; however, these possibilities represent a negligible share of the vehicles' 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 (that is, 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 are included in the capital cost of the proposed BLRT Extension project. However, since 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.

4.6.3.2 Funding Sources

To isolate the economic effects of the proposed BLRT Extension project on the local economy, it is necessary to distinguish those resources that are new to the economy from local resources that would still be spent in the region. **Table 4.6-2** describes the funding sources and expenditure percentages that are planned for the proposed BLRT Extension project and indicates whether these funds represent new resources that would be invested in the region because of the proposed BLRT Extension project.

Federal and state funds originate from outside the City of Minneapolis's local economy and thus represent new resources. Because the local funds originate within the Minneapolis–St. Paul–Bloomington MSA, they are considered existing revenue sources and do not represent new resources. The funding share described in **Table 4.6-2** is the total project cost of $1.49 billion (YOE dollars) for this analysis. The federal funding share or "new resources" (49 percent) is based on this amount.

Table 4.6-2. Funding Sources for the Proposed BLRT Extension Project

In YOE dollars

Funding Source	Contributions	Funding Share	New or Existing Funding Source
Federal 5309 New Starts	$733,251,069	49%	New
State of Minnesota	$149,643,075	10%	New
Counties Transit Improvement Board (CTIB)	$463,893,533	31%	Existing
Hennepin County Regional Railroad Authority (HCRRA)	$149,643,075	10%	Existing
Total funding	**$1,496,430,753**	**100%**	—
Percentage new funding	**$882,894,144**	**59%**	—

Source: Council, 2016c

The capital costs representing expenditures that would accrue to the region (that is, construction and professional services costs) are adjusted to account only for new resources flowing into the region. Only funding levels that represent new resources flowing into the region would generate effects with the proposed BLRT Extension project. **Table 4.6-3** shows the level of funding for the

capital cost elements that would generate economic effects within the local Minneapolis economy. The expenditures with substantial local labor elements (that is, construction cost of $1.02 billion) that would yield impacts to the local economy are derived from the data in **Table 4.6-1** and represent the sum of expenditures on construction and professional services costs for the proposed BLRT Extension project. The amount of funding that represents new resources (that is, 59 percent or about $883 million) for the region is derived from **Table 4.6-2** and represents the sum of those sources designated as "new."

The amount of funding that represents "new funding" (59 percent federal/state share) is less than the total amount required for construction. This analysis assumes that the new funds would be spent on general construction expenditures. For the proposed BLRT Extension project, construction costs would be more than the anticipated federal participation in the project. Therefore, every single dollar of new resources is expected by the Council to yield a local economic impact. This assumption does not bias the analysis, since the multipliers for "construction" and for "professional, scientific, and technical services" (the multiplier that would be applied to the professional services cost category) are similar.

Table 4.6-3. Capital Costs Representing New Resources

In YOE dollars

Alternative	General Construction Cost[1]	Federal/State Share (59%)[2]
Proposed BLRT Extension project	$1,017,601,972	$882,894,144

Source: Council, 2016c

[1] Capital cost that would impact local economy

[2] Represents federal share (49%) and state share (10%) of total project cost

The interpretation of the multipliers shown in **Table 4.6-4** is as follows (US Department of Commerce BEA Regional Input-Output Modeling System, RIMS II 2015). The construction industry is used as an example.

- The final demand output multiplier represents the total-dollar change in output that occurs in all industries for each additional dollar of output delivered to final demand by the construction industry.
- The final demand earnings multiplier represents the total-dollar change in earnings of households employed by all industries for each additional dollar of output delivered to final demand by the construction industry.
- The final demand employment multiplier represents the total change in number of jobs that occurs in all industries for each $1 million of output delivered to final demand by the construction industry.
- The direct effect earnings multiplier represents the total-dollar change in earnings of households employed by all industries for each additional dollar of earnings paid directly to households employed by the construction industry.
- The direct effect employment multiplier represents the total change in number of jobs in all industries for each additional job in the construction industry.

Table 4.6-4. RIMS II Multipliers by Industry

Region	Industry	Multiplier				
		Final Demand			Direct Effect	
		Output ($)	Earnings ($)	Employment (Jobs)	Earnings ($)	Employment (Jobs)
Minneapolis–St. Paul–Bloomington, MSA	Construction	1.4959	0.4818	9.9251	1.374	1.4383
	Professional, scientific, and technical services	1.4343	0.5768	10.7839	1.3088	1.4458
	Transit and ground passenger transportation	1.6076	0.5819	20.2455	1.3851	1.186

Source: US Department of Commerce BEA, RIMS II 2015

Applying the final demand multipliers for the construction industry to the amount of new funding and resources that would be used for capital expenditures provides estimates of the net output, earnings, and employment impacts generated by the proposed BLRT Extension project in the short term. The results are summarized in **Table 4.6-5.** These one-time impacts would last for the duration of construction. *One job* is defined as a job for one person for one year. For example, a job for one person that lasts 4 years would equate to 4 person-year jobs.

Table 4.6-5. Net Effects of Construction (Short-Term) Activity

Economic Indicators	Proposed BLRT Extension Project
New capital expenditure	$882,894,144
Final Demand Multipliers	
Output	1.4959
Earnings	0.4818
Employment	9.9251
Direct Effects	
Output	$1,320,721,350
Earnings	$425,378,399
Employment (jobs)	8,763

Source: US Department of Commerce BEA, RIMS II 2015

4.6.3.3 Operating-Phase (Long-Term) Effects

Given that construction-related spending would last only for the duration of the proposed BLRT Extension project's construction cycle, long-term economic impacts from this spending are not anticipated. Impacts associated with construction related activities are discussed in each of the resource impact discussions elsewhere in **Chapter 4** and **Chapter 5**.

4.6.3.4 Construction-Phase (Short-Term) Effects

No-Build Alternative

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

Proposed BLRT Extension Project

For the Minneapolis–St. Paul–Bloomington MSA, the effect of construction spending for the proposed BLRT Extension project is estimated to be $1.32 billion in output (2015 dollars). The Council estimates that the proposed BLRT Extension project would generate an estimated $425 million in net earnings and payroll expansion and would generate 8,763 person-year jobs in the Minneapolis–St. Paul–Bloomington MSA.

The Council used its REMI-PI model to supplement the results of the RIMS II model. The REMI-PI is a different type of modeling approach that can be used to understand the economic impacts resulting from changes in labor accessibility such as improved transit access or reduced roadway congestion. The results of the Council's REMI-PI analysis show that the proposed BLRT Extension project might cause similar short-term economic impacts beyond those estimated by the RIMS II model. The REMI-PI model projects similar levels of economic output, particularly in the construction industry earnings.

4.6.4 Output, Earnings, and Employment Effects from Operations and Maintenance Expenditures

The proposed BLRT Extension project would create jobs and additional earnings as a result of O&M expenditures. The projected O&M expenditures are calculated based on the existing light rail services. The analysis assumes that funding for O&M 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 proposed BLRT Extension project would expand economic activity in the counties of the Minneapolis–St. Paul–Bloomington MSA, thus generating recurring net economic impacts (long term). Other potential sources of federal funding for maintenance exist, since grants could be applied for to fund preventative 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.

The estimated net change in local earnings generated by the proposed BLRT Extension project is shown in **Table 4.6-6**. The table describes anticipated payroll expansion beyond implementation of the No-Build Alternative. This analysis uses only the direct effect multipliers to generate estimates of earnings impacts attributable to O&M activities because output measures are less reliable in the context of transit service where market prices are not available. The multipliers applied in this section of the analysis are for the industry labeled "Transit and Ground Passenger Transportation."

The increased earnings 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. The transit earnings are derived by multiplying the incremental O&M cost over the No-Build Alternative by the transit on-site labor percentage. The transit on-site labor percentage (76 percent) is derived from Metro Transit's O&M cost model. The final transit earnings do not include benefits, and only the wage element affects transit earnings.

Table 4.6-6. Net Earnings Impacts from Proposed BLRT Extension Project O&M Activities

In 2015 dollars

Alternative	Transit Earnings over No-Build Alternative[1]	Minneapolis–St. Paul–Bloomington MSA Earnings Multiplier[2]	Net Change in Local Earnings
Proposed BLRT Extension project	$16,546,818	1.3851	$22,918,997

Source: Council, 2016c

[1] Transit earnings are the incremental O&M costs multiplied by the on-site labor component

[2] RIMS II multiplier (transit and ground passenger transportation) direct effect earnings multiplier

4.6.4.1 Operating-Phase (Long-Term) Effects

No-Build Alternative

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

Proposed BLRT Extension Project

For the Minneapolis–St. Paul–Bloomington MSA, the effect of local O&M spending for the proposed BLRT Extension project is estimated by the Council at $23 million in local annual wages and salaries (2015 dollars). With implementation of the proposed BLRT Extension project, the increased earnings 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.

The Council used its REMI-PI model to supplement the results of the RIMS II model. The REMI-PI is a different type of modeling approach that can be used to understand the economic impacts resulting from changes in labor accessibility such as improved transit access or reduced roadway congestion. The results of the Council's REMI-PI analysis show that the proposed BLRT Extension project might cause additional positive economic impacts beyond those estimated by the RIMS II model. Specifically, the REMI-PI model estimated greater gains in employment and economic output that are a result of improved labor accessibility for transit-dependent populations and also modest household budget savings as a result of greater transit use. If the proposed BLRT Extension

project were to cause improved livability in the region that attracts additional population and economic activity, additional economic benefits might be realized.

4.6.4.2 Construction-Phase (Short-Term) Effects

O&M expenditures would not create short-term effects. The earnings impacts generated by O&M expenditures would be long-term recurring positive economic impacts.

4.6.5 Tax Revenue Effects

Construction of the proposed BLRT Extension project would require the acquisition of some private land and/or improvements for easements, right-of-way, parking, and station facilities. These acquisitions would remove properties from the existing local tax base. The annual tax revenue associated with the loss of properties as a result of right-of-way purchase, displacement, and relocation was identified in the development of the proposed BLRT Extension project. The Council developed the preliminary right-of-way cost estimate for the analysis. This amount of right-of-way to be acquired is preliminary and is subject to change as the proposed BLRT Extension project proceeds into final design.

Table 4.6-7 summarizes the estimated value of the properties to be acquired and shows the expected annual tax revenue lost from removing properties from Hennepin County taxing jurisdictions' tax base for the proposed BLRT Extension project. **Section 4.3** provides greater detail about the number and type of properties needed for the proposed BLRT Extension project. The calculation of the lost annual property tax revenue associated with converting land from private to public use is estimated at $72,000. Special assessment district revenue loss associated with removing properties was not estimated.

Table 4.6-7. Right-of-Way Acquisition and Associated Loss of Tax Revenues (2015 Tax Year)

Alternative	Number of Parcels to be Acquired	Tax Assessed Value	Estimated Annual Lost Tax Revenue
Proposed BLRT Extension project	14	$2,419,600	$72,368

Source: Hennepin County Assessor's Offices, Council, 2016c

It is important to note that the estimated loss of annual revenue reported in this section is 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 described in **Table 4.6-7** 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 (**Table 4.6-1**) are based on Council's recent experience in acquiring right-of-way and are substantially greater than the cost used in this analysis. These right-of-way acquisition costs assume that the property would be purchased for a price above the assessed value, since speculation and market forces increase the parcels' sales

price. There is a small and fixed amount of land along the proposed BLRT Extension project alignment that would be purchased.

4.6.5.1 Operating-Phase (Long-Term) Effects

No-Build Alternative

The No-Build Alternative would not require the acquisition of right-of-way for the proposed BLRT Extension project and would not affect tax revenue.

Proposed BLRT Extension Project

The lost tax revenues associated with the reduction in the tax base from the proposed BLRT Extension project would be a recurring loss on an annual basis. Partially offsetting these losses, however, would be an increase in other tax revenues. For example, the creation of new jobs and earnings associated with the recurring O&M spending could foster greater retail spending. The additional revenues from this spending would be recurring gains. The construction of the proposed BLRT Extension project is also expected by the Council to have positive effects on the value of residential and commercial properties within walking distance of a station. The increase in value translates into greater tax revenues and is expected to accrue to the local economy. Discussion on the potential development near the proposed BLRT Extension project stations is provided in **Chapter 6**.

4.6.5.2 Construction-Phase (Short-Term) Effects

The lost tax revenues associated with this reduction in the tax base will create a short-term reduction in tax collections. This loss is expected by the Council to diminish as the value of residential and commercial properties within walking distance of the station areas increases.[8] Therefore, the long-term positive effects of the proposed BLRT Extension project on the value of residential and commercial properties within walking distance of station areas is expected to offset any short-term effects of lost tax revenues attributable to right-of-way acquisition.

[8] There is substantial consensus within academic literature that the accessibility benefits of transit service increase real estate value gains near station areas. These benefits have not been quantitatively estimated for this project.

4.7 Safety and Security

This section describes the operating-phase (long-term) and construction-phase (short-term) effects of the proposed BLRT Extension 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 proposed BLRT Extension project, and a description of mitigation measures to implement with the proposed BLRT Extension project.

4.7.1 Regulatory Context and Methodology

The Council, as the owner and operator of the proposed BLRT Extension 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 *SSMP* for the proposed BLRT Extension project. These codes, standards, and guidance include, but are not limited to, the applicable parts of:

- National Fire Protection Association 130, *Standard for Fixed Guideway Transit or Passenger Rail Systems*
- International Fire Code, 2012 Edition, as amended
- 2015 Minnesota State Building Code, as amended by the cities of Minneapolis, Golden Valley, Robbinsdale, Crystal, and Brooklyn Park
- National Fire Protection Association 101 Life Safety Code as well as International Organization for Standardization (ISO) standards
- American National Standards Institute (ANSI) and American Society for Testing and Materials (ASTM) Standards
- 49 CFR Parts 214, 219 220, 222, 225, 228, 233, 234, 235, and 236 and 49 CFR Part 229.125
- Minnesota Chapter 312 (House File 3172/Senate File 2785), *Safety and Operational Standards for Freight Rail Operations*
- Circular C5800.1, *Safety and Security Guidance for Recipients with Major Capital Projects*, governing the safety and security process from planning through commencement of revenue service
- The Council's *Regional Transitway Guidelines* (Council, 2012a), *Station and Support Facility Design Guidelines User Guide Supplement* (Council, 2012b), *and Metro Light Rail Transit Design Criteria,* (Council, 2015c), which provide technical guidance for the design of transitway facilities
- Metro Transit's *SSMP* for the proposed BLRT Extension project (for instructions on how to access this document, refer to Appendix D of the Draft EIS), which covers safety and security requirements and actions during operation of the proposed BLRT Extension project

FRA has provided a preliminary jurisdiction determination for the proposed BLRT Extension project on its regulatory role in implementing the proposed light rail at-grade crossings of roads in the vicinity of existing freight rail at-grade crossings (see Appendix D of the Draft EIS). The Council

would work with FRA on a final jurisdiction determination for the proposed BLRT Extension project during the proposed BLRT Extension project's Engineering phase.

4.7.2 Study Area

The study area for the safety and security evaluation includes planned facilities within the LOD for the proposed BLRT Extension project, as illustrated in the Engineering Drawings (see **Appendix E**).

4.7.3 Affected Environment

This section describes the existing conditions of the study area, including an overview of existing freight rail crossings and a summary of existing emergency service providers in the study area.

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, Golden Valley, Robbinsdale, Crystal, and Brooklyn Park. Emergency medical services are located in each city. 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 Line and METRO Green Line LRT lines to provide security at stations and on rail cars and would provide similar services for the proposed BLRT Extension project.

4.7.3.2 Freight Railroads

There are currently two active freight rail corridors in the study area: the BNSF rail corridor and the CP rail corridor (for more information on existing freight rail operations, see **Section 3.2.3**). As shown in **Table 4.7-1**, there are 11 existing locations in the study area where roads cross freight rail corridors.

Table 4.7-1. At-Grade Railroad Crossings (Existing Conditions and Proposed BLRT Extension Project)

Location	Existing Conditions		Proposed BLRT Extension Project	
	Crossing Type	Crossing Control	Crossing Type	Crossing Control
Olson Memorial Hwy/ 7th St N/6th Ave N	None	Not applicable	LRT	Traffic signal
Olson Memorial Hwy/ Border Ave	None	Not applicable	LRT	Traffic signal
Olson Memorial Hwy/ I-94 westbound ramps (E Lyndale Ave N)	None	Not applicable	LRT	Traffic signal
Olson Memorial Hwy/ I-94 eastbound ramps (W Lyndale Ave N)	None	Not applicable	LRT	Traffic signal
Olson Memorial Hwy/ Bryant Ave N	None	Not applicable	LRT	Traffic signal
Olson Memorial Hwy/ Van White Memorial Blvd	None	Not applicable	LRT	Traffic signal
Olson Memorial Hwy/ Humboldt Ave N	None	Not applicable	LRT	Traffic signal
Olson Memorial Hwy/ Pedestrian crosswalk at James Ave N	None	Not applicable	LRT	Traffic signal
Olson Memorial Hwy/ Morgan Ave N	None	Not applicable	LRT	Traffic signal
Olson Memorial Hwy/ Pedestrian crossing east of Oliver Ave N	None	Not applicable	LRT	Traffic signal
Olson Memorial Hwy/ Penn Ave N	None	Not applicable	LRT	Traffic signal
Olson Memorial Hwy/ Pedestrian crossing at Russell Ave N	None	Not applicable	LRT	Traffic signal
Olson Memorial Hwy/ Thomas Ave N	None	Not applicable	LRT	Traffic signal
39½ Ave N	Freight	Flashers and automatic gates	None (crossing to be closed)	Not applicable
41st Ave N	Freight	Flashers and automatic gates	Freight and LRT	Flashers and automatic gates
42nd Ave N	Freight	Flashers	Freight and LRT	Flashers and automatic gates
TH 100	Freight	Freight on bridge	Freight and LRT	Freight and LRT on separate bridges

Table 4.7-1. At-Grade Railroad Crossings (Existing Conditions and Proposed BLRT Extension Project)

Location	Existing Conditions		Proposed BLRT Extension Project	
	Crossing Type	Crossing Control	Crossing Type	Crossing Control
45½ Ave N	Freight	Flashers	Freight and LRT	Flashers and automatic gates
W Broadway Ave	Freight	Flashers	Freight and LRT	Flashers and automatic gates
Corvallis Ave N	Freight	Flashers	Freight and LRT	Flashers and automatic gates
Bass Lake Rd	Freight	Flashers and automatic gates; preemption of Bottineau Blvd/Bass Lake Rd traffic signal	Freight and LRT	Flashers and automatic gates; preemption of Bottineau Blvd/Bass Lake Rd traffic signal
63rd Ave N	Freight	Flashers and automatic gates; preemption of Bottineau Blvd/63rd Ave N traffic signal	Freight and LRT	Flashers and automatic gates; preemption of Bottineau Blvd/ 63rd Ave N traffic signal
Bottineau Blvd/W Broadway Ave/71st Ave N	Freight	Flashers and automatic gates; preemption of Bottineau Blvd/W Broadway Ave/71st Ave N traffic signal	Freight and LRT	Flashers and automatic gates; preemption of Bottineau Blvd)/W Broadway Ave/71st Ave N traffic signal
Bottineau Blvd/73rd Ave N	Freight	Flashers; preemption of Bottineau Blvd/73rd Ave N traffic signal	Freight and LRT	Freight – flashers and automatic gates; preemption of Bottineau Blvd/ 73rd Ave N traffic signal LRT – on bridge
W Broadway Ave/75th Ave N	None	Not applicable	LRT	Traffic signal
W Broadway Ave/76th Ave N	None	Not applicable	LRT	Traffic signal
W Broadway Ave/Brooklyn Blvd/ CSAH 152	None	Not applicable	LRT	Traffic signal
W Broadway Ave/ Candlewood Dr	None	Not applicable	LRT	Traffic signal
W Broadway Ave/ College Park Dr	None	Not applicable	LRT	Traffic signal
W Broadway Ave/ 85th Ave N	None	Not applicable	LRT	Traffic signal

Table 4.7-1. At-Grade Railroad Crossings (Existing Conditions and Proposed BLRT Extension Project)

Location	Existing Conditions		Proposed BLRT Extension Project	
	Crossing Type	Crossing Control	Crossing Type	Crossing Control
W Broadway Ave/ Maplebrook Pkwy	None	Not applicable	LRT	Traffic signal
W Broadway Ave/Setzler Pkwy	None	Not applicable	LRT	Traffic signal
W Broadway Ave/ 93rd Ave N	None	Not applicable	LRT	Traffic signal
W Broadway Ave/94th Ave N	None	Not applicable	LRT	Traffic signal
TH 610	None	Not applicable	LRT	LRT on bridge
W Broadway Ave/Main St	None	Not applicable	LRT	Traffic signal
W Broadway Ave/ Oak Grove Pkwy	None	Not applicable	LRT	Traffic signal (non-revenue track)

Freight rail operation safety is regulated by FRA through the Rail Safety Improvement Act of 2008 and resulting rules and regulations. The design and operations of the freight rail infrastructure to be constructed as part of the proposed BLRT Extension project would be subject to FRA regulations, including 49 CFR Parts 214, 219, 220, 222, 225, 228, 233, 234, 235, and 236 and 49 CFR Part 229.125, as well as the hours-of-service laws, at the points of connection between the proposed BLRT Extension project and the general railroad system.[9] MnDOT and the Minnesota Department of Public Safety also have oversight responsibilities for freight railroad operations related to at-grade crossings, railway inspections, and emergency response training and preparedness.

In addition, in March 2016, FTA issued a final rule for State safety oversight (SSO) of rail fixed guideway public transportation systems not regulated by FRA (49 CFR Part 674). This final rule replaces existing regulations and significantly strengthens state safety oversight agency (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 will continue to conduct triennial audits of the safety programs established by each rail transit system. States have three 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 are governed by 49 CFR Part 659.

Refer to **Section 3.2.3** for a description of the current ownership of each of the freight rail corridors in the study area. Final ownership of these rights-of-way would be determined as the proposed BLRT Extension project advances, but it is unlikely that portions of the rail corridors would be

[9] Refer to Appendix D of the Draft EIS for a copy of correspondence between the Council and FRA regarding FRA's jurisdictional determination.

transferred to public ownership. Responsibility for rail operations safety and maintenance of the freight rail infrastructure would be determined as part of the related agreements and construction permits.

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 proposed BLRT Extension project. As part of the operating-phase impacts for the proposed BLRT Extension project, this section includes a discussion of the general proposed BLRT Extension project design features related to safety and security and an evaluation of impacts related to new at-grade crossings, emergency vehicle response times, and LRT service in the vicinity of freight rail.

4.7.4.1 Operating-Phase (Long-Term) Impacts

This section describes proposed design elements and other measures to increase safety and security that would be implemented as part of the proposed BLRT Extension project. Long-term impacts associated with safety and security related to new at-grade crossings, emergency vehicle response times, and light rail service in the vicinity of freight rail are also discussed. Given adherence to Metro Transit design criteria and the oversight of security personnel, the proposed BLRT Extension project is not expected by the Council to cause adverse impacts related to safety and security.

The proposed BLRT Extension project would not change freight railroad operations. However, the proposed BLRT Extension project would include changes to freight rail facilities, including the realignment and reconstruction of freight railroad track, the placement of light rail tracks in relatively close proximity to freight rail tracks, and several shared at-grade light rail and freight railroad crossings of roads (that are currently only freight rail crossings). Given that the design modifications to freight rail facilities would comply with applicable safety design standards, including appropriate corridor protection features (see **Section 3.2.4**), the proposed BLRT Extension project is not expected to cause adverse impacts related to freight rail safety and security.

Station Design Elements

Avoidance of safety issues at new light rail stations related to the proposed BLRT Extension project would be achieved through implementation of the proposed BLRT Extension project's *SSMP* (Council, 2014a) and the *Metro Light Rail Transit Design Criteria* (Council, 2015c). The purpose of the *SSMP* is to consider safety and security when designing, constructing, and operating the proposed BLRT Extension 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 proposed BLRT Extension project.

Station areas would be designed according to the project design criteria, incorporating as appropriate best practices for safety and security, cognizant of project budget, stakeholder requirements, and technical constraints. 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 Americans with Disabilities Act (ADA) requirements.

Lighting for proposed station areas and park-and-ride lots, as well as vehicular and pedestrian circulation areas, would be consistent with the *Metro Light Rail Transit Design Criteria* (Council, 2015c). Emergency lighting would be provided in all public areas, including platforms, pedestrian facilities, vehicular traffic areas, bus loading zones, and park-and-ride lots.

Fencing would be installed between the light rail alignment and freight rail alignment when adjacent to a trail or sidewalk. The OMF in the City of Brooklyn Park would be secured by perimeter fencing.

Safety and security within the proposed light rail 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 proposed stations and LRT alignment as well as nearby bus routes and bus stops. Transit police officers would provide security at light rail stations and in the light rail vehicles. 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

As shown in **Table 4.7-1**, 24 new LRT crossings at-grade with existing roads would be introduced as part of the proposed BLRT Extension project. Controls for at-grade crossings are shown in **Table 4.7-1**. Light rail vehicles would also sound horns or bells when entering a station, and when approaching at-grade roadway crossings, except in locations where a Quiet Zone[10] 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 3.2** for more information on freight and **Section 3.3** for more information on vehicular traffic.

In addition to the road crossings, three mid-block at-grade light rail crossings would be added on Olson Memorial Highway (see **Table 4.7-1**). These pedestrian crossings would be designed based on the *Metro Light Rail Transit Design Criteria* (Council, 2015c) 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.

[10] Quiet Zones are locations, at least one-half mile in length, where the routine sounding of horns has been eliminated because of safety improvements at at-grade crossings, including modifications to the streets, raised median barriers, four quadrant gates, and other improvements designed and implemented as a part of the proposed BLRT Extension project and consistent with Quiet Zone readiness. Horns are sounded in emergency situations at these locations. Municipalities must apply to FRA for approval of Quiet Zones.

With the proposed BLRT Extension project, there would be 10 shared light rail and freight railroad at-grade crossings, as shown in **Table 4-7.1.** Proposed controls for all new or modified crossings are also shown in **Table 4.7.1**. Mid-block at-grade light rail crossings would be equipped with U-shaped crossings, which are a crossing safety control measure that promote slower crossing speeds and force 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.

Emergency Vehicle Response Times

In locations where there would be at-grade light rail crossings of roads, emergency response times could increase as a result of delay to emergency vehicles while LRVs are in the crossing. During the peak weekday hour, up to 12 light rail trains (six in each direction) would pass through these at-grade crossings, causing about 50 seconds of delay per light rail train crossing. These delays could increase fire, emergency medical services, and police response times on routes using the crossings.

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 Fire Life Safety and Security Committee (FLSSC), as described in the proposed BLRT Extension project's *SSMP* (Council, 2014a).

Light Rail Service in the Vicinity of Freight Rail Service

Between Olson Memorial Highway in the City of Minneapolis and the crossover to West Broadway Avenue in the City of Brooklyn Park between 71st Avenue North and 73rd Avenue North, the proposed light rail alignment would be located within the BNSF freight rail corridor, and the light rail alignment would generally be located parallel to the existing freight rail corridor.

The proposed BLRT Extension project was examined by the Council to reduce risks in the event of a freight or LRT derailment. This review included examining technical reports, research papers, and treatments used on other corridors where freight rail and LRT operate jointly.

LRT and freight rail located in a shared corridor is not an unusual occurrence in the United States. These are known as "Common Corridor Operations." The Council collected and documented information on these locations, including mitigation measures in place. Based on this research the following Light Rail Operators have Common Corridor Operations on portions of their lines: Port Authority Transit Corp (PATCO), Charlotte NC LYNX, Greater Cleveland Regional Transit Authority Blue and Green Lines, Dallas DART, Denver RTD, Jersey City NJT Hudson-Bergen LRT, Los Angeles LACMTA Green and Gold Lines, Sacramento CA, Sacramento RTD, St. Louis, Bi-State Development Agency, San Jose, VTA, Maryland Counties, Purple Line and Portland MAX Orange Line.

The Council contacted staff associated with these projects to identify the following common methods currently used or planned to be used after system build-out. Some of these projects and methods are still in development, but the following is a summary of these measures:

- Reliance on direct communication by internal radio systems and emergency telephone contact with the adjacent railway's dispatch center and vice-versa for notification of an accident that interferes with the other's operation
- Have established incident response protocols with the adjacent railway and first responders as part of their emergency preparedness programs
- Conduct emergency response exercises and drills as part of their training requirements. Many properties actively support "Operation Lifesaver" to reduce trespasser/transit rail accidents.
- Construct corridor protection walls between freight and light rail
- Install intrusion detection devices in areas between freight and light rail

All of these methods are also planned to be used on the proposed BLRT Extension project and will be incorporated into the construction and management documents, as applicable.

The Metro Transit *Light Rail Transit Design Criteria* (Council, 2015c), which includes design standards and specifications to provide security and/or enhance safety, includes safeguards to prevent LRT operational derailments including guardrails (i.e., a rail or other structure laid parallel with the running rails of the track to keep derailed wheels adjacent to the running rails). In addition, the proposed BLRT Extension project includes a combination of horizontal separation, vertical separation, and physical means to provide safe operations. Three specific corridor-protection treatments are proposed:

- The proposed BLRT Extension project ditch (used where the corridor width permits)
- A retained-fill option where the LRT tracks would be at a higher grade than freight rail tracks
- A wall

Typical sections representing these corridor-protection options are shown in **Chapter 3, Figures 3.2-2 through 3.2-4** following **Table 3.2-1**. In addition, where clearance between the centerline of the light rail tracks and the centerline of the freight tracks is less than 50 feet, intrusion detection for possible freight derailment will be installed, where appropriate. These corridor-protection treatments were closely coordinated with BNSF.

Further, the design of the proposed BLRT Extension project will 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 proposed BLRT Extension project to address and minimize electrical sparking. Ice cutters will be utilized to maintain positive contact between the contact wire and pantograph during winter weather. Additionally, Metro Transit will regularly inspect pantographs for grooves along the pantograph's carbon strip (as it does on its existing light rail lines), which could cause arcing. Included in the design of the proposed BLRT Extension project to minimize arcing are contact wire gradients, which meet or exceed American Railway Engineering and Maintenance-of-Way Association

(AREMA) recommendations, staggering or zig-zags of the contact wire to ensure even wear, and overlaps between power sections. Finally, the design accounts for the OSHA 10-foot zone of influence, and meets or exceeds National Electrical Safety Code requirements along the proposed shared light rail and freight rail corridor.

The Council's *Operations Emergency Management Plan* (*OEMP*) (Council, 2016e) 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 proposed BLRT Extension project, a number of 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 *SSMP* and the Council's *OEMP*.

In addition, the Council maintains an emergency preparedness exercise plan. The emergency preparedness exercise plan will be carried out by the Fire Life Safety and Security Committee (FLSSC). In advance of operation of the proposed BLRT Extension project, a number of drills will be planned, conducted, and documented in the emergency preparedness exercise plan. Emergency preparedness training exercises will be designed to address areas such as rail equipment familiarization, situational awareness, passenger evacuation, coordination of functions, communications, and hands-on instruction. The FLSSC will coordinate training exercises with the Council and the freight railroad owners and operators, as appropriate. During normal revenue service, the FLSSC will coordinate training exercises to evaluate emergency preparedness. The exact nature of emergency preparedness exercises will 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.

4.7.4.2 Construction-Phase (Short-Term) Impacts

Construction activities would result in temporary increased congestion along adjacent roads as a result 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 in order 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 are identified in the proposed BLRT Extension project's *SSMP* (Council, 2014a), which would be incorporated into construction contract specifications.

As part of the proposed BLRT Extension project, construction activities would occur close to active freight rail corridors. Short-term freight operations impacts and mitigation are addressed in **Section 3.2**. All contractors would prepare a project safety and health program 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 as described in the proposed BLRT Extension project's *SSMP*.

4.7.5 Avoidance, Minimization, and/or Mitigation Measures

This section describes the measures the Council would implement to mitigate the proposed BLRT Extension project's long-term and short-term safety and security impacts. For each mitigation measure or set of associated mitigation measures, this section generally notes the anticipated impact or associated impacts that the mitigation measures would address (see **Sections 4.7.3.1 and 4.7.3.2** for additional information on the identified safety and security impacts and avoidance measures).[11]

Operating-Phase (Long-Term) Mitigation Measures. The Council will implement the following mitigation measures as part of implementing the proposed BLRT Extension project:

- Conform to FTA's Rail Fixed Guideway Systems; State Safety Oversight Program for Safety and Security Guidance for Recipients with Major Capital Projects (Circular C 5800.1), covered under 49 CFR Part 633 – Project Management Oversight
- Implement the project's *SSMP* and the Metro Light Rail Transit Design Criteria to avoid potential safety issues at new light rail stations, including emergency equipment and appropriate lighting for public areas
- Install fencing near at-grade trail or sidewalk crossing, in station areas, and between light rail and freight rail alignment when adjacent to a trail or sidewalk, where possible
- Design at-grade LRT crossings of sidewalks and trails per the Metro Light Rail Transit Design Criteria to include flashing light signals with an audible warning to notify pedestrians of a train's arrival and detectable warnings and signs
- Design shared freight rail and light rail crossings to meet FRA requirements for at-grade crossings, including requirements for train horn quiet zones as described in the Train Horn Quiet Zone Final Rule (49 CFR Part 222), where applicable
- Maintain emergency vehicle access to areas within the vicinity of the proposed BLRT Extension project
- Coordinate with affected emergency service providers including identification of alternative crossing routes
- Implement safeguards from the Metro *Light Rail Transit Design Criteria* including emergency guardrails

[11] See **Section 3.2** for additional information on freight rail operations and related mitigation measures.

- Install intrusion detection for possible freight derailment where clearance between the centerline of the LRT tracks and the centerline of the freight tracks is less than 50 feet, with the exception of locations where a corridor protection wall is present
- Install corridor protection barriers between freight rail and light rail tracks where clearance between centerlines is less than 25 feet
- Include safeguards in the catenary system for the proposed BLRT Extension project to help minimize the possibility of sparking occurring in the overhead catenary wires
- Regularly inspect pantographs for grooves along the pantograph's carbon strip, which could cause arcing
- Where the light rail alignment will be adjacent to a freight rail alignment, the light rail alignment will be primarily on segregated right-of-way, in accordance with the National Electric Safety guidelines
- Participate in the planning, performance, and evaluation of emergency simulations on the system in coordination with the LRT FLSSC

Construction-Phase (Short-Term) Mitigation Measures. In order to mitigate temporary impacts resulting from construction activities, the Council will:

- Coordinate with emergency service providers to provide schedule for construction activities and identify detour routes to minimizing delay for emergency response vehicles
- Maintain required access during established periods or keep one lane of traffic open on main arterials as will 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
- Contractors will prepare a project safety and health program 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 as described in the proposed BLRT Extension project's *SSMP*
- Develop and implement freight rail operation coordination plans to facilitate coordination between the proposed BLRT Extension project and the affected freight railroads during construction activities affecting freight rail operations