

APPENDIX G

ENVIRONMENTAL ASSESSMENT WORKSHEET



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APRIL 2021

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Environmental Assessment Worksheet

This Environmental Assessment Worksheet (EAW) form and EAW Guidelines are available at the Environmental Quality Board's (EQB's) website at:

<http://www.eqb.state.mn.us/EnvRevGuidance Documents.htm>. The EAW form provides information about a project that may have the potential for significant environmental effects. The EAW Guidelines provide additional detail and resources for completing the EAW form.

Cumulative potential effects can either be addressed under each applicable EAW Item or can be addressed collectively under EAW Item 19.

Note to reviewers: Comments must be submitted to the RGU during the 30-day comment period following notice of the EAW in the *EQB Monitor*. Comments should address the accuracy and completeness of information, potential impacts that warrant further investigation, and the need for an EIS.

1. Project Title

Rush Line Bus Rapid Transit (BRT) Project

2. Proposer

Proposer: Ramsey County
Contact Person: Andy Gitzlaff
Title: Senior Transportation Planner
Address: 15 West Kellogg Boulevard, Suite 210
City, State, ZIP: Saint Paul, MN 55102
Phone: 651-266-2772
Email: andrew.gitzlaff@co.ramsey.mn.us

3. RGU

RGU: Ramsey County
Contact Person: Ted Schoenecker
Title: Public Works Director
Address: 1425 Paul Kirkwold Drive
City, State, ZIP: Arden Hills, MN 55112
Phone: 651-266-7100
Email: ted.schoenecker@co.ramsey.mn.us

4. Reason for EAW Preparation

Check one:

Required:

- ☐ EIS Scoping
☐ Mandatory EAW

Discretionary:

- ☐ Citizen petition
☒ RGU discretion
☐ Proposer initiated

If EAW or EIS is mandatory, give EQB rule category subpart number(s) and name(s):
Not applicable

5. Project Location

County: Ramsey

City/Township: Saint Paul, Maplewood, White Bear Township, Vadnais Heights, Gem Lake and White Bear Lake

PLS Location ($\frac{1}{4}$, $\frac{1}{4}$, Section, Township, Range):

- Township 28N, Range 22W, Sections 5 and 6
- Township 29N, Range 22W, Sections 2, 3, 10, 15, 22, 27, 28, 29, 31 and 32
- Township 30N, Range 22W, Sections 14, 23, 26, 27 and 34

Watershed (81 major watershed scale): Mississippi River – Twin Cities

GPS Coordinates: Not applicable

Tax Parcel Number: Not applicable

At a minimum, attach each of the following to the EAW:

- **County map showing the general location of the project** (see Figure 1)
- **US Geological Survey 7.5 minute, 1:24,000 scale map indicating project boundaries** (see Figure 2 through Figure 5)
- **Site plans showing all significant project and natural features. Pre-construction site plan and post-construction site plan.** (see concept plans in Appendix A of the Environmental Assessment (EA))

6. Project Description

- a. **Provide the brief project summary to be published in the *EQB Monitor* (approximately 50 words).**

The Rush Line Bus Rapid Transit (BRT) Project (the project) is a proposed 15-mile long BRT route connecting Saint Paul, Maplewood, White Bear Township, Vadnais Heights, Gem Lake and White Bear Lake. It would include 21 stations, and the route would generally run along Robert Street, Jackson Street, Phalen Boulevard, Ramsey County rail right-of-way and Highway 61.

- b. **Give a complete description of the proposed project and related new construction, including infrastructure needs. If the project is an expansion, include a description of the existing facility. Emphasize 1) construction and operation methods and features that will cause physical manipulation of the environment or will produce wastes; 2) modifications to existing equipment or industrial processes; 3) significant demolition, removal, or remodeling of existing structures; and 4) timing and duration of construction activities.**

The proposed 15-mile route would operate in a dedicated guideway or in mixed traffic as illustrated on Figure 6 through Figure 9. Dedicated guideway is defined as the pavement area designed and designated for the exclusive use of transit vehicles and, if needed, emergency vehicles. In some areas, the dedicated guideway is a business access and transit lane, which non-transit vehicles can only use at intersections and driveways to make right turns.

Much of the route would be on or parallel to existing city, county and state roadways, except approximately 4 miles where a new dedicated guideway would be built adjacent to a reconstructed Bruce Vento Regional Trail in Ramsey County rail right-of-way (from Johnson Parkway to Beam Avenue and from County Road D to Buerkle Road). Ramsey County purchased the rail right-of-way in the early 1990s to reserve it for future transit use.

The project would include 21 stations (see Figure 6 through Figure 9). Both platforms for the 5th/6th Street station and two of the platforms serving Union Depot (on Sibley and Wacouta Streets) are planned to be constructed as part of the METRO Gold Line Project.¹ Stations would include shelters, ticket machines for off-board fare purchase, real-time bus schedule information, bicycle parking, on-demand heat, trash and recycling bins, emergency telephones, security cameras, energy-efficient LED station lighting, and information about the station, route, transit system and neighborhood.

Station platforms would generally be 10 inches tall. Typical platforms would be 60 to 80 feet long. At some stations, including southbound 10th Street, 14th Street, Mt. Airy Street, Maplewood Mall Transit Center and Downtown White Bear Lake, BRT platforms would be combined with local bus stops or extended to accommodate bus layovers, resulting in a total bus platform length of approximately 130 feet.

The Build Alternative would serve one existing park-and-ride (the Maplewood Mall Transit Center) and two proposed park-and-rides (at Highway 36 and County Road E).

Through 2019, the existing 1,000-space Maplewood Mall Transit Center operated at about 50 percent capacity.² Improvements would be made to the platforms and customer waiting area, but no new parking would be constructed.

The proposed Highway 36 park-and-ride would be an approximately 300-space structure located in the southwest corner of Harvest Park (north of Gervais Avenue and east of the Ramsey County rail right-of-way) by the Highway 36 station.³ As the project advances, there is the potential that the full build out of the park-and-ride would be phased over time, starting with an approximately 170-space surface lot that would be constructed within the same footprint. The EA and EAW evaluate the 300-space parking structure to reflect the proposed full build out at the station and, therefore, the most impactful environmental analysis.

The proposed County Road E park-and-ride would be a surface lot with up to 70 spaces designated for transit use. This park-and-ride would be located on Ramsey County property near the County Road E station in the existing TCO Sports Garden parking lot. A portion of the existing parking lot would be reconfigured to accommodate the park-and-ride.⁴

The Build Alternative option without the Highway 36 park-and-ride would serve the existing Maplewood Mall Transit Center and the proposed County Road E park-and-ride. At the Highway 36 station, this option would include station platforms and a passenger

¹ The METRO Gold Line is a proposed BRT project that will connect Saint Paul, Maplewood, Landfall, Oakdale and Woodbury generally along I-94. It is expected to begin service in 2024 (before Rush Line BRT). More information on the METRO Gold Line is available at <https://www.metrotransit.org/gold-line-project>.

² Metro Transit. *2019 Annual Regional Park & Ride System Report*. January 2020. Available at <https://metrotransit.org/Transportation/Publications-And-Resources/Transit/2019-Park-and-Ride-Report.aspx>.

³ The Metropolitan Council is not the planned owner or manager of the proposed Highway 36 park-and-ride, and an alternative ownership commitment has not been made at this time. The decision on if a park-and-ride would be provided at the Highway 36 station will be made based on forecast demand at this location in coordination with Ramsey County, the Metropolitan Council and the city of Maplewood.

⁴ A parking study was conducted at the TCO Sports Garden in the spring of 2019, which found that parking demand for the sports center is highest during evenings and weekends. This usage would be complementary to park-and-ride demand, which would primarily occur between about 7 a.m. and 5 p.m.

drop-off area but no park-and-ride (see Sheet 17A of the concept plans in Appendix A of the EA).

The project would operate from 5 a.m. to midnight on weekdays and Saturdays and from 6 a.m. to 10 p.m. on Sundays. Buses would operate at 10-minute intervals during peak periods (6 a.m. to 9 a.m. and 3 p.m. to 6:30 p.m.) and at 15-minute intervals all other times.

The project would use 13 new 60-foot articulated electric buses. A charging station would be constructed at the Union Depot bus deck where buses would charge for about 10 minutes during layovers. Buses would be serviced at the East Metro Garage, an existing Metro Transit operations and maintenance facility in Saint Paul (see location on Figure 6).

After completing the project's environmental analysis phase, which includes environmental review, preliminary engineering, preliminary station area planning and public engagement, the lead agency role for the Rush Line BRT Project will transition from Ramsey County to the Metropolitan Council. The Metropolitan Council will advance design, construct and operate the project. Based on the project's current schedule, construction is anticipated to begin in 2024 and passenger service would begin in 2026.

c. Project magnitude

Table 1: Project Magnitude

Measure	Magnitude
Total Project Acreage	Not applicable
Linear Project Length	15 miles
Number and Type of Residential Units	Not applicable
Commercial Building Area (square feet)	Not applicable
Industrial Building Area (square feet)	Not applicable
Institutional Building Area (square feet)	Not applicable
Other Uses – specify (square feet)	Not applicable
Structure Height (Highway 36 park-and-ride)	Approximately 25 feet

d. Explain the project purpose. If the project will be carried out by a governmental unit, explain the need for the project and identify its beneficiaries.

The purpose of the Rush Line BRT Project is to provide transit service that satisfies the long-term regional mobility and accessibility needs for businesses and the traveling public and supports sustainable development within the study area.

Four primary factors contribute to the need for the Rush Line BRT Project:

- Serving the needs of people who rely on transit.
- Meeting increasing demand for reliable, high-frequency⁵ transit.
- Planning for sustainable growth and development.
- Expanding multimodal travel options.

⁵ Routes are considered high frequency if they have service every 15 minutes or less on weekdays from 6 a.m. to 7 p.m. and Saturdays from 9 a.m. to 6 p.m.

The project will directly serve residents of Ramsey County, Saint Paul, Maplewood, White Bear Township, Vadnais Heights, Gem Lake and White Bear Lake, along with a wider base of transit users who may travel to these destinations from other areas.

- e. **Are future stages of this development, including development on any other property, planned or likely to happen?** ☐ Yes ☒ No

If yes, briefly describe future stages, relationship to present project, timeline, and plans for environmental review.

Not applicable.

- f. **Is this project a subsequent stage of an earlier project?** ☐ Yes ☒ No

If yes, briefly describe the past development, timeline, and past environmental review.

Not applicable.

7. Cover Types

Estimate the acreage of the site with each of the following cover types before and after development.

Cover types were identified within the project's potential area of disturbance, which is based on the 15 percent (concept level) plans and is defined as the estimated area where construction would occur for the proposed project at this stage of design. Impacts to vegetation will be refined as design advances.

Table 2: Cover Types

Cover Type	Before (Acres)	After (Acres)
Wetlands	1.02	0 ⁶
Deep Water/Streams	0	0
Wooded/Forest	49.0	0 ⁶
Brush/Grassland	13.3	0 ⁶
Cropland	0	0
Lawn/Landscaping	118.28	138.5
Impervious Surface	58.7	87.8
Stormwater Management Features	0.9	14.9
Other (describe)	0	0
Total	241.2	241.2

⁶ Vegetation management plans will be developed during final design. Wetland and tree impacts will be minimized to the extent practicable and locations for native seed establishment will be identified; therefore, it is anticipated that there will be more than 0 acres of these cover types remaining after the project is constructed.

8. Permits and Approvals Required

List all known local, state, and federal permits, approvals, certifications, and financial assistance for the project. Include modifications of any existing permits, governmental review of plans, and all direct and indirect forms of public financial assistance including bond guarantees, Tax Increment Financing, and infrastructure. *All of these final decisions are prohibited until all appropriate environmental review has been completed. See Minnesota Rules Chapter 4410.3100.*

Table 3: Permits and Approvals Required

Agency	Permit/Approval
Federal Approvals	
Federal Transit Administration	Environmental decision document
	Section 4(f) determination
	Section 106 Memorandum of Agreement
Federal Highway Administration	Right-of-way use approval
	Environmental decision document
US Army Corps of Engineers	Section 404 permit
United States Fish and Wildlife Service	Section 7 concurrence
State Approvals	
Minnesota Department of Natural Resources	Water appropriation permit (if needed)
	Public waters work permit
State Historic Preservation Office	Section 106 Memorandum of Agreement
Minnesota Department of Transportation	Right-of-way permit
	Limited use permit (if needed)
	Application for drainage permit
	Application for utility accommodation on trunk highway right-of-way
	Application for miscellaneous work on trunk highway right-of-way
	Wetland Conservation Act Replacement Plan approval
Minnesota Pollution Control Agency	National Pollutant Discharge Elimination System permit
	Section 401 Water Quality Certification (anticipated to be authorized by a certification for the Section 404 permit)
	Industrial groundwater pump-out general permit (if needed)
Local Approvals (to the extent authorized or required by law)	
Ramsey County	Environmental decision document for the state environmental process
	Excavation and obstruction permit
City of Saint Paul	Road crossing/right-of-way permits
	Grading/building permits
	Wetland Conservation Act Replacement Plan approval
	Local parkland diversion review
	Heritage Preservation design review
City of Maplewood	Road crossing/right-of-way permits
	Grading/building permits

Agency	Permit/Approval
City of Vadnais Heights	Road crossing/right-of-way permits
	Grading/building permits
	Erosion/sediment control/stormwater permit
City of Gem Lake	Grading permit
	Tree alteration permit (if necessary)
	Erosion/sediment control/stormwater permit
City of White Bear Lake	Road crossing/right-of-way permits
	Grading/building permits
	Erosion/sediment control/stormwater permit
	Municipal consent ⁷
Capitol Region Watershed District	Erosion/sediment control/stormwater permit
Ramsey-Washington Metro Watershed District	Erosion/sediment control/stormwater/flood control permit
	Wetland Conservation Act Replacement Plan approval
Vadnais Lake Area Water Management Organization	Wetland Conservation Act Replacement Plan approval
Rice Creek Watershed District	Erosion/sediment control/stormwater permit
Metropolitan Council Environmental Services	Sanitary sewer discharge permit (if needed)

9. Land Use

a. Describe:

i. Existing land use of the site as well as areas adjacent to and near the site, including parks, trails, and prime or unique farmlands.

The existing land use within one-half mile of the proposed route is characterized by urban and suburban residential, commercial and mixed-use development. A detailed description and maps of existing land use are included in Section 2.3 of the *Land Use and Economics Technical Report* (see Appendix E of the EA).

There are no prime or unique farmlands within one-half mile of the proposed route.

ii. Planned land use as identified in comprehensive plans (if available) and any other applicable plan for land use, water, or resource management by a local, regional, state, or federal agency.

Planned land use varies along the route. A detailed description and maps of planned land use in Saint Paul, Maplewood, White Bear Township, Vadnais Heights, Gem Lake and White Bear Lake are included in Section 2.3 of the *Land Use and Economics Technical Report* (see Appendix E of the EA).

⁷ Per Minnesota Statutes, sections 161.162-161.167, municipal approval is required for any Minnesota Department of Transportation trunk highway projects that alter access, increase or reduce highway traffic capacity, or require acquisition of permanent right-of-way. Acquisition of right-of-way for the Minnesota Department of Transportation will be required at the intersection of Highway 61 and White Bear Avenue and the intersection of Highway 61 and Whitaker Street. Additionally, a driveway off of Highway 61 north of Whitaker Street is proposed to be closed as part of the Rush Line BRT Project. Therefore, municipal consent will be needed from the city of White Bear Lake.

A key goal of the *Ramsey County 2040* plan involves partnering with cities and state agencies to support land use that encourages greater intensity of use, infill and development to promote transit ridership, affordable housing and the stewardship of natural resources.⁸ The county's transportation decisions are guided by its All Abilities Transportation Network Policy and commitment to providing equitable access for all people regardless of race, ethnicity, age, gender, sexual preference, health, education, abilities and economics. Ramsey County's transportation policies prioritize transit, bicycles and pedestrians to implement a safe, integrated and fully interconnected network using a variety of modes.

In addition, the Metropolitan Council's *2040 Transportation Policy Plan*⁹ identifies Rush Line BRT as a transit project that will be funded in the Current Revenue Scenario, which is also considered the Fiscally Constrained Scenario. A project's inclusion in a fiscally constrained plan is required for federal funding eligibility; inclusion of the Rush Line BRT Project in the *2040 Transportation Policy Plan* meets this requirement.

iii. **Zoning, including special districts or overlays such as shoreland, floodplain, wild and scenic rivers, critical area, agricultural preserves, etc.**

Existing zoning in station areas is discussed in Section 2.3 of the *Land Use and Economics Technical Report* (see Appendix E of the EA).

b. **Discuss the project's compatibility with nearby land uses, zoning, and plans listed in Item 9a above, concentrating on implications for environmental effects.**

Implementation of the Rush Line BRT Project would be compatible with the local land use planning policies of Saint Paul, Maplewood, White Bear Township, Vadnais Heights, Gem Lake and White Bear Lake. See Section 2 of the *Land Use and Economics Technical Report* (in Appendix E of the EA) for a detailed discussion of land use plan compatibility.

c. **Identify measures incorporated into the proposed project to mitigate any potential incompatibility as discussed in Item 9b above.**

The project would be compatible with adopted local land use planning documents. No related land use avoidance, minimization or mitigation measures are recommended.

10. Geology, Soils, and Topography/Landforms

a. **Geology – Describe the geology underlying the project area and identify and map any susceptible geologic features such as sinkholes, shallow limestone formations, unconfined/shallow aquifers, or karst conditions. Discuss any limitations of these features for the project and any effects the project could have on these features. Identify any project designs or mitigation measures to address effects to geologic features.**

⁸ Ramsey County. *Ramsey County 2040*. Available at <https://www.ramseycounty.us/your-government/projects-initiatives/comprehensive-plan>.

⁹ Metropolitan Council. *2040 Transportation Policy Plan*. October 2018 Update. Available at <https://metrocouncil.org/Transportation/Planning-2/Key-Transportation-Planning-Documents/Transportation-Policy-Plan.aspx>.

The study area for geology, groundwater and soils is defined as the area within 500 feet of the potential area of disturbance for the Build Alternative.

According to the Phase I Environmental Site Assessment completed for the project (included in Appendix E of the EA), the study area consists of postglacial age stream sediment deposits, Pleistocene age stream sediment of glacial River Warren deposits, Pleistocene age Superior Lobe till deposits, Pleistocene age Grantsburg Sublobe till deposits, Pleistocene age Grantsburg Sublobe meltwater stream sediment deposits, postglacial age organic sediment deposits and Pleistocene age Grantsburg Sublobe sandy lake sediment deposits. These unconsolidated sediments are generally encountered in a south to north direction within the study area and range from sand and gravel in various places to silt and clay near the terraces of the Mississippi River.

The uppermost bedrock units within the study area are the Middle Ordovician, Platteville and Glenwood Formations; the Middle Ordovician, St. Peter Sandstone; the Lower Ordovician, Prairie du Chien Group; and the Upper Cambrian, Jordan Sandstone.¹⁰ The depth to bedrock in the study area ranges from 50 feet to 300 feet below land surface.¹⁰ The deepest area is located in a bedrock valley at Lake Phalen near the center of the project study area.

There are no known karst features present within or near the potential limits of disturbance;¹¹ therefore, no impacts to geologic features or hazards are anticipated.

- b. Soils and Topography – Describe the soils on the site, giving NRCS (SCS) classifications and descriptions, including limitations of soils. Describe topography, any special site conditions relating to erosion potential, soil stability, or other soil limitations, such as steep slopes or highly permeable soils. Provide estimated volume and acreage of soil excavation and/or grading. Discuss impacts from project activities (distinguish between construction and operational activities) related to soils and topography. Identify measures during and after project construction to address soil limitations including stabilization, soil corrections, or other measures. Erosion/sedimentation control related to stormwater runoff should be addressed in response to Item 11.b.ii.**

Soils data was obtained from digital surveys of Ramsey County produced by the Soil Survey Geographic dataset from the Natural Resources Conservation Service.¹² This dataset is considered the best available soil data in Minnesota. For details on the soil types within the study area, see Table 4 and Figure 1 through 4 of the *Geology, Groundwater and Soils Memorandum* in Appendix F of the EA.

¹⁰ Minnesota Geological Survey, *Geologic Atlas of Ramsey County* (1992), accessed May 14, 2019. Available at <https://conservancy.umn.edu/handle/11299/58233>.

¹¹ Minnesota Department of Natural Resources, *Karst Feature Inventory Points Shapefile* (2019), accessed May 14, 2019.

¹² Natural Resources Conservation Service, *Web Soil Survey*, accessed August 19, 2020. Available at <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>.

Table 4: Summary of Soil Types within the Study Area

Name ¹³	Acres Within Study Area	Percent of Study Area	Drainage Classification ¹⁴	Erosion Hazard ¹⁵
Bluffton loam	4.1	0.2	Very poorly drained	Slight
Webster loam	3.5	0.2	Poorly drained	Slight
Brill silt loam	1.0	<0.1	Moderately well drained	Slight
Dundas fine sandy loam	11.1	0.5	Poorly drained	Slight
Hayden fine sandy loam, 2 to 6 percent slopes	27.0	1.2	Well drained	Slight
Hayden fine sandy loam, 6 to 12 percent slopes	23.4	1.0	Well drained	Moderate
Hayden fine sandy loam, 12 to 25 percent slopes	4.9	0.2	Well drained	Severe
Chetek sandy loam, 0 to 6 percent slopes	79.8	3.6	Somewhat excessively drained	Slight
Chetek sandy loam, 6 to 12 percent slopes	99	4.5	Somewhat excessively drained	Moderate
Chetek sandy loam, 12 to 25 percent slopes	94.0	4.1	Somewhat excessively drained	Severe
Anoka loamy fine sand, 0 to 3 percent slopes	14.6	0.7	Well drained	Slight
Isanti loamy fine sand, depressional	0.3	<0.1	Very poorly drained	Slight
Lino loamy fine sand	7.0	0.3	Somewhat poorly drained	Slight
Ronneby fine sandy loam	3.8	0.2	Somewhat poorly drained	Slight
Auburndale silt loam, 0 to 2 percent slopes	0.1	<0.1	Poorly drained	Slight

¹³ Definitions for slope classes are available in the Natural Resources Conservation Service Soil Survey Manual, Chapter 3. Soils that range from 20 to 60 percent may be considered steep. Available at http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/ref/?cid=nrcs142p2_054253.

¹⁴ Drainage classes are based on the frequency and duration in which a soil is in wet periods. Definitions for drainage classes are available in the Natural Resources Conservation Service Soil Survey Manual, Chapter 3. Available at http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/ref/?cid=nrcs142p2_054253.

¹⁵ Erosion hazard refers to the hazard of soil loss from off-road and off-trail areas after disturbance activities that expose the soil surface. A rating of “slight” indicates that erosion is unlikely under ordinary climatic conditions; a rating of “moderate” indicates some erosion is likely and that erosion-control measures may be needed. Urban land is not considered for erosion hazard because human activities, including grading and constructed impervious, have severely changed the characteristics of the soil parent material. NRCS Web Soil Survey. Available at <http://websoilsurvey.nrcs.usda.gov/app/HomePage.htm>.

Name ¹³	Acres Within Study Area	Percent of Study Area	Drainage Classification ¹⁴	Erosion Hazard ¹⁵
Nessel fine sandy loam, 1 to 4 percent slopes	18.6	0.8	Moderately well drained	Slight
Freer silt loam	4.2	0.2	Somewhat poorly drained	Slight
Richwood silt loam, 2 to 6 percent slopes	2.4	0.1	Well drained	Moderate
Rosholt sandy loam, 2 to 6 percent slopes	14.6	0.7	Well drained	Slight
Prebish loam	2.4	0.1	Very poorly drained	Slight
Kingsley sandy loam, 2 to 6 percent slopes	28.2	1.3	Well drained	Slight
Kingsley sandy loam, 6 to 12 percent slopes	8.3	0.4	Well drained	Moderate
Kingsley sandy loam, 12 to 18 percent slopes	2.4	0.1	Well drained	Severe
Kingsley sandy loam, 18 to 30 percent slopes	9.4	0.4	Well drained	Severe
Mahtomedi loamy sand, 0 to 6 percent slopes	21.6	1.0	Excessively drained	Slight
Mahtomedi loamy sand, 6 to 12 percent slopes	4.3	0.2	Excessively drained	Slight
Mahtomedi loamy sand, 12 to 25 percent slopes	0.2	<0.1	Excessively drained	Moderate
Mahtomedi loamy sand, 25 to 40 percent slopes	9.4	0.4	Excessively drained	Severe
Barronett silt loam	8.8	0.4	Poorly drained	Slight
Seelyeville muck	42.2	1.9	Very poorly drained	Slight
Markey muck	0.8	<0.1	Very poorly drained	Slight
Urban land – Waukegan complex, 0 to 3 percent slopes	6.2	0.3	Not rated	Not rated
Urban land – Waukegan complex, 3 to 15 percent slopes	0.2	<0.1	Not rated	Not rated
Urban land – Chetek complex, 0 to 3 percent slopes	16.5	0.7	Not rated	Not rated
Urban land – Chetek complex, 3 to 15 percent slopes	365.8	16.1	Not rated	Not rated
Urban land – Zimmerman complex, 1 to 8 percent slopes	175.9	7.9	Not rated	Not rated
Urban land – Hayden-Kingsley complex, 3 to 15 percent slopes	16.1	0.7	Not rated	Not rated

Name ¹³	Acres Within Study Area	Percent of Study Area	Drainage Classification ¹⁴	Erosion Hazard ¹⁵
Urban land – Kingsley complex, 3 to 15 percent slopes	135.5	6.1	Not rated	Not rated
Urban land – Kingsley complex, 15 to 25 percent slopes	16.8	0.7	Not rated	Not rated
Urban land – Lino complex, 0 to 3 percent slopes	32.1	1.4	Not rated	Not rated
Udorthents, wet substratum	182.2	8.1	Not rated	Not rated
Pits, gravel	71.5	3.2	Not rated	Not rated
Urban land	568.1	25.0	Not rated	Not rated
Aquolls and histosols, ponded	27.1	1.2	Very poorly drained	Slight
Lino variant loamy fine sand, 2 to 6 percent slopes	2.4	0.1	Moderately well drained	Slight
Dorerton – Rock outcrop complex, 25 to 65 percent slopes	<0.1	<0.1	Well drained	Very severe
Water	71.1	3.2	Not rated	Not rated
Total	2,228.80	100	-	-

Soils with slight and moderate erosion hazard ratings are found within the potential area of disturbance for the Build Alternative. In areas with a slight erosion hazard rating, erosion is unlikely under ordinary climatic conditions. In areas with a moderate erosion hazard rating, some erosion is likely and erosion control measures, such as double rows of sediment controls or specifying shorter allowable timeframes for exposed soils, may be needed.

Poorly drained soils exist within the potential area of disturbance for the Build Alternative, which may require soil correction (i.e., removal or replacement with stable soils or treatment in-place) for construction of the dedicated guideway, pavement or other structures. If these soils are removed, the excavated soils would need to be disposed of off-site in accordance with local ordinances or reused in areas that do not require consolidated soils.

Since the majority of the project would follow either the existing roadway or trail network, substantial grading in areas with steep slopes or other constraints is not anticipated. There are some segments of the corridor that are near steep slopes; however, these areas are not within the potential limits of disturbance. Grading would be needed in the Ramsey County rail right-of-way between Maryland and Beam Avenues. If needed, soil stabilization treatments would be utilized at these locations to mitigate the potential for erosion.

All project-related construction activities would, to the extent authorized or required by law, adhere to appropriate standards for grading and erosion control and applicable permitting requirements of the Minnesota Pollution Control Agency, Minnesota Department of Transportation, watershed districts and the project area cities. Additional information on the analysis completed related to geology, groundwater and soils is included in the *Geology, Groundwater and Soils Memorandum* in Appendix F of the EA.

11. Water Resources

a. Describe surface water and groundwater features on or near the site below.

- i. **Surface Water – lakes, streams, wetlands, intermittent channels, and county/judicial ditches. Include any special designations such as public waters, trout stream/lake, wildlife lakes, migratory waterfowl feeding/resting lake, and outstanding resource value water. Include water quality impairments or special designations listed on the current MPCA 303d Impaired Waters List that are within one mile of the project. Include DNR Public Waters Inventory number(s), if any.**

Additional information on surface waters is included in the *Natural Resources Technical Report* (see Appendix E of the EA). The study area for aquatic resources was defined as the area within one-fourth mile of the potential area of disturbance for the Build Alternative. This distance captures the wetlands, waterbodies and waterways near the potential area of disturbance that could potentially be affected by the proposed project. Wetland boundaries were identified through existing mapping (Level 1 Wetland Delineation) and field observation (October 24, 2018).¹⁶ The estimated boundaries were used for potential impact analysis. A detailed delineation of wetland boundaries will be required during project development to provide the required detail necessary for the permit review process. Other aquatic resource boundaries, including lakes, rivers and streams, were identified using existing geospatial data.

Table 5 lists aquatic resources that have been identified within the study area. These resources are shown on Figure 2 through Figure 5 of the *Natural Resources Technical Report* (see Appendix E of the EA).

Table 5: Aquatic Resources Within the Study Area

Aquatic Resource ID (Name)	Resource Type	Circular 39 Type ¹⁷	Plant Community (if applicable) ¹⁸	Acres Within Study Area
W-1 (Mississippi River)	River	Not applicable	Non-vegetated aquatic community	42.2
W-2	Wetland	1	Seasonally flooded basin	0.1
W-3	Wetland	5	Shallow open water community	0.06
W-4	Wetland	1	Seasonally flooded basin	0.2
W-5	Wetland	3	Shallow marsh	0.8
W-6	Stormwater pond	5	Shallow open water community	0.3

¹⁶ A Level 1 Wetland Delineation uses existing background information to determine estimated boundaries. Background information included National Wetland Inventory for Minnesota, the Minnesota Public Waters Inventory, the United States Geologic Survey National Hydrography Dataset and aerial photography from spring 2018.

¹⁷ *United States Fish and Wildlife Service Circular 39* (1971). Samuel Shaw and Gordon Fredine.

¹⁸ *Wetland Plants and Plant Community Types of Minnesota and Wisconsin*. Version 3.1 (May 2014). Steve Eggers and Donald Reed.

Aquatic Resource ID (Name)	Resource Type	Circular 39 Type ¹⁷	Plant Community (if applicable) ¹⁸	Acres Within Study Area
W-7	Wetland	3	Shallow marsh	0.07
		5	Shallow open water community	0.05
W-8	Wetland	5	Shallow open water community	0.2
W-9	Wetland	3	Shallow marsh	0.2
W-10	Wetland	1	Seasonally flooded basin	0.4
W-11	Wetland	5	Shallow open water community	0.2
W-12	Wetland	1	Seasonally flooded basin	0.2
W-13	Wetland	3	Shallow marsh	0.02
W-14	Wetland	3	Shallow marsh	0.3
W-15	Wetland	1	Seasonally flooded basin	0.1
W-16	Wetland	3	Shallow marsh	0.1
W-17	Wetland	3	Shallow marsh	0.1
W-18	Stormwater pond	4	Deep marsh	0.1
W-19	Wetland	2	Fresh (wet) meadow	0.1
W-20	Wetland	4	Deep marsh	0.1
W-21	Stormwater pond	3	Shallow marsh	0.2
W-22	Stormwater pond	5	Shallow open water community	0.2
W-23	Wetland	4	Deep marsh	2.3
W-24	Wetland	1	Seasonally flooded basin	0.05
W-25	Wetland	3	Shallow marsh	0.2
		5	Shallow open water community	0.1
W-26	Wetland	3	Shallow marsh	1.2
		5	Shallow open water community	0.2
W-27	Stormwater pond	5	Shallow open water community	0.08
W-28	Wetland	5	Shallow open water community	0.3
		1	Seasonally flooded basin	1.0
W-29 (Lake Phalen)	Wetland	5	Shallow open water community	27.6
		5	Non-vegetated aquatic community	51.5
W-30	Stormwater pond	3	Shallow marsh	0.1
		5	Shallow open water community	0.3
W-31	Wetland	1	Seasonally flooded basin	0.2

Aquatic Resource ID (Name)	Resource Type	Circular 39 Type ¹⁷	Plant Community (if applicable) ¹⁸	Acres Within Study Area
W-32	Wetland	1	Hardwood wetland	0.3
W-33	Wetland	1	Seasonally flooded basin	0.8
		3	Shallow marsh	1.1
		4	Deep marsh	0.6
W-34A (Wakefield Lake)	Wetland	5	Shallow open water community	2.2
W-34B	Stormwater pond	3	Shallow marsh	0.2
W-35	Stormwater pond	4	Deep marsh	0.3
W-36	Stormwater pond	5	Shallow open water community	0.1
W-37	Stormwater pond	3	Shallow marsh	0.07
W-38	Wetland	3	Shallow marsh	5.1
		4	Deep marsh	0.2
		5	Shallow open water community	13.7
W-39	Wetland	5	Shallow open water community	0.6
W-40	Wetland	1	Seasonally flooded basin	7.4
		3	Shallow marsh	11.4
		4	Deep marsh	1.6
		5	Shallow open water community	4.8
		6	Shrub carr	8.5
W-41	Stormwater pond	5	Shallow open water community	0.3
W-42	Wetland	5	Shallow open water community	1.1
W-43	Wetland	5	Shallow open water community	2.6
W-44	Wetland	5	Shallow open water community	1.1
W-45	Wetland	5	Shallow open water community	0.5
W-46	Stormwater pond	2	Fresh (wet) meadow	0.3
W-47 (Markham Pond)	Wetland	1	Seasonally flooded basin	0.2
		5	Shallow open water community	13.3
W-48	Wetland	1	Seasonally flooded basin	4.5
W-49	Wetland	3	Shallow marsh	4.1

Aquatic Resource ID (Name)	Resource Type	Circular 39 Type ¹⁷	Plant Community (if applicable) ¹⁸	Acres Within Study Area
W-50	Wetland	3	Shallow marsh	0.2
W-51A	Stormwater pond	5	Shallow open water community	0.6
W-51B	Stormwater pond	3	Shallow marsh	0.2
W-51C	Stormwater pond	3	Shallow marsh	0.2
W-51D	Stormwater pond	3	Shallow marsh	2.0
W-52	Wetland	3	Shallow marsh	0.1
W-53	Stormwater filtration area	1	Seasonally flooded basin	0.2
W-54	Stormwater pond	4	Deep marsh	0.4
W-55	Stormwater pond	5	Shallow open water community	0.3
W-56	Stormwater pond	5	Shallow open water community	0.3
W-57	Wetland	1	Seasonally flooded basin	1.0
		3	Shallow marsh	0.1
W-58	Wetland	1	Seasonally flooded basin	0.2
W-59	Wetland	3	Shallow marsh	2.2
		5	Shallow open water community	0.5
W-60	Wetland	1	Hardwood wetland	4.8
		3	Shallow marsh	2.3
W-61	Wetland	1	Seasonally flooded basin	0.4
W-62	Wetland	1	Hardwood wetland	7.9
		1	Seasonally flooded basin	1.4
		3	Shallow marsh	15.3
		4	Deep marsh	0.3
W-63A	Wetland	1	Hardwood wetland	0.2
		2	Fresh (wet) meadow	0.1
		3	Shallow marsh	29.4
		5	Shallow open water community	0.7
W-63B	Wetland	3	Shallow marsh	1.8
W-64	Stormwater pond	5	Shallow open water community	0.2

Aquatic Resource ID (Name)	Resource Type	Circular 39 Type ¹⁷	Plant Community (if applicable) ¹⁸	Acres Within Study Area
W-65	Wetland	1	Seasonally flooded basin	2.6
W-66	Wetland	3	Shallow marsh	0.6
		4	Deep marsh	0.2
W-67	Wetland	1	Seasonally flooded basin	0.4
W-68	Wetland ditch	2	Fresh (wet) meadow	0.01
W-69	Wetland ditch	2	Fresh (wet) meadow	0.2
W-70	Stormwater filtration area	1	Seasonally flooded basin	0.1
W-71	Stormwater pond	4	Deep marsh	0.08
W-72	Wetland ditch	1	Seasonally flooded basin	0.08
W-73	Wetland ditch	1	Seasonally flooded basin	0.1
W-74	Wetland ditch	2	Fresh (wet) meadow	0.1
W-75	Wetland ditch	1	Seasonally flooded basin	0.06
W-76	Wetland	3	Shallow marsh	0.02
W-77	Wetland	1	Seasonally flooded basin	0.5
W-78 (Gem Lake)	Wetland	1	Hardwood wetland	2.5
		3	Shallow marsh	9.1
		4	Deep Marsh	1.5
		5	Shallow open water community	3.5
		6	Shrub carr	0.5
W-79	Wetland	5	Shallow open water community	0.03
W-80	Wetland	5	Shallow open water community	0.5
W-81	Stormwater pond	4	Deep marsh	0.4
W-82	Wetland	5	Shallow open water community	0.3
W-83	Wetland	3	Shallow marsh	1.0
W-84	Wetland	2	Fresh (wet) meadow	0.07
W-85	Wetland	1	Seasonally flooded basin	0.4
		3	Shallow marsh	0.5
W-86	Wetland	1	Seasonally flooded basin	0.02
W-87	Wetland	2	Fresh (wet) meadow	0.04
W-88	Wetland	5	Shallow open water community	0.2
W-89	Wetland	1	Seasonally flooded basin	0.5
W-90	Wetland	3	Shallow marsh	0.2
		4	Deep marsh	0.3

Aquatic Resource ID (Name)	Resource Type	Circular 39 Type ¹⁷	Plant Community (if applicable) ¹⁸	Acres Within Study Area
W-91	Wetland	5	Shallow open water community	0.2
W-92 (Goose Lake West)	Wetland	3	Shallow marsh	0.3
		5	Shallow open water community	25.9
W-93	Wetland	4	Deep marsh	0.2
W-94 (Goose Lake East)	Lake	3	Shallow marsh	1.9
		5	Shallow open water community	82.9
W-95	Wetland	1	Hardwood wetland	1.3
		3	Shallow marsh	26.1
W-96	Wetland	3	Shallow marsh	0.04
W-97	Wetland	1	Seasonally flooded basin	0.01
W-98	Wetland	2	Fresh (wet) meadow	0.1
W-99	Wetland	3	Shallow marsh	2.4
W-100	Wetland	1	Hardwood wetland	1.4
W-101 (White Bear Lake)	Wetland	N/A	Non-vegetated aquatic community	17.0
		5	Shallow open water community	44.3
W-102	Wetland	3	Shallow marsh	0.2
W-103	Wetland	3	Shallow marsh	1.2
Total				523.8

Table 6 lists the Minnesota Pollution Control Agency impaired waters that fall within 1 mile of the Build Alternative's potential area of disturbance, including the types of impairments and their respective total maximum daily load status according to the US Environmental Protection Agency. All of the waters except Wakefield Lake would receive direct runoff from the project or indirect runoff that has been treated and/or has passed through other waterbodies. See Figure 2 of the *Stormwater and Water Quality Technical Report* in Appendix E of the EA for the locations of the impaired waters.

Table 6: Impaired Waters Within 1 Mile of the Potential Area of Disturbance

Name	Impairments	Impairments with Approved Total Maximum Daily Load Plans ¹⁹
Mississippi River (Upper St. Anthony Falls to St. Croix River)	Mercury, fecal coliform, polychlorinated biphenyl, perfluorooctane sulfonate, nutrients, total suspended solids	Mercury and total suspended solids
Lake Phalen	Mercury	Mercury
Wakefield Lake	Nutrients	Nutrients
Kohlman Lake	Nutrients and chloride	Nutrients and chloride
Goose Lake	Nutrients	Nutrients
White Bear Lake	Mercury	Mercury
Unnamed Creek (Lambert Creek)	Fecal coliform	Fecal coliform
Bald Eagle Lake	Mercury and nutrients	Mercury and nutrients

- ii. **Groundwater – aquifers, springs, and seeps. Include 1) depth to groundwater; 2) if project is within a MDH well protection area; and 3) identification of any onsite and/or nearby wells, including unique numbers and well logs, if available. If there are no wells known on site or nearby, explain the methodology used to determine this.**

The study area for groundwater is defined as the area within 500 feet of the potential area of disturbance for the Build Alternative.

The depth to groundwater within the study area ranges from less than 10 feet to 50 feet below land surface. The regional groundwater flow direction within the unconsolidated deposits in the project area varies from northwest, west, southwest, south and southeast.²⁰ The general groundwater flow direction within the uppermost bedrock aquifer in the project area (Prairie du Chien-Jordan Aquifer) ranges from southwest to southeast.²⁰ The local direction of groundwater flow may be affected by nearby streams, lakes, wells and/or wetlands.

According to the geologic atlas for Ramsey County, susceptibility to groundwater pollution across the study area ranges from moderately susceptible to very highly susceptible. Areas very highly susceptible to groundwater pollution are located in the study area near downtown Saint Paul and in the vicinity of the stations at Maryland Avenue, Larpenteur Avenue, Frost Avenue, Highway 36, Maplewood Mall Transit Center, St. John's Boulevard, Whitaker Street and Downtown White Bear Lake.²⁰

The study area is located within four wellhead protection areas: Vadnais Heights 2, White Bear Township NW, Mahtomedi and White Bear Lake. The study area is not located within a drinking water supply management area.

¹⁹ Approved by the US Environmental Protection Agency as of December 2018.

²⁰ Minnesota Geological Survey, Geologic Atlas of Ramsey County (1992), accessed May 14, 2019. Available at <https://conservancy.umn.edu/handle/11299/58233>.

Numerous private wells were identified within the study area using the Minnesota Well Index, which is a limited database of water well records. The locations of the wells are indicated on Figure 4 in Appendix B of the Phase I Environmental Site Assessment completed for the project (included in Appendix E of the EA). It should be noted that Unique Well ID #200490 was identified on the proposed Rush Line BRT route just east of the intersection of Phalen Boulevard and Payne Avenue in Saint Paul.²¹ According to the well log, the well is sealed; Phalen Boulevard currently occupies this location.

b. Describe effects from project activities on water resources and measures to minimize or mitigate the effects below.

i. Wastewater – For each of the following, describe the sources, quantities, and composition of all sanitary, municipal/domestic, and industrial wastewaters projected or treated at the site.

- 1) If the wastewater discharge is to a publicly owned treatment facility, identify any pretreatment measures and the ability of the facility to handle the added water and waste loadings, including any effects on, or required expansion of, municipal wastewater infrastructure.**

Not applicable.

- 2) If the wastewater discharge is to a subsurface sewage treatment system (SSTS), describe the system used, the design flow, and suitability of site conditions for such a system.**

Not applicable.

- 3) If the wastewater discharge is to surface water, identify the wastewater treatment methods, discharge points, and proposed effluent limitations to mitigation impacts. Discuss any effects to surface or groundwater from wastewater discharges.**

Not applicable.

ii. Stormwater – Describe the quantity and quality of stormwater runoff at the site prior to and post construction. Include the routes and receiving water bodies for runoff from the site (major downstream water bodies as well as the immediate receiving waters). Discuss any environmental effects from stormwater discharges. Describe stormwater pollution prevention plans including temporary and permanent runoff controls and potential BMP site locations to manage or treat stormwater runoff. Identify specific erosion control, sedimentation control, or stabilization measures to address soil limitations during and after project construction.

The Build Alternative would include approximately 27 acres of new impervious surface and approximately 26 acres of reconstructed impervious surfaces including roadways, sidewalks, trails, parking facilities and station platforms and structures. The Build Alternative option without the Highway 36 park-and-ride would result in approximately 2 acres less of new impervious surface, for a total of 25 acres.

²¹ See Figure 4, Sheet 7 in Appendix B of the Phase I Environmental Site Assessment and Site Summary 162 in Appendix C of the Phase I Environmental Site Assessment.

To mitigate impacts that would result from the proposed new and reconstructed impervious surface, the project must meet the standards and requirements of and receive applicable approvals from the Capitol Region Watershed District, Ramsey-Washington Metro Watershed District, Vadnais Lake Area Water Management Organization and Rice Creek Watershed District (the requirements of each agency are discussed in the *Stormwater and Water Quality Technical Report* in Appendix E of the EA). The project would also be required to receive a National Pollutant Discharge Elimination System permit from the Minnesota Pollution Control Agency in accordance with the Clean Water Act, which would include measures to mitigate potential impacts to impaired waters (impaired waters are identified in Table 1 of the *Stormwater and Water Quality Technical Report* in Appendix E of the EA). However, the requirements of the local regulatory entities are more restrictive than the federal requirements, and the project would adhere to these more restrictive requirements. Generally, the project would be required to meet water quality volume requirements within each watershed.

Potential locations for stormwater management features were identified on a range of public and private parcels based on the following considerations:

- Locations within the Ramsey County rail right-of-way are preferred over locations outside the Ramsey County rail right-of-way. Stormwater management features along this portion of the route may consist of small scale or linear features in narrow portions of the right-of-way that remain outside the dedicated guideway or larger site type features where larger sections of right-of-way are available.
- Locations within other public right-of-way adjacent to the project are preferred over locations on privately owned parcels.
- For locations within Minnesota Department of Transportation right-of-way, the approach would be to use surface practices and to avoid the use of underground systems or tree trenches. Any proposed locations within Minnesota Department of Transportation right-of-way will be further discussed with the Minnesota Department of Transportation as engineering advances.
- Where construction impacts are limited to new stations in areas isolated from other new or reconstructed pavement areas, the use of small-scale stormwater management features specific to station needs is preferred.
- Surface stormwater management features such as infiltration, filtration, iron-enhanced filtration, vegetative swales and others are preferred over underground systems, in part because surface stormwater management features are generally easier to inspect and maintain.
- Lower Phalen Creek Project, a community organization based in East Saint Paul, completed a feasibility study to explore the potential to daylight portions of Phalen Creek from the outlet at Lake Phalen to the Mississippi River. Where runoff and stormwater management features from the Rush Line BRT Project may contribute flow to the proposed Phalen Creek daylighting system and/or where there is potential for a combined conveyance system, consideration of options will be coordinated with representatives of the Capitol Region Watershed District

and Lower Phalen Creek Project. In late 2019, the Capitol Region Watershed District initiated a study intended to develop design recommendations for the areas of the creek daylighting project that are adjacent to the Rush Line BRT Project. Project staff have been, and will continue to be, involved in this study in a technical advisory capacity to ensure compatibility with the Rush Line BRT Project.

Ramsey County coordinated with each watershed district and other partner agencies to identify stormwater management feature opportunity sites outside the Ramsey County rail right-of-way. These locations were sorted into primary (highest priority) and secondary locations based on several factors ranging from physical challenges with elevations to properties that are no longer available due to recent development. Secondary locations are considered feasible locations that could be used if the primary location is ultimately not available or does not provide sufficient treatment capacity to meet the requirements for that portion of the project. Primary and secondary locations have been incorporated into the potential area of disturbance and are shown in Appendix A of the *Stormwater and Water Quality Technical Report* (see Appendix E of the EA).

At this preliminary phase, sizes and types of location-specific stormwater management features have not been quantified. The types, sizes and water quality volume credits associated with specific stormwater management feature types will be determined as engineering advances. Possible stormwater management features include, but are not limited to, the following:

- Bioretention basins/vegetated swales.
- Filtration/infiltration basins.
- Wet stormwater detention ponds.
- Dry stormwater detention basin.
- Pond retrofits.
- Enhanced filtration practices.
- Underground storage or filtration/infiltration.
- Tree trenches.
- Permeable pavements.
- Stormwater pollution-control devices.
- Stormwater harvesting and reuse.
- Creek channel creation.

As engineering advances, hydrologic modeling of the current and proposed conditions will assess the extent of rate control mitigation that the planned stormwater management features would provide and what measures, if any, would be needed beyond the rate attenuation that would be achieved.

Construction activities associated with the project would disturb existing paved and vegetated areas and expose underlying soils to precipitation and runoff. Runoff from these disturbed soils could potentially leave the construction site and create sediment deposits in adjacent waterways and waterbodies. Without temporary stormwater management (required through the permitting process), these activities could also result in an increase in runoff volume and discharge rates from the construction site that could erode or destabilize slopes and deliver additional sediment to receiving waters.

Some construction staging areas would be located on temporary impervious pavement, which may increase stormwater runoff in some locations. Short-term impacts to specific locations would be further evaluated as engineering advances. In accordance with the National Pollutant Discharge Elimination System construction stormwater permit, a Stormwater Pollution Prevention Plan would be developed for the construction phase of the project, which would outline additional protection measures. Additional information on stormwater and water quality is included in the *Stormwater and Water Quality Technical Report* (see Appendix E of the EA).

- iii. **Water Appropriation – Describe if the project proposes to appropriate surface or groundwater (including dewatering). Describe the source, quantity, duration, use, and purpose of the water use and if a DNR water appropriation permit is required. Describe any well abandonment. If connecting to an existing municipal water supply, identify the wells to be used as a water source and any effects on, or required expansion of, municipal water infrastructure. Discuss environmental effects from water appropriation, including an assessment of the water resources available for appropriation. Identify any measures to avoid, minimize, or mitigate environmental effects from the water appropriation.**

Construction activities may require temporary dewatering to install bridge abutments and walls and complete grading activities in select areas. If dewatering is needed during construction, a water appropriation permit would be required from the Minnesota Department of Natural Resources to dewater in excess of 10,000 gallons a day and would be obtained prior to any dewatering activities.

If unidentified wells are found, the Minnesota Pollution Control Agency and Minnesota Department of Health must be contacted to determine the course of action, which may include sealing, relocating, or preserving by a licensed well contractor according to Minnesota Rules, chapter 4725.

iv. **Surface Waters**

- 1) **Wetlands – Describe any anticipated physical effects or alterations to wetland features, such as draining, filling, permanent inundation, dredging, and vegetative removal. Discuss direct and indirect environmental effects from physical modification of wetlands, including the anticipated effects that any proposed wetland alterations may have to the host watershed. Identify measures to avoid (e.g., available alternatives that were considered), minimize, or mitigate environmental effects to wetlands. Discuss whether any required compensatory wetland mitigation for unavoidable wetland impacts will occur in the same minor or major watershed and identify those probable locations.**

Aquatic resources located within the potential area of disturbance were identified as potential impacts and tabulated by total acreages or, for waterways, linear feet.

Aquatic resource impacts are defined as excavation or placement of fill within an aquatic resource boundary that results in loss of function of the resource. All aquatic resources within the potential area of disturbance were considered to have anticipated impacts.

Aquatic resources located within the potential area of disturbance are summarized in Table 7. There is no difference in impacts to aquatic resources under the Build Alternative option without the Highway 36 park-and-ride.

Table 7: Aquatic Resources Within the Potential Area of Disturbance

Local Government Unit	Aquatic Resource ID	Acres within the Potential Area of Disturbance
City of Saint Paul	W-15 ²²	0.12
	W-16 ²²	0.11
	W-17 ²²	0.14
	W-19 ²²	0.10
	W-20 ²²	0.11
Ramsey-Washington Metro Watershed District	W-28	0.22
	W-40	0.16
	W-59	0.55
Minnesota Department of Transportation	W-68 ²³	0.01
	W-69 ²³	0.01
	W-70 ²³	0.06
	W-72 ²³	0.08
	W-74 ²³	0.09
	W-75 ²³	0.06
	W-92 ²⁴	0.05
	W-97 ²³	0.01
Vadnais Lake Area Watershed Management Organization	W-98	0.04
Total		1.92

No temporary construction phase impacts to aquatic resources are anticipated. All anticipated aquatic resource impacts are considered permanent at this stage of design. If construction activities require temporary aquatic resource impacts, the areas would be restored in accordance with the Section 404 Transportation Regional General Permit.

Based on the acreage of wetland within the potential area of disturbance, wetland permits from the US Army Corps of Engineers (Section 404) and

²² This resource is a constructed stormwater feature.

²³ This resource is a constructed roadside ditch.

²⁴ This aquatic resource is on the Minnesota Department of Natural Resources Public Waters Inventory. Any construction below the Ordinary High Water Level would be under the jurisdiction of the Minnesota Department of Natural Resources

Minnesota Pollution Control Agency (Section 401 certification) would be required; however, total project impacts may be reduced as the design of the project progresses. The city of Saint Paul, Ramsey-Washington Metro Watershed District, Vadnais Lake Area Watershed Management Organization and the Minnesota Department of Transportation are the local government units for anticipated wetland impacts and would require a Wetland Conservation Act wetland replacement plan, which would be completed during final design of the project. Any impacts to aquatic resources on the Public Waters Inventory would require a public waters work permit from the Minnesota Department of Natural Resources. The Capitol Region Watershed District and the Ramsey-Washington Metro Watershed District require all impacts to be replaced at a minimum of a 1:1 replacement ratio within the same sub-watershed. The remaining required mitigation could be provided through the purchase of wetland mitigation bank credits based on the Minnesota Wetland Conservation Act Replacement Standards. The Wetland Conservation Act and the US Army Corps of Engineers' current replacement ratio for wetland credits in this portion of Minnesota is 2.5:1; however, under certain conditions, including providing replacement within the same watershed or in advance of construction, the ratio may be reduced to 2:1.²⁵ The final amount, type and location of wetland replacement or bank credits will be determined during the permit review process, which will occur during final design.

Areas for construction of on-site or project-specific wetland replacement would be investigated as needed as design advances. Areas to be considered would include public land adjacent to the project and/or lands acquired for the project.

- 2) Other surface waters – Describe any anticipated physical effects or alterations to surface water features (lakes, streams, ponds, intermittent channels, county/judicial ditches) such as draining, filling, permanent inundation, dredging, diking, stream diversion, impoundment, aquatic plant removal, and riparian alteration. Discuss direct and indirect environmental effects from physical modification of water features. Identify measures to avoid, minimize, or mitigate environmental effects to surface water features, including in-water Best Management Practices that are proposed to avoid or minimize turbidity/sedimentation while physically altering the water features. Discuss how the project will change the number or type of watercraft on any water body, including current and projected watercraft usage.**

The only surface water within the potential area of disturbance is W-92 (Goose Lake), listed in Table 7. Any construction below the Ordinary High Water Level would also be under the jurisdiction of the Minnesota Department of Natural Resources and require additional coordination. Any potential impacts would be restricted to the shoreline of this basin and would not affect navigation.

²⁵ More information regarding the US Army Corps of Engineers' wetland compensation policy can be found at <https://www.mvp.usace.army.mil/Portals/57/docs/regulatory/MN-Special/Final%20St.%20Paul%20District%20Policy%20for%20Wetland%20Compensatory%20Mitigation%20in%20MNs.pdf>.

12. Contamination/Hazardous Materials/Wastes

- a. **Pre-project Site Conditions – Describe existing contamination or potential environmental hazards on or in close proximity to the project site, such as soil or groundwater contamination, abandoned dumps, closed landfills, existing or abandoned storage tanks, and hazardous liquid or gas pipelines. Discuss any potential environmental effects from pre-project site conditions that would be caused or exacerbated by project construction and operation. Identify measures to avoid, minimize, or mitigate adverse effects from existing contamination or potential environmental hazards. Include development of a Contingency Plan or Response Action Plan.**

A Phase I Environmental Site Assessment was completed in 2019.²⁶ The purpose of the Phase I Environmental Site Assessment was to serve as a screening tool to identify, to the extent possible, existing sources of contamination (based on present or former uses) and contamination at locations that could impact construction of the project. Sites identified by the Phase I Environmental Site Assessment were classified into low, medium and high environmental risk levels (170 low potential, 161 medium potential and 144 high potential for contamination sites were identified within the study area). Of these, 20 low risk, 21 medium risk and 33 high risk sites were identified within the potential area of disturbance for the Build Alternative.

Table 8 summarizes the proposed acquisition of land that is contaminated or contains hazardous or regulated material based on the Phase I Environmental Site Assessment.

Table 8: Potential Acquisition of Sites with Contamination Risk

Site Ranking	Sites with Permanent Acquisition Only	Sites with Temporary Easements Only	Sites with Permanent Acquisition and Temporary Easements	Total
Low ²⁷	2	5	5	12
Medium ²⁸	4	5	8	17
High ²⁹	2	5	12	19
Total	8	15	25	48

²⁶ The Phase I Environmental Site Assessment was conducted in conformance with the United States Environmental Protection Agency's All Appropriate Inquiries Rule and American Society of Testing and Materials methodology 1527-13, as modified by the Minnesota Department of Transportation for transportation projects.

²⁷ Low risk sites include sites that are hazardous waste generators, railroad lines, current lumber yards, golf courses, commercial properties and possibly some farmsteads or residences where the site reconnaissance showed poor housekeeping.

²⁸ Medium risk sites include sites with closed leaking underground or aboveground storage tanks, closed spill sites, all sites with underground or aboveground storage tanks, machine shops, all sites with historic or current vehicle and/or auto body repair activities and petroleum use or storage, all bulk grain/feed storage sites, all historical lumber yards, all closed agricultural release sites and graveyards.

²⁹ High risk sites include all active and inactive Voluntary Investigation and Cleanup Program sites, all active and inactive Minnesota Environmental Response and Liability Act/Superfund sites, all Resource Conservation and Recovery Act sites, all active and inactive dumpsites, all active leaking underground or aboveground storage tank sites, all dry cleaners (with on-site or unknown chemical processing), all bulk chemical/petroleum facilities, all active agricultural release sites, railroad facilities (fueling, yards or maintenance), clandestine chemical/drug laboratories and all historic industrial sites with likely chemical use on the premises.

A Phase II Environmental Site Assessment was completed in 2020 to further identify potential for contamination in the study area. Of the 137 soil borings completed, 49 within the potential area of disturbance identified debris, soil contamination or groundwater contamination. Debris, soil contamination or groundwater contamination was identified within 50 feet of 16 parcels with proposed permanent acquisitions or temporary easements. The potential for impacts during construction based on these soil borings is summarized below:

- In downtown Saint Paul, it is likely that shallow fill containing debris will be encountered during construction. Based on depth, it is unlikely that contaminated groundwater will be encountered.
- Along Phalen Boulevard, restrictive covenants³⁰ have been filed with Ramsey County in areas where contaminated soil was placed, so it is assumed that construction in these areas will encounter contaminated materials.
- Between Johnson Parkway and Buerkle Road, fill containing trace debris and/or other contaminants will be encountered within discreet areas. Based on the varying depth of groundwater in this portion of the corridor, it is likely that contaminated groundwater will be encountered during construction.
- Contaminated soil will be encountered during the construction of the Highway 36 park-and-ride. Based on the groundwater level observed in this area, it is likely that the discharge of contaminated groundwater will be required.
- Along Highway 61, fill containing debris and other contaminants will likely be encountered in discreet areas. Based on depth, it is unlikely that contaminated groundwater will be encountered during construction.

The locations of soil borings where contamination has been identified are included in the Phase II Environmental Site Assessment in Appendix E of the EA and the *Hazardous Materials Memorandum* in Appendix F of the EA.

Unknown materials that were not identified during the initial site investigations or Phase II Environmental Site Assessment may also be encountered during construction. A Response Action Plan and Construction Contingency Plan will be developed to outline the methods for identifying, segregating and handling contaminated soil and/or groundwater that may be encountered during construction. Such methods may include on-site hazard evaluation and sampling by a qualified field technician, implementation of exclusion zones and notification to applicable regulatory agencies. These plans will be submitted to the Minnesota Pollution Control Agency for review and approval prior to construction.

The Metropolitan Council will hire an environmental construction oversight contractor, if necessary, to help manage known and unknown contaminated and regulated materials and to make sure that these materials are handled in accordance with all appropriate federal, state and local regulations. Prior to the demolition of any structures, assessments for asbestos-containing materials, lead-based paint and other regulated materials/wastes would be performed. A demolition and disposal plan would be prepared for any identified contaminants that may be encountered during construction.

³⁰ A restrictive covenant regulates the use of contaminated property when real estate is transferred from one owner to another.

The Metropolitan Council, as the future lead agency, will be responsible for performing site mitigation to achieve acceptable environmental conditions. If necessary, the Metropolitan Council would enroll in the Minnesota Pollution Control Agency's Brownfield Program, which includes the Voluntary Investigation and Cleanup Program and Petroleum Brownfields Program, to obtain assurances that contaminated site cleanup work and/or contaminated site acquisition would not associate the agency with long-term environmental liability for contamination and to obtain approvals for any contamination management and cleanup plans.

- b. Project Related Generation/Storage of Solid Wastes – Describe solid wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from solid waste handling, storage, and disposal. Identify measures to avoid, minimize, or mitigate adverse effects from the generation/storage of solid waste including source reduction and recycling.**

All solid wastes generated by construction of the proposed project would be disposed of properly in a permitted, licensed solid waste facility. Project demolition of concrete, asphalt and other potentially recyclable construction materials would be directed to the appropriate storage, crushing or renovation facility for recycling.

- c. Project Related Use/Storage of Hazardous Materials – Describe chemicals/hazardous materials used/stored during construction and/or operation of the project including method of storage. Indicate the number, location, and size of any above or below ground tanks to store petroleum or other materials. Discuss potential environmental effects from accidental spills or releases of hazardous materials. Identify measures to avoid, minimize, or mitigate adverse effects from the use/storage of chemicals/hazardous materials including source reduction and recycling. Include development of a spill prevention plan.**

The project would not produce any hazardous or regulated materials during its operation, and as a result, no permanent storage tanks would be installed. The collection and disposal of oils, grease and other waste materials generated during vehicle maintenance and repair activities would be performed in accordance with recognized industry best management practices for bus maintenance facilities.

- d. Project Related Generation/Storage of Hazardous Wastes – Describe hazardous wastes generated/stored during construction and/or operation of the project. Indicate method of disposal. Discuss potential environmental effects from hazardous waste handling, storage, and disposal. Identify measures to avoid, minimize, or mitigate adverse effects from the generation/storage of hazardous wastes including source reduction and recycling.**

Normal construction wastes are anticipated. Toxic or hazardous materials such as fuel for construction equipment and materials used in the construction of roads will likely be used during site preparation and construction. Although spills of these materials are not common, any spills of reportable quantities that occur will be reported to the Minnesota Duty Officer and the contractor will clean up spilled material according to state requirements.

13. Fish, Wildlife, Plant Communities, and Sensitive Ecological Resources (Rare Features)

a. Describe fish and wildlife resources as well as habitats and vegetation on or near the site.

Given the largely developed/disturbed nature of the project area, wildlife habitat was generally classified into two categories: aquatic habitat and terrestrial habitat. Aquatic habitat includes plant communities that are dominated by water, such as wetlands, lakes and streams, and supports water-dependent species, such as fish, frogs and turtles. Terrestrial habitat includes all other plant communities, excluding frequently disturbed areas such as mowed/landscaped areas and right-of-way, and supports species such as white-tailed deer, squirrels, rabbits and birds. Aquatic habitat is protected by wetland and public waters regulations, as described under Item 11.

The wildlife habitat study area is defined as the area within one-fourth mile of the potential area of disturbance for the Build Alternative. To identify habitat types in the study area, aerial photography from spring 2018 was reviewed to identify undeveloped areas with potentially natural cover (excluding landscaped areas and right-of-way). A field review was conducted in October 2018 to refine the aquatic habitats identified by the aerial photography review and eliminate disturbed or developed areas not reflected in the aerial photography or other aquatic resource mapping resources. Using the aquatic and terrestrial habitat types defined through the aerial photography and field reviews, common habitat/wildlife associations were identified based on references from the Minnesota Department of Natural Resources.³¹

The terrestrial habitat in the wildlife habitat study area consists of two community types: deciduous trees/forested habitat and grassland habitat.

Species that can be found in deciduous trees/forested habitat include grey squirrels, white-tailed deer, common songbirds, foxes, raccoons and bats, among others. Tree cover in the wildlife habitat study area primarily consists of urban boulevard trees with some scattered woodlots and, within the Ramsey County rail right-of-way, tree-lined areas adjacent to the Bruce Vento Regional Trail. Common trees include aspen, cottonwood, box elder, walnut, maple, locust, various coniferous trees and some oak trees.

For this analysis, grassland habitat is defined as unmanicured, non-native grasslands located in upland areas. Species that can be found in this habitat include grey squirrels, raccoons, rabbits, field mice, voles, moles, Canada geese, white tailed deer, songbirds and red foxes, among others. Much of the potential area of disturbance is within or adjacent to right-of-way for vehicular traffic and, as a result, is developed, manicured and maintained.

The aquatic habitat in the wildlife habitat study area consists of two community types: wetlands and waterbodies. Wildlife associated with this habitat includes bald eagles, common reptile and amphibian species, fish species, white-tailed deer and songbirds. Aquatic habitat within the study area is identified in Table 5.

Given the urban landscape and disturbed nature of the study area, invasive species are common. According to the Minnesota Department of Natural Resources Infested Waters Map, there are three waters within the wildlife habitat study area that are infested. The

³¹ Rare Species Guide, 2018. Available at <http://www.dnr.state.mn.us/rsg/index.html>. Accessed October 2019.

Mississippi River is infested with flowering rush, grass carp, Eurasian water-milfoil, bighead carp, silver carp and zebra mussels; Lake Phalen is infested with Eurasian water-milfoil; and White Bear Lake is infested with zebra mussels and Eurasian water-milfoil.

The Early Detection and Distribution Mapping System showed some terrestrial invasive plant species that might be expected within the potential area of disturbance including European buckthorn, garlic mustard, oriental bittersweet, wild parsnip, Canada Thistle and leafy spurge.

The tree inventory completed for the *Ramsey County Rail Right-of-Way Design Guide*³² identified Siberian elm, boxelder, American elm, green ash and cottonwood as the most common species. Total aerial tree coverage within the wildlife habitat study area is approximately 414 acres (see Figure 6 through Figure 9 and Appendix C of the *Natural Resources Technical Report*, which is included in Appendix E of the EA).

- b. Describe rare features such as state-listed (endangered, threatened, or special concern) species, native plant communities, Minnesota County Biological Survey Sites of Biodiversity Significance, and other sensitive ecological resources on or within close proximity to the site. Provide the license agreement number (LA-____) and/or correspondence number (ERDB) from which the data were obtained and attach the Natural Heritage letter from the DNR. Indicate if any additional habitat or species survey work has been conducted within the site and describe results.**

The Natural Heritage Information System database, maintained by the Minnesota Department of Natural Resources, was used to identify state-listed species. The review area for this analysis is defined as the area within 1 mile of the Build Alternative route, referred to as the “review area.”³³ The Natural Heritage Information System database is comprised of locational records of rare plants, rare animals and other rare sensitive natural resource features, including native plant communities, geologic features and animal aggregations (such as nesting colonies). The dataset also lists known locations of bald eagles and golden eagles. Per stipulations of the Natural Heritage Information System program, known locations of state-listed species cannot be made publicly available.

The potential area of disturbance was evaluated for preferred habitats of the identified rare species in coordination with state and local agencies and in accordance with Minnesota’s endangered species law.³⁴

There are five endangered species, six threatened species and seven species of special concern within the Natural Heritage Information System review area (see Table 9).

³² Available in the project library at <https://www.ramseycounty.us/residents/roads-transit/transit-corridors-studies/rush-line-brt-project/project-library>.

³³ Data used in this analysis was provided by the Minnesota Department of Natural Resources Division of Ecological and Water Resources and was current as of July 2017 per license agreement LA-843. This data is not based on an exhaustive inventory of the state. The lack of data for any geographic area shall not be construed to mean that significant features are not present.

³⁴ Minnesota Statutes, section 84.0895

Table 9: State-Listed Species Within the Natural Heritage Information System Review Area

Scientific Name	Common Name	Group	Status	Habitat
<i>Arcidens confragosus</i>	Rock Pocketbook	Clams	Endangered	Medium to large rivers; may be found in fine substrates such as silt or sand in slow current areas
<i>Elliptio crassidens</i>	Elephant-ear	Clams	Endangered	Large rivers in mud, sand or fine gravel
<i>Fusconaia ebena</i>	Ebonyshell	Clams	Endangered	Large rivers in sand or gravel
<i>Juncus articulatus</i>	Jointed Rush	Plants	Endangered	Prefer wet sandy or calcareous soil in locations with both shade and sun; found along shores, banks, ditches and wet meadows
<i>Plethobasus cyphus</i>	Sheepnose	Clams	Endangered	Large rivers, such as the Mississippi River
<i>Actinonaias ligamentina</i>	Mucket	Clams	Threatened	Medium to large rivers; substrates that are most preferred include coarse sand and gravel
<i>Emydoidea blandingii</i>	Blanding's Turtle	Reptiles	Threatened	Wetland complexes and adjacent sandy uplands in calm, shallow waters, including wetlands associated with rivers and streams, with rich, aquatic vegetation
<i>Lasmigona costata</i>	Fluted-shell	Clams	Threatened	Medium to large rivers
<i>Quadrula metanevra</i>	Monkeyface	Clams	Threatened	River habitats dominated by stable substrates in water over 2 meters (6.6 feet) deep
<i>Quadrula nodulata</i>	Wartyback	Clams	Threatened	Large rivers; can be found in fine or coarse substrates in areas of slow or moderate current
<i>Truncilla donaciformis</i>	Fawnsfoot	Clams	Threatened	Large rivers or the lower reaches of medium-sized streams; most commonly found in sand or gravel
<i>Anguilla rostrata</i>	American Eel	Fish	Special Concern	Streams with continuous flow or in muddy, silt bottomed lakes
<i>Baptisia lactea</i> var. <i>lactea</i>	White Wild Indigo	Plants	Special Concern	Dry to average moisture, prairies, savannas, open woods in sunny conditions
<i>Eleocharis quinqueflora</i>	Few-flowered Spikerush	Plants	Special Concern	Wet sandy, marly or peaty soil in sunny conditions; located in calcareous fens, seeps, floating mats, sedge meadows, shores
<i>Etheostoma microperca</i>	Least Darter	Fish	Special Concern	Weedy portions of vegetated lakes and clear streams with sluggish flow

Scientific Name	Common Name	Group	Status	Habitat
<i>Falco peregrinus</i>	Peregrine Falcon	Bird	Special Concern	Previously nested on cliff ledges along rivers or lakes; presently nesting primarily on buildings and bridges in urban settings and use historic eyries on cliffs
<i>Lepomis peltastes</i>	Northern Sunfish	Fish	Special Concern	Clear lakes with emergent vegetation and extensive shallows
<i>Ligumia recta</i>	Black Sandshell	Clams	Special Concern	Riffle and run areas of medium to large rivers in areas dominated by sand or gravel

The quality of habitat within the study area was determined using three different habitat rating and classification systems, including the Minnesota Land Cover Classification System, Regionally Significant Ecological Areas from the Minnesota Department of Natural Resources and the Minnesota County Biological Survey Sites of Biodiversity Significance. More information about these systems can be found in the *Natural Resources Technical Report* (see Appendix E of the EA).

Within the wildlife habitat study area, the only habitat ranked by the Minnesota Land Cover Classification System is located between Larpenteur Avenue and Interstate 694 (I-694) in Maplewood. Most of the undeveloped land (over 99 percent) is ranked as D, indicating a poor condition of a natural community, or C, indicating moderate condition of a natural community. One location has a ranking of B/C, indicating slightly better than moderate conditions of a natural community. This area is located around a wetland complex northwest of Gervais Avenue and the Ramsey County rail right-of-way (see wetland W-38 on Figure 4 of the *Natural Resources Technical Report* included in Appendix E of the EA).

There is one regionally significant ecological area within the wildlife habitat study area (see Figure 8 of the *Natural Resources Technical Report* included in Appendix E of the EA), which is associated with a large wetland located north of Buerkle Road (wetland W-63A, which is shown on Figure 4 of the *Natural Resources Technical Report* included in Appendix E of the EA). The area is ranked as a 2, indicating an area of moderate size that may be at risk due to adjacent land uses or is an isolated site with some biodiversity significance.

There are three sites of biodiversity significance within the study area. Of these sites, two received a biodiversity significance rating of moderate and one received a ranking of below. One site with a moderate rating (see Figure 8 of the *Natural Resources Technical Report* included in Appendix E of the EA) is associated with a large wetland located north of Buerkle Road (wetland W-63A, which is shown on Figure 4 of the *Natural Resources Technical Report* included in Appendix E of the EA). The second site with a moderate rating (see Figure 9 of the *Natural Resources Technical Report* included in Appendix E of the EA) is associated with a large unnamed wetland complex (wetland W-95, which is shown on Figure 5 of the *Natural Resources Technical Report* included in Appendix E of the EA). The site with a below ranking (see Figure 8 of the *Natural Resources Technical Report* included in Appendix E of the EA) is associated with Willow Lake (wetland W-62, which is shown on Figure 4 of the *Natural Resources Technical Report* included in Appendix E of the EA).

c. Discuss how the identified fish, wildlife, plant communities, rare features, and ecosystems may be affected by the project. Include a discussion on introduction and spread of invasive species from the project construction and operation. Separately discuss effects to known threatened and endangered species.

Of the 18 state-listed species identified, 11 have a completely aquatic life cycle and are associated with the Mississippi River. Since the project would not disturb the Mississippi River or its tributaries, no impacts to these species are anticipated. The seven other species identified within 1 mile of the project are discussed below. Correspondence with the Minnesota Department of Natural Resources is included in Appendix B of the EA.

- Jointed rush is a plant species listed as endangered that was observed along the shores of White Bear Lake in 1926. The project would not affect the shoreline of White Bear Lake; therefore, impacts to jointed rush are not anticipated.
- There are 11 occurrences of Blanding's turtles within the Natural Heritage Information System review area, two of which are also within the potential area of disturbance. One occurrence was in a backyard in Maplewood between Larpenteur Avenue and Frost Avenue, and the other was near the interchange of Highway 61 and I-694 in White Bear Lake. The number of occurrences suggest that Blanding's turtles have the potential to be present within the potential area of disturbance. To avoid incidental impacts, mitigation measures required by the Minnesota Department of Natural Resources would be implemented during construction (see Section 4.4.2 of the *Natural Resources Technical Report* included in Appendix E of the EA for more information).
- White wild indigo is a plant species listed as a special concern that was most recently observed in the Natural Heritage Information System review area in 1986. Due to the lack of potential habitat and recorded observations within the potential area of disturbance, impacts to white wild indigo are not anticipated.
- Few-flowered spikerush is a plant species listed as a special concern that was observed along the shores of White Bear Lake in 2013. The project would not affect the shoreline of White Bear Lake; therefore, impacts to few-flowered spikerush are not anticipated.
- The least darter was observed in 2013 in Lake Phalen, which would not be impacted by this project. Therefore, impacts to this species are not anticipated.
- The Natural Heritage Information System review area included two occurrences of peregrine falcon, and there are several records of falcons nesting on buildings and structures around Saint Paul near the Mississippi River. Based on this information, peregrine falcons have the potential to be present within the potential area of disturbance. However, the project would not impact cliffs or involve the demolition of any buildings near the Mississippi River; therefore, it is unlikely that the species would be impacted by the project.
- Northern sunfish were observed in 1978 in Keller Lake, which would not be impacted by this project. Therefore, no impacts to this species are anticipated.

Wildlife habitat impacts are expected to result from the Build Alternative. Wildlife habitat is illustrated in Figure 6 through Figure 9 and Appendix C of the *Natural Resources Technical Report* included in Appendix E of the EA. Table 10 lists habitat within the potential area of disturbance.

Table 10: Wildlife Habitat Within the Potential Area of Disturbance

Habitat Type	Acres Within the Wildlife Habitat Study Area	Acres Within the Potential Area of Disturbance
Aquatic habitat	523.6	1.94
Terrestrial habitat: grassland	159.8	13.3
Terrestrial habitat: trees	414.4	49.0
Total	1,097.8	64.24

The regionally significant ecological area in the wildlife habitat study area is not located within the potential area of disturbance; therefore, no impacts to the area is anticipated.

None of the three identified sites of biodiversity significance within the wildlife habitat study area are located within the potential area of disturbance; therefore, no impacts to these areas are anticipated.

Given the urban landscape and disturbed nature of the study area, invasive species and noxious weeds are common. The Build Alternative would not further contribute to the presence of invasive species or noxious weeds in the study area. Native seed mixes would be used in all disturbed locations not proposed for mowing.

In summary, the Build Alternative would result in a loss of mostly low quality habitat. Due to the urban setting and the low quality of existing habitat within the potential area of disturbance, the wildlife that inhabit these areas are generalist species adapted to highly-urbanized conditions. These species are generally more tolerant of human presence and activities, including traffic (pedestrian, bus and vehicular), and have demonstrated by their presence that they adapt readily to the human environment. The habitat in these areas is generally located in existing right-of-way or within roadway medians. Based on the minimal extent of higher quality habitat within the potential limits of disturbance, significant adverse impacts to wildlife habitat are not anticipated.

Short-term impacts to wildlife would occur due to construction activities, including use of heavy equipment and silt fence/construction barriers. Wildlife-friendly erosion control methods, such as using bio-netting or natural netting (products that do not contain plastic mesh netting or other plastic components), would be used to minimize adverse impacts to wildlife, such as the Blanding's turtle. These impacts still may cause temporary disruptions to wildlife; however, they would be temporary and limited to active construction areas. Additionally, areas disturbed by construction would be stabilized with interim and final erosion and sediment control measures that include the utilization of construction activity best management practices (e.g., cleaning all equipment before moving to another site) as well as seeding plans that would inhibit the spread of invasive species or noxious weeds. The number of active construction areas would be the minimum number needed to construct the project as required by construction permits, and inactive disturbed areas would be stabilized with seeding and other forms of erosion control best management practices.

d. Identify measures that will be taken to avoid, minimize, or mitigate adverse effects to fish, wildlife, plant communities, and sensitive ecological resources.

Although impacts to the Blanding's turtle are not anticipated, the Minnesota Department of Natural Resources has established standard best management practices for construction that would be required for this project, including:

- Avoiding filling or dewatering wetlands from October 15 to April 15 when turtles may be hibernating.
- Stringent erosion control methods such as using bio-netting or natural netting types.
- Providing identification information to the contractor to facilitate avoidance of turtles if observed in the construction zone.
- Monitoring for turtles during construction and reporting any sightings to the Minnesota Department of Natural Resources.

Additional best management practices related to the Blanding's turtle would be considered but are not required. These include measures such as using overlapping silt fence that allows turtles to bypass the fencing while still capturing the sediment and removing silt fence after stabilization of the site to remove barriers to turtle movements. Correspondence with the Minnesota Department of Natural Resources is included in Appendix B of the EA.

Additionally, best management practices and permanent stormwater controls would reduce sedimentation to a level that is acceptable for a National Pollutant Discharge Elimination System permit and, therefore, the project would have no adverse impact on aquatic habitat and associated aquatic wildlife.

Construction best management practices, as outlined in federal, state and local regulations, would be confirmed as part of project development and implemented during construction. These best management practices would serve to minimize impacts to both terrestrial and aquatic habitats. Some examples of construction best management practices include avoidance and/or minimization of site disturbance to the extent possible and additional sediment erosion and control procedures to minimize construction disturbance.

Although existing habitat does not formally require replacement, Ramsey County acknowledges the importance that citizens place on existing vegetation, particularly along the Ramsey County rail right-of-way and existing Bruce Vento Regional Trail corridor. The *Ramsey County Rail Right-of-Way Design Guide*³⁵ includes provisions to preserve existing quality landscapes and enhance the corridor with ecologically beneficial, resilient and low-maintenance habitat.

Prior to construction, measures to reduce the spread of invasive species and seeds (e.g., cleaning equipment prior to bringing it onsite or leaving the site) would be done in accordance with the standards in Minnesota Rules, part 6216.0265, to minimize the spread of invasive species within the potential area of disturbance.

14. Historic Properties

Describe any historic structures, archeological sites, and/or traditional cultural properties on or in close proximity to the site. Include 1) historic designations; 2) known artifact areas; and 3) architectural features. Attach letter received from the State Historic Preservation Office (SHPO). Discuss any anticipated effects to historic properties during project construction and operation. Identify measures that will be taken to avoid, minimize, or mitigate adverse effects to historic properties.

³⁵ Available in the project library at <https://www.ramseycounty.us/residents/roads-transit/transit-corridors-studies/rush-line-brt-project/project-library>.

Because federal funding from the Federal Transit Administration will be pursued for the Rush Line BRT Project, the project is considered a federal undertaking and must comply with Section 106 of the National Historic Preservation Act of 1966 (Section 106) and its implementing regulations.

The Federal Transit Administration, as the lead federal agency for the proposed project, has authority to initiate the Section 106 process, designate consulting parties and make associated determinations regarding the area of potential effect, National Register of Historic Places eligibility and effects to historic resources within the area of potential effect. The Federal Transit Administration also has authority to negotiate terms and conditions of any Memorandum of Agreement resulting from the identification of adverse effects through Section 106 consultation. Ramsey County and the Minnesota Department of Transportation Cultural Resources Unit have been authorized to prepare Section 106 documentation, analyses and recommendations to inform the Federal Transit Administration determinations. Ramsey County and the Minnesota Department of Transportation Cultural Resources Unit are also authorized to consult directly with the State Historic Preservation Office on technical matters related to Section 106 documentation and analysis as well as to disseminate information to, and coordinate and schedule meetings with, consulting parties in coordination with the Federal Transit Administration.

The Federal Transit Administration, in consultation with the State Historic Preservation Office, defined two areas of potential effect in 2019: one for architecture/history properties and one for archaeological properties. Resources within the areas of potential effect were surveyed to identify and evaluate historic properties to determine their eligibility for the National Register of Historic Places.

The Phase I Survey, completed between June 2018 and December 2019, identified 784 architectural properties constructed prior to 1979, 75 of which were previously surveyed and resurveyed as a result of this project. A total of 25 properties and six districts were identified for Phase II evaluation. Six of the Phase II properties were previously listed or identified as eligible for the National Register of Historic Places and updated Phase II evaluations were prepared to confirm the previous status.

As a result of the Phase II evaluations, 9 properties were recommended as eligible for listing in the National Register of Historic Places:

- Produce Exchange Building.
- Westminster Junction.
- Phalen Park.
- Madeline L. Weaver Elementary School.
- Moose Lodge 963.
- Polar Chevrolet Bear.
- Saint Paul, Stillwater & Taylors Falls/Chicago, Saint Paul, Minneapolis & Omaha Railroad Corridor Historic District.
- Lake Superior & Mississippi Railroad Corridor Historic District: Saint Paul to White Bear Lake Segment.
- Lake Superior & Mississippi Railroad Corridor Historic District: White Bear Lake to Hugo Segment.

In addition, the Theodore Hamm Brewing Company Complex remains eligible for the National Register of Historic Places with no proposed boundary changes. Information for the 3M Main Plant Historic District was updated due to demolition of several contributing resources but remains eligible for the National Register of Historic Places.

Archaeology resources recommended eligible include three remnants of the 1868 Alignment of the Lake Superior & Mississippi Railroad,³⁶ which are contributing elements to the overall Lake Superior & Mississippi Railroad Corridor Historic District. Another archaeology resource, Gladstone Shops, is being treated as eligible.³⁷ No additional archaeological work is recommended for the rest of the project as designed to date. However, any future changes to the project should be reviewed against survey recommendations to determine if additional survey may be warranted.

The Federal Transit Administration has determined that the project would have an adverse effect on five historic properties: the Lake Superior & Mississippi Railroad Corridor Historic District: Saint Paul to White Bear Lake Segment,³⁸ the Lake Superior & Mississippi Railroad Corridor Historic District: White Bear Lake to Hugo Segment³⁹ and the three remnants of the 1868 Alignment of the Lake Superior & Mississippi Railroad.

The proposed construction of the dedicated guideway, BRT stations, bridges, park-and-rides, stormwater management facilities and other project elements would have a permanent physical effect on the integrity of location (horizontal and vertical alignment), design and materials of the Lake Superior & Mississippi Railroad Corridor Historic District: Saint Paul to White Bear Lake Segment and, therefore, would also impact the segment's integrity of feeling and association.

It might be possible to design the project to avoid physical effects to two segments of the 1868 Alignment of the Lake Superior & Mississippi Railroad (between County Road C and Gervais Avenue and between Kohlman and Beam Avenues). However, construction of the grade-separated crossing of the dedicated guideway and trail access between English Street and Weaver Elementary School would likely physically impact the third segment between Eldridge Avenue East and County Road B East.

Construction of the project would not physically affect the White Bear Lake to Hugo Segment or diminish the segment's integrity of location, design, materials or workmanship. However, the substantial physical effects to the Saint Paul to White Bear Lake Segment (i.e., the terminal segment of the Lake Superior & Mississippi Railroad Corridor Historic District) could render the historic district no longer eligible for inclusion in the National Register of Historic Places and, therefore, also diminish integrity of association for the White Bear Lake to Hugo Segment.

Resolution of the adverse effects to the resources associated with the Lake Superior & Mississippi Railroad will be most effectively accomplished through continued consultation under Section 106 of the National Historic Preservation Act. A draft Memorandum of Agreement is included in Appendix C of the EA. The Memorandum of Agreement will be finalized following public comment and the results of coordination with the State Historic Preservation Office and other Section 106 consulting parties.

Construction activities would produce noise, vibration and visual impacts near historic properties. Based on the project's concept plans (15 percent design), four historic properties may be temporarily affected by construction of the project (Phalen Park; Westminster Junction, Madeline L. Weaver Elementary School and Saint Paul, Stillwater & Taylors Falls/Chicago, Saint Paul, Minneapolis & Omaha Railroad Corridor Historic District). A

³⁶ State Historic Preservation Office inventory number XX-RRD-NPR002, XX-RRDNPR003 and XX-RRD-NPR004

³⁷ State Historic Preservation Office inventory number Site 21RA70

³⁸ State Historic Preservation Office inventory number XX-RRD-NPR001

³⁹ State Historic Preservation Office inventory number XX-RRD-NPR005

Construction Protection Plan for Historic Properties will be prepared for Phalen Park that will include measures recommended to minimize or avoid unintended damage to the historic resource during construction. A consultation meeting will be held before the 60 percent plans are finalized to determine whether a Construction Protection Plan for Historic Properties is necessary for the other three historic properties. These measures are included in the Section 106 Memorandum of Agreement (see the draft Memorandum of Agreement in Appendix C of the EA).

Additional information on the cultural resources evaluation is included in the following reports in Appendix E of the EA:

- *Phase IA Literature Review, Phase I/II Archaeological Investigations of 21RA82 for the Rush Line BRT Project, Ramsey County, Minnesota.*
- *Phase II Evaluation, Lake Superior & Mississippi Railroad Corridor Historic District: Saint Paul to White Bear Lake Segment.*
- *Phase I Architecture/History Survey and Phase II Evaluation for the Rush Line Bus Rapid Transit Project Ramsey County, Minnesota.*
- *Rush Line Bus Rapid Transit Project Section 106 Assessment of Effects and Determination of Effect for Historic Properties.*

15. Visual

Describe any scenic views or vistas on or near the project site. Describe any project related visual effects such as vapor plumes or glare from intense lights. Discuss the potential visual effects from the project. Identify any measures to avoid, minimize, or mitigate visual effects.

New project infrastructure and buses would create visual impacts, with most impacts occurring near the dedicated guideway and stations. Operating phase impacts related to specific project elements are listed by municipality in Section 3.2.9 of the EA.

During the construction phase, visual impacts would occur along the project route, except in limited sections where no dedicated guideway or stations would be constructed. Visual impacts of construction, such as the presence of heavy machinery, ground disturbance and artificial lighting, would be temporary in nature, though they may be greater in magnitude than operating-phase visual impacts.

Design and construction best practices will be used to avoid, minimize and mitigate impacts of the project on neighboring properties and communities, including visual impacts. Table 11 includes a list of key project elements for which visual impacts have already been considered as part of the project definition or concept design phases, as well as project elements that will be included in future master planning projects for further public engagement and refinement.

Table 11: Specific Project Elements Where Visual Mitigation Has Been Incorporated Into Design

Project Element	Impacted Area/Resource	Mitigation Incorporated Into Design
10 th Street station	Nearby commercial properties; Pedro Park	Based on public engagement feedback from nearby residents, businesses and community organizations, an alternative location was selected for the southbound platform at 10 th Street. The proposed platform location would avoid visual impacts to Pedro Park.

Project Element	Impacted Area/Resource	Mitigation Incorporated Into Design
Dedicated guideway bridge at Johnson Parkway	Realife Cooperative of Phalen Village	Public engagement was conducted with residents regarding the bridge dimensions, placement and materials. Based on feedback, the bridge was changed from a single span to a more visually open three-span design. Because Johnson Parkway is a historic property, ⁴⁰ design considerations will also be discussed in continuing consulting party meetings. Design of the bridge will be reviewed in accordance with Secretary of Interior Standards.
Dedicated guideway in Ramsey County rail right-of-way (Saint Paul, Maplewood and Vadnais Heights)	Bruce Vento Regional Trail; Phalen Regional Park; nearby residential properties	Specific outreach to users of the Bruce Vento Regional Trail and residents of adjacent neighborhoods was conducted as part of the <i>Ramsey County Rail Right-of-Way Design Guide</i> process. As noted in the design guide, ⁴¹ the Bruce Vento Regional Trail would be reconstructed as a 12-foot multi-use path. To the extent feasible, design and construction of the Rush Line BRT Project will seek to preserve existing vegetation and character, with specific attention given to specimen trees and areas of dense understory. Following construction, the disturbed right-of-way would be re-planted to reduce runoff, control erosion and reestablish wildlife habitat. At significant trail crossings, including at Weaver Elementary School and the Gateway State Trail, the dedicated guideway would be grade-separated to enhance safety and comfort in crossing the guideway.
Downtown White Bear Lake station	Nearby commercial and residential properties	Additional public engagement and design work was conducted to refine station location and configuration to minimize property impacts. ⁴²

⁴⁰ State Historic Preservation Office inventory number RA-SPC-8497 and RA-SPC-5685

⁴¹ Available in the project library at <https://www.ramseycounty.us/residents/roads-transit/transit-corridors-studies/rush-line-brt-project/project-library>.

⁴² A summary of input received on the Downtown White Bear Lake station location is available at <https://www.ramseycounty.us/sites/default/files/Projects%20and%20Initiatives/2019%2002%2021%20White%20Bear%20Lake%20Station%20Input%20Summary.pdf>.

Additional information on the analysis completed related to visual resources is included in the *Visual Resources Memorandum* in Appendix F of the EA.

16. Air

- a. **Stationary Source Emissions – Describe the type, sources, quantities, and compositions of any emissions from stationary sources such as boilers or exhaust stacks. Include any hazardous air pollutants, criteria pollutants, and any greenhouse gases. Discuss effects to air quality including any sensitive receptors, human health, or applicable regulatory criteria. Include a discussion of any methods used to assess the project’s effect on air quality and the results of that assessment. Identify pollution control equipment and other measures that will be taken to avoid, minimize, or mitigate adverse effects from stationary source emissions.**

The Rush Line BRT Project would not result in any stationary source emissions.

- b. **Vehicle Emissions – Describe the effect of the project’s traffic generation on air emissions. Discuss the project’s vehicle-related emissions effect on air quality. Identify measures (e.g., traffic operational improvements, diesel idling minimization plan) that will be taken to minimize or mitigate vehicle-related emissions.**

Additional information on air quality is included in the *Air Quality Technical Report* (see Appendix E of the EA).

Criteria Pollutants

The Twin Cities metropolitan area is in attainment for criteria pollutants. No air quality conformity analysis determinations for carbon monoxide are required. Per Federal Transit Administration guidance, air quality is not considered a concern for this project as it relates to the criteria pollutants.

Qualitative Mobile Source Air Toxics

Current air quality levels are considered acceptable, and the levels are expected to remain at acceptable levels under the Build Alternative. The Build Alternative is expected to carry 7,400 rides per day by 2040, the Build Alternative option without the Highway 36 park-and-ride is expected to carry 6,700 rides per day by 2040.

The project is not anticipated to significantly impact vehicular traffic. Due to new transit riders’ shift from cars to BRT, a small decrease in annual vehicle-miles traveled is expected on arterial roadways parallel to the Rush Line BRT Project route; however, additional park-and-ride lots may result in moderate localized increases in vehicle-miles traveled. The projected average daily traffic under the Build Alternative does not differ from that for the No Build Alternative; therefore, the Build Alternative is not anticipated to produce impacts to mobile source air toxics emissions.

The Build Alternative could include realigning travel lanes, which could move some traffic closer to nearby homes, schools and businesses; therefore, the Build Alternative could produce higher ambient concentrations of mobile source air toxics in localized areas than the No Build Alternative. Neither the magnitude nor duration of these potential increases can be reliably quantified and compared with the No Build Alternative because information about project-specific mobile source air toxics-related health impacts is incomplete or unavailable as discussed in Section 3.2 of the *Air Quality Technical Report* (see Appendix E of the EA). However, the Rush Line BRT Project is

anticipating using all electric, zero-emission buses, which would not contribute to localized mobile source air toxics increases.

Construction Phase Impacts

Construction of the project could temporarily close or reduce the operational capacity of some intersections, potentially detouring traffic to parallel roadways. This increased traffic on parallel roadways may temporarily produce increased emissions and higher concentrations of air pollutants near homes and businesses; however, these emissions levels are not anticipated to generate localized concentrations that would exceed state or federal air quality standards. Traffic mitigation measures would be developed before construction begins to establish detour routes and maintain traffic flow.

In addition to traffic-related emissions increases, construction activities could also temporarily increase concentrations of air pollutants. Construction equipment powered by fossil fuels emits the same air pollutants as highway vehicles. Exposed soils can also produce increased particulate matter when moved by construction equipment or disturbed by wind. Concentrations of these air pollutants are not anticipated to exceed state or federal air quality standards.

- c. **Dust and Odors – Describe sources, characteristics, duration, quantities, and intensity of dust and odors generated during project construction and operation. (Fugitive dust may be discussed under Item 16a). Discuss the effect of dust and odors in the vicinity of the project including nearby sensitive receptors and quality of life. Identify measures that will be taken to minimize or mitigate the effects of dust and odors.**

Construction of the project is anticipated to generate dust. Construction best management practices and US Environmental Protection Agency-recommended measures would be implemented to control dust. Best management practices may include the following:

- Minimization of land disturbance during site preparation.
- Use of watering trucks to minimize dust.
- Covering of trucks while hauling soil/debris off-site or transferring materials.
- Stabilization of dirt piles that are not removed immediately.
- Use of dust suppressants on unpaved areas.
- Minimization of unnecessary vehicle and machinery idling.
- Re-vegetation of any disturbed land after construction.

17. Noise

Describe sources, characteristics, duration, quantities, and intensity of noise generated during project construction and operation. Discuss the effect of noise in the vicinity of the project including 1) existing noise levels/sources in the area; 2) nearby sensitive receptors; 3) conformance to state noise standards; and 4) quality of life. Identify measures that will be taken to minimize or mitigate the effects of noise.

Noise was assessed in accordance with guidelines specified in the Federal Transit Administration's *Transit Noise and Vibration Impact Assessment Manual*.⁴³ The Federal Transit Administration noise impact criteria are more protective than the Minnesota Pollution

⁴³ Federal Transit Administration. *Transit Noise and Vibration Impact Assessment Manual*. September 2018. Available at <https://www.transit.dot.gov/research-innovation/transit-noise-and-vibration-impact-assessment-manual-report-0123>.

Control Agency standards and, therefore, were used to assess and mitigate any noise impacts identified. Noise-sensitive land uses within 200 feet of the proposed BRT route are included in Table 12.

Table 12: Noise-Sensitive Land Uses Within 200 Feet of the Proposed BRT Route

Section of Proposed BRT Route	Noise-Sensitive Land Uses
Union Depot to I-94	Twin Cities PBS, St. Paul Preparatory School, New Horizons Academy childcare center, Union Gospel Mission Child Development Center, Hyatt Place and various apartment and condominium buildings
I-94 to I-35E	Minnesota Transportation Museum and single- and multi-family residences
Along Phalen Boulevard	HealthPartners Neurosciences Center, Christian Mission Elim Minnesota and apartment buildings
Johnson Parkway to Highway 36	Single- and multi-family residences and the Kingdom Hall of Jehovah's Witnesses
Highway 36 to I-694	Single- and multi-family residences and St. John's Hospital
I-694 to Highway 96E	Single- and multi-family residences
White Bear Lake	Single- and multi-family residences and the First Church of Christ - Scientist

Operating Phase

While the project does add a negligible amount of noise, there are no exceedances of the noise impact criteria.

Construction Phase

Temporary noise impacts could result from activities associated with the construction of new stations, new dedicated guideway and bridges; utility relocation; grading; excavation; demolition and installation of systems components. Such impacts may occur in residential areas and at other noise-sensitive land uses located within several hundred feet of the proposed route (see Table 12).

The potential for noise impacts would be greatest at locations near pavement breaking and at locations close to any nighttime construction work. Pavement breaking is anticipated in proposed station areas, along Phalen Boulevard, where the dedicated guideway crosses existing streets, along Buerkle Road and along Highway 61.

For most construction equipment, diesel engines are typically the dominant noise source. For other activities, such as impact pile driving and jackhammering, noise generated by the actual process dominates. Short-term noise during construction of the project can be intrusive to residents near the construction sites. Most of the construction would consist of site preparation and paving. At some locations, more extensive work may occur, such as pile driving for elevated structures and retaining walls, including at the proposed bridges at Arcade Street, Johnson Parkway, Highway 36 and I-694.

For residential land use, short-term roadway construction noise impact can extend to approximately 120 feet from the construction site. However, if nighttime construction is

conducted, short-term noise impact from roadway construction can extend to approximately 380 feet from the construction site. For elevated structure construction, the distance for noise impact during the daytime could be up to 250 feet for impact pile driving, assuming a usage factor of 20 percent during the day. If alternative methods of piling are used, the distance to impact could be less. When a specific piling method is determined, a screening distance will be calculated.

A detailed noise and vibration control plan would be prepared to mitigate short-term noise and vibration resulting from construction activities. A noise control engineer or acoustician would work with the contractor to prepare the noise and vibration control plan in conjunction with the contractor's specific equipment and methods of construction. Key elements of a plan include:

- The contractor's specific equipment types.
- Schedule and methods of construction.
- Maximum noise and vibration limits and certification testing for each piece of equipment.
- Prohibitions on certain types of equipment and processes during nighttime hours without variances.
- Identification of specific sensitive sites near construction sites.
- Methods for projecting construction noise and vibration levels.
- Implementation of noise and vibration control measures where appropriate.
- Acoustic shielding requirements for jackhammers, chainsaws and pavement breakers.
- Methods for responding to community complaints.

Additional information on noise and vibration quality is included in the *Noise and Vibration Technical Report* (see Appendix E of the EA).

18. Transportation

- a. **Describe traffic-related aspects of project construction and operation. Include 1) existing and proposed additional parking spaces; 2) estimated total average daily traffic generated; 3) estimated maximum peak hour traffic generated and time of occurrence; 4) source of trip generation rates used in the estimates; and 5) availability of transit and/or other alternative transportation modes.**

Parking

There are three park-and-ride facilities associated with the project as summarized in Table 13. Two of these park-and-rides would use existing surface lots and/or parking structures, and the other would require the construction of a new parking structure.

Table 13: Park-and-Ride Facilities

Location	Number of Parking Spaces	Type of Facility
Highway 36	300	New parking structure
Maplewood Mall Transit Center	1,000	Existing surface lots and parking structure
County Road E	Up to 70	Existing surface lot reconfigured to accommodate the park-and-ride

Forecast Traffic Volumes

The development of future year traffic forecasts was based on preliminary 2040 socioeconomic data prepared by local communities and is consistent with the Metropolitan Council's long-range plan for the region, *Thrive MSP 2040*.⁴⁴ This data was used as an input to the Metropolitan Council's Regional Travel Demand Model. The outputs from the 2040 Regional Travel Demand Model were then compared to existing and historic traffic counts. This information, combined with the expected changes in land use and density, was used at a localized level to develop future year forecasts for each roadway segment within the study area.

The following ranges of annual growth rates were used to develop traffic forecasts for each of the analysis segments:

- Robert Street from 5th Street to 11th Street: 0.5 percent.
- Jackson Street from 14th Street to Pennsylvania Avenue: 0.5 percent.
- Phalen Boulevard from L'Orient Street to Maryland Avenue: 0.3 to 1.5 percent.
- Ramsey County rail right-of-way from Maryland Avenue to Beam Avenue: 0.5 percent.
- Beam Avenue to County Road D: 0.6 percent.
- Highway 61 from Buerkle Road to 8th Street: 0.5 to 1.5 percent.

The existing traffic turning movement volumes were grown from the count year to 2040 using these growth rates to project future traffic volumes along the corridor. In addition to background traffic growth, projected park-and-ride traffic was estimated for the peak hours and added to the traffic volumes on analysis segments where there are park-and-rides proposed as part of the Build Alternative. Appendix A of the *Traffic Technical Report* (see Appendix E of the EA) includes exhibits that show the existing, 2040 No Build Alternative and 2040 Build Alternative peak hour traffic volumes.

Availability of Transit and Other Transportation Modes

The proposed project would provide a reliable, high-frequency transit option connecting Saint Paul, Maplewood, White Bear Township, Vadnais Heights, Gem Lake and White Bear Lake. Under the Build Alternative, the Rush Line is forecast to carry 7,400 rides per day by 2040. Under the Build Alternative option without the Highway 36 park-and-ride, the Rush Line is forecast to carry 6,700 rides per day by 2040. For more information on ridership characteristics, see Section 3.2.2 of the EA and the *Ridership and Operations Technical Report* in Appendix E of the EA.

Rush Line BRT station platforms would generally be 10 inches tall, and this platform height improves customer experience by reducing the step onto the bus and allows for a level boarding option at the front door if the bus kneels.⁴⁵ It also allows both BRT and local buses to use the same platforms. Connections to other transit routes are identified on the concept plans in Appendix A of the EA.

The project would reconstruct the Bruce Vento Regional Trail from the intersection of Arcade Street and Phalen Boulevard to Beam Avenue and segments of the Bruce Vento Regional Trail between County Road D and Buerkle Road. The dedicated guideway would be co-located with a reconstructed Bruce Vento Regional Trail through the portion of the route in Ramsey County rail right-of-way (shown on Figure 6 through Figure 9).

⁴⁴ Metropolitan Council. *Thrive MSP 2040*. Adopted on May 28, 2014. Available at <https://metrocouncil.org/Planning/Projects/Thrive-2040.aspx>.

⁴⁵ Kneeling is when the bus operator lowers the front end of the bus to assist passenger boarding.

The *Ramsey County Rail Right-of-Way Design Guide*⁴⁶ was created to develop a safe dedicated guideway and shared-use trail within the Ramsey County rail right-of-way that fits in with the surrounding landscape and reflects relevant user, stakeholder and public guidance. As engineering advances, the guiding principles from the *Ramsey County Rail Right-of-Way Design Guide* will be used to inform the design work and ensure input received through the public engagement activities is incorporated.

Four of the proposed dedicated guideway bridges would provide grade separation between trail users and vehicles:

- A trail would cross over Johnson Parkway on a new dedicated guideway bridge.
- A new dedicated guideway bridge would cross over the intersection of the Bruce Vento Regional Trail and Gateway State Trail.
- A new dedicated guideway bridge would cross over the trail connection between English Street and Weaver Elementary School.
- A new dedicated guideway bridge would cross over the trail connection between Fitch Road and Barclay Street.

In addition to the safety benefits provided by the grade separated crossings, the Build Alternative is expected to benefit pedestrians and bicyclists by providing new connections to existing sidewalks and trails (new connections are shown on the concept plans in Appendix A of the EA). At intersections, reconstructed sidewalks and trails would include upgraded pedestrian ramps and all reconstructed signals would have accessible pedestrian signals. All BRT station platforms would include new sidewalk connections to adjacent pedestrian facilities. Additionally, bicycle racks would be provided at each station, and bicycles can be brought on the bus.

Additional information on pedestrian and bicycle facilities is included in the *Pedestrians and Bicycles Memorandum* in Appendix F of the EA.

- b. **Discuss the effect on traffic congestion on affected roads and describe any traffic improvements necessary. The analysis must discuss the project's impact on the regional transportation system. *If the peak hour traffic generated exceeds 250 vehicles or the total daily trips exceeds 2,500, a traffic impact study must be prepared as part of the EAW.* Use the format and procedures described in the Minnesota Department of Transportation's Access Management Manual, Chapter 5 (available at: <http://www.dot.state.mn.us/accessmanagement/resources.html>) or a similar local guidance.**

A traffic operations model was developed to identify changes in level of service that would result from the 2040 Build Alternative during peak hours. Peak hours reflect the times of day when a facility is typically busiest; therefore, the peak hours indicate the worst-case scenario in terms of impacts. The *Highway Capacity Manual*⁴⁷ uses six letter grades (from A to F) to describe an intersection's level of service, with A being the best operating conditions and F being the worst. The *Highway Capacity Manual* uses equations to calculate the delay motorists experience due to traffic signals or stop signs and conflicting traffic as the basis for determining an intersection's level of service. Level of service D or better is considered acceptable for intersections during the peak traffic hour in urban and suburban areas according to standard practice in the traffic

⁴⁶ Available in the project library at <https://www.ramseycounty.us/residents/roads-transit/transit-corridors-studies/rush-line-brt-project/project-library>.

⁴⁷ Transportation Research Board. *Highway Capacity Manual, Sixth Edition: A Guide for Multimodal Mobility Analysis*. 2016. Washington, D.C.

engineering industry, guidance from the American Association of State Highway and Transportation Officials and the Minnesota Department of Transportation.

The concept plans included in Appendix A of the EA show all traffic signal modifications and reconstructions, grade crossings and other infrastructure changes that are proposed as part of the project. With these improvements, all intersections evaluated are anticipated to operate at overall level of service D or better in the 2040 a.m. and p.m. peak hours except for the Highway 61/County Road E intersection in the p.m. peak hour, which would operate at level of service E as it would under the 2040 No Build Alternative. The project would improve 2040 peak hour operations at two intersections: at Phalen Boulevard/Payne Avenue in the a.m. and p.m. peak hours and at Highway 61/Buerkle Road in the p.m. peak hour.

Anticipated queue lengths were also evaluated to determine if intersections would have queueing issues under the 2040 Build Alternative that were not present under the 2040 No Build Alternative. Table 14 summarizes the seven intersections where queueing would be improved, and Table 15 summarizes the 11 intersections where there would be queueing issues. Recommended mitigation measures to alleviate the identified queueing issues are also included in Table 15. As design advances, there will be continued coordination with the appropriate roadway authorities on the recommended mitigation measures.

Table 14: 2040 Build Alternative Queueing Improvement Locations

Intersection	Movement(s)
Robert Street/9 th Street	Northbound right
Robert Street/11 th Street	Northbound through and right
	Southbound left
Phalen Boulevard/Cayuga Street	Southbound right
Phalen Boulevard/Payne Avenue	Eastbound left, through and right
	Westbound left
	Northbound right
	Southbound right
Highway 61/Buerkle Road	Westbound right
Highway 61/Whitaker Street	Southbound left
Highway 61/4 th Street	Westbound through and right

Table 15: 2040 Build Alternative Queueing Impact Locations and Recommended Mitigation Measures

Intersection	Movement(s)	Queueing Issue ⁴⁸	Recommended Mitigation Measure
Robert Street/5 th Street	Northbound through and right	Spillback into closely spaced upstream intersection and operates at level of service E	Diversion to alternative routes expected to reduce impact
Robert Street/6 th Street	Northbound through	Spillback into closely spaced upstream intersection and operates at level of service E	Diversion to alternative routes expected to reduce impact
Robert Street/7 th Place	Northbound through	Spillback into closely spaced upstream intersection	Diversion to alternative routes expected to reduce impact
	Southbound left	Spillback into closely spaced upstream intersection	Diversion to alternative routes expected to reduce impact
Robert Street/7 th Street	Northbound left and through	Spillback into closely spaced upstream intersection	Diversion to alternative routes expected to reduce impact
	Southbound left	Spillback into closely spaced upstream intersection and operates at level of service E	Diversion to alternative routes expected to reduce impact
	Southbound through	Spillback into closely spaced upstream intersection	Diversion to alternative routes expected to reduce impact
Robert Street/9 th Street	Northbound left	Spillback into closely spaced upstream intersection	Diversion to alternative routes expected
Robert Street/10 th Street	Northbound left	Spillback into closely spaced upstream intersection	Diversion to alternative routes expected to reduce impact
Phalen Boulevard/Olive Street	Eastbound through	Spillback into upstream intersection	None ⁴⁹
	Westbound left	Operates at level of service E	Extend the westbound left-turn storage lane by 50 feet

⁴⁸ Spillback is when the vehicle queue exceeds the available distance. An upstream intersection is the next intersection opposite the direction of travel.

⁴⁹ As discussed in the *Traffic Technical Report* included in Appendix E of the EA, due to the limitations that the I-35E bridge presents to roadway expansion in this area, additional capacity would not be reasonable to mitigate this queueing issue. Therefore, no mitigation is proposed.

Intersection	Movement(s)	Queueing Issue ⁴⁸	Recommended Mitigation Measure
Neid Lane/Arcade Street	Southbound through	Spillback into closely spaced upstream intersection	Adjust signal timings
Highway 61/County Road E	Westbound left	Operates at level of service F	Restripe upstream two-way left-turn lane to extend the westbound left-turn storage lane by 60 feet
Highway 61/County Road 96	Eastbound left	Operates at level of service F	Adjust transit signal priority parameters
Highway 61/4 th Street	Eastbound left	Operates at level of service F	Adjust transit signal priority parameters
	Eastbound through	Spillback into closely spaced upstream intersection and operates at level of service F	Adjust transit signal priority parameters

Additional information on the traffic analysis is available in the *Traffic Technical Report* (see Appendix E of the EA).

c. Identify measures that will be taken to minimize or mitigate project related transportation effects.

Recommended mitigation measures to alleviate the identified queueing issues are included in Table 15. As design advances, there will be continued coordination with the appropriate roadway authorities on the recommended mitigation measures.

19. Cumulative Potential Effects

a. Describe the geographic scales and timeframes of the project related environmental effects that could combine with other environmental effects resulting in cumulative potential effects.

Cumulative effects are effects on the environment that result from the incremental impact of the project when added to other past, present and reasonably foreseeable future actions. Cumulative effects can result from individually minor but collectively significant actions taking place over a period of time.⁵⁰ The study area for the analysis of cumulative effects is the area within 1 mile of the Build Alternative route. This area was selected based on federal guidance and other study areas used within the EA.

Reasonably foreseeable future actions are those that have received some local, state or federal government approval (including private development approvals) and thus could be under construction anytime between the present through the year 2040, which is a reasonable planning horizon to identify foreseeable future actions. These actions are reasonably foreseeable because they are likely to be funded, approved or part of an officially adopted planning document.

⁵⁰ 40 CFR § 1508.7

- b. Describe any reasonably foreseeable future projects (for which a basis of expectation has been laid) that may interact with environmental effects of the proposed project within the geographic scales and timeframes identified above.**

Future projects within the cumulative effects study area were identified through coordination with jurisdictions and agencies in the study area. They include approximately 40 state, local and private roadway, transit, recreation, facilities and development projects, which are listed in Table 1 in the *Indirect and Cumulative Effects Technical Report* (see Appendix E of the EA).

- c. Discuss the nature of the cumulative potential effects and summarize any other available information relevant to determining whether there is potential for significant environmental effects due to these cumulative effects.**

The potential resource impacts of other past, present and reasonably foreseeable future actions in the project area may contribute to cumulative effects on the transportation system, land use and the natural environment. However, based on the cumulative impact assessment, the combined project-related impacts are not anticipated to require avoidance, minimization or mitigation measures other than those identified in the EA. Discussion of cumulative effects by resource is included in Section 3.4 of the EA and the *Indirect and Cumulative Effects Technical Report* in Appendix E of the EA.

20. Other Potential Environmental Effects

If the project may cause any additional environmental effects not addressed by Items 1 to 19, describe the effects here, discuss the how the environment will be affected, and identify measures that will be taken to minimize and mitigate these effects.

Federal funding from the Federal Transit Administration will be pursued for the Rush Line BRT Project; as a result, the Federal Transit Administration is required to undertake environmental review in compliance with the National Environmental Policy Act. Potential environmental effects are addressed in the preceding Environmental Assessment Worksheet items or discussed in the EA.

RGU Certification

*The Environmental Quality Board will only accept **SIGNED** Environmental Assessment Worksheets for public notice in the EQB Monitor.*

I hereby certify that:

- The information contained in this document is accurate and complete to the best of my knowledge.
- The EAW describes the complete project; there are no other projects, stages, or components other than those described in this document, which are related to the project as connected actions or phased actions, as defined at Minnesota Rules, parts 4410.0200, subparts 9c and 60, respectively,
- Copies of this EAW are being sent to the entire EQB distribution list.

Signature Ted W Schoenecker

Date 05-04-2021

Title Public Works Director / County Engineer

FIGURES

Figure 1: County Map

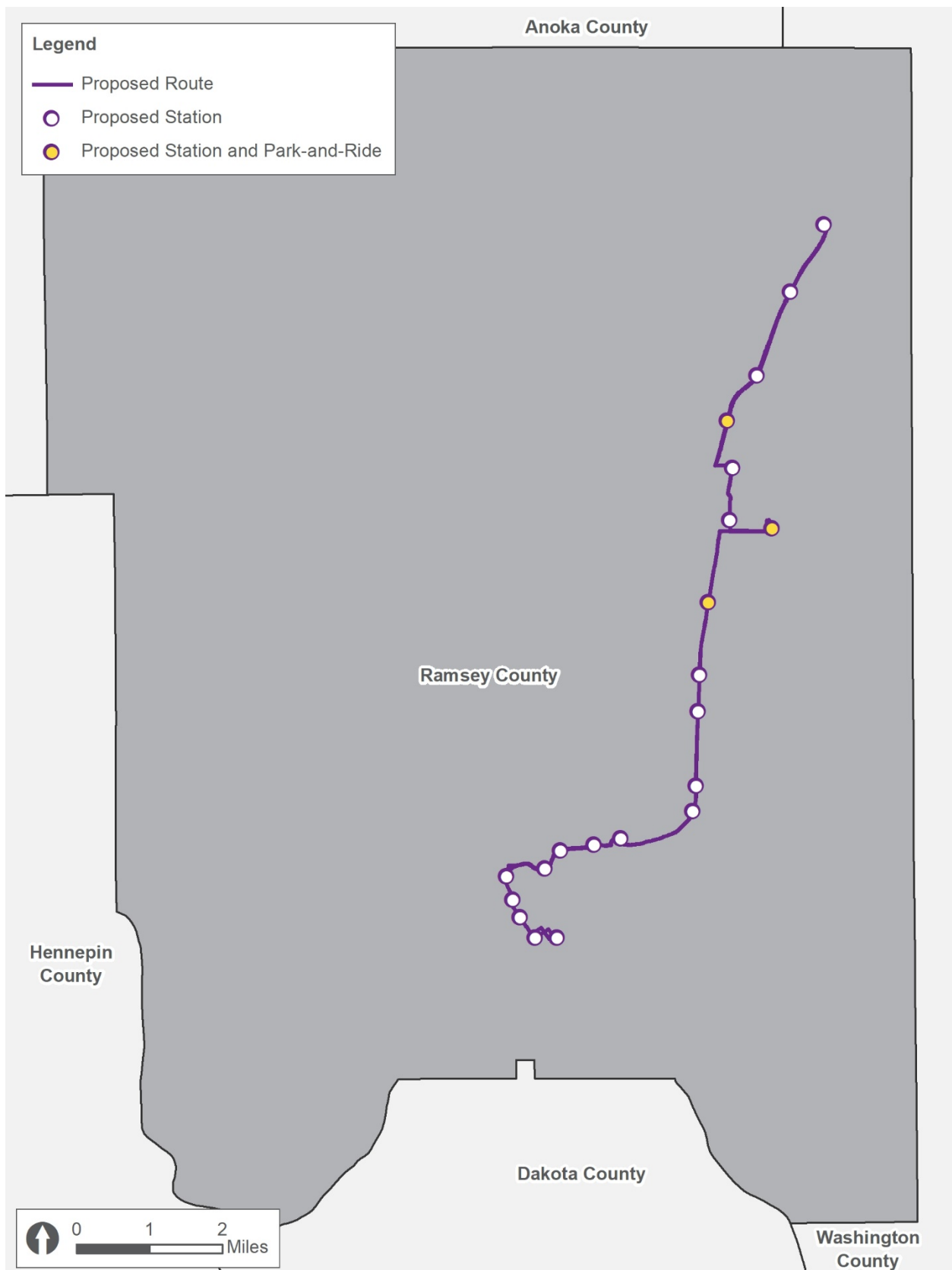


Figure 2: USGS Map from Union Depot to Arcade Street

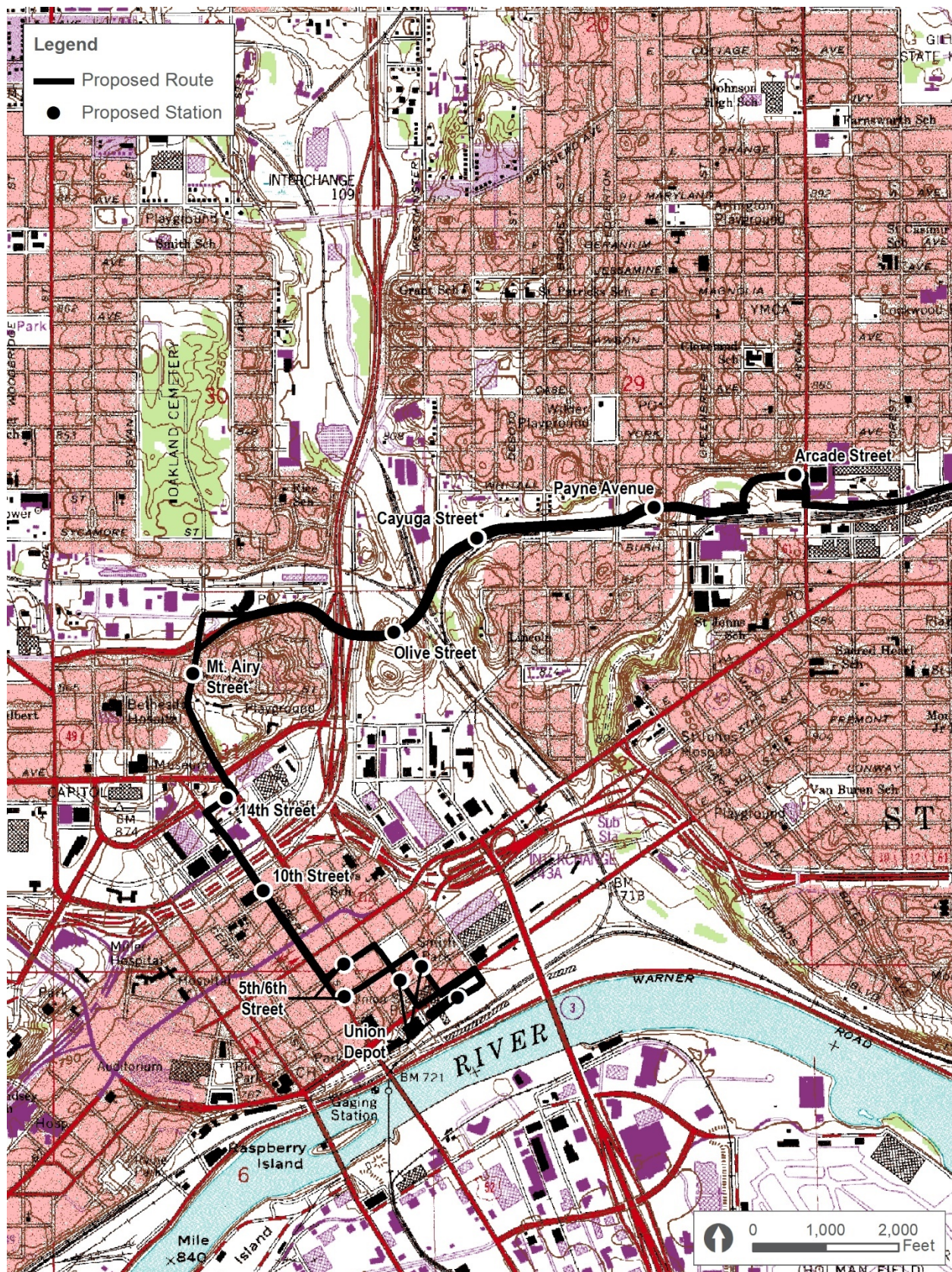


Figure 3: USGS Map from Arcade Street to County Road B

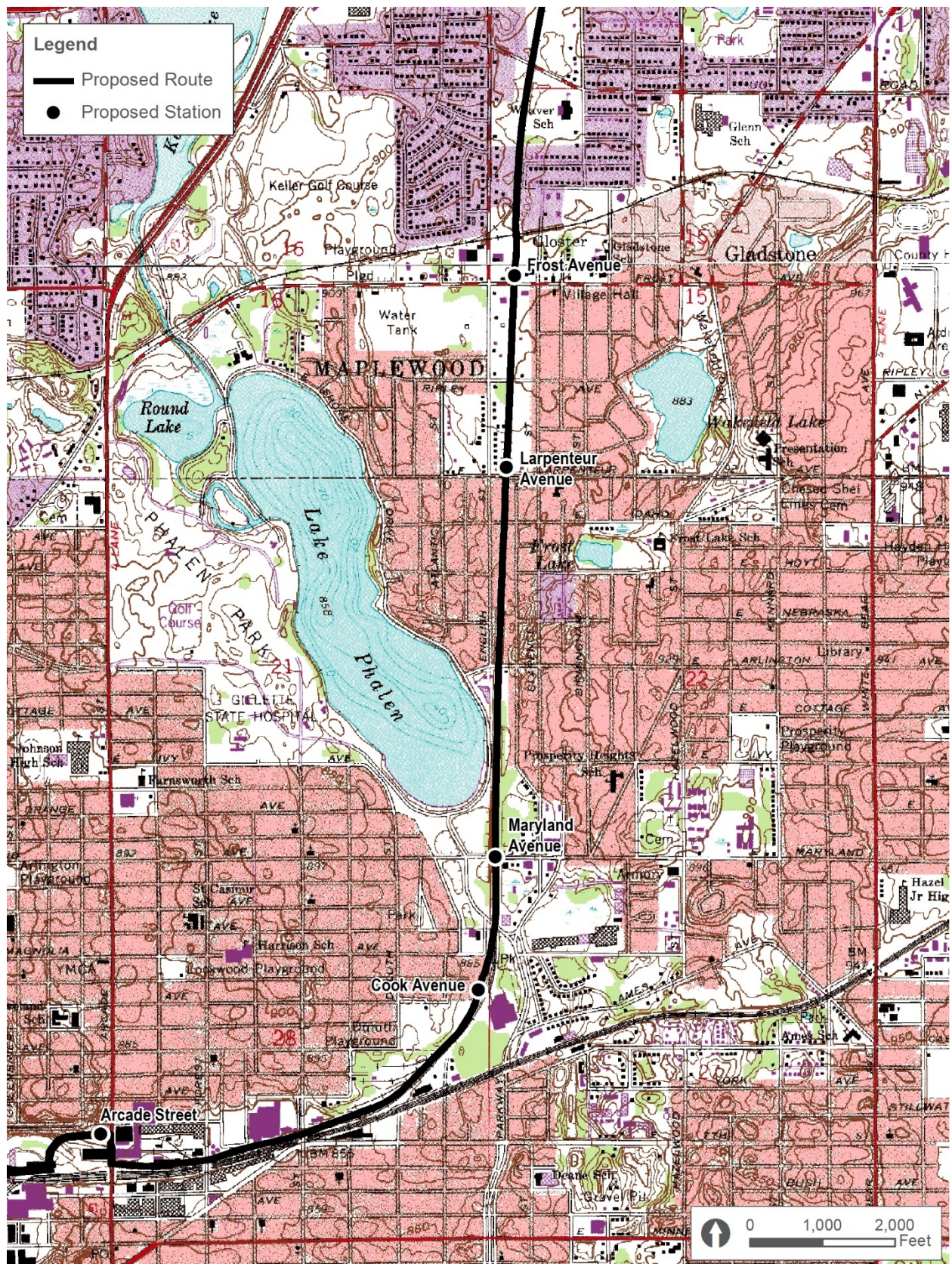


Figure 4: USGS Map from County Road B to County Road E

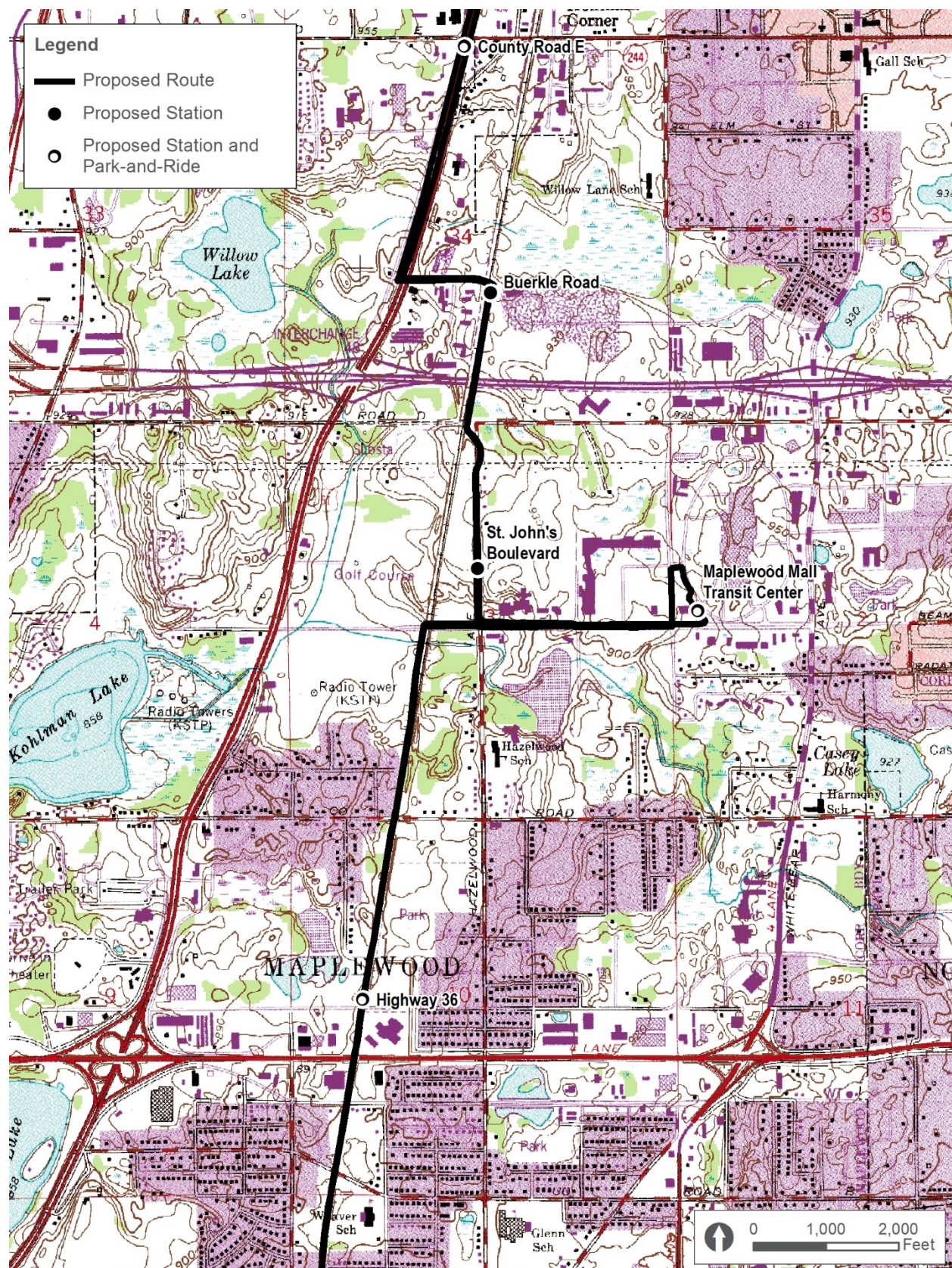


Figure 5: USGS Map from County Road E to Downtown White Bear Lake

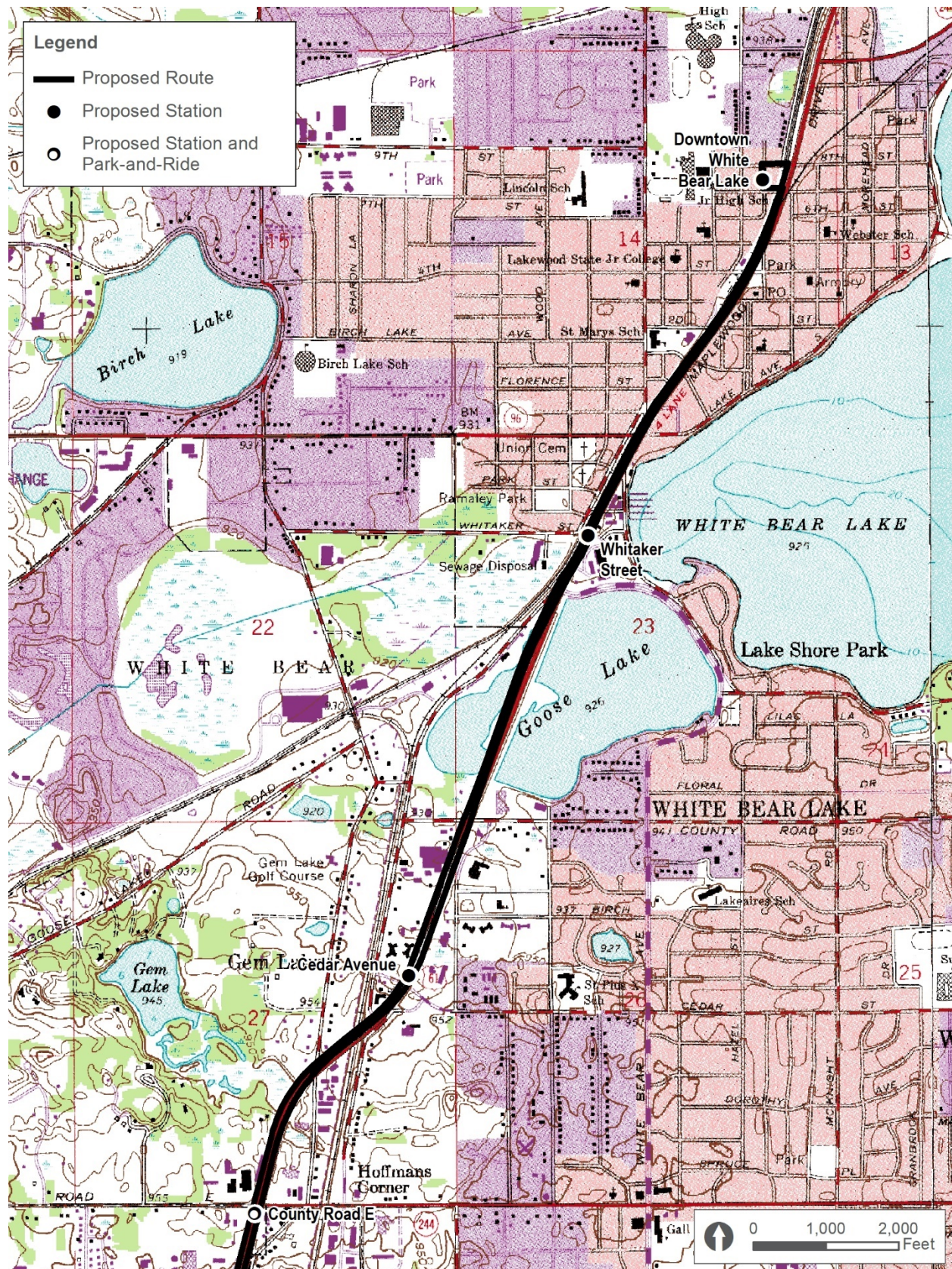


Figure 6: Operating Environment from Union Depot to Arcade Street



Figure 7: Operating Environment from Arcade Street to County Road B

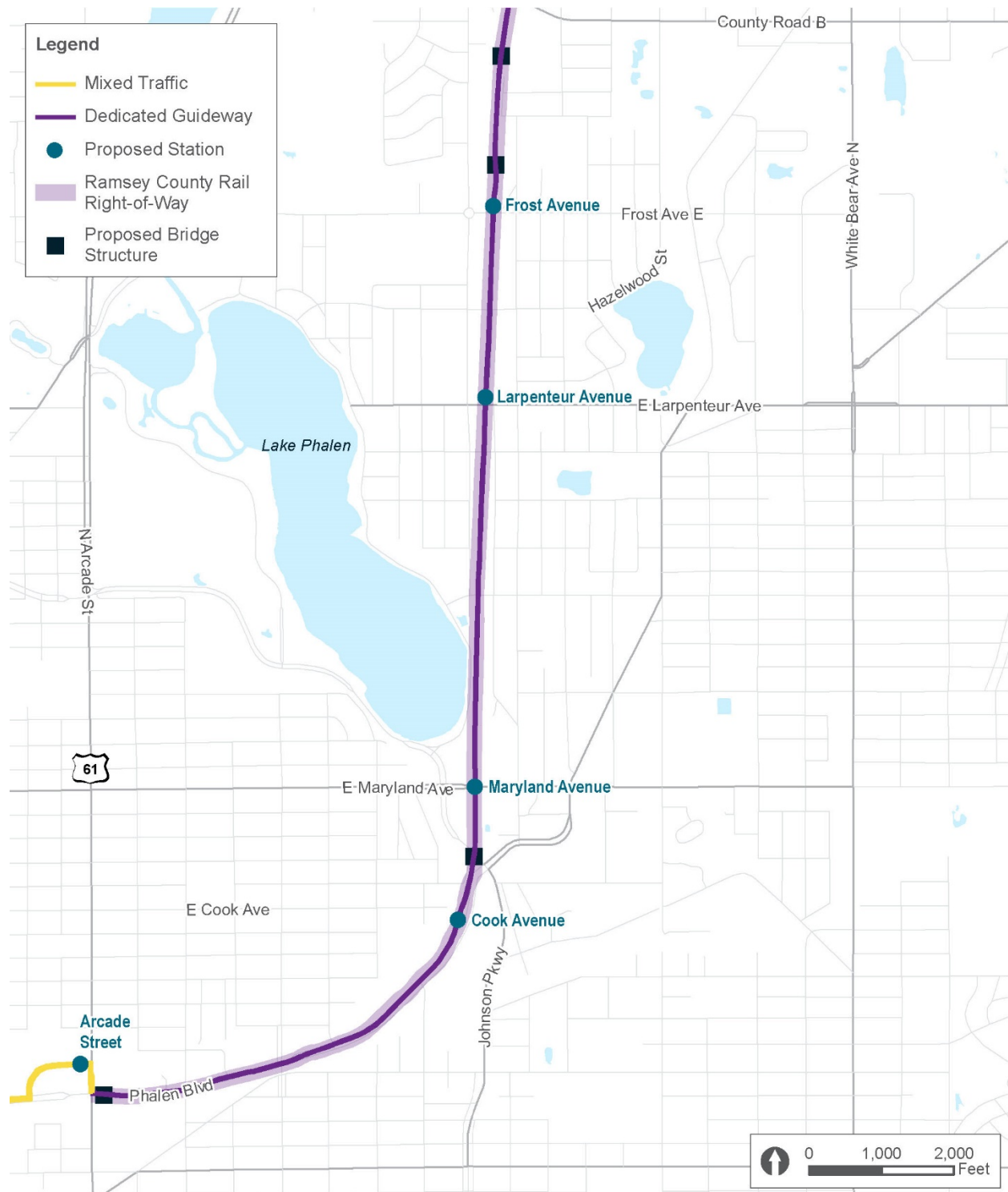


Figure 8: Operating Environment from County Road B to County Road E

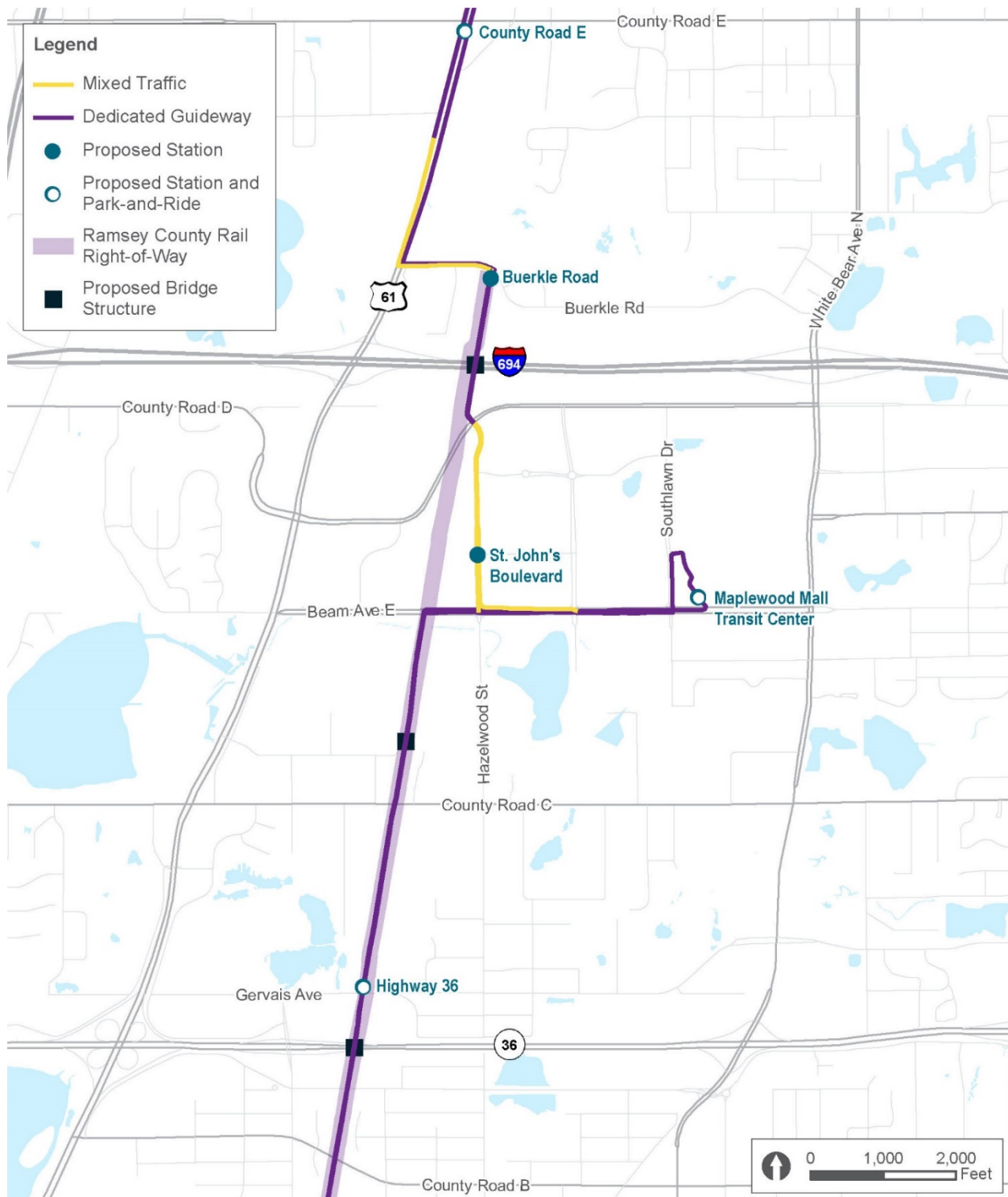


Figure 9: Operating Environment from County Road E to Downtown White Bear Lake

