

METRO Orange Line Bus Rapid Transit Project
Draft Environmental Benefits & Impacts

May 24, 2016



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A. Project Description

METRO Orange Line is a 17-mile planned highway BRT line between Minneapolis, Richfield, Bloomington, and Burnsville along I-35W. The planned guideway improvements, station locations, alignment, and adjacent parcels are detailed in *Appendix A-1: Station Aerial Maps* and *Appendix A-2: Station Area Parcel Maps*. The I-35W corridor is one of the most heavily used transit corridors in the region, with approximately 26 weekday routes and 14,000 daily transit riders. Orange Line's all-day, frequent, bidirectional service will complement existing local and express bus routes in the corridor, provide competitive running times for station-to-station trips, and offer a new option for reverse-commute and weekend markets. The project is expected to benefit existing users and attract new riders by improving transit facilities, access, service, and reliability on the I-35W corridor. Additionally, an identifiable, high-amenity brand will increase the visibility of transit and may leverage further service improvements. The continued improvement of station-to-station Orange Line service is justified by existing population and employment densities, high numbers of transit-dependent households, as measured by income and household car ownership, strong demand for existing bus service, and expected growth.

Purpose

- Connect people across the region to job centers, housing options, transit stations, and key destinations in the I-35W corridor and METRO system;
- Reduce significant delay for transit riders in the I-35W corridor;
- Better serve high-density, low-income, minority, and transit-dependent communities in the corridor by providing accessible, frequent, and reliable transit service;
- Complement and supplement existing transit service, especially for those traveling station to station, or in off-peak times or directions;
- Slow the growth of congestion by providing reliable and competitive transit options;
- Leverage past and concurrent roadway and bridge work in the corridor to reduce the overall costs and redundancies of all projects; and
- Foster compact, walkable development in the station areas.

Need

- Transit access to suburban jobs and opportunities along the I-35W corridor is limited. The Orange Line will improve access to 194,000 jobs and 115,000 residents, including 56,000 jobs and 81,000 residents outside of Downtown Minneapolis. This corridor contains 11.2 percent of the jobs within the seven-county metropolitan area, which is forecasted to continue growing in population and employment.
- There is significant delay in the I-35W corridor due to substandard facilities, and poor transit access to the Lake Street Station. As highway traffic has grown, buses weaving from the center-running managed lane to the shoulder to serve transit stops have become operationally unviable, presenting challenges for merging buses safely during peak hours. Effective in 2011, Metro Transit terminated service to the northbound Lake Street bus stop in the morning peak hours, and restricted non-peak service to drop-off only. The bus service restrictions are necessary until the current bus stop on I-35W at Lake Street is replaced by a center-running

station at Lake Street. Service to the Lake Street Station will greatly reduce the required running time on every route, and will positively impact recovery and reliability on every trip.

- Existing high-density, transit-dependent, low-income, and minority communities are not being served by quality, reliable transit service. Although the I-35W corridor is one of the region's most heavily-used transit corridors, the rider experience is often unsafe or inhospitable due to inadequate passenger facilities and, at some locations, a lack of accessibility. The affected communities are more diverse and of lower income than the region as a whole. There are concentrations of affordable housing, areas of low automobile ownership, areas of concentrated poverty, and significant minority populations in the Orange Line corridor (see demographic maps in *Appendix B*).
- There is a lack of station-to-station, off-peak, bidirectional service throughout the I-35W corridor. Ridership in the I-35W corridor is expected to grow from 14,000 to 26,500 daily riders by 2040.¹ However, most service in the corridor caters to traditional, peak-hour express bus commuters. There are few or no reliable transit options for those traveling during the midday, evening, and weekend periods, or in the reverse of commuter peak direction (from the urban core to suburban nodes), to reach their destinations.
- I-35W is Minnesota's most congested commuter highway, and has an annual average daily traffic (AADT) count of 211,000 at its busiest point (between Lake Street and 35th Street). This high demand creates several hours of congestion each day and significant delays for both people and freight. As part of the I-35W Transit/Access Project, the construction of a median station at Lake Street will remove bus weave movements in congestion and allow about 100 trips in the peak hour and 830 trips per day to provide service to Lake Street without a costly per-trip delay. In addition, it is anticipated that the upgraded Orange Line service will double the number of existing off-peak and reverse-commute trips, resulting in a significant increase in all-day access to regional transit service.
- There are significant prior and planned investments in transit station improvements, roadway and bridge work in the corridor. The Orange Line will build on incremental transit investments made over the past forty years to greatly improve access, reliability, and running time. Over \$200,000,000 of concurrent highway, bridge, local street, and pedestrian infrastructure is planned in the Minneapolis portion of the corridor, including the construction of an accessible median Lake Street Station, to which Orange Line will provide service. Other transit and highway planning, design, and environmental work in the corridor is being closely phased for maximum benefit and to minimize construction impacts to adjacent communities. Concurrent projects include the I-494/I-35W Interchange reconstruction, 66th Street redesign, and the future Minnesota River bridge reconstruction.
- The addition of METRO stations will greatly enhance areas of recent growth and redevelopment, and promote walkable, transit-oriented development. The Orange Line service and planned

¹ See *Appendix K: Orange Line Ridership Forecasts*. Consistent with the FTA Small Starts Guideway definition, ridership modeling predicts 26,500 linked rides benefiting from Orange Line stations or guideway. The existing ridership is based on 2013 average daily ridership on Orange Line corridor Metro Transit, MVTA, and Southwest routes. The 2040 ridership figure is based on SRF Consulting's regional modeling, attached in *Appendix K*.

station locations build on key redevelopment areas like the Penn American District in Bloomington (American Boulevard Station) and Heart of the City in Burnsville (Nicollet Ave & Highway 13). Shifts in the economy and changing market preferences present significant opportunities for walkable development that is integrated with frequent transit.

Guideway Improvements

The Orange Line alignment will use a combination of existing center-running highway managed lanes, bus-only shoulders, transit-only guideway, high-occupancy vehicle ramp bypass lanes, and short segments of operating in mixed traffic on local streets.

Table 1: Orange Line Guideway Distribution in Miles and Percent

Owner	Breakdown	Type	Breakdown	Status	Breakdown
Cities	4.6 miles, 13.1%	Mixed Traffic	9.7 miles, 28.0%	Existing	32.4 miles, 93.2%
Hennepin County	0.2 miles, 0.5%	Managed Lane	18.6 miles, 53.5%	Planned	2.4 miles, 6.8%
MnDOT	27.0 miles, 77.6%	Transit Only	6.4 miles, 18.5%		
Metro Transit	3.1 miles, 8.8%				



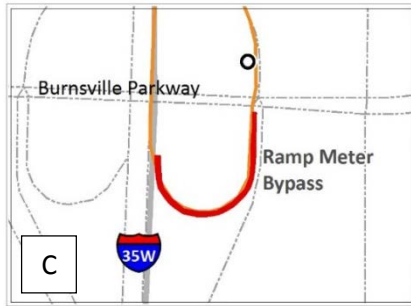
Planned guideway improvements are described below and concept designs are attached in *Appendix C*.

A. Knox Avenue Transitway. New right-of-way will be acquired by Metro Transit to establish a transit-only at-grade underpass along the alignment of Knox Avenue in the City of Bloomington between I-494 and the American Boulevard Station. This segment of the Orange Line project is referred to in this document as the “Knox Avenue Transitway.” The transitway will include two transit-only lanes and a trail for bicyclists and pedestrians. Two options for this alignment are described in *Social & Economic Impacts: Acquisitions & Relocations*. Excavation will be needed on the portion of the transitway that slopes to create an underpass beneath I-494. Concept designs and roadway markings for the alignment options are attached in *Appendix C*.



B. 12th Street Transit Ramp. The Orange Line project includes construction of a bidirectional transit-only ramp from Highway 65 onto 12th Street in Downtown Minneapolis. In combination with a new contraflow lane on 12th Street, this ramp will provide a seamless, reliable connection between the center of the freeway and the local street network, improving reliability for 700 bus trips per day and about 100 buses per hour in the peak periods. The ramp and 12th Street contraflow lane will be built entirely within existing MnDOT- and City of Minneapolis-owned right-of-way, and in close coordination with MnDOT’s I-35W Transit/Access project. Excavation will be needed to

lower the Highway 65 mainline and secure the piers of the 15th Street Bridge. Concept designs and roadway markings for the 12th Street Transit Ramp are attached in *Appendix C*.



C. Burnsville Parkway BRT Bypass. A single lane, bidirectional, transit-only bypass is planned at the Burnsville Parkway entrance ramp to I-35W. This enhancement will provide significant improvement in travel times for the northbound Orange Line in the morning peak period, when existing ramp meters cause congestion at this freeway entrance. No major excavation work will be needed, only minor grading on the existing shoulder. See *Appendix C* for the concept design.

D. Transit Signal Priority (corridor-wide). Transit Signal Priority (TSP) was studied at 34 possible locations where the Orange Line will intersect general purpose traffic. Signals identified for TSP will be modified to provide the necessary TSP detector, firmware, equipment, and signal controller. TSP recommendations are included in the Traffic Impact Study in *Appendix F*.

Upgraded Stations and Amenities

The Orange Line will have entirely off-board fare collection, with full ticket vending machines and fare validation pedestals at each station platform. Station platforms will be comprised of concrete, concrete curbs with concrete sidewalks, earth fill and yellow tactile strips with adjacent landscaping and grass.

Each station platform is proposed to include a pylon, with the exception of stations on 2nd Avenue in downtown Minneapolis which are proposed to have an Orange Line blade sign added to existing real-time information signage. Pylon design and dimensions are currently being explored as part of the station design process in summer 2016, taking into consideration station context and local zoning, lighting, and sign regulations. Options for these pylons include illuminated components, or real-time information housed within this infrastructure. For consideration of potential impacts in this process, a 12' x 22" x 8" illuminated pylon with real-time information is assumed, based on the design of Metro Transit's A Line standard BRT pylon shown on the right.



Station-specific maps, concepts, planned amenities, and local examples of similar improvements are shown in *Appendix O: Planned Station Improvements*. Current conditions and planned improvements at each station are described below:

Downtown Stations on Marquette Avenue (Minneapolis)

Concept and Location: Enhance four southbound stations on Marquette Avenue at South 3rd Street, South 5th Street, South 8th Street, and South 11th Street.

Current Condition: The existing Marquette Avenue “C Gate” bus stops were constructed as part of the federal Urban Partnership Agreement program in 2009. These at-grade bus stops have heated shelters and real-time time information, and currently serve southbound express bus routes operated by Minnesota Valley Transit Authority. The 8th Street bus stop has associated heated indoor waiting space with real-time information in the IDS Center lobby.

Planned Improvements: At each of the southbound stations on Marquette Avenue, a pylon, ticket vending machine, and fare card validator will be integrated into the existing bus stops. Downtown stations on Marquette are proposed to include a pylon, a ticket vending machine (69” x 17” x 11”), and a fare card validator (43” x 14” x 8”).

Downtown Stations on 2nd Avenue (Minneapolis)

Concept and Location: Enhance four existing northbound bus stops on 2nd Avenue at South 11th Street, South 8th Street, South 5th Street, and South 3rd Street.

Current Condition: The 2nd Avenue “E Gate” bus stops were constructed as part of the federal Urban Partnership Agreement program in 2009. These existing at-grade bus stops have heated shelters and real-time time information.

Planned Improvements: The northbound stations on 2nd Avenue will have minimal branding, as the stops will be used almost exclusively for alighting from the Orange Line. At these stations, branding will be incorporated through the addition of a blade sign (8” x 48” x 5”) into the existing real time sign or existing gate sign. Express buses will continue to share these gates with the Orange Line, similar to the existing operations with Route 535.

Lake Street Station (Minneapolis)

Concept and Location: Construct a new two-story freeway median transit station at I-35W and Lake Street, with environmental work and construction as part of the I-35W Transit/Access Project.

Current Condition: There is an existing southbound-only bus stop with shelter on the freeway shoulder. This shelter is protected from fast-moving freeway traffic by a concrete jersey barrier.

Planned Improvements: This new two-story median station will be served by BRT and express routes on a highway-level platform with direct MnPASS lane access and a bus passing lane in each direction.

Passengers will be able to connect to local routes and the Midtown Greenway on the lower, street level of the station.

Service to the Lake Street Station, but not the potential impacts of station construction, is evaluated in this environmental document. Potential impacts of Lake Street Station construction are disclosed under a separate environmental assessment prepared for the FHWA, as part of the I-35W Transit/Access Project, available at www.35lake.com.

46th Street Station (Minneapolis)

Concept and Location: Enhance an existing two-story freeway median transit station at I-35W and 46th Street.

Current Condition: The 46th Street Station was completed in 2009 as a part of the Crosstown Commons freeway reconstruction, and is already served by several weekday Metro Transit routes.

Planned Improvements: METRO Orange Line branding and ticket vending machines will be integrated inside this existing transit station.

66th Street Station (Richfield)

Concept and Location: At I-35W and 66th Street, replace an existing northbound I-35W off-ramp bus stop with a new northbound 80-foot Orange Line platform in the same location, and replace and relocate the southbound I-35W off-ramp bus stop with a new southbound Orange Line 80-foot platform on the I-35W on-ramp.

Current Conditions: Existing northbound bus stop south of 66th Street with a standard shelter, and existing southbound bus stop north of 66th Street with a standard shelter.

Planned Improvements: These stops will be upgraded and replaced by 80-foot Orange Line platforms that fit the existing residential character and space constraints within the freeway right-of-way and noise walls. New station amenities will include substantial shelters and canopies with push-button heat, light, real-time information, bicycle parking, trash receptacles, benches and lean rails, ticket vending machines and fare card validators, and a



pylon branding the station. The platforms will be constructed with a 9-inch curb to reduce the vertical step gap for riders boarding buses.

The design and construction of the 66th Street Station platforms is being coordinated with Hennepin County's 2016 reconstruction of 66th Street.

76th Street Station (Richfield)

Concept and Location: On Knox Avenue, between 76th Street and I-494, relocate and replace existing on-street bus stops with northbound and southbound Orange Line platforms.

Current Conditions: Existing bus stops on Knox Avenue south of 76th Street, and a bus stop with standard shelter at the Knox Avenue park-and-ride cul-de-sac.

Planned Improvements: These stops will be upgraded and replaced by 120-foot Orange Line platforms that fit the existing mix of land uses on Knox Avenue. New station amenities will include substantial shelters and canopies with push-button heat, light, real-time information, bicycle parking, trash receptacles, benches and lean rails, ticket vending machines and fare card validators, and a pylon branding the station. The platforms will be constructed with a 9" curb to reduce the vertical step gap for riders boarding buses. This station will be located a short walk from the existing Metro Transit Knox Avenue park-and-ride facility.

American Boulevard Station (Bloomington)

Concept and Location: On Knox Avenue at American Boulevard, relocate and replace existing on-street bus stops with northbound and southbound Orange Line platforms.

Current Conditions: Existing bus stops on Knox Avenue just north of American Boulevard, and on American Boulevard just west of Knox Avenue.

Planned Improvements: These stops will be upgraded and replaced by 120-foot Orange Line platforms on Knox Avenue that fit the existing and planned mix of land uses in this area. Southbound, options for the platform being north or south of American Boulevard are being studied, considering traffic impacts, transit signal priority, pedestrian safety, and local bus transfers. New station amenities will include substantial shelters and canopies with push-button heat, light, real-time information, bicycle parking, trash receptacles, benches and lean rails, ticket vending machines and fare card validators, and a pylon branding the station. The platforms will be constructed with a 9" curb to reduce the vertical step gap for riders boarding buses. At this station, local buses may share the station platforms to facilitate transfers to and from the Orange Line.

98th Street Station (Bloomington)

Concept and Location: Construct two new Orange Line platforms on the I-35W exit ramp frontage road, between West 99th Street and West 98th Street, adjacent to the existing South Bloomington Transit Center.

Current Conditions: South Bloomington Transit Center is a popular bus transfer hub and 200-space park-and-ride surface lot. The site of the future platforms is currently a roadside drainage ditch with light vegetation and a chain-link fence separating the ditch from the boarding gates of the transit center.

Planned Improvements: 80-foot northbound and southbound platforms will be constructed adjacent to the existing transit center, along with a pedestrian connections between the existing gates, parking area, and Orange Line platforms. The station will include substantial shelters and canopies with push-button heat, light, real-time information, bicycle parking, trash receptacles, benches and lean rails, ticket vending machines and fare card validators, and a pylon branding the station. The platforms will be constructed with a 9-inch curb to reduce the vertical step gap for riders boarding buses.

Nicollet Avenue Station (Burnsville)

Concept and Location: Construct one new Orange Line platform on the southwest quadrant of Nicollet Avenue and Highway 13.

Current Conditions: The Nicollet Avenue and Highway 13 site is a vacant surface parking lot with a MnDOT limited-use permit that restricts it to be used only for transit purposes, making it undevelopable for other land uses. There are no existing bus stops on the site; local bus stops on Nicollet Avenue will remain in place.

Planned Improvements: One 120-foot center platform will be constructed along with pedestrian connections to connect to the local street network and nearby existing municipal parking ramp. The station will include substantial shelters and canopies with push-button heat, light, real-time information, bicycle parking, trash receptacles, benches and lean rails, ticket vending machines and fare card validators, and a pylon branding the station. The platform will be constructed with a 9-inch curb to reduce the vertical step gap for riders boarding buses. This location will serve as the southern terminus and layover for the Orange Line. Parking is available at an existing municipal ramp, adjacent to the planned station. Additional space on the site will be prioritized for maintenance vehicle parking, ADA parking, and a kiss-and-ride drop-off space. Local buses and paratransit vehicles will be able to utilize one side of the platform to facilitate transfers to the Orange Line.

Burnsville Parkway Station (Burnsville)

Concept and Location: Construct one new northbound-only Orange Line platform on Travelers Trail north of Burnsville Parkway.

Current Conditions: This site is in existing right-of-way and is currently undeveloped. There are no existing bus stops on the site.

Planned Improvements: One 80-foot platform and associated sidewalks will be constructed adjacent to Travelers Trail on the northwest quadrant of the intersection. The station will include substantial shelters and canopies with push-button heat, light, real-time information, bicycle parking, trash receptacles, benches and lean rails, ticket vending machines and fare card validators, and a pylon

branding the station. The platform will be constructed with a 9-inch curb to reduce the vertical step gap for riders boarding buses.

Enhanced Service and Technology

The Orange Line will provide 10-minute peak frequency and 15-minute off-peak and weekend frequency. Service will operate 20 hours per day, seven days a week. Orange Line service will upgrade and replace existing Route 535 which provides 30-minute frequency and operates 18 hours per day on weekdays. The Orange Line will build on previous technology infrastructure investments along the corridor, such as next-bus arrival information currently available on monitors and annunciators at the Downtown Minneapolis station locations, the 46th Street Station, and the South Bloomington Transit Center. Visual and audio real-time information will be added at all remaining Orange Line platforms.

Branding and Fleet

Orange Line vehicles, signage, wayfinding, and station platforms will include the regional METRO branding. Exterior design and color scheme will be consistent with METRO Red, Blue, and Green Lines, which are easily distinguishable from local and express routes serving those stations.

The Orange Line will use ten sixty-foot, three-door, articulated BRT buses. Twelve buses will be purchased to provide two spares for this unique subfleet. Boarding will be allowed through all doors.

B. Social & Economic Considerations

Community Resources

This Orange Line corridor includes parts of Downtown and South Minneapolis, along with the suburban cities of Richfield, Bloomington, and Burnsville. There are approximately 195,100 individuals living within one half mile of the project (see map in *Appendix B: Corridor Environmental Justice Maps*). Median household income in the project area is \$48,924. Of the total project area population, 18% percent are living with an income below the poverty level (see map of percent below poverty level in *Appendix B*).

As a fully-developed urban area, the Orange Line project area contains many community resources, as well as the parks and recreation centers noted in Part P. The corridor is also lined with commercial nodes. Table 2 identifies community resources proximate to Orange Line station areas, within ½ mile from a station.

The Orange Line project will construct new dedicated stations and guideway in what are already heavily traveled, automobile-oriented areas. The majority of the project will be constructed within existing right-of-way, and thus the proposed project will not affect, separate, or isolate any neighborhoods or communities along the corridor, nor will it result in negative impacts to community resources.

Table 2: Community Facilities in Orange Line Station Areas

Station	Existing Community Facilities
Downtown	Hennepin County Medical Center, People Serving People, Hennepin County Public Safety, Minneapolis City Hall, Hennepin County Government Center, House of Charity, United States District Court, Family Justice Center, Minneapolis Central Library, Meet Minneapolis, Social Security Administration Center, Commuter Connections, Hennepin Center for the Arts, Cowles Center, New Century Theater, The Art Institutes International Minnesota, The FAIR School, University of Saint Thomas, Minnesota Orchestra, Minneapolis Community and Technical College, YWCA, Catholic Charities, Historic Wesley Center, Minneapolis Downtown Improvement District, Downtown Council
Lake Street	Cristo Rey Jesuit High School, Whittier Clinic- Hennepin County Medical Center, Nicollet Garage-Metro Transit, Minneapolis Police Department- 5th Precinct, United States Post Office- Lake Street Station, Harriet Tubman Center
46 th Street	Field Community School, McKnight Early Childhood Family Development Center, Ramsey Middle School, Washburn High School
66 th Street	United States Post Office- Richfield Station
76 th Street	Richfield Middle School, South Education Center, Loaves and Fishes Too
American Boulevard	Knox Landing Senior Center
98 th Street	Volunteers Enlisted to Assist People, Nativity of Mary School, Fairview Urgent Care – Bloomington
Nicollet Avenue & Burnsville Parkway	Ames Center, Diamondhead Community Education Center, Burnsville Transit Station

Orange Line service is intended to help residents connect to community resources. Transit access to community resources will be positively impacted by the Orange Line’s enhanced transit service and facilities. Project facilities and service will improve the transit experience for communities along the

corridor, and better connect people to shopping, employment, education, and recreation opportunities throughout the corridor. The further identification of community assets and resources will be an outreach focus and will shape service planning in 2017 and 2018.

The Orange Line project will allow people to use transit throughout the day. The project will increase frequency and span of transit service in the corridor, particularly on evenings and weekends. With 10-minute peak, and 15-minute off peak frequency, the Orange Line will become the primary transit service in the corridor, connecting Downtown and South Minneapolis and three suburban cities.

Orange Line service will replace the Limited-Stop Route 535, although the route will terminate in Burnsville instead of at Normandale Community College (NCC) in Bloomington. However Orange Line service will enhance the overall frequency and reliability of service to NCC with improved transfer opportunities at 76th Street and 98th Street Stations. According to Metro Transit ridership data from August 2015, 89% of existing daily 535 boardings are located within ½ mile of a future Orange Line station. The remaining 11% of existing 535 boardings will be directly on a planned local route that connects to the Orange Line. The distribution of 535 boardings in relation to Orange Line service and planned connecting local routes is illustrated in “Existing Route 535 Boardings with Planned Routes” in *Appendix B: Corridor Environmental Justice Maps*.

Public Parkland and Recreation Areas

The Orange Line will issue no temporary or constructive impacts on parkland. The Orange Line crosses Minnehaha Creek and the Minnesota River on existing I-35W bridges. No bridge modifications or local, state, or federal approvals are needed for transit to use these highway bridges. The Orange Line would enhance opportunities for transit riders to access regional parkland. Table 3 shows park and recreation areas near Orange Line stations, and *Appendix A-5: Station Area Park Maps* includes maps of the 4(f) properties within a quarter-mile of each proposed station location and guideway improvement.

Table 3: Park and Recreation Areas

Station area	Resource Name	Address	Approximate distance from nearest station or guideway improvement
Downtown	Franklin Steele Square	1601 5 th Ave S Minneapolis, MN 55404	215 ft from nearest edge of planned 12 th Street Transit Ramp, 2,000 ft from nearest station
Downtown	Cedar Lake Trail		1,000 ft from nearest station
66 th St	Richfield Lake Park	6400 Dupont Ave S, Richfield, MN 55423	900 ft from nearest station
66 th St	Monroe Park	6710 Irving Ave S, Richfield, MN 55423	1,300 ft from nearest station
66 th St	Wood Lake Nature Center	6710 Lake Shore Drive, Richfield, MN 55423	800 ft from nearest station
76 th St	Donaldson Park	7434 Humboldt Ave S, Richfield, MN 55423	770 ft from nearest station
Nicollet Ave & Highway 13	Nicollet Commons Park	12550 Nicollet Ave, Burnsville, MN 55337	800 ft from nearest station

Historic Resources

FTA initiated Section 106 consultation with the Minnesota State Historic Preservation Office (SHPO) via correspondence dated January 29, 2015. On February 23, 2016, FTA sent invitations to potential Section 106 consulting parties, including the Minneapolis Heritage Preservation Commission (HPC), the Cities of Richfield, Bloomington, and Burnsville, tribal organizations, and the Richfield and Burnsville Historical Society. Minneapolis HPC accepted in March 2016. The Upper Sioux Community Tribal Historic Preservation Office provided written correspondence requesting that, “in the event that the ground disturbance of this project inadvertently uncovers any human remains, funerary objects or artifacts that we are notified immediately” (*Appendix H*).

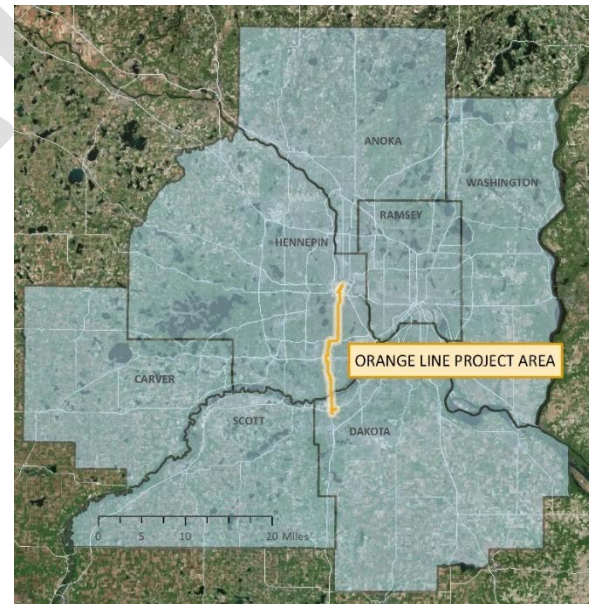
In correspondence dated January 11, 2016, FTA provided its area of potential effects (APE) determination for the project to the SHPO. The APE was delineated to assess direct and indirect effects to historic properties within the project area. The APE encompasses the area within and around the project construction limits to account for visual effects on nearby properties. Detailed maps of the draft APE and relevant correspondence are included in *Appendix I*. The State Historic Preservation Office concurred with the APE in a letter dated February 18, 2016. The full study of historic resources is expected to be completed in the summer of 2016.

Environmental Justice

Identification of Minority and Low-Income Populations

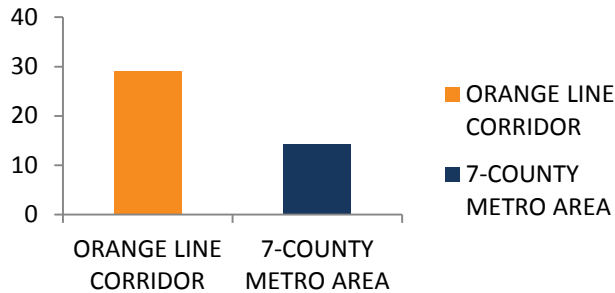
Per FTA guidelines, minorities are people who are American Indian and Alaska Native, Asian, Black, or African American, Native Hawaiian and other Pacific Islander, and/or Hispanic or Latino. A low-income person is one whose median household income is at or below the Department of Health and Human Services poverty guidelines. Because nearly all potential benefits and impacts of the Orange Line project will occur in station areas, the half mile area around each station was considered the study area for the environmental justice analysis. Minority and low-income populations in the study area were mapped using census tract data. These maps are available in *Appendix B*.

To identify minority and low-income populations, the population within a half mile of proposed Orange Line stations is compared to the population of the seven-county Twin Cities metro area.

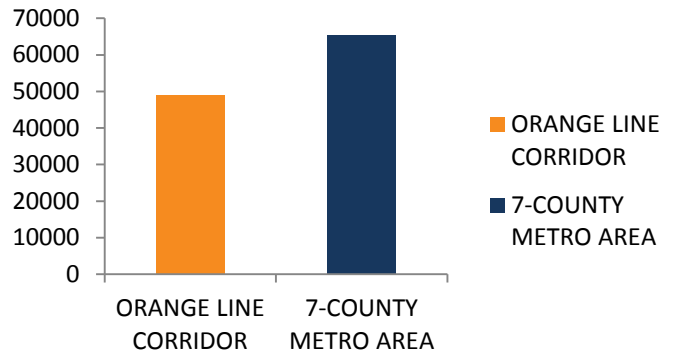


PROJECT CORRIDOR & METRO AREA DEMOGRAPHIC COMPARISON

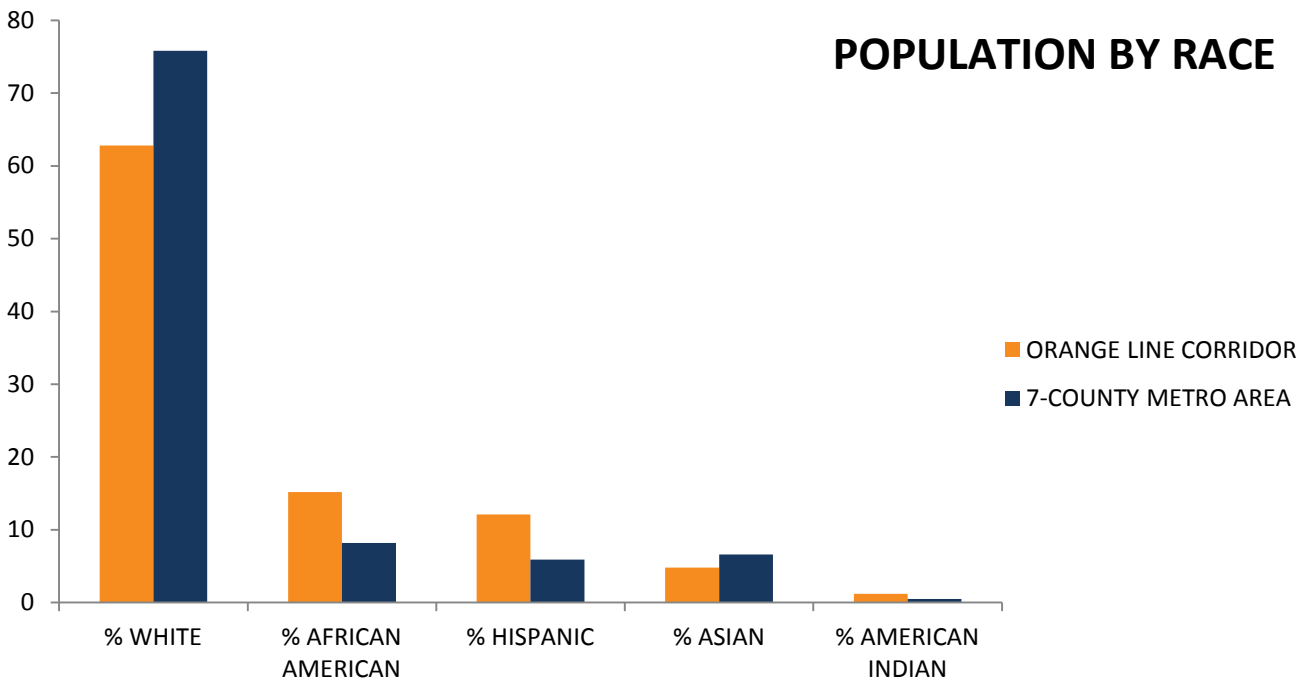
% OF POPULATION WITH INCOME 0-150% OF POVERTY THRESHOLD



MEDIAN HOUSEHOLD INCOME



POPULATION BY RACE



*Native Hawaiian and other Pacific Islander population is not shown as it equals .0001% of the project corridor population

Engagement with Environmental Justice Populations

The Orange Line connects a long, disjointed corridor that includes many cities and communities. Since the stations are centered along an interstate, they act as connection points and are not necessarily destinations. In response to this geography, the Orange Line outreach strategy is to engage the impacted populations in existing community spaces. Outreach events have been distributed across the

corridor, around station areas and in nearby community spaces. Outreach is often conducted at local meetings, and in conjunction with separate, but relevant, local projects.

Metro Transit on-board rider surveys consistently indicate that bus riders in the Twin Cities are more likely to be people of color and are more likely to report low incomes than the region as a whole. In order to engage bus riders, a traditionally hard-to-reach group of people, staff has engaged directly with riders waiting at high-volume bus stops along the Orange Line corridor, and on-board the existing Route 535.

There are notable Spanish and Somali speaking populations in the Orange Line corridor. In order to engage these groups, the Orange Line brochure and website are available in Spanish, Somali, and Hmong. In addition, Metro Transit provides live transit information to customers over the phone in 170 languages.

Metro Transit conducted two surveys, in 2013 and 2015, to solicit public input on planning decisions, and collect data on rider origins, destinations, and transfers. These surveys were distributed on-board Route 535 and on the internet. On-board surveys are a form of outreach that allows Metro Transit to conduct corridor-wide engagement, and access the dispersed population of potential Orange Line riders.

The project's 2016 Public Engagement Plan (PEP) (*Appendix G*), an update to the project's 2014 PEP, outlines how the Orange Line Project Team will engage and educate the public, policymakers, stakeholder groups, and Metro Transit staff during design and implementation of the Orange Line project. The PEP has a special engagement focus on communities, such as low-income and minority populations, that are traditionally under-represented in transit planning processes. Because the large corridor is diverse and varied, engagement and outreach is tailored to each station area. The PEP aims to create long-lasting relationships with the public, build the capacity of existing community organizations, and strive for partnerships between Metro Transit and engaged stakeholders. Each stage of the project has clear goals and objectives for community engagement and public involvement.

Benefits and Impacts to Environmental Justice Populations

The construction and operation of the Orange Line will not result in substantial impacts to any populations within the project area. Because the Orange Line project does not have any substantial impacts, there is no potential for a disproportionate impact on EJ populations.

As is indicated by these charts and the demographic maps in *Appendix B*, Orange Line corridor residents are more racially diverse, more dependent on transit and have a lower median income than the region's average resident. The Orange Line will link existing populations and employment densities, provide access to critical transit connections, and serve areas of expected growth. These benefits emphasize serving low-income and minority populations through creating stronger regional linkages and expanding opportunities for transit-dependent riders.

For example, the Lake Street Station area has the highest residential density in the Orange Line corridor and has a more diverse and transit-dependent population than the overall seven-county metro. Within a half-mile radius of the station area the population is 46 percent transit dependent, 73 percent minority,

and 14 percent low-income. Orange Line service will connect Lake Street area residents to jobs, opportunities, and community resources in Richfield, Bloomington, and Burnsville, and throughout the wider transit system. The Orange Line will introduce frequent and reliable weekend and off-peak service and bring a significant upgrade in transit service to the Lake Street station area. The Lake Street Station will offer connections to many local and express routes and will provide access to the METRO system for transit riders from around Minneapolis.

Acquisitions and Relocations

The Orange Line project will not result in any commercial or residential relocations. All acquisitions will be minor partial property takes in commercial areas and will not disproportionately affect low-income or minority residents.

Construction

All reasonable and feasible practices to minimize noise, vibration, dust, and erosion will be employed. Construction impacts are anticipated to occur mostly in commercial and already-disturbed areas with high ambient noise levels. Construction impacts are not anticipated to disproportionately affect EJ populations.

Transit Service

Stations will replace existing Route 535 stops or be relocated to maximize access to destinations. There will be two changes to service, the end of direct service from Downtown Minneapolis to Normandale Community College and the existing service on Penn Avenue between 76th and 82nd Street. Service to Normandale College will be enhanced with more frequent service and two possible transfer points along the Orange Line route, and the service restructuring around the 76th Street and American Boulevard Stations will maximize ridership potential in the area. The benefits and minor impacts of these changes will be distributed on customers throughout the corridor, and will not be borne disproportionately by EJ populations. If the future Orange Line service planning process constitutes a major service change, Metro Transit will conduct a Title VI service equity analysis to identify any potential adverse impacts. The Orange Line fare will be identical to the regional fare, and any proposed fare change must be brought to the Metropolitan Council for decision.

Land Use and Zoning

The areas served by the current Route 535 and future Orange Line are primarily commercial and residential. Planned zoning in these areas promotes higher-density and mixed-use development, and would intensify the existing commercial and residential land uses. The proposed project is consistent with current uses, and Orange Line will support and encourage additional ridership as these areas accommodate increased density. The size and nature of planned stations are compatible with the existing and permitted use of adjacent property. The Orange Line project will not require land use or zoning changes to surrounding parcels, as it will operate entirely in existing right-of-way and is primarily adjacent to parcels zoned for commercial and industrial uses. All station areas are currently served by some level of transit.

The existing land uses and zoning, and planned 2040 land uses within a half-mile of each station are depicted in *Appendix A-3: Corridor Land Use & Zoning Maps* and *Appendix A-4: Station Area Zoning Maps*.

Traffic

An arterial traffic impact study was completed to assess the potential impacts on general purpose traffic and parking at key arterial intersections with the implementation of the Orange Line BRT. Key arterial intersections were identified around the proposed station locations and grouped together for analysis purposes based on the jurisdictional review agencies and connectivity of the intersections. The existing 46th Street Station and the proposed Lake Street Station were excluded from this analysis since the 46th Street Station does not impact arterial intersections and the Lake Street Station impacts are being documented under a separate project.

Existing, No Build, Build, and Build with TSP modeling results for Opening Year (Year 2019) and Year 2040 were analyzed using PTV Vissim microsimulation to determine locations where the addition of the Orange Line BRT is expected to impact general purpose traffic.

Additional analyses were performed to compare the potential traffic impacts of the direct and curved Knox Avenue Transitway alignments, and to compare the potential impacts of a nearside or farside station on the southbound approach of the Knox Avenue/American Boulevard intersection. The analysis included additional trips generated by adding Orange Line service to existing park-and-rides.

The results of the traffic operations analysis are summarized below and further described in the *Traffic Impact Study* included in *Appendix F*.

- Implementation of the Orange Line BRT is not expected to have any major impacts to general purpose traffic at the analysis intersections.
- The existing intersections have adequate capacity to accommodate increased bus service and background traffic growth. Increasing development in the American Boulevard and Knox Avenue areas may lead to unacceptable future operations based on overall average delay per vehicle at two unsignalized intersections. These impacts are caused by increased vehicular traffic due to general traffic background growth on Knox Avenue and not as a result of the implementation of the Orange Line BRT.
- The Orange Line BRT can use existing and future transportation facilities with minimal operational impacts.
 - To ensure minimal operational impacts, the 66th Street southbound exit ramp will be restriped to a shared left-turn/through lane and separate right-turn lane. This will better balance lane utilization, provide better ramp alignment with the far-side station, and minimize BRT delay. This improvement will not cause additional impacts to general purpose traffic.
- The 12th Street Transit Ramp option will provide a transit-only connection between 12th Street and highway managed lanes on I-35W. This connection will improve the reliability of the bus service.

- With the addition of a westbound bus-only lane along 12th Street between I-35W and 2nd Avenue, the removal of 15 parking spaces on the north side of 12th Street is necessary. This improvement will decrease the number of eastbound lanes from three to two, but will cause minimum increases in average delay per vehicle (less than two second of delay per vehicle) along 12th Street. Parking loss mitigation is not needed due to the large volume of on-street, surface lot, and structured parking in this area.
- The Knox Avenue Transitway Direct Alignment provides a minimal reduction of five to thirty seconds in transit travel time, between the 76th Street and American Boulevard Stations, when compared to the Curved Alignment 2B (*Appendix C*). Option 2A has similar travel and traffic impacts to option 2B.
- Analysis of the southbound station location at the Knox Avenue/American Boulevard intersection showed there is expected to be minimal operational differences between the nearside and farside station locations. Additional safety and design considerations are needed for a recommendation, which will be vetted through the design development process. Impacts to general purpose traffic are minimal regardless of the station location.
- Use of the existing bus-only shoulder is recommended for eastbound Highway 13 between I-35W and Nicollet Avenue to bypass queuing that may occur at the Highway 13 and Nicollet Avenue intersection.
- TSP is expected to provide a significant benefit for BRT, particularly at the intersections where the BRT is on the minor approach. With the implementation of TSP at the locations outlined in *Appendix F: Traffic Impact Study*, BRT travel times can be decreased by 5 to 7 minutes along the entire corridor. Allowing the Orange Line to use TSP is expected to cause a minimal increase in total intersection delay, but will still preserve acceptable levels of service.

Acquisitions and Relocations

The project will only require acquisition of private right-of-way along the Knox Avenue Transitway in Richfield and Bloomington. No relocations are anticipated as a result of this acquisition.

12th Street Transit Ramp (Downtown Minneapolis)

Depending on the layout, construction of the 12th Street Transit Ramp may require 0.17 acres of temporary easement for construction purposes from property owned by First Global LLC (Hilton Garden Inn Hotel). The temporary easement will not affect access to the hotel for vehicles, deliveries, or pedestrians. See Table 5 and the 12th Street Transit Ramp concept design in *Appendix C* for details.

Knox Avenue Transitway (Richfield and Bloomington)

As part of the Orange Line project, a planned transit underpass will run below I-494 to connect Knox Avenue between the two cities. Dedicated guideway along Knox Avenue will allow the Orange Line to pass through seven fewer traffic signals, resulting in a time savings of 38 percent for each Orange Line trip. This significant time savings also reduces the necessary peak-hour fleet by at least one bus, creating daily operations savings.

Knox Avenue is a public street in Richfield north of I-494, and in Bloomington south of American Boulevard. However, the alignment of Knox Avenue between I-494 and American Boulevard was never

platted, and is a privately-owned service drive for the Southtown shopping center. Metro Transit currently operates transit on this service drive to reach bus stops within the property.

Since 2013, Metro Transit has worked with property owner Kraus Anderson to minimize Orange Line property and access impacts to existing and future development. As a result, there are currently two proposed alignments for the Knox Avenue Transitway, referred to as the direct alignment and the curved alignment. By working closely with all potentially affected property owners during design, Metro Transit hopes to minimize property impacts and the number of affected property owners.

Knox Avenue Option 1 (Direct Alignment)

The direct alignment was proposed by Metro Transit as the shortest and fastest path to connect Knox Avenue under I-494, and reduce the amount of right-of-way needed and number of properties impacted (see concept design in *Appendix C: Station Concept Designs*). North of I-494, the direct alignment will require permanent right-of-way acquisitions of less than 0.05 acres from three private property owners: Steven Operating, Inc (multifamily apartment building); CP Gal Ritchfield, LLC (retail store); and Best Buy (corporate offices), as well as approximately 0.2 acres of public land owned by the City of Richfield and currently used as a park-and-ride lot. These private property acquisitions are slivers of land along Knox Avenue, and will not affect access to these properties, nor the function of the businesses.

South of I-494, the direct alignment would require permanent acquisition of parts of three properties owned by Kraus-Anderson Inc. Because these three properties are contiguous, Kraus-Anderson has stated that the direct alignment would restrict access to their properties and compromise their redevelopment plans. In a letter dated May 29, 2014, Kraus Anderson raised the following concerns with the proposed direct alignment.

The proposed direct alignment will require a broad right-of-way through the Southtown property, effectively splitting the property into two disconnected sections. Running the right-of-way directly through the Southtown Complex would leave portions of the property east of the proposed right-of-way with limited access. Maintaining viable development on the economic remnants that would result would be difficult, if not impossible. The damages of a partial taking go well beyond the loss of the land itself. There would likely be a loss in value to the remaining improvements, temporary construction related damages, or the improvements may become obsolete depending on the scope and nature of the taking. Moreover, approving the proposed alignment would discourage any future investment or upkeep in the existing properties because of the looming threat of construction that would be years in the future. The Knox Avenue alignment would create irreparable damage to the Southtown complex, and leave the remainder of the property as an uneconomic remnant.

This correspondence is attached in *Appendix L: Acquisitions & Relocations*. The proposed direct alignment would reconfigure business access and surface parking spaces, change pedestrian and vehicle circulation within the Southtown complex, change the shape and size of the property's development pads, and require the relocation of a major water line. A summary of potential acquisitions and

temporary easements is shown below in Table 6. To reduce these identified impacts, Metro Transit developed a curved alignment option, discussed below.

Knox Avenue Option 2 (Curved Alignment)

Kraus-Anderson proposed a curved alignment to mitigate potential impacts to their future development plans. Metro Transit incorporated this recommendation into an alternative Knox Avenue alignment that retains the contiguity of the Kraus-Anderson-owned parcels, and removes impacts from previous curved alignment designs: it does not require acquisition from the adjacent property owner, Lupient Chevrolet, and avoids the relocation of Lucky’s 13 Pub. The concept design is attached in *Appendix C*. The curved alignment requires acquisition of approximately 0.5 acres of additional right-of-way compared to the direct alignment. The impacts of this alignment include an additional ten seconds of travel time for the Orange Line, the reconfiguration of business access and surface parking spaces, changes to pedestrian and vehicle circulation within the Southtown complex, and changes to the shape and size of the property’s development pads. See Table 7 for the summary of potential acquisitions and temporary easements under the curved alignment option.

American Boulevard Station

Two options are under consideration for the southbound American Boulevard station location. Option one is on the northwest corner of the Knox Avenue/American Boulevard intersection. Option two is on the southwest corner of the intersection. All right-of-way acquisition for both the direct and curved alignments shown in Tables 6 and 7 reflect a station location on the north side of the intersection. If the station were on the south side of the intersection, the property needed for station construction would be provided by the dedication of a transportation easement by the property owner, the Bloomington Housing and Redevelopment Authority. This would reduce permanent right-of-way acquired by approximately 0.09 acres and temporary easements would be reduced by 0.07 acres.

Table 5: Potential Property Acquisitions –12th Street Transit Ramp

Property Owner	Address	Property Type	Acquisition Type (partial/full)	Temporarily Needed Acres	Permanently Needed Acres	Relocations
First Global LLC	1101 4 th Avenue S	Private: commercial	partial	0.16	0	0
TOTAL				.016	0	0

Source: Hennepin County Parcel Data, 2015; HNTB Corporation, 2016; SRF Consulting Group, 2016

Table 6: Potential Property Acquisitions –Knox Avenue Direct Alignment

Property Owner	Address	Property Type	Acquisition Type (partial/full)	Temporarily Needed Acres	Permanently Needed Acres	Relocations
Best Buy Co. Inc.	7601 Penn Avenue S	Private: commercial	partial	0.41	0.30	0
Steven Operating Inc Et Al	7601 Knox Avenue S	Private: non-homestead residential	partial	0.06	0.01	0
Cp Gal Ritchfield LLC	1700 78 th Street W	Private: commercial	partial	0.44	0.03	0
City of Richfield	N/A	Public: commercial	partial	0.30	0.56	0
Kraus-Anderson Inc	7803 Penn Avenue S	Private: commercial	partial	0.89	0.69	0
Kraus-Anderson Inc	1800 American Blvd W	Private: commercial	partial	1.51	0.97	0
Kraus-Anderson Inc	1750 American Blvd W	Private: commercial	partial	0.24	0.51	0
Bloomington Southtown Properties	1601 Southtown Dr	Private: commercial	partial	0.05	0	0
Bloomington Southtown Properties	1700 American Blvd W	Private: commercial	partial	0.10	0	0
TOTAL				4.00	3.07	0

Source: Hennepin County Parcel Data, 2015; HNTB Corporation, 2016; SRF Consulting Group, 2016

Table 7: Potential Property Acquisitions –Knox Avenue Curved Alignment

Property Owner	Address	Property Type	Acquisition Type (partial/full)	Temporarily Needed Acres	Permanently Needed Acres	Relocations
Best Buy Co. Inc.	7601 Penn Avenue S	Private: commercial	partial	0.39	0.30	0
Steven Operating Inc Et Al	7601 Knox Avenue S	Private: non-homestead residential	partial	0.05	0.01	0
Cp Gal Ritchfield LLC	1700 78 th Street W	Private: commercial	partial	0.46	0.05	0
City of Richfield	N/A	Public: commercial	partial	0.26	0.19	0
Kraus-Anderson Inc	7803 Penn Avenue S	Private: commercial	partial	0.61	1.13	0
Kraus-Anderson Inc	1800 American Blvd W	Private: commercial	partial	0.48	0.16	0
Kraus- Anderson Inc	1750 American Blvd W	Private: commercial	partial	0.32	0.38	0
Bloomington Southtown Properties	1700 American Blvd W	Private: commercial	partial	0.01	0.00	0
TOTAL				2.58	2.22	0

Source: Hennepin County Parcel Data, 2015; HNTB Corporation, 2016; SRF Consulting Group, 2016

Safety and Security

Orange Line stations will be designed to provide safe and secure use of the sites. The current level of station planning has emphasized planning and design for pedestrian safety, and personal safety and security. This includes the decision to construct several offline stations in more visible commercial areas that are intended to maximize pedestrian safety and facilitate walk-up rides, rather than pursuing more isolated, online stations in the middle of the highway.

The project office will incorporate “Crime Prevention Through Environmental Design” (CPTED) strategies in the design and planning phases to provide safety and security to Orange Line riders and station users. The CPTED industry strategies include natural surveillance, natural access control, territoriality, activity support, and maintenance.

Natural surveillance is described as “see and be seen,” and is enhanced by maximum visibility. This will be implemented at Orange Line stations through adequate lighting, working with each city to coordinate station design and adjacent development, and an increased sense of observation with surveillance and cameras. Ongoing surveillance, clear signage, and Orange Line station branding is anticipated to create natural access control. Territoriality and activity support will occur through creating designated, semi-enclosed transit stations. These stations are a significant upgrade from the standard bus stop which does not differentiate from the street and general public space. Finally, daily maintenance will be a priority to ensure that these stations are clean, comfortable, and functional spaces. This standard will be implemented through a LRT-level maintenance plan.

The following specific measures will be taken at these stations:

Environmental / Physical Design Strategies

- Lighting will be installed throughout transit waiting areas to increase visibility.
- Signage, lighting, and distinct paving material will be used to delineate transit waiting zones as opposed to adjacent restricted or private areas.
- Transit station shelters will be designed to be open and transparent, avoiding dark, isolated compartments.
- Security cameras will be deployed at every station, they function both as a passive (detering) strategy and an active way to monitor sites.
- Snow and ice will be removed promptly to minimize slipping hazards for transit customers and pedestrians walking through the station areas.
- Materials and features at the stations will be durable and well-maintained to communicate that the area is under surveillance and consistent care.

Active Surveillance Strategies

- Metro Transit and local police will continue to provide active surveillance and monitoring at these stations, as they currently do.
- Fare inspection will be conducted at random on vehicles by Metro Transit police.
- Metro Transit will review security camera footage to follow up on suspicious activity or incidents.

Noise

The Orange Line operations will not result in noise impacts. The Orange Line is a bus-only project that will increase bus volumes modestly over current conditions. The proposed project would operate approximately 20 hours per day, with 15 minute service during off-peak hours and 10 minute service during peak hours, resulting in 64 buses in each direction during the day, 7:00 a.m. to 10:00 p.m. and 25 buses in each direction during the night, 10:00 p.m. to 7:00 a.m. In the project areas with the most potential for noise impact, Orange Line platforms will be located within the boundaries of existing noise walls.

Potential noise impacts from the proposed Orange Line project have been evaluated using the general noise assessment methodology contained in Chapter 5 of the Federal Transit Administration (FTA) noise and vibration guidance manual (Report FTA-VA-90-1003-06, May 2006). Noise sensitive land uses were identified, project noise levels were predicted based on operational information, and noise impacts from project noise sources were assessed by comparing project noise levels with estimated existing noise. Existing ambient noise in the corridor was estimated based on ambient noise measurements conducted for other projects in the study area, existing level of transit service, typical daily traffic volumes ranging from 25,000 to 211,000 vehicles per day, and FTA guidance for ambient noise conditions due to population density and distance from major noise sources.

The FTA general noise assessment yielded a project noise level of 50 to 52 dBA (peak-hour Leq) along I-35W without noise barriers, 45 to 47 dBA with barriers, and 55 dBA along 2nd Street & Marquette Ave in Minneapolis. Since the existing ambient noise level is expected to be greater than 60 to 65 dBA (peak-hour Leq) which is above the levels for moderate impact, no noise impact is predicted as a result of the Orange Line project according to FTA noise impact criteria. Refer to the Noise Assessment Technical Memorandum (*Appendix N*) for more details.

Vibration

For projects that involve rubber-tire vehicles, such as the Orange Line project, vibration impacts are unlikely because of its operations in an existing freeway corridor. There are no highly vibration-sensitive land uses adjacent to the Orange Line, and Orange Line buses would share existing road lanes (including any current roadway irregularities) with existing vehicle, bus and truck traffic. Therefore, none of the guidelines for conducting a vibration screening for the Orange Line are met, and there are no locations with the potential for vibration impact on the project. No further vibration assessment is required.

Construction

Metro Transit will employ a number of successful and tested mitigation strategies from other METRO and BRT lines to ensure that Orange Line construction has a minimal impact.

Erosion

Erosion and sedimentation on all exposed soils within the project will be minimized by using the appropriate Best Management Practices (BMPs) during construction. BMPs greatly reduce construction-related sedimentation and help to control erosion and runoff. Ditches, dikes, silt fences, sediment basins, and seeding will be used as temporary erosion control measures during construction grading.

Odors

The proposed project will not generate any excessive odors during construction.

Vibration

Vibration impacts as a result of pile-driving for the 12th Street Transit Ramp could affect buildings within 500 to 1000 feet of the pile location. Impacts depend upon numerous factors that will not be determined until final design, such as soil type and pile type. The construction contractor will be required to prepare a vibration mitigation plan, which will detail their methods of minimizing and mitigating vibration and include a pre- and post-construction damage survey of buildings in the affected area.

Noise

In its construction phase, Metro Transit will require its contractor to minimize and mitigate noise impacts using all reasonable and feasible practices. Construction activities will be subject to the noise ordinances of each local jurisdiction along the corridor, and as such will be restricted to avoid nighttime hours. Construction specifications will be written to ensure: limited duration of especially noisy activities; noisy tasks will be carried out during times of the highest ambient noise levels; construction equipment would be fitted with mufflers; idling equipment will be turned off when not in use; and alternative construction methods will be used as much as possible.

Dust

Dust generated during construction would be minimized through standard dust control measures such as watering. After construction is complete, dust levels are anticipated to be minimal because all soil surfaces would be in permanent cover (i.e. pavement or landscaped areas). Throughout the construction phase, project outreach staff will communicate regularly with adjacent residents, business owners, and the public to convey schedule expectations for construction activities and work to resolve concerns.

Construction Phase Activities

Existing Minneapolis Stations (Downtown and 46th Street). Modifications to the existing MARQ2 stations are confined to the sidewalk shelter areas along the west side of Marquette Avenue and the east side of Second Avenue. Additions of ticket vending machines and signage are not expected to impact vehicle or bus traffic, pedestrians, or transit riders, and are expected to occur while keeping the MARQ2 gates operational. The 46th Street Station similarly only requires minor fare collection and branding improvements. These are confined to the interior of the station, and will not have any impact on current transit operations or riders.

12th Street Transit Ramp. Phasing and coordination for the 12th Street Transit Ramp construction will depend heavily on MnDOT phasing decisions for the broader I-35W Transit/Access Project. The Access Project phasing is expected to be developed in the first half of 2016. The 12th Street contraflow lane will create temporary and permanent access changes between Highway 65 and 2nd Avenue, with some signal and striping changes necessary.

New Suburban Stations (66th Street, 76th Street, American Boulevard, 98th Street, Nicollet Avenue & Highway 13, and Burnsville Parkway). At each station platform site, sidewalk and/or lane demolition and

excavation may be required to prepare right-of-way for platform construction. Following excavation, communications infrastructure will be connected to the sites, new sidewalk and platform concrete panels will be poured, and station shelters and amenities will be installed. Metro Transit will actively seek to minimize impacts to traffic, pedestrians, and transit riders during the construction phase. The phasing of construction activities at 66th Street will be coordinated with planned street reconstruction efforts by the city and county. The Nicollet Avenue & Highway 13 Station is being built in an existing vacant surface parking lot and does not have any impacts to existing traffic or pedestrians. It will require coordination with MVTA, who occasionally utilizes this lot for bus driver training.

Knox Avenue Transitway. The Knox Avenue transitway, which crosses under I-494, will require close coordination with Bloomington, Richfield, and MnDOT partners in order to develop a design and phasing plan that minimizes construction impacts to traffic, commercial access, and bus operations. The full impacts of this proposed guideway improvement will be better understood as the concept moves from planning into design in early 2016.

DRAFT

C. Ecological Considerations

Wetlands

The Orange Line alignment will pass several wetland areas on its highway alignment, but it will not directly impact any wetlands as it will operate solely in existing transportation right-of-way through these regions. Platforms will be built on existing impervious surfaces primarily within right-of-way, and nearby wetlands are adjacent to and heavily impacted by interstate, highways, and high-traffic local streets. Table 8 lists the distance from each proposed station or guideway improvement to the nearest wetland area. The maps in *Appendix A-6* highlight the locations of these wetlands in relation to each station or guideway improvement.

Table 8: Wetland Impacts

Station or Guideway Improvement	Distance to Closest Wetland	Type of Wetland
Downtown Stations	None within ½ mile	N/A
12 th Street Transit Ramp	None within ½ mile	N/A
46 th Street Station	None within ½ mile	N/A
66 th Street Station	1,000 ft away	Freshwater Forested Wetland (PFO1A)
76 th Street Station	700 ft away	Freshwater Emergent Wetland (PEM1C)
Knox Avenue Transitway	315 ft away	Freshwater Emergent Wetland (PEM1Ax)
American Boulevard Station	1,450 ft away	Freshwater Pond (PUBGx)
98 th Street Station	1,300 ft away	Freshwater Emergent Wetland (PEM1C)
Nicollet Ave & Highway 13 Station	250 ft away	Freshwater Emergent Wetland (PEM1C)
Burnsville Parkway Station	200 ft away	Freshwater Emergent Wetland (PEM1Cx)
Burnsville Ramp Meter Bypass	50 ft away	Freshwater Emergent Wetland (PEM1Cx) ²

The Knox Avenue Transitway, Nicollet Avenue & Highway 13 Station, Burnsville Parkway Station, and Burnsville Ramp Meter Bypass are all located within existing freeway right-of-way. There are no wetlands on-site or adjacent to permanent station and guideway improvements. The Orange Line has no anticipated temporary or permanent impacts to wetland areas.

Ecologically-Sensitive Areas and Endangered Species

Ecologically Sensitive Areas

The project will construct enhanced bus stops in disturbed, highly developed urban areas almost entirely within existing transportation right-of-way. New right-of-way will only be acquired in the paved, freeway-adjacent Southtown Shopping Center. The natural areas along the Orange Line alignment are already affected by existing roadways and urban development. These include the Wood Lake Nature

² Although shown on wetland inventories, this pond was created as the result of a 2010 MnDOT mainline project on I-35W, which graded, disturbed, and reconstructed the entire area within the Burnsville Parkway on-ramp at I-35W.

Center, Minnehaha Creek Park, and Minnesota Valley National Wildlife refuge. No impacts are anticipated as a result of the project.

Endangered Species

The Minnesota Department of Natural Resources has identified several rare species that are located in the defined Orange Line project area. The Orange Line project's potential effects are described below. This information will be distributed to all Orange Line contractors. The materials supplied by the DNR are attached in *Appendix E*.

- **Blanding's Turtles (*Emydoidea blandingii*):** Based on the nature of the proposed project and its location (i.e., construction of transit stations and guideway improvements within existing transportation right-of-way, operation of buses on existing roadways in a highly developed, urban area), no impacts are anticipated to Blanding's turtles as a result of the project. The DNR has provided a fact sheet with recommendations to avoid and minimize impacts to this species (*Appendix E*). Metro Transit will distribute this information to all Orange Line contractors.
- **Several mussel species:** Several state-listed mussels have been documented in the Minnesota River in the vicinity of the proposed project. Orange Line buses will travel on the Minnesota River bridge over the Minnesota River using existing travel lanes. There are no planned Orange Line stations or guideway improvements adjacent to the Minnesota River, so this project will not increase impervious surface area. Therefore, no impacts are anticipated to the various mussel species as a result of the project. However, Metro Transit will ensure that effective erosion prevention and sediment control practices are implemented and maintained near the river and are incorporated into any storm water mitigation plan.
- **Northern long-eared bat (*Myotis septentrionalis*):** Based on the nature of the proposed project and its location (i.e., construction of transit stations and guideway improvements within existing transportation right-of-way, operation of buses on existing roadways in a highly developed, urban area), and because no bat hibernacula or roosts are known within a one-mile radius of the project, no impacts are anticipated to the northern long-eared bat.

The Minnesota Department of Natural Resources (DNR), Natural Heritage Review has identified these rare species, potential impacts, and mitigation strategies. Please see *Appendix E* for the DNR letter dated November 13, 2015.

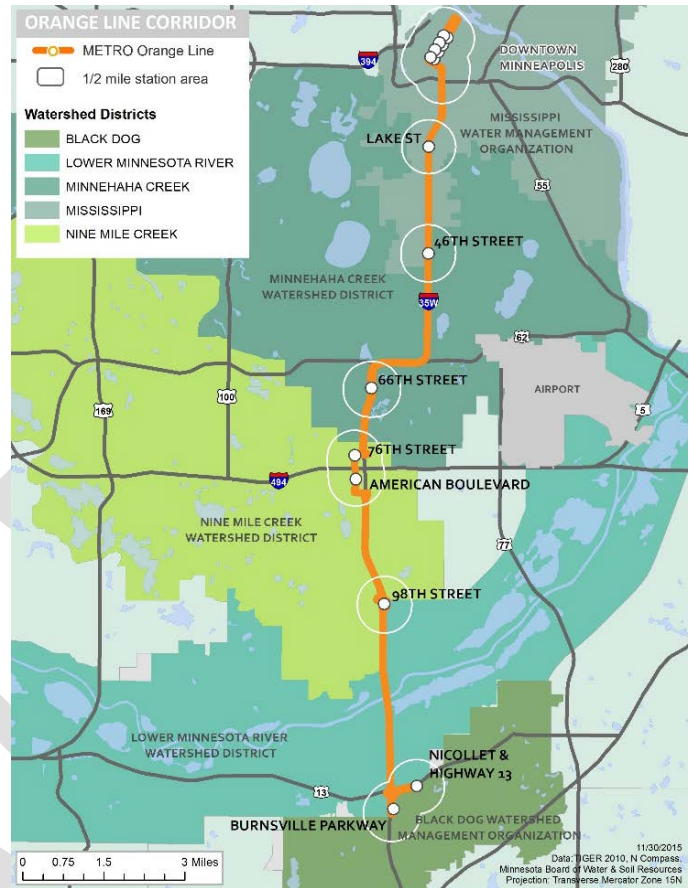
Correspondence regarding the proposed action was provided to the USFWS (November 17, 2015). The USFWS concurred with the finding that the project would have no effect on threatened or endangered species within Hennepin or Dakota counties. See *Appendix E* for USFWS correspondence dated January 22, 2016.

Water Quality, Navigable Waterways & Coastal Zones

The proposed project will have no impact on navigable waterways or coastal zones as none are located in or near project sites. The project is not located within a sole-source aquifer; the nearest sole-source aquifer is approximately 75 miles north of the project area.

The Orange Line is within the jurisdiction of the Mississippi Watershed Management Organization (WMO), Minnehaha Creek Watershed District, Nine Mile Creek Watershed District, Lower Minnesota River Watershed District, and Black Dog Watershed Management Organization.

In January and February 2016, Metro Transit conducted outreach with each of these five agencies and held coordination meetings at the discretion of each agency. The Minnehaha Creek Watershed District and Nine Mile Creek Watershed District both have the authority to permit capital improvement projects in their districts. The degree of planned Orange Line improvements in the Minnehaha Creek Watershed does not meet the threshold for their involvement. Metro Transit will coordinate with the Nine Mile Creek Watershed District on future permits and involvement, and will continue communications and opportunities for review of station planning and design as the project progresses through design and engineering.



Metro Transit will follow watershed organization rules and standards when designing stormwater management elements. Erosion control measures will be taken during the project construction phase to control surface runoff and sedimentation. In accordance with state and federal regulations, detailed drainage plans and erosion control plans for the project will be submitted as part of the application for a National Pollutant Discharge Elimination System (NPDES) permit, to be obtained from the MPCA prior to construction.

Orange Line buses will be stored and maintained at Metro Transit's Heywood Bus Garage at 560 N 6th Avenue Minneapolis, MN 55411. The wastewater from the bus washing will go into a floor drain that goes through an oil water separator before it is dumped into the sanitary sewer to be treated at a waste water treatment plant. Bassett Creek runs under an adjacent property at 812 7th Street North. The property was previously filled-in, including a portion of Bassett Creek that runs underneath the property.

Floodplains

According to Flood Insurance Rate Maps (FIRM) created as part of the National Flood Insurance Program, There are no Orange Line stations within the 100-year floodplain. The alignment will pass through the 100-year floodplain when I-35W crosses the Minnesota River. However, the Orange Line will operate solely in existing transportation right-of-way through this region. (All FIRM maps are listed below and attached in *Appendix D*).

- 27053C0357E, effective 09/02/2004
- 27053C0359E, no flood map printed for this location
- 27053C0367E, effective 09/02/2004
- 27053C0369E, effective 09/02/2004
- 27053C0368E, effective 09/02/2004
- 27053C0456E, effective 09/02/2004
- 27053C0458E, effective 09/02/2004
- 27053C0466E, effective 09/02/2004
- 27053C0070E, effective 12/02/2011

ORANGE LINE ALIGNMENT:
100 YEAR FLOODPLAIN



Metropolitan Planning & Air Quality Conformity

The Orange Line project is consistent with the following:

- *Metropolitan Council 2016-2019 [Transportation Improvement Plan](#)* (TIP adopted September 23, 2015)
- *Metropolitan Council [2040 Transportation Policy Plan](#)* (TPP adopted January 14, 2015)

The Orange Line project is included in the 2016-2019 Transportation Improvement Plan (TIP) with proposed Section 5307 and CMAQ funding under project numbers TRF-TCMT-16AZ and TRF-TCMT-17AL. The project is included as a Horizon Year 2020 regionally significant project on page E.5 of [Appendix E: Additional Air Quality Information](#) of the Transportation Policy Plan (TPP). The Orange Line's Air Quality (AQ) code within the Metropolitan Council Transportation Improvement Plan indicates that it is a project of regional significance to occur between 2015 and 2020, and that it is not exempt from the air quality conformity test.

The 2016-2019 TIP and TPP both conform to the relevant sections of the Federal Conformity Rule and to the applicable sections of Minnesota State Implementation Plan for air quality. The project was included within the air quality conformity analysis prepared for the Transportation Policy Plan, which was found to be in compliance. See *Appendix J: Air Quality Conformity* for USDOT and the Minnesota Pollution Control Agency approval of the air quality conformity determination for the Metropolitan Council's TIP pursuant to 40 CFR 93. *Appendix J* also includes USDOT finding that the TPP meets all conformity determination requirements under the Clean Air Act Amendments of 1990.

CO Hot Spots

The Environmental Protection Agency (EPA) regulates a group of common air pollutants on the basis of criteria (information on health and/or environmental effects of pollution). The criteria pollutants identified by the EPA are ozone, particulate matter, carbon monoxide, nitrogen dioxide, lead, and sulfur dioxide. Attainment status for these pollutants is assessed by comparing observed concentrations to National Ambient Air Quality Standards (NAAQS). Areas designated as nonattainment or maintenance (previously designated as nonattainment, but since returned to attainment) are subject to conformity requirements for transportation projects.

The location of the proposed project is in attainment for all of the criteria pollutants, except for carbon monoxide. For this pollutant, the EPA approved a limited maintenance plan request for the Twin Cities maintenance area in 2010. Under a limited maintenance plan, the EPA has determined that there is no requirement to perform regional emissions modeling over the maintenance period, however federally funded and state funded projects are still subject to "hot-spot" analysis requirements.

CO "hot-spot" analysis is performed by evaluating the worst-operating intersections in the project area. The EPA has approved a screening method to determine whether detailed analysis is required for hot-spot intersections. The hot-spot screening method uses a traffic volume threshold of 79,400 entering vehicles per day. Intersections with traffic volumes above this threshold must be evaluated using EPA-approved emission and dispersion models. Intersections with traffic volumes below this threshold are not expected to result in concentrations that exceed state or federal standards, and detailed modeling is not required. A review of intersections in the proposed project area shows that no affected intersections exceed the threshold volume. As a result, no modeling is required, and the project meets carbon monoxide conformity requirements under the limited maintenance plan.

PM 2.5 and PM 10 Hot Spots

The Orange Line project is in attainment areas for [PM-2.5](#) and [PM-10](#).

Hazardous Materials

Partial property acquisitions will be required for the Knox Avenue Transitway. A review of the Minnesota Pollution Control Agency online databases [What's in My Neighborhood](#) and [Petroleum Remediation Program Maps](#) indicates that there are contaminated soils on parcels that may be acquired for the project. Located on the 1750 American Boulevard W parcel are a hazardous waste site, two closed petroleum tank leak sites, and one active petroleum tank site. More detail on these sites is provided in *Appendix M: Hazardous Materials*. Metro Transit is currently completing a Phase I environmental site assessment (ESA) and is committed to completing a Phase II ESA as necessary, the results of which will be used to develop response action plans. These will be reviewed by the Minnesota Pollution Control Agency and implemented during construction. The construction plan will include provisions for the identification of potentially hazardous materials and/or contaminated soils uncovered during excavation and site grading. The plan will further include provisions for the temporary cessation of construction for in-place testing of suspect soils and materials, the temporary on-site storage of these soils and/or

materials and their proper re-use or disposal from the site. If contaminated soils are encountered during excavation activities, Metro Transit will halt construction activities and contact the FTA.

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