



# West Broadway Transit Study

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## Relevant Issues and Study Framework

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Prepared by the  
SRF Consulting Group Team  
for







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## Glossary of Terms

**Access or Accessibility:** In transportation, “access” or accessibility refers to the ease with which people can reach multiple destinations. People in places that are highly accessible can reach many other activities or destinations quickly and easily.

**Alignment:** The route of a transit line; the horizontal location of a transit system as described by curved and tangent track

**Areas of Concentrated Poverty (ACPs):** Census tracts where at least 40 percent of the residents live below 185 percent of the federal poverty line. Areas of Concentrated Poverty where more than 50 percent of residents are people of color are referred to as ACP50s.

**Arterial Bus Rapid Transit (BRT):** A transitway mode that uses bus vehicles but incorporates characteristics of light rail or commuter rail to improve bus speed, reliability, and identity. These characteristics can include specialized vehicles, unique and improved stations, signal preemption or priority, off-board fare collection, improved signage, and other features that allow vehicles to operate faster and more reliably than local or express buses. Arterial BRT runs in mixed traffic. Typically, service frequencies are every 15 minutes or better on the core portions of the line.

**At-grade:** At the same level. For example, at-grade crossings are crossings that are at street level. Grade separation is a bridge or tunnel that separates transportation facilities, such as a highway, so that they will not disrupt each other’s traffic flow when they cross.

**Density:** A measurement of the amount of building development within a given area. Density is a way of estimating how many people live, work, or visit that area.

**Economic Development:** The sustained and concerted actions of policy makers and communities to promote the standard of living and economic health of a specific area. Economic development includes real estate development and the creation of new built environments.

**Environmental Justice:** A responsibility of each federal agency (such as the Federal Transit Administration) to identify and address disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.

**Federal Transit Administration (FTA):** FTA is an agency within the United States Department of Transportation that provides financial and technical assistance to local transit systems.

**Frequency:** How often a transit route operates. For example, a bus operating on 15-minute frequencies should arrive at a given point every 15 minutes.

**Guideway:** Transit service routes that are exclusive to transit, either entirely or in part.



**Land use:** The human modification of the natural environment into the built environment, and the classification of the built and natural environment into categories that describe how the land is used. Examples of types of land use include: agricultural, industrial, residential, commercial, open space, and parks.

**Light Rail Transit (LRT):** A mode of transit service operating two- or three-car trains on fixed rails in right-of-way that is often separated from other traffic for part or much of the way. Light rail vehicles are typically driven electrically with power being drawn from an overhead electric line.

**Locally Preferred Alternative:** The transit route and mode selected by local units of government for inclusion in the regional Transportation Policy Plan and eventual implementation.

**Mixed-traffic lane:** Street lanes that are not exclusive to a particular type of vehicle.

**Mixed-use development:** The practice of allowing more than one type of use in a singular building (vertical mixed-use) or set of buildings (horizontal mixed-use).

**Mode:** A type of transit system for carrying passengers. Mode is described by specific right-of-way, technology, and operational features.

**Modern streetcar:** Electrically powered rail vehicles which typically operate in urban areas with high transit demand. Modern streetcars usually operate on city streets in mixed-traffic, although they can also operate in exclusive rights-of-way. Streetcars have a lower passenger capacity than LRT, but have higher passenger capacity than a typical bus. Streetcars can operate in single-track or double-track configurations.

**Off-board fare collection:** A vending machine located at a station or shelter that allows transit passengers to pay for their ride before boarding a bus or rail car.

**No-build alternative:** A description of the future circumstance where all programmed investments occur, but the transitway under consideration is not built.

**Section 4(f) and Section 6(f):** The portions of The Transportation Act of 1966 that protect publicly owned parks, recreation areas, historic sites, and wildlife or waterfowl refuges from conversion to transportation use.

**Terminus:** The end of the line of a designated route or last stop on a route.

**Title VI:** A section of the Civil Rights Act of 1964 that prohibits discrimination on the basis of race, color, and national origin in programs and activities receiving federal financial assistance.

**Transit-Oriented Development (TOD):** A development or neighborhood designed to provide easy access to public transportation. TODs are generally located within one-quarter to one-half mile of a transit facility—walking distance—and are designed for a relatively high population. TODs typically include a mix of residential and commercial/office uses built around or adjacent to a rail station or bus stop.



**Transit signal priority:** Use of technology to optimize signal timing or coordinate successive signals so that transit vehicles maintain speed and reliability.

**Transitway:** A high demand travel corridor that offers improved transit service including bus rapid transit, light rail, modern streetcar, or commuter rail

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## Introduction

The West Broadway Transit Study is a collaborative planning process with Metro Transit and community and agency partners to identify and evaluate potential transit improvements along Washington Avenue North and West Broadway Avenue in Minneapolis, and potential connections to planned METRO Blue Line Extension (Bottineau) LRT stations in Golden Valley and Robbinsdale. The study will include an evaluation of potential connections to the planned Nicollet-Central Modern Streetcar line, planned arterial Bus Rapid Transit (BRT) lines, and existing local and express bus services. The study will also consider the corridor's market potential for transit-oriented development (TOD). The intended outcome of the study is a locally preferred alternative (LPA) recommendation for transit service improvements in the corridor that meet area transportation and economic development needs.

The West Broadway Transit Study was conceived of by the City of Minneapolis, Hennepin County, and Metropolitan Council/Metro Transit as the METRO Blue Line Extension LRT project was going through approval of its locally preferred alternative (LPA). While all three agencies were in agreement that the Blue Line Extension alignment in the Burlington Northern Sante Fe (BNSF) railroad corridor east of Theodore Wirth Park was the optimal alternative for LRT, the agencies also agreed to pursue exploration of further transit and economic development improvements in north Minneapolis, including connections to the Blue Line Extension. To this end, the three agencies took several actions:

- The City of Minneapolis, Hennepin County, and Metro Transit signed an agreement that committed each agency to financial participation in the West Broadway Transit Study;
- Hennepin County created the Penn Avenue Community Works Project, an effort to redesign Penn Avenue North, promote economic opportunity, and stimulate private investment in the immediate area;
- Metropolitan Council/Metro Transit agreed to evaluate arterial bus rapid transit (BRT) improvements on Penn Avenue North and on Emerson/Fremont Avenues North; and
- Metropolitan Council invested \$2 million in Transit Oriented Development funds in a mixed income/mixed use project that includes funding for enhanced transit facilities at Penn and West Broadway Avenues.

The West Broadway Transit Study is thus not only a transit initiative, but is considered one important mechanism among several to revitalize West Broadway and grow economic prosperity among north Minneapolis residents and businesses. Accordingly, the study will identify and evaluate transit alternatives with the goal of selecting an LPA that best meets both the transportation and economic development needs of the corridor.

## Corridor Overview

West Broadway Avenue, a former streetcar corridor and current bus corridor, is north Minneapolis' "Main Street" and contains a mix of retail, commercial, cultural, and residential uses. West Broadway is the principal corridor for both automobile and transit traffic in north Minneapolis and serves both local access and longer-distance auto trips. Local bus Routes 14 and 30 use West Broadway Avenue. West Broadway is part of a regular street grid in north Minneapolis and parallels Olson Memorial Highway,

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Plymouth Avenue, Lowry Avenue, and Dowling Avenue. Together, these roadways serve the east-west auto travel market in this area.

Like West Broadway, Washington Avenue is a former streetcar corridor and current bus corridor. Washington Avenue forms the commercial spine of the Minneapolis Warehouse District and is lined with vertical mixed-use retail, commercial, and residential buildings. North of 10<sup>th</sup> Avenue, Washington Avenue is surrounded by industrial uses in the North Washington Jobs Park. Washington Avenue is part of a regular street grid in the Warehouse District, with some connectivity irregularities due to freight train and freeway connections in the neighborhood. Washington Avenue is used by local Route 14, connects downtown Minneapolis with north Minneapolis, and provides connections to Interstates 394 and 94.

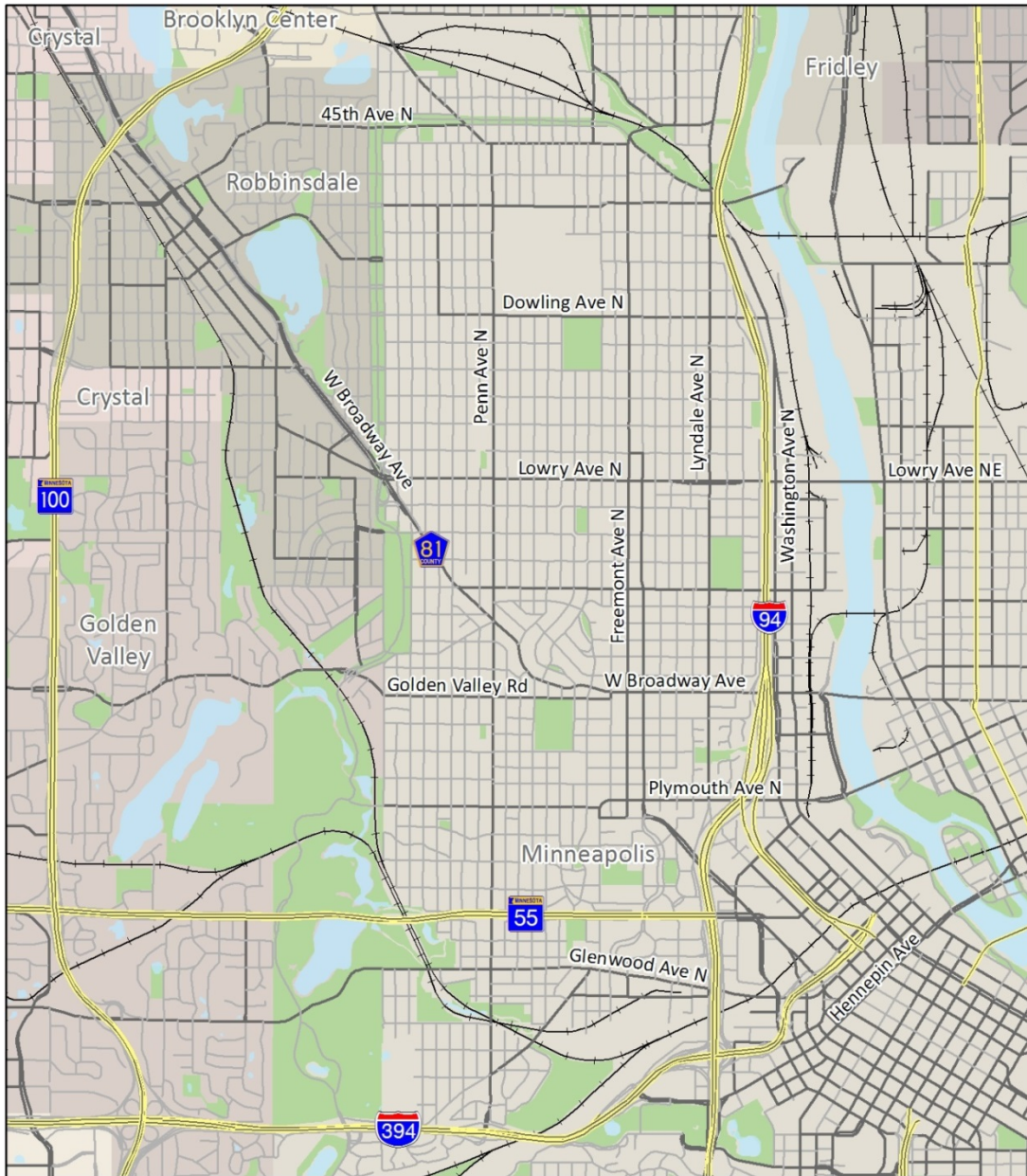
In Robbinsdale, Oakdale Avenue starts at West Broadway Avenue and runs diagonally across the street grid, bisecting the North Memorial Hospital campus and serving single family residential neighborhoods to the west. Oakdale Avenue ends at France Avenue, which is lined by single family residential neighborhoods to the west and commercial properties to the east. France Avenue transitions into West Broadway Avenue—Robbinsdale’s “Main Street”—which is home to a mix of commercial, retail, institutional, and multi-family residential uses in downtown Robbinsdale. Existing bus routes 14 and 32 use Oakdale, France, and West Broadway Avenues.

Golden Valley Road (Hennepin County Road 66) provides an east-west connection from west of Trunk Highway 100 into Minneapolis. It is a four-lane road until just east of TH 100 where it becomes a two-lane road until it terminates at Girard Avenue North in Minneapolis. Existing bus routes 14 and 30 use segments of Golden Valley Road.

See Figure 1 for a map of the project area.



**Figure 1: Project Area**



## Equity in Regional Transit Planning

In *Thrive MSP 2040*, the region’s development framework, the Metropolitan Council commits to “using equity as a lens to evaluate its operations, planning, and investments, and exploring its authority to use its resources and roles to mitigate the place-based dimension of disparities by race, ethnicity, income, and ability”. The Council also commits to working to mitigate Areas of Concentrated Poverty (ACP) by better connecting residents to opportunity and catalyzing neighborhood revitalization. Areas of Concentrated Poverty are census tracts where at least 40 percent of the residents live below 185 percent of the federal poverty line.<sup>1</sup> By 2010, nearly one person in ten in the region lived in an ACP.

<sup>1</sup> Defined as \$42,589 in annual income for a four-person household in 2011.

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Because Areas of Concentrated Poverty can both limit the economic mobility of their residents and discourage private investment, the region cannot afford to allow these areas to either persist or grow.

All of the census tracts surrounding West Broadway Avenue in Minneapolis are ACPs where more than 50 percent of residents are people of color. Mitigating Areas of Concentrated Poverty is especially relevant to the West Broadway Transit Study because the corridor is home to a disproportionate number of people of color living in poverty.

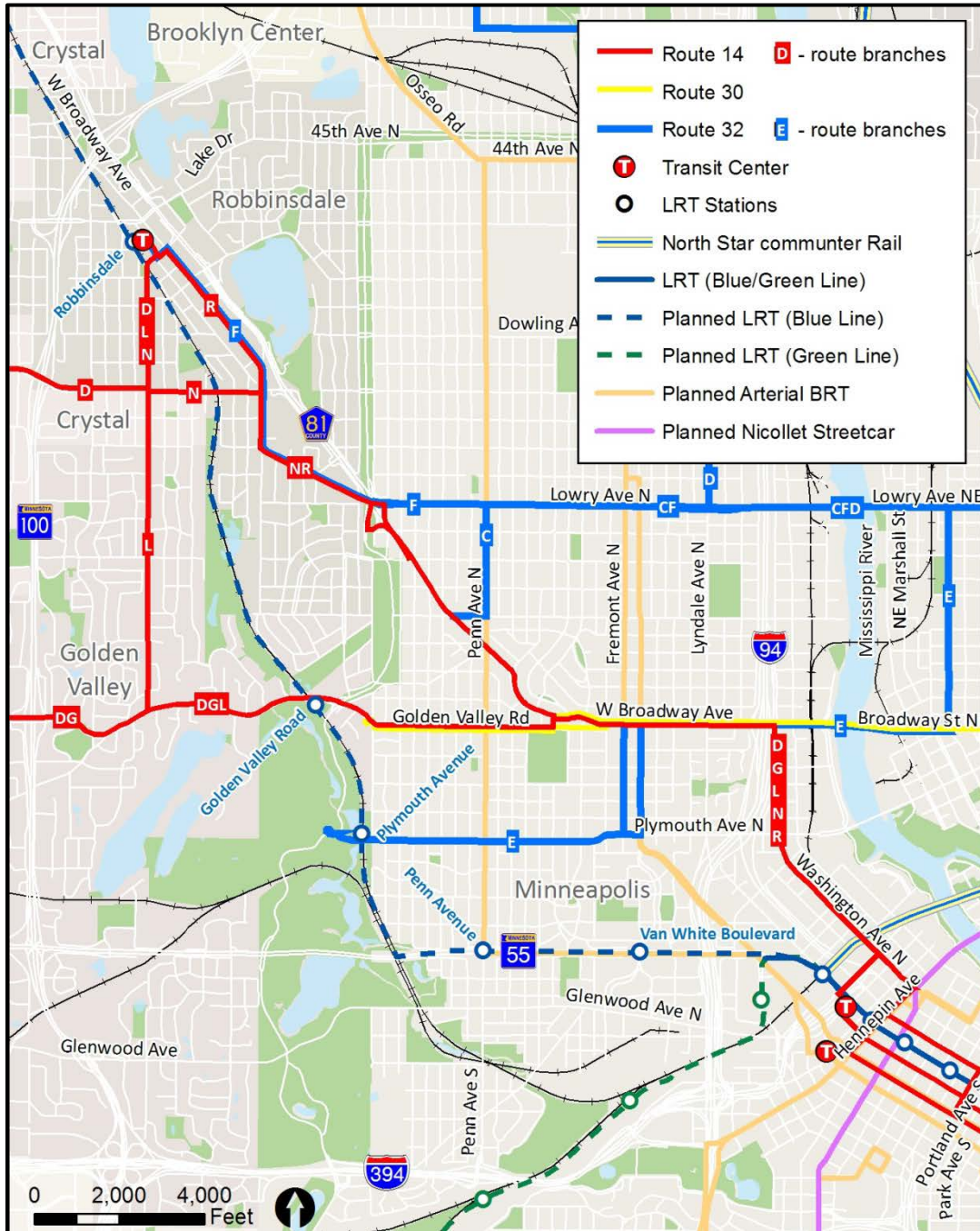
The West Broadway Transit Study is a joint effort of Hennepin County, Metropolitan Council/Metro Transit, and the City of Minneapolis to explore actions to mitigate the place-based dimension of racial and economic disparities.

### **Existing Transit Service in the Study Area**

Existing transit service on West Broadway and Washington Avenues is primarily provided by local Route 14. Route 14 provides all-day local service on weekdays from approximately 4:30 a.m. to 1:30 a.m. at 10-20 minute frequency, and at a reduced 20-30 minute frequency on Saturday and Sunday. Route 14 begins at the Robbinsdale Transit Center in downtown Robbinsdale and operates in five different patterns through Robbinsdale, Golden Valley, and North Minneapolis on its north end and four patterns on its south end in Minneapolis and Richfield. All patterns of the route operate together on West Broadway between Knox Avenue North and Washington Avenue North. The route operates southbound through downtown Minneapolis on Washington Avenue, 3<sup>rd</sup> Avenue, 6<sup>th</sup> Street, and 11<sup>th</sup> Avenue, and northbound on 11<sup>th</sup> Avenue, 7<sup>th</sup> Street, 5<sup>th</sup> Avenue, 4<sup>th</sup> Street, Hennepin Avenue, and Washington Avenue.

Supplemental service on West Broadway is provided by local Route 30, which provides weekday service from approximately 5:15 a.m. to 11:30 p.m. at 30 minute frequency from the Westgate Station on the Green Line LRT in Saint Paul to Xerxes Avenue in north Minneapolis via West Broadway Avenue and Golden Valley Road. Route 30 began operation in March 2014.

**Figure 2: Existing Bus Routes and Planned Transitways in the Corridor**



### Prior Transit Planning Efforts in the Corridor

The City of Minneapolis’ 2007 *Minneapolis Streetcar Feasibility Study* identified West Broadway and Washington Avenues as candidate routes for streetcar service. Metro Transit’s 2012 *Arterial Transitway Corridors Study* identified West Broadway as a potential corridor for arterial bus rapid transit (BRT), using West Broadway Avenue, Lyndale Avenue, and 7<sup>th</sup> Street into downtown Minneapolis. The West Broadway Transit Study will use these previous planning efforts as a starting point for development of



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potential transit concepts in Minneapolis. Further discussion with the Cities of Robbinsdale and Golden Valley will inform development of concepts in those cities.

## Document Outline

This document presents assumptions and parameters of the study, as well as issues and topics to be addressed in the Transit Study. The list of key issues is organized into five primary categories:

1. Modes
2. Alignments
3. Markets
4. Land Use and Economic Development
5. Transitway Impacts

### 1. Modes

The West Broadway Transit Study will evaluate only modern streetcar and arterial BRT as potential modes for implementation in the corridor. Each mode presents unique aesthetic, design, and operational characteristics. Both modes will be considered for some segments of the corridor, while only one mode will be considered for other segments. Modifications to the existing bus service will be evaluated to determine how best to complement the transitway improvements in the corridor.

#### Streetcar

Modern streetcars are electrically powered rail vehicles which typically operate in urban areas with high transit demand. Streetcar lines are typically less than four miles long and modern streetcars usually operate on city streets in mixed-traffic, although they can also operate in exclusive rights-of-way. Streetcars have a lower passenger capacity than light rail transit (LRT) systems, but have higher passenger capacity than a typical bus. Streetcars usually make frequent stops every few blocks and function more as a part of a local circulation system than a regional transportation system. Streetcars can operate in single-track or double-track configurations.

Modern streetcar service is particularly suitable for high-density, mixed-use areas with short average passenger trip lengths, areas where improved transit will benefit a high number of existing riders, and as an attraction for new or infrequent transit users like shoppers or visitors. Modern streetcars also have demonstrated promise for supporting high-density, mixed-use, walkable development in urban cores where people can live without a car and become regular and frequent transit users.

- **Why consider streetcar on West Broadway Avenue?**

West Broadway from the Robbinsdale Transit Center to Washington Avenue North, and Washington Avenue North to downtown Minneapolis was identified as a candidate streetcar corridor in the *Minneapolis Streetcar Feasibility Study* (2007), and included in Minneapolis' long-term streetcar network. Washington Avenue between Nicollet and 10<sup>th</sup> Avenues was identified as the segment to build first, as it emerged with favorable ratings on capital costs, functionality, cost-effectiveness, and potential to catalyze development. The plan notes that the

corridor lacks high intensity land uses but shows long-term potential for moderate development density, especially east of Penn Avenue North.

- **What type of stations will be assumed for streetcar?**

Station design will be consistent with the Nicollet-Central Streetcar stations. Streetcar stations will likely look much like arterial BRT stations currently under construction on Snelling Avenue in Saint Paul. See Figure 3 for an example. Streetcar stations are typically shorter than LRT stations because streetcars are operated using a single vehicle rather than using multi-vehicle trains. Station amenities would include shelters, lighting, ticket vending machines, level boarding, and seating.

**Figure 3: Sample Streetcar or Arterial BRT Station**



- **What type of streetcar vehicle will be used?**

The West Broadway Transit Study will evaluate modern streetcars. Most streetcar systems planned and in operation across the country today, including the Nicollet-Central Modern Streetcar line, use modern streetcar vehicles. Modern streetcars typically receive their power from overhead catenary wires and operate as single vehicles; a single vehicle holds 115 to 160 passengers. Modern streetcars offer level boarding and are ADA compliant. See below for an example of a modern streetcar.

**Figure 4: Modern Streetcar Example**



- **How would a West Broadway streetcar line interface with the planned Nicollet-Central Streetcar Line?**

In October 2013, the Minneapolis City Council approved a resolution recommending a streetcar alignment that would run between Lake Street on the south and 5th Street NE on the north as the Locally Preferred Alternative. The streetcar would use Nicollet Avenue/Nicollet Mall from Lake Street to at least 3<sup>rd</sup> Street South in downtown Minneapolis, and use Hennepin Avenue from Washington Avenue South to 5th Street NE. The route between 3rd Street South and Washington Avenue South in downtown has yet to be determined, and will be an important consideration for integration of a potential West Broadway streetcar line on Washington Avenue North or 2nd Street North. A decision on the Nicollet-Central downtown alignment is expected in 2015 and will become the downtown alignment for the West Broadway study as well.

- **Why isn't streetcar being considered for the segments in Robbinsdale?**

The City of Robbinsdale reconstructed Oakdale Avenue in 2012 and 2013 and as part of this project buried all overhead wire crossings and re-aligned water and sanitary sewer lines to meet separation guidelines. If streetcar were implemented in this area, these streets would need to be reopened and newly replaced utilities would need to be moved. Similar improvements were made to West Broadway Avenue in the early 1990s, including undergrounding wires, widening sidewalks, reducing the roadway width, and adding pedestrian nodes. Overhead wires were also buried during reconstruction of Hennepin County Road 81 to improve views of nearby lake and park. For these reasons, streetcar will not be considered for alignments serving downtown Robbinsdale.

## **Arterial BRT**

Arterial BRT is an all-day, frequent, high-capacity transit mode that uses bus vehicles and incorporates many of the premium characteristics of LRT and dedicated busways, but generally operates in mixed-traffic lanes on local streets with stations spaced about a half mile apart. Arterial BRT can incorporate transit advantages such as transit signal priority or queue jump lanes, and can be complemented with local bus service that stops more frequently. Typical amenities include improved stations and customer information, unique vehicles and branding, and fare collection that allows for faster boarding.

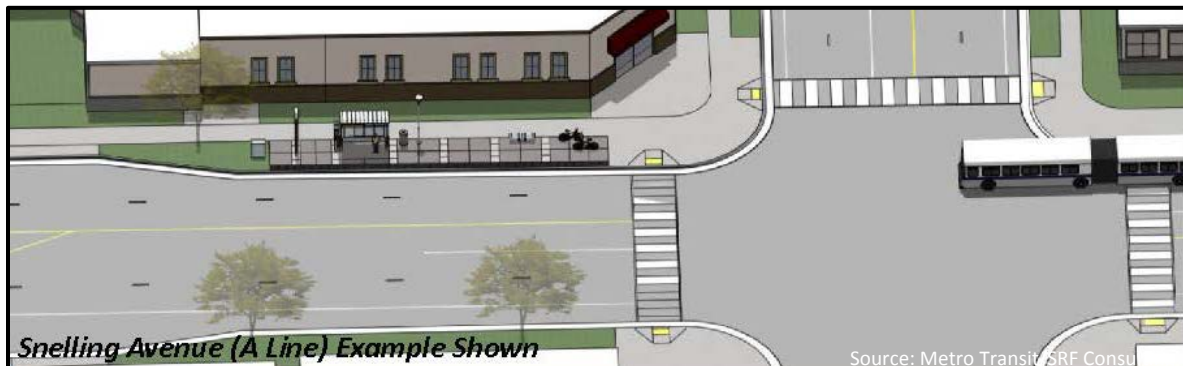
- **Why consider Arterial BRT on West Broadway Avenue?**

West Broadway was identified in the *Arterial Transitway Corridors Study (ATCS)* as one of eleven corridors in the Minneapolis-Saint Paul area with potential for transitway implementation. The proposed improvements considered for the corridor included many features found in full-feature BRT systems including off-board fare collection, transit signal priority, and enhanced station branding and amenities. Based on the results of the technical evaluation and near-term readiness assessment, the West Broadway corridor was recommended for further study. This alternative will need to be revisited to determine if alignment or operational modifications should be made or if the alternative should be carried forward using the assumptions made in the ATCS.

- **What types of stations will be assumed for BRT?**

During the ATCS, a range of BRT station types were developed to fit the various corridor conditions. In addition to physical stations, bump-outs (or curb extensions) were assumed in some locations where parking currently exists. A bump-out is a section of sidewalk that is extended from the existing roadway curb to the edge of the through lane for the length of the proposed platform. Once the bump-out platform ends, the sidewalk transitions back to the typical sidewalk width. Bump-outs provide additional space for station shelters and amenities and also eliminate the need for buses to merge in and out of traffic to access stations. This configuration helps minimize bus delays, but can have an impact on traffic flow due to transit vehicles stopping in the through lane of traffic. Please see Figure 5 for an example. Use of bump-outs will be analyzed in more detail during the West Broadway Transit Study.

**Figure 5: Bump-Out Example**



- **What type of BRT vehicle will be used?**

According to the ATCS, low-floor premium vehicles would be used for this service. Vehicles would have two or three doors based on the length, and passengers would be able to enter and exit the vehicle at all doors. Arterial BRT vehicles will be diesel or diesel-electric hybrids and carry 60 to 105 passengers per vehicle. The buses would have a brand or look distinct from regular local and express bus service.

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## Streetcar and Arterial BRT Operations

- **Where will the operations and maintenance facility be located?**

Once the number and type of vehicles required to operate the West Broadway streetcar alternative is determined, an evaluation of capacity at the existing rail Operations and Maintenance Facilities (OMFs) will need to be completed. If a new OMF is required, it should be sited to minimize impacts to operations expenses, and avoid areas with high potential for transit-oriented development and sensitive land uses such as residential and commercial. A similar analysis will be done for the arterial BRT alternatives to determine whether West Broadway buses could be accommodated in existing bus storage and maintenance facilities, or if a new facility is warranted.

- **How will streetcar and arterial BRT implementation affect current transit service?**

If streetcar or arterial BRT are implemented on West Broadway, Metro Transit will conduct an in-depth study of all of the local and express bus routes that intersect or overlap with the transitway. Because much of the proposed alignment is redundant with the Route 14, service may be scaled back on this local route, which could affect through-riders bound for south Minneapolis. Changes to Routes 30 and 32 are also possible.

- **Will streetcar and arterial BRT be considered for all alignment options?**

Streetcar and arterial BRT will be considered for all alignment options with the exception of the northern alignment option that terminates in downtown Robbinsdale, which will only include arterial BRT concepts, as discussed previously.

- **How will streetcar or arterial BRT interface with the Blue Line LRT?**

A West Broadway transitway has the potential to interface with the Blue Line Extension (Bottineau) LRT at its Robbinsdale Station or at its Golden Valley Road Station. The Robbinsdale LRT Station will be located at-grade in downtown Robbinsdale, between the intersections of 41<sup>st</sup> and 42<sup>nd</sup> Avenues and east of the existing Burlington Northern Santa Fe (BNSF) railroad tracks. An optimal connection between arterial BRT and LRT at this station would bring the BRT immediately adjacent to the LRT tracks and platform, facilitating a short transfer between the two modes. As discussed above, streetcar will not be considered for this connection. The Golden Valley Road LRT Station will be located below grade in the existing BNSF right-of-way. An elevator and stairs will provide access to the station from street level. Streetcar or arterial BRT would run at-grade on Golden Valley Road. Ideally, streetcars or buses would stop immediately adjacent to the elevators and stairs, facilitating a direct connection between the modes.

- **How would a West Broadway streetcar or arterial BRT line interface with the planned changes to Washington Avenue?**

Reconstruction of Washington Avenue South between Hennepin Avenue and 5<sup>th</sup> Avenue South will incorporate a cycle track and will begin in summer 2015. Cycle tracks are bicycle lanes that are separated from car traffic. On Washington Avenue, a cycle track in each direction will be



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separated from car traffic by approximately four feet as well as a curb and gutter. Washington Avenue North from Hennepin Avenue to 5<sup>th</sup> Avenue North will be reconfigured in summer 2015, as well. A portion of the road north of 5<sup>th</sup> Avenue North will likely be changed from its current four-lane design to a three-lane design that would provide two lanes for moving traffic, a center continuous left turn lane, and bicycle lanes in each direction. Design concepts for West Broadway transitway options will incorporate these changes to the roadway.

### Why won't LRT be studied for West Broadway?

The *Bottineau Transitway Alternatives Analysis* (2010) considered West Broadway as a potential route option for LRT between downtown Robbinsdale and downtown Minneapolis. This option was dismissed during the Bottineau AA and was not studied further in the *Bottineau Transitway Draft Environmental Impact Statement* (EIS).

In the Twin Cities region, LRT trains are three cars long and LRT is used in corridors where high-capacity vehicles are needed to handle large volumes of riders. LRT typically operates in an exclusive guideway approximately 50 feet wide at stations (depending on configuration) and 30 feet wide between stations outside of downtown areas. The segment of West Broadway Avenue between Oliver and Girard Avenues transitions through a series of curves, which further increases the width needed for an LRT-exclusive guideway. There are only two ways that an LRT guideway could be accommodated on West Broadway: expansion of West Broadway right-of-way, or conversion of automobile lanes to LRT guideway.

Expansion of the West Broadway right-of-way would have enormous economic, social, and visual impacts to north Minneapolis as land use along the length of the street is characterized by retail and commercial development. Many of the buildings are flush with the back of the sidewalk along West Broadway, as shown in Figure 6 below. Expansion of the right-of-way would likely mean acquisition and relocation of the commercial establishments along one side of the street for the length of West Broadway, and demolition of the existing buildings.

**Figure 6: West Broadway Avenue at North Emerson Avenue**



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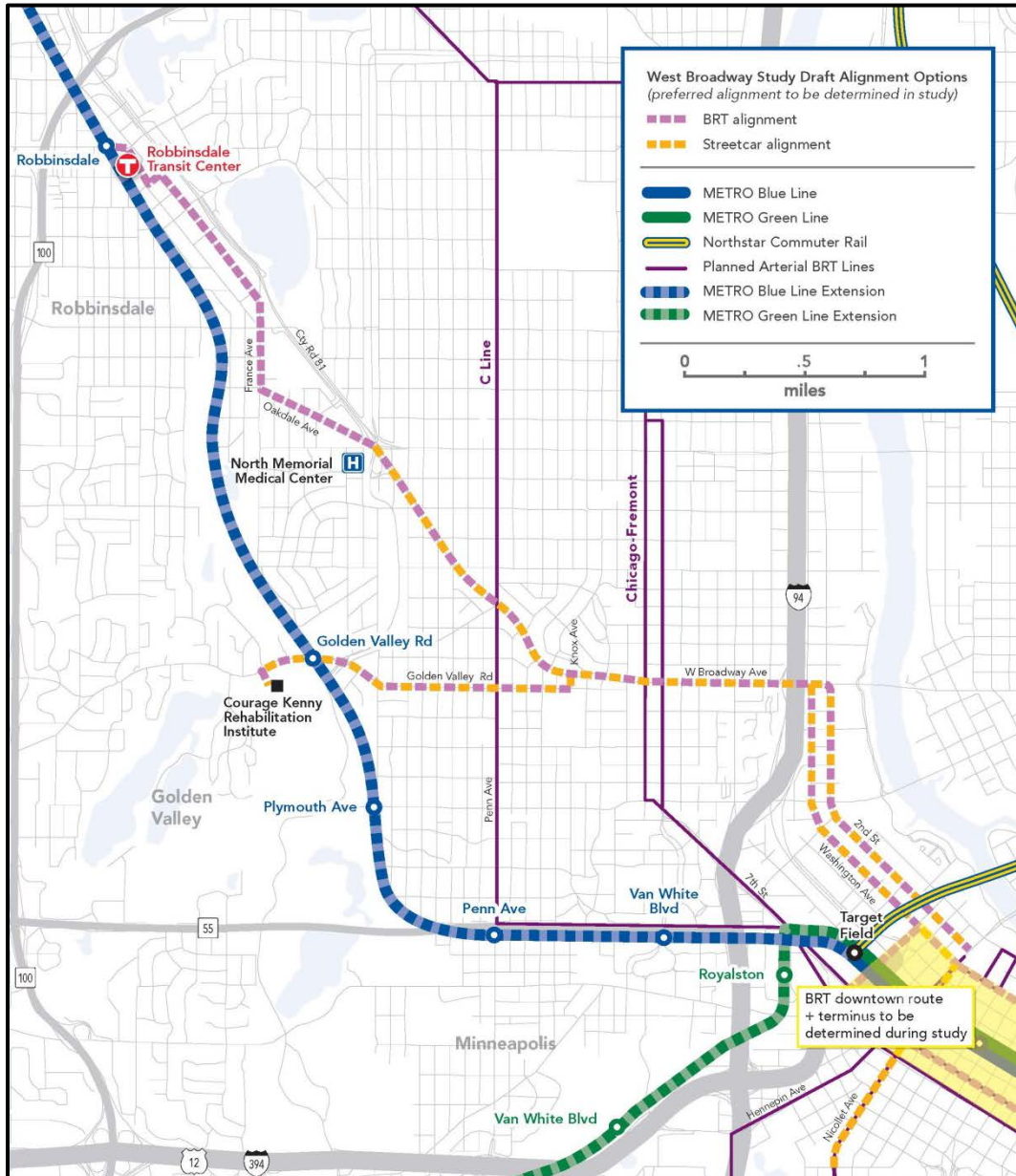
Conversion of travel lanes to LRT guideway would have severe impacts to transit, automobile, and pedestrian mobility in the area, as West Broadway is the only continuous east-west arterial facility between Plymouth Avenue and Lowry Avenue in north Minneapolis and one of just three bridges over the Mississippi River in the area. West Broadway Avenue is classified as an “A” minor arterial augmentor, which means it carries regional motor vehicle traffic and connects to the region’s freeway system. It also carries several local bus routes. Interstate 94 interchanges that provide access to north Minneapolis are located only at West Broadway Avenue and Dowling Avenue. Because these interchanges are widely spaced, they carry heavy automobile and truck volumes and have little capacity for the exclusive guideway that LRT requires. West Broadway serves significant traffic volumes, from 10,900 vehicles per day west of Penn Avenue to 20,300 vehicles per day west of Lyndale Avenue (2013 volumes). Opportunities to relocate existing West Broadway Avenue traffic to adjacent streets are limited.

Expansion of the West Broadway right-of-way or conversion of travel lanes would disrupt the economy of the neighborhood, deprive the neighborhood of long-standing community assets, destroy the visual consistency of the avenue, and compromise mobility and accessibility in north Minneapolis. Therefore, LRT will not be considered in the West Broadway Transit Study. A no-build alternative, as well as conceptual alternatives for modern streetcar and arterial BRT modes, will be developed as part of the study.

## **2. Alignments**

Several alignments will be considered for streetcar and arterial BRT in the West Broadway corridor. The study’s main focus is the alignment along West Broadway between Knox Avenue North and Washington Avenue North to downtown Minneapolis. Alignment options that connect to future METRO Blue Line Extension (Bottineau) LRT stations to the west are also being considered. Please see Figure 7 for a map of the alignment options.

**Figure 7: West Broadway Corridor Alignment Options**



### Common Alignment

- All streetcar and arterial BRT alignments will use a common segment of West Broadway between Knox Avenue North and Washington Avenue North. Options described below will be studied for alignments into downtown Minneapolis and connecting to METRO Blue Line Extension (Bottineau) LRT stations.

### Downtown Connection Alignment Options

- To reach its terminus at Nicollet Mall, the transitway would turn south from West Broadway onto Lyndale Avenue, then use Plymouth Avenue, and Washington Avenue or 2nd Street North to reach downtown Minneapolis.

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- This option was dismissed for both modes. Lyndale Avenue from Broadway to Plymouth runs primarily through a “suburban-style” neighborhood, with a broken street grid and single-family houses. There are no cross streets on Lyndale from 14<sup>th</sup> to 18<sup>th</sup> Avenue, making connections difficult. Since most of this area is already built out and contains small single-family lots, development potential is low. Plymouth Avenue from Lyndale Avenue to Washington Avenue consists of a long bridge overpassing I-94 and its associated ramps. Overall, development potential is very low on the Lyndale/Plymouth option and the long bridge would pose a costly technical challenge for streetcar.
  - To reach its terminus at Nicollet Mall, the transitway would turn south from West Broadway onto Washington Avenue to reach downtown Minneapolis.
    - This option was retained for both modes.
  - To reach its terminus at Nicollet Mall, the transitway would turn south from West Broadway onto 2<sup>nd</sup> Street North to reach downtown Minneapolis.
    - This option was retained for both modes.
  - Several options will be considered throughout the West Broadway Transit Study for continuing arterial BRT along Washington Avenue or into the downtown core.

## Western Alignment Options

- To reach a potential terminus at the Golden Valley Road Station on the METRO Blue Line Extension (Bottineau) LRT line the transitway would use Knox Avenue North and Golden Valley Road.
  - This option was retained for both modes.
- To reach a potential terminus at the Golden Valley Road Station on the METRO Blue Line Extension (Bottineau) LRT line the transitway would use McNair Avenue and Glenwood Parkway to reach the station.
  - This option was dismissed for both modes. McNair Avenue from West Broadway to Thomas Avenue has a narrow curb-to-curb right-of-way, measuring between 22 and 25 feet. West of Washburn Avenue, the streetcar or BRT would have to operate within Minneapolis Park and Recreation Board property, which could pose a significant topographical and political challenge. Development potential in this corridor is also fairly low.
- To reach a potential terminus at the Robbinsdale Station on the METRO Blue Line Extension (Bottineau) LRT line the transitway would use County Road 81, 41<sup>st</sup> Avenue, and West Broadway Avenue.
  - This option was dismissed for both modes. County Road 81 provides little access for the walk-up transit users that arterial BRT intends to serve. The other route option to downtown Robbinsdale along Oakdale, France, and West Broadway Avenues serves existing transit riders and is closer to residences, commercial uses, and North Memorial Hospital. Furthermore, use of the Oakdale-France-West Broadway route for arterial BRT allows for replacement of much of the Route 14 and simplifies the route structure so that just one branch of the Route 14 would operate from Robbinsdale Transit Center along Noble Avenue and 36<sup>th</sup> Avenue to West Broadway.

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- To reach a potential terminus at the Robbinsdale Station on the METRO Blue Line Extension (Bottineau) LRT line the transitway would use West Broadway, Oakdale Avenue, France Avenue, and West Broadway Avenue to reach the station.
    - This option was retained for arterial BRT only. Streetcar was dismissed because the City of Robbinsdale completed utility replacement and street reconstruction in 2013 on Oakdale and France Avenues and this work would need to be redone to accommodate streetcars.
  - To reach a potential terminus at North Memorial Hospital, the transitway would use West Broadway Avenue and Oakdale Avenue or adjacent streets. There is a tunnel under Oakdale Avenue between North Memorial Hospital and the Oakdale Medical Building that will need to be considered during concept development and design. North Memorial will be consulted during development of this alignment.
    - This option was retained for both modes.

## Streetcar and Arterial BRT Configuration

- **Will a double-track configuration or single-track with passing areas configuration be considered for streetcar?**

In a double-track configuration two parallel tracks are used throughout the length of the corridor. This eliminates conflicts with vehicles travelling in opposite directions that would be present with a single track configuration and allows for the highest frequency of service and scheduling flexibility. For these reasons, only a double-track streetcar configuration will be evaluated.
- **Where can a streetcar run in the roadway?**

Streetcar alternatives will be designed to meet project cost, operations, and community goals while also responding to physical conditions in the corridor and the needs of other users such as local buses, auto traffic, on-street parking, pedestrians, and bicyclists. In order to arrive at an optimal streetcar design, both center-running and side-running configurations will be considered at various locations in the corridor. Because streetcars run in shared traffic lanes, all tracks would be embedded into the street so that pedestrians, bicyclists, and vehicles are able to cross safely.
- **Can an exclusive guideway for either mode be considered on West Broadway?**

The implementation of a transitway with a dedicated guideway on West Broadway would require expansion of West Broadway right-of-way or conversion of automobile lanes to a transit guideway. Either of these actions would disrupt the economy of the neighborhood, deprive the neighborhood of long-standing community assets, and destroy the visual consistency of the avenue. Therefore exclusive guideways for streetcar or arterial BRT will not be evaluated as part of the West Broadway Transit Study.



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- **What are the impacts of operating a transitway in mixed-traffic lanes?**

An exclusive guideway offers transit vehicles a significant benefit for speed and reliability. However, in densely developed urban corridors like West Broadway, provision of an exclusive lane is challenged by available right-of-way and traffic capacity concerns. Where providing an exclusive guideway is infeasible, transit vehicles are operated in mixed-traffic lanes. Mixed-traffic lanes are not exclusive to transit vehicles, leading to potential transit delays due to traffic congestion. These delays affect the ability of a transitway investment to provide reliable, attractive service that is competitive with an automobile. A thorough analysis of the opportunities and constraints for some level of exclusive travel lanes for transit will be evaluated in the West Broadway Transit Study. Options for consideration include queue jump lane sections, or parking restrictions during peak periods.

- **How will a transitway on West Broadway impact roadway operations?**

West Broadway plays a significant role as an arterial roadway providing east-west travel through north Minneapolis. Implementation of a transitway on West Broadway will require a thorough analysis to assess the full impact on current traffic operations, including a possible shift in auto volumes to parallel roadways.

- **How will stations be developed on West Broadway?**

West Broadway is a dense urban corridor with a significant number of businesses on both sides. Station configurations for each mode will be developed based on existing roadway and sidewalk infrastructure and available space. The use of bump-outs and station placement for the various alternatives will be analyzed and evaluated during the concept development phase.

The West Broadway Transit Study will define alternatives (mode and alignment) to be studied and develop capital cost estimates, operating plans, and ridership forecasts for each alternative.

### **3. Markets**

There are two types of travel markets that can be captured by a potential transitway investment in the West Broadway corridor: external trips (either origin or destination outside of the corridor) and intra-corridor trips (entirely within the corridor).

#### **External Markets**

In addition to providing connections to the many transit options in downtown Minneapolis, the West Broadway corridor may provide a connection to the proposed METRO Blue Line Extension (Bottineau) LRT at the Golden Valley Road Station or the Robbinsdale Station, as well as the Robbinsdale Transit Center, planned arterial BRT service on Penn Avenue North (C Line), and planned arterial BRT service on Emerson and Fremont Avenues North. These connections will increase accessibility for transit users and create synergy between the growing network of high-frequency, high-capacity transitways in the region. Finally, the transitway will provide opportunities to connect with several local bus routes including Routes 5, 7, 14, 19, 22, 30, and 32.

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A West Broadway transitway could serve trips between corridor destinations and other locations by providing a faster and/or more reliable transit alternative. Short travel times, convenient connections to other regional transitways, and access to key destinations will be attractive to potential riders both within and outside of the immediate West Broadway corridor.

Improved connections to external markets provide increased access to destinations and job opportunities for corridor residents. This connectivity also provides increased access to businesses in the corridor from residential and other markets outside of the corridor.

### **Intra-Corridor Travel**

Transitway service will enhance opportunities for residents to access large employers and shopping and recreational destinations in the corridor. Major employers in the corridor include North Memorial Medical Center, Minneapolis Public Schools, the North Washington Jobs Park, and the region's largest employment cluster in downtown Minneapolis. Shopping and entertainment destinations line West Broadway in Robbinsdale and north Minneapolis, and Washington Avenue in the North Loop.

Using the Twin Cities Regional Travel Demand Forecast Model, each city's long-range development assumptions, and future year transportation networks, the West Broadway Transit Study will produce ridership forecasts for base alternatives, as well as sensitivity tests for alignment, station locations, frequency, and speed changes.

## **4. Land Use and Economic Development**

The implementation of transitway improvements such as streetcar and arterial BRT have been linked to increased development and redevelopment activity in other communities. For transit investments to be as successful as possible, land uses around the potential transit stations should allow for a critical mass of people to live, work, or visit the immediate area, or have the potential to stimulate development of such places. Transportation infrastructure must facilitate pedestrian and bicycle access to the station to and from nearby destinations. Land use, high density of development, and human-scale infrastructure around transit are critical to generating ridership on a line and increasing the return on the transit investment.

### **Land Use**

#### **Minneapolis**

Land use and community designations in *The Minneapolis Plan for Sustainable Growth* vary by segment of the corridor. Washington Avenue south of 10<sup>th</sup> Avenue and West Broadway between 26<sup>th</sup> Avenue and the Mississippi River and are designated as commercial corridors and can accommodate intensive commercial uses and high-density residential uses. Washington Avenue between 10<sup>th</sup> Avenue and West Broadway is an industrial employment district, a lower density area with few residents, primed for industrial growth in the city.

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## Robbinsdale

The *Robbinsdale Comprehensive Plan* calls for retention of the pedestrian scale of downtown, and continued downtown growth in a compact pattern. Land use in the majority of downtown and on the Terrace Mall site is mixed use, which allows for both vertical and horizontal mixed use and is intended to encourage higher density development (12-60+ units per acre of residential development).

Development interest is currently trending toward additional higher-density residential uses.

North Memorial Hospital employs approximately 3,500 people and occupies a large site at the intersection of Oakdale and West Broadway Avenues. The hospital reports that its campus has capacity to accommodate its near-term growth needs. The low-density (approximately 5.5 units per acre) residential neighborhoods along Oakdale and France Avenues are not planned for change.

## Golden Valley

Along Golden Valley Road, the *Golden Valley Comprehensive Plan* future land use plan calls for retention of established low-density (.1 to 5 units per acre) mostly single-family residential neighborhoods. The Courage Kenny Rehabilitation Institute, Minneapolis Clinic of Neurology, Church of St. Margaret Mary, and Unity Christ Church are institutional uses in the area. Station Area Planning for the Golden Valley Road Station on the METRO Blue Line Extension (Bottineau) LRT is currently underway and could possibly result in eventual land use designation changes.

## Economic Development

### Downtown East/North Loop Master Plan and North Loop Small Area Plan

The *Downtown East/North Loop Master Plan* was adopted by the Minneapolis City Council in 2003 and presents a vision and strategy for growth in the underdeveloped districts of downtown Minneapolis, particularly around LRT stations. It documents the importance of attracting additional residents to the North Loop, developing retail that allows people to shop in the neighborhood, and emphasizing pedestrian connections to facilitate walking to work. It recommends mixed use office/commercial and mixed use retail/commercial for most of the neighborhood.

The *North Loop Small Area Plan* is complementary to the *Master Plan* and provides guidance for areas of the North Loop that are not near an LRT station. The *Small Area Plan* emphasizes multi-modal connections in the neighborhood and mixed use buildings with ground-floor service-oriented commercial uses.

### Above the Falls Master Plan Update

The *Above the Falls Master Plan* was adopted by the Minneapolis City Council in 2013. The Plan governs the area between I-94 and Marshall Avenue NE and between Plymouth Avenue and 42<sup>nd</sup> Avenue west of the river and 8<sup>th</sup> Street NE and 37<sup>th</sup> Avenue NE on the east side of the river. The plan affirms the river as an amenity, and advocates for public open space with bicycle and pedestrian connections to park land along both banks. Land use on the west side of the river between Plymouth and 31<sup>st</sup> Avenues is industrial, with commercial at West Broadway, and mixed use and transitional industrial lining the river-adjacent green space. The plan advocates for maintaining the Industrial Employment District on Washington, which allows for high-intensity, job-generating uses.



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## **Industrial Land Use and Employment Policy Plan**

Adopted by the Minneapolis City Council in 2006, the *Industrial Land Use and Employment Policy Plan* designated several industrial employment districts in the city. These areas have a high degree of policy protection intended to maintain prime industrial space and an emphasis on job retention and creation. The North Washington Jobs Park is an Industrial Employment District. The Jobs Park extends from I-94 on the west to the railroad tracks/West River Parkway on the east, and Plymouth Avenue on the south to 31<sup>st</sup> Avenue North on the north.

## **West Broadway Alive**

The *West Broadway Alive!* study was adopted by the Minneapolis City Council in 2008 and documents the importance to the community of attracting new development to West Broadway. Most notably, the community welcomes a range of housing types, densities, and price points in the corridor, as well as additional commercial businesses.

*West Broadway Alive!* states that while the number of active development projects in the West Broadway corridor is a source of encouragement, the timeline for these projects is typically very long, as a result of the need to assemble multiple sources of public and philanthropic financial support. The plan notes that major challenges faced by developers include public safety issues and a chaotic and unsightly visual environment in many parts of the corridor. As part of the West Broadway Transit Study, an in-depth market analysis will evaluate current prospects for transit-oriented development in the corridor, identify development site opportunities, and propose policies and tools to aid in implementation. Recognizing the wide variety of environments along West Broadway, the analysis will be segmented by geography and existing development types.

**Figure 8: Inconsistent Visual Environment in the Corridor**



In addition to transit-supportive land use and other regulatory mechanisms, private market appetite for high-density transit-oriented development is critical to the success of the transitway. The West Broadway Transit Study will evaluate the current market trends in each of the distinct segments of the corridor, analyze the impact of land use regulations on development potential, and produce a baseline development scenario for the corridor with estimates of development potential for residential, office, and retail uses.

## 5. Potential Transitway Impacts

### Parks, Trails, and Recreation Areas

If the West Broadway transitway project intends to pursue funding from the Federal Transit Administration, it must meet the requirements of Section 4(f) and Section 6(f) of the Department of Transportation Act of 1966 (40 USC 303, 23 USC 138). This law protects publicly owned parks, recreation areas, historic sites, and wildlife or waterfowl refuges from conversion to transportation use. Conversion of 4(f) or 6(f) properties to transportation uses is not allowed unless all prudent and feasible alternatives and all possible planning activities to minimize harm have been considered.

Because of their high level of protection, 4(f) and 6(f) resources are important assets to consider when developing a transitway. Known parks, trails, and recreation areas, as well as historic and cultural resources in the study area are discussed below. Further research on these assets will occur throughout the West Broadway Transit Study. *The Minneapolis Plan for Sustainable Growth*, the *Robbinsdale Comprehensive Plan*, and the *Golden Valley Comprehensive Plan* identify several park, trail, and recreational resources in the project area:

#### Parks/Recreation Areas:

- James I. Rice Parkway and Mississippi River bluff (Minneapolis)
- Hall Park (Minneapolis)
- North Commons Park (Minneapolis)
- Willard Park (Minneapolis)
- Theodore Wirth Park (Minneapolis and Golden Valley)
- Victory Memorial Parkway (Minneapolis)
- Oliver Triangle (Minneapolis)

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- Cottage Park (Minneapolis)
  - Manor Park (Robbinsdale)
  - Lakeview Terrace Park (Robbinsdale)
  - Triangle Park (Robbinsdale)
  - Glenview Terrace Park (Golden Valley)
  - Mary Hills Nature Area (Golden Valley)

#### Trails

- West River Parkway
- Cedar Lake Trail
- Theodore Wirth Trail
- Victory Memorial Parkway
- Crystal Lake Regional Trail

## Communities of Color and Low-Income Communities

### Environmental Justice Analysis

If Metro Transit intends to pursue federal funding for transit improvements in the West Broadway Corridor, the project will need to comply with Executive Order 12898 Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (February 1994). This Executive Order requires the U.S. Department of Transportation (DOT) and the Federal Transit Administration to make environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and/or low-income populations (collectively “EJ populations”). Environmental justice at FTA includes incorporation of environmental justice and non-discrimination principles into transportation planning and decision-making processes and project-specific environmental reviews.

Though detailed information on the potential effects of the West Broadway transitway on minority and low-income populations is not available at this early stage of planning, consideration of the public transportation needs of EJ populations is critical information for selection of a locally preferred alternative (LPA) in the West Broadway Corridor. Consistent with the framework outlined in FTA Circular 4703.1 (August 2012), the West Broadway Transit Study will identify EJ populations in the corridor and document the Project’s engagement with EJ populations throughout the study. This will allow for consideration of EJ populations in the LPA selection, and set the stage for a full analysis of the Project’s impacts to EJ populations as part of its environmental review process.

### Title VI Analysis

A Title VI equity assessment will be conducted for each alternative evaluated in the West Broadway Transit Study. The FTA requires funding recipients to “evaluate, prior to implementation, any and all service changes that exceed the transit provider’s major service change threshold, as well as all fare changes, to determine whether those changes will have a discriminatory impact based on race, color, or national origin.”

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The primary purpose of the Title VI Service Equity Analysis is to identify proposed service changes that would result in disparate impacts or disproportionate burdens to minority or low-income populations. Transit providers are allowed to implement service changes that create a disparate impact or disproportionate burden only if they demonstrate that the change meets a substantial need in the public interest and that alternatives to the change would have a more adverse effect than the preferred alternative.

## Historic and Cultural Resources

The *Bottineau Transitway Draft Environmental Impact Statement (EIS)* documents the presence of historic resources for some segments of the West Broadway corridor. However, the analysis needs to be expanded, as the Bottineau Transitway study area overlaps West Broadway for just a short segment and does not coincide with several of the corridors that will be considered as part of the West Broadway Transit Study.

According to the *Bottineau Transitway Draft EIS*, the following historic resources are present in the corridor. These resources are listed on the National Register of Historic Places (NRHP), or are NRHP-eligible:

- Hennepin County Library Robbinsdale Branch
- Robbinsdale Water Works
- Sacred Health Catholic Church
- Osseo Branch, Saint Paul Minneapolis & Manitoba/GN Railway Historic District
- Terrace Theatre
- Pilgrim Heights Community Church
- St. Anne's Catholic Church
- Minneapolis Warehouse Historic District

In addition to its listing on the NRHP, the City of Minneapolis has designated the Warehouse District as a local historic district and has developed the *Minneapolis Historic Warehouse District Design Guidelines* to protect the integrity and character of the district and ensure that new development is integrated in a manner that is sensitive to the historic character of the district. The *Design Guidelines* are a regulatory tool for use by city officials to make legal findings regarding alternations within the district. The *Design Guidelines* also list individual structures that are considered contributing to the historic district. Along with dozens of individual buildings, the following transportation structures with direct relationship to the West Broadway Transit Study were identified:

- Washington Avenue North Bridge
- 2<sup>nd</sup> Street North between 1<sup>st</sup> and 3<sup>rd</sup> Avenues North
- Washington Avenue North between 1<sup>st</sup> and 3<sup>rd</sup> Avenues North
- Washington Avenue North between 5<sup>th</sup> and 10<sup>th</sup> Avenues North

Changes to locally designated historic districts are reviewed by City staff and the Minneapolis Heritage Preservation Commission to ensure that alterations to properties within the district are made in an appropriate manner. As transitway concepts are developed, the West Broadway Transit Study will

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consider the Warehouse District Guideline Requirements, as well as other resources that may be locally designated by the City as historic.

The City of Robbinsdale sets forth architectural guidelines for buildings within the downtown overlay district that are intended to preserve and protect the existing pedestrian character of downtown, and promote further development of compact, mixed use buildings with a continuous building façade. The City of Robbinsdale does not currently allow buses to operate on West Broadway between 41<sup>st</sup> and 42<sup>nd</sup> Avenues.

The West Broadway Transit Study will include a high-level review of significant environmental issues, with a focus on the differences between alternatives and modes. The following topics will be addressed: noise and vibration; cultural and historic resources; parks, trails, and recreational areas (4(f) and 6(f) properties); threatened and endangered species; wetlands; floodplains; hazardous materials and existing contamination; environmental justice; and land use.