West Broadway Transit Study

Final Report

3/20/2017

Prepared by the
SRF Consulting Group Team

for

MetroTransit
# Table of Contents

**Executive Summary** ........................................................................................................................................... 3  
**Project Purpose and Goals** ............................................................................................................................... 3  
**Study Alternatives** ........................................................................................................................................... 3  
**Introduction** ...................................................................................................................................................... 6  
**How to Use this Report** ...................................................................................................................................... 6  
**Origin of the West Broadway Transit Study** ......................................................................................................... 8  
**Community Engagement** ...................................................................................................................................... 8  
**Decision-Making during the Study** ....................................................................................................................... 8  
  - Project Management Team ................................................................................................................................ 8  
  - Technical Advisory Committee ............................................................................................................................ 9  
  - Community Advisory Committee ....................................................................................................................... 9  
  - Policy Advisory Committee ............................................................................................................................... 9  
**Public Engagement and Input to Decision-Makers** ............................................................................................. 9  
  - Outreach Approach and Activities .................................................................................................................. 10  
  - Outreach Techniques ....................................................................................................................................... 10  
  - Community Input to the Study ........................................................................................................................ 11  
**Existing Conditions in the Corridor** ..................................................................................................................... 13  
  - North Loop .............................................................................................................................................. 13  
  - North Washington Jobs Park ........................................................................................................................ 13  
  - Robbinsdale ............................................................................................................................................. 14  
  - Golden Valley ........................................................................................................................................ 14  
  - North Loop .............................................................................................................................................. 13  
**Project Purpose, Need, and Goals** ....................................................................................................................... 17  
  - Project Purpose and Need ................................................................................................................................ 17  
  - Key Elements of the Project Purpose and Need ............................................................................................. 17  
**Purpose of the West Broadway Transit Project** ..................................................................................................... 17  
**Need for the West Broadway Transit Project** ...................................................................................................... 17  
  - Need for economic and physical revitalization in the West Broadway Corridor ........................................ 17  
  - Need to serve high proportion of residents who rely on transit as their primary means of transportation ........ 18  
  - Need to serve a variety of transportation markets ...................................................................................... 20  
  - Need for transit facilities and amenities commensurate with demand .................................................... 20  
  - Need for predictable transit service ............................................................................................................. 20  
  - Need to serve forecast population and employment growth .................................................................... 21  
  - Need for Consistency with City and Regional Policy .................................................................................. 21  
**Goals of the West Broadway Transit Project** ....................................................................................................... 21  
**Transit Alternatives Studied** .................................................................................................................................. 22  
**Modes of Transit Considered** ............................................................................................................................. 22  
  - Modern Streetcar .............................................................................................................................................. 22  
  - Arterial Bus Rapid Transit ................................................................................................................................ 22  
  - Initial Screening Analysis Method ................................................................................................................. 26  
  - Screening Criteria ............................................................................................................................................ 26  
  - Initial Screening Results ............................................................................................................................... 27
Advanced Alternatives .......................................................................................................................... 28
Streetcar Alternative by the Numbers ....................................................................................................... 28
Evaluation of Advanced Alternatives Streetcar Alternative .................................................................. 28
Capital Costs ........................................................................................................................................ 28
Ridership .............................................................................................................................................. 29
Economic Development ............................................................................................................................ 29
Arterial BRT Alternative .......................................................................................................................... 31
Arterial BRT Alternative by the Numbers ................................................................................................. 31
Capital Costs ........................................................................................................................................ 31
Ridership .............................................................................................................................................. 31
Economic Development ............................................................................................................................ 31
Topics for Additional Analysis in Future Phases ....................................................................................... 33
On-Street Parking on West Broadway ....................................................................................................... 33
Operations and Maintenance Facility ........................................................................................................ 33
Impacts to Park Land and Historic and Cultural Resources .................................................................. 33
Locally Preferred Alternative .................................................................................................................. 34
Next Steps ............................................................................................................................................... 34
Locally Preferred Alternative Recommendation Resolution .................................................................... 35

List of Figures
Figure 1: Study Area ................................................................................................................................. 7
Figure 2: Decision-Making during the Study ......................................................................................... 9
Figure 3: Existing and Planned Transit Service in the West Broadway Corridor .................................. 16
Figure 4: Zero-Car Households in the West Broadway Corridor ............................................................ 19
Figure 5: Initial Streetcar Alternatives Evaluated ................................................................................... 25
Figure 6: Initial Arterial BRT Alternatives Evaluated ............................................................................ 26
Figure 7: Streetcar Alternative ............................................................................................................... 30
Figure 8: Arterial BRT Alternative .......................................................................................................... 32

List of Appendices
Appendix A: Relevant Issues and Study Framework
Appendix B: Community Engagement Plan
Appendix C: Community Engagement Report
Appendix D: Problem Statement
Appendix E: Conceptual Development of Alternatives Memo
Appendix F: Initial Screening Memo
Appendix G: Detailed Definition of Alternatives Memo
Addendum 1: Operations and Maintenance Facility Potential Locations
Addendum 2: North Loop Alternatives
Appendix H: Capital Cost Estimation Methodology and Results
Appendix I: Ridership Forecast Results
Appendix J: Economic Development Impacts of Transit Alternatives
Appendix K: Market Conditions and Planning Context Review
Appendix L: Economic Development Methodology
Appendix M: Environmental and Community Impact Analysis
Appendix N: Traffic Analysis Results
Appendix O: Operations and Maintenance Cost Estimation Methodology and Results
Executive Summary
The West Broadway Transit Study was a collaborative planning process with Metro Transit, the City of Minneapolis, Hennepin County, and community and agency partners to identify and evaluate potential streetcar and arterial bus rapid transit (BRT)\(^1\) 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.

Project Purpose and Goals
The purpose of the West Broadway transitway is to provide transit service that meets current and future travel needs, attracts new riders, connects users with job centers and key destinations, and supports transit-oriented development and economic growth in the corridor. Project goals that address the purpose and need for a transit investment in the West Broadway corridor were established at the beginning of the study:

- **Goal 1:** Catalyze and support housing and economic development along the corridor
- **Goal 2:** Improve local and regional mobility with improved access to jobs and activities
- **Goal 3:** Address equity issues in the West Broadway corridor to ensure that corridor residents as well as patrons of area businesses and institutions have access to opportunities for success, prosperity, and quality of life
- **Goal 4:** Build upon the vibrancy and diversity of the corridor by supporting healthy, active communities and the environment
- **Goal 5:** Improve upon existing transit service in the corridor
- **Goal 6:** Increase transit use among corridor residents, employees, and visitors
- **Goal 7:** Engage in an inclusive public outreach process

Study Alternatives
The West Broadway Transit Study initially considered five alternatives. A collaborative process was used to narrow the initial set of transit alternatives to those with the most potential. Of the five initially-considered alternatives, the two alternatives with the highest scores were recommended for detailed study. These were arterial BRT from downtown Minneapolis to Robbinsdale Transit Station and streetcar from Nicollet Mall to North Memorial Hospital. The study analyzed the benefits, costs, and impacts of these two alternatives. These alternatives are described on the following pages.

---

\(^1\) Bus Rapid Transit (BRT) is a mode of transit 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, and guideway BRT uses dedicated runningway. Typically, service frequencies are every 15 minutes or better.
STREETCAR
from Downtown Minneapolis to North Memorial Hospital

Streetcar by the Numbers
- Length: 4.9 miles
- Stations: 19
- Forecast 2040 Ridership: 3,900 rides
- Estimated Cost to Construct: $229 million
- Estimated Yearly Cost to Operate: $3.6 million
- Service Frequency: every 15 minutes
- End-to-End Travel Time: 33 minutes
- Similar Local Project: Nicollet-Central Modern Streetcar

What's Great About Streetcar?
- Streetcar is predicted to generate a significant amount of economic development in the West Broadway Corridor in the form of new housing, retail, and office space.
- Streetcar will connect to C Line, D Line, and all of the LRT and buses in downtown Minneapolis and is about four minutes faster than regular-route bus service.
- Streetcar service is a benefit to people who rely on transit to reach their destinations; it’s also a benefit to businesses that may see more people pass their shops.
- Streetcar is not anticipated to have significant negative impacts on residents, businesses, pedestrians, bicyclists, motorists, and the natural environment.
- Streetcar service will be frequent and reliable and will start early and run late. Stations will include shelters with heat and light, security cameras, and real-time arrival information.
- Streetcar service is likely to increase transit use among corridor residents, employees, and visitors.
ARTERIAL BRT
from Downtown Minneapolis to Downtown Robbinsdale

What's Great About Arterial BRT?

- Arterial BRT is predicted to generate a modest amount of economic development in the West Broadway Corridor in the form of new housing, retail, and office space.
- Arterial BRT will connect to Blue Line LRT, C Line, D Line, and all of the LRT and buses in downtown Minneapolis and is about five minutes faster than regular-route bus service.
- Arterial BRT service is a benefit to people who rely on transit to reach their destinations; it's also a benefit to businesses that may see more people pass their shops.
- Arterial BRT is not anticipated to have significant negative impacts on residents, businesses, pedestrians, bicyclists, motorists, or our parks and natural environment.
- Arterial BRT service will be frequent and reliable and will start early and run late. Stations will include shelters with heat and light, security cameras, and real-time arrival information.
- Arterial BRT service is likely to increase transit use among corridor residents, employees, and visitors.

Arterial BRT by the Numbers

- Length: 7 miles
- Stations: 22
- Forecast 2040 Ridership: 4,800 rides
- Estimated Cost to Construct: $40 million
- Estimated Yearly Cost to Operate: $5.5 million
- Service Frequency: every 15 minutes
- End-to-End Travel Time: 44 minutes
- Similar Local Project: A Line (Snelling Avenue)
Introduction

The West Broadway Transit Study was a collaborative planning process with Metro Transit, the City of Minneapolis, Hennepin County, and community and agency partners to identify and evaluate potential streetcar and arterial bus rapid transit (BRT)² 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. A map of the study area is shown in Figure 1. The study included an evaluation of potential connections to the Nicollet-Central Modern Streetcar line (currently under study), planned arterial BRT lines, and existing local and express bus services. The study also considered the corridor’s potential for transit-oriented development (TOD). The outcome of the study was a recommendation for transit service improvements in the corridor that meet area transportation and economic development needs.

The year-long study followed a four-stage process:

Stage 1: A problem statement was written describing the need for the proposed project and the goals and objectives of the project, an initial “universe of alternatives” of routes and modes of transit were developed in the study area, and the universe of alternatives was narrowed down to the most promising alternatives.

Stage 2: The most promising alternatives were further developed and became more detailed.

Stage 3: The most promising alternatives were refined and evaluated.

Stage 4: The preferred alternative was selected and recommendations on next steps were developed.

How to Use this Report

This report provides a high-level overview of the West Broadway Transit Study process and outcomes. Detailed technical documentation and results are captured in the project’s technical memoranda, which are referenced and hyperlinked throughout the document. All project documents can also be found on the project website: metrotransit.org/west-broadway-transit-study

---

² Bus Rapid Transit (BRT) is a mode of transit 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, and guideway BRT uses dedicated runningway. Typically, service frequencies are every 15 minutes or better.
Figure 1: Study Area
Origin of the West Broadway Transit Study

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). As a consideration in selecting the Blue Line Extension alignment in the Burlington Northern Santa Fe (BNSF) railroad corridor east of Theodore Wirth Park was the optimal alternative for LRT, the agencies also agreed to explore other 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 origination of the West Broadway Transit Study is not only a transit initiative, but transitway implementation also one important mechanism 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. Please see Appendix A: Relevant Issues and Study Framework for more information.

Community Engagement
Decision-Making during the Study

The West Broadway Transit Study was led by Metro Transit with input and direction from the Project Management Team (PMT), Technical Advisory Committee (TAC), Policy Advisory Committee (PAC), and Community Advisory Committee (CAC), which met throughout the study. For a full list of committee members, see Appendix B: Community Engagement Plan.

Project Management Team

The PMT consisted of project staff from the cities of Minneapolis, Golden Valley and Robbinsdale, Hennepin County, Metropolitan Council, Metro Transit, and the consultant team. The PMT was responsible for the day-to-day management of the study, and for facilitating coordination among the partner agencies, the consultant team, and the project committees. The PMT was also responsible for
oversight of all technical work as well as the project schedule and staff recommendations to the TAC and PAC. The PMT met biweekly for the duration of the study.

**Technical Advisory Committee**
The TAC was composed of PMT members along with additional representatives from the partner agencies in the West Broadway corridor, including the Metropolitan Council, Metro Transit, Hennepin County, and the cities of Minneapolis, Robbinsdale and Golden Valley. The TAC provided technical input to the transit study process, identified issues and concerns, evaluated project alternatives, and made recommendations on preferred alignments and modes to the PAC. The TAC met 8 times during the study.

**Community Advisory Committee**
The CAC was composed of members who live and work in the study area. While CAC members were not required to be representatives of neighborhood or other organizations, they were asked to help disseminate study information, and to consider the perspectives of the full community, their neighbors, and their colleagues, as well as their own views in committee discussions. A brief application to serve on the CAC was widely distributed at the beginning of the study and people were encouraged to apply. All applicants were invited to sit on the committee. The CAC met five times throughout the study and provided valuable perspectives on the technical information, evaluation of alternatives, and outreach and communication techniques. The two CAC co-chairs, selected by their peers, also served as voting members of the PAC. The CAC met five times during the study project.

**Policy Advisory Committee**
The PAC included elected and appointed officials from partner agencies in the West Broadway Transit Study corridor as well as the co-chairs of the CAC. The PAC provided policy input and direction throughout the study, discussed transit alternatives, and made the final LPA recommendation to the Metropolitan Council. The PAC met five times during the study, as well as a corridor tour.

**Public Engagement and Input to Decision-Makers**
Public engagement during the West Broadway Transit Study was conducted in two phases. During Phase I in summer 2015, the focus of activities was on community members’ views of corridor assets and barriers to transit use in the corridor. In fall 2015, Phase II’s focus was to engage people in a discussion of the project goals as well as priorities and ideas for transit service improvement along the West Broadway corridor. This feedback was presented to the Policy Advisory Committee, to inform their recommendation on the LPA in early 2016.
Outreach Approach and Activities
Public engagement throughout the West Broadway Transit Study was based on a “meet people where they are” approach. Rather than hosting a series of public meetings about the project and requesting attendance by community members, the project team instead brought study information, activities, and staff to already-planned community events throughout the corridor. Engagement activities reached more than 1,000 people and included 32 on-street activities or events and two public open houses between March and November 2015. The events included the following:

- 12 engagement activities at existing bus stops – six during Phase I and six during Phase II. Bus stop locations during Phase II were selected based on the quantity of feedback received at bus stops selected during Phase I
- Seven engagement activities at activity nodes: North Loop Whole Foods (3), Corner Coffee, North Memorial Hospital, Downtown Robbinsdale and Cedar Lake Trail
- A public open house at the West Broadway YMCA in conjunction with YMCA family night
- A public open house at the Capri Theatre with premiere of a video about the West Broadway corridor featuring residents and transit riders

Outreach Techniques
During Phase I, the focus for engagement was to raise awareness of the study and to ascertain community members’ views of assets and barriers to transit use in the West Broadway corridor. A range of materials and techniques were used to distribute information and gather feedback:

- Youth apprentices at Juxtaposition Arts created a ‘zine, a graphic magazine with the project map and information on the transit alternatives, which was distributed at outreach events.
- Postcards were available for people to write “six-word stories” that describe their community or neighborhood.
- An interactive corridor map exercise was used to help with discussion about key destinations and barriers. People used green dots to identify places where they live, work or frequent; they used red dots to identify locations where there are barriers to accessing transit.
• Radio ads and flyers distributed around the neighborhood notified people about the study and upcoming open house.

Engagement for Phase II centered on project goals, priorities and ideas for transit service improvement along the corridor. Techniques used to gather input during Phase II included:

• A second edition of the ‘zine provided the results of the technical analyses completed for the streetcar and arterial BRT alternatives, the project timeline, an updated map, and contact information for representative members of the Policy Advisory Committee.
• A “Family Feud” game was used at some events to help people learn about the feedback heard at previous engagement activities.
• A “poker chip” exercise was used to gain input on the relative value of planned West Broadway station area features.
• A video was produced that featured residents and transit riders in the corridor, and showcased their ideas and opinions about transit service.
• A 15 second video was aired through Comcast on YouTube between October 18 and November 3, 2015. The video came up as an ad before YouTube videos for Comcast subscribers in the zip codes in the corridor. The video, which advertised the study and the upcoming open house, was viewed 46,338 times and 133 viewers clicked through to view the West Broadway Transit Study website.

For more information about the engagement activities and techniques through the West Broadway Transit Study, see Appendix C: Community Engagement Report.

Community Input to the Study
During Phase I of community engagement, community members were asked about the assets in the corridor, their barriers to using transit, and their priorities for transit improvements, as shown below in Table 1.

Table 1: Community Input on Assets, Barriers, and Priorities

<table>
<thead>
<tr>
<th>Corridor Assets</th>
<th>Barriers to Transit Use</th>
<th>Transit Improvement Priorities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Businesses and stores</td>
<td>Long waits, especially evenings and weekends</td>
<td>Safety and security</td>
</tr>
<tr>
<td>Restaurants</td>
<td>Security and comfort at stations and on buses</td>
<td>Improved shelters</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-----------------------------------------------</td>
<td>-------------------------------------</td>
</tr>
<tr>
<td>Culture and people</td>
<td>Expensive fares</td>
<td>Additional routes and higher frequencies</td>
</tr>
<tr>
<td>Proximity to downtown</td>
<td>Long walks to buses</td>
<td>More amenities such as wireless internet, outlets, and improved seating</td>
</tr>
<tr>
<td>Minneapolis</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Lack of bus service to the suburbs</td>
<td></td>
</tr>
</tbody>
</table>

People also discussed their vision for West Broadway as a safe and peaceful place with more restaurants and places to buy healthy food, more independently-owned businesses, building vacancies filled, and more trees and landscaping.

During Phase II of engagement, community members were asked to weigh in on the most important goals of West Broadway transit improvements. Better public transportation to jobs, activities, and other places, more businesses and affordable housing in the corridor, and access to opportunities for people of color living in the corridor were the priority goals, according to respondents. People were also asked to identify their top three preferences for improvements to transit facilities and services. Connections to more places and routes, more frequent and earlier/later services, and safety at stops and on vehicles topped the list. Finally, people also weighed in on their preference for arterial BRT or streetcar. There was some preference for rail in the corridor for aesthetic and riding experience reasons. People also were less clear about what arterial BRT would look like and how it would be different from current bus service.

Youth apprentices at Juxtaposition Arts designed and led a game to engage people in transit conversations during FLOW Northside Arts Crawl.
Existing Conditions in the Corridor

Minneapolis

The West Broadway corridor passes through three distinct areas of Minneapolis: the North Loop, the North Washington Jobs Park, and four residential neighborhoods in north Minneapolis—Near-North, Hawthorne, Jordan, and Willard-Hay. The West Broadway corridor is racially and ethnically diverse, with significant African American, Asian, Hispanic, and white populations throughout the corridor. The corridor is also economically diverse, with low-, middle-, and upper-income populations. Demographic patterns loosely follow the segments described below.

North Loop

The North Loop neighborhood is located immediately adjacent to downtown Minneapolis in the Warehouse District, which is listed on the National Register of Historic Places. The neighborhood is bounded on the north by Plymouth Avenue, on the south by Hennepin and Third Avenues, on the west by I-94, and on the east by the Mississippi River. For most of its history, the North Loop was an industrial area home to a large railroad yard and numerous warehouses and factories. The warehouses that characterize the district are mostly six to eight stories high, and many were converted to residential and commercial buildings beginning in the 1980s. Washington Avenue is the commercial spine of the North Loop. The neighborhood is home to several regional destinations including Target Field, the Minneapolis Farmers’ Market, and Target Field Station, the hub of rail and bus transit in Minneapolis. The North Loop/Warehouse District is an affluent neighborhood with few children, little economic diversity among residents, and some racial and ethnic diversity.

North Washington Jobs Park

The North Washington Jobs Park is an area designated by the City of Minneapolis as an Industrial Employment District. There are no residents living in this area, as Industrial Employment Districts are meant to protect prime industrial space, provide opportunities for the City to support targeted industries and business clusters, and to redevelop underutilized sites for economic development purposes. These districts have a high level of policy protection and an emphasis on job retention and creation. Industrial uses have primacy over other uses. The North Washington Jobs Park is bound by I-94 on the

A business on Washington Avenue in the Jobs Park
west, West River Parkway on the east, 10th Avenue and Plymouth Avenue on the south, and 31st Avenue on the north.

**Near-North, Hawthorne, Jordan, and Willard-Hay Neighborhoods**

West Broadway Avenue is north Minneapolis’ “Main Street” and contains a mix of retail, commercial, cultural, residential and institutional uses. It is the north-south boundary between the Near-North, Hawthorne, Jordan, and Willard-Hay neighborhoods. As you move away from West Broadway these neighborhoods are primarily residential, with a mix of single-family homes, duplexes, triplexes, and small apartment buildings. Commercial and retail stores are generally clustered along West Broadway, with some neighborhood retail at key intersections. The four neighborhoods are racially and ethnically diverse, have a disproportionately high population of young people under age 18, have high rates of poverty and unemployment compared to regional averages, and have economic indicators, such as household income and educational attainment levels, which are below the regional average.

**Robbinsdale**

The West Broadway corridor includes three distinct places in Robbinsdale: North Memorial Medical Center, a medical campus with a Level I Trauma Center and several outpatient buildings; single family residential neighborhoods along France Avenue; and downtown Robbinsdale along West Broadway Avenue, a traditional “Main Street” with a mix of commercial, retail, institutional, and multi-family residential uses. The Robbinsdale segment of the corridor falls between the North Loop and north Minneapolis neighborhoods with regard to age distribution and economic status, and has less racial and ethnic diversity than the Minneapolis segments.

**Golden Valley**

The West Broadway corridor includes a short segment of eastern Golden Valley along Golden Valley Road that is almost entirely comprised of single-family residential neighborhoods and parks and open space. Several institutions are nearby: Courage Kenny Rehabilitation Institute, Minneapolis Clinic of
Neurology, Golden Valley Fire Station, Church of St. Margaret Mary, and Christ Unity Church. The Golden Valley segment of the corridor falls between the North Loop and north Minneapolis neighborhoods with regard to age distribution and economic status, and has less racial and ethnic diversity than the Minneapolis segments.

**Transit Service**

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, 3rd Avenue, 6th Street, and 11th Avenue, and northbound on 11th Avenue, 7th Street, 5th Avenue, 4th 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. Weekday service on Route 30 began in March 2014, while new weekend service will start in June 2016.

Finally, local Route 32 traverses West Broadway Avenue in the Robbinsdale segment of the corridor, providing service between Robbinsdale and Rosedale Transit Centers from approximately 6:15 a.m. to 8:20 p.m. at 30 minute frequencies on both weekdays and weekends.

Several transitway projects are planned in the West Broadway area. The West Broadway corridor could connect to planned METRO Blue Line Extension (Bottineau) light rail transit (LRT) stations in Golden Valley or Robbinsdale, and will connect to the planned arterial BRT lines on Penn Avenue (C Line), and Emerson and Fremont avenues, as well as the planned Nicollet-Central modern streetcar line in downtown Minneapolis. All existing and planned transit service in the study area is shown in Figure 3.
Figure 3: Existing and Planned Transit Service in the West Broadway Corridor
Project Purpose, Need, and Goals

Project Purpose and Need
The project’s problem statement, also referred to as its “purpose and need statement” communicates the problems that the project is attempting to address. The purpose and need statement was key to determining the range of project alternatives considered. Alternatives that did not meet the purpose and need were dismissed from the analysis. The purpose and need statement shaped the goals and objectives of the project that were used to evaluate each alternative and its suitability to addressing the needs of the corridor.

Key Elements of the Project Purpose and Need
- **Purpose**: A clear and succinct statement of the fundamental reasons the project is being proposed
- **Needs**: The current problems in the corridor that the project is intended to address
- **Goals/Objectives**: Desired outcomes the project would have
- **Evaluation Criteria**: A set of measures derived from the project goals that bring forward the characteristics of each alternative needed for decision-making

For a detailed discussion of the project’s purpose and need as well as its goals and objectives, see Appendix D: Problem Statement.

Purpose of the West Broadway Transit Project
The purpose of the West Broadway transitway is to provide transit service that meets current and future travel needs, attracts new riders, connects users with job centers and key destinations, and supports transit-oriented development and economic growth in the corridor.

Need for the West Broadway Transit Project

Need for economic and physical revitalization in the West Broadway Corridor
As shown in Table 1, 24.6 percent of residents in the West Broadway corridor live in poverty, compared to 21.6 percent in Minneapolis and 10.8 percent in the Twin Cities region. All of the census tracts surrounding West Broadway Avenue in Minneapolis are Areas of Concentrated Poverty where at least 40 percent of the residents live below 185 percent of the federal poverty line and at least half of the residents are people of color. In their regional planning framework, the Metropolitan Council states, “Living in Areas of Concentrated Poverty hurts people in many ways. Areas of Concentrated Poverty usually suffer from high crime and tend to have schools with lower test scores and graduation rates. Living in Areas of Concentrated Poverty undermines people’s physical and mental health. It reduces the cognitive abilities of children, making them more likely than their parents to have lower incomes as

---

3 Seventy-five percent of the census tracts in the Twin Cities Metropolitan Area identified as Areas of Concentrated Poverty are also census tracks in which 50 percent or more of the residents are people of color.
4 $42,589 in annual income for a four-person household in 2011.
adults. Together these characteristics lower the economic mobility of residents who live in Areas of Concentrated Poverty, making them more likely to stay poor across generations.”

Table 2: Poverty Levels in the West Broadway Corridor, Minneapolis, and Metropolitan Area

<table>
<thead>
<tr>
<th></th>
<th>Population</th>
<th>Population in Poverty</th>
<th>Percent of Population in Poverty</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Broadway Corridor</td>
<td>56,087</td>
<td>13,801</td>
<td>24.6%</td>
</tr>
<tr>
<td>Minneapolis</td>
<td>389,112</td>
<td>84,076</td>
<td>21.6%</td>
</tr>
<tr>
<td>Seven-County Metro</td>
<td>2,889,547</td>
<td>311,935</td>
<td>10.8%</td>
</tr>
</tbody>
</table>

Source: 2009-2013 ACS 5-Year Estimates by census block group. Census block groups within ½ mile of the alignments under consideration for the West Broadway Transit Study were included in the study area.

Need to serve high proportion of residents who rely on transit as their primary means of transportation

Consistent with the high levels of poverty in the West Broadway corridor, the corridor is also home to a disproportionately high number of households for whom a private automobile is not available. Zero-car households are used as a proxy for determining the number of people that rely on transit. The percentage of zero vehicle households in the West Broadway corridor (18.5) is more than twice the percentage of the metro area as a whole (8.0); see Figure 4 for a map of zero car households in the study area.
Figure 4: Zero-Car Households in the West Broadway Corridor

Map data source: 2009-2014 American Community Survey. Data is aggregated and reported by census block-group. Census block-groups are created based on the number of people living within them, so commercial areas with few residents may be part of geographically-larger block-groups. Census data does not distinguish between commercial and residential land uses so all of downtown Robbinsdale, for example, is shown as having 40-83 percent zero-car households, even though people do not live on the commercial parcels in that block-group. This is an accepted method of displaying census data and all demographics maps produced as part of this study follow this method.
**Need to serve a variety of transportation markets**

The Route 14 provides all-day service in the West Broadway corridor. Approximately 49 percent of the route’s ridership occurs during the 6.5 hours of peak service (6:00 to 9:00 a.m. and 3:00-6:30 p.m.), though off-peak ridership to mid-day or evening activities is also substantial. Saturday ridership is approximately 57 percent of weekday ridership and Sunday ridership is approximately 41 percent. Relative to weekday ridership on the Route 14, these are strong weekend ridership percentages, indicating that the West Broadway corridor is not a typical commuter corridor and riders are using the Route 14 to access jobs, shopping, or appointments that are outside of the peak commuting times.

Results of the 2010 Metropolitan Council Transit On-Board Survey conducted by the Metropolitan Council further support this finding. Approximately 8,900 daily trips are taken on transit in the study area. This includes rides on Route 14 and other routes that operate in the study area. The results of the survey show that 57 percent of home-based work trips on transit in the corridor are during off-peak hours, compared to 37 percent elsewhere in the region. These patterns emphasize the importance of high frequencies throughout a long span of transit service, so that transit is a convenient and reliable choice for people going to work at all times of day.

**Need for transit facilities and amenities commensurate with demand**

The Route 14 carries more than 6,000 passengers each weekday, approximately 40 passengers per in-service hour. Passenger facilities at bus stops along the corridor are adequate for a place with low volume local bus service, but do not support the high volumes of service used by Route 14 riders. Currently, the greatest number of boardings and alightings are at major transfer points such at the Robbinsdale Transit Center (future Blue Line Extension Station), and in downtown Minneapolis. Boardings and alightings along West Broadway Avenue in Minneapolis are also high, especially at Penn Avenue, where transfers are available to the Route 19 (planned C Line arterial BRT), and at Emerson-Fremont avenues, where transfers are available to the Route 5 (proposed D Line arterial BRT). Community members also identified a need for route identifiers, route maps, and schedule information at stops, as well as basic amenities like trash cans, and stressed that improved transit service needs to be accessible for everyone, including those with disabilities.

**Need for predictable transit service**

Route 14 has an average speed of 12.8 miles per hour and is on-time approximately 87 percent of the time, metrics that are similar to other urban local routes operating in Minneapolis. Customer boarding time and fare collection cause significant delay in the corridor and current bus stop facilities do not offer features that make boarding the bus a fast and easy process.

The northbound Route 14 branches five ways, creating a complicated structure for transit riders destined for locations north of West Broadway and Knox Avenues. Routes 14D, 14G, 14 L, 14N, and 14R from downtown Minneapolis all use Washington Avenue North to West Broadway Avenue before

---

6 The study area designated for use of Transit On-Board Survey and LEHD data is comprised of the Transportation Analysis Zones adjacent to all alignments under consideration for the West Broadway corridor.

7 Total Route 14 ridership, including portions south of the study area.
continuing along various route branches. This complicated route structure is difficult to schedule effectively and for new transit riders to easily understand.

**Need to serve forecast population and employment growth**
The West Broadway corridor is projected to grow in population by 26 percent and in employment by 45 percent between 2010 and 2040. Much of this growth is focused on the North Loop portion of the corridor which continues to transition from commercial and light industrial uses to mixed-use, office, and residential land uses. The North Loop is also projected to grow as a significant employment center, driving job growth in the West Broadway corridor study area. Areas outside of the North Loop are projected to have a steady but comparatively slower growth, with many opportunities for housing and economic growth due to vacant and underutilized properties. Growth in the West Broadway corridor will increase demand for transit service, and the region will benefit from connectivity to emerging employment centers.

**Need for Consistency with City and Regional Policy**
A transit investment in the West Broadway corridor is consistent with regional and individual communities’ policies for accommodating growth through increased density and improved transit service, as well as regional goals of leveraging transportation investments to guide land use and development patterns that advance the vision of stewardship, prosperity, liability, equity, and sustainability. The West Broadway transit project is consistent with principles identified in *Thrive MSP 2040*, the *2040 Transportation Policy Plan*, the *Minneapolis Plan for Sustainable Growth*, and the *Robbinsdale and Golden Valley Comprehensive Plans*.

**Goals of the West Broadway Transit Project**
The West Broadway Transit Study Policy Advisory Committee adopted seven broad goals that address the purpose and need for a transit investment in the West Broadway corridor. Specific objectives were also developed for each goal. For improved communication during public engagement, the goals evolved into more direct and somewhat abbreviated statements. The full goals and abbreviated goal statements are listed below. For a full list of the objectives, see Appendix D: Problem Statement.

- **Goal 1**: Catalyze and support housing and economic development along the corridor  
  - More businesses and more affordable housing
- **Goal 2**: Improve local and regional mobility with improved access to jobs and activities  
  - Better public transportation to jobs, activities, and other places to go
- **Goal 3**: Address equity issues in the West Broadway corridor to ensure that corridor residents as well as patrons of area businesses and institutions have access to opportunities for success, prosperity, and quality of life  
  - More access to opportunities for people of color living in the corridor
- **Goal 4**: Build upon the vibrancy and diversity of the corridor by supporting healthy, active communities and the environment  
  - No impacts to parks and the environment
- **Goal 5**: Improve upon existing transit service in the corridor  
  - Improved transit service
- **Goal 6**: Increase transit use among corridor residents, employees, and visitors
Transit Alternatives Studied

Modes of Transit Considered

Modern Streetcar
Modern streetcars are electrically powered rail vehicles which function best in urban areas with high transit demand. Streetcar lines are typically less than four miles long and 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 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 have also 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.

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.

Arterial Bus Rapid Transit
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

Was LRT Studied for West Broadway?
Yes, during the 2010 the Bottineau Transitway Alternatives Analysis West Broadway was studied 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 or in the West Broadway Transit Study. LRT was dismissed because there are only two ways that an LRT guideway could be accommodated on West Broadway: expansion of the roadway or conversion of automobile lanes to LRT guideway. The first option would require acquisition and demolition of existing buildings and relocation of businesses and along West Broadway; the second option would have severe impacts to transit, automobile, and pedestrian traffic in the area. Neither option was acceptable to community members or decision-makers, so West Broadway was dismissed from further consideration for LRT.
local bus service that stops more frequently. Typical amenities include improved stations and customer information, unique vehicles and branding, and off-board fare collection that allows for faster boarding.

West Broadway was identified in the 2011 *Arterial Transitway Corridors Study* (ATCS) as one of eleven corridors in the Minneapolis-Saint Paul area with potential for transitway implementation. Since the study was completed, Metro Transit advanced the Snelling Avenue corridor for planning, design, construction, and implementation. The A Line will open in June 2016.

**Table 3: Transit Modes Considered in the West Broadway Transit Study**

<table>
<thead>
<tr>
<th></th>
<th>Streetcar</th>
<th>Arterial BRT</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Runningway</strong></td>
<td>Typically operates in mixed-traffic lanes, but can also be in streetcar-exclusive right-of-way</td>
<td>Operates in mixed-traffic lanes</td>
</tr>
<tr>
<td><strong>Station Spacing</strong></td>
<td>Stations located every ¼ to ½ mile</td>
<td>Stations located every ¼ to ½ mile</td>
</tr>
<tr>
<td><strong>Station Amenities</strong></td>
<td>Stations can range from basic stops with minimal passenger amenities to LRT-like stations</td>
<td>Stations can range from basic stops with minimal passenger amenities to LRT-like stations</td>
</tr>
<tr>
<td><strong>Vehicle Type</strong></td>
<td>Electrically-powered vehicles with overhead wires</td>
<td>Diesel or diesel-electric hybrid vehicles</td>
</tr>
<tr>
<td><strong>Passenger Capacity</strong></td>
<td>Between 115 and 160 passengers per vehicle. Unlike LRT, vehicles operate as single units</td>
<td>Between 60 and 105 passengers per vehicle</td>
</tr>
<tr>
<td><strong>Capital Cost per Mile</strong></td>
<td>$30-$60 million per mile</td>
<td>$2-$6 million per mile</td>
</tr>
<tr>
<td><strong>Operating Cost per Hour</strong></td>
<td>$235-$260 per hour</td>
<td>$115-$130 per hour</td>
</tr>
<tr>
<td><strong>Example Operating Locations</strong></td>
<td>Portland, Seattle, Toronto</td>
<td>Kansas City, Oakland, Seattle</td>
</tr>
<tr>
<td><strong>Locally Planned Projects</strong></td>
<td>Nicollet-Central Streetcar</td>
<td>A Line (Snelling Avenue)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>C Line (Penn Avenue)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>D Line (Chicago-Emerson/Fremont)</td>
</tr>
</tbody>
</table>

**Initial Alternatives Considered**

After defining the goals and objectives of the desired transit investment, the next step in the West Broadway Transit Study process was to establish the full range of potential alternatives within the study area. This set of alternatives was screened at a high level to determine which alternatives best met the
stated purpose and need for the project. For a full discussion of all alternatives considered, see Appendix E: Conceptual Development of Alternatives Memo.

A total of five alternatives, two arterial BRT alternatives and three streetcar alternatives, were included in the initial universe of alternatives, shown in Figure 5 and Figure 6.

1. Arterial BRT from downtown Minneapolis to Robbinsdale Station via Washington and West Broadway Avenues
2. Streetcar from Nicollet Mall to North Memorial Hospital via Washington and West Broadway Avenues
3. Streetcar from Nicollet Mall to Courage Kenny via Washington Avenue, West Broadway Avenue, and Golden Valley Road
4. Arterial BRT from downtown Minneapolis to Courage Kenny via Washington Avenue, West Broadway Avenue, and Golden Valley Road
5. Streetcar from Nicollet Mall to Courage Kenny via Washington, West Broadway, and McNair Avenues

Each of the alternatives include proposed service enhancements on local Routes 7 and 30 serving West Broadway Avenue, Plymouth Avenue, and the proposed Golden Valley Road LRT Station. Service would also be reduced on local Route 14, and its northern branches eliminated and replaced by service on the Routes 7 and 30.

---

8 The McNair alternative was initially dismissed because McNair Avenue is a narrow residential street where transit-oriented development is unlikely, and implementation of a transitway would likely have substantial right-of-way impacts. However, PMT and TAC members recommended that a streetcar alternative that serves the Penn and West Broadway intersection and connects to the Blue Line Extension LRT be considered in the initial screening. The McNair alternative is the only one that fits this description.
Initial Screening Analysis Method

Screening Criteria
The initial screening analysis used four screening criteria, summarized in Table 3, to evaluate the project’s initial alternatives. The screening criteria reflect different aspects of the project’s purpose and need statement. For a full description of the initial screening criteria and requirements, see Appendix F: Initial Screening Memo.
Table 4: Initial Screening Criteria

<table>
<thead>
<tr>
<th>Screening Criteria</th>
<th>Screening Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential for economic development and revitalization</td>
<td>The potential for each alternative to take advantage of economic development opportunities in the corridor including potential for transit-oriented residential, commercial, or office redevelopment, industrial and jobs-rich redevelopment (in the North Washington Jobs Park), as well as need for general infrastructure and visual revitalization in a given area. Alternatives that serve areas with potential for dense redevelopment, as measured by available sites, current and planned land use and zoning regulations, and general policy support, as well as those that provide access to major employers and destinations received higher scores.</td>
</tr>
<tr>
<td>Connections to the regional transit network</td>
<td>Each alternative’s compatibility with existing and planned transportation modes and infrastructure. High-level assumptions were used to determine how well each alternative would connect with the planned LRT stations along the Blue Line Extension, the planned arterial BRT stations along Penn Avenue and Emerson and Fremont Avenues, and the existing transit network. Alternatives that offered connections to the existing/planned LRT and arterial BRT stations received higher scores.</td>
</tr>
<tr>
<td>Potential right of way impacts</td>
<td>General assumptions regarding how much area each alternative would require for a guideway, stations, and power source infrastructure in order to gauge how much right of way each alternative would require. Since limited information is available at this time regarding specific right-of-way needs, scoring on this criteria was done by mode. Arterial BRT alternatives are likely to need right-of-way only at certain station locations. Streetcar alternatives may need a single site of approximately three acres for an operations and maintenance facility, small sites for traction power substations, as well as right-of-way at certain station locations. Therefore, arterial BRT alternatives performed better in this category than streetcar alternatives.</td>
</tr>
<tr>
<td>North Minneapolis Coverage</td>
<td>Each alternative’s ability to provide improved transit service and economic development to the North Minneapolis neighborhoods along West Broadway Avenue, which is considered the heart of the study area. West Broadway Avenue is North Minneapolis’s “Main Street” and from the Mississippi River to 26th Avenue North is designated as a commercial corridor in The Minneapolis Plan for Sustainable Growth. The City’s vision for the area, as described in the West Broadway Alive! plan, is to attract commercial and residential redevelopment to the corridor, with intensive uses along the avenue. For consistency with this vision, alternatives that serve West Broadway between the Mississippi River and 26th Avenue North received higher scores.</td>
</tr>
</tbody>
</table>

**Initial Screening Results**

All alternatives were scored against each of the evaluation criteria and rated with one, two, or three stars according to their fulfillment of the criteria. Because the alternatives share a great deal of the
For example, all of the alternatives have excellent connections to the regional transit network, but only those that connect to the Blue Line Extension LRT in addition to other transitways and local bus service received a “three star” rating. Alternatives with the highest overall score were advanced to the next phase of the study for further in-depth technical analysis and comparison to a no-build alternative. Of the five initially-considered alternatives, the two alternatives with the highest scores were recommended for detailed study:

- Arterial BRT from downtown Minneapolis to Robbinsdale Transit Station
- Streetcar from Nicollet Mall to North Memorial Hospital

For more details on the screening of initial alternatives, see Appendix F: Initial Screening Memo.

Advanced Alternatives
The next step in the West Broadway Transit Study was to design the two alternatives advanced for more detailed analysis. Some of the features addressed included:

- Station platform and design
- Station siting
- Guideway design such as placement of tracks and bumpouts
- Operations and maintenance facilities
- Transit service planning

The designs were conceptual and used to develop an approximate cost estimate for each alternative, as well as the relative benefits and impacts of each alternative. For a detailed description of each alternative and its components, see Appendix G: Detailed Definition of Alternatives Memo.

Evaluation of Advanced Alternatives

Streetcar Alternative
The streetcar alternative operates primarily in mixed traffic from Alice Rainville Place and Nicollet Mall in downtown Minneapolis to North Memorial Medical Center in Robbinsdale. See Figure 7 for a map of the proposed alignment and station locations, and see Appendix G: Detailed Definition of Alternatives Memo for an in-depth description of the streetcar alignment, station platform locations and types, power systems, and transit service plan.

Capital Costs
The capital cost of the streetcar alternative reflects the cost to construct the line, and includes the guideway, two-way track, stations, structures, signalization and communications systems, support facilities, vehicles, and communications systems, support facilities, vehicles,

Streetcar Alternative by the Numbers
Length: 4.9 miles
Stations: 19
Forecast 2040 Ridership: 3,900 rides
Estimated Cost to Construct: $256 million*
Estimated Yearly Cost to Operate: $9.6 million*
Service Frequency: every 15 minutes
End-to-End Travel Time: 33 minutes
Similar Local Project: Nicollet-Central Modern Streetcar

*2015 Dollars
** If West Broadway streetcars can use Nicollet-Central tracks and stations in downtown Minneapolis, cost to construct would be reduced to $229 million
and right-of-way acquisitions, as well as “soft costs” for items such as engineering and construction services. Contingencies, allocated and unallocated, are applied to the capital cost to account for uncertainty in both the estimating process and the scope of the project. Cost to construct the streetcar line from Alice Rainville Place and Nicollet Mall to North Memorial Medical Center were estimated at approximately $256 million (2015 $). If the Nicollet-Central Streetcar line is in place when West Broadway is constructed, then streetcar tracks would not need to be built on Nicollet Mall, reducing estimated capital cost to construct to approximately $229 million (2015 $). Capital Cost methodology and assumptions are discussed in detail in Appendix H: Capital Cost Estimation Methodology.

Ridership
The 2040 ridership forecast assumed that all transitways included in the region’s fiscally constrained long-range plan are operational, including: Blue Line Extension (Bottineau) LRT, Green Line Extension (Southwest) LRT, C Line arterial BRT on Penn Avenue, and arterial BRT on Emerson and Fremont Avenues North. Because the Nicollet-Central Streetcar line is not included in the regional long-range plan, the 2040 ridership forecast assumed that the West Broadway streetcar would operate from North Memorial Medical Center to a terminus at Nicollet Mall and Alice Rainville Place. Forecast 2040 daily ridership was approximately 3,900.

A separate ridership sensitivity test was conducted that assumes that the Nicollet-Central Streetcar line is operational when West Broadway Streetcar line opens, which increases forecast 2040 daily ridership on the West Broadway line by approximately 100 riders. A second ridership sensitivity test that adjusted the routing and stops on adjacent local bus service increased ridership on the West Broadway line by 200 daily riders. To verify the magnitude of this increase, two additional analyses were conducted. One evaluated transfers between Route 14 and Route 18 (the Nicollet Ave local service), finding less than 50 daily transfers between these routes. Another analysis evaluated the magnitude of the overall travel market between these corridors, finding that the West Broadway travel market is smaller than other corridors in North Minneapolis. This is due to the fact that there are many transit options that exist in North Minneapolis, such as Penn Avenue, Chicago-Emerson/Freemont Avenue and the planned METRO Blue Line Extension, which all provide frequent and more direct transit options to those travelling to Downtown Minneapolis. In light of these additional analyses, the estimated magnitude of increase was found to be reasonable. See Appendix I: Ridership Forecast Results for more information.

Economic Development
An analysis of economic development prospects in the corridor found that transit improvements generate a property value premium that grows in magnitude over time in a virtuous cycle as the transit amenity attracts new development and enhances the quality of the public realm. Over 25 years, the streetcar alternative is expected to generate $480-640 million in real estate value over and above baseline conditions. Property value serves as a proxy for larger economic development benefits as changes in neighborhood desirability, quality of the public realm, local environmental benefits, place-making features, and connectivity are all ultimately capitalized into the value of surrounding real estate. By Year 25 (2040), the streetcar alternative is also expected to generate 2,600 incremental jobs over baseline conditions. See Appendix J: Economic Development Impacts of Transit Alternatives, Appendix K: Market Conditions and Planning Context Review, and Appendix L: Economic Development
Methodology for more information. Appendix K developed case studies based on comparable socio-economic corridors in other regions. The rail-based case studies were of light rail corridors, not modern streetcars. Modern streetcar implementation in the United States is more recent and development results of streetcar implementations in corridors comparable to West Broadway are emerging. Tracking future development of national peers will be important to further validate streetcar development effects in the West Broadway Transit Study. Results may vary from the LRT corridors evaluated.

Figure 7: Streetcar Alternative
Arterial BRT Alternative

The arterial BRT alternative operates in mixed traffic from downtown Minneapolis to the Robbinsdale Transit Center in downtown Robbinsdale via 7th and 8th Streets in downtown Minneapolis, Hennepin, Washington, and West Broadway Avenues in Minneapolis, and Oakdale, France, and West Broadway Avenues in Robbinsdale. See Figure 8 for a map of the proposed alignment and station locations, and see Appendix G: Detailed Definition of Alternatives Memo for an in-depth description of the arterial BRT alignment, station platform locations and types, and transit service plan.

Capital Costs

The capital cost of the arterial BRT alternative reflects the cost to construct the, stations, signalization and communications systems, vehicles, and right-of-way acquisitions, as well as “soft costs” for items such as engineering and construction services. Contingencies, allocated and unallocated, are applied to the capital cost to account for uncertainty in both the estimating process and the scope of the project. The capital cost of $40 million (2015 $) assumes construction of the line from 5th Street and Hennepin Avenues in downtown Minneapolis to its terminus at Robbinsdale Transit Center. Cost of construction of stations on 7th and 8th Streets in downtown Minneapolis is assumed to be borne by C Line and/or D Line arterial BRT projects. Capital Cost methodology and assumptions are discussed in detail in Appendix H: Capital Cost Estimation Methodology.

Ridership

The 2040 ridership forecast assumes that all transitways included in the region’s fiscally constrained plan are operational. This includes: Blue Line Extension (Bottineau) LRT, Green Line Extension (Southwest) LRT, C Line arterial BRT on Penn Avenue, and arterial BRT on Emerson and Fremont Avenues North, but does not include Nicollet-Central Streetcar. The 2040 ridership forecast assumes that arterial BRT on West Broadway would operate from Robbinsdale Transit Center to its terminus at 8th Street and 11th Avenue on the east side of downtown Minneapolis. See Appendix I: Ridership Forecast Results for more information.

Economic Development

Over 25 years, arterial BRT on West Broadway is expected to generate $220-300 million in real estate value over and above baseline conditions. By Year 25 (2040), the arterial BRT alternative is expected to generate 1,075 incremental jobs over baseline conditions. See Appendix J: Economic Development.

Figure 8: Arterial BRT Alternative
Topics for Additional Analysis in Future Phases

On-Street Parking and Traffic Analysis on West Broadway

The section of West Broadway Avenue between Girard Avenue and 29th Avenue allows parking in the outside drive lanes during non-peak hours, as there are not dedicated on-street parking lanes. Parking is restricted in the southbound direction between 7-9 am, and in the northbound direction between 4-6 pm. There are approximately 330 parking spaces in this segment of the corridor.

A parking study would be necessary to determine the extent to which these parking spaces are used and the impact that loss of these spaces would have on nearby businesses and residents. If these parking spaces must be retained, the arterial BRT and streetcar operations and designs presented in this study would likely need to be modified. For the arterial BRT alternative, buses would be required to merge to the inside lane if cars are parked in the outside lane during non-peak hours. For the streetcar alternative it may be necessary to transition to a center-running alignment between Girard and 29th Avenues. This would require eliminating either one or both left turn lanes at station locations (depending on the platform configuration, turning priorities, and alternative left-turn locations). This configuration could create a conflict for emergency vehicles with streetcars operating in the only available travel lane while cars are parked in the outside lane, though it could be mitigated by prohibiting parking in the outside lane at station areas. These operations and design changes would not be necessary if off-peak parking were eliminated in this segment of West Broadway.

Analysis of parking would also inform more detailed traffic analysis. Key study intersections were analyzed through this study, though changes in roadway design and land use have occurred and may continue to shape future traffic patterns. More detailed traffic analysis will be required to obtain roadway authority support to advance the locally preferred alternative recommendation to adoption.

Operations and Maintenance Facility

As part of the West Broadway Transit Study, standards from past streetcar studies were used to determine the space requirements for a potential operations and maintenance facility (OMF). However, recently the Nicollet-Central Streetcar team has determined that the functional requirements of a streetcar OMF should include all heavy maintenance, increased personnel amenities, and fleet storage space separate from maintenance spaces. The sites identified as part of the West Broadway alignment may not accommodate these increased requirements for a streetcar OMF. Furthermore, regional coordination may allow for sharing of an OMF between multiple streetcar lines. This topic will require further investigation in future development phases.

Impacts to Park Land and Historic and Cultural Resources

Both the streetcar and arterial BRT alternatives run through the Minneapolis Warehouse District along Washington Avenue. Both direct and indirect impacts to portions of the historic district are anticipated under each alternative, particularly related to contributing structures such as Washington Avenue and the Washington Avenue North Bridge, and 2nd Street North. Direct impacts include bridge impacts and construction of station locations and streetcar guideways; indirect impacts include potential visual....
effects, noise, and development/redevelopment impacts. Based on these potential impacts, likelihood of Section 106 impacts will require further investigation as the project proceeds.

The streetcar alternative design shows streetcar in the median of West Broadway Avenue as it transitions to Oakdale Avenue. It is anticipated that public transportation rights-of-way would be used wherever possible. However, the ownership and use of the median of West Broadway will require further investigation, as its status as parkland or transportation right-of-way is currently uncertain and would affect the scope of the transitway project. See Appendix M: Environmental and Community Impact Analysis for more information.

Locally Preferred Alternative
After the study technical phase concluded in April 2016, the Policy Advisory Committee awaited further development of potential transportation funding under discussion at the state level. The regular 2016 legislative session did not result in a major transportation bill, and various discussions of a potential special session occurred. Ultimately, new transportation funding was not enacted. The PAC awaited potential resolution of this process before recommending a Locally Preferred Alternative.

On October 31, 2016, the PAC convened for a project update including presentation of a draft LPA resolution for discussion. Robbinsdale staff shared that new information was uncovered related to a pedestrian tunnel at North Memorial Medical Center that could present complications to the streetcar alternative as developed through the study. PAC members discussed potential future refinement of the streetcar alternative, including consideration of Penn Avenue as the northern terminus of the streetcar. However, it would not be practical to revise the study alternative this significantly without additional detailed technical and public engagement work. A shortened corridor would likely have different tradeoffs compared to the alternatives studied and may be considered in subsequent corridor study. The draft resolution also noted support for continued corridor bus service and facility improvements.

On February 2, 2017, the PAC convened and recommended the Streetcar alternative as the Locally Preferred Alternative Recommendation. Following discussion, the PAC voted to approve the LPA recommendation on a 6-5 show-of-hands vote.

Next Steps
On February 27, 2017, Metro Transit staff presented the study recommendations to the Metropolitan Council Transportation Committee as an information item. As discussed through the study process, advancing the project will need to include further technical development by a local project sponsor, and adopting the LPA recommendation into the region’s fiscally constrained long-range transportation plan.

The Metropolitan Council anticipates an update to the region’s long-range transportation plan (2040TPP) in 2018. The West Broadway corridor is currently identified as an “increased revenue scenario” transitway with in-progress study. While the 2040 TPP update will note this corridor study’s
completion, adopting the LPA recommendation in the region’s long-range transportation plan (via the 2018 update or other amendment) will require additional steps:

1. Refinement of key technical issues as described in the LPA recommendation. The planned terminus should be identified through technical study informed by community engagement.
2. Resolutions of support from local governments for the LPA recommendation. This would include affected cities and counties in which the LPA alternative advanced for consideration is located.
3. Sufficient transit funding capacity within the region’s plan to include the project, and appropriate funding commitments to advance the project’s next phases.

**Locally Preferred Alternative Recommendation Resolution**  
Adopted by the West Broadway Transit Study Policy Advisory Committee, February 2, 2017

WHEREAS, the West Broadway corridor is identified in the Metropolitan Council’s 2040 Transportation Policy Plan (adopted January 14, 2015) as a future transitway in the “increased revenue scenario”, with the appropriate mode and alignment to be determined through further study, and

WHEREAS, West Broadway is identified in the Metropolitan Council’s 2040 Transportation Policy Plan as a future arterial BRT corridor in the “increased revenue scenario”, and

WHEREAS, on April 2, 2010 the City of Minneapolis identified the West Broadway corridor as part of a long-term rail network, and

WHEREAS, the City of Minneapolis has identified the West Broadway corridor as a recommended primary transit network corridor in the Access Minneapolis: Citywide Transportation Action Plan (published July 2009), and

WHEREAS, on June 26, 2012 the Hennepin County Regional Rail Authority adopted resolution 12-HCRRA-0038 recommending the alignment and mode for the Bottineau Transitway which resolved to “work closely with project stakeholders, including cooperating and participating agencies, in addressing issues and concerns”, and

WHEREAS, on June 15, 2012 the City of Minneapolis approved a resolution of support for the Bottineau Transitway to the Hennepin County Regional Railroad Authority and the Metropolitan Council that included reference to key initiatives to advance other transit initiatives in north Minneapolis, including the West Broadway Study to “advance the vision shared by many in the community of a vibrant commercial corridor served by transit”, and

WHEREAS, the City of Minneapolis, Hennepin County Regional Railroad Authority, and the Metropolitan Council entered into an agreement to advance a study of transit options along West Broadway, developed as the West Broadway Transit Study (Transit Study), and
WHEREAS, the Transit Study identified seven needs to address: economic and physical revitalization, service to high proportion of residents who rely on transit, transit facilities and amenities commensurate with transit demand, predictable transit service, service to forecast population and employment growth, and consistency with city and regional policy, and

WHEREAS, the Transit Study identified seven goals to achieve with the West Broadway transitway, stated as more businesses and affordable housing, better public transportation to jobs activities and other places to go, more access to opportunities for people of color living in the corridor, no impacts to parks and the environment, improved transit service, more transit riders, and an inclusive public outreach process, and

WHEREAS, the Transit Study has shown that the streetcar alternative or arterial BRT alternative addresses the corridor needs and achieve project goals, but Transit Study results indicate the streetcar alternative has significantly higher potential for economic development effects with transitway implementation, and

WHEREAS, through a robust public engagement process the study process found strong community support for transitway improvements along the West Broadway corridor, including by participants serving on the project’s Community Advisory Committee (CAC) who voiced support for project alternatives that encourage business growth, that transition to alternative energy sources in transportation, and allow corridor transportation investment ahead of LPA implementation, and

WHEREAS, the technical advisory committee (TAC), with representatives from Metro Transit, the Metropolitan Council, Hennepin County, the City of Minneapolis, the City of Robbinsdale, and the City of Golden Valley, has provided input in this resolution,

NOW, THEREFORE, BE IT RESOLVED that the West Broadway Transit Study Policy Advisory Committee (PAC) has taken into consideration the technical information on each of the alternatives, along with input from the TAC, CAC and community, and recommends the streetcar mode and alignment as the locally preferred alternative.

BE IT FURTHER RESOLVED that further evaluation of the length of the streetcar project corridor should be developed in future phases of project implementation, and that the PAC recommends development and consideration of advancing a streetcar alternative along the study alignment from West Broadway Avenue and Penn Avenue North to downtown Minneapolis.

BE IT FURTHER RESOLVED that in addition to optimizing corridor length, subsequent phases of technical analysis will continue to engage policymakers, technical experts, adjacent property owners and the community to address key issues not covered in the LPA recommendation, including parking impacts.
BE IT FURTHER RESOLVED the PAC encourages parallel investment in improved bus service and additional transit infrastructure in the West Broadway corridor as funding allows and as demand warrants, including in relation to bus service connecting to the planned Blue Line LRT Extension.

BE IT FURTHER RESOLVED that this resolution for the recommended locally preferred alternative by the West Broadway Transit Study PAC be forwarded to the Metropolitan Council for consideration in the 2040 Transportation Policy Plan.