Recommended Locally Preferred Alternative Report

Nicollet-Central Transit Alternatives

FINAL November 2013

Minneapolis
City of Lakes

Prepared for:

City of Minneapolis

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URS

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1. Executive Summary

This document describes the Alternatives Analysis process by which a recommended Locally Preferred Alternative (LPA) was selected for the Nicollet-Central Corridor.

The recommended LPA for transit in the Nicollet-Central Corridor is modern streetcar running between Lake Street and at least 5th Street NE on Nicollet Avenue, Nicollet Mall and Hennepin/1st Avenues, using the Hennepin Avenue Bridge to cross the Mississippi River (see Figure 2).

The recommended LPA was approved by the Minneapolis City Council for recommendation to the Metropolitan Council on October 4, 2013 (see Appendix A).

The decision follows over a year of technical analysis and public engagement through the Nicollet-Central Transit Alternatives Study. During the study, over 3,000 people participated in outreach activities, including ten public open houses, presentations at 70 standing community and stakeholder meetings, online surveys, and other efforts. A Technical/Community Advisory Committee and a Policy Advisory Committee guided the process, meeting regularly, and recommending the LPA to the Minneapolis City Council.

The study examined a 9-mile corridor generally following Nicollet Avenue S and Central Avenue NE between 46th Street to the south and 41st Avenue NE to the northeast. The corridor runs through the heart of downtown Minneapolis and serves many activity centers including the Convention Center, several post-secondary schools, and numerous entertainment and restaurant districts.

A variety of alternative transit modes and alignments were evaluated to determine what option best met the purpose of the project:

> *To improve transit connectivity, enhance the attractiveness of transit service, and catalyze development through an investment in transit infrastructure within the Nicollet-Central Corridor.*

Six goals and 28 evaluation measures based upon this purpose were used to evaluate the alternatives. Based on the evaluation results and public and stakeholder input, modern streetcar on the 3.4-mile LPA alignment was found to best meet the purpose of the project.

Figure 1: Recommended LPA Facts

Length: 3.4 miles

Service Frequency: 7.5 min peak, 10 min off-peak, 7 days a week

2030 Projected Weekday Ridership: 9,200

Estimated Capital Cost: approximately $200 million in 2017 dollars

Major Transit Connections:

- all transit in downtown Minneapolis
- 4 LRT lines downtown (Blue and Green)
- I-35W Highway BRT line (at Lake St and downtown)
- major E-W bus connections outside downtown (Lake St, Franklin Ave, 4th/University)

Special Generators:

- Nicollet Mall
- Minneapolis Convention Center
- 6,000 hotel rooms
- "Eat Street" Nicollet Avenue business district
- Minneapolis Institute of Arts
- East Hennepin business district
- Central Mississippi Riverfront Regional Park and Nicollet Island
- Five large-scale redevelopment opportunity sites

Population and Jobs:

- 55,000 residents and 118,000 jobs within one-half mile
- Projected to grow by 25,000 residents and 50,000 jobs in the next 20 years

Transit-Reliant Population:

- 20 percent of the population within one-half mile has no car
- 24 percent of residents within one-half mile live in poverty
- 4,200 legally-binding affordable housing units within one-half mile

Nicollet – Central Transit Alternatives

The study evaluated in detail modern streetcar and enhanced bus options that operate in mixed traffic with cars and trucks for the 9-mile study corridor. Other alternatives such as light rail transit and bus rapid transit in a dedicated busway were screened out early in the process due to the limited physical space in the corridor and high demand for short trips and frequent stops. Both enhanced bus and modern streetcar alternatives serve the same people, jobs, activity centers, development sites, and transit connections and have similar minimal impacts on the existing transportation system. **Modern streetcar was selected as the preferred mode** because it:

- attracts more riders;
- has greater capacity to catalyze and support economic development;
- costs more to build and operate and maintain, but has similar operating and maintenance costs on a per passenger basis; and
- has significantly greater public support.

The study evaluated alternative alignment options through downtown and paralleling Nicollet Avenue S and Central Avenue NE. The initial screening of alignment options determined that Nicollet Avenue S, Nicollet Mall, and Central Avenue NE best met the project purpose and goals; however, two river crossing alignment options were carried into the detailed evaluation: (1) the Hennepin/1st Avenue Bridge, and (2) the Central/3rd Avenue Bridge. While the two river crossings are geographically close and serve the same general areas and transit connections, the **Hennepin Avenue river crossing was selected as the preferred alignment** because it:

- is a shorter route, resulting in faster travel times, higher transit ridership and lower costs;
- has better bicycle/pedestrian connections to the Mississippi River and provides a direct connection to Nicollet Island;
- can more easily accommodate both bicycle facilities and on-street parking northeast of the river; and
- is not listed on the National Register of Historic Places as is the Central/3rd Avenue Bridge and has lower cost to accommodate modern streetcar.

Because most modern streetcar projects in the United States are generally short (built in 1 to 4 mile segments) and operate in activity centers where there is a high demand for short trips, the need to consider the modern streetcar alternative as a shorter initial project was identified and presented to the public early in the study. A 3.4-mile starter modern streetcar line between Lake Street and approximately 5th Street NE was evaluated in the same level of detail as the 9-mile enhanced bus and modern streetcar alternatives. This 3.4-mile segment was found to capture a significant concentration of the benefits of the longer streetcar alternative at a cost that is competitive with modern streetcar projects in other cities that are competing for federal funds. The **3.4-mile modern streetcar starter line was selected as the preferred minimum operating segment** because it:

- requires half the construction costs of the 9-mile streetcar alternative;
- serves half the projected riders of the 9-mile streetcar alternative;
- serves two-thirds of the population and 90 percent of projected population and employment growth in the 9-mile corridor;
- serves 60 to 70 percent of transit-reliant people (people without cars and people in poverty), 60 percent of the non-white population, and 90 percent of affordable housing units within the 9-mile corridor;
- serves two-thirds of the development capacity and five out of nine development opportunity sites within the 9-mile corridor;
- serves the section of the corridor with a high percentage of short trips, allowing the replacement of many buses along Nicollet Avenue and Nicollet Mall in downtown; and
- is strongly supported by the public as a starter line, although there is interest in extending the line further northeast.

The following tasks are key next steps to advance the Nicollet-Central Modern Streetcar project and to prepare the project for entry into the Federal Transit Administration (FTA) Small Starts Project Development process:

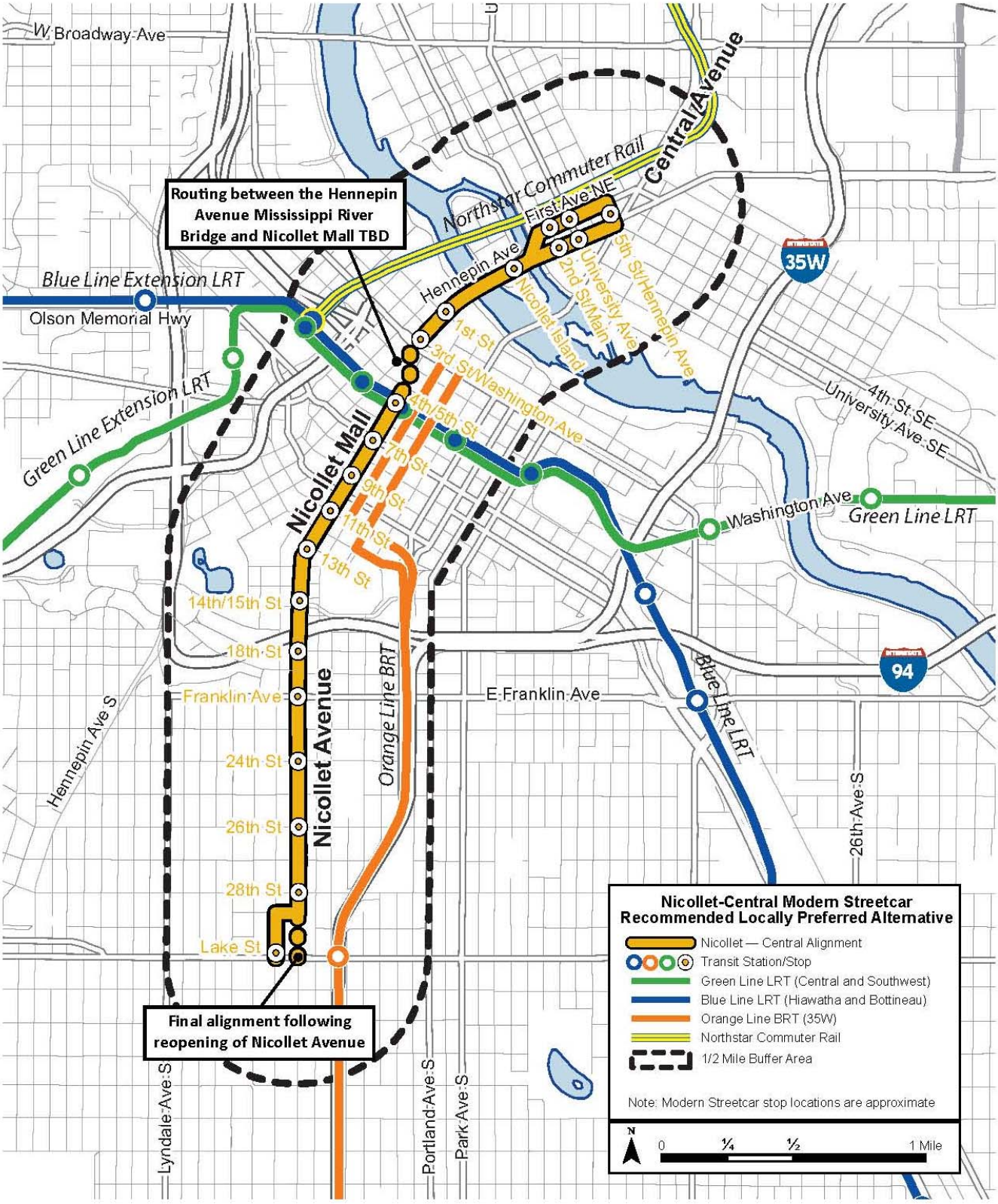
- **Regional Transportation Policy Plan** – The Metropolitan Council's 2030 Transportation Policy Plan is expected to be modified in early 2014 to recognize the recommended LPA for the Nicollet-Central Modern Streetcar. This project is the first modern streetcar project in the Twin Cities region to request adoption of the LPA in the Plan, although modern streetcar is under consideration in other corridors. A more comprehensive update to the Plan is planned for late 2014, which is expected to address the role of modern streetcar in the region more comprehensively.

- **Environmental Review** – An Environmental Assessment (EA) is being prepared in 2014 for the project, led by the City of Minneapolis in partnership with the Metropolitan Council and Federal Transit Administration. In November 2013, the Federal Transit Administration concurred that an EA was the probable class of action for the Nicollet-Central Modern Streetcar project. Both the City of Minneapolis and the Metropolitan Council will be signatories to the EA.

- **Project Development** – The City of Minneapolis and the Metropolitan Council, the presumed owner, operator, and implementer of the project, are collaborating to advance design and engineering for the project. The City of Minneapolis and the Metropolitan Council plan to enter into an interagency agreement in late 2013 to provide technical staff support from the Metropolitan Council to the City of Minneapolis to advance the project through the EA process and other pre-project development activities.

- **Funding** – In spring 2013, following passage of enabling legislation by the State of Minnesota, the City of Minneapolis established a value capture district, by which future tax revenues generated in the near term from planned development on five blocks along the project may be used to fund capital costs of the streetcar project, estimated to generate up to $60 million. Additional local, regional and/or federal transportation funds are needed to fully fund the project. The City of Minneapolis intends to collaborate with the Metropolitan Council to seek federal transportation funds for the project, such as FTA Small Starts and/or other federal funding programs. The source of operating funds for the project will also need to be identified.

Figure 2: Nicollet-Central Modern Streetcar Recommended LPA Alignment



2. Introduction

2.1. Purpose of This Report

The purpose of this document is to summarize the alternative development and decision making process that has resulted in the selection of the 3.4-mile Modern Streetcar Starter Line as the recommended Locally Preferred Alternative (LPA) of the Nicollet-Central Transit Alternatives Study.

The Nicollet-Central Transit Alternatives Study, which began in June 2012 and was completed in fall 2013, has been led by the City of Minneapolis in close coordination with the Metropolitan Council and Metro Transit. This alternatives analysis examined various alignments and modes, with the detailed definition and evaluation of no-build, enhanced bus and modern streetcar alternatives within the full length of the 9.2-mile Nicollet-Central corridor between the Columbia Heights Transit Center (41st Avenue NE) and the 46th Street BRT Station for the future Orange Line (46th Street S).

2.2. Nicollet-Central Corridor

The Nicollet-Central corridor (see Figure 3) is a 9.2 mile corridor that includes some of the region's most densely-developed neighborhoods and runs through the heart of the downtown Minneapolis central business district. It is home to 90,000 residents and is expected to see an increase of 25,000 residents by 2030. There are currently 125,000 jobs within the corridor, and employment is expected to increase by 50,000 by 2030. The corridor serves a multitude of activity centers including the Nicollet Mall, the Convention Center, several post-secondary schools, several entertainment and arts districts, the Mississippi Riverfront, many hotels and other popular destinations. The corridor is planned to continue to grow with compact, mixed-use development. In additional to numerous smaller infill development opportunities, nine large-scale development opportunity sites have been identified in the corridor where transit investments could act as a catalyst for economic development.

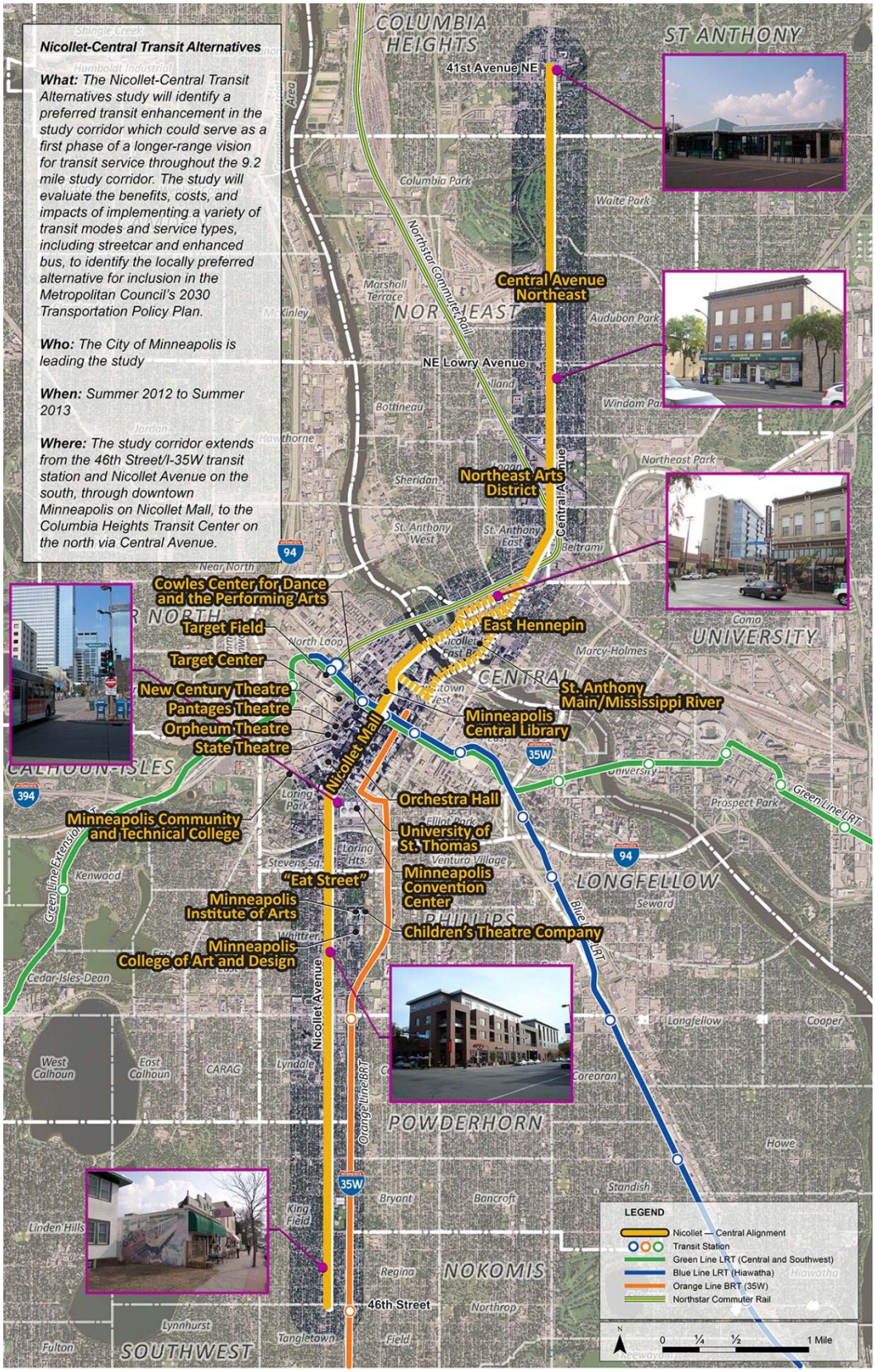
The Nicollet-Central corridor has a very ethnically and economically diverse population. Approximately 25 percent of households within one-half mile of the corridor are without cars and about 24 percent of residents in the corridor live in poverty. There are 4,600 legally defined affordable housing units in the corridor.

The Nicollet-Central corridor connects to a large transit network, including local and express bus routes and existing and future light rail and bus rapid transit lines. The corridor has a significant demand for shorter distance transit trips and is currently served directly by several high-ridership bus routes. While bus service in the corridor is frequent, it does not connect the activity centers and destinations in the corridor with a legible, easy-to-use, reliable transit service that can serve the growing travel demand and support economic development objectives. Significant residential growth has recently occurred in and near downtown but many of the neighborhoods are separated from downtown by either the Mississippi River or by one of the freeways surrounding the downtown area. Residents have expressed a stronger desire to have better transit connections between their neighborhoods and downtown.

2.3. Previous Studies

A significant amount of transit and land use planning has previously occurred in the corridor. These include both City of Minneapolis and the Metropolitan Council plans prioritizing transit improvements in the corridor and mode-specific feasibility studies of modern streetcar and arterial BRT. Land use plans for the corridor recommend development and land use patterns that support enhanced transit.

Figure 3: Nicollet-Central Corridor Study Area



Between 2006 and 2009, the City of Minneapolis completed a series of transportation plans and studies as part of the *Access Minneapolis Transportation Action Plan* process. The *Downtown Transportation Action Plan*, the *Streetcar Feasibility Study* and the *Citywide Transportation Action Plan* are particularly relevant to the Nicollet-Central corridor.

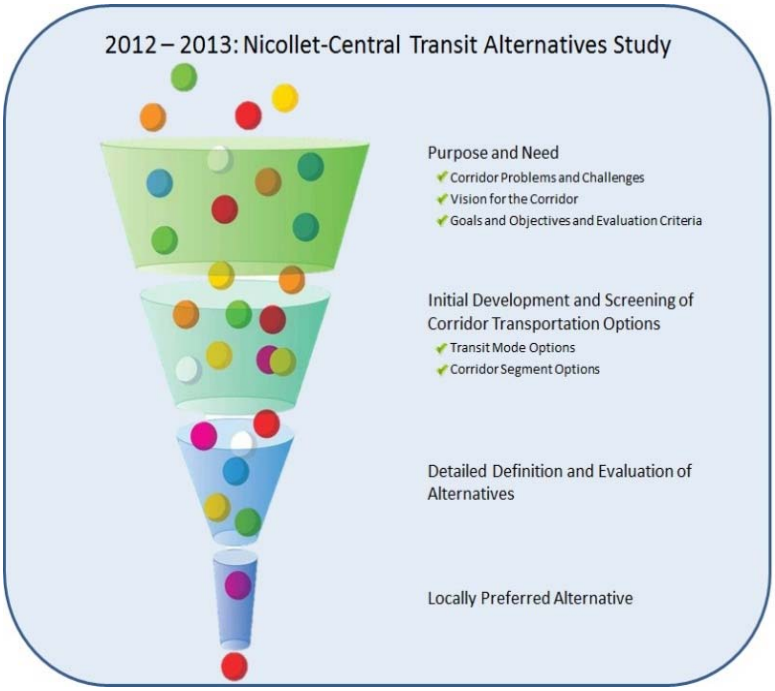
- The 2007 *Access Minneapolis Downtown Transportation Action Plan* recommended consolidating north-south local bus service on Nicollet Mall, consolidating north-south commuter express bus service on Marquette and 2nd Avenues, and improving local transit operations on Nicollet Mall. All of these recommendations have been implemented.
- The purpose of the *Minneapolis Streetcar Feasibility Study*, completed in 2008, was to determine the physical, operational and financial feasibility of providing streetcar service as a high quality transit and urban circulator option on the most heavily used Primary Transit Network (PTN) corridors in Minneapolis. The feasibility study proposed a long-term 20- to 50-year vision for a streetcar network of seven streetcar corridors in Minneapolis, including Nicollet and Central Avenues.
- The *Citywide Transportation Action Plan*, adopted by City Council in 2009, recommends that the City work with its partner agencies to establish and maintain a Primary Transit Network that is a permanent network of all-day bus or rail transit service. Nicollet and Central Avenues were identified as definite, near-term Primary Transit Network corridors.

Metropolitan Council, the region's federally-designated metropolitan planning organization, adopted the *Regional 2030 Transportation Policy Plan (TPP)*, the official long range transportation plan, in November 2010. This document identifies nine corridors for potential arterial BRT facilities, including Central, Nicollet, and Hennepin Avenues. The *TPP* also identifies streetcar as a mode that "is particularly suitable for high density areas with short average passenger trip lengths and to attract infrequent transit users like shoppers or visitors. Streetcars may also be appropriate as a development tool for local units of government."

2.4. Alternatives Analysis Process

As shown in Figure 4, the Nicollet-Central Transit Alternatives study followed a three-step method to define and evaluate a variety of transit modes and alignment options and to identify the appropriate mode-alignment pairings, leading to selection of the recommended LPA. The first step ("Purpose and Need") developed the purpose and goals for the project. The second step ("Initial Screening") assessed each mode and alignment relative to overall implementation viability. The third step ("Detailed Evaluation of Alternatives") assessed the mode/alignment pairing that passed the initial screening criteria. The mode/alignment pairing that fared best against the detailed criteria in this second step has been recommended as the LPA.

Figure 4: Nicollet-Central Alternatives Analysis Process



2.5. Decision-Making Process

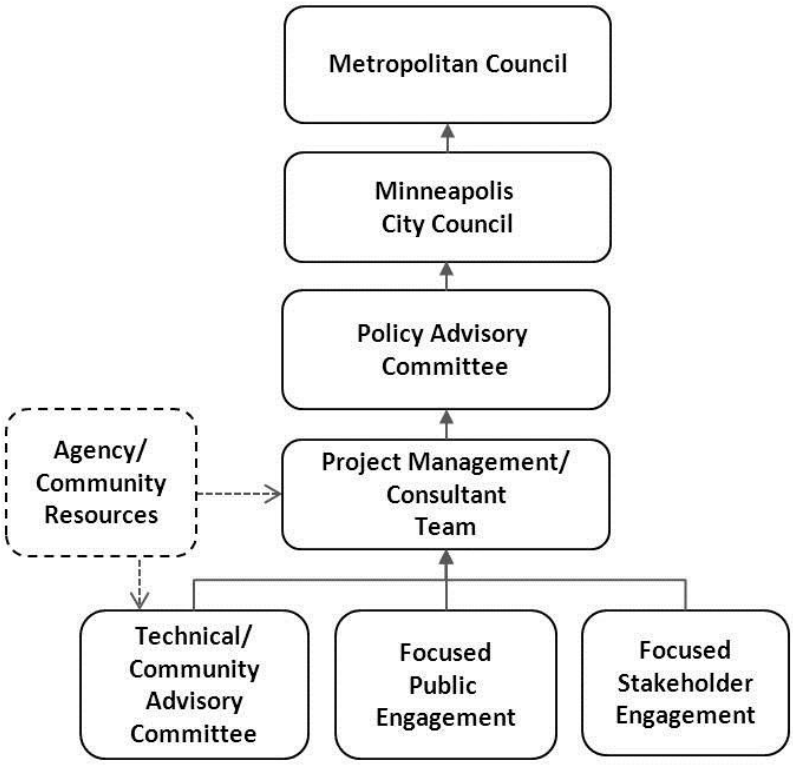
The City of Minneapolis, in consultation with the Metropolitan Council and the FTA, served as the local lead agency for the Nicollet-Central Transit Alternatives Study. Throughout the Alternatives Analysis process, there has been active engagement with the public and project committees. Three primary committees have guided the study process, as shown in Figure 5:

- The **Policy Advisory Committee (PAC)** is comprised of key elected and appointed officials from affected agencies in the study area, including the City of Minneapolis, Metropolitan Council, Hennepin County, Anoka County, the City of Columbia Heights, the Minnesota Department of Transportation, and the Downtown Council. The PAC met five times and provided overall policy guidance, approved key decisions in the process, and recommended an LPA to the Minneapolis City Council and Metropolitan Council.

- The **Technical/Community Advisory Committee (T/CAC)** is comprised of staff from the affected agencies represented on the PAC, as well as community members representing community and business stakeholders. The T/CAC met ten times and provided input on the study process, key decisions, and technical documents; served as a communications link with staff and elected officials at partner agencies and with community constituencies; and provided input to the PAC on the LPA recommendation.

- The **Project Management Team (PMT)** is comprised of staff from the City of Minneapolis, Metropolitan Council/Metro Transit, as well as the consultant team completing the technical evaluation. The PMT met every one to two weeks and was responsible for overall management of the technical analysis and stakeholder engagement.

Figure 5: Decision-Making Process



2.6. Public Involvement

Public involvement and opinion have been critical elements in the definition and evaluation of alternatives over the course of the *Nicollet-Central Transit Alternatives* study. Public sentiment, supported by the technical analysis, formed the basis of the selection of the recommended LPA. A variety of public engagement platforms have been utilized during the three major phases of the project – *Purpose and Need*; *Alternatives Development*; *and Detailed Evaluation of Alternatives*. Outreach tools included project brochures, open houses, online surveys, stakeholder interviews, and stakeholder meetings (available on the project web site: http://www.minneapolismn.gov/nicollet-central). Following is a summary of the key public outreach activities undertaken during each of the three phases of the alternatives analysis and documented as public outreach summary reports on the project web site.

- **Phase I: Purpose and Need:** Public outreach activities undertaken during Phase I of the Alternatives Analysis between August and October 2012 included:
    - A series of 14 stakeholder interviews including representatives from a mix of public, private, and community/nonprofit interests along both the Nicollet and Central corridors
    - Presentations at 29 stakeholder and community meetings attended by over 500 people
    - Three public open houses attended by 115 people
    - An on-line survey completed by 1,395 people
    - Website, Facebook, email distribution list
    - News releases and media coverage
    - Newsletter published in English, Spanish and Somali
- **Phase II: Alternatives Development:** Public outreach activities undertaken during Phase II of the Alternatives Analysis between November 2012 and February 2013 included:
    - Three public open houses held in different parts of the corridor and attended by 171 people
    - Paper and electronic comment forms completed by 143 people
    - Presentations at 11 stakeholder and community meetings attended by over 200 people
    - Website, Facebook, email distribution list
    - News releases and media coverage
    - Newsletter published in English, Spanish and Somali
- **Phase III: Detailed Evaluation of Alternatives:** Public outreach activities undertaken during Phase III of the Alternatives Analysis between March and September 2013 included:
    - Developers forum
    - Four public open houses attended by over 100 people
    - Presentations at over 30 stakeholder and community meetings attended by over 500 people
    - Public hearing in front of the City Council's Transportation and Public Works Committee
    - On-line comment form completed by over 150 people
    - Website, Facebook, email distribution list
    - News releases and media coverage
    - Newsletter published in English, Spanish and Somali

3. Project Purpose and Need

As approved by the PAC on October 29, 2012, following T/CAC and public input, the **purpose** of the Nicollet-Central Transit Alternatives project is ***to improve transit connectivity, enhance the attractiveness of transit service, and catalyze development through an investment in transit infrastructure within the Nicollet-Central Corridor*.**

Minneapolis is a dense urban built environment with a growing network of transportation alternatives. The Twin Cities region has several major transit investments in various stages of implementation, most of which directly serve downtown Minneapolis and are primarily oriented to serving long and medium distance trips. The Nicollet-Central corridor includes some of the region's most densely-developed and transit-oriented activity centers, including downtown. It is home to a diverse population, including many people who rely on and frequently use transit, and it connects to a large transit network, including local and express bus routes and existing and future light rail and bus rapid transit lines. The corridor is planned to continue to grow with compact, mixed-use development. The corridor has a significant demand for shorter distance transit trips and is currently served directly by several high-ridership bus routes. While bus service in the corridor is frequent, it does not connect the activity centers and destinations in the corridor with a legible, easy-to-use, reliable transit service that can serve the growing travel demand and support economic development objectives.

The **need** for the Nicollet-Central Transit Alternatives project is based upon:

- **Strong and growing travel demand**
  - Population and employment are densely concentrated in the corridor and projected to grow significantly in and near downtown Minneapolis.
  - Existing bus riders make many short trips in the corridor, and demand for short trips is expected to grow with population and employment growth as well as growth in visitor, consumer and special event activities in downtown.
  - The corridor serves a diverse range of destinations and reasons that people travel, contributing to a strong, all-day transit market.
  - At least one-quarter of people living in the corridor rely solely on public transportation for access to jobs and economic opportunities, contributing to a strong all-day transit market in the corridor.
  - Growth in residential population in downtown and near-downtown neighborhoods has increased the need for better connections across the freeways and the river that separate downtown from these neighborhoods.
- **Economic development trends and objectives**
  - Local land use policies direct compact, mixed-use development to the corridor; while the development market is performing strongly in selected nodes within the corridor, there is a need to catalyze further development to meet local and regional growth objectives.
  - Nicollet Mall is a central component of economic vitality in downtown Minneapolis, and the public and private sector have prioritized improving infrastructure, the pedestrian experience, and connectivity along and beyond Nicollet Mall.
- **Deficiencies in existing bus service**
  - To occasional bus riders and visitors, the existing bus service in the corridor is not easy to use because the vehicles and stop facilities are not clearly distinguishable from other bus service in the region.

- The level of existing passenger facilities and amenities in the corridor is basic and not commensurate with passenger demand.
- Existing vehicles and service frequency contribute to capacity constraints for future growth.
- Boarding and fare payment on existing bus service is slow and contributes to inconsistent reliability of service in the corridor.

The **goals and objectives** of the Nicollet-Central Transit Alternatives project are to:

- **Connect People and Places**
  - Connect Downtown with nearby neighborhoods
  - Enhance connections between corridor activity centers and destinations
  - Improve connections between the corridor and the regional transit system
- **Increase the Attractiveness of Transit**
  - Provide transit capacity for future growth
  - Maximize transit ridership
  - Improve visibility and identification of the transit system
  - Provide improved passenger amenities and infrastructure
  - Provide reliable, frequent service
  - Provide transit service and facilities that are easy to use for people who live, and work and visit the corridor
  - Provide safe and comfortable transit service and facilities
  - Improve accessibility for people with mobility challenges
- **Catalyze and Support Economic Development**
  - Support the economic vitality of downtown
  - Support the economic vitality of small neighborhood businesses
  - Support local and regional goals to foster compact, mixed-used development along the corridor
- **Integrate with the Transportation System**
  - Integrate with the existing transit network
  - Provide acceptable traffic operations and reasonable parking options
  - Support walkable neighborhoods and multimodal transportation choices
- **Support Healthy Communities and Environmental Practices**
  - Minimize impacts to historical, cultural, and natural resources
  - Minimize impacts to low-income and minority communities
  - Minimize neighborhood and property impacts
  - Support improved transportation, housing and economic opportunities for all people
- **Develop an Implementable Project with Community Support**
  - Define transit improvements with strong public, stakeholder and agency support
  - Identify transit improvements that are financially feasible and competitive
  - Develop transit improvements that allow for phased implementation

Details of the development of the Purpose and Need statement are documented under separate cover (*Purpose and Need Report* and *Public Outreach Summary Report #1*).

4. Initial Screening of Transportation Options

In order to evaluate the different transit modes and alignment options and identify the appropriate mode-alignment pairings that defined the detailed alternatives, the study undertook a two-pronged approach within the initial screening. One approach identified a broad set of transit mode options while another related to alignments. The initial screening applied generally broad, qualitative measures, including information from previous corridor studies. Details of this initial screening are documented under separate cover (*Initial Screening of Alternatives* and *Public Outreach Summary Report #2*).

4.1. Mode Options

Ten modes were initially considered for implementation within the study corridor:

- Conventional bus ("no build")
- Enhanced bus (in mixed traffic)
- Modern streetcar
- Bus rapid transit (in a dedicated busway)
- Light rail transit
- Heavy rail
- Maglev
- Monorail
- Personal rapid transit
- Commuter rail

Figure 6 summarizes the results of the initial screening of modes along with the criteria. In summary, modes that require grade separation, a dedicated runningway, and/or wide stop spacing (heavy rail, commuter rail, maglev, monorail, personal rapid transit, light rail transit and bus rapid transit in a dedicated busway) were not recommended for further consideration, while modes that operate in mixed traffic and provide frequent stops were recommended to be carried forward into detailed definition:

- Conventional bus ("no build")
- Enhanced bus (in mixed traffic)
- Modern streetcar

4.2. Alignment Options

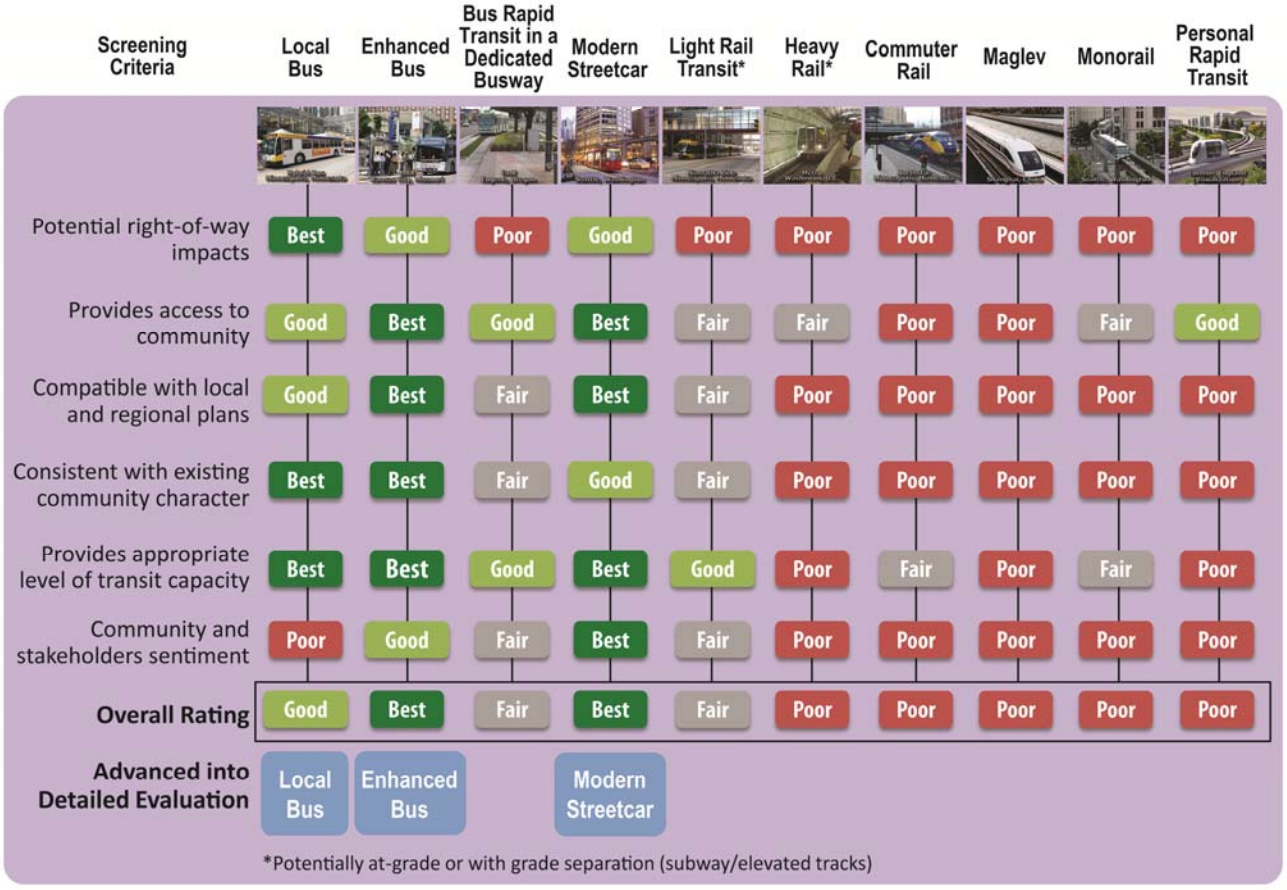
A variety of parallel alignments between 41st Street and 46th Avenue, including two Mississippi River crossing options, were considered. The corridor was divided into six segments to facilitate comparison among the alignments that were under consideration. The result of the evaluation is shown in Figure 7. In summary, the following alignment options were recommended for detailed evaluation:

- **Central Avenue NE (Segments A and B):** A single alignment option along Central Avenue NE was recommended for detailed evaluation. Central Avenue NE provides the most direct access through the study area, and it is an existing bus corridor and commercial corridor where transit oriented development is supported.
- **Two River Crossing Options (Segment C):** Both alignment options considered were recommended for detailed evaluation (Alignment C1 via E. Hennepin/1st Avenue NE and Alignment C2 via Central Avenue

SE). Both alignments have existing local bus service, and public input suggested community interest in further information and evaluation of both alignment options.

- **Nicollet Mall (Segment D):** A single alignment option along Nicollet Mall through downtown Minneapolis was recommended for detailed evaluation. The Nicollet Mall alignment rated highest of the four Segment D options because Nicollet Mall provides the most direct connection to Nicollet Avenue south of downtown; it has been designed and prioritized for pedestrian and local transit use as an auto-free street; and it has been prioritized in local and regional plans and currently serves the local transit market in the north-south direction. Hennepin Avenue and Marquette and 2nd Avenues, in contrast, have been designed and prioritized for other transit travel markets (local transit service in the southwest direction to Uptown on Hennepin Avenue and express bus service on Marquette and 2nd Avenues S) as well as auto traffic, while 3rd Avenue is located several blocks from the downtown core.
- **Nicollet Avenue S (Segments E & F):** A single alignment option along Nicollet Avenue S is recommended with two sub-options for the discontinuous one-block segment of Nicollet Avenue at Lake Street: one alignment sub-option that goes around the Kmart site and one alignment sub-option that assumes Nicollet Avenue is reopened through the Kmart site. Nicollet Avenue S provides the best alignment option through south Minneapolis because it is an existing local bus corridor and commercial corridor where transit-oriented development is supported.

Figure 6: Results of Initial Screening of Mode Options

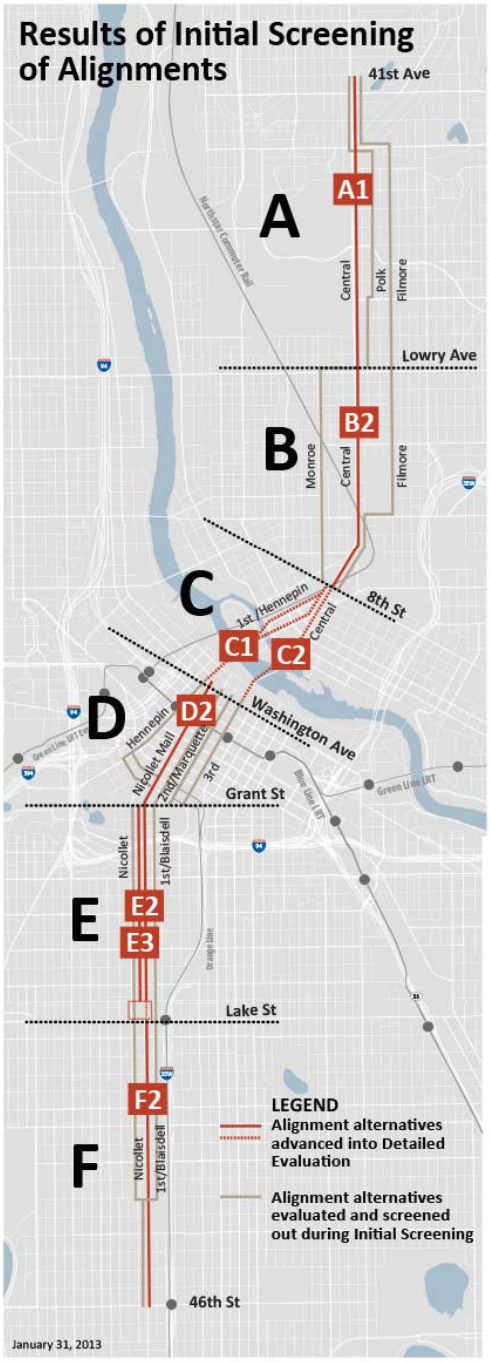


Screening Criteria	Local Bus	Enhanced Bus	Bus Rapid Transit in a Dedicated Busway	Modern Streetcar	Light Rail Transit*	Heavy Rail*	Commuter Rail	Maglev	Monorail	Personal Rapid Transit
Potential right-of-way impacts	Best	Good	Poor	Good	Poor	Poor	Poor	Poor	Poor	Poor
Provides access to community	Good	Best	Good	Best	Fair	Fair	Poor	Poor	Fair	Good
Compatible with local and regional plans	Good	Best	Fair	Best	Fair	Poor	Poor	Poor	Poor	Poor
Consistent with existing community character	Best	Best	Fair	Good	Fair	Poor	Poor	Poor	Poor	Poor
Provides appropriate level of transit capacity	Best	Best	Good	Best	Good	Poor	Fair	Poor	Fair	Poor
Community and stakeholders sentiment	Poor	Good	Fair	Best	Fair	Poor	Poor	Poor	Poor	Poor
Overall Rating	Good	Best	Fair	Best	Fair	Poor	Poor	Poor	Poor	Poor
Advanced into Detailed Evaluation	Local Bus	Enhanced Bus		Modern Streetcar						

*Potentially at-grade or with grade separation (subway/elevated tracks)

Figure 7: Results of Initial Screening of Alignment Options

		Connects activity centers	Compatible with local and regional plans	Community and stakeholder sentiment	Effective alignment that provides for direct access	Consistent with existing community character	**Overall Rating**	**Advanced into Detailed Evaluation**
41st Ave								
A1	Central	Good	Best	Best	Good	Best	Best	A1
A2	Polk	Good	Fair	Fair	Poor	Fair	Fair	
A3	Filmore	Best	Fair	Fair	Fair	Fair	Fair	
Lowry Ave								
B1	Monroe	Best	Fair	Fair	Poor	Fair	Fair	
B2	Central	Good	Best	Best	Best	Best	Best	B2
B3	Filmore	Fair	Fair	Fair	Poor	Fair	Fair	
8th St								
C1	1st/Hennepin	Good	Good	Good	Good	Good	Good	C1
C2	Central	Good	Good	Good	Good	Good	Good	C2
Washington Ave								
D1	Hennepin	Good	Fair	Fair	Fair	Good	Fair	
D2	Nicollet Mall	Good	Best	Good	Best	Best	Best	D2
D3	2nd/ Marquette	Good	Fair	Fair	Fair	Fair	Fair	
D4	3rd	Good	Fair	Fair	Fair	Fair	Fair	
Grant St								
E1	1st/Blaisdell	Good	Fair	Fair	Fair	Fair	Fair	
E2	Nicollet (reconnected at Lake)	Best	Best	Best	Best	Good	Best	E2
E3	Nicollet (assuming no reconnection of Nicollet)	Good	Good	Good	Good	Good	Good	E3
Lake St								
F1	1st/Blaisdell	Good	Fair	Fair	Fair	Fair	Fair	
F2	Nicollet	Best	Best	Best	Best	Best	Best	F2
46th St								



4.3. Alternatives for Detailed Evaluation

The three alternatives that were carried forward into the Detailed Evaluation of Alternatives phase based on the initial screening were:

- Conventional bus ("no build")
- Enhanced Bus
- Modern Streetcar

Enhanced bus and modern streetcar options crossing the Mississippi River on both the Hennepin Avenue bridge and the 3rd/Central Avenue bridge were also carried forward into the Detailed Evaluation of Alternatives phase.

In addition, the PMT recommended evaluating in detail a shorter modern streetcar starter line because modern streetcar systems in design or currently operating in the U.S. are generally much shorter and less costly than the 9.2-mile study corridor and because a shorter line would require a substantially different service plan for complementary bus service in the corridor than a longer line. A similar shorter enhanced bus starter line was not recommended for detailed evaluation because enhanced bus service in other cities is generally provided for longer corridors due to the flexibility of routing buses and lower capital investment generally implemented with bus modes.

A 3.4 mile modern streetcar starter line between Lake Street and the intersection of Hennepin and Central Avenues just northeast of the Mississippi River was identified as the best starter streetcar segment for detailed evaluation. This 3.4 mile starter segment captures the high volume of existing short transit trips occurring today in the densely-populated segment of Nicollet Avenue between downtown and Lake Street; it connects with major existing and planned transitways (LRT on 5th Street downtown, Highway BRT at Lake Street and I-35W, and the future Midtown Transitway near Lake Street); it crosses two major physical barriers separating downtown from near-downtown neighborhoods (the Mississippi River and Interstate 94); and it connects numerous activity centers and special generators.

The PAC approved the alternatives for detailed definition and evaluation at its February 28, 2013 meeting, following input from the T/CAC and the public. The detailed definition of these alternatives is summarized below. A more detailed description of these alternatives is documented under separate cover (*Detailed Definition of Alternatives Report*). In summary, the alternatives were defined as follows:

- The **No Build alternative** is a continuation of existing bus service using conventional 60-foot buses operating along Routes 10, 18 and 59 as they do today. This alternative includes growth in bus service to accommodate expected future growth in population and employment.

- The **Modern Streetcar alternative** is a modern streetcar service that includes stops approximately every 1/4 mile (about every two blocks), modern streetcar vehicles, off-board fare collection, improved transit stops/shelters, signal adjustments for improved transit speed, and other transit amenities. It provides frequent, all-day service, replacing routes 10 and 18 as the primary local service, and providing a one-seat ride between 46th Street and 41st Avenue NE. It is complemented by limited stop bus services on Nicollet Avenue and Central Avenue, providing a faster, one-seat ride from beyond the streetcar to downtown and to major transfer points; it is also complemented by local bus service connecting to the streetcar termini.

- The **Enhanced Bus alternative** is designed to mimic streetcar service in the corridor. This alternative is not the same as "Arterial Bus Rapid Transit (BRT)" which tends to have less frequent stops (usually every ½ to 1 mile apart), faster transit speeds, and serve a much longer corridor. It included stops approximately

every 1/4 mile (about every two blocks), new hybrid articulated buses, off-board fare collection, improved transit stops/shelters, signal adjustments for improved transit speed, and other transit amenities. It provides frequent, all-day service, replacing routes 10 and 18 as the primary local service, and providing a one-seat ride between 46th Street and 41st Avenue NE; however, unlike the streetcar alternative, enhanced bus was assumed to continue as a local bus service to 66th Street to the south and 53rd Avenue to the northeast. It is complemented by limited stop bus services on Nicollet Avenue and Central Avenue, providing a faster, one-seat ride from beyond the enhanced bus to downtown and major transfer points; it is also complemented by local bus service connecting to the enhanced bus termini.

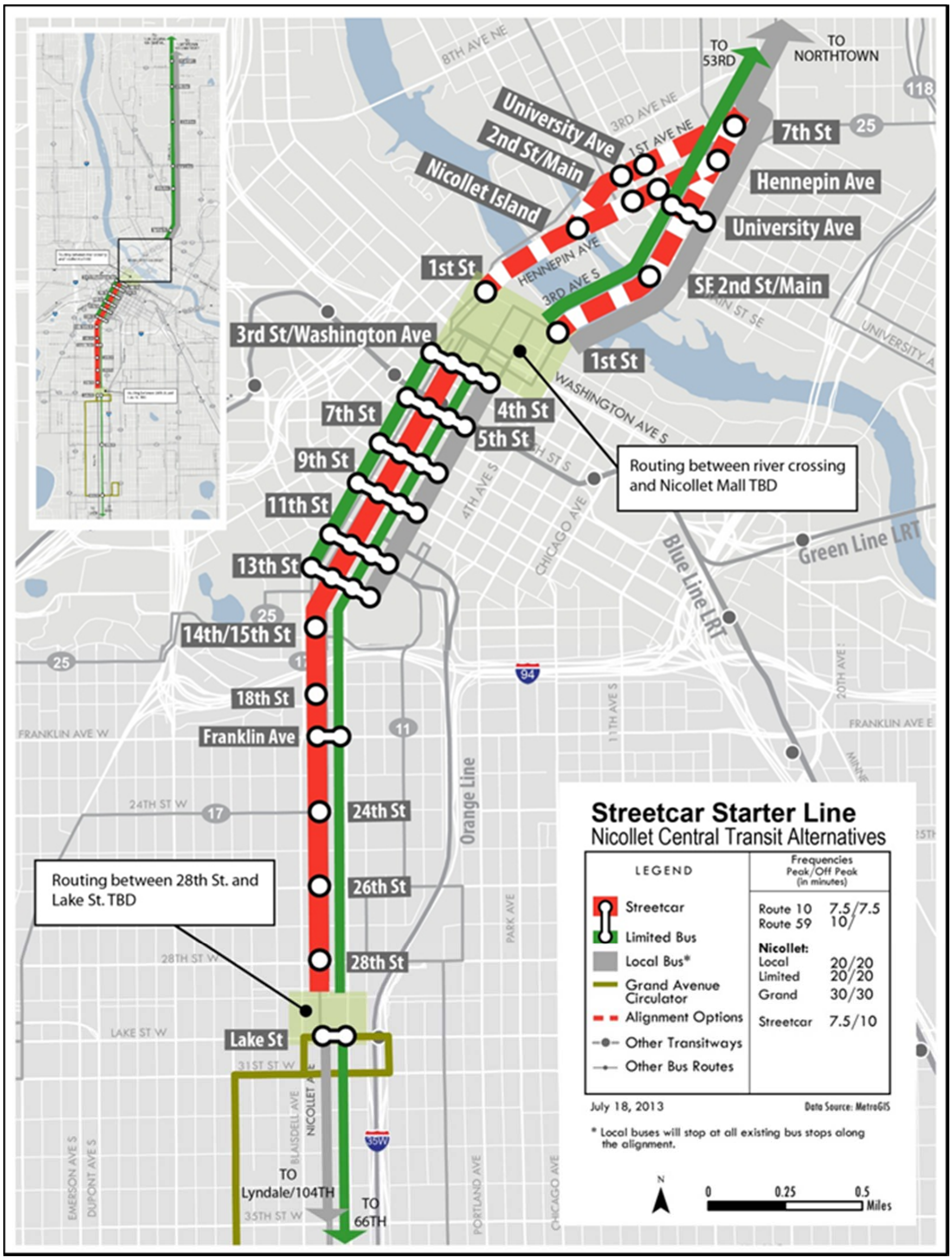
- The **Modern Streetcar Starter Line** had similar infrastructure characteristics as the Modern Streetcar Alternative, but because of its shorter length, its service plan assumes less extensive changes to the existing bus network. It provides frequent, all-day service, replacing route 18 as the primary local service, and providing a one-seat ride between Lake Street and 5th Street SE. It is complemented by a limited stop bus service on Nicollet Avenue, providing a faster, one-seat ride from south of Lake Street to downtown and major transfer points; it is also complemented by local bus service south of Lake Street. Routes 10 and 59 were assumed to be the same as in the no build.

None of the alternatives assumed any changes to other bus routes in the corridor, including routes 11, 17, 25, and 568. A summary of the characteristics of the build detailed alternatives is shown in Figures 8, 9 and 10.

Figure 8: Enhanced Bus Conceptual Service Plan

Figure 9: Modern Streetcar Conceptual Service Plan

Figure 10: Modern Streetcar Starter Line Conceptual Service Plan



5. Detailed Evaluation of Alternatives

The No Build, Enhanced Bus, and Modern Streetcar Alternatives were each evaluated for their performance against the six project goals.

- **Goal 1: Connect people and places** (measured by the number of people, jobs and activity centers served as well as the quality of transit, bicycle and pedestrian connections).
- **Goal 2: Increase the attractiveness of transit** (measured by projected transit ridership and potential for future growth in ridership).
- **Goal 3: Catalyze and support economic development** (measured by potential development capacity and potential to spur economic development)
- **Goal 4: Integrate with the existing transportation system** (measured by impacts on traffic, parking and freight railroads)
- **Goal 5: Support healthy communities and environmental practices** (measured by impacts to historic, cultural and natural resources, benefits to environmental justice communities and transit-reliant population, and environmental benefits)
- **Goal 6: Develop an implementable project with community support** (measured by capital costs, operating and maintenance cost, cost-effectiveness, and public/business support)

The detailed tables of these evaluation results are included as Appendix C of this report. More detailed information can be found in the *Detailed Evaluation of Alternatives Report* and *Public Outreach Summary Report #3* (under separate cover).

The recommended LPA was identified by answering these key questions:

- Which mode is best?
- Which river crossing is best?
- What is the minimum operating segment (starter line)?

5.1. Which Transit Mode Is Best?

Differentiating characteristics of the Enhanced Bus and Modern Streetcar alternatives are shown below in Table 1, followed by a description of the degree to which each of these alternatives meets the project goals.

- ***Goal 1 - Connecting people and places*:** There is no difference between the Enhanced Bus and Modern Streetcar alternatives because both serve the same population, employment and activity centers and both provide the same transit, pedestrian and bicycle connections.
- ***Goal 2 – Increase the attractiveness of transit*:** Modern Streetcar has higher projected ridership (20,100 riders per weekday on Modern Streetcar compared to 13,400 riders on Enhanced Bus) and Modern Streetcar has greater potential capacity per vehicle to accommodate future growth.
- ***Goal 3 – Catalyze and support economic development:*** There is significant development capacity and value in the corridor, regardless of mode because they both serve the same corridor; however, Modern Streetcar has greater potential to catalyze development based on a review of peer cities and discussion at a local developer forum.

- ***Goal 4 – Integrate with existing transportation systems:*** Both Modern Streetcar and Enhanced Bus operate in the same lanes as general traffic. Both are expected to have minimal and similar impacts on traffic, parking and freight rail operations.
- ***Goal 5 – Support healthy communities and environmental practices:*** Because both alternatives serve the same corridor, they serve the same low-income population, minority population, zero-car households, and affordable housing; however, Modern Streetcar is projected to serve a higher number of transit-reliant riders (7,500 weekday riders compared to 4,800 weekday riders for enhanced bus).
- ***Goal 6 – Develop an implementable project with community support:*** Enhanced Bus has a lower capital cost ($94 million compared to $393 million for Modern Streetcar) and a lower annual operating and maintenance cost ($13.6 million compared to $20.1 million for Modern Streetcar); however, the operating and maintenance cost per passenger boarding are approximately the same. Public and business input gathered during the study showed significantly greater support for Modern Streetcar than for Enhanced Bus.

Table 1: Differences between 9.2-mile Modal Build Alternatives*

	ENHANCED BUS	MODERN STREETCAR
Weekday Riders (2030)	13,400	20,100
Transit Reliant Riders (2030)	4,800	7,500
New Transit System Riders (2030)	--	900
Capital Cost (2013$)	$94 million	$393 million
Annual O&M Cost (2013$)	$13.6 million	$20.1 million
O&M Cost per Passenger (2013$)	$3.17	$3.13
Potential to Spur Economic Development	Medium	Highest
Community Support	Limited	Significant

* Ridership and cost estimates shown assume the Hennepin Avenue river crossing

5.2. Which River Crossing is Best?

Two river crossings (Hennepin/1st and 3rd/Central Avenues) were evaluated based on those evaluation criteria that could be applied to the river crossing alternatives (see Figure 11 and Table 2). The results of this evaluation are:

Figure 11: Mississippi River Crossing Options

- ***Goal 1 - Connecting people and places***: The Hennepin river crossing provides better existing pedestrian and bicycle connections to both sides of the river and provides a direct connection to Nicollet Island, as shown in Figure 11. Both river crossings provide similar connections to major transit connections; however, the Hennepin river crossing provides a shared alignment with the potential future Hennepin and University/4th streetcar line, as proposed in the City of Minneapolis long-term streetcar network.
- ***Goal 2 – Increase the attractiveness of transit***: While both river crossings currently serve local bus routes, the Hennepin river crossing provides a faster travel time and, as a result, higher projected transit ridership; however, because Route 10 (Central Avenue service) currently uses the Central river crossing, walk distances would be 1-3 blocks farther for some existing riders.
- ***Goal 3 – Catalyze and support economic development:*** Because the two alignments are so close together, there is not expected to be any difference in economic development potential.
- ***Goal 4 – Integrate with existing transportation systems:*** The Hennepin river crossing has more traffic lanes and greater traffic capacity than the Central Avenue river crossing. Installing streetcar tracks on this section of Central Avenue and retaining bicycle lanes (currently shared lane markings) along Central Avenue would require the removal of on-street parking. There is additional capacity on Hennepin and 1st Avenues to install streetcar tracks without impacting on-street parking or proposed bicycle lanes. Streetcar tracks on the Hennepin river crossing would not preclude conversion of Hennepin and 1st Avenues NE to two-way traffic, as desired by some community members.
- ***Goal 5 – Support healthy communities and environmental practices:*** Because the two alignments are so close together, they serve the same communities. Both cross the Mississippi River. The Central Avenue Bridge is listed on the National Register of Historic Places and, thus, would have potentially greater cultural resource impacts.
- ***Goal 6 – Develop an implementable project with community support:*** The Hennepin alignment has a lower operating and maintenance cost due to the shorter transit travel time. It also has a lower capital cost due to the shorter length and additional costs associated with the Central Avenue Bridge due to its age and historic status.

Table 2: Key Differences between Mississippi River Crossing Options*

	HENNEPIN/1ST	3RD/CENTRAL
Distance	6,200 feet	6,900 feet
Activity Centers	Direct access to Nicollet Island	No access to Nicollet Island
Pedestrian Connections	Direct access to riverfront	Indirect access to riverfront
Bicycle and Parking Impacts	Room for both bike lane and parking on both sides of the street	No room for bike lane without parking impacts
Traffic	3 lanes per direction Greater capacity	2 lanes per direction Lower capacity
Weekday Riders (2030)	20,100	19,400
Capital Cost (2013$)	$393 million	$409 million
Annual O&M Cost (2013$)	$20.1 million	$20.6 million
Community Support	More	Less

* Comparison assumes Modern Streetcar between 41st Avenue NE and 46th Street S

5.3. What Is the Best Minimum Operable Segment (Starter Line) for Modern Streetcar?

A 3.4 mile Modern Streetcar Starter Line between Lake Street and approximately 5th St NE was evaluated in the same level of detail as the 9.2 mile Modern Streetcar and Enhanced Bus alternatives. The 3.4-mile Starter Line captures the majority of benefits within the corridor, while reducing capital and operating costs to approximately half that of the longer line (see Table 3):

- ***Goal 1 - Connecting people and places*:** The 3.4-mile Starter Line serves the majority of existing population and employment in the longer corridor and over 90% of projected growth in population and employment. It also serves all but two of the activity centers and most of the major transitway connections in the longer corridor.
- ***Goal 2 – Increase the attractiveness of transit*:** The 3.4-mile Starter Line serves a projected 9,200 weekday boardings, which is about half of the projected boardings for the longer streetcar line.
- ***Goal 3 – Catalyze and support economic development:*** The 3.4-mile Starter Line serves 69% of development capacity in the longer corridor and five of nine development opportunity sites in the longer corridor. Modern streetcar on the Starter Line has the same potential to spur development as the longer line, based on a peer review and local developer forum.
- ***Goal 4 – Integrate with existing transportation systems:*** Modern Streetcar on either the 3.4-mile or 9.2-mile corridor has minimal impacts on traffic and parking. The 3.4-mile Starter Line does not cross any of the at-grade or grade-separated railroad crossings on Central Avenue. The 3.4-mile Starter Line is long enough to replace the primary local bus service on Nicollet Avenue between Lake Street and downtown.
- ***Goal 5 – Support healthy communities and environmental practices:*** The 3.4-mile Starter Line serves over 60% of transit-reliant and minority populations in the longer corridor and over 90% of legally-binding affordable housing units in the longer corridor.
- ***Goal 6 – Develop an implementable project with community support:*** The capital and operating and maintenance costs of the 3.4-mile Starter Line are approximately half that of the longer line. At $182 million in 2013 dollars, the estimated capital cost is within a reasonable range to be eligible for the FTA's Small Starts program. The Starter Line has strong community support, although there is a desire in the community to extend the line further northeast along Central Avenue farther into the heart of northeast Minneapolis.

Table 3: Key Differences between 9.2-mile and 3.4-mile Modern Streetcar*

`	9.2-MILE MODERN STREETCAR	3.4-MILE MODERN STREETCAR	% SHARE
2010 Population	94,000	55,000	59%
2010-30 Population Growth	+26,000	+25,000	96%
2010 Employment	126,000	118,000	94%
2010-30 Employment Growth	+52,000	+49,000	94%
Population Living Below Poverty	21,600	13,100	61%
Population without Access to Automobile	15,100	11,200	74%
Non-White Population	26,100	16,300	62%
Legally-Binding Affordable Housing Units	4,600	4,200	91%
Weekday Riders (2030)	20,100	9,200	46%
Transit Dependent Riders (2030)	7,500	4,800	64%
New Transit System Riders (2030)	900	1,200	133%
Development Capacity based on Zoning	119 million sq ft	82 million sq ft	69%
Value of Development Capacity	$4.8 billion	$3.3 billion	67%
Large-Scale Redevelopment Opportunity Sites	9 sites	5 sites	56%
Potential to Spur Development	Highest Potential	Highest Potential	
Capital Cost (2013$)	$393 million	$182 million	46%
Annual O&M Cost (2013$)	$20.1 million	$10.6 million	53%
Community Support	Significant	Strongest	

* Comparison assumes Hennepin Avenue river crossing and uses ½ mile radius for demographic data

6. Recommended Locally Preferred Alternative

Prior to selecting a recommended LPA, the City of Minneapolis received the following input on the LPA recommendation.

Four open houses were held on August 6, 7, and 14 and September 9, 2013, and public comment period concluded September 15, 2013. Presentations were also made to neighborhood and business association meetings during August and September. In general, **public sentiment** can be characterized as: very strong preference for streetcar as a mode; preference for the Hennepin Avenue river crossing; general support for the 3.4 mile starter line between Lake Street, but a desire to carry the alignment further northeast towards Lowry Avenue NE.

The **TCAC** met on August 19, 2013 and provided input to the PAC that for the LPA: streetcar is the preferred mode; the Hennepin Avenue bridge is the preferred river crossing; and a starter streetcar line should extend from Lake Street on the south to as far northeast of downtown as is financially feasible.

The **PAC** met on September 19, 2013 and recommended the Locally Preferred Alternative as modern streetcar running between Lake Street and approximately 5th Street NE on Nicollet Avenue, Nicollet Mall, and Hennepin/1st Avenues, using the Hennepin Avenue bridge to cross the Mississippi River, and further acknowledged that an extension of modern streetcar further northeast of downtown is desirable, the length of which depends on funding availability and the location of an operations and maintenance facility.

Based on this input, on October 4, 2013, the Minneapolis City Council approved the recommended LPA for transit in the Nicollet-Central Corridor as **modern streetcar running between Lake Street and at least 5th Street NE on Nicollet Avenue, Nicollet Mall and Hennepin/1st Avenues, using the Hennepin Avenue Bridge to cross the Mississippi River** and recommended the LPA to the Metropolitan Council for inclusion in the Regional Transportation Policy Plan**.** The full City Council resolution is in Appendix A.

Figure 12 summarizes key characteristics of the recommended LPA. A map of the recommended LPA is provided in Figure 13.

Figure 12: Recommended LPA Characteristics

Length: 3.4 miles

Service Frequency: 7.5 min peak, 10 min off-peak, 7 days a week

2030 Projected Weekday Ridership: 9,200

Estimated Capital Cost: approximately $200 million in 2017 dollars

Major Transit Connections:

- all transit in downtown Minneapolis
- 4 LRT lines downtown (Blue and Green)
- I-35W Highway BRT line (at Lake St and downtown)
- major E-W bus connections outside downtown (Lake St, Franklin Ave, 4th/University)

Special Generators:

- Nicollet Mall
- Minneapolis Convention Center
- 6,000 hotel rooms
- "Eat Street" Nicollet Avenue business district
- Minneapolis Institute of Arts
- East Hennepin business district
- Central Mississippi Riverfront Regional Park and Nicollet Island
- Five large-scale redevelopment opportunity sites

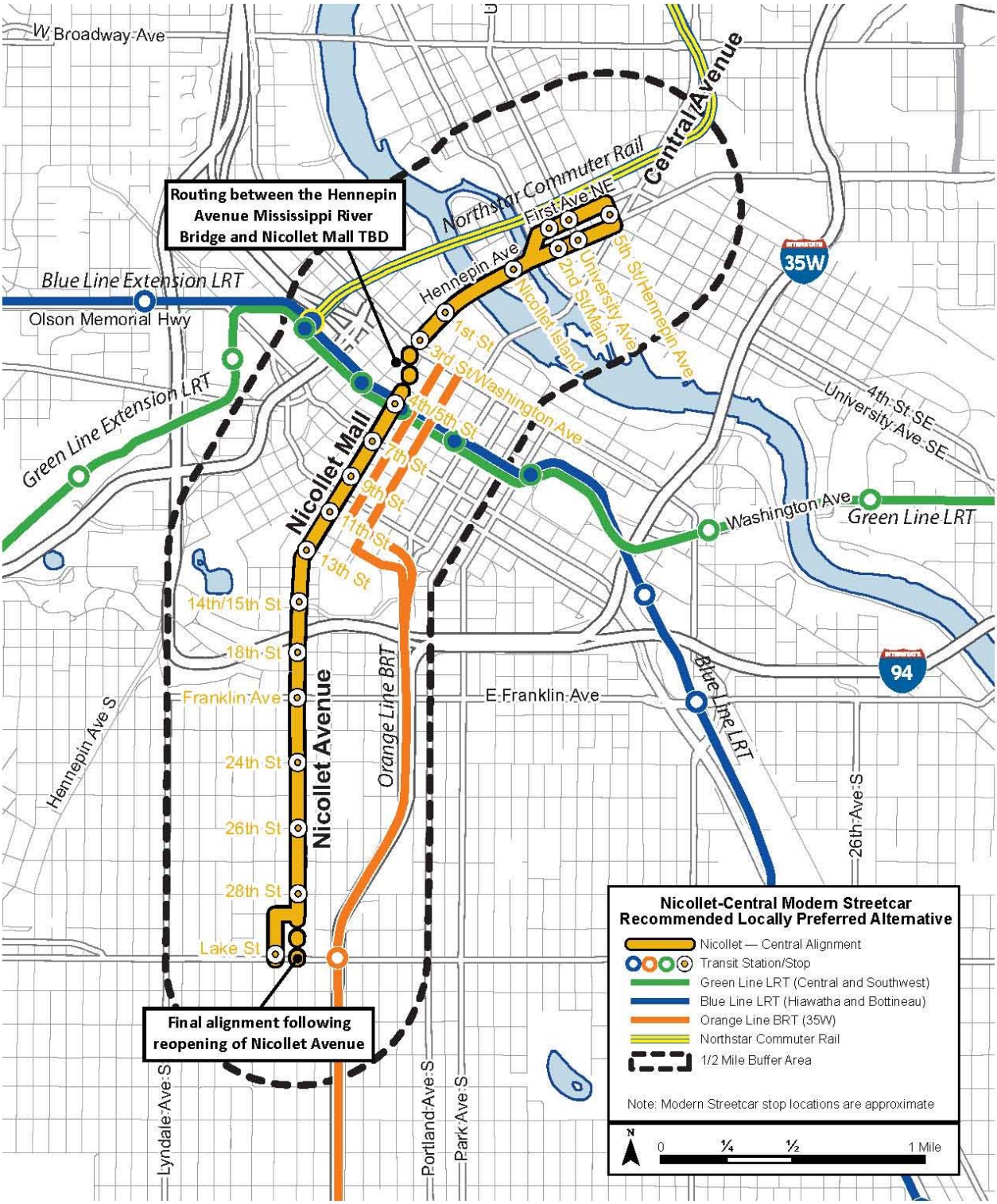
Population and Jobs:

- 55,000 residents and 118,000 jobs within one-half mile
- Projected to grow by 25,000 residents and 50,000 jobs in the next 20 years

Transit-Reliant Population:

- 20 percent of the population within one-half mile has no car
- 24 percent of residents within one-half mile live in poverty
- 4,200 legally-binding affordable housing units within one-half mile

Figure 13 Recommended Locally Preferred Alternative Alignment



7. Next Steps

The following tasks are key next steps to advance the Nicollet-Central Modern Streetcar project and to prepare the project for entry into the Federal Transit Administration (FTA) Small Starts Project Development process:

- **Regional Transportation Policy Plan** – The Metropolitan Council's 2030 Transportation Policy Plan is expected to be modified in early 2014 to recognize the recommended LPA for the Nicollet-Central Modern Streetcar. This project is the first modern streetcar project in the Twin Cities region to request adoption of the LPA in the Plan, although modern streetcar is under consideration in other corridors. A more comprehensive update to the Plan is planned for late 2014, which is expected to address the role of modern streetcar in the region more comprehensively.

- **Environmental Review** – An Environmental Assessment (EA) is being prepared in 2014 for the project, led by the City of Minneapolis in partnership with the Metropolitan Council and Federal Transit Administration. In November 2013, the Federal Transit Administration concurred that an EA was the probable class of action for the Nicollet-Central Modern Streetcar project. Both the City of Minneapolis and the Metropolitan Council will be signatories to the EA.

- **Project Development** – The City of Minneapolis and the Metropolitan Council, the presumed owner, operator, and implementer of the project, are collaborating to advance design and engineering for the project. The City of Minneapolis and the Metropolitan Council plan to enter into an interagency agreement in late 2013 to provide technical staff support from the Metropolitan Council to the City of Minneapolis to advance the project through the EA process and other pre-project development activities.

- **Funding** – In spring 2013, following passage of enabling legislation by the State of Minnesota, the City of Minneapolis established a value capture district, by which future tax revenues generated in the near term from planned development on five blocks along the project may be used to fund capital costs of the streetcar project, estimated to generate up to $60 million. Additional local, regional and/or federal transportation funds are needed to fully fund the project. The City of Minneapolis intends to collaborate with the Metropolitan Council to seek federal transportation funds for the project, such as FTA Small Starts and/or other federal funding programs. The source of operating funds for the project will also need to be identified.

APPENDIX A: CITY COUNCIL ACTION

CITY OF MINNEAPOLIS
CERTIFICATION

STATE OF MINNESOTA)
COUNTY OF HENNEPIN) SS
CITY OF MINNEAPOLIS)

I, Casey Joe Carl, City Clerk of the City of Minneapolis, in the County of Hennepin, State of Minnesota, certify that I have examined the Transportation & Public Works committee report regarding the **"Nicollet-Central Transit Corridor Locally Preferred Alternative"** and accompanying Resolution **"2013R-422"**, was adopted October 4, 2013 by the City Council, and approved October 10, 2013 by the Mayor, have carefully compared the same with the original on file in this office, and that the attached copy is a true, correct and complete copy of the original.

IN WITNESS WHEREOF, I have signed and affixed the City seal on October 15, 2013.

Casey Joe Carl, City Clerk

T&PW - Your Committee recommends passage of the accompanying resolution supporting the Nicollet-Central Transit Corridor Locally Preferred Alternative and recommending the Locally Preferred Alternative to the Metropolitan Council for inclusion in the Regional Transportation Policy Plan.

Certified as an official action of the City Council.

RECORD OF COUNCIL VOTE (X INDICATES VOTE)

COUNCIL MEMBER	AYE	NAY	ABSTAIN	ABSENT	VOTE TO OVERRIDE	VOTE TO SUSTAIN	COUNCIL MEMBER	AYE	NAY	ABSTAIN	ABSENT	VOTE TO OVERRIDE	VOTE TO SUSTAIN
Reich	X						Glidden	X					
Gordon	X						Schiff				X		
Hofstede	X						Tuthill	X					
Johnson				X			Quincy	X					
Samuels	X						Colvin Roy	X					
Lilligren	X						Hodges	X					
Goodman	X												

ADOPTED OCT 4 2013
DATE

ATTEST [signature]
CITY CLERK

[X] APPROVED [ ] NOT APPROVED [ ] VETOED

[signature]
MAYOR RYBAK

OCT 10 2013
DATE

2013R-422

RESOLUTION
of the
CITY OF
MINNEAPOLIS

By Colvin Roy

Supporting the Nicollet-Central Transit Corridor Locally Preferred Alternative.

Whereas, the City of Minneapolis approved a long-term modern streetcar network on April 2, 2010; and

Whereas, the City of Minneapolis has conducted an alternatives analysis for modern streetcar or other transit improvements in a portion of that long-term network along Nicollet and Central Avenues; and

Whereas, the alternatives analysis has shown that modern streetcar has greater ridership and economic development benefits than an enhanced bus alternative but similar operating and maintenance costs per passenger; and

Whereas, the alternatives analysis has shown that a modern streetcar alignment crossing the Mississippi River on the Hennepin/1st Avenue Bridge has greater benefits and lower cost than the Central/3rd Avenue Bridge and does not preclude future changes in traffic operations along Hennepin Avenue and 1st Avenue; and

Whereas, a starter streetcar line operating between Lake Street and approximately 5th Street NE has the highest concentration of benefits related to ridership, service to transit-reliant and low income people, economic development and affordable housing within the Nicollet-Central Corridor and is more financially feasible at this time than a long streetcar line; and

Whereas, there is significant public support for modern streetcar in the Nicollet-Central Corridor; and

Whereas, the Technical and Community Advisory Committee provided input that modern streetcar is the preferred mode, that the Hennepin Avenue Bridge is the preferred river crossing, and that a starter streetcar line should extend from Lake Street on the south to as far northeast of downtown as is financially feasible; and

Whereas, the Policy Advisory Committee recommended the Locally Preferred Alternative as modern streetcar running between Lake Street and approximately 5th Street NE on Nicollet Avenue, Nicollet Mall, and Hennepin/1st Avenues, using the Hennepin Avenue Bridge to cross the Mississippi River, and further acknowledged that an extension of modern streetcar further northeast of downtown is desirable, the length of which depends on funding availability and the location of an operations and maintenance facility; and

Whereas, the City of Minneapolis established a value capture district for the local share of streetcar financing on June 25, 2013; and

Whereas, to be eligible for federal and regional funding, a Locally Preferred Alternative (LPA) for transit improvements in the Nicollet-Central Corridor must be approved by the Metropolitan Council and amended into the Regional Transportation Policy Plan;

Now, Therefore, Be It Resolved by The City Council of The City of Minneapolis:

That the City of Minneapolis recommends that the Locally Preferred Alternative for the Nicollet-Central Transit Corridor be modern streetcar running between Lake Street and at least 5th Street NE on Nicollet Avenue, Nicollet Mall and Hennepin/1st Avenues, using the Hennepin Avenue Bridge to cross the Mississippi River.

Be It Further Resolved that an extension of modern streetcar further northeast of downtown is desirable, the length of which depends on funding availability and the location of an operations and maintenance facility.

Be It Further Resolved that the City of Minneapolis will coordinate with the Metropolitan Council to approve and amend this LPA into the Regional Transportation Policy Plan, to complete an Environmental Assessment and preliminary engineering for the LPA, to negotiate a funding plan, and to negotiate appropriate interagency agreements for the continued implementation of modern streetcar in the Nicollet-Central Corridor.

Certified as an official action of the City Council:

RECORD OF COUNCIL VOTE (X INDICATES VOTE)

COUNCIL MEMBER	AYE	NAY	ABSTAIN	ABSENT	VOTE TO OVERRIDE	VOTE TO SUSTAIN	COUNCIL MEMBER	AYE	NAY	ABSTAIN	ABSENT	VOTE TO OVERRIDE	VOTE TO SUSTAIN
Reich	X						Glidden	X					
Gordon	X						Schiff				X		
Hofstede	X						Tuthill	X					
Johnson				X			Quincy	X					
Samuels	X						Colvin Roy	X					
Lilligren	X						Hodges	X					
Goodman	X												

ADOPTED OCT 4 2013
DATE

ATTEST
CITY CLERK

[X] APPROVED [ ] NOT APPROVED [ ] VETOED

OCT 10 2013

MAYOR RYBAK DATE

APPENDIX B: REFERENCE DOCUMENTS

Alternatives analysis documents (available on the project website):

- Relevant Issues Report
- Purpose and Need Report
- Public Outreach Summary Report for Phase I: Purpose and Need
- Initial Screening of Alternatives Report
- Detailed Definition of Alternatives Report
- Public Outreach Summary Report for Phase II: Alternatives Development
- Detailed Evaluation Report and supporting technical memoranda
    - Appendix A: Travel Forecasting Results
    - Appendix B: Operation Plans
    - Appendix C: Running Time Methodology
    - Appendix D: Developer Forum Summary
    - Appendix E: Affordable Housing Assessment
    - Appendix F: Traffic and Parking Impacts
    - Appendix G: Freight Rail Impacts
    - Appendix H: National Environmental Resources
    - Appendix I: Cultural Resources
    - Appendix J: Capital Cost Methodology
    - Appendix K: Cost Effectiveness
    - Appendix L: Bridge Analysis
    - Appendix M: Vehicle Clearance under Central Avenue Overpass
    - Appendix N: Economic Development Recommendations
    - Appendix O: Operating and Maintenance Cost Estimation Methodology
    - Appendix P: Streetcar and Enhanced Bus Peer Review Summary
- Public Outreach Summary Report for Phase III: Detailed Evaluation of Alternatives
- Recommended Locally Preferred Alternative Report

APPENDIX C: DETAILED EVALUATION TABLES

Figure 14: Summary of Detailed Alternatives Evaluation

Criteria	No-Build	Enhanced Bus *(9.2 mi)*	Modern Streetcar *(9.2 mi)*	Modern Streetcar Starter Line *(3.4 mi)*
Goal 1: Connect People and Places				
1.1 2010 population within one-half mile	93,900			54,800
1.2 2030 population within one-half mile	120,000			79,700
1.3 2010 employment within one-half mile	125,500			118,100
1.4 2030 employment within one-half mile	177,900			167,000
1.5 Existing major activity centers	All alternatives serve all or nearly all major activity centers Most major activity centers are clustered in/around downtown; Eighth-Washington; and Grant-Lake.			
1.6 Transit connections	Serves all of the transit connections within the 9.2-mile study corridor including the Columbia Heights Transit Center and 38th St primary transit network			Serves most important connections (Downtown - Lake)
1.7 Quality of pedestrian connections	Connections diminish somewhat farther north and south			Consistent quality of connections throughout alignment
1.8 Quality of bicycle connections	Connections diminish somewhat farther north and south			Consistent quality of connections throughout alignment
Goal 2: Increase the Attractiveness of Transit				
2.1 2030 ridership projections				
Project boardings	N/A	13,400	20,100	9,200
New corridor transit trips	N/A	--	900	1,200
2.2 Ability to accommodate growth in transit ridership[1]	Would require use of hybrid articulated buses to do so	Would accommodate	Could require more frequent service during special events	Would accommodate
Goal 3: Catalyze and Support Economic Development				
3.1 Estimate of development potential (SF)[2]	118,500,000			82,200,000
3.2 Potential value of development (2013 $)	$ 4.84 billion			$3.28 billion
3.3 Potential for alternative to spur development *(Based on May 2013 Developer Forum, Peer Review, and review of local plans, policies and guidelines)*	Lowest potential of four alternatives	Medium potential of four alternatives	Highest potential of four alternatives	Highest potential of four alternatives
Goal 4: Integrate with the Existing Transportation System				
4.1 Impact on corridor traffic	Minimal impacts for all alternatives			
4.2 Impact on parking	Minimal impacts for all alternatives			
4.3 Impact on freight railroad operations	Minimal impacts for all alternatives			
Goal 5: Support Healthy Communities and Environmental Practices				
5.1 Potential impacts on historical, cultural and natural resources				
Number of archeology sites within one-quarter mile	3			3
Number of architectural sites within one-quarter mile	310			290
Natural resources within one-half mile	Minimal impacts for all alternatives			
5.2 Year 2030 transit-reliant ridership				
Project boardings by transit-reliant persons	N/A	4,800	7,500	4,200
% of project boardings by transit-reliant persons	N/A	36%	37%	46%
5.3 Benefits to low-income and minority population				
Population living below poverty served	21,600			13,100
% of population living below poverty	23%			24%
Non-white population served	26,100			16,300
% of population that is non-white	28%			30%
Population without access to automobile	15,100			11,200
% of population without access to automobile	16%			20%
5.4 Affordable housing				
Number of affordable housing units	4,600			4,200
% of housing units that are affordable	9%			13%
5.5 Environmental benefits *(Relative to No-Build)*	N/A	Minimal impacts for all Build alternatives		
Regional air pollution *(Regional change, in kilograms)*[3]	N/A	No significant difference between alternatives. Alternatives are within +/- 0.5%		
Safety	N/A	No significant difference between alternatives		
Goal 6: Develop an Implementable Project with Community Support				
6.1 Cost Effectiveness				
Passenger boardings per vehicle revenue hour				
Project	N/A	42	90	75
Other buses in corridor[4]	64	34	37	52
Corridor total	64	38	58	56
O&M cost per passenger boarding				
Project	N/A	$3.17	$3.13	$3.60
Other buses in corridor[4]	$1.58	$3.00	$2.85	$1.97
Corridor total	$1.58	$3.10	$3.02	$2.39
Annual O&M cost estimate				
Project	N/A	$13,600,000	$20,100,000	$10,600,000
Other buses in corridor[4]	$18,900,000	$9,700,000	$11,200,000	$16,600,000
System-wide change vs. No-Build	N/A	$4,400,000	$12,400,000	$8,300,000
Project capital cost estimate (2013 $)	Would require use of hybrid articulated buses	$94,000,000	$393,000,000	$182,000,000
Cost-effectiveness (2013 $)[5]	N/A	$1.79	$4.27	$4.76
6.2 Community Support				
Public sentiment	*very limited support*	*limited support*	*support*	*strong support*
Business/developer community sentiment	*very limited support*	*limited support*	*support*	*strong support*

[1] *Based on estimated additional passenger capacity at peak load based on 2030 ridership forecasts*

[2] *Based on existing zoning*

[3] *Relative to 2030 change in VMT, vs. No-Build alterantive*

[4] *Other buses in corridor defined as follows:*

No-Build -- Routes 10, 18, and 59

Build alternatives -- Local, limited stop and Grand Avenue circulator

[5] *Project incremental annualized capital costs + project incremental annual O&M cost divided by 2030 project boardings relative to No-Build alternative*

2030 project boardings annualized using Route 18 factor (320)

Build Alternatives presented in this table assume the Hennepin Avenue River Crossing

Figure 15: Evaluation of River Crossing Alternatives

CONSIDERATIONS	HENNEPIN/FIRST AVENUE BRIDGE	CENTRAL/THIRD AVENUE BRIDGE
One-Way Distance[a]	6,200 feet	6,900 feet
Other Future Streetcar Lines Served	Hennepin	Hennepin
	University/Fourth	University/Fourth
	Washington	
Major Activity Centers Served	Direct and indirect ways to access the Riverfront, Nicollet Island, East Hennepin and St. Anthony Main	Mostly indirect ways to access Riverfront, Nicollet Island and St. Anthony Main
Existing Pedestrian and Bicycle Connections	Direct and indirect access to the Riverfront and Nicollet Island	Access to north/east Riverfront via stairs
	North of the River, Hennepin/First could accommodate bike lane within the existing roadway right-of-way	Indirect to Nicollet Island and West Riverfront
Walk Time for Existing Transit Riders	For Route 10/59 patrons: Walk would be two to three blocks longer or shorter, if from the east or west	No change for existing patrons
2030 Weekday Boardings[b]	20,100	19,400
Transit Travel Time		
Enhanced Bus (41st Ave NE-46th St S)	47 minutes	48.5 minutes
Streetcar (41st Ave NE-46th St S)	45.9 minutes	47.5 minutes
Streetcar Starter Line (Eighth St NE-Lake St)	25.2 minutes	26.8 minutes
2010 Traffic Volumes[c]		
AM Peak (Southbound)	500 vehicles/lane	700 vehicles/lane
PM Peak (Northbound)	600 vehicles/lane	650 vehicles/lane
Hennepin/First Avenue Conversion to Two-Way Traffic	Would not preclude	No impact
Cultural and Historic Resources		Bridge on National Register of Historic Places
Estimated Annual Operating and Maintenance Cost of Build Alternative[d]		
Enhanced Bus (41st Ave NE-46th St S)	$13.6 million	$13.9 million
Streetcar (41st Ave NE-46th St S)	$20.1 million	$20.6 million
Streetcar Starter Line (Eighth St NE-Lake St)	$10.6 million	$11.4 million
Estimated Capital Cost of Build Alternative[d]		
Enhanced Bus (41st Ave NE-46th St S)	$94 million	$100 million
Streetcar (41st Ave NE-46th St S)	$393 million	$409 million
Streetcar Starter Line (Eighth St NE-Lake St)	$182 million	$189 million

[a] Distance along alignment between Eighth Avenue NE and Washington Avenue.

[b] Based on 2030 boardings for streetcar alternative between 41st Avenue NE and 46th Street S.

[c] Source: City of Minneapolis.

Figure 16: Key Results Available by Segment

	2010					2030	
	Population	Population - No Vehicle Households	Percent of Population Living Below Poverty	Non-White Population	Employment	Population	Employment
41st to Lowry	10,000	900	11%	2,500	1,900	10,700	3,100
Lowry to Broadway	6,200	1,000	20%	1,800	1,900	7,000	2,900
Broadway to 8th	3,700	400	31%	600	1,400	4,200	2,100
8th to Washington - Hennepin	12,400	1,800	21%	2,500	6,700	17,800	9,200
Washington to Grant	17,800	4,000	25%	5,000	103,200	31,500	145,900
Grant to Lake	24,600	5,400	25%	8,800	8,200	30,400	11,900
Lake to 38th	11,300	1,200	25%	3,100	1,100	11,000	1,600
38th to 46th	7,900	400	25%	1,800	1,100	7,400	1,200
Total: 41st to 46th	93,900	15,100	23%	26,100	125,500	120,000	177,900
Total: 8th to Lake - Hennepin	54,800	11,200	24%	16,300	118,100	79,700	167,000
Minneapolis Average			22%				
Columbia Heights Average			13%				
Seven County Region Average			11%				
8th to Washington - Central	12,400	1900	24%	2,900	11,500	18,000	15,800

Represents population and employment within 1/2 mile of proposed alignment.

Numbers may not sum due to rounding.

Source:

2010 Population, US Census Bureau 2010 Decennial Census, TAZ 2000 level geography

Population in Households with No Vehicle Available, American Community Survey: 5-year sample 2006-2011 at the Census tract geography.

2010 Employment, Minnesota Department of Employment and Economic Securities, TAZ 2000 level geography

2030 Population and Employment, Metropolitan Council forecasts developed based on city forecasts, TAZ 2000 level geography

Non-white population, persons without access to an automobile, and persons living poverty were based on the American Community Survey (ACS) 5-year sample 2007-2011 at the Census tract level geography

	Affordable Housing		Estimated Potential Maximum Development Capacity	
	Affordable Housing Units	Total Housing Units	Size (million sq ft)	Value ($ million)
41st to Lowry	51	4,633	16	$860
Lowry to Broadway	242	4,336	5	$170
Broadway to 8th	0	1,002	9	$123
8th to Washington	1,514	6,220	20	$699
Washington to Grant	1,832	14,528	39	$1,375
Grant to Lake	862	11,984	24	$1,202
Lake to 38th	109	4,575	4	$294
38th to 46th	36	3,375	2	$115
Total: 41st to 46th	4,646	50,653	118	$4,838
Total: 8th to Lake	4,208	32,732	82	$3,276
Minneapolis Total	21,734	178,287		
Columbia Heights Total	307	8,584		
Seven County Region Total	59,948	1,186,986		

Represents affordable housing and development capacity within 1/2 mile of proposed alignment.

Source:

Affordable Housing Units, HousingLink data on legally-binding housing units available and affordable to households earning 80 percent of Area Median Income (AMI) or less.

Total Housing Units, US Census Bureau 2010 Decennial Census

Estimated Potential Maximum Development Capacity, Appendix N Economic Development Recommendations. Defined as the theoretical maximum build-out alowable under current zoning, based on the maximum allowable FAR (floor-to-area ratio) in each zoning district. The difference between current built form and the potential maximum allowable limits (build-out increment) is the estimated potential maximum development capacity.