



West Broadway Transit Study

Initial Screening of Alternatives Memo

5/22/2015

Prepared by the
SRF Consulting Group Team
for







Table of Contents

Purpose 1

Methodology 1

Screening 5

Screening Criteria 5

Screening Process 6

Summary of Screening Results 6

Build Alternatives Advanced for Further Study 8

Arterial BRT from downtown Minneapolis to the Robbinsdale LRT Station 8

Streetcar from Nicollet Mall to North Memorial Hospital 8

List of Figures

Figure 1: Streetcar Alternatives Evaluated 2

Figure 2: Arterial BRT Alternatives Evaluated 3

Figure 3: Proposed Local Bus Routes for All Alternatives 4

List of Tables

Table 1: Proposed Frequencies for Linked Local Bus Service 5

Table 2: Alternatives Screening Results 7

DRAFT



Purpose

The purpose of this initial screening analysis is to select up to three alternatives for detailed evaluation as part of the West Broadway Transit Study. As described in the West Broadway Transit Study Problem Statement, each of the alternatives screened in this memo meet the purpose, need, and goals of the West Broadway Transit Project. In order to advance the study within its scope and budget, only the highest performing of these alternatives will be considered during the next level of analysis where the costs, benefits and impacts of the alternatives will be estimated.

Methodology

The initial screening analysis began by identifying the universe of alternatives in the West Broadway Corridor. As shown in Figure 1 and Figure 2 and in the list below, two arterial BRT alternatives and three streetcar alternatives were included in the initial screening analysis:

1. Arterial BRT from downtown Minneapolis to Robbinsdale Station via Washington and West Broadway Avenues (downtown routing and terminus to be determined)
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 (downtown routing and terminus to be determined)
5. Streetcar from Nicollet Mall to Courage Kenny via Washington, West Broadway, and McNair Avenues¹

One goal of the West Broadway Transit Study is to develop a transit project with capital costs of less than \$250 million in order to qualify for the Federal Small Starts grant program, which could provide up to \$75 million toward the capital cost of the project. The Small Starts grant program requires fewer approvals by the Federal Transit Administration than the New Starts program (which is for projects with costs greater than \$250 million), streamlining the project planning and implementation processes. Preliminary capital cost estimates were developed on a per-mile basis for each of the alternatives considered in this analysis. Capital costs of each of the alternatives are less than \$250 million; at this juncture no alternatives were dismissed due to preliminary cost estimates.

¹ 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.



Figure 1: Streetcar Alternatives Evaluated

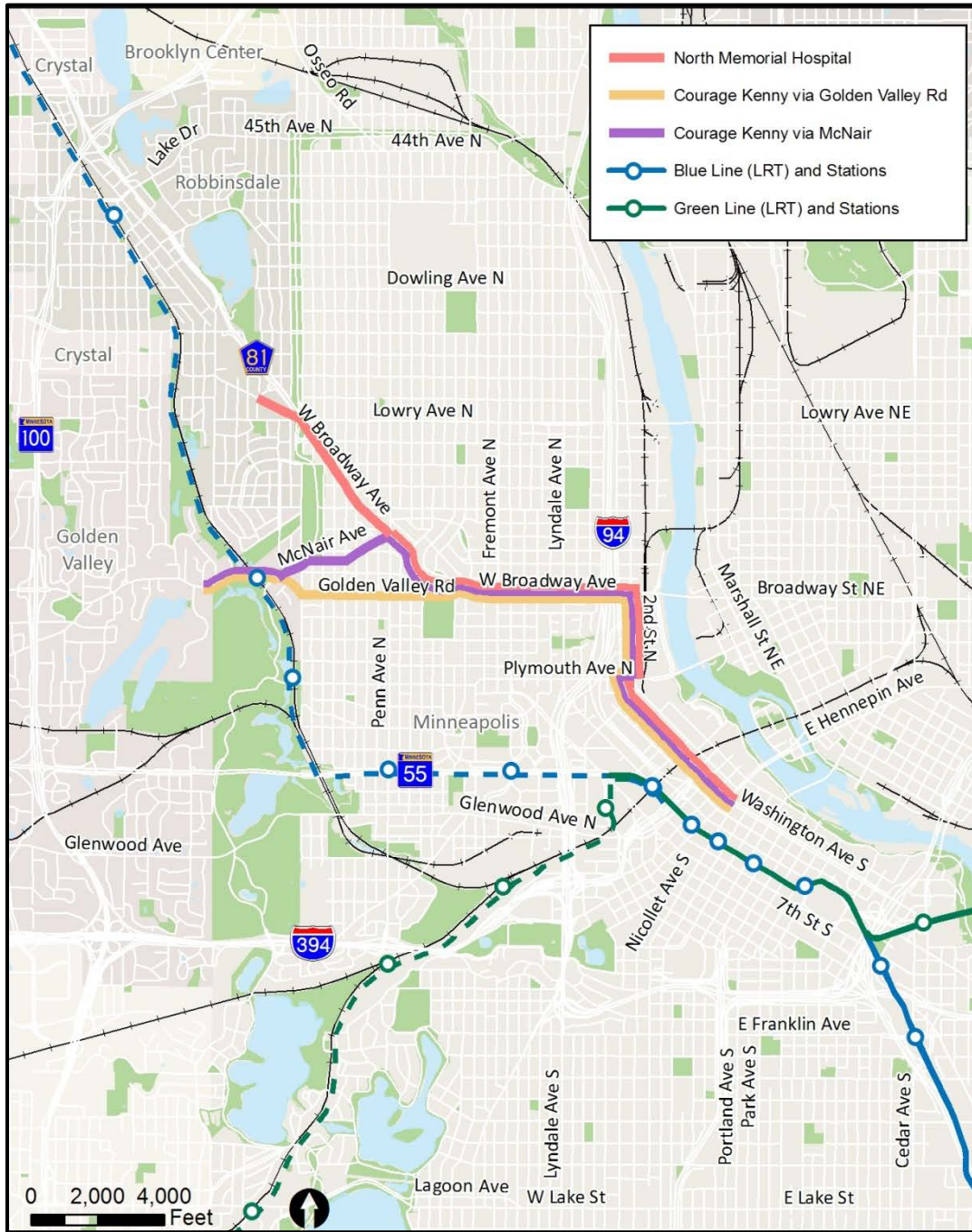
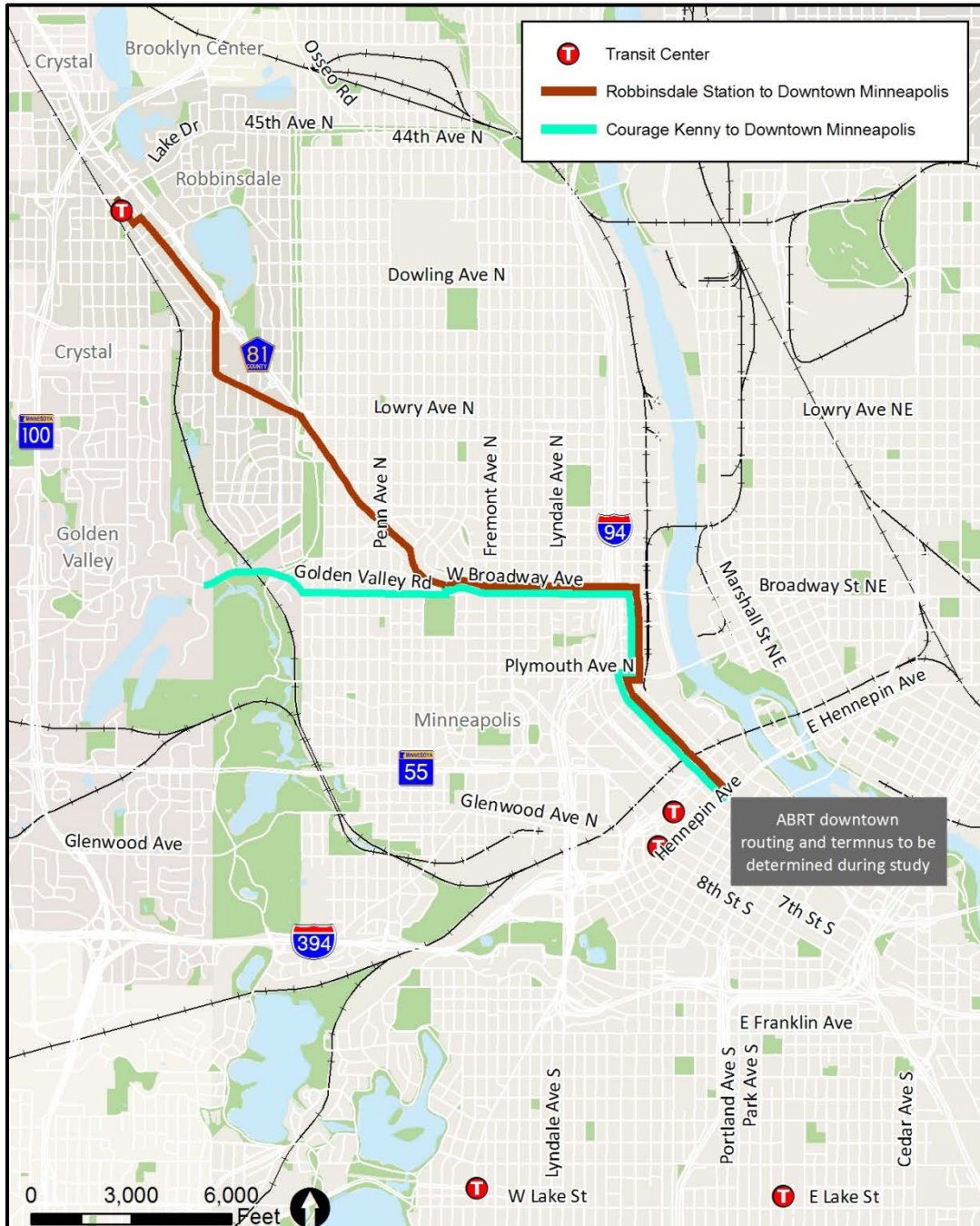




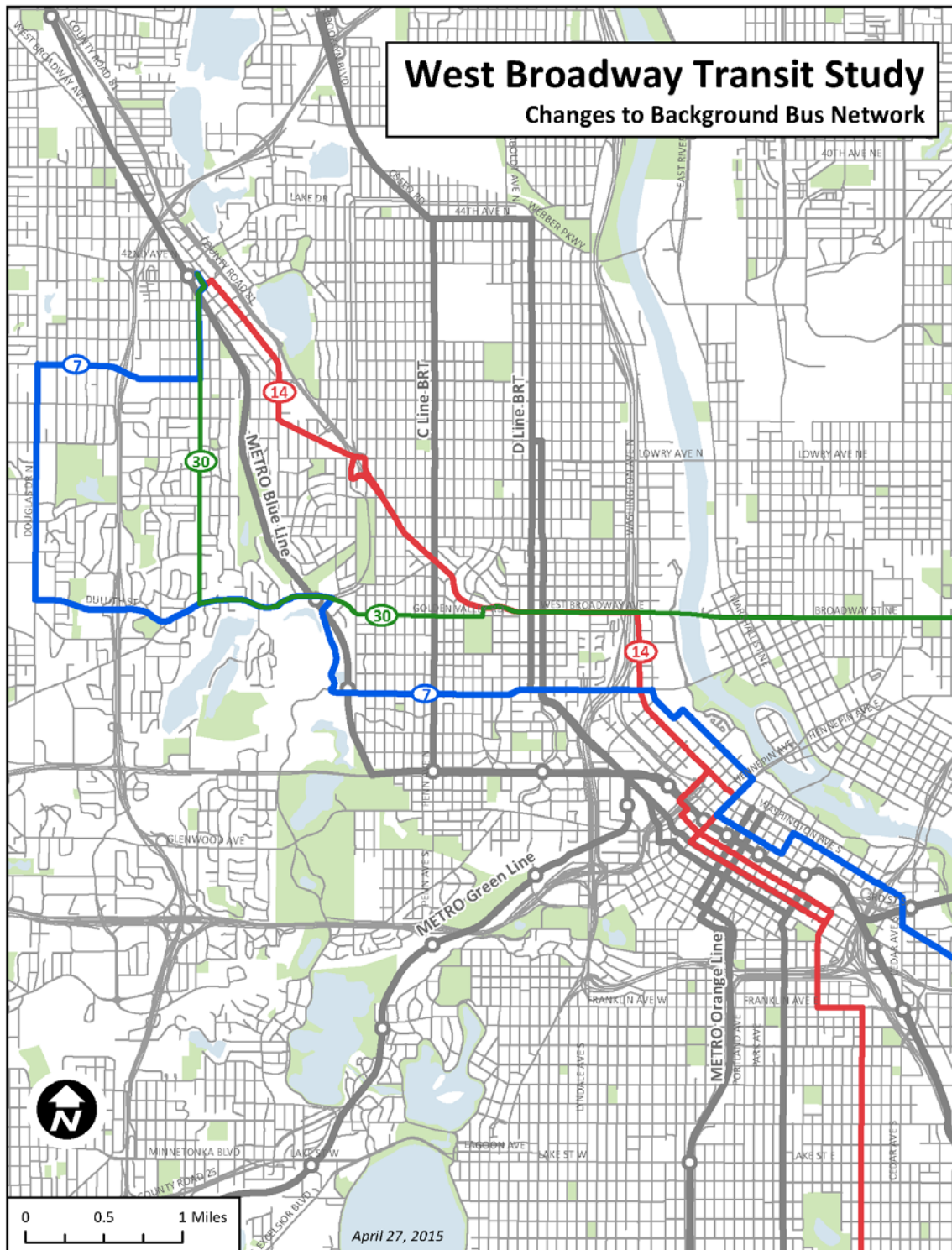
Figure 2: Arterial BRT Alternatives Evaluated



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, as shown in Figure 3 and Table 1. Many of these service changes may occur before the West Broadway Transit Project is completed, as part of a restructuring of service in anticipation of the Blue Line LRT Extension opening. Furthermore, transit operations on Theodore Wirth Parkway would require discussion with and agreement from the Minneapolis Park and Recreation Board.



Figure 3: Proposed Local Bus Routes for All Alternatives



Note: transit operations on Theodore Wirth Parkway would require discussion with and agreement from the Minneapolis Park and Recreation Board.

**Table 1: Proposed Frequencies for Linked Local Bus Service**

	Alternative	Transitway		Route 7		Route 14		Route 30 (extension)	
		Peak	Off-Peak	Peak	Off-Peak	Peak	Off-Peak	Peak	Off-Peak
1	Arterial BRT from downtown to Robbinsdale Station	15	15	30	30	60	60	30	60
2	Streetcar from Nicollet Mall to North Memorial Hospital	15	15	30	30	30	30	30	60
3	Streetcar from Nicollet Mall to Courage Kenny	15	15	30	30	30	30	30	60
4	Arterial BRT from downtown to Courage Kenny	15	15	30	30	30	30	30	60
5	Streetcar from Nicollet Mall to Courage Kenny via McNair	15	15	30	30	30	30	30	60

Screening

Screening Criteria

The initial screening analysis used four screening criteria, listed below, to evaluate the project's universe of alternatives. The screening criteria reflect different aspects of the project's purpose and need statement. Alternatives were given a score of one, two, or three stars depending on how well they fulfilled each criterion. The following section discusses the measures used to generate a score for each screening criteria.

Screening Criteria #1: Potential for Economic Development and Revitalization

Screening criteria 1 assessed the potential for each alternative to take advantage of economic development opportunities in the corridor. Economic development opportunities include 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.

Screening Criteria #2: Connections to the Regional Transit Network

Screening criteria 2 assessed each alternative's compatibility with existing and planned transportation modes and infrastructure. For example, 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.

Screening Criteria #3: Potential Right of Way Impacts

Screening criteria 3 used general assumptions regarding how much area each alternative would require for a guideway, stations, and power source infrastructure 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 were rated higher in this category than the streetcar alternatives.

Screening Criteria #4: North Minneapolis Coverage

Screening criteria 4 measured 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.

Screening Process

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 corridor in common, ratings were based on differentiators among the alternatives. 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 will be advanced to the next phase of the study for further in-depth technical analysis and comparison to a no-build alternative.

In addition to the technical analysis of alternatives, the Community Advisory Committee as well as attendees at the project's first open house were asked to weigh in on the merits and costs of the five alternatives. Themes that emerged from community members were:

- Several people liked that the arterial BRT option went to Robbinsdale and would like the streetcar to go further north past North Memorial Hospital
- Several people were opposed to streetcar entirely because of the impacts of rail
- Several Golden Valley residents stated their opposition to the streetcar and redevelopment in the city
- Several people questioned the rationale behind the McNair Avenue option, given its residential character

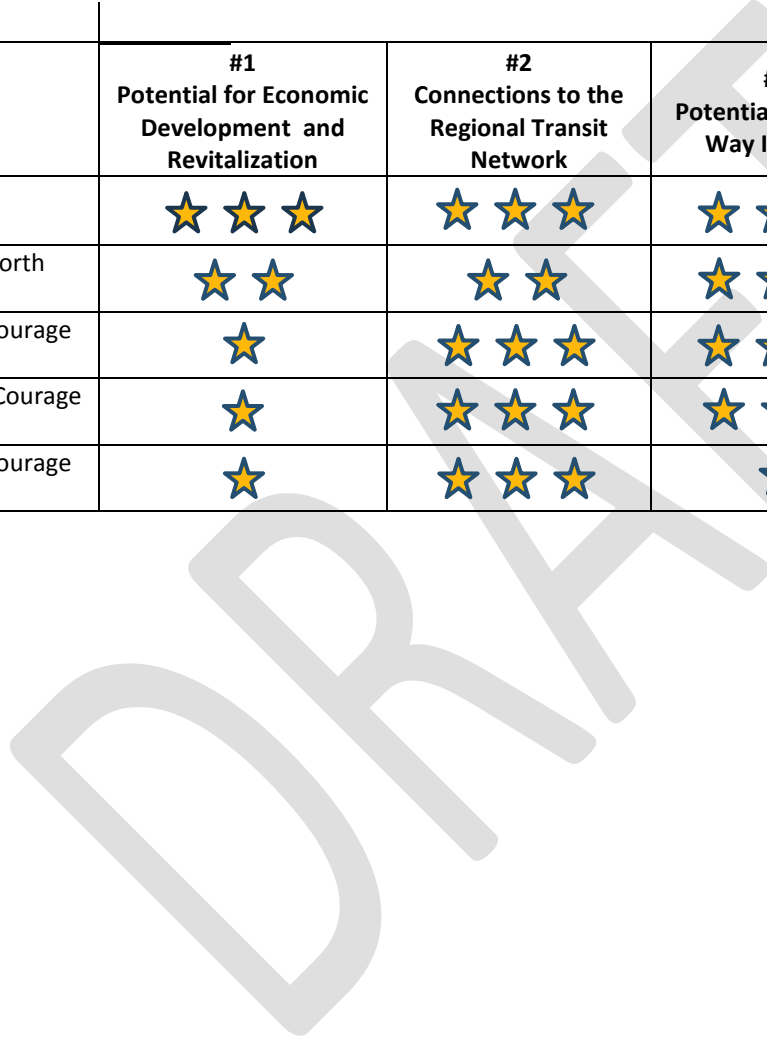
Summary of Screening Results

The results of the Initial Screening Analysis are shown in Table 2. The detailed analysis and scoring of each alternative is included in Appendix A.



Table 2: Alternatives Screening Results

	Alternative	#1 Potential for Economic Development and Revitalization	#2 Connections to the Regional Transit Network	#3 Potential Right-of- Way Impacts	#4 North Minneapolis Coverage	Overall Rating
1	Arterial BRT from downtown to Robbinsdale Station	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★
2	Streetcar from Nicollet Mall to North Memorial Hospital	★ ★	★ ★	★ ★ ★	★ ★ ★	★ ★ ★
3	Streetcar from Nicollet Mall to Courage Kenny	★	★ ★ ★	★ ★ ★	★	★ ★
4	Arterial BRT from downtown to Courage Kenny	★	★ ★ ★	★ ★ ★	★	★ ★
5	Streetcar from Nicollet Mall to Courage Kenny via McNair	★	★ ★ ★	★	★ ★ ★	★ ★





Of the five initially-considered alternatives, two alternatives with the highest scores are recommended for detailed study:

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

Build Alternatives Advanced for Further Study

Arterial BRT from downtown Minneapolis to the Robbinsdale LRT Station

As shown in Figure 2, arterial BRT would run northwest from Washington and Hennepin Avenues in downtown Minneapolis using Washington Avenue or 2nd Street North to Plymouth Avenue. Arterial BRT would continue on either Washington Avenue or 2nd Street from Plymouth Avenue to West Broadway Avenue, where the line would turn west and continue to run in mixed traffic along West Broadway Avenue.

Arterial BRT would continue northwest along West Broadway Avenue until it transitions down to the Lowry and Theodore Wirth intersection, then runs at-grade along Oakdale Avenue west to North Memorial Hospital. The arterial BRT line would then continue along Oakdale, France, and Broadway Avenues through downtown Robbinsdale to the Robbinsdale Station of the METRO Blue Line Extension. To access the Blue Line Extension LRT station, the line would turn left onto 41st Avenue N. and terminate at the Robbinsdale Transit Center.

Streetcar from Nicollet Mall to North Memorial Hospital

The City of Minneapolis is in the planning phases for a north-south streetcar line on Nicollet Avenue through downtown. The West Broadway streetcar alignment would likely connect to the streetcar at Washington Avenue and Hennepin Avenue in downtown Minneapolis. As shown in Figure 1, the streetcar would run northwest either on Washington Avenue or 2nd Street North to Plymouth Avenue. If the streetcar alignment runs along Washington Avenue through the North Loop and 2nd Street through the North Washington Jobs Park, the alignment would run along N. 10th Avenue for one block between the two streets.

From Plymouth Avenue or 10th Avenue, the streetcar alignment would continue to run north on either Washington or 2nd Street until West Broadway Avenue, where it would turn west. The streetcar would run along West Broadway until it transitions down to the Lowry and Theodore Wirth intersection, then runs at-grade along Oakdale Avenue west to North Memorial Hospital.



Appendix A: Evaluation Results

DRAFT



West Broadway Transit Study Initial Alignment Screening

Alignment		Screening Criteria				Overall Rating
		#1 Potential for Economic Development and Revitalization	#2 Connections to the Regional Transit Network	#3 Potential Right-of-Way Impacts	#4 North Minneapolis Coverage	
1	Arterial BRT from downtown to Robbinsdale Station via Washington and West Broadway Avenues	<ul style="list-style-type: none"> Development momentum and available sites in North Loop Available sites and policy protection for industrial redevelopment in North Washington Jobs Park Land use, zoning, and political support for intensive redevelopment along West Broadway from Mississippi River to 26th Avenue North West Broadway corridor in Minneapolis demonstrates major need for revitalization Connects to major institution and employment center at North Memorial Hospital Redevelopment sites are available in Robbinsdale Near-term development is viable in Robbinsdale Connects to downtown Robbinsdale, a retail and residential center 	Connects to: <ul style="list-style-type: none"> Blue Line Extension LRT at Robbinsdale C Line Arterial BRT at Penn Avenue N D Line Arterial BRT at Emerson/Fremont Avenues N Nicollet-Central Streetcar at Hennepin Avenue Express Routes 716, 717, 758 in Robbinsdale Local Routes 3, 5, 7, 14, 19, 22, 32 in Robbinsdale, North Minneapolis, and North Loop Dozens of local and express routes in downtown Minneapolis Within few-block walk of Blue and Green Line LRT downtown 	Limited to those station areas with constrained widths for placement of station amenities	<ul style="list-style-type: none"> Serves West Broadway between 2nd Street North/ Washington Avenue and 26th Avenue North Serves critical neighborhood node at Penn and West Broadway 	★ ★ ★
	Rating	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	
2	Streetcar from Nicollet Mall to North Memorial Hospital via Washington and West Broadway Avenues	<ul style="list-style-type: none"> Development momentum and available sites in North Loop Available sites and policy protection for industrial redevelopment in North Washington Jobs Park Land use, zoning, and political support for intensive redevelopment along West Broadway from Mississippi River to 26th Avenue North West Broadway corridor in Minneapolis demonstrates major need for revitalization Connects to major institution and employment center at North Memorial Hospital 	Connects to: <ul style="list-style-type: none"> C Line Arterial BRT at Penn Avenue N D Line Arterial BRT at Emerson/Fremont Avenues N Nicollet-Central Streetcar at Hennepin Avenue Local Routes 3, 5, 7, 14, 19, 22, 32 in Robbinsdale, North Minneapolis, and North Loop Dozens of local and express routes in downtown Minneapolis Within few-block walk of Blue and Green Line LRT downtown 	Approximately 3 acres of right-of-way for an OMF, scattered small sites for traction power substations, as well as limited right-of-way acquisitions at constrained station areas and turning locations.	<ul style="list-style-type: none"> Serves West Broadway between 2nd Street North/Washington Avenue and 26th Avenue North Serves critical neighborhood node at Penn and West Broadway 	★ ★ ★
	Rating	★ ★	★ ★	★ ★ ★	★ ★ ★	
3	Streetcar from Nicollet Mall to Courage Kenny via Washington and West Broadway Avenues and Golden Valley Road	<ul style="list-style-type: none"> Development momentum and available sites in North Loop Available sites and policy protection for industrial redevelopment in North Washington Jobs Park Land use, zoning, and political support for intensive redevelopment along West Broadway from Mississippi River to 26th Avenue North; alignment serves West Broadway between 2nd Street N. and Knox Avenue West Broadway corridor in Minneapolis demonstrates major need for revitalization; alignment serves approximately half of the corridor Few development opportunities on Golden Valley Road segment No planned land use changes in Golden Valley 	Connects to: <ul style="list-style-type: none"> Blue Line Extension LRT at Golden Valley Road C Line Arterial BRT at Penn Avenue N D Line Arterial BRT at Emerson/Fremont Avenues N Nicollet-Central Streetcar at Hennepin Avenue Local Routes 3, 5, 7, 14, 19, 22, 32 in North Minneapolis and North Loop Dozens of local and express routes in downtown Minneapolis Within few-block walk of Blue and Green Line LRT downtown 	Approximately 3 acres of right-of-way for an OMF, scattered small sites for traction power substations, as well as limited right-of-way acquisitions at constrained station areas and turning locations.	<ul style="list-style-type: none"> Serves West Broadway between 2nd Street North/ Washington Avenue and Knox Avenue North; Does not serve critical neighborhood node at Penn and West Broadway 	★ ★
	Rating	★	★ ★ ★	★ ★ ★	★	



Alignment		Screening Criteria			Overall Rating	
4	Arterial BRT from downtown to Courage Kenny via Washington and West Broadway Avenues and Golden Valley Road	<ul style="list-style-type: none"> Development momentum and available sites in North Loop Available sites and policy protection for industrial redevelopment in North Washington Jobs Park Land use, zoning, and political support for intensive redevelopment along West Broadway from Mississippi River to 26th Avenue North; alignment serves West Broadway between 2nd Street N. and Knox Avenue West Broadway corridor in Minneapolis demonstrates major need for revitalization; alignment serves approximately half of the corridor Few development opportunities on Golden Valley Road segment No planned land use changes in Golden Valley 	Connects to: <ul style="list-style-type: none"> Blue Line Extension LRT at Golden Valley Road Green Line LRT at West Bank Station C Line Arterial BRT at Penn Avenue N D Line Arterial BRT at Emerson/Fremont Avenues N Nicollet-Central Streetcar at Hennepin Avenue Local Routes 3, 5, 7, 14, 19, 22, 32 in North Minneapolis and North Loop Dozens of local and express routes in downtown Minneapolis Within few-block walk of Blue and Green Line LRT downtown 	Limited to those station areas with constrained widths for placement of station amenities	<ul style="list-style-type: none"> Serves West Broadway between 2nd Street North/ Washington Avenue and Knox Avenue North; Does not serve West Broadway between Knox and 26th Avenues North 	★ ★
	Rating	★	★ ★ ★	★ ★ ★	★	
5	Streetcar from Nicollet Mall to Courage Kenny via Washington, West Broadway, and McNair Avenues	<ul style="list-style-type: none"> Development momentum and available sites in North Loop Available sites and policy protection for industrial redevelopment in North Washington Jobs Park Land use, zoning, and political support for intensive redevelopment along West Broadway from Mississippi River to 26th Avenue North West Broadway corridor in Minneapolis demonstrates major need for revitalization Land use and zoning do not support redevelopment along McNair Avenue No planned land use changes and few development opportunities in Golden Valley 	Connects to: <ul style="list-style-type: none"> Blue Line Extension LRT at Golden Valley Road C Line Arterial BRT at Penn Avenue N D Line Arterial BRT at Emerson/Fremont Avenues N Nicollet-Central Streetcar at Hennepin Avenue Local Routes 3, 5, 7, 14, 19, 22, 32 in North Minneapolis and North Loop Dozens of local and express routes in downtown Minneapolis Within few-block walk of Blue and Green Line LRT downtown 	Approximately 3 acres of right-of-way for an OMF, scattered small sites for traction power substations, as well as limited right-of-way acquisitions at constrained station areas and turning locations. McNair right-of-way is very narrow—ranging from 19 to 25 feet curb-to-curb—resulting in additional acquisitions along its length	<ul style="list-style-type: none"> Serves West Broadway between 2nd Street North/ Washington Avenue and Penn Avenue North Serves critical neighborhood node at Penn and West Broadway 	★ ★
	Rating	★	★ ★ ★	★	★ ★ ★	

• Note: All alternatives include service enhancements on local Routes 7 and 30 serving West Broadway Avenue, Plymouth Avenue, and the proposed Golden Valley Road LRT Station.