

RIVERVIEW CORRIDOR

**Report # 7:
Detailed Definition of Alternatives**

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Note: The Riverview Pre-Project Development Study began discussing with the PAC the Detailed Definition of Alternatives in 2016. Some of the terms originally presented to the PAC may have changed over the course of the Study, and may not be consistent among Study documents. Please refer to the Riverview Pre-Project Development Study Glossary of Terms and List of Abbreviations and Acronyms, available under separate cover.

INTRODUCTION

This document defines the general infrastructure and service characteristics of the 10 Most Promising Alternatives (MPAs) that advanced through the initial screening process.¹ The MPAs are defined using the following categories from the Metropolitan Council's Regional Transitway Guidelines.

- Mode (transit vehicle)
- Alignment (route)
- Service characteristics²
- Runningway
- Stop/station facilities
- Vehicle maintenance facility

This report begins with an overview of the mode and alignment used in developing the MPAs. The alternatives are also illustrated under separate cover.³

Overview: Modes

Local Bus/Route 54



Metro Transit Route 54. (Photo: Metro Transit)

Route 54 serves the Riverview Corridor on W. 7th Street and Hwy 5 between downtown Saint Paul, Minneapolis-St. Paul International Airport (MSP), and Mall of America (MOA). It runs with general traffic, and provides frequent, limited-stop service for most of the day. Stops are spaced one-eighth to one-half mile apart. Patrons pay their fare as they board the bus.

Arterial Bus Rapid Transit

Arterial BRT operates on existing arterial roads and urban streets in shared use or dedicated lanes. It provides frequent, limited-stop service for most of the day. Stations are branded and amenities are higher than those associated with local bus service. Stations one-eighth to one-half mile apart. Patrons pay their fare before boarding. As such, patrons may also use all bus doors to board or alight. Metro Transit's A Line is a local example of Arterial BRT.



Metro Transit A Line (Photo: Metro Transit)

¹ http://riverviewcorridor.com/wp-content/uploads/2016/03/RV-Initial-Screening_Final_2016March4_508.compressed-ADA.pdf

² For details, see Technical Memorandum #6, Year 2040 Service Plans, under separate cover.

³ <http://riverviewcorridor.com/wp-content/uploads/2017/01/Riverview-Most-Promising-Alternatives-Booklet-Jan.-2017.pdf>

Dedicated Bus Rapid Transit (BRT)



HealthLine, Cleveland, OH, Dedicated BRT (Photo: AECOM)

Dedicated BRT can operate in shared use and in dedicated lanes within or separate from existing roadways to avoid traffic congestion. The Riverview Study uses the Federal Transit Administration’s definition of Dedicated BRT, i.e. at least one-half of the route operates in dedicated lanes.

Like Arterial BRT, Dedicated BRT provides frequent service for most of the day, and off-board fare collection. Station amenities are similar to LRT, including level-boarding, a platform snow melt system, wayfinding signs, artwork, landscaping, and bicycle racks. Stations are spaced one-half to one-mile apart. A local example of Dedicated BRT is the planned Orange Line on I-35W.

Modern Streetcar

Modern streetcars operate on tracks in shared use and dedicated lanes. Stations have amenities similar to Dedicated BRT and LRT. Typical station spacing can range from one-eighth to one mile apart. Patrons pay before boarding, so all streetcar doors are available for boarding/deboarding. The Twin Cities do not have modern streetcar in operation.



Atlanta Streetcar (Photo: City of Atlanta)

Light Rail Transit (LRT)



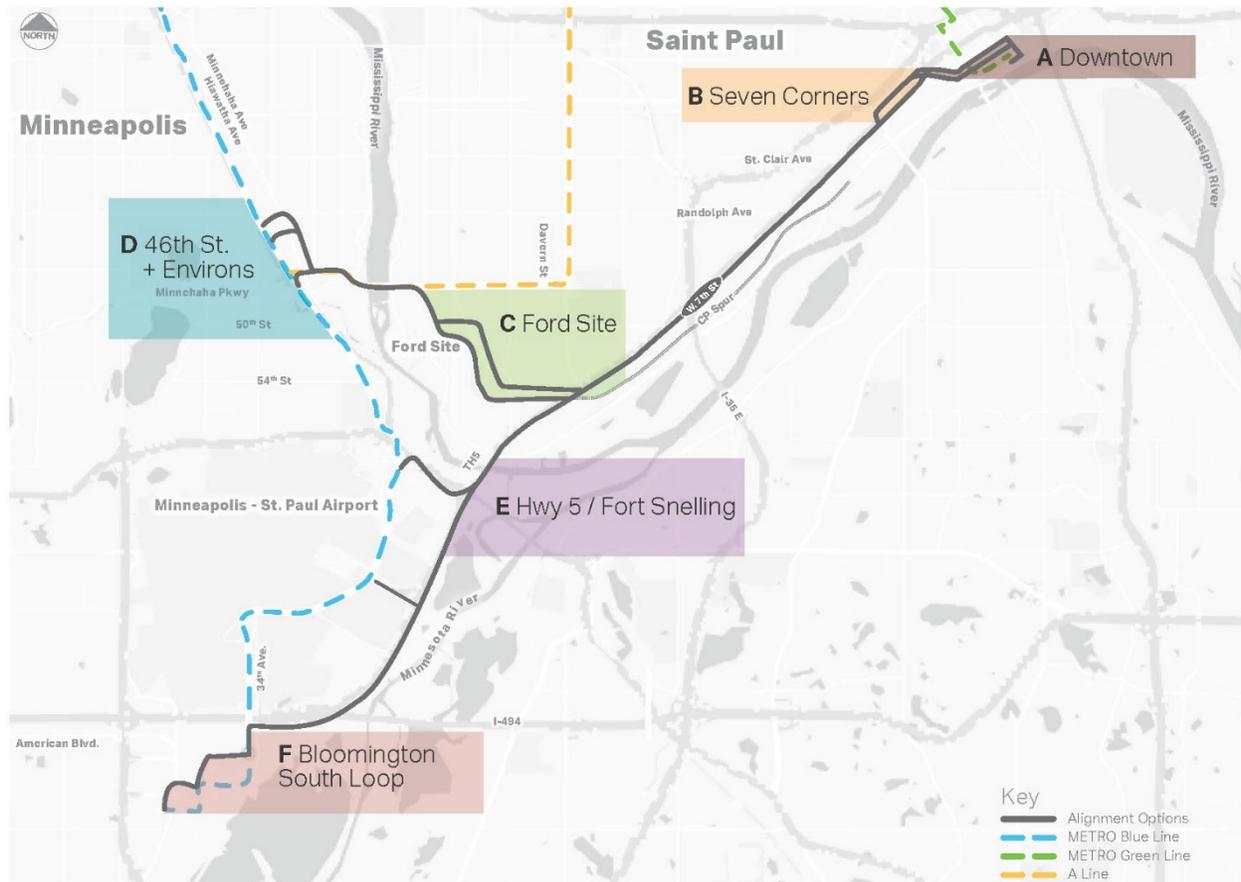
Green Line, Twin Cities, MN (Photo: Metro Transit)

LRT in the Twin Cities operates in dedicated lanes, on the street or in separate right-of-way, as in the case of the Green Line on University Avenue and the Blue Line along Hwy 55, respectively. Stations, amenities, stop spacing, fare collection systems, and frequency of service are similar to Dedicated BRT. Currently, the Twin Cities have two other LRT lines in development – Green Line Extension and Blue Line Extension.

Overview: Alignment Alternatives

Riverview Corridor alignment alternatives run between Downtown Saint Paul and the Mall of America. An area of distinction between the alternatives is the Mississippi River crossing. Alternatives cross the Mississippi River at Ford Parkway or Hwy 5. Further, depending on the transit mode, each sub-area (see Figure 1) can include multiple alignment options.^{4, 5}

Figure 1: Sub-Areas



⁴ <http://riverviewcorridor.com/wp-content/uploads/2017/01/Riverview-Most-Promising-Alternatives-Booklet-Jan.-2017.pdf>

⁵ For rail alternatives crossing at Hwy 5, the Detailed Definition of Alternatives presumed a new crossing would be required to accommodate rail transit, pedestrians, and bicyclists. This presumption could span a variety of options, e.g. retrofit of the existing structure; construction of a new structure in place of the existing bridge; construction of a new structure adjacent to the existing Hwy 5 Bridge. The National Park Service submitted a letter to Riverview project staff on November 9, 2017 regarding the agency's concerns about the new river crossing at Hwy 5. As referenced in Policy 11 of the Mississippi National River Recreation Area Comprehensive Management Plan, the agency's order of preference would be to first modify the existing bridge, followed by constructing a parallel structure, and establishing a new corridor. If the Riverview LPA is a rail alternative crossing at Hwy 5, then future environmental review and engineering phases of the selected Riverview LPA will evaluate river crossing options.

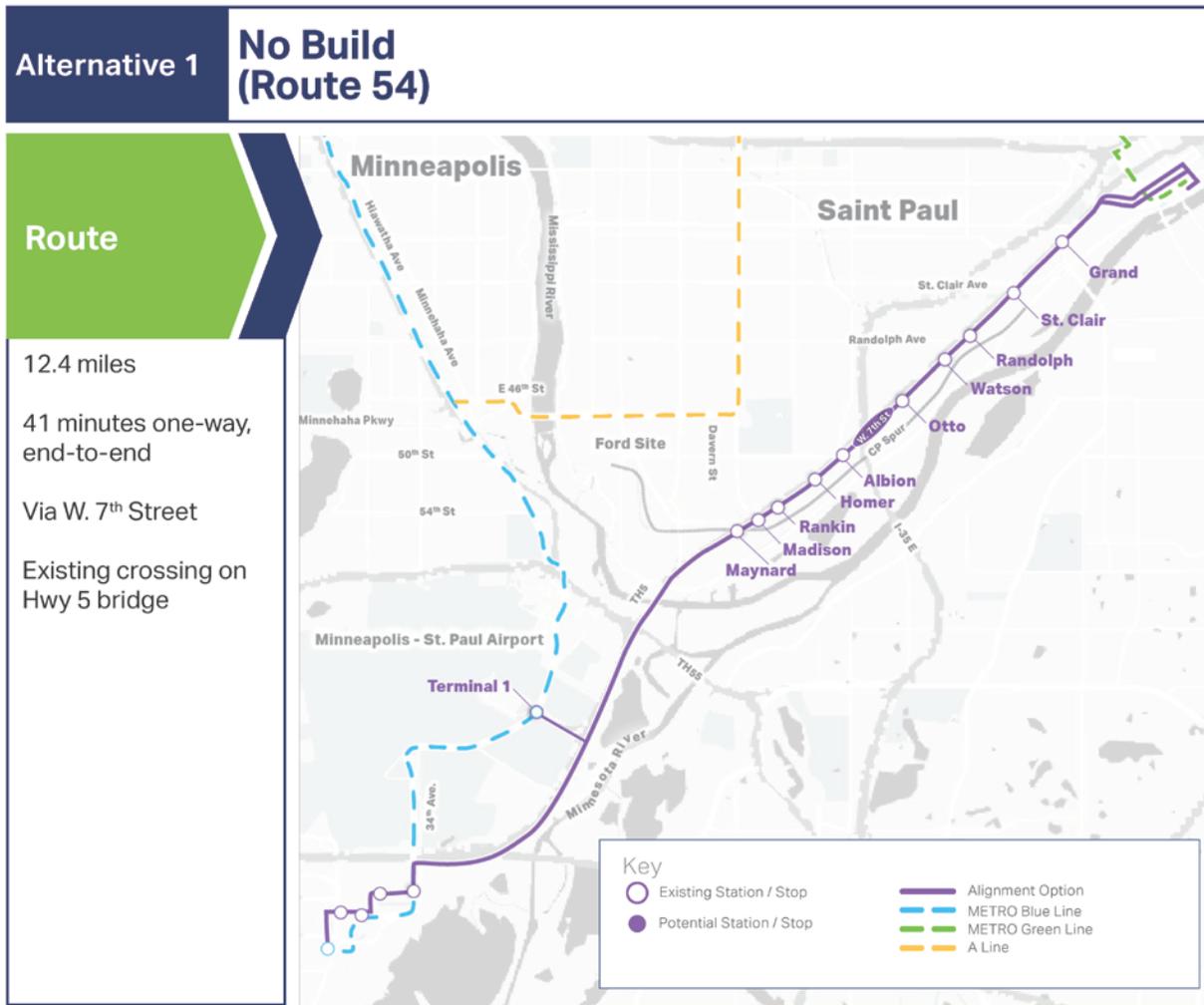
Assumptions

Each MPA, summarized in the subsequent section, connects to the regional transit network via Union Depot in Downtown Saint Paul and the Mall of America Transit Station. Additionally, all alternatives include MnDOT's W. 7th Street project, anticipated in the next five to ten years, that will entail road resurfacing and sidewalk reconstruction.

All of the alternatives would provide more frequent service than the Route 54 does today. For details, see Technical Memorandum #6: Year 2040 Service Plans.

Future environmental review and engineering phases of the selected Riverview locally preferred alternative (LPA) and relevant alternatives will refine service plans. This entails balancing several factors such as service frequencies, costs, and ridership.

ALTERNATIVE 1



Characteristics

Vehicle

Hybrid diesel-electric bus

Local bus in shared use lanes

Assumes use of existing Metro Transit bus garages

Service

Continuation of Route 54 service

21.5 hours/day

Seven days/week

10 minute peak
15-30 minute off-peak

Includes Maplewood Mall extension at half the frequency

Stations

26 total stations

On-board fare collection

Maintain existing Route 54 stops; does not presume improvements

References: Most Promising Alternatives Booklet (Appendix A), Preliminary Concepts Booklet (Appendix B), Technical Memorandum #6: Year 2040 Service Plans (Appendix C), Operating Environment maps (Appendix D), Report #8: Riverview Pre-Project Development Study, Basis of Estimate Memorandum (available under separate cover)

ALTERNATIVE 2

Alternative 2

Arterial BRT W. 7th - Hwy 5 / Fort Snelling

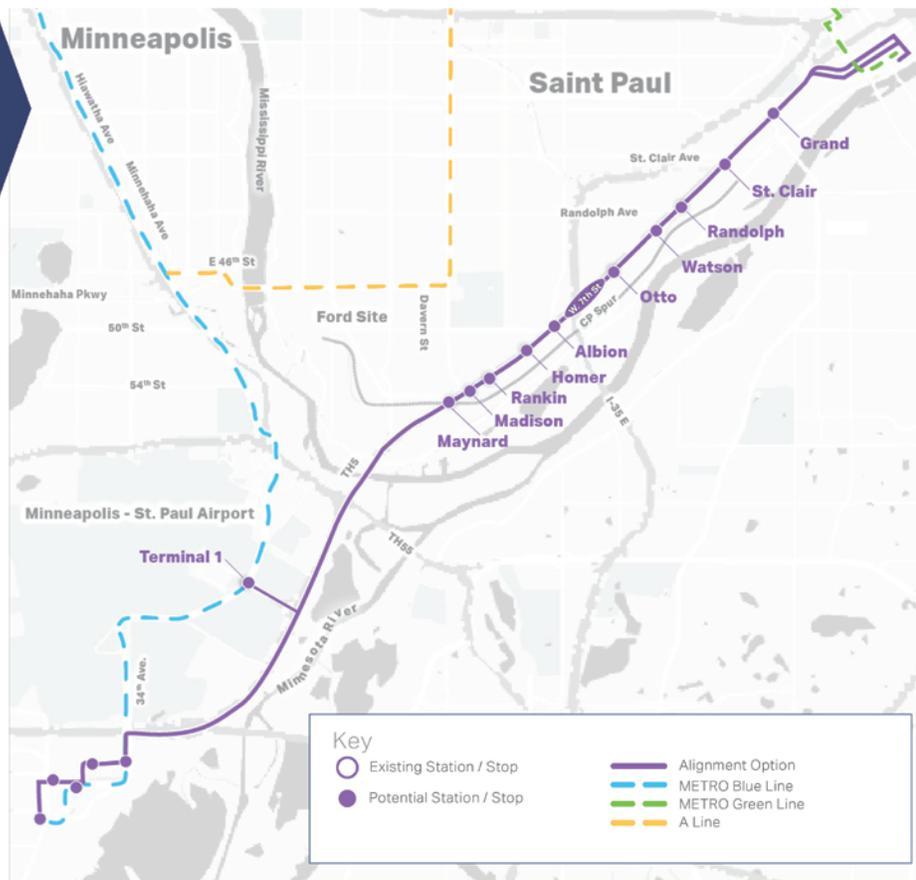
Route

12.4 miles

39 minutes one-way,
end-to-end

Via W. 7th Street

Existing crossing on
Hwy 5 bridge



Characteristics

Vehicle

Hybrid diesel-electric bus

BRT in shared use lanes

Assumes use of existing Metro
Transit bus garages to store
and maintain additional buses

Service

Direct service to MSP airport
and Mall of America

Route 54 would operate at
reduced frequency

21.5 hours/day

Seven days/week

10 minute peak
15-30 minute off-peak

Stations

26 total stations

Off-board fare collection

Upgrade existing Route 54
stops similar to the A Line

References: Most Promising Alternatives Booklet (Appendix A), Preliminary Concepts Booklet (Appendix B), Technical Memorandum #6: Year 2040 Service Plans (Appendix C), Operating Environment maps (Appendix D), Report #8: Riverview Pre-Project Development Study, Basis of Estimate Memorandum (available under separate cover)

ALTERNATIVE 3

Alternative 3

Dedicated BRT W. 7th - Hwy 5 / Fort Snelling

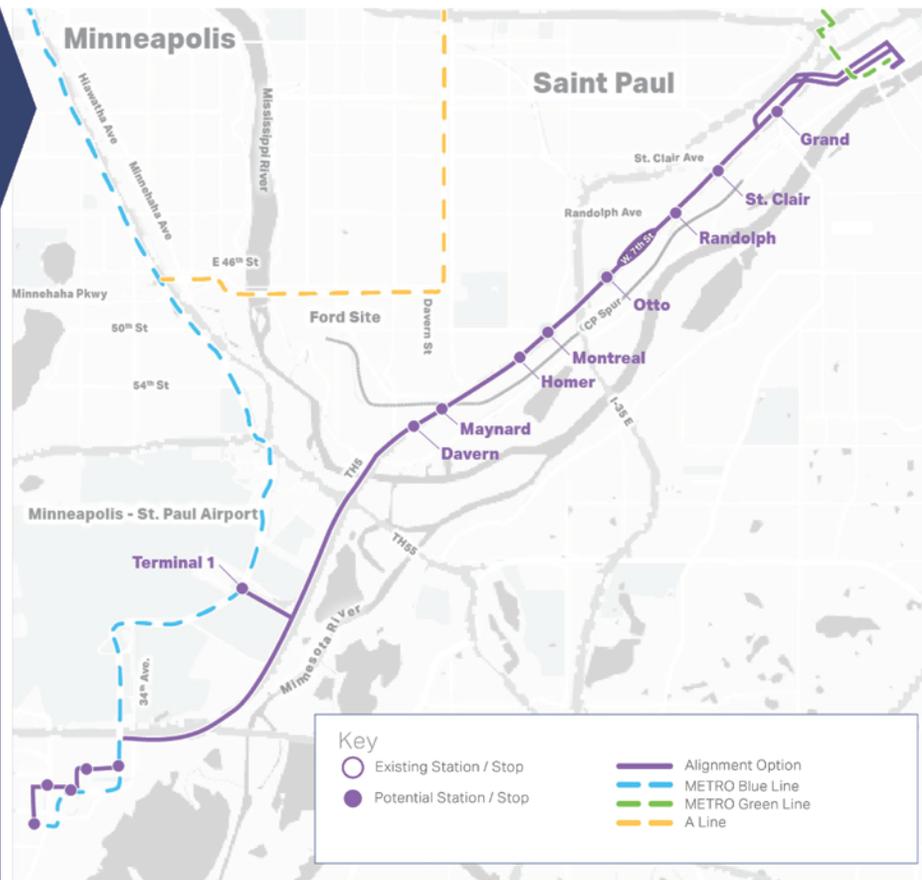
Route

12.4 miles

40 minutes one-way,
end-to-end

Via W. 7th Street

Existing crossing on
Hwy 5 bridge



Characteristics

Vehicle

Hybrid diesel-electric bus

BRT in dedicated and shared
use lanes

Assumes new BRT vehicle
storage and maintenance
facility

Service

Direct service to MSP airport
and Mall of America

Route 54 would operate at
reduced frequency

21.5 hours/day

Seven days/week

9 minute peak*
15-30 minute off-peak

Stations

20 total stations

Off-board fare collection

Construct new BRT stations,
similar to the Orange and Gold
Lines

Level boarding

*Initially presumed 10 minute peak frequency; revised to 9 minute based on 2040 ridership forecasts. Costs shown are based on 9 minute peak frequency.
References: Most Promising Alternatives Booklet (Appendix A), Preliminary Concepts Booklet (Appendix B), Technical Memorandum #6: Year 2040 Service Plans (Appendix C), Operating Environment maps (Appendix D), Report #8: Riverview Pre-Project Development Study, Basis of Estimate Memorandum (available under separate cover)

ALTERNATIVE 4

Alternative 4

Rail: LRT or Modern Streetcar W. 7th - Hwy 5 / Fort Snelling

Route

11.7 miles

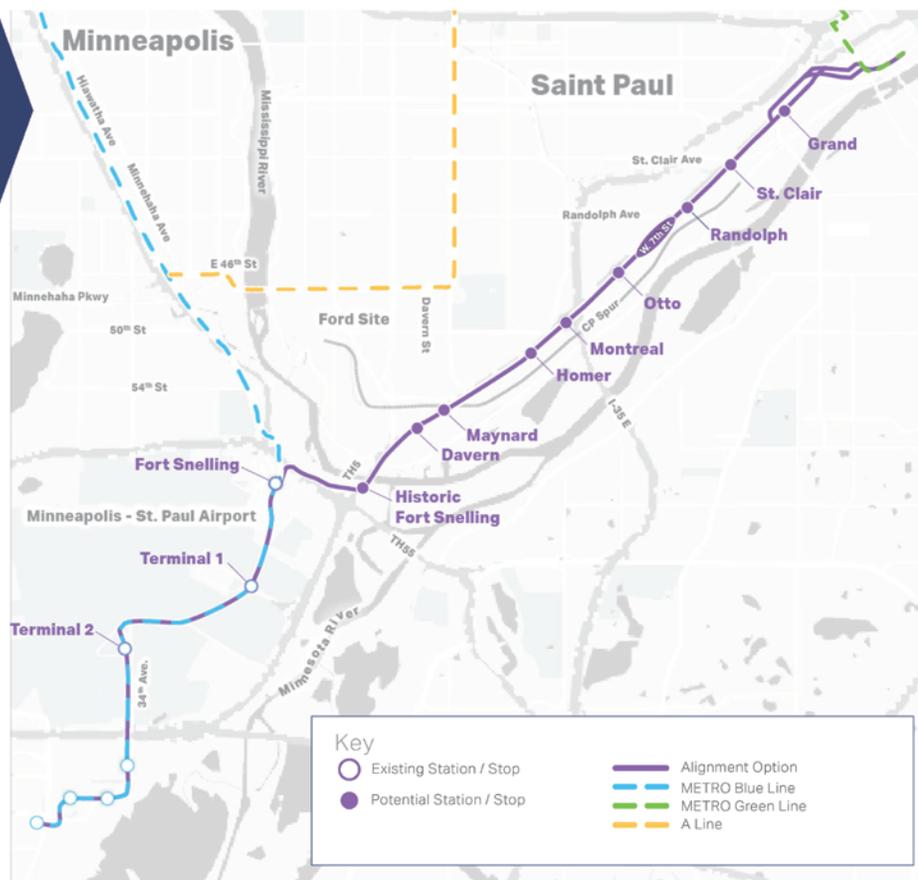
44 minutes one-way,
end-to-end

Via W. 7th Street

Connect to Green
Line at Central
Station

New rail crossing
near Hwy 5

Connect to Blue
Line at Fort Snelling
Station



Characteristics

Vehicle

70' to 95' long

Rail on or separated from street

Electric-powered, typically via
overhead contact system (wire)

Assumes new rail vehicle
storage and maintenance
facility

Service

Direct service to MSP airport
and Mall of America

Route 54 would operate at
reduced frequency

21.5 hours/day

Seven days/week

10 minute peak
15-30 minute off-peak

Stations

20 total stations

Off-board fare collection

Construct new rail stations,
similar to Blue and Green Lines

Level boarding

References: Most Promising Alternatives Booklet (Appendix A), Preliminary Concepts Booklet (Appendix B), Technical Memorandum #6: Year 2040 Service Plans (Appendix C), Operating Environment maps (Appendix D), Report #8: Riverview Pre-Project Development Study, Basis of Estimate Memorandum (available under separate cover)

ALTERNATIVE 5

Alternative 5

Dedicated BRT W. 7th - Ford Site

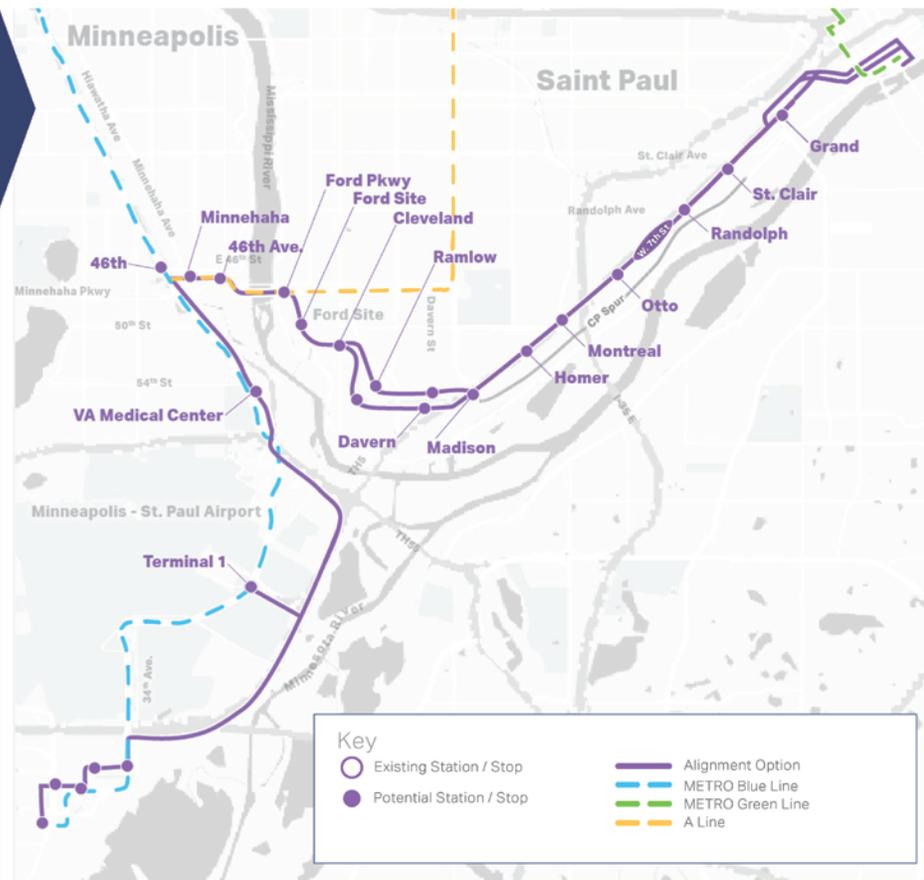
Route

18.0 miles

59 minutes one-way,
end-to-end

Via W. 7th Street and
St. Paul Avenue or
CP Spur

Existing crossing on
Ford Parkway bridge



Characteristics

Vehicle

Hybrid diesel-electric bus

BRT in dedicated and shared
use lanes

Assumes new BRT vehicle
storage and maintenance
facility

Service

Direct service to Ford Site

Route 54 would operate at
reduced frequency

21.5 hours/day

Seven days/week

10 minute peak
15-30 minute off-peak

Stations

28 total stations

Off-board fare collection

Construct new BRT stations,
similar to the Orange and Gold
Lines

Level boarding

References: Most Promising Alternatives Booklet (Appendix A), Preliminary Concepts Booklet (Appendix B), Technical Memorandum #6: Year 2040 Service Plans (Appendix C), Operating Environment maps (Appendix D), Report #8: Riverview Pre-Project Development Study, Basis of Estimate Memorandum (available under separate cover)

ALTERNATIVE 6

Alternative 6

Rail: Modern Streetcar W. 7th - Ford Site

Route

15.7 miles

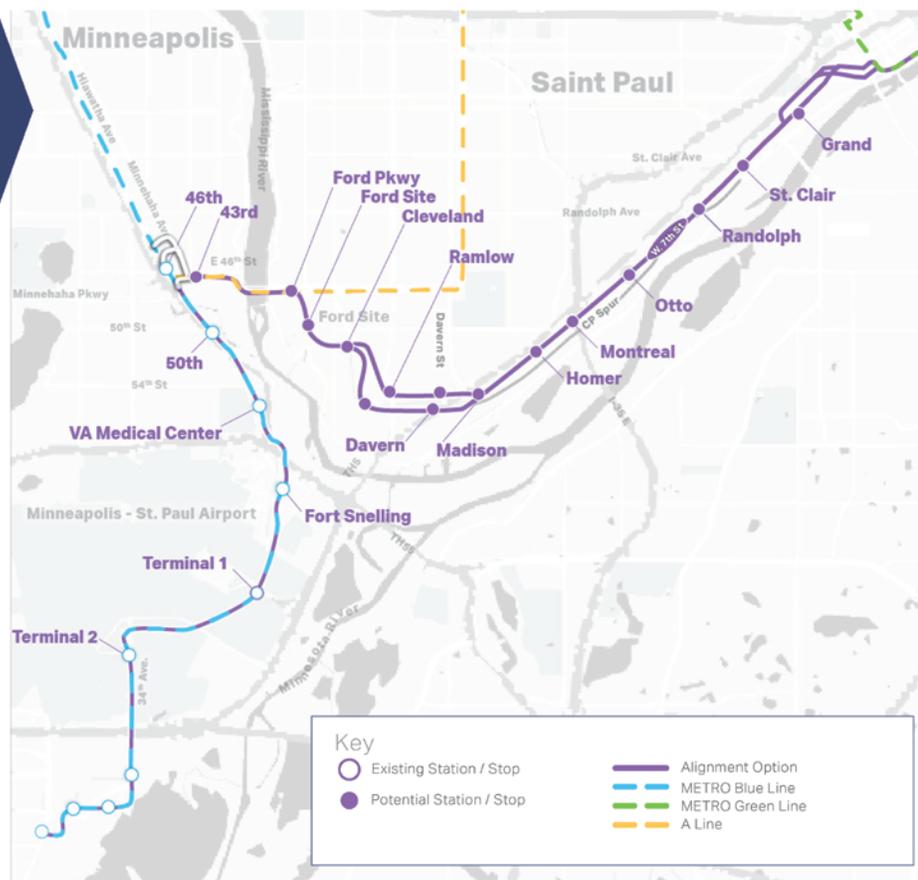
56 minutes one-way,
end-to-end

Via W. 7th Street and
St. Paul Avenue or
CP Spur

Connect to Green
Line at Central
Station

Rail crossing on
retrofitted Ford
Parkway bridge

Connect to Blue Line
at 46th Street Station



Characteristics

Vehicle

70' to 95' long

Rail on or separated from street

Electric-powered, typically via
overhead contact system (wire)

Assumes new rail vehicle
storage and maintenance
facility

Service

Direct service to Ford Site

Route 54 would operate at
reduced frequency

21.5 hours/day

Seven days/week

10 minute peak
15-30 minute off-peak

Stations

27 total stations

Off-board fare collection

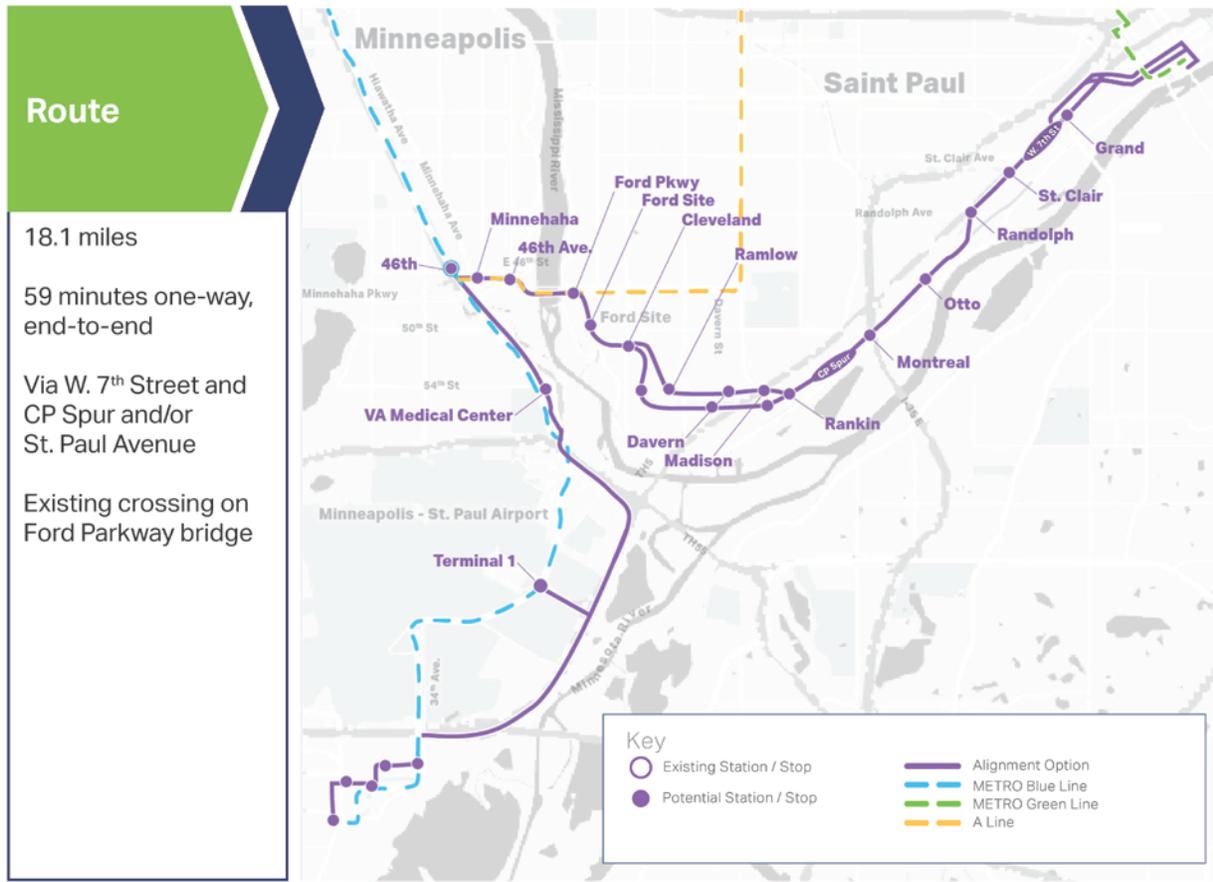
Construct new rail stations,
similar to Blue and Green Lines

Level boarding

References: Most Promising Alternatives Booklet (Appendix A), Preliminary Concepts Booklet (Appendix B), Technical Memorandum #6: Year 2040 Service Plans (Appendix C), Operating Environment maps (Appendix D), Report #8: Riverview Pre-Project Development Study, Basis of Estimate Memorandum (available under separate cover)

ALTERNATIVE 7

Alternative 7 Dedicated BRT W. 7th - CP Spur - Ford Site



Characteristics

Vehicle	Service	Stations
Hybrid diesel-electric bus	Direct service to Ford Site	28 total stations
BRT in dedicated and shared use lanes	Route 54 would operate at reduced frequency	Off-board fare collection
Assumes new BRT vehicle storage and maintenance facility	21.5 hours/day	Construct new BRT stations, similar to the Orange and Gold Lines
	Seven days/week	Level boarding
	10 minute peak 15-30 minute off-peak	

References: Most Promising Alternatives Booklet (Appendix A), Preliminary Concepts Booklet (Appendix B), Technical Memorandum #6: Year 2040 Service Plans (Appendix C), Operating Environment maps (Appendix D), Report #8: Riverview Pre-Project Development Study, Basis of Estimate Memorandum (available under separate cover)

ALTERNATIVE 8

Alternative 8

Rail: Modern Streetcar W. 7th - CP Spur - Ford Site

Route

15.8 miles

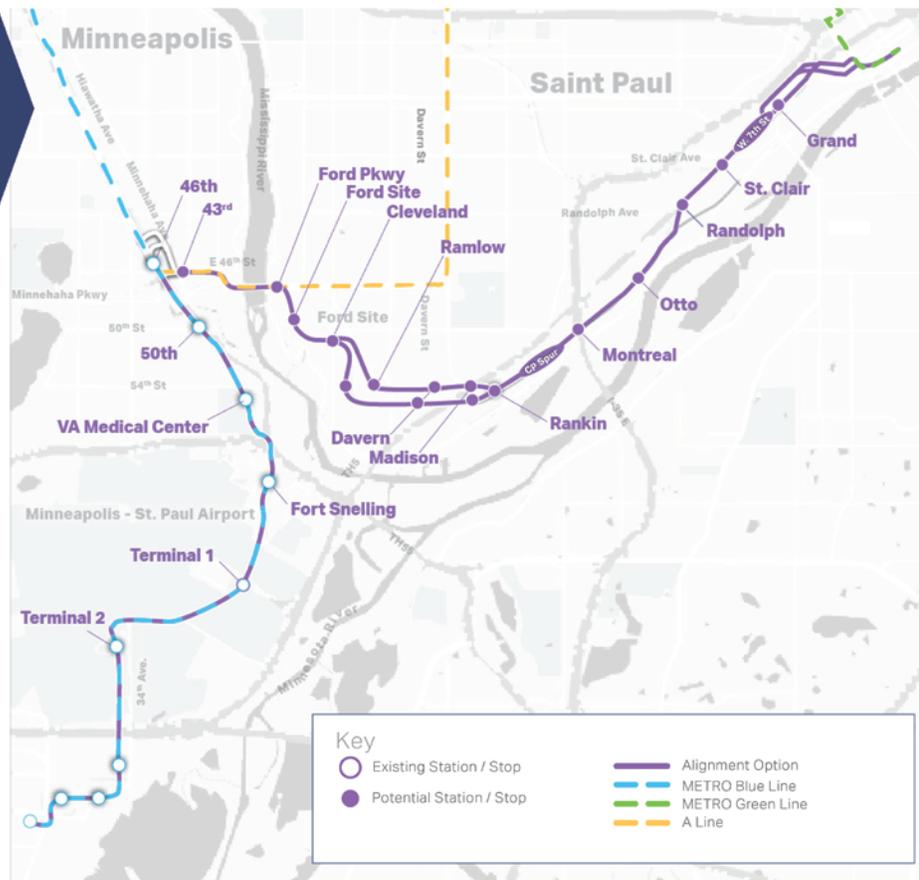
54 minutes one-way,
end-to-end

Via W. 7th Street and
CP Spur and/or
St. Paul Avenue

Connect to Green
Line at Central
Station

Rail crossing on
retrofitted Ford
Parkway bridge

Connect to Blue Line
at 46th Street Station



Characteristics

Vehicle

70' to 95' long

Rail on or separated from street

Electric-powered, typically via
overhead contact system (wire)

Assumes new rail vehicle
storage and maintenance
facility

Service

Direct service to Ford Site

Route 54 would operate at
reduced frequency

21.5 hours/day

Seven days/week

10 minute peak
15-30 minute off-peak

Stations

27 total stations

Off-board fare collection

Construct new rail stations,
similar to Blue and Green Lines

Level boarding

References: Most Promising Alternatives Booklet (Appendix A), Preliminary Concepts Booklet (Appendix B), Technical Memorandum #6: Year 2040 Service Plans (Appendix C), Operating Environment maps (Appendix D), Report #8: Riverview Pre-Project Development Study, Basis of Estimate Memorandum (available under separate cover)

ALTERNATIVE 9

Alternative 9

Dedicated BRT W. 7th - CP Spur - Hwy 5 / Fort Snelling

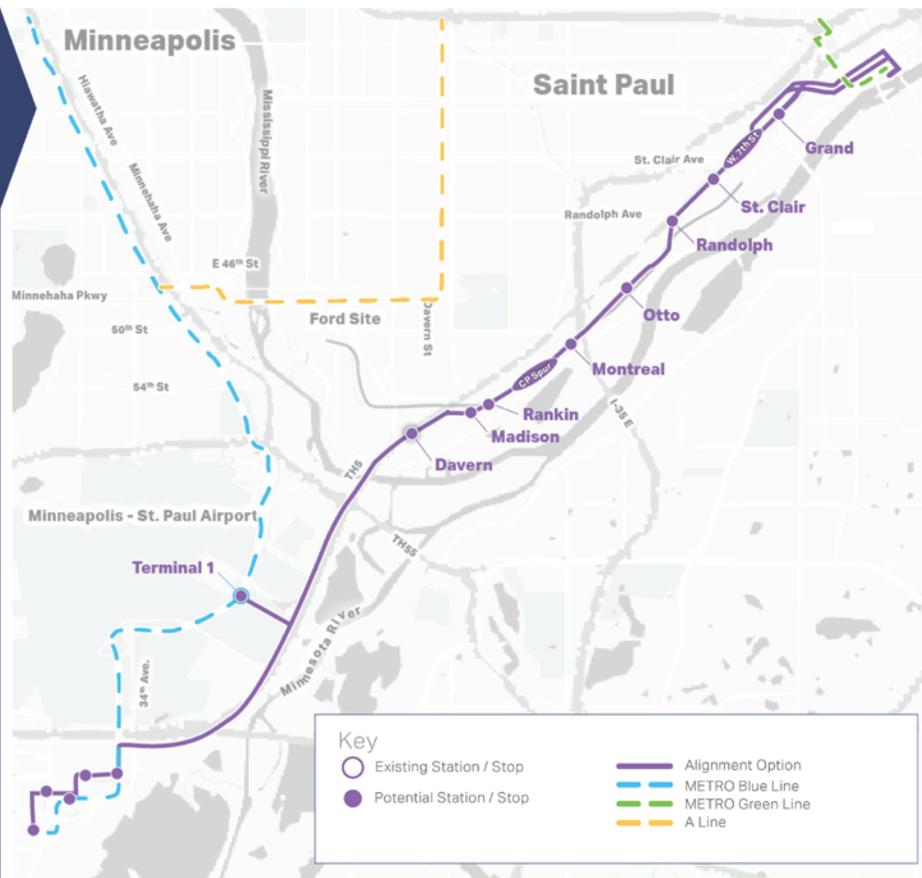
Route

12.6 miles

40 minutes one-way, end-to-end

Via W. 7th Street and CP Spur

Existing crossing on Hwy 5 bridge



Characteristics

Vehicle

Hybrid diesel-electric bus
BRT in dedicated and shared use lanes
Assumes new BRT vehicle storage and maintenance facility

Service

Direct service to MSP airport and Mall of America
Route 54 would operate at reduced frequency
21.5 hours/day
Seven days/week
9 minute peak*
15-30 minute off-peak

Stations

20 total stations
Off-board fare collection
Construct new BRT stations, similar to the Orange and Gold Lines
Level boarding

*Initially presumed 10 minute peak frequency; revised to 9 minute based on 2040 ridership forecasts. Costs shown are based on 9 minute peak frequency.
References: Most Promising Alternatives Booklet (Appendix A), Preliminary Concepts Booklet (Appendix B), Technical Memorandum #6: Year 2040 Service Plans (Appendix C), Operating Environment maps (Appendix D), Report #8: Riverview Pre-Project Development Study, Basis of Estimate Memorandum (available under separate cover)

ALTERNATIVE 10

Alternative 10

Rail: LRT or Modern Streetcar W. 7th - CP Spur - Hwy 5 / Fort Snelling

Route

11.9 miles

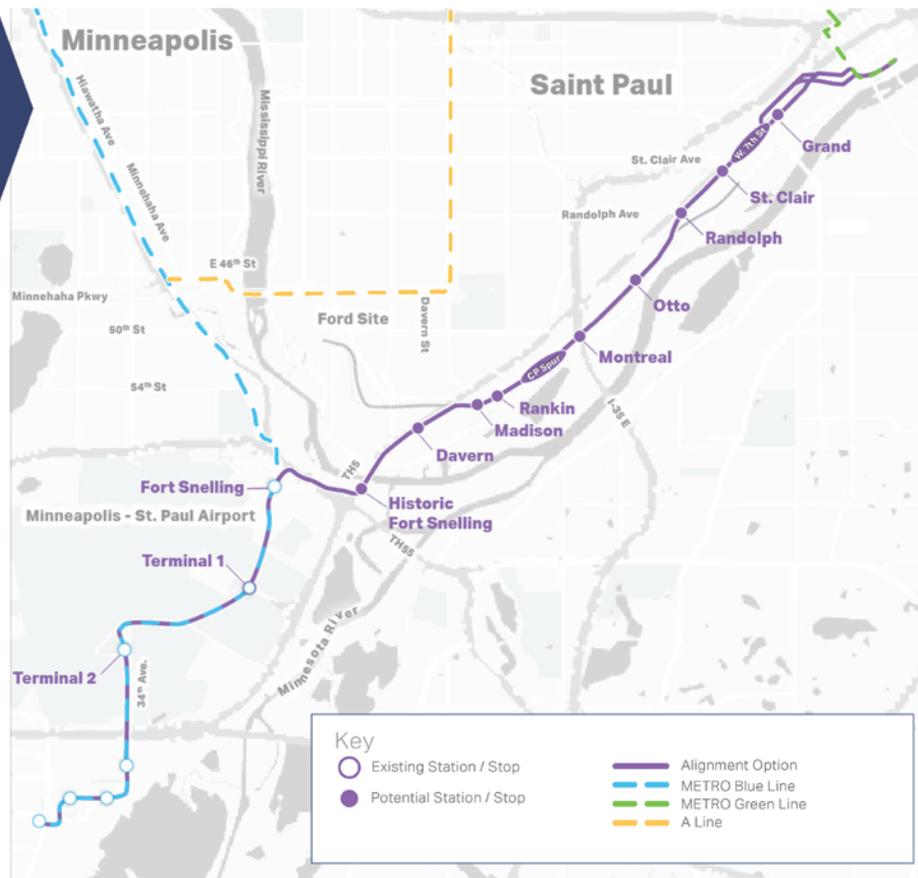
43 minutes one-way, end-to-end

Via W. 7th Street and CP Spur

Connect to Green Line at Central Station

New rail crossing near Hwy 5

Connect to Blue Line at Fort Snelling Station



Characteristics

Vehicle

70' to 95' long

Rail on or separated from street

Electric-powered, typically via overhead contact system (wire)

Assumes new rail vehicle storage and maintenance facility

Service

Direct service to MSP airport and Mall of America

Route 54 would operate at reduced frequency

21.5 hours/day

Seven days/week

10 minute peak
15-30 minute off-peak

Stations

20 total stations

Off-board fare collection

Construct new rail stations, similar to Blue and Green Lines

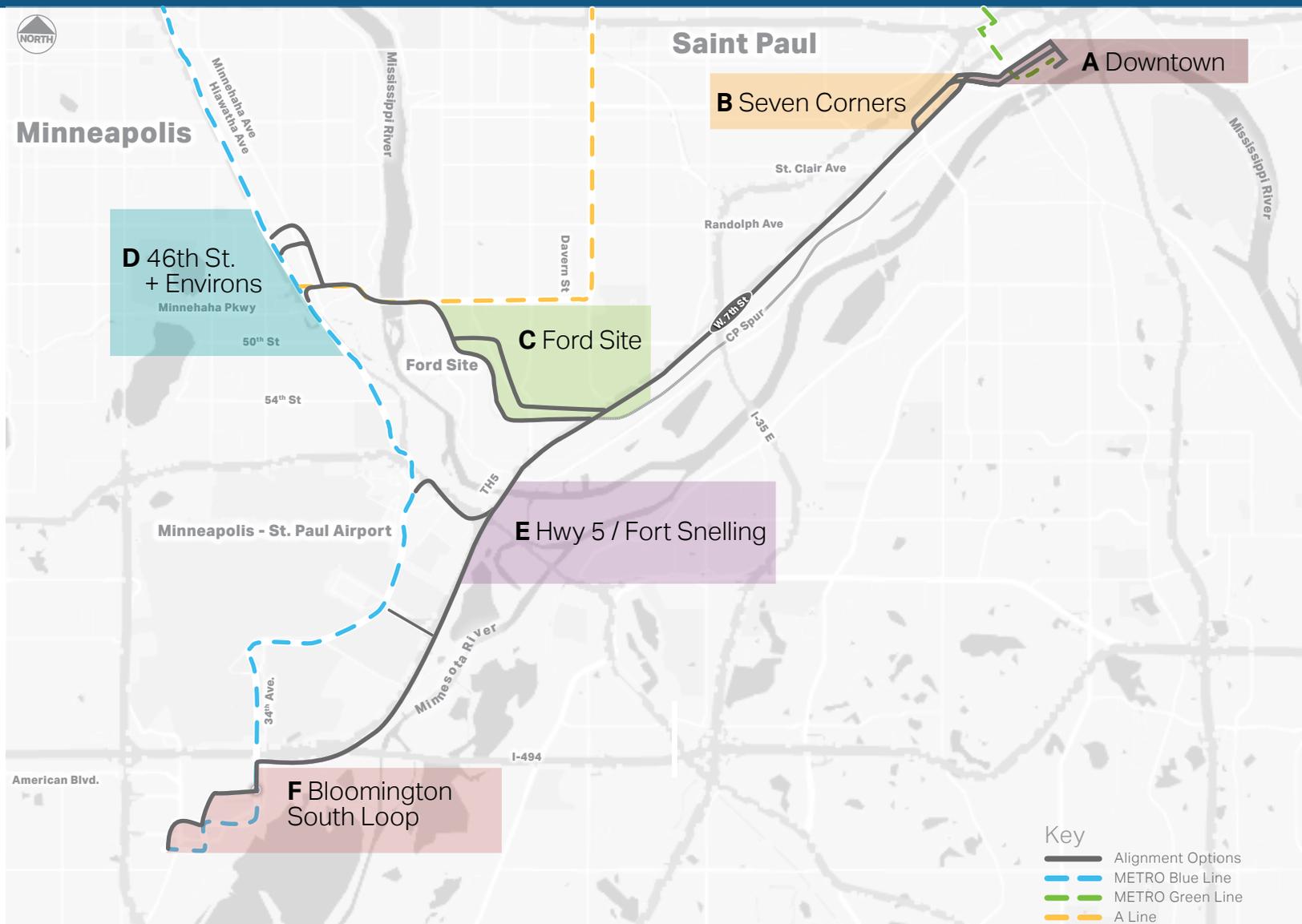
Level boarding

References: Most Promising Alternatives Booklet (Appendix A), Preliminary Concepts Booklet (Appendix B), Technical Memorandum #6: Year 2040 Service Plans (Appendix C), Operating Environment maps (Appendix D), Report #8: Riverview Pre-Project Development Study, Basis of Estimate Memorandum (available under separate cover)

Appendix A: Most Promising Alternatives Booklet



Most Promising Alternatives



What are the Most Promising Alternatives?

They are the transit routes and vehicles carried forward into Detailed Evaluation in the Riverview Corridor Pre-Project Development Study.

Each Most Promising Alternative (downtown-Bloomington South Loop) includes a bus and a rail alternative.

What does the Detailed Evaluation of Alternatives Entail?

Development of estimated costs and benefits, including ridership.

Preliminary assessment of challenges and opportunities

How did the Study Identify the Most Promising Alternatives?

The Study began with a large number of potential transit routes and vehicles.

Potential transit routes encompassed the trunk of the Riverview Corridor and its sub-areas: Downtown + Seven Corners, Ford Site, Mississippi River, and Bloomington South Loop.

The Study narrowed down the number of alternatives for Detailed Evaluation through a qualitative and technical screening of existing and future population, employment, accessibility, physical constraints, and transportation system infrastructure relevant to each alternative.

What are Sub-Areas?

They are parts of the corridor with unique opportunities and challenges. As such, the study identifies a number of options to address these factors.

These sub-areas are Downtown, Seven Corners, Ford Site, 46th St + Environs, Hwy 5/Fort Snelling, and Bloomington South Loop.

Can I Mix and Match the Alignment Options?

Yes. For example, match a Bus Rapid Transit Alternative using primarily W. 7th Street by starting in downtown, serve the Ford Site using St. Paul Avenue, cross the Mississippi River using the Ford Parkway Bridge, and connect to MSP and Bloomington South Loop via TH 55 and TH 5.

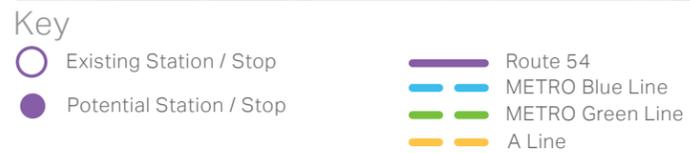
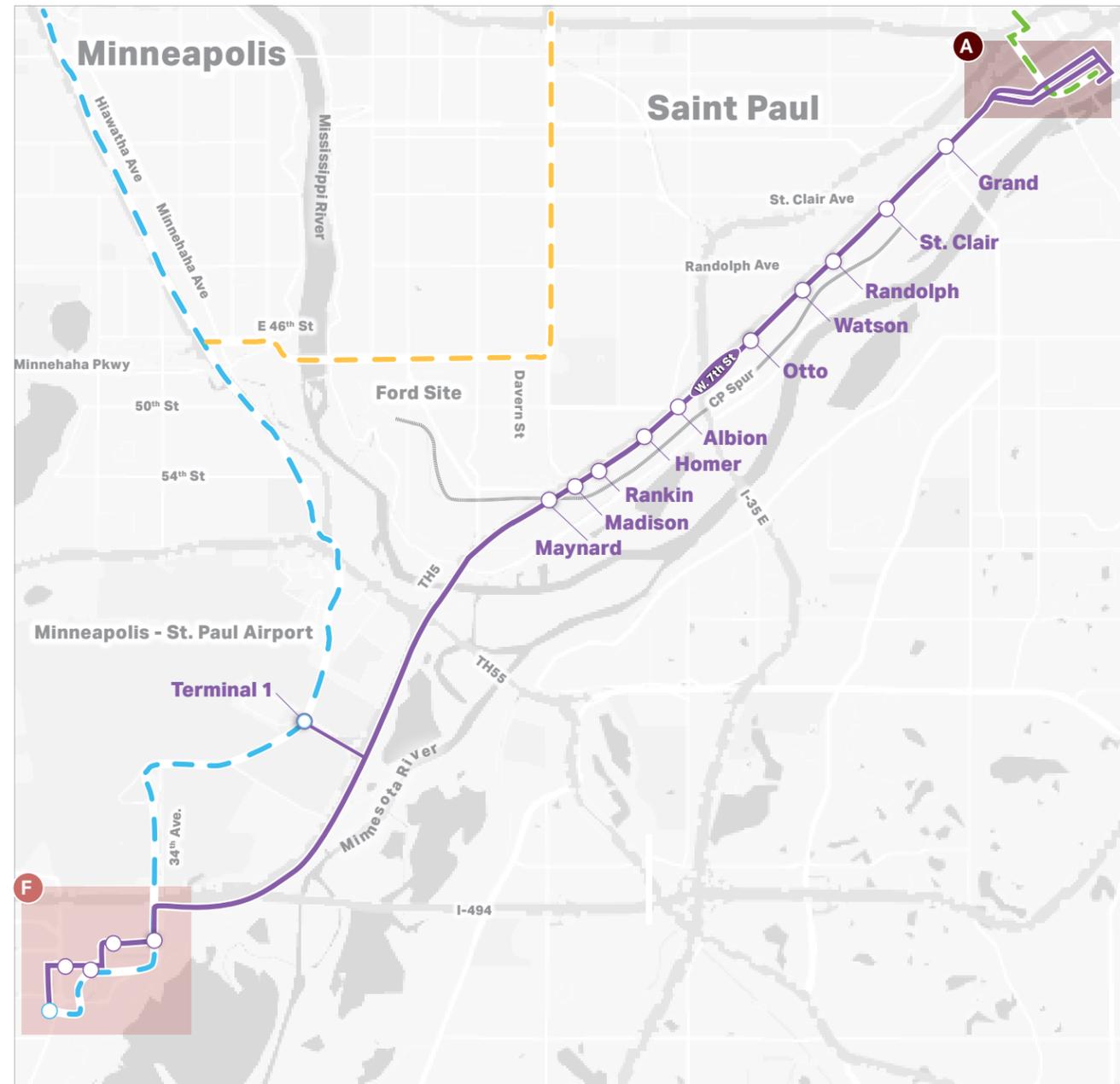
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Most Promising Alternatives

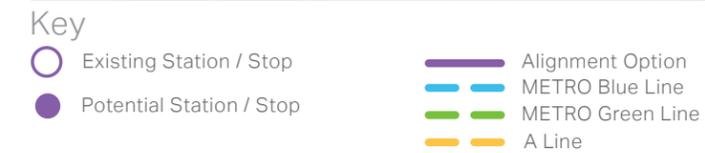
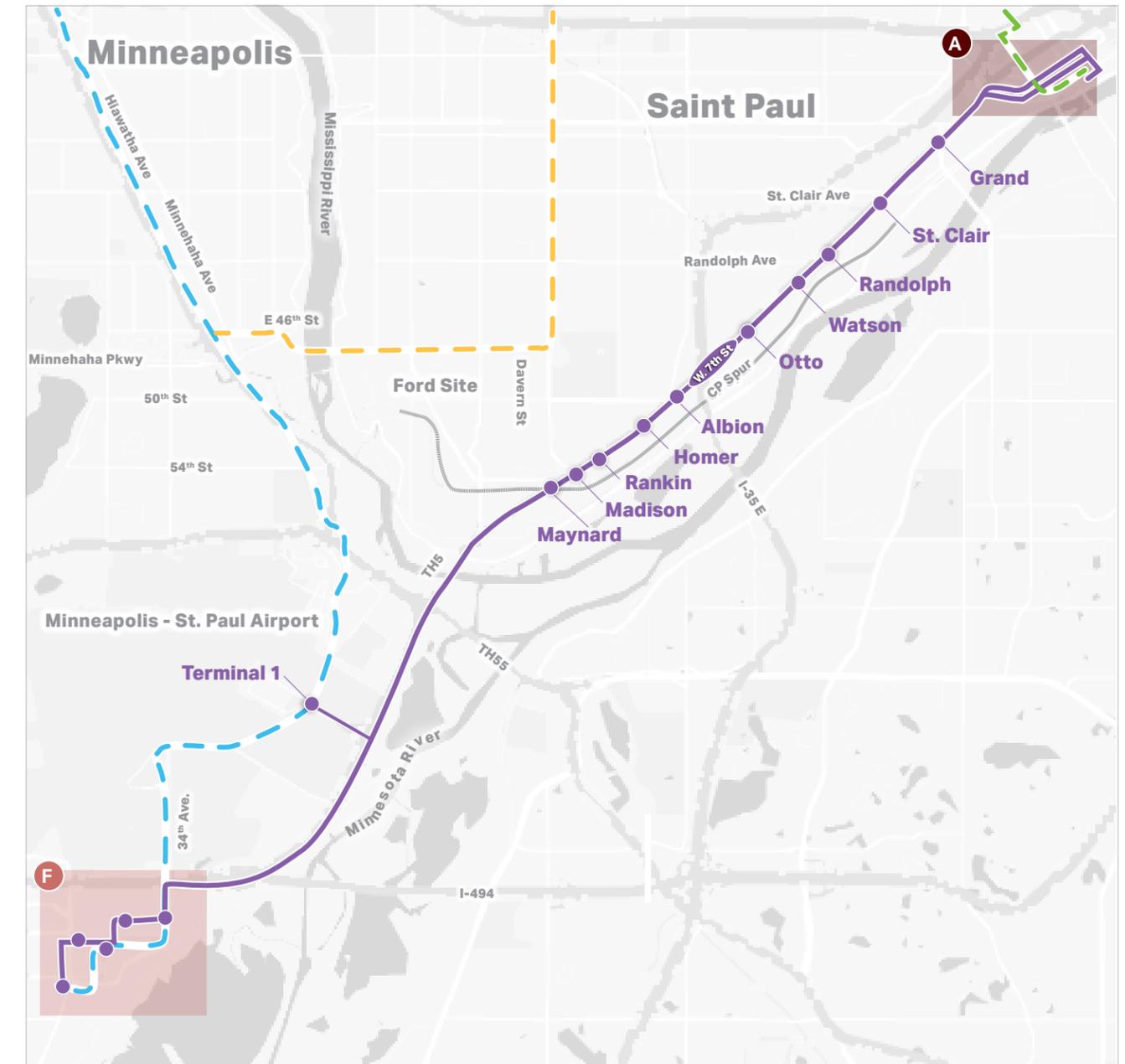
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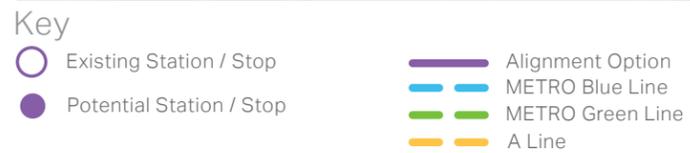
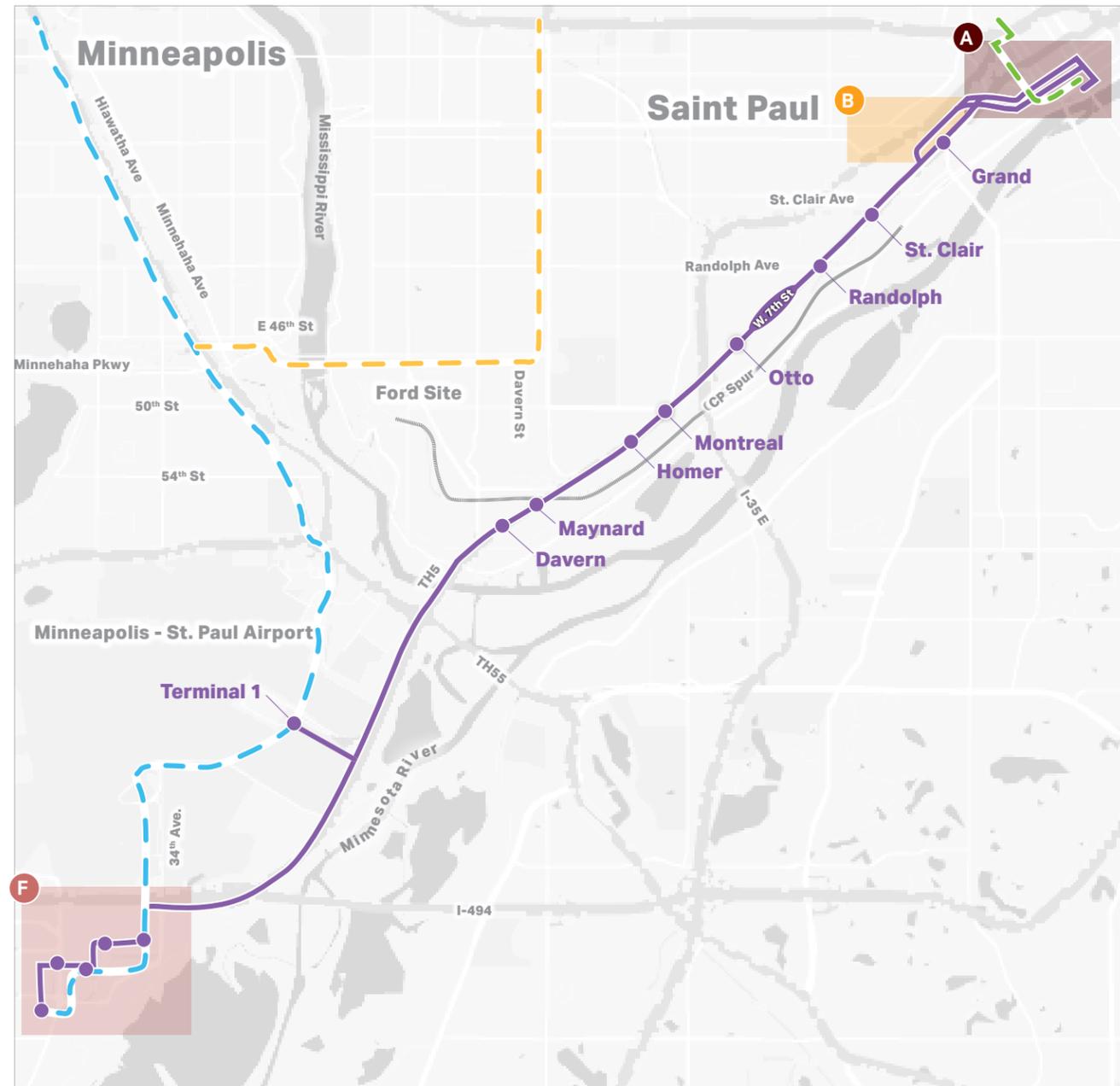
1 No Build (Route 54)



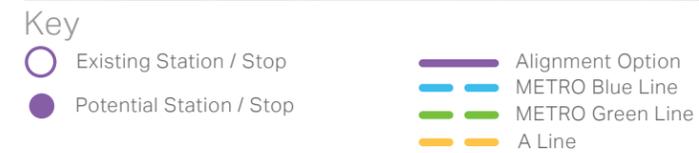
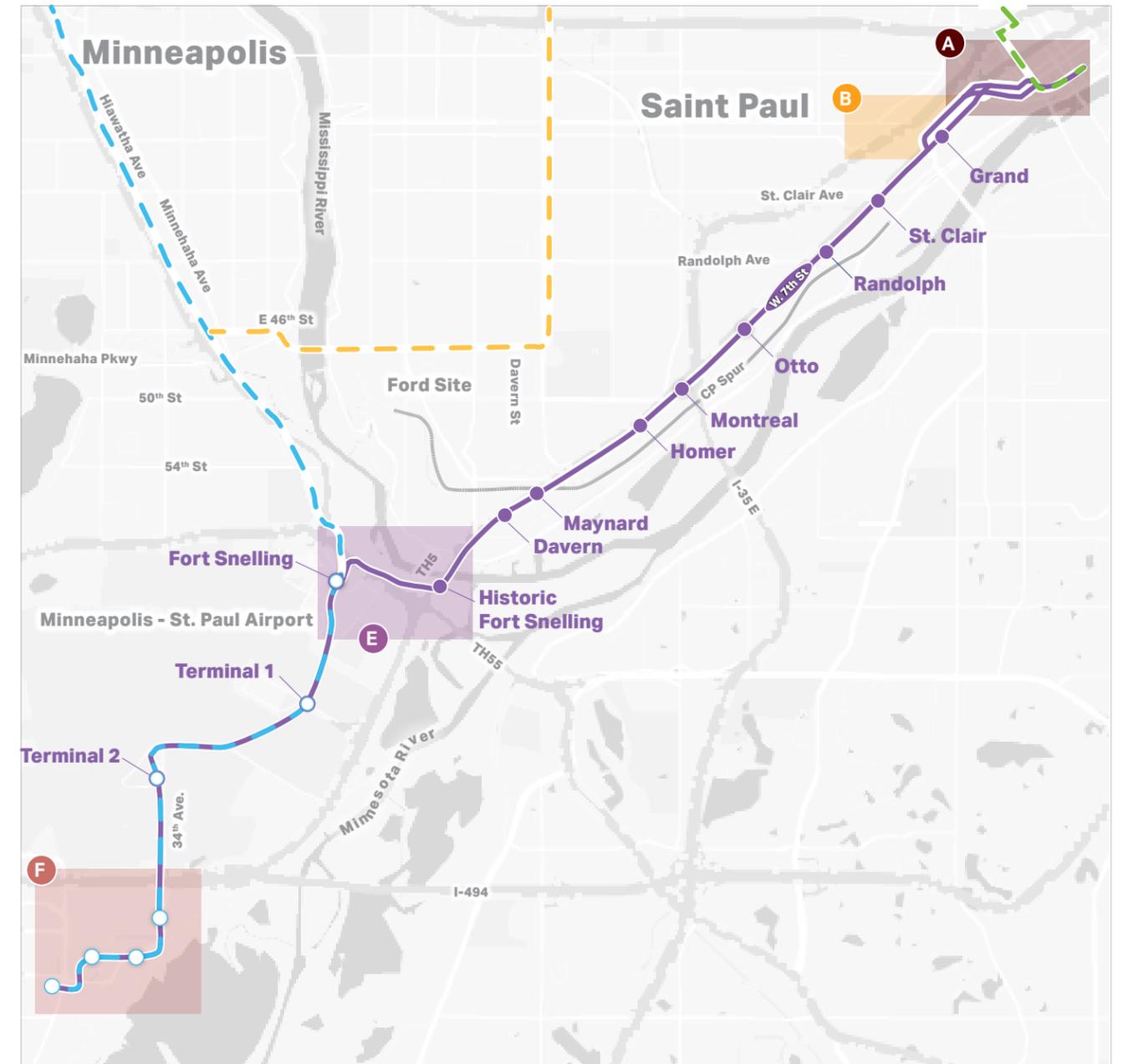
2 Arterial BRT



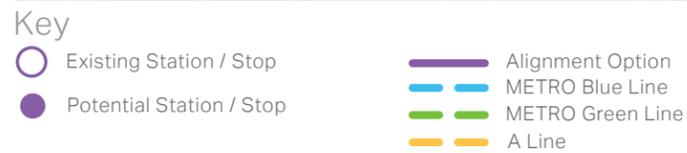
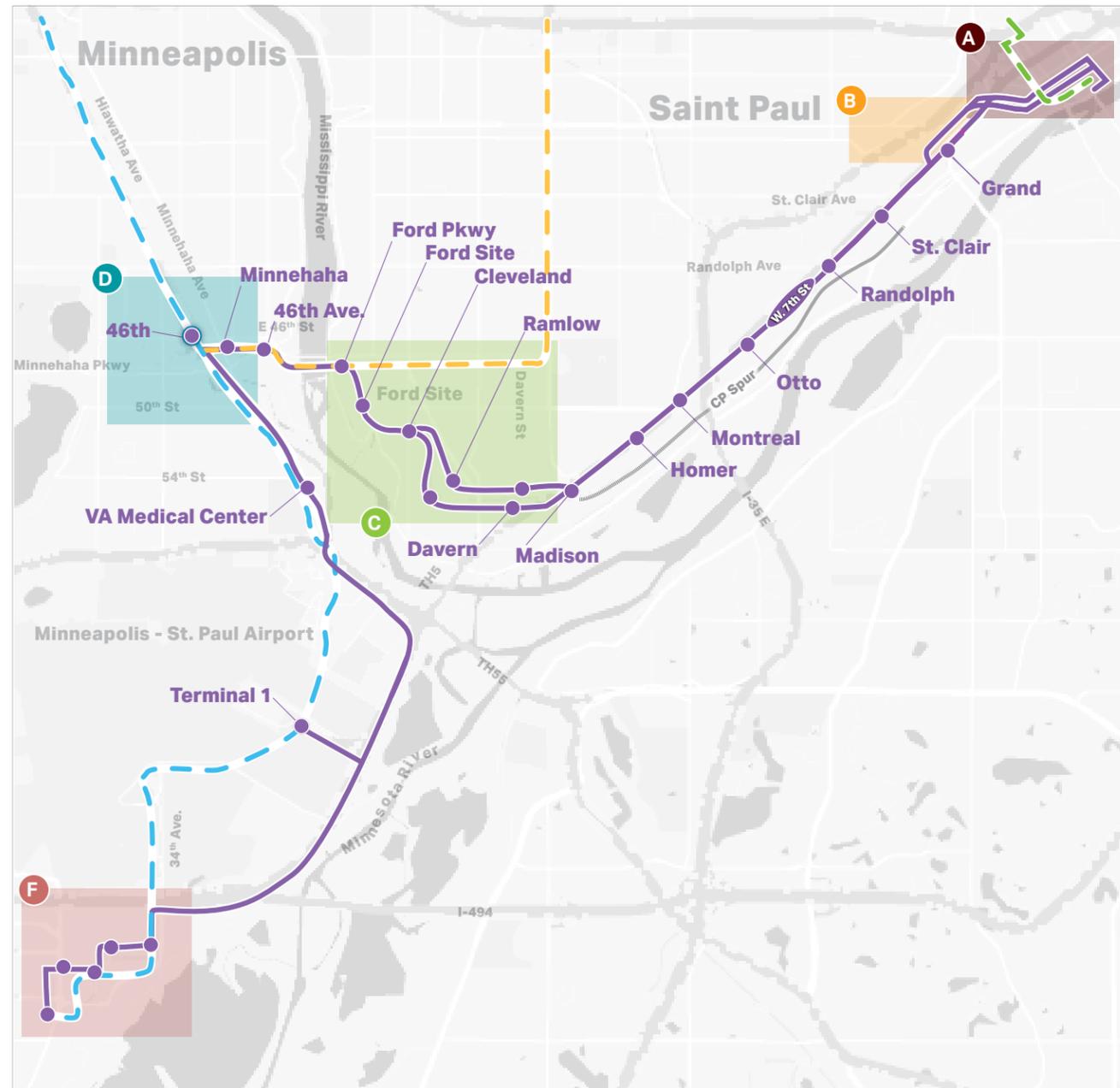
3 BRT: W. 7th - Hwy 5 / Fort Snelling



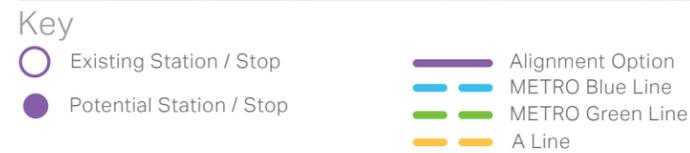
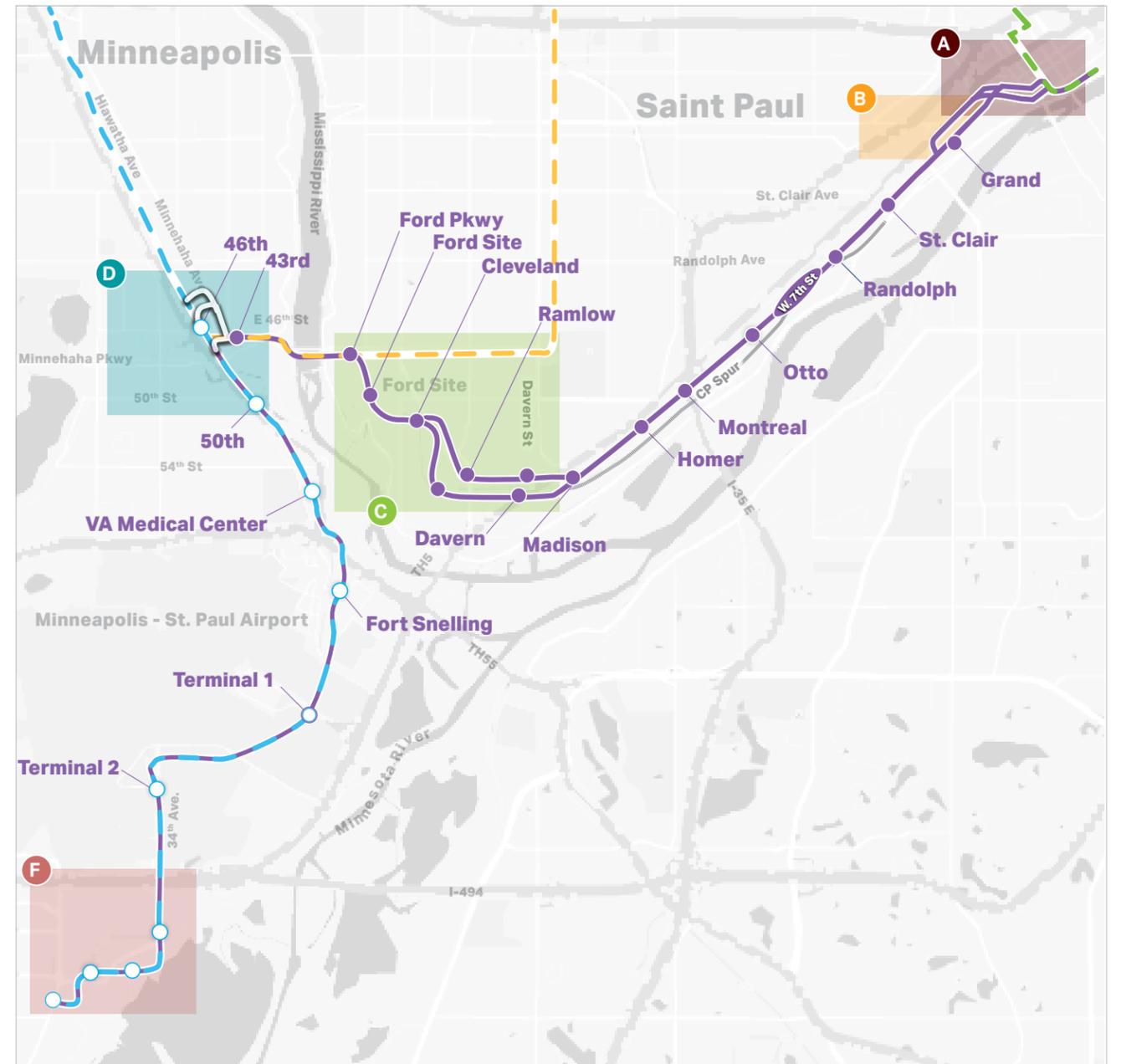
4 Rail: W. 7th - Hwy 5 / Fort Snelling



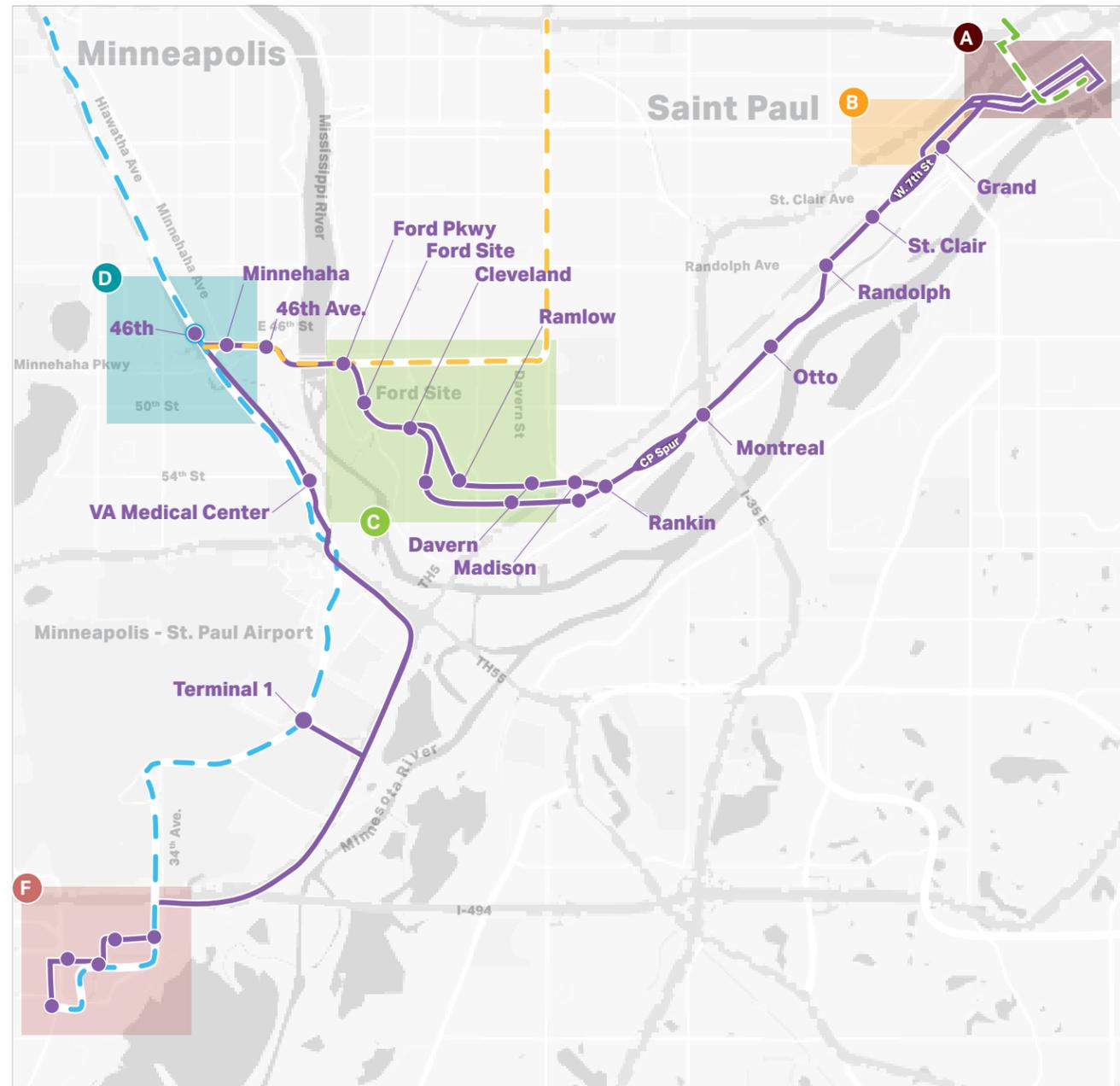
5 BRT: W. 7th - Ford Site



6 Rail: W. 7th - Ford Site



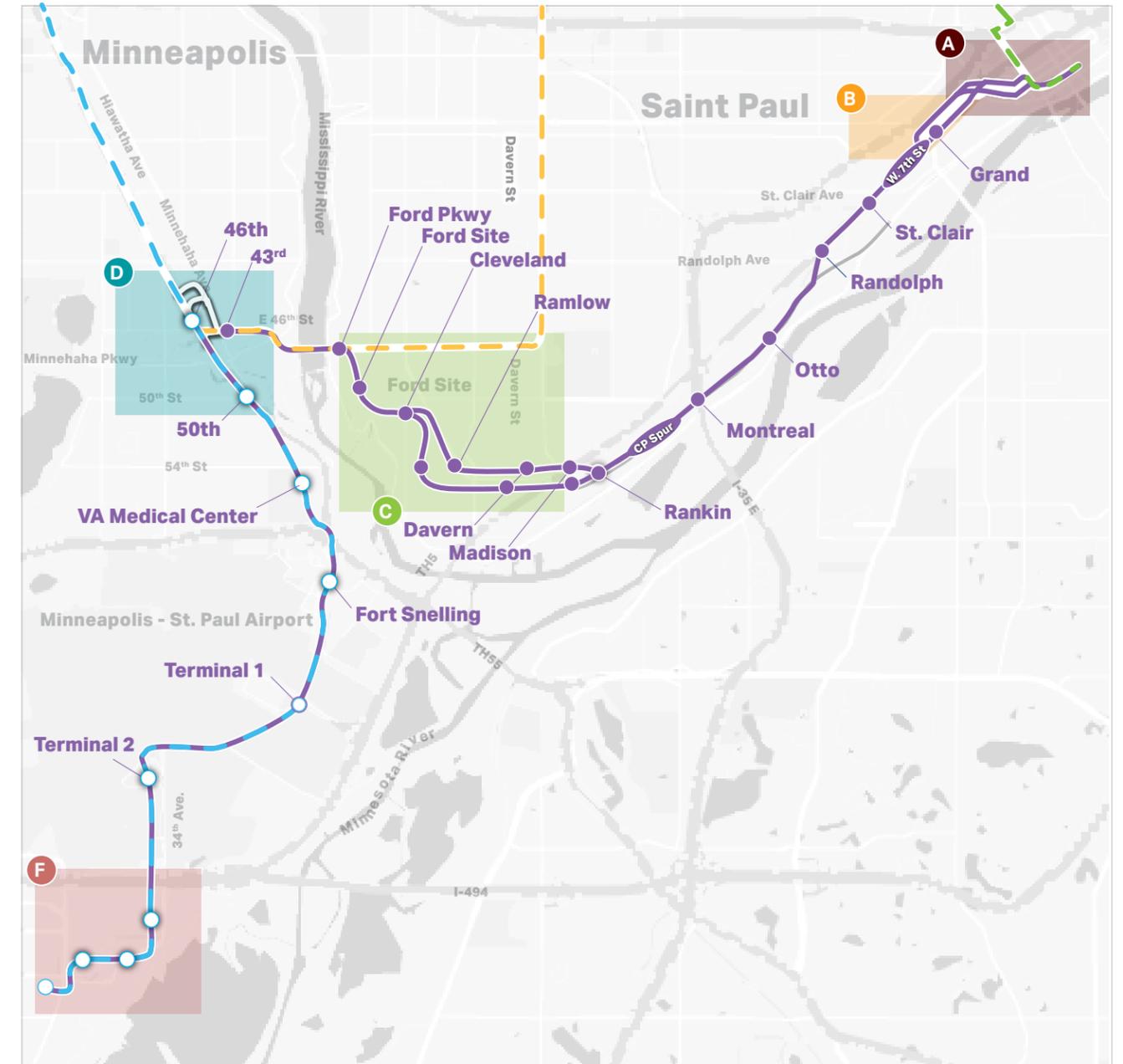
7 BRT: W. 7th - CP Spur - Ford Site



- Key**
- Existing Station / Stop
 - Potential Station / Stop
 - Alignment Option
 - METRO Blue Line
 - METRO Green Line
 - A Line



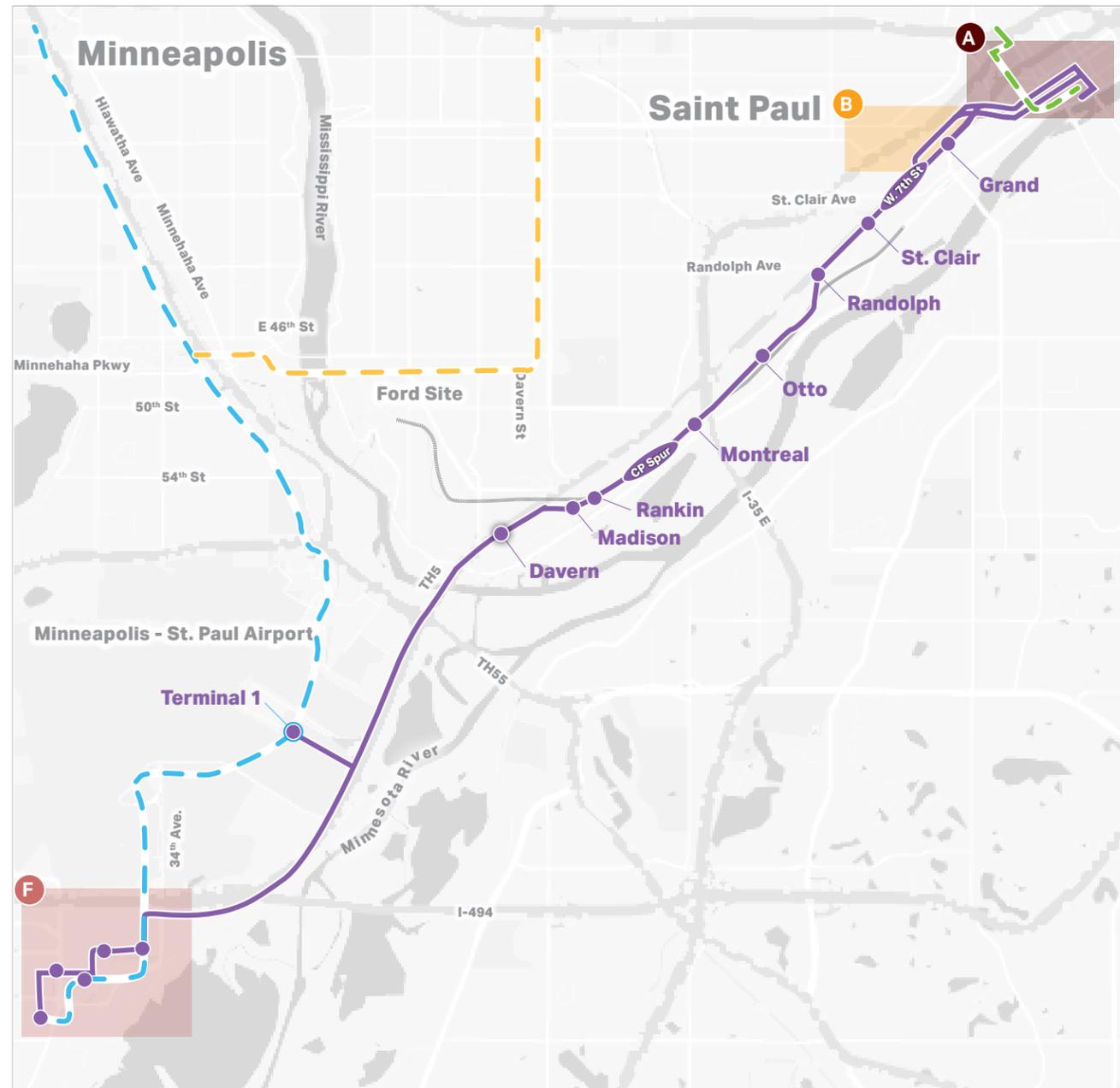
8 Rail: W. 7th - CP Spur - Ford Site



- Key**
- Existing Station / Stop
 - Potential Station / Stop
 - Alignment Option
 - METRO Blue Line
 - METRO Green Line
 - A Line



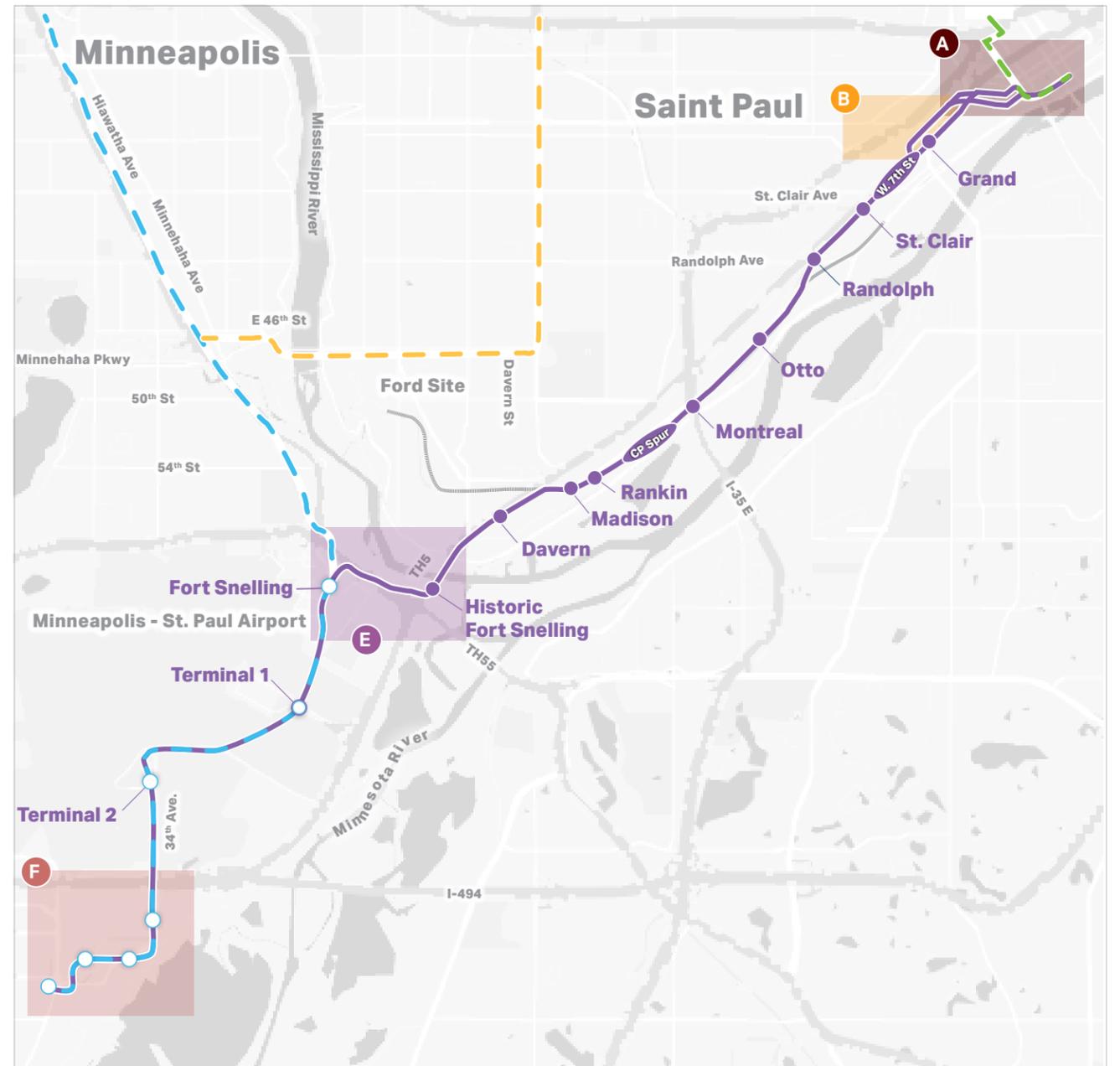
9 BRT: W. 7th - CP Spur - Hwy 5 / Fort Snelling



- Key**
- Existing Station / Stop
 - Potential Station / Stop
 - Alignment Option
 - METRO Blue Line
 - METRO Green Line
 - A Line



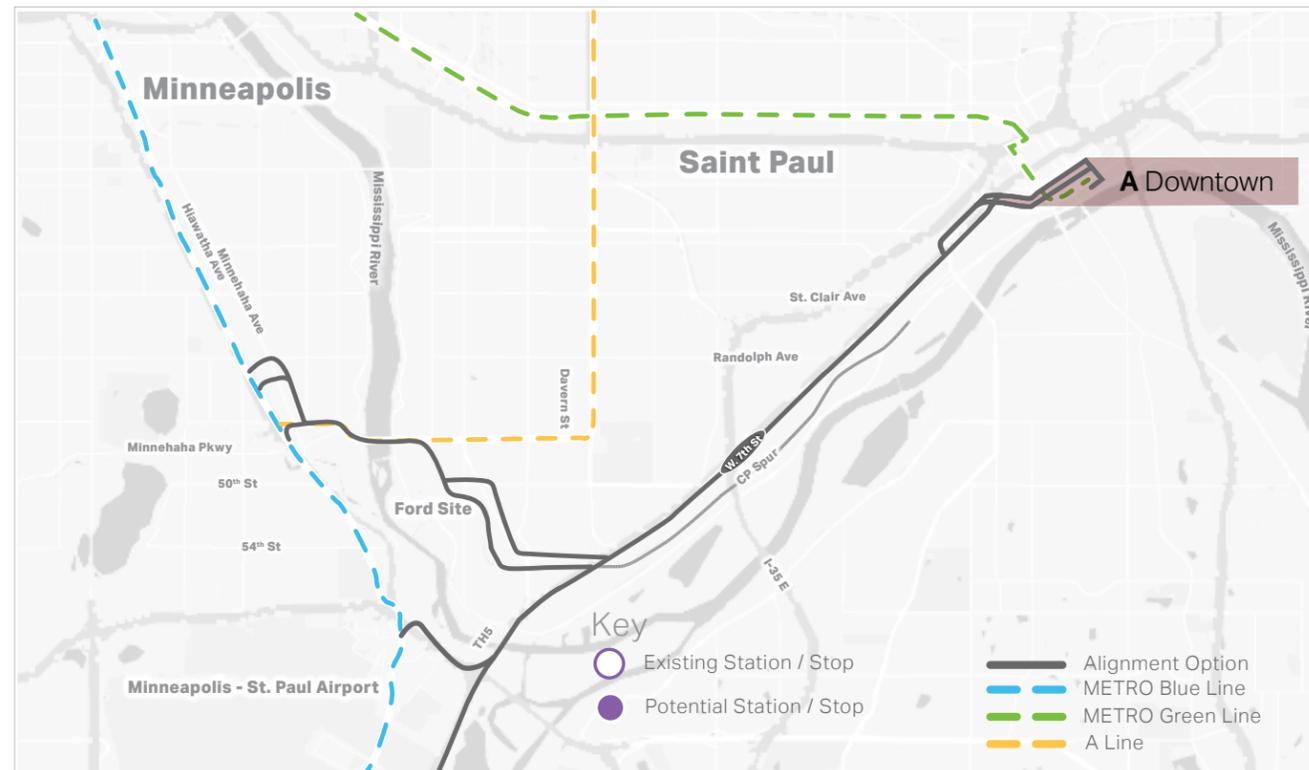
10 Rail: W.7th - CP Spur - Hwy 5 / Fort Snelling



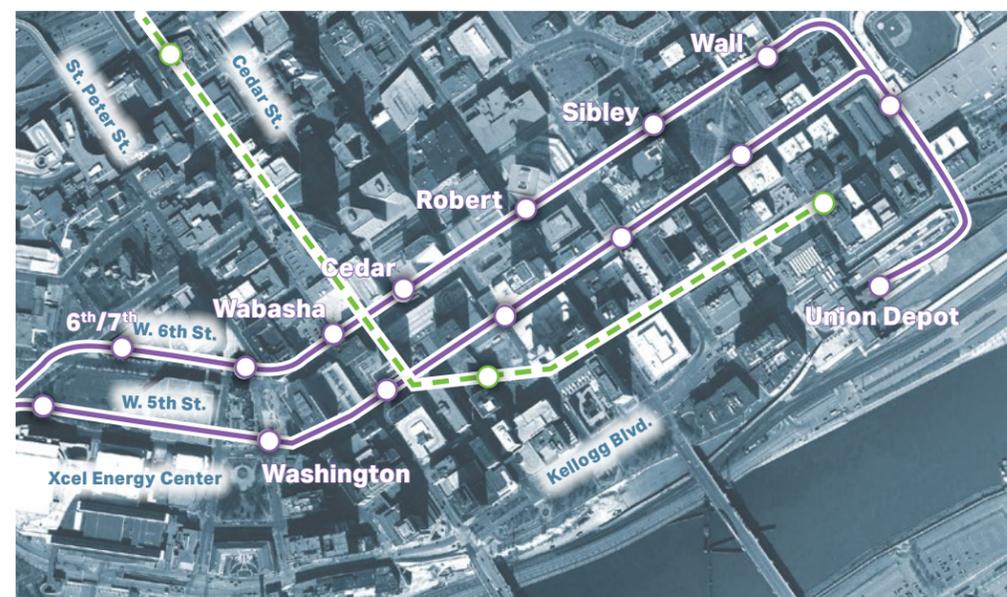
- Key**
- Existing Station / Stop
 - Potential Station / Stop
 - Alignment Option
 - METRO Blue Line
 - METRO Green Line
 - A Line



A Downtown Saint Paul



No Build and Arterial BRT



A Downtown Saint Paul

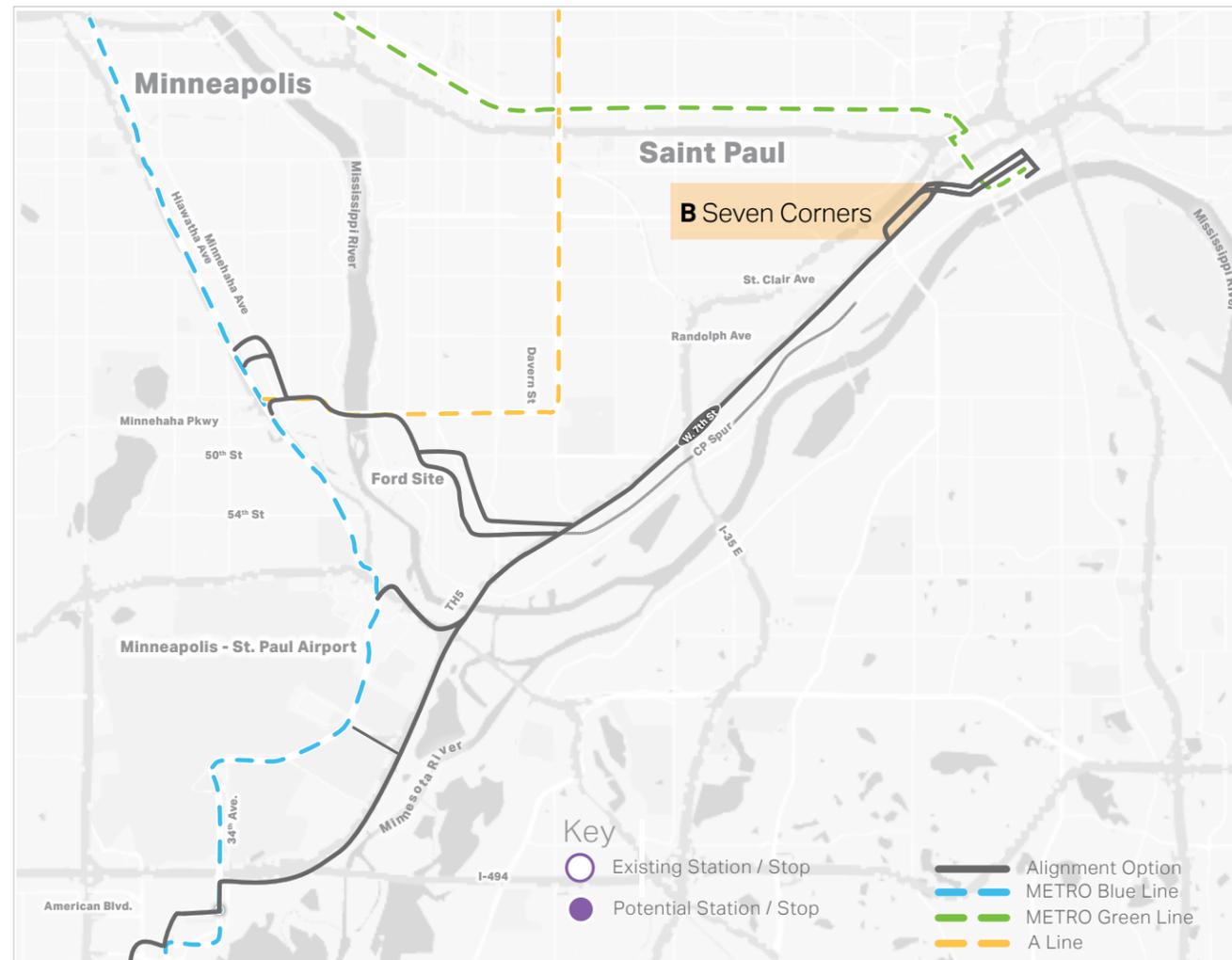
Concept | BRT



Concept | Rail



B Seven Corners



No Build and Arterial BRT



B Seven Corners

Concept | BRT or Rail

W. 7th St.



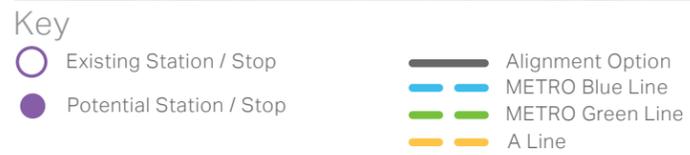
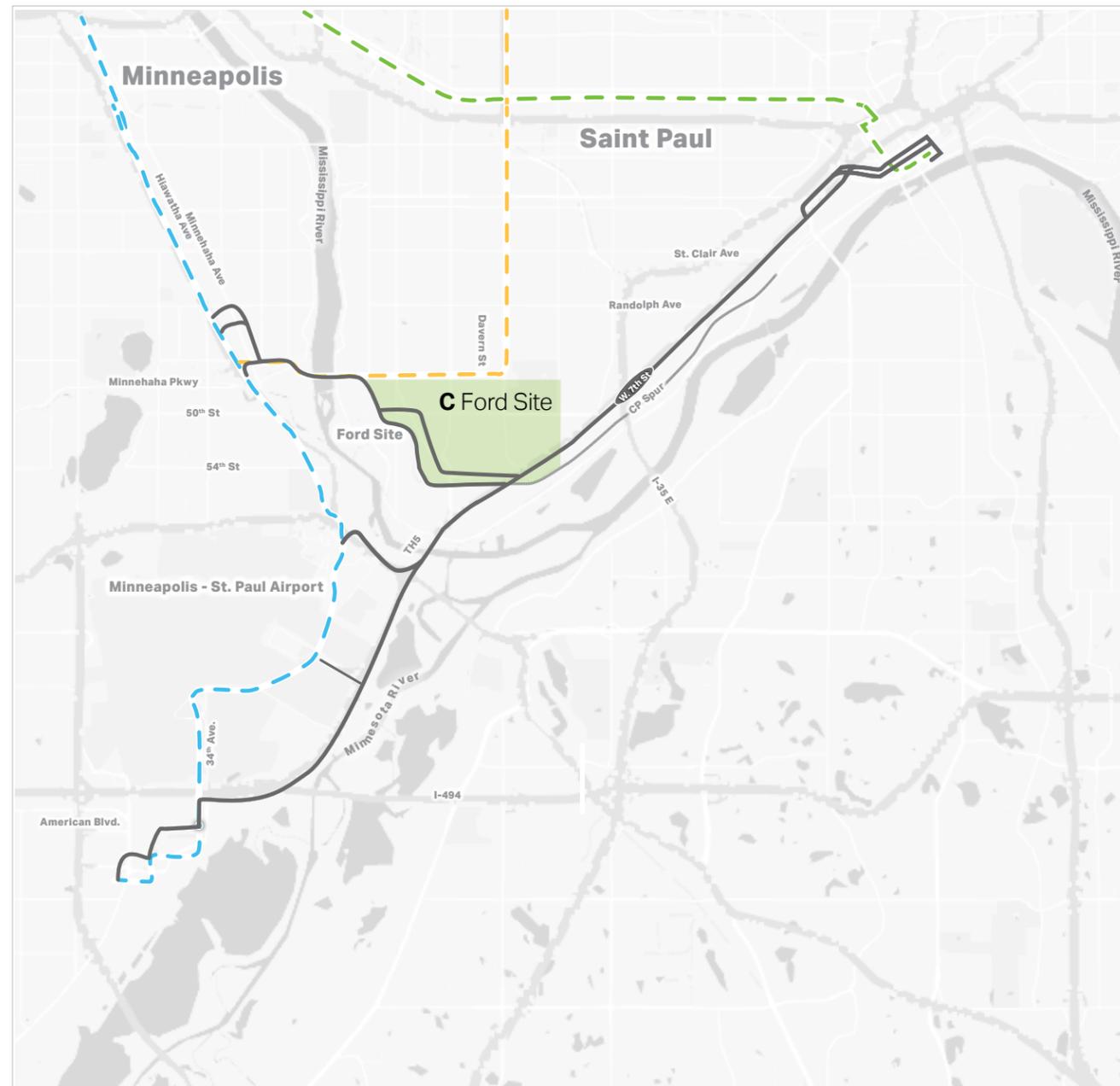
W. 7th St. - Smith Ave. Pair



Smith Ave. Mall



C Ford Site



C Ford Site

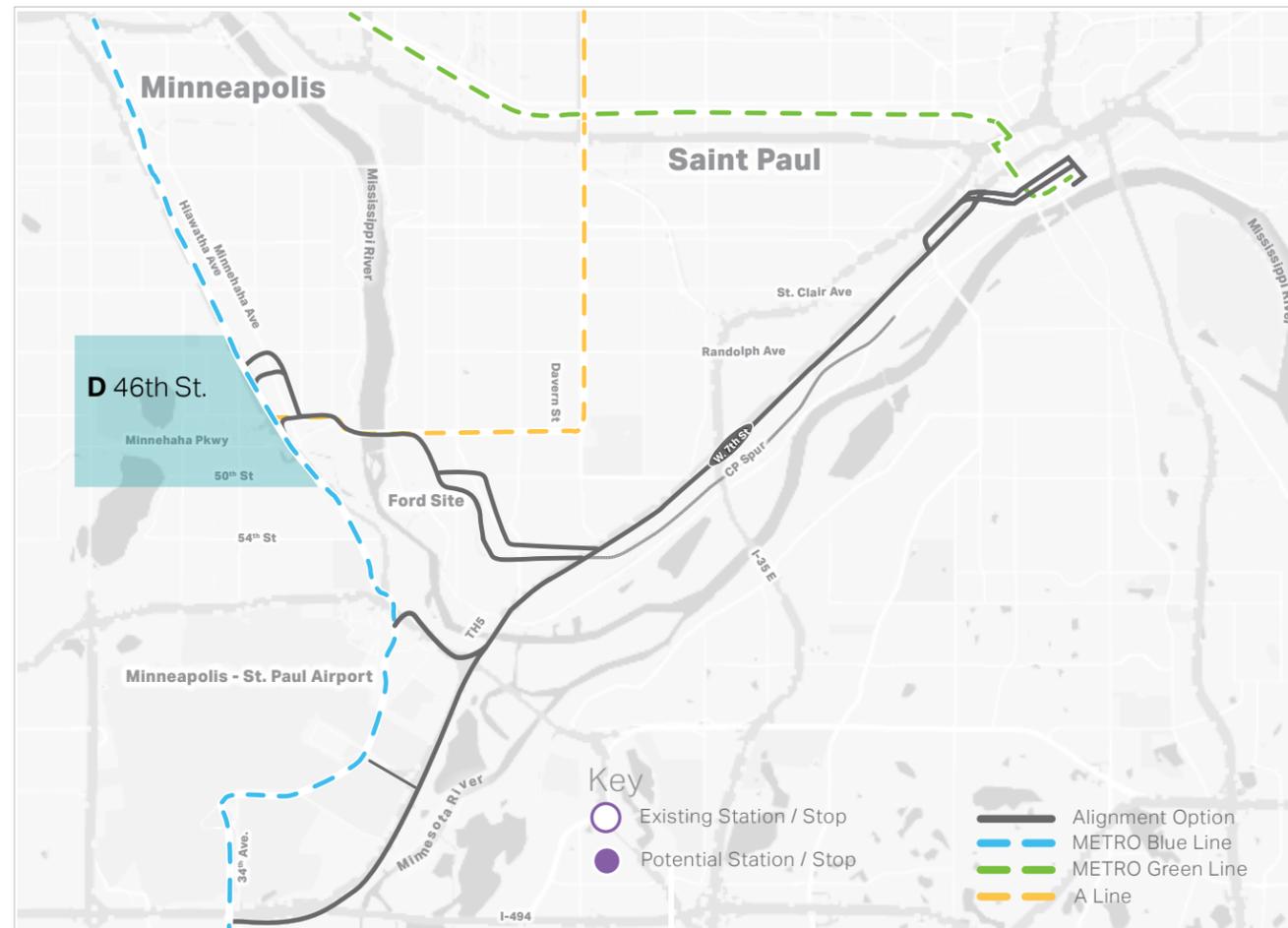
Concept | BRT or Rail
CP Spur



St. Paul Ave.



D 46th St & Environs



Concept | BRT

W. 46th St. BRT



D 46th St + Environs

Concept | Rail

Via 44th St



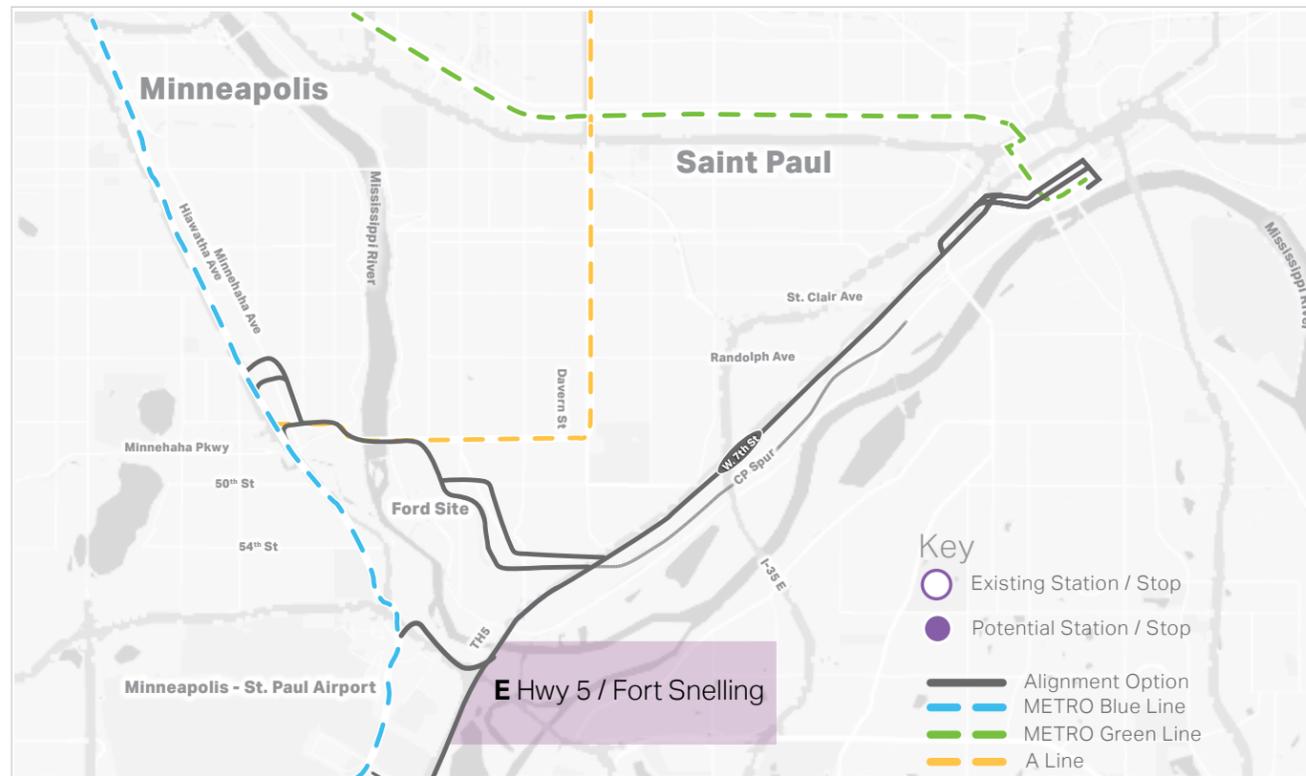
Via 45th St



Via 46th St / 50th St



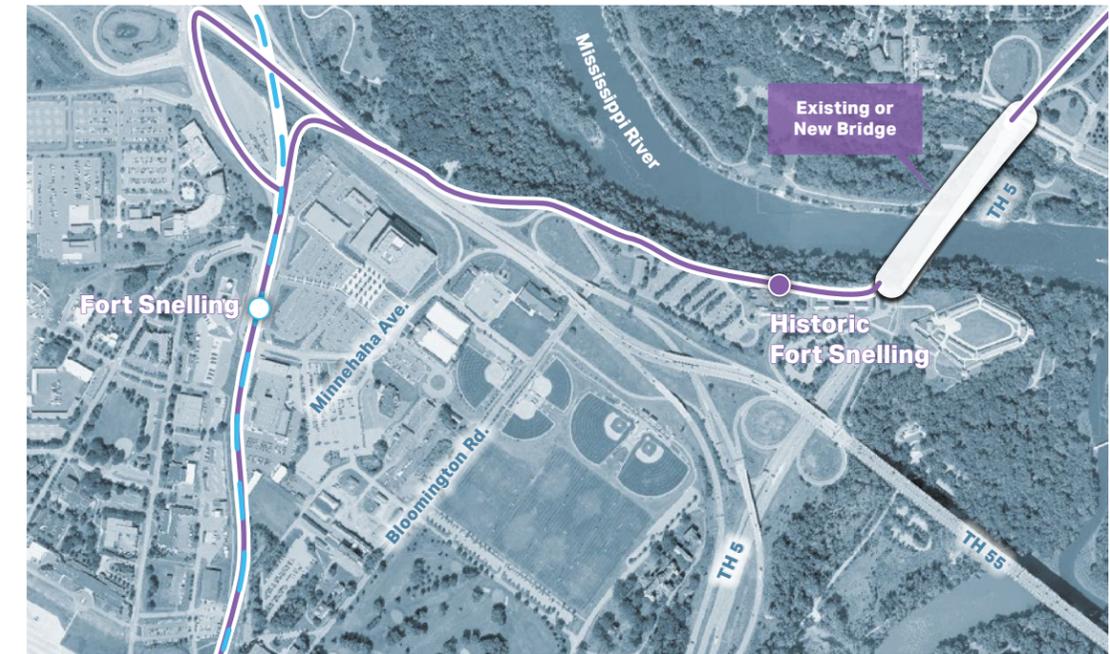
E Hwy 5 / Fort Snelling



E Hwy 5 / Fort Snelling

Concept | Rail

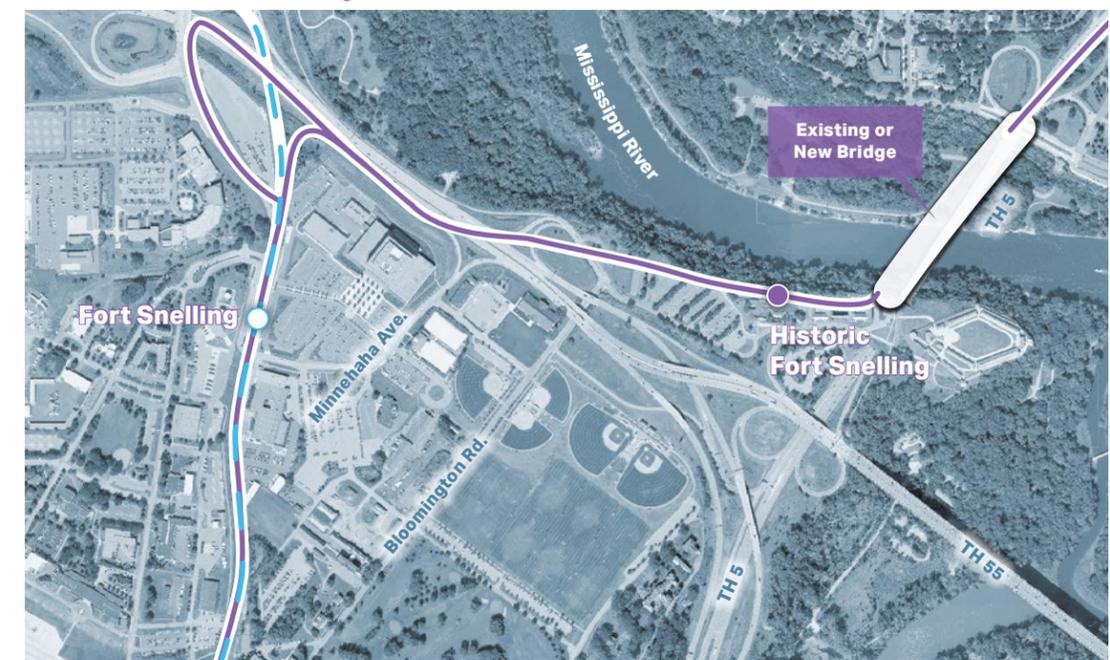
Cross Over Hwy 55 West of Minnehaha Ave



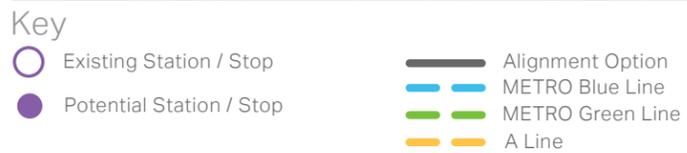
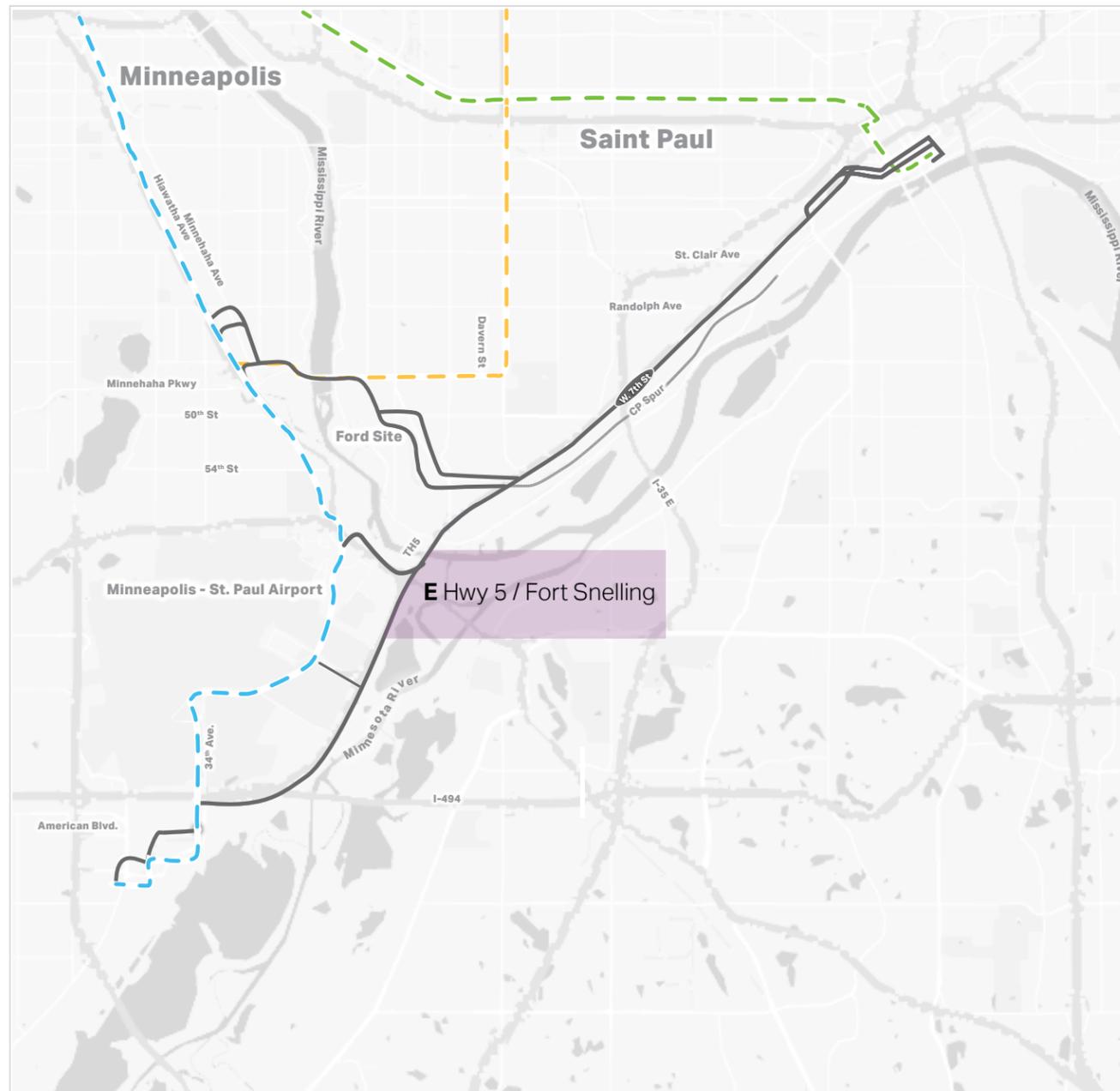
No Build, Arterial BRT, and BRT



Cross Over Hwy 55 Near Minnehaha Ave



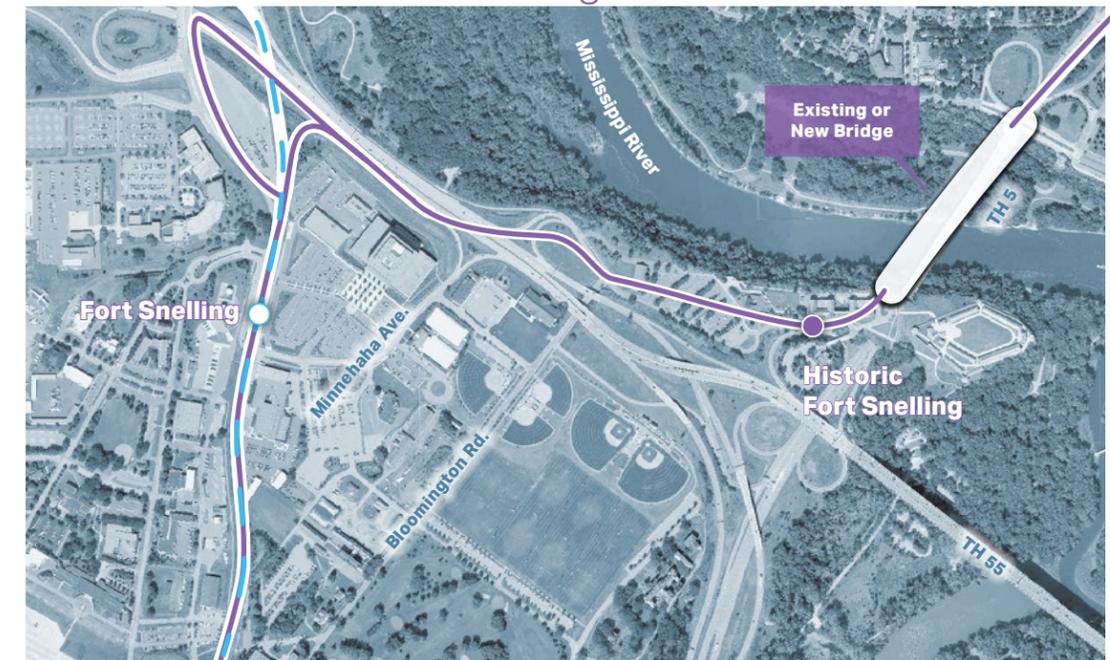
E Hwy 5 / Fort Snelling



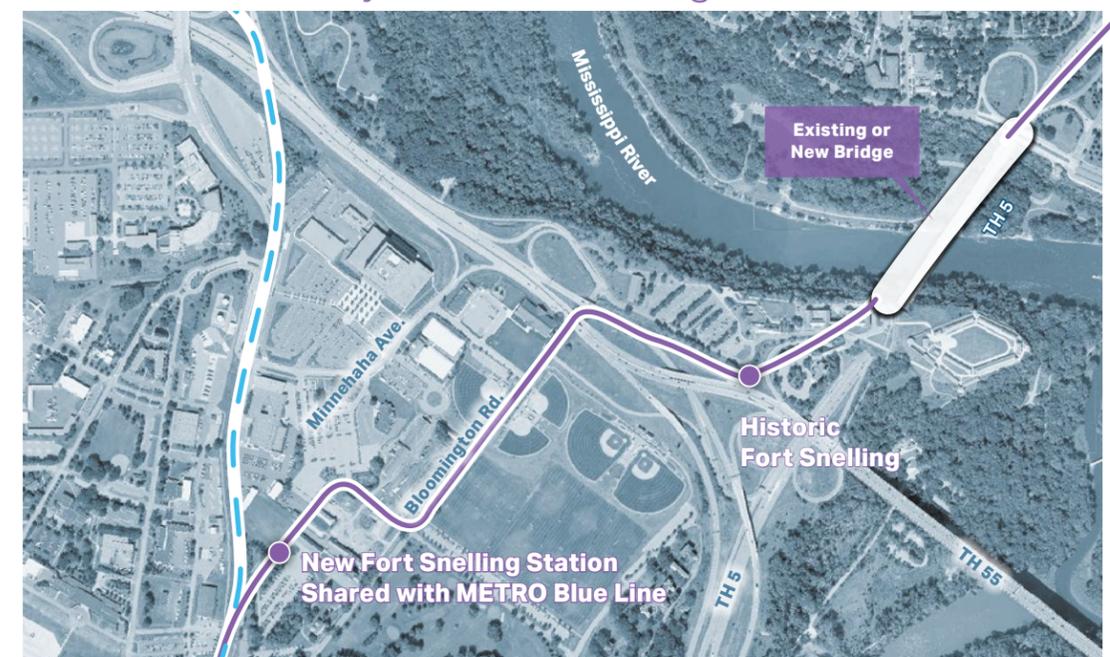
E Hwy 5 / Fort Snelling

Concept | Rail

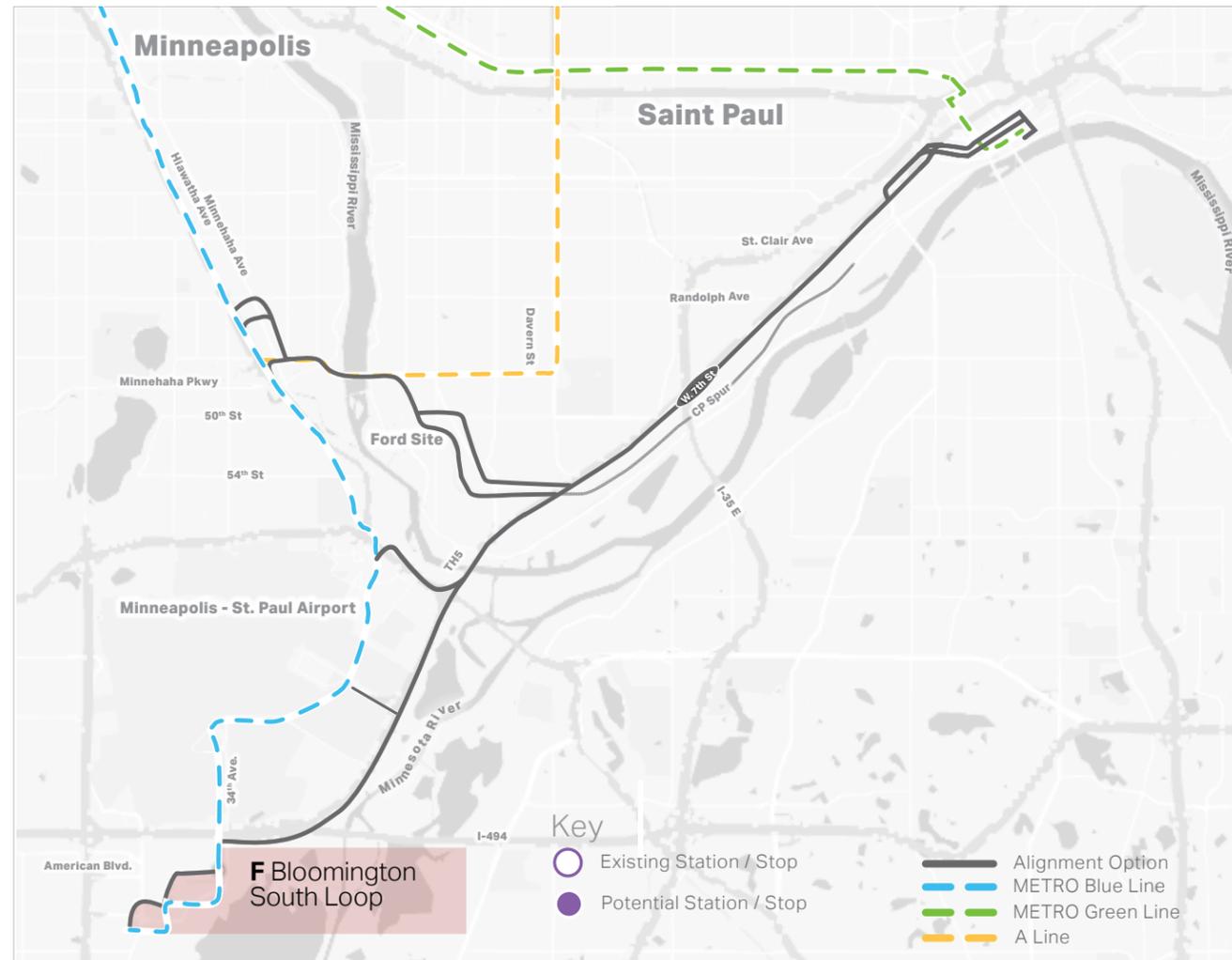
Under Historic Fort Snelling



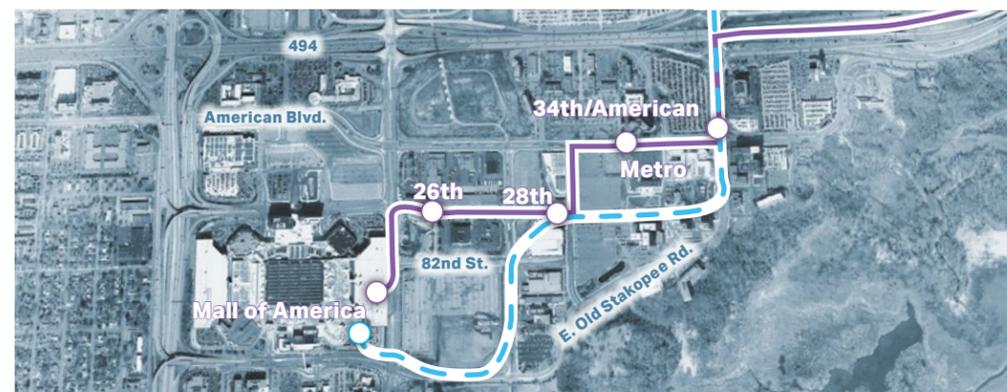
Cross Under Hwy 55 at Bloomington Rd



F Bloomington South Loop

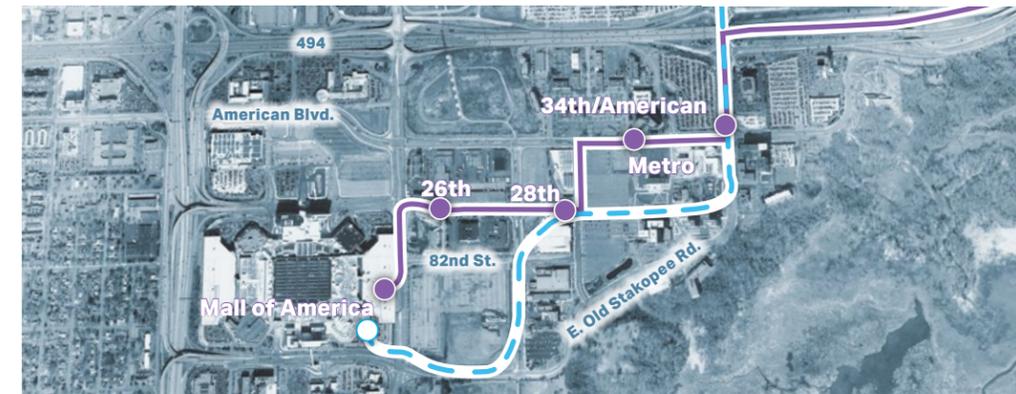


No Build



F Bloomington South Loop

Concept | BRT BRT and Arterial BRT



Existing Blue Line Interline Rail



Concept | Rail Blue Line Interline via 82nd St





STAY INVOLVED



www.riverviewcorridor.com



info@riverviewcorridor.com



651.266.2760



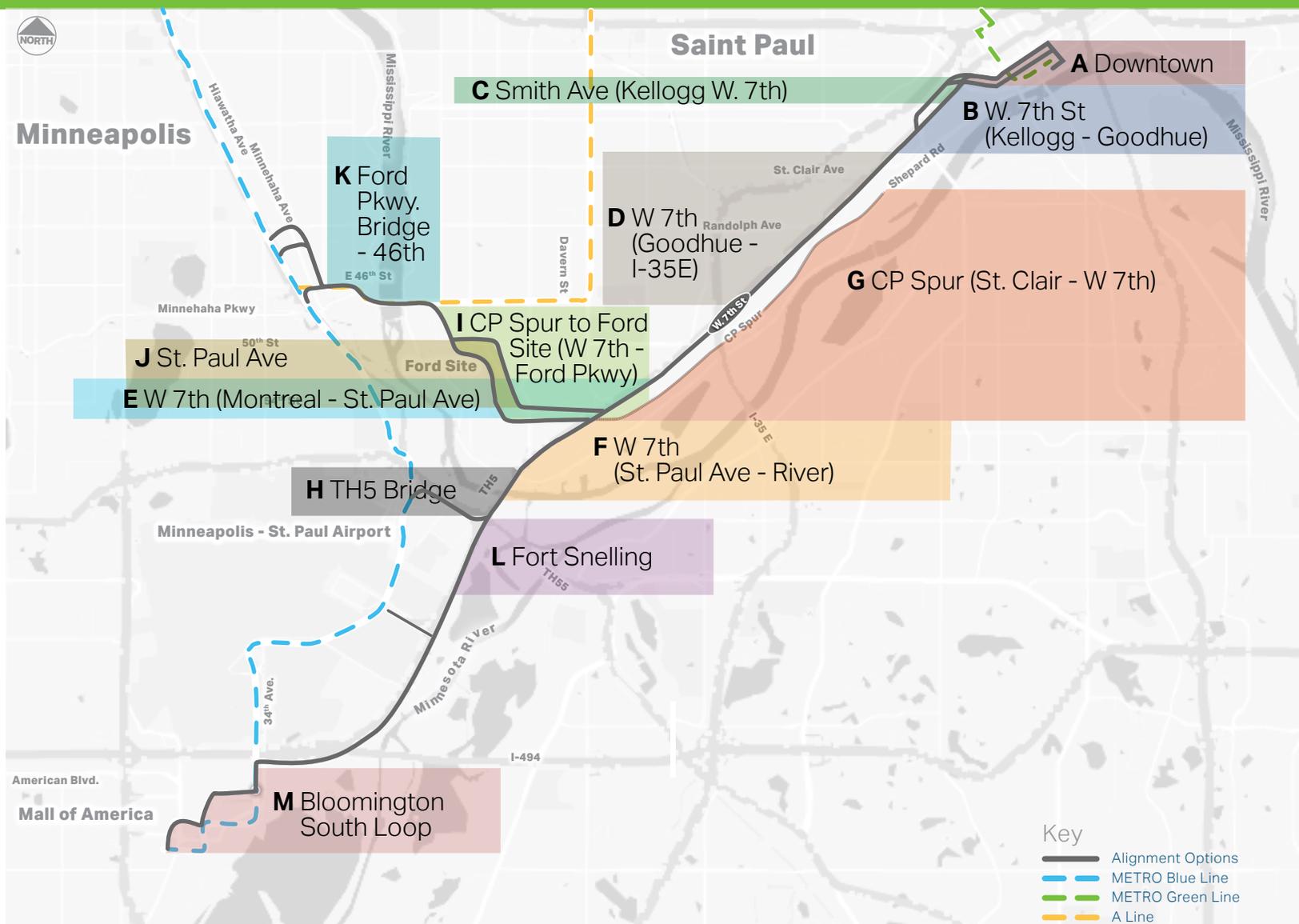
facebook.com/riverviewcorridor



[@riverviewstudy](https://twitter.com/riverviewstudy)

Appendix B: Preliminary Concepts Booklet

Preliminary Concepts



What concepts are technically feasible?

Develop and analyze further those concepts that are part of the Locally Preferred Alternative (LPA).

Options

Side running on road | Dedicated lane or shared-use lane

Center running on road | Dedicated lane or shared-use lane

Purpose of the Study

To enhance mobility and access to opportunities for residents, businesses, and the region and to cultivate economic prosperity

Corridor Facts

- 12.5 miles long
- 50,600 residents
- 24,900 households
- 123,900 jobs
- Served today by the Route 54 bus

What is this booklet for?

- Show existing conditions in the Riverview Corridor
- Illustrate general concepts for accommodating bus or rail within the Riverview Corridor transitways
- Help weigh opportunities and constraints of each concept

Note: Concepts are not to scale.

If another format is needed to review this booklet, please call Ramsey County Regional Railroad Authority at 651-266-2760

What are some considerations in developing the concepts?





METRO Red Line, Twin Cities, MN (BRT on shoulder lane)



Pier 39, San Francisco, CA (BRT dedicated lane)



CP Spur at Juno Ave, facing southwest



Pier 39, San Francisco, CA



HealthLine, Cleveland, OH (Center-running dedicated BRT)



Route 54 bus stop outreach



Seven Corners



Market Street at New Montgomery, San Francisco, CA (Shared use bus and rail)



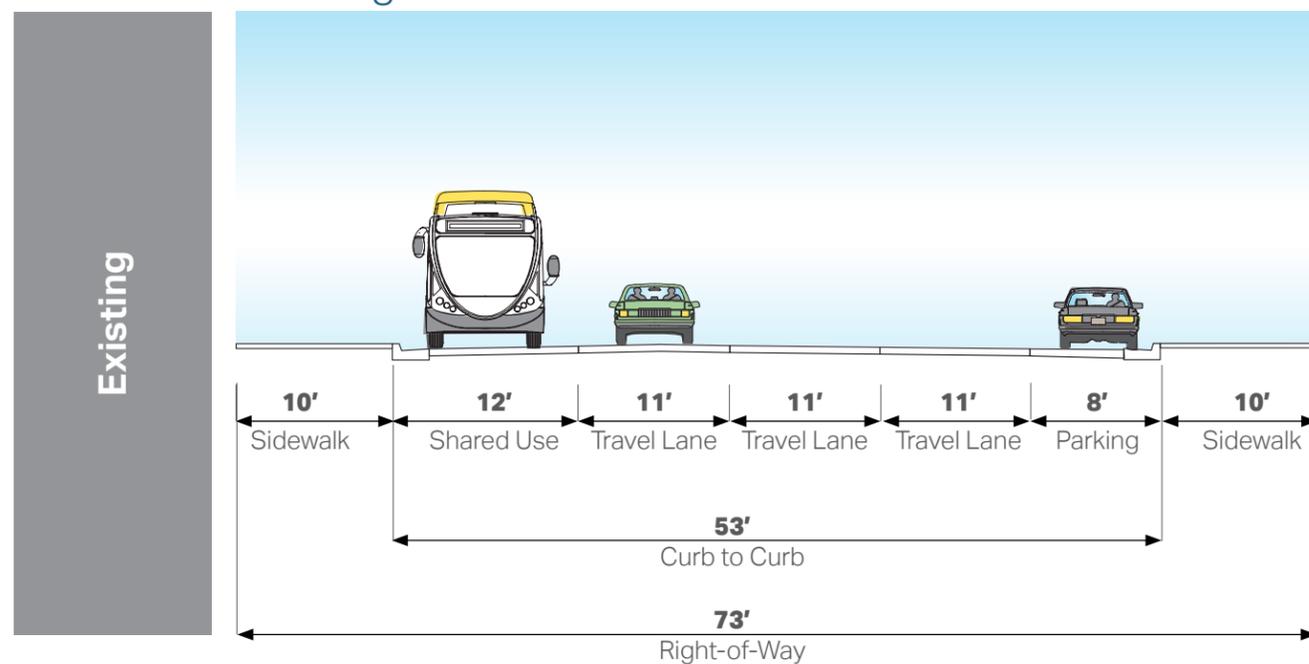
Route 54 on W. 7th Street

A 5th / 6th St E (Union Depot - Wabasha)

Existing Condition



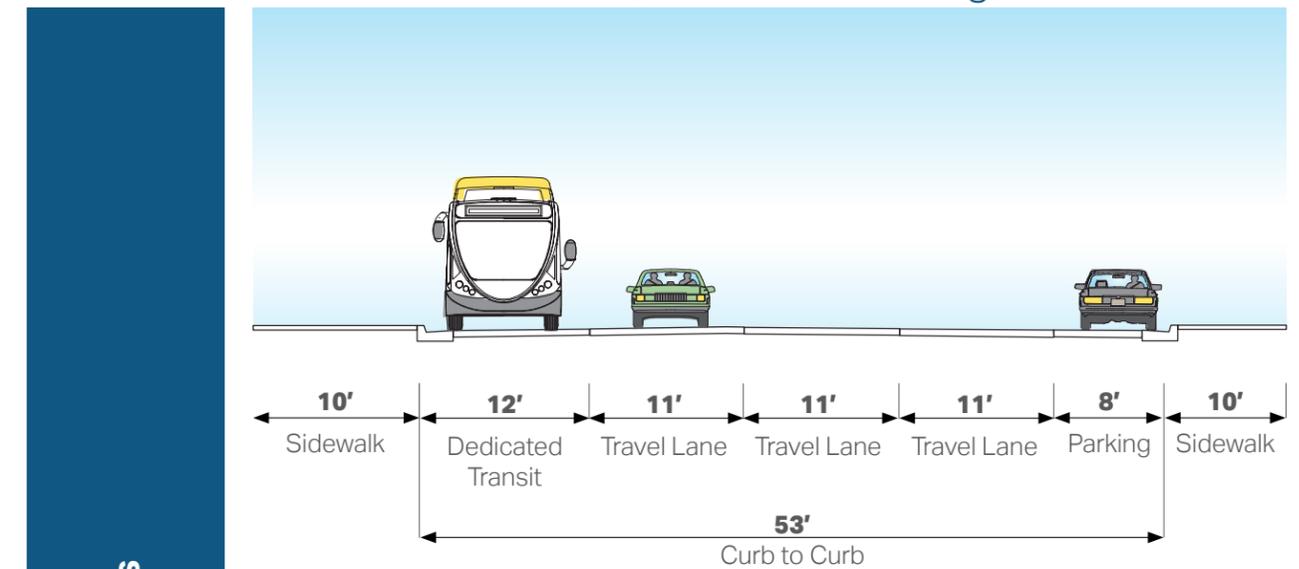
Existing as Shown between Cedar and Wabasha



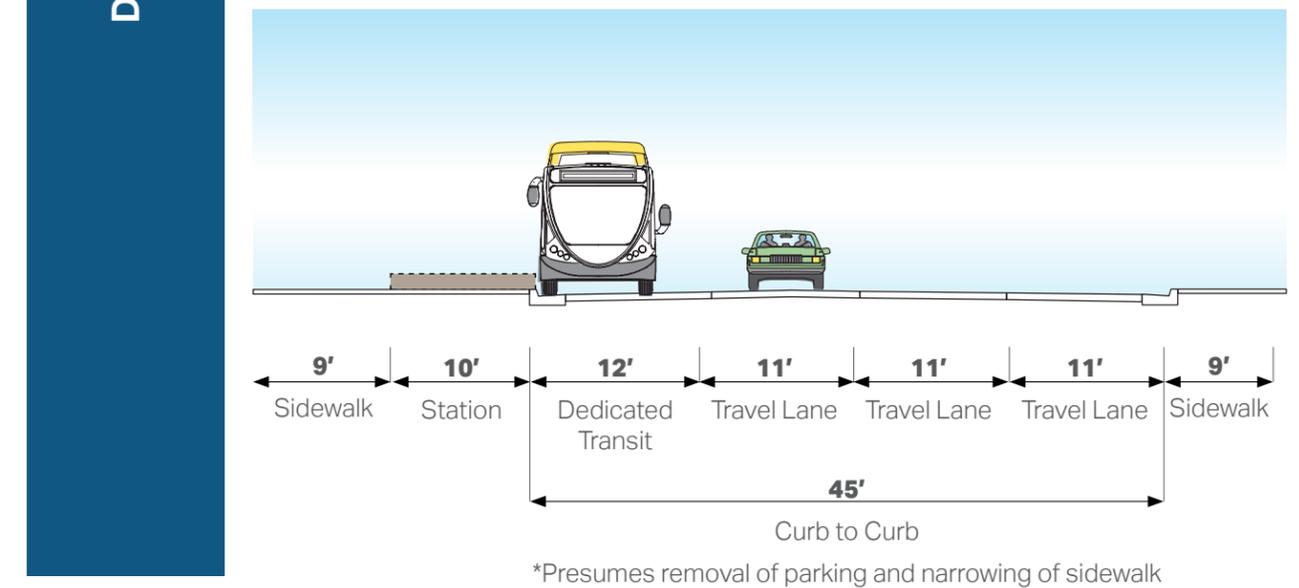
A 5th / 6th St E (Union Depot - Wabasha)

Concept | Side Running

Between Stations (same as existing)



At Station



A 4th St E (Union Depot - Cedar St)

Existing Condition



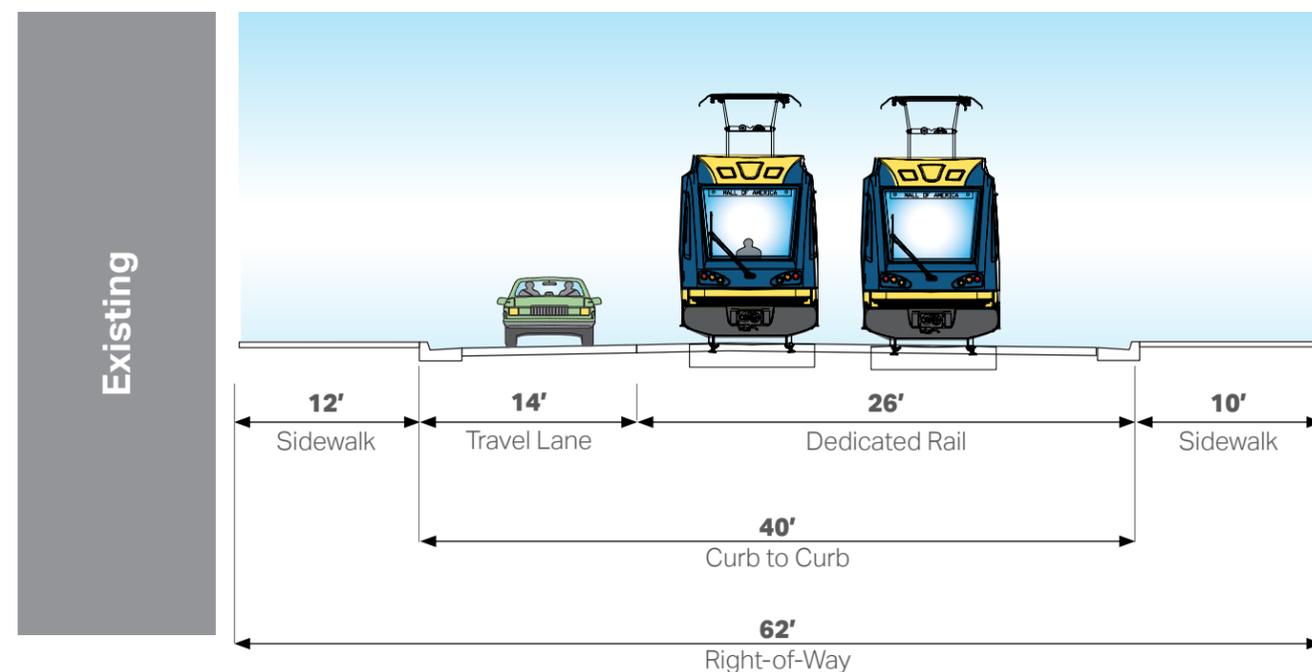
A 4th St E (Union Depot - Cedar St)

Side Running (same as existing)

Between Stations

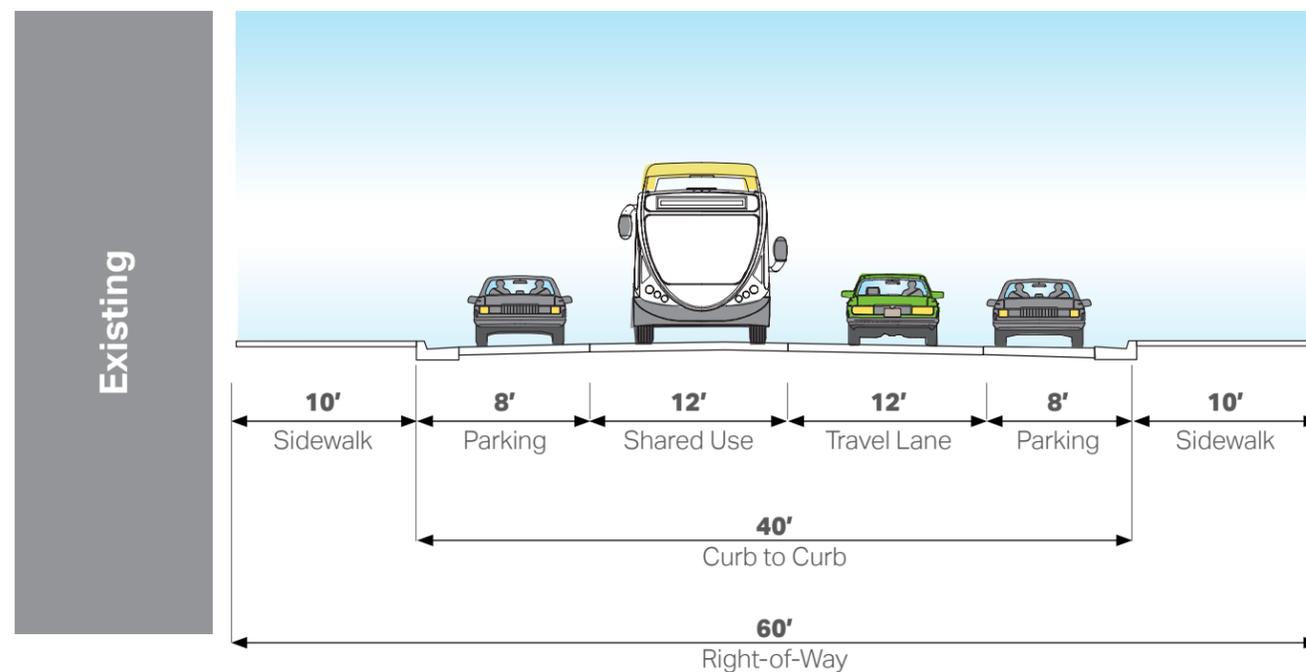
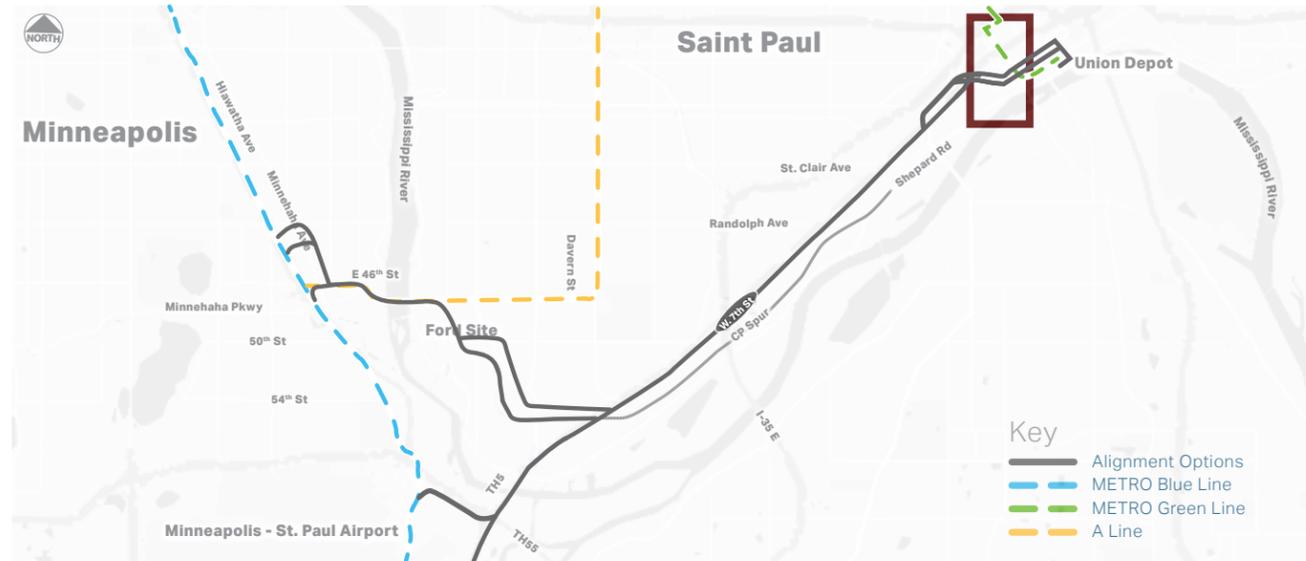


Green Line train on 4th St. looking southwest (Source: Metro Transit)



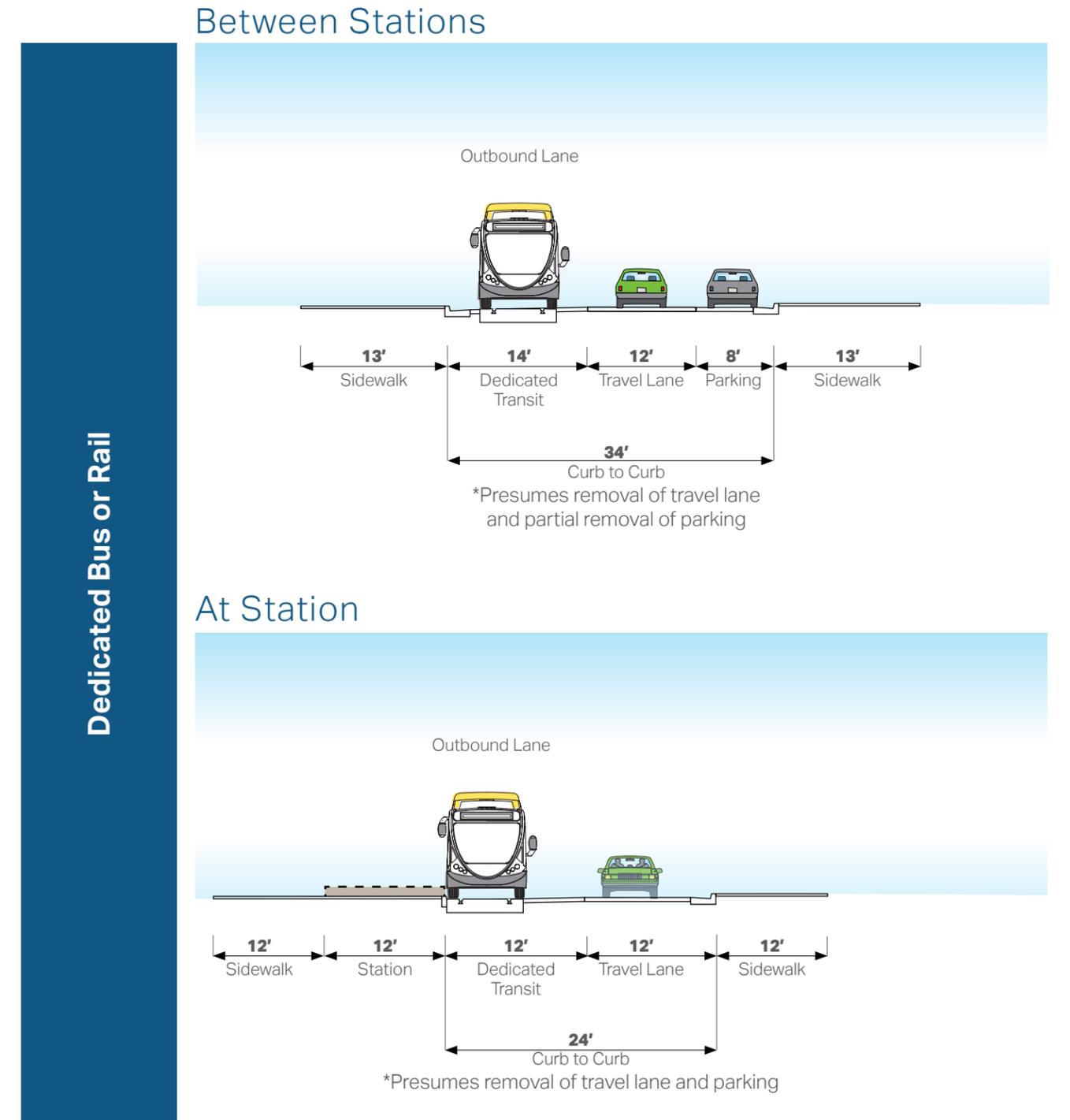
A W. 5th / 6th St (Wabasha - W. 7th St)

Existing Condition



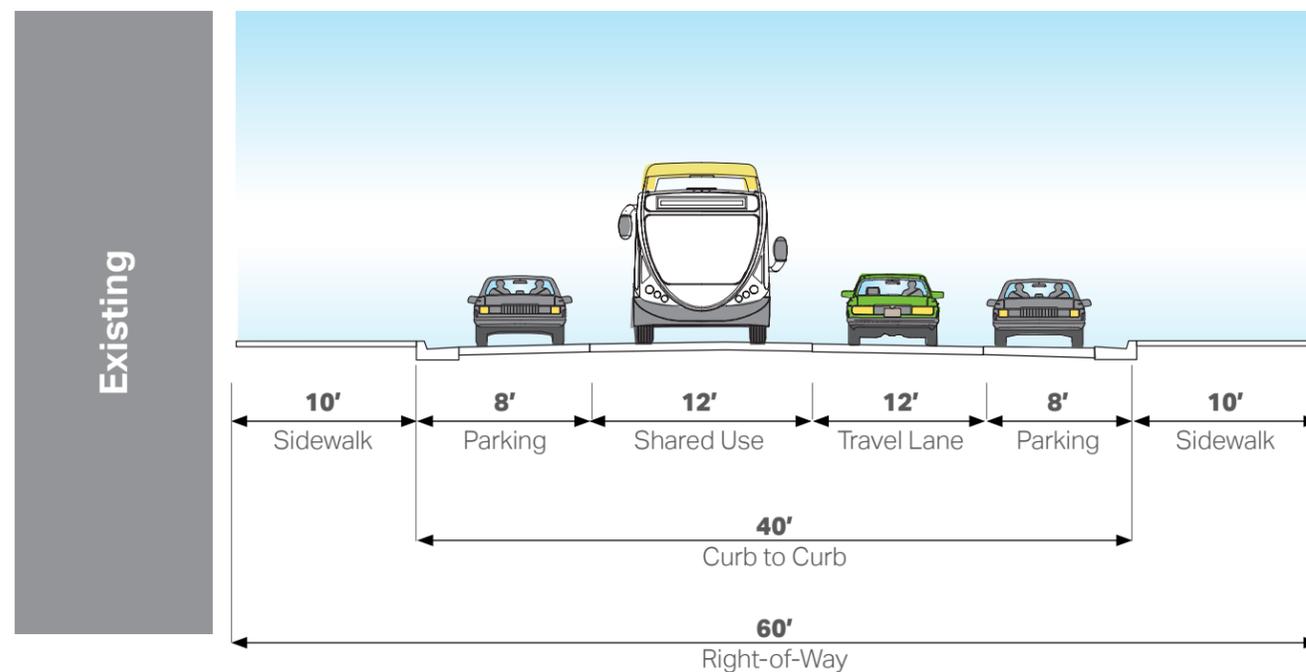
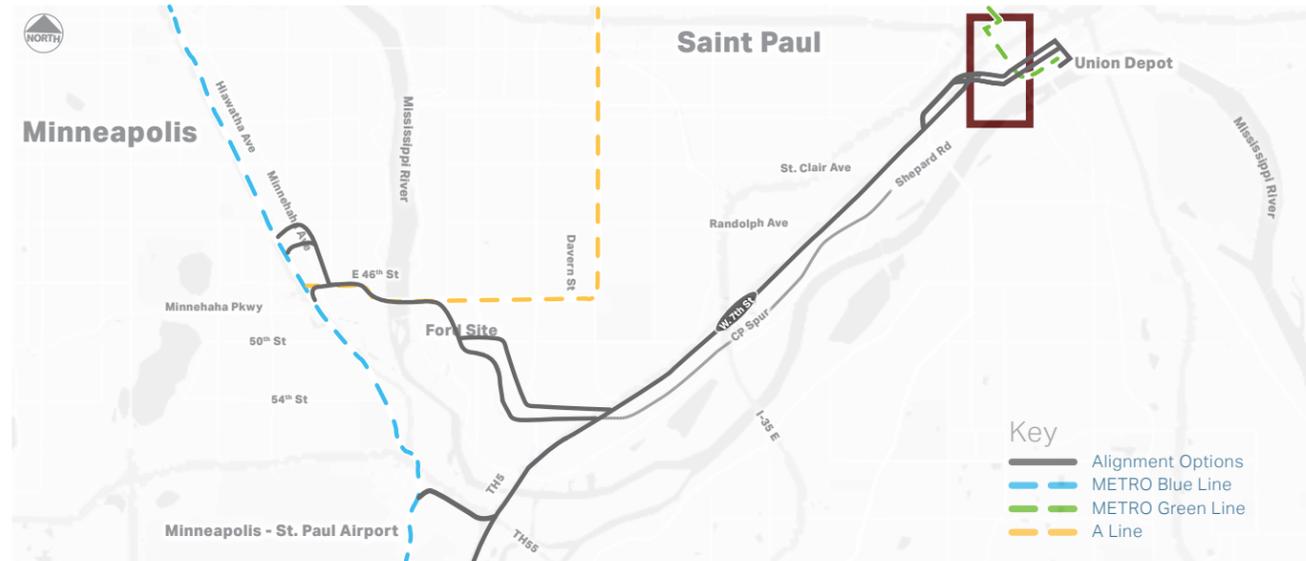
A W. 5th / 6th St (Wabasha - W. 7th St)

Concept | Side Running



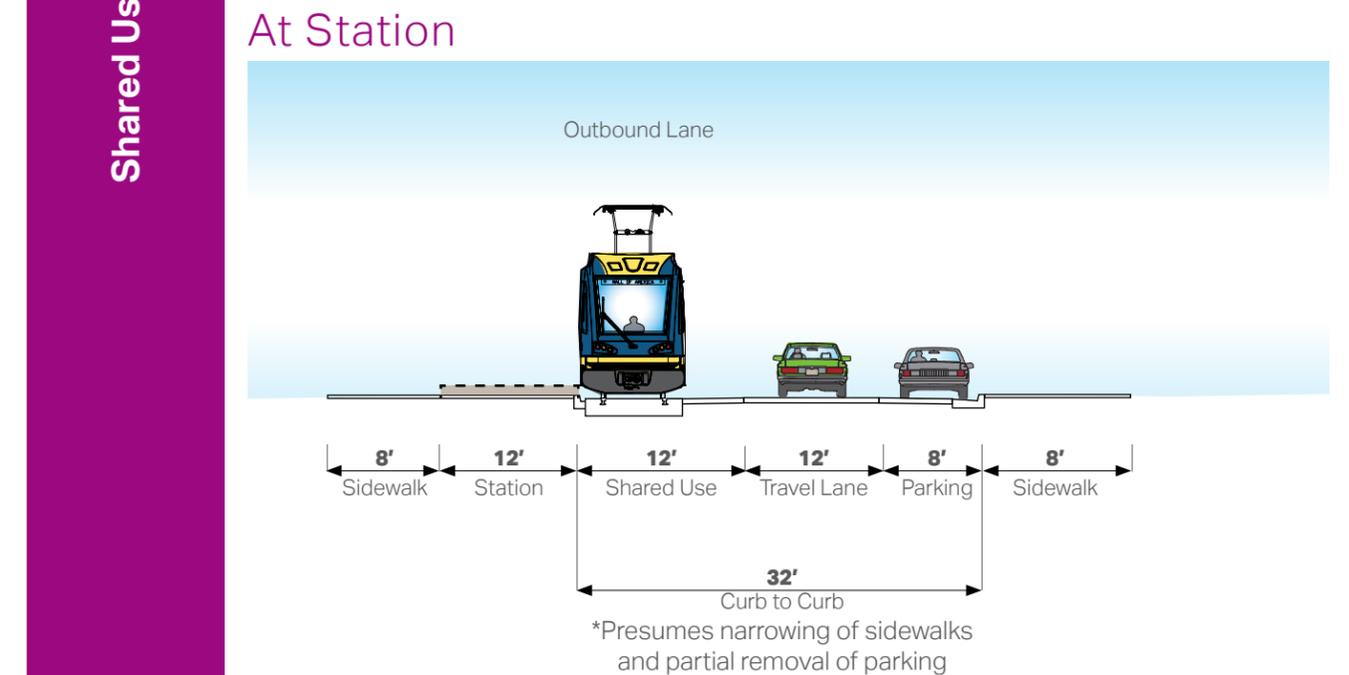
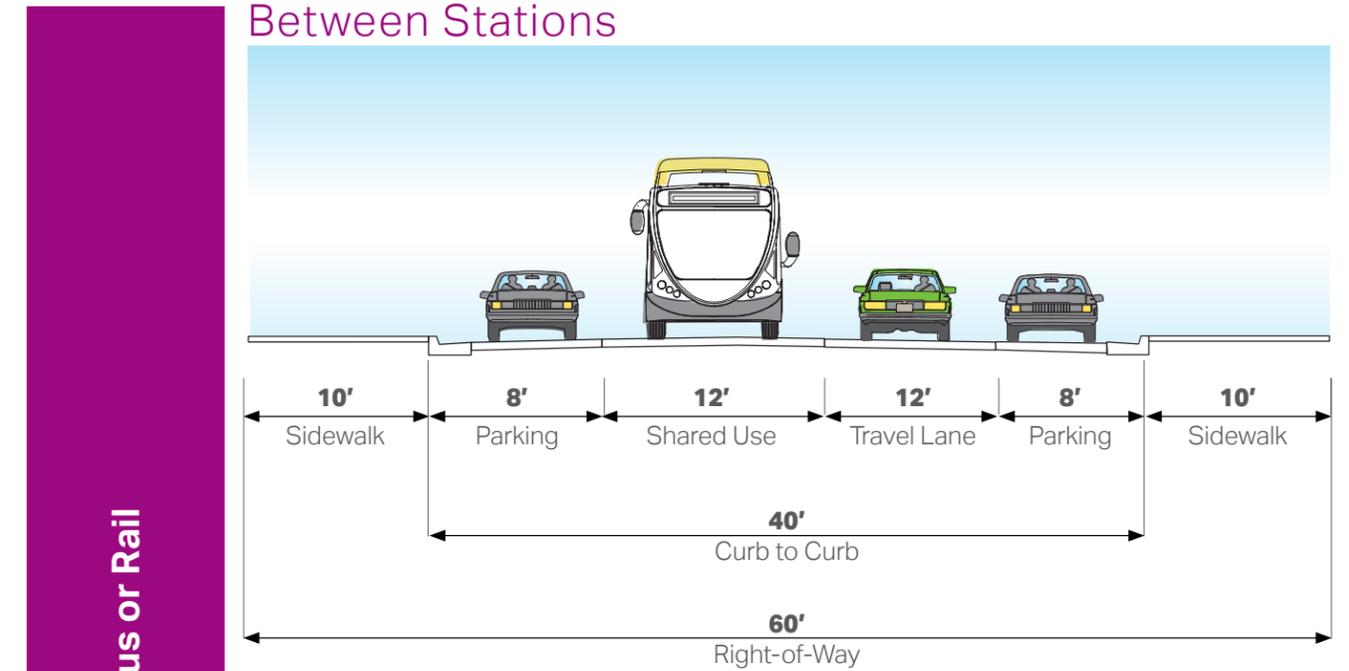
A W. 5th / 6th St (Wabasha - W. 7th St)

Existing Condition



A W. 5th / 6th St (Wabasha - W. 7th St)

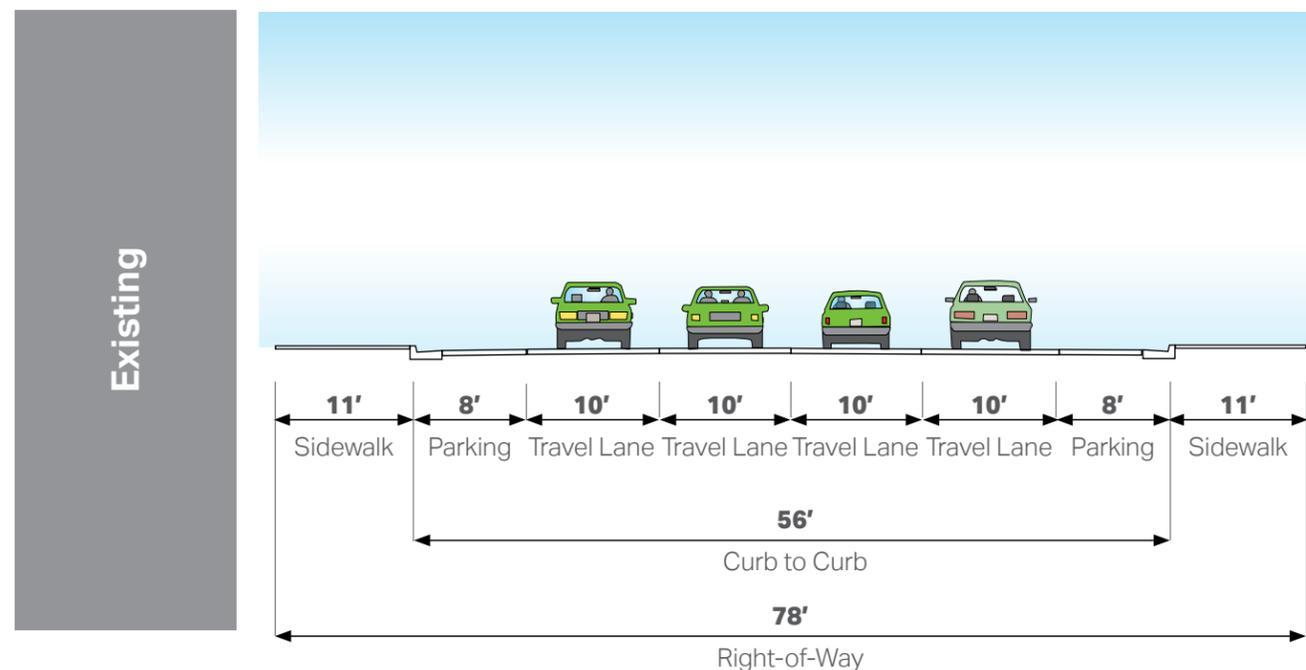
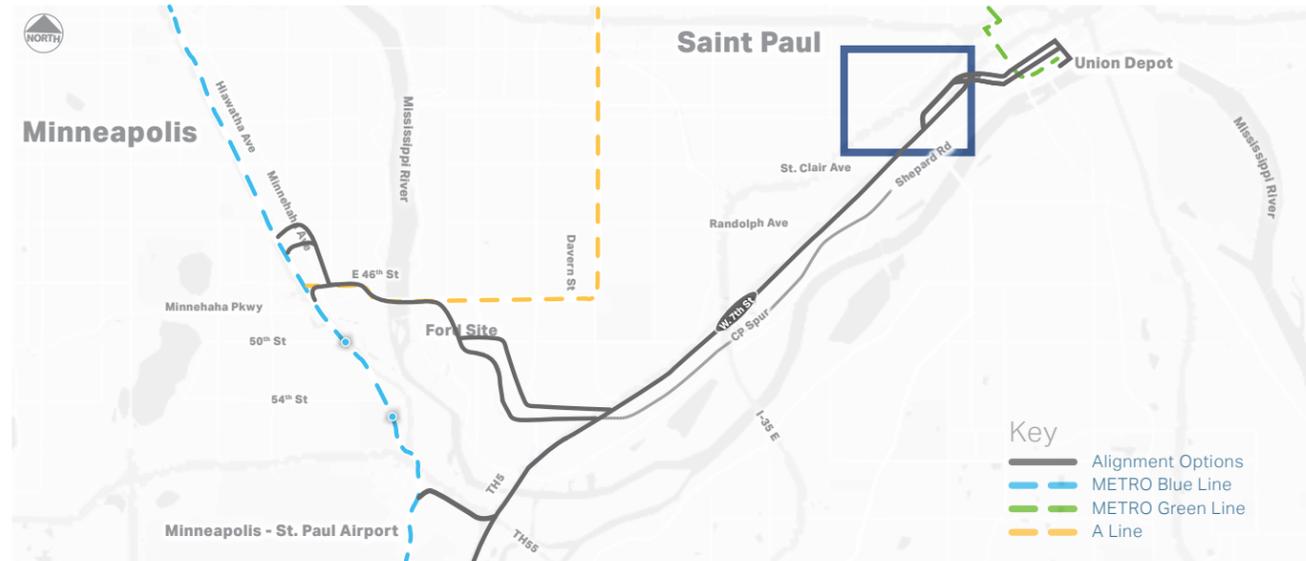
Concept | Side Running



Shared Use Bus or Rail

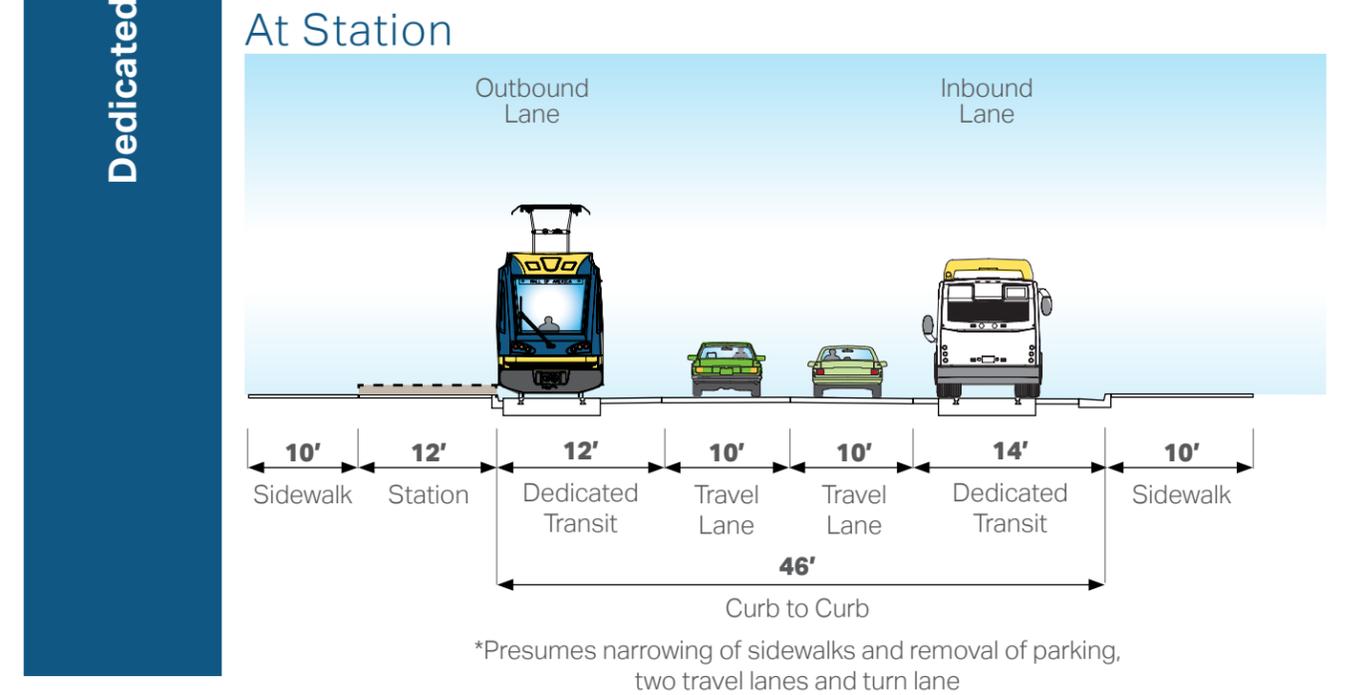
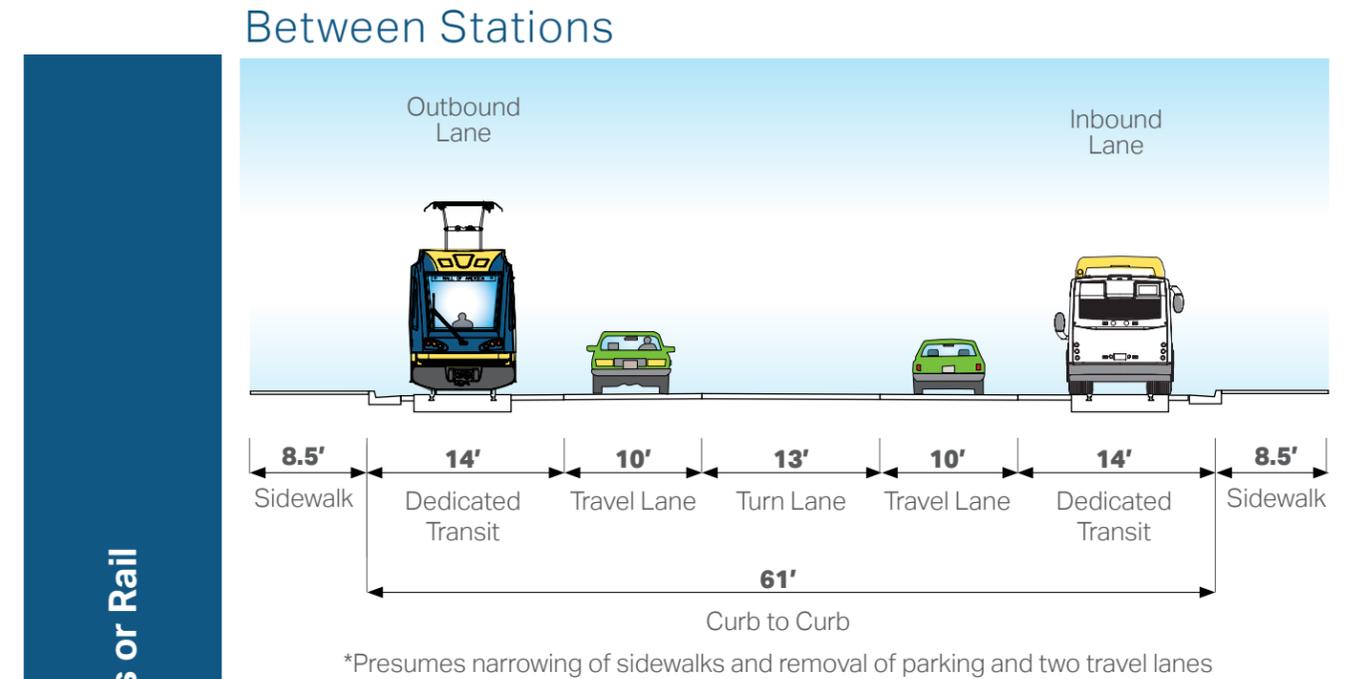
B W. 7th St (Kellogg – Goodhue)

Existing Condition



B W. 7th St (Kellogg – Goodhue)

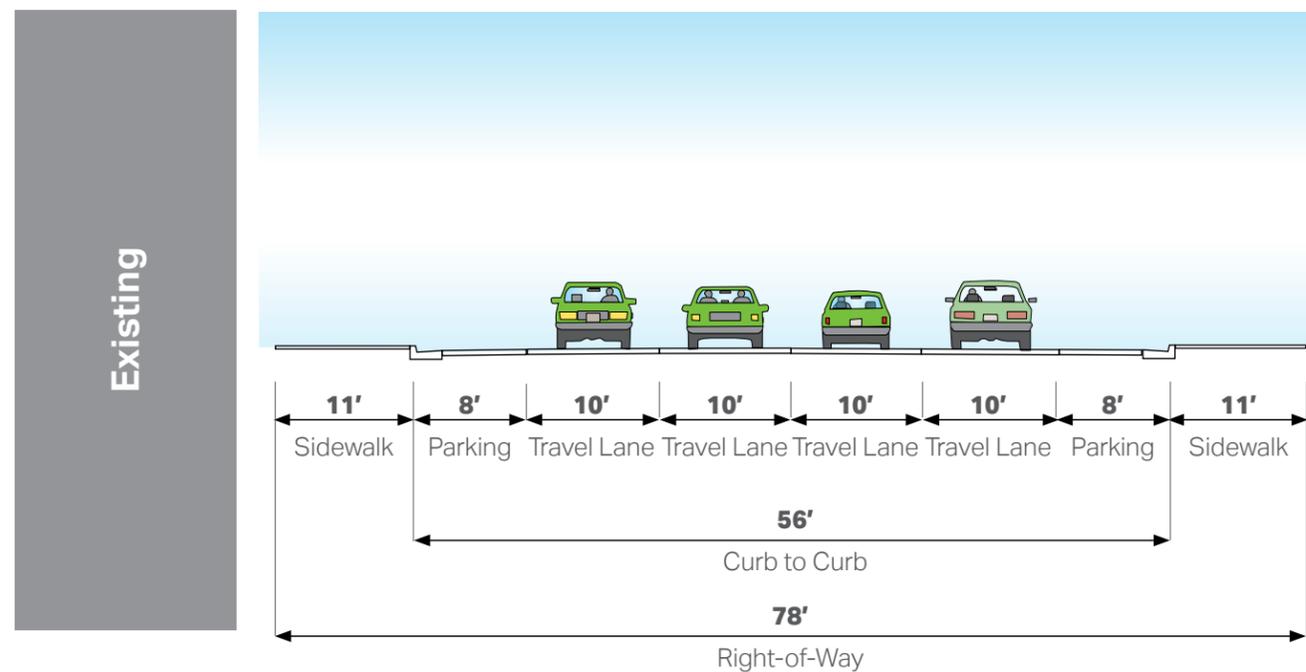
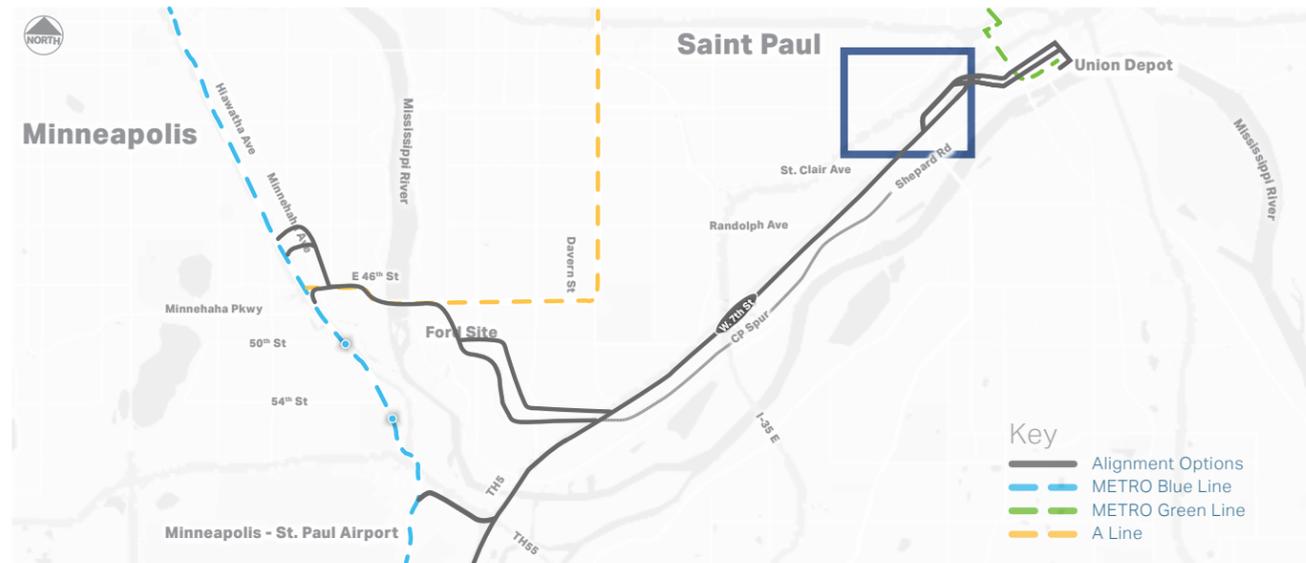
Concept | Side Running



Dedicated Bus or Rail

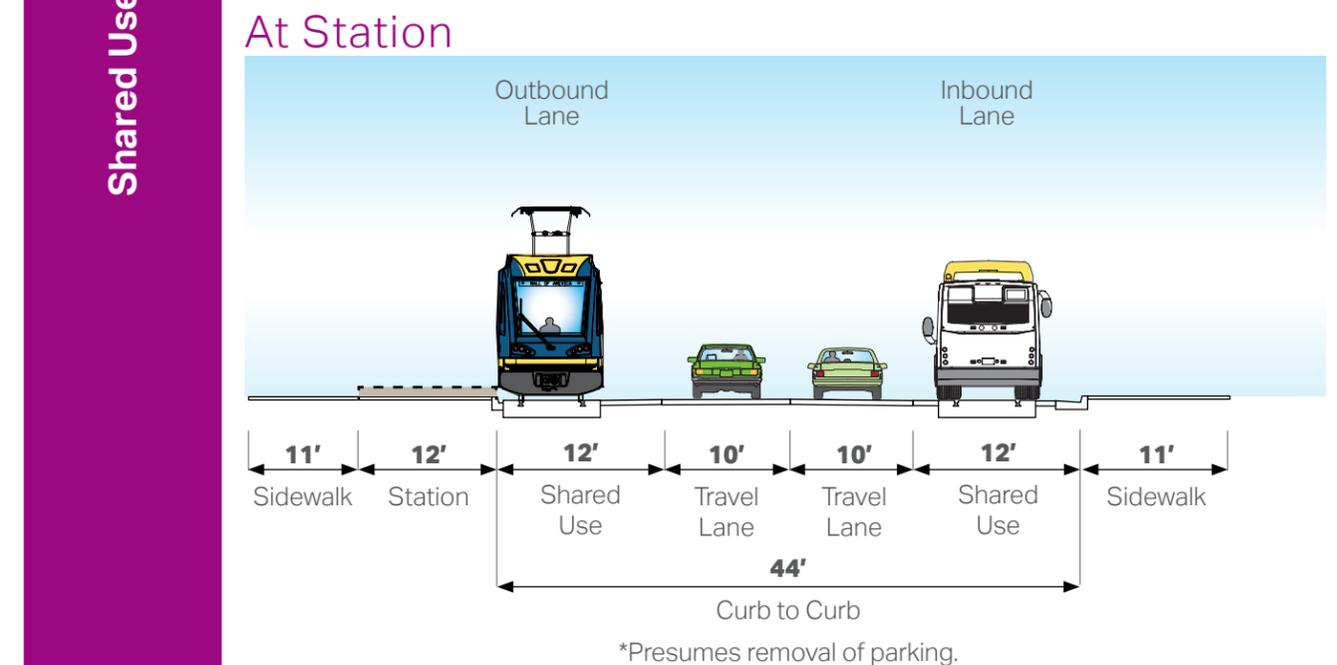
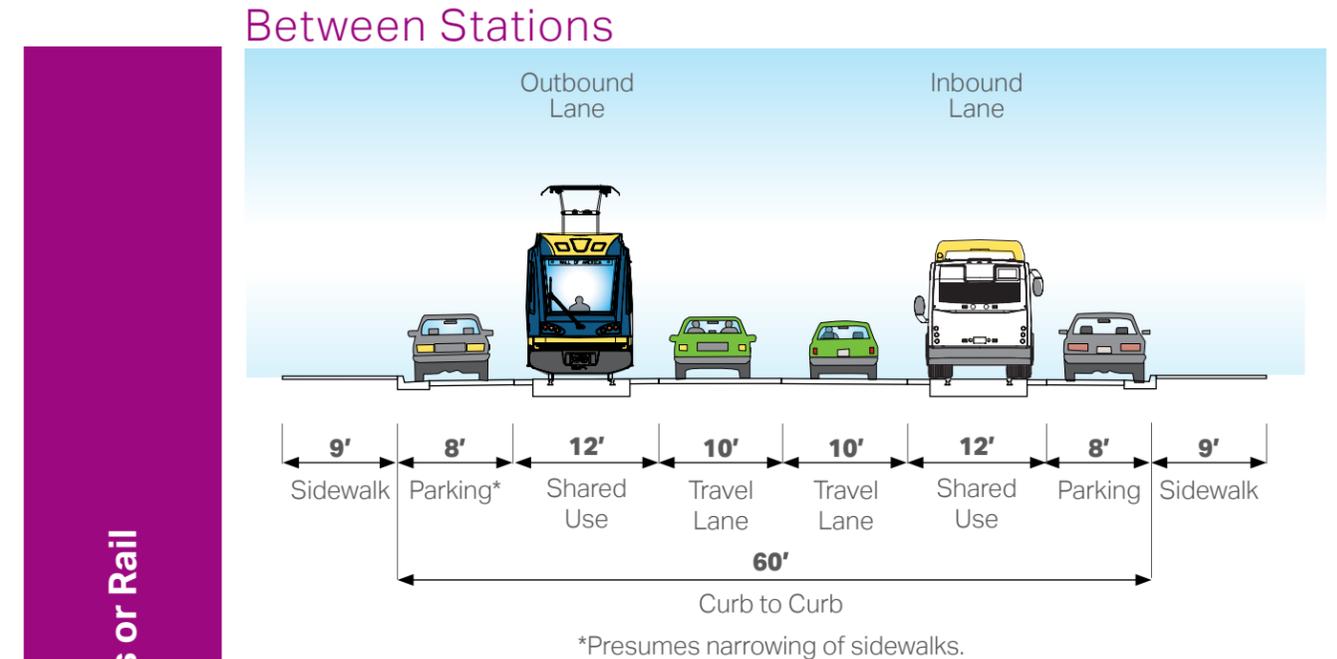
B W. 7th St (Kellogg – Goodhue)

Existing Condition



B W. 7th St (Kellogg – Goodhue)

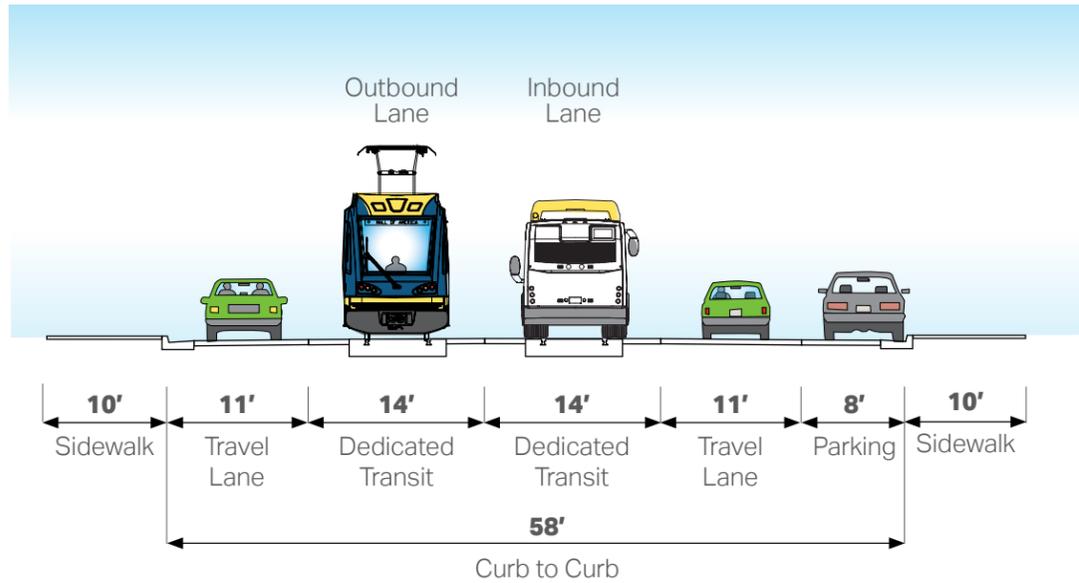
Concept | Side Running



B W. 7th St (Kellogg – Goodhue)

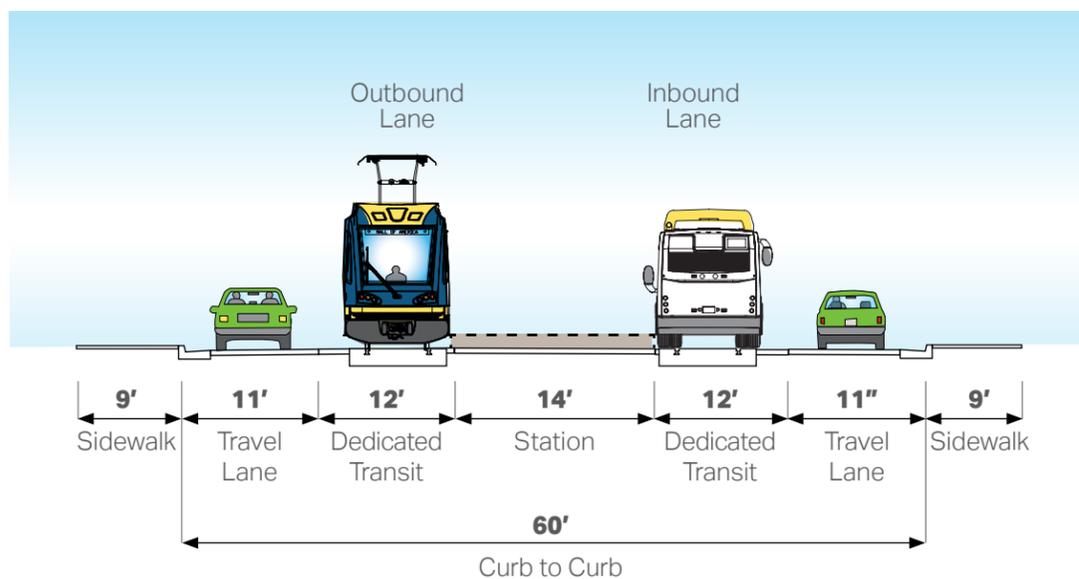
Concept | Center-Running

Between Stations



*Presumes narrowing of sidewalks, removal of two travel lanes and partial removal of parking

At Station



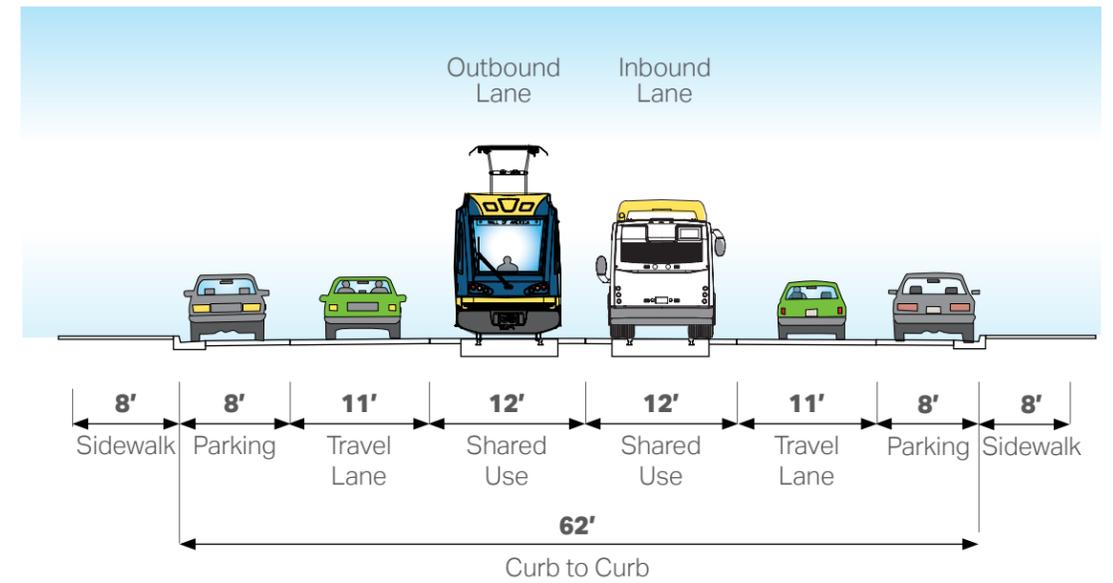
*Presumes narrowing of sidewalks and removal of two travel lanes and parking

Dedicated Bus or Rail

B W. 7th St (Kellogg – Goodhue)

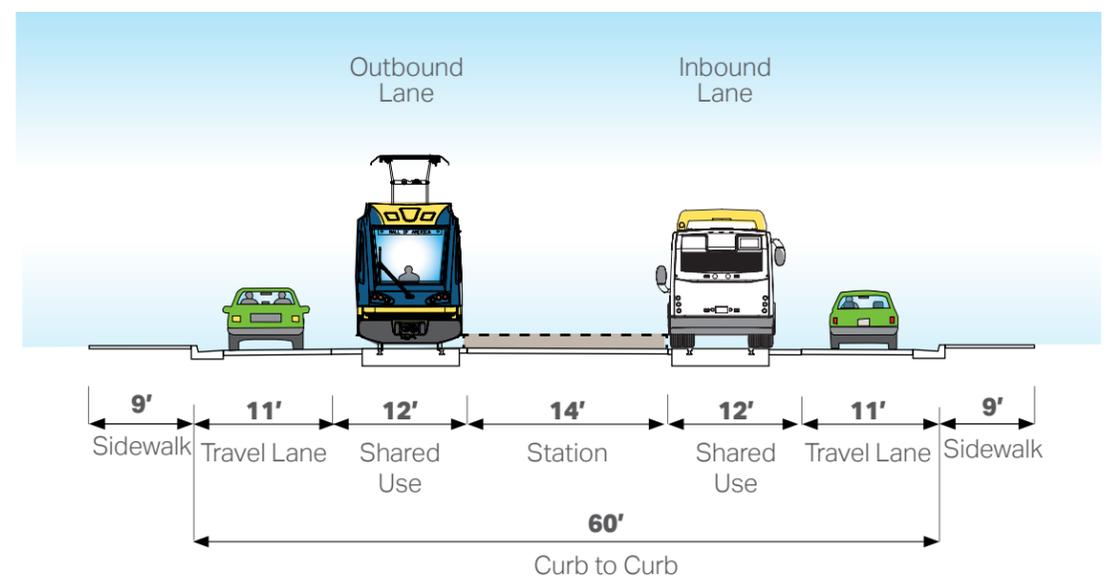
Concept | Center-Running

Between Stations



*Presumes narrowing of sidewalks

At Station

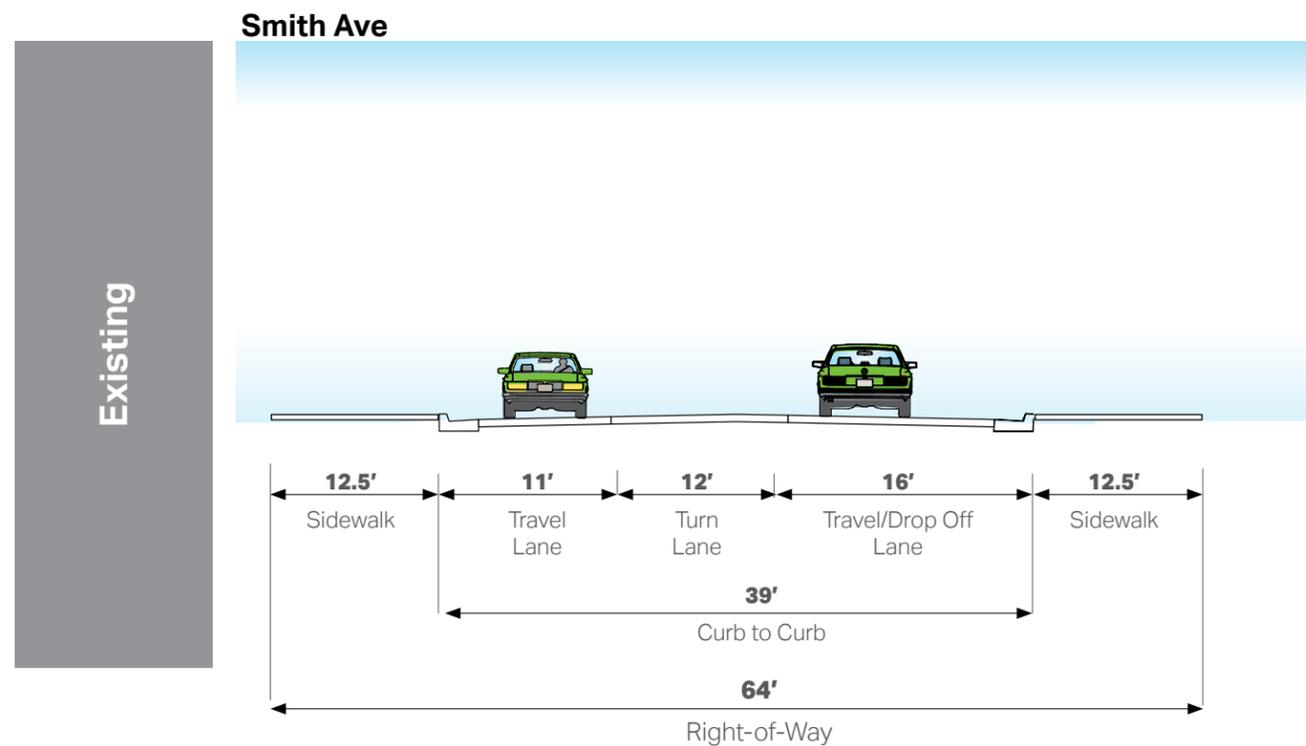
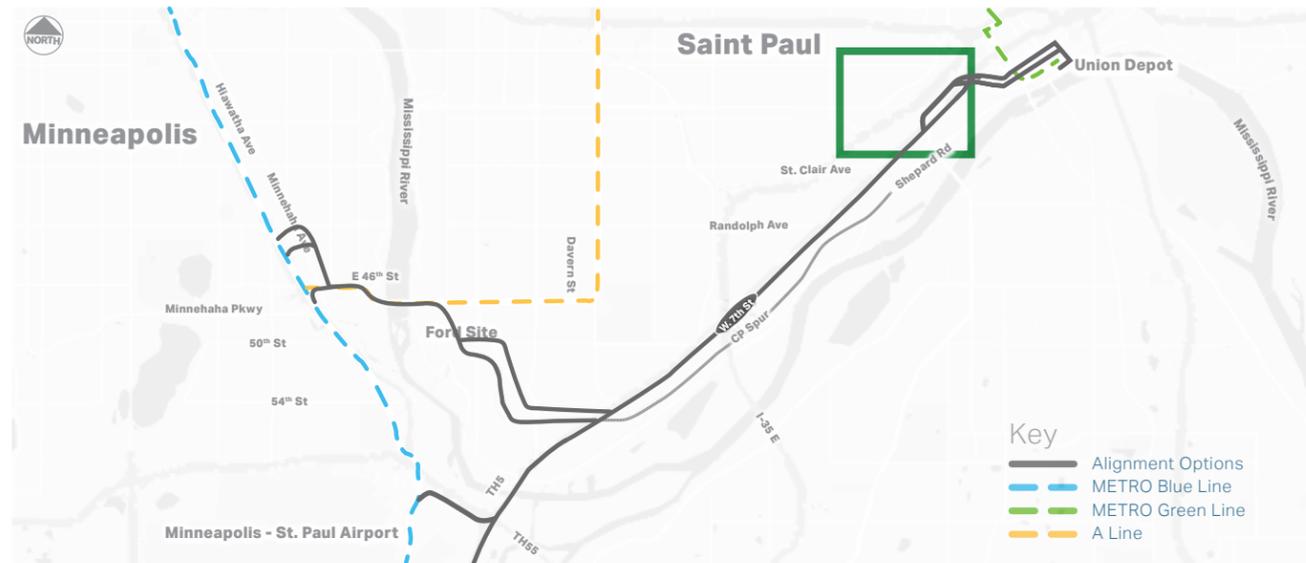


*Presumes narrowing of sidewalks and removal of parking

Shared Use Bus or Rail

C Smith Ave Mall (Kellogg – W. 7th)

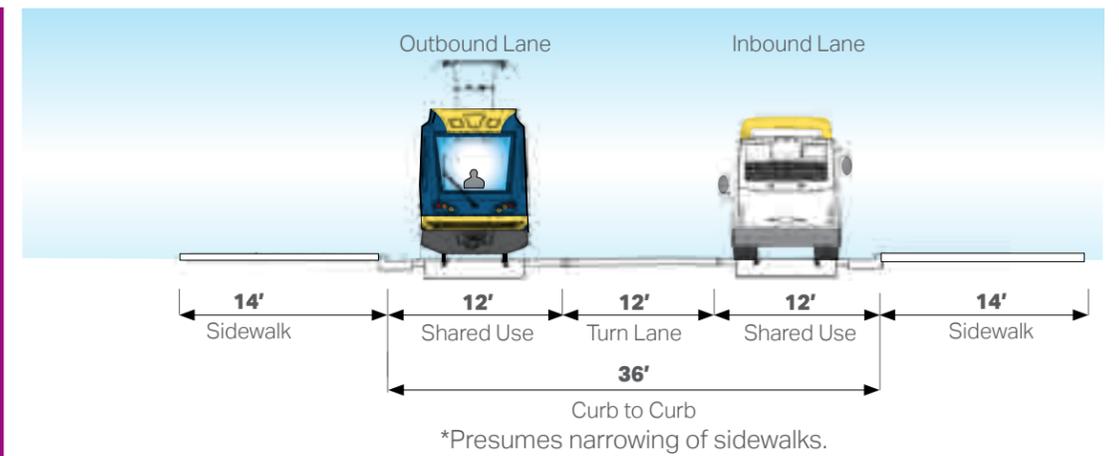
Existing Condition



C Smith Ave Mall (Kellogg – W. 7th)

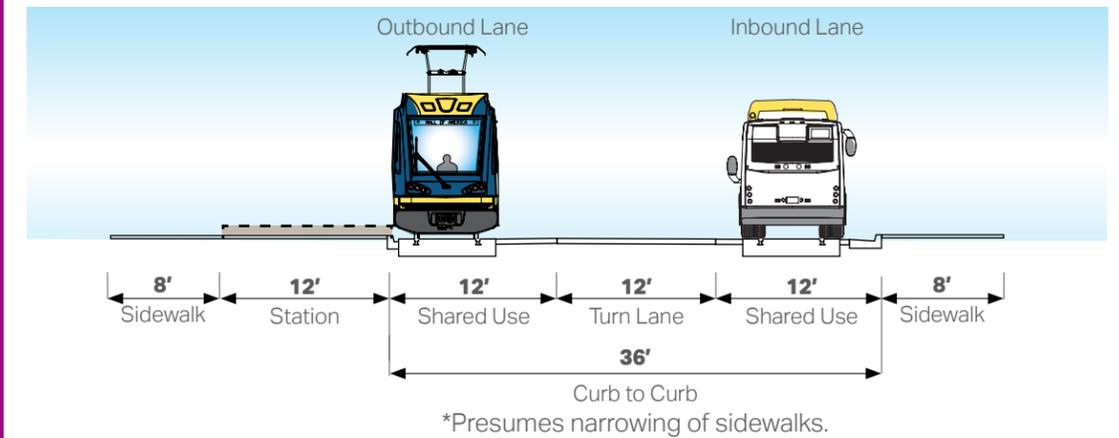
Concept | Side Running

Smith Ave Mall Between Stations



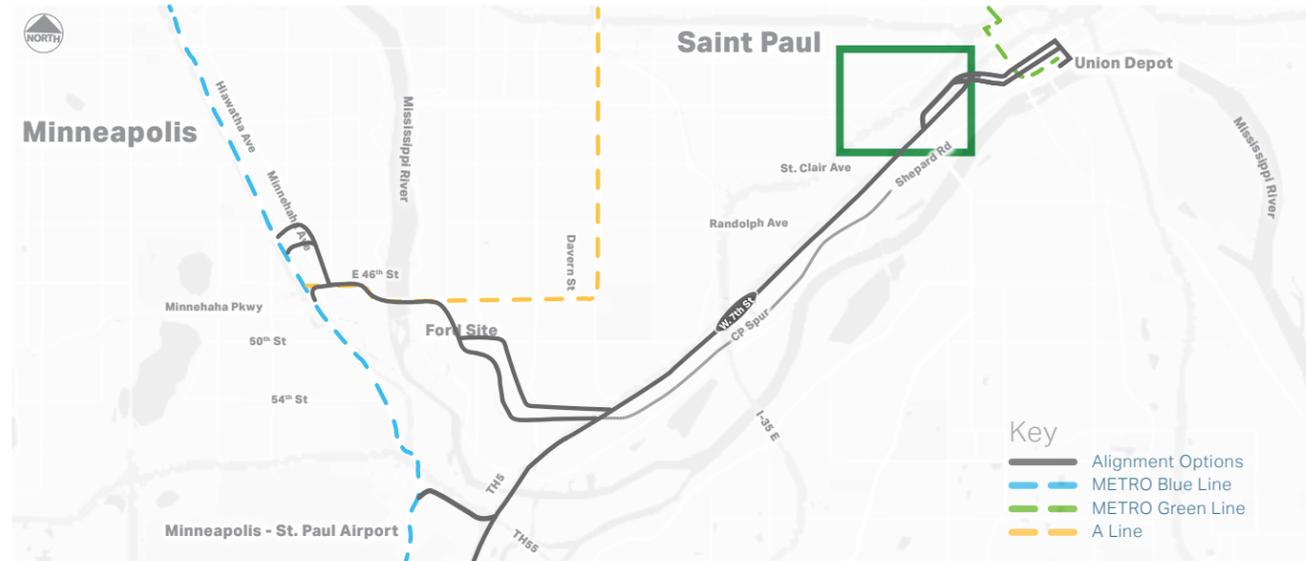
Shared Use Bus or Rail

Smith Ave Mall at Station

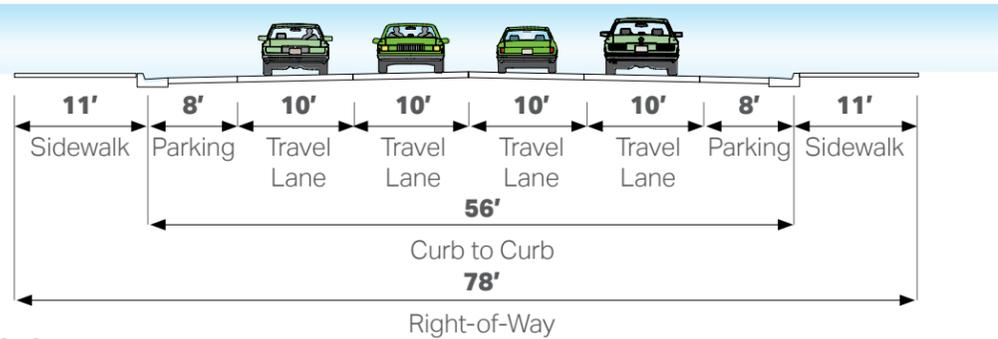


C W. 7th St/Smith Ave Pair

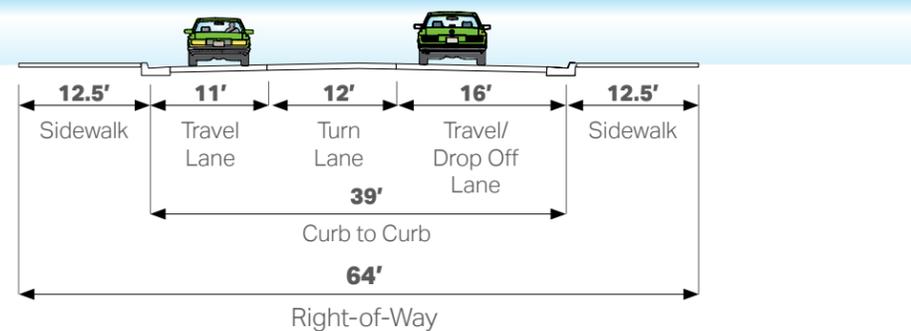
Existing Condition



W. 7th Street



Smith Ave

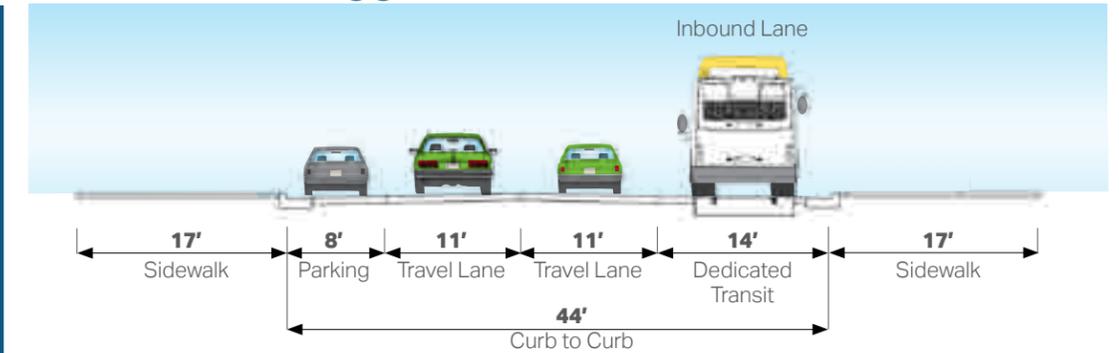


Existing

C W. 7th St/Smith Ave Pair

Concept | Side Running

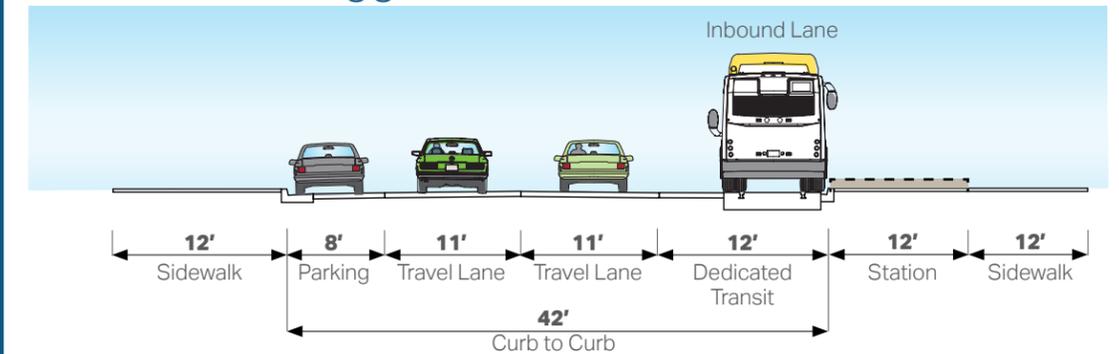
W. 7th St (Kellogg - Smith) Between Stations



*Presumes removal of two travel lanes and partial removal of parking.

Dedicated Bus or Rail

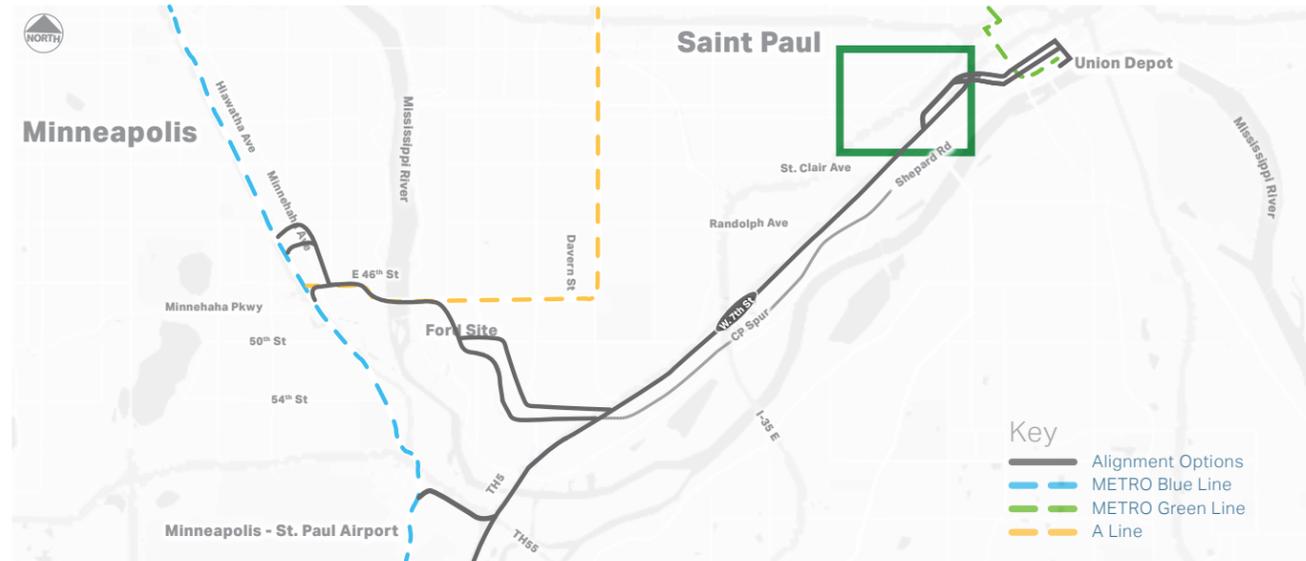
W. 7th St (Kellogg - Smith) At Station



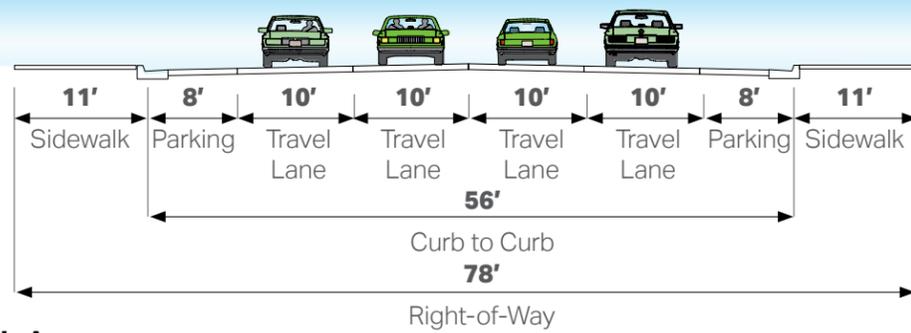
*Presumes removal of two travel lanes and partial removal of parking

C W. 7th St/Smith Ave Pair

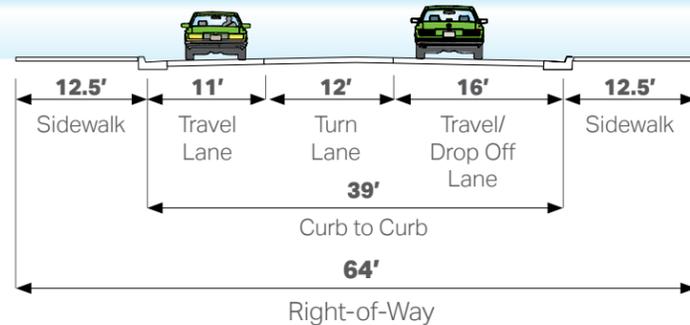
Existing Condition



W. 7th Street



Smith Ave

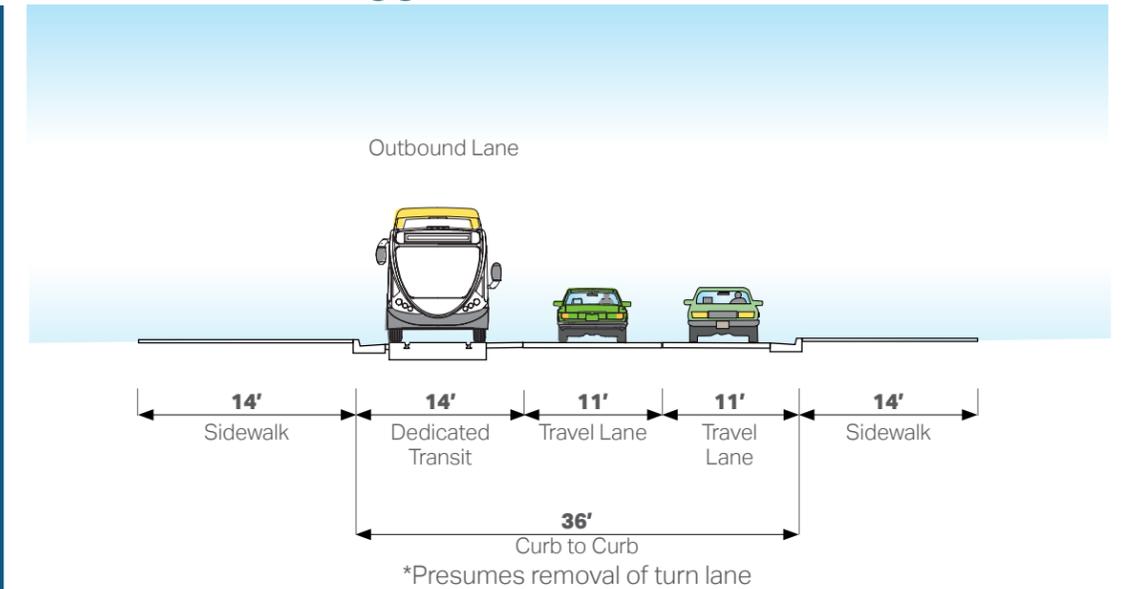


Existing

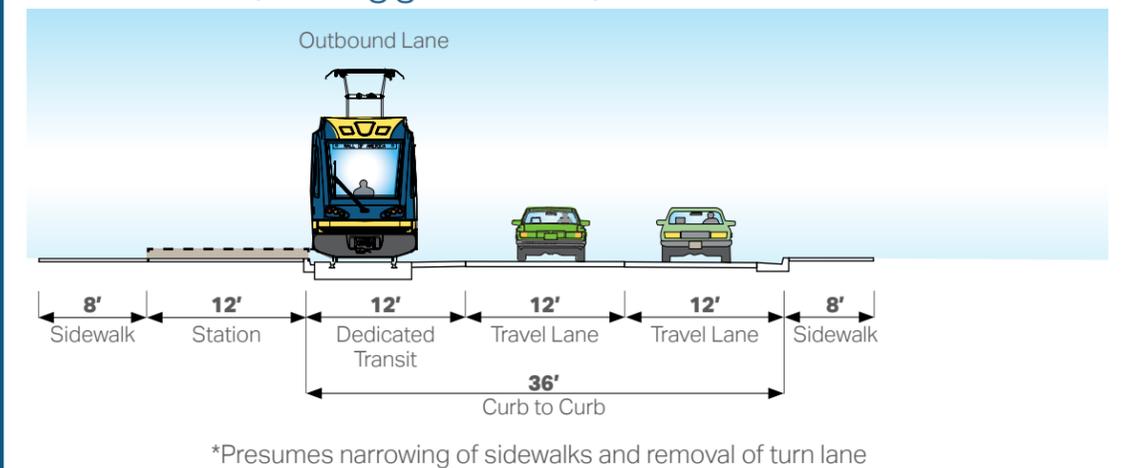
C W. 7th St/Smith Ave Pair

Concept | Side Running

Smith Ave (Kellogg - W. 7th) Between Stations



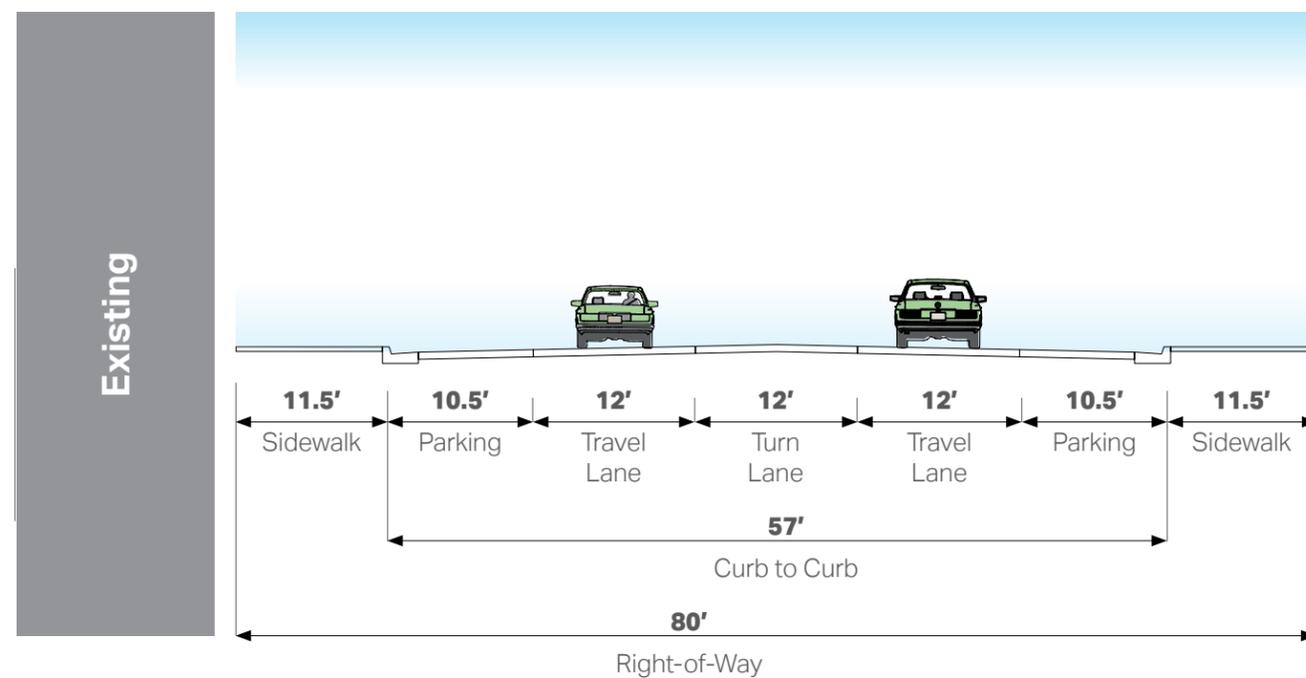
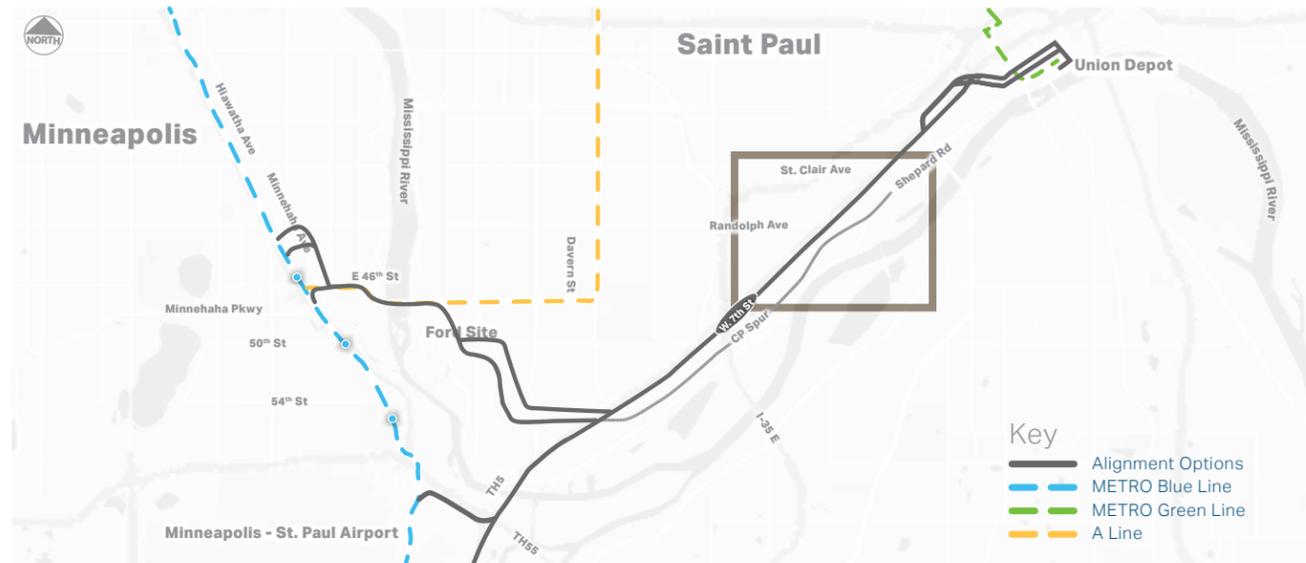
Smith Ave (Kellogg - W. 7th) At Station



Dedicated Bus or Rail

D W. 7th St (Goodhue – I-35E)

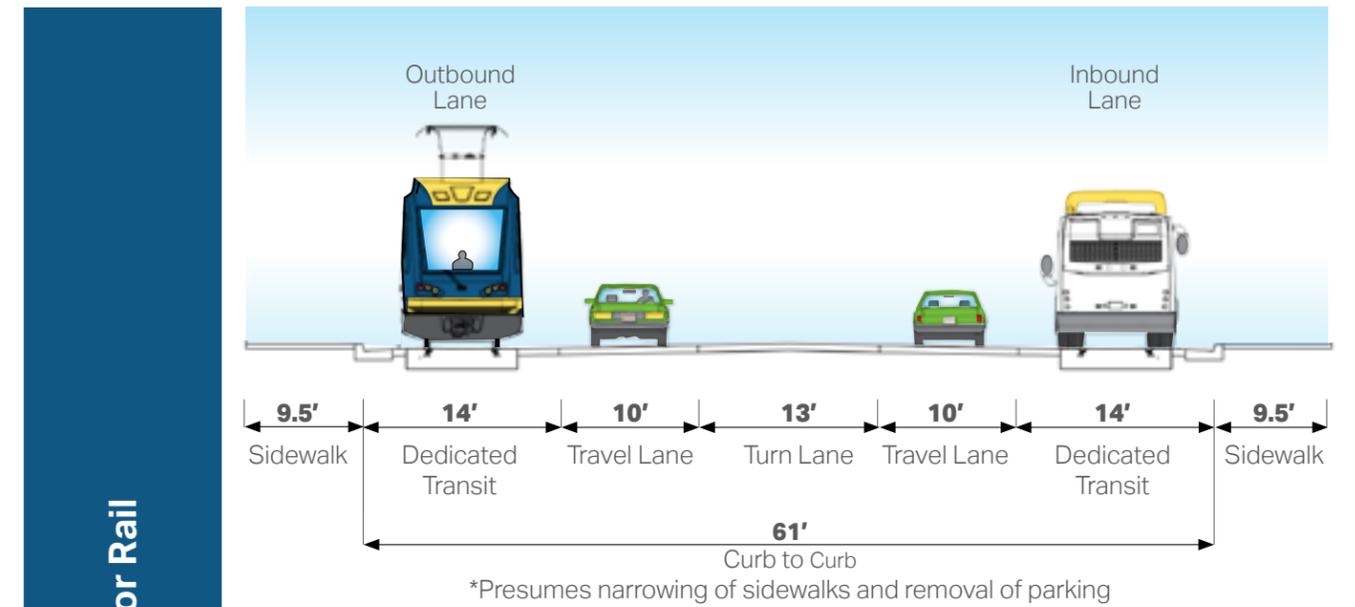
Existing Condition



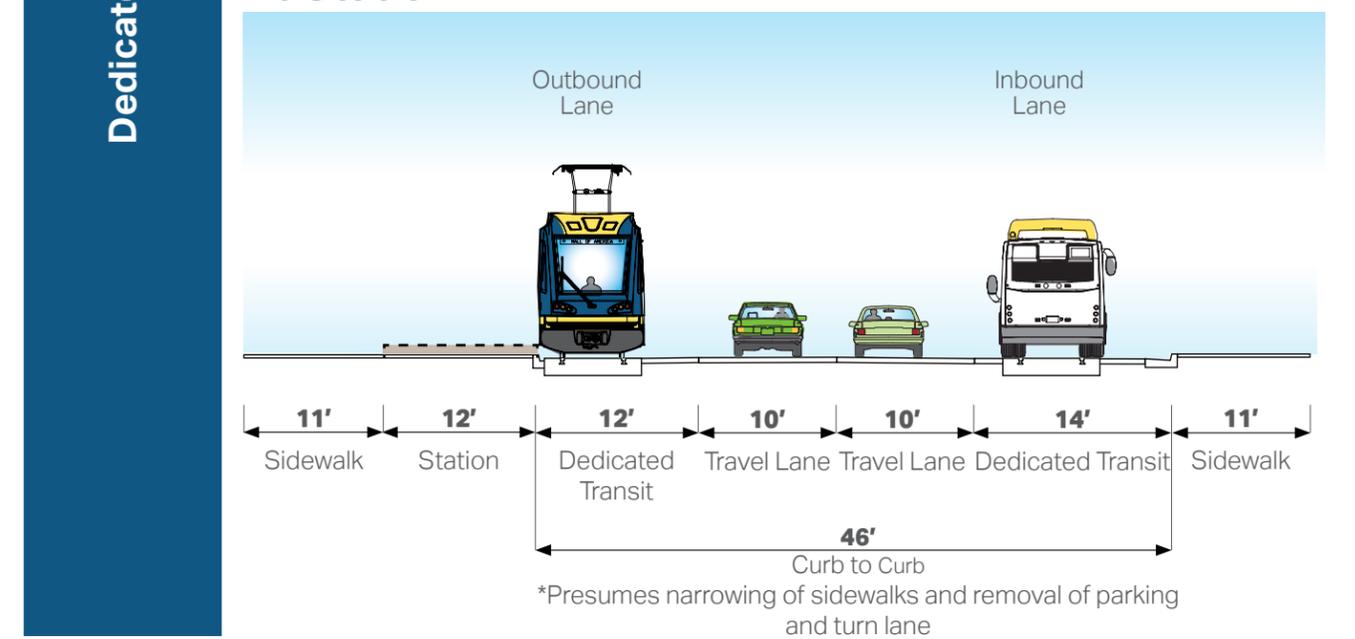
D W. 7th St (Goodhue – I-35E)

Concept | Side Running

Between Stations

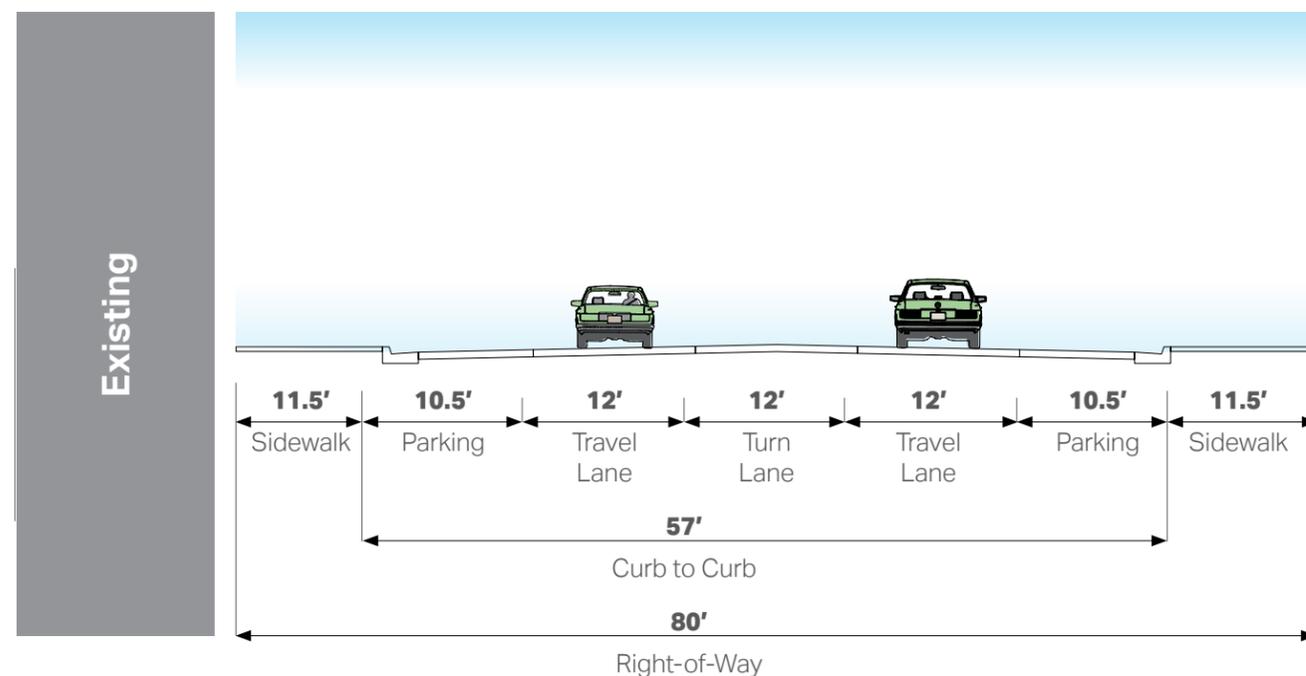
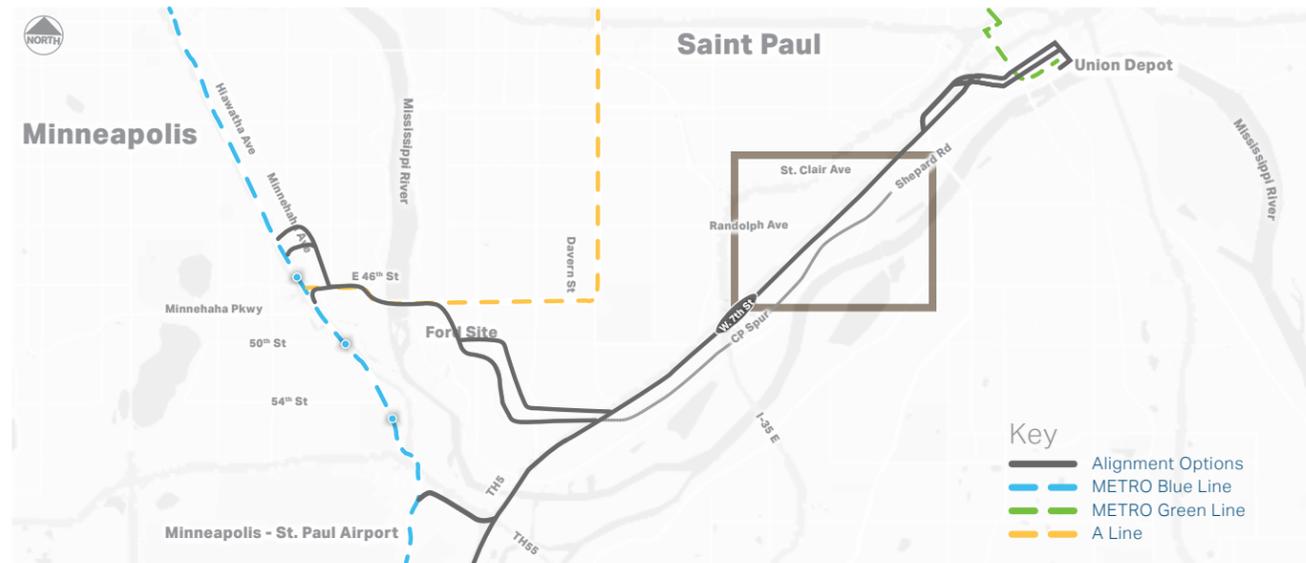


At Station



D W. 7th St (Goodhue - I-35E)

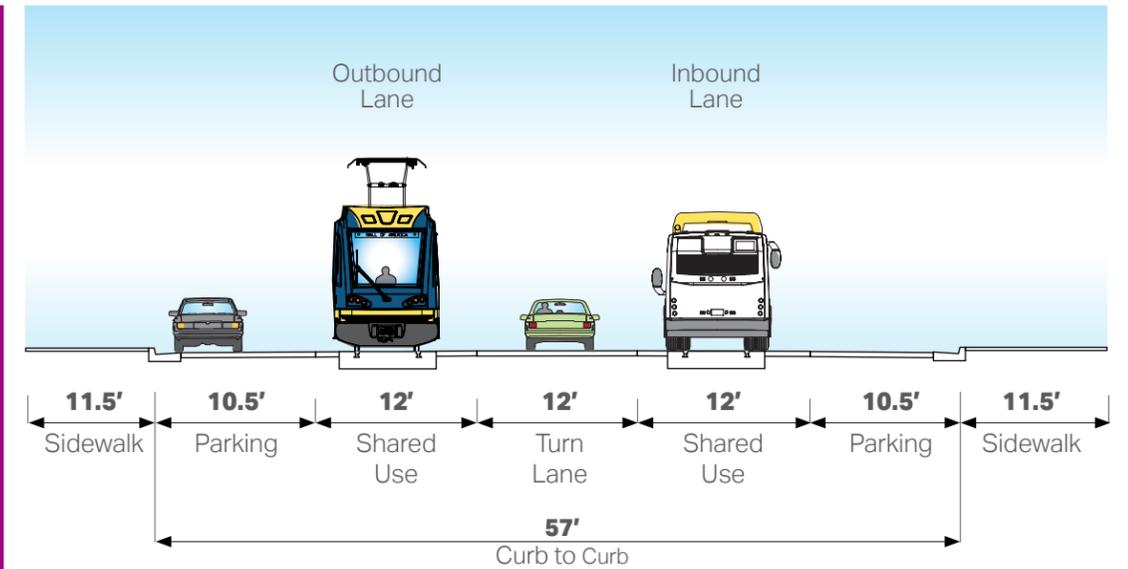
Existing Condition



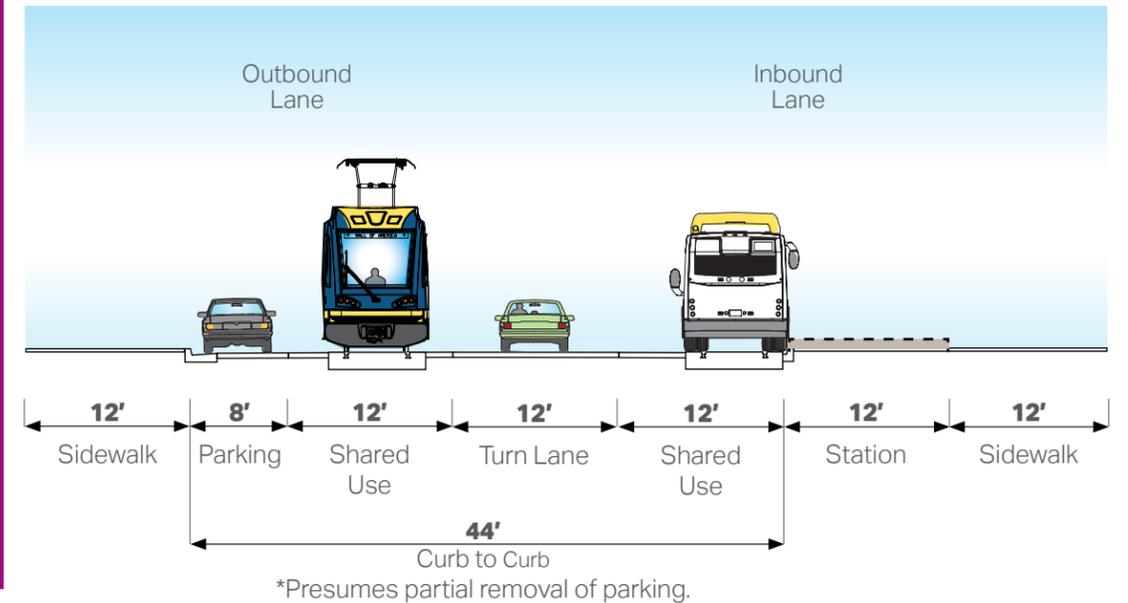
D W. 7th St (Goodhue - I-35E)

Concept | Side Running

Between Stations



At Station

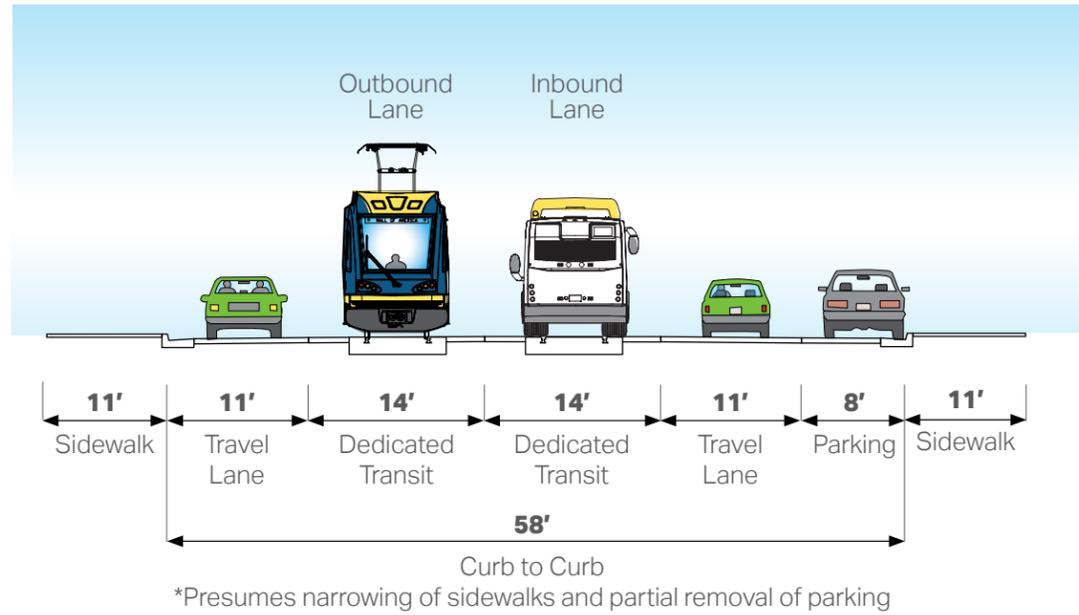


Shared Use Bus or Rail

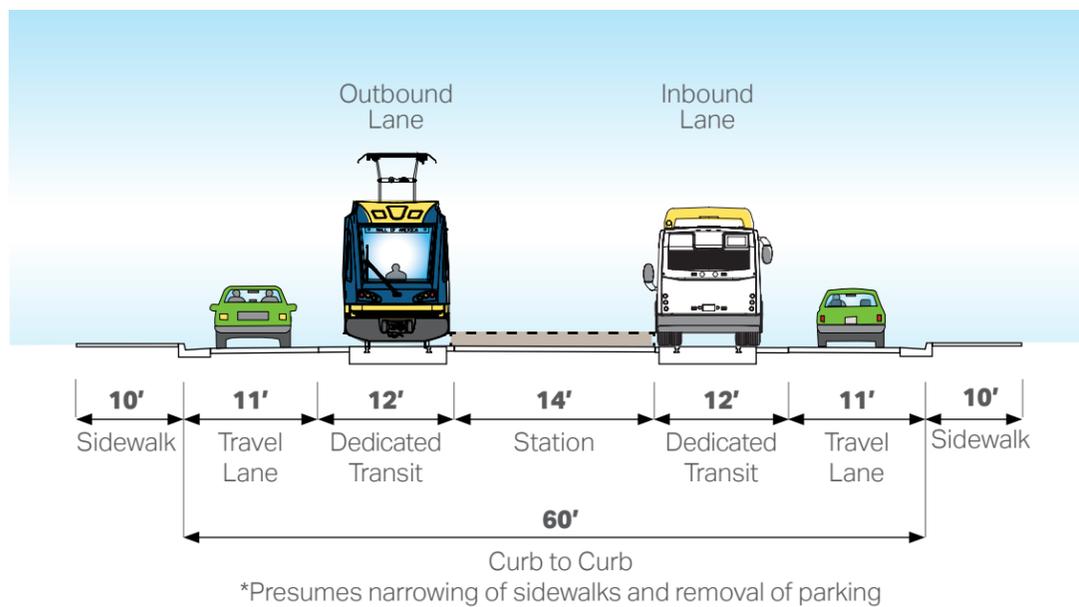
D W. 7th St. (Goodhue – I-35E)

Concept | Center-Running

Between Stations



At Station

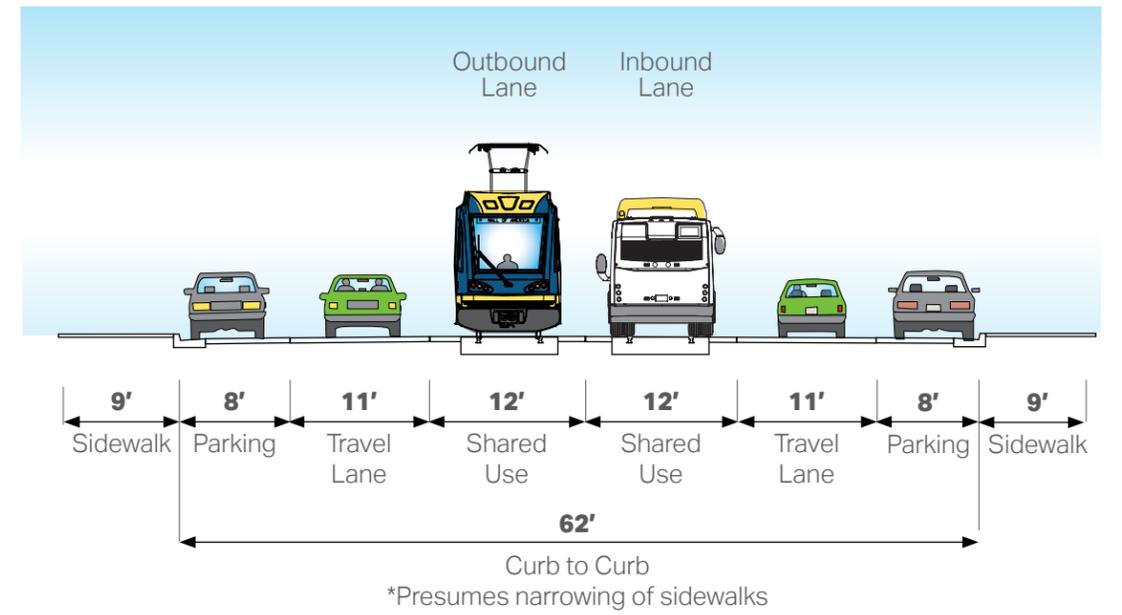


Dedicated Bus or Rail

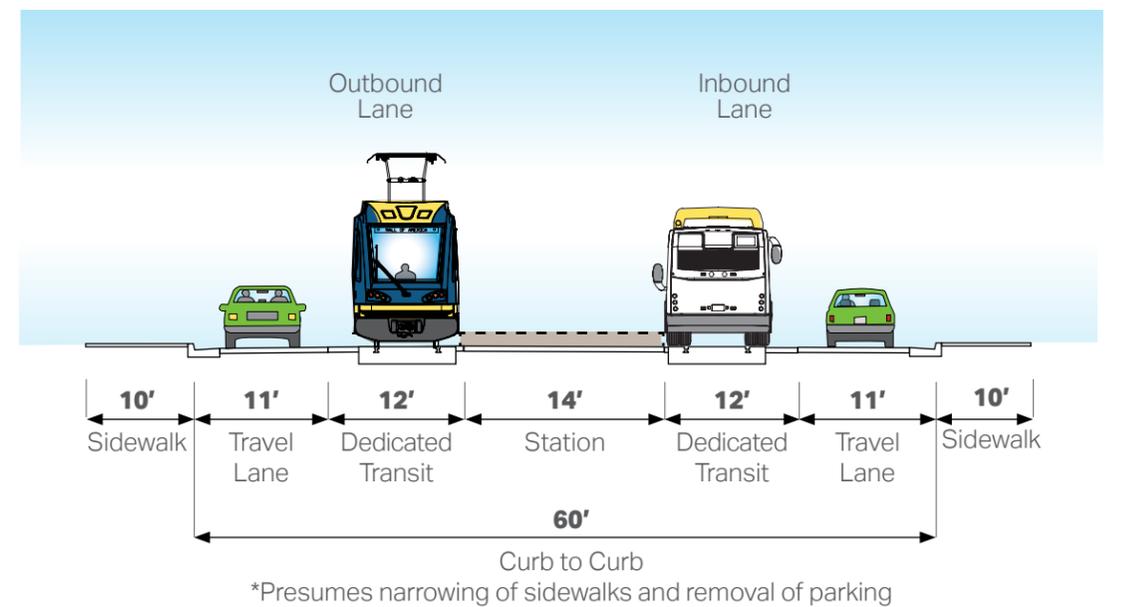
D W. 7th St. (Goodhue – I-35E)

Concept | Center-Running

Between Stations



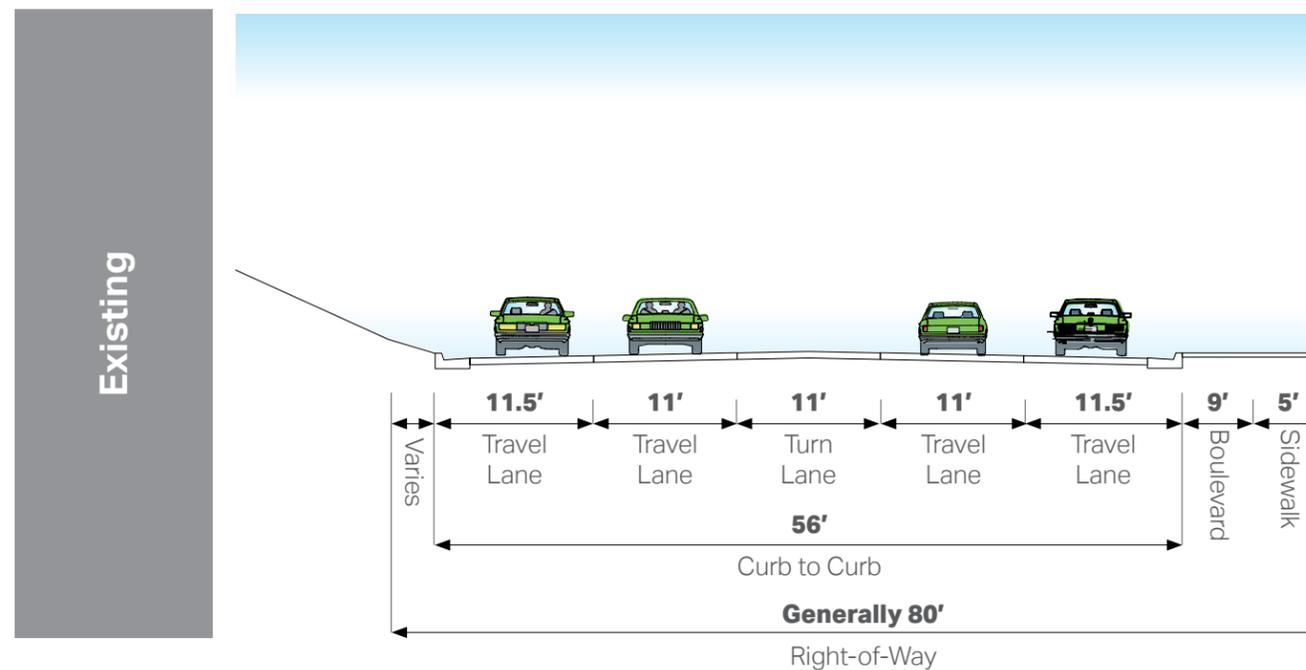
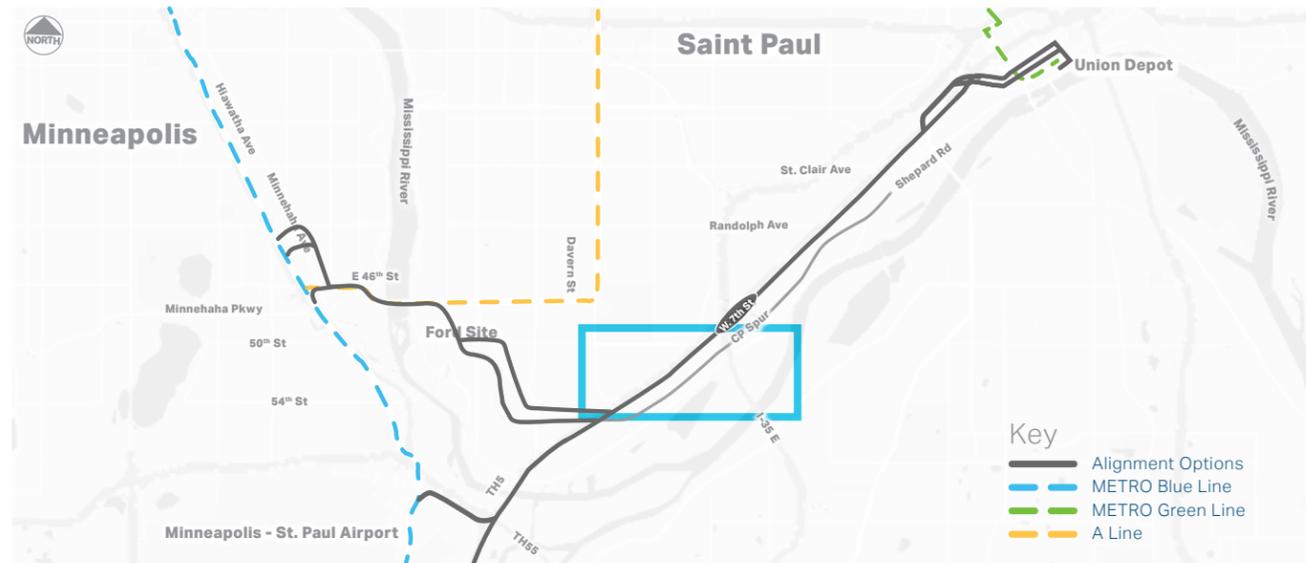
At Station



Shared Use Bus or Rail

E W. 7th (Montreal – St. Paul Ave)

Existing Condition

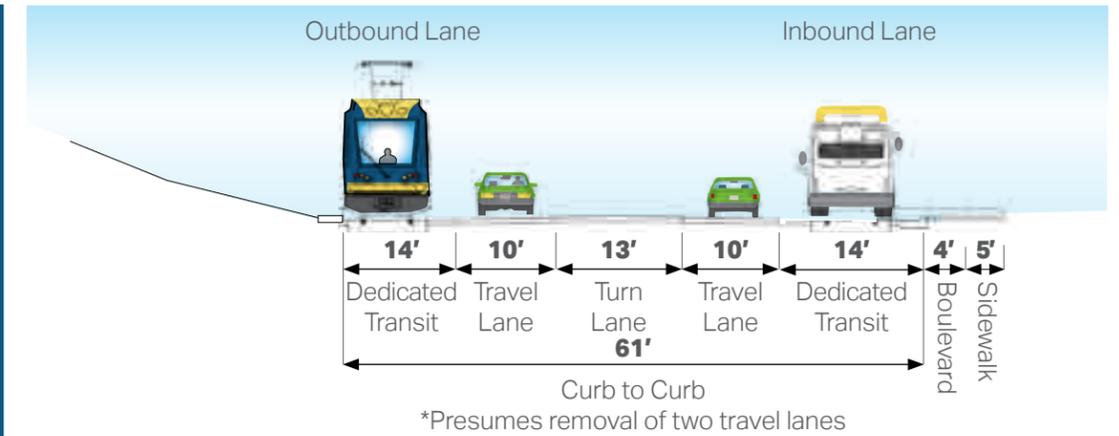


E W. 7th St. (Montreal – St. Paul Ave)

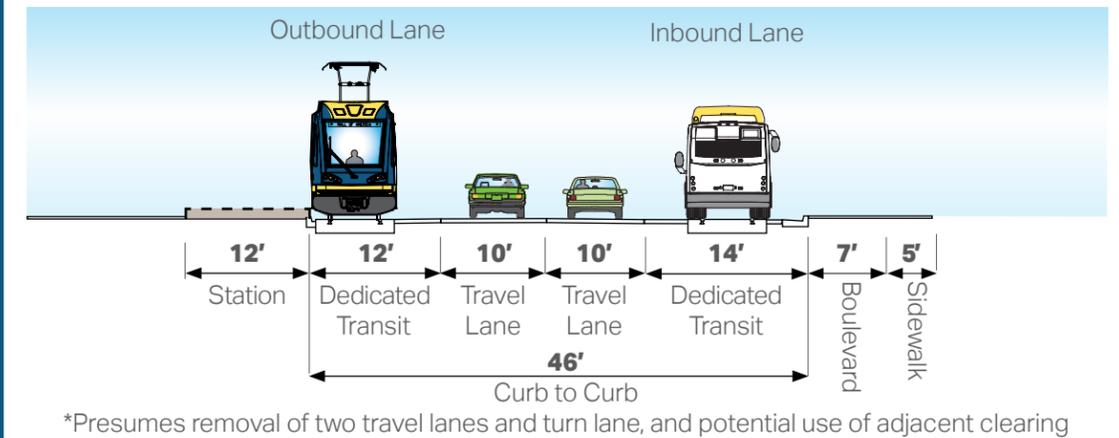
Concept | Side Running

Dedicated Bus or Rail

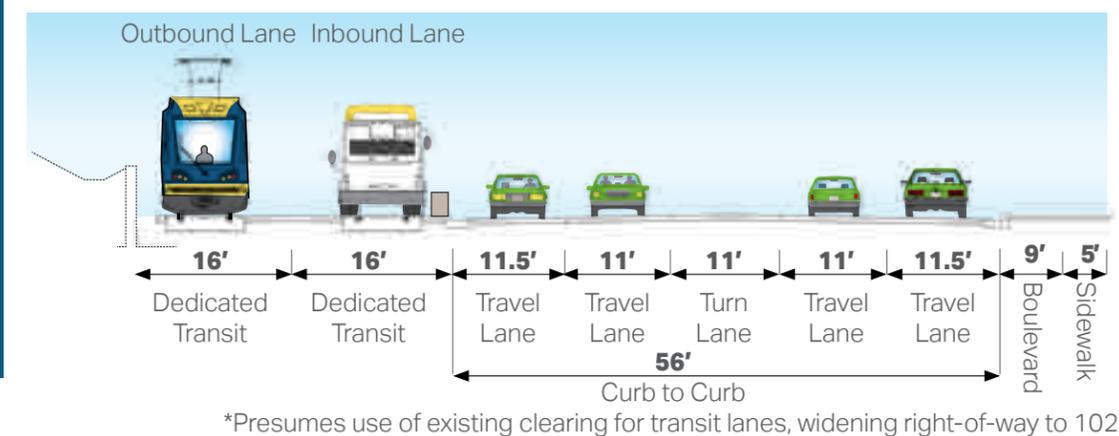
In-Street Between Stations



In-Street At Station

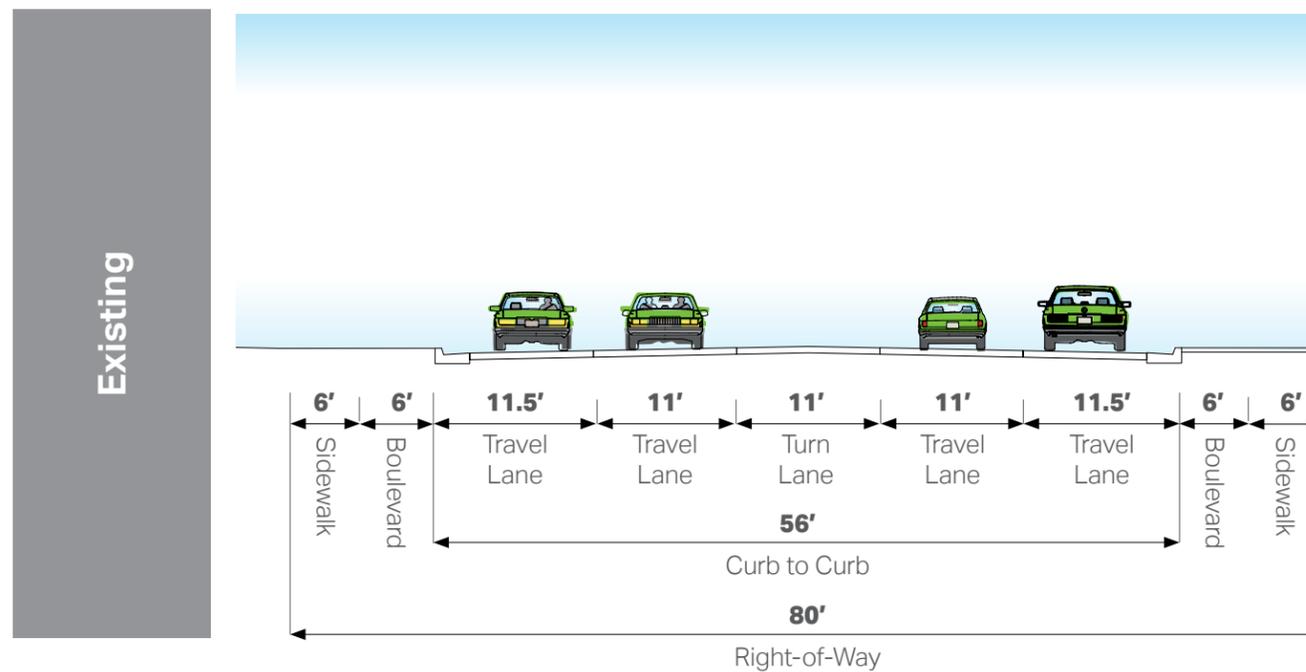
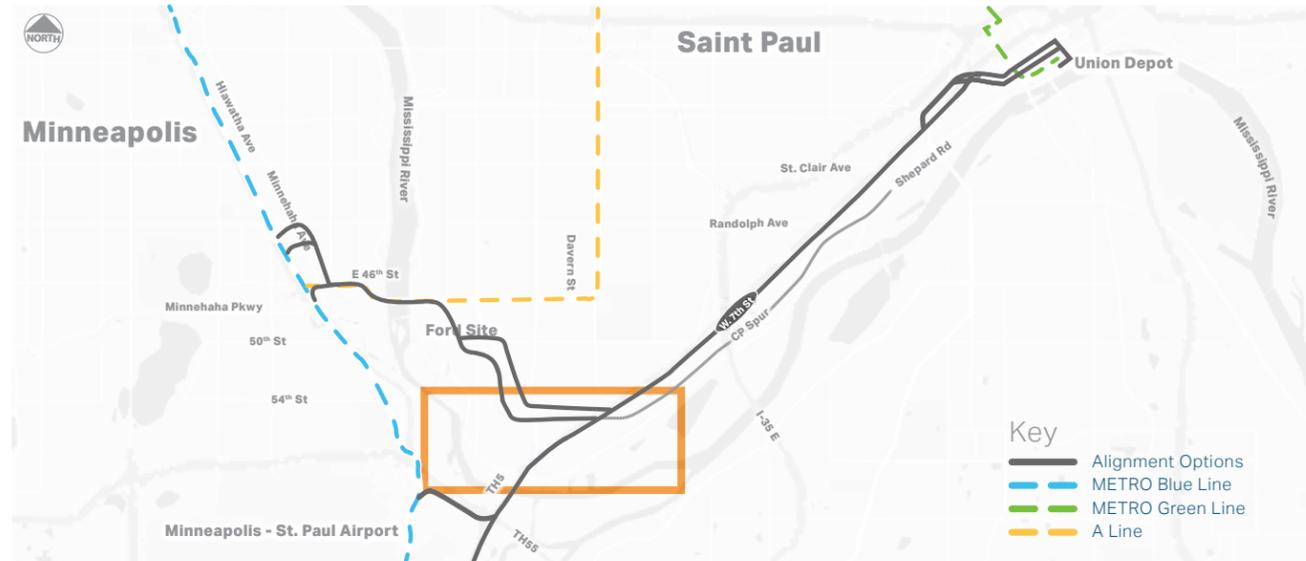


Off-Street Between Stations



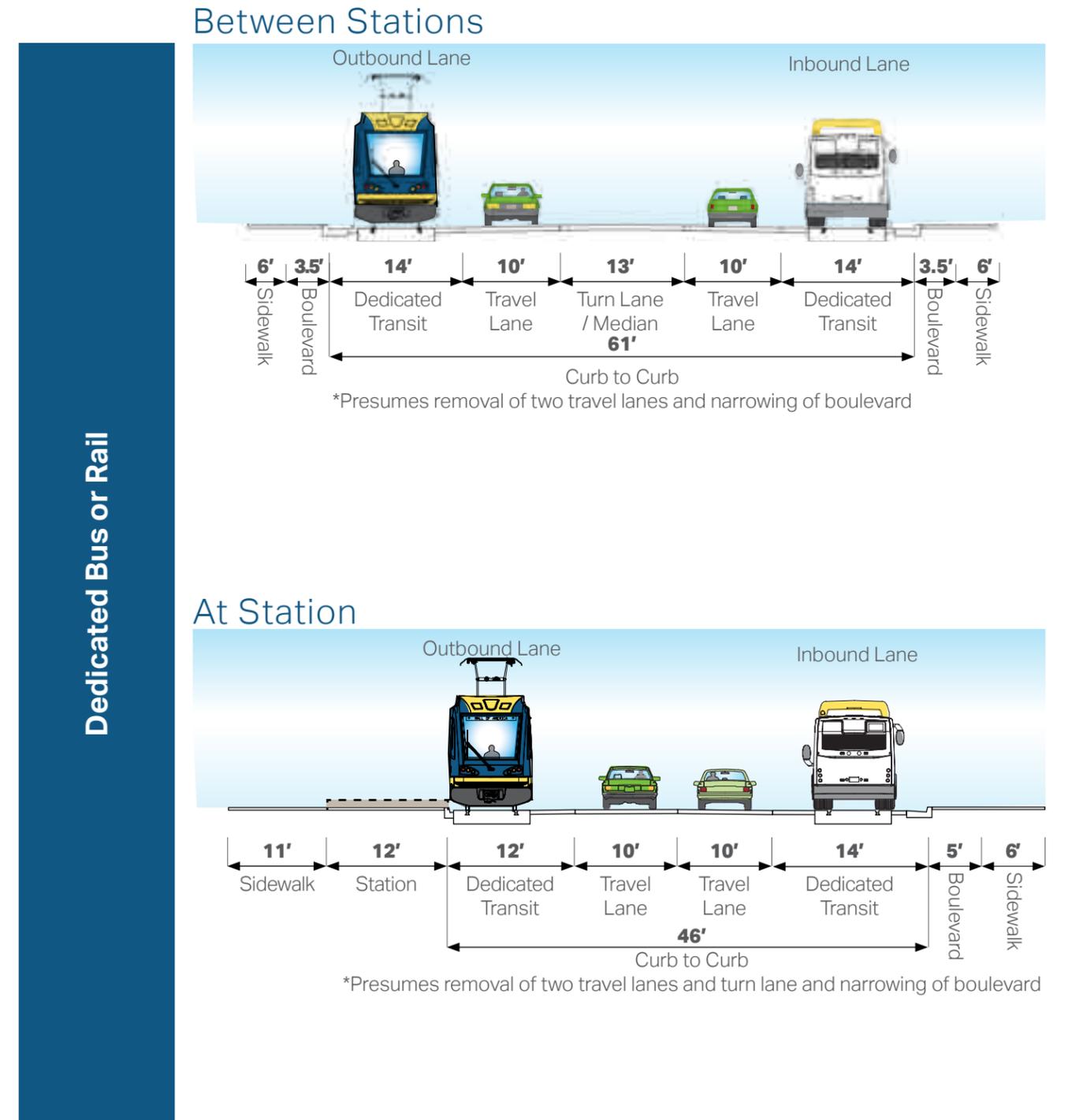
F W. 7th St. (St. Paul Ave – River)

Existing Condition



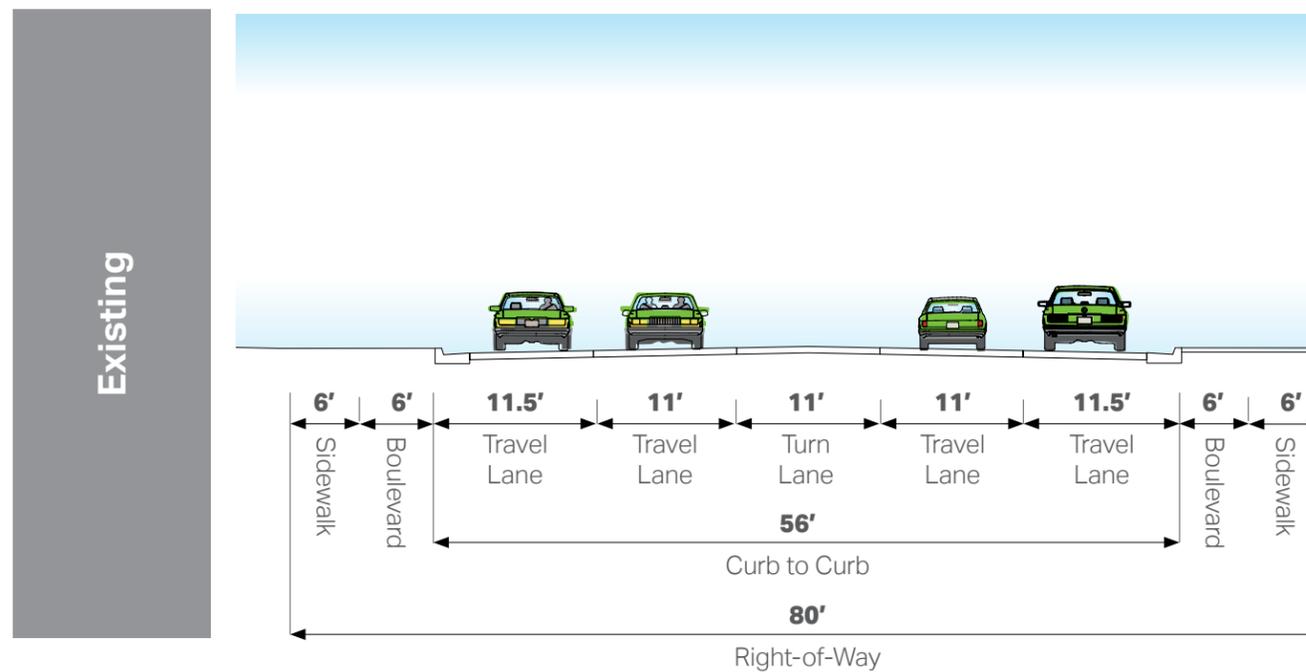
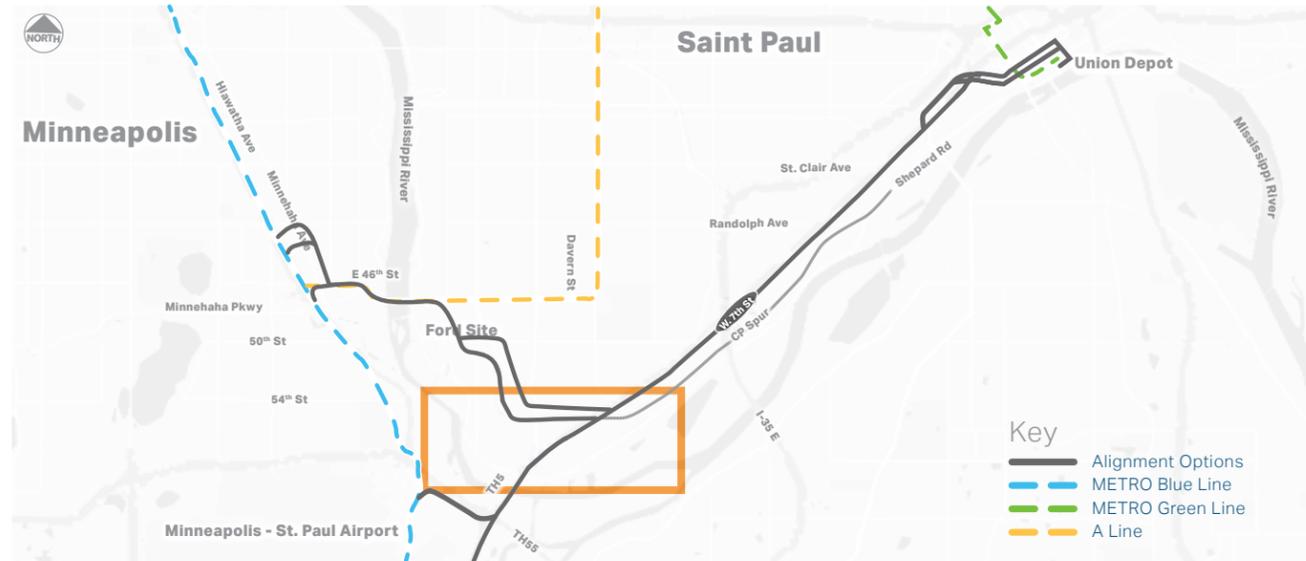
F W. 7th St. (St. Paul Ave - River)

Concept | Side Running



F W. 7th St. (St. Paul Ave – River)

Existing Condition

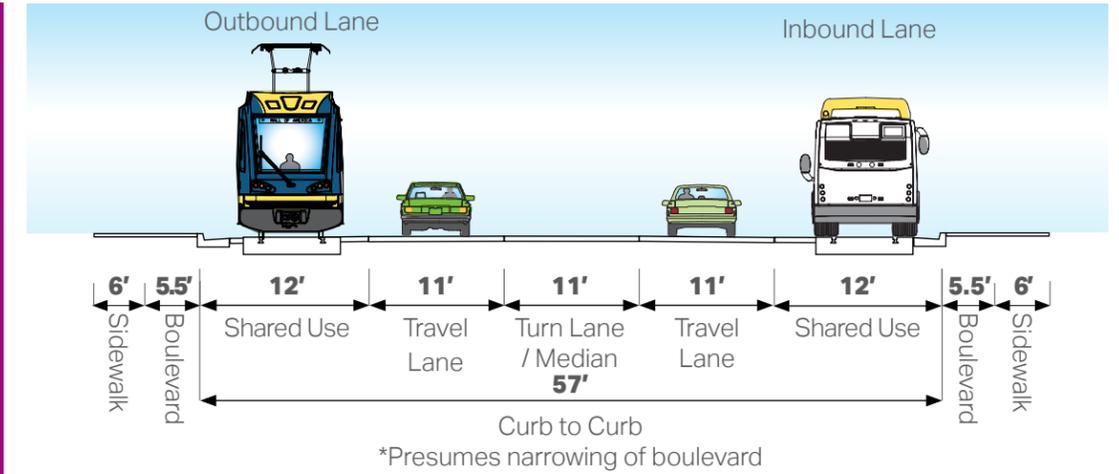


F W. 7th St. (St. Paul Ave - River)

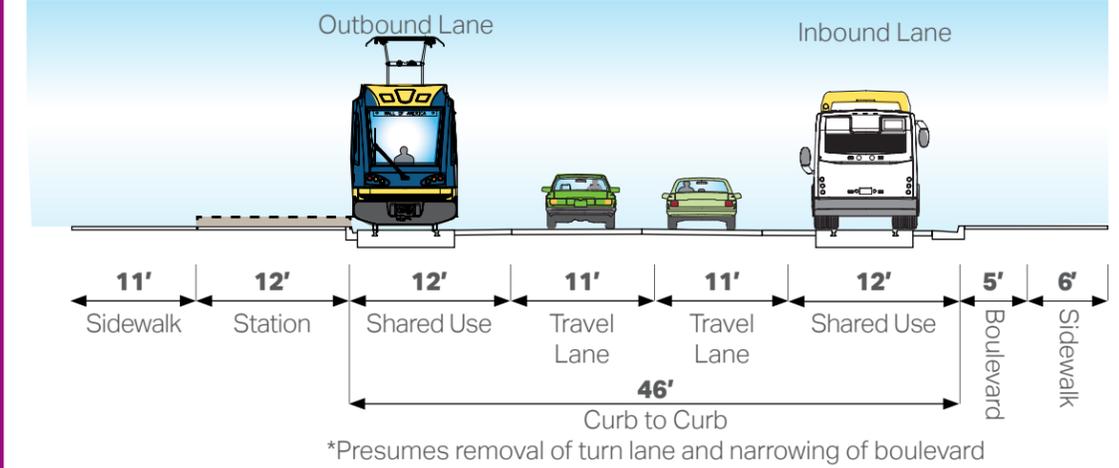
Concept | Side Running

Shared Use Bus or Rail

Between Stations



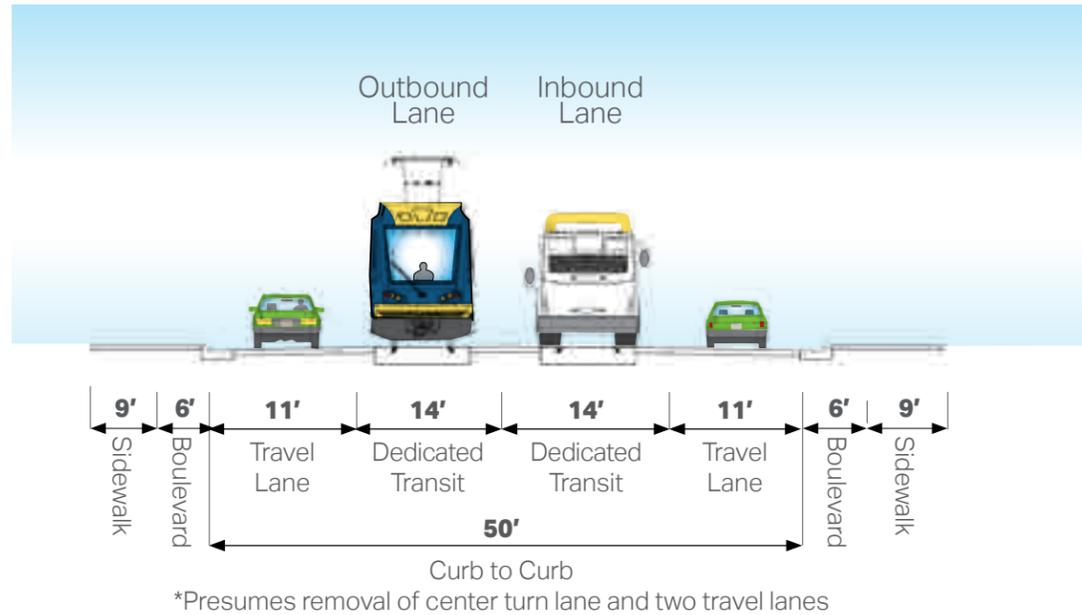
At Station



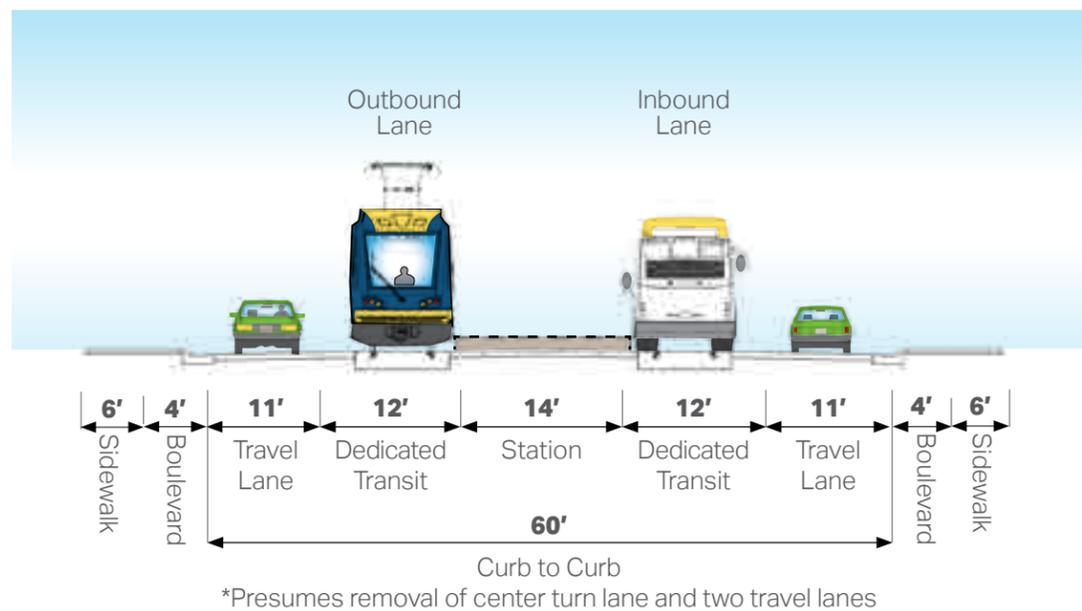
F W. 7th St. (St. Paul Ave – River)

Concept | Center-Running

Between Stations



At Station

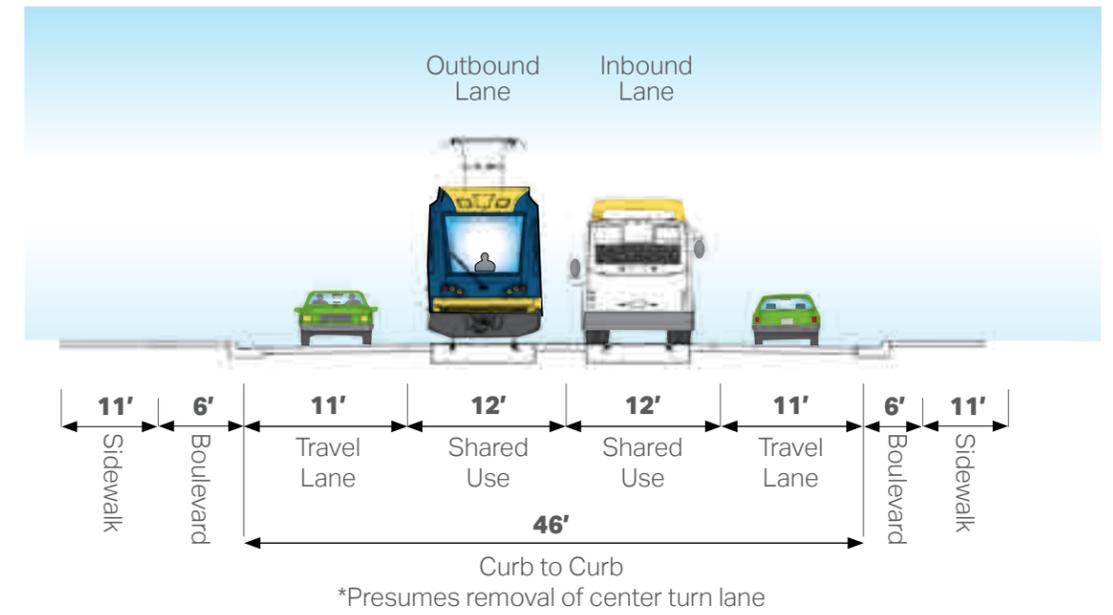


Dedicated Bus or Rail

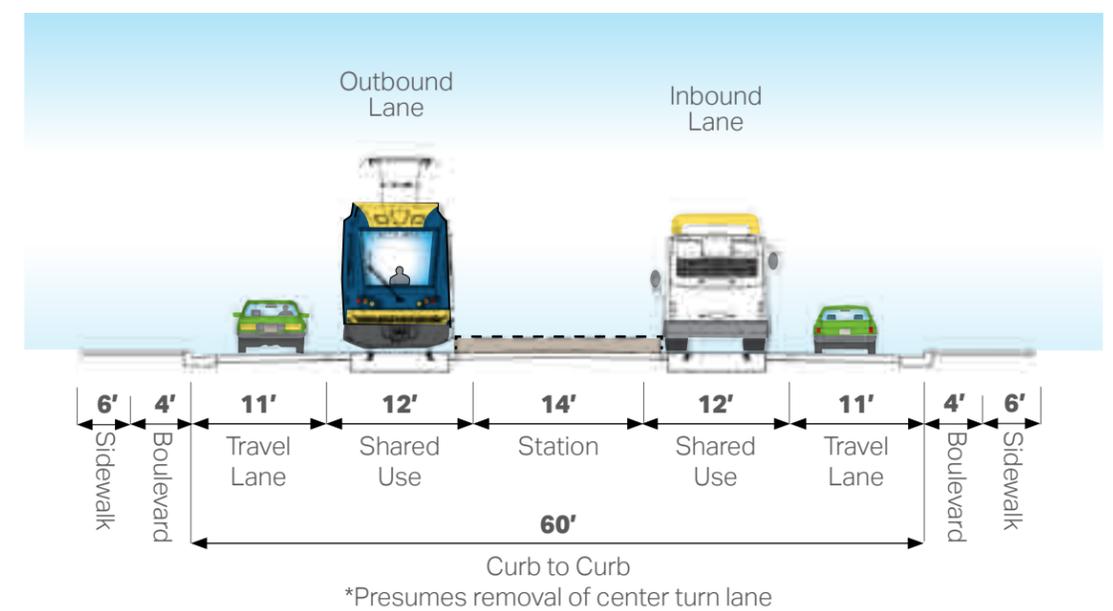
F W. 7th St. (St. Paul Ave – River)

Concept | Center-Running

Between Stations



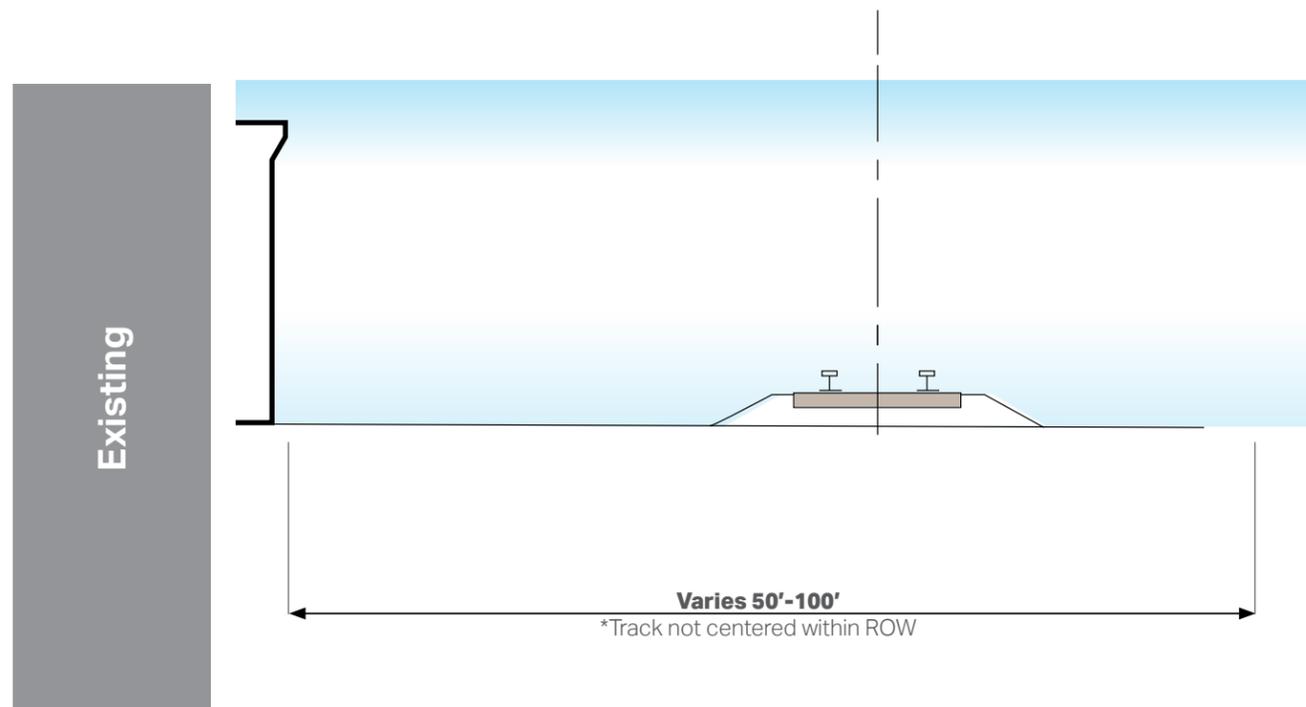
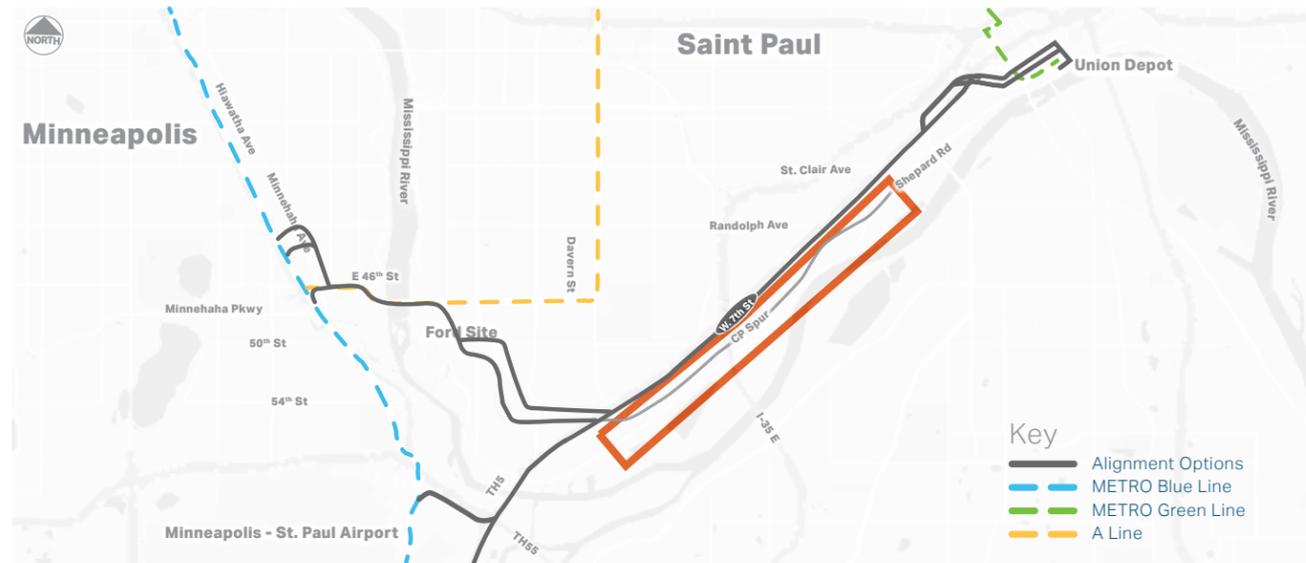
At Station



Shared Use Bus or Rail

G CP Spur (St. Clair – W. 7th St)

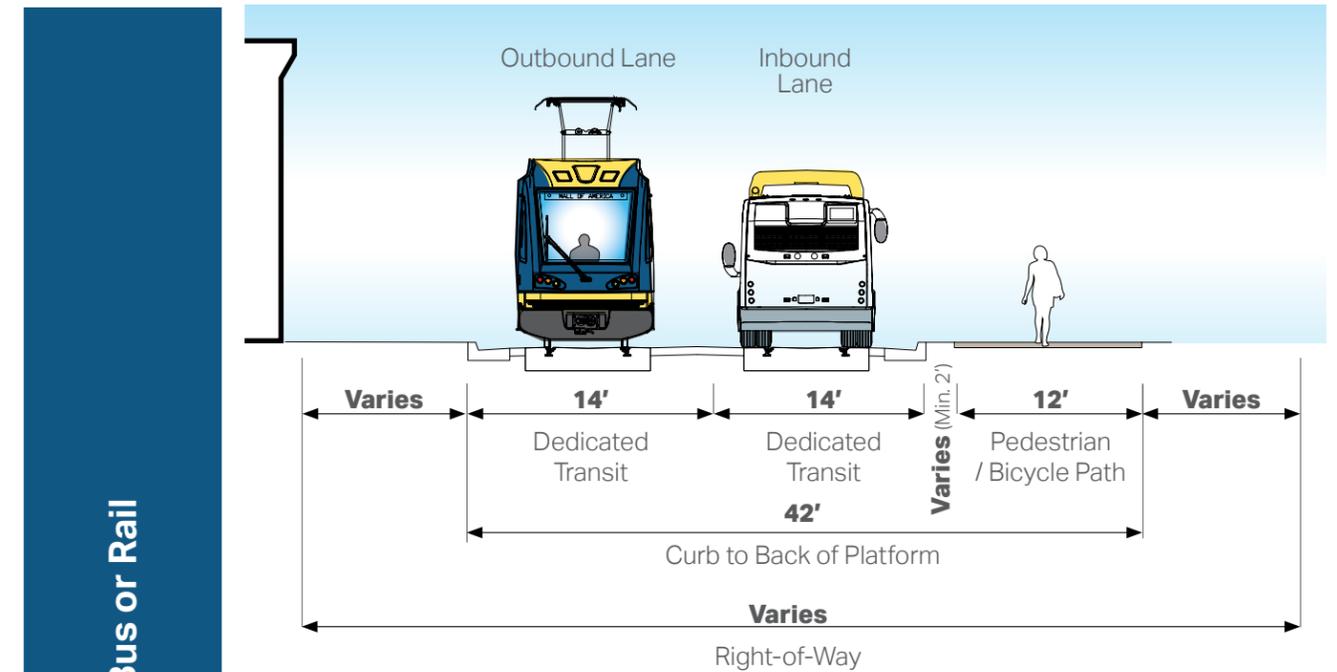
Existing Condition



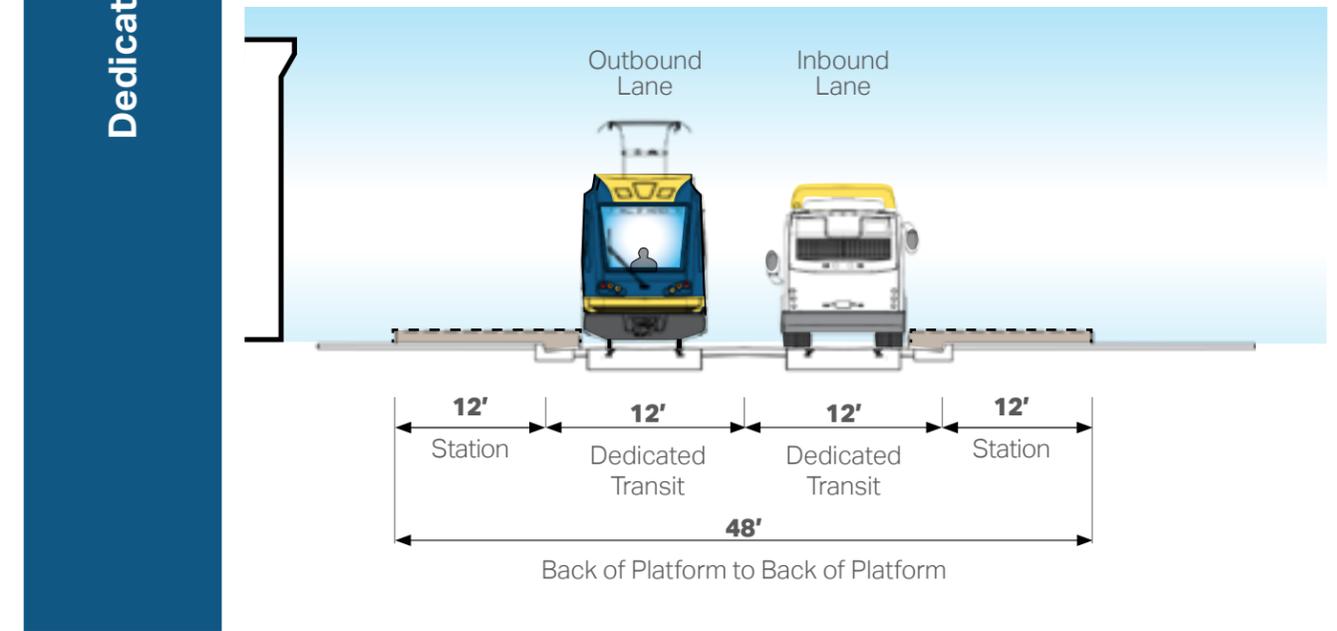
G CP Spur (St. Clair – W. 7th St)

Concept | Side Running

Between Stations with Trail

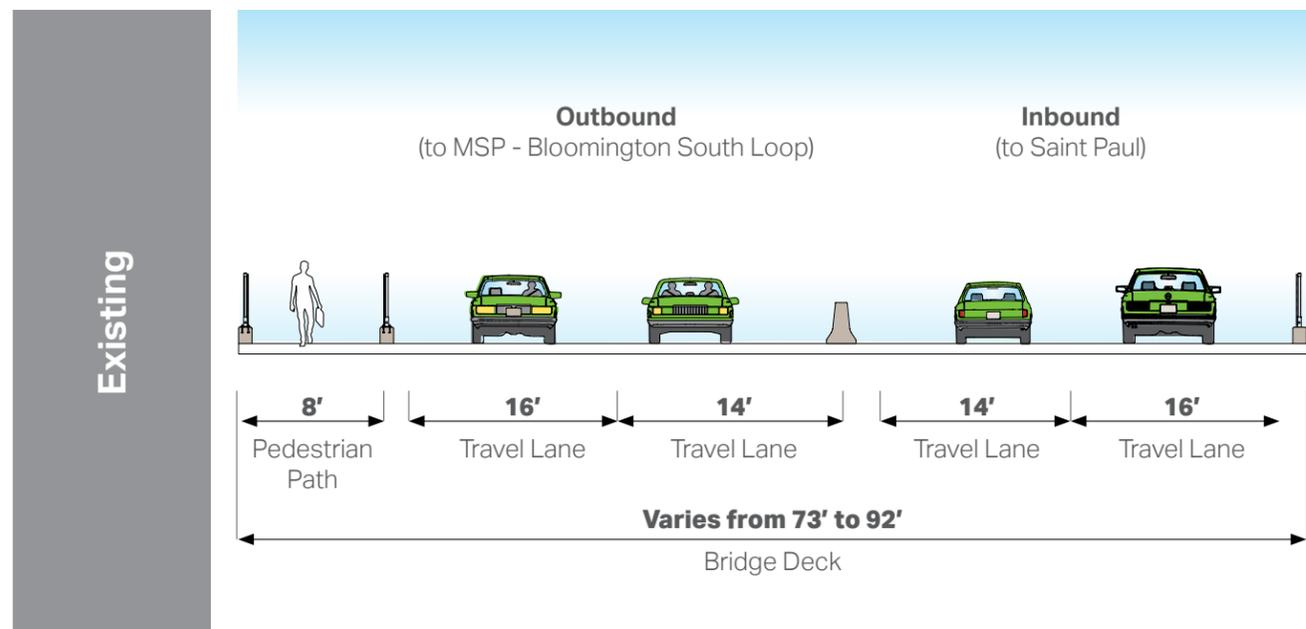
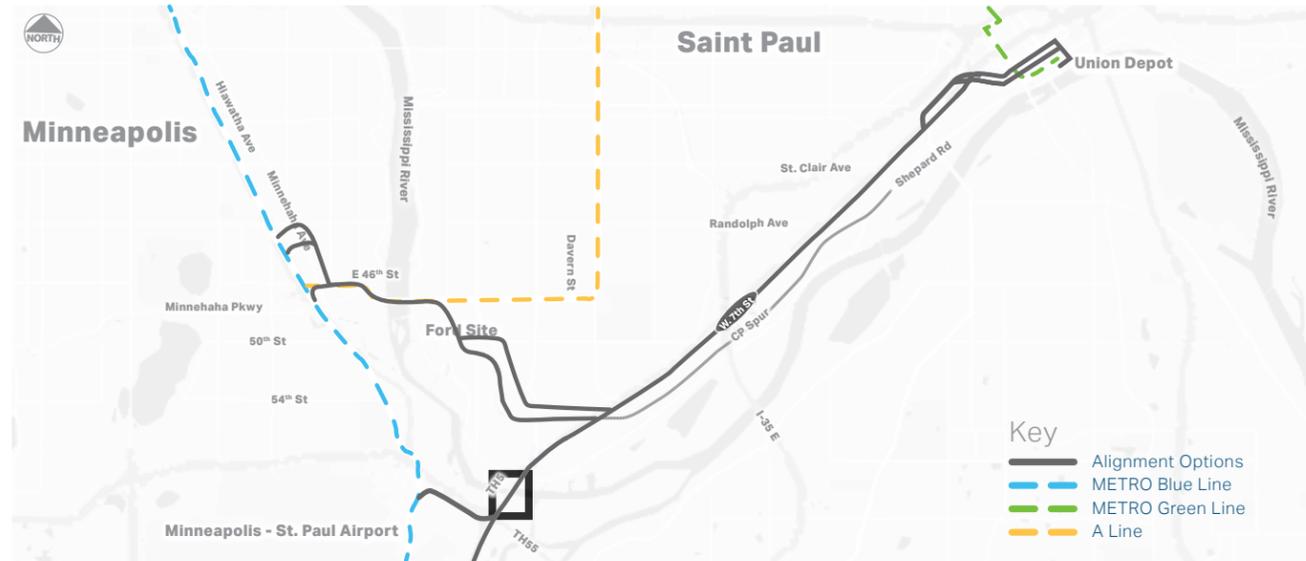


At Station



TH 5 Bridge

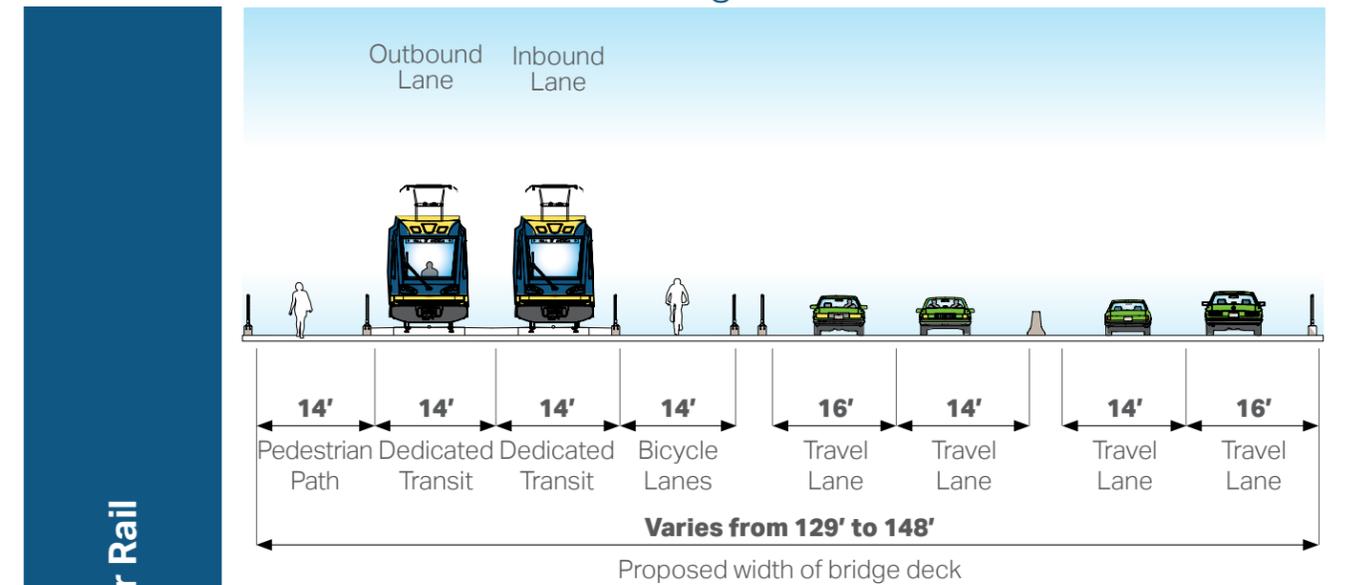
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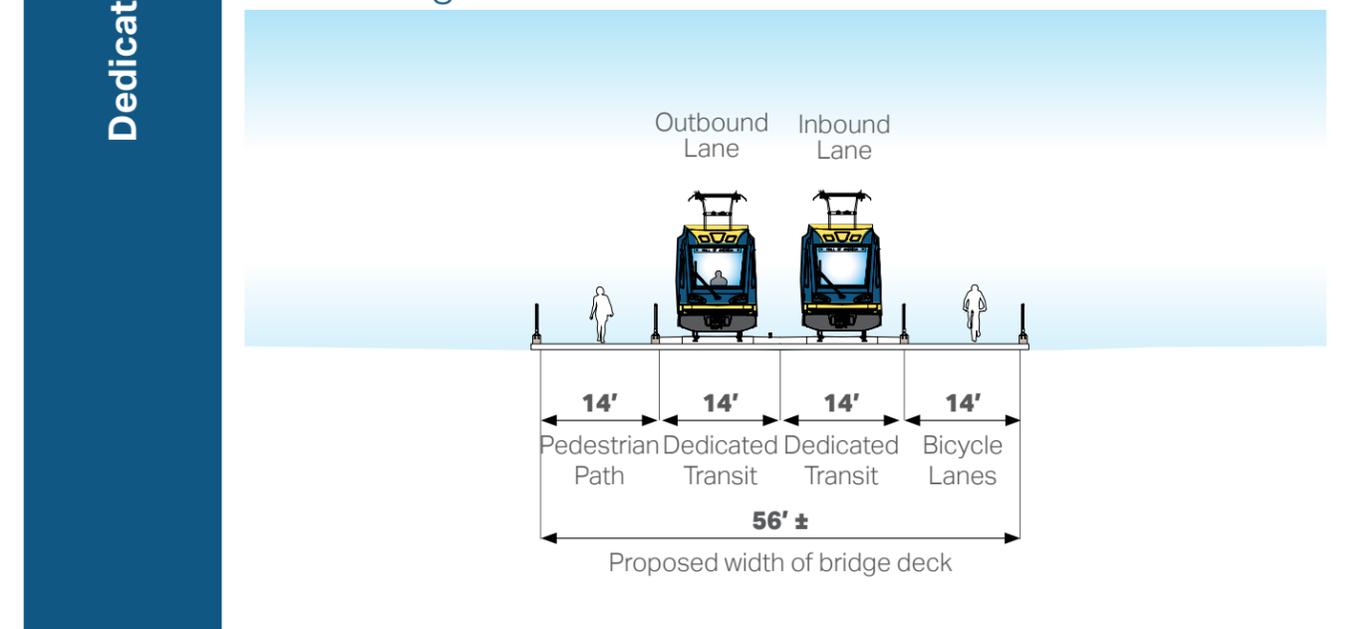
TH 5 Bridge

Concept | Center Running

Reconstruct TH 5 Bridge at Current Location



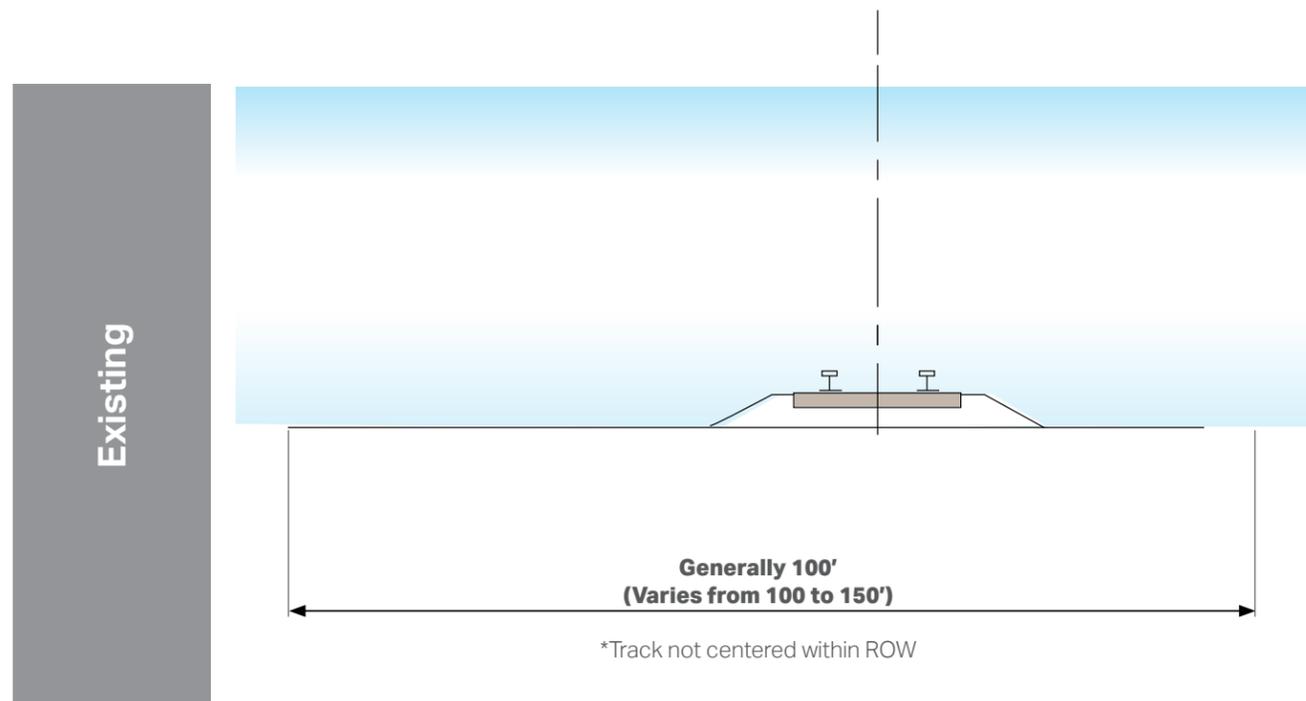
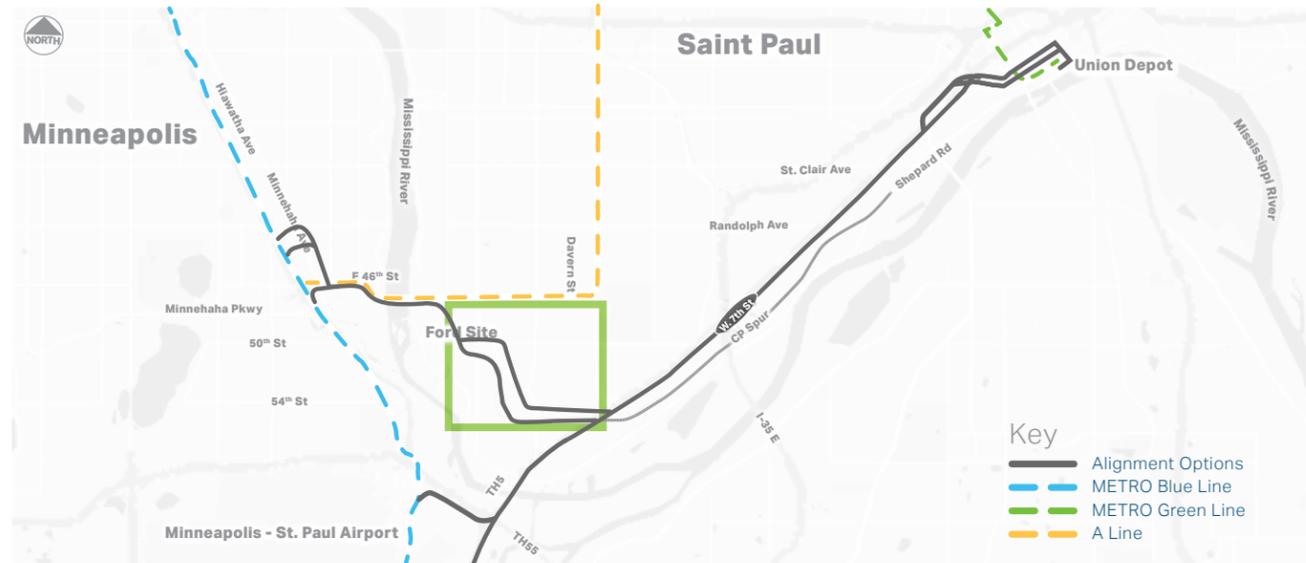
New Bridge near TH 5



Dedicated Bus or Rail

CP Spur to Ford Site (W. 7th - Ford Pkwy)

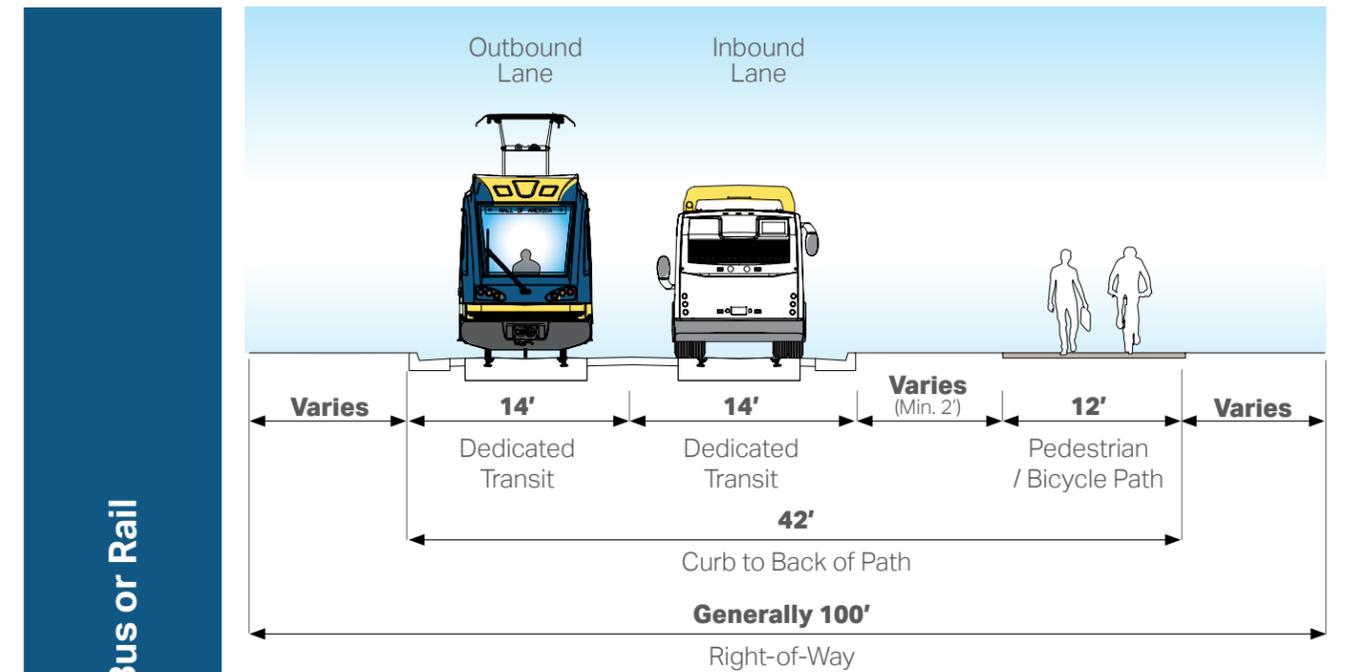
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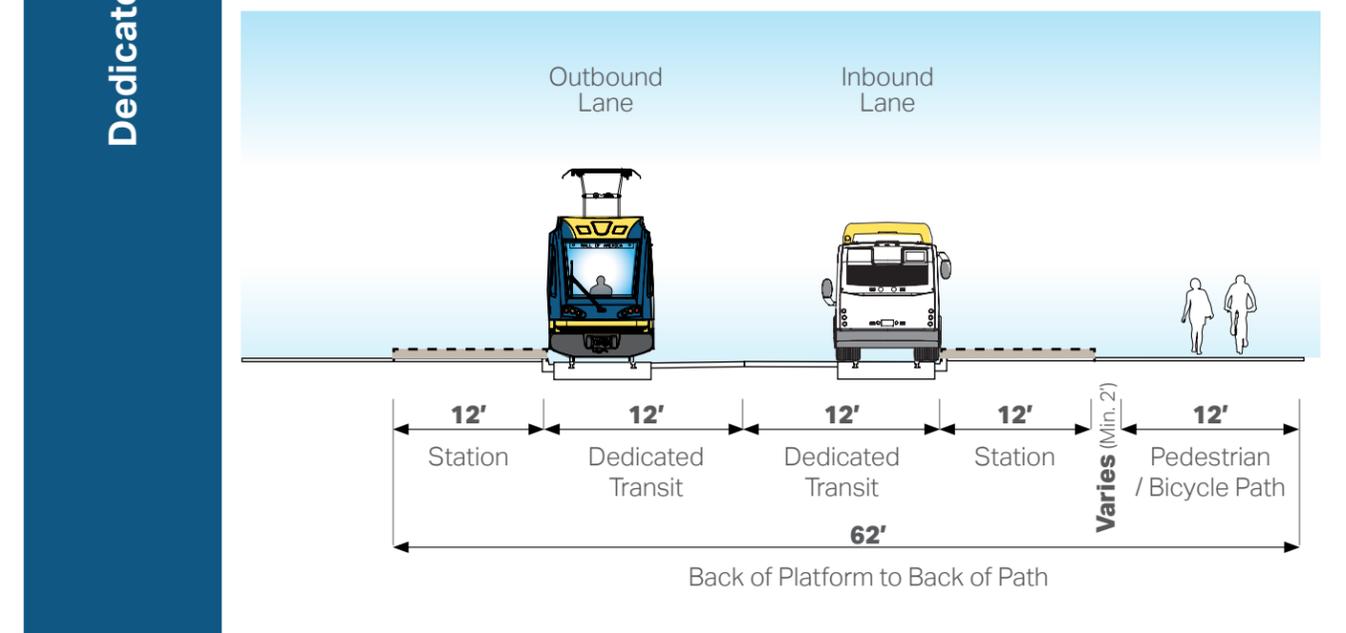
CP Spur to Ford Site (W. 7th - Ford Pkwy)

Concept | Side Running

Between Stations with Trail

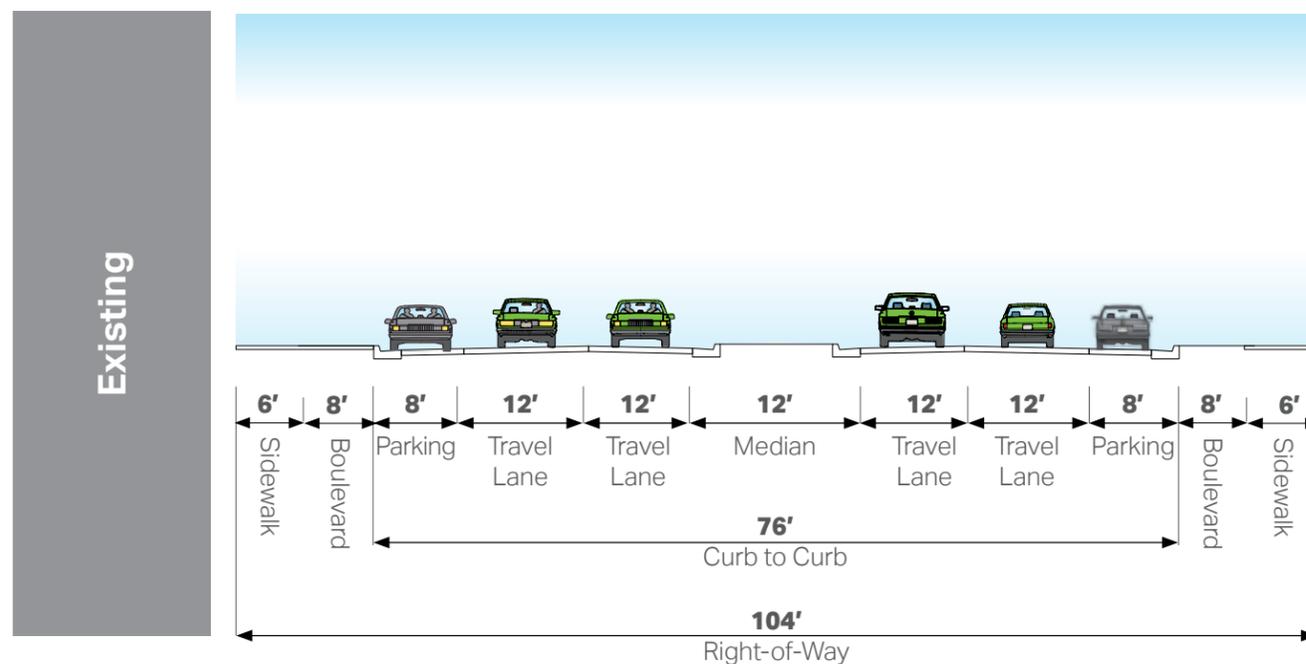
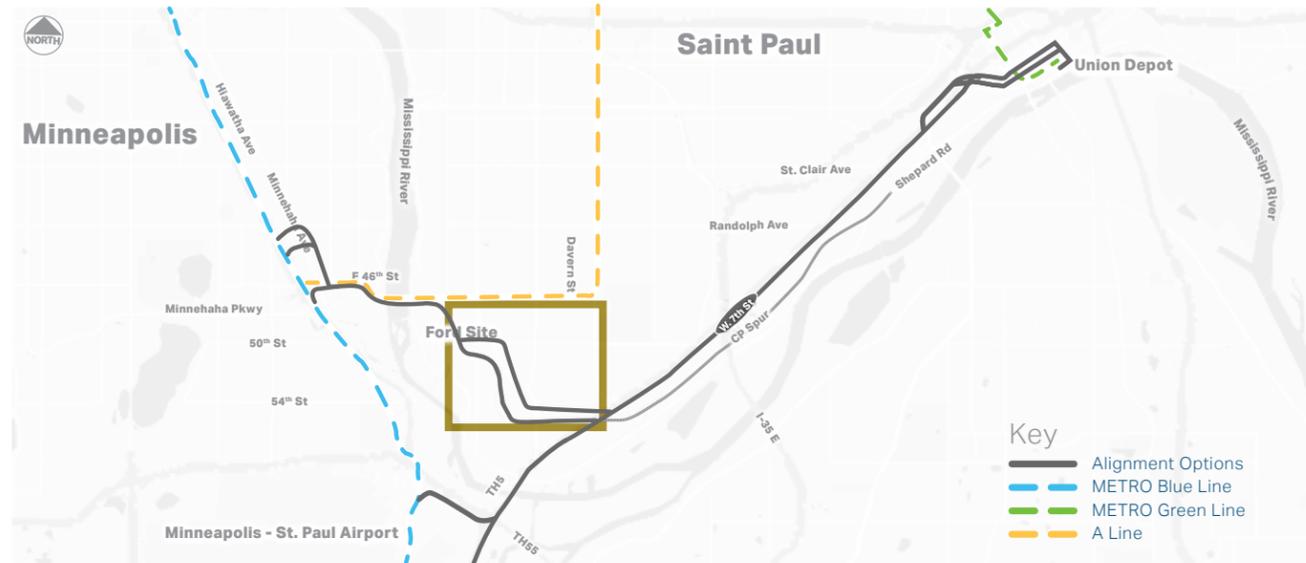


At Station with Trail



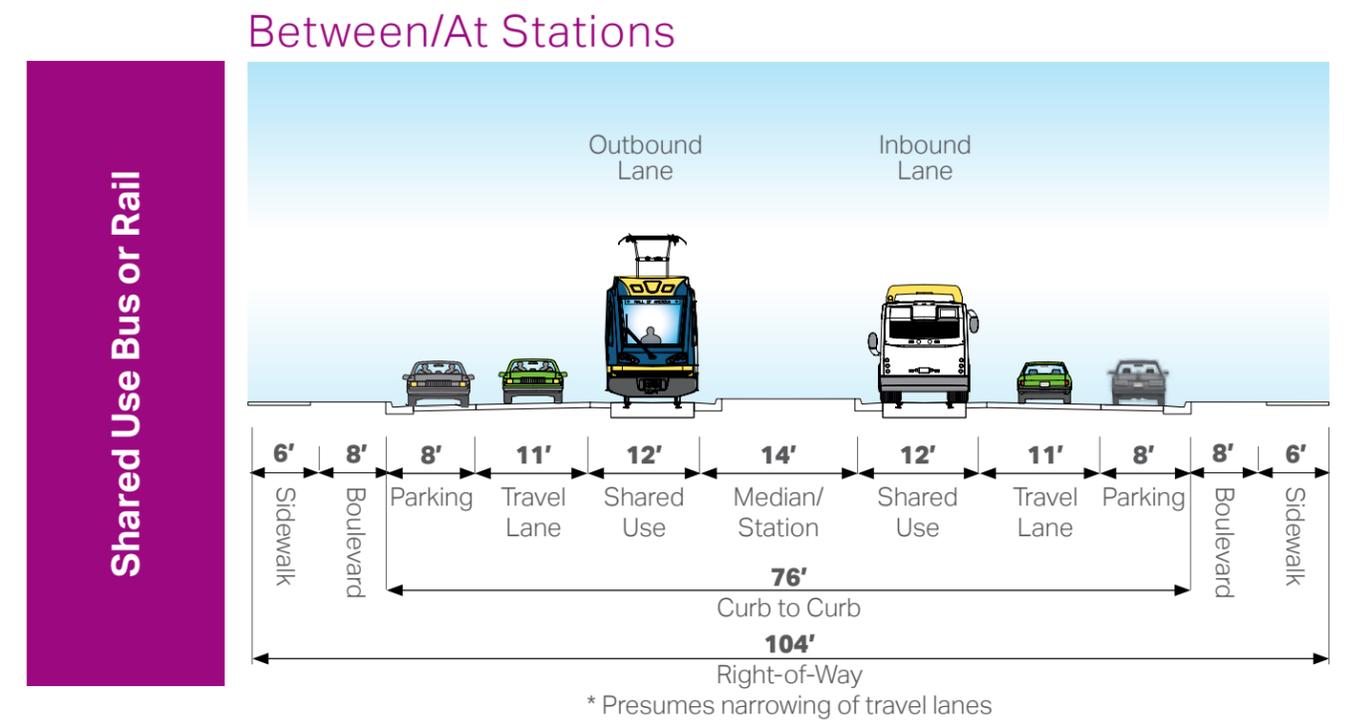
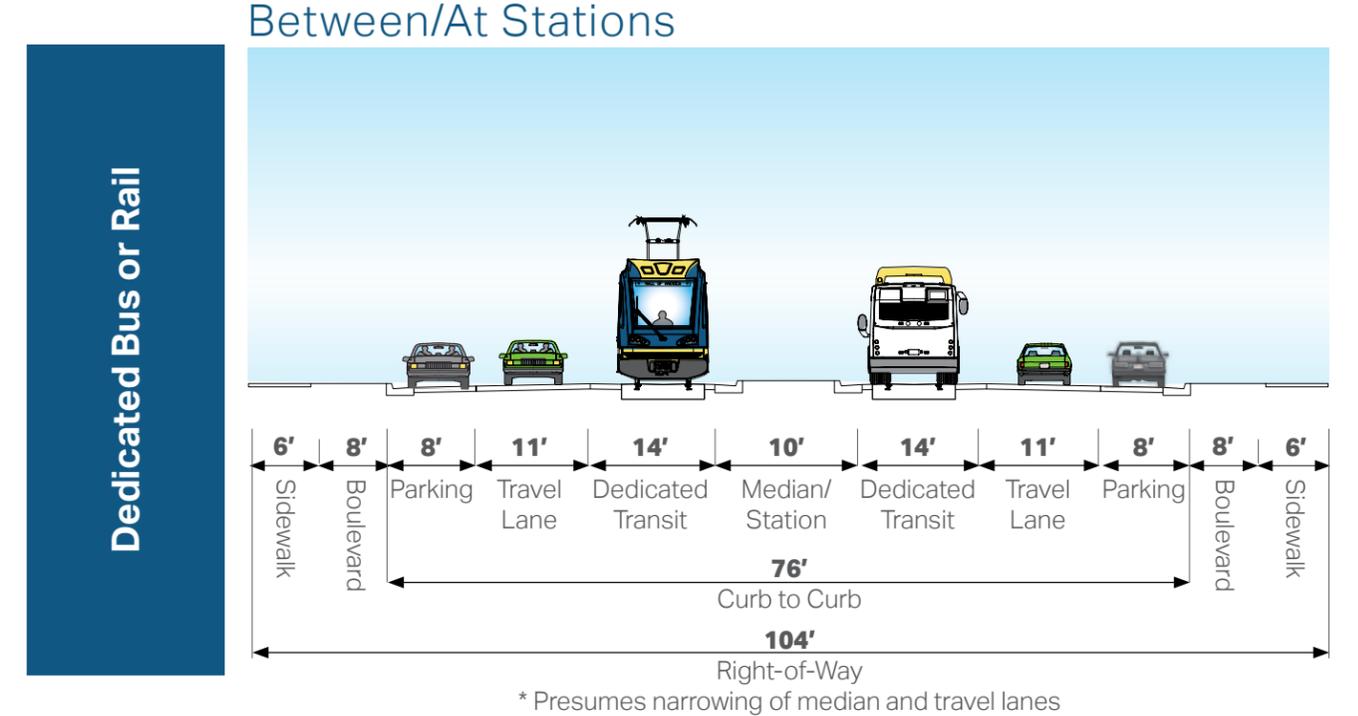
J St Paul Ave

Existing Condition



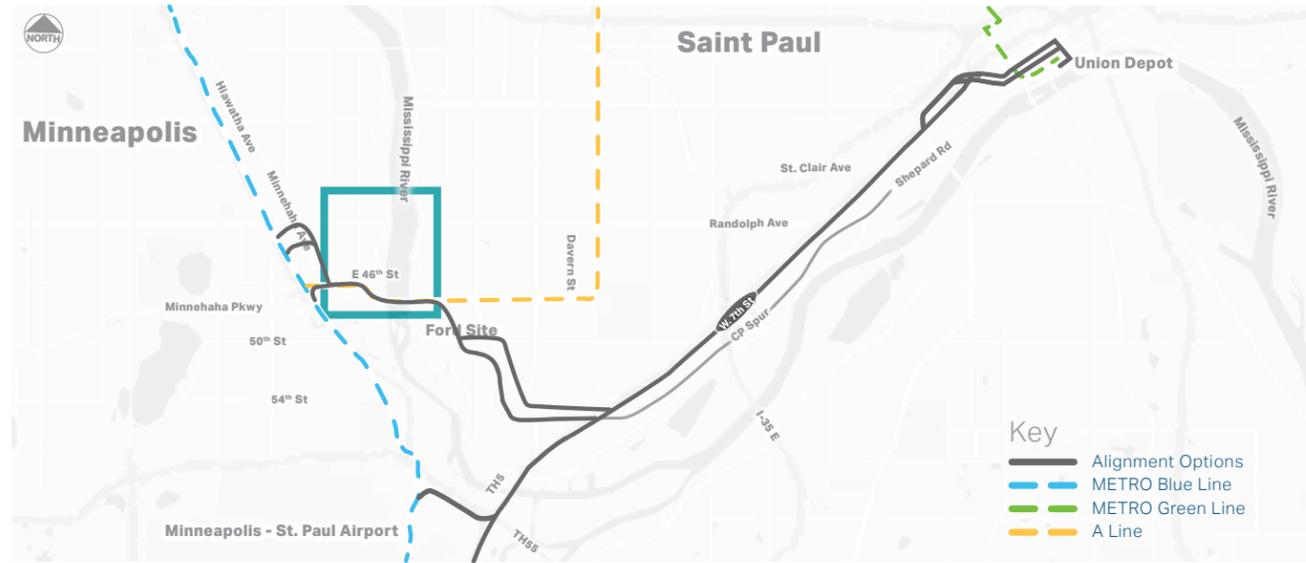
J St Paul Ave

Concept | Center Running



K Ford Pkwy Bridge

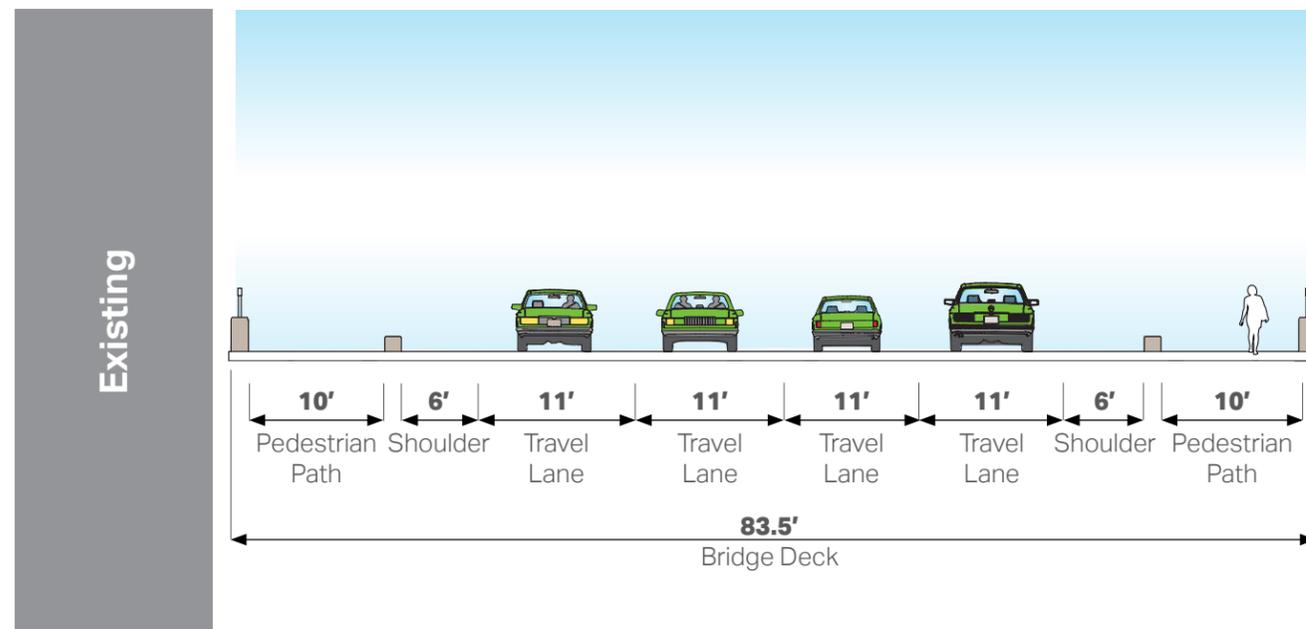
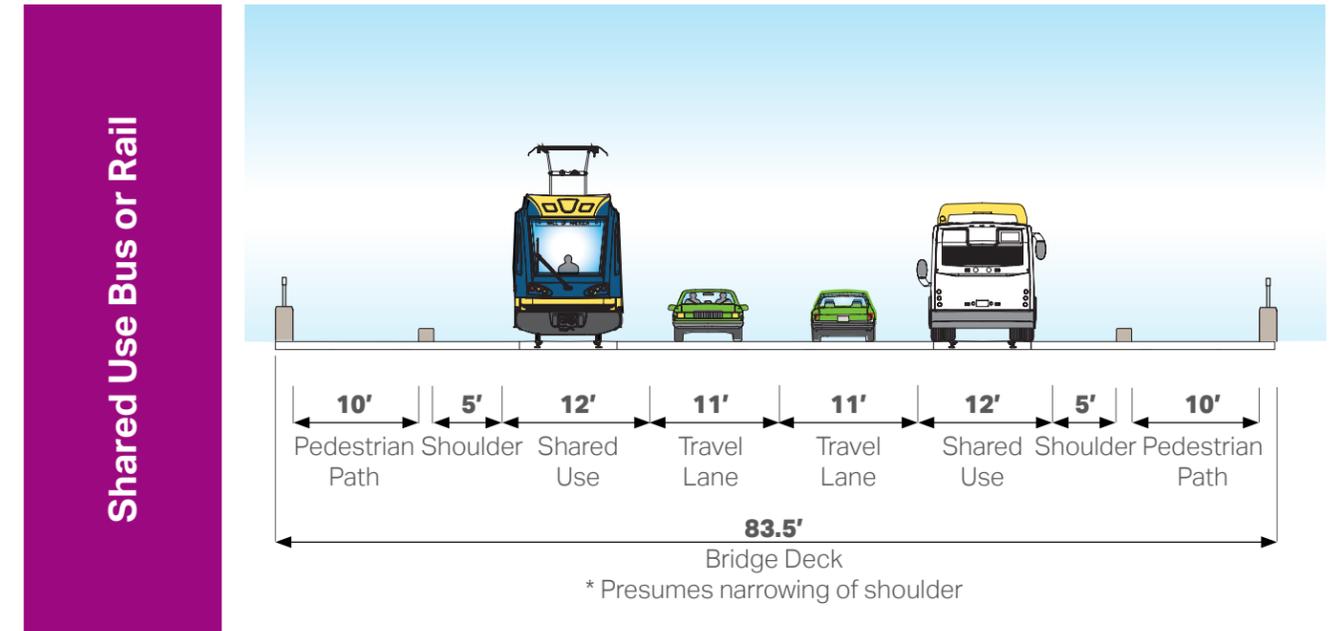
Existing Condition



K Ford Pkwy Bridge

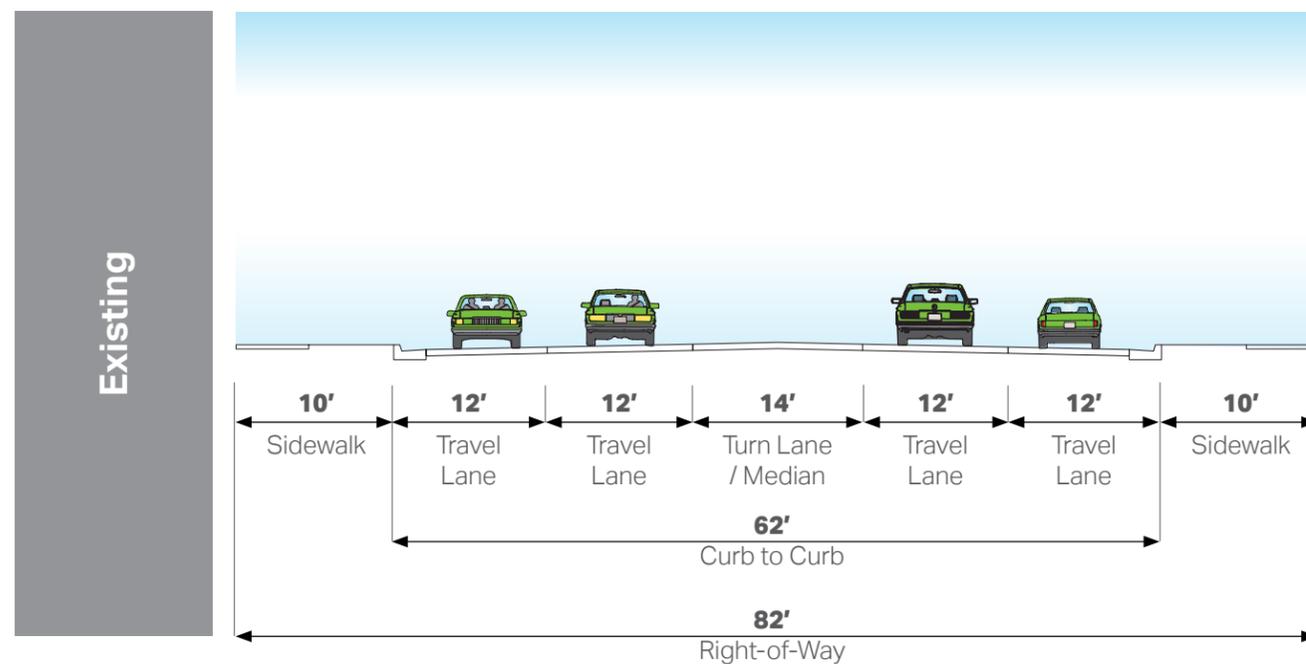
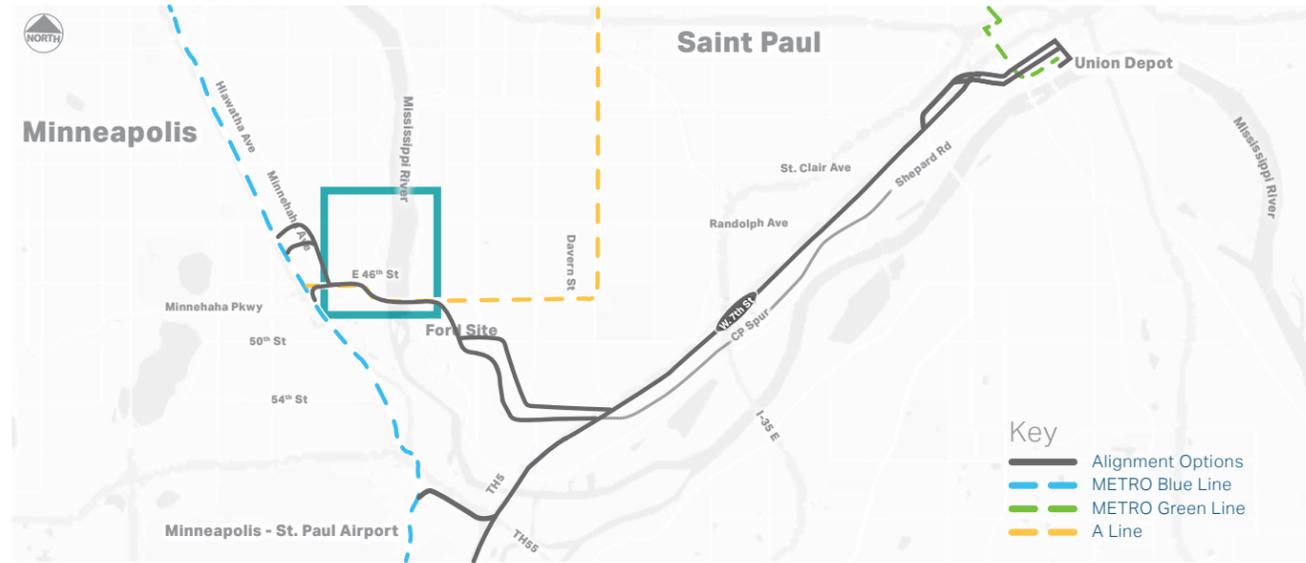
Concept | Side Running

Between Stations



K 46th St

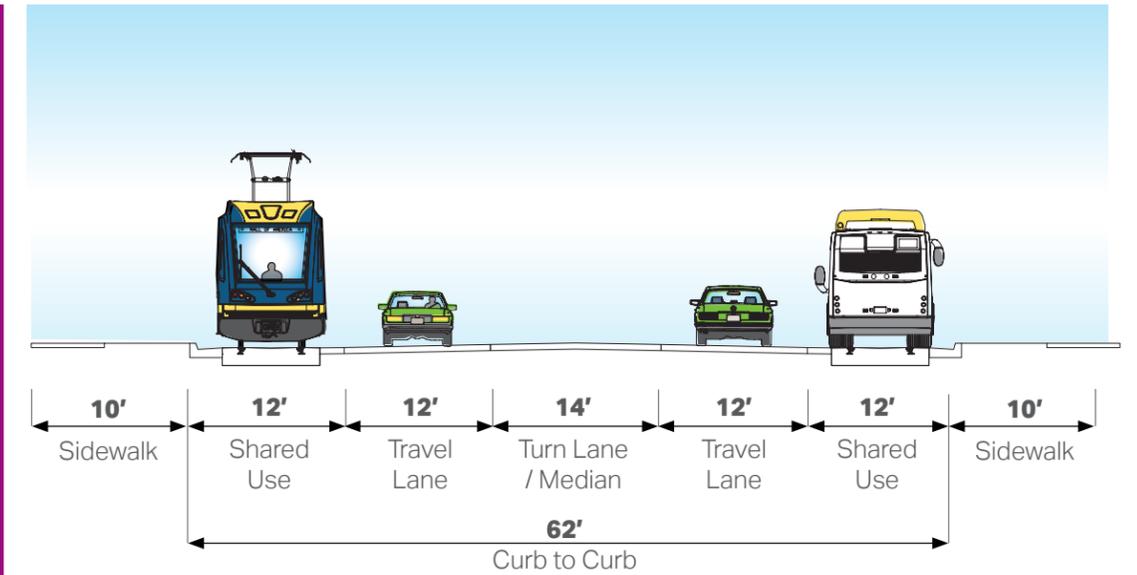
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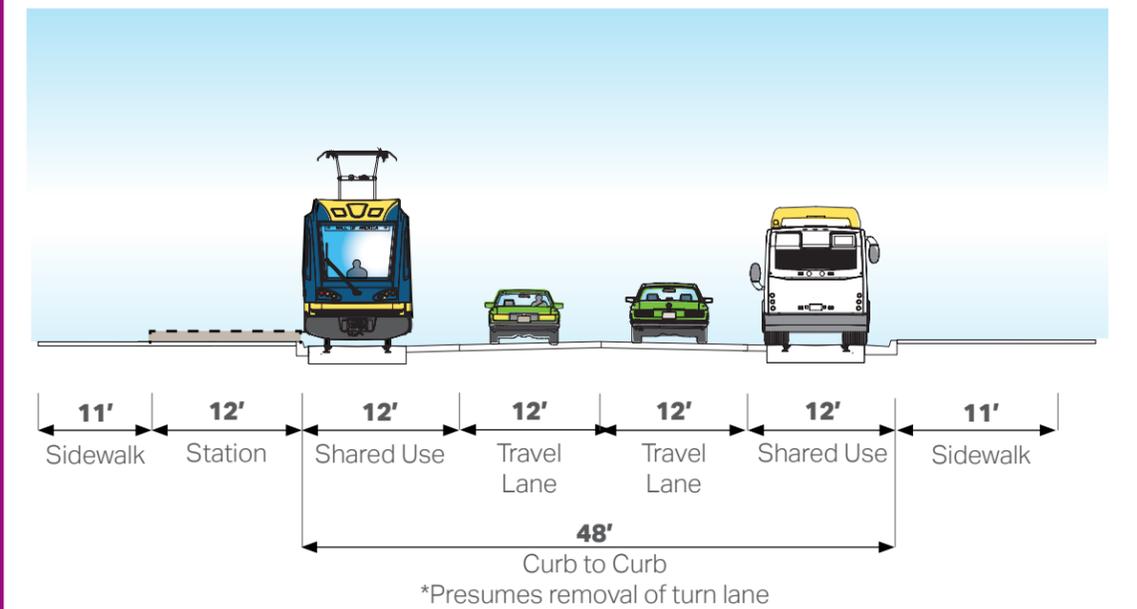
K 46th St

Concept | Side Running

Between Stations



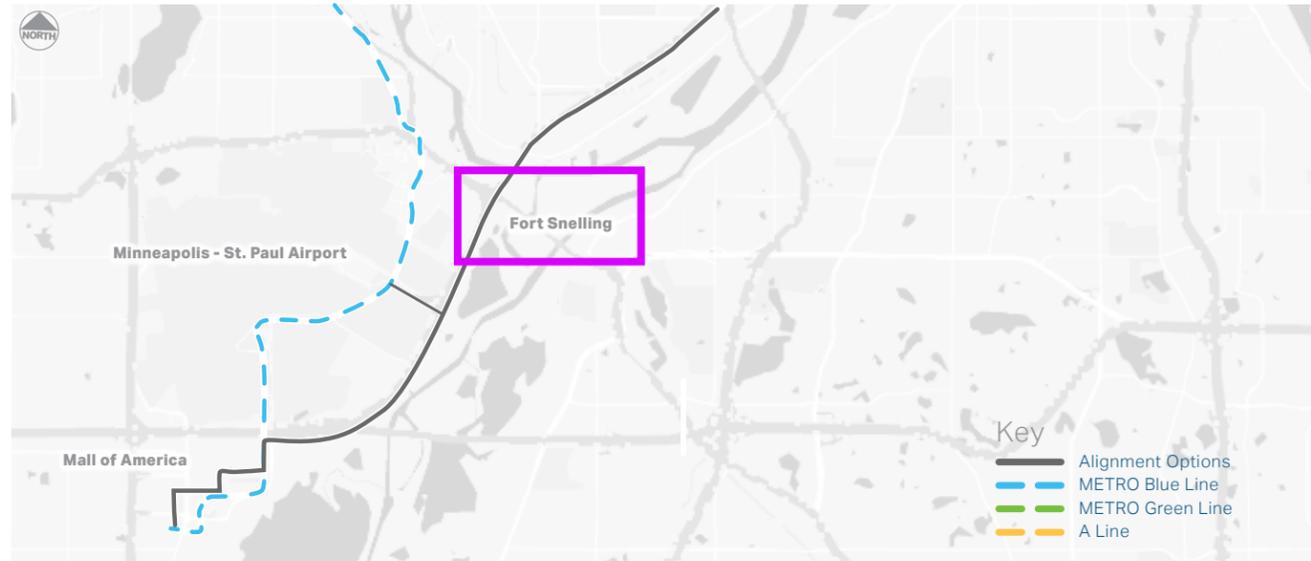
At Station



Shared Use Bus or Rail

L Fort Snelling

Existing Condition



M Bloomington South Loop

Existing Condition

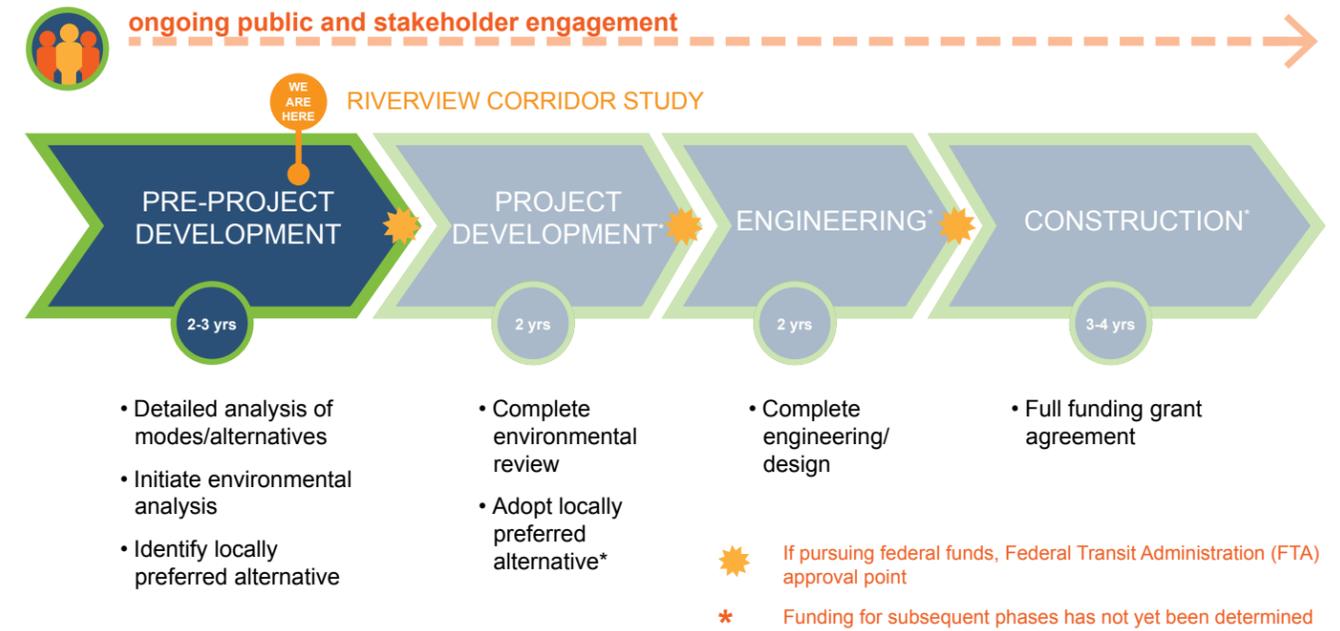


M Bloomington South Loop

Existing Condition



Project Development and Implementaton





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Appendix C: Technical Memorandum #6: Year 2040 Service Plans





RIVERVIEW CORRIDOR

**Technical Memorandum #6:
Year 2040 Service Plans**

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Appendix B – Mainline Operating Statistics

Appendix C – Local Bus Operating Statistics

Note: As part of the Riverview Pre-Project Development Study, the information herein was developed beginning in 2016. Results for the Travel Time criterion were then presented to the Policy Advisory Committee (PAC) in May 2017. As such, some of the terms originally presented to the PAC may have changed over the course of the Study, and may not be consistent among Study documents. Please refer to the Riverview Pre-Project Development Study Glossary of Terms and List of Abbreviations and Acronyms, available under separate cover.

BACKGROUND

The Riverview Corridor Pre-Project Development Study developed year 2040 conceptual service plans for the 10 Most Promising Alternatives (MPAs) with the following rationale:

- To define similar travel times for comparable bus rapid transit (BRT) and rail (modern streetcar or light rail transit [LRT]) alternatives
- To develop year 2040 ridership forecasts
- To develop cost estimates

To define similar end-to-end travel times, BRT and rail alternatives on the same general alignment have different station locations. The BRT service plans also consider duplication in transit service and/or facilities. For instance, a Riverview BRT alternative crossing at Ford Parkway would continue on to Hiawatha Avenue and run parallel to the Blue Line between 46th Street and 50th Street Stations. In this case, a Riverview BRT station at 50th Street may not be necessary because patrons could be served by transferring at the 46th Street Station. Similarly, the existing Route 54 stops at Minneapolis-St. Paul International Airport (MSP) Terminal 1. Route 54 patrons who travel to/from Terminal 2 today do so by transferring to/from the Blue Line at Terminal 1.

In February 2017, the Policy Advisory Committee (PAC) directed that the BRT alternatives be defined so they are identical to their rail counterparts to facilitate a one-to-one comparison between BRT and rail alternatives on the same alignment, for example, BRT and rail alternatives crossing at Hwy 5. The PAC's specific concern related to potentially underestimating ridership of BRT alternatives because they would not directly serve Fort Snelling, Historic Fort Snelling, and MSP Terminal 2, unlike rail alternatives. This direction, then, entailed the following key technical tasks:

1. Apply the same background transit service to alternatives on the same alignment between downtown Saint Paul and Mall of America, regardless of mode
2. Define and analyze six additional BRT alternatives that include three additional station locations. (See Memorandum: Six Additional BRT Alternatives, under separate cover.)

In so doing, this direction resulted in some duplicative service, namely:

- All MPAs (BRT and rail) include all or a portion of the existing Route 54 between downtown Saint Paul and Mall of America, denoted as Route 54 West in the year 2040 conceptual service plans. It would operate generally every 20 to 60 minutes, depending on time of day and day of week.
- All MPAs crossing at Ford Parkway: Route 54 West would operate every 20 to 60 minutes between downtown Saint Paul and the Mall of America. (The route is the same as the existing Route 54.) Year 2040 ridership forecasts indicate continued need for this service. See Technical Memorandum #7, Transportation Issues.

- MPAs crossing at Hwy 5: Route 54 West would operate between downtown Saint Paul and W. 7th Street between Kellogg Boulevard and Davern Street every 30 to 60 minutes. These MPAs include Arterial BRT, Dedicated BRT, and rail.
 - Arterial BRT on W. 7th Street and Hwy 5: Similar to Dedicated BRT and rail alternatives crossing at Hwy 5, Arterial BRT includes Route 54 West service. This would increase service in the corridor. Specific to W. 7th Street between Kellogg Boulevard and Davern Street, in year 2040 peak hour, a BRT/bus would arrive every 7.5 minutes at common stations/stops between Arterial BRT and Route 54 West. Removing Route 54 West service would result in 10-minute peak service at these common stations.
 - Inferring from 2040 ridership forecasts for Route 54 West, the increase in mainline ridership (i.e. Arterial BRT, Dedicated BRT, or rail) may be up to 1,200 to 1,400 per day.

Future environmental review and engineering phases of the selected Riverview locally preferred alternative (LPA) and relevant alternatives will refine service plans. This entails balancing several factors such as service frequencies, costs, and ridership.

METHODOLOGY AND ASSUMPTIONS

Travel Time

Travel time is a key component of developing the conceptual service plan for each alternative. Following are travel time assumptions employed for the Riverview alternatives.

The travel time analysis accounts for speed limitations introduced by curves and station placement. Geometric data are used in tandem with vehicle acceleration and deceleration rates to estimate transit travel times between stations and along the entire proposed alignment. Specific to road-/street-running alternatives, this study uses posted speeds as the maximum transit operating speed.

For alternatives operating on the CP Spur, Blue and Green Line experience was consulted to determine assumed operating environments given adjacent land uses. Maximum operating speeds on the CP Spur were limited to 45 mph. Between Randolph Avenue and Alton Street, maximum cruise speeds were 40 mph. From Alton Street to the Ford Site, maximum speeds were 45 mph.

BRT Acceleration and Deceleration Rates¹

- Acceleration rate is a constant 1.5 miles per hour per second (mphps) from 0 to 25 mph, decreasing to 1.0 mphps when going from 0 to 55 mph.
- Bus deceleration rate is a constant 2.0 mphps.
- Acceleration/deceleration rate assumptions were the same as in Arterial Transitway Corridors Study, as well as for Gateway and other Twin Cities transit studies. These assumptions are subject to revision, as new information suggests modern buses and particularly hybrid buses are capable of faster rates, such as an acceleration rate closer to 2.0 mphps.
- Buses are able to reach posted speed limit, e.g. this ranges from 25 to 40 mph on W. 7th Street.
- Lower speeds are assumed in congested areas for segments in mixed traffic, generally in downtown Saint Paul and on W. 7th Street between Kellogg Boulevard and Smith Avenue.

Rail Acceleration and Deceleration Rates²

- Acceleration rate is a constant 2.0 mphps from 0 to 25 mph, decreasing to 1.25 mphps when going from 0 to 55 mph.
- Deceleration rate is a constant 2.0 mphps.

¹ Acceleration and deceleration rates stated here are consistent with rates used on the Gateway/Gold Line project as well as the *Arterial Transitway Corridor Study*.

² As discussed with Metro Transit Rail Operations in 2016, and based on Blue Line Extension Project analysis. Rates are subject to refinement as part of future environmental review and engineering phases of the selected Riverview LPA.

- Maximum allowed speed is based on posted speed limit (if street-running); maximum attainable speed is based on vehicle specifications (if dedicated right-of-way separated from roadway) and alignment geometry.
- Lower speeds are assumed in congested areas for segments in mixed traffic, based on intersection LOS information if available.

Traffic Signal Delay Assumptions

Traffic signals along the corridor are incorporated into the travel time analysis to account for delay at signalized intersections. Intersections have been classified – as major, intermediate, or minor – based on assumed cycle times by reviewing geometry, adjacent land uses, roadway classification and estimated volumes. Major intersections assume a 120-second cycle time, intermediate intersections assume a 90-second cycle time, and minor intersections assume a 60-second cycle time. Existing green-to-cycle (g/c) time ratios for all intersection types are assumed at 0.50, meaning that the Riverview route is assumed to have the same amount of green time as cross streets. Additionally, traffic signal priority (TSP) is assumed for signalized intersections. TSP is assumed to provide an additional 10 percent of the total cycle time toward additional green time; thus, intersections with proposed TSP will assume a greater g/c ratio. The proportion of time the transit vehicle is stopped by major signalized intersections depends on the level of service of an intersection. Information on intersection operations are based on available data from related traffic studies, or determined by reviewing travel time information for the corridor. Exhibit 1 shows the class of intersection, level of service, and expected amount of delay with and without TSP.

Exhibit 1: Signalized Delay by Intersection Type (in seconds)³

Intersection Classification	LOS	No TSP	w/ TSP
Class 1 MAJOR	A	0:00:20	0:00:12
	B	0:00:23	0:00:16
	C	0:00:26	0:00:19
	D	0:00:30	0:00:23
	E	0:00:39	0:00:32
	F	0:00:53	0:00:45
Class 2 INTERMEDIATE	A	0:00:15	0:00:11
	B	0:00:18	0:00:13
	C	0:00:21	0:00:16
	D	0:00:24	0:00:19
	E	0:00:33	0:00:26
	F	0:00:46	0:00:39
Class 3 MINOR	A	0:00:11	0:00:07
	B	0:00:13	0:00:09
	C	0:00:16	0:00:11
	D	0:00:19	0:00:14
	E	0:00:26	0:00:21
	F	0:00:39	0:00:34

Station/Stop Dwell Time Assumptions

Dwell time refers to the amount of time a transit vehicle stops at any given transit station or stop to allow passengers to board and alight. It is assumed that for all alternatives vehicles will stop at every defined station. Dwell time is based on assumed ridership levels and the assumption that fares will be collected off-board. Proposed dwell times listed by ridership activity and payment type are listed below. The dwell times presented below are based on information from the *Transit Capacity & Quality of Service Manual*. Dwell times assume off-board fare collection occurs at all stations on each Riverview alternative.

- Arterial BRT: Variable station dwell times of 7, 14, or 21 seconds, depending on existing boardings per trip at Route 54 stations.⁴
- Dedicated BRT: 20 seconds per station
- Rail: 20 seconds per station

³ Source: TCRP Report 118, pages 4-35 and 4-36.

⁴ Arterial BRT station dwell times: 21 seconds for 5 or more boardings per trip; 14 seconds for 2 to 4 boardings per trip; and 7 seconds for 1 boarding per trip.

Arterial Level of Service Assumptions

Arterial levels of service have been determined for each segment where mixed traffic operations are in effect. Level of service is the amount of traffic congestion (and thus speed reduction) that transit would experience. Speed reduction rates from the 2000 Highway Capacity Manual were applied to each mixed traffic segment to determine the expected segment speed. Exhibit 2 provides the reduction rates used in the travel time model.

Exhibit 2: Arterial Level of Service Speed Reduction⁵

LOS	Speed Red.
A	0.95
B	0.85
C	0.75
D	0.65
E	0.55
F	0.45

Dedicated Guideway Assumptions

For segments with dedicated guideway, including operations on the CP Spur and W. 7th Street, transit is assumed to be able to travel freely according to allowable maximum posted speeds.

Full pre-emption was assumed at street crossings along the CP Spur corridor like treatments for the existing Blue and Green Lines. Thus, minimal delay due to cross traffic was assumed. For at-grade crossings on W. 7th Street, TSP was assumed at signalized intersections and crossing delays were incorporated at major, intermediate, and minor signalized intersections as described in the previous section.

⁵ Source: Speed reduction factors conform to travel speed LOS as defined in 2000 Highway Capacity Manual, with consideration of intersection delay times.



ALTERNATIVE 1: NO BUILD

This section presents the No Build alternative. The transit improvements detailed in this section are those designated as funded under the current revenue scenario in the Metropolitan Council's 2040 Transportation Policy Plan.⁶ Details on other transit improvements (primarily bus based) were provided by Metro Transit service planning.

Existing Transit Facilities

There are four existing transit facilities that function as major transfer locations within the Riverview transit service area, including:

- Mall of America Transit Center (MOA) – Located in Bloomington near the interchange of I-494 and Cedar Avenue (TH 77), Mall of America serves Metro Transit routes Blue Line, Red Line, 5, 54, 415, 444, 515, 538, 539, 540, 542, and 683.
- MSP Airport Terminal 1 – Lindbergh – Located at MSP airport outside of Terminal 1, this transit center serves Metro Transit route 54.
- Union Depot – Located in Saint Paul's Lowertown neighborhood, Union Depot serves Metro Transit routes Green Line, 3, 16, 21, 54, 94, 262, 417, MVTA routes 480, 484, 489, Greyhound, Megabus, Jefferson Lines, and Amtrak. Additional Metro Transit routes 63, 70, 350, 351, 361, and 364 stop just east of the depot at Kellogg Boulevard and Broadway Street.

- 46th Street LRT station – Located in Minneapolis the 46th Street LRT station service Metro Transit Routes Blue Line, A Line, 7, 9, 46, 74, MVTA routes 436 and 446.

Local Bus Routes

This section presents local routes that operate within the Riverview transit service area. Because of the location of transit centers at both ends of the study area (MOA and Union Depot), there are far more Metro Transit routes than described here. The routes presented herein operate within the Riverview study area.

- Route 23: Operates east-west on 38th Street between the Uptown neighborhood in Minneapolis and Highland Village in Saint Paul.
- Route 46: Operates east-west on 50th and 46th Streets between Minnetonka (only two trips per day), Edina, and Minneapolis to Highland Village in Saint Paul.
- Route 54 West: Operates northeast-southwest on W. 7th Street and Hwy 5 between downtown Saint Paul, MSP Airport, and Mall of America.
- Route 54 East: Route 54 has funding in place to be extended east from downtown Saint Paul to Maplewood Mall, with implementation expected in 2018. The 54 East would operate at half the frequency of 54 West, with all 54 East trips through routed to MSP Airport and Mall of America.
- Route 63: Operates east-west on Grand Avenue and E. 3rd Street between the Westgate Green Line station, downtown Saint Paul, Sun Ray Transit Center, and McKnight Road.

⁶ 2040 TPP, Chapter 6, Transit Investment, page 6.58.

- Route 70: Operates east-west on St. Clair Avenue, W. 7th Street, Burns Avenue, and Upper Afton Road between Highland Village, downtown Saint Paul, and Sun Ray Transit Center.
- Route 74: Operates east-west on Randolph Avenue, W. 7th Street, E. 7th Street, and Minnehaha Avenue between 46th Street Blue Line station, Highland Village, downtown Saint Paul, and Sun Ray Transit Center.
- Route 83: Operates north-south on Lexington Parkway between Roseville, Lexington Parkway Green Line station, and W. 7th Street.
- Route 87: Operates north-south on Fairview Avenue, Raymond Avenue, and Cleveland Avenue between Rosedale Center, Raymond Avenue Green Line station, and Highland Village.

Arterial BRT

Two Arterial BRT routes are included in the No Build service plan. One of these, the A Line, is already in operation. The other, the D Line, is part of Metropolitan Council's 2017-2020 Transportation Improvement Program.

- A Line: The A Line is a north-south arterial BRT line operating on Snelling Avenue between Rosedale Center, the Snelling Avenue Green Line station, and 46th Street Blue Line station.
- D Line: The D Line is a north-south arterial BRT line proposed to operate on Emerson and Fremont Avenues in north Minneapolis, on Chicago Avenue in south Minneapolis, Portland Avenue in Richfield, and American Boulevard in Bloomington. It will connect the Brooklyn Center Transit Center and the Mall of America via downtown Minneapolis.

Light Rail Transit (LRT)

- Blue Line: The Blue Line is a north-south light rail transit line connecting downtown Minneapolis to MSP Airport and Mall of America activity centers. Much of its alignment parallels Hiawatha Avenue.
- Green Line: The Green Line is an east-west light rail transit line connecting downtown Minneapolis to the University of Minnesota and downtown Saint Paul. Much of its alignment is located within University Avenue.

Exhibit 3 provides year 2040 service frequency and span of service for each of the routes included in the No Build Alternative, while Exhibit 4 maps the proposed service plan.

Exhibit 3: Year 2040 Conceptual Service Plan for Alternative 1, No Build

Route	Day	Average Frequency [min]			Service Span [hrs]
		Peak	Midday	Evening Late/Early	
A-Line	Weekday	10	10	10-20	21.5
	Saturday	10-15			20.5
	Sunday	10-15			20.5
D-Line	Weekday	7.5	7.5	10-15	19.0
	Saturday	10-15			18.5
	Sunday	10-15			18.5
23	Weekday	20	20-30	30	19.5
	Saturday	20-30			18.5
	Sunday	30			18.5
46 A/B	Weekday	14 trips			3.0
	Saturday				
	Sunday				
46 E/C	Weekday	30	30	60	17.7
	Saturday	30			16.5
	Sunday	30-60			13.0
54 West	Weekday	10	15	15	21.5
	Saturday	15-30			21.5
	Sunday	20-30			21.5
54 East	Weekday	20	30	30	21.5
	Saturday	30-60			21.5
	Sunday	40-60			21.5
63	Weekday	10-20	20	20-30	20.5
	Saturday	20-30			20.5
	Sunday	20-30			20.5

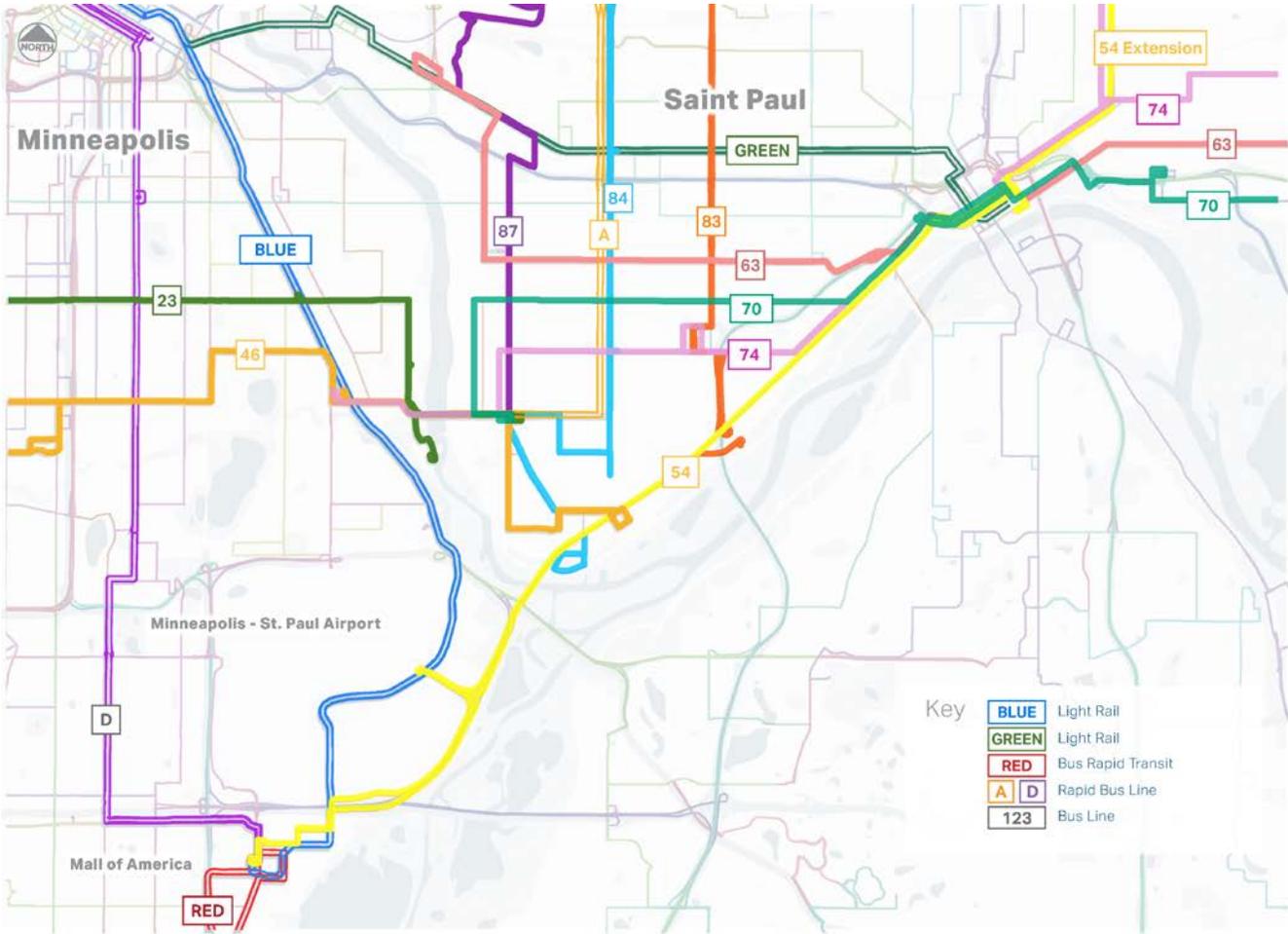
Route	Day	Average Frequency [min]			Service Span [hrs]
		Peak	Midday	Evening Late/Early	
70	Weekday	30	60	60	17.0
	Saturday				
	Sunday				
74	Weekday	15-20	20	30	21.5
	Saturday	20-30			20.5
	Sunday	30			20.0
83	Weekday	30	30	30	18.0
	Saturday	30			18.0
	Sunday	30			18.0
84	Weekday	30	30	30	16.0
	Saturday	30			10.5
	Sunday	30			10.5
87	Weekday	20	20	30-60	20.0
	Saturday	20-60			19.0
	Sunday	30-60			19.0
Red	Weekday	15	15	30	19.0
	Saturday	30-60			18.0
	Sunday	30-60			18.0
Blue	Weekday	10	10	15	23.0
	Saturday	10-15			23.0
	Sunday	10-15			23.0
Green	Weekday	10	10	15	24.0
	Saturday	10-15			24.0
	Sunday	10-15			24.0



Exhibit 4: Year 2040 Conceptual Service Plan for Alternative 1, No Build⁷



Route	Headway Peak/Mid
A-Line	10/10
D-Line	7.5/7.5
23	20/30
46	30/30
54	10/15
54 Extension	20/30
63	10/20
70	30/60
74	15/20
83	30/30
84	30/30
87	20/20
RED	15/15
BLUE	10/10
GREEN	10/10



⁷ As of July 2016. For purposes of developing 2040 travel demand forecasts. Future environmental review and engineering phases of the selected Riverview LPA and relevant alternatives will refine service plans. This entails balancing several factors such as service frequencies, costs, and ridership.



ALTERNATIVE 2: ARTERIAL BRT

Arterial BRT Service

In Alternative 2, Arterial BRT (ABRT) would operate on W. 7th Street and Hwy 5 between downtown Saint Paul and the Mall of America. Exhibit 5 presents the mainline service characteristics for Alternative 2.

Exhibit 5: Year 2040 Conceptual Service Plan for Alternative 2, Arterial BRT

Alternative	Day	Average Frequency [min]			Service Span [hrs]
		Peak	Midday	Evening Late/Early	
Alternative 2 Arterial BRT	Weekday	10	10	15-30	22.0
	Saturday	10		15-30	22.0
	Sunday	10		15-30	22.0

Travel Times

Alternative 2 averages an end-to-end travel time of 39 minutes. Exhibit 7 illustrates conceptual station locations served by Alternative 2.

Appendix A provides station-to-station travel times for each alternative.

Proposed Changes to Local Bus Routes

- Route 46: The weekday daytime frequency is proposed to be increased from 30 minutes to 20 minutes to provide a better connection from Highland Village to the proposed alternative. The service increase does not apply to evening or weekend service.
- Route 54 West: Route 54 West would still be operated in Alternative 2, but with a decreased frequency of 30 minutes during daytime and 60 minutes at night.
- Route 54 East: Route 54 East would continue to operate with same frequency and span as the No Build.

- Route 70: The east and west sides of this route would split. Route 70E would operate as normal between the east side of Saint Paul and downtown, ending at the Smith Avenue Transit Center on the west side of downtown. Route 70W would operate as normal on St. Clair Avenue to W. 7th Street. Instead of traveling to downtown it would be rerouted to use the Smith Avenue Bridge, ending at Signal Hills Shopping Center in West Saint Paul. All frequencies would remain the same with both branches of this route.
- Route 74: The east and west sides of this route would split. Route 74E would operate as normal between the east side of Saint Paul and downtown, ending at the Smith Avenue Transit Center on the west side of downtown. Route 74W would operate as normal on Randolph Avenue to W. 7th Street, terminating at the Randolph Avenue station of the proposed mainline service. All frequencies would remain the same with both branches of this route.
- Route 83: The proposed weekday daytime frequency would increase from 30 minutes to 20 minutes to improve connection along Lexington Parkway to the proposed alternative. The service increase does not apply to evening or weekend service.

Exhibit 6 presents the overall service plan for Alternative 2, while Exhibit 7 shows the transit service plan map.



Exhibit 6: Year 2040 Conceptual Service Plan for Alternative 2, Arterial BRT

Route	Day	Average Frequency [min]			Service Span [hrs]
		Peak	Midday	Evening Late/Early	
A-Line	Weekday	10	10	10-20	21.5
	Saturday	10-15			20.5
	Sunday	10-15			20.5
D-Line	Weekday	7.5	7.5	10-15	19.0
	Saturday	10-15			18.5
	Sunday	10-15			18.5
23	Weekday	20	20-30	30	19.5
	Saturday	20-30			18.5
	Sunday	30			18.5
46 A/B	Weekday	14 trips			3.0
	Saturday				
	Sunday				
46 E/C	Weekday	20	20	60	17.7
	Saturday	30			16.5
	Sunday	30-60			13.0
54 East	Weekday	20	30	30	21.5
	Saturday	30-60			21.5
	Sunday	40-60			21.5
54 West	Weekday	30	30	30-60	21.0
	Saturday	30-60			21.0
	Sunday	30-60			21.0
63	Weekday	10-20	20	20-30	20.5
	Saturday	20-30			20.5
	Sunday	20-30			20.5

Route	Day	Average Frequency [min]			Service Span [hrs]
		Peak	Midday	Evening Late/Early	
70	Weekday	30	60	60	17.0
	Saturday				
	Sunday				
74	Weekday	15-20	20	30	21.5
	Saturday	20-30			20.5
	Sunday	30			20.0
83	Weekday	20	20	30	18.0
	Saturday	30			18.0
	Sunday	30			18.0
84	Weekday	30	30	30	16.0
	Saturday	30			10.5
	Sunday	30			10.5
87	Weekday	20	20	30-60	20.0
	Saturday	20-60			19.0
	Sunday	30-60			19.0
Red	Weekday	15	15	30	19.0
	Saturday	30-60			18.0
	Sunday	30-60			18.0
Blue	Weekday	10	10	15	23.0
	Saturday	10-15			23.0
	Sunday	10-15			23.0
Green	Weekday	10	10	15	24.0
	Saturday	10-15			24.0
	Sunday	10-15			24.0

Increase in service frequency
 Decrease in service frequency

Alignment notes:
 70E ends at Smith Ave Transit Center
 70W extended to Signal Hills Shopping Center in W St Paul
 74E ends at Smith Ave Transit Center
 74W ends at Randolph Station



Exhibit 7: Year 2040 Conceptual Service Plan for Alternative 2, Arterial BRT⁸

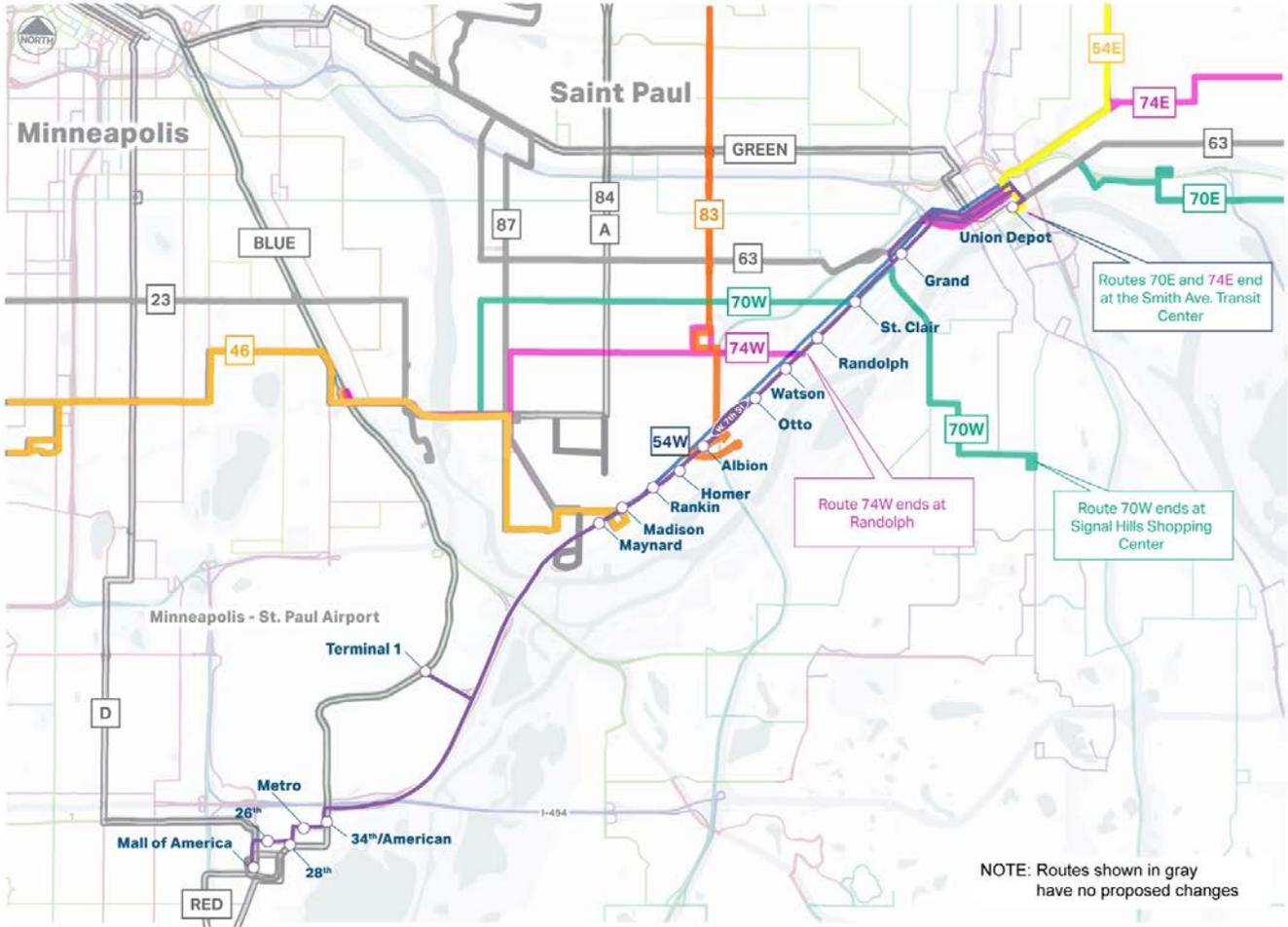


Key

- Riverview Alignment
- BLUE Light Rail
- GREEN Light Rail
- RED Bus Rapid Transit
- A | D Rapid Bus Line
- 123 Bus Line

Route	Change	Headway Peak/Mid
46	Increase Service	20/20 ▲
54W	Decrease Service	30/30 ▼
70	Alignment	30/60
74	Alignment	15/20
83	Increase Service	20/20 ▲

- ▲ = More frequent service
- ▼ = Less frequent service



⁸ As of April 2017. For purposes of developing 2040 travel demand forecasts. Future environmental review and engineering phases of the selected Riverview LPA and relevant alternatives will refine service plans. This entails balancing several factors such as service frequencies, costs, and ridership.



ALTERNATIVE 3: BRT: W. 7TH-HWY 5/FORT SNELLING

Dedicated BRT Service

In Alternative 3, dedicated BRT (DBRT) would operate on W. 7th Street and Hwy 5 between downtown Saint Paul and the Mall of America. The initial draft DBRT service plan proposes 10 minutes in the peak, as shown on Exhibit 8.⁹

Exhibit 8: Year 2040 Conceptual Service Plan for Alternative 3, BRT: W. 7th-Hwy 5/Fort Snelling⁹

Alternative	Day	Average Frequency [min]			Service Span [hrs]
		Peak	Midday	Evening Late/Early	
Alternative 3	Weekday	10	10	15-30	22.0
BRT: W. 7th-Hwy 5 / Fort Snelling	Saturday	10		15-30	22.0
	Sunday	10		15-30	22.0

Travel Times

Alternative 3 average one-way travel time is 40 minutes. Exhibit 10 illustrates conceptual station locations served by Alternative 3. Appendix A provides station-to-station travel times for each alternative.

Proposed Changes to Local Bus Routes

- Route 46: The weekday daytime frequency is proposed to be increased from 30 minutes to 20 minutes to provide a better connection from Highland Village to the proposed alternative. The service increase does not apply to evening or weekend service.
- Route 54 West: Route 54 West would still operate in Alternative 3, but with a reduced frequency of 30 minutes during daytime and 60 minutes at night due to the mainline service on the same corridor.
- Route 54 East: Route 54 East would continue to operate with same frequency and span as the No Build.
- Route 70: The east and west sides of this route would split. Route 70E would operate as normal between the east side of Saint Paul and downtown, ending at the Smith Avenue Transit Center. Route 70W would operate as normal on St. Clair Avenue to W. 7th Street. Instead of traveling to downtown it would be rerouted to use the Smith Avenue Bridge, ending at Signal Hills Shopping Center in West Saint Paul. All frequencies would remain the same with both branches of this route.
- Route 74: The east and west sides of this route would split. Route 74E would operate as normal between the east side of Saint Paul and downtown, ending at the Smith Avenue Transit Center. Route 74W would operate as normal on Randolph Avenue to W. 7th Street, terminating at the Randolph Avenue station of the proposed mainline service. All frequencies would remain the same with both branches of this route.

⁹ A frequency equilibration indicated that Alternative 3 DBRT service at 10-minute peak frequency would result in bus overcrowding. Therefore, it was adjusted to nine-minute peak frequency. See *Frequency Equilibration* at the end of this memorandum.

- Route 83: The proposed weekday daytime frequency would increase from 30 minutes to 20 minutes to improve connection along Lexington Parkway to the proposed Riverview BRT. The service increase does not apply to evening or weekend service.

Exhibit 9 presents the overall service plan for Alternative 3, while Exhibit 10 shows the transit service plan map.

Exhibit 9: Year 2040 Conceptual Service Plan for Alternative 3, BRT: W. 7th-Hwy 5/Fort Snelling

Route	Day	Average Frequency [min]			Service Span [hrs]
		Peak	Midday	Evening Late/Early	
A-Line	Weekday	10	10	10-20	21.5
	Saturday	10-15			20.5
	Sunday	10-15			20.5
D-Line	Weekday	7.5	7.5	10-15	19.0
	Saturday	10-15			18.5
	Sunday	10-15			18.5
23	Weekday	20	20-30	30	19.5
	Saturday	20-30			18.5
	Sunday	30			18.5
46 A/B	Weekday	14 trips			3.0
	Saturday				
	Sunday				
46 E/C	Weekday	20	20	60	17.7
	Saturday	30			16.5
	Sunday	30-60			13.0
54 East	Weekday	20	30	30	21.5
	Saturday	30-60			21.5
	Sunday	40-60			21.5
54 West	Weekday	30	30	30-60	21.0
	Saturday	30-60			21.0
	Sunday	30-60			21.0
63	Weekday	10-20	20	20-30	20.5
	Saturday	20-30			20.5
	Sunday	20-30			20.5

Route	Day	Average Frequency [min]			Service Span [hrs]
		Peak	Midday	Evening Late/Early	
70	Weekday	30	60	60	17.0
	Saturday				
	Sunday				
74	Weekday	15-20	20	30	21.5
	Saturday	20-30			20.5
	Sunday	30			20.0
83	Weekday	20	20	30	18.0
	Saturday	30			18.0
	Sunday	30			18.0
84	Weekday	30	30	30	16.0
	Saturday	30			10.5
	Sunday	30			10.5
87	Weekday	20	20	30-60	20.0
	Saturday	20-60			19.0
	Sunday	30-60			19.0
Red	Weekday	15	15	30	19.0
	Saturday	30-60			18.0
	Sunday	30-60			18.0
Blue	Weekday	10	10	15	23.0
	Saturday	10-15			23.0
	Sunday	10-15			23.0
Green	Weekday	10	10	15	24.0
	Saturday	10-15			24.0
	Sunday	10-15			24.0

Increase in service frequency
 Decrease in service frequency

Alignment notes:
 70E ends at Smith Ave Transit Center
 70W extended to Signal Hills Shopping Center in W St Paul
 74E ends at Smith Ave Transit Center
 74W ends at Randolph Station



Exhibit 10: Year 2040 Conceptual Service Plan for Alternative 3, BRT: W. 7th-Hwy 5/Fort Snelling¹⁰

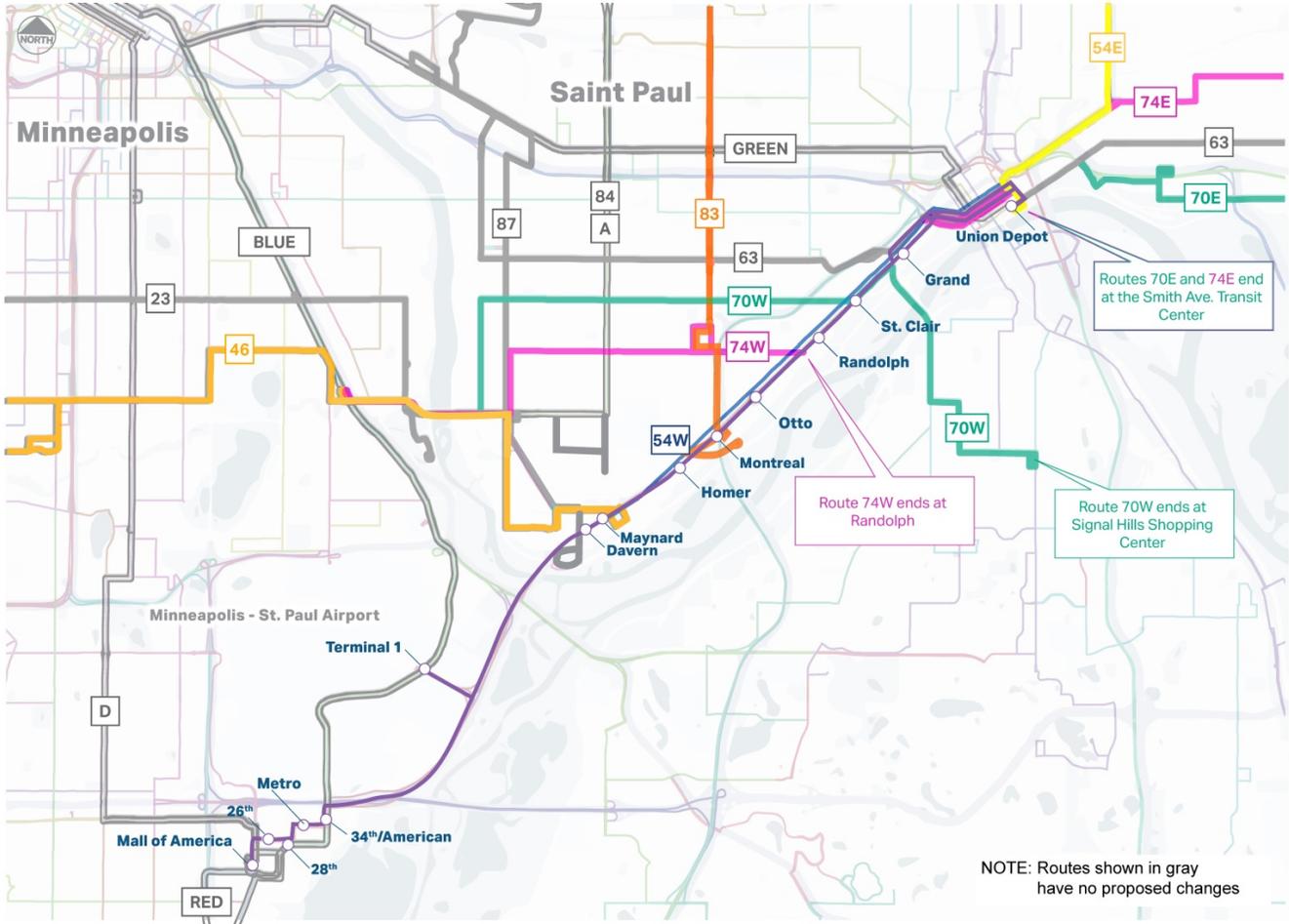


Key

	Riverview Alignment
	Light Rail
	Light Rail
	Bus Rapid Transit
	Rapid Bus Line
	Bus Line

Route	Change	Headway Peak/Mid
46	Increase Service	20/20 ▲
54W	Decrease Service	30/30 ▼
70	Alignment	30/60
74	Alignment	15/20
83	Increase Service	20/20 ▲

- ▲ = More frequent service
- ▼ = Less frequent service



¹⁰ As of July 2016. For purposes of developing 2040 travel demand forecasts. Future environmental review and engineering phases of the selected Riverview LPA and relevant alternatives will refine service plans. This entails balancing several factors such as service frequencies, costs, and ridership.



**ALTERNATIVE 4:
RAIL: W. 7TH-HWY 5/FORT SNELLING¹¹**

Rail Service

In Alternative 4, rail service would operate on W. 7th Street from downtown Saint Paul, then cross the Mississippi River and use the existing Blue Line to access MSP Airport and the Mall of America. The rail alternative is proposed to operate at a 10-minute frequency during daytime hours, seven days a week. Exhibit 11 presents the mainline service characteristics for Alternative 4.

Exhibit 11: Year 2040 Conceptual Service Plan for Alternative 4, Rail: W. 7th – Hwy 5/Fort Snelling

Alternative	Day	Average Frequency [min]			Service Span [hrs]
		Peak	Midday	Evening Late/Early	
Alternative 4 Rail: W. 7th-Hwy 5 / Fort Snelling	Weekday	10	10	15-30	22.0
	Saturday	10		15-30	22.0
	Sunday	10		15-30	22.0

Travel Times

Alternative 4 average one-way travel time is 44 minutes. Exhibit 13 illustrates conceptual station locations served by Alternative 4. Appendix A provides station-to-station travel times for each alternative.

Proposed Changes to Local Bus Routes

- Route 46: The proposed weekday daytime frequency would increase from 30 minutes to 20 minutes to improve connection from Highland Village to the proposed alternative. The service increase does not apply to evening or weekend service.

- Route 54 West: Route 54 West would still operate in Alternative 4, but with a reduced frequency of 30 minutes during daytime and 60 minutes at night due to the mainline service on the same corridor.
- Route 54 East would continue to operate with same frequency and span as the No Build.
- Route 70. Split the route into east and west branches. Route 70E would operate as normal between the east side of Saint Paul and downtown, ending at the Smith Avenue Transit Center. Route 70W would continue to operate on St. Clair Avenue to W. 7th Street. Instead of traveling to downtown, the route would use the Smith Avenue Bridge, ending at Signal Hills Shopping Center in West Saint Paul. All frequencies would remain the same with both branches of this route.
- Route 74. Split the route into east and west branches. Route 74E would continue to operate between the east side of Saint Paul and downtown, ending at the Smith Avenue Transit Center. Route 74W would operate as normal on Randolph Avenue to W. 7th Street, terminating at the Randolph Avenue station of the proposed mainline service. All frequencies would remain the same with both branches of this route.
- Route 83: The weekday daytime frequency would increase from 30 minutes to 20 minutes to provide a better connection along Lexington Parkway to the proposed alternative. The service increase does not apply to evening or weekend service.

Exhibit 12 presents the overall service plan for Alternative 4, while Exhibit 13 shows the transit service plan map.

¹¹ LRT or modern streetcar.



Exhibit 12: Year 2040 Conceptual Service Plan for Alternative 4, Rail: W. 7th-Hwy 5/Fort Snelling

Route	Day	Average Frequency [min]			Service Span [hrs]
		Peak	Midday	Evening Late/Early	
A-Line	Weekday	10	10	10-20	21.5
	Saturday	10-15			20.5
	Sunday	10-15			20.5
D-Line	Weekday	7.5	7.5	10-15	19.0
	Saturday	10-15			18.5
	Sunday	10-15			18.5
23	Weekday	20	20-30	30	19.5
	Saturday	20-30			18.5
	Sunday	30			18.5
46 A/B	Weekday	14 trips			3.0
	Saturday				
	Sunday				
46 E/C	Weekday	20	20	60	17.7
	Saturday	30			16.5
	Sunday	30-60			13.0
54 East	Weekday	20	30	30	21.5
	Saturday	30-60			21.5
	Sunday	40-60			21.5
54 West	Weekday	30	30	30-60	21.0
	Saturday	30-60			21.0
	Sunday	30-60			21.0
63	Weekday	10-20	20	20-30	20.5
	Saturday	20-30			20.5
	Sunday	20-30			20.5

Route	Day	Average Frequency [min]			Service Span [hrs]
		Peak	Midday	Evening Late/Early	
70	Weekday	30	60	60	17.0
	Saturday				
	Sunday				
74	Weekday	15-20	20	30	21.5
	Saturday	20-30			20.5
	Sunday	30			20.0
83	Weekday	20	20	30	18.0
	Saturday	30			18.0
	Sunday	30			18.0
84	Weekday	30	30	30	16.0
	Saturday	30			10.5
	Sunday	30			10.5
87	Weekday	20	20	30-60	20.0
	Saturday	20-60			19.0
	Sunday	30-60			19.0
Red	Weekday	15	15	30	19.0
	Saturday	30-60			18.0
	Sunday	30-60			18.0
Blue	Weekday	10	10	15	23.0
	Saturday	10-15			23.0
	Sunday	10-15			23.0
Green	Weekday	10	10	15	24.0
	Saturday	10-15			24.0
	Sunday	10-15			24.0

Increase in service frequency
 Decrease in service frequency

Alignment notes:
 70E ends at Smith Ave Transit Center
 70W extended to Signal Hills Shopping Center in W St Paul
 74E ends at Smith Ave Transit Center
 74W ends at Randolph Station



Exhibit 13: Year 2040 Conceptual Service Plan for Alternative 4, Rail: W. 7th-Hwy 5/Fort Snelling¹²

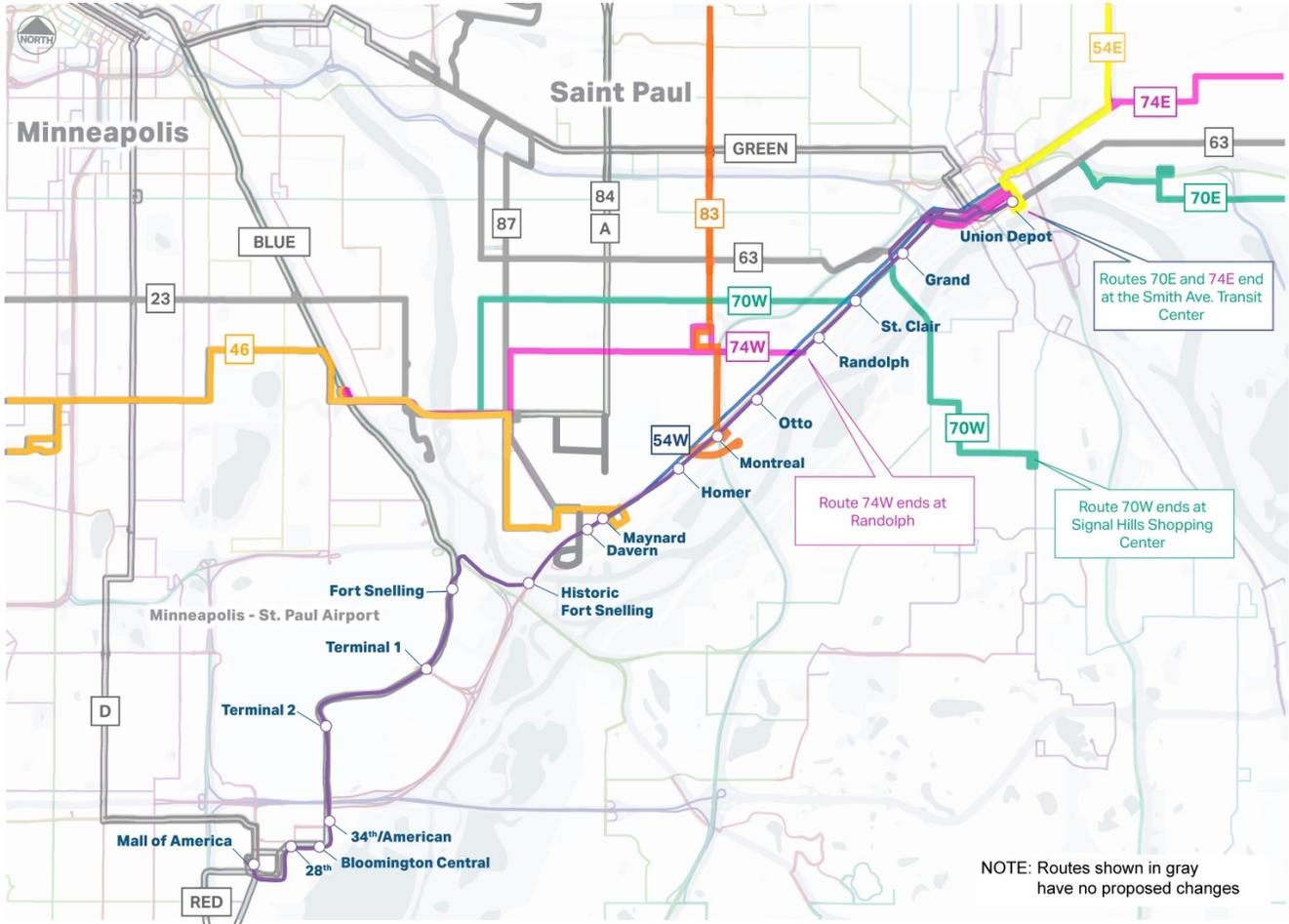


Key

	Riverview Alignment
	Light Rail
	Light Rail
	Bus Rapid Transit
	Rapid Bus Line
	Bus Line

Route	Change	Headway Peak/Mid
46	Increase Service	20/20 ▲
54W	Decrease Service	30/30 ▼
70	Alignment	30/60
74	Alignment	15/20
83	Increase Service	20/20 ▲

▲ = More frequent service
▼ = Less frequent service



¹² As of July 2016. For purposes of developing 2040 travel demand forecasts. Future environmental review and engineering phases of the selected Riverview LPA and relevant alternatives will refine service plans. This entails balancing several factors such as service frequencies, costs, and ridership.



ALTERNATIVE 5: BRT: W. 7TH-FORD SITE

DBRT Service

In Alternative 5, DBRT would operate on W. 7th Street to the CP Spur, then use the spur to travel to the Ford Site. The DBRT alternative is proposed to operate at a 10-minute frequency during daytime hours, seven days a week.

Exhibit 14 presents the mainline service characteristics for Alternative 5.

Exhibit 14: Year 2040 Conceptual Service Plan for Alternative 5, BRT: W. 7th – Ford Site

Alternative	Day	Average Frequency [min]			Service Span [hrs]
		Peak	Midday	Evening Late/Early	
Alternative 5 BRT: W.7th-Ford Site	Weekday	10	10	15-30	22.0
	Saturday	10		15-30	22.0
	Sunday	10		15-30	22.0

Travel Times

Alternative 5 average one-way travel time is 59 minutes. Exhibit 16 illustrates the conceptual station locations served by Alternative 5, while Appendix A provides station-to-station travel times for each alternative.

Proposed Changes to Local Bus Routes

- Route 54 West: Route 54 West would operate in this alternative, but at a reduced frequency because it operates in the same alignment as the mainline service. This route would provide a direct connection to MSP Airport and Mall of America, while Alternative 5 serves the Ford Site. Route 54 West would operate every 20 minutes during weekday daytimes, 30 minutes during weekend daytimes, and 60 minutes in late and early periods.

- Route 54 East: Route 54 East would continue to operate with same frequency and span as the No Build.
- Route 70: The east and west sides of this route would split. Route 70E would operate as normal between the east side of Saint Paul and downtown, ending at the Smith Avenue Transit Center. Route 70W would operate as normal on St. Clair Avenue to W. 7th Street. Instead of traveling to downtown, it would use the Smith Avenue Bridge, ending at Signal Hills Shopping Center in West Saint Paul. All frequencies would remain the same with both branches of this route.
- Route 74: The east and west sides of this route would split. Route 74E would continue to operate between the east side of Saint Paul and downtown, ending at the Smith Avenue Transit Center. Route 74W would continue to operate on Randolph Avenue to W. 7th Street, terminating at the Randolph Avenue station of the proposed mainline service. All frequencies would remain the same with both branches of this route.
- Route 83: The proposed weekday daytime frequency would increase from 30 minutes to 20 minutes to improve connection along Lexington Parkway to the proposed alternative. The service increase does not apply to evening or weekend service.

Exhibit 15 presents the overall service plan for Alternative 5, while Exhibit 16 maps the conceptual service plan.



Exhibit 15: Year 2040 Conceptual Service Plan for Alternative 5, BRT: W. 7th-Ford Site

Route	Day	Average Frequency [min]			Service Span [hrs]
		Peak	Midday	Evening Late/Early	
A-Line	Weekday	10	10	10-20	21.5
	Saturday	10-15			20.5
	Sunday	10-15			20.5
D-Line	Weekday	7.5	7.5	10-15	19.0
	Saturday	10-15			18.5
	Sunday	10-15			18.5
23	Weekday	20	20-30	30	19.5
	Saturday	20-30			18.5
	Sunday	30			18.5
46 A/B	Weekday	14 trips			3.0
	Saturday				
	Sunday				
46 E/C	Weekday	30	30	60	17.7
	Saturday	30			16.5
	Sunday	30-60			13.0
54 East	Weekday	20	30	30	21.5
	Saturday	30-60			21.5
	Sunday	40-60			21.5
54 West	Weekday	20	20	30-60	21.0
	Saturday	30-60			21.0
	Sunday	30-60			21.0
63	Weekday	10-20	20	20-30	20.5
	Saturday	20-30			20.5
	Sunday	20-30			20.5

Route	Day	Average Frequency [min]			Service Span [hrs]
		Peak	Midday	Evening Late/Early	
70	Weekday	30	60	60	17.0
	Saturday				
	Sunday				
74	Weekday	15-20	20	30	21.5
	Saturday	20-30			20.5
	Sunday	30			20.0
83	Weekday	20	20	30	18.0
	Saturday	30			18.0
	Sunday	30			18.0
84	Weekday	30	30	30	16.0
	Saturday	30			10.5
	Sunday	30			10.5
87	Weekday	20	20	30-60	20.0
	Saturday	20-60			19.0
	Sunday	30-60			19.0
Red	Weekday	15	15	30	19.0
	Saturday	30-60			18.0
	Sunday	30-60			18.0
Blue	Weekday	10	10	15	23.0
	Saturday	10-15			23.0
	Sunday	10-15			23.0
Green	Weekday	10	10	15	24.0
	Saturday	10-15			24.0
	Sunday	10-15			24.0

Increase in service frequency
 Decrease in service frequency

Alignment notes:
 70E ends at Smith Ave Transit Center
 70W extended to Signal Hills Shopping Center in W St Paul
 74E ends at Smith Ave Transit Center
 74W ends at Randolph Station



Exhibit 16: Year 2040 Conceptual Service Plan for Alternative 5, BRT: W. 7th-Ford Site¹³

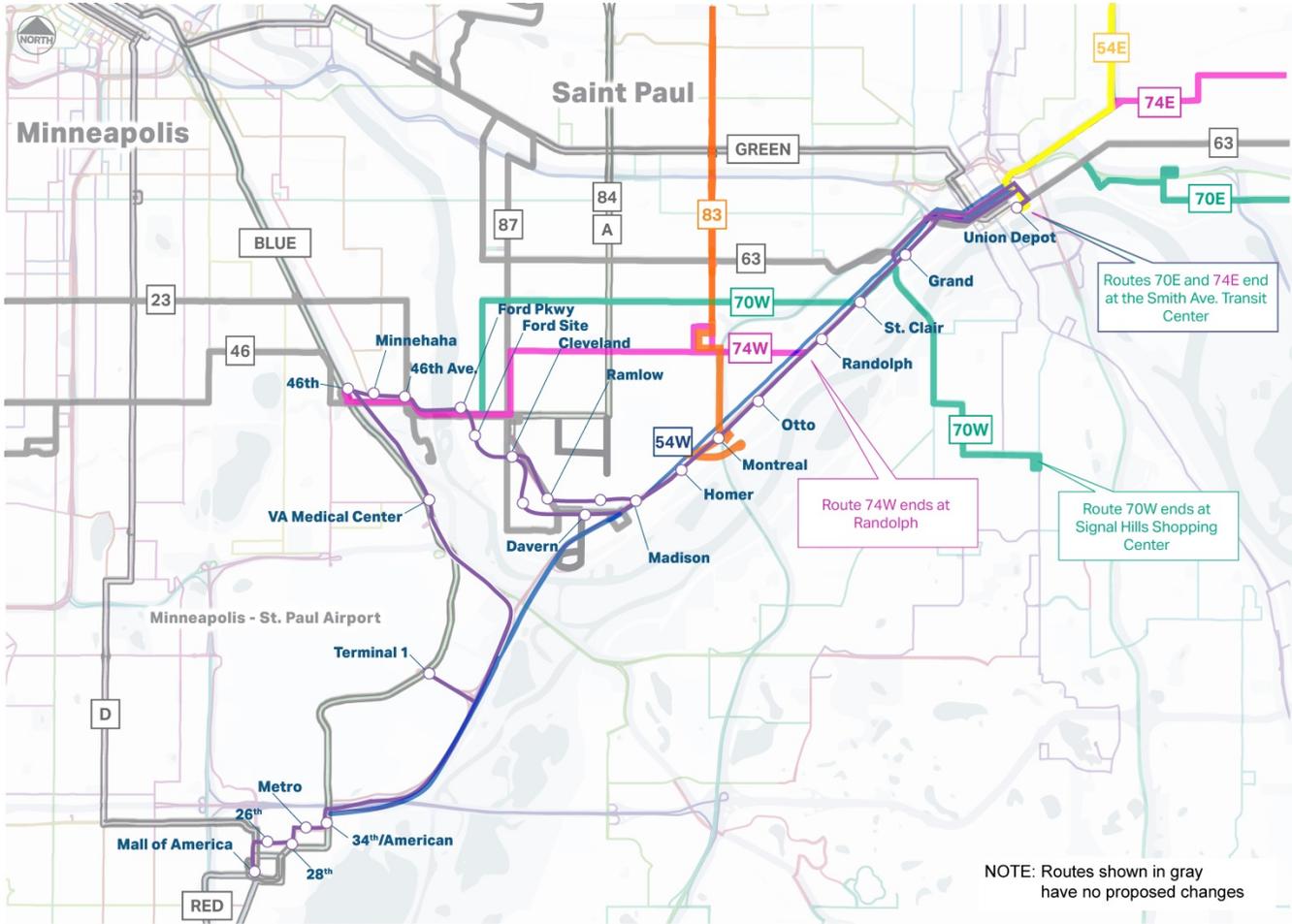


Key

	Riverview Alignment
	Light Rail
	Light Rail
	Bus Rapid Transit
	Rapid Bus Line
	Bus Line

Route	Change	Headway Peak/Mid
	Decrease Service	20/20 ▼
	Alignment	30/60
	Alignment	15/20
	Increase Service	20/20 ▲

- ▲ = More frequent service
- ▼ = Less frequent service



¹³ As of July 2016. For purposes of developing 2040 travel demand forecasts. Future environmental review and engineering phases of the selected Riverview LPA and relevant alternatives will refine service plans. This entails balancing several factors such as service frequencies, costs, and ridership.



ALTERNATIVE 6: RAIL: W. 7TH-FORD SITE¹⁴

Rail Service

In Alternative 6, rail service would operate on W. 7th Street to the CP Spur, use the spur to travel to the Ford Site, and then use the Ford Parkway Bridge to the existing Blue Line alignment at Hiawatha Avenue. Alternative 6 would operate every 10 minutes during daytime hours, seven days a week. Exhibit 17 presents the mainline service characteristics for Alternative 6.

Exhibit 17: Year 2040 Conceptual Service Plan for Alternative 6, Rail: W. 7th-Ford Site

Alternative	Day	Average Frequency [min]			Service Span [hrs]
		Peak	Midday	Evening Late/Early	
Alternative 6 Rail: W.7th-Ford Site	Weekday	10	10	15-30	22.0
	Saturday	10		15-30	22.0
	Sunday	10		15-30	22.0

Travel Times

Alternative 6 average one-way travel time is 56 minutes. Exhibit 19 illustrates the conceptual station locations served by Alternative 6, while Appendix A provides station-to-station travel times for each alternative.

¹⁴ Modern streetcar.

Proposed Changes to Local Bus Routes

- Route 54 West would operate at a reduced frequency, coincident with the proposed rail alternative. It would connect directly to MSP Airport and Mall of America, while Alternative 6 would serve the Ford Site. It would operate every 20 minutes during weekday daytimes, 30 minutes during weekend daytimes, and 60 minutes in late and early periods.
- Route 54 East: Route 54 East would continue to operate with same frequency and span as the No Build.
- Route 70: Split the east and west sides of the route. Route 70E would continue to operate between the east side of Saint Paul and downtown, ending at the Smith Avenue Transit Center. Route 70W would continue to operate on St. Clair Avenue to W. 7th Street, and then on the Smith Avenue Bridge to Signal Hills Shopping Center in West Saint Paul. All frequencies would remain the same with both branches of this route.
- Route 74: Split the east and west sides of the route. Route 74E would continue to operate between the east side of Saint Paul and downtown, ending at the Smith Avenue Transit Center. Route 74W would continue to operate on Randolph Avenue to W. 7th Street and end at the Randolph Avenue station of the proposed mainline service. All frequencies would remain the same with both branches of this route.
- Route 83: Increase the weekday daytime frequency from 30 minutes to 20 minutes to provide a better connection along Lexington Parkway to the proposed alternative. The service increase does not apply to evening or weekend service.

Exhibit 18 presents the overall service plan for Alternative 6, while Exhibit 19 shows the transit service plan map.



Exhibit 18: Year 2040 Conceptual Service Plan for Alternative 6, Rail: W. 7th-Ford Site

Route	Day	Average Frequency [min]			Service Span [hrs]
		Peak	Midday	Evening Late/Early	
A-Line	Weekday	10	10	10-20	21.5
	Saturday	10-15			20.5
	Sunday	10-15			20.5
D-Line	Weekday	7.5	7.5	10-15	19.0
	Saturday	10-15			18.5
	Sunday	10-15			18.5
23	Weekday	20	20-30	30	19.5
	Saturday	20-30			18.5
	Sunday	30			18.5
46 A/B	Weekday	14 trips			3.0
	Saturday				
	Sunday				
46 E/C	Weekday	30	30	60	17.7
	Saturday	30			16.5
	Sunday	30-60			13.0
54 East	Weekday	20	30	30	21.5
	Saturday	30-60			21.5
	Sunday	40-60			21.5
54 West	Weekday	20	20	30-60	21.0
	Saturday	30-60			21.0
	Sunday	30-60			21.0
63	Weekday	10-20	20	20-30	20.5
	Saturday	20-30			20.5
	Sunday	20-30			20.5

Route	Day	Average Frequency [min]			Service Span [hrs]
		Peak	Midday	Evening Late/Early	
70	Weekday	30	60	60	17.0
	Saturday				
	Sunday				
74	Weekday	15-20	20	30	21.5
	Saturday	20-30			20.5
	Sunday	30			20.0
83	Weekday	20	20	30	18.0
	Saturday	30			18.0
	Sunday	30			18.0
84	Weekday	30	30	30	16.0
	Saturday	30			10.5
	Sunday	30			10.5
87	Weekday	20	20	30-60	20.0
	Saturday	20-60			19.0
	Sunday	30-60			19.0
Red	Weekday	15	15	30	19.0
	Saturday	30-60			18.0
	Sunday	30-60			18.0
Blue	Weekday	10	10	15	23.0
	Saturday	10-15			23.0
	Sunday	10-15			23.0
Green	Weekday	10	10	15	24.0
	Saturday	10-15			24.0
	Sunday	10-15			24.0

Increase in service frequency
 Decrease in service frequency

Alignment notes:
 70E ends at Smith Ave Transit Center
 70W extended to Signal Hills Shopping Center in W St Paul
 74E ends at Smith Ave Transit Center
 74W ends at Randolph Station



Exhibit 19: Year 2040 Conceptual Service Plan for Alternative 6, Rail: W. 7th-Ford Site¹⁵

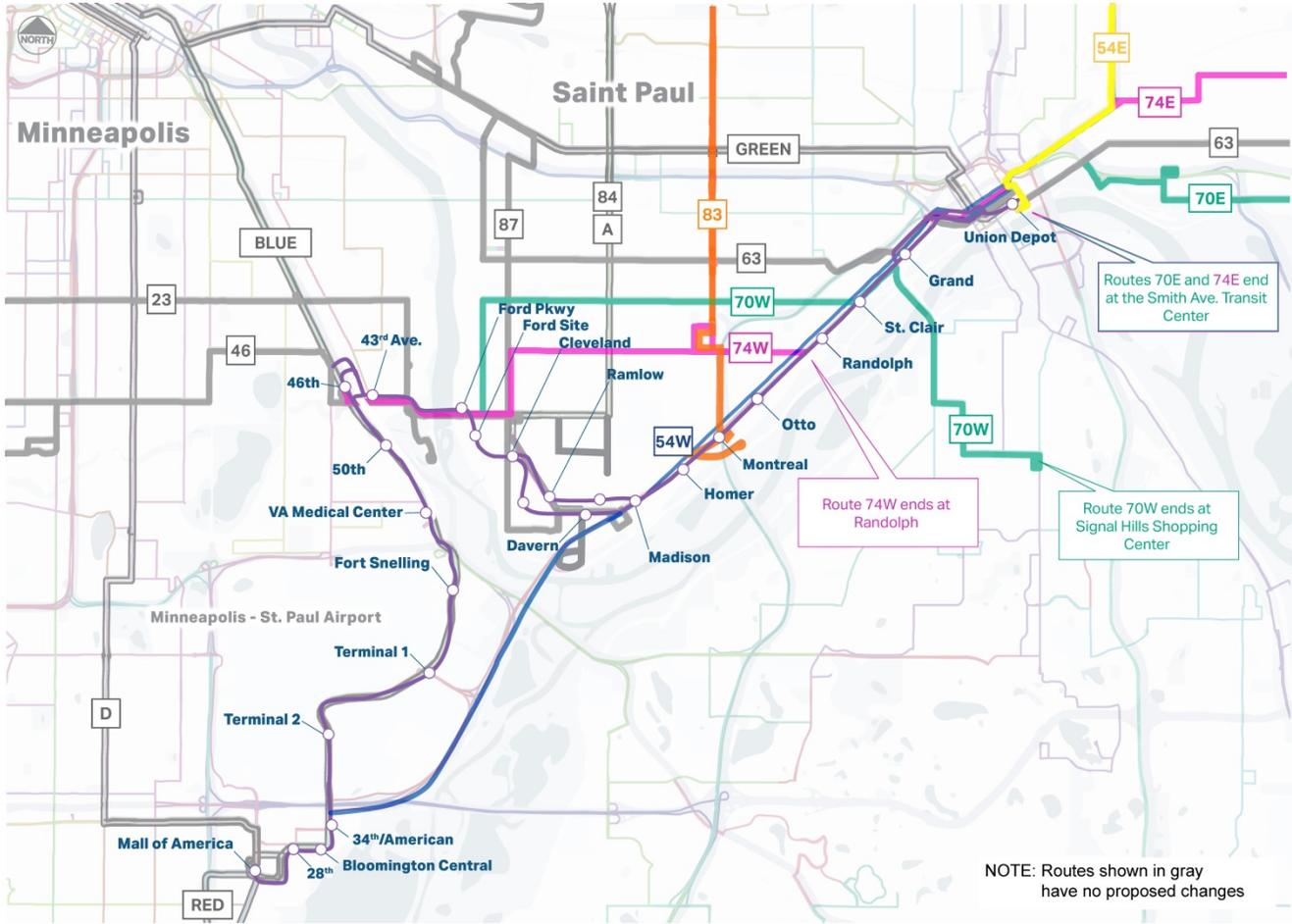


Key

	Riverview Alignment
	Light Rail
	Light Rail
	Bus Rapid Transit
	Rapid Bus Line
	Bus Line

Route	Change	Headway Peak/Mid
54W	Decrease Service	20/20 ▼
70	Alignment	30/60
74	Alignment	15/20
83	Increase Service	20/20 ▲

- ▲ = More frequent service
- ▼ = Less frequent service



¹⁵ As of July 2016. For purposes of developing 2040 travel demand forecasts. Future environmental review and engineering phases of the selected Riverview LPA and relevant alternatives will refine service plans. This entails balancing several factors such as service frequencies, costs, and ridership.



ALTERNATIVE 7: BRT: W. 7TH-CP SPUR-FORD SITE

DBRT Service

In Alternative 7, DBRT service would operate on W. 7th Street to Toronto Street, and then use the CP Spur to travel to the Ford Site. Alternative 7 is proposed to operate at a 10-minute frequency during daytime hours, seven days a week. Exhibit 20 presents the mainline service characteristics for Alternative 7.

Exhibit 20: Year 2040 Conceptual Service Plan for Alternative 7, BRT: W. 7th-CP Spur-Ford Site

Alternative	Day	Average Frequency [min]			Service Span [hrs]
		Peak	Midday	Evening Late/Early	
Alternative 7 BRT: W.7th-CP Spur- Ford Site	Weekday	10	10	15-30	22.0
	Saturday	10		15-30	22.0
	Sunday	10		15-30	22.0

Travel Times

Alternative 7 average one-way travel time is 58 minutes. Exhibit 22 illustrates the conceptual station locates served by Alternative 7. Appendix A provides station-to-station travel times for each alternative.

Proposed Changes to Local Bus Routes

- **Route 54 West:** Route 54 West would operate at a reduced frequency, coincident with the proposed BRT service on the CP Spur. This route would connect directly to MSP Airport and Mall of America, while Alternative 7 would serve the Ford Site. Route 54 West would operate every 20 minutes during weekday daytimes, 30 minutes during weekend daytimes, and 60 minutes in late and early periods.
- **Route 54 East:** Route 54 East would continue to operate with same frequency and span as the No Build.

- **Route 70:** The east and west sides of this route would split. Route 70E would continue to operate between the east side of Saint Paul and downtown, ending at the Smith Avenue Transit Center. Route 70W would operate as normal on St. Clair Avenue to W. 7th Street. Instead of traveling to downtown, it would use the Smith Avenue Bridge, ending at Signal Hills Shopping Center in West Saint Paul. All frequencies would remain the same with both branches of this route.
- **Route 74:** The east and west sides of this route would split. Route 74E would continue to operate between the east side of Saint Paul and downtown, ending at the Smith Avenue Transit Center. Route 74W would continue to operate on Randolph Avenue to W. 7th Street, terminating at the Randolph Avenue station of the proposed mainline service. All frequencies would remain the same with both branches of this route.
- **Route 83:** The proposed weekday daytime frequency would increase from 30 minutes to 20 minutes to improve connection along Lexington Parkway to Alternative 7. The service increase does not apply to evening or weekend service.

Exhibit 21 presents the overall service plan for Alternative 7, while Exhibit 22 shows the transit service plan map.



Exhibit 21: Year 2040 Conceptual Service Plan for Alternative 7, BRT: W. 7th-CP Spur-Ford Site

Route	Day	Average Frequency [min]			Service Span [hrs]
		Peak	Midday	Evening Late/Early	
A-Line	Weekday	10	10	10-20	21.5
	Saturday	10-15			20.5
	Sunday	10-15			20.5
D-Line	Weekday	7.5	7.5	10-15	19.0
	Saturday	10-15			18.5
	Sunday	10-15			18.5
23	Weekday	20	20-30	30	19.5
	Saturday	20-30			18.5
	Sunday	30			18.5
46 A/B	Weekday	14 trips			3.0
	Saturday				
	Sunday				
46 E/C	Weekday	30	30	60	17.7
	Saturday	30			16.5
	Sunday	30-60			13.0
54 East	Weekday	20	30	30	21.5
	Saturday	30-60			21.5
	Sunday	40-60			21.5
54 West	Weekday	20	20	30-60	21.0
	Saturday	30-60			21.0
	Sunday	30-60			21.0
63	Weekday	10-20	20	20-30	20.5
	Saturday	20-30			20.5
	Sunday	20-30			20.5

Route	Day	Average Frequency [min]			Service Span [hrs]
		Peak	Midday	Evening Late/Early	
70	Weekday	30	60	60	17.0
	Saturday				
	Sunday				
74	Weekday	15-20	20	30	21.5
	Saturday	20-30			20.5
	Sunday	30			20.0
83	Weekday	20	20	30	18.0
	Saturday	30			18.0
	Sunday	30			18.0
84	Weekday	30	30	30	16.0
	Saturday	30			10.5
	Sunday	30			10.5
87	Weekday	20	20	30-60	20.0
	Saturday	20-60			19.0
	Sunday	30-60			19.0
Red	Weekday	15	15	30	19.0
	Saturday	30-60			18.0
	Sunday	30-60			18.0
Blue	Weekday	10	10	15	23.0
	Saturday	10-15			23.0
	Sunday	10-15			23.0
Green	Weekday	10	10	15	24.0
	Saturday	10-15			24.0
	Sunday	10-15			24.0

Increase in service frequency
 Decrease in service frequency

Alignment notes:
 70E ends at Smith Ave Transit Center
 70W extended to Signal Hills Shopping Center in W St Paul
 74E ends at Smith Ave Transit Center
 74W ends at Randolph Station



Exhibit 22: Year 2040 Conceptual Service Plan for Alternative 7: BRT: W. 7th-CP Spur-Ford Site¹⁶

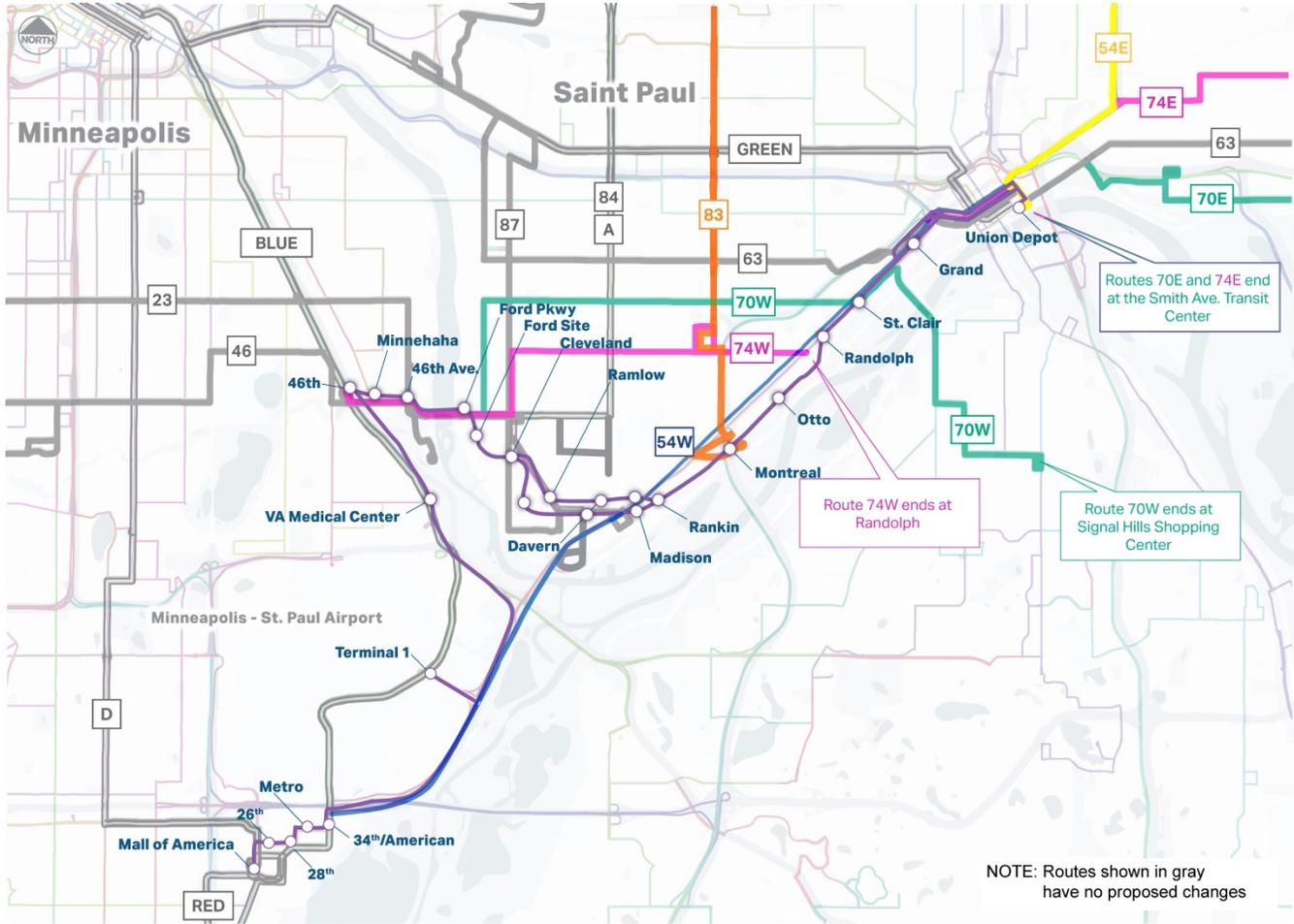


Key

- Riverview Alignment
- BLUE Light Rail
- GREEN Light Rail
- RED Bus Rapid Transit
- A D Rapid Bus Line
- 123 Bus Line

Route	Change	Headway Peak/Mid
54W	Decrease Service	20/20 ▼
70	Alignment	30/60
74	Alignment	15/20
83	Increase Service	20/20 ▲

- ▲ = More frequent service
- ▼ = Less frequent service



¹⁶ As of July 2016. For purposes of developing 2040 travel demand forecasts. Future environmental review and engineering phases of the selected Riverview LPA and relevant alternatives will refine service plans. This entails balancing several factors such as service frequencies, costs, and ridership.



ALTERNATIVE 8: RAIL: W. 7TH-CP SPUR-FORD SITE¹⁷

Rail Service

In Alternative 8, rail service would operate on W. 7th Street to Toronto Street, and then use the CP Spur to travel to the Ford Site. It would operate at a 10-minute frequency during daytime hours, seven days a week. Exhibit 23 presents the mainline service characteristics for Alternative 8.

Exhibit 23: Year 2040 Conceptual Service Plan for Alternative 8, Rail: W. 7th-CP Spur-Ford Site

Alternative	Day	Average Frequency [min]			Service Span [hrs]
		Peak	Midday	Evening Late/Early	
Alternative 8	Weekday	10	10	15-30	22.0
Rail: W.7th-CP Spur-Ford Site	Saturday	10		15-30	22.0
	Sunday	10		15-30	22.0

Travel Times

Alternative 8 average one-way travel time is 54 minutes. Exhibit 25 illustrates conceptual station locations served by Alternative 8; Appendix A provides station-to-station travel times for each alternative.

Proposed Changes to Local Bus Routes

- Route 54 West would operate at a reduced frequency, coincident with the proposed mainline service on the CP Spur. It would connect directly to MSP Airport and Mall of America, while Alternative 8 would serve the Ford Site. It would operate every 20 minutes during weekday daytimes, 30 minutes during weekend daytimes, and 60 minutes in late and early periods.

- Route 54 East: Route 54 East would continue to operate with same frequency and span as the No Build.
- Route 70: Split the east and west sides of the route. Route 70E would continue to operate between the east side of Saint Paul and downtown, ending at the Smith Avenue Transit Center. Route 70W would continue to operate on St. Clair Avenue to W. 7th Street. Instead of traveling to downtown, it would use the Smith Avenue Bridge, ending at Signal Hills Shopping Center in West Saint Paul. All frequencies would remain the same with both branches of this route.
- Route 74: Split the east and west sides of the route. Route 74E would continue to operate between the east side of Saint Paul and downtown, ending at the Smith Avenue Transit Center. Route 74W would continue to operate on Randolph Avenue to W. 7th Street, terminating at the Randolph Avenue station of the proposed mainline service. All frequencies would remain the same with both branches of this route.
- Route 83: The proposed weekday daytime frequency would increase from 30 minutes to 20 minutes to improve connection along Lexington Parkway to the proposed alternative. The service increase does not apply to evening or weekend service.

Exhibit 24 presents the overall service plan for Alternative 8, while Exhibit 25 shows the transit service plan map.

¹⁷ Modern streetcar.



Exhibit 24. Year 2040 Conceptual Service Plan for Alternative 8, Rail: W. 7th-CP Spur-Ford Site

Route	Day	Average Frequency [min]			Service Span [hrs]
		Peak	Midday	Evening Late/Early	
A-Line	Weekday	10	10	10-20	21.5
	Saturday	10-15			20.5
	Sunday	10-15			20.5
D-Line	Weekday	7.5	7.5	10-15	19.0
	Saturday	10-15			18.5
	Sunday	10-15			18.5
23	Weekday	20	20-30	30	19.5
	Saturday	20-30			18.5
	Sunday	30			18.5
46 A/B	Weekday	14 trips			3.0
	Saturday				
	Sunday				
46 E/C	Weekday	30	30	60	17.7
	Saturday	30			16.5
	Sunday	30-60			13.0
54 East	Weekday	20	30	30	21.5
	Saturday	30-60			21.5
	Sunday	40-60			21.5
54 West	Weekday	20	20	30-60	21.0
	Saturday	30-60			21.0
	Sunday	30-60			21.0
63	Weekday	10-20	20	20-30	20.5
	Saturday	20-30			20.5
	Sunday	20-30			20.5

Route	Day	Average Frequency [min]			Service Span [hrs]
		Peak	Midday	Evening Late/Early	
70	Weekday	30	60	60	17.0
	Saturday				
	Sunday				
74	Weekday	15-20	20	30	21.5
	Saturday	20-30			20.5
	Sunday	30			20.0
83	Weekday	20	20	30	18.0
	Saturday	30			18.0
	Sunday	30			18.0
84	Weekday	30	30	30	16.0
	Saturday	30			10.5
	Sunday	30			10.5
87	Weekday	20	20	30-60	20.0
	Saturday	20-60			19.0
	Sunday	30-60			19.0
Red	Weekday	15	15	30	19.0
	Saturday	30-60			18.0
	Sunday	30-60			18.0
Blue	Weekday	10	10	15	23.0
	Saturday	10-15			23.0
	Sunday	10-15			23.0
Green	Weekday	10	10	15	24.0
	Saturday	10-15			24.0
	Sunday	10-15			24.0

Increase in service frequency
 Decrease in service frequency

Alignment notes:
 70E ends at Smith Ave Transit Center
 70W extended to Signal Hills Shopping Center in W St Paul
 74E ends at Smith Ave Transit Center
 74W ends at Randolph Station



Exhibit 25: Year 2040 Conceptual Service Plan for Alternative 8, Rail: W. 7th-CP Spur-Ford Site¹⁸

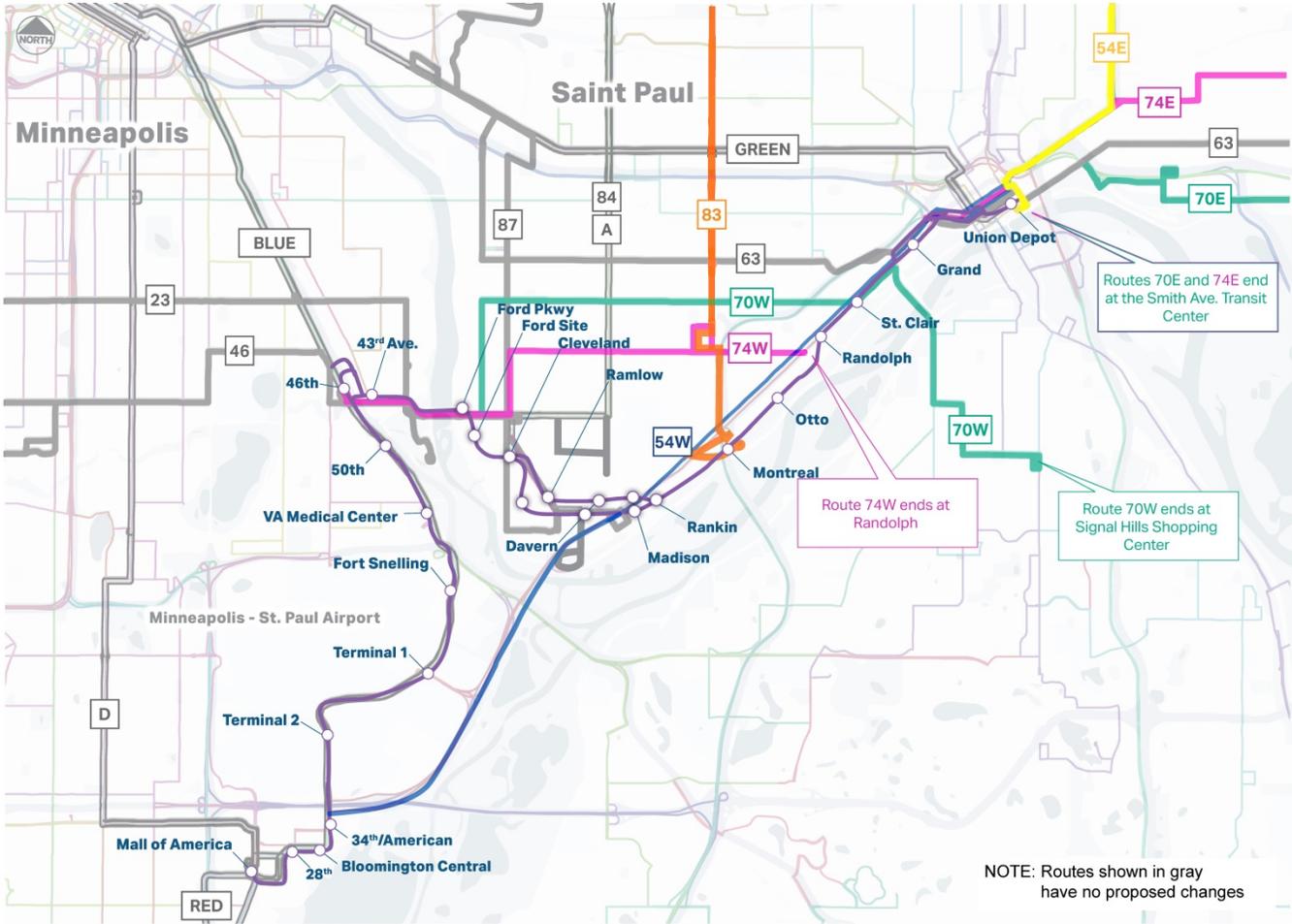


Key

- Riverview Alignment
- BLUE Light Rail
- GREEN Light Rail
- RED Bus Rapid Transit
- A D Rapid Bus Line
- 123 Bus Line

Route	Change	Headway Peak/Mid
54W	Decrease Service	20/20 ▼
70	Alignment	30/60
74	Alignment	15/20
83	Increase Service	20/20 ▲

- ▲ = More frequent service
- ▼ = Less frequent service



¹⁸ As of July 2016. For purposes of developing 2040 travel demand forecasts. Future environmental review and engineering phases of the selected Riverview LPA and relevant alternatives will refine service plans. This entails balancing several factors such as service frequencies, costs, and ridership.



**ALTERNATIVE 9:
BRT: W. 7TH-CP SPUR-HWY 5/FORT SNELLING**

DBRT Service

In Alternative 9, DBRT would operate on W. 7th Street, the CP Spur between Toronto Street and approximately St. Paul Avenue, and follow Route 54 for service to MSP Terminal 1 and Bloomington South Loop. The initial draft DBRT service plan proposes 10 minutes in the peak, as shown on Exhibit 26.¹⁹

Exhibit 26: Year 2040 Conceptual Service Plan for Alternative 9, BRT: W. 7th-CP Spur-Hwy 5/Fort Snelling¹⁹

Alternative	Day	Average Frequency [min]			Service Span [hrs]
		Peak	Midday	Evening Late/Early	
Alternative 9 BRT: W.7th-CP Spur- Hwy 5 / Fort Snelling	Weekday	10	10	15-30	22.0
	Saturday	10		15-30	22.0
	Sunday	10		15-30	22.0

Travel Times

Alternative 9 average one-way travel time is 40 minutes. Exhibit 28 illustrates conceptual station locations served by Alternative 9, while Appendix A provides station-to-station travel times for each alternative.

¹⁹ A frequency equilibration indicated that Alternative 9 DBRT service at 10-minute peak frequency would result in bus overcrowding. Therefore, it was adjusted to nine-minute peak frequency. See *Frequency Equilibration* at the end of this memorandum.

Proposed Changes to Local Bus Routes

- Route 46: The weekday daytime frequency would increase from every 30 minutes to every 20 minutes to improve connection from Highland Village to the proposed alternative. The service increase does not apply to evening or weekend service.
- Route 54 West: Route 54 West would still operate in Alternative 9, but with an increased frequency of every 30 minutes during daytime and every 60 minutes at night due to the mainline service operating on the same corridor.
- Route 54 East: Route 54 East would continue to operate with same frequency and span as the No Build.
- Route 70: The east and west sides of this route would split. Route 70E would continue to operate between the east side of Saint Paul and downtown, ending at the Smith Avenue Transit Center. Route 70W would continue to operate on St. Clair Avenue to W. 7th Street. Instead of traveling to downtown, it would use the Smith Avenue Bridge, ending at Signal Hills Shopping Center in West Saint Paul. All frequencies would remain the same with both branches of this route.
- Route 74: The east and west sides of this route would split. Route 74E would continue to operate between the east side of Saint Paul and downtown, ending at the Smith Avenue Transit Center. Route 74W would continue to operate on Randolph Avenue to W. 7th Street, terminating at the Randolph Avenue station of the proposed mainline service. All frequencies would remain the same with both branches of this route.



- Route 83: The weekday daytime frequency would increase from every 30 minutes to every 20 minutes to provide a better connection along Lexington Parkway to the proposed alternative. The service increase does not apply to evening or weekend service.

Exhibit 27 presents the overall service plan for Alternative 9, while Exhibit 28 shows the transit service plan map.

Exhibit 27: Year 2040 Conceptual Service Plan for Alternative 9, BRT: W. 7th-CP Spur-Hwy 5/Fort Snelling

Route	Day	Average Frequency [min]			Service Span [hrs]
		Peak	Midday	Evening Late/Early	
A-Line	Weekday	10	10	10-20	21.5
	Saturday	10-15			20.5
	Sunday	10-15			20.5
D-Line	Weekday	7.5	7.5	10-15	19.0
	Saturday	10-15			18.5
	Sunday	10-15			18.5
23	Weekday	20	20-30	30	19.5
	Saturday	20-30			18.5
	Sunday	30			18.5
46 A/B	Weekday	14 trips			3.0
	Saturday				
	Sunday				
46 E/C	Weekday	20	20	60	17.7
	Saturday	30			16.5
	Sunday	30-60			13.0
54 East	Weekday	20	30	30	21.5
	Saturday	30-60			21.5
	Sunday	40-60			21.5
54 West	Weekday	20	20	30-60	21.0
	Saturday	30-60			21.0
	Sunday	30-60			21.0
63	Weekday	10-20	20	20-30	20.5
	Saturday	20-30			20.5
	Sunday	20-30			20.5

Route	Day	Average Frequency [min]			Service Span [hrs]
		Peak	Midday	Evening Late/Early	
70	Weekday	30	60	60	17.0
	Saturday				
	Sunday				
74	Weekday	15-20	20	30	21.5
	Saturday	20-30			20.5
	Sunday	30			20.0
83	Weekday	20	20	30	18.0
	Saturday	30			18.0
	Sunday	30			18.0
84	Weekday	30	30	30	16.0
	Saturday	30			10.5
	Sunday	30			10.5
87	Weekday	20	20	30-60	20.0
	Saturday	20-60			19.0
	Sunday	30-60			19.0
Red	Weekday	15	15	30	19.0
	Saturday	30-60			18.0
	Sunday	30-60			18.0
Blue	Weekday	10	10	15	23.0
	Saturday	10-15			23.0
	Sunday	10-15			23.0
Green	Weekday	10	10	15	24.0
	Saturday	10-15			24.0
	Sunday	10-15			24.0

Increase in service frequency
 Decrease in service frequency

Alignment notes:
 70E ends at Smith Ave Transit Center
 70W extended to Signal Hills Shopping Center in W St Paul
 74E ends at Smith Ave Transit Center
 74W ends at Randolph Station



Exhibit 28: Year 2040 Conceptual Service Plan for Alternative 9, BRT: W. 7th-CP Spur-Hwy 5/Fort Snelling²⁰

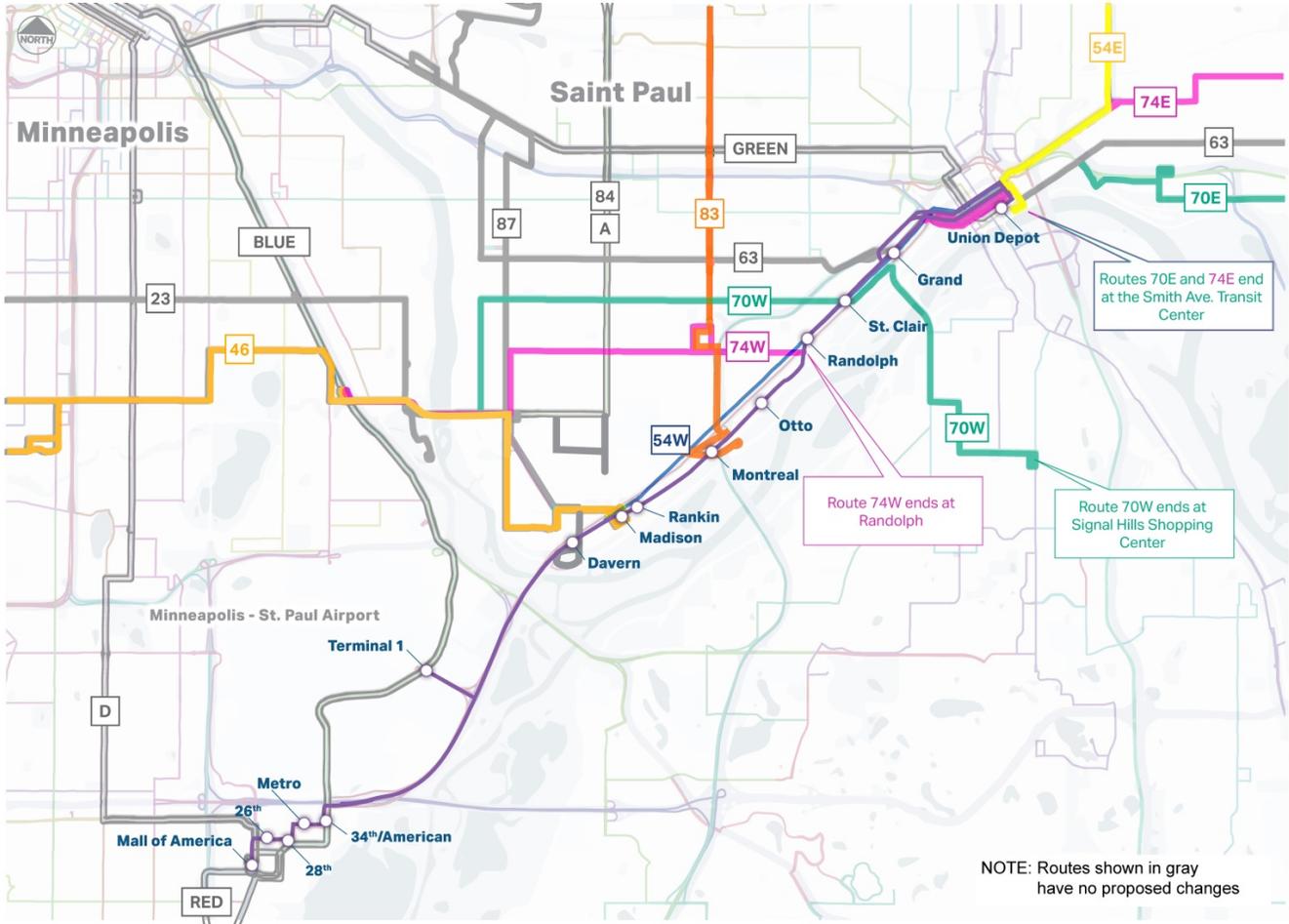


Key

	Riverview Alignment
	Light Rail
	Light Rail
	Bus Rapid Transit
	Rapid Bus Line
	Bus Line

Route	Change	Headway Peak/Mid
46	Increase Service	20/20 ▲
54W	Decrease Service	20/20 ▼
70	Alignment	30/60
74	Alignment	15/20
83	Increase Service	20/20 ▲

- ▲ = More frequent service
- ▼ = Less frequent service



²⁰ As of July 2016. For purposes of developing 2040 travel demand forecasts. Future environmental review and engineering phases of the selected Riverview LPA and relevant alternatives will refine service plans. This entails balancing several factors such as service frequencies, costs, and ridership.



**ALTERNATIVE 10:
RAIL: W. 7TH-CP SPUR-HWY 5/FORT SNELLING²¹**

Rail Service

Alternative 10 entails rail service on W. 7th Street, Toronto Street and the CP Spur between Toronto Street and approximately St. Paul Avenue, and crossing the Mississippi River to connect to the Blue Line at Fort Snelling Station. The rail alternative would operate every 10 minutes during daytime hours, seven days a week. Exhibit 29 presents the mainline service characteristics for Alternative 10.

Exhibit 29: Year 2040 Conceptual Service Plan for Alternative 10, Rail: W. 7th-CP Spur-Hwy 5/Fort Snelling

Alternative	Day	Average Frequency [min]			Service Span [hrs]
		Peak	Midday	Evening Late/Early	
Alternative 10 Rail: W.7th-CP Spur- Hwy 5 / Fort Snelling	Weekday	10	10	15-30	22.0
	Saturday	10		15-30	22.0
	Sunday	10		15-30	22.0

Travel Times

Alternative 8 average one-way travel time is 43 minutes. Exhibit 31 illustrates conceptual station locations served by Alternative 10. Appendix A provides station-to-station travel times for each alternative.

Proposed Changes to Local Bus Routes

- Route 46: The weekday daytime frequency would increase from every 30 minutes to every 20 minutes to improve connection from Highland Village to the proposed alternative. The service increase does not apply to evening or weekend service.

- Route 54 West: Route 54 West would still operate in Alternative 10, but with a reduced frequency of 30 minutes during daytime and 60 minutes at night, coincident with the proposed streetcar service. Route 54 East would continue to operate with same frequency and span as the No Build.
- Route 70: The east and west sides of this route would split. Route 70E would continue to operate between the east side of Saint Paul and downtown, ending at the Smith Avenue Transit Center. Route 70W would continue to operate on St. Clair Avenue to W. 7th Street. Instead of traveling to downtown, it would use the Smith Avenue Bridge, ending at Signal Hills Shopping Center in West Saint Paul. All frequencies would remain the same with both branches of this route.
- Route 74: The east and west sides of this route would split. Route 74E would continue to operate between the east side of Saint Paul and downtown, ending at the Smith Avenue Transit Center. Route 74W would continue to operate on Randolph Avenue to W. 7th Street, terminating at the Randolph Avenue station of the proposed mainline service. All frequencies would remain the same with both branches of this route.
- Route 83: The weekday daytime frequency would increase from every 30 minutes to every 20 minutes to provide a better connection along Lexington Parkway to the proposed alternative. The service increase does not apply to evening or weekend service.

Exhibit 30 presents the overall service plan for Alternative 10, while Exhibit 31 shows the transit service plan map.

²¹ LRT or modern streetcar.



Exhibit 30: Year 2040 Conceptual Service Plan for Alternative 10, Rail: W. 7th-CP Spur-Hwy 5/Fort Snelling

Route	Day	Average Frequency [min]			Service Span [hrs]
		Peak	Midday	Evening Late/Early	
A-Line	Weekday	10	10	10-20	21.5
	Saturday	10-15			20.5
	Sunday	10-15			20.5
D-Line	Weekday	7.5	7.5	10-15	19.0
	Saturday	10-15			18.5
	Sunday	10-15			18.5
23	Weekday	20	20-30	30	19.5
	Saturday	20-30			18.5
	Sunday	30			18.5
46 A/B	Weekday	14 trips			3.0
	Saturday				
	Sunday				
46 E/C	Weekday	20	20	60	17.7
	Saturday	30			16.5
	Sunday	30-60			13.0
54 East	Weekday	20	30	30	21.5
	Saturday	30-60			21.5
	Sunday	40-60			21.5
54 West	Weekday	20	20	30-60	21.0
	Saturday	30-60			21.0
	Sunday	30-60			21.0
63	Weekday	10-20	20	20-30	20.5
	Saturday	20-30			20.5
	Sunday	20-30			20.5

Route	Day	Average Frequency [min]			Service Span [hrs]
		Peak	Midday	Evening Late/Early	
70	Weekday	30	60	60	17.0
	Saturday				
	Sunday				
74	Weekday	15-20	20	30	21.5
	Saturday	20-30			20.5
	Sunday	30			20.0
83	Weekday	20	20	30	18.0
	Saturday	30			18.0
	Sunday	30			18.0
84	Weekday	30	30	30	16.0
	Saturday	30			10.5
	Sunday	30			10.5
87	Weekday	20	20	30-60	20.0
	Saturday	20-60			19.0
	Sunday	30-60			19.0
Red	Weekday	15	15	30	19.0
	Saturday	30-60			18.0
	Sunday	30-60			18.0
Blue	Weekday	10	10	15	23.0
	Saturday	10-15			23.0
	Sunday	10-15			23.0
Green	Weekday	10	10	15	24.0
	Saturday	10-15			24.0
	Sunday	10-15			24.0

Increase in service frequency
 Decrease in service frequency

Alignment notes:
 70E ends at Smith Ave Transit Center
 70W extended to Signal Hills Shopping Center in W St Paul
 74E ends at Smith Ave Transit Center
 74W ends at Randolph Station



Exhibit 31: Year 2040 Conceptual Service Plan for Alternative 10, Rail: W. 7th-CP Spur-Hwy 5/Fort Snelling²²

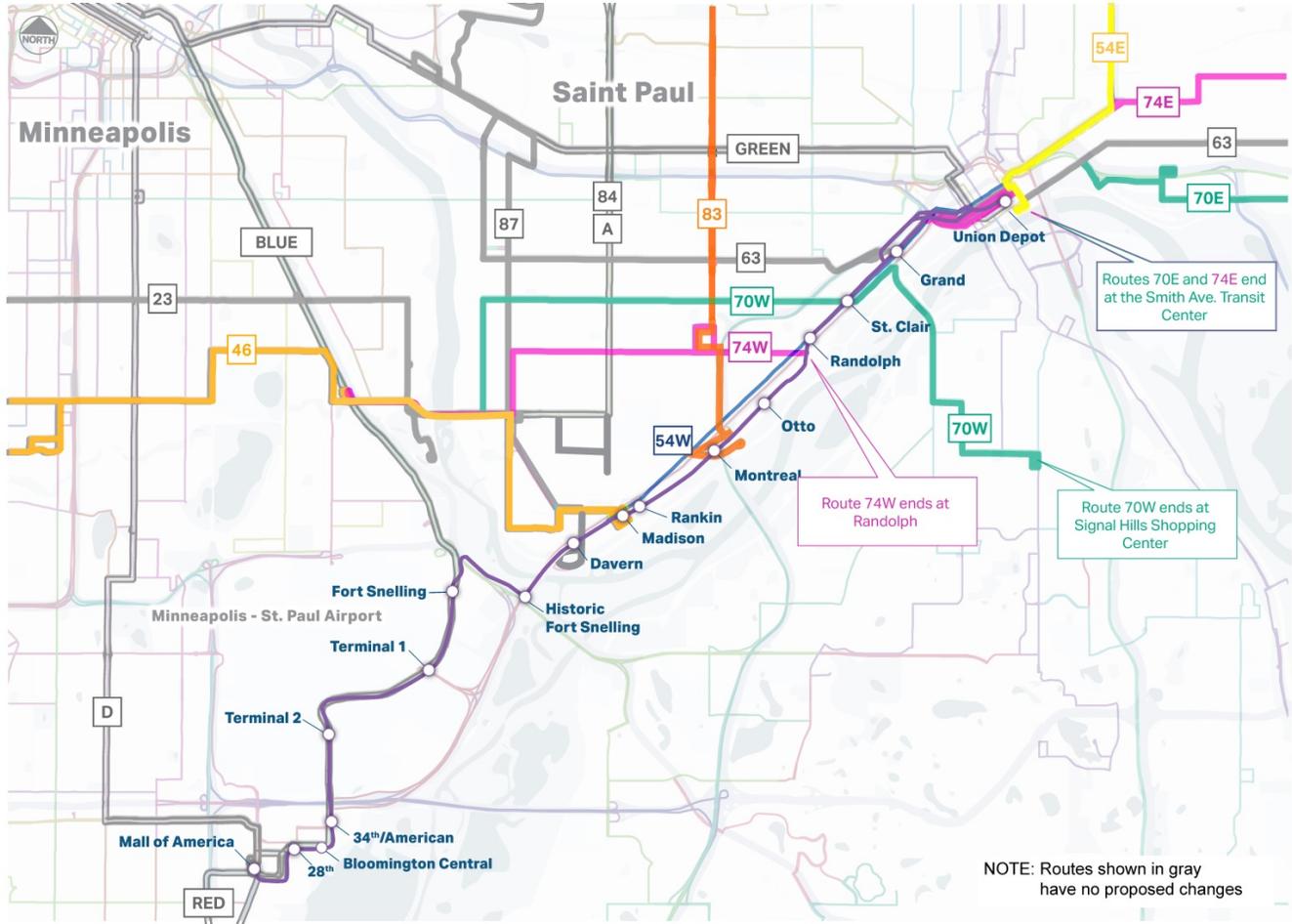


Key

- Riverview Alignment
- BLUE Light Rail
- GREEN Light Rail
- RED Bus Rapid Transit
- A | D Rapid Bus Line
- 123 Bus Line

Route	Change	Headway Peak/Mid
46	Increase Service	20/20 ▲
54W	Decrease Service	20/20 ▼
70	Alignment	30/60
74	Alignment	15/20
83	Increase Service	20/20 ▲

- ▲ = More frequent service
- ▼ = Less frequent service



²² As of July 2016. For purposes of developing 2040 travel demand forecasts. Future environmental review and engineering phases of the selected Riverview LPA and relevant alternatives will refine service plans. This entails balancing several factors such as service frequencies, costs, and ridership.



FREQUENCY EQUILIBRATION

An initial peak frequency of 10 minutes was set for each of the proposed build alternatives. This frequency was used in the ridership model to generate an initial set of ridership results for each alternative. The process of equilibration reviews the peak hour peak direction load and determines if the capacity of the service using the initial frequency can accommodate the ridership. If not, the frequency is adjusted, and if necessary, tested in the model again to generate a new load.

For this study, two alternatives were flagged as being over capacity. Alternatives 3 and 9 each had an initial peak load over the capacity. The table below shows the peak load and equilibration calculation. Because of this process, the peak period frequency for Alternatives 3 and 9 were adjusted to every 9 minutes to accommodate the new loading. Because it is unclear the exact hour of the peak load, and to exercise caution, the 9-minute frequency was applied to all daytime service on each of these alternatives. Exhibit 32 presents the results of this analysis.

Finally, because the revised frequency is close to the initial frequency, it was determined that the ridership model would likely not have a significant difference in terms of ridership. So, the revised frequency was not retested in the ridership model.

Exhibit 32: Peak Load and Frequency Equilibration

Peak Hour Peak Load Analysis Alternative	Peak Load	Direction	Location	Peak Trips/Hr	Vehicle Capacity	Consist	Total Capacity (per hr per dir)	Over Capacity?	Required Trips/Hr	Required Frequency
Alternative 3 - BRT - W. 7th-Hwy 5/Fort Snelling	466	wb	Grand - St. Clair	6.0	73	1	438	over	6.4	9 min
Alternative 4 - Rail - W. 7th-Hwy 5/Fort Snelling	563	eb	St. Clair - Grand	6.0	136	1	816		6.0	10 min
Alternative 5 - BRT - W. 7th-Ford Site	334	eb	St. Clair - Grand	6.0	73	1	438		6.0	10 min
Alternative 6 - Rail - W. 7th-Ford Site	426	eb	St. Clair - Grand	6.0	136	1	816		6.0	10 min
Alternative 7 - BRT - W. 7th-CP Spur-Ford Site	297	eb	Smith-Grand	6.0	73	1	438		6.0	10 min
Alternative 8 - Rail - W. 7th-CP Spur-Ford Site	410	eb	St. Clair - Grand	6.0	136	1	816		6.0	10 min
Alternative 9 - BRT - W. 7th-CP Spur-Hwy 5/ Fort Snelling	447	wb	Grand - St. Clair	6.0	73	1	438	over	6.1	9 min
Alternative 10 - Rail - W. 7th-CP Spur-Hwy 5/ Fort Snelling	535	eb	St. Clair - Grand	6.0	136	1	816		6.0	10 min

ANNUAL OPERATING STATISTICS SUMMARY

This section summarizes the operating statistics for the alternatives in this document. These statistics are used to estimate operations and maintenance (O&M) costs. See Appendices B and C for details on the mainline and local bus operating statistics, respectively.

Exhibit 33: Rail Annual Operating Statistics Summary

Rail Alternatives Annual Operating Statistics	Alt 4	Alt 6	Alt 8	Alt 10
	Rail: W. 7th - Hwy 5 / Fort Snelling	Rail: W. 7th - Ford Site	Rail: W. 7th-CP Spur- Ford Site	Rail: W. 7th-CP Spur- Hwy 5 / Fort Snelling
Rev. Train-Hours	71,000	85,500	85,500	71,000
Rev. Pass Car-Miles	913,100	1,216,400	1,228,800	923,900
Peak Pass. Cars	12	14	14	12
LRT Platforms ²³	11	16	16	12
Directional Track Miles	13.8	17.1	17.6	14.2
Train Yards	1	1	1	1

Exhibit 34: BRT Annual Operating Statistics Summary

BRT Alternatives Annual Operating Statistics	Alt 2	Alt 3	Alt 5	Alt 7	Alt 9
	Arterial BRT: W. 7th - Hwy 5 / Fort Snelling	BRT: W. 7th - Hwy 5 / Fort Snelling	BRT: W. 7th - Ford Site	BRT: W. 7th-CP Spur- Ford Site	BRT: W. 7th-CP Spur- Hwy 5 / Fort Snelling
Veh-Hrs	58,300	69,700	92,100	92,100	69,700
Veh-Miles	965,600	1,026,800	1,395,600	1,404,900	1,033,600
Pk Vehicle	9	11	14	14	11
BRT Platforms ²³	47	39	53	53	37
Lane Miles	0.0	24.9	36.0	36.2	25.2
TSP Intersections	41	46	57	50	40

²³ The number and configuration of platforms presumed in the Study are subject to change, based on future environmental review and engineering phases of the selected Riverview LPA. Also see Memorandum, Basis of estimate, under separate cover.

Appendix A. Mainline Station-to-Station Travel Times

This section details the station-to-station travel times for each mainline alternative. For rail alternatives, travel between existing Metro Transit Blue and Green rail lines use information from public timetables. Lower speeds are assumed in congested areas for segments in mixed traffic (i.e. downtown Saint Paul and W. 7th Street between Kellogg Boulevard and Smith Avenue), based on intersection level of service information when available.

The run time estimate for each MPA between downtown Saint Paul and Mall of America Transit Station is a series of intersections and segments that make up the proposed alignment. For segments operating in mixed traffic, the observed level of service was applied, which has the effect of reducing the speed. For example, W. 7th Street from Kellogg Boulevard to Chestnut Street has a statutory speed of 25 mph. Applying the observed level of service of C to the segment, the model reduced the speed in the segment to 20 mph. This speed reduction was applied in places of observed traffic congestion, where alternatives were operating in mixed traffic conditions.

Alternative 2 - Arterial BRT: W. 7th-Hwy 5/Fort Snelling		Westbound					Eastbound				
From	To	Seg. Dist.	Cum. Dist.	Seg. Time	Cum. Time	mph	Seg. Dist.	Cum. Dist.	Seg. Time	Cum. Time	mph
Union Depot	Broadway & 5th	0.28	0.28	01:36	01:36	10.4	0.34	12.57	01:28	38:56	13.7
Broadway & 5th	6th & Wall	0.10	0.38	00:43	02:19	8.8	0.17	12.24	01:18	37:28	7.7
6th & Wall	6th & Sibley	0.14	0.52	00:59	03:18	8.3	0.15	12.07	01:07	36:09	8.0
6th & Sibley	6th & Robert	0.16	0.68	01:15	04:33	7.7	0.15	11.92	01:20	35:03	6.8
6th & Robert	6th & Cedar	0.14	0.82	01:01	05:34	8.2	0.07	11.77	00:51	33:43	5.0
6th & Cedar	6th & Wabasha	0.08	0.89	00:41	06:15	6.6	0.07	11.70	00:39	32:51	6.5
6th & Wabasha	6th & Washington	0.11	1.01	00:47	07:02	8.7	0.12	11.62	01:05	32:12	6.7
6th & Washington	6th & 7th	0.08	1.09	00:28	07:30	10.8	0.23	11.50	01:09	31:07	12.3
6th & 7th	7th & Grand	0.55	1.64	03:17	10:46	10.0	0.40	11.27	02:07	29:58	11.5
7th & Grand	St Clair & 7th	0.72	2.35	02:52	13:38	15.0	0.71	10.87	02:52	27:51	15.0
St Clair & 7th	7th & Randolph	0.72	3.08	02:31	16:10	17.2	0.75	10.15	02:24	25:00	18.6
7th & Randolph	7th & Tuscarora	0.36	3.44	00:59	17:08	22.1	0.25	9.41	01:06	22:36	13.5
7th & Tuscarora	7th & Otto	0.36	3.80	01:09	18:17	18.8	0.45	9.16	01:06	21:30	24.6
7th & Otto	7th & Albion	0.54	4.34	01:59	20:16	16.3	0.54	8.71	01:53	20:24	17.1
7th & Albion	7th & Homer	0.58	4.92	01:45	22:01	20.1	0.61	8.17	02:07	18:31	17.2
7th & Homer	7th & Rankin	0.25	5.17	00:47	22:48	19.1	0.24	7.56	00:46	16:25	18.8
7th & Rankin	7th & Madison	0.31	5.48	01:10	23:58	16.1	0.36	7.32	01:02	15:39	20.9
7th & Madison	7th & Maynard	0.32	5.81	01:11	25:09	16.4	0.31	6.96	01:11	14:37	15.5
7th & Maynard	MSP Airport	2.64	8.45	04:12	29:21	37.8	2.74	6.66	04:22	13:26	37.7
MSP Airport	34th & American	2.80	11.25	04:52	34:13	34.5	2.81	3.92	04:27	09:04	37.9
34th & American	American & Metro	0.21	11.46	00:47	35:00	16.1	0.21	1.11	01:03	04:37	12.0
American & Metro	American & 28th	0.25	11.71	01:04	36:04	14.1	0.25	0.90	00:51	03:34	17.6
American & 28th	28th Ave & 82nd St	0.26	11.97	00:53	36:57	17.7	0.26	0.65	01:06	02:43	14.2
28th Ave & 82nd St	MOA	0.39	12.36	01:46	38:43	13.2	0.39	0.39	01:37	01:37	14.5
		12.36		38:43		19.2	12.57		38:56		19.4



Alternative 3 - BRT: W. 7th-Hwy 5/Fort Snelling		Westbound					Eastbound				
From	To	Seg. Dist.	Cum. Dist.	Seg. Time	Cum. Time	mph	Seg. Dist.	Cum. Dist.	Seg. Time	Cum. Time	mph
Union Depot	5th (or 6th) & Sibley	0.52	0.52	03:06	03:06	10.0	0.57	12.54	03:07	39:57	11.0
5th (or 6th) & Sibley	5th (or 6th) & Robert	0.16	0.68	01:18	04:24	7.4	0.16	11.97	01:19	36:50	7.4
5th (or 6th) & Robert	5th (or 6th) & Wabasha	0.21	0.89	01:29	05:53	8.7	0.21	11.80	01:38	35:31	7.8
5th (or 6th) & Wabasha	5th (or 6th) & Washington	0.17	1.06	01:18	07:11	8.0	0.20	11.59	01:32	33:53	8.0
5th (or 6th) & Washington	7th & Kellogg	0.28	1.34	01:54	09:05	8.8	0.25	11.38	01:24	32:21	10.9
7th & Kellogg	Grand	0.31	1.65	01:55	11:00	9.7	0.30	11.13	01:49	30:57	9.9
Grand	St Clair Ave	0.72	2.37	02:43	13:43	15.8	0.71	10.83	02:42	29:08	15.9
St Clair Ave	Randolph Ave	0.72	3.09	02:31	16:14	17.3	0.75	10.12	02:29	26:26	18.0
Randolph Ave	Otto Ave	0.72	3.81	02:04	18:18	20.9	0.70	9.37	02:00	23:57	20.9
Otto Ave	Montreal	0.71	4.53	02:52	21:10	14.9	0.73	8.67	02:48	21:57	15.7
Montreal	Homer	0.42	4.95	01:22	22:32	18.4	0.42	7.94	01:38	19:09	15.4
Homer	7th & E Maynard	0.75	5.70	02:06	24:38	21.4	0.75	7.52	02:06	17:31	21.4
7th & E Maynard	Davern St	0.20	5.90	01:27	26:05	8.3	0.20	6.77	01:18	15:25	9.4
Davern St	MSP Airport	2.55	8.45	03:56	30:01	39.0	2.65	6.57	04:15	14:07	37.4
MSP Airport	34th & American	2.80	11.25	05:01	35:02	33.5	2.81	3.92	04:34	09:52	36.9
34th & American	American & Metro	0.21	11.46	00:57	35:59	13.3	0.21	1.11	01:13	05:18	10.4
American & Metro	American & 28th	0.25	11.71	01:15	37:14	12.0	0.25	0.90	01:02	04:05	14.5
American & 28th	28th Ave & 82nd St	0.26	11.97	01:03	38:17	14.9	0.26	0.65	01:16	03:03	12.3
28th Ave & 82nd St	MOA	0.39	12.36	01:53	40:10	12.4	0.39	0.39	01:47	01:47	13.1
		12.36		40:10		18.5	12.54		39:57		18.8



Alternative 4 - Rail: W. 7th-Hwy 5/Fort Snelling		Westbound					Eastbound				
From	To	Seg. Dist.	Cum. Dist.	Seg. Time	Cum. Time	mph	Seg. Dist.	Cum. Dist.	Seg. Time	Cum. Time	mph
Union Depot	Central	0.32	0.32	03:00	03:00	6.3	0.35	11.75	03:00	43:16	7.0
Central	5th/6th & Washington	0.30	0.62	01:51	04:51	9.8	0.40	11.40	02:13	40:16	10.8
5th/6th & Washington	Kellogg	0.24	0.86	01:54	06:45	7.5	0.16	11.00	01:19	38:03	7.4
Kellogg	Grand	0.36	1.21	02:05	08:50	10.3	0.40	10.84	02:11	36:44	11.0
Grand	St Clair	0.49	1.70	02:00	10:50	14.6	0.49	10.44	02:00	34:33	14.6
St Clair	Randolph	0.82	2.52	02:38	13:28	18.6	0.82	9.95	02:35	32:33	19.0
Randolph	Otto	0.75	3.27	02:18	15:46	19.6	0.75	9.13	02:02	29:58	22.2
Otto	Montreal	0.71	3.98	02:48	18:34	15.3	0.71	8.38	02:42	27:56	15.8
Montreal	Homer	0.42	4.41	01:38	20:12	15.6	0.42	7.67	01:54	25:14	13.4
Homer	Maynard	0.73	5.14	02:16	22:28	19.3	0.77	7.24	02:21	23:20	19.7
Maynard	Davern	0.21	5.35	01:25	23:53	8.9	0.21	6.47	01:14	20:59	10.2
Davern	Tower	0.91	6.26	03:01	26:54	18.1	1.01	6.26	03:39	19:45	16.6
Tower	Fort Snelling	0.90	7.15	02:15	29:09	23.9	0.75	5.25	02:06	16:06	21.5
Fort Snelling	MSP Terminal 1	0.97	8.13	02:00	31:09	29.2	0.97	4.50	02:00	14:00	29.2
MSP Terminal 1	MSP Terminal 2	1.16	9.28	02:00	33:09	34.7	1.16	3.52	04:00	12:00	17.3
MSP Terminal 2	American Blvd	1.08	10.36	03:00	36:09	21.5	1.08	2.37	03:00	08:00	21.5
American Blvd	Bloomington Central	0.32	10.67	02:00	38:09	9.5	0.32	1.29	01:00	05:00	19.0
Bloomington Central	28th Ave	0.29	10.96	02:00	40:09	8.6	0.29	0.98	01:00	04:00	17.2
28th Ave	MOA	0.69	11.65	04:00	44:09	10.3	0.69	0.69	03:00	03:00	13.8
		11.65		44:09		15.8	11.75		43:16		16.3



Alternative 5 - BRT: W. 7th - Ford Site		Westbound					Eastbound				
From	To	Seg. Dist.	Cum. Dist.	Seg. Time	Cum. Time	mph	Seg. Dist.	Cum. Dist.	Seg. Time	Cum. Time	mph
Union Depot	5th/6th & Sibley	0.52	0.52	03:06	03:06	10.0	0.57	18.01	03:07	58:34	11.0
5th/6th & Sibley	5th/6th & Robert	0.16	0.68	01:18	04:24	7.4	0.16	17.44	01:19	55:27	7.4
5th/6th & Robert	5th/6th & Wabasha	0.21	0.89	01:29	05:53	8.7	0.21	17.27	01:38	54:08	7.8
5th/6th & Wabasha	5th/6th & Washington	0.17	1.06	01:18	07:11	8.0	0.20	17.06	01:32	52:30	8.0
5th/6th & Washington	7th/Kellogg	0.28	1.34	01:54	09:05	8.8	0.25	16.86	01:24	50:58	10.9
7th/Kellogg	Grand	0.31	1.65	02:02	11:07	9.1	0.31	16.60	01:50	49:34	10.1
Grand	St Clair Ave	0.72	2.37	02:57	14:04	14.6	0.72	16.29	02:43	47:44	15.8
St Clair Ave	Randolph Ave	0.72	3.09	02:31	16:35	17.3	0.75	15.58	02:29	45:01	18.0
Randolph Ave	Otto Ave	0.72	3.81	02:04	18:39	20.9	0.70	14.83	02:00	42:32	20.9
Otto Ave	Montreal	0.71	4.53	02:52	21:31	14.9	0.73	14.13	02:48	40:32	15.7
Montreal	Homer	0.42	4.95	01:22	22:53	18.4	0.42	13.40	01:38	37:44	15.4
Homer	Madison	0.50	5.45	01:29	24:22	20.2	0.50	12.98	01:29	36:06	20.2
Madison	Davern	0.41	5.86	01:50	26:12	13.4	0.41	12.48	01:47	34:37	13.8
Davern	Ramlow	0.65	6.51	01:55	28:07	20.3	0.65	12.07	01:54	32:50	20.5
Ramlow	Cleveland	0.48	6.99	01:37	29:44	17.8	0.48	11.42	01:37	30:56	17.8
Cleveland	Ford Site	0.50	7.49	01:56	31:40	15.5	0.50	10.94	01:57	29:19	15.4
Ford Site	Ford Pkwy & Woodlawn Ave	0.29	7.78	01:15	32:55	13.9	0.29	10.44	01:14	27:22	14.1
Ford Pkwy & Woodlawn Ave	Ford Pkwy & 46th Ave	0.54	8.32	01:41	34:36	19.2	0.54	10.15	01:52	26:08	17.4
Ford Pkwy & 46th Ave	46th Street & Minnehaha Ave	0.38	8.70	01:28	36:04	15.5	0.36	9.61	01:40	24:16	13.0
46th Street & Minnehaha Ave	46th Street Station (Blue)	0.36	9.06	01:49	37:53	11.9	0.43	9.25	02:20	22:36	11.1
46th Street Station (Blue)	VA Medical	2.04	11.10	05:40	43:33	21.6	2.04	8.82	05:33	20:16	22.1
VA Medical	MSP Airport	2.97	14.07	05:09	48:42	34.6	2.86	6.78	04:51	14:43	35.4
MSP Airport	34th & American	2.80	16.87	05:01	53:43	33.5	2.81	3.92	04:34	09:52	36.9
34th & American	American & Metro	0.21	17.08	00:57	54:40	13.3	0.21	1.11	01:13	05:18	10.4
American & Metro	American & 28th	0.25	17.33	01:15	55:55	12.0	0.25	0.90	01:02	04:05	14.5
American & 28th	28th Ave & 82nd St	0.26	17.59	01:03	56:58	14.9	0.26	0.65	01:16	03:03	12.3
28th Ave & 82nd St	MOA	0.39	17.98	01:53	58:51	12.4	0.39	0.39	01:47	01:47	13.1
		17.98		58:51		18.3	18.01		58:34		18.4



Alternative 6 - Rail: W. 7th - Ford Site		Westbound					Eastbound				
From	To	Seg. Dist.	Cum. Dist.	Seg. Time	Cum. Time	mph	Seg. Dist.	Cum. Dist.	Seg. Time	Cum. Time	mph
St Paul Union Depot	Central	0.32	0.32	03:00	03:00	6.4	0.35	15.71	03:00	55:09	7.1
Central	Washington	0.30	0.62	01:51	04:51	9.8	0.40	15.36	02:13	52:09	10.8
Washington	Kellogg	0.24	0.86	01:54	06:45	7.5	0.16	14.96	01:19	49:56	7.4
Kellogg	Grand	0.36	1.22	02:09	08:54	10.0	0.40	14.79	02:11	48:37	11.0
Grand	St Clair	0.49	1.70	02:09	11:03	13.6	0.49	14.39	02:00	46:26	14.6
St Clair	Randolph Ave	0.82	2.52	02:38	13:41	18.6	0.82	13.91	02:35	44:26	19.0
Randolph Ave	Otto Ave	0.75	3.27	02:18	15:59	19.6	0.75	13.09	02:02	41:51	22.2
Otto Ave	Montreal	0.71	3.99	02:48	18:47	15.3	0.71	12.34	02:42	39:49	15.8
Montreal	Homer Street	0.42	4.41	01:38	20:25	15.6	0.42	11.62	01:54	37:07	13.4
Homer Street	Madison St	0.49	4.90	01:25	21:50	20.8	0.49	11.20	01:25	35:13	20.8
Madison St	Davern St	0.43	5.33	02:08	23:58	12.1	0.43	10.71	02:08	33:48	12.1
Davern St	Ramlow Pl	0.65	5.98	01:52	25:50	20.9	0.65	10.28	01:52	31:40	20.9
Ramlow Pl	Cleveland Ave	0.48	6.46	01:34	27:24	18.4	0.48	9.63	01:34	29:48	18.4
Cleveland Ave	Ford	0.50	6.96	01:54	29:18	15.8	0.50	9.15	01:54	28:14	15.8
Ford	Ford Pkwy	0.29	7.25	01:12	30:30	14.5	0.29	8.65	01:12	26:20	14.5
Ford Pkwy	43rd St	0.76	8.01	02:31	33:01	18.1	0.73	8.36	02:26	25:08	18.0
43rd St	46th St	0.86	8.87	03:02	36:03	17.0	0.81	7.63	02:42	22:42	18.0
46th St	50th St	0.77	9.64	02:00	38:03	23.1	0.77	6.82	02:00	20:00	23.1
50th St	VA Medical Center	0.75	10.39	02:00	40:03	22.5	0.75	6.05	02:00	18:00	22.5
VA Medical Center	Ft Snelling (existing)	0.75	11.14	02:00	42:03	22.5	0.75	5.30	02:00	16:00	22.5
Ft Snelling (existing)	MSP Terminal 1 (existing)	0.95	12.09	02:00	44:03	28.5	1.01	4.55	02:00	14:00	30.3
MSP Terminal 1 (existing)	MSP Terminal 2 (existing)	1.18	13.27	02:00	46:03	35.4	1.18	3.54	04:00	12:00	17.7
MSP Terminal 2 (existing)	American Blvd (existing)	1.15	14.42	03:00	49:03	23.0	1.01	2.36	03:00	08:00	20.2
American Blvd (existing)	Bloomington Central (existing)	0.26	14.68	02:00	51:03	7.8	0.36	1.35	01:00	05:00	21.6
Bloomington Central (existing)	28th Ave (existing)	0.27	14.95	02:00	53:03	8.1	0.27	0.99	01:00	04:00	16.2
28th Ave (existing)	MOA (existing)	0.69	15.64	04:00	57:03	10.4	0.72	0.72	03:00	03:00	14.4
		15.64		57:03		16.5	15.71		55:09		17.1



Alternative 7 - BRT: W. 7th - CP Spur - Ford Site		Westbound					Eastbound				
From	To	Seg. Dist.	Cum. Dist.	Seg. Time	Cum. Time	mph	Seg. Dist.	Cum. Dist.	Seg. Time	Cum. Time	mph
Union Depot	5th/6th & Sibley	0.52	0.52	03:06	03:06	10.0	0.57	18.09	03:07	57:45	11.0
5th/6th & Sibley	5th/6th & Robert	0.16	0.68	01:18	04:24	7.4	0.16	17.52	01:19	54:38	7.4
5th/6th & Robert	5th/6th & Wabasha	0.21	0.89	01:29	05:53	8.7	0.21	17.36	01:38	53:19	7.8
5th/6th & Wabasha	5th/6th & Washington	0.17	1.06	01:18	07:11	8.0	0.20	17.14	01:32	51:41	8.0
5th/6th & Washington	7th/Kellogg	0.28	1.34	01:54	09:05	8.8	0.25	16.94	01:24	50:09	10.9
7th/Kellogg	Grand	0.31	1.65	01:55	11:00	9.7	0.31	16.68	01:50	48:45	10.1
Grand	St Clair Ave	0.72	2.37	02:43	13:43	15.8	0.72	16.37	02:43	46:55	15.8
St Clair Ave	Randolph	0.68	3.05	02:22	16:05	17.2	0.68	15.66	02:41	44:12	15.2
Randolph	Otto	0.63	3.68	01:52	17:57	20.3	0.58	14.98	01:47	41:31	19.5
Otto	Montreal	0.71	4.39	02:01	19:58	21.1	0.71	14.40	02:01	39:44	21.1
Montreal	Rankin	0.80	5.19	02:07	22:05	22.7	0.80	13.69	02:07	37:43	22.7
Rankin	Madison	0.38	5.57	01:20	23:25	17.1	0.38	12.89	01:20	35:36	17.1
Madison	Davern	0.38	5.95	01:20	24:45	17.1	0.44	12.51	01:26	34:16	18.4
Davern	Ramlow	0.65	6.60	01:55	26:40	20.3	0.65	12.07	01:54	32:50	20.5
Ramlow	Cleveland	0.48	7.08	01:37	28:17	17.8	0.48	11.42	01:37	30:56	17.8
Cleveland	Ford Site	0.50	7.58	01:56	30:13	15.5	0.50	10.94	01:57	29:19	15.4
Ford Site	Ford Pkwy & Woodlawn Ave	0.29	7.87	01:15	31:28	13.9	0.29	10.44	01:14	27:22	14.1
Ford Pkwy & Woodlawn Ave	Ford Pkwy & 46th Ave	0.54	8.41	01:41	33:09	19.2	0.54	10.15	01:52	26:08	17.4
Ford Pkwy & 46th Ave	46th Street & Minnehaha Ave	0.38	8.79	01:28	34:37	15.5	0.36	9.61	01:40	24:16	13.0
46th Street & Minnehaha Ave	46th Street Station (Blue)	0.36	9.15	01:49	36:26	11.9	0.43	9.25	02:20	22:36	11.1
46th Street Station (Blue)	VA Medical	2.04	11.19	05:40	42:06	21.6	2.04	8.82	05:33	20:16	22.1
VA Medical	MSP Terminal 1	2.97	14.16	05:09	47:15	34.6	2.86	6.78	04:51	14:43	35.4
MSP Terminal 1	34th & American	2.80	16.96	05:01	52:16	33.5	2.81	3.92	04:34	09:52	36.9
34th & American	American & Metro	0.21	17.17	00:57	53:13	13.3	0.21	1.11	01:13	05:18	10.4
American & Metro	American & 28th	0.25	17.42	01:15	54:28	12.0	0.25	0.90	01:02	04:05	14.5
American & 28th	28th Ave & 82nd St	0.26	17.68	01:03	55:31	14.9	0.26	0.65	01:16	03:03	12.3
28th Ave & 82nd St	MOA	0.39	18.07	01:53	57:24	12.4	0.39	0.39	01:47	01:47	13.1
		18.07		57:24		18.9	18.09		57:45		18.8



Alternative 8 - Rail: W.7th-CP Spur-Ford Site		Westbound					Eastbound				
From	To	Seg. Dist.	Cum. Dist.	Seg. Time	Cum. Time	mph	Seg. Dist.	Cum. Dist.	Seg. Time	Cum. Time	mph
St Paul Union Depot	Central	0.32	0.32	03:00	03:00	6.4	0.35	15.85	03:00	53:38	7.1
Central	Washington	0.30	0.62	01:51	04:51	9.8	0.40	15.50	02:13	50:38	10.8
Washington	Kellogg	0.24	0.86	01:54	06:45	7.5	0.16	15.10	01:19	48:25	7.4
Kellogg	Grand	0.36	1.22	02:05	08:50	10.3	0.40	14.93	02:11	47:06	11.0
Grand	St Clair	0.49	1.70	02:00	10:50	14.6	0.49	14.53	02:00	44:55	14.6
St Clair	Randolph Ave	0.86	2.56	02:58	13:48	17.3	0.86	14.05	02:50	42:55	18.1
Randolph Ave	Otto Ave	0.63	3.19	01:50	15:38	20.6	0.58	13.19	01:44	40:05	20.1
Otto Ave	Montreal	0.71	3.90	01:56	17:34	22.0	0.71	12.61	01:56	38:21	22.0
Montreal	Rankin St	0.80	4.70	02:05	19:39	23.0	0.80	11.90	02:05	36:25	23.0
Rankin St	Madison St	0.38	5.08	01:17	20:56	17.8	0.38	11.10	01:17	34:20	17.8
Madison St	Davern St	0.38	5.46	01:17	22:13	17.8	0.44	10.72	01:23	33:03	19.1
Davern St	Ramlow Pl	0.65	6.11	01:52	24:05	20.9	0.65	10.28	01:52	31:40	20.9
Ramlow Pl	Cleveland Ave	0.48	6.59	01:34	25:39	18.4	0.48	9.63	01:34	29:48	18.4
Cleveland Ave	Ford	0.50	7.09	01:54	27:33	15.8	0.50	9.15	01:54	28:14	15.8
Ford	Ford Pkwy	0.29	7.38	01:12	28:45	14.5	0.29	8.65	01:12	26:20	14.5
Ford Pkwy	43rd St	0.76	8.14	02:31	31:16	18.1	0.73	8.36	02:26	25:08	18.0
43rd St	46th St	0.86	9.00	03:02	34:18	17.0	0.81	7.63	02:42	22:42	18.0
46th St	50th St	0.77	9.77	02:00	36:18	23.1	0.77	6.82	02:00	20:00	23.1
50th St	VA Medical Center	0.75	10.52	02:00	38:18	22.5	0.75	6.05	02:00	18:00	22.5
VA Medical Center	Ft Snelling (existing)	0.75	11.27	02:00	40:18	22.5	0.75	5.30	02:00	16:00	22.5
Ft Snelling (existing)	MSP Terminal 1 (existing)	0.95	12.22	02:00	42:18	28.5	1.01	4.55	02:00	14:00	30.3
MSP Terminal 1 (existing)	MSP Terminal 2 (existing)	1.18	13.40	02:00	44:18	35.4	1.18	3.54	04:00	12:00	17.7
MSP Terminal 2 (existing)	American Blvd (existing)	1.15	14.55	03:00	47:18	23.0	1.01	2.36	03:00	08:00	20.2
American Blvd (existing)	Bloomington Central (existing)	0.26	14.81	02:00	49:18	7.8	0.36	1.35	01:00	05:00	21.6
Bloomington Central (existing)	28th Ave (existing)	0.27	15.08	02:00	51:18	8.1	0.27	0.99	01:00	04:00	16.2
28th Ave (existing)	MOA (existing)	0.69	15.77	04:00	55:18	10.4	0.72	0.72	03:00	03:00	14.4
		15.77		55:18		17.1	15.85		53:38		17.7



Alternative 9 - BRT: W. 7th-CP Spur-Hwy 5/Fort Snelling		Westbound					Eastbound				
From	To	Seg. Dist.	Cum. Dist.	Seg. Time	Cum. Time	mph	Seg. Dist.	Cum. Dist.	Seg. Time	Cum. Time	mph
Union Depot	5th (or 6th) & Sibley	0.52	0.52	03:06	03:06	10.0	0.57	12.65	03:07	39:59	11.0
5th/6th & Sibley	5th (or 6th) & Robert	0.16	0.68	01:18	04:24	7.4	0.16	12.09	01:19	36:52	7.4
5th/6th & Robert	5th (or 6th) & Wabasha	0.21	0.89	01:29	05:53	8.7	0.21	11.92	01:38	35:33	7.8
5th/6th & Wabasha	5th (or 6th) & Washington	0.17	1.06	01:18	07:11	8.0	0.20	11.71	01:32	33:55	8.0
5th/6th & Washington	7th & Kellogg	0.28	1.34	01:54	09:05	8.8	0.25	11.50	01:24	32:23	10.9
7th & Kellogg	Grand	0.31	1.65	02:02	11:07	9.1	0.30	11.25	01:53	30:59	9.6
Grand	St Clair Ave	0.72	2.37	02:57	14:04	14.6	0.71	10.95	02:53	29:06	14.9
St Clair Ave	Randolph	0.63	2.99	02:26	16:30	15.4	0.63	10.23	02:39	26:13	14.3
Randolph	Otto	0.71	3.70	02:04	18:34	20.5	0.71	9.60	02:04	23:34	20.5
Otto	Montreal	0.71	4.41	02:00	20:34	21.3	0.71	8.90	02:00	21:30	21.3
Montreal	Rankin	0.80	5.21	02:08	22:42	22.4	0.80	8.19	02:08	19:30	22.4
Rankin	Madison	0.41	5.61	01:34	24:16	15.6	0.41	7.39	01:34	17:22	15.6
Madison	Davern St	0.42	6.03	01:58	26:14	12.8	0.42	6.99	01:47	15:48	14.1
Davern St	MSP Airport	2.55	8.59	03:56	30:10	39.0	2.65	6.57	04:09	14:01	38.3
MSP Airport	34th & American	2.80	11.39	05:01	35:11	33.5	2.81	3.92	04:34	09:52	36.9
34th & American	American & Metro	0.21	11.60	00:57	36:08	13.3	0.21	1.11	01:13	05:18	10.4
American & Metro	American & 28th	0.25	11.85	01:15	37:23	12.0	0.25	0.90	01:02	04:05	14.5
American & 28th	28th Ave & 82nd St	0.26	12.11	01:03	38:26	14.9	0.26	0.65	01:16	03:03	12.3
28th Ave & 82nd St	MOA	0.39	12.50	01:53	40:19	12.4	0.39	0.39	01:47	01:47	13.1
		12.50		40:19		18.6	12.65		39:59		19.0



Alternative 10 - Rail: W. 7th-CP Spur-Hwy 5/Fort Snelling		Westbound					Eastbound				
From	To	Seg. Dist.	Cum. Dist.	Seg. Time	Cum. Time	mph	Seg. Dist.	Cum. Dist.	Seg. Time	Cum. Time	mph
Union Depot	Central	0.32	0.32	03:00	03:00	6.3	0.35	12.00	03:00	42:58	7.0
Central	Washington	0.30	0.62	01:51	04:51	9.8	0.40	11.65	02:13	39:58	10.8
Washington	Kellogg	0.24	0.86	01:54	06:45	7.5	0.16	11.25	01:19	37:45	7.4
Kellogg	Grand	0.36	1.21	02:05	08:50	10.3	0.40	11.09	02:19	36:26	10.4
Grand	St Clair	0.49	1.70	02:09	10:59	13.6	0.49	10.69	02:09	34:07	13.6
St Clair	Randolph	0.80	2.50	03:02	14:01	15.9	0.80	10.20	02:47	31:58	17.3
Randolph	Otto	0.71	3.21	02:02	16:03	20.8	0.71	9.40	02:02	29:11	20.8
Otto	Montreal	0.71	3.92	01:56	17:59	22.0	0.71	8.69	01:56	27:09	22.0
Montreal	Rankin	0.80	4.72	02:05	20:04	23.0	0.80	7.98	02:05	25:13	23.0
Rankin	Madison	0.41	5.12	01:32	21:36	15.9	0.41	7.19	01:32	23:08	15.9
Madison	Davern	0.42	5.55	01:56	23:32	13.2	0.42	6.78	01:46	21:36	14.1
Davern	Tower	0.91	6.46	03:01	26:33	18.1	0.97	6.36	03:31	19:50	16.5
Tower	Fort Snelling	0.90	7.35	02:15	28:48	23.9	0.90	5.39	02:19	16:19	23.2
Fort Snelling	MSP Terminal 1	0.97	8.33	02:00	30:48	29.2	0.97	4.50	02:00	14:00	29.2
MSP Terminal 1	MSP Terminal 2	1.16	9.48	02:00	32:48	34.7	1.16	3.52	04:00	12:00	17.3
MSP Terminal 2	American Blvd	1.08	10.56	03:00	35:48	21.5	1.08	2.37	03:00	08:00	21.5
American Blvd	Bloomington Central	0.32	10.87	02:00	37:48	9.5	0.32	1.29	01:00	05:00	19.0
Bloomington Central	28th Ave	0.29	11.16	02:00	39:48	8.6	0.29	0.98	01:00	04:00	17.2
28th Ave	MOA	0.69	11.85	04:00	43:48	10.3	0.69	0.69	03:00	03:00	13.8
		11.85		43:48		16.2	12.00		42:58		16.8



Appendix B. Mainline Operating Statistics Tables

This section presents the individual route calculations for Weekday, Saturday, and Sunday for each mainline build alternative.

Alt 2 - Arterial BRT: W. 7th-Hwy 5/Fort Snelling

From	To	Time (min.)	Distance (mi.)	Day	Headway							Consist							Vehicles		
					Early	AM	Mid	PM	Eve	Late	Owl	Early	AM	Mid	PM	Eve	Late	Owl	Peak	Total	
Mall of America	Union Depot	38.82	12.45	M-F	15	10	10	10	10	15	30	1	1	1	1	1	1	1	1	9	11
				Sat	20	15	10	10	15	15	30	1	1	1	1	1	1	1			
				Sun	20	15	10	10	15	15	30	1	1	1	1	1	1	1			
																			9	11	
Daily		Annual		Required Buses								One-way daily bus trips									
Veh-Miles	Veh-Hrs	Veh-Miles	Veh-Hrs	Early	AM	Mid	PM	Eve	Late	Owl	Early	AM	Mid	PM	Eve	Late	Owl	Total			
2,726	164	692,400	41,700	6	9	9	9	9	6	3	12	48	66	42	18	18	15	219			
2,577	157	139,100	8,500	5	6	9	9	6	6	3	15	20	72	48	26	14	12	207			
2,353	143	134,100	8,100	5	6	9	9	6	6	3	9	20	72	48	26	14	0	189			
		965,600	58,300																		



Alt 3 - BRT: W. 7th-Hwy 5/Fort Snelling

From	To	Time (min.)	Distance (mi.)	Day	Headway							Consist							Vehicles		
					Early	AM	Mid	PM	Eve	Late	Owl	Early	AM	Mid	PM	Eve	Late	Owl	Peak	Total	
Mall of America	Union Depot	40.06	12.45	M-F	15	9	9	9	9	15	30	1	1	1	1	1	1	1	11	14	
				Sat	20	15	10	10	15	15	30	1	1	1	1	1	1	1	1		
				Sun	20	15	10	10	15	15	30	1	1	1	1	1	1	1	1		
																		11	14		

Daily		Annual		Required Buses								One-way daily bus trips							
Veh-Miles	Veh-Hrs	Veh-Miles	Veh-Hrs	Early	AM	Mid	PM	Eve	Late	Owl	Early	AM	Mid	PM	Eve	Late	Owl	Total	
2,967	201	753,600	51,000	7	11	11	11	11	7	4	12	54	74	47	20	18	15	240	
2,577	177	139,100	9,600	5	7	10	10	7	7	4	15	20	72	48	26	14	12	207	
2,353	160	134,100	9,100	5	7	10	10	7	7	4	9	20	72	48	26	14	0	189	
		1,026,800	69,700																



Alt 4 - Rail: W. 7th-Hwy 5/Fort Snelling

From	To	Time (min.)	Distance (mi.)	Day	Headway							Consist						Vehicles		
					Early	AM	Mid	PM	Eve	Late	Owl	Early	AM	Mid	PM	Eve	Late	Owl	Peak	Total
Riverview Mall of America	Union Depot	43.70	11.77	M-F	15	10	10	10	10	15	30	1	1	1	1	1	1	1	11	14
				Sat	20	15	10	10	15	15	30	1	1	1	1	1	1	1		
				Sun	20	15	10	10	15	15	30	1	1	1	1	1	1	1		
Riverview Gap Trains												1	1	1	1	1	1	1	1	1

12 15

Daily		Annual		Required Trains								One-way daily train trips							
Car-Miles	Train-Hrs	Car-Miles	Train-Hrs	Early	AM	Mid	PM	Eve	Late	Owl	Early	AM	Mid	PM	Eve	Late	Owl	Total	
2,578	201	654,700	51,000	7	11	11	11	11	7	4	12	48	66	42	18	18	15	219	
2,436	190	131,600	10,200	6	7	11	11	7	7	4	15	20	72	48	26	14	12	207	
2,225	172	126,800	9,800	6	7	11	11	7	7	4	9	20	72	48	26	14	0	189	
n/a	n/a	n/a	n/a	1	1	1	1	1	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	
		913,100	71,000																



Alt 5 - BRT: W. 7th-Ford Site

From	To	Time (min.)	Distance (mi.)	Day	Headway							Consist							Vehicles	
					Early	AM	Mid	PM	Eve	Late	Owl	Early	AM	Mid	PM	Eve	Late	Owl	Peak	Total
Mall of America	Union Depot	58.70	17.99	M-F	15	10	10	10	10	15	30	1	1	1	1	1	1	1	14	17
				Sat	20	15	10	10	15	15	30	1	1	1	1	1	1	1		
				Sun	20	15	10	10	15	15	30	1	1	1	1	1	1	1		
																		14	17	

Daily		Annual		Required Buses								One-way daily bus trips							
Veh-Miles	Veh-Hrs	Veh-Miles	Veh-Hrs	Early	AM	Mid	PM	Eve	Late	Owl	Early	AM	Mid	PM	Eve	Late	Owl	Total	
3,940	259	1,000,700	65,800	10	14	14	14	14	10	5	12	48	66	42	18	18	15	219	
3,724	248	201,100	13,400	7	10	14	14	10	10	5	15	20	72	48	26	14	12	207	
3,400	226	193,800	12,900	7	10	14	14	10	10	5	9	20	72	48	26	14	0	189	
		1,395,600	92,100																



Alt 6 - Rail: W. 7th-Ford Site

From	To	Time (min.)	Distance (mi.)	Day	Headway							Consist							Vehicles	
					Early	AM	Mid	PM	Eve	Late	Owl	Early	AM	Mid	PM	Eve	Late	Owl	Peak	Total
Mall of America	Union Depot	56.10	15.68	M-F	15	10	10	10	10	15	30	1	1	1	1	1	1	1	13	16
				Sat	20	15	10	10	15	15	30	1	1	1	1	1	1	1		
				Sun	20	15	10	10	15	15	30	1	1	1	1	1	1	1	1	
Riverview Gap Trains												1	1	1	1	1	1	1	1	1
																		14	17	

Daily		Annual		Required Trains							One-way daily train trips							
Car-Miles	Train-Hrs	Car-Miles	Train-Hrs	Early	AM	Mid	PM	Eve	Late	Owl	Early	AM	Mid	PM	Eve	Late	Owl	Total
3,434	241	872,200	61,200	9	13	13	13	13	9	5	12	48	66	42	18	18	15	219
3,246	230	175,300	12,400	7	9	13	13	9	9	5	15	20	72	48	26	14	12	207
2,964	208	168,900	11,900	7	9	13	13	9	9	5	9	20	72	48	26	14	0	189
n/a	n/a	n/a	n/a	1	1	1	1	1	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		1,216,400	85,500															



Alt 7 - BRT: W. 7th-CP Spur-Ford Site

From	To	Time (min.)	Distance (mi.)	Day	Headway							Consist							Vehicles	
					Early	AM	Mid	PM	Eve	Late	Owl	Early	AM	Mid	PM	Eve	Late	Owl	Peak	Total
Mall of America	Union Depot	57.60	18.11	M-F	15	10	10	10	10	15	30	1	1	1	1	1	1	1	14	17
				Sat	20	15	10	10	15	15	30	1	1	1	1	1	1	1		
				Sun	20	15	10	10	15	15	30	1	1	1	1	1	1	1		
																		14	17	

Daily		Annual		Required Buses								One-way daily bus trips							
Veh-Miles	Veh-Hrs	Veh-Miles	Veh-Hrs	Early	AM	Mid	PM	Eve	Late	Owl	Early	AM	Mid	PM	Eve	Late	Owl	Total	
3,966	259	1,007,400	65,800	10	14	14	14	14	10	5	12	48	66	42	18	18	15	219	
3,749	248	202,400	13,400	7	10	14	14	10	10	5	15	20	72	48	26	14	12	207	
3,423	226	195,100	12,900	7	10	14	14	10	10	5	9	20	72	48	26	14	0	189	
		1,404,900	92,100																



Alt 8 - Rail: W. 7th-CP Spur-Ford Site

From	To	Time (min.)	Distance (mi.)	Day	Headway							Consist							Vehicles	
					Early	AM	Mid	PM	Eve	Late	Owl	Early	AM	Mid	PM	Eve	Late	Owl	Peak	Total
Mall of America	Union Depot	54.47	15.84	M-F	15	10	10	10	10	15	30	1	1	1	1	1	1	1	13	16
				Sat	20	15	10	10	15	15	30	1	1	1	1	1	1	1		
				Sun	20	15	10	10	15	15	30	1	1	1	1	1	1	1	1	
Riverview Gap Trains												1	1	1	1	1	1	1	1	1
																		14	17	

Daily		Annual		Required Trains							One-way daily train trips							
Car-Miles	Train-Hrs	Car-Miles	Train-Hrs	Early	AM	Mid	PM	Eve	Late	Owl	Early	AM	Mid	PM	Eve	Late	Owl	Total
3,469	241	881,100	61,200	9	13	13	13	13	9	5	12	48	66	42	18	18	15	219
3,279	230	177,100	12,400	7	9	13	13	9	9	5	15	20	72	48	26	14	12	207
2,994	208	170,600	11,900	7	9	13	13	9	9	5	9	20	72	48	26	14	0	189
n/a	n/a	n/a	n/a	1	1	1	1	1	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		1,228,800	85,500															



Alt 9 - BRT: W. 7th-CP Spur-Hwy 5/Fort Snelling

From	To	Time (min.)	Distance (mi.)	Day	Headway							Consist							Vehicles		
					Early	AM	Mid	PM	Eve	Late	Owl	Early	AM	Mid	PM	Eve	Late	Owl	Peak	Total	
Mall of America	Union Depot	40.20	12.53	M-F	15	9	9	9	9	15	30	1	1	1	1	1	1	1	11	14	
				Sat	20	15	10	10	15	15	30	1	1	1	1	1	1	1	1		
				Sun	20	15	10	10	15	15	30	1	1	1	1	1	1	1	1		
																		11	14		

Daily		Annual		Required Buses								One-way daily bus trips							
Veh-Miles	Veh-Hrs	Veh-Miles	Veh-Hrs	Early	AM	Mid	PM	Eve	Late	Owl	Early	AM	Mid	PM	Eve	Late	Owl	Total	
2,986	201	758,500	51,000	7	11	11	11	11	7	4	12	54	74	47	20	18	15	240	
2,594	177	140,100	9,600	5	7	10	10	7	7	4	15	20	72	48	26	14	12	207	
2,368	160	135,000	9,100	5	7	10	10	7	7	4	9	20	72	48	26	14	0	189	
		1,033,600	69,700																



Alt 10 - Rail: W. 7th-CP Spur-Hwy 5/Fort Snelling

From	To	Time (min.)	Distance (mi.)	Day	Headway							Consist							Vehicles	
					Early	AM	Mid	PM	Eve	Late	Owl	Early	AM	Mid	PM	Eve	Late	Owl	Peak	Total
Mall of America	Union Depot	43.40	11.91	M-F	15	10	10	10	10	15	30	1	1	1	1	1	1	1	11	14
				Sat	20	15	10	10	15	15	30	1	1	1	1	1	1	1		
				Sun	20	15	10	10	15	15	30	1	1	1	1	1	1	1		
Riverview Gap Trains												1	1	1	1	1	1	1	1	1
																		12	15	

Daily		Annual		Required Trains							One-way daily train trips							
Car-Miles	Train-Hrs	Car-Miles	Train-Hrs	Early	AM	Mid	PM	Eve	Late	Owl	Early	AM	Mid	PM	Eve	Late	Owl	Total
2,608	201	662,500	51,000	7	11	11	11	11	7	4	12	48	66	42	18	18	15	219
2,465	190	133,100	10,200	6	7	11	11	7	7	4	15	20	72	48	26	14	12	207
2,251	172	128,300	9,800	6	7	11	11	7	7	4	9	20	72	48	26	14	0	189
n/a	n/a	n/a	n/a	1	1	1	1	1	1	0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
		923,900	71,000															



Appendix C. Local Bus Operating Statistics Tables

This section presents the individual route calculations for Weekday, Saturday, and Sunday for all local bus service. The figures herein are used to develop operating and maintenance cost estimates for each MPA. (See summary in Table 1, Memorandum: O&M Cost Estimates, under separate cover).

No Build Local Bus Operating Statistics – Year 2040

Route	Description	Notes	Day of week	Direction	SERVICE SPAN						FREQUENCY						TRAVEL TIME					DAILY STATS		ANNUAL STATS			PM Peak Vehicle	
					EARLY	AMPK	MID	PM PK	EVE	NIGHT	EARLY	AMPK	MID	PM PK	EVE	NIGHT	One-way Trips	One-way trip length	Trip Length	Est. speed	Layover Percent	Cycle Time	Revenue Hours	Revenue Miles	Revenue Hours	Revenue Miles		AM Peak Vehicle
WEEKDAY STATISTICS																												
5	5 (NB)		Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	0	420	0	0	0	1.0	3.2	3.2	12.2	22%	19	0	3	81	813		
5	5F (NB)		Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	140	180	150	0	7.0	14.0	14.0	12.2	22%	84	10	98	2,499	24,928	0.5	0.5
5	5K (NB)		Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	420	0	0	80	5.0	5.0	5.0	12.2	22%	30	3	25	637	6,350	0.5	
5	5L (NB)		Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	140	0	0	0	4.0	13.8	13.8	12.2	22%	83	6	55	1,410	14,061	0.5	
5	5M-1 (NB)		Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	120	180	420	90	75	240	10.0	18.2	18.2	12.2	22%	109	18	182	4,634	46,228	1.0	1.5
5	5M-2 (NB)		Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	60	180	105	90	0	0	9.0	13.1	13.1	12.2	22%	79	12	118	3,002	29,947	0.5	1.0
5	5M-3 (NB)		Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	120	180	420	180	75	0	8.0	10.8	10.8	12.2	22%	65	9	86	2,200	21,946	0.5	0.5
5	5 (SB)		Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	210	0	0	0	3.0	3.2	3.2	12.2	22%	19	1	10	244	2,438	0.5	
5	5A (SB)		Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	105	180	0	0	6.0	11.1	11.1	12.2	22%	67	7	67	1,699	16,947	0.5	0.5
5	5B (SB)		Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	420	90	75	120	10.0	13.4	13.4	12.2	22%	80	13	134	3,407	33,985	0.5	1.0
5	5E-1 (SB)		Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	140	180	150	240	8.0	18.5	18.5	12.2	22%	111	15	148	3,760	37,511	1.0	1.0
5	5E-2 (SB)		Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	30	180	420	180	75	120	13.0	14.1	14.1	12.2	22%	85	18	183	4,651	46,393	0.5	0.5
5	5E-3 (SB)		Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	140	180	0	0	5.0	13.8	13.8	12.2	22%	83	7	69	1,757	17,526	0.5	0.5
23	23B (EB)	To Bucketwood	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.0	90	180	0	0	0	2.0	6.5	6.5	12.3	23%	39	1	13	329	3,287	0.5		
23	23C (EB)	To Veterans Home	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.0	45	36	53	60	75	0	22.0	7.6	7.6	12.3	23%	46	17	167	4,244	42,413	1.5	1.0
23	23H (EB)	To Kenneth/Ford	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.0	0	60	53	36	75	0	20.0	8.0	8.0	12.3	23%	48	16	160	4,057	40,538	1.0	1.5
23	23B (WB)	From Bucketwood	Weekday	1	1.0	3.0	7.0	3.0	5.0	0.0	60	0	0	0	0	1.0	6.7	6.7	12.3	23%	40	1	7	171	1,704			
23	23C (WB)	From Veterans Home	Weekday	1	1.0	3.0	7.0	3.0	5.0	0.0	60	45	47	60	60	0	22.0	7.8	7.8	12.3	23%	47	17	172	4,367	43,642	1.5	1.0
23	23H (WB)	To Kenneth/Ford	Weekday	1	1.0	3.0	7.0	3.0	5.0	0.0	60	45	60	36	75	0	21.0	8.3	8.3	12.3	23%	50	17	175	4,441	44,379	1.5	1.5
23	23I(WB)	Leaves from 38th St Station	Weekday	1	1.0	3.0	7.0	3.0	5.0	0.0	0	0	420	0	0	0	1.0	4.9	4.9	12.3	23%			5	0	1,247		
46	46A-1(EB)	Base	Weekday	1	1.0	3.0	7.0	3.0	4.0	0.0	0	180	0	180	0	0	2.0	8.6	8.6	14.9	25%	43	1	17	364	4,343	0.5	0.5
46	46A-2(EB)	From 50th/France	Weekday	1	1.0	3.0	7.0	3.0	4.0	0.0	0	90	420	0	0	0	3.0	7.0	7.0	14.9	25%	35	2	21	447	5,334	0.5	
46	46A-3(EB)	From Chowan/47th and serves	Weekday	1	1.0	3.0	7.0	3.0	4.0	0.0	0	0	105	0	0	0	4.0	7.2	7.2	14.9	25%	36	2	29	614	7,325		
46	46A-4(EB)	Begins at 50th/Pleasant	Weekday	1	1.0	3.0	7.0	3.0	4.0	0.0	0	0	420	0	0	0	1.0	4.7	4.7	14.9	25%	24	0	5	100	1,196		
46	46E-2(EB)	Begins at 50th/France	Weekday	1	1.0	3.0	7.0	3.0	4.0	0.0	60	0	0	0	0	0	1.0	12.8	12.8	14.9	25%	64	1	13	272	3,251		
46	46E-1(EB)	Base	Weekday	1	1.0	3.0	7.0	3.0	4.0	0.0	60	30	30	30	60	0	31.0	11.2	11.2	14.9	25%	56	29	347	7,386	88,189	2.0	2.0
46	46B-1(WB)	Base	Weekday	1	0.5	3.0	7.0	3.0	4.0	0.0	0	60	420	0	0	0	4.0	7.3	7.3	15	25%	37	2	29	622	7,427	1.0	
46	46B-2(WB)	Does not go to 50th/Pleasant	Weekday	1	0.5	3.0	7.0	3.0	4.0	0.0	0	180	0	0	0	0	1.0	7.3	7.3	15	25%	37	1	7	156	1,862	0.5	
46	46C-1(WB)	Base	Weekday	1	0.5	3.0	7.0	3.0	4.0	0.0	30	30	30	30	80	0	30.0	13.4	13.4	15	25%	67	34	402	8,552	102,108	2.5	2.5
46	46C-2(WB)	Leaves from 46th St Station	Weekday	1	0.5	3.0	7.0	3.0	4.0	0.0	0	0	420	90	0	0	3.0	8.8	8.8	15	25%	44	2	26	563	6,721		0.5
46	46C-3(WB)	Leaves from 46th St Station an	Weekday	1	0.5	3.0	7.0	3.0	4.0	0.0	0	180	0	0	0	0	1.0	8.8	8.8	15	25%	44	1	9	187	2,238	0.5	
54	54 (WB)	Union Depot to MOA	Weekday	1	3.0	3.0	7.0	3.0	3.0	2.5	45	20	28	20	30	75	45.0	12.6	12.6	19	43%	56	42	565	10,691	143,447	3.0	3.0
54	54 (WB)	Maplewood Mall to MOA	Weekday	1	3.0	3.0	7.0	3.0	3.0	2.5	60	20	28	20	30	50	45.0	20.5	20.5	19	43%	92	69	923	17,472	234,429	5.0	5.0
54	54 (EB)	MOA to Union Depot	Weekday	1	1.5	3.0	7.0	3.0	3.0	3.0	45	20	28	20	30	30	47.0	12.6	12.6	19	43%	56	44	590	11,166	149,822	3.0	3.0
54	54 (EB)	MOA to Maplewood Mall	Weekday	1	1.5	3.0	7.0	3.0	3.0	3.0	90	20	28	20	30	60	43.0	20.5	20.5	19	43%	92	66	882	16,695	224,010	5.0	5.0
63	63B-1(WB)	Berry/University to McKnight	Weekday	1	1.5	3.0	7.0	3.0	5.0	2.0	0	0	140	30	43	0	16.0	14.7	14.7	13.8	21%	77	21	235	5,212	59,741		3.0
63	63B-2(WB)	Berry/University to McKnight L	Weekday	1	1.5	3.0	7.0	3.0	5.0	2.0	23	20	23	60	75	120	39.0	15.9	15.9	13.8	21%	83	54	620	13,741	157,516	4.5	1.5
63	63-1(WB)	Mcknight Loop to Smith Ramp	Weekday	1	1.5	3.0	7.0	3.0	5.0	2.0	0	180	0	0	0	0	1.0	8.6	8.6	13.8	21%	45	1	9	191	2,189	0.5	
63	63-2(WB)	Sun Ray TC to Smith Ramp	Weekday	1	1.5	3.0	7.0	3.0	5.0	2.0	0	90	0	0	0	0	2.0	5.7	5.7	13.8	21%	30	1	11	252	2,885	0.5	
63	63K-1(EB)	McKnight to Berry/University	Weekday	1	1.5	3.0	7.0	3.0	5.0	1.5	23	20	47	0	0	0	22.0	14.4	14.4	13.8	21%	75	28	317	7,020	80,467	4.0	
63	63K-2(EB)	Mcknight Loop to Berry/Univer	Weekday	1	1.5	3.0	7.0	3.0	5.0	1.5	90	0	35	20	27	90	34.0	15.6	15.6	13.8	21%	82	46	530	11,753	134,721		4.5
63	63K-3(EB)	Smith Ramp to McKnight Loop	Weekday	1	1.5	3.0	7.0	3.0	5.0	1.5	0	0	420	0	0	0	1.0	6.9	6.9	13.8	21%	36	1	7	153	1,753		
63	63S (EB)	Smith Ramp to Sun Ray TC	Weekday	1	1.5	3.0	7.0	3.0	5.0	1.5	0	0	105	0	0	0	4.0	5.7	5.7	13.8	21%	30	2	23	503	5,771		
64	64N (EB)	Via Whitebear	Weekday	1	1.0	3.0	7.0	3.0	5.0	1.5	20	30	23	30	50	0	39.0	12.6	12.6	13.9	30%	70	46	491	11,596	124,824	2.5	2.5
64	64D (EB)	Via Prosperity	Weekday	1	1.0	3.0	7.0	3.0	5.0	1.5	60	30	32	36	100	0	28.0	11.0	11.0	13.9	30%	61	29	308	7,268	78,232	2.5	2.0
64	64H-1(EB)	Smith Ramp to Hillcrest	Weekday	1	1.0	3.0	7.0	3.0	5.0	1.5	0	90	210	45	75	45	14.0	6.9	6.9	13.9	30%	39	9	97	2,293	24,679	0.5	1.0
64	64P/H-2(EB)	Johnson HS to Hillcrest	Weekday	1																								

Route	Description	Notes	Day of week	Direction	SERVICE SPAN						FREQUENCY						TRAVEL TIME					DAILY STATS		ANNUAL STATS				
					EARLY	AM PK	MID	PM PK	EVE	NIGHT	EARLY	AM PK	MID	PM PK	EVE	NIGHT	One-way Trips	One-way trip length	Trip Length	Est. speed	Layover Percent	Cycle Time	Revenue Hours	Revenue Miles	Revenue Hours	Revenue Miles	AM Peak Vehicle	PM Peak Vehicle
70	70 (WB)	Sun Ray TC to DT St Paul. A few	Weekday	1	1.5	3.0	7.0	3.0	3.0	0.0	90	180	84	180	60	0	11.0	5.9	5.9	15.9	30%	29	5	65	1,347	16,513	0.5	0.5
74	74G-1(EB)	To Ivy Ave/Hwy120	Weekday	1	1.0	3.0	7.0	3.0	5.0	2.0	60	60	53	60	150	0	17.0	14.6	14.6	13.9	22%	77	22	248	5,537	63,043	1.5	1.5
74	74G-2(EB)	To Ivy Ave/Hwy120 from Johns	Weekday	1	1.0	3.0	7.0	3.0	5.0	2.0	0	0	420	0	0	0	1.0	6.7	6.7	13.9	22%	35	1	7	148	1,689		
74	74G-3(EB)	Edgecumbe Loop via Ivy Ave	Weekday	1	1.0	3.0	7.0	3.0	5.0	2.0	0	180	0	0	0	0	1.0	15.5	15.5	13.9	22%	82	1	16	346	3,937	0.5	
74	74S-1(EB)	To Sun Ray TC	Weekday	1	1.0	3.0	7.0	3.0	5.0	2.0	30	36	53	30	38	120	30.0	15.0	15.0	13.9	22%	79	40	450	10,038	114,300	2.5	3.0
74	74S-2(EB)	To Sun Ray TC from Johnson H	Weekday	1	1.0	3.0	7.0	3.0	5.0	2.0	0	0	420	0	0	0	1.0	7.0	7.0	13.9	22%	37	1	7	156	1,778		
74	74S-3(EB)	Edgecumbe Loop via Sun Ray T	Weekday	1	1.0	3.0	7.0	3.0	5.0	2.0	0	0	60	0	0	0	7.0	15.8	15.8	13.9	22%	83	10	111	2,467	28,092		
74	74 (EB)	From 46th Station to DT St Pau	Weekday	1	1.0	3.0	7.0	3.0	5.0	2.0	0	0	0	90	0	0	2.0	7.7	7.7	13.9	22%	40	1	15	342	3,896		0.5
74	74A-1(WB)	From Sun Ray TC	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	23	30	38	36	38	0	34.0	15.0	15.0	13.9	22%	79	45	510	11,377	129,540	3.0	2.5
74	74A-2(WB)	From Ivy Ave/Hwy120	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	90	36	105	45	100	0	17.0	14.5	14.5	13.9	22%	76	22	247	5,499	62,611	2.5	2.0
74	74A-3(WB)	From Randolph/Shelling	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	0	0	420	0	0	0	1.0	3.4	3.4	13.9	22%	18	0	3	76	866		
74	74A-4(WB)	From DT St Paul	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	0	0	420	0	0	0	1.0	7.8	7.8	13.9	22%	41	1	8	174	1,981		
74	74A-5(WB)	Edgecumbe Loop via Ivy Ave	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	0	0	140	0	0	0	3.0	15.0	15.0	13.9	22%	79	4	45	1,004	11,430		
74	74A-6(WB)	Edgecumbe Loop via Sun Ray T	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	0	180	140	0	0	0	4.0	13.9	13.9	13.9	22%	73	5	56	1,240	14,122	0.5	
74	74J-1(WB)	From Sun Ray TC, includes dist:	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	0	60	0	0	0	0	3.0	5.7	5.7	13.9	22%	30	2	17	383	4,366	1.0	
74	74J-2(WB)	From Ivy Ave/Hwy120, include	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	0	180	0	0	0	0	1.0	6.8	6.8	13.9	22%	36	1	7	152	1,735	0.5	
83	83 (NB)	To Target	Weekday	1	0.5	3.0	7.0	3.0	5.0	0.0	30	30	30	30	30	0	37.0	9.9	9.9	15.6	20%	46	28	367	7,157	93,228	2.0	2.0
83	83 (SB)	To Montreal Circle	Weekday	1	0.5	3.0	7.0	3.0	4.5	0.0	15	30	30	30	34	0	36.0	9.6	9.6	15.6	20%	44	26	345	6,725	87,600	1.5	1.5
84	84 (NB)	Davern/Shepard to Rosedale	Weekday	1	1.0	3.0	7.0	3.0	2.0		30	30	30	30	30	0	32.0	11.5	11.5	17.1	27%	51	27	368	6,934	93,472	2.0	2.0
84	84 (SB)	Rosedale to Davern/Shepard	Weekday	1	1.0	3.0	7.0	3.0	1.5		30	30	30	30	30	0	31.0	11.5	11.5	17.1	27%	51	26	357	6,717	90,551	2.0	2.0
87	87 (NB)	To Rosedale TC	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	30	20	20	23	43	0	48.0	9.0	9.0	15.5	37%	47	38	430	9,640	109,240	2.5	2.5
87	87 (SB)	To Kenneth/Ford	Weekday	1	1.0	3.0	7.0	3.0	5.0	0.5	30	20	20	23	38	0	48.0	9.5	9.5	15.5	37%	50	40	457	10,242	116,068	3.0	2.5
134	134A (EB)	To Cleveland/Montreal	Weekday	1	0.0	0.5	0.5	3.0	0.0	0.0	0	15	30	90	0	0	5.0	8.3	8.3	15.1	33%	44	4	41	924	10,478	3.0	0.5
134	134B (EB)	To Gannon/Norfolk	Weekday	1	0.0	0.5	0.5	3.0	0.0	0.0	0	0	0	30	0	0	6.0	10.6	10.6	15.1	33%	56	6	64	1,425	16,154		2.0
134	134A (WB)	From Cleveland/Montreal. Mo:	Weekday	1	0.0	3.0	0.0	0.5	0.0	0.0	0	45	0	30	0	0	5.0	8.6	8.6	15.1	33%	46	4	43	965	10,935	1.5	2.0
134	134B (WB)	From Gannon/Montreal. Most	Weekday	1	0.0	3.0	0.0	0.5	0.0	0.0	0	30	0	0	0	0	6.0	10.8	10.8	15.1	33%	57	6	65	1,452	16,459	2.0	
417	417 (NB)	To Union Depot	Weekday	1	0.0	1.5	0.0	0.0	0.0	0.0	0	45	0	0	0	0	2.0	9.6	9.6	17.4	41%	47	2	19	395	4,877	1.5	
417	417(SB)	To Dodd/Mendota Heights	Weekday	1	0.0	0.0	0.0	1.5	0.0	0.0	0	0	0	45	0	0	2.0	9.7	9.7	17.4	41%	47	2	19	399	4,923		1.5
436	436 (NB)	To 46th St Station	Weekday	1	0.0	0.0	0.5	2.5	0.0	0.0	0	0	30	75	0	0	3.0	11.6	11.6	21.7	47%	47	2	35	598	8,839		1.0
436	436M (NB)	To 7th/Maynard	Weekday	1	0.0	0.0	0.5	2.5	0.0	0.0	0	0	0	150	0	0	1.0	12.6	12.6	21.7	47%	51	1	13	216	3,200		0.5
436	436S (NB)	To Pilot Knob/Mendota Height	Weekday	1	0.0	0.0	0.5	2.5	0.0	0.0	0	0	0	150	0	0	1.0	6.3	6.3	21.7	47%	25	0	6	108	1,590		0.5
436	436 (SB)	To Reuters	Weekday	1	0.5	2.0	0.0	0.0	0.0	0.0	30	40	0	0	0	0	4.0	11.3	11.3	21.7	47%	46	3	45	776	11,481	1.5	
480	480A (NB)	From Apple Valley Transit Stati	Weekday	1	0.0	3.0	0.0	0.0	0.0	0.0	0	36	0	0	0	0	5.0	20.6	20.6	22.9	36%	73	6	103	1,552	26,162	2.5	
480	480B-1(NB)	From Heart to Blackhawk	Weekday	1	0.0	3.0	0.0	0.0	0.0	0.0	0	90	0	0	0	0	2.0	20.0	20.0	22.9	36%	71	2	40	603	10,160	1.0	
480	480B-2(NB)	From Heart to Union Depot	Weekday	1	0.0	3.0	0.0	0.0	0.0	0.0	0	90	0	0	0	0	2.0	20.7	20.7	22.9	36%	74	2	41	624	10,516	1.0	
480	480C (NB)	From Blackhawk P&R	Weekday	1	0.0	3.0	0.0	0.0	0.0	0.0	0	90	0	0	0	0	2.0	15.2	15.2	22.9	36%	54	2	30	458	7,722	1.0	
480	480A (SB)	To Apple Valley Transit Station	Weekday	1	0.0	0.0	0.5	3.0	0.0	0.0	0	0	15	60	0	0	5.0	20.7	20.7	22.9	36%	74	6	104	1,560	26,289		1.5
480	480B (SB)	To Heart of the City P&R	Weekday	1	0.0	0.0	0.5	3.0	0.0	0.0	0	0	0	45	0	0	4.0	20.0	20.0	22.9	36%	71	5	80	1,206	20,320		2.0
480	480P (SB)	To Palomino P&R	Weekday	1	0.0	0.0	0.5	3.0	0.0	0.0	0	0	0	60	0	0	3.0	18.0	18.0	22.9	36%	64	3	54	814	13,716		1.5
A-Line	SA-BRT (NB)	To Rosedale TC	Weekday	1	2.0	3.0	6.0	4.5	3.0	3.5	30	10	10	10	20	30	101.0	9.9	9.9	15.0	27%	51	85	1,004	21,611	255,001	5.5	5.5
A-Line	SA-BRT (SB)	To 46th St Station	Weekday	1	1.5	3.5	6.0	5.0	3.0	2.5	30	10	10	10	20	30	104.0	10.0	10.0	15.0	27%	51	88	1,040	22,387	264,160	5.5	5.5
D-Line	Freemont-BRT-1 56th to BCTC		Weekday	1	0.0	3.0	6.0	3.0	4.0	0.0	0	15	15	15	20	0	60.0	13.0	13.0	15.0	22%	64	64	780	16,129	198,120	4.5	4.5
D-Line	Freemont-BRT-1 BCTC to 56th		Weekday	1	0.0	3.0	6.0	3.0	4.0	0.0	0	15	15	15	20	0	60.0	13.1	13.1	15.0	22%	64	64	786	16,253	199,644	4.5	4.5
D-Line	Freemont-BRT-2 BCTC to MOA		Weekday	1	2.0	3.0	6.0	3.0	4.0	4.0	20	15	15	15	20	30	74.0	18.2	18.2	15.0	22%	89	110	1,347	27,850	342,087	6.0	6.0
D-Line	Freemont-BRT-2 MOA to BCTC		Weekday	1	2.0	3.0	6.0	3.0	4.0	4.0	20	15	15	15	20	30	74.0	18.2	18.2	15.0	22%	89	110	1,347	27,850	342,087	6.0	6.0



Route	Description	Notes	Day of week	Direction	SERVICE SPAN					FREQUENCY					TRAVEL TIME					DAILY STATS		ANNUAL STATS			PM Peak Vehicle			
					EARLY	AM PK	MID	PM PK	EVE	NIGHT	EARLY	AM PK	MID	PM PK	EVE	NIGHT	One-way Trips	One-way trip length	Trip Length	Est. speed	Layover Percent	Cycle Time	Revenue Hours	Revenue Miles		Revenue Hours	Revenue Miles	AM Peak Vehicle
SATURDAY STATISTICS																												
5	5F (NB)		Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	105	90	300	0	8.0	14.0	14.0	13.0	20%	78	10	112	549	5,944		
5	5K (NB)		Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	120	0	0	0	80	4.0	10.1	10.1	13.0	20%	56	4	40	198	2,141			
5	5M-1 (NB)		Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	120	90	105	90	100	0	12.0	13.1	13.1	13.0	20%	73	15	157	769	8,332		
5	5M-2 (NB)		Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	60	60	70	90	50	80	22.0	18.2	18.2	13.0	20%	101	37	400	1,960	21,221		
5	5B-1 (SB)		Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	0	210	180	0	0	3.0	8.9	8.9	13.0	20%	49	2	27	131	1,417		
5	5B-2 (SB)		Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	60	60	84	90	50	60	22.0	14.0	14.0	13.0	20%	78	28	308	1,508	16,324		
5	5C (SB)		Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	0	0	0	300	0	1.0	14.5	14.5	13.0	20%	80	1	15	71	769		
5	5E (SB)		Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	60	60	60	60	100	80	21.0	18.5	18.5	13.0	20%	103	36	389	1,902	20,591		
23	23C (EB)		Saturday	1	1.0	3.0	7.0	3.0	4.0	0.0	30	45	60	60	48	0	21.0	7.6	7.6	12.8	26%	45	16	159	833	8,448		
23	23H (EB)		Saturday	1	1.0	3.0	7.0	3.0	4.0	0.0	0	90	38	36	80	0	21.0	8.0	8.0	12.8	26%	47	17	168	876	8,882		
23	23C (WB)		Saturday	1	0.5	3.0	7.0	3.0	5.0	0.0	30	36	60	60	60	0	21.0	7.8	7.8	12.8	26%	46	16	164	857	8,693		
23	23H (WB)		Saturday	1	0.5	3.0	7.0	3.0	5.0	0.0	0	90	42	45	75	0	20.0	8.3	8.3	12.8	26%	49	16	166	870	8,819		
46	46E (EB)		Saturday	1	0.0	3.0	7.0	3.0	3.5	0.0	0	45	30	30	42	0	29.0	11.2	11.2	15.6	22%	52	25	325	1,344	17,214		
46	46C (WB)		Saturday	1	0.0	3.0	7.0	3.0	3.5	0.0	0	60	32	30	42	0	27.0	13.4	13.4	15.6	22%	63	28	362	1,497	19,175		
54	54 (WB)	Union Depot to MOA	Saturday	1	3.0	3.0	7.0	3.0	3.0	2.5	45	60	30	30	30	50	36.0	12.6	12.6	19	33%	52	31	452	1,662	23,945		
54	54 (WB)	Maplewood Mall to MOA	Saturday	1	3.0	3.0	7.0	3.0	3.0	2.5	0	60	30	26	30	75	32.0	20.5	20.5	19	33%	85	46	656	2,414	34,785		
54	54 (EB)	MOA to Union Depot	Saturday	1	1.5	3.0	7.0	3.0	3.0	3.0	45	60	30	36	26	36	36.0	12.6	12.6	19	33%	52	31	452	1,662	23,945		
54	54 (EB)	MOA to Maplewood Mall	Saturday	1	1.5	3.0	7.0	3.0	3.0	3.0	90	60	32	30	30	60	32.0	20.5	20.5	19	33%	85	46	656	2,414	34,785		
63	63B-1(WB)	Berry/University to McKnight	Saturday	1	1.5	3.0	7.0	3.0	5.0	2.0	0	0	0	90		2.0	14.7	14.7	14.4	25%	77	3	29	135	1,558			
63	63B-2(WB)	Berry/University to McKnight L	Saturday	1	1.5	3.0	7.0	3.0	5.0	2.0	45	36	20	26	60	0	40.0	15.9	15.9	14.4	25%	83	55	636	2,924	33,708		
63	63K-1(EB)	McKnight to Berry/University	Saturday	1	0.5	3.0	7.0	3.0	5.0	2.0	0	60	70	0	0	0	9.0	14.4	14.4	14.4	25%	75	11	130	596	6,869		
63	63K-2(EB)	McKnight Loop to Berry/Univer	Saturday	1	0.5	3.0	7.0	3.0	5.0	2.0	30	60	28	20	25	60	42.0	15.6	15.6	14.4	25%	81	57	655	3,012	34,726		
64	64D (EB)	Via Propserity	Saturday	1	1.0	3.0	7.0	3.0	5.0	1.5	0	0	42	36	0	0	15.0	11.0	11.0	14.7	25%	56	14	165	744	8,745		
64	64H(EB)	Via Hillcrest	Saturday	1	1.0	3.0	7.0	3.0	5.0	1.5	60	60	105	0	300	30	12.0	6.9	6.9	14.7	25%	35	7	83	373	4,388		
64	64N (EB)	Via Whitebear	Saturday	1	1.0	3.0	7.0	3.0	5.0	1.5	60	45	30	23	23	0	40.0	12.5	12.5	14.7	25%	64	43	500	2,254	26,500		
64	64D (WB)	Via Propserity	Saturday	1	1.5	3.0	7.0	3.0	5.0	1.0	0	180	53	36	300	0	15.0	10.9	10.9	14.7	25%	56	14	164	737	8,666		
64	64H (WB)	Via Hillcrest	Saturday	1	1.5	3.0	7.0	3.0	5.0	1.0	45	60	70	0	0	0	11.0	6.8	6.8	14.7	25%	35	6	75	337	3,964		
64	64N (WB)	Via Whitebear	Saturday	1	1.5	3.0	7.0	3.0	5.0	1.0	0	45	30	23	27	30	39.0	12.5	12.5	14.7	25%	64	41	488	2,198	25,838		
65	65 (NB)		Saturday	1	1.0	3.0	7.0	3.0	5.0	1.0	30	30	20	20	33	30	49.0	8.0	8.0	16.9	48%	42	35	392	1,830	20,776		
65	65 (SB)		Saturday	1	1.0	3.0	7.0	3.0	5.0	1.0	30	26	20	20	30	60	50.0	7.5	7.5	16.9	48%	40	33	377	1,758	19,955		
70	70S (EB)		Saturday	1	0.0	1.8	7.0	3.0	2.0	0.0	0	53	105	90	60	0	10.0	6.1	6.1	17.5	36%	28	5	61	251	3,233		
70	70D (EB)		Saturday	1	0.0	1.8	7.0	3.0	2.0	0.0	0	0	140	180	0	0	4.0	7.3	7.3	17.5	36%	34	2	29	121	1,556		
70	70S (WB)		Saturday	1	0.0	2.5	7.0	3.0	2.0	0.0	0	50	105	90	60	0	11.0	6.1	6.1	17.5	36%	28	5	67	276	3,556		
70	70D (WB)		Saturday	1	0.0	2.5	7.0	3.0	2.0	0.0	0	0	140	180	0	0	4.0	7.3	7.3	17.5	36%	34	2	29	121	1,556		
74	74S (EB)	To Sun Ray TC	Saturday	1	0.5	3.0	7.0	3.0	5.0	2.0	0	36	30	36	60	60	31.0	15.0	15.0	13.8	20%	78	40	465	2,129	24,645		
74	74G (EB)	To Ivy Ave/Hwy120	Saturday	1	0.5	3.0	7.0	3.0	5.0	2.0	30	90	60	60	60	0	18.0	14.6	14.6	13.8	20%	76	23	263	1,203	13,928		
74	74A-1 (WB)	From Sun Ray TC	Saturday	1	1.5	3.0	7.0	3.0	5.0	0.0	45	45	30	45	50	0	30.0	15.0	15.0	13.8	20%	78	39	450	2,060	23,850		
74	74A-2 (WB)	From Ivy Ave/Hwy120	Saturday	1	1.5	3.0	7.0	3.0	5.0	0.0	0	60	60	60	60	0	18.0	14.5	14.5	13.8	20%	75	23	261	1,195	13,833		
83	83 (NB)	To Target	Saturday	1	0.0	3.0	7.0	3.0	4.5	0.0	0	30	30	30	30	0	35.0	9.9	9.9	16.0	22%	46	27	347	1,407	18,402		
83	83 (SB)	To Montreal Circle	Saturday	1	1.0	3.0	7.0	3.0	4.5	0.0	60	36	30	30	30	0	35.0	9.6	9.6	16.0	22%	44	26	335	1,359	17,771		
84	84 (NB)	Davern/Shepard to Rosedale	Saturday	1		2.0	7.0	3.0	1.0		0	30	30	30	30	0	26.0	11.5	11.5	17.9	29%	50	22	299	1,142	15,847		
84	84 (SB)	Rosedale to Davern/Shepard	Saturday	1		2.5	7.0	3.0	1.0		0	30	30	30	30	0	27.0	11.5	11.5	17.9	29%	50	22	311	1,185	16,457		
87	87 (NB)	To Rosedale TC	Saturday	1	0.0	3.0	7.0	3.0	5.0	1.0	0	30	21	20	42.9	60	43.0	9.0	9.0	16.1	41%	47	34	385	1,788	20,420		
87	87 (SB)	To Kenneth/Ford	Saturday	1	0.0	3.0	7.0	3.0	5.0	1.0	0	30	21	20	38	60	44.0	9.5	9.5	16.1	41%	50	37	419	1,944	22,201		
A-Line	SABRT (NB)	To Rosedale TC	Saturday	1	2.0	3.0	6.0	3.0	4.5	3.0	30	10	10	10	15	30	100.0	9.9	9.9	15.0	27%	51	84	994	4,465	52,682		
A-Line	SABRT (SB)	To 46th St Station	Saturday	1	2.0	3.0	6.0	3.0	4.5	3.5	30	10	10	10	15	30	101.0	10.0	10.0	15.0	27%	51	86	1,010	4,537	53,530		
D-Line	Freemont-BRT-1	56th to BCTC	Saturday	1	0.0	3.0	6.0	3.0	4.0	0.0	0	20	20	20	20	0	48.0	13.0	13.0	15.0	22%	64	51	624	2,692	33,072		
D-Line	Freemont-BRT-1	BCTC to 56th	Saturday	1	0.0	3.0	6.0	3.0	4.0	0.0	0	20	20	20	20	0	48.0	1										

Route	Description	Notes	Day of week	Direction	SERVICE SPAN						FREQUENCY						TRAVEL TIME					DAILY STATS		ANNUAL STATS			PM Peak Vehicle	
					EARLY	AM PK	MID	PM PK	EVE	NIGHT	EARLY	AM PK	MID	PM PK	EVE	NIGHT	One-way Trips	One-way trip length	Trip Length	Est. speed	Layover Percent	Cycle Time	Revenue Hours	Revenue Miles	Revenue Hours	Revenue Miles		AM Peak Vehicle
SUNDAY STATISTICS																												
5	5F (NB)		Sunday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	210	180	300	0	5.0	14.0	14.0	13.3	19%	75	6	70	363	4,066		
5	5K (NB)		Sunday	1	2.0	3.0	7.0	3.0	5.0	4.0	60	0	0	0	80	5.0	10.1	10.1	13.3	19%	54	5	51	261	2,929			
5	5M-1 (NB)		Sunday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	90	70	60	75	0	15.0	13.1	13.1	13.3	19%	70	18	197	1,016	11,397		
5	5M-2 (NB)		Sunday	1	2.0	3.0	7.0	3.0	5.0	4.0	60	60	70	90	60	240	19.0	18.2	18.2	13.3	19%	97	31	346	1,788	20,056		
5	5B-1 (SB)		Sunday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	0	210	180	0	0	3.0	8.9	8.9	13.3	19%	48	2	27	138	1,550		
5	5B-2 (SB)		Sunday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	60	105	90	75	60	17.0	14.0	14.0	13.3	19%	75	21	238	1,231	13,804		
5	5E (SB)		Sunday	1	2.0	3.0	7.0	3.0	5.0	4.0	60	60	53	60	38	50	28.8	18.5	18.5	13.3	19%	99	48	533	2,756	30,902		
23	23C (EB)		Sunday	1	1.0	3.0	7.0	3.0	4.0	0.0	60	60	70	60	60	0	17.0	7.6	7.6	13.1	24%	43	12	129	707	7,484		
23	23H (EB)		Sunday	1	1.0	3.0	7.0	3.0	4.0	0.0	0	90	53	60	120	0	15.0	8.0	8.0	13.1	24%	45	11	120	656	6,943		
23	23C (WB)		Sunday	1	1.0	3.0	7.0	3.0	4.5	0.0	60	60	60	60	68	0	18.0	7.8	7.8	13.1	24%	44	13	141	770	8,154		
23	23H (WB)		Sunday	1	1.0	3.0	7.0	3.0	4.5	0.0	0	90	60	60	90	0	15.0	8.3	8.3	13.1	24%	47	12	125	684	7,238		
46	46E (EB)		Sunday	1	0.0	1.0	7.0	3.0	2.0	0.0	0	30	32	45	60	0	21.0	11.2	11.2	15.9	21%	51	18	235	1,044	13,642		
46	46C (WB)		Sunday	1	0.0	1.0	7.0	3.0	2.0	0.0	0	60	30	45	60	0	21.0	13.4	13.4	15.9	21%	62	22	281	1,249	16,321		
54	54 (WB)	Union Depot to MOA	Sunday	1	3.0	3.0	7.0	3.0	3.0	2.5	45	60	38	45	45	38	30.0	12.6	12.6	19	29%	51	25	377	1,470	21,837		
54	54 (WB)	Maplewood Mall to MOA	Sunday	1	3.0	3.0	7.0	3.0	3.0	2.5	0	45	42	36	60	75	24.0	20.5	20.5	19	29%	83	33	492	1,921	28,550		
54	54 (EB)	MOA to Union Depot	Sunday	1	1.5	3.0	7.0	3.0	3.0	3.0	45	60	42	45	36	45	28.0	12.6	12.6	19	29%	51	24	351	1,372	20,381		
54	54 (EB)	MOA to Maplewood Mall	Sunday	1	1.5	3.0	7.0	3.0	3.0	3.0	90	60	47	36	45	90	24.0	20.5	20.5	19	29%	83	33	492	1,921	28,550		
63	63B-1(WB)	Berry/University to McKnight	Sunday	1	1.5	3.0	7.0	3.0	5.0	2.0	0	0	84	23	50	0	19.0	14.7	14.7	15.1	27%	74	23	279	1,361	16,199		
63	63B-2(WB)	Berry/University to McKnight L	Sunday	1	1.5	3.0	7.0	3.0	5.0	2.0	45	30	26	0	60	60	31.0	15.9	15.9	15.1	27%	80	41	493	2,402	28,588		
63	63K-1(EB)	McKnight to Berry/University	Sunday	1	0.5	3.0	7.0	3.0	5.0	2.0	0	30	32	0	0	0	19.0	14.4	14.4	15.1	27%	73	23	274	1,333	15,869		
63	63K-2(EB)	McKnight Loop to Berry/Univer	Sunday	1	0.5	3.0	7.0	3.0	5.0	2.0	30	180	53	20	27	60	32.0	15.6	15.6	15.1	27%	79	42	499	2,433	28,954		
64	64H(EB)	Via Hillcrest	Sunday	1	1.0	3.0	7.0	3.0	5.0	1.0	60	90	0	0	300	60	5.0	6.9	6.9	15.1	23%	34	3	35	163	2,001		
64	64N (EB)	Via Whitebear	Sunday	1	1.0	3.0	7.0	3.0	5.0	1.0	0	60	25	20	33	0	38.0	12.6	12.6	15.1	23%	62	39	479	2,260	27,770		
64	64H (WB)	Via Hillcrest	Sunday	1	1.5	3.0	7.0	3.0	5.0	1.0	45	45	0	0	0	60	7.0	6.8	6.8	15.1	23%	33	4	48	225	2,761		
64	64N (WB)	Via Whitebear	Sunday	1	1.5	3.0	7.0	3.0	5.0	1.0	0	90	23	20	27	0	40.0	12.5	12.5	15.1	23%	61	41	500	2,360	29,000		
65	65 (NB)		Sunday	1	1.0	3.0	7.0	3.0	5.0	1.0	30	26	30	30	30	60	40.0	8.0	8.0	17.7	62%	44	29	320	1,691	18,560		
65	65 (SB)		Sunday	1	1.5	3.0	7.0	3.0	5.0	1.0	30	30	30	30	33	60	39.0	7.5	7.5	17.7	62%	41	27	294	1,552	17,033		
70	70S (EB)		Sunday	1	0.0	0.0	7.0	2.5	0.0	0.0	0	0	84	50	0	0	8.0	6.1	6.1	17.4	35%	28	4	49	219	2,830		
70	70D (EB)		Sunday	1	0.0	0.0	7.0	2.5	0.0	0.0	0	0	210	0	0	0	2.0	7.3	7.3	17.4	35%	34	1	15	66	851		
70	70S (WB)		Sunday	1	0.0	0.0	7.0	3.0	0.0	0.0	0	0	84	60	0	0	8.0	6.1	6.1	17.4	35%	28	4	49	219	2,830		
70	70D (WB)		Sunday	1	0.0	0.0	7.0	3.0	0.0	0.0	0	0	210	0	0	0	2.0	7.3	7.3	17.4	35%	34	1	15	66	851		
74	74C (EB)	To Sun Ray TC	Sunday	1	0.5	3.0	7.0	3.0	5.0	2.0	0	90	60	60	60	0	17.0	13.4	13.4	14.0	24%	71	20	228	1,173	13,212		
74	74K (EB)	To Edgewater/Maryland	Sunday	1	0.5	3.0	7.0	3.0	5.0	2.0	30	60	60	90	60	60	20.0	13.2	13.2	14.0	24%	70	23	264	1,360	15,312		
74	74A-1 (WB)	From Sun Ray TC	Sunday	1	1.5	3.0	7.0	3.0	5.0	0.0	90	180	60	60	60	0	17.0	13.4	13.4	14.0	24%	71	20	228	1,173	13,212		
74	74A-3 (WB)	From Edgewater/Maryland	Sunday	1	1.5	3.0	7.0	3.0	5.0	0.0	90	45	70	60	50	0	20.0	13.2	13.2	14.0	24%	70	23	264	1,360	15,312		
83	83 (NB)	To Target	Sunday	1	0.0	3.0	7.0	3.0	4.5	0.0	0	30	32	30	27	0	35.0	9.9	9.9	16.0	22%	46	27	347	1,540	20,138		
83	83 (SB)	To Montreal Circle	Sunday	1	1.0	3.0	7.0	3.0	4.5	0.0	60	36	30	30	30	0	35.0	9.6	9.6	16.0	22%	44	26	335	1,487	19,447		
84	84 (NB)	Davern/Shepard to Rosedale	Sunday	1			6.5	3.0	1.0		0	0	30	30	30	0	21.0	11.5	11.5	18.7	31%	48	17	242	980	14,007		
84	84 (SB)	Rosedale to Davern/Shepard	Sunday	1			6.5	3.0	0.5		0	0	30	30	30	0	20.0	11.5	11.5	18.7	31%	48	16	230	933	13,340		
87	87 (NB)	To Rosedale TC	Sunday	1	0.0	3.0	7.0	3.0	5.0	1.0	0	30	30	30	42.9	60	34.0	9.0	9.0	16.0	31%	44	25	305	1,447	17,669		
87	87 (SB)	To Kenneth/Ford	Sunday	1	0.0	3.0	7.0	3.0	5.0	1.0	0	30	30	30	38	60	35.0	9.5	9.5	16.0	31%	47	27	333	1,583	19,326		
A-Line	SABRT (NB)	To Rosedale TC	Sunday	1	1.5	3.5	6.0	3.0	4.0	3.5	30	10	10	10	20	30	97.0	9.9	9.9	15.0	27%	51	82	964	4,739	55,922		
A-Line	SABRT (SB)	To 46th St Station	Sunday	1	1.5	3.5	6.0	3.0	5.0	3.0	30	10	10	10	20	30	99.0	10.0	10.0	15.0	27%	51	84	990	4,866	57,420		
D-Line	Freemont-BRT-1	56th to BCTC	Sunday	1	0.0	3.0	6.0	3.0	4.0	0.0	0	20	20	20	20	0	48.0	13.0	13.0	15.0	22%	64	51	624	2,946	36,192		
D-Line	Freemont-BRT-1	BCTC to 56th	Sunday	1	0.0	3.0	6.0	3.0	4.0	0.0	0	20	20	20	20	0	48.0	13.1	13.1	15.0	22%	64	51	629	2,969	36,470		
D-Line	Freemont-BRT-2	BCTC to MOA	Sunday	1	2.0	3.0	6.0	3.0	4.0	3.0	30	20	20	20	20	30	58.0	18.2	18.2	15.0	22%	89	86	1,056	4,984	61,225		
D-Line	Freemont-BRT-2	MOA to BCTC	Sunday	1	2.0	3.0	6.0	3.0	4.0	3.0	30	20	20	20	30	30	58.0	18.2	18.2	15.0	22%	89	86	1,056	4,984	61,225		



Alternatives 2, 3, and 4 Local Bus Operating Statistics – Year 2040

Route	Description	Day of week	Direction	SERVICE SPAN						FREQUENCY						TRAVEL TIME					DAILY STATS		ANNUAL STATS			PM Peak Vehicle			
				EARLY	AM PK	MID	PM PK	EVE	NIGHT	EARLY	AM PK	MID	PM PK	EVE	NIGHT	One-way Trips	One-way trip length	Trip Length	Est. speed	Layover Percent	Cycle Time	Revenue Hours	Revenue Miles	Revenue Hours	Revenue Miles		AM Peak Vehicle		
WEEKDAY STATISTICS																													
5	5 (NB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	0	420	0	0	0	1.0	3.2	3.2	12.2	22%	19	0	3	81	813				
5	5F (NB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	140	180	150	0	7.0	14.0	14.0	12.2	22%	84	10	98	2,499	24,928	0.5	0.5		
5	5K (NB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	420	0	0	80	5.0	5.0	5.0	12.2	22%	30	3	25	637	6,350	0.5			
5	5L (NB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	140	0	0	0	4.0	13.8	13.8	12.2	22%	83	6	55	1,410	14,061	0.5			
5	5M-1 (NB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	120	180	420	90	75	240	10.0	18.2	18.2	12.2	22%	109	18	182	4,634	46,228	1.0	1.5		
5	5M-2 (NB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	60	180	105	90	0	0	9.0	13.1	13.1	12.2	22%	79	12	118	3,002	29,947	0.5	1.0		
5	5M-3 (NB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	120	180	420	180	75	0	8.0	10.8	10.8	12.2	22%	65	9	86	2,200	21,946	0.5	0.5		
5	5 (SB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	210	0	0	0	3.0	3.2	3.2	12.2	22%	19	1	10	244	2,438	0.5			
5	5A (SB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	105	180	0	0	6.0	11.1	11.1	12.2	22%	67	7	67	1,699	16,947	0.5	0.5		
5	5B (SB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	420	90	75	120	10.0	13.4	13.4	12.2	22%	80	13	134	3,407	33,985	0.5	1.0		
5	5E-1 (SB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	140	180	150	240	8.0	18.5	18.5	12.2	22%	111	15	148	3,760	37,511	1.0	1.0		
5	5E-2 (SB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	30	180	420	180	75	120	13.0	14.1	14.1	12.2	22%	85	18	183	4,651	46,393	0.5	0.5		
5	5E-3 (SB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	140	180	0	0	5.0	13.8	13.8	12.2	22%	83	7	69	1,757	17,526	0.5	0.5		
23	23B (EB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.0	90	180	0	0	0	0	2.0	6.5	6.5	12.3	23%	39	1	13	329	3,287	0.5			
23	23C (EB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.0	45	36	53	60	75	0	22.0	7.6	7.6	12.3	23%	46	17	167	4,244	42,413	1.5	1.0		
23	23H (EB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.0	0	60	53	36	75	0	20.0	8.0	8.0	12.3	23%	48	16	160	4,057	40,538	1.0	1.5		
23	23B (WB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	0.0	60	0	0	0	0	0	1.0	6.7	6.7	12.3	23%	40	1	7	171	1,704				
23	23C (WB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	0.0	60	45	47	60	60	0	22.0	7.8	7.8	12.3	23%	47	17	172	4,367	43,642	1.5	1.0		
23	23H (WB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	0.0	60	45	60	36	75	0	21.0	8.3	8.3	12.3	23%	50	17	175	4,441	44,379	1.5	1.5		
23	23I(WB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	0.0	0	0	420	0	0	0	1.0	4.9	4.9	12.3	23%			5	0	1,247				
46	46A-1(EB)	Weekday	1	1.0	3.0	7.0	3.0	4.0	0.0	0	180	0	180	0	0	2.0	8.6	8.6	14.9	25%	43	1	17	364	4,343	0.5	0.5		
46	46A-2(EB)	Weekday	1	1.0	3.0	7.0	3.0	4.0	0.0	0	90	420	0	0	0	3.0	7.0	7.0	14.9	25%	35	2	21	447	5,334	0.5			
46	46A-3(EB)	Weekday	1	1.0	3.0	7.0	3.0	4.0	0.0	0	0	105	0	0	0	4.0	7.2	7.2	14.9	25%	36	2	29	614	7,325				
46	46A-4(EB)	Weekday	1	1.0	3.0	7.0	3.0	4.0	0.0	0	0	420	0	0	0	1.0	4.7	4.7	14.9	25%	24	0	5	100	1,196				
46	46E-2(EB)	Weekday	1	1.0	3.0	7.0	3.0	4.0	0.0	60	0	0	0	0	0	1.0	12.8	12.8	14.9	25%	64	1	13	272	3,251				
46	46E-1(EB)	Weekday	1	1.0	3.0	7.0	3.0	4.0	0.0	60	20	20	20	60	0	44.0	11.2	11.2	14.9	25%	56	41	493	10,483	125,171	3.0	3.0		
46	46B-1(WB)	Weekday	1	0.5	3.0	7.0	3.0	4.0	0.0	0	60	420	0	0	0	4.0	7.3	7.3	15	25%	37	2	29	622	7,427	1.0			
46	46B-2(WB)	Weekday	1	0.5	3.0	7.0	3.0	4.0	0.0	0	180	0	0	0	0	1.0	7.3	7.3	15	25%	37	1	7	156	1,862	0.5			
46	46C-1(WB)	Weekday	1	0.5	3.0	7.0	3.0	4.0	0.0	30	20	20	20	80	0	43.0	13.4	13.4	15	25%	67	48	576	12,258	146,355	3.5	3.5		
46	46C-2(WB)	Weekday	1	0.5	3.0	7.0	3.0	4.0	0.0	0	0	420	90	0	0	3.0	8.8	8.8	15	25%	44	2	26	563	6,721				
46	46C-3(WB)	Weekday	1	0.5	3.0	7.0	3.0	4.0	0.0	0	180	0	0	0	0	1.0	8.8	8.8	15	25%	44	1	9	187	2,238	0.5			
54E	54 (WB)	Weekday	1	2.0	3.0	7.0	3.0	5.0			20	30	20	30		42.0	8.8	8.8	13.5	15%	45	31	370	7,997	93,878	2.5	2.5		
54E	54 (EB)	Weekday	1	2.0	3.0	7.0	3.0	5.0			20	30	20	30		42.0	8.8	8.8	13.5	15%	45	31	370	7,997	93,878	2.5	2.5		
63	63B-1(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	2.0	0	0	140	30	43	0	16.0	14.7	14.7	13.8	21%	77	21	235	5,212	59,741			3.0	
63	63B-2(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	2.0	23	20	23	60	75	120	39.0	15.9	15.9	13.8	21%	83	54	620	13,741	157,516	4.5	1.5		
63	63-1(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	2.0	0	180	0	0	0	0	1.0	8.6	8.6	13.8	21%	45	1	9	191	2,189	0.5			
63	63-2(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	2.0	0	90	0	0	0	0	2.0	5.7	5.7	13.8	21%	30	1	11	252	2,885	0.5			
63	63K-1(EB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	1.5	23	20	47	0	0	0	22.0	14.4	14.4	13.8	21%	75	28	317	7,020	80,467	4.0			
63	63K-2(EB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	1.5	90	0	35	20	27	90	34.0	15.6	15.6	13.8	21%	82	46	530	11,753	134,721			4.5	
63	63K-3(EB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	1.5	0	0	420	0	0	0	1.0	6.9	6.9	13.8	21%	36	1	7	153	1,753				
63	63S (EB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	1.5	0	0	105	0	0	0	4.0	5.7	5.7	13.8	21%	30	2	23	503	5,771				
64	64N (EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	1.5	20	30	23	30	50	0	39.0	12.6	12.6	13.9	30%	70	46	491	11,596	124,824	2.5	2.5		
64	64D (EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	1.5	60	30	32	36	100	0	28.0	11.0	11.0	13.9	30%	61	29	308	7,268	78,232	2.5	2.0		
64	64H-1(EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	1.5	0	90	210	45	75	45	14.0	6.9	6.9	13.9	30%	39	9	97	2,293	24,679	0.5	1.0		
64	64P/H-2(EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	1.5	0	0	140	0	0	0	3.0	3.7	3.7	13.9	30%	21	1	11	261	2,804				
64	64N (WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	1.0	30	30	28	36	50	0	35.0	12.5	12.5	13.9	30%	70	41	438	10,323	111,125	2.5	2.0		
64	64D (WB)	Weekday	1	1.5	3.0	7.0																							

Route	Description	Day of week	Direction	SERVICE SPAN						FREQUENCY						TRAVEL TIME						DAILY STATS		ANNUAL STATS			
				EARLY	AM PK	MID	PM PK	EVE	NIGHT	EARLY	AM PK	MID	PM PK	EVE	NIGHT	One-way Trips	One-way trip length	Trip Length	Est. speed	Layover Percent	Cycle Time	Revenue Hours	Revenue Miles	Revenue Hours	Revenue Miles	AM Peak Vehicle	PM Peak Vehicle
70	70S-1(EB)	Weekday	1	0.5	3.0	7.0	3.0	3.5	0.0	30	36	38	36	70	0	25.0	6.1	6.1	15.9	30%	30	12	153	3,159	38,735	1.0	1.0
70	70D (EB)	Weekday	1	0.5	3.0	7.0	3.0	3.5	0.0	0	180	140	180	0	0	5.0	7.3	7.3	15.9	30%	36	3	37	760	9,322	0.5	0.5
70	70B-1(WB)	Weekday	1	1.5	3.0	7.0	3.0	3.0	0.0	90	180	210	180	0	0	5.0	7.3	7.3	15.9	30%	36	3	37	760	9,322	0.5	0.5
70	70B-2(WB)	Weekday	1	1.5	3.0	7.0	3.0	3.0	0.0	45	36	35	60	60	0	25.0	5.9	5.9	15.9	30%	29	12	148	3,061	37,529	1.0	0.5
70	70S-2(EB)	Weekday	1	0.5	3.0	7.0	3.0	3.5	0.0	0	36	60	36	0	0	17.0	8.7	8.7	15.9	30%	43	12	148	3,075	37,696	1.5	1.5
70	70B-1(WB)	Weekday	1	1.5	3.0	7.0	3.0	3.0	0.0	45	36	47	60	0	0	19.0	8.7	8.7	15.9	30%	43	14	166	3,436	42,131	1.5	1.0
74	74G-1(EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	2.0	60	45	53	60	150	0	18.0	7.5	7.5	13.9	22%	40	12	135	3,020	34,381	1.0	1.0
74	74G-2(EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	2.0	0	0	420	0	0	0	1.0	6.7	6.7	13.9	22%	35	1	7	148	1,689		
74	74S-1(EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	2.0	30	36	28	30	38	120	37.0	6.2	6.2	13.9	22%	33	20	230	5,134	58,456	1.0	1.5
74	74S-2(EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	2.0	0	0	420	0	0	0	1.0	7.0	7.0	13.9	22%	37	1	7	156	1,778		
74	74A-1(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	23	26	30	36	38	0	38.0	6.3	6.3	13.9	22%	33	21	239	5,332	60,711	1.5	1.0
74	74A-2(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	90	36	60	45	100	0	20.0	7.5	7.5	13.9	22%	39	13	149	3,324	37,846	1.5	1.0
74	74J-1(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	0	60	0	0	0	0	3.0	5.7	5.7	13.9	22%	30	2	17	383	4,366	1.0	
74	74J-2(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	0	180	0	0	0	0	1.0	6.8	6.8	13.9	22%	36	1	7	152	1,735	0.5	
74	74G-1(EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	2.0	20	23	26	20	30	120	47.0	5.3	5.3	13.9	22%	28	22	251	5,588	63,630	1.5	1.5
74	74G-3(EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	2.0	0	180	60	0	0	0	8.0	1.3	1.3	13.9	22%	7	1	11	239	2,723	0.5	
74	74 (EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	2.0	0	0	0	90	0	0	2.0	5.3	5.3	13.9	22%	28	1	11	238	2,708		0.5
74	74A-1(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	18	16	26	20	27	0	52.0	5.3	5.3	13.9	22%	28	24	277	6,183	70,399	2.0	1.5
74	74A-3(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	0	0	420	0	0	0	1.0	1.9	1.9	13.9	22%	10	0	2	43	488		
74	74A-5(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	0	180	70	0	0	0	7.0	1.3	1.3	13.9	22%	7	1	9	209	2,383	0.5	
83	83 (NB)	Weekday	1	0.5	3.0	7.0	3.0	5.0	0.0	30	20	20	20	30	0	50.0	9.9	9.9	15.6	20%	46	38	496	9,671	125,984	2.5	2.5
83	83 (SB)	Weekday	1	0.5	3.0	7.0	3.0	4.5	0.0	15	20	20	20	34	0	49.0	9.6	9.6	15.6	20%	44	36	469	9,153	119,233	2.5	2.5
84	84 (NB)	Weekday	1	1.0	3.0	7.0	3.0	2.0		30	30	30	30	30	0	32.0	11.5	11.5	17.1	27%	51	27	368	6,934	93,472	2.0	2.0
84	84 (SB)	Weekday	1	1.0	3.0	7.0	3.0	1.5		30	30	30	30	30	0	31.0	11.5	11.5	17.1	27%	51	26	357	6,717	90,551	2.0	2.0
87	87 (NB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	30	20	20	23	43	0	48.0	9.0	9.0	15.5	37%	47	38	430	9,640	109,240	2.5	2.5
87	87 (SB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	0.5	30	20	20	23	38	0	48.0	9.5	9.5	15.5	37%	50	40	457	10,242	116,068	3.0	2.5
134	134A (EB)	Weekday	1	0.0	0.5	0.5	3.0	0.0	0.0	0	15	30	90	0	0	5.0	8.3	8.3	15.1	33%	44	4	41	924	10,478	3.0	0.5
134	134B (EB)	Weekday	1	0.0	0.5	0.5	3.0	0.0	0.0	0	0	0	30	0	0	6.0	10.6	10.6	15.1	33%	56	6	64	1,425	16,154		2.0
134	134A (WB)	Weekday	1	0.0	3.0	0.0	0.5	0.0	0.0	0	45	0	30	0	0	5.0	8.6	8.6	15.1	33%	46	4	43	965	10,935	1.5	2.0
134	134B (WB)	Weekday	1	0.0	3.0	0.0	0.5	0.0	0.0	0	30	0	0	0	0	6.0	10.8	10.8	15.1	33%	57	6	65	1,452	16,459	2.0	
417	417 (NB)	Weekday	1	0.0	1.5	0.0	0.0	0.0	0.0	0	45	0	0	0	0	2.0	9.6	9.6	17.4	41%	47	2	19	395	4,877	1.5	
417	417(SB)	Weekday	1	0.0	0.0	0.0	1.5	0.0	0.0	0	0	0	45	0	0	2.0	9.7	9.7	17.4	41%	47	2	19	399	4,923		1.5
436	436 (NB)	Weekday	1	0.0	0.0	0.5	2.5	0.0	0.0	0	0	30	75	0	0	3.0	11.6	11.6	21.7	47%	47	2	35	598	8,839		1.0
436	436M (NB)	Weekday	1	0.0	0.0	0.5	2.5	0.0	0.0	0	0	0	150	0	0	1.0	12.6	12.6	21.7	47%	51	1	13	216	3,200		0.5
436	436S (NB)	Weekday	1	0.0	0.0	0.5	2.5	0.0	0.0	0	0	0	150	0	0	1.0	6.3	6.3	21.7	47%	25	0	6	108	1,590		0.5
436	436 (SB)	Weekday	1	0.5	2.0	0.0	0.0	0.0	0.0	30	40	0	0	0	0	4.0	11.3	11.3	21.7	47%	46	3	45	776	11,481	1.5	
480	480A (NB)	Weekday	1	0.0	3.0	0.0	0.0	0.0	0.0	0	36	0	0	0	0	5.0	20.6	20.6	22.9	36%	73	6	103	1,552	26,162	2.5	
480	480B-1(NB)	Weekday	1	0.0	3.0	0.0	0.0	0.0	0.0	0	90	0	0	0	0	2.0	20.0	20.0	22.9	36%	71	2	40	603	10,160	1.0	
480	480B-2(NB)	Weekday	1	0.0	3.0	0.0	0.0	0.0	0.0	0	90	0	0	0	0	2.0	20.7	20.7	22.9	36%	74	2	41	624	10,516	1.0	
480	480C (NB)	Weekday	1	0.0	3.0	0.0	0.0	0.0	0.0	0	90	0	0	0	0	2.0	15.2	15.2	22.9	36%	54	2	30	458	7,722	1.0	
480	480A (SB)	Weekday	1	0.0	0.0	0.5	3.0	0.0	0.0	0	0	15	60	0	0	5.0	20.7	20.7	22.9	36%	74	6	104	1,560	26,289		1.5
480	480B (SB)	Weekday	1	0.0	0.0	0.5	3.0	0.0	0.0	0	0	0	45	0	0	4.0	20.0	20.0	22.9	36%	71	5	80	1,206	20,320		2.0
480	480P (SB)	Weekday	1	0.0	0.0	0.5	3.0	0.0	0.0	0	0	0	60	0	0	3.0	18.0	18.0	22.9	36%	64	3	54	814	13,716		1.5
A-Line	SA-BRT (NB)	Weekday	1	2.0	3.0	6.0	4.5	3.0	3.5	30	10	10	10	20	30	101.0	9.9	9.9	15.0	27%	51	85	1,004	21,611	255,001	5.5	5.5
A-Line	SA-BRT (SB)	Weekday	1	1.5	3.5	6.0	5.0	3.0	2.5	30	10	10	10	20	30	104.0	10.0	10.0	15.0	27%	51	88	1,040	22,387	264,160	5.5	5.5
D-Line	Freemont-BRT-1	Weekday	1	0.0	3.0	6.0	3.0	4.0	0.0	0	15	15	15	20	0	60.0	13.0	13.0	15.0	22%	64	64	780	16,129	198,120	4.5	4.5
D-Line	Freemont-BRT-1	Weekday	1	0.0	3.0	6.0	3.0	4.0	0.0	0	15	15	15	20	0	60.0	13.1	13.1	15.0	22%	64	64	786	16,253	199,644	4.5	4.5
D-Line	Freemont-BRT-2	Weekday	1	2.0	3.0	6.0	3.0	4.0	4.0	20	15	15	15	20	30	74.0	18.2	18.2	15.0	22%	89	110	1,347	27,850	342,087	6.0	6.0
D-Line	Freemont-BRT-2	Weekday	1	2.0	3.0	6.0	3.0	4.0	4.0	20	15	15	15	20	30	74.0	18.2	18.2	15.0	22%	89	110	1,347	27,850	342,087	6.0	6.0



Route	Description	Day of week	Direction	SERVICE SPAN						FREQUENCY						TRAVEL TIME					DAILY STATS		ANNUAL STATS			PM Peak Vehicle		
				EARLY	AM PK	MID	PM PK	EVE	NIGHT	EARLY	AM PK	MID	PM PK	EVE	NIGHT	One-way Trips	One-way trip length	Trip Length	Est. speed	Layover Percent	Cycle Time	Revenue Hours	Revenue Miles	Revenue Hours	Revenue Miles		AM Peak Vehicle	
SATURDAY STATISTICS																												
5	5F (NB)	Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	105	90	300	0	8.0	14.0	14.0	13.0	20%	78	10	112	549	5,944			
5	5K (NB)	Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	120	0	0	0	80	4.0	10.1	10.1	13.0	20%	56	4	40	198	2,141				
5	5M-1 (NB)	Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	120	90	105	90	100	0	12.0	13.1	13.1	13.0	20%	73	15	157	769	8,332			
5	5M-2 (NB)	Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	60	60	70	90	50	80	22.0	18.2	18.2	13.0	20%	101	37	400	1,960	21,221			
5	5B-1 (SB)	Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	0	210	180	0	0	3.0	8.9	8.9	13.0	20%	49	2	27	131	1,417			
5	5B-2 (SB)	Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	60	60	84	90	50	60	22.0	14.0	14.0	13.0	20%	78	28	308	1,508	16,324			
5	5C (SB)	Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	0	0	0	300	0	1.0	14.5	14.5	13.0	20%	80	1	15	71	769			
5	5E (SB)	Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	60	60	60	60	100	80	21.0	18.5	18.5	13.0	20%	103	36	389	1,902	20,591			
23	23C (EB)	Saturday	1	1.0	3.0	7.0	3.0	4.0	0.0	30	45	60	60	48	0	21.0	7.6	7.6	12.8	26%	45	16	159	833	8,448			
23	23H (EB)	Saturday	1	1.0	3.0	7.0	3.0	4.0	0.0	0	90	38	36	80	0	21.0	8.0	8.0	12.8	26%	47	17	168	876	8,882			
23	23C (WB)	Saturday	1	0.5	3.0	7.0	3.0	5.0	0.0	30	36	60	60	60	0	21.0	7.8	7.8	12.8	26%	46	16	164	857	8,693			
23	23H (WB)	Saturday	1	0.5	3.0	7.0	3.0	5.0	0.0	0	90	42	45	75	0	20.0	8.3	8.3	12.8	26%	49	16	166	870	8,819			
46	46E (EB)	Saturday	1	0.0	3.0	7.0	3.0	3.5	0.0	0	45	30	30	42	0	29.0	11.2	11.2	15.6	22%	52	25	325	1,344	17,214			
46	46C (WB)	Saturday	1	0.0	3.0	7.0	3.0	3.5	0.0	0	60	32	30	42	0	27.0	13.4	13.4	15.6	22%	63	28	362	1,497	19,175			
54E	54 (WB)	Saturday	1	3.0	7.0	3.0	4.0			60	30	30	30		31.0	8.8	8.8	13.5	15%	45	23	273	1,232	14,458				
54E	54 (EB)	Saturday	1	3.0	7.0	3.0	4.0			60	30	30	30		31.0	8.8	8.8	13.5	15%	45	23	273	1,232	14,458				
63	63B-1(WB)	Saturday	1	1.5	3.0	7.0	3.0	5.0	2.0	0	0	0	90		2.0	14.7	14.7	14.4	25%	77	3	29	135	1,558				
63	63B-2(WB)	Saturday	1	1.5	3.0	7.0	3.0	5.0	2.0	45	36	20	26	60	0	40.0	15.9	15.9	14.4	25%	83	55	636	2,924	33,708			
63	63K-1(EB)	Saturday	1	0.5	3.0	7.0	3.0	5.0	2.0	0	60	70	0	0	0	9.0	14.4	14.4	14.4	25%	75	11	130	596	6,869			
63	63K-2(EB)	Saturday	1	0.5	3.0	7.0	3.0	5.0	2.0	30	60	28	20	25	60	42.0	15.6	15.6	14.4	25%	81	57	655	3,012	34,726			
64	64D (EB)	Saturday	1	1.0	3.0	7.0	3.0	5.0	1.5	0	0	42	36	0	0	15.0	11.0	11.0	14.7	25%	56	14	165	744	8,745			
64	64H(EB)	Saturday	1	1.0	3.0	7.0	3.0	5.0	1.5	60	60	105	0	300	30	12.0	6.9	6.9	14.7	25%	35	7	83	373	4,388			
64	64N (EB)	Saturday	1	1.0	3.0	7.0	3.0	5.0	1.5	60	45	30	23	23	0	40.0	12.5	12.5	14.7	25%	64	43	500	2,254	26,500			
64	64D (WB)	Saturday	1	1.5	3.0	7.0	3.0	5.0	1.0	0	180	53	36	300	0	15.0	10.9	10.9	14.7	25%	56	14	164	737	8,666			
64	64H (WB)	Saturday	1	1.5	3.0	7.0	3.0	5.0	1.0	45	60	70	0	0	0	11.0	6.8	6.8	14.7	25%	35	6	75	337	3,964			
64	64N (WB)	Saturday	1	1.5	3.0	7.0	3.0	5.0	1.0	0	45	30	23	27	30	39.0	12.5	12.5	14.7	25%	64	41	488	2,198	25,838			
65	65 (NB)	Saturday	1	1.0	3.0	7.0	3.0	5.0	1.0	30	30	20	20	33	30	49.0	8.0	8.0	16.9	48%	42	35	392	1,830	20,776			
65	65 (SB)	Saturday	1	1.0	3.0	7.0	3.0	5.0	1.0	30	26	20	20	30	60	50.0	7.5	7.5	16.9	48%	40	33	377	1,758	19,955			
54W	66 (EB)	Saturday	1	2.0	3.0	7.0	3.0	4.0	2.0	60	60	30	30	30	60	35.0	5.9	5.9	14.0	15%	29	17	205	891	10,852			
54W	66 (WB)	Saturday	1	2.0	3.0	7.0	3.0	4.0	2.0	60	60	30	30	30	60	35.0	6.0	6.0	14.0	15%	29	17	208	907	11,037			
70	70S (EB)	Saturday	1	0.0	1.8	7.0	3.0	2.0	0.0	0	53	105	90	60	0	10.0	6.1	6.1	17.5	36%	28	5	61	251	3,233			
70	70D (EB)	Saturday	1	0.0	1.8	7.0	3.0	2.0	0.0	0	0	140	180	0	0	4.0	7.3	7.3	17.5	36%	34	2	29	121	1,556			
70	70S (WB)	Saturday	1	0.0	2.5	7.0	3.0	2.0	0.0	0	50	105	90	60	0	11.0	6.1	6.1	17.5	36%	28	5	67	276	3,556			
70	70D (WB)	Saturday	1	0.0	2.5	7.0	3.0	2.0	0.0	0	0	140	180	0	0	4.0	7.3	7.3	17.5	36%	34	2	29	121	1,556			
74	74S (EB)	Saturday	1	0.5	3.0	7.0	3.0	5.0	2.0	0	36	30	36	60	60	31.0	6.2	6.2	13.8	20%	32	17	193	883	10,219			
74	74G (EB)	Saturday	1	0.5	3.0	7.0	3.0	5.0	2.0	30	90	60	60	60	0	18.0	7.5	7.5	13.8	20%	39	12	135	620	7,174			
74	74A-1 (WB)	Saturday	1	1.5	3.0	7.0	3.0	5.0	0.0	45	45	30	45	50	0	30.0	6.3	6.3	13.8	20%	33	16	189	864	10,001			
74	74A-2 (WB)	Saturday	1	1.5	3.0	7.0	3.0	5.0	0.0	0	60	60	60	60	0	18.0	7.5	7.5	13.8	20%	39	12	134	614	7,107			
74	74S (EB)	Saturday	1	0.5	3.0	7.0	3.0	5.0	2.0	30	26	20	23	30	60	49.0	5.3	5.3	13.8	20%	28	23	261	1,196	13,842			
74	74A-1 (WB)	Saturday	1	1.5	3.0	7.0	3.0	5.0	0.0	45	26	20	26	27	0	48.0	5.3	5.3	13.8	20%	28	22	256	1,171	13,560			
83	83 (NB)	Saturday	1	0.0	3.0	7.0	3.0	4.5	0.0	0	30	30	30	30	0	35.0	9.9	9.9	16.0	22%	46	27	347	1,407	18,402			
83	83 (SB)	Saturday	1	1.0	3.0	7.0	3.0	4.5	0.0	60	36	30	30	30	0	35.0	9.6	9.6	16.0	22%	44	26	335	1,359	17,771			
84	84 (NB)	Saturday	1	2.0	7.0	3.0	1.0			0	30	30	30	30	0	26.0	11.5	11.5	17.9	29%	50	22	299	1,142	15,847			
84	84 (SB)	Saturday	1	2.5	7.0	3.0	1.0			0	30	30	30	30	0	27.0	11.5	11.5	17.9	29%	50	22	311	1,185	16,457			
87	87 (NB)	Saturday	1	0.0	3.0	7.0	3.0	5.0	1.0	0	30	21	20	42.9	60	43.0	9.0	9.0	16.1	41%	47	34	385	1,788	20,420			
87	87 (SB)	Saturday	1	0.0	3.0	7.0	3.0	5.0	1.0	0	30	21	20	38	60	44.0	9.5	9.5	16.1	41%	50	37	419	1,944	22,201			
A-Line	SABRT (NB)	Saturday	1	2.0	3.0	6.0	3.0	4.5	3.0	30	10	10	10	15	30	100.0	9.9	9.9	15.0	27%	51	84	994	4,465	52,682			
A-Line	SABRT (SB)	Saturday	1	2.0	3.0	6.0	3.0	4.5	3.5	30	10	10	10	15	30	101.0	10.0	10.0	15.0	27%	51	86	1,010	4,537	53,530			
D-Line	Freemont-BRT-1	Saturday	1	0.0	3.0	6.0	3.0	4.0	0.0	0	20	20	20	20														

Route	Description	Day of week	Direction	SERVICE SPAN						FREQUENCY						TRAVEL TIME					DAILY STATS		ANNUAL STATS			PM Peak Vehicle		
				EARLY	AM PK	MID	PM PK	EVE	NIGHT	EARLY	AM PK	MID	PM PK	EVE	NIGHT	One-way Trips	One-way trip length	Trip Length	Est. speed	Layover Percent	Cycle Time	Revenue Hours	Revenue Miles	Revenue Hours	Revenue Miles		AM Peak Vehicle	
SUNDAY STATISTICS																												
5	5F (NB)	Sunday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	210	180	300	0	5.0	14.0	14.0	13.3	19%	75	6	70	363	4,066			
5	5K (NB)	Sunday	1	2.0	3.0	7.0	3.0	5.0	4.0	60	0	0	0	80	5.0	10.1	10.1	13.3	19%	54	5	51	261	2,929				
5	5M-1 (NB)	Sunday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	90	70	60	75	0	15.0	13.1	13.1	13.3	19%	70	18	197	1,016	11,397			
5	5M-2 (NB)	Sunday	1	2.0	3.0	7.0	3.0	5.0	4.0	60	60	70	90	60	240	19.0	18.2	18.2	13.3	19%	97	31	346	1,788	20,056			
5	5B-1 (SB)	Sunday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	0	210	180	0	0	3.0	8.9	8.9	13.3	19%	48	2	27	138	1,550			
5	5B-2 (SB)	Sunday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	60	105	90	75	60	17.0	14.0	14.0	13.3	19%	75	21	238	1,231	13,804			
5	5E (SB)	Sunday	1	2.0	3.0	7.0	3.0	5.0	4.0	60	60	53	60	38	50	28.8	18.5	18.5	13.3	19%	99	48	533	2,756	30,902			
23	23C (EB)	Sunday	1	1.0	3.0	7.0	3.0	4.0	0.0	60	60	70	60	60	0	17.0	7.6	7.6	13.1	24%	43	12	129	707	7,484			
23	23H (EB)	Sunday	1	1.0	3.0	7.0	3.0	4.0	0.0	0	90	53	60	120	0	15.0	8.0	8.0	13.1	24%	45	11	120	656	6,943			
23	23C (WB)	Sunday	1	1.0	3.0	7.0	3.0	4.5	0.0	60	60	60	60	68	0	18.0	7.8	7.8	13.1	24%	44	13	141	770	8,154			
23	23H (WB)	Sunday	1	1.0	3.0	7.0	3.0	4.5	0.0	0	90	60	60	90	0	15.0	8.3	8.3	13.1	24%	47	12	125	684	7,238			
46	46E (EB)	Sunday	1	0.0	1.0	7.0	3.0	2.0	0.0	0	30	32	45	60	0	21.0	11.2	11.2	15.9	21%	51	18	235	1,044	13,642			
46	46C (WB)	Sunday	1	0.0	1.0	7.0	3.0	2.0	0.0	0	60	30	45	60	0	21.0	13.4	13.4	15.9	21%	62	22	281	1,249	16,321			
54E	54 (WB)	Sunday	1		3.0	7.0	3.0	3.0	2.0		60	40	40	40	60	24.5	8.8	8.8	13.5	15%	45	18	216	1,065	12,505			
54E	54 (EB)	Sunday	1		3.0	7.0	3.0	3.0	2.0		60	40	40	40	60	24.5	8.8	8.8	13.5	15%	45	18	216	1,065	12,505			
63	63B-1(WB)	Sunday	1	1.5	3.0	7.0	3.0	5.0	2.0	0	0	84	23	50	0	19.0	14.7	14.7	15.1	27%	74	23	279	1,361	16,199			
63	63B-2(WB)	Sunday	1	1.5	3.0	7.0	3.0	5.0	2.0	45	30	26	0	60	60	31.0	15.9	15.9	15.1	27%	80	41	493	2,402	28,588			
63	63K-1(EB)	Sunday	1	0.5	3.0	7.0	3.0	5.0	2.0	0	30	32	0	0	0	19.0	14.4	14.4	15.1	27%	73	23	274	1,333	15,869			
63	63K-2(EB)	Sunday	1	0.5	3.0	7.0	3.0	5.0	2.0	30	180	53	20	27	60	32.0	15.6	15.6	15.1	27%	79	42	499	2,433	28,954			
64	64H(EB)	Sunday	1	1.0	3.0	7.0	3.0	5.0	1.0	60	90	0	0	300	60	5.0	6.9	6.9	15.1	23%	34	3	35	163	2,001			
64	64N (EB)	Sunday	1	1.0	3.0	7.0	3.0	5.0	1.0	0	60	25	20	33	0	38.0	12.6	12.6	15.1	23%	62	39	479	2,260	27,770			
64	64H (WB)	Sunday	1	1.5	3.0	7.0	3.0	5.0	1.0	45	45	0	0	0	60	7.0	6.8	6.8	15.1	23%	33	4	48	225	2,761			
64	64N (WB)	Sunday	1	1.5	3.0	7.0	3.0	5.0	1.0	0	90	23	20	27	0	40.0	12.5	12.5	15.1	23%	61	41	500	2,360	29,000			
65	65 (NB)	Sunday	1	1.0	3.0	7.0	3.0	5.0	1.0	30	26	30	30	30	60	40.0	8.0	8.0	17.7	62%	44	29	320	1,691	18,560			
65	65 (SB)	Sunday	1	1.5	3.0	7.0	3.0	5.0	1.0	30	30	30	30	33	60	39.0	7.5	7.5	17.7	62%	41	27	294	1,552	17,033			
54W	66 (EB)	Sunday	1	2.0	3.0	7.0	3.0	4.0	2.0	60	60	30	30	30	60	35.0	5.9	5.9	14.0	15%	29	17	205	975	11,876			
54W	66 (WB)	Sunday	1	2.0	3.0	7.0	3.0	4.0	2.0	60	60	30	30	30	60	35.0	6.0	6.0	14.0	15%	29	17	208	992	12,079			
70	70S (EB)	Sunday	1	0.0	0.0	7.0	2.5	0.0	0.0	0	0	84	50	0	0	8.0	6.1	6.1	17.4	35%	28	4	49	219	2,830			
70	70D (EB)	Sunday	1	0.0	0.0	7.0	2.5	0.0	0.0	0	0	210	0	0	0	2.0	7.3	7.3	17.4	35%	34	1	15	66	851			
70	70S (WB)	Sunday	1	0.0	0.0	7.0	3.0	0.0	0.0	0	0	84	60	0	0	8.0	6.1	6.1	17.4	35%	28	4	49	219	2,830			
70	70D (WB)	Sunday	1	0.0	0.0	7.0	3.0	0.0	0.0	0	0	210	0	0	0	2.0	7.3	7.3	17.4	35%	34	1	15	66	851			
74	74C (EB)	Sunday	1	0.5	3.0	7.0	3.0	5.0	2.0	0	90	60	60	60	0	17.0	6.2	6.2	14.0	24%	33	9	106	545	6,133			
74	74K (EB)	Sunday	1	0.5	3.0	7.0	3.0	5.0	2.0	30	60	60	90	60	60	20.0	6.2	6.2	14.0	24%	33	11	124	641	7,215			
74	74A-1 (WB)	Sunday	1	1.5	3.0	7.0	3.0	5.0	0.0	90	180	60	60	60	0	17.0	6.3	6.3	14.0	24%	34	9	107	551	6,202			
74	74A-3 (WB)	Sunday	1	1.5	3.0	7.0	3.0	5.0	0.0	90	45	70	60	50	0	20.0	6.1	6.1	14.0	24%	33	11	123	633	7,122			
74	74C (EB)	Sunday	1	0.5	3.0	7.0	3.0	5.0	2.0	30	36	30	36	30	60	37.0	5.3	5.3	14.0	24%	28	18	197	1,016	11,438			
74	74A-1 (WB)	Sunday	1	1.5	3.0	7.0	3.0	5.0	0.0	45	36	32	30	27	0	37.0	5.3	5.3	14.0	24%	28	18	197	1,016	11,438			
83	83 (NB)	Sunday	1	0.0	3.0	7.0	3.0	4.5	0.0	0	30	32	30	27	0	35.0	9.9	9.9	16.0	22%	46	27	347	1,540	20,138			
83	83 (SB)	Sunday	1	1.0	3.0	7.0	3.0	4.5	0.0	60	36	30	30	30	0	35.0	9.6	9.6	16.0	22%	44	26	335	1,487	19,447			
84	84 (NB)	Sunday	1			6.5	3.0	1.0		0	30	30	30	30	0	21.0	11.5	11.5	18.7	31%	48	17	242	980	14,007			
84	84 (SB)	Sunday	1			6.5	3.0	0.5		0	30	30	30	30	0	20.0	11.5	11.5	18.7	31%	48	16	230	933	13,340			
87	87 (NB)	Sunday	1	0.0	3.0	7.0	3.0	5.0	1.0	0	30	30	30	42.9	60	34.0	9.0	9.0	16.0	31%	44	25	305	1,447	17,669			
87	87 (SB)	Sunday	1	0.0	3.0	7.0	3.0	5.0	1.0	0	30	30	30	38	60	35.0	9.5	9.5	16.0	31%	47	27	333	1,583	19,326			
A-Line	SABRT (NB)	Sunday	1	1.5	3.5	6.0	3.0	4.0	3.5	30	10	10	10	20	30	97.0	9.9	9.9	15.0	27%	51	82	964	4,739	55,922			
A-Line	SABRT (SB)	Sunday	1	1.5	3.5	6.0	3.0	5.0	3.0	30	10	10	10	20	30	99.0	10.0	10.0	15.0	27%	51	84	990	4,866	57,420			
D-Line	Freemont-BRT-1	Sunday	1	0.0	3.0	6.0	3.0	4.0	0.0	0	20	20	20	20	0	48.0	13.0	13.0	15.0	22%	64	51	624	2,946	36,192			
D-Line	Freemont-BRT-1	Sunday	1	0.0	3.0	6.0	3.0	4.0	0.0	0	20	20	20	20	0	48.0	13.1	13.1	15.0	22%	64	51	629	2,969	36,470			
D-Line	Freemont-BRT-2	Sunday	1	2.0	3.0	6.0	3.0	4.0	3.0	30	20	20	20	20	30	58.0	18.2	18.2	15.0	22%	89	86	1,056	4,984	61,225			
D-Line	Freemont-BRT-2	Sunday	1	2.0	3.0	6.0	3.0	4.0	3.0	30	20	20																

Alternatives 5 and 6 Local Bus Operating Statistics – Year 2040

Route	Description	Day of week	Direction	SERVICE SPAN						FREQUENCY						TRAVEL TIME					DAILY STATS		ANNUAL STATS			PM Peak Vehicle		
				EARLY	AM PK	MID	PM PK	EVE	NIGHT	EARLY	AM PK	MID	PM PK	EVE	NIGHT	One-way Trips	One-way trip length	Trip Length	Est. speed	Layover Percent	Cycle Time	Revenue Hours	Revenue Miles	Revenue Hours	Revenue Miles		AM Peak Vehicle	
WEEKDAY STATISTICS																												
5	5 (NB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	0	420	0	0	0	1.0	3.2	3.2	12.2	22%	19	0	3	81	813			
5	5F (NB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	140	180	150	0	7.0	14.0	14.0	12.2	22%	84	10	98	2,499	24,928	0.5	0.5	
5	5K (NB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	420	0	0	80	5.0	5.0	5.0	12.2	22%	30	3	25	637	6,350	0.5		
5	5L (NB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	140	0	0	0	4.0	13.8	13.8	12.2	22%	83	6	55	1,410	14,061	0.5		
5	5M-1 (NB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	120	180	420	90	75	240	10.0	18.2	18.2	12.2	22%	109	18	182	4,634	46,228	1.0	1.5	
5	5M-2 (NB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	60	180	105	90	0	0	9.0	13.1	13.1	12.2	22%	79	12	118	3,002	29,947	0.5	1.0	
5	5M-3 (NB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	120	180	420	180	75	0	8.0	10.8	10.8	12.2	22%	65	9	86	2,200	21,946	0.5	0.5	
5	5 (SB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	210	0	0	0	3.0	3.2	3.2	12.2	22%	19	1	10	244	2,438	0.5		
5	5A (SB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	105	180	0	0	6.0	11.1	11.1	12.2	22%	67	7	67	1,699	16,947	0.5	0.5	
5	5B (SB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	420	90	75	120	10.0	13.4	13.4	12.2	22%	80	13	134	3,407	33,985	0.5	1.0	
5	5E-1 (SB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	140	180	150	240	8.0	18.5	18.5	12.2	22%	111	15	148	3,760	37,511	1.0	1.0	
5	5E-2 (SB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	30	180	420	180	75	120	13.0	14.1	14.1	12.2	22%	85	18	183	4,651	46,393	0.5	0.5	
5	5E-3 (SB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	140	180	0	0	5.0	13.8	13.8	12.2	22%	83	7	69	1,757	17,526	0.5	0.5	
23	23B (EB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.0	90	180	0	0	0	2.0	6.5	6.5	12.3	23%	39	1	13	329	3,287	0.5			
23	23C (EB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.0	45	36	53	60	75	0	22.0	7.6	7.6	12.3	23%	46	17	167	4,244	42,413	1.5	1.0	
23	23H (EB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.0	0	60	53	36	75	0	20.0	8.0	8.0	12.3	23%	48	16	160	4,057	40,538	1.0	1.5	
23	23B (WB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	0.0	60	0	0	0	0	0	1.0	6.7	6.7	12.3	23%	40	1	7	171	1,704			
23	23C (WB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	0.0	60	45	47	60	60	0	22.0	7.8	7.8	12.3	23%	47	17	172	4,367	43,642	1.5	1.0	
23	23H (WB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	0.0	60	45	60	36	75	0	21.0	8.3	8.3	12.3	23%	50	17	175	4,441	44,379	1.5	1.5	
23	23I(WB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	0.0	0	0	420	0	0	0	1.0	4.9	4.9	12.3	23%			5	0	1,247			
46	46A-1(EB)	Weekday	1	1.0	3.0	7.0	3.0	4.0	0.0	0	180	0	180	0	0	2.0	8.6	8.6	14.9	25%	43	1	17	364	4,343	0.5	0.5	
46	46A-2(EB)	Weekday	1	1.0	3.0	7.0	3.0	4.0	0.0	0	90	420	0	0	0	3.0	7.0	7.0	14.9	25%	35	2	21	447	5,334	0.5		
46	46A-3(EB)	Weekday	1	1.0	3.0	7.0	3.0	4.0	0.0	0	0	105	0	0	0	4.0	7.2	7.2	14.9	25%	36	2	29	614	7,325			
46	46A-4(EB)	Weekday	1	1.0	3.0	7.0	3.0	4.0	0.0	0	0	420	0	0	0	1.0	4.7	4.7	14.9	25%	24	0	5	100	1,196			
46	46E-2(EB)	Weekday	1	1.0	3.0	7.0	3.0	4.0	0.0	60	0	0	0	0	0	1.0	12.8	12.8	14.9	25%	64	1	13	272	3,251			
46	46E-1(EB)	Weekday	1	1.0	3.0	7.0	3.0	4.0	0.0	60	30	30	30	60	0	31.0	11.2	11.2	14.9	25%	56	29	347	7,386	88,189	2.0	2.0	
46	46B-1(WB)	Weekday	1	0.5	3.0	7.0	3.0	4.0	0.0	0	60	420	0	0	0	4.0	7.3	7.3	15	25%	37	2	29	622	7,427	1.0		
46	46B-2(WB)	Weekday	1	0.5	3.0	7.0	3.0	4.0	0.0	0	180	0	0	0	0	1.0	7.3	7.3	15	25%	37	1	7	156	1,862	0.5		
46	46C-1(WB)	Weekday	1	0.5	3.0	7.0	3.0	4.0	0.0	30	30	30	30	80	0	30.0	13.4	13.4	15	25%	67	34	402	8,552	102,108	2.5	2.5	
46	46C-2(WB)	Weekday	1	0.5	3.0	7.0	3.0	4.0	0.0	0	0	420	90	0	0	3.0	8.8	8.8	15	25%	44	2	26	563	6,721		0.5	
46	46C-3(WB)	Weekday	1	0.5	3.0	7.0	3.0	4.0	0.0	0	180	0	0	0	0	1.0	8.8	8.8	15	25%	44	1	9	187	2,238	0.5		
54E	54 (WB)	Weekday	1	2.0	3.0	7.0	3.0	5.0			20	30	20	30		42.0	8.8	8.8	14	15%	45	31	370	7,997	93,878	2.5	2.5	
54E	54 (EB)	Weekday	1	2.0	3.0	7.0	3.0	5.0			20	30	20	30		42.0	8.8	8.8	14	15%	45	31	370	7,997	93,878	2.5	2.5	
63	63B-1(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	2.0	0	0	140	30	43	0	16.0	14.7	14.7	13.8	21%	77	21	235	5,212	59,741		3.0	
63	63B-2(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	2.0	23	20	23	60	75	120	39.0	15.9	15.9	13.8	21%	83	54	620	13,741	157,516	4.5	1.5	
63	63-1(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	2.0	0	180	0	0	0	0	1.0	8.6	8.6	13.8	21%	45	1	9	191	2,189	0.5		
63	63-2(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	2.0	0	90	0	0	0	0	2.0	5.7	5.7	13.8	21%	30	1	11	252	2,885	0.5		
63	63K-1(EB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	1.5	23	20	47	0	0	0	22.0	14.4	14.4	13.8	21%	75	28	317	7,020	80,467	4.0		
63	63K-2(EB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	1.5	90	0	35	20	27	90	34.0	15.6	15.6	13.8	21%	82	46	530	11,753	134,721		4.5	
63	63K-3(EB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	1.5	0	0	420	0	0	0	1.0	6.9	6.9	13.8	21%	36	1	7	153	1,753			
63	63S (EB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	1.5	0	0	105	0	0	0	4.0	5.7	5.7	13.8	21%	30	2	23	503	5,771			
64	64N (EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	1.5	20	30	23	30	50	0	39.0	12.6	12.6	13.9	30%	70	46	491	11,596	124,824	2.5	2.5	
64	64D (EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	1.5	60	30	32	36	100	0	28.0	11.0	11.0	13.9	30%	61	29	308	7,268	78,232	2.5	2.0	
64	64H-1(EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	1.5	0	90	210	45	75	45	14.0	6.9	6.9	13.9	30%	39	9	97	2,293	24,679	0.5	1.0	
64	64P/H-2(EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	1.5	0	0	140	0	0	0	3.0	3.7	3.7	13.9	30%	21	1	11	261	2,804			
64	64N (WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	1.0	30	30	28	36	50	0	35.0	12.5	12.5	13.9	30%	70	41	438	10,323	111,125	2.5	2.0	
64	64D (WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	1.0	45	36	26	36	100	0	31.0	10.9	10.9	13.9	30%	61	31	338	7,973	85,827	2.0	2.0	
64	64H-1(WB)	Weekday	1	1.5																								

Route	Description	Day of week	Direction	SERVICE SPAN						FREQUENCY						TRAVEL TIME						DAILY STATS		ANNUAL STATS			
				EARLY	AM PK	MID	PM PK	EVE	NIGHT	EARLY	AM PK	MID	PM PK	EVE	NIGHT	One-way Trips	One-way trip length	Trip Length	Est. speed	Layover Percent	Cycle Time	Revenue Hours	Revenue Miles	Revenue Hours	Revenue Miles	AM Peak Vehicle	PM Peak Vehicle
70	70S-1(EB)	Weekday	1	0.5	3.0	7.0	3.0	3.5	0.0	30	36	38	36	70	0	25.0	6.1	6.1	15.9	30%	30	12	153	3,159	38,735	1.0	1.0
70	70D (EB)	Weekday	1	0.5	3.0	7.0	3.0	3.5	0.0	0	180	140	180	0	0	5.0	7.3	7.3	15.9	30%	36	3	37	760	9,322	0.5	0.5
70	70B-1(WB)	Weekday	1	1.5	3.0	7.0	3.0	3.0	0.0	90	180	210	180	0	0	5.0	7.3	7.3	15.9	30%	36	3	37	760	9,322	0.5	0.5
70	70B-2(WB)	Weekday	1	1.5	3.0	7.0	3.0	3.0	0.0	45	36	35	60	60	0	25.0	5.9	5.9	15.9	30%	29	12	148	3,061	37,529	1.0	0.5
70	70S-2(EB)	Weekday	1	0.5	3.0	7.0	3.0	3.5	0.0	0	36	60	36	0	0	17.0	8.7	8.7	15.9	30%	43	12	148	3,075	37,696	1.5	1.5
70	70B-1(WB)	Weekday	1	1.5	3.0	7.0	3.0	3.0	0.0	45	36	47	60	0	0	19.0	8.7	8.7	15.9	30%	43	14	166	3,436	42,131	1.5	1.0
74	74G-1(EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	2.0	60	45	53	60	150	0	18.0	7.5	7.5	13.9	22%	40	12	135	3,020	34,381	1.0	1.0
74	74G-2(EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	2.0	0	0	420	0	0	0	1.0	6.7	6.7	13.9	22%	35	1	7	148	1,689		
74	74S-1(EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	2.0	30	36	28	30	38	120	37.0	6.2	6.2	13.9	22%	33	20	230	5,134	58,456	1.0	1.5
74	74S-2(EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	2.0	0	0	420	0	0	0	1.0	7.0	7.0	13.9	22%	37	1	7	156	1,778		
74	74A-1(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	23	26	30	36	38	0	38.0	6.3	6.3	13.9	22%	33	21	239	5,332	60,711	1.5	1.0
74	74A-2(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	90	36	60	45	100	0	20.0	7.5	7.5	13.9	22%	39	13	149	3,324	37,846	1.5	1.0
74	74J-1(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	0	60	0	0	0	0	3.0	5.7	5.7	13.9	22%	30	2	17	383	4,366	1.0	
74	74J-2(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	0	180	0	0	0	0	1.0	6.8	6.8	13.9	22%	36	1	7	152	1,735	0.5	
74	74G-1(EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	2.0	20	23	26	20	30	120	47.0	5.3	5.3	13.9	22%	28	22	251	5,588	63,630	1.5	1.5
74	74G-3(EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	2.0	0	180	60	0	0	0	8.0	1.3	1.3	13.9	22%	7	1	11	239	2,723	0.5	
74	74 (EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	2.0	0	0	0	90	0	0	2.0	5.3	5.3	13.9	22%	28	1	11	238	2,708		0.5
74	74A-1(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	18	16	26	20	27	0	52.0	5.3	5.3	13.9	22%	28	24	277	6,183	70,399	2.0	1.5
74	74A-3(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	0	0	420	0	0	0	1.0	1.9	1.9	13.9	22%	10	0	2	43	488		
74	74A-5(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	0	180	70	0	0	0	7.0	1.3	1.3	13.9	22%	7	1	9	209	2,383	0.5	
83	83 (NB)	Weekday	1	0.5	3.0	7.0	3.0	5.0	0.0	30	20	20	20	30	0	50.0	9.9	9.9	15.6	20%	46	38	496	9,671	125,984	2.5	2.5
83	83 (SB)	Weekday	1	0.5	3.0	7.0	3.0	4.5	0.0	15	20	20	20	34	0	49.0	9.6	9.6	15.6	20%	44	36	469	9,153	119,233	2.5	2.5
84	84 (NB)	Weekday	1	1.0	3.0	7.0	3.0	2.0		30	30	30	30	30	0	32.0	11.5	11.5	17.1	27%	51	27	368	6,934	93,472	2.0	2.0
84	84 (SB)	Weekday	1	1.0	3.0	7.0	3.0	1.5		30	30	30	30	30	0	31.0	11.5	11.5	17.1	27%	51	26	357	6,717	90,551	2.0	2.0
87	87 (NB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	30	20	20	23	43	0	48.0	9.0	9.0	15.5	37%	47	38	430	9,640	109,240	2.5	2.5
87	87 (SB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	0.5	30	20	20	23	38	0	48.0	9.5	9.5	15.5	37%	50	40	457	10,242	116,068	3.0	2.5
134	134A (EB)	Weekday	1	0.0	0.5	0.5	3.0	0.0	0.0	0	15	30	90	0	0	5.0	8.3	8.3	15.1	33%	44	4	41	924	10,478	3.0	0.5
134	134B (EB)	Weekday	1	0.0	0.5	0.5	3.0	0.0	0.0	0	0	0	30	0	0	6.0	10.6	10.6	15.1	33%	56	6	64	1,425	16,154		2.0
134	134A (WB)	Weekday	1	0.0	3.0	0.0	0.5	0.0	0.0	0	45	0	30	0	0	5.0	8.6	8.6	15.1	33%	46	4	43	965	10,935	1.5	2.0
134	134B (WB)	Weekday	1	0.0	3.0	0.0	0.5	0.0	0.0	0	30	0	0	0	0	6.0	10.8	10.8	15.1	33%	57	6	65	1,452	16,459	2.0	
417	417 (NB)	Weekday	1	0.0	1.5	0.0	0.0	0.0	0.0	0	45	0	0	0	0	2.0	9.6	9.6	17.4	41%	47	2	19	395	4,877	1.5	
417	417(SB)	Weekday	1	0.0	0.0	0.0	1.5	0.0	0.0	0	0	0	45	0	0	2.0	9.7	9.7	17.4	41%	47	2	19	399	4,923		1.5
436	436 (NB)	Weekday	1	0.0	0.0	0.5	2.5	0.0	0.0	0	0	30	75	0	0	3.0	11.6	11.6	21.7	47%	47	2	35	598	8,839		1.0
436	436M (NB)	Weekday	1	0.0	0.0	0.5	2.5	0.0	0.0	0	0	0	150	0	0	1.0	12.6	12.6	21.7	47%	51	1	13	216	3,200		0.5
436	436S (NB)	Weekday	1	0.0	0.0	0.5	2.5	0.0	0.0	0	0	0	150	0	0	1.0	6.3	6.3	21.7	47%	25	0	6	108	1,590		0.5
436	436 (SB)	Weekday	1	0.5	2.0	0.0	0.0	0.0	0.0	30	40	0	0	0	0	4.0	11.3	11.3	21.7	47%	46	3	45	776	11,481	1.5	
480	480A (NB)	Weekday	1	0.0	3.0	0.0	0.0	0.0	0.0	0	36	0	0	0	0	5.0	20.6	20.6	22.9	36%	73	6	103	1,552	26,162	2.5	
480	480B-1(NB)	Weekday	1	0.0	3.0	0.0	0.0	0.0	0.0	0	90	0	0	0	0	2.0	20.0	20.0	22.9	36%	71	2	40	603	10,160	1.0	
480	480B-2(NB)	Weekday	1	0.0	3.0	0.0	0.0	0.0	0.0	0	90	0	0	0	0	2.0	20.7	20.7	22.9	36%	74	2	41	624	10,516	1.0	
480	480C (NB)	Weekday	1	0.0	3.0	0.0	0.0	0.0	0.0	0	90	0	0	0	0	2.0	15.2	15.2	22.9	36%	54	2	30	458	7,722	1.0	
480	480A (SB)	Weekday	1	0.0	0.0	0.5	3.0	0.0	0.0	0	0	15	60	0	0	5.0	20.7	20.7	22.9	36%	74	6	104	1,560	26,289		1.5
480	480B (SB)	Weekday	1	0.0	0.0	0.5	3.0	0.0	0.0	0	0	0	45	0	0	4.0	20.0	20.0	22.9	36%	71	5	80	1,206	20,320		2.0
480	480P (SB)	Weekday	1	0.0	0.0	0.5	3.0	0.0	0.0	0	0	0	60	0	0	3.0	18.0	18.0	22.9	36%	64	3	54	814	13,716		1.5
A-Line	SA-BRT (NB)	Weekday	1	2.0	3.0	6.0	4.5	3.0	3.5	30	10	10	10	20	30	101.0	9.9	9.9	15.0	27%	51	85	1,004	21,611	255,001	5.5	5.5
A-Line	SA-BRT (SB)	Weekday	1	1.5	3.5	6.0	5.0	3.0	2.5	30	10	10	10	20	30	104.0	10.0	10.0	15.0	27%	51	88	1,040	22,387	264,160	5.5	5.5
D-Line	Freemont-BRT-1	Weekday	1	0.0	3.0	6.0	3.0	4.0	0.0	0	15	15	15	20	0	60.0	13.0	13.0	15.0	22%	64	64	780	16,129	198,120	4.5	4.5
D-Line	Freemont-BRT-1	Weekday	1	0.0	3.0	6.0	3.0	4.0	0.0	0	15	15	15	20	0	60.0	13.1	13.1	15.0	22%	64	64	786	16,253	199,644	4.5	4.5
D-Line	Freemont-BRT-2	Weekday	1	2.0	3.0	6.0	3.0	4.0	4.0	20	15	15	15	20	30	74.0	18.2	18.2	15.0	22%	89	110	1,347	27,850	342,087	6.0	6.0
D-Line	Freemont-BRT-2	Weekday	1	2.0	3.0	6.0	3.0	4.0	4.0	20	15	15	15	20	30	74.0	18.2	18.2	15.0	22%	89	110	1,347	27,850	342,087	6.0	6.0



Route	Description	Day of week	Direction	SERVICE SPAN						FREQUENCY						TRAVEL TIME					DAILY STATS		ANNUAL STATS			PM Peak Vehicle		
				EARLY	AM PK	MID	PM PK	EVE	NIGHT	EARLY	AM PK	MID	PM PK	EVE	NIGHT	One-way Trips	One-way trip length	Trip Length	Est. speed	Layover Percent	Cycle Time	Revenue Hours	Revenue Miles	Revenue Hours	Revenue Miles		AM Peak Vehicle	
SATURDAY STATISTICS																												
5	5F (NB)	Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	105	90	300	0	8.0	14.0	14.0	13.0	20%	78	10	112	549	5,944			
5	5K (NB)	Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	120	0	0	0	80	4.0	10.1	10.1	13.0	20%	56	4	40	198	2,141				
5	5M-1 (NB)	Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	120	90	105	90	100	0	12.0	13.1	13.1	13.0	20%	73	15	157	769	8,332			
5	5M-2 (NB)	Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	60	60	70	90	50	80	22.0	18.2	18.2	13.0	20%	101	37	400	1,960	21,221			
5	5B-1 (SB)	Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	0	210	180	0	0	3.0	8.9	8.9	13.0	20%	49	2	27	131	1,417			
5	5B-2 (SB)	Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	60	60	84	90	50	60	22.0	14.0	14.0	13.0	20%	78	28	308	1,508	16,324			
5	5C (SB)	Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	0	0	0	300	0	1.0	14.5	14.5	13.0	20%	80	1	15	71	769			
5	5E (SB)	Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	60	60	60	60	100	80	21.0	18.5	18.5	13.0	20%	103	36	389	1,902	20,591			
23	23C (EB)	Saturday	1	1.0	3.0	7.0	3.0	4.0	0.0	30	45	60	60	48	0	21.0	7.6	7.6	12.8	26%	45	16	159	833	8,448			
23	23H (EB)	Saturday	1	1.0	3.0	7.0	3.0	4.0	0.0	0	90	38	36	80	0	21.0	8.0	8.0	12.8	26%	47	17	168	876	8,882			
23	23C (WB)	Saturday	1	0.5	3.0	7.0	3.0	5.0	0.0	30	36	60	60	60	0	21.0	7.8	7.8	12.8	26%	46	16	164	857	8,693			
23	23H (WB)	Saturday	1	0.5	3.0	7.0	3.0	5.0	0.0	0	90	42	45	75	0	20.0	8.3	8.3	12.8	26%	49	16	166	870	8,819			
46	46E (EB)	Saturday	1	0.0	3.0	7.0	3.0	3.5	0.0	0	45	30	30	42	0	29.0	11.2	11.2	15.6	22%	52	25	325	1,344	17,214			
46	46C (WB)	Saturday	1	0.0	3.0	7.0	3.0	3.5	0.0	0	60	32	30	42	0	27.0	13.4	13.4	15.6	22%	63	28	362	1,497	19,175			
54E	54 (WB)	Saturday	1	3.0	7.0	3.0	4.0			60	30	30	30		31.0	8.8	8.8	14	15%	45	23	273	1,232	14,458				
54E	54 (EB)	Saturday	1	3.0	7.0	3.0	4.0			60	30	30	30		31.0	8.8	8.8	14	15%	45	23	273	1,232	14,458				
63	63B-1(WB)	Saturday	1	1.5	3.0	7.0	3.0	5.0	2.0	0	0	0	90		2.0	14.7	14.7	14.4	25%	77	3	29	135	1,558				
63	63B-2(WB)	Saturday	1	1.5	3.0	7.0	3.0	5.0	2.0	45	36	20	26	60	0	40.0	15.9	15.9	14.4	25%	83	55	636	2,924	33,708			
63	63K-1(EB)	Saturday	1	0.5	3.0	7.0	3.0	5.0	2.0	0	60	70	0	0	0	9.0	14.4	14.4	14.4	25%	75	11	130	596	6,869			
63	63K-2(EB)	Saturday	1	0.5	3.0	7.0	3.0	5.0	2.0	30	60	28	20	25	60	42.0	15.6	15.6	14.4	25%	81	57	655	3,012	34,726			
64	64D (EB)	Saturday	1	1.0	3.0	7.0	3.0	5.0	1.5	0	0	42	36	0	0	15.0	11.0	11.0	14.7	25%	56	14	165	744	8,745			
64	64H(EB)	Saturday	1	1.0	3.0	7.0	3.0	5.0	1.5	60	60	105	0	300	30	12.0	6.9	6.9	14.7	25%	35	7	83	373	4,388			
64	64N (EB)	Saturday	1	1.0	3.0	7.0	3.0	5.0	1.5	60	45	30	23	23	0	40.0	12.5	12.5	14.7	25%	64	43	500	2,254	26,500			
64	64D (WB)	Saturday	1	1.5	3.0	7.0	3.0	5.0	1.0	0	180	53	36	300	0	15.0	10.9	10.9	14.7	25%	56	14	164	737	8,666			
64	64H (WB)	Saturday	1	1.5	3.0	7.0	3.0	5.0	1.0	45	60	70	0	0	0	11.0	6.8	6.8	14.7	25%	35	6	75	337	3,964			
64	64N (WB)	Saturday	1	1.5	3.0	7.0	3.0	5.0	1.0	0	45	30	23	27	30	39.0	12.5	12.5	14.7	25%	64	41	488	2,198	25,838			
65	65 (NB)	Saturday	1	1.0	3.0	7.0	3.0	5.0	1.0	30	30	20	20	33	30	49.0	8.0	8.0	16.9	48%	42	35	392	1,830	20,776			
65	65 (SB)	Saturday	1	1.0	3.0	7.0	3.0	5.0	1.0	30	26	20	20	30	60	50.0	7.5	7.5	16.9	48%	40	33	377	1,758	19,955			
54W	66 (EB)	Saturday	1	2.0	3.0	7.0	3.0	4.0	2.0	60	60	30	30	30	60	35.0	12.6	12.6	14.0	15%	62	36	441	1,920	23,373			
54W	66 (WB)	Saturday	1	2.0	3.0	7.0	3.0	4.0	2.0	60	60	30	30	30	60	35.0	12.4	12.4	14.0	15%	61	36	434	1,889	23,002			
70	70S (EB)	Saturday	1	0.0	1.8	7.0	3.0	2.0	0.0	0	53	105	90	60	0	10.0	6.1	6.1	17.5	36%	28	5	61	251	3,233			
70	70D (EB)	Saturday	1	0.0	1.8	7.0	3.0	2.0	0.0	0	0	140	180	0	0	4.0	7.3	7.3	17.5	36%	34	2	29	121	1,556			
70	70S (WB)	Saturday	1	0.0	2.5	7.0	3.0	2.0	0.0	0	50	105	90	60	0	11.0	6.1	6.1	17.5	36%	28	5	67	276	3,556			
70	70D (WB)	Saturday	1	0.0	2.5	7.0	3.0	2.0	0.0	0	0	140	180	0	0	4.0	7.3	7.3	17.5	36%	34	2	29	121	1,556			
74	74S (EB)	Saturday	1	0.5	3.0	7.0	3.0	5.0	2.0	0	36	30	36	60	60	31.0	6.2	6.2	13.8	20%	32	17	193	883	10,219			
74	74G (EB)	Saturday	1	0.5	3.0	7.0	3.0	5.0	2.0	30	90	60	60	60	0	18.0	7.5	7.5	13.8	20%	39	12	135	620	7,174			
74	74A-1 (WB)	Saturday	1	1.5	3.0	7.0	3.0	5.0	0.0	45	45	30	45	50	0	30.0	6.3	6.3	13.8	20%	33	16	189	864	10,001			
74	74A-2 (WB)	Saturday	1	1.5	3.0	7.0	3.0	5.0	0.0	0	60	60	60	60	0	18.0	7.5	7.5	13.8	20%	39	12	134	614	7,107			
74	74S (EB)	Saturday	1	0.5	3.0	7.0	3.0	5.0	2.0	30	26	20	23	30	60	49.0	5.3	5.3	13.8	20%	28	23	261	1,196	13,842			
74	74A-1 (WB)	Saturday	1	1.5	3.0	7.0	3.0	5.0	0.0	45	26	20	26	27	0	48.0	5.3	5.3	13.8	20%	28	22	256	1,171	13,560			
83	83 (NB)	Saturday	1	0.0	3.0	7.0	3.0	4.5	0.0	0	30	30	30	30	0	35.0	9.9	9.9	16.0	22%	46	27	347	1,407	18,402			
83	83 (SB)	Saturday	1	1.0	3.0	7.0	3.0	4.5	0.0	60	36	30	30	30	0	35.0	9.6	9.6	16.0	22%	44	26	335	1,359	17,771			
84	84 (NB)	Saturday	1	2.0	7.0	3.0	1.0			0	30	30	30	30	0	26.0	11.5	11.5	17.9	29%	50	22	299	1,142	15,847			
84	84 (SB)	Saturday	1	2.5	7.0	3.0	1.0			0	30	30	30	30	0	27.0	11.5	11.5	17.9	29%	50	22	311	1,185	16,457			
87	87 (NB)	Saturday	1	0.0	3.0	7.0	3.0	5.0	1.0	0	30	21	20	42.9	60	43.0	9.0	9.0	16.1	41%	47	34	385	1,788	20,420			
87	87 (SB)	Saturday	1	0.0	3.0	7.0	3.0	5.0	1.0	0	30	21	20	38	60	44.0	9.5	9.5	16.1	41%	50	37	419	1,944	22,201			
A-Line	SABRT (NB)	Saturday	1	2.0	3.0	6.0	3.0	4.5	3.0	30	10	10	10	15	30	100.0	9.9	9.9	15.0	27%	51	84	994	4,465	52,682			
A-Line	SABRT (SB)	Saturday	1	2.0	3.0	6.0	3.0	4.5	3.5	30	10	10	10	15	30	101.0	10.0	10.0	15.0	27%	51	86	1,010	4,537	53,530			
D-Line	Freemont-BRT-1	Saturday	1	0.0	3.0	6.0	3.0	4.0	0.0	0	20	20	20	20</														

Route	Description	Day of week	Direction	SERVICE SPAN						FREQUENCY						TRAVEL TIME					DAILY STATS		ANNUAL STATS			PM Peak Vehicle	
				EARLY	AM PK	MID	PM PK	EVE	NIGHT	EARLY	AM PK	MID	PM PK	EVE	NIGHT	One-way Trips	One-way trip length	Trip Length	Est. speed	Layover Percent	Cycle Time	Revenue Hours	Revenue Miles	Revenue Hours	Revenue Miles		AM Peak Vehicle
SUNDAY STATISTICS																											
5	5F (NB)	Sunday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	210	180	300	0	5.0	14.0	14.0	13.3	19%	75	6	70	363	4,066		
5	5K (NB)	Sunday	1	2.0	3.0	7.0	3.0	5.0	4.0	60	0	0	0	80	5.0	10.1	10.1	13.3	19%	54	5	51	261	2,929			
5	5M-1 (NB)	Sunday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	90	70	60	75	0	15.0	13.1	13.1	13.3	19%	70	18	197	1,016	11,397		
5	5M-2 (NB)	Sunday	1	2.0	3.0	7.0	3.0	5.0	4.0	60	60	70	90	60	240	19.0	18.2	18.2	13.3	19%	97	31	346	1,788	20,056		
5	5B-1 (SB)	Sunday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	0	210	180	0	0	3.0	8.9	8.9	13.3	19%	48	2	27	138	1,550		
5	5B-2 (SB)	Sunday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	60	105	90	75	60	17.0	14.0	14.0	13.3	19%	75	21	238	1,231	13,804		
5	5E (SB)	Sunday	1	2.0	3.0	7.0	3.0	5.0	4.0	60	60	53	60	38	50	28.8	18.5	18.5	13.3	19%	99	48	533	2,756	30,902		
23	23C (EB)	Sunday	1	1.0	3.0	7.0	3.0	4.0	0.0	60	60	70	60	60	0	17.0	7.6	7.6	13.1	24%	43	12	129	707	7,484		
23	23H (EB)	Sunday	1	1.0	3.0	7.0	3.0	4.0	0.0	0	90	53	60	120	0	15.0	8.0	8.0	13.1	24%	45	11	120	656	6,943		
23	23C (WB)	Sunday	1	1.0	3.0	7.0	3.0	4.5	0.0	60	60	60	60	68	0	18.0	7.8	7.8	13.1	24%	44	13	141	770	8,154		
23	23H (WB)	Sunday	1	1.0	3.0	7.0	3.0	4.5	0.0	0	90	60	60	90	0	15.0	8.3	8.3	13.1	24%	47	12	125	684	7,238		
46	46E (EB)	Sunday	1	0.0	1.0	7.0	3.0	2.0	0.0	0	30	32	45	60	0	21.0	11.2	11.2	15.9	21%	51	18	235	1,044	13,642		
46	46C (WB)	Sunday	1	0.0	1.0	7.0	3.0	2.0	0.0	0	60	30	45	60	0	21.0	13.4	13.4	15.9	21%	62	22	281	1,249	16,321		
54E	54 (WB)	Sunday	1		3.0	7.0	3.0	3.0	2.0		60	40	40	40	60	24.5	8.8	8.8	14	15%	45	18	216	1,065	12,505		
54E	54 (EB)	Sunday	1		3.0	7.0	3.0	3.0	2.0		60	40	40	40	60	24.5	8.8	8.8	14	15%	45	18	216	1,065	12,505		
63	63B-1(WB)	Sunday	1	1.5	3.0	7.0	3.0	5.0	2.0	0	0	84	23	50	0	19.0	14.7	14.7	15.1	27%	74	23	279	1,361	16,199		
63	63B-2(WB)	Sunday	1	1.5	3.0	7.0	3.0	5.0	2.0	45	30	26	0	60	60	31.0	15.9	15.9	15.1	27%	80	41	493	2,402	28,588		
63	63K-1(EB)	Sunday	1	0.5	3.0	7.0	3.0	5.0	2.0	0	30	32	0	0	0	19.0	14.4	14.4	15.1	27%	73	23	274	1,333	15,869		
63	63K-2(EB)	Sunday	1	0.5	3.0	7.0	3.0	5.0	2.0	30	180	53	20	27	60	32.0	15.6	15.6	15.1	27%	79	42	499	2,433	28,954		
64	64H(EB)	Sunday	1	1.0	3.0	7.0	3.0	5.0	1.0	60	90	0	0	300	60	5.0	6.9	6.9	15.1	23%	34	3	35	163	2,001		
64	64N (EB)	Sunday	1	1.0	3.0	7.0	3.0	5.0	1.0	0	60	25	20	33	0	38.0	12.6	12.6	15.1	23%	62	39	479	2,260	27,770		
64	64H (WB)	Sunday	1	1.5	3.0	7.0	3.0	5.0	1.0	45	45	0	0	0	60	7.0	6.8	6.8	15.1	23%	33	4	48	225	2,761		
64	64N (WB)	Sunday	1	1.5	3.0	7.0	3.0	5.0	1.0	0	90	23	20	27	0	40.0	12.5	12.5	15.1	23%	61	41	500	2,360	29,000		
65	65 (NB)	Sunday	1	1.0	3.0	7.0	3.0	5.0	1.0	30	26	30	30	30	60	40.0	8.0	8.0	17.7	62%	44	29	320	1,691	18,560		
65	65 (SB)	Sunday	1	1.5	3.0	7.0	3.0	5.0	1.0	30	30	30	30	33	60	39.0	7.5	7.5	17.7	62%	41	27	294	1,552	17,033		
54W	66 (EB)	Sunday	1	2.0	3.0	7.0	3.0	4.0	2.0	60	60	30	30	30	60	35.0	12.6	12.6	14.0	15%	62	36	441	2,101	25,578		
54W	66 (WB)	Sunday	1	2.0	3.0	7.0	3.0	4.0	2.0	60	60	30	30	30	60	35.0	12.4	12.4	14.0	15%	61	36	434	2,068	25,172		
70	70S (EB)	Sunday	1	0.0	0.0	7.0	2.5	0.0	0.0	0	0	84	50	0	0	8.0	6.1	6.1	17.4	35%	28	4	49	219	2,830		
70	70D (EB)	Sunday	1	0.0	0.0	7.0	2.5	0.0	0.0	0	0	210	0	0	0	2.0	7.3	7.3	17.4	35%	34	1	15	66	851		
70	70S (WB)	Sunday	1	0.0	0.0	7.0	3.0	0.0	0.0	0	0	84	60	0	0	8.0	6.1	6.1	17.4	35%	28	4	49	219	2,830		
70	70D (WB)	Sunday	1	0.0	0.0	7.0	3.0	0.0	0.0	0	0	210	0	0	0	2.0	7.3	7.3	17.4	35%	34	1	15	66	851		
74	74C (EB)	Sunday	1	0.5	3.0	7.0	3.0	5.0	2.0	0	90	60	60	60	0	17.0	6.2	6.2	14.0	24%	33	9	106	545	6,133		
74	74K (EB)	Sunday	1	0.5	3.0	7.0	3.0	5.0	2.0	30	60	60	90	60	60	20.0	6.2	6.2	14.0	24%	33	11	124	641	7,215		
74	74A-1 (WB)	Sunday	1	1.5	3.0	7.0	3.0	5.0	0.0	90	180	60	60	60	0	17.0	6.3	6.3	14.0	24%	34	9	107	551	6,202		
74	74A-3 (WB)	Sunday	1	1.5	3.0	7.0	3.0	5.0	0.0	90	45	70	60	50	0	20.0	6.1	6.1	14.0	24%	33	11	123	633	7,122		
74	74C (EB)	Sunday	1	0.5	3.0	7.0	3.0	5.0	2.0	30	36	30	36	30	60	37.0	5.3	5.3	14.0	24%	28	18	197	1,016	11,438		
74	74A-1 (WB)	Sunday	1	1.5	3.0	7.0	3.0	5.0	0.0	45	36	32	30	27	0	37.0	5.3	5.3	14.0	24%	28	18	197	1,016	11,438		
83	83 (NB)	Sunday	1	0.0	3.0	7.0	3.0	4.5	0.0	0	30	32	30	27	0	35.0	9.9	9.9	16.0	22%	46	27	347	1,540	20,138		
83	83 (SB)	Sunday	1	1.0	3.0	7.0	3.0	4.5	0.0	60	36	30	30	30	0	35.0	9.6	9.6	16.0	22%	44	26	335	1,487	19,447		
84	84 (NB)	Sunday	1			6.5	3.0	1.0		0	30	30	30	30	0	21.0	11.5	11.5	18.7	31%	48	17	242	980	14,007		
84	84 (SB)	Sunday	1			6.5	3.0	0.5		0	30	30	30	30	0	20.0	11.5	11.5	18.7	31%	48	16	230	933	13,340		
87	87 (NB)	Sunday	1	0.0	3.0	7.0	3.0	5.0	1.0	0	30	30	30	42.9	60	34.0	9.0	9.0	16.0	31%	44	25	305	1,447	17,669		
87	87 (SB)	Sunday	1	0.0	3.0	7.0	3.0	5.0	1.0	0	30	30	30	38	60	35.0	9.5	9.5	16.0	31%	47	27	333	1,583	19,326		
A-Line	SABRT (NB)	Sunday	1	1.5	3.5	6.0	3.0	4.0	3.5	30	10	10	10	20	30	97.0	9.9	9.9	15.0	27%	51	82	964	4,739	55,922		
A-Line	SABRT (SB)	Sunday	1	1.5	3.5	6.0	3.0	5.0	3.0	30	10	10	10	20	30	99.0	10.0	10.0	15.0	27%	51	84	990	4,866	57,420		
D-Line	Freemont-BRT-1	Sunday	1	0.0	3.0	6.0	3.0	4.0	0.0	0	20	20	20	20	0	48.0	13.0	13.0	15.0	22%	64	51	624	2,946	36,192		
D-Line	Freemont-BRT-1	Sunday	1	0.0	3.0	6.0	3.0	4.0	0.0	0	20	20	20	20	0	48.0	13.1	13.1	15.0	22%	64	51	629	2,969	36,470		
D-Line	Freemont-BRT-2	Sunday	1	2.0	3.0	6.0	3.0	4.0	3.0	30	20	20	20	20	30	58.0	18.2	18.2	15.0	22%	89	86	1,056	4,984	61,225		
D-Line	Freemont-BRT-2	Sunday	1	2.0	3.0	6.0	3.0	4.0	3.0	30	20	20	20	30	58.0	18.2	18.2	15.0	22%	89	86	1,056	4,984	61,225			



Alternatives 7 and 8 Local Bus Operating Statistics – Year 2040

Route	Description	Day of week	Direction	SERVICE SPAN						FREQUENCY						TRAVEL TIME					DAILY STATS		ANNUAL STATS			PM Peak Vehicle		
				EARLY	AM PK	MID	PM PK	EVE	NIGHT	EARLY	AM PK	MID	PM PK	EVE	NIGHT	One-way Trips	One-way trip length	Trip Length	Est. speed	Layover Percent	Cycle Time	Revenue Hours	Revenue Miles	Revenue Hours	Revenue Miles		AM Peak Vehicle	
WEEKDAY STATISTICS																												
5	5 (NB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	0	420	0	0	0	1.0	3.2	3.2	12.2	22%	19	0	3	81	813			
5	5F (NB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	140	180	150	0	7.0	14.0	14.0	12.2	22%	84	10	98	2,499	24,928	0.5	0.5	
5	5K (NB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	420	0	0	80	5.0	5.0	5.0	12.2	22%	30	3	25	637	6,350	0.5		
5	5L (NB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	140	0	0	0	4.0	13.8	13.8	12.2	22%	83	6	55	1,410	14,061	0.5		
5	5M-1 (NB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	120	180	420	90	75	240	10.0	18.2	18.2	12.2	22%	109	18	182	4,634	46,228	1.0	1.5	
5	5M-2 (NB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	60	180	105	90	0	0	9.0	13.1	13.1	12.2	22%	79	12	118	3,002	29,947	0.5	1.0	
5	5M-3 (NB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	120	180	420	180	75	0	8.0	10.8	10.8	12.2	22%	65	9	86	2,200	21,946	0.5	0.5	
5	5 (SB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	210	0	0	0	3.0	3.2	3.2	12.2	22%	19	1	10	244	2,438	0.5		
5	5A (SB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	105	180	0	0	6.0	11.1	11.1	12.2	22%	67	7	67	1,699	16,947	0.5	0.5	
5	5B (SB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	420	90	75	120	10.0	13.4	13.4	12.2	22%	80	13	134	3,407	33,985	0.5	1.0	
5	5E-1 (SB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	140	180	150	240	8.0	18.5	18.5	12.2	22%	111	15	148	3,760	37,511	1.0	1.0	
5	5E-2 (SB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	30	180	420	180	75	120	13.0	14.1	14.1	12.2	22%	85	18	183	4,651	46,393	0.5	0.5	
5	5E-3 (SB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	140	180	0	0	5.0	13.8	13.8	12.2	22%	83	7	69	1,757	17,526	0.5	0.5	
23	23B (EB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.0	90	180	0	0	0	2.0	6.5	6.5	12.3	23%	39	1	13	329	3,287	0.5			
23	23C (EB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.0	45	36	53	60	75	0	22.0	7.6	7.6	12.3	23%	46	17	167	4,244	42,413	1.5	1.0	
23	23H (EB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.0	0	60	53	36	75	0	20.0	8.0	8.0	12.3	23%	48	16	160	4,057	40,538	1.0	1.5	
23	23B (WB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	0.0	60	0	0	0	0	1.0	6.7	6.7	12.3	23%	40	1	7	171	1,704				
23	23C (WB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	0.0	60	45	47	60	60	0	22.0	7.8	7.8	12.3	23%	47	17	172	4,367	43,642	1.5	1.0	
23	23H (WB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	0.0	60	45	60	36	75	0	21.0	8.3	8.3	12.3	23%	50	17	175	4,441	44,379	1.5	1.5	
23	23I(WB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	0.0	0	0	420	0	0	0	1.0	4.9	4.9	12.3	23%			5	0	1,247			
46	46A-1(EB)	Weekday	1	1.0	3.0	7.0	3.0	4.0	0.0	0	180	0	180	0	0	2.0	8.6	8.6	14.9	25%	43	1	17	364	4,343	0.5	0.5	
46	46A-2(EB)	Weekday	1	1.0	3.0	7.0	3.0	4.0	0.0	0	90	420	0	0	0	3.0	7.0	7.0	14.9	25%	35	2	21	447	5,334	0.5		
46	46A-3(EB)	Weekday	1	1.0	3.0	7.0	3.0	4.0	0.0	0	0	105	0	0	0	4.0	7.2	7.2	14.9	25%	36	2	29	614	7,325			
46	46A-4(EB)	Weekday	1	1.0	3.0	7.0	3.0	4.0	0.0	0	0	420	0	0	0	1.0	4.7	4.7	14.9	25%	24	0	5	100	1,196			
46	46E-2(EB)	Weekday	1	1.0	3.0	7.0	3.0	4.0	0.0	60	0	0	0	0	1.0	12.8	12.8	14.9	25%	64	1	13	272	3,251				
46	46E-1(EB)	Weekday	1	1.0	3.0	7.0	3.0	4.0	0.0	60	30	30	30	60	0	31.0	11.2	11.2	14.9	25%	56	29	347	7,386	88,189	2.0	2.0	
46	46B-1(WB)	Weekday	1	0.5	3.0	7.0	3.0	4.0	0.0	0	60	420	0	0	0	4.0	7.3	7.3	15	25%	37	2	29	622	7,427	1.0		
46	46B-2(WB)	Weekday	1	0.5	3.0	7.0	3.0	4.0	0.0	0	180	0	0	0	0	1.0	7.3	7.3	15	25%	37	1	7	156	1,862	0.5		
46	46C-1(WB)	Weekday	1	0.5	3.0	7.0	3.0	4.0	0.0	30	30	30	30	80	0	30.0	13.4	13.4	15	25%	67	34	402	8,552	102,108	2.5	2.5	
46	46C-2(WB)	Weekday	1	0.5	3.0	7.0	3.0	4.0	0.0	0	0	420	90	0	0	3.0	8.8	8.8	15	25%	44	2	26	563	6,721		0.5	
46	46C-3(WB)	Weekday	1	0.5	3.0	7.0	3.0	4.0	0.0	0	180	0	0	0	0	1.0	8.8	8.8	15	25%	44	1	9	187	2,238	0.5		
54E	54 (WB)	Weekday	1	2.0	3.0	7.0	3.0	5.0			20	30	20	30		42.0	8.8	8.8	14	15%	45	31	370	7,997	93,878	2.5	2.5	
54E	54 (EB)	Weekday	1	2.0	3.0	7.0	3.0	5.0			20	30	20	30		42.0	8.8	8.8	14	15%	45	31	370	7,997	93,878	2.5	2.5	
63	63B-1(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	2.0	0	0	140	30	43	0	16.0	14.7	14.7	13.8	21%	77	21	235	5,212	59,741		3.0	
63	63B-2(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	2.0	23	20	23	60	75	120	39.0	15.9	15.9	13.8	21%	83	54	620	13,741	157,516	4.5	1.5	
63	63-1(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	2.0	0	180	0	0	0	0	1.0	8.6	8.6	13.8	21%	45	1	9	191	2,189	0.5		
63	63-2(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	2.0	0	90	0	0	0	0	2.0	5.7	5.7	13.8	21%	30	1	11	252	2,885	0.5		
63	63K-1(EB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	1.5	23	20	47	0	0	0	22.0	14.4	14.4	13.8	21%	75	28	317	7,020	80,467	4.0		
63	63K-2(EB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	1.5	90	0	35	20	27	90	34.0	15.6	15.6	13.8	21%	82	46	530	11,753	134,721		4.5	
63	63K-3(EB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	1.5	0	0	420	0	0	0	1.0	6.9	6.9	13.8	21%	36	1	7	153	1,753			
63	63S (EB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	1.5	0	0	105	0	0	0	4.0	5.7	5.7	13.8	21%	30	2	23	503	5,771			
64	64N (EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	1.5	20	30	23	30	50	0	39.0	12.6	12.6	13.9	30%	70	46	491	11,596	124,824	2.5	2.5	
64	64D (EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	1.5	60	30	32	36	100	0	28.0	11.0	11.0	13.9	30%	61	29	308	7,268	78,232	2.5	2.0	
64	64H-1(EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	1.5	0	90	210	45	75	45	14.0	6.9	6.9	13.9	30%	39	9	97	2,293	24,679	0.5	1.0	
64	64P/H-2(EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	1.5	0	0	140	0	0	0	3.0	3.7	3.7	13.9	30%	21	1	11	261	2,804			
64	64N (WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	1.0	30	30	28	36	50	0	35.0	12.5	12.5	13.9	30%	70	41	438	10,323	111,125	2.5	2.0	
64	64D (WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	1.0	45	36	26	36	100	0	31.0	10.9	10.9	13.9	30%	61	31	338	7,973	85,827	2.0	2.0	
64	64H-1(WB)	Weekday	1	1.5	3.0	7																						

Route	Description	Day of week	Direction	SERVICE SPAN						FREQUENCY						TRAVEL TIME						DAILY STATS		ANNUAL STATS			
				EARLY	AM PK	MID	PM PK	EVE	NIGHT	EARLY	AM PK	MID	PM PK	EVE	NIGHT	One-way Trips	One-way trip length	Trip Length	Est. speed	Layover Percent	Cycle Time	Revenue Hours	Revenue Miles	Revenue Hours	Revenue Miles	AM Peak Vehicle	PM Peak Vehicle
70	70S-1(EB)	Weekday	1	0.5	3.0	7.0	3.0	3.5	0.0	30	36	38	36	70	0	25.0	6.1	6.1	15.9	30%	30	12	153	3,159	38,735	1.0	1.0
70	70D (EB)	Weekday	1	0.5	3.0	7.0	3.0	3.5	0.0	0	180	140	180	0	0	5.0	7.3	7.3	15.9	30%	36	3	37	760	9,322	0.5	0.5
70	70B-1(WB)	Weekday	1	1.5	3.0	7.0	3.0	3.0	0.0	90	180	210	180	0	0	5.0	7.3	7.3	15.9	30%	36	3	37	760	9,322	0.5	0.5
70	70B-2(WB)	Weekday	1	1.5	3.0	7.0	3.0	3.0	0.0	45	36	35	60	60	0	25.0	5.9	5.9	15.9	30%	29	12	148	3,061	37,529	1.0	0.5
70	70S-2(EB)	Weekday	1	0.5	3.0	7.0	3.0	3.5	0.0	0	36	60	36	0	0	17.0	8.7	8.7	15.9	30%	43	12	148	3,075	37,696	1.5	1.5
70	70B-1(WB)	Weekday	1	1.5	3.0	7.0	3.0	3.0	0.0	45	36	47	60	0	0	19.0	8.7	8.7	15.9	30%	43	14	166	3,436	42,131	1.5	1.0
74	74G-1(EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	2.0	60	45	53	60	150	0	18.0	7.5	7.5	13.9	22%	40	12	135	3,020	34,381	1.0	1.0
74	74G-2(EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	2.0	0	0	420	0	0	0	1.0	6.7	6.7	13.9	22%	35	1	7	148	1,689		
74	74S-1(EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	2.0	30	36	28	30	38	120	37.0	6.2	6.2	13.9	22%	33	20	230	5,134	58,456	1.0	1.5
74	74S-2(EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	2.0	0	0	420	0	0	0	1.0	7.0	7.0	13.9	22%	37	1	7	156	1,778		
74	74A-1(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	23	26	30	36	38	0	38.0	6.3	6.3	13.9	22%	33	21	239	5,332	60,711	1.5	1.0
74	74A-2(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	90	36	60	45	100	0	20.0	7.5	7.5	13.9	22%	39	13	149	3,324	37,846	1.5	1.0
74	74J-1(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	0	60	0	0	0	0	3.0	5.7	5.7	13.9	22%	30	2	17	383	4,366	1.0	
74	74J-2(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	0	180	0	0	0	0	1.0	6.8	6.8	13.9	22%	36	1	7	152	1,735	0.5	
74	74G-1(EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	2.0	20	23	26	20	30	120	47.0	5.3	5.3	13.9	22%	28	22	251	5,588	63,630	1.5	1.5
74	74G-3(EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	2.0	0	180	60	0	0	0	8.0	1.3	1.3	13.9	22%	7	1	11	239	2,723	0.5	
74	74 (EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	2.0	0	0	0	90	0	0	2.0	5.3	5.3	13.9	22%	28	1	11	238	2,708		0.5
74	74A-1(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	18	16	26	20	27	0	52.0	5.3	5.3	13.9	22%	28	24	277	6,183	70,399	2.0	1.5
74	74A-3(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	0	0	420	0	0	0	1.0	1.9	1.9	13.9	22%	10	0	2	43	488		
74	74A-5(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	0	180	70	0	0	0	7.0	1.3	1.3	13.9	22%	7	1	9	209	2,383	0.5	
83	83 (NB)	Weekday	1	0.5	3.0	7.0	3.0	5.0	0.0	30	20	20	20	30	0	50.0	9.9	9.9	15.6	20%	46	38	496	9,671	125,984	2.5	2.5
83	83 (SB)	Weekday	1	0.5	3.0	7.0	3.0	4.5	0.0	15	20	20	20	34	0	49.0	9.6	9.6	15.6	20%	44	36	469	9,153	119,233	2.5	2.5
84	84 (NB)	Weekday	1	1.0	3.0	7.0	3.0	2.0		30	30	30	30	30	0	32.0	11.5	11.5	17.1	27%	51	27	368	6,934	93,472	2.0	2.0
84	84 (SB)	Weekday	1	1.0	3.0	7.0	3.0	1.5		30	30	30	30	30	0	31.0	11.5	11.5	17.1	27%	51	26	357	6,717	90,551	2.0	2.0
87	87 (NB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	30	20	20	23	43	0	48.0	9.0	9.0	15.5	37%	47	38	430	9,640	109,240	2.5	2.5
87	87 (SB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	0.5	30	20	20	23	38	0	48.0	9.5	9.5	15.5	37%	50	40	457	10,242	116,068	3.0	2.5
134	134A (EB)	Weekday	1	0.0	0.5	0.5	3.0	0.0	0.0	0	15	30	90	0	0	5.0	8.3	8.3	15.1	33%	44	4	41	924	10,478	3.0	0.5
134	134B (EB)	Weekday	1	0.0	0.5	0.5	3.0	0.0	0.0	0	0	0	30	0	0	6.0	10.6	10.6	15.1	33%	56	6	64	1,425	16,154		2.0
134	134A (WB)	Weekday	1	0.0	3.0	0.0	0.5	0.0	0.0	0	45	0	30	0	0	5.0	8.6	8.6	15.1	33%	46	4	43	965	10,935	1.5	2.0
134	134B (WB)	Weekday	1	0.0	3.0	0.0	0.5	0.0	0.0	0	30	0	0	0	0	6.0	10.8	10.8	15.1	33%	57	6	65	1,452	16,459	2.0	
417	417 (NB)	Weekday	1	0.0	1.5	0.0	0.0	0.0	0.0	0	45	0	0	0	0	2.0	9.6	9.6	17.4	41%	47	2	19	395	4,877	1.5	
417	417(SB)	Weekday	1	0.0	0.0	0.0	1.5	0.0	0.0	0	0	0	45	0	0	2.0	9.7	9.7	17.4	41%	47	2	19	399	4,923		1.5
436	436 (NB)	Weekday	1	0.0	0.0	0.5	2.5	0.0	0.0	0	0	30	75	0	0	3.0	11.6	11.6	21.7	47%	47	2	35	598	8,839		1.0
436	436M (NB)	Weekday	1	0.0	0.0	0.5	2.5	0.0	0.0	0	0	0	150	0	0	1.0	12.6	12.6	21.7	47%	51	1	13	216	3,200		0.5
436	436S (NB)	Weekday	1	0.0	0.0	0.5	2.5	0.0	0.0	0	0	0	150	0	0	1.0	6.3	6.3	21.7	47%	25	0	6	108	1,590		0.5
436	436 (SB)	Weekday	1	0.5	2.0	0.0	0.0	0.0	0.0	30	40	0	0	0	0	4.0	11.3	11.3	21.7	47%	46	3	45	776	11,481	1.5	
480	480A (NB)	Weekday	1	0.0	3.0	0.0	0.0	0.0	0.0	0	36	0	0	0	0	5.0	20.6	20.6	22.9	36%	73	6	103	1,552	26,162	2.5	
480	480B-1(NB)	Weekday	1	0.0	3.0	0.0	0.0	0.0	0.0	0	90	0	0	0	0	2.0	20.0	20.0	22.9	36%	71	2	40	603	10,160	1.0	
480	480B-2(NB)	Weekday	1	0.0	3.0	0.0	0.0	0.0	0.0	0	90	0	0	0	0	2.0	20.7	20.7	22.9	36%	74	2	41	624	10,516	1.0	
480	480C (NB)	Weekday	1	0.0	3.0	0.0	0.0	0.0	0.0	0	90	0	0	0	0	2.0	15.2	15.2	22.9	36%	54	2	30	458	7,722	1.0	
480	480A (SB)	Weekday	1	0.0	0.0	0.5	3.0	0.0	0.0	0	0	15	60	0	0	5.0	20.7	20.7	22.9	36%	74	6	104	1,560	26,289		1.5
480	480B (SB)	Weekday	1	0.0	0.0	0.5	3.0	0.0	0.0	0	0	0	45	0	0	4.0	20.0	20.0	22.9	36%	71	5	80	1,206	20,320		2.0
480	480P (SB)	Weekday	1	0.0	0.0	0.5	3.0	0.0	0.0	0	0	0	60	0	0	3.0	18.0	18.0	22.9	36%	64	3	54	814	13,716		1.5
A-Line	SA-BRT (NB)	Weekday	1	2.0	3.0	6.0	4.5	3.0	3.5	30	10	10	10	20	30	101.0	9.9	9.9	15.0	27%	51	85	1,004	21,611	255,001	5.5	5.5
A-Line	SA-BRT (SB)	Weekday	1	1.5	3.5	6.0	5.0	3.0	2.5	30	10	10	10	20	30	104.0	10.0	10.0	15.0	27%	51	88	1,040	22,387	264,160	5.5	5.5
D-Line	Freemont-BRT-1	Weekday	1	0.0	3.0	6.0	3.0	4.0	0.0	0	15	15	15	20	0	60.0	13.0	13.0	15.0	22%	64	64	780	16,129	198,120	4.5	4.5
D-Line	Freemont-BRT-1	Weekday	1	0.0	3.0	6.0	3.0	4.0	0.0	0	15	15	15	20	0	60.0	13.1	13.1	15.0	22%	64	64	786	16,253	199,644	4.5	4.5
D-Line	Freemont-BRT-2	Weekday	1	2.0	3.0	6.0	3.0	4.0	4.0	20	15	15	15	20	30	74.0	18.2	18.2	15.0	22%	89	110	1,347	27,850	342,087	6.0	6.0
D-Line	Freemont-BRT-2	Weekday	1	2.0	3.0	6.0	3.0	4.0	4.0	20	15	15	15	20	30	74.0	18.2	18.2	15.0	22%	89	110	1,347	27,850	342,087	6.0	6.0



Route	Description	Day of week	Direction	SERVICE SPAN						FREQUENCY						TRAVEL TIME					DAILY STATS		ANNUAL STATS			PM Peak Vehicle		
				EARLY	AM PK	MID	PM PK	EVE	NIGHT	EARLY	AM PK	MID	PM PK	EVE	NIGHT	One-way Trips	One-way trip length	Trip Length	Est. speed	Layover Percent	Cycle Time	Revenue Hours	Revenue Miles	Revenue Hours	Revenue Miles		AM Peak Vehicle	
SATURDAY STATISTICS																												
5	5F (NB)	Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	105	90	300	0	8.0	14.0	14.0	13.0	20%	78	10	112	549	5,944			
5	5K (NB)	Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	120	0	0	0	80	4.0	10.1	10.1	13.0	20%	56	4	40	198	2,141				
5	5M-1 (NB)	Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	120	90	105	90	100	0	12.0	13.1	13.1	13.0	20%	73	15	157	769	8,332			
5	5M-2 (NB)	Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	60	60	70	90	50	80	22.0	18.2	18.2	13.0	20%	101	37	400	1,960	21,221			
5	5B-1 (SB)	Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	0	210	180	0	0	3.0	8.9	8.9	13.0	20%	49	2	27	131	1,417			
5	5B-2 (SB)	Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	60	60	84	90	50	60	22.0	14.0	14.0	13.0	20%	78	28	308	1,508	16,324			
5	5C (SB)	Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	0	0	0	300	0	1.0	14.5	14.5	13.0	20%	80	1	15	71	769			
5	5E (SB)	Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	60	60	60	60	100	80	21.0	18.5	18.5	13.0	20%	103	36	389	1,902	20,591			
23	23C (EB)	Saturday	1	1.0	3.0	7.0	3.0	4.0	0.0	30	45	60	60	48	0	21.0	7.6	7.6	12.8	26%	45	16	159	833	8,448			
23	23H (EB)	Saturday	1	1.0	3.0	7.0	3.0	4.0	0.0	0	90	38	36	80	0	21.0	8.0	8.0	12.8	26%	47	17	168	876	8,882			
23	23C (WB)	Saturday	1	0.5	3.0	7.0	3.0	5.0	0.0	30	36	60	60	60	0	21.0	7.8	7.8	12.8	26%	46	16	164	857	8,693			
23	23H (WB)	Saturday	1	0.5	3.0	7.0	3.0	5.0	0.0	0	90	42	45	75	0	20.0	8.3	8.3	12.8	26%	49	16	166	870	8,819			
46	46E (EB)	Saturday	1	0.0	3.0	7.0	3.0	3.5	0.0	0	45	30	30	42	0	29.0	11.2	11.2	15.6	22%	52	25	325	1,344	17,214			
46	46C (WB)	Saturday	1	0.0	3.0	7.0	3.0	3.5	0.0	0	60	32	30	42	0	27.0	13.4	13.4	15.6	22%	63	28	362	1,497	19,175			
54E	54 (WB)	Saturday	1	3.0	7.0	3.0	4.0			60	30	30	30		31.0	8.8	8.8	14	15%	45	23	273	1,232	14,458				
54E	54 (EB)	Saturday	1	3.0	7.0	3.0	4.0			60	30	30	30		31.0	8.8	8.8	14	15%	45	23	273	1,232	14,458				
63	63B-1(WB)	Saturday	1	1.5	3.0	7.0	3.0	5.0	2.0	0	0	0	90		2.0	14.7	14.7	14.4	25%	77	3	29	135	1,558				
63	63B-2(WB)	Saturday	1	1.5	3.0	7.0	3.0	5.0	2.0	45	36	20	26	60	0	40.0	15.9	15.9	14.4	25%	83	55	636	2,924	33,708			
63	63K-1(EB)	Saturday	1	0.5	3.0	7.0	3.0	5.0	2.0	0	60	70	0	0	0	9.0	14.4	14.4	14.4	25%	75	11	130	596	6,869			
63	63K-2(EB)	Saturday	1	0.5	3.0	7.0	3.0	5.0	2.0	30	60	28	20	25	60	42.0	15.6	15.6	14.4	25%	81	57	655	3,012	34,726			
64	64D (EB)	Saturday	1	1.0	3.0	7.0	3.0	5.0	1.5	0	0	42	36	0	0	15.0	11.0	11.0	14.7	25%	56	14	165	744	8,745			
64	64H(EB)	Saturday	1	1.0	3.0	7.0	3.0	5.0	1.5	60	60	105	0	300	30	12.0	6.9	6.9	14.7	25%	35	7	83	373	4,388			
64	64N (EB)	Saturday	1	1.0	3.0	7.0	3.0	5.0	1.5	60	45	30	23	23	0	40.0	12.5	12.5	14.7	25%	64	43	500	2,254	26,500			
64	64D (WB)	Saturday	1	1.5	3.0	7.0	3.0	5.0	1.0	0	180	53	36	300	0	15.0	10.9	10.9	14.7	25%	56	14	164	737	8,666			
64	64H (WB)	Saturday	1	1.5	3.0	7.0	3.0	5.0	1.0	45	60	70	0	0	0	11.0	6.8	6.8	14.7	25%	35	6	75	337	3,964			
64	64N (WB)	Saturday	1	1.5	3.0	7.0	3.0	5.0	1.0	0	45	30	23	27	30	39.0	12.5	12.5	14.7	25%	64	41	488	2,198	25,838			
65	65 (NB)	Saturday	1	1.0	3.0	7.0	3.0	5.0	1.0	30	30	20	20	33	30	49.0	8.0	8.0	16.9	48%	42	35	392	1,830	20,776			
65	65 (SB)	Saturday	1	1.0	3.0	7.0	3.0	5.0	1.0	30	26	20	20	30	60	50.0	7.5	7.5	16.9	48%	40	33	377	1,758	19,955			
54W	66 (EB)	Saturday	1	2.0	3.0	7.0	3.0	4.0	2.0	60	60	30	30	30	60	35.0	12.6	12.6	14.0	15%	62	36	441	1,920	23,373			
54W	66 (WB)	Saturday	1	2.0	3.0	7.0	3.0	4.0	2.0	60	60	30	30	30	60	35.0	12.4	12.4	14.0	15%	61	36	434	1,889	23,002			
70	70S (EB)	Saturday	1	0.0	1.8	7.0	3.0	2.0	0.0	0	53	105	90	60	0	10.0	6.1	6.1	17.5	36%	28	5	61	251	3,233			
70	70D (EB)	Saturday	1	0.0	1.8	7.0	3.0	2.0	0.0	0	0	140	180	0	0	4.0	7.3	7.3	17.5	36%	34	2	29	121	1,556			
70	70S (WB)	Saturday	1	0.0	2.5	7.0	3.0	2.0	0.0	0	50	105	90	60	0	11.0	6.1	6.1	17.5	36%	28	5	67	276	3,556			
70	70D (WB)	Saturday	1	0.0	2.5	7.0	3.0	2.0	0.0	0	0	140	180	0	0	4.0	7.3	7.3	17.5	36%	34	2	29	121	1,556			
74	74S (EB)	Saturday	1	0.5	3.0	7.0	3.0	5.0	2.0	0	36	30	36	60	60	31.0	6.2	6.2	13.8	20%	32	17	193	883	10,219			
74	74G (EB)	Saturday	1	0.5	3.0	7.0	3.0	5.0	2.0	30	90	60	60	60	0	18.0	7.5	7.5	13.8	20%	39	12	135	620	7,174			
74	74A-1 (WB)	Saturday	1	1.5	3.0	7.0	3.0	5.0	0.0	45	45	30	45	50	0	30.0	6.3	6.3	13.8	20%	33	16	189	864	10,001			
74	74A-2 (WB)	Saturday	1	1.5	3.0	7.0	3.0	5.0	0.0	0	60	60	60	60	0	18.0	7.5	7.5	13.8	20%	39	12	134	614	7,107			
74	74S (EB)	Saturday	1	0.5	3.0	7.0	3.0	5.0	2.0	30	26	20	23	30	60	49.0	5.3	5.3	13.8	20%	28	23	261	1,196	13,842			
74	74A-1 (WB)	Saturday	1	1.5	3.0	7.0	3.0	5.0	0.0	45	26	20	26	27	0	48.0	5.3	5.3	13.8	20%	28	22	256	1,171	13,560			
83	83 (NB)	Saturday	1	0.0	3.0	7.0	3.0	4.5	0.0	0	30	30	30	30	0	35.0	9.9	9.9	16.0	22%	46	27	347	1,407	18,402			
83	83 (SB)	Saturday	1	1.0	3.0	7.0	3.0	4.5	0.0	60	36	30	30	30	0	35.0	9.6	9.6	16.0	22%	44	26	335	1,359	17,771			
84	84 (NB)	Saturday	1	2.0	7.0	3.0	1.0			0	30	30	30	30	0	26.0	11.5	11.5	17.9	29%	50	22	299	1,142	15,847			
84	84 (SB)	Saturday	1	2.5	7.0	3.0	1.0			0	30	30	30	30	0	27.0	11.5	11.5	17.9	29%	50	22	311	1,185	16,457			
87	87 (NB)	Saturday	1	0.0	3.0	7.0	3.0	5.0	1.0	0	30	21	20	42.9	60	43.0	9.0	9.0	16.1	41%	47	34	385	1,788	20,420			
87	87 (SB)	Saturday	1	0.0	3.0	7.0	3.0	5.0	1.0	0	30	21	20	38	60	44.0	9.5	9.5	16.1	41%	50	37	419	1,944	22,201			
A-Line	SABRT (NB)	Saturday	1	2.0	3.0	6.0	3.0	4.5	3.0	30	10	10	10	15	30	100.0	9.9	9.9	15.0	27%	51	84	994	4,465	52,682			
A-Line	SABRT (SB)	Saturday	1	2.0	3.0	6.0	3.0	4.5	3.5	30	10	10	10	15	30	101.0	10.0	10.0	15.0	27%	51	86	1,010	4,537	53,530			
D-Line	Freemont-BRT-1	Saturday	1	0.0	3.0	6.0	3.0	4.0	0.0	0	20	20	20	20														

Route	Description	Day of week	Direction	SERVICE SPAN						FREQUENCY						TRAVEL TIME					DAILY STATS		ANNUAL STATS			PM Peak Vehicle	
				EARLY	AM PK	MID	PM PK	EVE	NIGHT	EARLY	AM PK	MID	PM PK	EVE	NIGHT	One-way Trips	One-way trip length	Trip Length	Est. speed	Layover Percent	Cycle Time	Revenue Hours	Revenue Miles	Revenue Hours	Revenue Miles		AM Peak Vehicle
SUNDAY STATISTICS																											
5	5F (NB)	Sunday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	210	180	300	0	5.0	14.0	14.0	13.3	19%	75	6	70	363	4,066		
5	5K (NB)	Sunday	1	2.0	3.0	7.0	3.0	5.0	4.0	60	0	0	0	80	5.0	10.1	10.1	13.3	19%	54	5	51	261	2,929			
5	5M-1 (NB)	Sunday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	90	70	60	75	0	15.0	13.1	13.1	13.3	19%	70	18	197	1,016	11,397		
5	5M-2 (NB)	Sunday	1	2.0	3.0	7.0	3.0	5.0	4.0	60	60	70	90	60	240	19.0	18.2	18.2	13.3	19%	97	31	346	1,788	20,056		
5	5B-1 (SB)	Sunday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	0	210	180	0	0	3.0	8.9	8.9	13.3	19%	48	2	27	138	1,550		
5	5B-2 (SB)	Sunday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	60	105	90	75	60	17.0	14.0	14.0	13.3	19%	75	21	238	1,231	13,804		
5	5E (SB)	Sunday	1	2.0	3.0	7.0	3.0	5.0	4.0	60	60	53	60	38	50	28.8	18.5	18.5	13.3	19%	99	48	533	2,756	30,902		
23	23C (EB)	Sunday	1	1.0	3.0	7.0	3.0	4.0	0.0	60	60	70	60	60	0	17.0	7.6	7.6	13.1	24%	43	12	129	707	7,484		
23	23H (EB)	Sunday	1	1.0	3.0	7.0	3.0	4.0	0.0	0	90	53	60	120	0	15.0	8.0	8.0	13.1	24%	45	11	120	656	6,943		
23	23C (WB)	Sunday	1	1.0	3.0	7.0	3.0	4.5	0.0	60	60	60	60	68	0	18.0	7.8	7.8	13.1	24%	44	13	141	770	8,154		
23	23H (WB)	Sunday	1	1.0	3.0	7.0	3.0	4.5	0.0	0	90	60	60	90	0	15.0	8.3	8.3	13.1	24%	47	12	125	684	7,238		
46	46E (EB)	Sunday	1	0.0	1.0	7.0	3.0	2.0	0.0	0	30	32	45	60	0	21.0	11.2	11.2	15.9	21%	51	18	235	1,044	13,642		
46	46C (WB)	Sunday	1	0.0	1.0	7.0	3.0	2.0	0.0	0	60	30	45	60	0	21.0	13.4	13.4	15.9	21%	62	22	281	1,249	16,321		
54E	54 (WB)	Sunday	1		3.0	7.0	3.0	3.0	2.0		60	40	40	40	60	24.5	8.8	8.8	14	15%	45	18	216	1,065	12,505		
54E	54 (EB)	Sunday	1		3.0	7.0	3.0	3.0	2.0		60	40	40	40	60	24.5	8.8	8.8	14	15%	45	18	216	1,065	12,505		
63	63B-1(WB)	Sunday	1	1.5	3.0	7.0	3.0	5.0	2.0	0	0	84	23	50	0	19.0	14.7	14.7	15.1	27%	74	23	279	1,361	16,199		
63	63B-2(WB)	Sunday	1	1.5	3.0	7.0	3.0	5.0	2.0	45	30	26	0	60	60	31.0	15.9	15.9	15.1	27%	80	41	493	2,402	28,588		
63	63K-1(EB)	Sunday	1	0.5	3.0	7.0	3.0	5.0	2.0	0	30	32	0	0	0	19.0	14.4	14.4	15.1	27%	73	23	274	1,333	15,869		
63	63K-2(EB)	Sunday	1	0.5	3.0	7.0	3.0	5.0	2.0	30	180	53	20	27	60	32.0	15.6	15.6	15.1	27%	79	42	499	2,433	28,954		
64	64H(EB)	Sunday	1	1.0	3.0	7.0	3.0	5.0	1.0	60	90	0	0	300	60	5.0	6.9	6.9	15.1	23%	34	3	35	163	2,001		
64	64N (EB)	Sunday	1	1.0	3.0	7.0	3.0	5.0	1.0	0	60	25	20	33	0	38.0	12.6	12.6	15.1	23%	62	39	479	2,260	27,770		
64	64H (WB)	Sunday	1	1.5	3.0	7.0	3.0	5.0	1.0	45	45	0	0	0	60	7.0	6.8	6.8	15.1	23%	33	4	48	225	2,761		
64	64N (WB)	Sunday	1	1.5	3.0	7.0	3.0	5.0	1.0	0	90	23	20	27	0	40.0	12.5	12.5	15.1	23%	61	41	500	2,360	29,000		
65	65 (NB)	Sunday	1	1.0	3.0	7.0	3.0	5.0	1.0	30	26	30	30	30	60	40.0	8.0	8.0	17.7	62%	44	29	320	1,691	18,560		
65	65 (SB)	Sunday	1	1.5	3.0	7.0	3.0	5.0	1.0	30	30	30	30	33	60	39.0	7.5	7.5	17.7	62%	41	27	294	1,552	17,033		
54W	66 (EB)	Sunday	1	2.0	3.0	7.0	3.0	4.0	2.0	60	60	30	30	30	60	35.0	12.6	12.6	14.0	15%	62	36	441	2,101	25,578		
54W	66 (WB)	Sunday	1	2.0	3.0	7.0	3.0	4.0	2.0	60	60	30	30	30	60	35.0	12.4	12.4	14.0	15%	61	36	434	2,068	25,172		
70	70S (EB)	Sunday	1	0.0	0.0	7.0	2.5	0.0	0.0	0	0	84	50	0	0	8.0	6.1	6.1	17.4	35%	28	4	49	219	2,830		
70	70D (EB)	Sunday	1	0.0	0.0	7.0	2.5	0.0	0.0	0	0	210	0	0	0	2.0	7.3	7.3	17.4	35%	34	1	15	66	851		
70	70S (WB)	Sunday	1	0.0	0.0	7.0	3.0	0.0	0.0	0	0	84	60	0	0	8.0	6.1	6.1	17.4	35%	28	4	49	219	2,830		
70	70D (WB)	Sunday	1	0.0	0.0	7.0	3.0	0.0	0.0	0	0	210	0	0	0	2.0	7.3	7.3	17.4	35%	34	1	15	66	851		
74	74C (EB)	Sunday	1	0.5	3.0	7.0	3.0	5.0	2.0	0	90	60	60	60	0	17.0	6.2	6.2	14.0	24%	33	9	106	545	6,133		
74	74K (EB)	Sunday	1	0.5	3.0	7.0	3.0	5.0	2.0	30	60	60	90	60	60	20.0	6.2	6.2	14.0	24%	33	11	124	641	7,215		
74	74A-1 (WB)	Sunday	1	1.5	3.0	7.0	3.0	5.0	0.0	90	180	60	60	60	0	17.0	6.3	6.3	14.0	24%	34	9	107	551	6,202		
74	74A-3 (WB)	Sunday	1	1.5	3.0	7.0	3.0	5.0	0.0	90	45	70	60	50	0	20.0	6.1	6.1	14.0	24%	33	11	123	633	7,122		
74	74C (EB)	Sunday	1	0.5	3.0	7.0	3.0	5.0	2.0	30	36	30	36	30	60	37.0	5.3	5.3	14.0	24%	28	18	197	1,016	11,438		
74	74A-1 (WB)	Sunday	1	1.5	3.0	7.0	3.0	5.0	0.0	45	36	32	30	27	0	37.0	5.3	5.3	14.0	24%	28	18	197	1,016	11,438		
83	83 (NB)	Sunday	1	0.0	3.0	7.0	3.0	4.5	0.0	0	30	32	30	27	0	35.0	9.9	9.9	16.0	22%	46	27	347	1,540	20,138		
83	83 (SB)	Sunday	1	1.0	3.0	7.0	3.0	4.5	0.0	60	36	30	30	30	0	35.0	9.6	9.6	16.0	22%	44	26	335	1,487	19,447		
84	84 (NB)	Sunday	1			6.5	3.0	1.0		0	30	30	30	30	0	21.0	11.5	11.5	18.7	31%	48	17	242	980	14,007		
84	84 (SB)	Sunday	1			6.5	3.0	0.5		0	30	30	30	30	0	20.0	11.5	11.5	18.7	31%	48	16	230	933	13,340		
87	87 (NB)	Sunday	1	0.0	3.0	7.0	3.0	5.0	1.0	0	30	30	30	42.9	60	34.0	9.0	9.0	16.0	31%	44	25	305	1,447	17,669		
87	87 (SB)	Sunday	1	0.0	3.0	7.0	3.0	5.0	1.0	0	30	30	30	38	60	35.0	9.5	9.5	16.0	31%	47	27	333	1,583	19,326		
A-Line	SABRT (NB)	Sunday	1	1.5	3.5	6.0	3.0	4.0	3.5	30	10	10	10	20	30	97.0	9.9	9.9	15.0	27%	51	82	964	4,739	55,922		
A-Line	SABRT (SB)	Sunday	1	1.5	3.5	6.0	3.0	5.0	3.0	30	10	10	10	20	30	99.0	10.0	10.0	15.0	27%	51	84	990	4,866	57,420		
D-Line	Freemont-BRT-1	Sunday	1	0.0	3.0	6.0	3.0	4.0	0.0	0	20	20	20	20	0	48.0	13.0	13.0	15.0	22%	64	51	624	2,946	36,192		
D-Line	Freemont-BRT-1	Sunday	1	0.0	3.0	6.0	3.0	4.0	0.0	0	20	20	20	20	0	48.0	13.1	13.1	15.0	22%	64	51	629	2,969	36,470		
D-Line	Freemont-BRT-2	Sunday	1	2.0	3.0	6.0	3.0	4.0	3.0	30	20	20	20	20	30	58.0	18.2	18.2	15.0	22%	89	86	1,056	4,984	61,225		
D-Line	Freemont-BRT-2	Sunday	1	2.0	3.0	6.0	3.0	4.0	3.0	30	20	20	20	30	30	58.0	18.2	18.2	15.0	22%	89	86	1,056	4,984	61,225		



Alternative 9 and 10 Local Bus Operating Statistics – Year 2040

Route	Description	Day of week	Direction	SERVICE SPAN						FREQUENCY						TRAVEL TIME					DAILY STATS		ANNUAL STATS			PM Peak Vehicle			
				EARLY	AM PK	MID	PM PK	EVE	NIGHT	EARLY	AM PK	MID	PM PK	EVE	NIGHT	One-way Trips	One-way trip length	Trip Length	Est. speed	Layover Percent	Cycle Time	Revenue Hours	Revenue Miles	Revenue Hours	Revenue Miles		AM Peak Vehicle		
WEEKDAY STATISTICS																													
5	5 (NB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	0	420	0	0	0	1.0	3.2	3.2	12.2	22%	19	0	3	81	813				
5	5F (NB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	140	180	150	0	7.0	14.0	14.0	12.2	22%	84	10	98	2,499	24,928	0.5	0.5		
5	5K (NB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	420	0	0	80	5.0	5.0	5.0	12.2	22%	30	3	25	637	6,350	0.5			
5	5L (NB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	140	0	0	0	4.0	13.8	13.8	12.2	22%	83	6	55	1,410	14,061	0.5			
5	5M-1 (NB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	120	180	420	90	75	240	10.0	18.2	18.2	12.2	22%	109	18	182	4,634	46,228	1.0	1.5		
5	5M-2 (NB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	60	180	105	90	0	0	9.0	13.1	13.1	12.2	22%	79	12	118	3,002	29,947	0.5	1.0		
5	5M-3 (NB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	120	180	420	180	75	0	8.0	10.8	10.8	12.2	22%	65	9	86	2,200	21,946	0.5	0.5		
5	5 (SB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	210	0	0	0	3.0	3.2	3.2	12.2	22%	19	1	10	244	2,438	0.5			
5	5A (SB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	105	180	0	0	6.0	11.1	11.1	12.2	22%	67	7	67	1,699	16,947	0.5	0.5		
5	5B (SB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	420	90	75	120	10.0	13.4	13.4	12.2	22%	80	13	134	3,407	33,985	0.5	1.0		
5	5E-1 (SB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	140	180	150	240	8.0	18.5	18.5	12.2	22%	111	15	148	3,760	37,511	1.0	1.0		
5	5E-2 (SB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	30	180	420	180	75	120	13.0	14.1	14.1	12.2	22%	85	18	183	4,651	46,393	0.5	0.5		
5	5E-3 (SB)	Weekday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	140	180	0	0	5.0	13.8	13.8	12.2	22%	83	7	69	1,757	17,526	0.5	0.5		
23	23B (EB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.0	90	180	0	0	0	2.0	6.5	6.5	12.3	23%	39	1	13	329	3,287	0.5				
23	23C (EB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.0	45	36	53	60	75	0	22.0	7.6	7.6	12.3	23%	46	17	167	4,244	42,413	1.5	1.0		
23	23H (EB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.0	0	60	53	36	75	0	20.0	8.0	8.0	12.3	23%	48	16	160	4,057	40,538	1.0	1.5		
23	23B (WB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	0.0	60	0	0	0	0	1.0	6.7	6.7	12.3	23%	40	1	7	171	1,704					
23	23C (WB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	0.0	60	45	47	60	60	0	22.0	7.8	7.8	12.3	23%	47	17	172	4,367	43,642	1.5	1.0		
23	23H (WB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	0.0	60	45	60	36	75	0	21.0	8.3	8.3	12.3	23%	50	17	175	4,441	44,379	1.5	1.5		
23	23I(WB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	0.0	0	0	420	0	0	0	1.0	4.9	4.9	12.3	23%			5	0	1,247				
46	46A-1(EB)	Weekday	1	1.0	3.0	7.0	3.0	4.0	0.0	0	180	0	180	0	0	2.0	8.6	8.6	14.9	25%	43	1	17	364	4,343	0.5	0.5		
46	46A-2(EB)	Weekday	1	1.0	3.0	7.0	3.0	4.0	0.0	0	90	420	0	0	0	3.0	7.0	7.0	14.9	25%	35	2	21	447	5,334	0.5			
46	46A-3(EB)	Weekday	1	1.0	3.0	7.0	3.0	4.0	0.0	0	0	105	0	0	0	4.0	7.2	7.2	14.9	25%	36	2	29	614	7,325				
46	46A-4(EB)	Weekday	1	1.0	3.0	7.0	3.0	4.0	0.0	0	0	420	0	0	0	1.0	4.7	4.7	14.9	25%	24	0	5	100	1,196				
46	46E-2(EB)	Weekday	1	1.0	3.0	7.0	3.0	4.0	0.0	60	0	0	0	0	1.0	12.8	12.8	14.9	25%	64	1	13	272	3,251					
46	46E-1(EB)	Weekday	1	1.0	3.0	7.0	3.0	4.0	0.0	60	20	20	20	60	0	44.0	11.2	11.2	14.9	25%	56	41	493	10,483	125,171	3.0	3.0		
46	46B-1(WB)	Weekday	1	0.5	3.0	7.0	3.0	4.0	0.0	0	60	420	0	0	0	4.0	7.3	7.3	15	25%	37	2	29	622	7,427	1.0			
46	46B-2(WB)	Weekday	1	0.5	3.0	7.0	3.0	4.0	0.0	0	180	0	0	0	0	1.0	7.3	7.3	15	25%	37	1	7	156	1,862	0.5			
46	46C-1(WB)	Weekday	1	0.5	3.0	7.0	3.0	4.0	0.0	30	20	20	20	80	0	43.0	13.4	13.4	15	25%	67	48	576	12,258	146,355	3.5	3.5		
46	46C-2(WB)	Weekday	1	0.5	3.0	7.0	3.0	4.0	0.0	0	0	420	90	0	0	3.0	8.8	8.8	15	25%	44	2	26	563	6,721				
46	46C-3(WB)	Weekday	1	0.5	3.0	7.0	3.0	4.0	0.0	0	180	0	0	0	0	1.0	8.8	8.8	15	25%	44	1	9	187	2,238	0.5			
54E	54 (WB)	Weekday	1	2.0	3.0	7.0	3.0	5.0			20	30	20	30		42.0	8.8	8.8	14	15%	45	31	370	7,997	93,878	2.5	2.5		
54E	54 (EB)	Weekday	1	2.0	3.0	7.0	3.0	5.0			20	30	20	30		42.0	8.8	8.8	14	15%	45	31	370	7,997	93,878	2.5	2.5		
63	63B-1(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	2.0	0	0	140	30	43	0	16.0	14.7	14.7	13.8	21%	77	21	235	5,212	59,741			3.0	
63	63B-2(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	2.0	23	20	23	60	75	120	39.0	15.9	15.9	13.8	21%	83	54	620	13,741	157,516	4.5	1.5		
63	63-1(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	2.0	0	180	0	0	0	0	1.0	8.6	8.6	13.8	21%	45	1	9	191	2,189	0.5			
63	63-2(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	2.0	0	90	0	0	0	0	2.0	5.7	5.7	13.8	21%	30	1	11	252	2,885	0.5			
63	63K-1(EB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	1.5	23	20	47	0	0	0	22.0	14.4	14.4	13.8	21%	75	28	317	7,020	80,467	4.0			
63	63K-2(EB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	1.5	90	0	35	20	27	90	34.0	15.6	15.6	13.8	21%	82	46	530	11,753	134,721			4.5	
63	63K-3(EB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	1.5	0	0	420	0	0	0	1.0	6.9	6.9	13.8	21%	36	1	7	153	1,753				
63	63S (EB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	1.5	0	0	105	0	0	0	4.0	5.7	5.7	13.8	21%	30	2	23	503	5,771				
64	64N (EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	1.5	20	30	23	30	50	0	39.0	12.6	12.6	13.9	30%	70	46	491	11,596	124,824	2.5	2.5		
64	64D (EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	1.5	60	30	32	36	100	0	28.0	11.0	11.0	13.9	30%	61	29	308	7,268	78,232	2.5	2.0		
64	64H-1(EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	1.5	0	90	210	45	75	45	14.0	6.9	6.9	13.9	30%	39	9	97	2,293	24,679	0.5	1.0		
64	64P/H-2(EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	1.5	0	0	140	0	0	0	3.0	3.7	3.7	13.9	30%	21	1	11	261	2,804				
64	64N (WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	1.0	30	30	28	36	50	0	35.0	12.5	12.5	13.9	30%	70	41	438	10,323	111,125	2.5	2.0		
64	64D (WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	1.0																				

Route	Description	Day of week	Direction	SERVICE SPAN						FREQUENCY						TRAVEL TIME						DAILY STATS		ANNUAL STATS			PM Peak Vehicle
				EARLY	AM PK	MID	PM PK	EVE	NIGHT	EARLY	AM PK	MID	PM PK	EVE	NIGHT	One-way Trips	One-way trip length	Trip Length	Est. speed	Layover Percent	Cycle Time	Revenue Hours	Revenue Miles	Revenue Hours	Revenue Miles	AM Peak Vehicle	
70	70S-1(EB)	Weekday	1	0.5	3.0	7.0	3.0	3.5	0.0	30	36	38	36	70	0	25.0	6.1	6.1	15.9	30%	30	12	153	3,159	38,735	1.0	1.0
70	70D (EB)	Weekday	1	0.5	3.0	7.0	3.0	3.5	0.0	0	180	140	180	0	0	5.0	7.3	7.3	15.9	30%	36	3	37	760	9,322	0.5	0.5
70	70B-1(WB)	Weekday	1	1.5	3.0	7.0	3.0	3.0	0.0	90	180	210	180	0	0	5.0	7.3	7.3	15.9	30%	36	3	37	760	9,322	0.5	0.5
70	70B-2(WB)	Weekday	1	1.5	3.0	7.0	3.0	3.0	0.0	45	36	35	60	60	0	25.0	5.9	5.9	15.9	30%	29	12	148	3,061	37,529	1.0	0.5
70	70S-2(EB)	Weekday	1	0.5	3.0	7.0	3.0	3.5	0.0	0	36	60	36	0	0	17.0	8.7	8.7	15.9	30%	43	12	148	3,075	37,696	1.5	1.5
70	70B-1(WB)	Weekday	1	1.5	3.0	7.0	3.0	3.0	0.0	45	36	47	60	0	0	19.0	8.7	8.7	15.9	30%	43	14	166	3,436	42,131	1.5	1.0
74	74G-1(EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	2.0	60	45	53	60	150	0	18.0	7.5	7.5	13.9	22%	40	12	135	3,020	34,381	1.0	1.0
74	74G-2(EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	2.0	0	0	420	0	0	0	1.0	6.7	6.7	13.9	22%	35	1	7	148	1,689		
74	74S-1(EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	2.0	30	36	28	30	38	120	37.0	6.2	6.2	13.9	22%	33	20	230	5,134	58,456	1.0	1.5
74	74S-2(EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	2.0	0	0	420	0	0	0	1.0	7.0	7.0	13.9	22%	37	1	7	156	1,778		
74	74A-1(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	23	26	30	36	38	0	38.0	6.3	6.3	13.9	22%	33	21	239	5,332	60,711	1.5	1.0
74	74A-2(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	90	36	60	45	100	0	20.0	7.5	7.5	13.9	22%	39	13	149	3,324	37,846	1.5	1.0
74	74J-1(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	0	60	0	0	0	0	3.0	5.7	5.7	13.9	22%	30	2	17	383	4,366	1.0	
74	74J-2(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	0	180	0	0	0	0	1.0	6.8	6.8	13.9	22%	36	1	7	152	1,735	0.5	
74	74G-1(EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	2.0	20	23	26	20	30	120	47.0	5.3	5.3	13.9	22%	28	22	251	5,588	63,630	1.5	1.5
74	74G-3(EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	2.0	0	180	60	0	0	0	8.0	1.3	1.3	13.9	22%	7	1	11	239	2,723	0.5	
74	74 (EB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	2.0	0	0	0	90	0	0	2.0	5.3	5.3	13.9	22%	28	1	11	238	2,708		0.5
74	74A-1(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	18	16	26	20	27	0	52.0	5.3	5.3	13.9	22%	28	24	277	6,183	70,399	2.0	1.5
74	74A-3(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	0	0	420	0	0	0	1.0	1.9	1.9	13.9	22%	10	0	2	43	488		
74	74A-5(WB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	0	180	70	0	0	0	7.0	1.3	1.3	13.9	22%	7	1	9	209	2,383	0.5	
83	83 (NB)	Weekday	1	0.5	3.0	7.0	3.0	5.0	0.0	30	20	20	20	30	0	50.0	9.9	9.9	15.6	20%	46	38	496	9,671	125,984	2.5	2.5
83	83 (SB)	Weekday	1	0.5	3.0	7.0	3.0	4.5	0.0	15	20	20	20	34	0	49.0	9.6	9.6	15.6	20%	44	36	469	9,153	119,233	2.5	2.5
84	84 (NB)	Weekday	1	1.0	3.0	7.0	3.0	2.0		30	30	30	30	30	0	32.0	11.5	11.5	17.1	27%	51	27	368	6,934	93,472	2.0	2.0
84	84 (SB)	Weekday	1	1.0	3.0	7.0	3.0	1.5		30	30	30	30	30	0	31.0	11.5	11.5	17.1	27%	51	26	357	6,717	90,551	2.0	2.0
87	87 (NB)	Weekday	1	1.5	3.0	7.0	3.0	5.0	0.5	30	20	20	23	43	0	48.0	9.0	9.0	15.5	37%	47	38	430	9,640	109,240	2.5	2.5
87	87 (SB)	Weekday	1	1.0	3.0	7.0	3.0	5.0	0.5	30	20	20	23	38	0	48.0	9.5	9.5	15.5	37%	50	40	457	10,242	116,068	3.0	2.5
134	134A (EB)	Weekday	1	0.0	0.5	0.5	3.0	0.0	0.0	0	15	30	90	0	0	5.0	8.3	8.3	15.1	33%	44	4	41	924	10,478	3.0	0.5
134	134B (EB)	Weekday	1	0.0	0.5	0.5	3.0	0.0	0.0	0	0	0	30	0	0	6.0	10.6	10.6	15.1	33%	56	6	64	1,425	16,154		2.0
134	134A (WB)	Weekday	1	0.0	3.0	0.0	0.5	0.0	0.0	0	45	0	30	0	0	5.0	8.6	8.6	15.1	33%	46	4	43	965	10,935	1.5	2.0
134	134B (WB)	Weekday	1	0.0	3.0	0.0	0.5	0.0	0.0	0	30	0	0	0	0	6.0	10.8	10.8	15.1	33%	57	6	65	1,452	16,459	2.0	
417	417 (NB)	Weekday	1	0.0	1.5	0.0	0.0	0.0	0.0	0	45	0	0	0	0	2.0	9.6	9.6	17.4	41%	47	2	19	395	4,877	1.5	
417	417(SB)	Weekday	1	0.0	0.0	0.0	1.5	0.0	0.0	0	0	0	45	0	0	2.0	9.7	9.7	17.4	41%	47	2	19	399	4,923		1.5
436	436 (NB)	Weekday	1	0.0	0.0	0.5	2.5	0.0	0.0	0	0	30	75	0	0	3.0	11.6	11.6	21.7	47%	47	2	35	598	8,839		1.0
436	436M (NB)	Weekday	1	0.0	0.0	0.5	2.5	0.0	0.0	0	0	0	150	0	0	1.0	12.6	12.6	21.7	47%	51	1	13	216	3,200		0.5
436	436S (NB)	Weekday	1	0.0	0.0	0.5	2.5	0.0	0.0	0	0	0	150	0	0	1.0	6.3	6.3	21.7	47%	25	0	6	108	1,590		0.5
436	436 (SB)	Weekday	1	0.5	2.0	0.0	0.0	0.0	0.0	30	40	0	0	0	0	4.0	11.3	11.3	21.7	47%	46	3	45	776	11,481	1.5	
480	480A (NB)	Weekday	1	0.0	3.0	0.0	0.0	0.0	0.0	0	36	0	0	0	0	5.0	20.6	20.6	22.9	36%	73	6	103	1,552	26,162	2.5	
480	480B-1(NB)	Weekday	1	0.0	3.0	0.0	0.0	0.0	0.0	0	90	0	0	0	0	2.0	20.0	20.0	22.9	36%	71	2	40	603	10,160	1.0	
480	480B-2(NB)	Weekday	1	0.0	3.0	0.0	0.0	0.0	0.0	0	90	0	0	0	0	2.0	20.7	20.7	22.9	36%	74	2	41	624	10,516	1.0	
480	480C (NB)	Weekday	1	0.0	3.0	0.0	0.0	0.0	0.0	0	90	0	0	0	0	2.0	15.2	15.2	22.9	36%	54	2	30	458	7,722	1.0	
480	480A (SB)	Weekday	1	0.0	0.0	0.5	3.0	0.0	0.0	0	0	15	60	0	0	5.0	20.7	20.7	22.9	36%	74	6	104	1,560	26,289		1.5
480	480B (SB)	Weekday	1	0.0	0.0	0.5	3.0	0.0	0.0	0	0	0	45	0	0	4.0	20.0	20.0	22.9	36%	71	5	80	1,206	20,320		2.0
480	480P (SB)	Weekday	1	0.0	0.0	0.5	3.0	0.0	0.0	0	0	0	60	0	0	3.0	18.0	18.0	22.9	36%	64	3	54	814	13,716		1.5
A-Line	SA-BRT (NB)	Weekday	1	2.0	3.0	6.0	4.5	3.0	3.5	30	10	10	10	20	30	101.0	9.9	9.9	15.0	27%	51	85	1,004	21,611	255,001	5.5	5.5
A-Line	SA-BRT (SB)	Weekday	1	1.5	3.5	6.0	5.0	3.0	2.5	30	10	10	10	20	30	104.0	10.0	10.0	15.0	27%	51	88	1,040	22,387	264,160	5.5	5.5
D-Line	Freemont-BRT-1	Weekday	1	0.0	3.0	6.0	3.0	4.0	0.0	0	15	15	15	20	0	60.0	13.0	13.0	15.0	22%	64	64	780	16,129	198,120	4.5	4.5
D-Line	Freemont-BRT-1	Weekday	1	0.0	3.0	6.0	3.0	4.0	0.0	0	15	15	15	20	0	60.0	13.1	13.1	15.0	22%	64	64	786	16,253	199,644	4.5	4.5
D-Line	Freemont-BRT-2	Weekday	1	2.0	3.0	6.0	3.0	4.0	4.0	20	15	15	15	20	30	74.0	18.2	18.2	15.0	22%	89	110	1,347	27,850	342,087	6.0	6.0
D-Line	Freemont-BRT-2	Weekday	1	2.0	3.0	6.0	3.0	4.0	4.0	20	15	15	15	20	30	74.0	18.2	18.2	15.0	22%	89	110	1,347	27,850	342,087	6.0	6.0



Route	Description	Day of week	Direction	SERVICE SPAN						FREQUENCY						TRAVEL TIME					DAILY STATS		ANNUAL STATS			PM Peak Vehicle		
				EARLY	AM PK	MID	PM PK	EVE	NIGHT	EARLY	AM PK	MID	PM PK	EVE	NIGHT	One-way Trips	One-way trip length	Trip Length	Est. speed	Layover Percent	Cycle Time	Revenue Hours	Revenue Miles	Revenue Hours	Revenue Miles		AM Peak Vehicle	
SATURDAY STATISTICS																												
5	5F (NB)	Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	105	90	300	0	8.0	14.0	14.0	13.0	20%	78	10	112	549	5,944			
5	5K (NB)	Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	120	0	0	0	80	4.0	10.1	10.1	13.0	20%	56	4	40	198	2,141				
5	5M-1 (NB)	Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	120	90	105	90	100	0	12.0	13.1	13.1	13.0	20%	73	15	157	769	8,332			
5	5M-2 (NB)	Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	60	60	70	90	50	80	22.0	18.2	18.2	13.0	20%	101	37	400	1,960	21,221			
5	5B-1 (SB)	Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	0	210	180	0	0	3.0	8.9	8.9	13.0	20%	49	2	27	131	1,417			
5	5B-2 (SB)	Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	60	60	84	90	50	60	22.0	14.0	14.0	13.0	20%	78	28	308	1,508	16,324			
5	5C (SB)	Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	0	0	0	300	0	1.0	14.5	14.5	13.0	20%	80	1	15	71	769			
5	5E (SB)	Saturday	1	2.0	3.0	7.0	3.0	5.0	4.0	60	60	60	60	100	80	21.0	18.5	18.5	13.0	20%	103	36	389	1,902	20,591			
23	23C (EB)	Saturday	1	1.0	3.0	7.0	3.0	4.0	0.0	30	45	60	60	48	0	21.0	7.6	7.6	12.8	26%	45	16	159	833	8,448			
23	23H (EB)	Saturday	1	1.0	3.0	7.0	3.0	4.0	0.0	0	90	38	36	80	0	21.0	8.0	8.0	12.8	26%	47	17	168	876	8,882			
23	23C (WB)	Saturday	1	0.5	3.0	7.0	3.0	5.0	0.0	30	36	60	60	60	0	21.0	7.8	7.8	12.8	26%	46	16	164	857	8,693			
23	23H (WB)	Saturday	1	0.5	3.0	7.0	3.0	5.0	0.0	0	90	42	45	75	0	20.0	8.3	8.3	12.8	26%	49	16	166	870	8,819			
46	46E (EB)	Saturday	1	0.0	3.0	7.0	3.0	3.5	0.0	0	45	30	30	42	0	29.0	11.2	11.2	15.6	22%	52	25	325	1,344	17,214			
46	46C (WB)	Saturday	1	0.0	3.0	7.0	3.0	3.5	0.0	0	60	32	30	42	0	27.0	13.4	13.4	15.6	22%	63	28	362	1,497	19,175			
54E	54 (WB)	Saturday	1	3.0	7.0	3.0	4.0			60	30	30	30		31.0	8.8	8.8	14	15%	45	23	273	1,232	14,458				
54E	54 (EB)	Saturday	1	3.0	7.0	3.0	4.0			60	30	30	30		31.0	8.8	8.8	14	15%	45	23	273	1,232	14,458				
63	63B-1(WB)	Saturday	1	1.5	3.0	7.0	3.0	5.0	2.0	0	0	0	90		2.0	14.7	14.7	14.4	25%	77	3	29	135	1,558				
63	63B-2(WB)	Saturday	1	1.5	3.0	7.0	3.0	5.0	2.0	45	36	20	26	60	0	40.0	15.9	15.9	14.4	25%	83	55	636	2,924	33,708			
63	63K-1(EB)	Saturday	1	0.5	3.0	7.0	3.0	5.0	2.0	0	60	70	0	0	0	9.0	14.4	14.4	14.4	25%	75	11	130	596	6,869			
63	63K-2(EB)	Saturday	1	0.5	3.0	7.0	3.0	5.0	2.0	30	60	28	20	25	60	42.0	15.6	15.6	14.4	25%	81	57	655	3,012	34,726			
64	64D (EB)	Saturday	1	1.0	3.0	7.0	3.0	5.0	1.5	0	0	42	36	0	0	15.0	11.0	11.0	14.7	25%	56	14	165	744	8,745			
64	64H(EB)	Saturday	1	1.0	3.0	7.0	3.0	5.0	1.5	60	60	105	0	300	30	12.0	6.9	6.9	14.7	25%	35	7	83	373	4,388			
64	64N (EB)	Saturday	1	1.0	3.0	7.0	3.0	5.0	1.5	60	45	30	23	23	0	40.0	12.5	12.5	14.7	25%	64	43	500	2,254	26,500			
64	64D (WB)	Saturday	1	1.5	3.0	7.0	3.0	5.0	1.0	0	180	53	36	300	0	15.0	10.9	10.9	14.7	25%	56	14	164	737	8,666			
64	64H (WB)	Saturday	1	1.5	3.0	7.0	3.0	5.0	1.0	45	60	70	0	0	0	11.0	6.8	6.8	14.7	25%	35	6	75	337	3,964			
64	64N (WB)	Saturday	1	1.5	3.0	7.0	3.0	5.0	1.0	0	45	30	23	27	30	39.0	12.5	12.5	14.7	25%	64	41	488	2,198	25,838			
65	65 (NB)	Saturday	1	1.0	3.0	7.0	3.0	5.0	1.0	30	30	20	20	33	30	49.0	8.0	8.0	16.9	48%	42	35	392	1,830	20,776			
65	65 (SB)	Saturday	1	1.0	3.0	7.0	3.0	5.0	1.0	30	26	20	20	30	60	50.0	7.5	7.5	16.9	48%	40	33	377	1,758	19,955			
54W	66 (EB)	Saturday	1	2.0	3.0	7.0	3.0	4.0	2.0	60	60	30	30	30	60	35.0	5.9	5.9	14.0	15%	29	17	205	891	10,852			
54W	66 (WB)	Saturday	1	2.0	3.0	7.0	3.0	4.0	2.0	60	60	30	30	30	60	35.0	6.0	6.0	14.0	15%	29	17	208	907	11,037			
70	70S (EB)	Saturday	1	0.0	1.8	7.0	3.0	2.0	0.0	0	53	105	90	60	0	10.0	6.1	6.1	17.5	36%	28	5	61	251	3,233			
70	70D (EB)	Saturday	1	0.0	1.8	7.0	3.0	2.0	0.0	0	0	140	180	0	0	4.0	7.3	7.3	17.5	36%	34	2	29	121	1,556			
70	70S (WB)	Saturday	1	0.0	2.5	7.0	3.0	2.0	0.0	0	50	105	90	60	0	11.0	6.1	6.1	17.5	36%	28	5	67	276	3,556			
70	70D (WB)	Saturday	1	0.0	2.5	7.0	3.0	2.0	0.0	0	0	140	180	0	0	4.0	7.3	7.3	17.5	36%	34	2	29	121	1,556			
74	74S (EB)	Saturday	1	0.5	3.0	7.0	3.0	5.0	2.0	0	36	30	36	60	60	31.0	6.2	6.2	13.8	20%	32	17	193	883	10,219			
74	74G (EB)	Saturday	1	0.5	3.0	7.0	3.0	5.0	2.0	30	90	60	60	60	0	18.0	7.5	7.5	13.8	20%	39	12	135	620	7,174			
74	74A-1 (WB)	Saturday	1	1.5	3.0	7.0	3.0	5.0	0.0	45	45	30	45	50	0	30.0	6.3	6.3	13.8	20%	33	16	189	864	10,001			
74	74A-2 (WB)	Saturday	1	1.5	3.0	7.0	3.0	5.0	0.0	0	60	60	60	60	0	18.0	7.5	7.5	13.8	20%	39	12	134	614	7,107			
74	74S (EB)	Saturday	1	0.5	3.0	7.0	3.0	5.0	2.0	30	26	20	23	30	60	49.0	5.3	5.3	13.8	20%	28	23	261	1,196	13,842			
74	74A-1 (WB)	Saturday	1	1.5	3.0	7.0	3.0	5.0	0.0	45	26	20	26	27	0	48.0	5.3	5.3	13.8	20%	28	22	256	1,171	13,560			
83	83 (NB)	Saturday	1	0.0	3.0	7.0	3.0	4.5	0.0	0	30	30	30	30	0	35.0	9.9	9.9	16.0	22%	46	27	347	1,407	18,402			
83	83 (SB)	Saturday	1	1.0	3.0	7.0	3.0	4.5	0.0	60	36	30	30	30	0	35.0	9.6	9.6	16.0	22%	44	26	335	1,359	17,771			
84	84 (NB)	Saturday	1	2.0	7.0	3.0	1.0			0	30	30	30	30	0	26.0	11.5	11.5	17.9	29%	50	22	299	1,142	15,847			
84	84 (SB)	Saturday	1	2.5	7.0	3.0	1.0			0	30	30	30	30	0	27.0	11.5	11.5	17.9	29%	50	22	311	1,185	16,457			
87	87 (NB)	Saturday	1	0.0	3.0	7.0	3.0	5.0	1.0	0	30	21	20	42.9	60	43.0	9.0	9.0	16.1	41%	47	34	385	1,788	20,420			
87	87 (SB)	Saturday	1	0.0	3.0	7.0	3.0	5.0	1.0	0	30	21	20	38	60	44.0	9.5	9.5	16.1	41%	50	37	419	1,944	22,201			
A-Line	SABRT (NB)	Saturday	1	2.0	3.0	6.0	3.0	4.5	3.0	30	10	10	10	15	30	100.0	9.9	9.9	15.0	27%	51	84	994	4,465	52,682			
A-Line	SABRT (SB)	Saturday	1	2.0	3.0	6.0	3.0	4.5	3.5	30	10	10	10	15	30	101.0	10.0	10.0	15.0	27%	51	86	1,010	4,537	53,530			
D-Line	Freemont-BRT-1	Saturday	1	0.0	3.0	6.0	3.0	4.0	0.0	0	20	20	20	20														

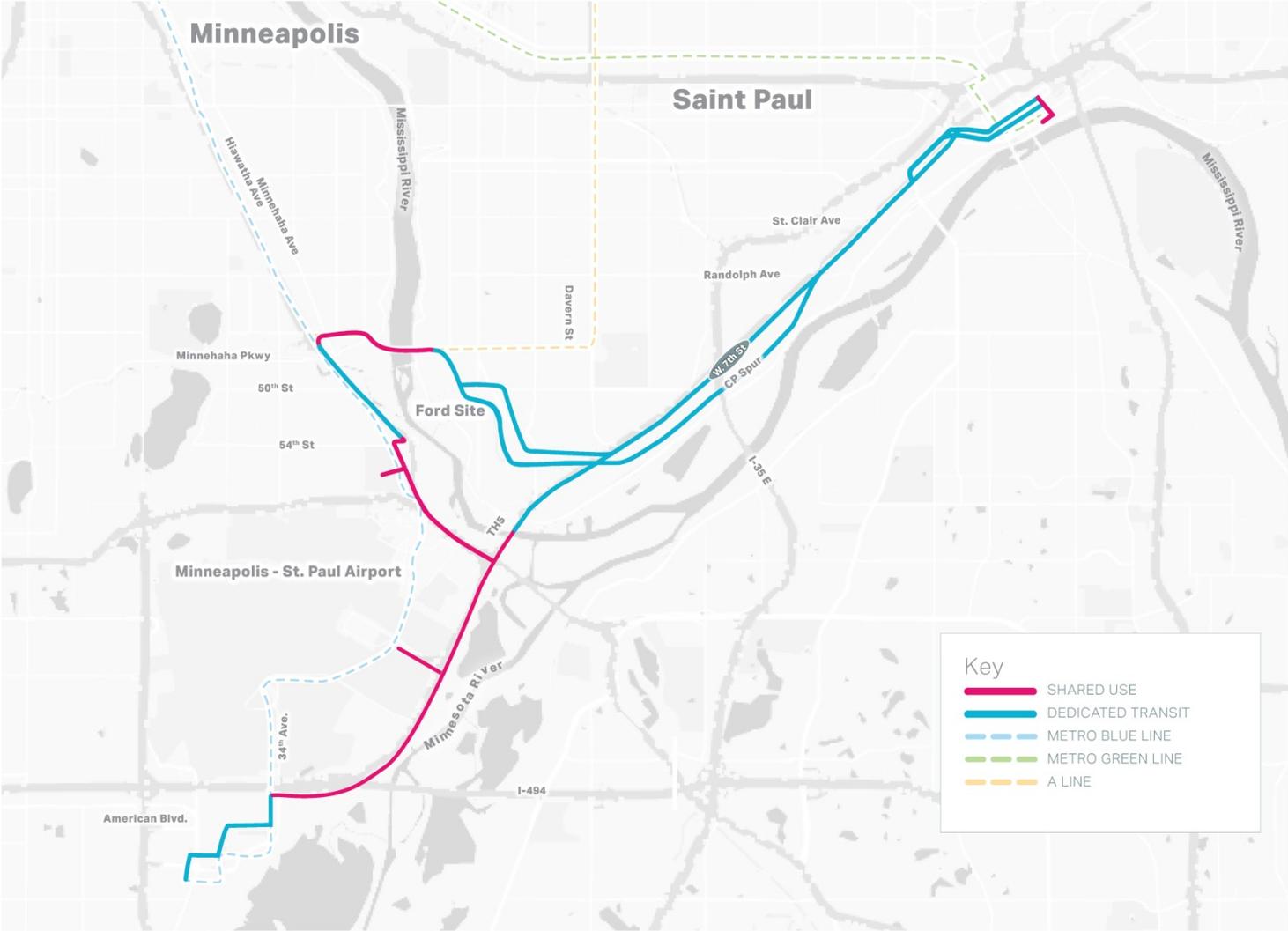
Route	Description	Day of week	Direction	SERVICE SPAN						FREQUENCY						TRAVEL TIME					DAILY STATS		ANNUAL STATS			PM Peak Vehicle	
				EARLY	AM PK	MID	PM PK	EVE	NIGHT	EARLY	AM PK	MID	PM PK	EVE	NIGHT	One-way Trips	One-way trip length	Trip Length	Est. speed	Layover Percent	Cycle Time	Revenue Hours	Revenue Miles	Revenue Hours	Revenue Miles		AM Peak Vehicle
SUNDAY STATISTICS																											
5	5F (NB)	Sunday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	180	210	180	300	0	5.0	14.0	14.0	13.3	19%	75	6	70	363	4,066		
5	5K (NB)	Sunday	1	2.0	3.0	7.0	3.0	5.0	4.0	60	0	0	0	80	5.0	10.1	10.1	13.3	19%	54	5	51	261	2,929			
5	5M-1 (NB)	Sunday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	90	70	60	75	0	15.0	13.1	13.1	13.3	19%	70	18	197	1,016	11,397		
5	5M-2 (NB)	Sunday	1	2.0	3.0	7.0	3.0	5.0	4.0	60	60	70	90	60	240	19.0	18.2	18.2	13.3	19%	97	31	346	1,788	20,056		
5	5B-1 (SB)	Sunday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	0	210	180	0	0	3.0	8.9	8.9	13.3	19%	48	2	27	138	1,550		
5	5B-2 (SB)	Sunday	1	2.0	3.0	7.0	3.0	5.0	4.0	0	60	105	90	75	60	17.0	14.0	14.0	13.3	19%	75	21	238	1,231	13,804		
5	5E (SB)	Sunday	1	2.0	3.0	7.0	3.0	5.0	4.0	60	60	53	60	38	50	28.8	18.5	18.5	13.3	19%	99	48	533	2,756	30,902		
23	23C (EB)	Sunday	1	1.0	3.0	7.0	3.0	4.0	0.0	60	60	70	60	60	0	17.0	7.6	7.6	13.1	24%	43	12	129	707	7,484		
23	23H (EB)	Sunday	1	1.0	3.0	7.0	3.0	4.0	0.0	0	90	53	60	120	0	15.0	8.0	8.0	13.1	24%	45	11	120	656	6,943		
23	23C (WB)	Sunday	1	1.0	3.0	7.0	3.0	4.5	0.0	60	60	60	60	68	0	18.0	7.8	7.8	13.1	24%	44	13	141	770	8,154		
23	23H (WB)	Sunday	1	1.0	3.0	7.0	3.0	4.5	0.0	0	90	60	60	90	0	15.0	8.3	8.3	13.1	24%	47	12	125	684	7,238		
46	46E (EB)	Sunday	1	0.0	1.0	7.0	3.0	2.0	0.0	0	30	32	45	60	0	21.0	11.2	11.2	15.9	21%	51	18	235	1,044	13,642		
46	46C (WB)	Sunday	1	0.0	1.0	7.0	3.0	2.0	0.0	0	60	30	45	60	0	21.0	13.4	13.4	15.9	21%	62	22	281	1,249	16,321		
54E	54 (WB)	Sunday	1		3.0	7.0	3.0	3.0	2.0		60	40	40	40	60	24.5	8.8	8.8	14	15%	45	18	216	1,065	12,505		
54E	54 (EB)	Sunday	1		3.0	7.0	3.0	3.0	2.0		60	40	40	40	60	24.5	8.8	8.8	14	15%	45	18	216	1,065	12,505		
63	63B-1(WB)	Sunday	1	1.5	3.0	7.0	3.0	5.0	2.0	0	0	84	23	50	0	19.0	14.7	14.7	15.1	27%	74	23	279	1,361	16,199		
63	63B-2(WB)	Sunday	1	1.5	3.0	7.0	3.0	5.0	2.0	45	30	26	0	60	60	31.0	15.9	15.9	15.1	27%	80	41	493	2,402	28,588		
63	63K-1(EB)	Sunday	1	0.5	3.0	7.0	3.0	5.0	2.0	0	30	32	0	0	0	19.0	14.4	14.4	15.1	27%	73	23	274	1,333	15,869		
63	63K-2(EB)	Sunday	1	0.5	3.0	7.0	3.0	5.0	2.0	30	180	53	20	27	60	32.0	15.6	15.6	15.1	27%	79	42	499	2,433	28,954		
64	64H(EB)	Sunday	1	1.0	3.0	7.0	3.0	5.0	1.0	60	90	0	0	300	60	5.0	6.9	6.9	15.1	23%	34	3	35	163	2,001		
64	64N (EB)	Sunday	1	1.0	3.0	7.0	3.0	5.0	1.0	0	60	25	20	33	0	38.0	12.6	12.6	15.1	23%	62	39	479	2,260	27,770		
64	64H (WB)	Sunday	1	1.5	3.0	7.0	3.0	5.0	1.0	45	45	0	0	0	60	7.0	6.8	6.8	15.1	23%	33	4	48	225	2,761		
64	64N (WB)	Sunday	1	1.5	3.0	7.0	3.0	5.0	1.0	0	90	23	20	27	0	40.0	12.5	12.5	15.1	23%	61	41	500	2,360	29,000		
65	65 (NB)	Sunday	1	1.0	3.0	7.0	3.0	5.0	1.0	30	26	30	30	30	60	40.0	8.0	8.0	17.7	62%	44	29	320	1,691	18,560		
65	65 (SB)	Sunday	1	1.5	3.0	7.0	3.0	5.0	1.0	30	30	30	30	33	60	39.0	7.5	7.5	17.7	62%	41	27	294	1,552	17,033		
54W	66 (EB)	Sunday	1	2.0	3.0	7.0	3.0	4.0	2.0	60	60	30	30	30	60	35.0	5.9	5.9	14.0	15%	29	17	205	975	11,876		
54W	66 (WB)	Sunday	1	2.0	3.0	7.0	3.0	4.0	2.0	60	60	30	30	30	60	35.0	6.0	6.0	14.0	15%	29	17	208	992	12,079		
70	70S (EB)	Sunday	1	0.0	0.0	7.0	2.5	0.0	0.0	0	0	84	50	0	0	8.0	6.1	6.1	17.4	35%	28	4	49	219	2,830		
70	70D (EB)	Sunday	1	0.0	0.0	7.0	2.5	0.0	0.0	0	0	210	0	0	0	2.0	7.3	7.3	17.4	35%	34	1	15	66	851		
70	70S (WB)	Sunday	1	0.0	0.0	7.0	3.0	0.0	0.0	0	0	84	60	0	0	8.0	6.1	6.1	17.4	35%	28	4	49	219	2,830		
70	70D (WB)	Sunday	1	0.0	0.0	7.0	3.0	0.0	0.0	0	0	210	0	0	0	2.0	7.3	7.3	17.4	35%	34	1	15	66	851		
74	74C (EB)	Sunday	1	0.5	3.0	7.0	3.0	5.0	2.0	0	90	60	60	60	0	17.0	6.2	6.2	14.0	24%	33	9	106	545	6,133		
74	74K (EB)	Sunday	1	0.5	3.0	7.0	3.0	5.0	2.0	30	60	60	90	60	60	20.0	6.2	6.2	14.0	24%	33	11	124	641	7,215		
74	74A-1 (WB)	Sunday	1	1.5	3.0	7.0	3.0	5.0	0.0	90	180	60	60	60	0	17.0	6.3	6.3	14.0	24%	34	9	107	551	6,202		
74	74A-3 (WB)	Sunday	1	1.5	3.0	7.0	3.0	5.0	0.0	90	45	70	60	50	0	20.0	6.1	6.1	14.0	24%	33	11	123	633	7,122		
74	74C (EB)	Sunday	1	0.5	3.0	7.0	3.0	5.0	2.0	30	36	30	36	30	60	37.0	5.3	5.3	14.0	24%	28	18	197	1,016	11,438		
74	74A-1 (WB)	Sunday	1	1.5	3.0	7.0	3.0	5.0	0.0	45	36	32	30	27	0	37.0	5.3	5.3	14.0	24%	28	18	197	1,016	11,438		
83	83 (NB)	Sunday	1	0.0	3.0	7.0	3.0	4.5	0.0	0	30	32	30	27	0	35.0	9.9	9.9	16.0	22%	46	27	347	1,540	20,138		
83	83 (SB)	Sunday	1	1.0	3.0	7.0	3.0	4.5	0.0	60	36	30	30	30	0	35.0	9.6	9.6	16.0	22%	44	26	335	1,487	19,447		
84	84 (NB)	Sunday	1			6.5	3.0	1.0		0	30	30	30	30	0	21.0	11.5	11.5	18.7	31%	48	17	242	980	14,007		
84	84 (SB)	Sunday	1			6.5	3.0	0.5		0	30	30	30	30	0	20.0	11.5	11.5	18.7	31%	48	16	230	933	13,340		
87	87 (NB)	Sunday	1	0.0	3.0	7.0	3.0	5.0	1.0	0	30	30	30	42.9	60	34.0	9.0	9.0	16.0	31%	44	25	305	1,447	17,669		
87	87 (SB)	Sunday	1	0.0	3.0	7.0	3.0	5.0	1.0	0	30	30	30	38	60	35.0	9.5	9.5	16.0	31%	47	27	333	1,583	19,326		
A-Line	SABRT (NB)	Sunday	1	1.5	3.5	6.0	3.0	4.0	3.5	30	10	10	10	20	30	97.0	9.9	9.9	15.0	27%	51	82	964	4,739	55,922		
A-Line	SABRT (SB)	Sunday	1	1.5	3.5	6.0	3.0	5.0	3.0	30	10	10	10	20	30	99.0	10.0	10.0	15.0	27%	51	84	990	4,866	57,420		
D-Line	Freemont-BRT-1	Sunday	1	0.0	3.0	6.0	3.0	4.0	0.0	0	20	20	20	20	0	48.0	13.0	13.0	15.0	22%	64	51	624	2,946	36,192		
D-Line	Freemont-BRT-1	Sunday	1	0.0	3.0	6.0	3.0	4.0	0.0	0	20	20	20	20	0	48.0	13.1	13.1	15.0	22%	64	51	629	2,969	36,470		
D-Line	Freemont-BRT-2	Sunday	1	2.0	3.0	6.0	3.0	4.0	3.0	30	20	20	20	20	30	58.0	18.2	18.2	15.0	22%	89	86	1,056	4,984	61,225		
D-Line	Freemont-BRT-2	Sunday	1	2.0	3.0	6.0	3.0	4.0	3.0	30	20	20	20	30	30	58.0	18.2	18.2	15.0	22%	89	86	1,056	4,984	61,225		



Appendix D: Operating Environment Maps



Dedicated BRT



Key

- SHARED USE
- DEDICATED TRANSIT
- - - METRO BLUE LINE
- - - METRO GREEN LINE
- - - A LINE



Rail

