Highway Transitway Corridor Study

Transportation Committee | December 9, 2013

METROPOLITAN COUNCIL

SRF Consulting Group, Inc. | Engineers Planners Designers

Agenda

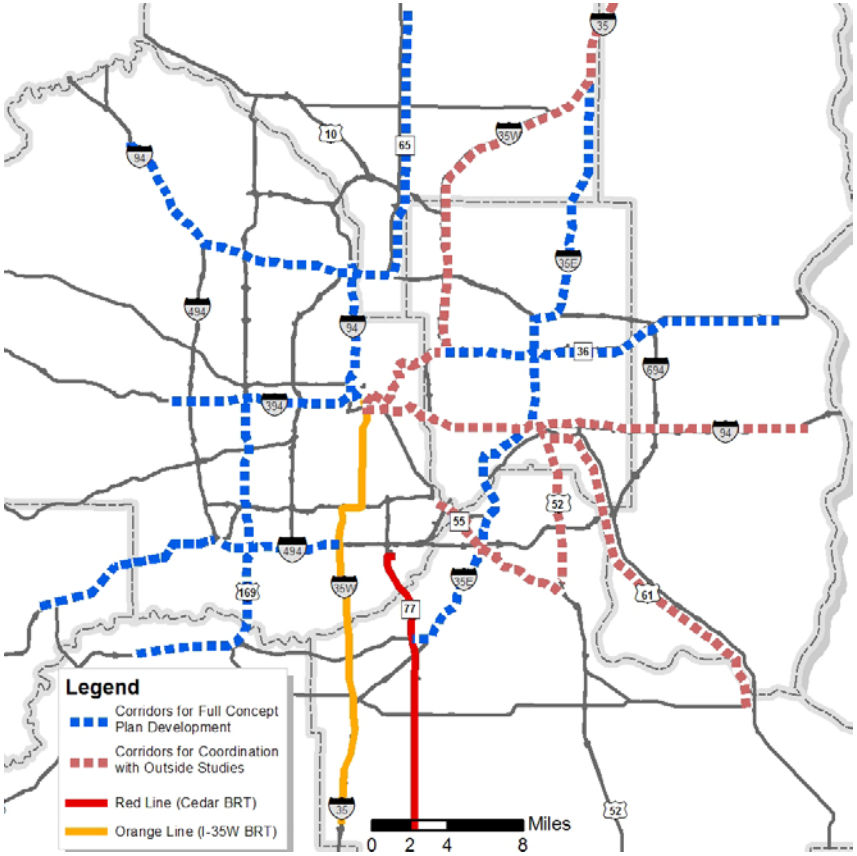
- Project Purpose
- Initial Screening
- Concept Overview and Capital Costs
- Cost and Ridership Results
- Next Steps
- Questions

Project Purpose

- 8 corridors for concept plan development

TH 212	TH 36
TH 169	I-35 E North
I-394	I-35 E South
I-94 West	
TH 65	

- Additional corridors already under study will coordinate with this study



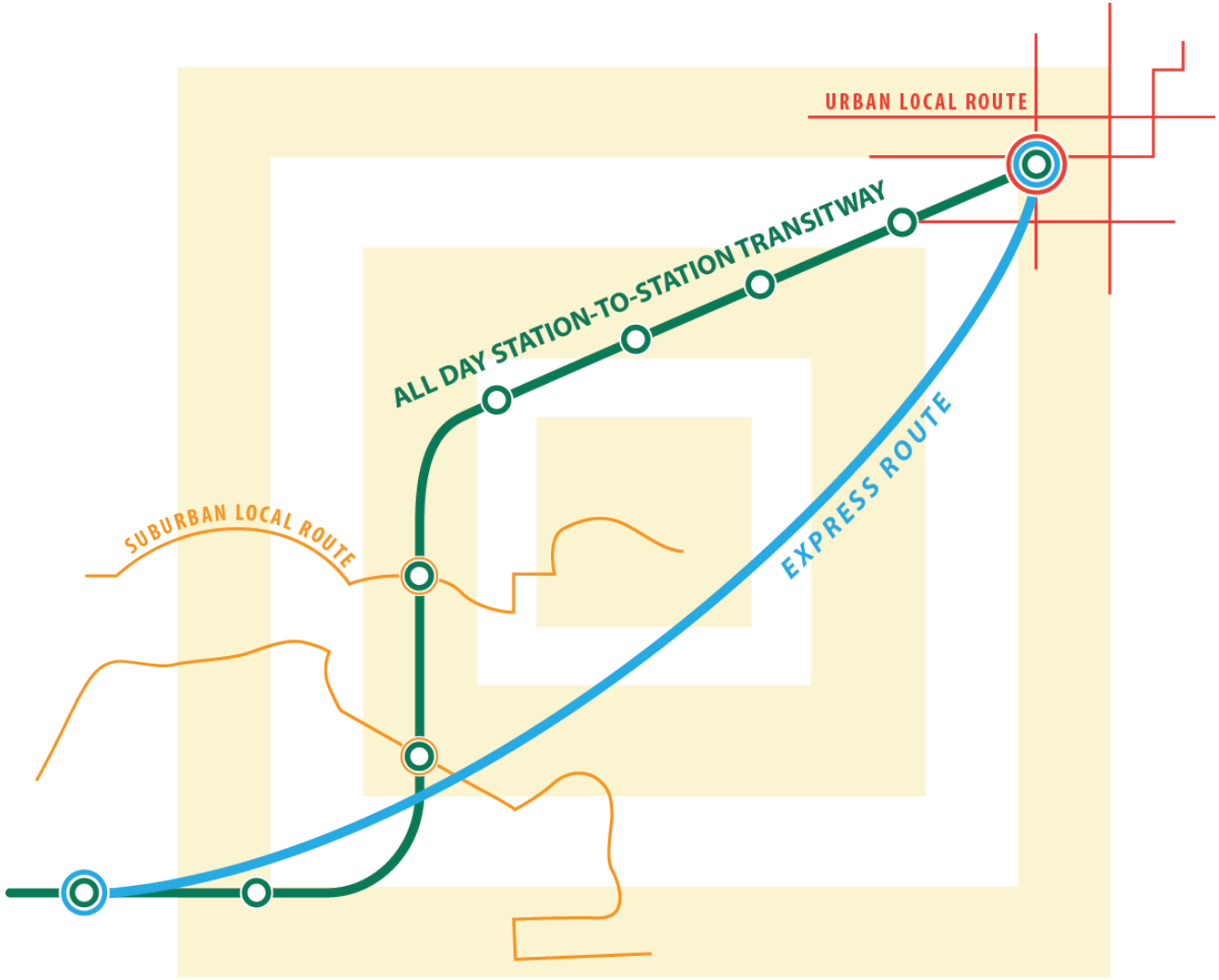
Project Purpose

- Determine transit demand for all-day, BRT-like service
  - *Conceptual routes*
  - *Conceptual station locations*
- Better understand highway BRT demand in the multiple regional corridors and the range of costs and benefits
- Include analysis in future transit and highway studies

Purpose and Need

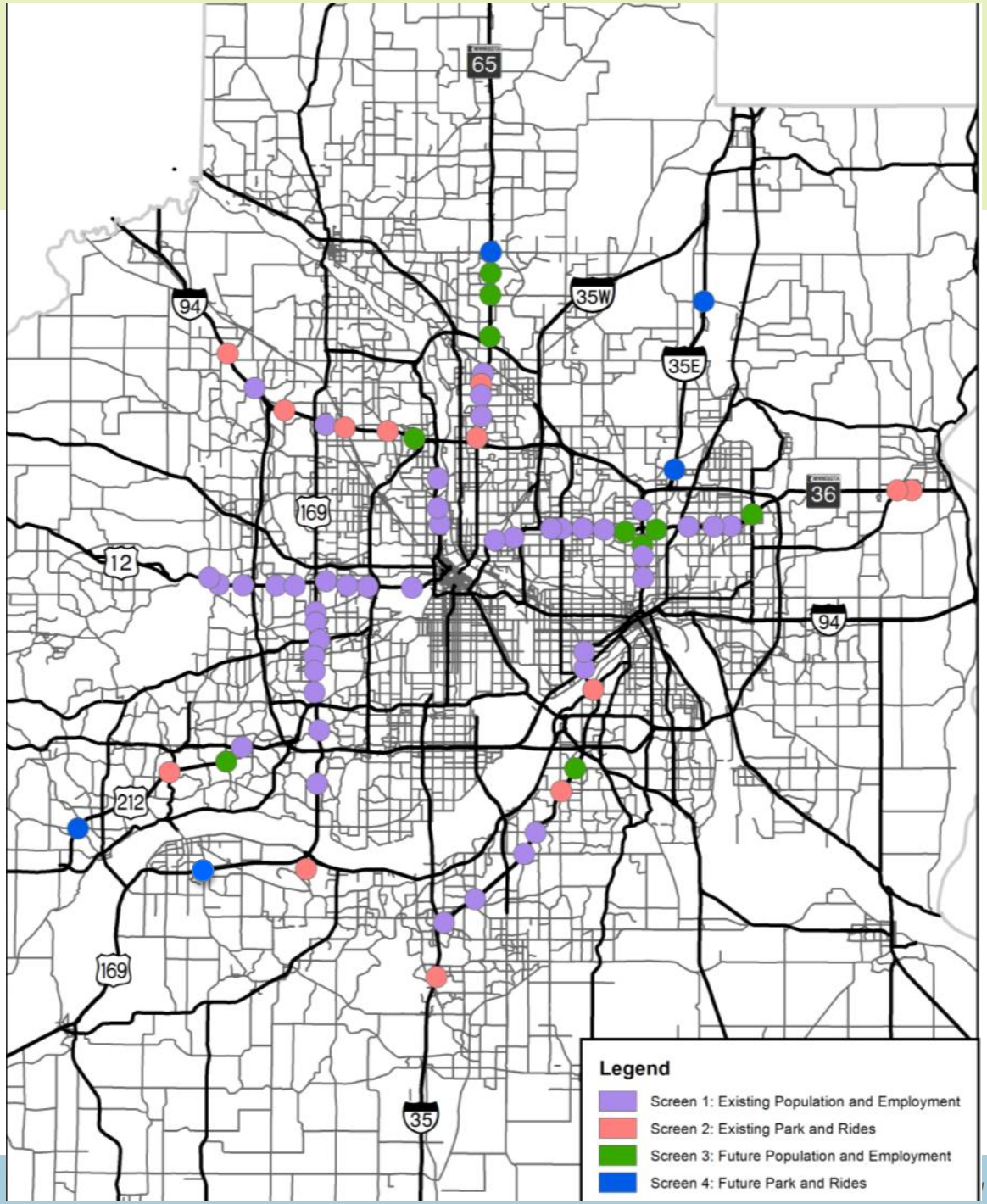
- The purpose of highway BRT is to provide fast, frequent, all-day service that is cost-effective in serving high-demand regional population, employment, and transit nodes in highway corridors.

Family of Transit Services - Example



Initial Station Screening Approach

- Existing population density: 6 people/acre
- Existing employment density: 11 employees/acre
- Existing park-and-ride locations
- Future population and employment growth
- Future park & ride locations


65
94
35W
35E
36
169
12
94
212
169
35
Legend
Screen 1: Existing Population and Employment
Screen 2: Existing Park and Rides
Screen 3: Future Population and Employment
Screen 4: Future Park and Rides

Concept Definition

- Transit connections
- Physical barriers at or near interchanges
- Worker commute origins-destinations
- Zero-car households
- Transitway Guidelines station spacing recommendations

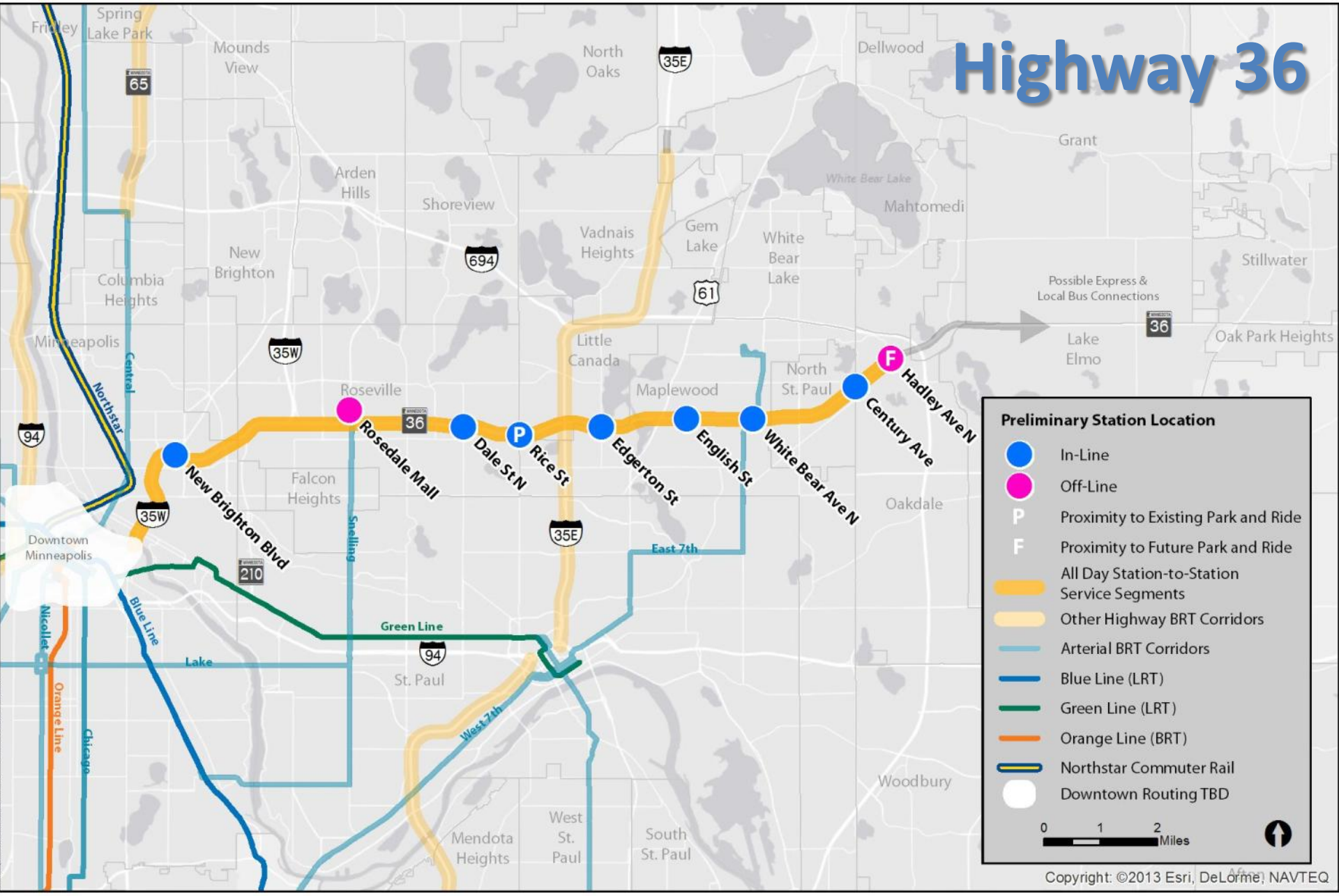
Station Types

Online

Inline

Offline

Highway 36


Spring Lake Park
Mounds View
North Oaks
Dellwood
Grant
Arden Hills
Shoreview
White Bear Lake
Mahtomedi
Vadnais Heights
Gem Lake
White Bear Lake
New Brighton
Stillwater
Columbia Heights
Possible Express & Local Bus Connections
Minneapolis
Little Canada
Lake Elmo
Oak Park Heights
Roseville
Maplewood
North St. Paul
Rosedale Mall
Dale St N
Rice St
Edgerton St
English St
White Bear Ave N
Century Ave
Hadley Ave N
New Brighton Blvd
Falcon Heights
Oakdale
Downtown Minneapolis
East 7th
Green Line
Blue Line
Lake
St. Paul
West 7th
Mendota Heights
West St. Paul
South St. Paul
Woodbury
Northstar
Central
Nicollet
Orange Line
Chicago
Snelling
65
35W
35E
694
61
36
94
210
Preliminary Station Location
In-Line
Off-Line
P Proximity to Existing Park and Ride
F Proximity to Future Park and Ride
All Day Station-to-Station Service Segments
Other Highway BRT Corridors
Arterial BRT Corridors
Blue Line (LRT)
Green Line (LRT)
Orange Line (BRT)
Northstar Commuter Rail
Downtown Routing TBD
0 1 2 Miles
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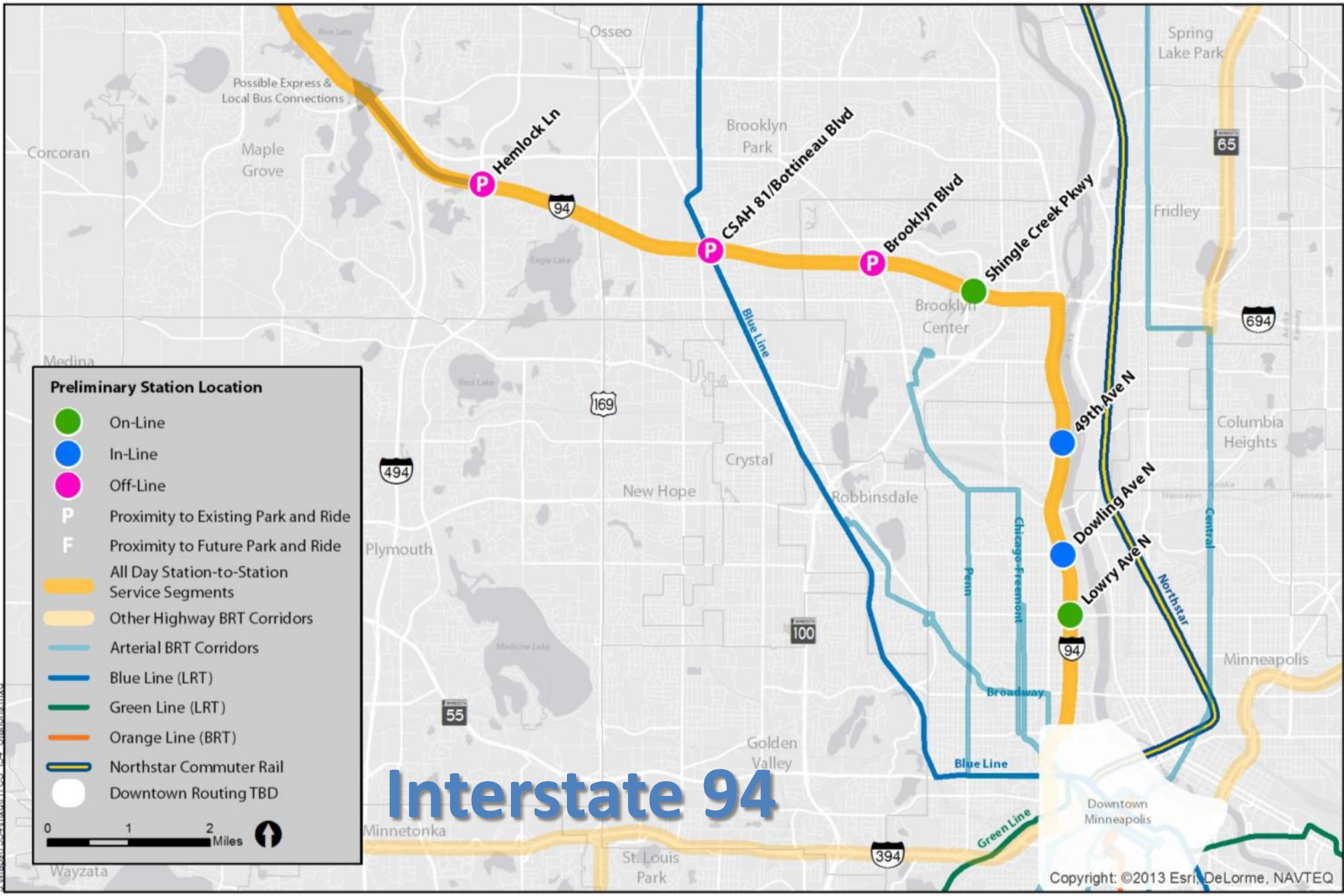
Preliminary Station Location
On-Line
In-Line
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Blue Line (LRT)
Green Line (LRT)
Orange Line (BRT)
Northstar Commuter Rail
Downtown Routing TBD
0 1 2 Miles
Possible Express & Local Bus Connections
Hemlock Ln
CSAH 81/Bottineau Blvd
Brooklyn Blvd
Shingle Creek Pkwy
49th Ave N
Dowling Ave N
Lowry Ave N
Interstate 94
Osseo
Spring Lake Park
Corcoran
Maple Grove
Brooklyn Park
Fridley
Brooklyn Center
Medina
Columbia Heights
Crystal
New Hope
Robbinsdale
Plymouth
Golden Valley
Minneapolis
Minnetonka
St. Louis Park
Wayzata
Downtown Minneapolis
Blue Line
Green Line
Broadway
Penn
Chicago-Fremont
Central
Northstar
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Possible Express & Local Bus Connections
F 125th Ave NE
Highway 65
Coon Rapids
Blaine
Lino Lakes
109th Ave NE
65
35W
Circle Pines
10
93rd La NE
Lexington
610
Spring Lake Park
Northstar
Shoreview
Osborne Rd NE
Mounds View
Brooklyn Park
Arden Hills
North Oaks
Fridley
Mississippi St NE
Moore Lake Dr
Brooklyn Center
53rd Ave NE
694
New Brighton
Columbia Heights
Central
Minneapolis
94
St. Anthony
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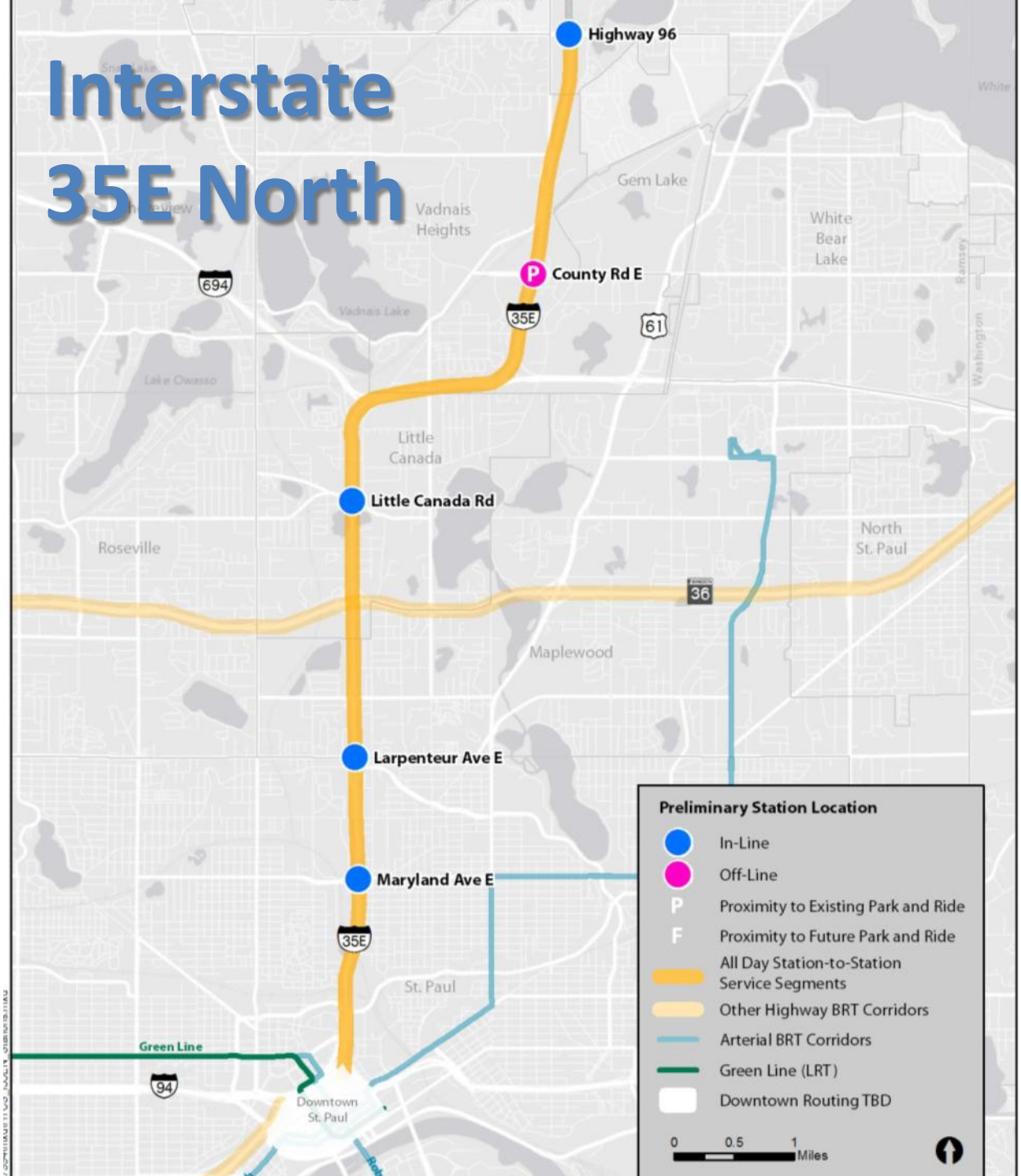
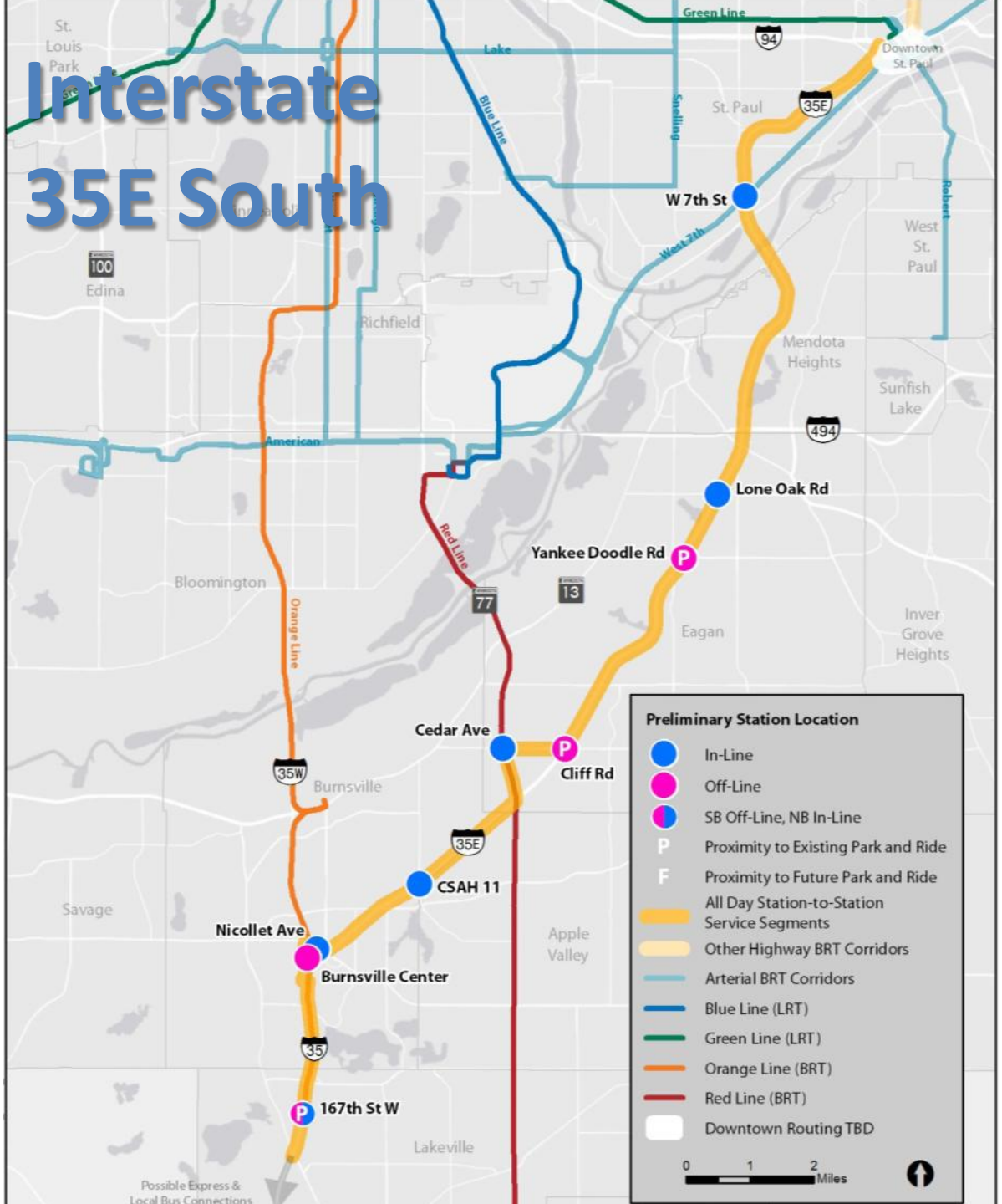
0 1 2 Miles

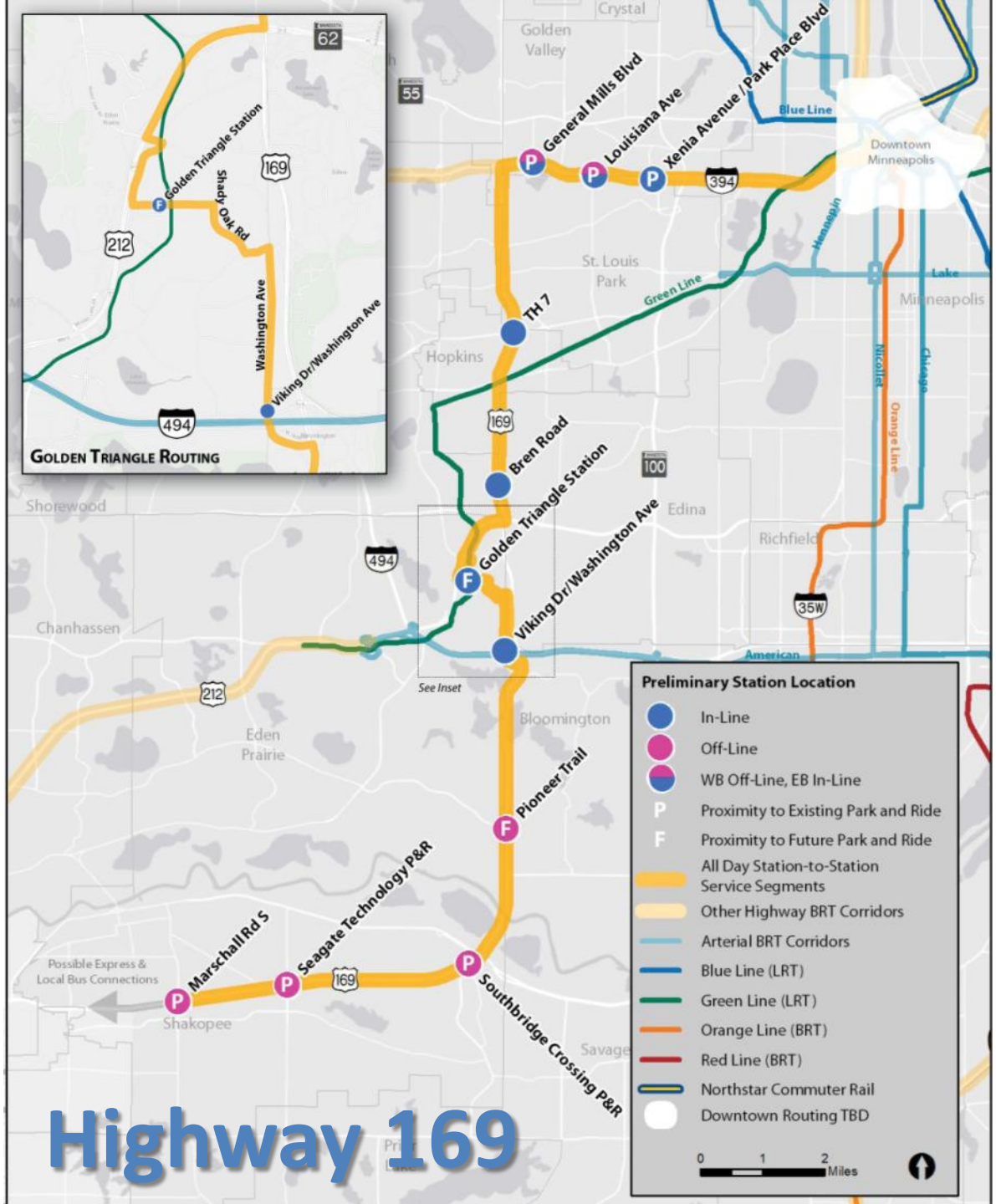
Interstate 35E North



Interstate 35E South



Interstate 394


Golden Triangle Routing
62
169
212
494
Golden Triangle Station
Shady Oak Rd
Washington Ave
Viking Dr/Washington Ave
General Mills Blvd
Louisiana Ave
Xenia Avenue / Park Place Blvd
394
Blue Line
Downtown Minneapolis
Golden Valley
Crystal
55
St. Louis Park
Green Line
TH 7
Hopkins
Bren Road
100
Edina
Shorewood
Chanhassen
See Inset
Richfield
35W
American
Bloomington
Eden Prairie
Pioneer Trail
Seagate Technology P&R
Marschall Rd S
Possible Express & Local Bus Connections
Shakopee
Southbridge Crossing P&R
Savage
Nicollet
Orange Line
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In-Line
Off-Line
WB Off-Line, EB In-Line
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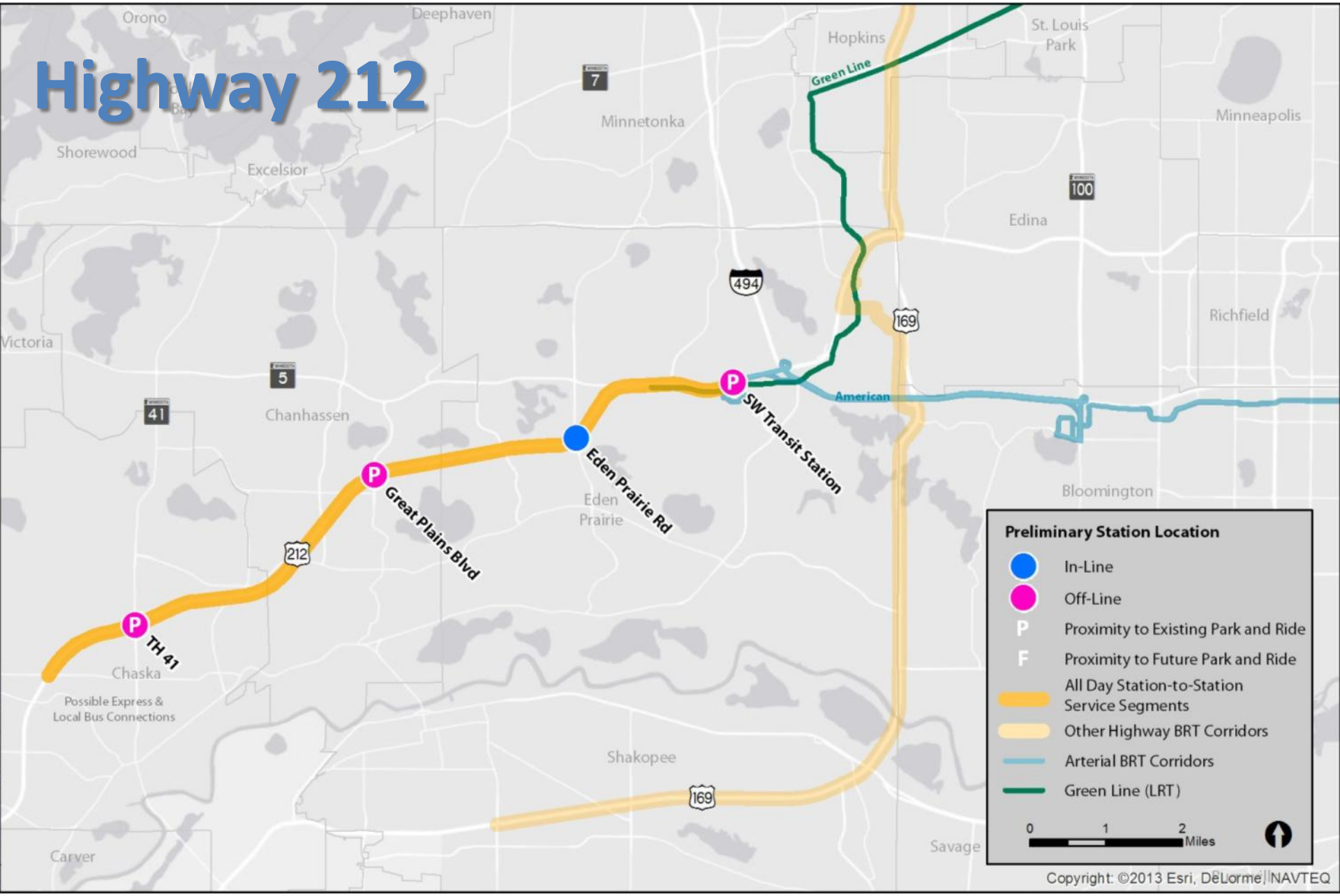
Downtown Routing TBD
0 1 2 Miles

Highway 169

Highway 212


Orono
Deephaven
Hopkins
St. Louis Park
Green Line
Minnetonka
Minneapolis
Shorewood
Excelsior
Edina
Victoria
Richfield
Chanhassen
American
SW Transit Station
Eden Prairie Rd
Great Plains Blvd
Eden Prairie
Bloomington
TH 41
Chaska
Possible Express & Local Bus Connections
Shakopee
Savage
Carver
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Concept Overview

- Existing bus shoulders on highway BRT corridors
  - Does not preclude managed lanes from future study
- No additional right-of-way required for stations
- Downtown stations not in capital cost (if needed)
- Bus maintenance facility costs are per bus cost
- Station shelter costs are assumed to be a smaller version of Red Line Stations
- Station shelter amenities include:
  - Off-board fare collection
  - Trash Receptacles
  - Bike Racks
  - Real-Time Signage

Service Plans

- Corridor service plans based on *Regional Transitway Guidelines*
- Span
  - 16 hours on weekdays and Saturday
  - 13 hours on Sunday
- Frequency
  - 15 minutes all day on weekdays
  - 30 minutes on Saturday evenings and Sundays

Service Plans

- Minor modifications made to some routes in the corridors to provide enhanced connectivity including some new circulator/feeder routes
- Existing corridor express routes remain in place, with at least one stop at a Highway BRT station

Cost Estimates Summary (2013 dollars)

Corridor	Hwy 36	I-94	Hwy 65	I-35E North	I-35E South	I-394	Hwy 169	Hwy 212
# of Stations	9	7	7	5	9	7	11	4
Capital Cost	Medium	High	Medium	Low	Medium	Medium	Medium	Low
Operating Cost	Medium	Medium	Low	Low	High	Medium	High	Low

Capital Costs

High =	$50-100 Million
Medium =	$25-50 Million
Low =	$14-25 Million

Operating Costs (*Station-to-station Only)*

High =	$7.5-9 Million
Medium =	$5-7.5 Million
Low =	$3-5 Million

Ridership Forecast Assumptions

- 2030 No Build
- Highway BRT Station-to-Station
  - Station Locations and Service
  - Background/Connectivity Service Changes
  - Travel Times

- Consideration of Modal Benefits

Corridor Daily Ridership Summary

Corridor	Hwy 36	I-94	Hwy 65	I-35E North	I-35E South	I-394	Hwy 169	Hwy 212
Station-to-Station	High	Medium	Low	Low	Medium	High	High	Low
Other Routes	Low	High	Low	Low	Low	High	Medium	Medium

Station-to-Station

High = 6,000-10,000

Medium = 3,000-6,000

Low = 600-3,000

Other Routes

High = 5,000-8,500

Medium = 3,000-5,000

Low = 400-3,000

Cost and Ridership Summary

Corridor	Hwy 36	I-94	Hwy 65	I-35E North	I-35E South	I-394	Hwy 169	Hwy 212
# of Stations	9	7	7	5	9	7	11	4
Capital Cost	Medium	High	Medium	Low	Medium	Medium	Medium	Low
Operating Cost	Medium	Medium	Low	Low	High	Medium	High	Low
Station-to-Station Ridership	High	Medium	Low	Low	Medium	High	High	Low

Modeling Sensitivity Tests

- Frequency changes, two different tests
  - 30 minutes in off-peak to save costs
  - 10 minutes in peak
- Hwy 65 interlined with I-94 to downtown
- Hwy 169 connection with Green Line at Hopkins Station versus Golden Triangle station

Next Steps

- Develop evaluation factors
  - Mobility
  - Cost-effectiveness
  - Readiness
- Corridor prioritization recommendation for further analysis in future studies
- Incorporate results of other corridor studies
- Draft final report – Early 2014

Questions?

Cole Hiniker

Senior Planner, MTS

651-602-1748

Cole.hiniker@metc.state.mn.us