Freeway Connections Study
APPENDIX T11 – FREEWAY CONNECTIONS STUDY

Introduction

Since 2016, MnDOT has been working with neighborhoods, community groups, district councils, local governments and others interested in the future of I-94 between St. Paul and Minneapolis in an effort to plan for transportation changes on and along the freeway. This effort is known as Rethinking I-94. The work described in this technical memorandum was conducted as part of the initial phase of Rethinking I-94 conducted between 2016 and 2018.

During the infancy of the study, the Rethinking I-94 Study Team received questions from agency stakeholders and the public regarding access to and from I-94. A portion of these questions focused on five interchanges within the study area that did not provide full access or interchanges that have been previously studied for access changes. In response to these questions, the Study Team conducted an evaluation at these five locations, which include the following connections that do not exist today:

- Westbound I-94 to northbound I-35W and southbound I-35W to eastbound I-94
- Southbound TH 280 to Cretin Avenue
- Ayd Mill Road extension to I-94
- Eastbound I-94 to southbound I-35E and northbound I-35E to westbound I-94
- Eastbound I-94 to Etna Street and Etna Street to westbound I-94

This memorandum documents the assumptions and results of the planning level evaluation. The PowerPoint presentation included in Attachment 1 provides additional detail that was presented to the Rethinking I-94 Technical Advisory Committee (TAC) on March 15, 2017.

Methodology/Assumptions

A planning level evaluation was conducted to understand the magnitude of traffic volumes that would use the connections that aren’t provided today. This evaluation also accounts for the traffic volume shifts that correspond with these connections since some roadways would experience an increase in traffic volume while other roadways would experience a decrease. The main assumptions of the evaluation are:

- The Year 2010 Validated Activity Based Travel Demand Model was used supplemented with year 2015 origin-destination data
- Only daily volumes were calculated and reported
• The connections are feasible to construct and all existing connections are maintained

As mentioned in the last assumption bullet, this evaluation assumes all connections are feasible to construct and all existing connections are maintained. If any of these connections are considered for construction under a future project, a full geometric and traffic evaluation needs to occur. The implementation of one of these connections may significantly change current access or may require a major change in the current infrastructure.

Key Findings

Based on the results of the connection evaluation, the following findings and conclusions are offered for consideration:

WESTBOUND I-94 TO NORTHBOUND I-35W AND SOUTHBOUND I-35W TO EASTBOUND

• Both connections will carry approximately 4,000 trips per day (existing two-way volume)
  o The daily traffic volume on the Mississippi River Bridge will increase by 2,000 trips per day
  o Most of this traffic has a local origin and/or destination
  o The daily traffic volume on TH 280 will decrease by 500 vehicles
  o Slight reductions in daily traffic volumes (less than 100) are expected on Hiawatha Avenue, Huron Boulevard, University Avenue and 10th Street River Bridge

• For comparison purposes, the lowest ramp volume today within the study area is 3,000 trips per day (one-way volume). These ramps would carry the fewest vehicles of any ramp along the corridor.

• These potential connections would be challenging to construct, which may result in modification of existing access.

SOUTHBOUND TH 280 TO CRETIN AVENUE:

• The daily traffic volume on the existing off ramp to Cretin Avenue will increase by 3,000 trips per day
  o Largest reduction in traffic will occur on University Avenue (approximately 2,000 fewer vehicles just east of TH 280)
  o Approximately 2,000 additional vehicles per day are expected on Cretin Avenue between I-94 and Marshall Avenue, minimal change south of Marshall Avenue
• This assumes the connection is reasonable to maneuver (simple weave segment)

• Currently, the westbound on ramp to I-94 is 3,000 vehicles per day more than the eastbound off ramp (this ramp allows for traffic to access TH 280)

**AYD MILL ROAD EXTENSION TO I-94:**

• The daily traffic volume on the new segment of Ayd Mill Road between I-94 and Selby Avenue will be approximately 10,000 trips per day
  - Most of this traffic will come from the existing roadways of Snelling Avenue, Pascal Street, Hamline Avenue and Lexington Parkway
  - Minimal changes to regional traffic is expected, most of the changes in traffic volumes will occur on the local roadway network

• This assumes the connection will tie into the one-way frontage roads at I-94 (no new ramps to/from I-94)

• Ayd Mill Road currently serves about 24,500 daily trips near I-35E and about 11,500 west of Hamline Avenue

**EASTBOUND I-94 TO SOUTHBOUND I-35E AND NORTHBOUND I-35E TO WESTBOUND**

• Both connections will carry approximately 2,000 trips per day (existing two-way volume)
  - These connections will mainly serve trips that have an origin and/or destination along Dale Street north of I-94
  - Slight reductions in daily traffic volumes are expected on Kellogg Boulevard, Marion Street, Dale Street south of I-94 and Lexington Parkway south of I-94

• For comparison purposes, the lowest ramp volume today within the study area is 3,000 trips per day (one-way volume). These ramps would carry the fewest vehicles of any ramp along the corridor.

• These potential connections would be challenging to construct, which may result in modification of existing access.

**EASTBOUND I-94 TO ETNA STREET AND SOUTHBOUND ETNA STREET TO WESTBOUND**

• Both connections will carry approximately 3,000 trips per day (existing two-way volume)
o These connections will mainly reduce volumes by 1,000 vehicles per day at Mounds Boulevard, White Bear Avenue and TH 61 where vehicles are making a U-turn at Burns Avenue

- For comparison purposes, the lowest ramp volume today within the study area is 3,000 trips per day (one-way volume). These ramps would carry the fewest vehicles of any ramp along the corridor.

- These potential ramps were evaluated as part of the Gateway Corridor Project but were not recommended because they were not needed as part of the project.

Overall, the westbound I-94 to northbound I-35W/southbound I-35W to eastbound I-94 and the eastbound I-94 to southbound I-35E/northbound I-35E to westbound I-94 will produce low utilization and will be challenging to construct. The southbound TH 280 to Cretin Avenue, Ayd Mill Road extension to I-94 and eastbound I-94 to Etna Street/ Etna Street to westbound I-94 will produce higher utilizations and could be beneficial to local roadway traffic issues. The graphical representations of this data are shown in the attached PowerPoint.

Prepared by: SRF Consulting Group, Inc.
Rethinking I-94 – Missing Connections Analysis

TAC Meeting - 3/15/2017
Assumptions

• Five locations were analyzed

• Year 2010 Validated Activity Based Model was used

• Only daily volumes are reported

• All existing connections are maintained
  • Does not consider geometric feasibility

• Sensitivity test: the results are considered planning level and are only intended to understand the magnitude of traffic volume shifts
Locations Evaluated

- WB I-94 to NB I-35W/SB I-35W to EB I-94
- SB TH 280 to Cretin Avenue
- Ayd Mill Road to I-94 Frontage Roads
- EB I-94 to SB I-35E/NB I-35E to WB I-94
- EB I-94 to Etna Street/Etna Street to WB I-94
Summary

- Potential connections will mainly serve trips that have a local origin and/or destination.
- Potential connections will carry the fewest vehicles of any ramp along the corridor.
- Potential connections will be challenging to construct, which may result in modification of existing access.

Most trips using this connection will start or end in these areas:

- Hiawatha Ave
- Huron Blvd and University Ave
- 10th Street Bridge

+2,000 Daily Trips

+4,000 Daily Trips (Two-Way Volume)

-500 Daily Trips

Slight Reductions on:
- Hiawatha Ave
- Huron Blvd and University Ave
- 10th Street Bridge
Summary

• Assumes the connection is reasonable to maneuver (simple weave segment)
• Currently, the westbound on-ramp from Cretin Ave is 3,000 vehicles per day more than the eastbound off-ramp
• Largest reduction is on University Avenue
• Minimal changes south of Marshall Avenue
Ayd Mill Road to I-94 Frontage Roads

Summary

- Connection will tie into the one-way frontage roads at I-94 (no new ramps to I-94)
- Ayd Mill Road currently serves about 24,500 daily trips near I-35E and about 11,500 west of Hamline Avenue
- Minimal changes to the regional system

The Ayd Mill Road extension will mainly pull traffic from local routes

+10,000 Daily Trips

-1,500 Other Routes

+1,500

+500

-3,000

-1,000

2,500

-2,000

+500

Marshall Ave

Pascal St

Hamline Ave

Lexington Pkwy

University Ave

+500

+1,500

-1,500 Other Routes

+10,000 Daily Trips

+500
EB I-94 to SB I-35E/NB I-35E to WB I-94

Summary

• Potential connections will mainly serve trips that have an origin and/or destination Dale Street north of I-94

• Potential connections will carry the fewest vehicles of any ramp along the corridor

• Potential connections will be challenging to construct, which may result in modification of existing access

Slight Reductions on:
- Kellogg Blvd
- Marion St
- Dale St south of I-94
- Lexington Pkwy south of I-94 (-500)

+2,000 Daily Trips (Two-Way Volume)

+1,000

-500

+1,000

-1,000

-1,000
Summary

- Currently, about 100 vehicles perform a U-turn on TH 61 just south of I-94 during the a.m. and p.m. peak hour.
- Potential connections were evaluated as part of the Gateway Corridor Project but not recommended.

Reductions on:
- Mounds Blvd Ramps
- White Bear Ave Ramps
- TH 61 South of I-94

+3,000 Daily Trips (Two-Way Volume)
Summary of Findings

• Lower Utilization Missing Connections
  • WB I-94 to NB I-35W/SB I-35W to EB I-94 (challenging to construct)
  • EB I-94 to SB I-35E/NB I-35E to WB I-94 (challenging to construct)

• Higher Utilization Missing Connections
  • SB TH 280 to Cretin Avenue
  • Ayd Mill Road to I-94 Frontage Roads
  • EB I-94 to Etna Street/Etna Street to WB I-94
Thank you!

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