Study Report

May 2002

Highway 52/42/55 Interchange and Highway 55 Regional Corridor Study
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Executive Summary

Introduction

This Highway 52/42/55 Interchange Partnership Study is part of Mn/DOT’s statewide Moving Minnesota initiative and focuses on the needs of Highway 55 and Highway 42 between Highway 52 and the City of Hastings. The key outcomes of this Partnership Study include the identification of a preferred ultimate roadway system plan for the study area and the identification of a preferred concept for the Highway 52/42 interchange. The preferred interchange concept can immediately progress into preliminary design and official mapping activities. Right-of-way can then be reserved for the ultimate interchange configuration.

The Executive Summary presents the purpose and need for the study and highlights the key outcomes of this study process. Details regarding the following study content are provided in the body and Appendix of this report:

- Public involvement
- Background/issues identification
- Overall study area system options identification and evaluation
- Highway 52/42 interchange alternatives identification and evaluation

A summary of major study area issues is presented in Figure ES-1.

Purpose and Need

The purpose and need of this study is to:

- Assess the need to improve the study area roadway network to accommodate land use development plans of surrounding communities 20 years into the future.

- Maintain Highway 42 as an important roadway for east-west through traffic. This will include considering improvement to a four-lane facility and managing the spacing of direct access roadways.

- Maintain Highway 52 as an important roadway for north-south through traffic. This includes assessing the need to eliminate the existing Highway 52/55 interchange and assessing the need to reconstruct the existing Highway 52 interchange at Highway 42. In conjunction with the elimination of the Highway 52/55 interchange, the potential to combine Highway 42 and Highway 55 into a continuous east-west principal arterial will be considered.

- A supporting roadway system is needed including frontage and backage roads to serve the identified land uses.

- Address the existing limited visibility between the Highway 52 ramp approaches along Highway 42 under the Highway 52 bridges and alignment of Highway 42. Address the deficient ramp lengths at the Highway 52/42 interchange.
Highway 52/55/42 Interchange Partnership Project

Figure ES-1

Summary of Major Issues

- Potential Improvement Areas
- Existing/Planned Land Uses

- High Priority Regional Corridor
- Heavy Commuter Traffic Use
- Topographical/Land Use Constraints Preclude Expansion

Highway 52
- Long Term Vision as a Freeway
- High Priority Interregional Corridor

Highway 55
- At-Grade Rail Crossing

Highway 42
- Future Capacity Deficiencies for existing two-lane facility

Highway 46
- Recent Highway 46 Intersection Realignment
- Planned Future Interchange
Preferred Highway 52/42/55 System Option

Due to the unique transportation flow characteristics of the Highway 52/42/55 triangle, a comprehensive range of eight system level alternatives were developed and assessed. Through a comparative screening and evaluation process, the Project Management Team (PMT) was able to identify a preferred system option. The preferred system option has been identified as Option F and is shown graphically in Figure ES-2.

The following positive characteristics of Option F outweigh the shorter travel distance (1.4 miles) and travel time (1.7 minutes during peak periods) associated with other options that maintain the existing Highway 55 diagonal segment and interchange with Highway 52.

- Eliminates substandard Highway 52/55 interchange.
- Upgrades Highway 42/55 to a four-lane continuous east-west facility from west of Highway 52 to Highway 61 in Hastings. This will improve continuity/reliability for east-west through traffic.
- Reorients arterial commuter traffic from a two-lane Highway 55 to an upgraded four-lane Highway 42/55 facility. The diagonal segment of Highway 55 becomes a collector roadway (Courthouse Boulevard) compatible with existing and future direct property access.
- Eliminates weave movement from 117th Street interchange to Highway 52 left hand exit.
- Provides intermediate 140th Street crossing of Highway 52 between 117th Street and Highway 42 interchanges. This crossing will enhance the integrity of Highway 52 and the adjacent interchange by reducing local traffic use of these facilities.
- Environmental impacts limited to impacts on agricultural land along Highway 42 and in the Highway 52/42 interchange area.
- Development of Highway 42/55 as a continuous east-west facility that will minimize conflicting side street volumes. This in turn will minimize the need for a signal.
- Avoids support roadway improvements along the topographically constrained Highway 55 corridor.

Two critical support roadway connections were assessed in detail during this study resulting in the following preferred treatments:

- The Courthouse Boulevard intersection with Highway 42/new 55 would be relocated approximately ½-mile west of the existing west intersection of Highway 42 and Highway 55. Courthouse Boulevard would form the minor street leg (see Figure ES-2).
- The Courthouse Boulevard connection to 117th Street would be made adjacent to the east side of Highway 52. This would require a constrained segment along the Pine Bend Cemetery with constrained roadway dimensions and railroad clearance.
Highway 52/42 Interchange Alternative

A wide range of configuration alternatives for the Highway 52/42 interchange have been considered and assessed with respect to operational utility, compatibility with future land use development, and overall land area impacts. The elimination of the Highway 55 interchange with Highway 52 would require the reorientation of current Highway 55 traffic between the north and east to the Highway 42 interchange. How this major movement between the north and east is accommodated is a major factor in the development and assessment of Highway 42 interchange alternatives.

Six alternatives have been identified that provide a comprehensive range of configurations for the Highway 52/42 interchange.

Alternative 5B, identified as the preferred interchange configuration, is shown graphically in Figure ES-3. This configuration provides a high level of overall interchange operations, ensures free flow operations for Highway 42 through traffic by eliminating the need for signals, and provides free flow ramps for all major movements. The operational integrity of the interchange is high due to the provision of free flow conditions and can be easily signed and understood by motorists. Furthermore, the interchange configuration and absence of signals is highly compatible with the heavy existing/future truck traffic activity through the interchange.

Implementation Plan

An Implementation Plan has been developed for the preferred study area roadway system alternative as shown in Table 1. A logical order of improvements is proposed to ensure that the best possible traffic flow/operations are maintained over time. Actual implementation timeframes will be driven by needs along study area roadways and funding availability. Based on the 2020 Land Use Plan and year 2025 forecast traffic volumes, this Implementation Plan could have a 25-year or greater timeframe based on statewide funding priorities. This Implementation Plan assumes the completion of the 117th Street interchange (including the required bridge structure for the shared Union Pacific Rail and 140th Street underpass) and the Highway 55/Highway 42/County Road 85 intersection realignment improvement projects.
### Table 1
Implementation Plan
Highway 52/42/55 Interchange Partnership Study

<table>
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<tr>
<th>Priority Improvement Elements</th>
<th>Stage 1</th>
<th>Stage 2</th>
<th>Stage 3</th>
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<td>Reconstruct Highway 52/42 interchange including four-lane section on Highway 42.</td>
<td>Realign Highway 42 and Highway 55 to form a continuous east-west facility through the Highway 55/42 west junction area</td>
<td>Remove existing Highway 55 interchange with Highway 52.</td>
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**Key associated improvement elements that may be done concurrently with major improvement element.**

- Construct rail overpass north of 140th Street (proposed by 117th Street design for 2002-2004 construction).
- Construct 140th Street connection to under Highway 52.
- Revise west side Highway 52 frontage road adjacent to Koch to right-in/right-out.
- Realign Courthouse Boulevard and Emery Avenue to form a single relocated full access intersection.
- Connect Courthouse Boulevard with 117th Street on the east side of Highway 52.
- Upgrade remaining two-lane segments of Highway 55 to form a continuous four-lane divided facility.

System plan roadway improvements not addressed above as needed in conjunction with land use development.

**Next Steps**

Preliminary design of the preferred Highway 52/42 interchange configuration concept will be developed as the next phase of this Partnership Study. Key components include:

- An official map of the interchange that will assist responsible agencies in guiding future land development near the interchange.

- Preliminary design is expected to be completed by the summer of 2002.

- Mn/DOT has committed to providing an adequate span in the proposed Highway 52 railroad overpass bridges for a local roadway crossing of Highway 52.

- The Highway 52 bridges are the responsibility of Mn/DOT as part of the 117th Street interchange improvements.

- The City of Rosemount will take responsibility for the local roadway improvements.

The memorandum of understanding (MOU) between Mn/DOT and the City of Rosemount regarding the Highway 52 railroad overpass is included in Appendix F. Key commitments by Mn/DOT and the City of Rosemount of this MOU are as follows.
1. As part of the Highway 52/117th Street interchange and railroad grade separation project, scheduled for construction in 2002-2004, Mn/DOT will extend the span on the Highway 52 bridges over the railroad to provide local street system continuity by providing a corridor for 138th/140th Street under the Highway 52 bridges. Mn/DOT will design, fund, and maintain a bridge that accommodates the typical section as shown in Exhibit 1 (revised on 12/20/01).

2. This will be the only local street grade separation with Highway 52 that Mn/DOT will financially participate in between Highway 42 and 117th Street.

3. Mn/DOT will continue to work within the State’s project development and cooperative agreement processes to develop a frontage road system as identified in the Highway 52/42/55 IRC Partnership Study with the City.

City of Rosemount

4. The City will design, construct, and fund all costs for the 138th/140th Street connection including acquiring the necessary right-of-way.

5. The City will work to develop a frontage road system in accordance with the Highway 52/42/55 IRC Partnership Study that will permit future closure of at-grade access points north of 138th Street and will not request additional at-grade access intersections on Highway 52.

6. The City agrees to close the existing at-grade access on Highway 52 at 140th Street when the new 138th/140th Street connection is completed.

7. In conformance with the Mn/DOT access guidelines for High Priority Regional Corridors and the Highway 42 Corridor Study, the City will include within their transportation plan the recommendations from the Highway 52/42/55 Partnership Study. This includes providing right-of-way where possible through platting, constructing a supporting local street system and working with Mn/DOT through the State’s project development and cooperative agreement program in the development of the Highway 52/42 interchange to:

   - Move Connolly Road approximately ½-mile east of the east Highway 52/42 (Highway 55) interchange ramp with right-in/right-out access.
   - Plan for a full access intersection approximately 1-mile east of the east Highway 52/42 (Highway 55) interchange ramp.
Highway 52/42/55 Interchange and Highway 55 Regional Corridor Study

Prepared for Dakota County, Minnesota

1.0 Introduction/Intent of the Study

This Highway 52/42/55 Interchange Partnership Study is part of Mn/DOT’s statewide Moving Minnesota initiative that seeks to protect and enhance the safety and mobility of interregional corridors (IRCs) that provide important transportation links between Minnesota’s regional trade centers. Seven critical IRCs have been identified for detailed study, including Highway 52 between the Twin Cities and Rochester. Recently completed studies in the area include the Highway 52 Corridor Study between Rosemount and Rochester and the Highway 42 Corridor Study through Scott and Dakota Counties. These two studies recommended a detailed assessment of improvements to study area roadways. A Highway 52 IRC Study is being done concurrently with this study.

This study focuses on the needs of Highway 55 and Highway 42 between Highway 52 and the City of Hastings. These needs have direct implications upon the operations of Highway 52, primarily at the Highway 52 interchanges with Highway 55 and Highway 42. As the study progressed, it became clear that an overall roadway system plan for Highway 52, Highway 42, and Highway 55 needed to be identified before the needs of specific locations could be addressed. The key outcomes of this Partnership Study include the identification of a preferred ultimate roadway system plan for the study area and the identification of a preferred concept for the Highway 52/42 interchange. The preferred interchange concept can immediately progress into preliminary design and official mapping activities. Right-of-way can then be reserved for an ultimate interchange improvement configuration.

A multi-step process has been used to logically progress from the system level to location-specific improvement concepts. The report format follows this multi-step process:
1. First, relevant issues in the study area relative to the transportation roadway network are identified.

2. Second, system-level improvement alternatives are identified and assessed.

3. Third, a more detailed development and assessment of improvements at critical locations along study area roadways are presented.

4. Finally, a proposed Implementation Plan is recommended to implement the preferred study area improvements over time.

The long-term needs of the Highway 55 corridor from Highway 52 to Highway 61 (east of the study area boundary) are also addressed in this study in accordance with Mn/DOT’s High Priority Regional Corridor Guidelines.

1.1 Study Area
The study area encompasses the transportation roadway network in the City of Rosemount and Nininger Township, and is focused upon the triangle formed by three major roadways: Highway 52, Highway 55, and Highway 42. The study area is bounded by Highway 71 to the west, the Hastings city limits to the east (Jacob Avenue), County Road 48 to the south, and 117th Street to the north (see Figure 1). The study area includes large-scale industrial land uses, such as Koch Refinery, smaller industrial and commercial operations, residential homes, transmission tower overhead utility lines, farmland and golf courses, wetlands, and the Mississippi River Valley and its designated Critical Area.

1.2 Relevant Previous Studies
Several previous studies have been reviewed to assist in understanding relevant issues for this Partnership Study. These studies are listed below, followed by a summary of relevant issues for this current study:

- The City of Rosemount Comprehensive Guide Plan Update 2000 (October 1993)
- Highway 52 Corridor Study (October 1993)
- County Highway 42 Corridor Study Final Report (September 1998)
- Mississippi River Regional Trail Project, Dakota County Office of Planning (February 1999)
- The City of Rosemount 2020 Comprehensive Plan Update, Final Draft (February 1999)
- Highway 52 Corridor Study and Management Plan (March 2000)
Figure 1
Study Area Map

Interchange Partnership Project

TH 52 CSAH 42 TH 55

Baldwin Lake
Mooers Lake
Mississippi River
Spring Lake
Lake Rebecca
Lake Isabelle
Lake Conley
Inver Grove Heights
Rosemount
Coates
Nininger
Hastings
• 117th Street Interchange Design

• Highway 55/Highway 42/County Road 85 Improvement

The City of Rosemount Comprehensive Guide Plan Update 2000 (October 1993)

• Recognizes Highway 52 as a principal arterial and Highway 42 as a minor arterial.

• Identifies access control standards for range of roadway classifications.

• Recognizes the classification of Highway 42 as a principal arterial by Dakota County, but took exception to this classification due to residential buffering and commercial access concerns.

Highway 52 Corridor Study (October 1993)

• Short-term improvement concepts include the frontage road west of Highway 52 to extend south to Highway 42, closing the frontage roads current southerly access to Highway 52, closing 140th Street east and west access to Highway 52 (east currently closed), and a new east frontage road connecting 140th Street to Highway 42 (currently constructed).

• Long-term improvement concepts include total reconstruction of the Highway 42 interchange and extension of the east frontage road from 140th Street to Highway 55.

County Highway 42 Corridor Study Final Report (September 1998)

• Recommended Corridor Implementation Plan included:
  – Maintaining the present non-freeway principal arterial functional classification of Highway 42.
  – Functionally classifying A-minor arterials on the supporting roadway system adjacent to County Highway 42.
  – Adoption of access spacing guidelines including a target one-half mile average spacing between full access intersections, partial access at intermediate locations, and no private access along Highway 42.
  – Construction of continuous trails along the Highway 42 corridor with grade separations where feasible.
  – Construction of an enhanced system of supporting roadways to improve mobility of the Highway 42 corridor.
  – Long-term implementation (6+ years) of the 140th Street extension east from Shannon Parkway to CR 71.
– Long-term implementation of the Highway 55 reroute south on Highway 52 and east on Highway 42, turnback Courthouse Boulevard to the City. Close existing Highway 55 interchange with Highway 52 and extend Courthouse Boulevard north to future interchange.

– Long-term implementation of the extension of the four-lane cross section from Highway 52 to Highway 55 in conjunction with the recommended rerouting of Highway 55, with a single point urban interchange at Highway 52 ramps (dual left turn lanes on each leg).

Mississippi River Regional Trail Project (February 1999)
• Identifies plan for Mississippi River Regional Trail Alignment through the study area generally following the top of the river bluff.

City of Rosemount 2020 Comprehensive Plan Update (February 1999)
• Recognized Highway 52, Highway 42, and Highway 55 as principal arterial roadways.

• Intended to incorporate the recommendations of the Highway 42 Corridor Study and Highway 52 Study.

• Restated access control standards.

• Recognized that Highway 52 in the city and Highway 55 between Nininger Township and Inver Grove Heights is expected to be over road capacity in 2020.

• Recognized the planned Highway 42 and Highway 55 realignment and intersection improvement (west junction of Highway 55 and Highway 42) as recommended by the Highway 42 Corridor Study.

• Recognized potential improvement of the Highway 52 and Highway 42 interchange redesign with frontage roads.

• The Rosemount Comprehensive Plan includes a year 2020 Land Use Plan for the entire city, including the Highway 52/42/55 triangle. The Land Use Plan includes expansion of industrial/mixed land use in the study area.

Land use boundaries from the City of Rosemount Year 2020 Land Use Plan has been incorporated into key report exhibits.

The City of Rosemount Land Use Planning Study (ongoing)
Rosemount is conducting a Land Use Planning Study in the area of the Highway 52/42 interchange concurrent with this Partnership Study. Preliminary interchange concepts and planned land use development
areas are being shared between the Land Use Planning Study and this Partnership Study.

**Highway 52 Corridor Study and Management Plan (March 2000)**

- **Study findings included:**
  - Highway 52 2020 traffic volumes will reach 39,000 vehicles per day (vpd) just south of County Highway 48.
  - Heavy commercial traffic has increased at rates faster than automobile traffic, and increases in truck traffic are expected to continue.
  - Highway 52, a high-priority IRC, faces performance threats and is at risk of signal proliferation due to the increasing levels of traffic.

- **The vision for Highway 52 is for development into a freeway facility.**

- **The existing interchange at Highway 42 is identified for reconstruction in the Corridor Management and Improvement Plan, Strategy 1.**

- **Policies identified in Strategy 1 (convert selected at-grade intersections to grade-separated interchanges) include the planning of a network of local and county roads to support the upgrade of existing intersection locations to grade separated interchanges, and that no median openings will be allowed within 1-mile of the end of interchange ramps.**

**117th Street Interchange Design**

Replacement of the existing signalized intersection of Highway 52 and 117th Street with a grade-separated interchange is currently being designed by Mn/DOT and is scheduled to begin construction in the fall of 2002 with completion in the fall of 2004. This interchange will result in much safer and efficient traffic operations. The planned improvement will have implications on the operations of the Highway 52/55 interchange, which is addressed in this current Partnership Study. Of specific emphasis is the operation of southbound Highway 52 between 117th Street and the Highway 55 interchange. Traffic entering Highway 52 southbound from 117th Street will need to change lanes to access Highway 55 via the existing left exit. This interchange improvement is shown graphically in Appendix A.

**Highway 55/Highway 42/County Road 85 Improvement**

Realignment of the east leg of Highway 42 and south leg of County Road 85 to intersect Highway 55 at a right angle is planned by Mn/DOT for the 2003 construction season. This improvement will
include auxiliary turn lanes on the Highway 42, Highway 55, and County Road 85 approaches. A schematic of this Improvement Plan is shown in Appendix B.

As listed, the preceding previous studies have identified a number of key findings that relate directly to the purpose and need for this Partnership Study.

1.3 Purpose and Need
The purpose and need of this study is to:

- Assess the need to improve the study area roadway network to accommodate land use development plans of surrounding communities 20 years into the future.

- Maintain Highway 42 as an important roadway for east-west through traffic. This will include considering improvement to a four-lane facility and managing the spacing of direct access roadways.

- Maintain Highway 52 as an important roadway for north-south through traffic. This includes assessing the need to eliminate the existing Highway 52/55 interchange and assessing the need to reconstruct the existing Highway 52 interchange at Highway 42. In conjunction with the elimination of the Highway 52/55 interchange, the potential to combine Highway 42 and Highway 55 into a continuous east-west principal arterial will be considered.

- A supporting roadway system is needed including frontage and backage roads to serve existing and future land use development.

- Address the existing limited visibility between the Highway 52 ramp approaches along Highway 42 under the Highway 52 bridges and alignment of Highway 42. Address the deficient ramp lengths at the Highway 52/42 interchange.

2.0 Public and Key Stakeholder Issues
Initiated at the onset of the study, the Highway 52/42/55 Interchange Partnership Project process included a public and agency involvement program. This program was active and ongoing throughout the alternatives identification, development and evaluation process, and will continue into future preliminary design activities. Elements of this process are detailed below.

2.1 Project Management Team (PMT)
The Highway 52/42/55 Interchange Partnership Project process has been guided by a PMT consisting of staff from Mn/DOT, Dakota County, Nininger Township, and the cities of Rosemount and Hastings. The PMT met monthly to guide the development and
evaluation of alternatives, and ultimately participated in the recommendation of preferred alternatives.

2.2 Project Newsletters
Two project newsletters were prepared and mailed to provide project information to the affected public, including residences, businesses, and property owners in the study area. The Hastings area residents were included in the mailing due to the importance of Highway 55 as a commuting route to the Twin Cities.

2.3 City of Rosemount/Koch Refinery/UP Railroad Meetings
Two meetings were held with representatives from the Koch Refinery and the City of Rosemount. The first meeting was held early in the concept development stage to gain an understanding of the operations and needs of Koch. The second meeting was held at the later stages of the refinement of alternatives and included representatives from Koch, the City of Rosemount, and the Union Pacific Railroad. This meeting focused on the viability of a grade-separated roadway crossing of Highway 52 north of 140th Street, the connection of Courthouse Boulevard northerly to 117th Street, and support roadway connections east of Highway 52.

2.4 Public Meetings
Two public open houses were held on May 24 and August 2, 2001 to receive comments and concerns of area residents, businesses, and system commuters. An extra meeting on September 13, 2001 was necessary due to complications in notifying the public of the second meeting. Some of the primary public input included:

- Recognition that the study area system currently experiences congestion and operational problems.
- Recognition that severing the Highway 55 connection with Highway 52 would increase travel distance and travel time for movements to and from the north and east.
- Recognition that the sight distance at the Highway 52/42 diamond interchange ramp terminals is inadequate, especially beneath the constrained Highway 52 bridges.
- Recognition that the Highway 52/42 interchange would need to be upgraded to accommodate increased volumes, especially with the realignment of Highway 55.

Appendix C includes copies of all public comments received.
3.0 Background/Issues Identification

3.1 Functional Classification/IRC Designation

The functional classification indicates the importance of study area roadways in the overall roadway system network. The three arterial facilities in the study area form a triangle in the City of Rosemount, and this network configuration results in unique system functional characteristics.

Highway 52 is a principal arterial that has been designated a High Priority IRC from the Twin Cities to Rochester and serves 39,500 (vpd) just north of the Highway 55 connection. This facility will be characterized by interchanges at major access points and limited direct access points for low volume intersecting roadways north of the study area. The existing signal at 117th Street is planned for an interchange upgrade, reflecting the long-term vision for Highway 52 through the study area as a freeway facility.

Highway 55 is a principal arterial and has been designated a High Priority Regional Corridor (HPRC). The diagonal segment of Highway 55 provides the least travel time and distance for movements between the east (Hastings) and the north (Twin Cities metro area). Because of the orientation of Highway 55 relative to other arterials, it primarily serves trips between the north and east along with those generated by local land use development. The Highway 52/55 interchange supports this function with high type directional ramps for the movements to and from the north and an at-grade intersection for movements to and from the south.

Highway 42 is a principal arterial and is the only continuous east-west roadway in central Dakota and northern Scott Counties. A principal arterial roadway’s primary function is to serve through traffic. Existing and anticipated development in the area has made it necessary to plan for safe and efficient access locations. The character of Highway 42 changes significantly between the east and west sides of Highway 52. West of Highway 52, Highway 42 is a four-lane divided facility, while east of Highway 52, Highway 42 is a two-lane facility. Traffic volumes west of Highway 52 (17,500 vpd) are more than double those east of Highway 52 (6,400 vpd).

See Figure 2 for existing study area traffic volumes.
Interchange Partnership Project

Figure 2
Existing Traffic Volumes
3.2 Crash History

A high-level review of traffic crashes over a five-year period from January 1996 to December 2000 has been conducted to identify potential safety deficiencies along the Highway 52, 42, and 55 corridors, and to assess the needs of these corridors for potential improvements. Mn/DOT’s TIS database provided crash data for study area roadways according to location and severity (whether the crash involved property damage, injury, or a fatality). Inaccuracies in recording the crash data associated with the Mn/DOT TIS database tend to be consistent across different highway corridors, thereby allowing for reasonable comparisons.

A total of 351 crashes were reported along the study area segments of Highway 52, 42, and 55. Ninety-one occurred on Highway 52, 88 crashes occurred on Highway 42, 93 on Highway 55, and 79 on the Highway 42/55 common section. Of the 351 total crashes, 233 were property damage only crashes, 111 involved personal injuries, and 7 crashes resulted in fatalities.

Utilizing the existing traffic volumes in combination with the summary of reported crashes over the past five years, average crash rates have been computed for segments of the study corridors. The crash rate is determined by the average annual daily traffic over the five-year period, the crashes reported, and the length of the roadway segment. The crash rate is expressed in units of crashes per million vehicle-miles traveled. A summary of the computed crash rates for January 1996 to December 2000, with corresponding average Mn/DOT District and statewide crash rates, follow:

<table>
<thead>
<tr>
<th>Highway 52 Segment</th>
<th>Crash Rate</th>
<th>Metro East Average</th>
<th>Statewide Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>117th Street to Highway 55</td>
<td>0.6</td>
<td>0.9</td>
<td>0.9</td>
</tr>
<tr>
<td>Highway 55 to Highway 42</td>
<td>0.5</td>
<td>0.9</td>
<td>0.9</td>
</tr>
<tr>
<td>Highway 42 to Coates</td>
<td>0.2</td>
<td>0.9</td>
<td>0.9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Highway 42 Segment</th>
<th>Crash Rate</th>
<th>Metro East Average</th>
<th>Statewide Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>County Road 71 to Highway 52</td>
<td>0.7</td>
<td>0.9</td>
<td>0.9</td>
</tr>
<tr>
<td>Highway 52 to Highway 55</td>
<td>1.4</td>
<td>1.6</td>
<td>1.0</td>
</tr>
<tr>
<td>Highway 55 to Hastings</td>
<td>3.2</td>
<td>1.4</td>
<td>0.9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Highway 55 Segment</th>
<th>Crash Rate</th>
<th>Metro East Average</th>
<th>Statewide Average</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highway 52 to Highway 42 West</td>
<td>1.2</td>
<td>1.2</td>
<td>1.3</td>
</tr>
<tr>
<td>Highway 42/55 Common Section</td>
<td>1.9</td>
<td>1.2</td>
<td>1.3</td>
</tr>
<tr>
<td>Highway 42 East to Hastings</td>
<td>0.6</td>
<td>1.2</td>
<td>1.3</td>
</tr>
</tbody>
</table>
As indicated, the Highway 42/55 common section and Highway 42 east of Highway 55 experience crash rates above both the district and statewide averages. The higher than average crash rate of the Highway 42 segment from Highway 55 to Hastings is due primarily to the low volumes using this section of Highway 42. However, the higher than average crash rate of the Highway 42/55 common section may indicate potential safety concerns.

Figure 3 illustrates study area crash locations and roadway segment crash rates.

3.3 Access Management Guidelines

Effective access management is an important component of maintaining an efficient and safe transportation roadway network. Mn/DOT has identified an access category system and recommended spacing guidelines.

One of the key recommendations of this study (discussed in Section 4.0) is that the existing Highway 55 connection to Highway 52 be closed and that Highway 55 be rerouted along Highway 42 east of Highway 52. The section of Highway 42 east of Highway 52 then becomes part of the Highway 55 HPRC. This is a key factor in the designation of access spacing discussed in the remainder of this section.

The following are excerpts from Mn/DOT’s guidelines that are applicable to this study.

Definition: Access management is the planning, design, and implementation of land use and transportation strategies that control the flow of the traffic between the road and the surrounding land. Appropriate spacing and design of public street intersections and private access to the trunk highway system is necessary to ensure the safety and mobility of the statewide traveling public while accommodating the access and accessibility needs of local communities.

3.3.1 Access Spacing

The summary of recommended access spacing is presented in Table 2. The following access management categories apply to the three primary arterial roadways in the study area:

- Highway 52 in the study area is a High Priority IRC with an ultimate vision of a full grade separated freeway facility, but is currently categorized as a rural High Priority IRC with some existing at-grade access allowable – Category 1A-F.
**Table 2**

*Summary of Recommended Access Spacing*

<table>
<thead>
<tr>
<th>Facility</th>
<th>Access Spacing Category</th>
<th>Primary Full Movement Intersection Spacing</th>
<th>Conditional Secondary Intersection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Highway 52</td>
<td>High Priority IRC (Rural) 1A-F</td>
<td>1-mile on interim basis with plan for interchange replacement</td>
<td>½-mile on interim basis with plan for eventual closure</td>
</tr>
<tr>
<td>Highway 55 and future Highway 55 reroute along</td>
<td>High Priority Regional Corridor (Rural/Exurban) 3A</td>
<td>1-mile</td>
<td>½-mile (see conditions)</td>
</tr>
<tr>
<td>Highway 42 east of Highway 52</td>
<td>Principal Arterial (Rural/Exurban) 4A</td>
<td>1-mile</td>
<td>½-mile (see conditions)</td>
</tr>
</tbody>
</table>


General guidelines for Category 1A-F include:

1. No at-grade intersections permitted over time.

2. Full at-grade intersections at 1-mile spacing on an interim basis with a plan for replacement by an interchange.

3. Right-in/right-out intersections at ½-mile spacing from full access points may be provided on an interim basis with a plan for eventual closure.

- Highway 55 and the future Highway 55/42 reroute along Highway 42 east of Highway 52 will be a HPRC with a rural/exurban facility type – Category 3A (45 to 65 mph).

General guidelines for Categories 3A include:

1. Primary full movement intersections should be spaced at 1-mile intervals.

2. Intervening secondary intersections may be provided at ½-mile spacing from primary full movement intersections if all of the following conditions are met:

   a. The intersecting street is planned as a public way connecting to the existing or planned extension of the local street network. Intersections serving short isolated public street networks or cul-de-sacs should only be provided if necessary to provide reasonable access to the highway system due to existing topographic constraints or historic development patterns.

   b. On existing or planned two-lane undivided highways, an intervening intersection may be provided if the analysis of future traffic conditions, using a Gap Analysis Procedure, indicates a low risk conflict condition can be maintained. If
the analysis indicates a high risk conflict condition is anticipated, the intervening intersection should not be allowed.

c. On existing or planned divided highways, the intervening secondary intersection may provide full movement if the analysis of future traffic conditions, using a Gap Analysis Procedure, indicates a low risk conflict condition can be maintained. Full movement, intervening secondary intersections will be subject to future conversion to a right-in/right-out or ¾ left-in only intersection if increased traffic growth creates a high risk conflict potential.

If the analysis indicates that a full movement intersection would create a high risk conflict condition, further analysis, using a Gap Analysis Procedure, should be conducted to determine if restricting the intersection to right-in/right-out only would maintain a low risk conflict condition. If the analysis indicates that a high risk conflict condition would still be created, the intervening intersection should not be allowed, or restricted to a right-in only if practical given the supporting road network.

- Highway 42 west of Highway 52 is a principal arterial with rural/exurban facility type – Category 4A (45 to 55 mph).

General guidelines for Category 4A include:

1. Primary full movement intersections should be spaced at 1-mile intervals.

2. Intervening secondary intersections may be provided at ½-mile spacing from primary full movement intersections if all of the following conditions are met:

   a. The intersecting street is planned as a public way connecting to the existing or planned extension of the local street network. Intersections serving short isolated public street networks or cul-de-sacs should only be provided if necessary to provide reasonable access to the highway system due to existing topographic constraints or historic development patterns.

   b. On existing or planned two-lane undivided highways, an intervening intersection may be provided if the analysis of future traffic conditions, using a Gap Analysis Procedure, indicates a low risk conflict condition can be maintained. If the analysis indicates a high risk conflict condition is anticipated, the intervening intersection should not be allowed.
c. On existing or planned divided highways, the intervening secondary intersection may provide full movement if the analysis of future traffic conditions, using a Gap Analysis Procedure, indicates a low risk conflict condition can be maintained. Full movement, intervening secondary intersections will be subject to future conversion to a right-in/right-out or ¾ left-in only intersection if increased traffic growth creates a high risk conflict potential.

If the analysis indicates that a full movement intersection would create a high risk conflict condition, further analysis, using a Gap Analysis Procedure, should be conducted to determine if restricting the intersection to right-in/right-out only would maintain a low risk conflict condition. If the analysis indicates that a high risk conflict condition would still be created, the intervening intersection should not be allowed, or restricted to a right-in only if practical given the supporting road network.

3.3.2 Signal Spacing and Operation Guidelines

Signalized access should generally be reserved for public street intersections providing access to the adjacent land area through an interconnected network of public streets. Local governments are responsible for planning a supporting local road network to prevent/minimize the need for signals. Signalized access to a private entrance should only be considered if:

1. The proposed signalized access is designed to serve a large development area encompassing multiple properties or buildings with a system of internal private roadways connected to cross access segments.

2. The access does not negatively impact the accessibility of adjacent land areas by disrupting the connectivity of the local supporting road network.

3. The proposed signalized access conforms to the full movement intersection spacing guidelines.

In addition to the above, attaining the HPRC goal of 50 mph on Highway 55 is a relevant factor in avoiding signalization.

The recommended spacing for signalized intersections is as follows:

Highway 52 – Category 1A-F

Access is provided by grade-separated interchange only. No signals are allowed on fully-grade separated roadway segments.

On existing roadway segments that are planned to transition to Subcategory A-F over time, signalized intersections at 1-mile spacing
may be provided on an interim basis if there is a plan established for eventual replacement by an interchange or closure and connection to the supporting road network. Interim signals should only be considered after all other alternatives.

Highway 55 – Category 3A (includes Highway 55 reroute on Highway 42 east of Highway 55 and existing Highway 55 from Highway 42 west junction to Hastings city limits)

In rural areas, signalized intersections are not anticipated except in rare instances involving the intersection of two high volume principal and/or minor arterials. If one is required, the signal will tend to operate in isolation; therefore, the timing of the signal should favor the through movements along the higher category roadway.

Highway 42 – Category 4A (includes Highway 42 west of Highway 52)

In rural areas, signalized intersections are not anticipated except in rare instances involving the intersection of two high volume principal and/or minor arterials. If one is required, the signal will tend to operate in isolation; therefore, the timing of the signal should favor the through movements along the higher category roadway.

3.4 Land Use

Study area land use is predominantly industrial, agricultural, and low-density residential development. Koch Refinery is the primary industrial operation in the area, occupying substantial acreage adjacent to Highway 52. Many of the land uses adjacent to Highway 52 and Highway 55 are operations related to the activities of the Koch Refinery. A number of load transfer facilities (surface to river barges) exist north and east of the diagonal segment of Highway 55 adjacent to the Mississippi River Valley. Landfill facilities exist north of 117th Street and south and east of Highway 55 along the diagonal segment. Land use along Highway 42 is agricultural, with pockets of residential, industrial, and recreational (golf course) land uses.

3.5 Mississippi River Critical Area

The bluff area along the Mississippi River is designated the Mississippi River Critical Area. Executive Order 79-19 directs local units of government to work with state agencies to protect this environmentally sensitive area. One such direction is the protection of bluffs of 18 percent slope or greater and the regulation of development on bluffs of 12 percent to 18 percent slope. The City of Rosemount has developed setback regulations for development in conformance with the protection of these bluffs. Bluffs of 12 percent slope or greater are considered a topographical constraint in the development of potential roadway improvement concepts.
3.6 Traffic Operational Characteristics and Deficiencies

Because of the surrounding land uses and the function of the Highway 52/42/55 roadway network, significant amounts of truck traffic use study area arterial roadways. Field observations and traffic volume counts along study area roadways indicate the following characteristics:

- Highway 55 carries heavy amounts of through traffic oriented between Hastings and the Twin Cities. This traffic tends to travel in directional streams during peak periods, with a heavy east to north movement (from Hastings to the Twin Cities) in the morning and a heavy north to east movement (from the Twin Cities to Hastings) in the afternoon. Left turn movements from Highway 55, while waiting for gaps in opposing traffic, cause disruptions in through traffic flow. Heavy truck turning movements were observed at the 117th Street and Highway 52 intersection and the Highway 55 driveway access to EKS Environmental Landfill.

- Several physical characteristics of the Highway 52/42 interchange area combine to create operational concerns. The bridge pier locations of the Highway 52 bridges, the vertical geometry of Highway 42, and the horizontal geometry transition from a four-lane divided section west of the interchange to a two-lanes undivided section at the interchange create sight distance restrictions and safety concerns. The interchange ramp lengths are deficient based on current guidelines and a 70 mph design speed for Highway 52.

- Concerning the Highway 52/55 interchange, the existing left exit from southbound Highway 52 to eastbound Highway 55 causes disruptions to Highway 52 southbound traffic flow. This may be caused by motorist confusion over the atypical left hand exit.

- Existing peak hour intersection turning movement volumes and daily roadway segment volumes at key locations were derived from data provided by Mn/DOT and Dakota County, as well as peak period intersection traffic counts. Peak hour volumes are shown in detail in the Traffic Analysis Technical Memorandum. These volumes verify the directional volume characteristics on Highway 55 during the peak periods – as extreme as a 75 percent and 25 percent split – and reflect the heavy commuter influence on Highway 55 traffic flow. These existing traffic volumes are used to assist in the assessment of existing operating conditions and as a check against the traffic volume forecast output.

Figure 4 summarizes relevant study area issues.
Highway 52/55/42 Interchange Partnership Project

Figure 4

Summary of Major Issues

Potential Improvement Areas - Existing/Planned Land Uses

- High Priority Regional Corridor
- Heavy Commuter Traffic Use
- Topographical/Land Use Constraints Preclude Expansion
- Future Capacity Deficiencies for existing two lane facility.

Highway 52
- Long Term Vision as a Freeway
- High Priority Interregional Corridor

Highway 55
- At-Grade Rail Crossing
- Planned Highway 55 Overpass (Over Rail)

Highway 52/42 Interchange Deficiencies (Poor Visibility)

Highway 42
- 2020 Mixed-Use Industrial

Highway 46
- Planned Future Interchange

Recent Highway 46
- Intersection Realignment

County Road 71
- Potential Koch Land Development

Potential Improvement Areas
- Planned Highway 52 Overpass (Over Rail)
- Planned Track and Rail Improvements
- Planned 117th Street Interchange (2002)
- Substandard Interchange Configuration

River Bluff
- Topographical Constraints Slopes Greater Than 12%

140th Street
- 2020 General Industrial

Highway 55
- 2020 General Industrial

Highway 42
- 2020 Mixed-Use Industrial
4.0  Highway 52/42/55 System Options Identification and Evaluation

4.1  Introduction

As the study process began, it became clear that a multi-step approach was required to understand study area needs, develop and evaluate conceptual improvement options, and select preferred improvements.

Based on the major issues and needs concerning the entire transportation system identified in Section 3.0, a comprehensive range of system level alternatives were developed and assessed. The system level alternatives can be divided into two main roadway network configurations: maintaining the Highway 55 connection to Highway 52, and eliminating the Highway 52 connection and realigning Highway 55 along Highway 42. Under the second configuration, the existing diagonal segment of Highway 55 would be downgraded to an industrial collector roadway.

This section summarizes the initial screening and comparative assessment of Highway 52/42/55 system alternatives. The result of this screening and assessment process is the identification of a preferred roadway system alternative for the study area.

4.2  Initial Screening

The magnitude of potential roadway network changes in the Highway 52/42/55 triangle is the basis for an assessment of a comprehensive range of system alternatives. Every combination of two and four-lane sections on Highways 55 and 42 with and without the Highway 55 connection to Highway 52 are included in the initial assessment and screening.

The eight possible improvement alternatives are as follows:

With Highway 55 Connection to Highway 52:
- Option A – Highway 55 and 42 two-lane
- Option B – Highway 55 two-lane, Highway 42 four-lane
- Option C – Highway 55 four-lane, Highway 42 two-lane
- Option D – Highway 55 and 42 four-lane

Without Highway 55 Connection to Highway 52:
- Option E – Highway 55 and 42 two-lane
- Option F – Highway 55 two-lane, Highway 42 four-lane
- Option G – Highway 55 four-lane, Highway 42 two-lane
- Option H – Highway 55 and 42 four-lane
The initial comparative evaluation of the eight system alternatives is summarized in Table 3. Initially, four of the eight alternatives have been screened from consideration based on major flaws documented in Table 3. This includes Options D, E, G, and H.

Additional evaluation indicates that Options B and C should be screened from further consideration. Due to the topographical constraints along the diagonal segment of the Highway 55 corridor, the four-lane upgrade and parallel supporting roadway system associated with Option C is undesirable. Option B has been eliminated from consideration due to the inefficiency of upgrading Highway 42 to a four-lane and maintaining both Highways 42 and 55 as arterial facilities in the same transportation corridor.

Based on the initial screening, the PMT was able to select two system alternatives, A and F, for more detailed evaluation.

4.3 Evaluation of Two Retained System Alternatives

The two retained system alternatives have been developed to a greater level of detail in order for a thorough comparative evaluation. A detailed description of relevant factors and assumptions for both alternatives is provided below, followed by a summary of the major system level attributes. Figures 5 and 6 illustrate the system alternatives and system issues on aerial base mapping.

4.3.1 Relevant Factors/Assumptions

- The ultimate goal for Highway 52 is to become a freeway facility. Existing at-grade full movement intersections on Highway 52 in the study area that should be eliminated or modified include the west side frontage road intersection adjacent to Koch Refinery and the Highway 55 connector intersection for movements to and from the south.

- The current principal arterial designation of Highway 55 and Highway 42 indicate that a full access intersection spacing of 1-mile should be provided to meet access management guidelines (Category 3A HPRCs). Secondary intersections at ½-mile may be considered if operational street network criteria are met.

- System alternatives assume the 117th Street interchange and Highway 42/County Road 85 intersection realignment and geometric improvement are in place.

- Highway 42 would be upgraded to a four-lane facility in the area of the Highway 52 interchange under both system improvement alternatives to address the safety and operating deficiencies at the interchange.
# Table 3
Highway 52/42/55 Interchange Partnership Project
Screening Level Comparative Evaluation of System Alternatives

<table>
<thead>
<tr>
<th>Highway 42 2-lane</th>
<th>Highway 42 4-lane</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OPTION A</strong></td>
<td></td>
</tr>
<tr>
<td>Maintains existing system configuration with the following major features needed to accommodate projected traffic volumes:</td>
<td></td>
</tr>
<tr>
<td>- One-mile average full access spacing along Highway 55 and Highway 42 to accommodate projected volumes.</td>
<td></td>
</tr>
<tr>
<td>- Highway 52 access control including closure of existing Highway 55 at-grade intersection with Highway 52.</td>
<td></td>
</tr>
<tr>
<td>- Support roadways along Highway 52, Highway 55 and Highway 42 to accommodate access control (including potential 1/4-mile street grade separation with Highway 52).</td>
<td></td>
</tr>
<tr>
<td>- Extension of Highway 42 4-lane section east of Highway 52. Upgrade Highway 52/Highway 42 diamond interchange configuration to address safety (sight distance) deficiencies.</td>
<td></td>
</tr>
<tr>
<td>- Signalize Highway 55/Highway 42 intersection and upgrade geometrics including turn lanes.</td>
<td></td>
</tr>
<tr>
<td>- Highway 55 at-grade rail spur crossing to remain.</td>
<td></td>
</tr>
<tr>
<td>- Longer travel time/distance for predominant movement between north and east.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Highway 55 2-lane</th>
<th>Highway 55 4-lane</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OPTION B</strong></td>
<td></td>
</tr>
<tr>
<td>Enhances east-west continuity for Highway 42 while maintaining existing Highway 55/Highway 52 connection between north and east.</td>
<td></td>
</tr>
<tr>
<td>- Similar characteristics to Option A.</td>
<td></td>
</tr>
<tr>
<td>- Realign Highway 55/Highway 42 intersection to make Highway 42 the continuous route (signalize intersection as stated above).</td>
<td></td>
</tr>
<tr>
<td>- At-grade railroad crossing of Highway 55 arterial roadway undesirable.</td>
<td></td>
</tr>
<tr>
<td><strong>POTENTIAL FLAW</strong> - Constrained Highway 55 corridor may make access control/support roadways difficult to implement. Maintenance of two arterial facilities in the area undesirable.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Highway 55 2-lane</th>
<th>Highway 55 4-lane</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OPTION C</strong></td>
<td></td>
</tr>
<tr>
<td>Enhances movements between the north and the east. Existing Highway 42 accommodates additional movements between the east and south on Highway 52.</td>
<td></td>
</tr>
<tr>
<td>- Similar characteristics to Option A.</td>
<td></td>
</tr>
<tr>
<td>- Widening Highway 55 impacts on developed property.</td>
<td></td>
</tr>
<tr>
<td>- At-grade railroad crossing of Highway 55 arterial roadway undesirable.</td>
<td></td>
</tr>
<tr>
<td><strong>POTENTIAL FLAW</strong> - Constrained Highway 55 corridor may make four-lane improvement difficult to implement. Maintenance of two arterial facilities in the area undesirable.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Highway 55 2-lane</th>
<th>Highway 55 4-lane</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OPTION D</strong></td>
<td></td>
</tr>
<tr>
<td><strong>FATAL FLAW</strong> - Cost of construction and maintenance of two four-lane facilities in the same travel shed/corridor is not economically feasible.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Highway 55 2-lane</th>
<th>Highway 55 4-lane</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OPTION E</strong></td>
<td></td>
</tr>
<tr>
<td><strong>FATAL FLAW</strong> - Without Highway 55 connection, Highway 42 needs a capacity upgrade from 2-lanes to 4-lanes to serve projected 2025 volumes of 22,800 vehicles per day.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Highway 42 2-lane</th>
<th>Highway 42 4-lane</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OPTION F</strong></td>
<td></td>
</tr>
<tr>
<td>Enhances east-west continuity for Highway 42. Reorients movements between Highway 55 and Highway 52 via the Highway 42 interchange.</td>
<td></td>
</tr>
<tr>
<td>- Similar characteristics to Option A in terms of access control and support roadways.</td>
<td></td>
</tr>
<tr>
<td>- Upgrade current Highway 42 diamond interchange. High type movements between north and east.</td>
<td></td>
</tr>
<tr>
<td>- Sever existing Highway 55 interchange with Highway 52. Optimizes Highway 52 operations.</td>
<td></td>
</tr>
<tr>
<td>- Unsignalized control feasible at Highway 42/ Courthouse Boulevard (former Highway 55).</td>
<td></td>
</tr>
<tr>
<td>- Frontage roads along Highway 42.</td>
<td></td>
</tr>
<tr>
<td>- Longer travel time/distance for predominant movement between north and east.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Highway 55 2-lane</th>
<th>Highway 55 4-lane</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OPTION G</strong></td>
<td></td>
</tr>
<tr>
<td><strong>FATAL FLAW</strong> - Upgrading the capacity of Highway 55 with a severed Highway 52 connection is not warranted.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Highway 55 2-lane</th>
<th>Highway 55 4-lane</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>OPTION H</strong></td>
<td></td>
</tr>
<tr>
<td><strong>FATAL FLAW</strong> - Upgrading the capacity of Highway 55 with a severed Highway 52 connection is not warranted.</td>
<td></td>
</tr>
</tbody>
</table>
4.3.2 Traffic Analysis

One of the key assessment tools in understanding the differences between the two retained system alternatives is the traffic analysis. The traffic analysis is documented in the Traffic Analysis Technical Memorandum. Key findings relative to understanding and evaluating the two retained system alternatives are presented below.

Existing Conditions

Field observations and analysis of existing traffic volumes have identified operational and safety concerns at the following locations:

- Highway 52/55 interchange, primarily related to left exit and at-grade intersection
- Highway 52/42 interchange, primarily sight distance deficiencies and geometrics
- Highway 55 operations, primarily the difficulties related to traffic entering from side streets

Future Traffic Volumes (see Figure 7)

- Traffic volumes along the arterial roadways in the study area are expected to grow by 29 percent to as much as 118 percent between 2000 and 2025.
- The common section of Highway 42/55 is expected to grow to 20,000+ vpd, and traffic volumes along Highway 42 are expected to grow to 22,800 vpd by the year 2025 under System Option F.
- This study assumes an upgrade to the Highway 61 bridge and the ability to accommodate 45,000+ vpd (an increase of 20,000 over year 2000 levels).

Operations Analysis

- With no capacity increase, the Highway 42/55 common section is expected to degrade to Level of Service (LOS) E operations by the year 2025.
- Upgrade of Highway 42/55 common two-lane section to four-lane facility would attain an acceptable capacity LOS D or better operational goal.
- If the Highway 55 connection remains (System Option A), the entering and exiting movements to and from the north on Highway 52 may require capacity improvements in the form of auxiliary lanes.
Figure 7

Traffic Volume Map - Existing (2000) and Future (2025) with TH 55 Realignment
• If Highway 55 is realigned (System Option F), the entrance and exit to and from the north at Highway 42 and Highway 52 may require capacity improvements in the form of auxiliary lanes.

4.3.3 Comparative Evaluation

To evaluate the two remaining system alternatives, evaluation criteria were identified and are listed below:

1. Roadway system continuity/access
2. Supporting roadway system/access management
3. Train-vehicular conflicts
4. Travel distances/times
5. Truck traffic implications
6. Support of existing and planned land uses
7. Environmental impacts
8. Signalized intersections
9. Roadway system maintenance

The comparative evaluation of system improvement alternatives is summarized below with respect to each of the nine identified evaluation criteria in terms of major pros and cons. Each of the alternatives has been assigned a relative rating with respect to each of the evaluation criteria. “High” indicates alternatives that are most effective in attaining the criteria, and “low” indicates alternatives that are least effective in attaining the criteria.

Table 4 summarizes the comparative evaluation of the two retained system alternatives.

Criteria 1 – Roadway System Continuity/Access

Option A

Pros

• Maintains continuous/direct movements between Highway 52 to the north and Highway 55 to the east, with the maintenance of the diagonal Highway 55 alignment and the high type movement connections at the Highway 52/55 interchange.

• Eliminates at-grade intersection for movements to and from Highway 52 south.

Cons

• Long-term improvements along Highway 52 will result in closure of the at-grade intersection that accommodates movements between Highway 52 south and Highway 55 east. This will result in an undesirable partial movement interchange between Highway 52 and Highway 55.
• Maintains undesirable left exit from southbound Highway 52 to eastbound Highway 55. Weave created on southbound Highway 52 between proposed 117th Street interchange and this left exit.

• Maintains T-type intersection at the west junction of Highway 42 with Highway 55. This intersection may need a traffic signal in the future that would reduce the mobility of both Highway 55 and Highway 42.

• The transitions between four-lane and two-lane sections at the Highway 52 interchange (existing) and at the Highway 42 intersection (future) would reduce mobility and trip reliability over time.

Assessment Rating: Low

Option F

Pros

• Eliminates sub-standard Highway 52/55 interchange.

• Creates upgraded four-lane east-west arterial facility along Highway 42 alignment creating better continuity for movements between Highway 55 east and Highway 52 south.

• Extends Highway 42/55 as a continuous four-lane primary arterial facility for Dakota County from west of Highway 52 to Highway 61 in Hastings.

Cons

• High type ramps between Highway 52 north and Highway 55 eliminated, replacement of these movements at Highway 42 interchange may be somewhat less direct.

Assessment Rating: High

Criteria 2 – Supporting Roadway System/Access Management

Option A

Pros

• Accommodates intermediate Highway 52 crossing (potential shared railroad underpass north of 140th Street) for east-west support roadway continuity

Cons

• Difficult to provide support roadways compatible with access management guidelines of 1-mile intersection spacing along the Highway 55 diagonal segment due to existing land development patterns, existing rail operations, steep topography, and Mississippi River Critical Area environmental constraints.
Need for a high level of access control along two facilities in the same travel shed, Highway 42 and Highway 55.

More supporting roadways needed to provide access control on both Highways 42 and 55.

**Assessment Rating: Low**

**Option F**

**Pros**

- Accommodates intermediate Highway 52 crossing (potential shared railroad underpass north of 140th Street) for east-west support roadway continuity.

- Courthouse Boulevard’s (Old Highway 55) function as collector roadway allows direct property access and no need for substantial support roadway construction.

- Potential for support roadways compatible with 1-mile intersection spacing along an improved Highway 42/55 facility.

- The diagonal segment of Highway 55 becomes a local industrial roadway compatible with existing direct property access. Access management can be focused on Highway 42.

**Assessment Rating: High**

**Criteria 3 – Train-Vehicular Conflicts**

**Option A**

**Cons**

- Maintains Highway 55 at-grade rail crossing of arterial facility. This rail crossing is expected to serve an additional four to six trains per day in conjunction with the 117th Street interchange improvement.

**Assessment Rating: Low**

**Option F**

**Pros**

- The existing Courthouse Boulevard (Old Highway 55) rail crossing remains, but arterial vehicular traffic is reoriented to Highway 42, and Courthouse Boulevard becomes a lower volume/lower speed industrial collector local roadway. Train vehicular conflict potential is reduced.

**Assessment Rating: High**
Criteria 4 – Travel Times/Distances

Option A

Pros
• Maintains existing Highway 55 diagonal movement for shorter distance (1.4 miles) and faster travel time (1.7 minutes) between north and east compared to Option F.

Cons
• Decreased mobility on two-lane Highway 55 and Highway 42 arterial facilities as volumes increase over time.
• Bottlenecks at two-lane/four-lane transitions on Highway 55 and Highway 42 affect travel time/reliability in the future.
• Removes existing at-grade intersection that connects Highway 55 with Highway 52 to/from the south. This travel demand would need to reorient through a new roadway connection to the 117th Street interchange or reorient via Highway 42 to the Highway 52 interchange.

Assessment Rating: Moderate

Option F

Pros
• Removes existing at-grade intersection that connects Highway 55 with Highway 52 to/from the south. This travel demand would reorient along the improved Highway 42/55 four-lane continuous east-west facility and through the improved Highway 52 interchange.
• The four-lane continuous Highway 42/55 will improve travel time/reliability for east-west trips.

Cons
• Additional travel distance of 1.4 miles for movements between the north and east. This is expected to result in an average travel time increase of 1.7 minutes during peak periods.

Assessment Rating: Moderate

Criteria 5 – Truck Traffic Implications

Option A

Cons
• Continues to mix heavy truck activity entering and exiting properties along Highway 55 with arterial commuter traffic.
• Maintains weave movement from the 117th Street interchange to Highway 52 left hand exit that may be especially difficult for truck acceleration capabilities.

**Assessment Rating:** Moderate

**Option F**

**Pros**

• Reorients arterial commuter traffic from two lane Highway 55 diagonal segment with heavy truck movement property access to upgraded four-lane Highway 42/55 facility.

• Eliminates weave movement from 117th Street interchange to Highway 52 left hand exit.

**Assessment Rating:** High

**Criteria 6 – Support of Existing and Planned Land Use Development**

**Option A**

**Pros**

• Accommodates intermediate Highway 52 crossing (potential shared railroad underpass north of 140th Street) for east-west support roadway continuity.

**Cons**

• Rolling topography, Mississippi River Critical Area, existing rail facilities, and depth of developable parcels may constrain supporting roadway development and access management north of Highway 55.

**Assessment Rating:** Moderate

**Option F**

**Pros**

• Supports development by converting existing Highway 55 to an industrial collector roadway and focusing commuter traffic along Highway 42 with managed access.

• Accommodates intermediate Highway 52 crossing (potential shared railroad underpass north of 140th Street) for east-west support roadway continuity.

**Assessment Rating:** High
Criteria 7 – Environmental Impacts
Option A
Cons
• Potential impacts on Mississippi River Critical Area with support roadway implementation north of Highway 55 through the diagonal segment.

Assessment Rating: Moderate

Option F
Pros
• Environmental impacts limited to impacts on agricultural land along Highway 42 and in the Highway 52/42 interchange area.

Assessment Rating: Moderate

Criteria 8 – Signalized Intersections
Option A
Cons
• Signal and capacity improvements likely needed at west junction of Highway 42 and Highway 55.

Assessment Rating: Moderate

Option F
Pros
• Development of Highway 42/55 as continuous east-west facility that will minimize conflicting side street volumes and may minimize the need for signalized control.

Assessment Rating: High

Criteria 9 – Roadway System Maintenance
Option A
Pros
• 2.7 lane miles less state jurisdiction roadways compared to Option F.

Cons
• 4.0 lane miles more than Option F.
• 5.3 lane miles more county roadways than Option F.
• 1.4 lane miles more local roadways than Option F.
• Maintains existing Highway 52/55 interchange including 320-foot curved bridge structure.
Assessment Rating: Moderate

Option F

Pros
- 4.0 total lane-miles less than Option A.
- 5.3 lane miles less county roadways than Option A.
- 1.4 lane miles less local roadways than Option A.
- Highway 52/55 interchange eliminated.

Cons
- 2.7 lane miles more state roadways than Option A.

Assessment Rating: High

Table 4
Evaluation of Retained System Alternatives

<table>
<thead>
<tr>
<th></th>
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<th></th>
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<tbody>
<tr>
<td>Potential to achieve system continuity/system access design criteria</td>
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<td>HIGH</td>
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<tr>
<td>Potential to provide an efficient support roadway system that meets access management guidelines</td>
<td>LOW</td>
<td>HIGH</td>
</tr>
<tr>
<td>Potential to minimize train-vehicular conflicts at railroad crossings</td>
<td>LOW</td>
<td>HIGH</td>
</tr>
<tr>
<td>Potential to minimize travel distances/travel times for major movements</td>
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</tr>
<tr>
<td>Potential implications on area truck activity.</td>
<td>MODERATE</td>
<td>HIGH</td>
</tr>
<tr>
<td>Potential to support existing and planned land use development</td>
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<td>HIGH</td>
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<tr>
<td>Potential to minimize environmental impacts</td>
<td>MODERATE</td>
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<tr>
<td>Potential to minimize signalized intersections</td>
<td>MODERATE</td>
<td>HIGH</td>
</tr>
<tr>
<td>Potential to minimize overall roadway system maintenance</td>
<td>MODERATE</td>
<td>HIGH</td>
</tr>
</tbody>
</table>

* Each of the alternatives has been assigned a relative rating with respect to each of the evaluation criteria. “High” indicates alternatives that are most effective in attaining the criteria, and “low” indicates alternatives that are least effective in attaining the criteria.

4.4 Selection of Preferred System Alternative

The selection of a preferred system alternative is a critical decision that will provide a framework for future infrastructure improvements
and land use development in the area. Therefore, it has been important to develop an understanding of the implications of a range of alternatives as documented in the previous section.

After a thorough evaluation and gaining input from the public and local units of government, System Option F has been identified as the preferred alternative. The following positive characteristics of Option F outweigh the shorter travel distance (1.4 miles) and travel time (1.7 minutes during peak periods) associated with Option A:

- Eliminates sub-standard Highway 52/55 interchange.

- Upgrades Highway 42/55 to a four-lane continuous east-west facility for Dakota County from west of Highway 52 to Highway 61 in Hastings. This will improve continuity/reliability for east-west through traffic, as well as between Highway 55 east and Highway 52 south. Travel demand to/from Highway 52 southbound would reorient along the improved Highway 42/55 facility through the improved Highway 52/42 interchange.

- Reorients arterial commuter traffic from two-lane Highway 55 diagonal segment with heavy truck movement property access to upgraded four-lane Highway 42/55 facility. The diagonal segment of Highway 55 becomes a collector roadway (Courthouse Boulevard) compatible with existing and future direct property access. The existing rail crossing of Courthouse Boulevard is compatible with the function and projected low traffic volumes and lower speeds along Courthouse Boulevard.

- Eliminates weave movement from 117th Street interchange to Highway 52 left hand exit. Supports development by converting existing Highway 55 to an industrial collector roadway and focusing commuter traffic along Highway 42 with managed access.

- Accommodates intermediate Highway 52 crossing (potential shared railroad underpass north of 140th Street) for east-west support roadway continuity.

- Environmental impacts limited to impacts on agricultural land along Highway 42 and in the Highway 52/42 interchange area.

- Development of Highway 42/55 as continuous east-west facility that will minimize conflicting side street volumes that would create the need for signalization.

- Avoids support roadway improvements along Highway 55, which may effect the Mississippi River Critical Area.
• Provides intermediate crossing of Highway 52 between 117th Street and Highway 42 interchanges. This crossing will enhance the integrity of Highway 52 and the adjacent 117th Street and Highway 42 interchanges by reducing local traffic use of these facilities.

4.5 Access Management Plan

Figure 8 illustrates desirable full access intersection locations and supporting roadway connections for the entire study area under system Option F. The potential supporting roadway network is based upon compatibility with current land use and future land use plans, opportunities to create connections, and continuity with the existing roadway network.

Full access locations along the Highway 42/55 corridor include:

• County Road 71
• Highway 52/42/55 interchange (westbound left to southbound Highway 52 only)
• Intermediate location (dependent upon land use plans)
• Emery Avenue (realigned Courthouse Boulevard)
• Fisher Avenue
• Goodwin Avenue/Highway 42
• Horner Avenue
• Jacob Avenue

The proposed support roadway connections south of Highway 42 have been viewed differently than the other support roadways proposed by the preferred system plan. The support roadway connections are shown as dashed lines in Figure 8. The current year 2020 plan between the existing growth boundary south of Highway 42 and CSAH 46 is for continued agricultural use. These roadway connections would be considered in more detail in conjunction with future land use planning for this area.

Two critical support roadway connection features that were assessed in detail during the study are discussed below.
4.5.1 **Highway 42/55 West Leg Intersection Configuration**

Preferred System Option F has major implications on the location and configuration of the Courthouse Boulevard/Highway 42/55 intersection. As shown in Figure 8, the Courthouse Boulevard intersection with Highway 42/55 would be relocated approximately ½-mile to the west. There are a number of advantages with this configuration:

- Supports Highway 42/55 as a continuous east-west arterial and Courthouse Boulevard as a side street that intersects from the north.

- The proposed intersection is at a desirable location with respect to the geometry of Highway 42/55; the intersection location is west of an existing and proposed horizontal curve and prior to a change in vertical alignment to the east.

- The proposed alignment location of the north leg of the intersection is through a relatively flat area and is desirable with respect to the vertical profile of the connection to Courthouse Boulevard.

With the realignment identified under Option F, all movements, but the southbound left would operate at acceptable levels. Although the volume forecasts indicate a large volume (250 vph) for the critical southbound left turn movement during the p.m. peak hour, signalized control may not be necessary based on the following:

- Option F will create a fundamental change in the function of Courthouse Boulevard and demand volumes may not be as high as predicted.

- As delay is experienced at the Courthouse Boulevard intersection with Highway 42/55, a portion of this demand volume may reorient to the 117th Street interchange beyond what is predicted by the forecast volumes.

4.5.2 **117th Street Connection Alternatives Identification and Evaluation**

The ultimate vision of Highway 52 as a freeway type facility, the elimination of the existing Highway 55 interchange with Highway 52 under Option F, and the planned implementation of the 117th Street interchange have implications on the support roadway system needs of the study area. One such need is the connection of Courthouse Boulevard to the 117th Street interchange.
Providing a roadway connection from Courthouse Boulevard to the future 117th Street interchange along the east side of Highway 52 is constrained by the 18 percent slopes in the Mississippi River Critical Area, Koch treatment pond facilities and pipelines, the existing rail spur adjacent to Highway 55 and 52, and the Pine Bend Cemetery.

A range of improvement alternatives for this connection have been investigated to ensure that the highest utility and lowest impact improvement scenario is selected.

**Initial Screening**

Four potential alignment combinations for the rail spur and roadway connection were identified during the study process. All four of these alternatives are shown graphically in Appendix D and are described briefly below:

**Alternative 1** – Constrained roadway connection and rail spur alignment between Highway 52 and Pine Bend Cemetery

**Alternative 2** – Rail spur realignment behind the Pine Bend Cemetery with roadway connection adjacent to Highway 52

**Alternative 3** – Roadway connection alignment behind the Pine Bend Cemetery with existing rail spur alignment adjacent to Highway 52

**Alternative 4** – Roadway alignment bridging Highway 52 to the west frontage road using abandoned Highway 55 fill section (only under Option F)

Alternatives 2, 3, and 4 were screened from further consideration due to Mississippi River Critical Area steep slope impacts (Alternatives 2 and 3), Koch facility impacts (Alternatives 2, 3, and 4), and cost implications (Alternatives 2, 3, and 4). Figure 9 illustrates the retained Alternative 1.

More detailed development of Alternative 1 indicates there are several possible ways in which to fit the frontage road connection between the east side of Highway 52 and the Union Pacific rail spur. Under the current preferred option, the existing rail spur would be relocated 7 feet to the east and a j-barrier would be installed between the frontage road and Highway 52. Figure 10 illustrates the retained existing and proposed cross section concept.

The existing parking area for the cemetery would need to allow for a rail maintenance (show storage) easement. The cemetery parking would need to be reoriented.
Existing Confined Section Cross-Section

Northbound Highway 52

Rail Spur

Cemetery (SW Corner)

56-foot RR separation

Property Line

Fence

1A – Proposed Cross-Section with Rail Realignment 7 feet to the east

- Constrained section with existing rail does not provide needed width to meet Major Metro Area Route cross-section guidelines (80’ Centerline Spacing and 13’ Outside Shoulder).
- Constrained frontage and rail segment may require increased maintenance for snow removal.

Highway 52/55/42 Interchange Partnership Project

Figure 10

Alternative 1 Conceptual Cross-sections
The proposed cross section shows that a constrained design may be feasible to implement a frontage road connection adjacent to Pine Bend Cemetery. More detailed mapping and design activities will be necessary to explore the feasibility of this concept farther.

**Regional Trail Issues**

The Mississippi Regional Trail alignment is also planned through this constrained segment between Highway 52 and Pine Bend Cemetery.

The trail plan document\(^1\) states that the trail would parallel the spur railroad track between 117\(^{th}\) Street and Pine Bend Trail. The trail is planned to run adjacent to the east side of the tracks from 117\(^{th}\) Street to the north edge of the cemetery.

The regional trail location has not been included in the 117\(^{th}\) Street connection plan and cross section figures.

Given the aesthetic needs of the trail and that the 117\(^{th}\) Street connection was not anticipated as part of the trail planning study, the trail alignment location should be revisited as part of more detailed design development for the area.

The current planned roadway connection and constraints may justify a revised trail alignment adjacent to the east side of the cemetery.

### 5.0 Highway 52/42 Interchange Alternatives Identification and Evaluation

#### 5.1 Alternatives Identification

Compared with many interchange locations throughout the metro area, the Highway 52/42 interchange area is unconstrained in terms of existing major land use development, sensitive environmental features (including existing water bodies and wetlands), and topographic constraints. Based on this, a wide range of interchange configuration alternatives have been considered and assessed with respect to operational utility, compatibility with future land use development, and overall land area impacts.

It is important to emphasize that the existing Highway 55 interchange with Highway 52 provides high type, free flow movements for existing heavy volumes oriented between the north and east. The high type interchange ramps are important connections between the City of Hastings and the Twin Cities. The elimination of the Highway 55 interchange with Highway 52 would require the reorientation of current Highway 55 traffic between the north and east to the Highway 42 interchange. Provision for this major movement between the north

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\(^1\) Mississippi River Regional Trail Project Summary, Dakota County Office of Planning, February 1999.
and east is a major factor in the development and assessment of Highway 42 interchange alternatives.

Six alternatives have been identified that provide a comprehensive range of configurations for the Highway 52/42 interchange. These alternatives are identified below:

- **Alternative 1**: Folded diamond to the south
- **Alternative 2**: Northwest/southeast folded diamond with loop in southwest quadrant
- **Alternative 3**: Cloverleaf west of Highway 52 with folded diamond East of Highway 52
- **Alternative 4**: Full cloverleaf
- **Alternative 5A**: Partial cloverleaf southwest/northeast loops
- **Alternative 5B**: Partial cloverleaf southwest/southeast/northeast loops
- **Alternative 6**: Single point diamond interchange

These alternatives are shown schematically in Appendix E.

### 5.2 Traffic Analysis

As previously stated, the traffic analysis is documented in a separate technical memorandum. Key findings relative to understanding and evaluating the interchange alternatives are presented below:

- Highway 42 should be expanded to a four-lane divided facility through the Highway 52 interchange regardless of the proposed interchange configuration to accommodate future traffic volumes.

- The diamond interchange is undesirable based on its delay characteristics relative to the other alternatives.

- Four of the interchange concepts have the following operational and geometric characteristics that may be a deciding factor in selecting a preferred alternative (given one of the goals for free flow movement between the north and the east).
  
  - **Diamond Interchange** – Signalized control of both ramp terminals would be necessary. Double left turn lanes would be needed for both ramp approaches, the eastbound Highway 42 left turn to the northbound on ramp, and considered for the southbound off ramp right turn to Highway 42 westbound. The eastbound approach to the interchange would need to include three through lanes. This would result in lane balance problems through the interchange.
Alternative 1: Folded Diamond – The east side ramp terminal would need to be signalized. An auxiliary lane would likely be needed along Highway 42 for the southwest loop for the heavy movement from Highway 52 southbound to Highway 42 eastbound.

Alternative 5: Partial Cloverleaf – Free flow design allows for high speed single lane ramps for all major movements. The projected low volume movement from Highway 42 westbound to Highway 52 southbound would be provided with a channelized left turn lane.

Alternative 6: SPUI – Double left turn lanes are needed on both off ramp approaches, as well as for the eastbound Highway 42 left turn movement to Highway 52 northbound.

5.3 Alternatives Evaluation

Six evaluation criteria were identified for assessment of interchange alternatives. These criteria are listed below and focus on property and land use impacts and traffic operations:

1. Existing property impacts
2. Compatibility with future development
3. Overall interchange area traffic operations
4. Major movement accommodation
5. Highway 42 operations including desired access spacing
6. Operational integrity

5.3.1 Comparative Evaluation Discussion

The comparative evaluation of conceptual interchange improvement alternatives are summarized below with respect to each of the six identified evaluation criteria. Each of the alternatives has been assigned a relative rating with respect to each of the evaluation criteria. “High” indicates alternatives that are most effective in attaining the criteria, and “low” indicates alternatives that are least effective in attaining the criteria. Table 5 provides a summary of the comparative evaluation.

Criteria 1: Potential to Minimize Property Impacts

*Alternative 1: Moderate*

- Impacts large areas in two quadrants of the interchange (southwest and southeast) with large loop ramps.
Alternative 2: Low
- Impacts large areas in two quadrants (northwest and southeast) with large loop ramps and in a third quadrant (southwest) with a smaller radius loop.

Alternative 3: Low
- Impacts large area in southeast quadrant with large loop ramp and in two quadrants (southwest and northwest) with two smaller radius loops.

Alternative 4: Low
- Impacts all four quadrants with loop/directional ramps.

Alternative 5A: Moderate
- Impacts in two quadrants (southwest and northeast) due to directional loop ramps.

Alternative 5B: Moderate
- Impacts in three quadrants (southwest, southeast, and northeast) with directional loop ramps.

Alternative 6: High
- Minimizes property impacts with minimal footprint interchange.

Criteria 2: Potential to Optimize Interchange Area Traffic Operations

Alternative 1: Low
- Configuration would result in two at-grade intersections approximately 2,000 feet apart that would likely need signalized control.

- High overall interchange delay characteristics compared to other alternatives.

Alternative 2: Low
- Configuration would result in two at-grade intersections approximately 2,000 feet apart that would likely need signalized control.

- Heavy left turn movement from Highway 42 eastbound to Highway 52 southbound.

- High overall interchange delay characteristics compared to other alternatives.

Alternative 3: Moderate
- Configuration would result in one at-grade intersection at the east ramp terminal, which would likely need signalization.
• Moderate overall interchange delay characteristics compared to other alternatives.

Alternative 4: High
• Configuration would provide free flow for all movements with high type cloverleaf interchange.
• Low overall interchange delay characteristics compared to other alternatives.

Alternative 5A: Moderate
• Configuration would provide free flow for all heavy movements except eastbound Highway 42 to Highway 52 northbound; this movement would result in a left turn crossing of westbound Highway 42 traffic.
• May result in signalized control at east ramp terminal.
• Low overall interchange delay characteristics compared to other alternatives.

Alternative 5B: High
• Configuration would provide free flow for all heavy movements.
• Weave segments expected to experience free flow operational conditions.
• Low overall interchange delay characteristics compared to other alternatives.

Alternative 6: Moderate
• Configuration would result in one multi-phase signal at single ramp terminal intersection on Highway 42.
• Moderate overall interchange delay characteristics compared to other alternatives.

Criteria 3: Potential to Optimize Highway 42 Operations Through Access Management

Alternative 1: Low
• Results in two full access intersections 2,000 feet apart with potential for signalized control.

Alternative 2: Low
• Results in two full access intersections 2,000 feet apart with potential for signalized control.
Alternative 3: Moderate
• Results in one full access intersection with potential for signalized control.

Alternative 4: High
• Results in no at-grade intersections along Highway 42 associated with the interchange; will allow free flow operations.

Alternative 5A: Moderate
• Results in two intersections for on-ramps to Highway 52.
• Conflicting movements would only involve left turn movements crossing through traffic.
• The east ramp intersection has the potential for signalized control.

Alternative 5B: High
• Results in one intersection for on-ramp to Highway 52 southbound.
• Conflicting movements would only involve the low volume left turn movement crossing through traffic.

Alternative 6: Moderate
• Results in one major signalized intersection for interchange.

Criteria 4: Potential to Optimize Major Movement Flow Characteristics
Alternative 1: Low
• Major movements would pass through a signalized intersection.

Alternative 2: Low
• Major movements would pass through a signalized intersection.

Alternative 3: Low
• Major movements would pass through a signalized intersection.

Alternative 4: High
• Free flow conditions provided for major movements.

Alternative 5A: Moderate
• Free flow conditions provided for major movements.
• Potential to configure the signal at the east ramp intersection as simple two phase operation that causes minimal delay for major movements.

Alternative 5B: High
• Free flow conditions provided for major movements.
**Alternative 6: Low**
Major movements would pass through a signalized intersection.

**Criteria 5: Compatibility with Land Use Plan**

**Alternative 1: High**
- Allows access to and from land uses north of the interchange.
- Full access intersections accessing land uses south of interchange 1-mile east and west of the interchange would be desirable.

**Alternative 2: High**
- Allows access to and from land uses in northeast and southwest quadrants at the interchange.
- Full access intersections accessing land uses in the northwest and southeast quadrants 1-mile east and west of the interchange would be desirable.

**Alternative 3: Moderate**
- Allows access to and from land uses in the northeast quadrant at the interchange.
- Full access intersections accessing land uses in the remaining three quadrants 1-mile east and west of the interchange would be desirable.

**Alternative 4: Low**
- Cloverleaf design would result in access to land uses approximately ½-mile east and west of the interchange.

**Alternative 5A: Moderate**
- Allows flexibility in land use access with no full access intersections associated with interchange. Partial access intersection may be acceptable at Conley Avenue.

**Alternative 5B: Moderate**
- Allows flexibility in land use access with no full access intersections associated with interchange. Partial access intersection may be acceptable at Conley Avenue.

**Alternative 6: Low**
- Full access intersections accessing land uses 1-mile east and west of the interchange would be desirable.
Criteria 6: Potential to Maximize Operational Integrity (Signing, Wayfinding, Ease of use by Heavy Vehicles)

Alternative 1: Moderate
- Standard folded diamond interchange can create confusion for motorists expecting a diamond configuration.
- Potential signal operation may affect the eastbound Highway 42 weave.

Alternative 2: Low
- Unusual interchange configuration may be confusing.
- Ramp terminal signal operation may affect the eastbound Highway 42 weave segment.

Alternative 3: Moderate
- Unusual interchange configuration may be confusing.
- Ramp terminal signal operation may affect the eastbound Highway 42 weave segment.

Alternative 4: High
- Typical cloverleaf interchange.

Alternative 5A: Moderate
- Logical movements can be easily signed.
- Eastbound left turn movement may create the potential for back-ups into through traffic lanes over time.

Alternative 5B: High
- Logical movements can be easily signed.

Alternative 6: Low
- Single Point Urban Interchange (SPUI) signal can create confusion due to motorist expectations.
- Heavy traffic flow and truck movements would require large storage lengths on ramp approaches and Highway 42 turn lanes to avoid blocking adjacent lanes.

5.3.2 Construction Cost

Typically, construction cost is one criteria of a thorough comparative evaluation. However, in the assessment of the Highway 52/42 interchange alternatives, it was found that construction cost would not provide a meaningful contrast between alternatives. Generally, clear contrasts cannot be identified at this level of study because of the following:
• All of the alternatives involve a new Highway 52 bridge over Highway 42.

• Alternatives 1 through 5 involve substantial ramp construction and land acquisition.

• Alternative 6 involves less ramp construction and land acquisition but a more substantial/complex bridge structure and the installation of a traffic control signal.

5.4 Identification of a Preferred Highway 52/42 Interchange Alternative

 Alternatives 5A and 5B both clearly rank higher than the other interchange alternatives under the evaluation criteria. The main differences between the two relate to traffic operating features discussed below.

• Under Alternative 5A, the eastbound Highway 42 movement to Highway 52 northbound is accommodated via a left turn lane. This movement would conflict with westbound through traffic.

• Under Alternative 5B, the eastbound Highway 42 movement to Highway 52 northbound is accommodated via a loop ramp in the southeast quadrant of the interchange. This movement would need to negotiate two weave segments; one on Highway 42 eastbound and a second on the northbound collector-distributor roadway adjacent to Highway 52.

Alternative 5B has been identified as the preferred Highway 52/42 interchange alternative by the PMT. This is based upon an understanding of the countywide roadway system traffic flow characteristics and interchange configuration operating preferences of Mn/DOT and Dakota County.

Traffic flow characteristics of the overall transportation system in Dakota County indicate that movements between the west and the north (including eastbound to northbound) are high demand/high growth movements. Historically, this has been the case for the eastbound to northbound movements at many east-west and north-south arterial intersections. Based on this, it is expected that the eastbound to northbound demand volume at the Highway 52 interchange may be more than indicated by the forecast traffic volumes. Therefore, the high type loop ramp design for this movement associated with Alternative 5B is desirable.

Alternative 5B provides a high level of overall interchange operations, ensures free flow operations for Highway 42 through traffic by eliminating the need for signals, and provides free flow ramps for all major movements. The operational integrity of the interchange is high.
due to the provision of free flow conditions, and can be easily signed and understood by motorists. Furthermore, the interchange configuration and absence of signals is highly compatible with truck traffic operations.

The preferred interchange alternative is somewhat unusual with loops provided in three of four quadrants with no loop provided in the northwest quadrant. Factors that contribute to selecting the three loop configuration over a full cloverleaf design include the following:

- The demand volume for the Highway 42 westbound to Highway 52 southbound movement is currently very small and is expected to continue to be small in the future (10 to 15 vehicles in the year 2025). This movement can be accommodated via Highway 42 left turn lane with unsignalized control.

- A loop in the northwest quadrant would create additional land use impacts. In addition to the impacts created by the loop, the ramp from southbound Highway 52 to westbound Highway 42 would connect with Highway 42 further to the west. This would impact existing residential access to the north side of Highway 42 west of Highway 52 and likely cause the need for support roadway construction in this area to provide acceptable ramp connection/merge operations.

A concept of this preferred Highway 52/42 interchange design is shown in Figure 11.

6.0 Implementation Plan

An Implementation Plan has been developed for the preferred study area roadway system alternative as shown in Table 6. A logical order of improvements is proposed to ensure that the best possible traffic flow/operations are maintained over time. Actual implementation timeframes will be driven by needs along study area roadways and funding availability. Based on the 2020 Land Use Plan and year 2025 forecast traffic volumes, this Implementation Plan could have a 20 to 25 year timeframe. This Implementation Plan assumes the completion of the 117th Street interchange (including the required bridge structure for the shared Union Pacific Rail and 140th Street underpass) and the Highway 55/Highway 42/County Road 85 intersection realignment improvement projects.
Table 5
Highway 52/42/55 Interchange Partnership Project
Evaluation of Highway 42 Interchange Alternatives*

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<tr>
<th>Comparative Evaluation Criteria</th>
<th>Alternative 1 Folded Diamond To The South</th>
<th>Alternative 2 NW/SE Folded Diamond With Loop In SW Quadrant</th>
<th>Alternative 3 Cloverleaf West of 52 With Folded Diamond East of 52</th>
<th>Alternative 4 Full Cloverleaf</th>
<th>Alternative 5A Partial Cloverleaf SW/NE Loops</th>
<th>Alternative 5B Partial Cloverleaf SW/SE/NE Loops</th>
<th>Alternative 6 Single Point Diamond Interchange</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential to Minimize Property Impacts</td>
<td>Moderate</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Moderate</td>
<td>Moderate</td>
<td>High</td>
</tr>
<tr>
<td>Potential to Optimize Interchange Area Operations</td>
<td>Low</td>
<td>Low</td>
<td>Moderate</td>
<td>High</td>
<td>Moderate</td>
<td>High</td>
<td>Moderate</td>
</tr>
<tr>
<td>Potential to Optimize Highway 42 Operations through Access Management</td>
<td>Low</td>
<td>Low</td>
<td>Moderate</td>
<td>High</td>
<td>Moderate</td>
<td>High</td>
<td>Moderate</td>
</tr>
<tr>
<td>Potential to Optimize Major Movement Flow Characteristics</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>High</td>
<td>Moderate</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td>Compatibility with Land Use Plan</td>
<td>High</td>
<td>High</td>
<td>Moderate</td>
<td>Low</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Low</td>
</tr>
<tr>
<td>Potential to Maximize Operational Integrity (signing, wayfinding, ease of use by heavy vehicles)</td>
<td>Moderate</td>
<td>Low</td>
<td>Moderate</td>
<td>High</td>
<td>Moderate</td>
<td>High</td>
<td>Low</td>
</tr>
</tbody>
</table>

*Relative rankings indicate how well alternatives attain each criteria. “High” indicates alternatives that are most effective in attaining the criteria, and “low” indicates alternatives that are least effective in attaining the criteria.
### Table 6
**Implementation Plan**
**Highway 52/42/55 Interchange Partnership Study**

<table>
<thead>
<tr>
<th>Priority Improvement Elements</th>
<th>Stage 1</th>
<th>Stage 2</th>
<th>Stage 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Reconstruct Highway 52/42 interchange including four-lane section on Highway 42.</td>
<td>• Realign Highway 42 and Highway 55 to form a continuous east-west facility through the Highway 55/42 west junction area</td>
<td>• Remove existing Highway 55 interchange with Highway 52.</td>
<td></td>
</tr>
<tr>
<td>• Realign Highway 42 and Highway 55 to form a continuous east-west facility through the Highway 55/42 west junction area</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Remove existing Highway 55 interchange with Highway 52.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Key associated improvement elements that may be done concurrently with major improvement element.</td>
<td>• Construct rail overpass north of 140th Street (proposed by 117th Street design for 2002-2004 construction).</td>
<td>• Realign Courthouse Boulevard and Emery Avenue to form a single relocated full access intersection.</td>
<td>• Connect Courthouse Boulevard with 117th Street on the east side of Highway 52.</td>
</tr>
<tr>
<td>• Construct 140th Street connection to under Highway 52.</td>
<td>• Revise west side Highway 52 frontage road adjacent to Koch to right-in/right-out</td>
<td></td>
<td>• Upgrade remaining two-lane segments of Highway 55 to form a continuous four-lane divided facility.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>System plan roadway improvements not addressed above as needed in conjunction with land use development.</td>
<td></td>
</tr>
</tbody>
</table>

### 7.0 Next Steps
Preliminary design of the preferred Highway 52/42 interchange configuration concept will be developed as the next phase of this Partnership Study. Key components include:

- An official map of the interchange that will assist responsible agencies in guiding future land development near the interchange.

- Preliminary design is expected to be completed by the summer of 2002.

- Mn/DOT has committed to providing an adequate span in the proposed Highway 52 railroad overpass bridges for a local roadway crossing of Highway 52.

- The Highway 52 bridges are the responsibility of Mn/DOT as part of the 117th Street interchange improvements.

- The City of Rosemount will take responsibility for the local roadway improvements.
The memorandum of understanding (MOU) between Mn/DOT and the City of Rosemount regarding the Highway 52 railroad overpass is included in Appendix F. Key commitments by Mn/DOT and the City of Rosemount of this MOU are as follows:

**Mn/DOT**

1. As part of the Highway 52/117th Street interchange and railroad grade separation project, scheduled for construction in 2002-2004, Mn/DOT will extend the span on the Highway 52 bridges over the railroad to provide local street system continuity by providing a corridor for 138th/140th Street under the Highway 52 bridges. Mn/DOT will design, fund, and maintain a bridge that accommodates the typical section as shown in Exhibit 1 (revised on 12/20/01).

2. This will be the only local street grade separation with Highway 52 that Mn/DOT will financially participate in between Highway 42 and 117th Street.

3. Mn/DOT will continue to work within the State’s project development and cooperative agreement processes to develop a frontage road system as identified in the Highway 52/42/55 IRC Partnership Study with the City.

**City of Rosemount**

1. The City will design, construct, and fund all costs for the 138th/140th Street connection including acquiring the necessary right-of-way.

2. The City will work to develop a frontage road system in accordance with the Highway 52/42/55 IRC Partnership Study that will permit future closure of at-grade access points north of 138th Street and will not request additional at-grade access intersections on Highway 52.

3. The City agrees to close the existing at-grade access on Highway 52 at 140th Street when the new 138th/140th Street connection is completed.

4. In conformance with the Mn/DOT access guidelines for High Priority Regional Corridors and the Highway 42 Corridor Study, the City will include within their transportation plan the recommendations from the Highway 52/42/55 Partnership Study. This includes providing right-of-way where possible through platting, constructing a supporting local street system and working with Mn/DOT through the State’s project development and cooperative agreement program in the development of the Highway 52/42 interchange to:
• Move Connolly Road approximately 1/2 mile east of the east Highway 52/42 (Highway 55) interchange ramp with right-in/right-out access.

• Plan for a full access intersection approximately 1-mile east of the east Highway 52/42 (Highway 55) interchange ramp.

8.0 Highway 55 Regional Corridor Plan

Highway 55, from Highway 52 in Rosemount to Highway 61 in Hastings, is designated a HPRC. During the course of this IRC Partnership Study, Mn/DOT established the study guidelines for HPRCs. Because the majority of the Highway 55 HPRC is within the limits of the Partnership Study, it was decided to amend this study to include a section addressing the Highway 55 HPRC requirements to avoid revisiting the same transportation issues in a separate study at a later time.

The HPRC segment of Highway 55 is 9.3 miles long and consists of a ½-mile four-lane divided section immediately east of Highway 52; a 2.3-mile two-lane section adjacent to the Mississippi River Valley; a 1.7-mile two-lane commons section with Highway 42; a 2.9-mile two-lane section west of Hastings; and a 2-mile four-lane divided section in Hastings to Highway 61.

This section identifies a Corridor Management Plan to ensure that this segment of Highway 55 can meet the 50 mph average speed performance target over its entire length, as well as provide for safe access points that meet HPRC access management guidelines.

8.1 Performance

A performance evaluation, as suggested by HPRC guidelines under existing, future no-build, and future build conditions, has not been conducted for the following reasons:

• The preceding system alternatives evaluation methodology is to a much higher level of detail than the HPRC performance evaluation methodology.

• A performance evaluation is a tool for identifying deficiencies and potential improvement areas along the entire length of a corridor. Deficiencies and potential improvement areas have been identified using more detailed tools and methods.

• A performance evaluation is to be measured for an average one-hour trip. The short length of Highway 55 will not allow for a measurement during a one-hour trip.

The traffic analysis memorandum included in the Appendix provides some indication of the potential for Highway 55 to meet the 50 mph
performance target. In summary, the new alignment of Highway 55 between Highway 52 and the east junction of County Highway 42 would operate at LOS E under 2025 forecast volume conditions, assuming the existing two-lane facility remains. This indicates that Highway 55 performance would likely degrade well below the 50 mph goal. When upgrading to a four-lane facility, this segment of Highway 55 is expected to operate at LOS B and can expect to meet its performance target.

The existing four-lane divided section in Hastings has not been evaluated. Due to the recent land use development, the installation of signals and implementation of access management and supporting roadways to serve this development, it is unlikely that significant improvements could be considered that would measurably increase performance.

Crash rates along the Highway 42/55 commons section are the highest in the Highway 55 corridor. Crash data was collected for a five-year period beginning in January of 1996 and ending in December of 2000. A total of 79 crashes were reported along this segment, many of which were reported at the Highway 55/Highway 42/County Road 85 substandard intersection. This intersection is planned for a safety improvement in 2003 that will realign County Road 85 and Highway 42 to the east to intersect with Highway 55 at a right angle. Turn lanes are included in the design, and crash potential will be reduced by this upgrade.

Upgrading the two-lane commons section from Highway 52 to the east junction of Highway 42 to a four-lane divided facility would not only correct the capacity concerns, but may allow Highway 55 to meet its performance targets. The remaining two-lane section between the east junction of Highway 42 and Jacob Avenue should be upgraded as well to a four-lane divided section to eliminate all bottlenecks along Highway 55.

Under preferred System Option F, the entire length of the realigned Highway 55 would be upgraded to a four-lane, east-west roadway facility to accommodate future traffic volumes and eliminate bottlenecks. Combining this capacity improvement with an average full access spacing of 1-mile, as suggested by HPRC access management guidelines, will protect the performance characteristics of Highway 55.

8.2 Function

Highway 55 is functionally classified as a Principal Arterial. Due to the high through volumes using the corridor and the peak hour traffic splits (75/25) indicating high use by commuters to and from the Twin Cities, this classification is warranted. Highway 46 could be
considered an optional corridor 1.5 miles south of Highway 55, especially considering the planned connection of old Highway 48 to Highway 46 to the east through the University of Minnesota Research Facility and a new intersection south of Coates. However, the character of the roadway, including consistent residential development adjacent to the highway and its current at-grade intersection with Highway 52, will not provide the type of performance to replace the function of Highway 55.

8.3 Jurisdiction
Currently, the State of Minnesota owns existing Highway 55 from Highway 52 to Highway 61 and Dakota County owns Highway 42 from Highway 52 to Highway 55. When System Option F is implemented, the State of Minnesota should assume ownership of Highway 42, from Highway 52 to Highway 55, to provide for the new alignment of Highway 55. Courthouse Boulevard, or the old Highway 55 from Highway 52 to Highway 42, should turn back to local jurisdiction (the City of Rosemount).

8.4 Land Use/Access Management
Development is imminent along the future Highway 42/55 corridor, primarily near the existing Highway 52/42 interchange and along the existing Highway 55 alignment between Highway 52 and Highway 42. The City of Rosemount has finalized its 2020 Land Use Plan, and it will be used as a guide and template for the planning of future development. The City of Rosemount is currently studying, to a greater level of detail, potential development patterns surrounding the Highway 52/Highway 42 interchange due to land use development potential.

The old Highway 55, Courthouse Boulevard, will serve as a local industrial collector roadway with direct access to future development allowed. The relocated Highway 55/42 HPRC corridor, from Hastings to an upgraded Highway 52/42/55 interchange, will need to accommodate local roadway system access while meeting the access management guidelines for HPRC.

The access management guidelines for HPRCs detailed in Section 3.3 include:

- 1-mile full movement intersection spacing.
- Secondary intersections may be provided subject to operating/street network conditions.
- Signalization is not anticipated and should be avoided to protect the performance of the HPRC facility.
• Private access not allowed unless no other alternatives are available

An Access Management Plan has been created for the new Highway 55 corridor from Highway 52 to Hastings and is shown in Figure 8 in Section 4.5. Assumptions of the plan include the realignment of the existing Highway 42/55 intersection to provide for the new east/west through route associated with System Option F. Additionally, the planned intersection realignment and upgrade at Highway 55, Highway 42, and Highway 85 is included.

Full median opening intersections would be allowed along Highway 55 at the following public cross-streets:

• Highway 52/42/55 interchange (configuration to be determined)
• Intermediate location between the Highway 52/42/55 interchange and Emery Avenue
• Realigned Emery Avenue/Courthouse Boulevard intersection
• Fischer Avenue intersection
• Realigned Highway 85/42 intersection
• Horner Avenue intersection

Right-in/right-out intersections may be considered to accommodate access via the existing/future street network subject to the operative conditions referenced in Section 3.3.

The system plan indicates support roadway connections that may be used to correlate with the Highway 42/55 access plan and accommodate the 2020 Land Use Plan. Potential intermediate access locations are shown that would be subject to operating conditions.

8.5 Funding

Section 6.0 outlined a potential Implementation Plan for study area improvements. Actual funding allocation and implementation will be determined as needs arise.
Appendix A

117th Street Interchange Layout
117th Street Interchange Concept Plan
Appendix B

Highway 55/42/85 Intersection Layout
Name: Tony & Darlene Blatnik
Address: 13675 Mississippi Trail Minneap.
City/State/Zip: Hastings, MN 55033 9203
Phone: 651-437-3734
Comments: The new 55/85/42 intersection looks great. We're hoping it includes wider shoulders up to Spring Lake Park entrance where they are a bit wider already. Hwy 55 should definitely be 4 lane - traffic is immediate (especially during rush hour).

Name: Kathleen & N. A. Roth
Address: 4151 Kindred Way
City/State/Zip: Lake Elmo MN 55042
Phone: 651-739-4572
Comments: need address as if 7/1/01
Want to be notified of upcoming meetings
Name: Tim Spitzack
Address: 14140 Furlong Trail
City/State/Zip: Hastings, MN 55033
Phone: 651-437-0077
Comments: It's my understanding that 46 is being developed as the major East/West corridor between 57 and 35. Doesn't it make more sense to look at further developing 48 from Hastings to Coates (52) to meet with that? 55 is too busy as it is. Developing 48 would alleviate much of that traffic and be far more convenient for commuters that live South East of Hastings.

Name: Jill Spitzack
Address: 14140 Furlong Trail
City/State/Zip: Hastings, MN 55033
Phone: 651-437-0077
Comments: Rep. @ open house didn't seem to know much about situation & seemed rude, not open to discussion or suggestions. I think it would be in the best interest of Hastings & the safety of Hwy 55 to explore a 4 lane road beginning @ 47 + joining the 42/52 interchange. Why bring all commuters through Hastings? Commuters are not going to want to travel South on 42 to hook up @ 52 as proposed. They need a shorter route.
Name: JONATHAN E. ROBERTSON, CONTINENTAL NITROGEN
Address: 12955 COURTHOUSE RD
City/State/Zip: ROSEMONT, MN 55068
Phone: 651-437-3101
Comments: Our facility is located in the "crest" of 52/55. If that interchange is eliminated, we would hope that there is a frontage road that will connect to I-174. If not, it will be extremely inconvenient for our northbound traffic.
Name: Connie Stein
Address: 925 Balls Drive #204
City/State/Zip: Hastings MN 55033
Phone: (651) 438-7484
Comments: I agree that these highways need to be taken care of. If the highway 42 entrance to Hwy 52 is chosen, I feel that highway 42 should be a 4-lane highway. The traffic from Hwy 55 and future growth are going to be too much for a 2-lane road. I think Option A should be chosen.

Name: Henry Tejeda
Address: 17440 East 203rd St
City/State/Zip: Ramsey Hastings MN - 55033
Phone: 
Comments: Preserve mobility on 55/52 & 42 Plan for Frontage roads - (Model after 61-Jamaica etc.)

Corridors). Avoid problems like Newport with stop lights or Elliff (101)
Hastings is growing - expansion in that area should require Frontage planning. (42's lights Rem to Brule are frustrating) Anti Traffic on TH 55
Name: Sam Strain
Address: 16341 Goodwin Ave
City/State/Zip: Hastings MN 55033
Phone: 651-437-9374
Comments: Good plan @85 & 42. 42 & 52 interchange concept is good. But you should not close 55 there is much more traffic out of Hastings. Concept out of Hastings East 42 & 52 makes all the north bound traffic down to 1 right hand turn at 48 & 52.

Bad move! Very bad! Need an interchange at 48 & 52. There will be people killed at that intersection. 117 looks good but 52 should be 3 lanes from 117 to Concord. 55 should be 4 lanes. It would be good if 55 was 4 lanes to 52.

Name: Frank Andre
Address: 4322 145th St
City/State/Zip: Rosemount
Phone: 
Comments: When you move 55 to 42, you are only making a bigger problem. If you enlarge the road at 55 and make a bridge at 4100, the traffic would be good at 55 & 42.
TH 52/CUSAH 42/TH 55 Interchange Partnership Project  
Second Open House, August 2, 2001

Name: J D Payne, Jr.  
Address: 5300 Pine Bend Trail  
City/State/Zip: Rosemount, MN 55068  
Phone: 651-437-6191 EXT 11  
Comments: Please send me options A, F, All 42 interchange options, Concept F1, F2, F4A, F4B, F4C and A3 (interchange options 11-17th)

Any questions call Kristine Vieth

TH 52/CUSAH 42/TH 55 Interchange Partnership Project  
Third Open House, September 13, 2001

Name: Myron Napper  
Address: 6281-145th St. E.  
City/State/Zip: Rosemount, MN 55068  
Phone: 651-437-5159  
Comments: Need to approve Opt A and Opt F, Alt 5B, also Opt F Alt 5
Name: Martin & JoAnn Rechtzigel
Address: 14727 Clayton Ave E
City/State/Zip: Rosemount, MN 55068
Phone: 651-437-925
Comments: Go with Option F or A
Alt. B: Hwy 42 interchange,
Give us your final plan & the possible Construction date A.S.A.P.
Name: Randy Knutson
Address: 101 St - 140th E 
City/State/Zip: Hastings Mn  55033
Phone: 651 437 6745
Comments: Keep 55 on same corridor but widen it to 4 lanes to Hastings. Keep Co. 42 same as is but make better merging lanes to highway 55. Lower the speed limit by 10 mph because of the curve.
Name: Carol & Cy Schmitz
Address: 14050 Courthouse Blvd
City/State/Zip: Rosemount, MN 55068
Phone: 651-437-8291
Comments: ① NEED STOP LITES AT 42/55 & 42/55/85 NOW
② NEED TURN LANE EASTBOUND 55 TO WESTBOUND 42 NOW
③ NEED TO FIX RAILROAD TRACKS AT SPECTRO ALLOYS ON HWY 55
④

Name: Brenda Sugi
Address: 13701 Courthouse Blvd
City/State/Zip: Rosemount, MN 55068
Phone: (651) 437-2296 / (651) 438-7900
Comments: Our property is on Hwy 55. If a frontage road is put in we would lose a good portion of our land and or have our house condemned because its too close to the road, I also have a business at my home which would also be affected.
Pierre Mendez

1004 125th St. E.
Hastings, MN 55033
(651) 437-2689

Appreciate Staylight is used - use only at peak hours. Shutting down Staylight between 42 & 52.

Kevin Dakota
8783 145th St. E.
Hastings
437-1596

42-52 - Opp F ALT 4 would flow traffic faster.
Name: Karen J. Bremer Nininger Township Pressure

Address: 9070 150th St. E.

City/State/Zip: Hastings, MN 55033-8500

Phone: (651) 437-5130

Comments: I am pleased to see that Mn/DOT is going to improve the intersection. But an accident at this intersection, believe that until a stop light is installed, we will not fully solve the problem.

Name: Juanita Sorg

Address: 13645 Mississippi Tr.

City/State/Zip: Hastings, MN 55033

Phone: 

Comments: 55/42/85 New Diamond interchange great but go farther stop lights or over pass. Farm traffic is heavy & frequent & we have large piece of equipment & we are extremely cautious yet every day Dinos plow right up on us to pass us. The do we get over/around/over SS 27 into 55 U-turn all the way into Hastings!
Name: Phyllis Paulkne
Address: 1395 S Mississippi
City/State/Zip: Hastings MI 53733
Phone: 637-1609
Comments: Prefer light @ 42 + 55 proposed new intersection in Nininger. Stop signs are not going to improve the safety of crossing Hwy 55 to Goodwin.
Appendix D

117th Street Connection Alternatives
Highway 52/55/42 Interchange Partnership Project

Figure B2

117th Street Connection Alternative 2:
Rail spur realignment around cemetery
Appendix E

Highway 52/42 Interchange Configuration Alternatives
STATE OF MINNESOTA
METRO DIVISION
DEPARTMENT OF TRANSPORTATION
MEMORANDUM OF UNDERSTANDING

Memorandum of Understanding between:
The State of Minnesota
Department of Transportation, and
The City of Rosemount

RE: Construction of Trunk Highway 52

This Memorandum of Understanding is made and entered into by and between the State of Minnesota, Department of Transportation, hereinafter referred to as the "State" and the City of Rosemount, Dakota County, Minnesota, acting by and through its City Council, hereinafter referred to as the "City".

WITNESSETH:

WHEREAS, the City, Dakota County, and State are completing an Inter-Regional Corridor (IRC) Study to plan for the future operation of TH 52 and the connecting local road system; and

WHEREAS, the study is recommending that a collector street be provided that is grade separated with TH 52 between 117th Street and CSAH 42; and

WHEREAS, the study is recommending that at grade intersections be removed from TH 52 and the City and State work in partnership to provide a frontage road system; and

WHEREAS, the State is currently designing the bridges on TH 52 that will grade separate the relocated railroad crossing at 138th Street; and

WHEREAS, the City and the State concur that it is in their best interest to preserve TH 52 as a High Priority IRC; and

WHEREAS, the City and the State concur that it is important to plan for and
provide local street system continuity while removing at grade intersections on TH 52.

THEREFORE, it is the intent of the State, and the City to work cooperatively toward the following objectives:

Article I - Non-binding Memorandum of Understanding

1. Both parties acknowledge that this Memorandum of Understanding (MOU) is a non-binding statement of intent. Any binding agreements executed by the parties subsequent to this MOU will be made pursuant to written and properly executed and approved agreements.

Article II - Trunk Highway 52 Construction—Mn/DOT Commitments

1. As part of the TH 52/117th Street interchange and railroad grade separation project, scheduled for construction in 2002-2004, Mn/DOT will extend the span on the TH 52 bridges over the railroad to provide local street system continuity by providing a corridor for 138th/140th street under the TH 52 bridges. Mn/DOT will design, fund and maintain a bridge that accommodates the typical section as shown in exhibit 1 (revised on 12/20/01).

2. This will be the only local street grade separation with TH 52 that Mn/DOT will financially participate in between CSAH 42 and 117th Street.

3. Mn/DOT will continue to work within the State's project development and cooperative agreement processes to develop a frontage road system as identified in the TH 52/TH55/CSAH 42 IRC Partnership Study with the City.
Article III - Trunk Highway 52 Construction—City Commitments

1. The City will design, construct and fund all costs for the 138th/140th Street connection including acquiring the necessary right of way.

2. The City will work to develop a frontage road system in accordance with the TH 52/TH 55/CSAH 42 IRC Partnership Study that will permit future closure of at-grade access points north of 138th Street and will not request additional at-grade access intersections on TH 52.

3. The City agrees to close the existing at grade access on TH 52 at 140th Street when the new 138th/140th Street connection is completed.

4. In conformance with the Mn/DOT access guidelines for High Priority Regional Corridors and the CSAH 42 Corridor Study, the City will include within their transportation plan the recommendations from the TH 52/TH 55/CSAH 42 Partnership Study. This includes providing right of way where possible through platting, constructing a supporting local street system and working with Mn/DOT through the State’s project development and cooperative agreement program in the development of the TH 52/CSAH 42 Interchange to:
   - move Connolly Road approximately ½ mile east of the east TH 52/CSAH42 (TH 55) interchange ramp with right-in/right-out access
   - plan for a full access intersection approximately 1 mile east of the east TH 52/CSAH 42 (TH 55) interchange ramp
IN TESTIMONY WHEREOF the parties have executed this memorandum of understanding by their authorized officers.

DEPARTMENT OF TRANSPORTATION

By
Robert Winter
Acting Metropolitan Division Engineer
Date 11/30/02

CITY OF ROSEMOUNT

By
Thomas Burt
City Administrator
Date 2-6-02