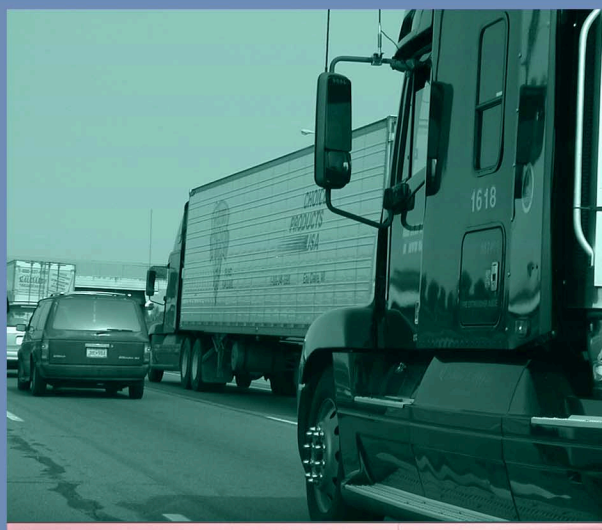
June 2003

Adequacy of Freight Connectors to Interregional Corridors and Major Highways



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DEFINITIONS

The following definitions are used throughout the report and are defined as follows:

Greater Minnesota

Major freight facilities include manufacturing facilities, wholesale or distribution centers, and utilities with gross annual sales exceeding $100,000,000.

Connectors are the local or county roads used by trucks to travel from the freight facility to the major highway (10-ton road).

Twin Cities Metro Area

Key access interchanges are grade-separated interchanges which trucks most likely use to travel from the Metropolitan Urban Freeway System to minor arterials and major collectors. System interchanges, or freeway-to-freeway interchanges, are not designated as "key interchanges" because they do not provide local access.

Key access intersections are arterial intersections used by trucks. They do not typically provide direct access to freight facilities.

Key access points are secondary intersections used by trucks to access the local street system (city streets and local collectors).

Industrial and extractive land use areas are based on land use classification codes 151 (Industrial & Utility) and 153 (Extractive) from the Generalized Land Use 2000 for the Twin Cities Metropolitan Area. (Note: some clusters include residential, retail, and mixed uses.)

Major freight facilities see above definition for Greater Minnesota

River terminals are defined as intermodal freight transfer facilities located along major river waterways.

Cluster areas are defined as significant concentrations of industrial and/or extractive land uses having multiple major freight facilities.

Deficient bridges include overpasses and underpasses with signed vertical clearance restrictions and/or signed weight restrictions.

ADEQUACY OF FREIGHT CONNECTORS

1.0 Introduction

This study on the adequacy of Freight Connectors to the Interregional and Major Highway System Study is another step in the development of information, tools and processes to improve freight planning and make better investment decisions in Minnesota. Previous efforts include the development of Mn/DOT's Freight Facilities Database, the Statewide Freight Flow Study, and the Freight Planning Information Systems Requirements Analysis.

The objective of these efforts is to make available to Mn/DOT Districts, planning agencies and the freight industry the resources for improving freight productivity and, ultimately, for increasing economic activity in the state. To accomplish this objective, it is important that Mn/DOT stay up-to-date with current, and anticipated freight issues by maintaining channels of communication open with the freight industry and stakeholders. In particular, Mn/DOT Districts are in a good position to dialogue with freight shippers and carriers in their region. In addition, Districts can take the results of these studies and share them with relevant freight stakeholders in their respective region.

2.0 Study Context

The Minnesota Department of Transportation (Mn/DOT) has taken a number of proactive steps to better understand freight movements and to develop policies and priorities that keep Minnesota competitive. These include:

- Development of the Interregional Corridor (IRC) system. These interregional corridors serve as the backbone system for efficiently and safely moving people, goods, and materials to markets.
- Establishment of performance measures to assess the adequacy of freight connections to the IRC system.
- Identification of freight information and tools to identify roadway deficiencies and generate support for improvements that affect freight.

Policy 4 of the 2003 Statewide Transportation Plan defines freight performance measures. This policy is stated as follows:

> "Provide transportation options for people and freight"

One of the freight performance measures for this policy is Performance Measure 4.3F, which reads as follows:

> "Percent of major freight generators with appropriately designed roadway connections to Interregional Corridors and other major rail and water corridors. Major freight generators include commercial water ports and terminal, rail terminals, truck terminals, intermodal facilities, and other major freight generating facilities and transfer points."

This study addresses roadway connections between major freight facilities and generators in the state and Interregional Corridors. Additionally, this study looks at connections between freight facilities and the regional highway system in the Twin Cities Metropolitan Area.

The Department will, at a later date, assess the adequacy of water and rail connections to major rail and water corridors.

As a point of information, there are other performance measures in the Statewide Transportation Plan that directly or indirectly affect freight. These include:

Measure	Description
5.1	Measure travel speeds on IRCs
5.2	Measure travel time reliability on IRCs
6.1	Measure the ratio of peak to off-peak travel times on urban freeway systems
6.2	Measures travel time reliability on urban freeway systems
6.3	Measure miles and hours of congestion on urban freeway systems
7.1	Measures crash rates on the Trunk Highway system and at at-grade railroad crossings
7.2	Measures total fatalities on all roads statewide

For each of these measures, six-year, ten-year and 20-year performance targets have been defined.

In 1996, Mn/DOT and the Metropolitan Council submitted to the Federal Highway Administration (FHWA) a list of National Highway System Connections to regional major intermodal terminals. This report was in response to FHWA's request that state departments of transportation and metropolitan planning organizations identify major connectors. The two intermodal facilities submitted to FHWA were the Minneapolis-St. Paul International Airport and the Duluth Sea Port connectors.

3.0 Study Purpose

The purpose of this study is to develop an initial measure of freight connector adequacy. This study is a follow-up to Mn/DOT's *Freight Planning Information Systems Requirements Analysis*, which identified and prioritized a number of immediate, mid-term and long-term information system needs. The top need identified was the establishment of a performance measure to assess the adequacy of freight connections between major freight facilities and the IRC system[1]. This measure addresses the concern that since most freight generating facilities are not located directly on the IRC system, the connectors to the IRC system may limit the ability to efficiently move freight.

[1] The IRC system consists of higher-level roadways that generally meet weight, geometric and other design requirements for heavy trucks.

4.0 Freight Connectors

The issue of adequacy of freight connectors is quite different in the Twin Cities metropolitan area than it is for IRCs in Greater Minnesota (the IRC system stops at the I-494/694 ring). The sheer number of freight facilities, the relatively small Twin Cities geographic area, and the high density of roadways servicing freight, combine to argue for a different approach for assessing freight connections in the metropolitan area.

For these reasons, the report is divided into two parts: The first part focuses on connectors in Greater Minnesota and the second focuses on connectors in the seven-county Twin Cities Metropolitan Area (TCMA).

Freight Connectors in Greater Minnesota

The assessment of adequacy of connectors between freight facilities and the IRC system in Greater Minnesota requires; first, identification of key freight facilities statewide; second, identification of alternative roadway connections between these key facilities and IRCs; and third, an evaluation of connection adequacy based on predetermined criteria.

Freight Facilities

For this initial effort, the goal was to identify an average of 10-15 key regional freight facilities in each of Mn/DOT's Districts in Greater Minnesota, for a total of approximately 100 major facilities.

The following steps were taken to identify and evaluate these major freight facilities:

1. Mn/DOT's Freight Facilities Database was used to identify a preliminary list of freight generators. The criteria used were: any business in the service sector with gross annual revenues in excess of $100 million, including lake and river terminals, but excluding retail outlets. This initial list included a number of small petroleum distributors, utility plants, and co-ops. These facilities did not meet the major freight facility criteria, and were removed from the list. Other facilities were added (e.g., Schwan's Foods) based on knowledge of local areas.
2. A list of facilities was sent to each Mn/DOT District office with the request to verify each facility's existence, their geographic location, and other relevant data.
3. A revised list of 158 facilities was compiled and mapped (see Figures A1 to A7 for each district in Appendix A.) The Mn/DOT Freight Facilities Database provided site addresses and latitude / longitude. Mn/DOT supplied the spatial data for the basemap. Highway routes from Mn/DOT's basemap included Spring Load data from the TIS (10-ton roads) and deficient bridge locations (weight postings or height restrictions). Major 10-ton highways were displayed along with the facilities identified. Once the locations were mapped, the nearest major 10-ton highway to each location was identified[2]. For facilities where local

[2] The connector criteria was modified so that the connector is to the nearest 10-ton trunk highway rather than to the IRC because: (a) Weight is the primary element in servicing freight facilities; (b) most businesses relate connectors

roadways provided the connection to a major highway, the specific local roads were noted as "links" to each major highway. Figure A8 in Appendix A shows an example of this type of connection.

4. A telephone survey of the freight facilities (businesses) was conducted to verify the accuracy of the freight facility information, including location, size, and key roadway connectors and "links" used. A sample survey form can be found in Appendix A. Survey results for all sites are found in Table A4 Appendix A. In addition, several questions were asked regarding:

   - Weight or height restrictions along the connectors.
   - Safety problems (sight lines, turning radius) along the connectors.
   - Number of semi-trailers in / out daily.
   - Number of single-unit trucks in / out daily.

5. The adequacy of connectors was determined based on the survey results, especially user comments about safety and roadway conditions that seemed serious enough to affect operations. It is important to note that this assessment of adequacy did not include on-site visits or discussion with local jurisdictions responsible for the connectors.

Results

Of the initial158 freight facilities identified, surveys were not completed for 24 freight facilities either because the company was out of business, because the company was presumed to be out of business (discontinued telephone), or because the respondents declined to participate in the survey (See Table 1 in Appendix A). In addition, 33 sites had direct driveway access to a major highway. These connectors were deemed adequate and no survey was conducted.

The connector adequacy to each of the remaining freight facilities was determined utilizing the completed survey results, consultant knowledge of the area and of neighboring generators with a shared roadway connector, or by consulting with city staff. Table 2 in Appendix A lists these sites and the means by which the adequacy of the connector was determined. The verified database of 101 freight facilities in Greater Minnesota satisfies the goal of 100 at the study outset.

Of the 101 sites, the study identified six as not having an adequate connector to the IRC system, (an adequacy rate of 94 percent.) These facilities are listed below with the reason for connector inadequacy.

1. Azcon Corp Dock, Duluth, MN

   Arthur Avenue is part of the connector used by trucks to travel along the pier. Azcon reported that the very poor condition of Arthur Avenue affects the performance of their business. (Planned reconstruction of Arthur Avenue within the next year will likely fix the problem.)

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as roadways that connect their facilities to the nearest major route (i.e., 10-ton trunk highway); and (c) the length of connectors is more manageable (in terms of obtaining input and tracking data).

2. Arthur M. Clure Public Marine Terminal Berth Nos. 1, 2, 4, 5, & 6, Duluth, MN

   (Same problem as Facility 1 above).

3. Arthur M. Clure Public Marine Terminal – Garfield Docks C and D, Duluth, MN

   (Same problem as Facility 1).

4. Northland Pier, Northland Constructors Inc., Duluth, MN

   (Same problem as Site 1).

5. Cold Spring Granite Company, Cold Spring, MN

   This facility has direct access to MN 23, but merging and accelerating onto this roadway is difficult for trucks.

6. Bankers Systems, St. Cloud, MN

   The intersection of CR 75 and Ridgewood Road along the connector has experienced fatal accidents and other safety problems.

Freight Connectors in the Twin Cities Metropolitan Area (TCMA)

Mn/DOT has identified a high- and medium-priority system of interregional highway corridors that connect the state's major regional trade centers to each other and to the Twin Cities region. These corridors, including Interstates 35E, 35W and I-94, and Trunk Highways 169, 212, 10, 36 and 52, are all linked to the I-494 and I-694 beltway. The regional principal and minor arterial road network connects these interregional corridors to freight terminals at the MSP Airport, to the river port facilities in Savage, St. Paul and Minneapolis, to railroad truck/rail intermodal facilities in St. Paul and Minneapolis, to truck freight distribution centers, and to major manufacturing facilities.

Within the region, 468 highway miles are designated on the National Truck Network for use by long combination trucks, 74 miles are designated as part of the Minnesota Twin-Trailer Network, and 304 miles are designated as part of the 10-ton system (Source: Twin Cities Transportation System Performance Audit, Metropolitan Council, 2001).

Approach

Given the tendency of freight facilities to occur in groupings, in close proximity to each other (e.g., business parks, industrial parks, campuses, etc.); a "cluster" approach was used to identify and evaluate freight connections in the TCMA. Freight facility clusters were identified using Metropolitan Council land use information. Industrial and extractive (mining) uses were mapped using GIS, and then grouped in logical clusters.

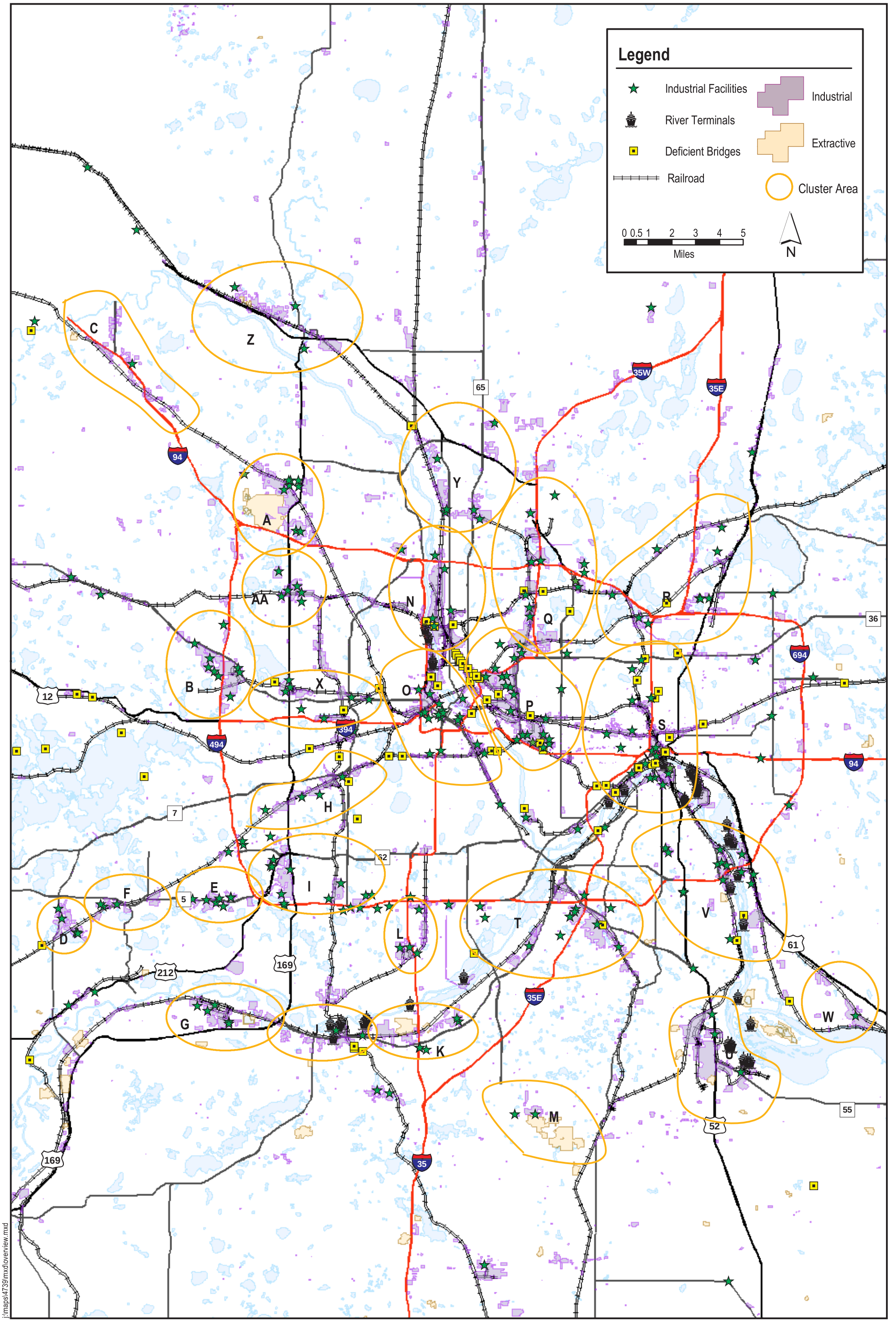
Cluster areas do not encompass every freight facility or industrial and extractive land use in the TCMA. However, they do contain the major concentrations. In addition, Mn/DOT's Freight

Facility Database was used to overlay the larger freight facilities (businesses with more than one hundred million in gross annual sales), and special facilities such as river terminals and airports.

The TCMA was broken into 27 distinct cluster areas (see Figure 1). For each of these clusters, a short summary was developed (see Appendix B). The summary contains:

- A geographic description of the cluster area;
- A map showing industrial and extractive land uses and key transportation features/elements that relate to accessing the regional system;
- A sample of the types of facilities found in the cluster area;
- A description of key roadways used to access the regional system;
- Issues and/or challenges for freight movement in the area; and
- Suggested solutions (projects that have been proposed for addressing identified problems).

Non-waterway intermodal transfer facilities were not evaluated unless they were within a cluster area identified. Most of these facilities are airports (Minneapolis-St. Paul International (MSP), St. Paul Midway, and Flying Cloud).



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TWIN CITIES METROPOLITAN REGION - CLUSTERS

Figure 1

ADEQUACY OF FREIGHT CONNECTION TO REGIONAL SYSTEM FOR TWIN CITIES METROPOLITAN AREA

Minnesota Department of Transportation

5.0 Findings and Recommendations

An important outcome of this work is the identification of freight connectors and the development of a freight facility database (Greater Minnesota) and freight facility cluster database (TCMA). This initial step will provide the framework for conducting future freight performance analysis and for identifying roadway improvements. The following are a summary of the findings and recommendations from the study.

Findings

1. Based on the response to the freight telephone survey, only six of the 101 freight facilities consider that their connector is inadequate.

2. A great majority of contact names kept in the Freight Facilities Database were incorrect (because of turnover of personnel). Consideration should be given to not maintaining this information field, but rather a main phone number.

3. Congestion in the Twin Cities was identified in the survey as the most significant problem affecting freight movement

4. Most cluster areas identified in the TCMA have multiple accesses to the regional highway system. However, some have a few or only one access point (e.g., Savage Port). As a result, congestion occurs in local access roads and intersections, and on nearby interchanges.

5. Connectors in industrial areas are generally in good condition (pavement and geometrics). A number of City Engineers indicated that, when there are problems, roadways are not posted. Instead, they are temporarily "patched" until repairs are made.

Recommendations

The work conducted as part of this study is the initial step in a process aimed at assessing the adequacy of freight connectors to major statewide and regional freight facilities. As such, there are a number of steps that are recommended for continuing to improve this process:

1. Adequacy of connectors was determined based, primarily, on a survey of freight facilities managers and operators, complemented by consultant knowledge of the area and conversations with city staff. This information needs to be verified at the District level with actual site visits of connectors judged inadequate.

2. Mn/DOT should continue to define the technical criteria for assessing the adequacy of connectors. This should be a consultative process involving Mn/DOT Districts and freight industry representatives. The criteria previously identified in the requirements analysis included: Spring and/or Posted Weight Restrictions, Congestion and/or capacity problems,

Availability of turn lanes, Availability of acceleration lanes, Difficulty making left or right turns, At-rail grade crossings, Availability of truck only routes, and pavement conditions.

3. The current database of major freight facilities and their connectors to the IRC and major highways needs to be kept up-to-date. This includes the freight facilities themselves, which change with some frequency, and the adequacy statues. In addition, as eligible new freight facilities emerge, they should be added to the database. It is recommended that this be done at the District level (there are only 10-20 facilities per District).

4. Using the connector database for the Twin Cities clusters as a starting point, develop a truck route designation processes. Present in the form of a map.

5. Consider incorporating freight corridor information from the commodity flow (Reebie) data, to further identify freight improvements (connectors, corridors, areas).

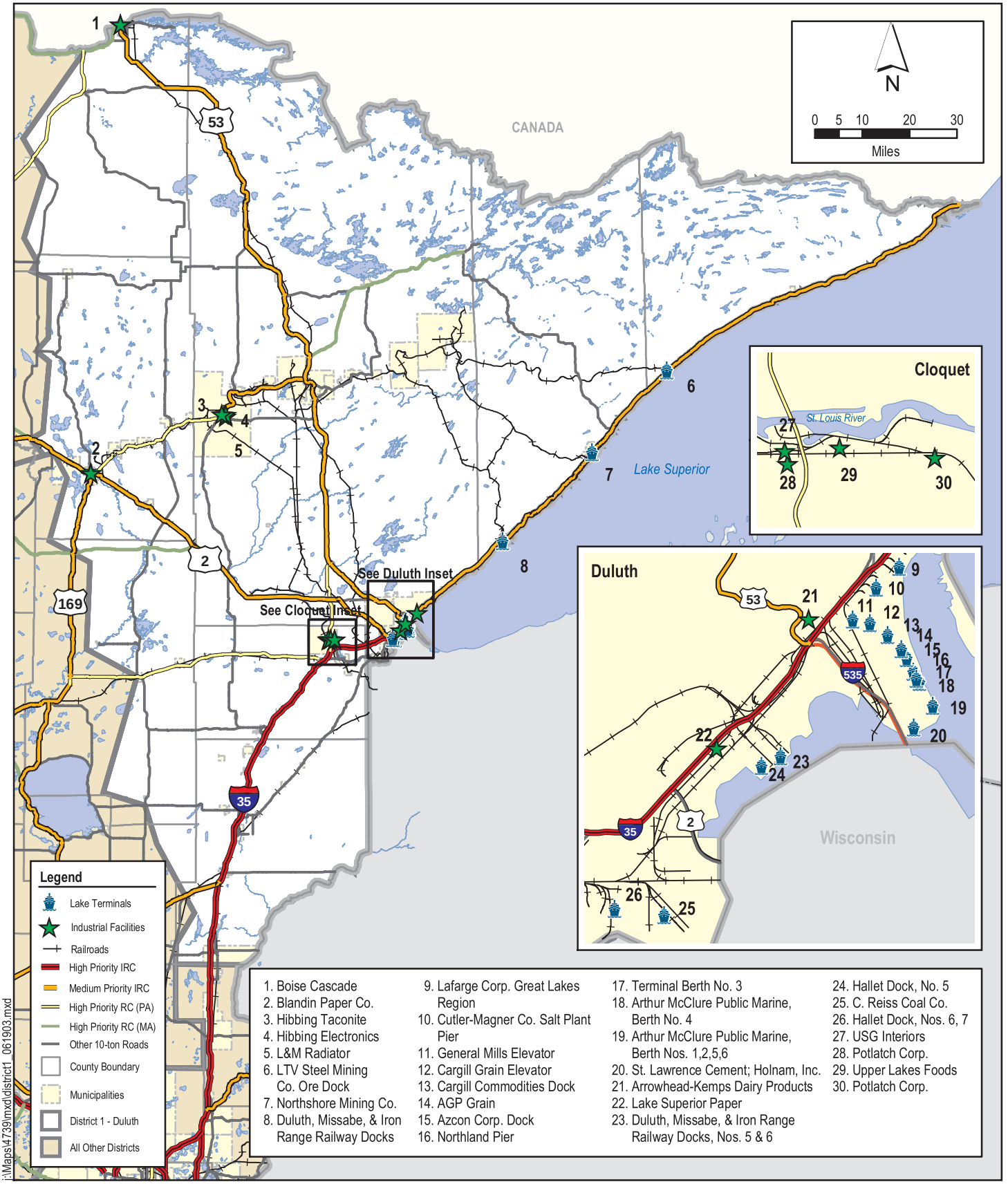
6. Develop performance thresholds and targets for the freight connector performance measure using the findings of this study. Consider evaluating the TCMA and Greater Minnesota separately.

7. Conduct an assessment of adequacy of connectors between water/rail facilities and water/rail corridors.

8. Mn/DOT and the Metropolitan Council should reexamine the state's National Highway System (NHS) Connections to Intermodal Terminals submission to FHWA. Other major intermodal terminals may qualify for NHS connection designation (e.g., rail/truck transfer facilities, etc.). NHS Connections are eligible for improvements with NHS funds.

9. Most of the freight analysis conducted in this and previous studies deal primarily with freight-carrying facilities. It is recommended that Mn/DOT work with the Metropolitan Council to examine the freight activity and demand side, especially in the TCMA.

Appendix A: Greater Minnesota



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DISTRICT 1 - DULUTH

Figure A1

ADEQUACY OF FREIGHT CONNECTIONS TO REGIONAL SYSTEM

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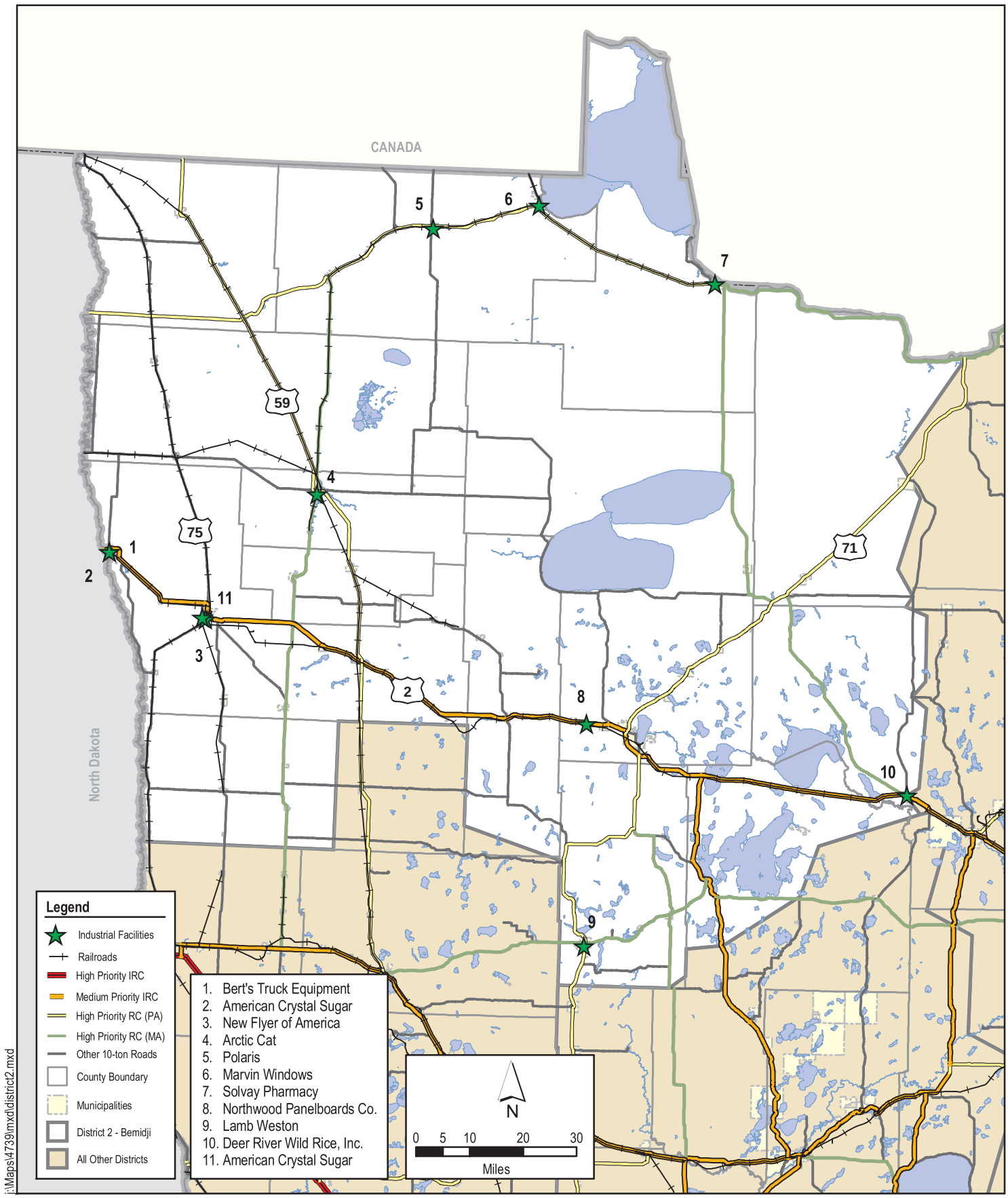

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DISTRICT 2 - BEMIDJI

Figure A2

ADEQUACY OF FREIGHT CONNECTIONS TO REGIONAL SYSTEM

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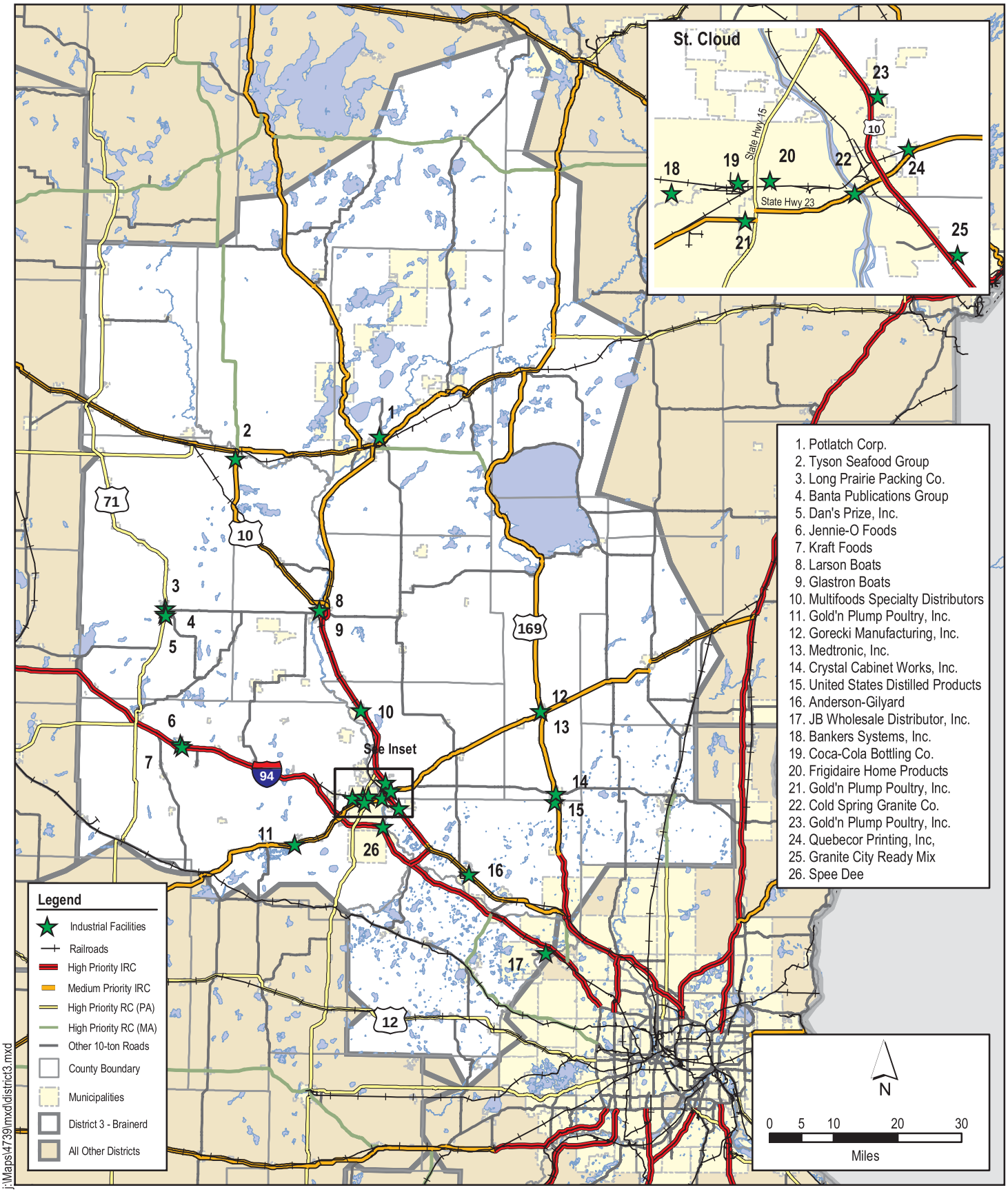

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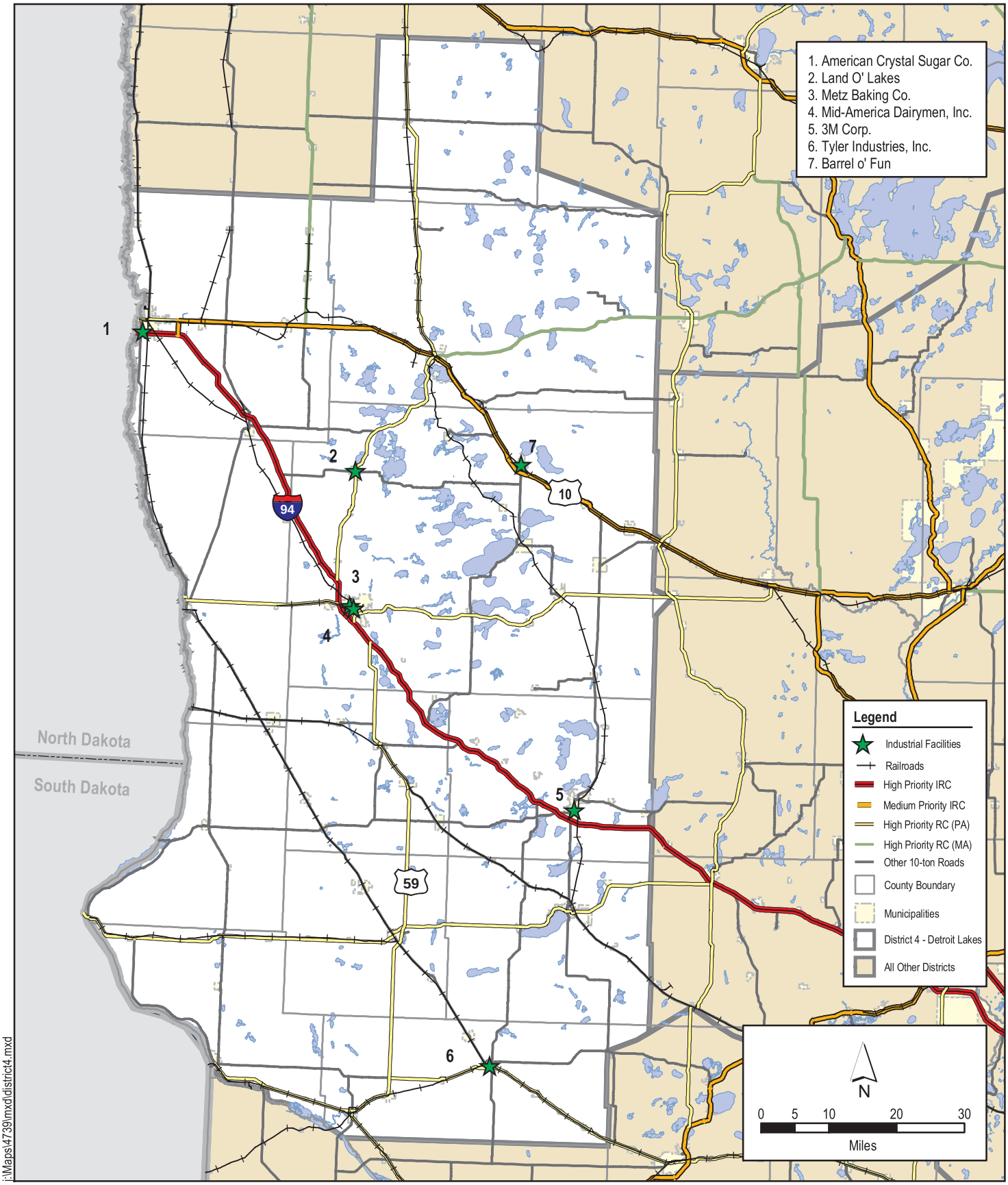
DISTRICT 3 - BRAINERD

Figure A3

ADEQUACY OF FREIGHT CONNECTIONS TO REGIONAL SYSTEM

Minnesota Department of Transportation



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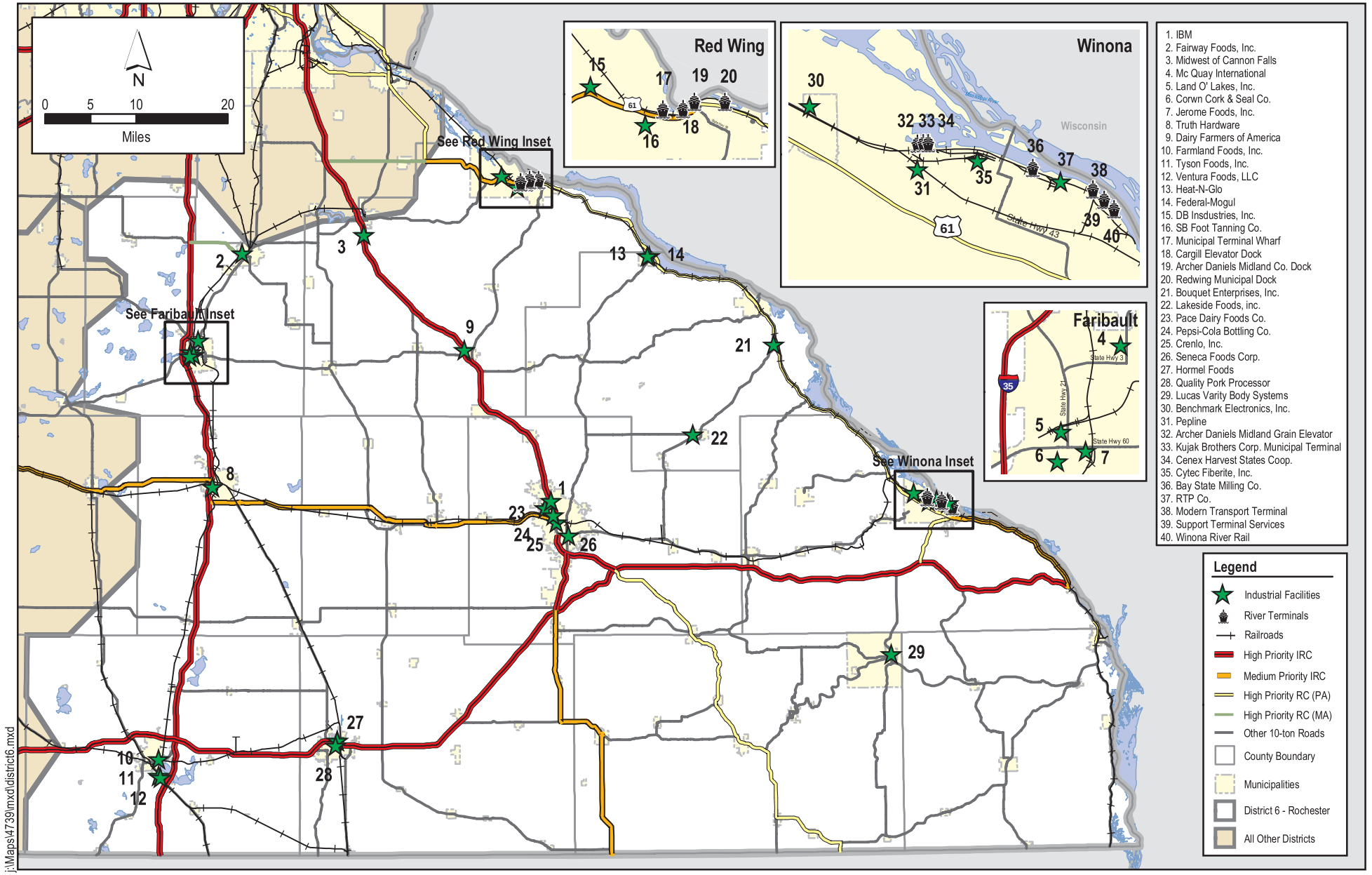
DISTRICT 4 - DETROIT LAKES

Figure A4

ADEQUACY OF FREIGHT CONNECTIONS TO REGIONAL SYSTEM

Minnesota Department of Transportation



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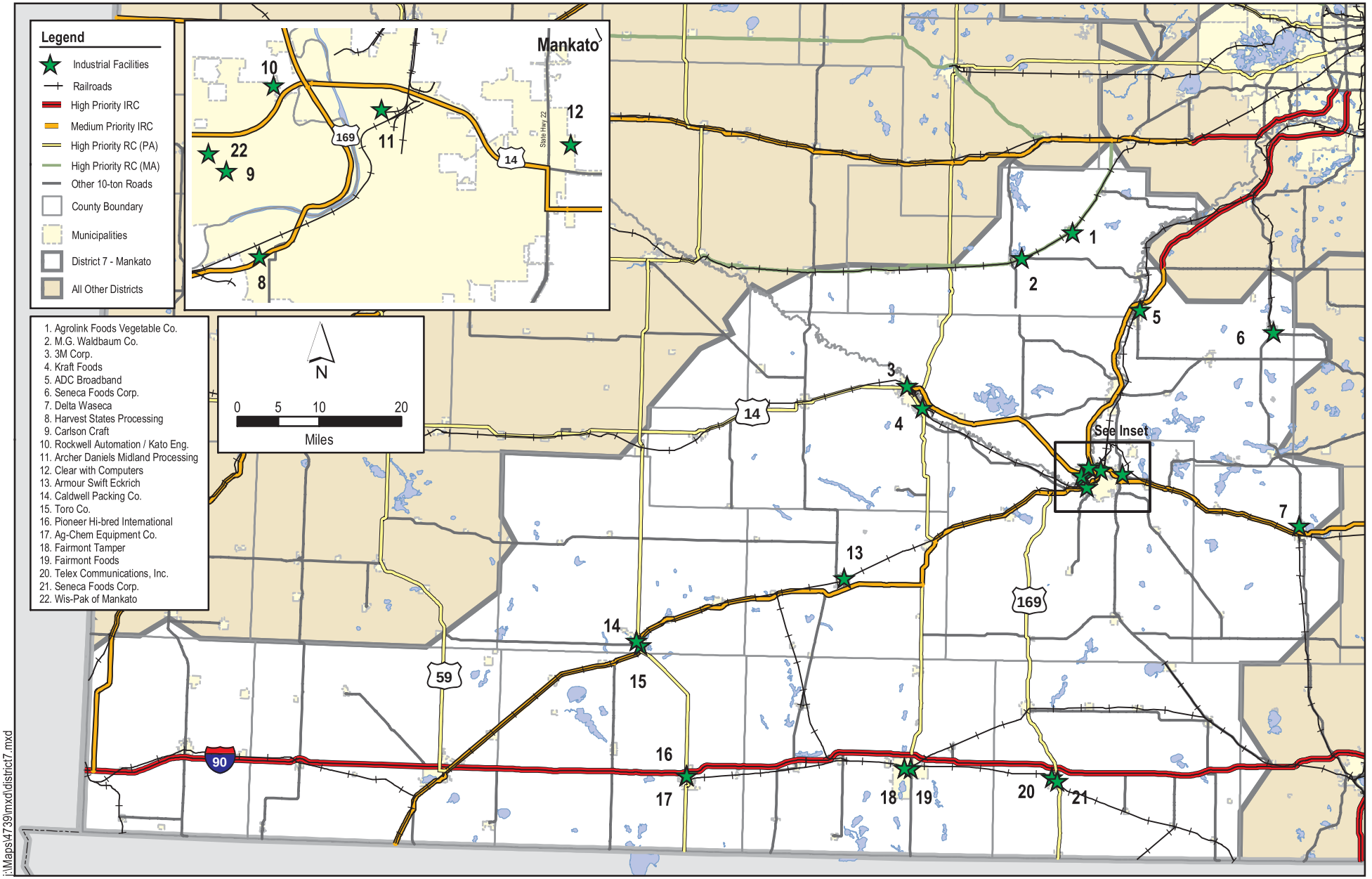
DISTRICT 6 - ROCHESTER

Figure A5

ADEQUACY OF FREIGHT CONNECTIONS TO REGIONAL SYSTEM

Minnesota Department of Transportation



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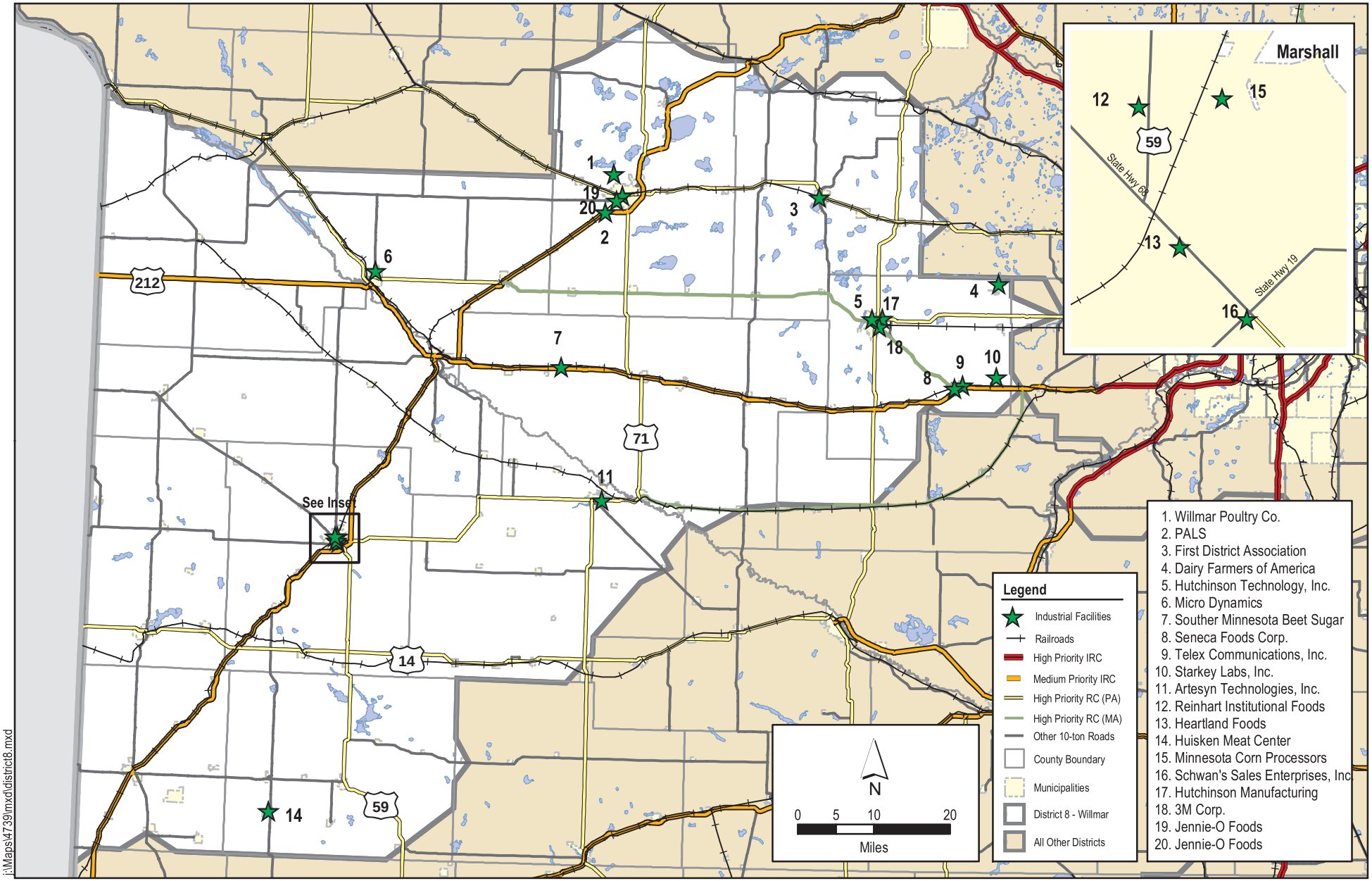
DISTRICT 7 - MANKATO

Figure A6

ADEQUACY OF FREIGHT CONNECTIONS TO REGIONAL SYSTEM

Minnesota Department of Transportation



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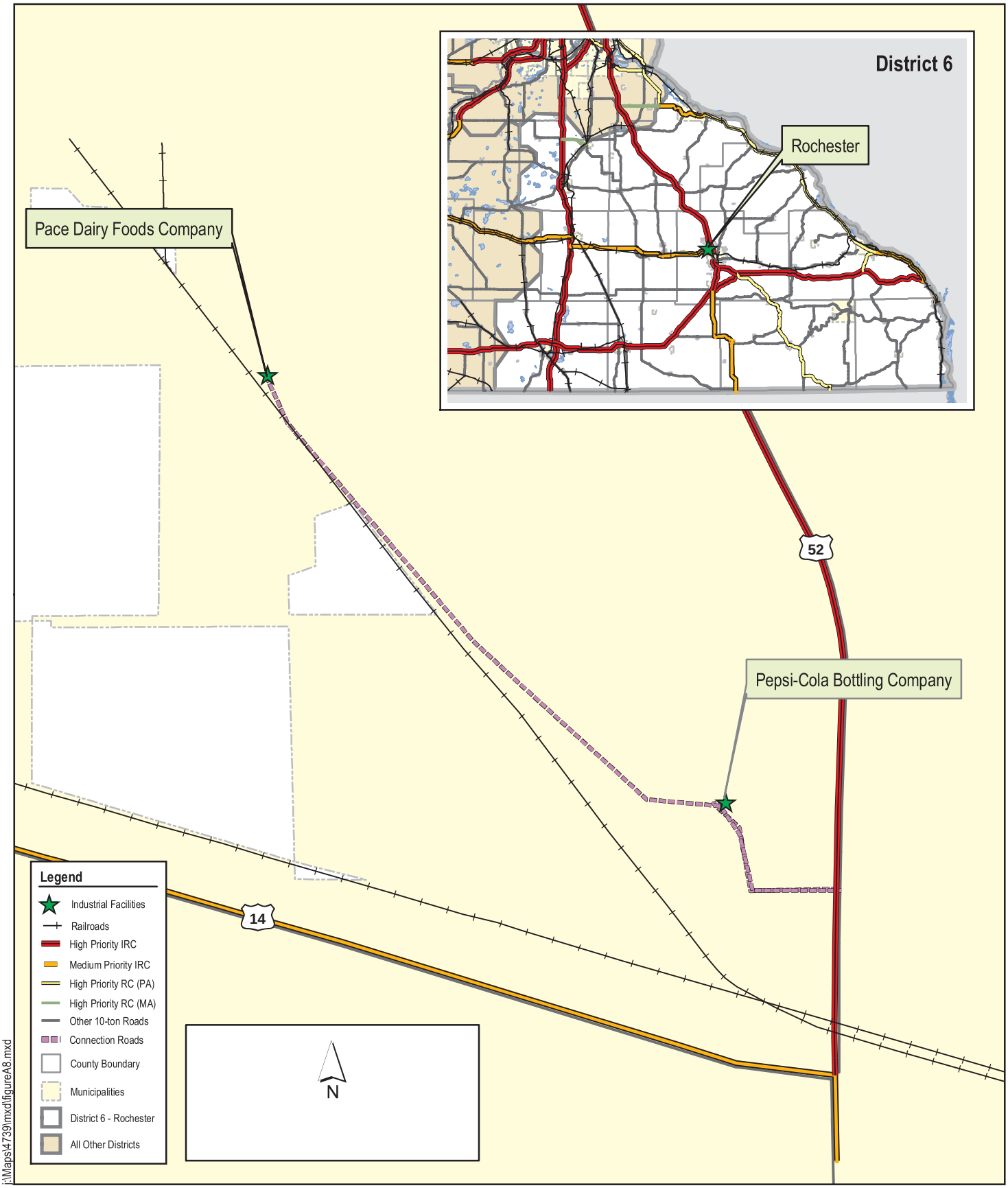
DISTRICT 8 - WILLMAR

Figure A7

ADEQUACY OF FREIGHT CONNECTIONS TO REGIONAL SYSTEM

Minnesota Department of Transportation



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PACE DAIRY FOOD COMPANY - ROCHESTER

Figure A8

ADEQUACY OF FREIGHT CONNECTIONS TO REGIONAL SYSTEM

Minnesota Department of Transportation

TELEPHONE FREIGHT SURVEY (Sample)

Company Name: _____

Contact Name: _____ Title: _____

Address: _____

Telephone: _____ Fax: _____ E-Mail: _____

Introduction:

Hello, my name is _____ with SRF Consulting Group. We are conducting a survey for the Minnesota Department of Transportation to determine the adequacy of roads between the major freight facilities, like your company, and the inter-regional roadways and major highways. Could we have a few minutes of your time to conduct a brief survey about your facility's access to major a highway?

If questions arise regarding conducting surveys during a time of budget cuts:

In the next few years as Mn/DOT's resources are budgeted more tightly, it is important to them that they understand exactly what companies like yours need and want. While they cannot give everyone every thing that they want, Mn/DOT wishes to be clear on what your needs are so that investment decisions are appropriate.

First Question

Verify location and route to nearest 10-ton route:

Route: _____ to _____ to _____ to

Nearest major highway (10-ton road): _____

1. Are there spring and posted weight restrictions on any of these roadways or bridges along your route? *(Specify roads*)

2. Are there any safety or other issues or concerns regarding these roads along the route? (*Be specific*)

3. Are there any problems with your suppliers getting to you because of the route?

4. What is a range of the number of trucks entering and exiting your facility on a daily basis during your peak season?

5. What type of trucks do you use at your facility (*Semi-trailer, single unit, both*)?

Other notes:

TABLE A1
FREIGHT PERFORMANCE STUDY
FREIGHT GENERATORS NOT SURVEYED

DISTNUMBER	ID	NAME	CNTC_CITY	CNTC_ADEQUACY
1	7326	USG INTERIORS INC	CLOQUET	OUT OF BUSINESS
1	8310	LTV STEEL MINING COMPANY ORE DOCK	HOYT LAKES	OUT OF BUSINESS
1	8307	DULUTH, MISSABE AND IRON RANGE RAILWAY, ORE DOCK NO. 5 & 6	DULUTH	OUT OF BUSINESS
1	8298	CUTLER-MAGNER CO. SALT PLANT PIER	DULUTH	OUT OF BUSINESS
1	8305	DULUTH, MISSABE AND IRON RANGE RAILWAY DOCKS NO. 1& 2	DULUTH	OUT OF BUSINESS
6	2505	DAIRY FARMERS OF AMERICA	ZUMBROTA	OUT OF BUSINESS
6	8386	RED WING MUNICIPAL TERMINAL WHARF.	RED WING	OUT OF BUSINESS
7	4242	KRAFT FOODS	NEW ULM	OUT OF BUSINESS
7	6131	ROCKWELL AUTOMATION/KATO ENG	NORTH MANKATO	OUT OF BUSINESS
7	1103	ADC BROADBAND CONNECTIVITY GRP	LE SUEUR	OUT OF BUSINESS
8	3532	HEARTLAND FOOD CO	MARSHALL	OUT OF BUSINESS
8	6047	REINHART INSTITUTIONAL FOODS	MARSHALL	OUT OF BUSINESS
4	4329	LAND O'LAKES INC	PERHAM	OUT OF BUSINESS
4	4861	MID-AMERICA DAIRYMEN INC (DAIRY FARMERS OF AMERICA)	FERGUS FALLS	OUT OF BUSINESS
1	7813	POTLATCH CORP., NW PAPER DIV. (SAPPI)	CLOQUET	UNABLE TO CONTACT
2	5201	NEW FLYER OF AMERICA-MN INC	CROOKSTON	UNABLE TO CONTACT
3	4725	MEDTRONIC INC (TRIVIRIX)	MILACA	UNABLE TO CONTACT
3	3327	GOLD'N PLUMP POULTRY INC (ROCHESTER MEATS)	SAUK RAPIDS	UNABLE TO CONTACT
6	5910	QUALITY PORK PROCESSOR	AUSTIN	UNABLE TO CONTACT
6	7075	TRUTH HARDWARE	OWATONNA	UNABLE TO CONTACT
7	1381	ARMOUR SWIFT ECKRICH	ST. JAMES	UNABLE TO CONTACT
7	6349	SENECA FOODS CORP	MONTGOMERY	UNABLE TO CONTACT
8	2503	DAIRY FARMERS OF AMERICA	WINSTED	UNABLE TO CONTACT
8	3720	HUISKEN MEAT CTR	CHANDLER	UNABLE TO CONTACT

The preceeding are facilities in which the company is unreachable or presumed to be out of business. Of the 10 sites above, which are presumably in business, but unreachable, a follow-up with the facility or city staff is advised.

TABLE A2

FREIGHT PERFORMANCE STUDY

ADEQUACY OF CONNECTION FOUND BY MEANS OTHER THAN DIRECT SURVEY

DISTNUMBER	ID	NAME	CNTC_CITY	SRVY_COMMENTS [1]	CNTC_ADEQUACY
1	8129	HIBBING ELECTRONICS	HIBBING	ADEQUACY BASED ON NEIGHBORS ASSESSMENT	PASS
1	8321	GENERAL MILLS, ELEVATOR A WHARF	DULUTH	ADEQUACY BASED ON NEIGHBORS ASSESSMENT	PASS
1	8291	CARGILL GRAIN ELEVATOR B (SOUTH)	DULUTH	ADEQUACY BASED ON NEIGHBORS ASSESSMENT	PASS
1	8290	CARGILL COMMODITIES DOCK (NORTH)	DULUTH	ADEQUACY BASED ON NEIGHBORS ASSESSMENT	PASS
3	4348	LARSON BOATS	LITTLE FALLS	ADEQUACY BASED ON NEIGHBORS ASSESSMENT	PASS
3	3173	FRIGIDAIRE HOME PRODUCTS (ELECTROLUX)	ST. CLOUD	ADEQUACY FOUND THROUGH OTHER STUDIES DONE BY CONSULTANT	PASS
3	262	SPEE DEE DELIVERY SVC	ST. CLOUD	ADEQUACY FOUND THROUGH OTHER STUDIES DONE BY CONSULTANT	PASS
4	1255	AMERICAN CRYSTAL SUGAR CO	MOORHEAD	ADEQUACY FOUND THROUGH OTHER STUDIES DONE BY CONSULTANT	PASS
4	2197	BARREL O'FUN SNACK FOODS INC	PERHAM	ADEQUACY FOUND THROUGH OTHER STUDIES DONE BY CONSULTANT.	PASS
6	5507	PACE DAIRY FOODS CO	ROCHESTER	ADEQUACY BASED ON NEIGHBORS ASSESMENT	PASS
6	3535	HEAT-N-GLO	LAKE CITY	ADEQUACY BASED ON NEIGHBORS ASSESMENT	PASS
6	6185	RTP CO	WINONA	ADEQUACY BASED ON NEIGHBORS ASSESMENT	PASS
6	3978	JEROME FOODS INC (JENNIO TURKEY STORE)	FARIBAULT	ADEQUACY FOUND BY INTERVIEW WITH CITY STAFF	PASS
6	1607	BENCHMARK ELECTRONICS INC	WINONA	ADEQUACY FOUND BY INTERVIEW WITH CITY STAFF	PASS
6	2470	CYTEC FIBERITE INC	WINONA	ADEQUACY BASED ON NEIGHBORS ASSESMENT	PASS
6	7356	VENTURA FOODS LLC	ALBERT LEA	ADEQUACY BASED ON NEIGHBORS ASSESMENT	PASS
6	4897	MIDWEST OF CANNON FALLS	CANNON FALLS	ADEQUACY FOUND THROUGH OTHER STUDIES DONE BY CONSULTANT	PASS
6	5627	PEPLINE (WINCRAFT)	WINONA	ADEQUACY FOUND BY INTERVIEW WITH CITY STAFF	PASS
7	1002	3M CORP	NEW ULM	ADEQUACY FOUND BY INTERVIEW WITH CITY STAFF	PASS
7	1949	CARLSON CRAFT COMMERCIAL DIV	NORTH MANKATO	ADEQUACY FOUND THROUGH OTHER STUDIES DONE BY CONSULTANT	PASS
7	1156	AGROLINK FOODS VEGETABLE CO (SENECA FOODS)	ARLINGTON	ADEQUACY FOUND BY INTERVIEW WITH CITY STAFF	PASS
7	2958	FAIRMONT TAMPER	FAIRMONT	ADEQUACY BASED ON NEIGHBORS ASSESMENT	PASS
7	2134	CLEAR WITH COMPUTERS	MANKATO	ADEQUACY FOUND THROUGH OTHER STUDIES DONE BY CONSULTANT	PASS
7	3675	HARVEST STATES PROCESSING/REFINING	MANKATO	ADEQUACY FOUND THROUGH OTHER STUDIES DONE BY CONSULTANT	PASS
7	1170	WIS-PAK OF MANKATO	NORTH MANKATO	ADEQUACY FOUNT THROUGH OTHER STUDIES DONE BY CONSULTANT	PASS
8	6348	SENECA FOODS CORP	GLENCOE	ADEQUACY FOUND THROUGH OTHER STUDIES DONE BY CONSULTANT	PASS
8	3727	HUTCHINSON TECHNOLOGY INC	HUTCHINSON	ADEQUACY FOUND THROUGH OTHER STUDIES DONE BY CONSULTANT	PASS
8	7642	WILLMAR POULTRY CO	WILLMAR	ADEQUACY FOUND THROUGH OTHER STUDIES DONE BY CONSULTANT.	PASS
8	2201	JENNIE-O FOODS INC	WILLMAR	ADEQUACY FOUNT THROUGH OTHER STUDIES DONE BY CONSULTANT	PASS
8	12201	JENNIE-O FOODS INC	WILLMAR	ADEQUACY FOUNT THROUGH OTHER STUDIES DONE BY CONSULTANT	PASS

(1) If a facility was unreachable, attempts were made to determine the adequacy of the connection through a number of methods.
(a) Adequacy was determined for sites which lie within the boundaries of previous studies conducted by the consultant by recalling those projects.
(b) Adequacy was determined by looking at the assessment given by another freight generator that shared the same connection.
(c) Adequacy was determined by calling city staff and inquiring about problems with the connection.
Notation of this method is noted in the SURVY_COMMENTS field.

Survey Database

The data collected from the survey was entered into ESRI's ArcView Version 8.3 Geographic Information Systems (GIS) compatible format. Table A3 shows the fields created for the survey database, a description of each field, and the length and type of each field.

Table A3
New Database Fields after Survey

Field Name	Description	Length	Type
SURVEY_DATE	Date survey was completed	10	DATE
10_TON_ROAD	Nearest 10-ton highway to facility	10	TEXT
LINK_1	First road on way to 10-ton road	10	TEXT
LINK_2	Second road on way to 10-ton road (if necessary)	10	TEXT
LINK_3	Third road on way to 10-ton road(if necessary)	10	TEXT
SRVY_HEIGHT_RESTR	Bridge height restrictions on connection	25	TEXT
SRVY_WEIGHT_RESTR	Posted restrictions on connection	25	TEXT
SRVY_COMMENTS	General Comments about connection	256	TEXT
SRVY_LINK_SAFETY	Comments of safety issues (sight lines, acceleration, merging, etc.)	256	TEXT
SRVY_NO_OF_SINGLE_UNIT	Number of single unit trucks in / out on a daily basis	10	NUMERIC
SRVY_NO_OF_SEMI_TRAILER	Number of semi-trailer trucks in / out on a daily basis	10	NUMERIC
SRVY_ADEQUACY_NOTES	Comments regarding adequacy rating (reasoning for fail)	256	TEXT
ADEQUACY	Pass / Fail of connection to 10-ton road	10	TEXT

Each connection was drawn on the map with a corresponding ID code that matched the ID code for the facility in the Mn/DOT Freight Facilities database. Possible products include using the database and GIS to map all locations with a particular adequacy rating, or to measure connection distances from selected sites to major highways. Each connection meeting a certain length criteria could be displayed. The database can be viewed which explains the survey results, including the street names of the links for each connection and comments about each connection. Truck quantity tallies gathered while conducting the survey are also available.

TABLE A4
FREIGHT PERFORMANCE STUDY
SURVEY RESULTS

DISTNUMBER	ID	NAME	LOCN_CITY	10_TON_ROAD	LINK_1	LINK_2	LINK_3	SURV_CONDCTD	SRVY_HEIGHT_RESTR	SRVY_WEIGHT_RESTR	SRVY_COMMENTS	SRVY_LINK_SAFETY	SRVY_NO_OF_SINGLE_UNIT	SRVY_NO_OF_SEMI_TRAILER	SRVY_ADEQUACY_NO	CNTC_ADEQUACY
1	8275	AZCON CORP. DOCK	DULUTH	I 35	ARTHUR	GARFIELD		5/21/2003	NONE	NONE	ARTHUR AVENUE IS IN HORRIB	ARTHUR AVENUE IS IN	0	15	ARTHUR AVENUE MAIN	FAIL
1	8268	ARTHUR M. CLURE PUBLIC MARINE TERMINAL BERTHS N	DULUTH	I 35	PORT TERMINAL	GARFIELD		5/28/2003	NONE	NONE	ARTHUR AVENUE IS IN HORRIB	PARKING ALONG PORT	100	80	ARTHUR AVENUE MAIN	FAIL
1	9186	ARTHUR M. CLURE PUBLIC MARINE TERMINAL - GARFIEL	DULUTH	I 35	ARTHUR	BIRCH	GARFIELD	5/28/2003	NONE	NONE	ARTHUR AVENUE IS IN HORRIB	PARKING ALONG PORT	0	0	ARTHUR AVENUE MAIN	FAIL
1	8129	HIBBING ELECTRONICS	HIBBING	US 169	14TH	37TH		5/21/2003			ADEQUACY BASED ON NEIGHBORS ASSESSMENT					PASS
1	7813	POTLATCH CORP., NW PAPER DIV. (SAPPI)	CLOQUET	MN 33	CLOQUET			5/22/2003								UNABLE TO CONTACT
1	8146	L & M RADIATOR INC	HIBBING	US 169	37TH			5/21/2003	NONE	NONE		NONE	0	5		PASS
1	1700	BLANDIN PAPER CO	GRAND RAPIDS	US 169	1ST			6/2/2003	NONE	YES	PLANT LOCATION IS DIFFEREN	TURNING RADIUS ONT	0	25	TURN LANES HAVE HEI	PASS
1	1728	BOISE CASCADE PAPER DIV	INTERNATIONAL FALLS	US 53	2ND	4TH		5/21/2003	NONE	NONE	LOUD TRUCKS BYPASS DOWNT	WIDE LOAD TRUCKS NEED TO BE PLANNED AHEAD				PASS
1	5768	POTLATCH CORP (SAPPI)	CLOQUET	I 35	AVENUE B	MN 45		5/23/2003	NONE	YES	HWY 45 IS ANOTHER ROUTE US	HILLS AND CURVES AL	0	450		PASS
1	9191	HIBBING TACONITE COMPANY	HIBBING	US 169	PRIVATE ROAD	CR 5		5/21/2003	NONE	YES		NONE				PASS
1	9553	ARROWHEAD-KEMPS DAIRY PRODUCTS (FRANKLIN FOOI	DULUTH	US 53	1ST			5/27/2003	NONE	NONE		BLOCK TRAFFIC WHILE	7	13		PASS
1	7190	UPPER LAKES FOODS INC	CLOQUET	MN 33	INDUSTRY	8TH	CLOQUET	6/2/2003	NONE	NONE	PRIVATE DIRT ROAD USED BY S	HILL LEADING TO A ST	2	50		PASS
1	8339	LAFARGE CORP., GREAT LAKES REGION	DULUTH	I 35	HARBOR	5TH		5/22/2003	NONE	NONE		NONE				PASS
1	323	AGP GRAIN LTD.	DULUTH	I 35	MILL	BIRCH	GARFIELD	5/21/2003	NONE	NONE		ROADWAY MAINTENAN	0	80		PASS
1	8559	TERMINAL BERTH NO. 3, MURPHY OIL MARINE TERMINAL	DULUTH	I 35	PORT TERMINAL			5/22/2003	NONE	NONE	SAME LOCATION AS ID # 8271	NONE	0	30		PASS
1	8560	ST. LAWRENCE CEMENT, HOLNAM INC.	DULUTH	I535	PORT TERMINAL			5/22/2003	NONE	NONE		MERGING ONTO I 535 C	0	50		PASS
1	8406	C. REISS COAL CO., DULUTH DOCK	DULUTH	I 35	WASECA	CENTRAL		5/22/2003	NONE	YES		NONE	25	25		PASS
1	8325	HALLETT DOCK NO. 5.	DULUTH	I 35	37TH			5/22/2003	SOO LINE BRIDGE OCC	NONE		TURNING RADIUS ON FREEWAY ENTRANCE				PASS
1	8326	HALLETT DOCK NO. 6 & 7	DULUTH	I 35	CENTRAL			5/22/2003	NONE	NONE		NONE				PASS
1	9578	LAKE SUPERIOR PAPER INDUSTRIES	DULUTH	I 35	CENTRAL			5/22/2003	NONE	NONE		NONE	50	100		PASS
1	8387	NORTHSHORE MINING COMPANY	SILVER BAY	MN 61	OUTER											ON MAJOR HIGHWAY
1	8321	GENERAL MILLS, ELEVATOR A WHARF	DULUTH	I 35	GARFIELD						ADEQUACY BASED ON NEIGHBORS ASSESSMENT					PASS
1	8291	CARGILL GRAIN ELEVATOR B (SOUTH)	DULUTH	I 35	GARFIELD						ADEQUACY BASED ON NEIGHBORS ASSESSMENT					PASS
1	8290	CARGILL COMMODITIES DOCK (NORTH)	DULUTH	I 35	GARFIELD						ADEQUACY BASED ON NEIGHBORS ASSESSMENT					PASS
1	8271	MURPHY OIL MARINE TERMINAL - BERTH NO. 3	DULUTH	I 35	PORT TERMINAL											PASS
1	9185	NORTHLAND PIER, NORTHLAND CONSTRUCTORS INC. (M	DULUTH	I 35	ARTHUR	GARFIELD		5/21/2003	NONE	NONE	ARTHUR AVENUE IS IN HORRIBLE SHAPE AND DEFINITELY EFFECTS THE PERFORMANCE OF TRUCKING				ARTHUR AVENUE MAIN	FAIL
1	7326	USG INTERIORS INC	CLOQUET	MN 33	ARCH	CLOQUET		5/21/2003								OUT OF BUSINESS
1	8310	LTV STEEL MINING COMPANY ORE DOCK	SCHROEDER	MN 61	DRIVEWAY											OUT OF BUSINESS
1	8307	DULUTH, MISSABE AND IRON RANGE RAILWAY, ORE DOC	DULUTH	I 35	34TH			5/21/2003								OUT OF BUSINESS
1	8298	CUTLER-MAGNER CO. SALT PLANT PIER	DULUTH	I 35	10TH	RAILROAD	GARFIELD	5/21/2003								OUT OF BUSINESS
1	8305	DULUTH, MISSABE AND IRON RANGE RAILWAY DOCKS N	TWO HARBORS	US 61	6TH			5/21/2003								OUT OF BUSINESS
2	5201	NEW FLYER OF AMERICA-MN INC	CROOKSTON	US 75	5TH	3RD	INGERSOL	6/2/2003								UNABLE TO CONTACT
2	1634	BERT'S TRUCK EQUIPMENT INC	EAST GRAND FORKS	US 2	5TH	CENTRAL		6/2/2003			NO TRUCKING					PASS
2	5379	NORTHWOOD PANELBOARD CO	SOLWAY	US 2	CR 507			5/22/2003	NONE	NONE		NONE	0	100		PASS
2	4317	LAMB WESTON	PARK RAPIDS	US 71												ON MAJOR HIGHWAY
2	1370	ARCTIC CAT INC	THIEF RIVER FALLS	MN 32	BROOKS	GREENWOOD		6/12/2003	NONE	YES; POSTED 5 OR 7 TON	WEIGHT RESTRICTION DOES N	TURNING RADIUS PRO	1	100		PASS
2	5748	POLARIS INDUSTRIES	ROSEAU	MN 89												ON MAJOR HIGHWAY
2	6460	SOLVAY PHARMACEUTICALS INC	BAUDETTE	MN 11												ON MAJOR HIGHWAY
2	1253	AMERICAN CRYSTAL SUGAR CO	EAST GRAND FORKS	US 2												ON MAJOR HIGHWAY
2	9691	MARVIN WINDOWS & DOORS	WARROAD	MN 11												ON MAJOR HIGHWAY
2	2582	DEER RIVER WILD RICE INC	DEER RIVER	US 2												ON MAJOR HIGHWAY
2	9692	AMERICAN CRYSTAL SUGAR CO	CROOKSTON	US 75	11TH	MN 18										ON MAJOR HIGHWAY
3	2187	COLD SPRING GRANITE CO	COLD SPRING	MN 23	3RD			5/30/2003	NONE	NONE	ACTUAL ACCESS FOR TURCKS	SGIHT LINE PROBLEMS	0	60	EVEN THOUGH ACCES	FAIL
3	1533	BANKERS SYSTEMS INC	ST. CLOUD	MN 23	SAUKVIEW	RIDGEWOOD	CR 75	6/2/2003	NONE	NONE		INTERSECTION WITH R	1	2	INTERSECTION SAFET	FAIL
3	3903	J & B WHOLESALE DISTR INC	ST. MICHAEL	MN 241	44TH	NABER		5/23/2003	NONE	NONE	IMPENDING BRIDGE FOR HWY	TURNING RADIUS OFF	0	100		PASS
3	4348	LARSON BOATS	LITTLE FALLS	US 10	PAUL LARSON			6/2/2003			ADEQUACY BASED ON NEIGHBORS ASSESSMENT					PASS
3	4725	MEDTRONIC INC (TRIVIRIX)	MILACA	US 169	6TH	150TH										UNABLE TO CONTACT
3	3327	GOLD'N PLUMP POULTRY INC (ROCHESTER MEATS)	SAUK RAPIDS	US 10	INDUSTRIAL	GOLDEN SPIKE		6/2/2003								UNABLE TO CONTACT
3	7168	UNITED STATES DISTILLED PRODS	PRINCETON	US 169	12TH	CR 45	RUM RIVER	5/23/2003	NONE	NONE		NONE	10	20		PASS
3	4463	LONG PRAIRIE PACKING CO	LONG PRAIRIE	US 71	RIVERSIDE			6/3/2003	NONE	NONE		NONE	0	50		ON MAJOR HIGHWAY
3	3350	GORECKI MANUFACTURING INC	MILACA	MN 23	6TH	8TH	10TH	5/23/2003	NONE	NONE		NONE	5	10		PASS
3	3970	JENNIE-O FOODS	MELROSE	I 94	KRAFT	5TH		5/22/2003	NONE	NONE		SCHOOL CROSSING AL	0	40		PASS
3	5919	QUEBECOR PRINTING INC	ST. CLOUD	MN 23	CR 1			5/23/2003	NONE	NONE		NONE	2	25		PASS
3	3302	GLASTRON BOATS	LITTLE FALLS	US 10	PAUL LARSON			6/2/2003	NONE	NONE	NONE; ROADS REDONE RECEN	NONE	0	75		PASS
3	1543	BANTA PUBLICATIONS GROUP	LONG PRAIRIE	US 71	BANTA	5TH		5/23/2003	NONE	NONE	TRUCK DRIVEWAY CONNECTS	NONE	10	50		PASS
3	4243	KRAFT GENERAL FOODS (MELROSE DAIRY PROTEIN)	MELROSE	I 94	KRAFT	4TH		6/2/2003	NONE	YES: WHOLE ROUTE	ALL POSTED ROUTES ARE OBS	PROBLEMS GETTING T	30	10		PASS
3	5124	MULTIFOODS SPECIALTY DISTR (VISTAR SPECIALTY DIST	RICE	US 10	DIVISION			5/28/2003	NONE	NONE		HIGH TRAFFIC SPEED (	0	30		PASS
3	2179	COCA-COLA BOTTLING CO	ST. CLOUD	MN 15	RUSAN	MCLELAND	CR 4	5/28/2003	NONE	NONE		PEDESTRIANS IN INDU	0	75		PASS
3	1328	ANDERSON-GILYARD	BECKER	US 10	PINE	2ND	HOLASEK	6/2/2003	NONE	NONE		NONE	0	10		PASS
3	7120	TYSON SEAFOOD GROUP	MOTLEY	US 10												ON MAJOR HIGHWAY
3	3326	GOLD'N PLUMP POULTRY INC	COLD SPRING	MN 23												ON MAJOR HIGHWAY
3	3173	FRIGIDAIRE HOME PRODUCTS (ELECTROLUX)	ST. CLOUD	MN 15	33RD	8TH					ADEQUACY FOUND THROUGH OTHER STUDIES DONE BY CONSULTANT					PASS
3	2513	DAN'S PRIZE INC	LONG PRAIRIE	US 71	1ST	6TH										ON MAJOR HIGHWAY
3	2397	CRYSTAL CABINET WORKS INC	PRINCETON	US 169	CRYSTAL			6/12/2003	NONE	NONE	LOTS OF ACCIDENTS ON MN 95	HEAVY AUTO TRAFFIC	2	6		PASS
3	3325	GOLD'N PLUMP POULTRY	ST. CLOUD	MN 23												ON MAJOR HIGHWAY
3	5767	POTLATCH CORP	BRAINERD	MN 25												ON MAJOR HIGHWAY
3	262	SPEE DEE DELIVERY SVC	ST. CLOUD	I 94	CR 75						ADEQUACY FOUND THROUGH OTHER STUDIES DONE BY CONSULTANT					PASS
3	2267	GRANITE CITY READY-MIX	ST. CLOUD	US 10												ON MAJOR HIGHWAY
4	998	3M CORP	ALEXANDRIA	MN 29	BROADWAY	22ND		6/2/2003								ON MAJOR HIGHWAY
4	1255	AMERICAN CRYSTAL SUGAR CO	MOORHEAD	US 75	11TH	MN 18					ADEQUACY FOUND THROUGH OTHER STUDIES DONE BY CONSULTANT					PASS
4	7118	TYLER INDUSTRIES INC	BENSON	MN 29	20TH	PACIFIC										ON MAJOR HIGHWAY
4	4861	MID-AMERICA DAIRYMEN INC (DAIRY FARMERS OF AMER	FERGUS FALLS	I 94	BUSE	LINCOLN					CITY STAFF STATES COMPANY IS NO LONGER IN BUSINESS					OUT OF BUSINESS
4	4818	METZ BAKING CO (SARALEE BAKING GROUP)	FERGUS FALLS	MN 210	MILL	CASCADE		6/12/2003	NONE	YES	SPRING LOAD DOESN'T AFFECT	SIGNAL ALONG ROUTE	5	20		PASS
4	4329	LAND O'LAKES INC	PERHAM	US 10	2ND	MAIN	CR 34	5/22/2003								OUT OF BUSINESS
4	2197	BARREL O'FUN SNACK FOODS INC	PERHAM	CR 78	4TH	3RD	MAIN				ADEQUACY FOUND THROUGH OTHER STUDIES DONE BY CONSULTANT.					PASS
6	4695	MC QUAY INTL	FARIBAULT	MN 3	24TH			5/30/2003	RR BRIDGE AFTER GET	NONE	NEW PLANT LOCATION WILL HA	TURING RADIUS PROBI	3	25		PASS
6	2478	D B INDUSTRIES INC	RED WING	US 61	PEPIN	CANNON RIVER		5/29/2003	NONE	NONE		TURNING RADIUS PRO	10	6		PASS
6	4327	LAND O'LAKES INC (PRODIENT)	FARIBAULT	MN 60	PARK			5/22/2003			NO LONGER A FREIGHT BUSINESS					PASS
6	5507	PACE DAIRY FOODS CO	ROCHESTER	US 52	VALLEY HIGH	7TH		5/22/2003			ADEQUACY BASED ON NEIGHBORS ASSESMENT					PASS
6	2366	CRENLO INC	ROCHESTER	US 63	3RD	14TH		5/29/2003	NONE	NONE		NONE	0	10		PASS
6	6350	SENECA FOODS CORP	ROCHESTER	US 14	3RD			5/29/2003	NONE	NONE		HEAVY TRAFFIC ALONG	0	60		PASS
6	3693	HORMEL FOODS CORP	AUSTIN	I 90	HORMEL	8TH	11TH	5/29/2003	NONE	NONE	NO TRUCKS		0	0		PASS
6	3013	FEDERAL-MOGUL (POWER TRAIN SYSTEMS)	LAKE CITY	US 63	7TH			5/29/2003	NONE	9 TON SPRING LIMIT	PARKING ON ONE SIDE OF STR	NONE	0	20		PASS
6	6221	S B FOOT TANNING CO	RED WING	US 61	CR 1			5/29/2003	NONE	POSTED IN SPRING		SIGHT DISTANCE ISSUE	5	20		PASS
6	7119	TYSON FOODS INC	ALBERT LEA	US 65	13TH	MARGARETHA		5/29/2003	NONE	NONE		TURING RADIUS ISSUE	15	20		PASS
6	3689	HORMEL FOODS	AUSTIN	I 90	HORMEL	8TH	11TH	5/29/2003	NONE	NONE		RAIL ROAD TRACKS	30	300		PASS
6	5635	PEPSI-COLA BOTTLING CO	ROCHESTER	US 52	VALLEY HIGH	7TH		5/29/2003	NONE	NONE		NONE	0	35		PASS

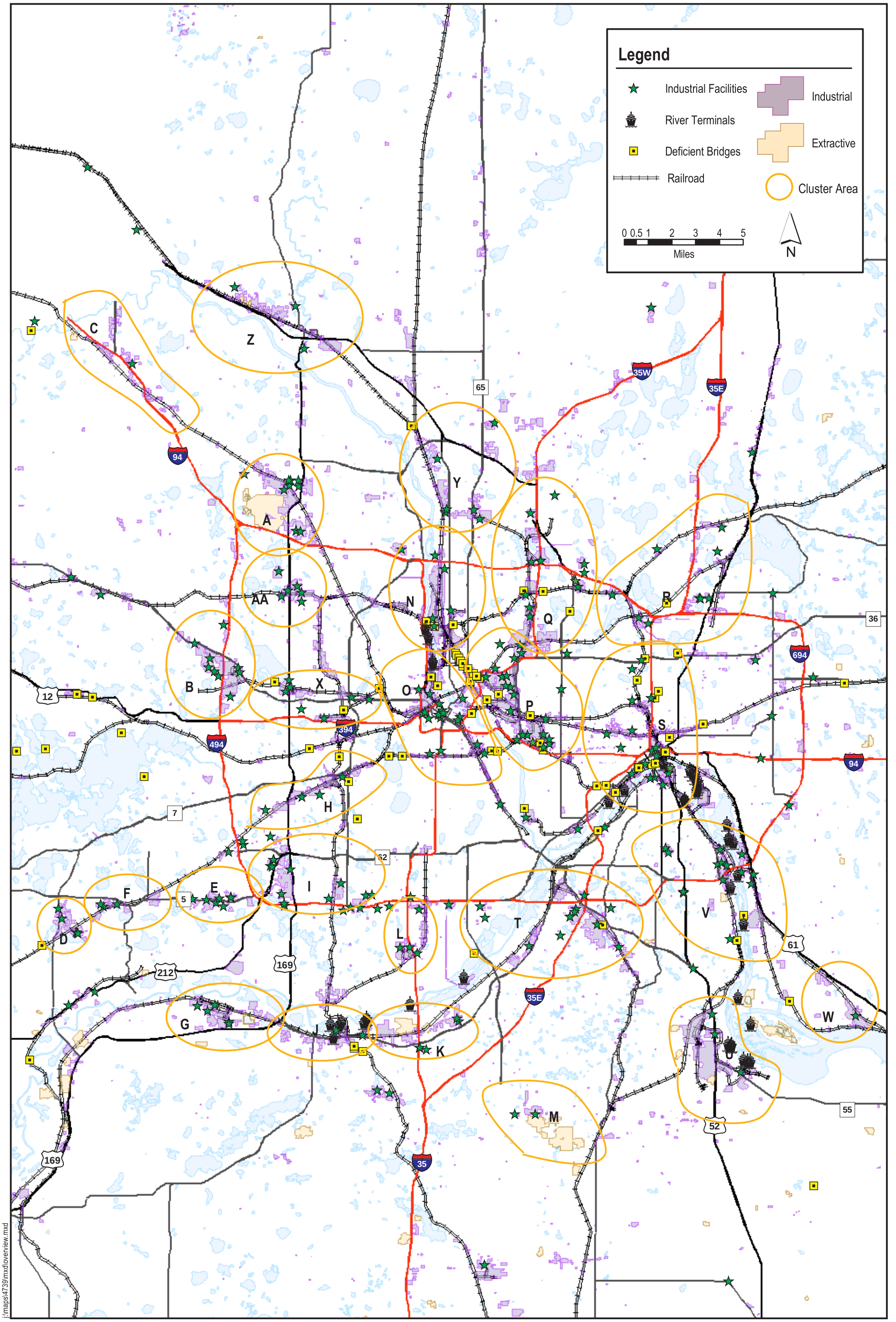
TABLE A4
FREIGHT PERFORMANCE STUDY
SURVEY RESULTS

DISTNUMBER	ID	NAME	LOCN_CITY	10_TON_ROAD	LINK_1	LINK_2	LINK_3	SURV_CONDCTD	SRVY_HEIGHT_RESTR	SRVY_WEIGHT_RESTR	SRVY_COMMENTS	SRVY_LINK_SAFETY	SRVY_NO_OF_SINGLE_UNIT	SRVY_NO_OF_SEMI_TRAILER	SRVY_ADEQUACY_NO	CNTC_ADEQUACY
6	8372	RED WING MUNICIPAL DOCK	RED WING	US 61	LEVEE	5TH		5/29/2003	NONE	NONE	PRIVATE ACCESS	ROAD WIDTH IS NARRO	0	50		PASS
6	8297	CARGILL RED WING ELEVATOR DOCK.	RED WING	US 61	LEVEE	BROADWAY		5/29/2003	NONE	NONE		NONE	30	150		PASS
6	8266	ARCHER DANIELS MIDLAND (ADM)/GROMARK, WINONA G	WINONA	MN 43	RIVERVIEW	HUFF	2ND	6/3/2003	NONE	YES	NONE	RAIL X-ING	0	300		PASS
6	8365	MODERN TRANSPORT TERMINAL, LOWER WHARF.	WINONA	MN 43	FRONT	MANKATO		6/3/2003	NONE	YES: WHOLE ROUTE	NONE	NONE	0	75		PASS
6	8391	SUPPORT TERMINAL SERVICES	WINONA	MN 43	2ND	MANKATO		6/3/2003	NONE	NONE	NONE	NONE	0	100		PASS
6	8417	WINONA RIVER RAIL	WINONA	MN 43	3RD	MANKATO		6/3/2003	NONE	NONE		BUSY RESIDENTIAL AR	0	150		PASS
6	3535	HEAT-N-GLO	LAKE CITY	US 63	JEFFERSON	8TH					ADEQUACY BASED ON NEIGHBORS ASSESMENT					PASS
6	6185	RTP CO	WINONA	MN 43	FRONT	HAMILTON					ADEQUACY BASED ON NEIGHBORS ASSESMENT					PASS
6	5910	QUALITY PORK PROCESSOR	AUSTIN	I 90	4TH	14TH	6TH									UNABLE TO CONTACT
6	4311	LAKESIDE FOODS INC	PLAINVIEW	MN 247												ON MAJOR HIGHWAY
6	4486	LUCAS VARITY BODY SYSTEMS	RUSHFORD	MN 43												ON MAJOR HIGHWAY
6	3002	FARMLAND FOODS INC	ALBERT LEA	MN 13												ON MAJOR HIGHWAY
6	3978	JEROME FOODS INC (JENNIO TURKEY STORE)	FARIBAULT	MN 60	4TH				NONE	NONE	ADEQUACY FOUND BY INTERVIEW WITH CITY STAFF					PASS
6	7075	TRUTH HARDWARE	OWATONNA	I 35	BRIDGE											UNABLE TO CONTACT
6	1607	BENCHMARK ELECTRONICS INC	WINONA	US 61	THEURER	PELZER			NONE	NONE	ADEQUACY FOUND BY INTERVIEW WITH CITY STAFF					PASS
6	2470	CYTEC FIBERITE INC	WINONA	MN 43	3RD						ADEQUACY BASED ON NEIGHBORS ASSESMENT					PASS
6	7356	VENTURA FOODS LLC	ALBERT LEA	US 65	14TH	MARGARETHA					ADEQUACY BASED ON NEIGHBORS ASSESMENT					PASS
6	2388	CROWN CORK & SEAL CO	FARIBAULT	MN 60	4TH	PARK		6/12/2003	NONE	NONE		NONE	2	24		PASS
6	4897	MIDWEST OF CANNON FALLS	CANNON FALLS	US 52	64TH						ADEQUACY FOUND THROUGH OTHER STUDIES DONE BY CONSULTANT					PASS
6	1745	BOUQUET ENTERPRISES INC	KELLOGG	US 61	BELVIDERE			6/12/2003	NONE	NONE		NONE	1	2		PASS
6	5627	PEPLINE (WINCRAFT)	WINONA	US 61	5TH	VILA			NONE	NONE	ADEQUACY FOUND BY INTERVIEW WITH CITY STAFF					PASS
6	2961	FAIRWAY FOODS INC	NORTHFIELD	MN 19	5TH											ON MAJOR HIGHWAY
6	8265	ARCHER DANIELS MIDLAND(ADM) CO., RED WING PLANT	RED WING	US 61	LA GRANGE	PLUM	BUSH	6/12/2003	NONE	NONE	GATE WITH ACCESS DIRECTLY	MERGING WITH TRAFF	0	60		PASS
6	8350	KUJAK BROTHERS CORP. MUNICIPAL TERMINAL	WINONA	MN 43	RIVERVIEW	HUFF	2ND				SITE DOES NOT HAVE TRUCKS ACCORDING TO CONTACT PERSON; ROADS ARE FINE					PASS
6	8334	CENEX HARVEST STATES COOPERATIVES, WINONA TER	WINONA	MN 43	RIVERVIEW	HUFF	2ND	6/12/2003	NONE	NONE		TURNING RADIUS WITH	0	500		PASS
6	8278	BAY STATE MILLING CO. DOCK.	WINONA	MN 43	FRANKLIN			6/12/2003	NONE	NONE		TURNING RADIUS WITH	0	50		PASS
6	1306	IBM CORP	ROCHESTER	US 52												ON MAJOR HIGHWAY
6	2505	DAIRY FARMERS OF AMERICA	ZUMBROTA	US 52	STAR	445TH		5/21/2003								OUT OF BUSINESS
6	8386	RED WING MUNICIPAL TERMINAL WHARF.	RED WING	US 61	LEVEE	WITHERS HARBOR		5/22/2003								OUT OF BUSINESS
7	1002	3M CORP	NEW ULM	US 14	MINNESOTA	17TH		6/2/2003			ADEQUACY FOUND BY INTERVIEW WITH CITY STAFF					PASS
7	7000	TORO CO	WINDOM	MN 60	16TH			5/30/2003	NONE	NONE		HEAVY TRAFFIC AT INT	20	20		PASS
7	6876	TELEX COMMUNICATIONS INC	BLUE EARTH	US 169	OLD CR 16			5/30/2003	NONE	NONE	NONE	ACCELERATION ISSUES	2	4		PASS
7	5708	PIONEER HI-BRED INTL	JACKSON	US 71	INDUSTRIAL PARK			5/30/2003	NONE	NONE	NONE	NONE				PASS
7	2957	FAIRMONT FOODS	FAIRMONT	MN 15	4TH			5/30/2003	NONE	NONE		NONE	1	6		PASS
7	1113	ARCHER DANIELS MIDLAND (ADM) PROCESSING	MANKATO	US 14	3RD			5/30/2003	NONE	NONE		LACK OF TURN LANE O	0	300		PASS
7	1149	AG-CHEM EQUIPMENT CO	JACKSON	US 71	INDUSTRIAL PARK			5/30/2003	NONE	NONE		TURNING RADIUS ISSU	5	20		PASS
7	6346	SENECA FOODS CORP	BLUE EARTH	US 169	7TH			5/30/2003	NONE	NONE	THE LINK USED TO GET TO TH	NONE	20	50		PASS
7	4538	M. G. WALDBAUM CO	GAYLORD	MN 5												ON MAJOR HIGHWAY
7	1381	ARMOUR SWIFT ECKRICH	ST. JAMES	MN 4	11TH											UNABLE TO CONTACT
7	1949	CARLSON CRAFT COMMERCIAL DIV	NORTH MANKATO	US 14	ROE CREST	COMMERCE	LORRAY				ADEQUACY FOUND THROUGH OTHER STUDIES DONE BY CONSULTANT					PASS
7	1156	AGROLINK FOODS VEGETABLE CO (SENECA FOODS)	ARLINGTON	MN 5	3RD	BAKER			NONE	NONE	ADEQUACY FOUND BY INTERVIEW WITH CITY STAFF					PASS
7	2958	FAIRMONT TAMPER	FAIRMONT	MN 15	MAIN	4TH					ADEQUACY BASED ON NEIGHBORS ASSESMENT					PASS
7	2134	CLEAR WITH COMPUTERS	MANKATO	MN 22	CR 3						ADEQUACY FOUND THROUGH OTHER STUDIES DONE BY CONSULTANT					PASS
7	1900	CALDWELL PACKING CO	WINDOM	MN 60												ON MAJOR HIGHWAY
7	6349	SENECA FOODS CORP	MONTGOMERY	MN 21	5TH											UNABLE TO CONTACT
7	3675	HARVEST STATES PROCESSING/REFINING	MANKATO	US 169	MINNEOPA	WOODLAND					ADEQUACY FOUND THROUGH (	PROBLEMS WITH STAGING SUPPLIER TRUCKS GOING INTO PLANT AT HARVEST TIME				PASS
7	2593	DELTA-WASECA INC	WASECA	MN 13	2ND			6/12/2003	NONE	NONE	INTERSECTION OF MN 13 AND I	NONE	5	3		PASS
7	1170	WIS-PAK OF MANKATO	NORTH MANKATO	US 14	TOWER	JAMES	LORRAY				ADEQUACY FOUNT THROUGH OTHER STUDIES DONE BY CONSULTANT					PASS
7	1103	ADC BROADBAND CONNECTIVITY GRP	LE SUEUR	MN 112	4TH	VINE		5/21/2003								OUT OF BUSINESS
7	4242	KRAFT FOODS	NEW ULM	MN 15	BRIDGE	20TH		6/2/2003								OUT OF BUSINESS
7	6131	ROCKWELL AUTOMATION/KATO ENG	NORTH MANKATO	US 14	HOWARD	CR 13		6/2/2003								OUT OF BUSINESS
8	2503	DAIRY FARMERS OF AMERICA	WINSTED	MN 7	1ST	KINGSLEY	CR 9	6/2/2003								UNABLE TO CONTACT
8	6471	SOUTHERN MINNESOTA BEET SUGAR	RENVILLE	US 212												ON MAJOR HIGHWAY
8	6565	STARKEY LABS INC	GLENCOE	US 212	10TH											ON MAJOR HIGHWAY
8	3720	HUISKEN MEAT CTR	CHANDLER	MN 91	5TH	CR 5										UNABLE TO CONTACT
8	6877	TELEX COMMUNICATIONS INC	GLENCOE	US 212	14TH	UNION	10TH	6/12/2003	NONE	NONE		RR TRACK X-ING	20	5		PASS
8	1404	ARTESYN TECHNOLOGIES	REDWOOD FALLS	MN 19	BRIDGE											ON MAJOR HIGHWAY
8	6348	SENECA FOODS CORP	GLENCOE	MN 22	8TH						ADEQUACY FOUND THROUGH OTHER STUDIES DONE BY CONSULTANT					PASS
8	3727	HUTCHINSON TECHNOLOGY INC	HUTCHINSON	MN 7	HIGHLAND PARK						ADEQUACY FOUND THROUGH OTHER STUDIES DONE BY CONSULTANT					PASS
8	3053	FIRST DISTRICT ASSOCIATION	LITCHFIELD	MN 22												ON MAJOR HIGHWAY
8	7642	WILLMAR POULTRY CO	WILLMAR	US 12	CR 5						ADEQUACY FOUND THROUGH OTHER STUDIES DONE BY CONSULTANT.					PASS
8	4842	MICRO DYNAMICS	MONTEVIDEO	MN 29	9TH	CR 41		6/12/2003	NONE	NONE		NONE	1	1		PASS
8	5534	PALS	WILLMAR	MN 23	CR 5											ON MAJOR HIGHWAY
8	1561	SCHWAN'S SALES ENTERPRISES INC	MARSHALL	MN 19												ON MAJOR HIGHWAY
8	1698	MINNESOTA CORN PROCESSORS	MARSHALL	MN 59												ON MAJOR HIGHWAY
8	1008	3M CORP	HUTCHINSON	MN 22												ON MAJOR HIGHWAY
8	1479	HUTCHINSON MANUFACTURING INC	HUTCHINSON	MN 7												ON MAJOR HIGHWAY
8	2201	JENNIE-O FOODS INC	WILLMAR	US 12	BENSON	11TH					ADEQUACY FOUNT THROUGH OTHER STUDIES DONE BY CONSULTANT					PASS
8	12201	JENNIE-O FOODS INC	WILLMAR	MN 40	WILLMAR						ADEQUACY FOUNT THROUGH OTHER STUDIES DONE BY CONSULTANT					PASS
8	3532	HEARTLAND FOOD CO	MARSHALL	US 59	6TH			6/2/2002								OUT OF BUSINESS

Appendix B: Twin Cities Metropolitan Area Clusters

APPENDIX B: TWIN CITIES METROPOLITAN AREA CLUSTERS

For the purposes of this analysis, the Twin Cities Metropolitan Area (TCMA) was broken into 27 cluster areas (clusters A through AA) (see figure B-1). Each cluster area is analyzed and discussed in terms of its geographic location, the industrial business types contained within, the extent of roadway connections and their access to the regional system, known freight movement and access issues, and potential solutions or projects which will address these issues.



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TWIN CITIES METROPOLITAN REGION - CLUSTERS

ADEQUACY OF FREIGHT CONNECTION TO REGIONAL SYSTEM FOR TWIN CITIES METROPOLITAN AREA

Minnesota Department of Transportation

Figure B-1

CLUSTER A – MAPLE GROVE/OSSEO/BROOKLYN PARK

Location

Cluster Area "A" is located along the northwest corner of the I-494/I-694/I-94 beltway. The cluster area encompasses portions of the municipalities of Maple Grove, Osseo, and Brooklyn Park (see figure B-2).

Business Types

Cluster Area "A" contains industrial and extractive land uses. A sample of the types of major freight facilities that can be found within this cluster area, include the following (see figure B-2 and the table below):

Facility Name	Business Type	Product Type	Location
County Seat Distribution Center	Wholesale or Distribution Center	Durable Goods	Brooklyn Park
Siemens Energy Automation, Inc.	Wholesale or Distribution Center	Professional Equipment and Supplies	Brooklyn Park
Ceram-Traz Corp.	Wholesale or Distribution Center	Chemicals and Allied Products	Osseo
Northern States Power Co.	Utility	Electric Services	Maple Grove

Source: Mn/DOT Database.

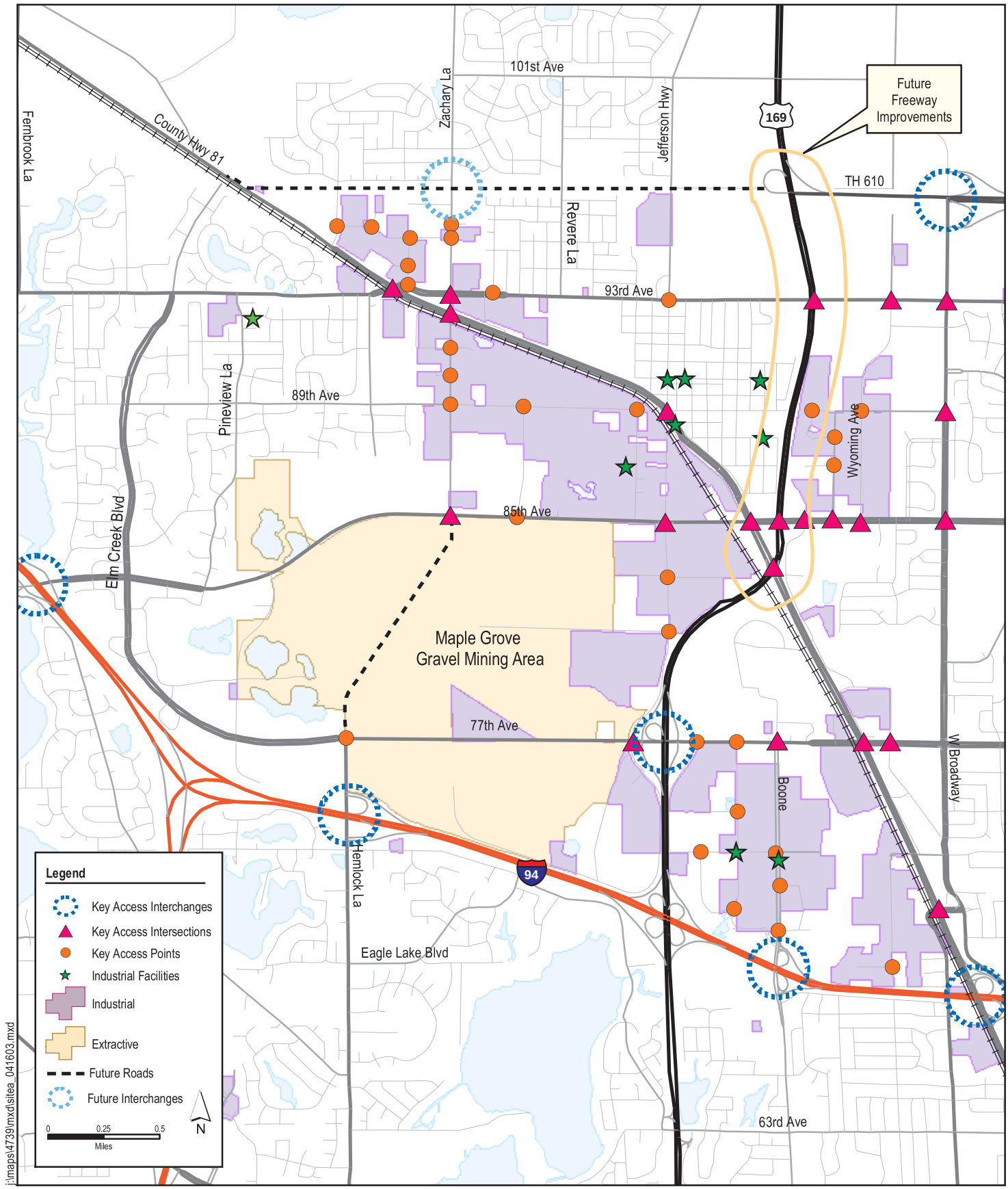
Connections/Access

Freight facilities located within Cluster Area "A" have multiple access points to the regional transportation system (e.g., interstate, NHS, IRC), including the following interchanges (also see figure B-2):

- County Road 109 (Weaver Lake Road) at Interstate 94
- County Road 61 (Hemlock Lane) at Interstate 94
- Boone Avenue at Interstate 94
- County Road 81 at Interstate 94
- County Road 130 (77th Avenue) at State Highway 169
- West Broadway at Trunk Highway 610

Additionally, the freight facilities are well-served by a network of minor arterials that are in good physical condition and support legal loads, including the following (also see figure B-2):

- County Road 130 (Elm Creek Boulevard/77th Avenue)
- Boone Avenue
- County Road 81
- West Broadway Avenue
- County Road 109 (Weaver Lake Road/85th Avenue)
- County Road 30 (93rd Avenue/7th Street)



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CLUSTER A - MAPLE GROVE / OSSEO / BROOKLYN PARK

Figure B-2

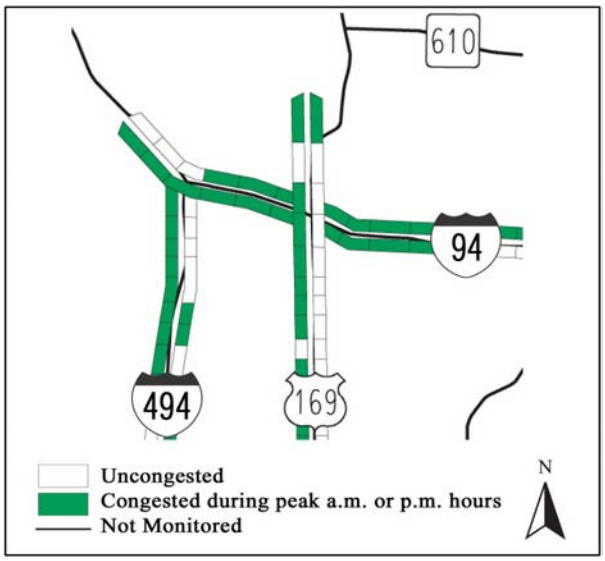
ADEQUACY OF FREIGHT CONNECTIONS TO REGIONAL SYSTEM FOR THE TWIN CITIES METROPOLITAN AREA

Minnesota Department of Transportation

There are no known deficient bridges with height or weight restrictions within the cluster area (see figure B-2).

Issues

Based on discussions with local engineers, there are few major issues or concerns regarding connections to the regional system. The most significant issues are with the capacity of the regional system (e.g., Interstate 94, Truck Highway 169). These facilities routinely experience congestion during peak hours (Source: Mn/DOT Metro Division Transportation System Plan, January 2001). Trunk Highway 169 frequently experiences large peak period queues, which limit the ability of trucks to easily access the surrounding industrial and extractive concentrations.



Potential Solutions/Projects

There are several planned improvements that will help mitigate these problems including:

- Upgrading Interstate 94 to a six-lane freeway from Brooklyn Boulevard to Hemlock Lane (currently under construction) to increase capacity,
- Upgrading Trunk Highway 169 to a freeway with grade separated interchanges from County Road 81 to Trunk Highway 610 to improve access and increase capacity,
- Extending Trunk Highway 610 as a freeway with grade separated interchanges from Trunk Highway 169 to Interstate 94 to provide a parallel alternate route, thereby alleviating congestion on Interstate 94,
- Extending and upgrading Hemlock Lane/Zachary Lane from Elm Creek Boulevard/ 77th Avenue to Trunk Highway 610, including a new interchange at Trunk Highway 610, to provide a parallel alternate route, thereby alleviating congestion on County Road 81 and Trunk Highway 169, and
- Upgrading Trunk Highway 100 to freeway with grade separated interchanges to provide a parallel alternate route, thereby alleviating congestion on Trunk Highway 169.

CLUSTER B – PLYMOUTH

General Location

Cluster Area "B" is located along the western side of the I-494/I-694/I-94 beltway, just north of Interstate 394. The cluster area encompasses the central portion of the municipality of Plymouth (see figure B-3).

Business Types

Cluster Area "B" contains industrial land uses. A sample of the types of major freight facilities that can be found in this cluster area, include the following (see figure B-3 and the table below):

Facility Name	Business Type	Product Type	Location
Chrysler Corp.	Wholesale or Distribution Center	Motor Vehicle Supplies and New Parts	Plymouth
Olympic Steel Co.	Wholesale or Distribution Center	Metal Service Centers and Offices	Plymouth
Polaris Industries Inc.	Manufacturing Plant	Transportation Equipment, NEC	Plymouth
Banner Engineering Corp.	Manufacturing Plant	Relays and Industrial Controls	Plymouth

Source: Mn/DOT Database.

Connections/Access

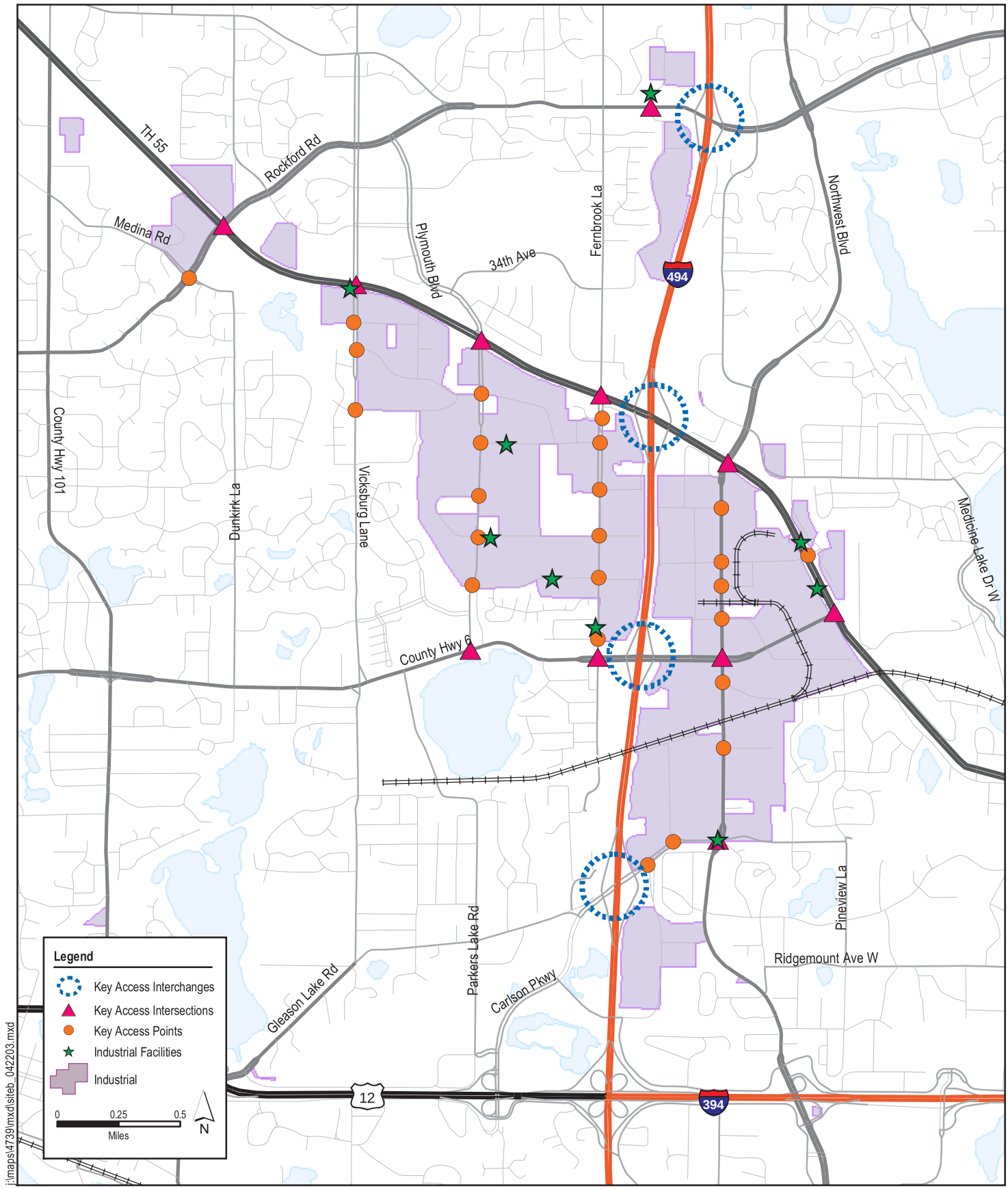
Freight facilities located within Cluster Area "B" have multiple access points to the regional transportation system (e.g., interstate, NHS, IRC), including the following interchanges (also see figure B-3):

- County Road 9 (Rockford Road) at Interstate 494
- Trunk Highway 55 at Interstate 494
- County Road 6 at Interstate 494
- Carlson Parkway at Interstate 494

Additionally, the freight facilities are well-served by a network of minor arterials that are in good physical condition and support legal loads, including the following (also see figure B-3):

- County Road 61 (Northwest Boulevard/Xenium Lane)
- County Road 9 (Rockford Road)
- Trunk Highway 55
- County Road 6

There are no known deficient bridges with height or weight restrictions within the cluster area (see figure B-3).



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CLUSTER B - PLYMOUTH

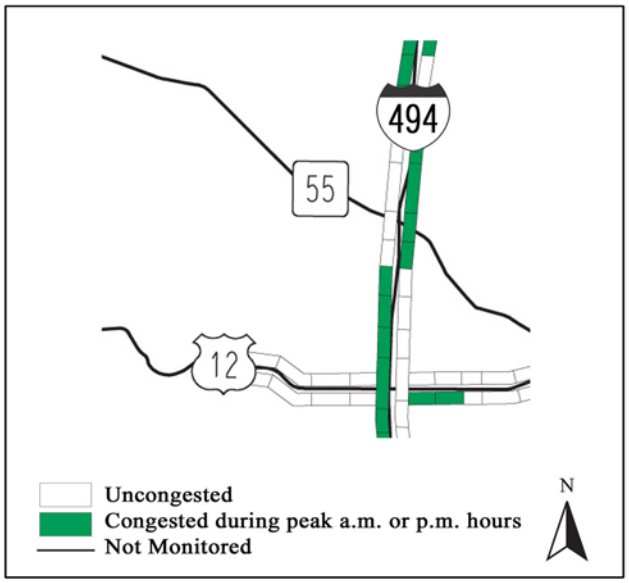
Figure B-3

ADEQUACY OF FREIGHT CONNECTIONS TO REGIONAL SYSTEM FOR THE TWIN CITIES METROPOLITAN AREA

Minnesota Department of Transportation

Issues/Concerns

The most significant issues involve the capacity of the regional system (e.g., Interstate 494, Interstate 394). These facilities routinely experience congestion during peak hours (Source: Mn/DOT Metro Division Transportation System Plan, January 2001). County State Aid Highway (CSAH) 61, as a main parallel alternate route to Interstate 494, experiences heavy commuter volumes during peak periods, thereby reducing freight flow. Additionally, the congestion on CSAH 61 is compounded by the lack of turn lanes to local streets from CSAH 61. Trunk Highway 55, as the primary east-west route west of Interstate 494 between Interstate 94 and Interstate 394, experiences heavy peak period volumes.



Solutions

There have been discussions about extending Medina Road from Dunkirk to Vicksburg, which would alleviate some congestion along Trunk Highway 55 by providing a parallel alternate route. There are plans to expand Interstate 494 from Interstate 394 to Interstate 94 (Source: Mn/DOT Metro Division Transportation System Plan, January 2001). There have been discussions about converting HOV lanes on Interstate 394 to HOT lanes.

CLUSTER AREA C – ROGERS

General Location

Cluster Area "C" is located along I-94, northwest of the I-494/I-694/I-94 beltway. The cluster area encompasses portions of the municipalities of Rogers, Hassan Township and Dayton (see figure B-4).

Business Types

Cluster Area "C" contains industrial and extractive land uses. A sample of the type of major freight facilities that can be found in this cluster area, include the following (see figure B-4 and the table below):

Facility Name	Business Type	Product Type	Location
Graco US Distribution Center	Wholesale or Distribution Center	Industrial Machinery & Equipment	Rogers

Source: Mn/DOT Database.

Connections/Access

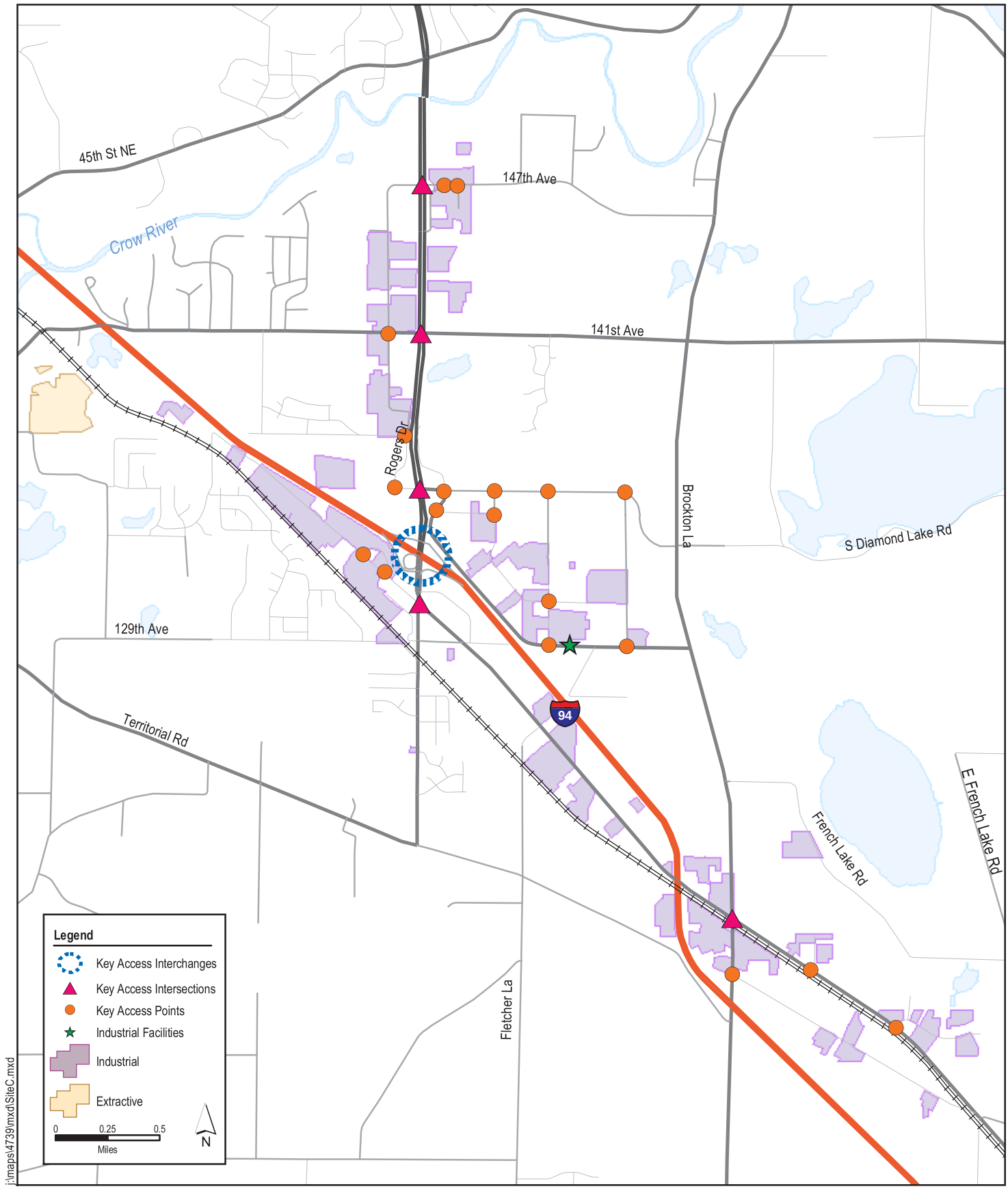
Freight facilities located within Cluster Area "F" have limited access points to the regional transportation system (e.g., interstate, NHS, IRC), primarily the following interchange (also see figure B-4):

- Trunk Highway 101 (Main Street) at Interstate 94

Additionally, the freight facilities are heavily concentrated around a small but growing network of minor arterials that are in good physical condition and support legal loads, including the following (also see figure B-4):

- Trunk Highway 101 (Main Street)
- Industrial Boulevard

There are no known deficient bridges with height or weight restrictions within the cluster area (see figure B-4).



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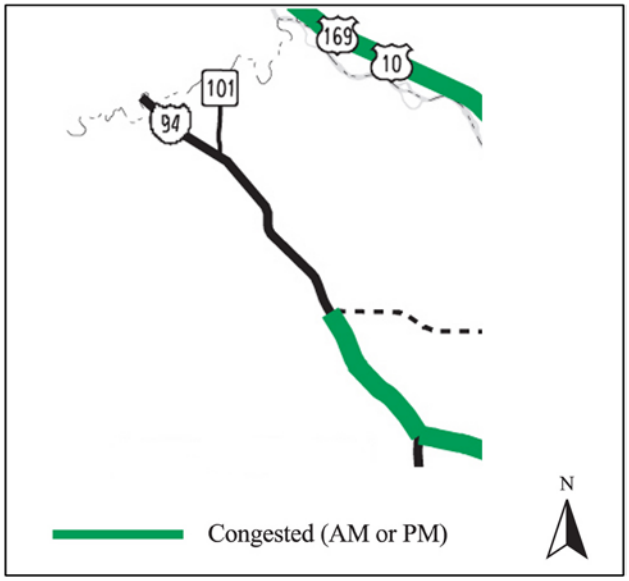
CLUSTER C - ROGERS

Figure B-4

ADEQUACY OF FREIGHT CONNECTIONS TO REGIONAL SYSTEM FOR THE TWIN CITIES METROPOLITAN AREA

Minnesota Department of Transportation

Issues/Concerns



The most significant issues in this cluster occur due to the limited capacity of the regional system (e.g., Interstate 94). These facilities routinely experience congestion during peak hours (Source: Mn/DOT Metro Division Transportation System Plan, January 2001). Additionally, Trunk Highway 101, the primary north-south arterial, experiences heavy traffic volumes and large congested queues during peak periods. It is also difficult to access southbound Trunk Highway 101 from 147th Avenue. Unlike some of the other cluster areas, the industrial concentration in Cluster "C" is growing rapidly between Trunk Highway 101, Brockton Lane, 141st Avenue, and County Road 49. Major freight facilities, such as Archway, Department 56, and Reinhart FoodService, have begun operation within this area since 2000.

Solutions

There are several planned improvements that will help mitigate these problems including:

- Continuing expansion of the local system to relieve congestion around the Trunk Highway 101/Interstate 94 interchange.
- Extension of Trunk Highway 610 from Trunk Highway 169 west to Interstate 94.

CLUSTER AREA D – CHASKA

General Location

Cluster Area "D" is located several miles outside of the southwestern corner of the I-494/I-694/I-94 beltway. The cluster area encompasses portions of the municipalities of Chaska and Chanhassen (see figure B-5).

Business Types

Cluster Area "D" contains industrial land uses. A sample of the types of major freight facilities that can be found in this cluster area, include the following (see figure B-5 and the table below):

Facility Name	Business Type	Product Type	Location
American Harvest	Manufacturing Plant	Food Products Machinery	Chaska
Fluoroware, Inc.	Manufacturing Plant	Semiconductors & Related Devices	Chaska
Lake Region Manufacturing, Inc.	Manufacturing Plant	Surgical & Medical Instruments & Apparatus	Chaska
Mammoth, Inc.	Wholesale or Distribution Center	Undefined	Chaska

Source: Mn/DOT Database.

Connections/Access

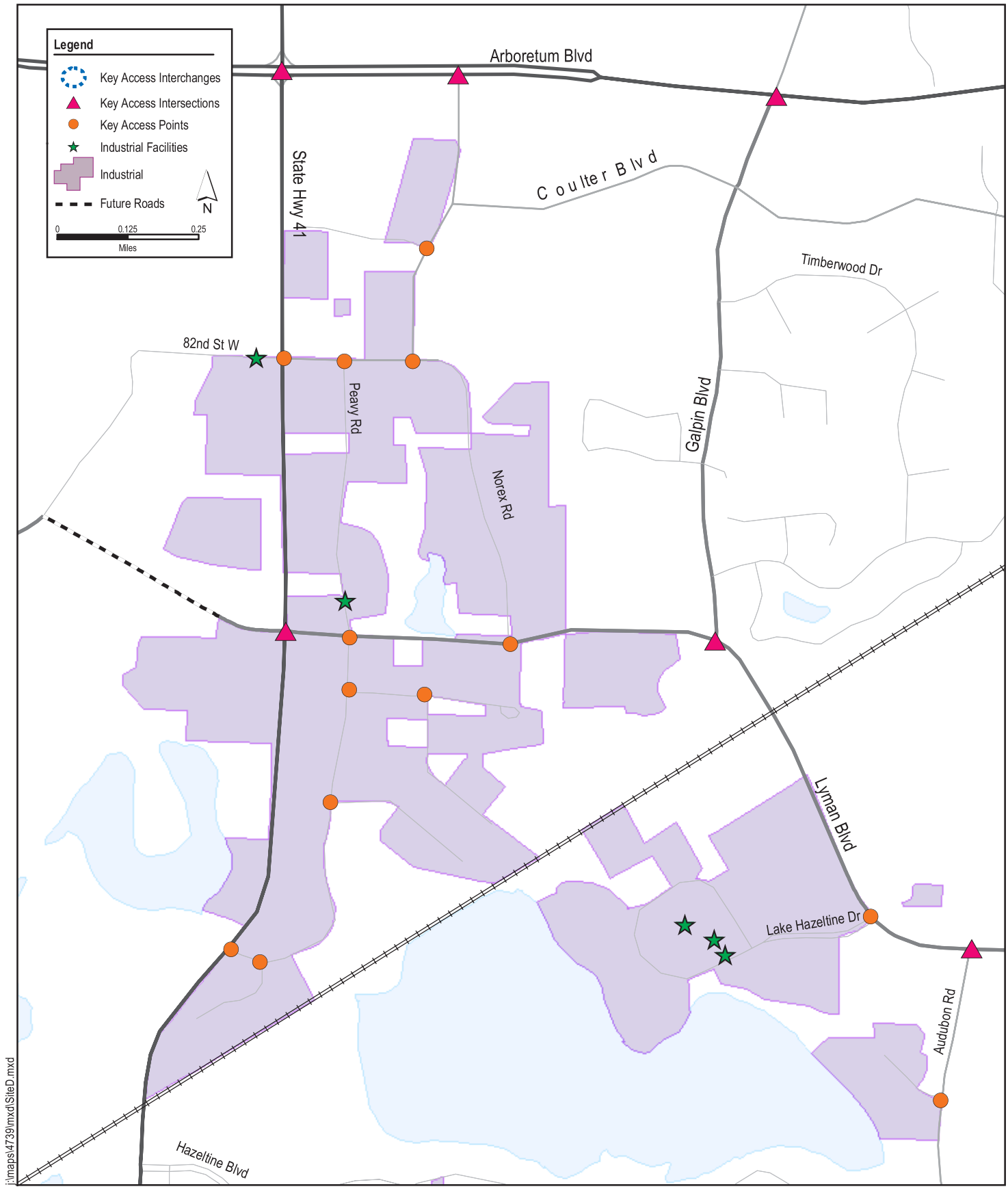
Freight facilities located within Cluster Area "D" have limited access points to the regional transportation system (e.g., interstate, NHS, IRC), primarily the following interchange (also see figure B-5):

- Trunk Highway 5 at Interstate 494

However, the freight facilities are well-served by a network of minor arterials that are in good physical condition and support legal loads, including the following (also see figure B-5):

- Trunk Highway 5 (Arboretum Boulevard)
- Trunk Highway 41 (Hazeltine Boulevard)
- County Road 18 (Lyman Boulevard)
- County Road 19 (Galpin Boulevard)

There are no known deficient bridges with height or weight restrictions within the cluster area (see figure B-5).



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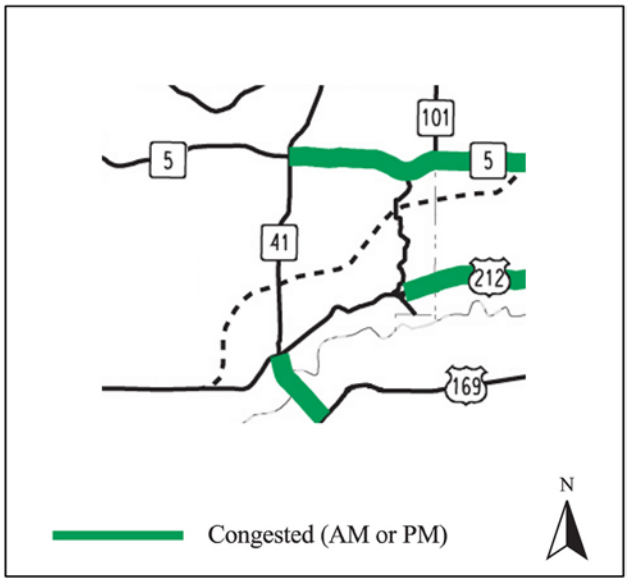
CLUSTER D - CHASKA

Figure B-5

ADEQUACY OF FREIGHT CONNECTIONS TO REGIONAL SYSTEM FOR THE TWIN CITIES METROPOLITAN AREA

Minnesota Department of Transportation

Issues/Concerns



The most significant issues in this cluster are with the capacity of the regional system (e.g., Interstate 494, Trunk Highway 5). These facilities routinely experience congestion during peak hours (Source: Mn/DOT Metro Division Transportation System Plan, January 2001). Additionally, other trunk highways, such as Trunk Highway 41, Trunk Highway 7, and Trunk Highway 212, experience high traffic volumes during the peak periods resulting in poor access and flow to and from the metropolitan area, and across the Minnesota River to Trunk Highway 169. There are a number of signals on Trunk Highway 41 and Trunk Highway 5 that impede traffic flow. Steep grades near downtown Chaska hinder truck travel. Several intersections on Trunk Highway 41, Trunk Highway 212, Trunk Highway 41, and Trunk Highway 169 operate at a LOS F during peak periods. There is inadequate bridge capacity crossing the Minnesota River.

Solutions

The future construction of Trunk Highway 312 as a freeway with grade separated interchanges from Eden Prairie to Dahlgren Township will provide a parallel alternate route to Trunk Highway 5 and Trunk Highway 212, thereby alleviating congestion along and improving peak period operation on Trunk Highway 5. As part of the future freeway construction project, grade separated interchanges are planned at Trunk Highway 41 and Audubon Road, all of which will provide quick direct access from the major freight facilities in the cluster to Trunk Highway 312 in the future. Trunk Highway 312 is not currently in the 10 Year Work Program. Advancement of this project could occur if additional new funding becomes available. Additional turn lanes and access removals, in 2004, are expected to improve the intersection of Trunk Highway 41 and Trunk Highway 169. There have also been discussions of a future freeway-type roadway connection from Trunk Highway 212, across the Minnesota River, to Trunk Highway 169. The current Trunk Highway 41 Bridge over the Minnesota River is programmed for replacement in Fiscal Year 2006 (Metro Division 10-Year Work Plan).

CLUSTER AREA E – EDEN PRAIRIE

General Location

Cluster Area "E" is located along the southwestern corner of the I-494/I-694/I-94 beltway. The cluster area encompasses primarily the northwestern portion of the municipality of Eden Prairie (see figure B-6).

Business Types

Cluster Area "E" contains industrial land uses. A sample of the types of major freight facilities that can be found in this cluster area, include the following (see figure B-6 and the table below):

Facility Name	Business Type	Product Type	Location
Cooperative Power Association	Utility	Electric Services	Eden Prairie
Kraft Foods	Wholesale or Distributions Center	Dairy Products, Except Dried or Canned	Eden Prairie
Pillsbury Company	Wholesale or Distributions Center	Groceries & Related Products, NEC	Eden Prairie
Rollerblade, Inc.	Manufacturing Plant	Sporting & Athletic Goods, NEC	Eden Prairie

Source: Mn/DOT Database.

Connections/Access

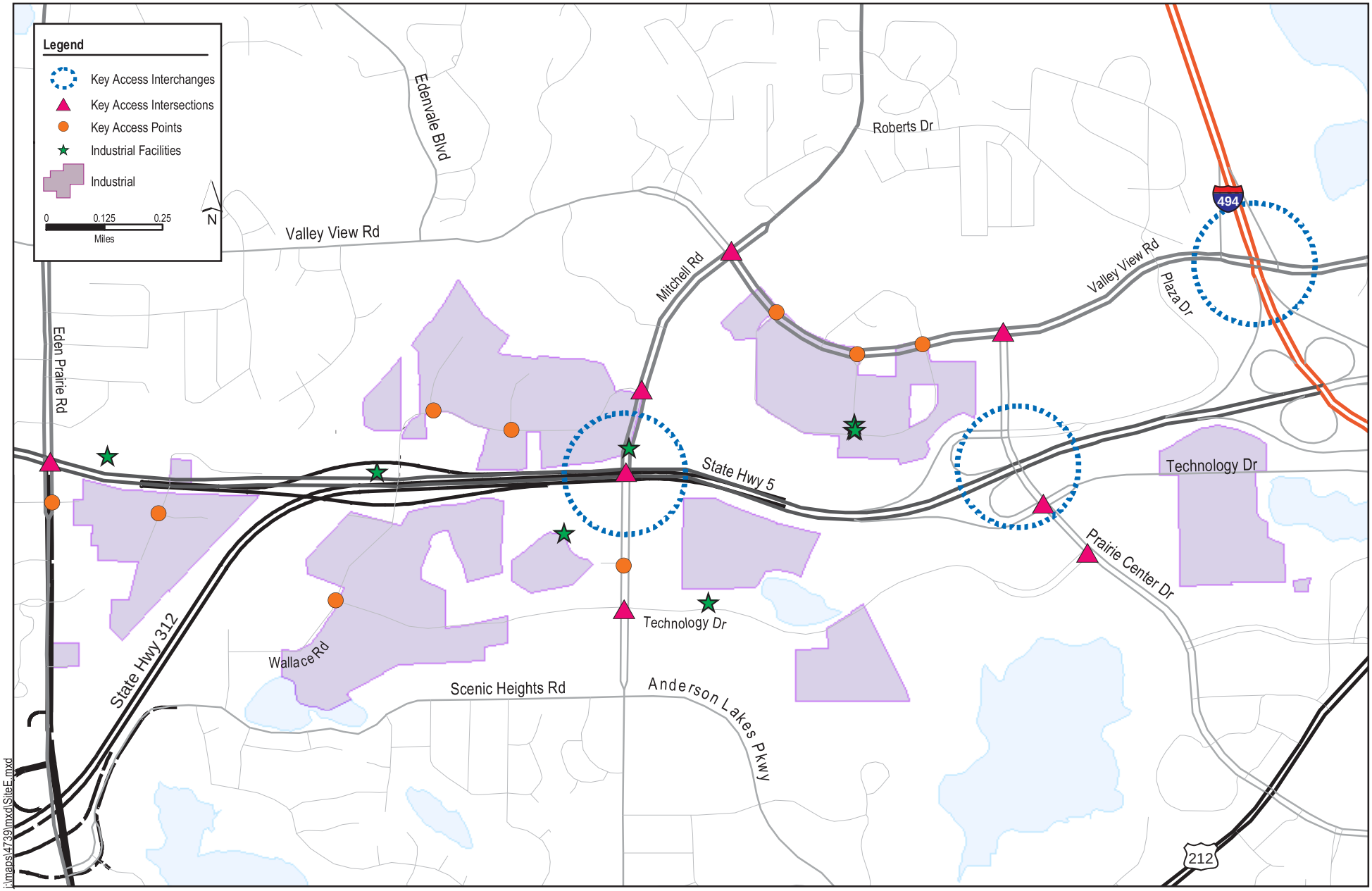
Freight facilities located within Cluster Area "E" have a limited number of direct access points to the regional transportation system (e.g., interstate, NHS, IRC), specifically the following interchanges (also see figure B-6):

- Trunk Highway 5 at Interstate 494
- County Road 39 (Valley View Road) at Interstate 494

However, the freight facilities are well-served by a network of minor arterials that are in good physical condition and support legal loads, including the following (also see figure B-6):

- County Road 39 (Valley View Road)
- Trunk Highway 5
- Prairie Center Drive
- County Road 60 (Mitchell Road)
- Eden Prairie Road
- Technology Drive

There are no known deficient bridges with height or weight restrictions within the cluster area (see figure B-6).



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CLUSTER E - EDEN PRAIRIE

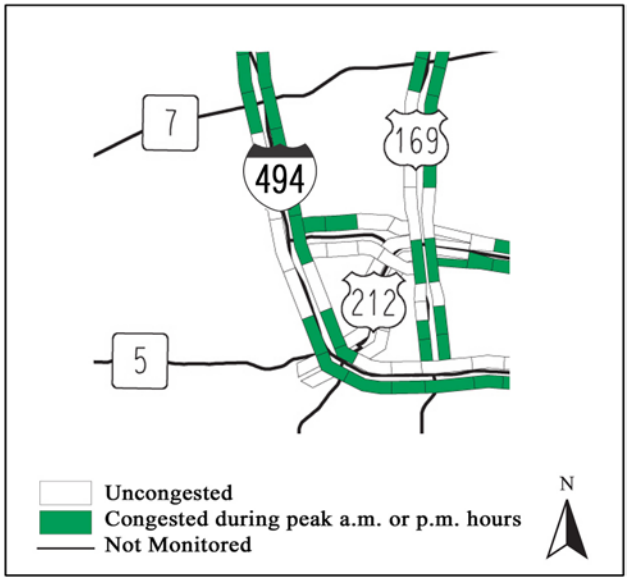
Figure B-6

ADEQUACY OF FREIGHT CONNECTIONS TO REGIONAL SYSTEM FOR THE TWIN CITIES METROPOLITAN AREA

Minnesota Department of Transportation

Issues/Concerns

The most significant issues are with the capacity of the regional system (e.g., Interstate 494, Truck Highway 5). These facilities routinely experience congestion during peak hours (Source: Mn/DOT Metro Division Transportation System Plan, January 2001).



Solutions

The recent upgrading of Trunk Highway 5 to a freeway with grade separated interchanges at County Road 60 (Mitchell Road) and Prairie Center Drive has improved access to and flow along Trunk Highway 5 from those roadways. The future construction of Trunk Highway 312 as a freeway with grade separated interchanges from Eden Prairie to Dahlgren Township will provide a parallel alternate route to Trunk Highway 5 and Trunk Highway 212, thereby alleviating congestion along and improving peak period operation on Trunk Highway 5. An additional lane, which is currently being added to Interstate 494 between Trunk Highway 100 and Trunk Highway 212 will increase the capacity of the roadway and alleviate congestion, particularly during peak periods.

CLUSTER AREA F – CHANHASSEN

General Location

Cluster Area "F" is located several miles outside of the southwestern corner of the I-494/I-694/I-94 beltway. The cluster area encompasses primarily the northeastern portion of the municipality of Chanhassen (see figure B-7).

Business Types

Cluster Area "F" contains industrial land uses. A sample of the types of major freight facilities that can be found in this cluster area, include the following (see figure B-7 and the table below):

Facility Name	Business Type	Product Type	Location
Empak, Inc.	Manufacturing Plant	Plastic Products, NEC	Chanhassen
Instant Web, Inc.	Manufacturing Plant	Commercial Printing, NEC	Chanhassen
Pillsbury Co.	Wholesale or Distribution Center	Groceries, General Line	Chanhassen

Source: Mn/DOT Database.

Connections/Access

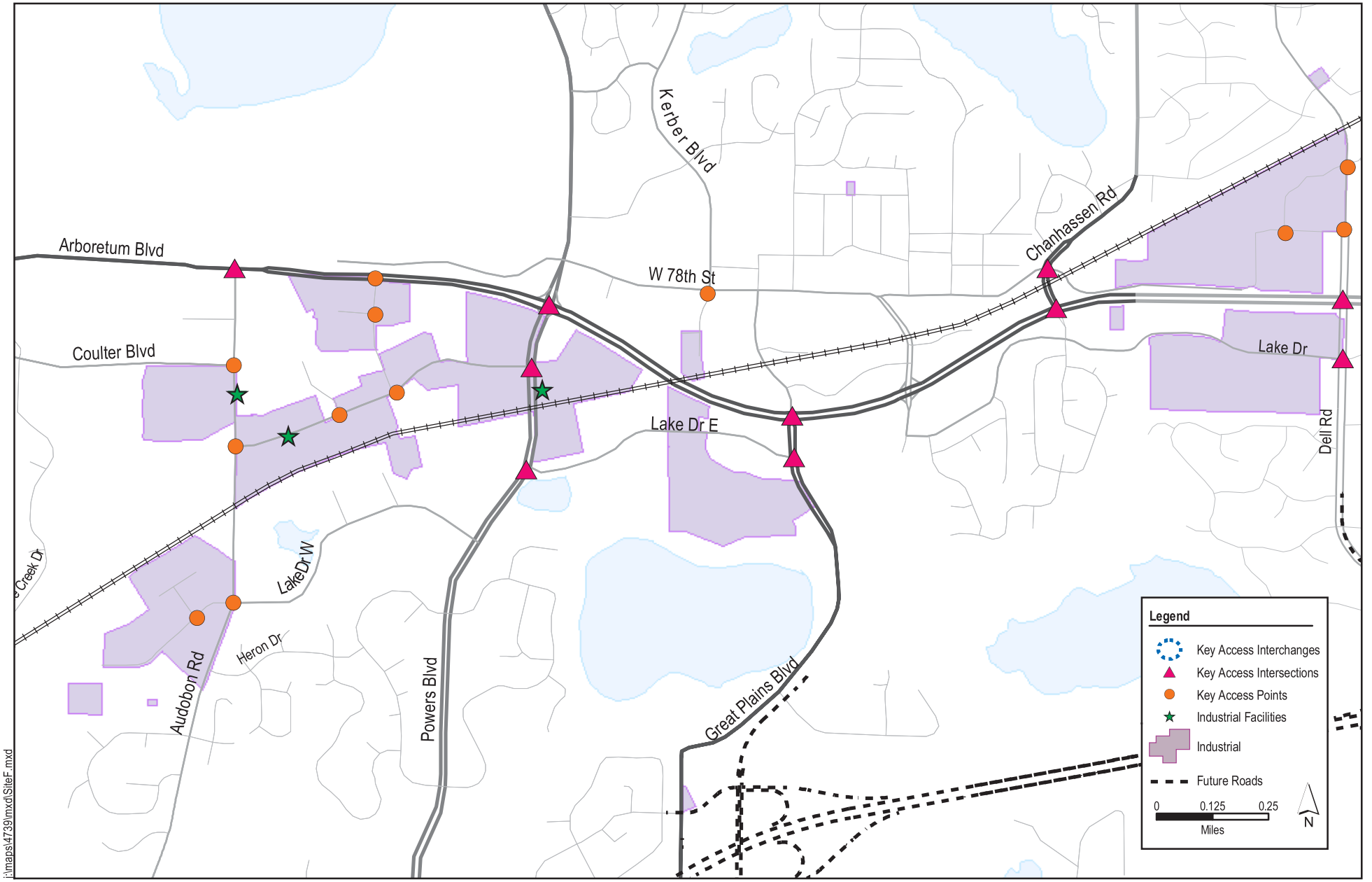
Freight facilities located within Cluster Area "F" have limited access points to the regional transportation system (e.g., interstate, NHS, IRC), primarily the following interchange (also see figure B-7):

- Trunk Highway 5 at Interstate 494

However, the freight facilities are well-served by a network of minor arterials that are in good physical condition and support legal loads, including the following (also see figure B-7):

- Trunk Highway 5
- Dell Road
- Trunk Highway 101 (Great Plains Boulevard)
- County Road 17 (Powers Boulevard)
- Audubon Road

There are no known deficient bridges with height or weight restrictions within the cluster area (see figure B-7).



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CLUSTER F - CHANHASSEN

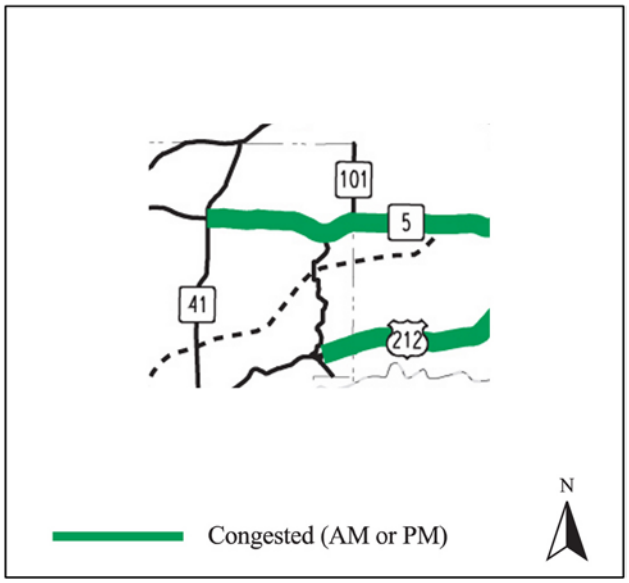
Figure B-7

ADEQUACY OF FREIGHT CONNECTIONS TO REGIONAL SYSTEM FOR THE TWIN CITIES METROPOLITAN AREA

Minnesota Department of Transportation

Issues/Concerns

The most significant issues in this cluster are with the capacity of the regional system (e.g., Interstate 494, Truck Highway 5). These facilities routinely experience congestion during peak hours (Source: Mn/DOT Metro Division Transportation System Plan, January 2001). Trunk Highway 5 frequently experiences heavy traffic volumes, and a high number of signals impede the efficient flow of traffic. Capacity problems exist at Trunk Highway 212 and Interstate 494. The river crossings at Trunk Highway 41 and Trunk Highway 100 are nearing capacity. The north-south connections are problematic for trucks due to grades, geometrics, discontinuous routes at Trunk Highway 212.



Solutions

The future construction of Trunk Highway 312 as a freeway with grade separated interchanges from Eden Prairie to Dahlgren Township will provide a parallel alternate route to Trunk Highway 5 and Trunk Highway 212, thereby alleviating congestion along and improving peak period operation on Trunk Highway 5. As part of the future freeway construction project, grade separated interchanges are planned at Dell Road, Trunk Highway 101 (Great Plains Boulevard), and County Road 17 (Powers Boulevard), which will provide quick direct access from the major freight facilities in the cluster to Trunk Highway 312 in the future. Trunk Highway 312 is not currently in the 10 Year Work Program. The Trunk Highway 41 Bridge over the Minnesota River is programmed for replacement in Fiscal Year 2006 (Metro Division 10-Year Work Plan).

CLUSTER AREA G – SHAKOPEE

General Location

Cluster Area "G" is located several miles southwest of the I-494/I-694/I-94 beltway. The cluster area encompasses a portion of the municipality of Shakopee (see figure B-8).

Business Types

Cluster Area "G" contains industrial and extractive land uses. A sample of the types of major freight facilities that can be found in this cluster area, include the following (see figure B-8 and the table below):

Facility Name	Business Type	Product Type	Location
Certain Teed Corporation	Manufacturing Plant	Asphalt Felts & Coatings	Shakopee
Fremont Industries, Inc.	Manufacturing Plant	Chemicals & Chemical Preparations, NEC	Shakopee
Toro Company	Manufacturing Plant	Undefined	Shakopee
Tsumura International, Inc.	Wholesale or Distribution Center	Durable Goods, NEC	Shakopee

Source: Mn/DOT Database.

Connections/Access

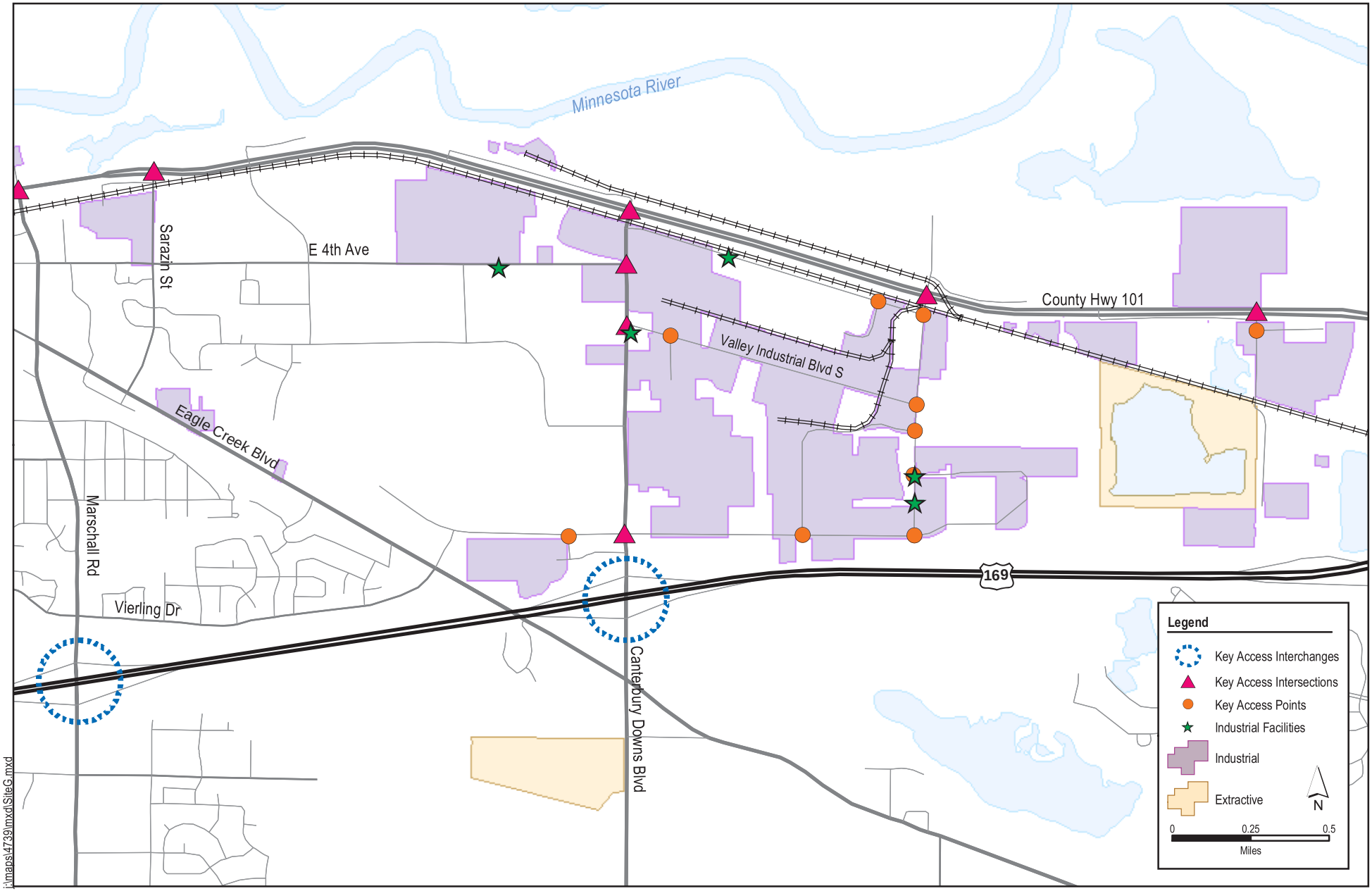
Freight facilities located within Cluster Area "G" have multiple access points to the regional transportation system (e.g., interstate, NHS, IRC), including the following interchanges (also see figure B-8):

- Trunk Highway 101 at US Highway 169
- County Road 83 (Canterbury Downs Boulevard) at US Highway 169
- County Road 17 (Marschall Road) at US Highway 169

Additionally, the freight facilities are well-served by a network of arterials that are in good physical condition and support legal loads, including the following (also see figure B-8):

- Trunk Highway 101
- County Road 18 (Principal Arterial)

There are no known deficient bridges with height or weight restrictions within the cluster area (see figure B-8).



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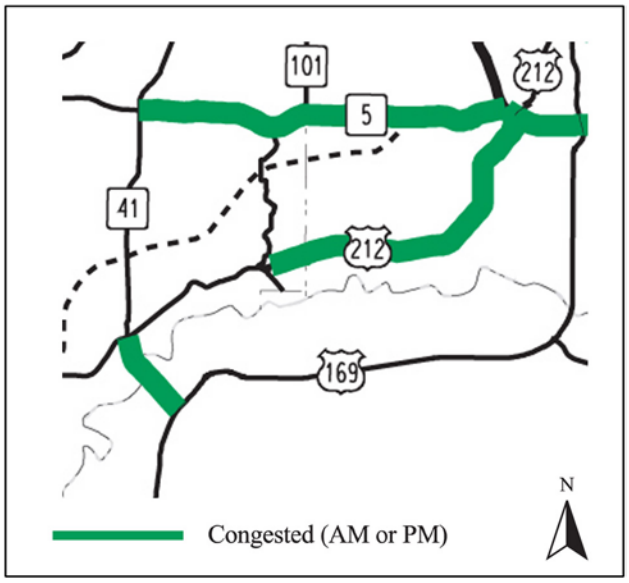
CLUSTER G - SHAKOPEE

Figure B-8

ADEQUACY OF FREIGHT CONNECTIONS TO REGIONAL SYSTEM FOR THE TWIN CITIES METROPOLITAN AREA

Minnesota Department of Transportation

Issues/Concerns



Queuing occurs on the Trunk Highway 169/Highway 101 interchange and the Trunk Highway 169/County Road 18 interchange as a result of bottlenecks created by signals on Trunk Highway 169 at Interstate 494, Anderson Lakes Parkway, and Pioneer Trail. Queuing on the Trunk Highway 169/ Highway 101 interchange is also the result of congestion created by the signal at Trunk Highway 13/Highway 101.

Solutions

There are no known improvements planned for this cluster area. However, improvements to relieve the bottlenecks at Anderson Lakes Parkway and Pioneer Trail planned for 2009 and 2010 along Trunk Highway 169, north of the river in Bloomington, would relieve queuing on the Trunk Highway 169/Highway 101 interchange (Metro Division 10-Year Work Plan), but there are no current funded plans for I-494. These improvements could be advanced through the Legislative Finance package passed in 2003. The City of Shakopee has acquired federal funding to initiate first steps in a planned series of corridor management improvements on Trunk Highway 13.

CLUSTER AREA H – HOPKINS/ST. LOUIS PARK

General Location

Cluster Area "H" is located inside the southwest corner of the I-494/I-694/I-94 beltway. The cluster area encompasses portions of the municipalities of Hopkins and St. Louis Park (see Figure B-9).

Business Types

Cluster Area "H" contains industrial land uses. A sample of the types of major freight facilities that can be found in this cluster area, include the following (see figure B-9 and the table below):

Facility Name	Business Type	Product Type	Location
Arrowhead Products, Inc.	Wholesale or Distribution Center	Lumber, Plywood, Millwork, & Wooded Panels	Hopkins
Japs-Olson Company	Manufacturing Plant	Commercial Printing, Lithographic	St. Louis Park
Minnesota Rubber	Manufacturing Plant	Molded, Extruded, and Lathe-Cut Mechanical Rubber Goods	St. Louis Park
Quality Assured Label	Manufacturing Plant	Coated & Laminated Paper, NEC	Hopkins

Source: Mn/DOT Database.

The SuperValu Distribution facilities, located in 3 of the 4 quadrants of the Excelsior Boulevard/Trunk Highway 169 interchange, anchor the industrial corridor in this cluster area.

Connections/Access

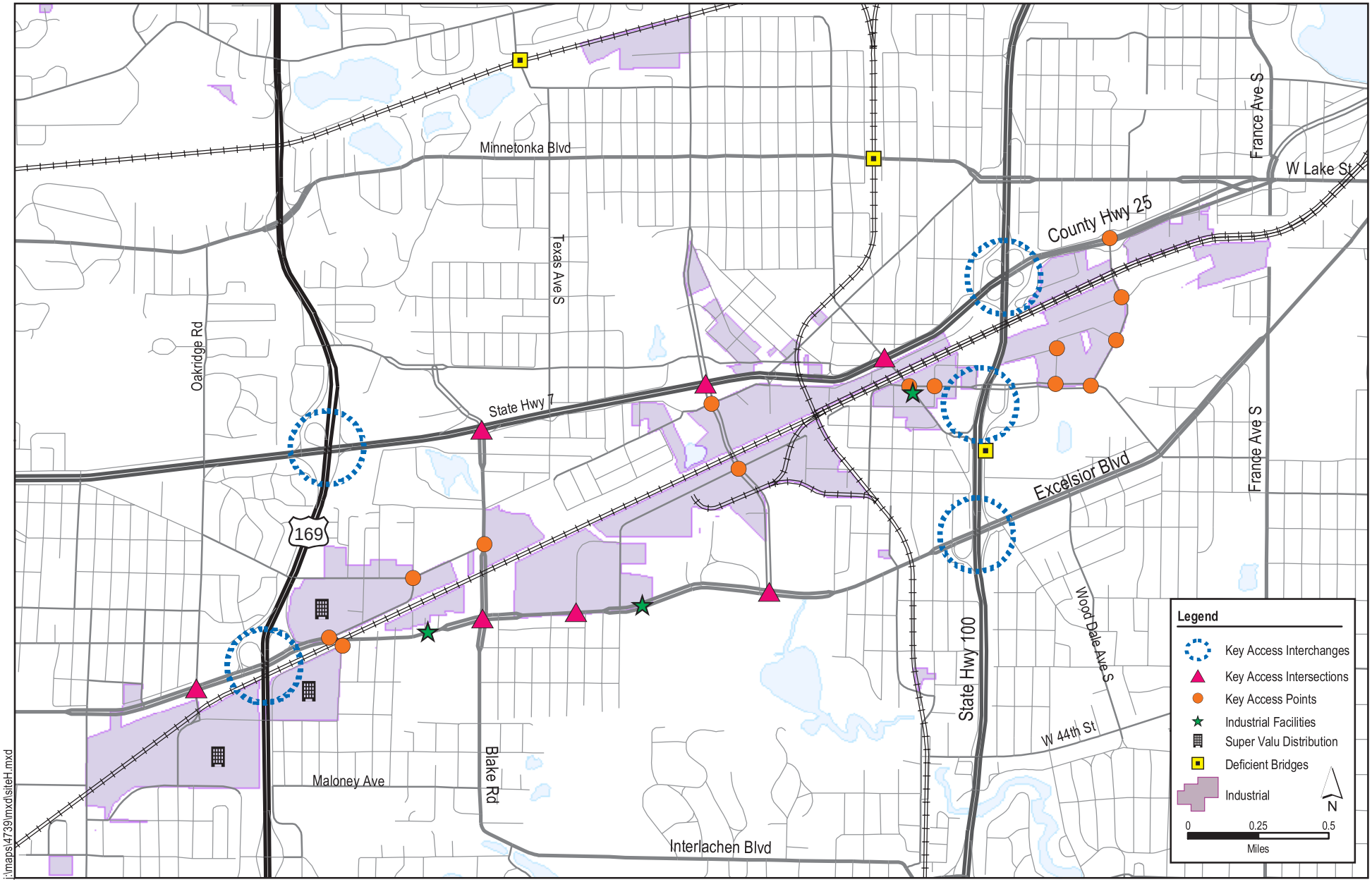
Freight facilities located within Cluster Area "H" have multiple access points to the regional transportation system (e.g., interstate, NHS, IRC), including the following interchanges (also see figure B-9):

- County Road 3 (Excelsior Boulevard) at US Highway 169
- Trunk Highway 7 at US Highway 169
- County Road 3 (Excelsior Boulevard) at Trunk Highway 100
- Trunk Highway 7 at Trunk Highway 100
- 36th Street at Trunk Highway 100

Additionally, the freight facilities are well-served by a network of arterials that are in good physical condition and support legal loads, including the following (also see figure B-9):

- Trunk Highway 7 (Principal Arterial)
- County Road 3 (Excelsior Boulevard)
- Blake Road
- Louisiana Avenue

There are three deficient bridges with height or weight restrictions within the cluster area (see figure B-9).



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CLUSTER H - HOPKINS / ST. LOUIS PARK

Figure B-9

ADEQUACY OF FREIGHT CONNECTIONS TO REGIONAL SYSTEM FOR THE TWIN CITIES METROPOLITAN AREA

Minnesota Department of Transportation

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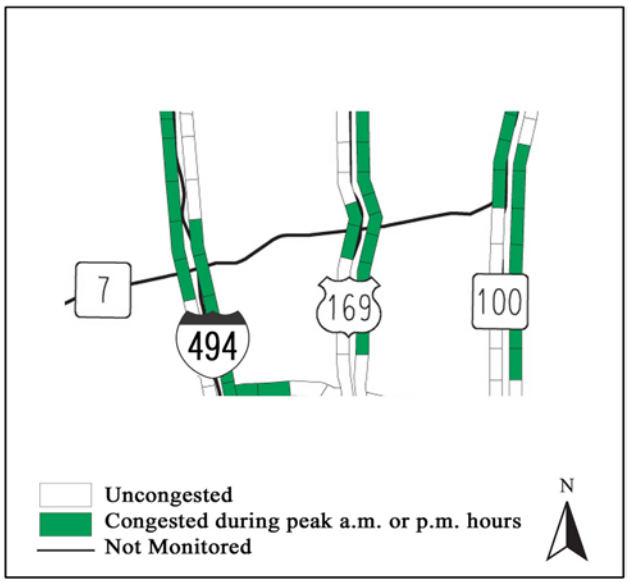
Issues/Concerns

The most significant issues are with the capacity of the regional system (e.g., Truck Highway 169, Trunk Highway 100). These facilities routinely experience congestion during peak hours (Source: Mn/DOT Metro Division Transportation System Plan, January 2001). Trunk Highway 169 frequently experiences heavy traffic flows, particularly during peak periods, thereby slowing traffic on the facility. The cluster area is crisscrossed with active rail lines. At one time, rail was the primary mode of freight transport for the cluster area, but today, rail lines cause delay at at-grade crossings on many of the arterials serving the cluster area.



Solutions

Trunk Highway 100 is currently being upgraded to a freeway facility with grade-separated interchanges between Interstate 394 and Interstate 94/Interstate 694, to increase the capacity of the roadway, particularly during peak periods. Recently, there have been discussions regarding future improvements to local access in the area of Trunk Highway 100 and Excelsior Boulevard to better serve the expansion plans of area medical facilities, such as Methodist Hospital and the Park Nicollet Clinic. These improvements would also benefit freight movement and access in the cluster area.

CLUSTER AREA I – EDINA/EDEN PRARIE NORTHEAST

General Location

Cluster Area "I" is located inside the southwestern corner of the I-494/I-694/I-94 beltway. The cluster area encompasses portions of the municipalities of Eden Prairie and Edina (see figure B-10). This cluster includes the area bounded by US-212, US-169 and I-494, known as the "Golden Triangle."

Business Types

Cluster Area "I" contains industrial land uses. A sample of the types of major freight facilities that can be found in this cluster area, include the following (see figure B-10 and the table below):

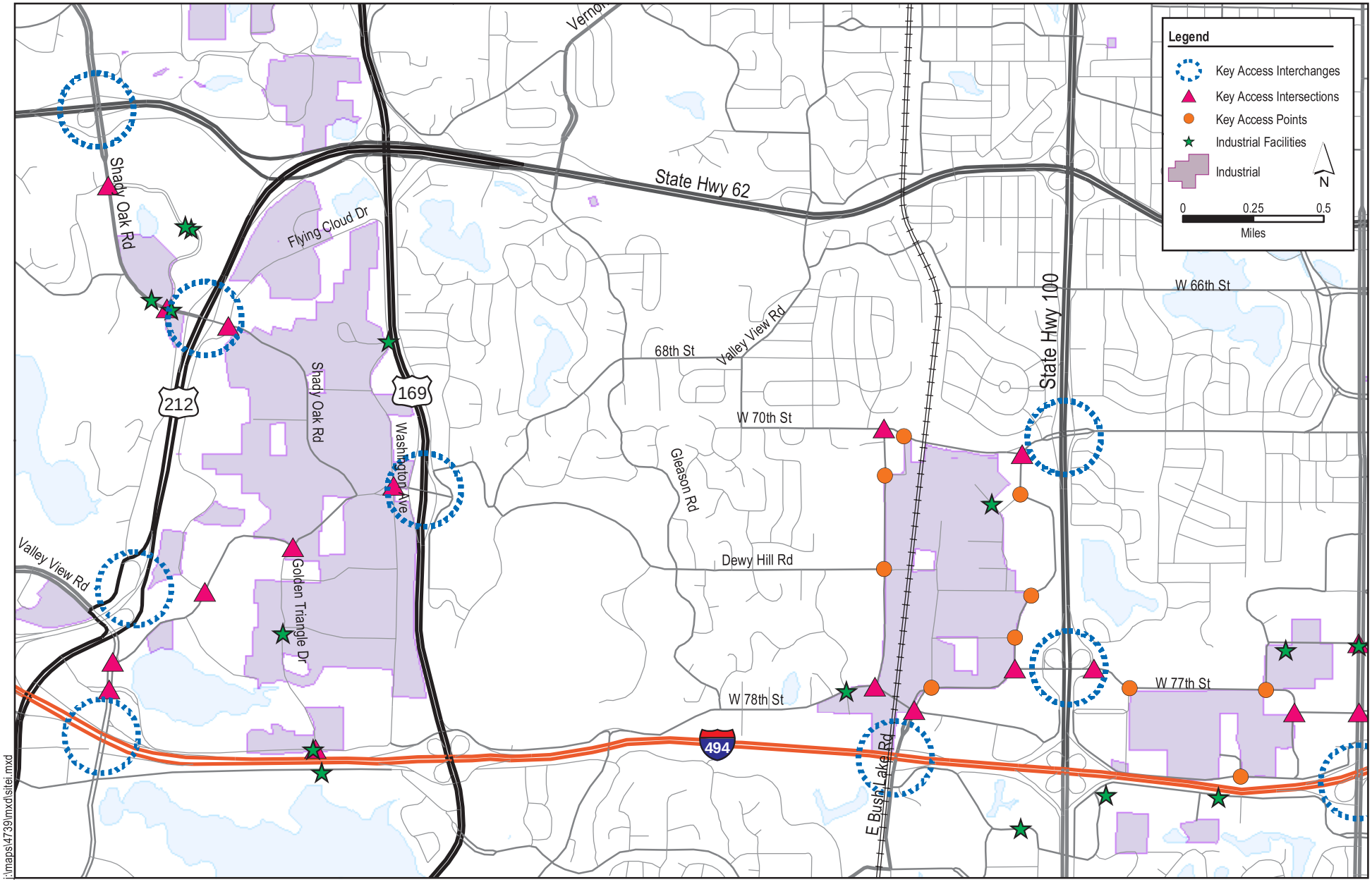
Facility Name	Business Type	Product Type	Location
Department 56 Inc.	Wholesale or Distribution Center	Nondurable Goods, NEC	Eden Prairie
Diversified Pharmaceutical	Wholesale or Distribution Center	Drugs, Drugs Proprietaries, & Druggists' Sundries	Edina
Honeywell Industrial Controls	Manufacturing Plant	Industrial Instruments for Measurement, Display, & Control of Process Variables; and Related Products	Edina
Western Petroleum Company	Utility	Mixed, Manufactured, or Liquefied Petroleum Gas Production and /or Distribution	Eden Prairie

Source: Mn/DOT Database.

Connections/Access

Freight facilities located within Cluster Area "I" have multiple access points to the regional transportation system (e.g., interstate, NHS, IRC), including the following interchanges (also see figure B-10):

- West 70th Street at Trunk Highway 100
- West 77th Street at Trunk Highway 100
- Valley View Road at Trunk Highway 169
- County Road 61 (Shady Oak Road) at Trunk Highway 62
- County Road 61 (Shady Oak Road) at Trunk Highway 212
- Valley View Road at Trunk Highway 212
- County Road 17 (France Avenue) at Interstate 494
- East Bush Lake Road at Interstate 494
- Prairie Center Drive at Interstate 494



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CLUSTER I - EDINA / EDEN PRAIRIE

ADEQUACY OF FREIGHT CONNECTIONS TO REGIONAL SYSTEM FOR THE TWIN CITIES METROPOLITAN AREA

Minnesota Department of Transportation

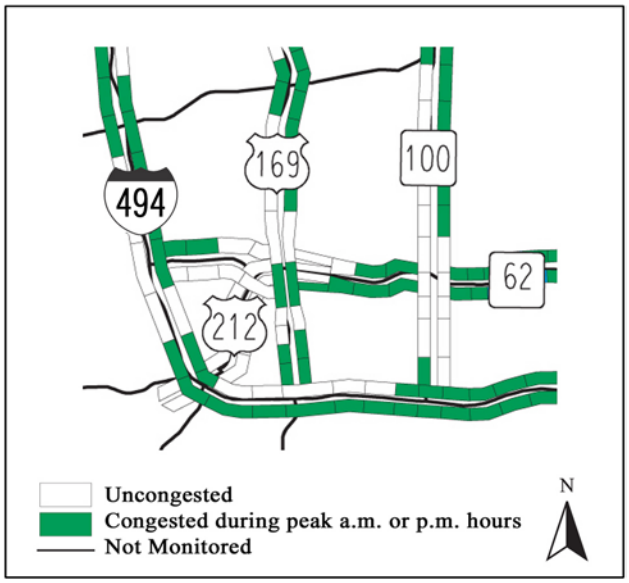
Figure B-10

Additionally, the freight facilities are well-served by a network of minor arterials that are in good physical condition and support legal loads, including the following (also see figure B-10):

- West 70th Street
- West 77th Street
- Valley View Road
- County Road 61 (Shady Oak Road)
- County Road 17 (France Avenue)
- East Bush Lake Road
- Prairie Center Drive

There are no known deficient bridges with height or weight restrictions within the cluster area (see figure B-10).

Issues/Concerns



The most significant issues are with the capacity of the regional system (e.g., Truck Highway 169, Trunk Highway 100, Interstate 494, and Trunk Highway 62). These facilities routinely experience congestion during peak hours (Source: Mn/DOT Metro Division Transportation System Plan, January 2001). It is not the total number, but the location of access points relative to the concentration of industrial uses that creates a significant problem for the cluster area. For example, there is only one access point (Valley View Road) to Trunk Highway 169 from the Golden Triangle (highest density of jobs in the metro area outside of the two central business districts), and this results in significant peak period queuing onto local streets. Major queuing also exists on Interstate 494 between Trunk Highway 100 and Trunk Highway 212, due to capacity problems, and on Trunk Highway 169 at Interstate 494, due to signalization. Queuing also frequently occurs on East Bush Lake Road due to a narrow bridge (bottleneck), which restricts access to eastbound Interstate 494.

Solutions

An additional lane is currently being added to Interstate 494 between Trunk Highway 100 and Trunk Highway 212, and the East Bush Lake Road Bridge will be reconstructed as part of these improvements. Future planned improvements include upgrading Trunk Highway 169 to a freeway, removing signals at Interstate 494, and installing grade-separated interchanges at Anderson Lakes Parkway and Pioneer Trail.

CLUSTER J – SAVAGE

General Location

Cluster Area "J" is located several miles southwest of the I-494/I-694/ I-94 beltway. The cluster area encompasses portions of the municipality of Savage (see Figure B-11).

Business Types

Cluster Area "J" contains industrial and extractive land uses. A sample of the types of major freight facilities that can be found in this cluster area, include the following (see figure B-11 and the table below):

Facility Name	Business Type	Product Type	Location
Port Cargill – Grain Dock	River Terminal	Wheat	Savage
Superior Minerals – Savage	River Terminal	Undefined	Savage
Continental Grain Co.	Wholesale or Distribution Center	Grain & Field Beans	Savage
Silgan Container Corp.	Manufacturing Plant	Metal Cans	Savage

Source: Mn/DOT Database.

Connections/Access

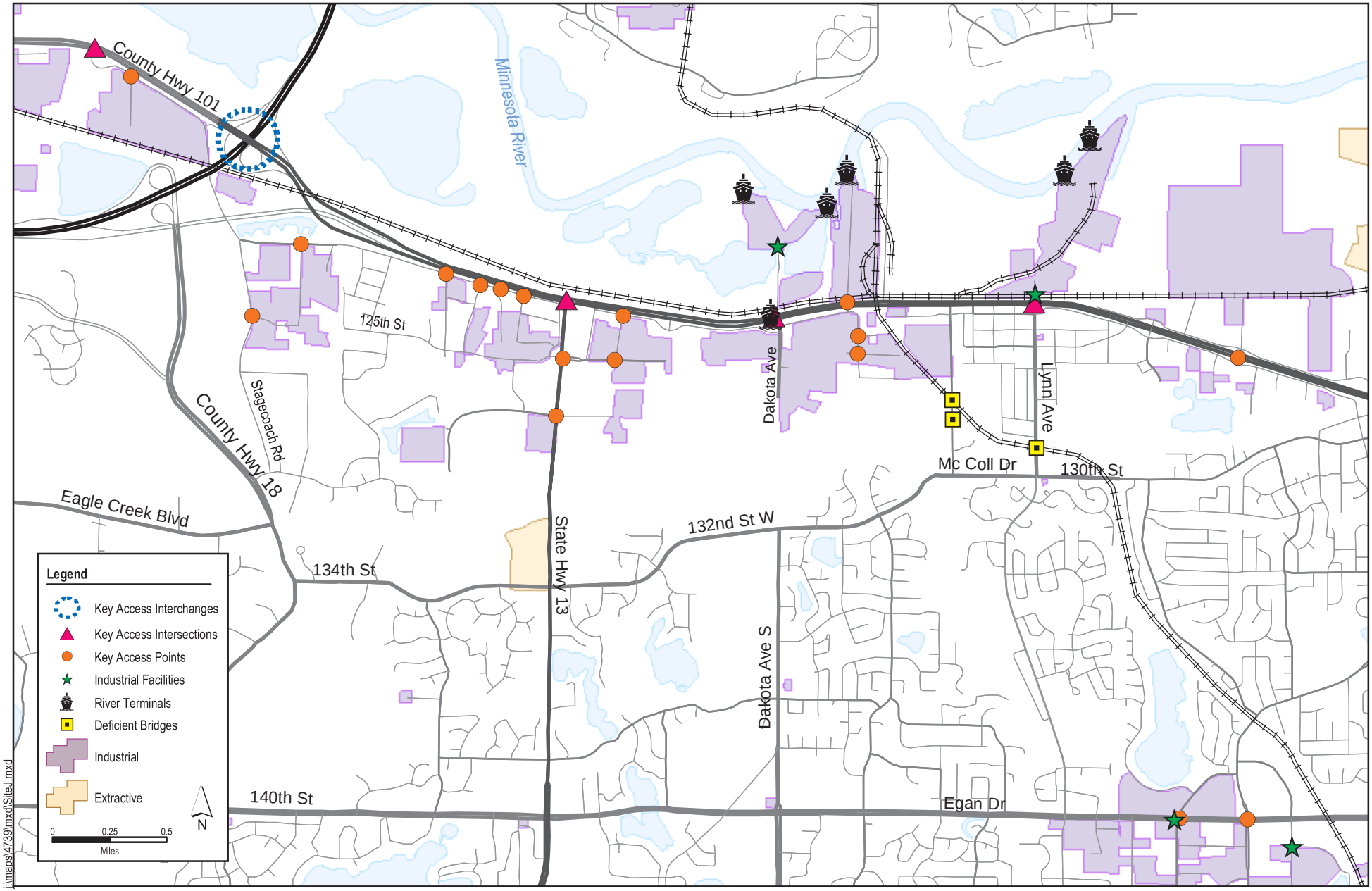
Freight facilities located within Cluster Area "J" have limited access points to the regional transportation system (e.g., interstate, NHS, IRC), primarily the following interchange (also see figure B-11):

- Highway 101 at US Highway 169

Additionally, the freight facilities are heavily concentrated around a small network of arterials that are in good physical condition and support legal loads, including the following (also see figure B-11):

- Highway 101 (Principal Arterial to the east)
- County Road 42 (Egan Drive/140 Street)
- Trunk Highway 13 (Principal Arterial)

There are three known deficient bridges with height or weight restrictions within the cluster area, however these bridges do not appear to affect access to the industrial areas (see figure B-11).



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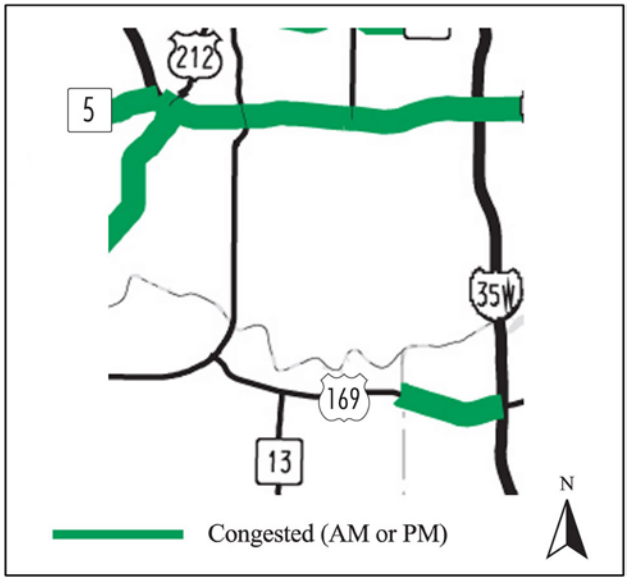
CLUSTER J - SAVAGE

Figure B-11

ADEQUACY OF FREIGHT CONNECTIONS TO REGIONAL SYSTEM FOR THE TWIN CITIES METROPOLITAN AREA

Minnesota Department of Transportation

Issues/Concerns



The most significant issues are with the capacity of the regional system (e.g., Trunk Highway 169). These facilities routinely experience congestion during peak hours (Source: Mn/DOT Metro Division Transportation System Plan, January 2001). The combination of the highest truck volumes in the metro area, heavy truck movements to and from river terminals, and several at-grade rail crossings across adjacent roadways results in severe capacity problems on Trunk Highway 13. Queuing occurs at the Trunk Highway 169/Highway 101 interchange and at the Trunk Highway 169/County Road 18 interchange as a result of bottlenecks created by signals on Trunk Highway 169 at Interstate 494, Anderson Lakes Parkway, and Pioneer Trail. Queuing on the Trunk Highway 169/Highway 101 interchange is also the result of congestion created by the signal at the intersection of Trunk Highway 13 and 101.

Solutions

A detailed study completed for the Trunk Highway 13 Corridor recommended a six-lane expressway with grade-separated interchanges at County Road 5 and Highway 101; however, there is not universal agreement on this solution nor is funding identified for the expansion. Improvements are planned for 2009 and 2010 along Trunk Highway 169, north of the river, in Bloomington that would relieve queuing on the Trunk Highway 169/ Highway 101 interchange (Metro Division 10-Year Work Plan). These improvements could be advanced through the 2003 Legislative Finance package.

CLUSTER K – BURNSVILLE

General Location

Cluster Area "K" is located several miles south of the I-494/I-694/I-94 beltway. The cluster area encompasses portions of the municipality of Burnsville, Eagan and Apple Valley (see Figure B-12).

Business Types

Cluster Area "K" contains industrial and extractive land uses. A sample of the types of major freight facilities that can be found in this cluster area, include the following (see figure B-12 and the table below):

Facility Name	Business Type	Product Type	Location
Condura	Wholesale or Distribution Center	Tires & Tubes	Burnsville
Midwest Veterinary Supply, Inc.	Manufacturing Plant	Surgical & Medical Instruments & Apparatus	Burnsville
Pepsi-Cola Bottling Co.	Manufacturing Plant	Undefined	Burnsville
U.S. Salt	River Terminal	Undefined	Burnsville

Source: Mn/DOT Database.

Connections/Access

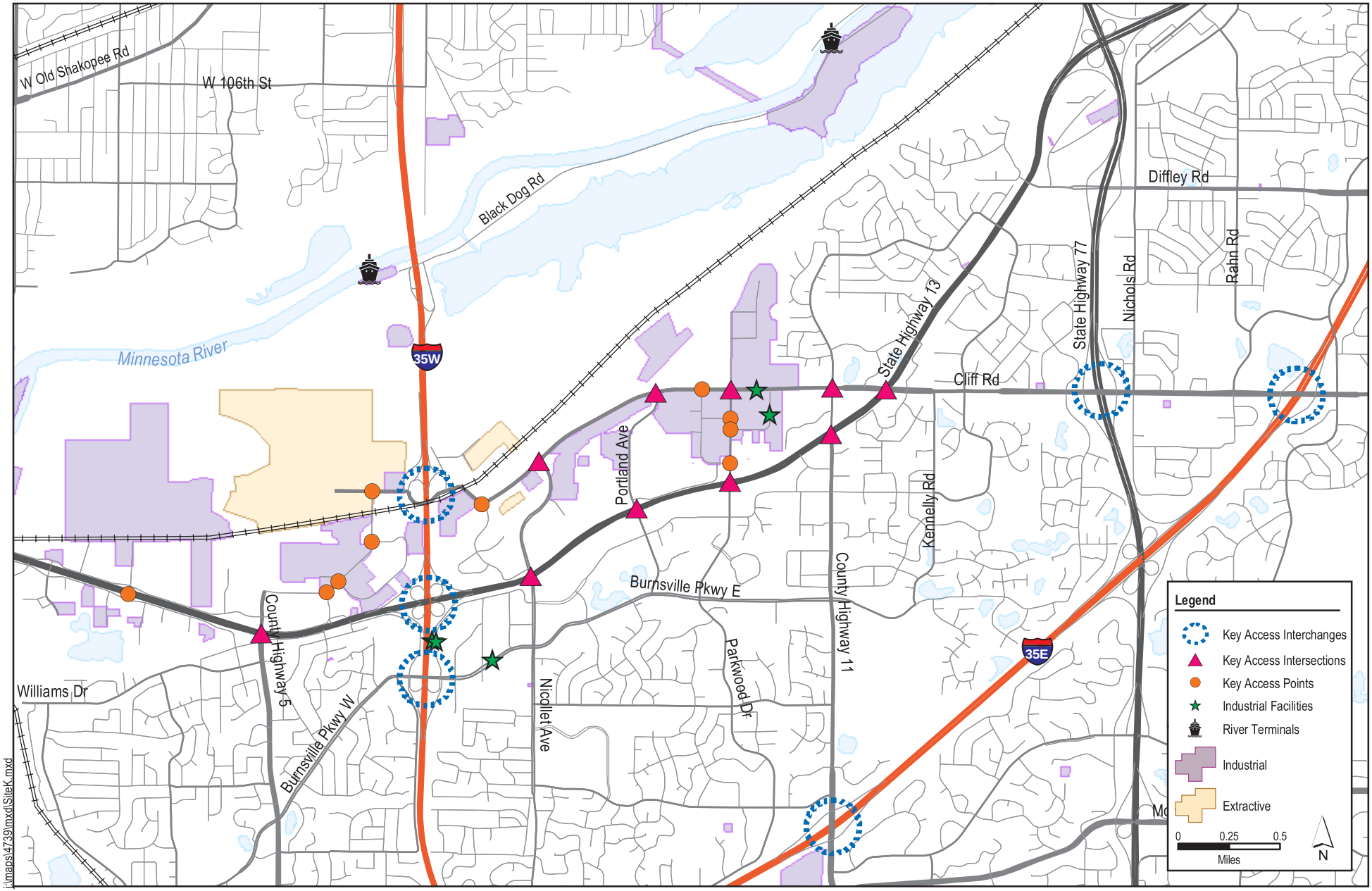
Freight facilities located within Cluster Area "K" have multiple access points to the regional transportation system (e.g., interstate, NHS, IRC), including the following interchanges (also see figure B-12):

- Trunk Highway 13 at Interstate 35W
- Burnsville Parkway at Interstate 35W
- County Road 32 (Cliff Road) at Interstate 35W
- County Road 11 at Interstate 35E
- County Road 32 (Cliff Road) at Interstate 35E
- County Road 32 (Cliff Road) at Trunk Highway 77

Additionally, the freight facilities are well-served by a network of arterials that are in good physical condition and support legal loads, including the following (also see figure B-12):

- Trunk Highway 13 (1)
- Burnsville Parkway
- County Road 32 (Cliff Road) (1)
- County Road 11
- Nicollet Avenue
- Portland Avenue

(1) TH 13 is a principal arterial from the west, until its junction with Cliff Road. At that point, Cliff Road takes over as principal arterial to its junction with I-35E.



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CLUSTER K - BURNSVILLE

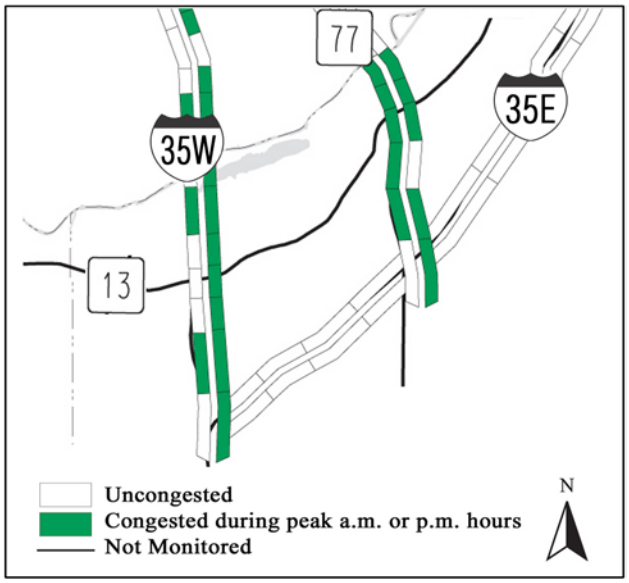
Figure B-12

ADEQUACY OF FREIGHT CONNECTIONS TO REGIONAL SYSTEM FOR THE TWIN CITIES METROPOLITAN AREA

Minnesota Department of Transportation

There are no known deficient bridges with height or weight restrictions within the cluster area (see figure B-12).

Issues/Concerns



The most significant issues are with the capacity of the regional system (e.g., Interstate 35W, Truck Highway 77). These facilities routinely experience congestion during peak hours (Source: Mn/DOT Metro Division Transportation System Plan, January 2001). The Interstate 35W and Cliff Road interchange is inadequate due to poor geometrics and connections to local roads. The Trunk Highway 13 and County Road 5 signal operates poorly. Trunk Highway 13 is over capacity in the area surrounding Interstate 35W. Congestion frequently exists at the signals on County Road 42, between the Interstate 35W and Interstate 35E interchanges. Queuing on the Interstate 35E mainline results in inadequate storage capacity on the Interstate 35E off ramps to County Road 11. Interstate 35W has capacity problems during peak periods north of County Road 42 to Interstate 494.

Solutions

There are no known improvements programmed or in the 10-Year Work Plan for this cluster area. The Trunk Highway 13 Study recommended several improvements along Trunk Highway 13 in Savage and Burnsville. Both municipalities continue to develop preliminary designs and to seek funding.

CLUSTER L – BLOOMINGTON

General Location

Cluster Area "L" is located just south of the I-494/I-694/I-94 beltway. The cluster area encompasses the municipality of Bloomington (see figure B-13).

Business Types

Cluster Area "L" contains industrial land uses. A sample of the types of major freight facilities that can be found in this cluster area, include the following (see figure B-13 and the table below):

Facility Name	Business Type	Product Type	Location
Donaldson Co., Inc.	Manufacturing Plant	Industrial & Commercial Fans & Blowers & Air Purification Equipment	Bloomington
John Deere Co.	Wholesale or Distribution Center	Farm & Garden Machinery & Equipment	Bloomington
Telex Communications, Inc.	Manufacturing Plant	Communications Equipment, NEC	Bloomington
Toro Co.	Manufacturing Plant	Lawn & Garden Tractors & Home Lawn & Garden Equipment	Bloomington

Source: Mn/DOT Database.

Connections/Access

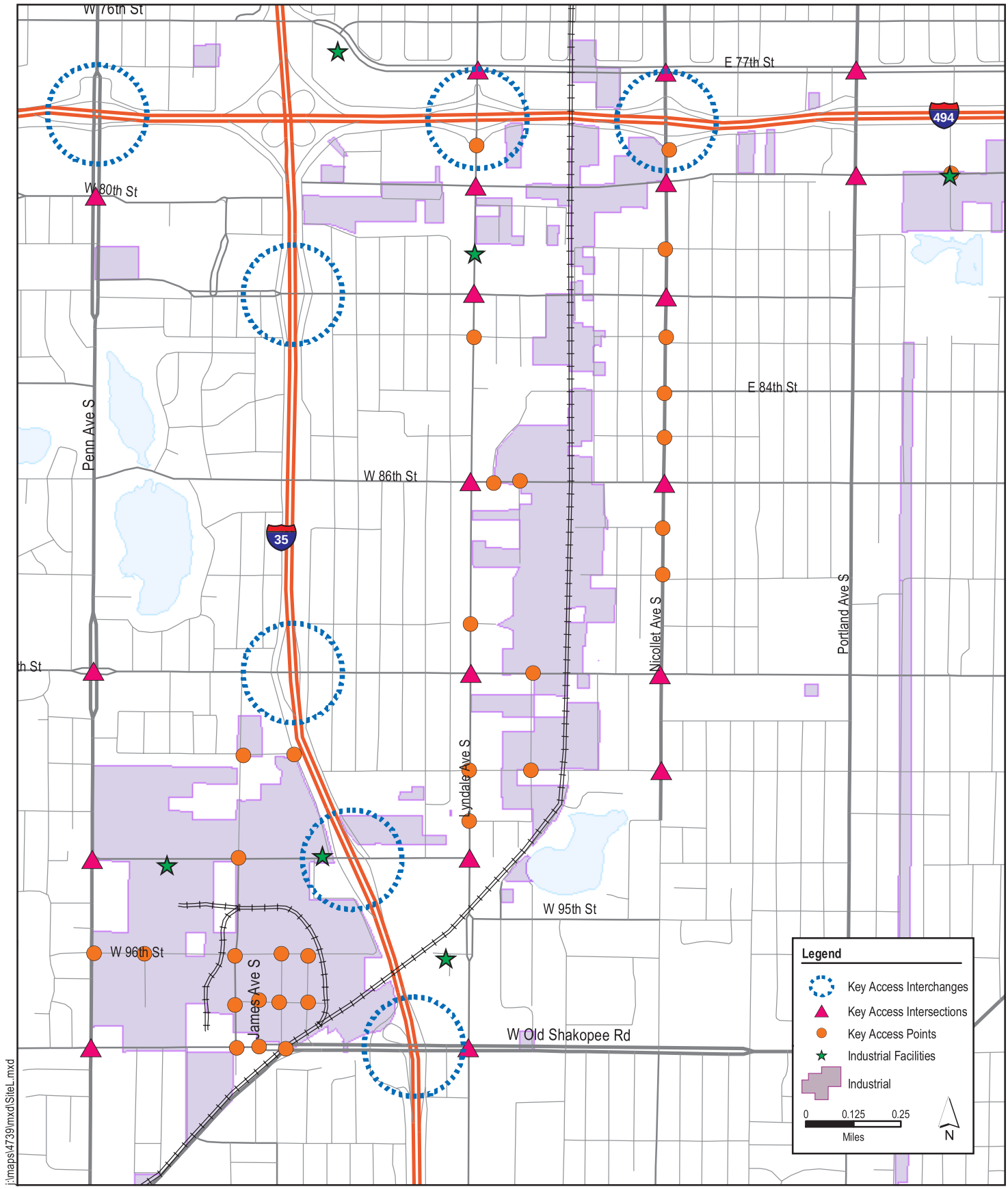
Freight facilities located within Cluster Area "L" have multiple access points to the regional transportation system (e.g., interstate, NHS, IRC), including the following interchanges (also see figure B-13):

- Penn Avenue at Interstate 494
- Lyndale Avenue at Interstate 494
- Nicollet Avenue at Interstate 494
- 82nd Street at Interstate 35W
- 90th Street at Interstate 35W
- 94th Street at Interstate 35W
- 98th Street at Interstate 35W

Additionally, the freight facilities are well-served by a network of minor arterials that are in good physical condition and support legal loads, including the following (also see figure B-13):

- Penn Avenue
- Lyndale Avenue
- Nicollet Avenue

There are no known deficient bridges with height or weight restrictions within the cluster area (see figure B-13).



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CLUSTER L - BLOOMINGTON

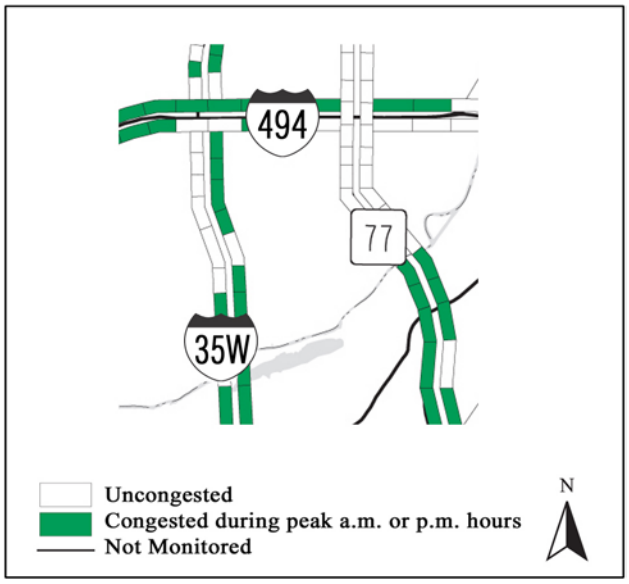
Figure B-13

ADEQUACY OF FREIGHT CONNECTIONS TO REGIONAL SYSTEM FOR THE TWIN CITIES METROPOLITAN AREA

Minnesota Department of Transportation

Issues/Concerns

The most significant issues are with the capacity of the regional system (e.g., Interstate 494, Interstate 35W, Trunk Highway 77). These facilities routinely experience congestion during peak hours (Source: Mn/DOT Metro Division Transportation System Plan, January 2001).



Solutions

Reconstruction of the interchange at Interstate 494 and Lyndale Avenue is planned for Fiscal Year 2006 (Metro Division 10-Year Work Plan).

CLUSTER M – APPLE VALLEY

General Location

Cluster Area "M" is located several miles south of the I-494/I-694/I-94 beltway. The cluster area encompasses portions of the municipality of Apple Valley (see figure B-14).

Business Types

Cluster Area "M" contains industrial and extractive land uses. A sample of the types of major freight facilities that can be found in this cluster area, include the following (see figure B-14 and the table below):

Facility Name	Business Type	Product Type	Location
Fischer Sand & Aggregate Co.	Wholesale or Distribution Center	Undefined	Apple Valley
North Star Concrete Co.	Manufacturing Plant	Concrete Products, Except Block & Brick	Apple Valley

Source: Mn/DOT Database.

Connections/Access

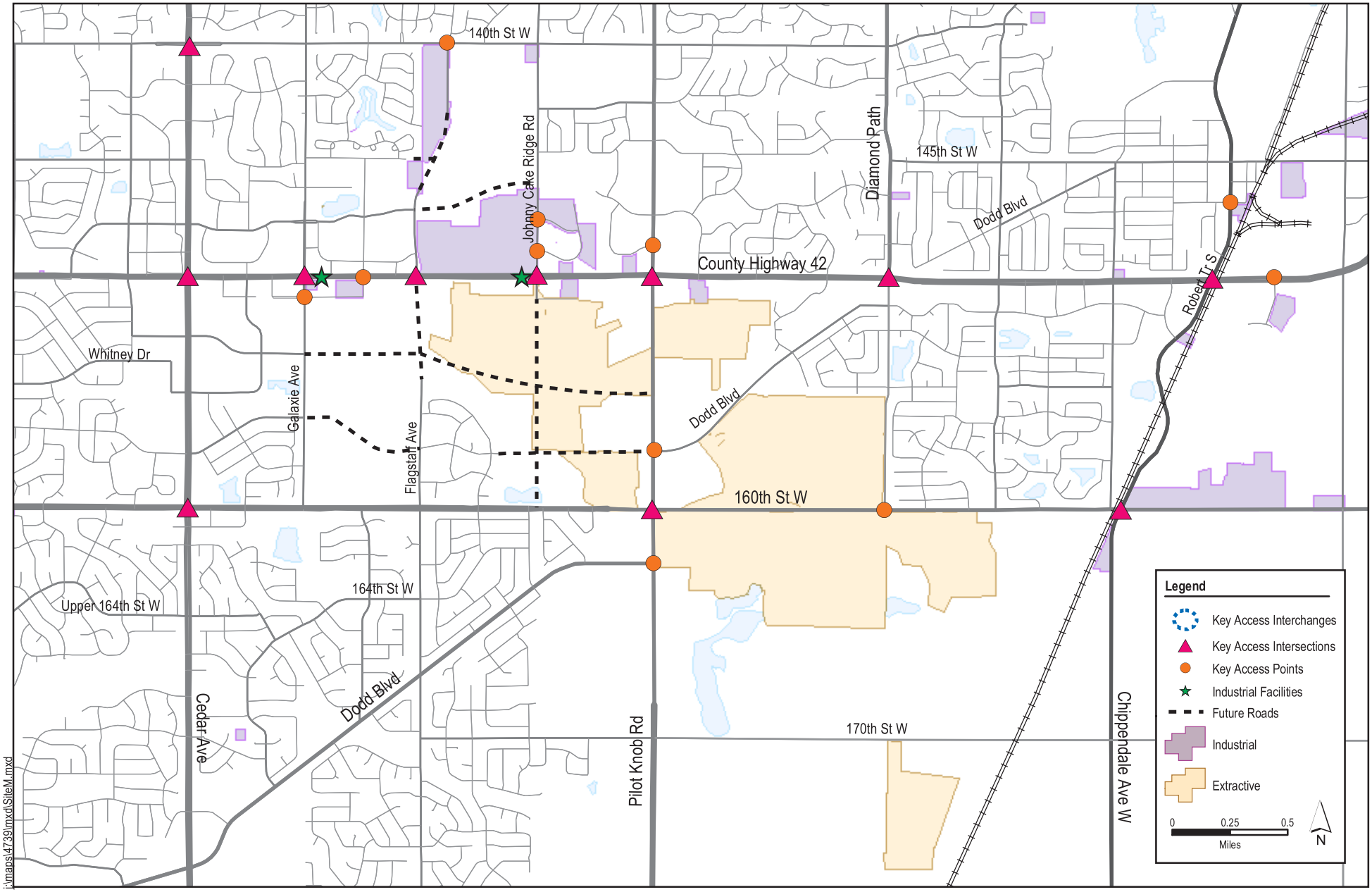
Freight facilities located within Cluster Area "M" have limited access points to the regional transportation system (e.g., interstate, NHS, IRC), primarily the following interchange (also see figure B-14):

- Trunk Highway 77 at Interstate 35E

However, the freight facilities are well-served by a network of arterials that are in good physical condition and support legal loads, including the following (also see figure B-14):

- County Road 42 (150th Street West) (Principal Arterial)
- 140th Street West
- County Road 46 (160th Street West)
- County Road 31 (Pilot Knob Road)
- Trunk Highway 77 (Cedar Avenue)
- Trunk Highway 3 (Robert Trail South)

There are no known deficient bridges with height or weight restrictions within the cluster area (see figure B-14).



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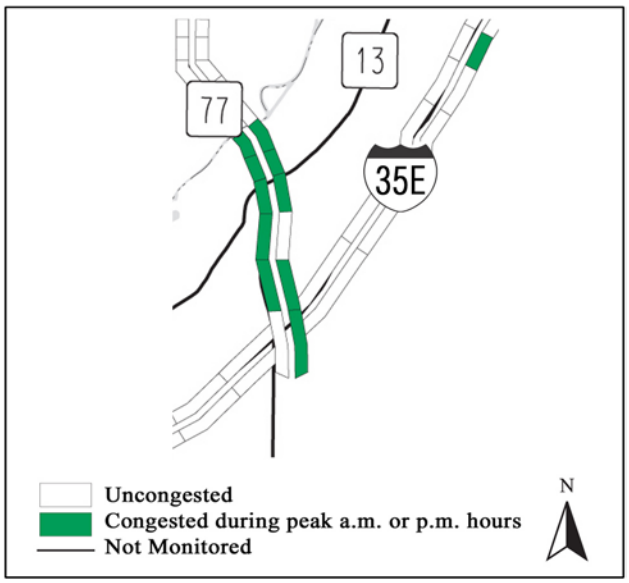
CLUSTER M - APPLE VALLEY

Figure B-14

ADEQUACY OF FREIGHT CONNECTIONS TO REGIONAL SYSTEM FOR THE TWIN CITIES METROPOLITAN AREA

Minnesota Department of Transportation

Issues/Concerns



The most significant issues are with the capacity of the regional system (e.g., Highway 77). Trunk Highway 77 routinely experiences congestion during peak hours (Source: Mn/DOT Metro Division Transportation System Plan, January 2001). Capacity problems exist at the intersection of Trunk Highway 77 and County Road 42. Geometric deficiencies at the interchange of Trunk Highway 52 and County Road 42 cause capacity problems during the peak periods. High traffic volumes on Trunk Highway 3, a rural 2 lane minor arterial, result in frequent congestion and safety issues at County Road 46 and County Road 42. Trunk Highway 77, south of County Road 42, has a constricted right-of-way, making future improvements difficult.

Solutions

Construction of new local roadways are proposed to provide better connections throughout the area (see figure B-14). A signal will be installed at the intersection of Trunk Highway 3 and County Road 46 in Spring 2003.

Cluster N – Columbia Heights/NE Minneapolis

General Location

Cluster Area "N" is located along the Mississippi River, just south of the I-694/I-94 split. The cluster area encompasses the municipalities of Fridley, Columbia Heights and Minneapolis (see figure B-15). Freight facilities in this cluster are located in the Columbia, Marshall Terrace, and Holland neighborhoods in Minneapolis.

Business Types

Cluster Area "N" contains industrial land uses. A sample of businesses in this area includes the following (see figure B-15 and the table below):

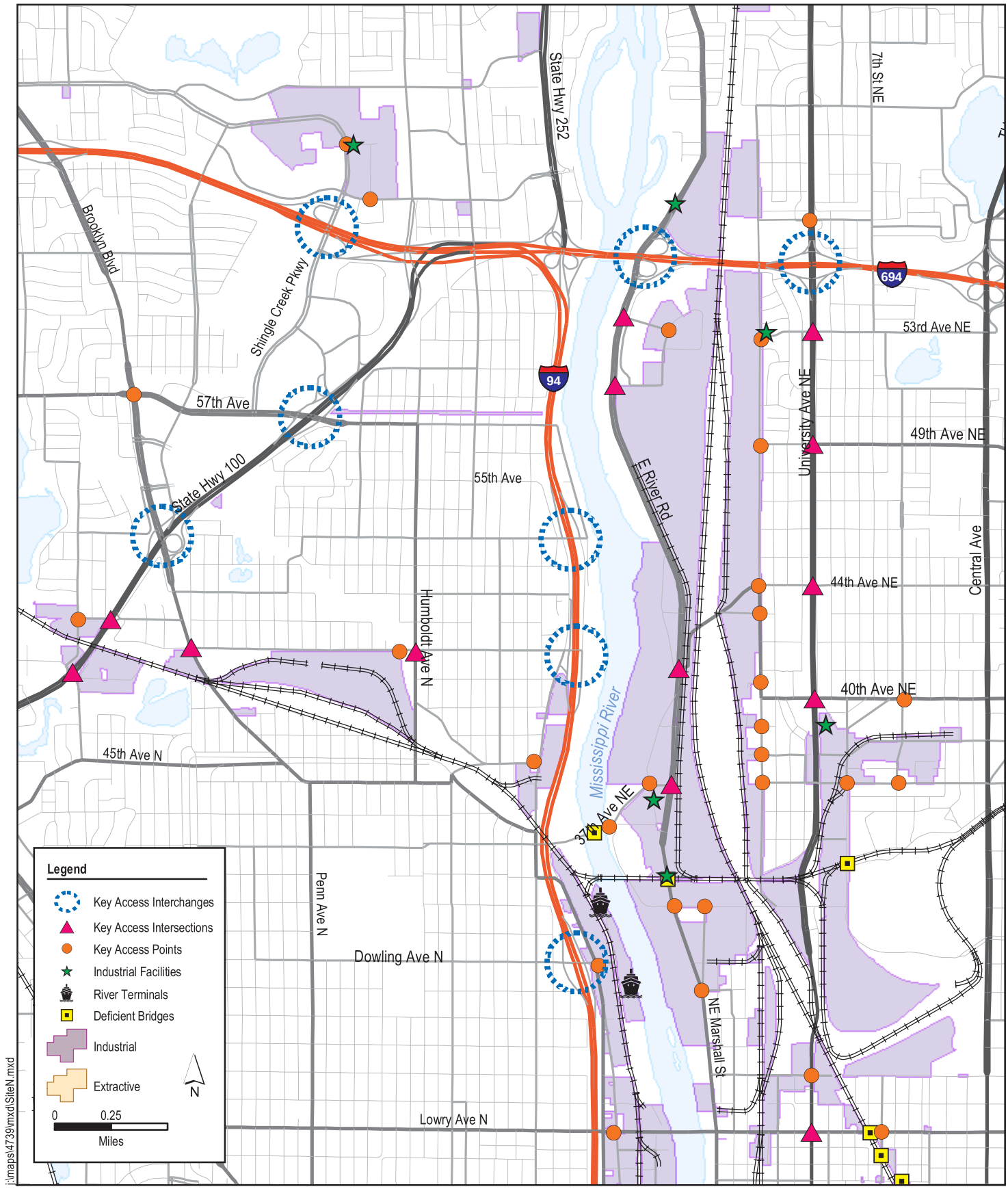
Facility Name	Business Type	Product Type	Location
Lamaur	Manufacturing Plant	Perfumes, Cosmetics, and Other Toilet Preparations	Fridley
Nationwide Papers	Wholesale or Distribution Center	Printing and Writing Paper	Fridley
Holnam, Minneapolis Cement Terminal Dock #2	River Terminal	Undefined	Minneapolis
Honeywell Inc.	Manufacturing Plant	Electronic Computers	Minneapolis

Source: Mn/DOT Database.

Connectors/Regional Access Points

Industrial facilities located within Cluster Area "N" area have multiple access points to the regional transportation system (e.g., interstate, NHS, IRC), including the following access interchanges (also see figure B-15):

- 53rd Avenue at Interstate 94
- Dowling Avenue/Port of Minneapolis Drive at Interstate 94
- Shingle Creek Parkway at Interstate 694
- County Road 1 (East River Road) at Interstate 694
- Trunk Highway 47 (University Avenue NE) at Interstate 694
- County Road 152 (Brooklyn Boulevard/Osseo Road N) at Trunk Highway 100
- County Road 10 (Bass Lake Road) at Trunk Highway 100



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CLUSTER N - COLUMBIA HEIGHTS & NORTHEAST MINNEAPOLIS

Figure B-15

ADEQUACY OF FREIGHT CONNECTIONS TO REGIONAL SYSTEM FOR THE TWIN CITIES METROPOLITAN AREA

Minnesota Department of Transportation

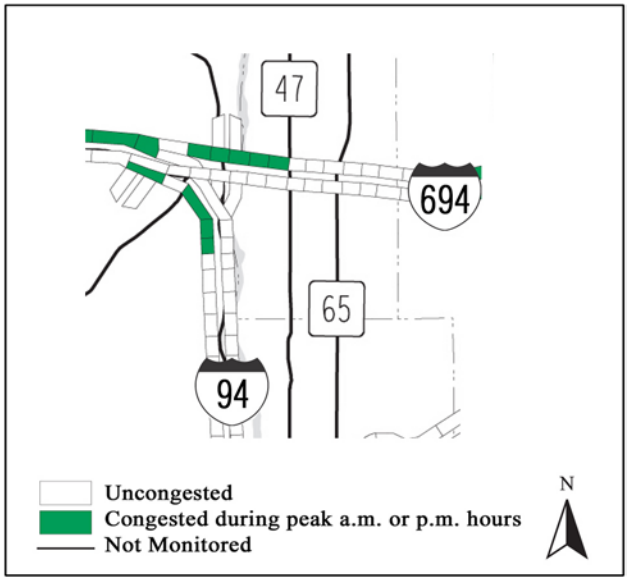
Additionally, these interchanges are served by a well-connected set of minor arterials that are in good physical condition and support legal loads, including the following (also see figure B-15):

- County Road 1 (East River Road NE)
- Trunk Highway 47 (University Avenue NE)
- Trunk Highway 65 (Central Avenue NE)
- 40th Avenue NE
- Shingle Creek Parkway
- Lowry Avenue N

There are six known deficient bridges with height or weight restrictions within the cluster area (see figure B-15).

Issues/Concerns

Major issues and concerns in this cluster area include roadway congestion, deficient infrastructure, high crash rates, and incompatibilities between land uses. I-694 eastbound and I-94 eastbound, as well as Trunk Highway 65 south of I-694, routinely experience congestion during peak hours (source: Mn/DOT Metro Division Transportation System Plan, January 2001). It is expected that all freeways within the cluster area will be congested at the peak hour by 2025.



Freight generated in this cluster area has good access to the regional system. However, the long-range plan for land adjacent to the Mississippi River call for conversion of land uses from industrial facilities to residential development and parkland. This will potentially limit truck use of existing access points because residential development occurring in industrial areas often leads residents to push for the closing of truck routes. Residential opposition to industrial uses is especially evident in the Bottineau neighborhood and in other areas along the river. Endangered routes, which currently provide freight access to major roadways within this cluster, include 49th Street, Humboldt Avenue, and Marshall Street. The reconstruction of Trunk Highway 65 (Central Avenue), from 27th to 37th Avenue, to a parkway street section will inhibit truck traffic along the corridor.

Solutions

Widening of Interstate 694 to three lanes, from CSAH 152 to TH 100, will help mitigate congestion in the I-694/94 vicinity. Replacing the aging Interstate 694 Mississippi River bridge will also help traffic flow. Improvements, which would improve capacity, but are not funded within the 10 year or 20 year planning horizon include adding one lane of capacity, or exploring creative solutions to operational problems along TH 65, and constructing a grade-separated interchange at TH 65 and TH 242.

CLUSTER O – CENTRAL MINNEAPOLIS

General Location

Cluster Area "O" is located in central Minneapolis in the area surrounding Interstate 94, Interstate 394, Interstate 35W, Hiawatha Avenue, and the Mississippi River (see figure B-16). Freight facilities in this cluster are located in the Bottineau, Sheridan, Near North, North Loop, Marcy Holmes, Seward, and Longfellow neighborhoods in Minneapolis.

Business Types

Cluster Area O contains industrial land uses. A sample of businesses in this area includes the following (see figure B-16 and the table below):

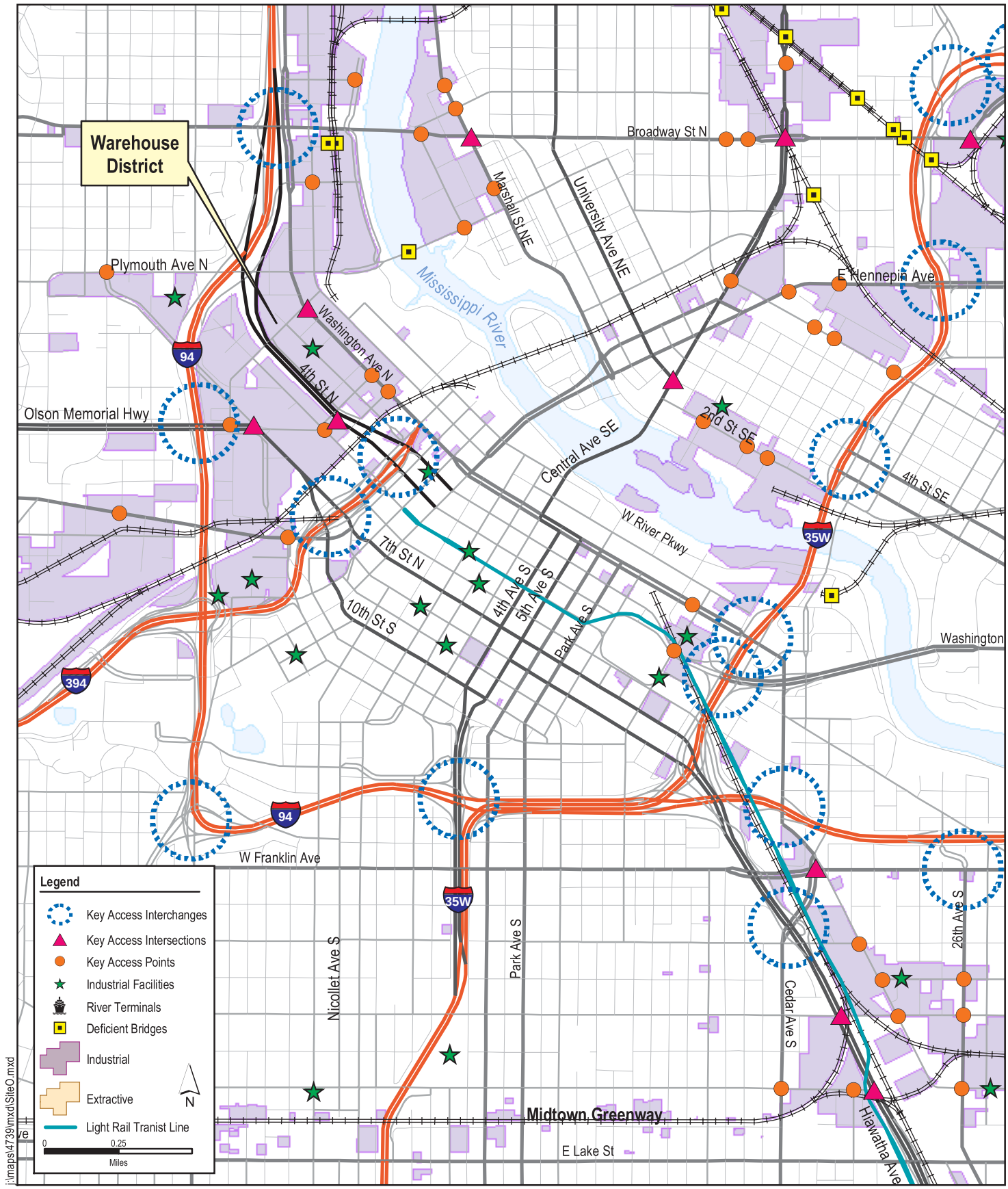
Facility Name	Business Type	Product Type	Location
River Services, Minneapolis Bulk Loading Dock	River Terminal	Undefined	Minneapolis
Inacom Professional Services	Wholesale or Distribution Center	Computers and Computer Peripheral Equipment and Software	Minneapolis
Genmar Holdings Inc.	Manufacturing Plant	Boat Building and Repairing	Minneapolis
Northern States Power Co.	Utility	Electric Services	Minneapolis

Source: Mn/DOT Database.

Connectors/Regional Access Points

Industrial facilities located within Cluster Area "O" area have multiple access points to the regional transportation system (e.g., interstate, NHS, IRC), including the following access interchanges (also see figure B-16):

- County Road 66 (Broadway Street NE/Broadway Avenue W) at Interstate 94
- Trunk Highway 55 (Olson Memorial Highway) at Interstate 94
- Lyndale/Hennepin Avenue at Interstate 94
- County Road 35 (Portland Avenue) at Interstate 94
- Trunk Highway 65 at Interstate 35W/94
- County Road 152 (Cedar Avenue) at Interstate 94 and Trunk Highway 55
- 3rd Street South at Interstate 35W
- County Road 152 (Washington Avenue S) at Interstate 35W
- County Road 36 (University Avenue SE) at Interstate 35W
- 25th/26th Avenue at Interstate 94



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CLUSTER O - CENTRAL MINNEAPOLIS

Figure B-16

ADEQUACY OF FREIGHT CONNECTIONS TO REGIONAL SYSTEM FOR THE TWIN CITIES METROPOLITAN AREA

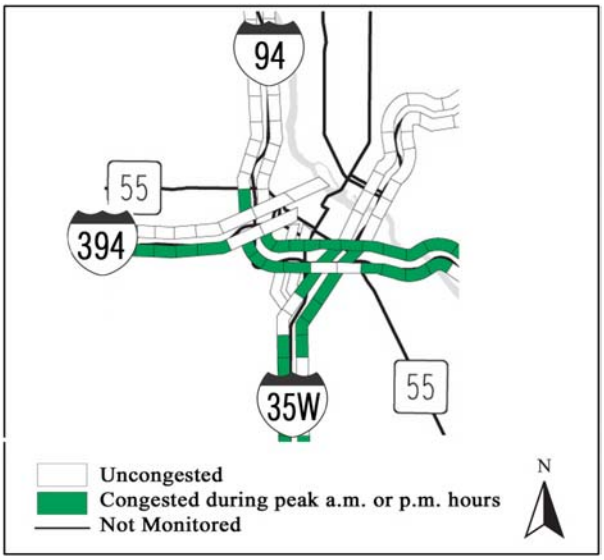
Minnesota Department of Transportation

Additionally, these interchanges are served by a well-connected set of arterials that are in good physical condition and support legal loads, including the following (also see figure B-16):

- County Road 152 (Washington Avenue/Cedar Avenue)
- Trunk Highway 47 (University Avenue)
- Trunk Highway 65 (Central Avenue/3rd Avenue S)
- County Road 66 (Broadway Street NE)
- County Road 40 (Glenwood Avenue)
- East Hennepin Avenue
- County Road 3 (Lake Street)
- 26th Avenue South

There are eleven known deficient bridges with height or weight restrictions within the cluster area (see figure B-16).

Issues/Concerns



This cluster is located in downtown Minneapolis, and access deficiencies, land use conflicts, and roadway congestion are the area's most major issues and concerns. Interstate 94 and the southern portion of 35W routinely experience congestion during peak hours (source: Mn/DOT Metro Division Transportation System Plan, January 2001. It is expected that all freeways within the cluster area will be congested at the peak hour by 2025.

As the area along the Mississippi River becomes a more attractive place to live, Cluster "O" will be plagued by the same issues as Cluster "N" Incompatibilities and access deficiencies will become more apparent as areas within the Warehouse District and St. Anthony Main are converted from abandoned industrial facilities to retail and loft apartments, and as the Glenwood and Near North areas are revitalized. Evolution of land uses will potentially endanger freight routes along Marshall Street NE, Plymouth Avenue, 2nd Street SE.

Residential opposition to industrial expansion, and lack of access to regional roadways, currently plague the Seward neighborhood. Redevelopment along the LRT to mixed-use, transit oriented development will cause further incompatibilities with existing industrial uses.

Solutions

To maintain the flow of truck traffic through Minneapolis, minor arterials must remain open to truck traffic. Construction of a north-south road through the Minneapolis impound lot, from Plymouth Ave/7th Street to Dunwoody, would facilitate movement on the western side of the city. Adding capacity to I-35W, south of CSAH 42, would alleviate congestion. Improving the Lowry Tunnel would also relieve congestion, but funding is not available for the project within the planning horizon.

CLUSTER P – MINNEAPOLIS/ST. PAUL (MIDWAY)

General Location

Cluster Area "P" encompasses eastern Minneapolis and western St. Paul, from just north of the Mississippi River and Interstate 94, to the area immediately north of Interstate 35W (see figure B-17.) Freight facilities in this cluster are located in the Como and Prospect Park neighborhoods in Minneapolis, and the St. Anthony Park and Hamline-Midway neighborhoods in St. Paul.

Business Types

Cluster Area P contains industrial land uses. A sample of businesses in this area includes the following (see figure B-17 and the table below):

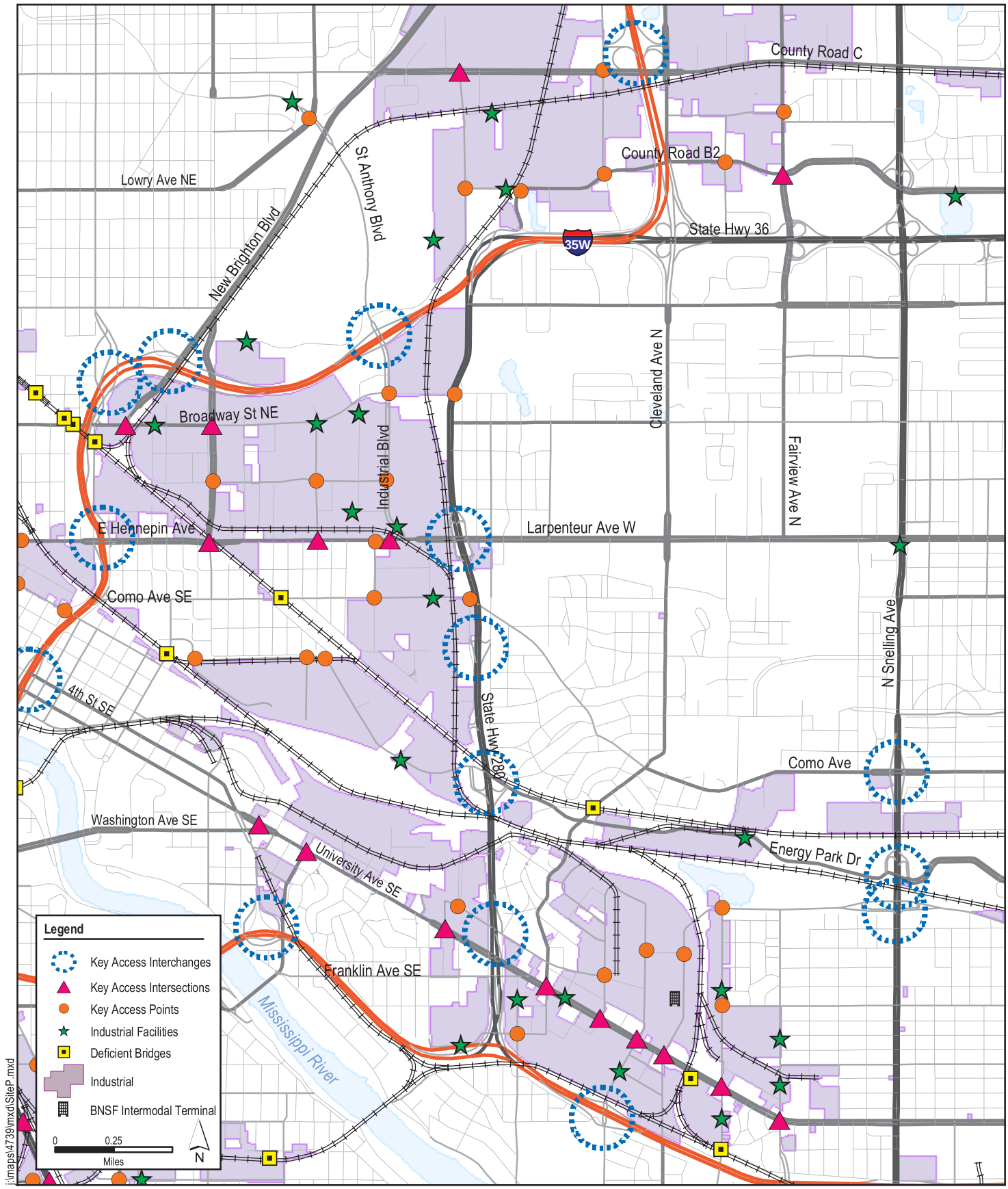
Facility Name	Business Type	Product Type	Location
Resource Net International	Wholesale or Distribution Center	Printing and Writing Paper	Minneapolis
API Group Inc.	Wholesale or Distribution Center	Construction Materials, NEC	Roseville
Pentair Inc.	Manufacturing Plant	Electrical Machinery, Equipment, and Supplies, NEC	St. Paul
Banta Publications Group	Manufacturing Plant	Commercial Printing, Lithographic	St. Paul

Source: Mn/DOT Database.

Connectors/Regional Access Points

Industrial facilities located within Cluster Area "P" have multiple access points to the regional transportation system (e.g., interstate, NHS, IRC), including the following access interchanges (also see figure B-17):

- County Road 66 (Broadway Avenue) at Interstate 35W
- Johnson Street NE at Interstate 35W
- County Road 88 (New Brighton Boulevard) at Interstate 35W
- Industrial Boulevard at Interstate 35W
- County Road 94/23 (County Road C) at Interstate 35W
- Huron Boulevard at Interstate 94
- Cretin/Vandalia Avenue at Interstate 94
- US Highway 52 (University Avenue) At Trunk Highway 280
- Territorial Road at Trunk Highway 280
- County Road 32 (Energy Park Drive/Kasota Avenue) at Trunk Highway 280
- Como Avenue at Trunk Highway 280
- County Road 52/30 (Hennepin Avenue E/Larpenteur Avenue) at Trunk Highway 280
- County Road 78 (County Road B2) at Snelling Avenue
- Como Avenue at Snelling Avenue



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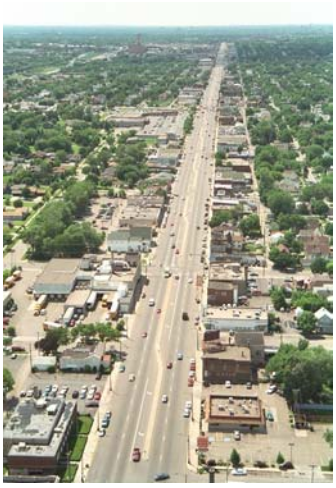
CLUSTER P - MINNEAPOLIS / ST. PAUL (MIDWAY)

Figure B-17

ADEQUACY OF FREIGHT CONNECTIONS TO REGIONAL SYSTEM FOR THE TWIN CITIES METROPOLITAN AREA

Minnesota Department of Transportation

- County Road 32 (Energy Park Drive) at Snelling Avenue
- County Road 33 (Pierce Butler Route) at Snelling Avenue
- County Road 48 (Fairview Avenue) at Trunk Highway 36

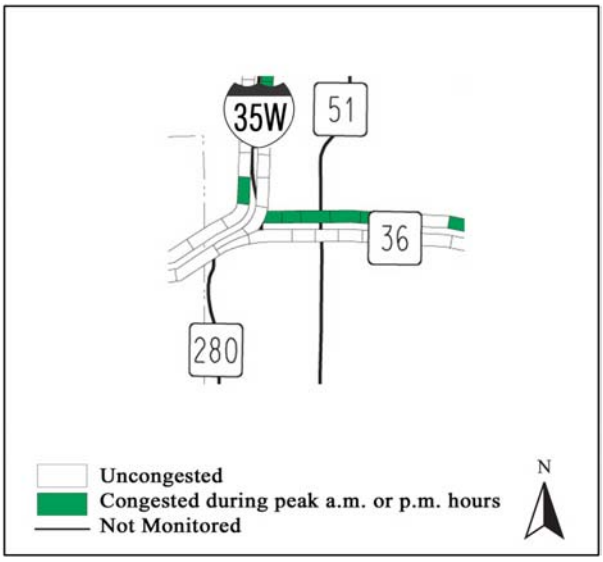


Additionally, these interchanges are served by a well-connected set of minor arterials that are in good physical condition and support legal loads, including the following (also see figure B-17):

- University Avenue SE
- County Road 46 (Raymond/Cleveland Avenue)
- County Road 30 (Larpenteur Avenue)
- County Road 25 (County Road B)
- County Road 32 (Energy Park Drive)
- County Road 78 (County Road B2)
- County Road 23 (County Road C)
- County Road 33 (Pierce Butler Route)

There are ten known deficient bridges with height or weight restrictions within the cluster area (see figure B-17).

Issues/Concerns



This cluster area has a well connected set of access routes, but congestion is caused by aging and deficient infrastructure and high volumes of freight traffic using I-35W and TH 280. Parkway restrictions along I-35E in St. Paul divert all north-south through truck traffic to Interstate 35W or 494/694. Portions of TH 36 eastbound and I-35W southbound routinely experience congestion during peak hours (source: Mn/DOT Metro Division Transportation System Plan, January 2001). It is expected that, by 2025, improvements will alleviate congestion along TH 36 but peak hour congestion will increase along I-35W.

Further problems in the Midway area are caused by residential opposition (especially in the Prospect Park neighborhood) to industrial expansion. Potential land-use changes include: redevelopment of the Kasota Avenue area, expansion of BNSF's Intermodal Terminal and expansion of the University of Minnesota's campus facilities.

Solutions

Solutions to increase capacity include adding one lane in each direction on Interstate 35W south of TH 36 and completing construction of bus-only shoulders along Interstate 35W. Geometric improvements to increase safety and reduce congestion include reconstructing the Lexington Avenue interchange, reconstructing TH 280 from Larpenteur to I-35W, realigning the east ramp of the County Road C interchange, and connecting County Road C to Twin Lakes Parkway. Other "Bottleneck Removal" projects are planned on 35W from Washington Avenue to TH 36.

CLUSTER Q – NEW BRIGHTON/ARDEN HILLS

General Location

Cluster Area "Q" is located along Interstate 35W, from north of Trunk Highway 36 to just north of Interstate 694. The cluster area encompasses the municipalities of New Brighton, Roseville, and Arden Hills (see figure B-18)

Business Types

Cluster Area "Q" contains industrial land uses. A sample of businesses in this area includes the following (see figure B-18 and the table below):

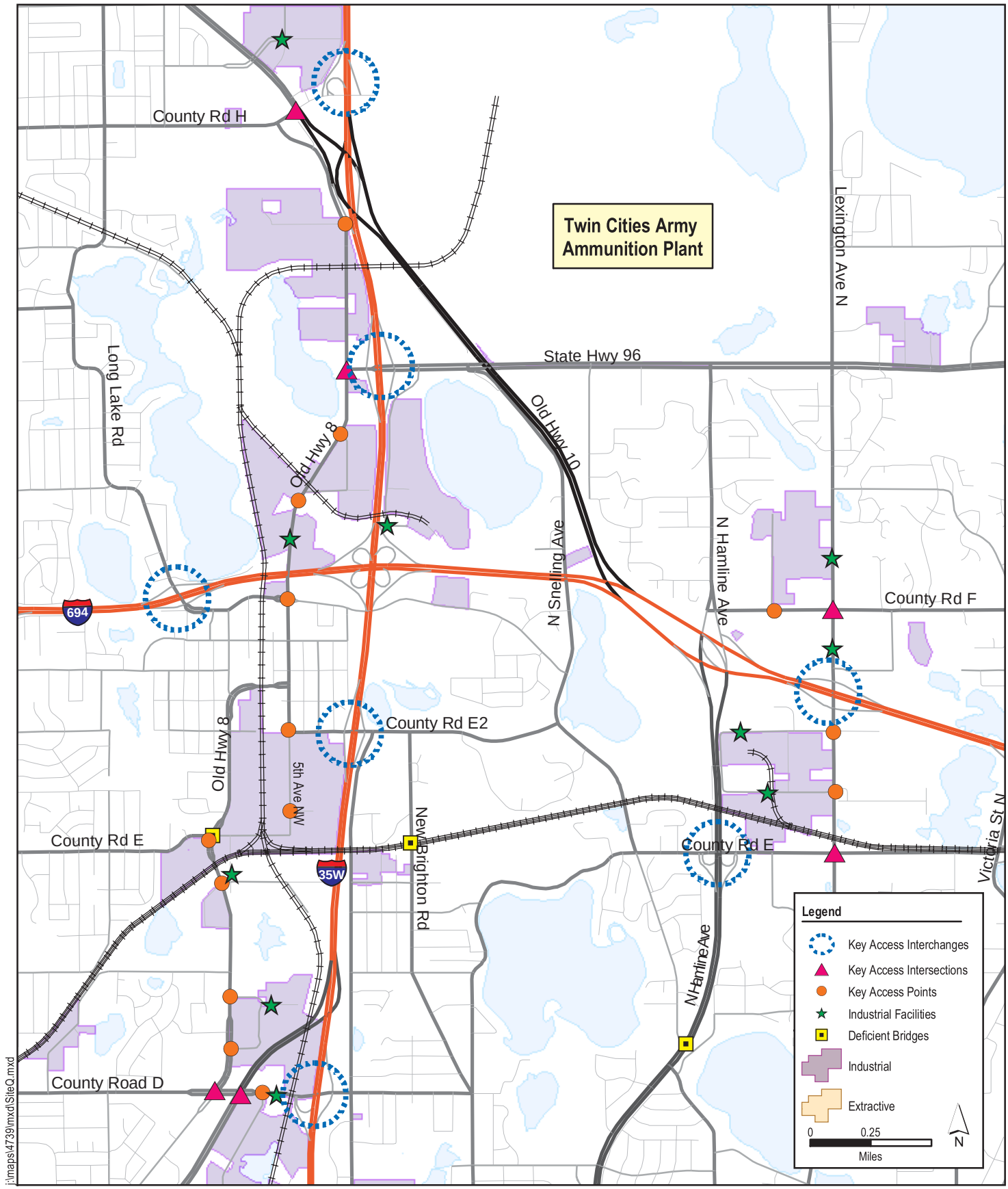
Facility Name	Business Type	Product Type	Location
Dahlke Trailer Sales & Leasing	Manufacturing Plant	Automobiles and Other Motor Vehicles	New Brighton
Multi-Tech Systems Inc.	Manufacturing Plant	Computer Peripheral Equipment, NEC	Mounds View
Land O'Lakes Inc.	Manufacturing Plant	Fluid Milk	Arden Hills
Superior Products	Manufacturing Plant	Service Industry Machinery, NEC	Roseville

Source: Mn/DOT Database

Connectors/Regional Access Points

Industrial facilities located within Cluster Area "Q" have multiple access points to the regional transportation system (e.g., interstate, NHS, IRC), including the following access interchanges (also see figure B-18):

- County Road D at Interstate 35W
- Trunk Highway 88 (New Brighton Boulevard) at Interstate 35W
- County Road 73 (5th Street/County Road E2) at Interstate 35W
- Trunk Highway 96 at Interstate 35W
- County Road H at Interstate 35W
- County Road 12 (Long Lake Road/10th Street NW) at Interstate 694
- County Road 51 (Lexington Avenue) at Interstate 694



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CLUSTER Q - NEW BRIGHTON / ARDEN HILLS

Figure B-18

ADEQUACY OF FREIGHT CONNECTIONS TO REGIONAL SYSTEM FOR THE TWIN CITIES METROPOLITAN AREA

Minnesota Department of Transportation

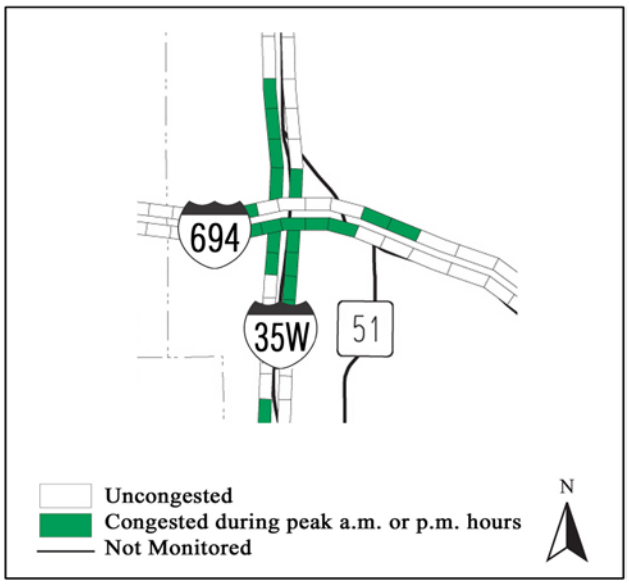
Additionally, these interchanges are served by a well-connected set of minor arterials that are in good physical condition and support legal loads, including the following (also see Figure B-18):

- County Road 77 (Old Highway 8)
- Trunk Highway 96
- County Road 10
- County Road 45 (Long Lake Road)
- County Road 73 (County Road E2)
- County Road 76 (Snelling Avenue)
- New Brighton Boulevard
- Trunk Highway 51 (Snelling Avenue/Hamline Avenue)

There are three known deficient bridges with height or weight restrictions within the cluster area (see figure B-18).

Issues/Concerns

Numerous intermodal connections and geometric deficiencies (primarily at the interchange of TH 10, I-694 and the I-35W/TH 36 commons) cause conflicts and capacity deficiencies. Another concern is with potential increases in traffic volumes caused by the redevelopment of a 600-acre portion of the Twin Cities Army Ammunition Plant in Arden Hills, just north of Highway 96.



Interstate 35W and portions of Interstate 694, routinely experience congestion during peak hours (source: Mn/DOT Metro Division Transportation System Plan, January 2001). It is expected that all of I-35W and I-694, east of 35W will be congested at the peak hour by 2025.

Solutions

Adding capacity to and reconstructing Interstate 694 from Interstate 35W to Interstate 35E could decrease roadway congestion. Planned geometric improvements include modifying the TH 10/51 interchange and constructing a flyover at Old 10 and TH 96. A sub-area study of Interstate 35W would identify further projects to improve traffic flow in this cluster area.

CLUSTER R – LITTLE CANADA/VADNAIS HEIGHTS

General Location

Cluster Area "R" lies along Interstate 35E and the commons area of Interstates 694 and 35E. The cluster area encompasses the municipalities of Little Canada and Vadnais Heights (see figure B-19).

Business Types

Cluster Area R contains industrial land uses. A sample of businesses in this area includes the following (see figure B-19 and the table below):

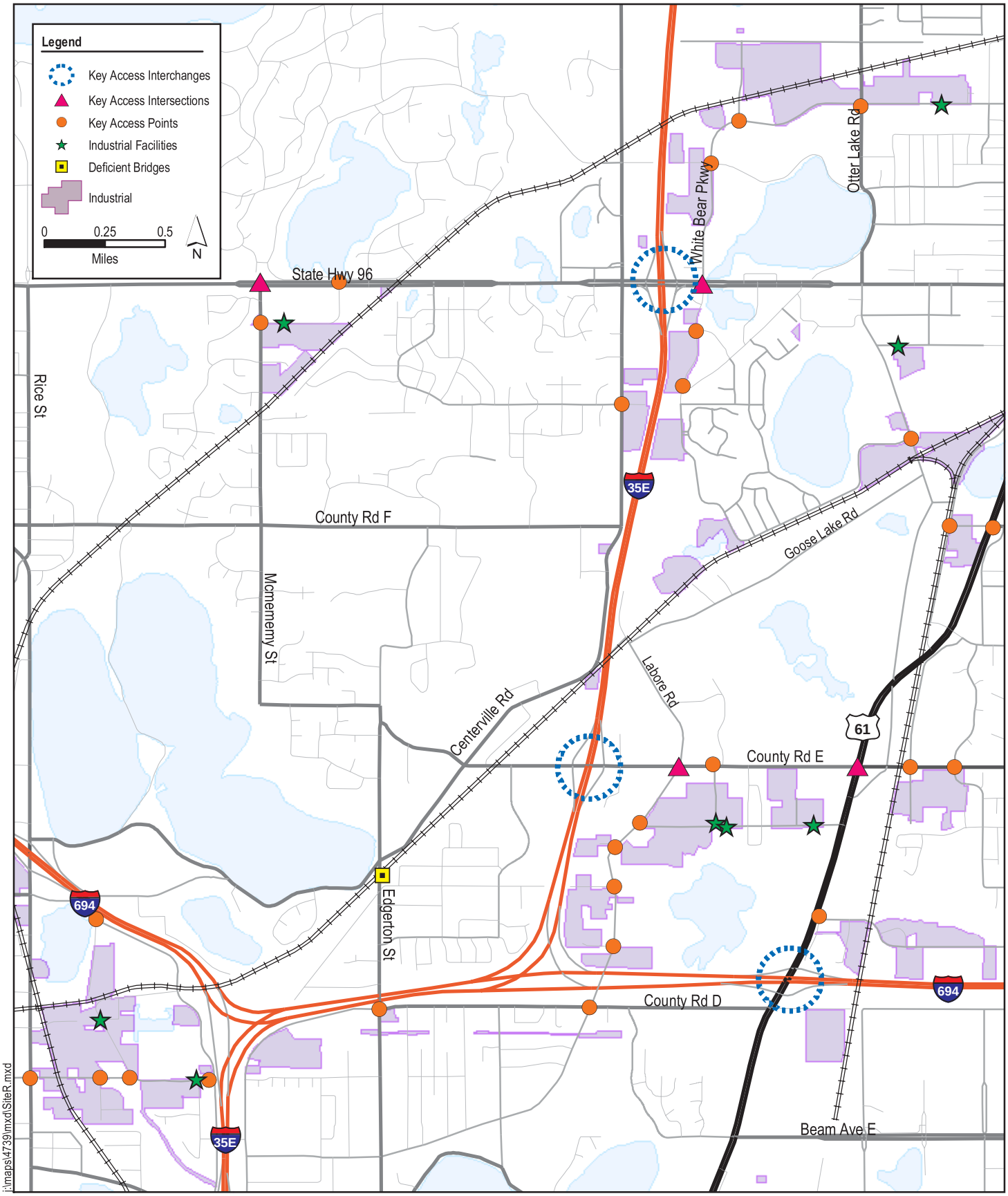
Facility Name	Business Type	Product Type	Location
Major Video Concepts Inc.	Wholesale or Distribution Center	Electronic Parts and Equipment, NEC	Vadnais Heights
Water Gremlin Co.	Wholesale or Distribution Center	Sporting and Recreational Goods and Supplies	White Bear Lake
H. B. Fuller Co.	Manufacturing Plant	Adhesives and Sealants	Vadnais Heights
Petroleum Maintenance Co.	Wholesale or Distribution Center	Petroleum and Petroleum Products Wholesalers, Except Bulk Stations and Terminals	Little Canada

Source: Mn/DOT Database.

Connectors/Regional Access Points

Industrial facilities located within Cluster Area "R" have a limited number of access points to the regional transportation system (e.g., interstate, NHS, IRC), including the following access interchanges (also see figure B-19):

- US Highway 61 (Maplewood Drive) at Interstate 694
- County Road 15 (County Road E) at Interstate 35E
- Trunk Highway 96 at Interstate 35E



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CLUSTER R - LITTLE CANADA / VADNAIS HEIGHTS

Figure B-19

ADEQUACY OF FREIGHT CONNECTIONS TO REGIONAL SYSTEM FOR THE TWIN CITIES METROPOLITAN AREA

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Minnesota Department of Transportation

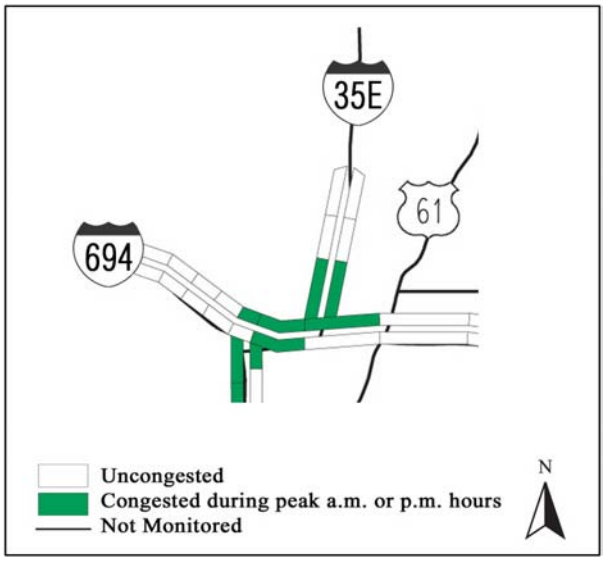
Additionally, these interchanges are served by a well-connected set of minor arterials that are in good physical condition and support legal loads, including the following (also see figure B-19):

- US Highway 61
- Trunk Highway 96
- County Road 57 (McMenemy Street)
- County Road 60/148 (Otter Lake Road)
- County Road 12 (County Road F)
- County Road 15 (County Road E)
- County Road 59 (Centerville Road)
- County Road 19 (County Road D)

There is one known deficient bridge with a height or weight restriction within the cluster area (see figure B-19).

Issues/Concerns

The most major problem in this cluster area is congestion caused by high volumes on Interstate 694, and by traffic weaving across multiple lanes at the I-694/35E commons. I-694 and I-35E routinely experience congestion during peak hours (source: Mn/DOT Metro Division Transportation System Plan, January 2001). Increased congestion on freeways adjacent to the commons area is expected by 2025.



Solutions

Capacity improvements could be made by expanding Interstate 694 to a six-lane facility and by grading and surfacing a third lane on Interstate 694 from 35W to 35E. Completing the "Unweave the Weave" project (which entails reconstructing the I-35E/694 interchange, realigning/adding lanes, and rebuilding bridges) and reconstructing the Interstate 694 interchange at Rice Street would improve geometrics.

CLUSTER S – ST. PAUL

General Location

Cluster Area "S" is located along Interstates 94, 35E, and US Highway 52 in downtown St. Paul (see figure B-20). The majority of freight facilities in this cluster are centered along railroad lines and along the Mississippi River. Residential areas in this cluster affected by freight include the Downtown, North End, Thomas-Dale, Payne-Phalen, Westside and West 7th neighborhoods in St. Paul.

Business Types

Cluster Area "S" contains industrial land uses. A sample of businesses in this area includes the following (see figure B-20 and the table below):

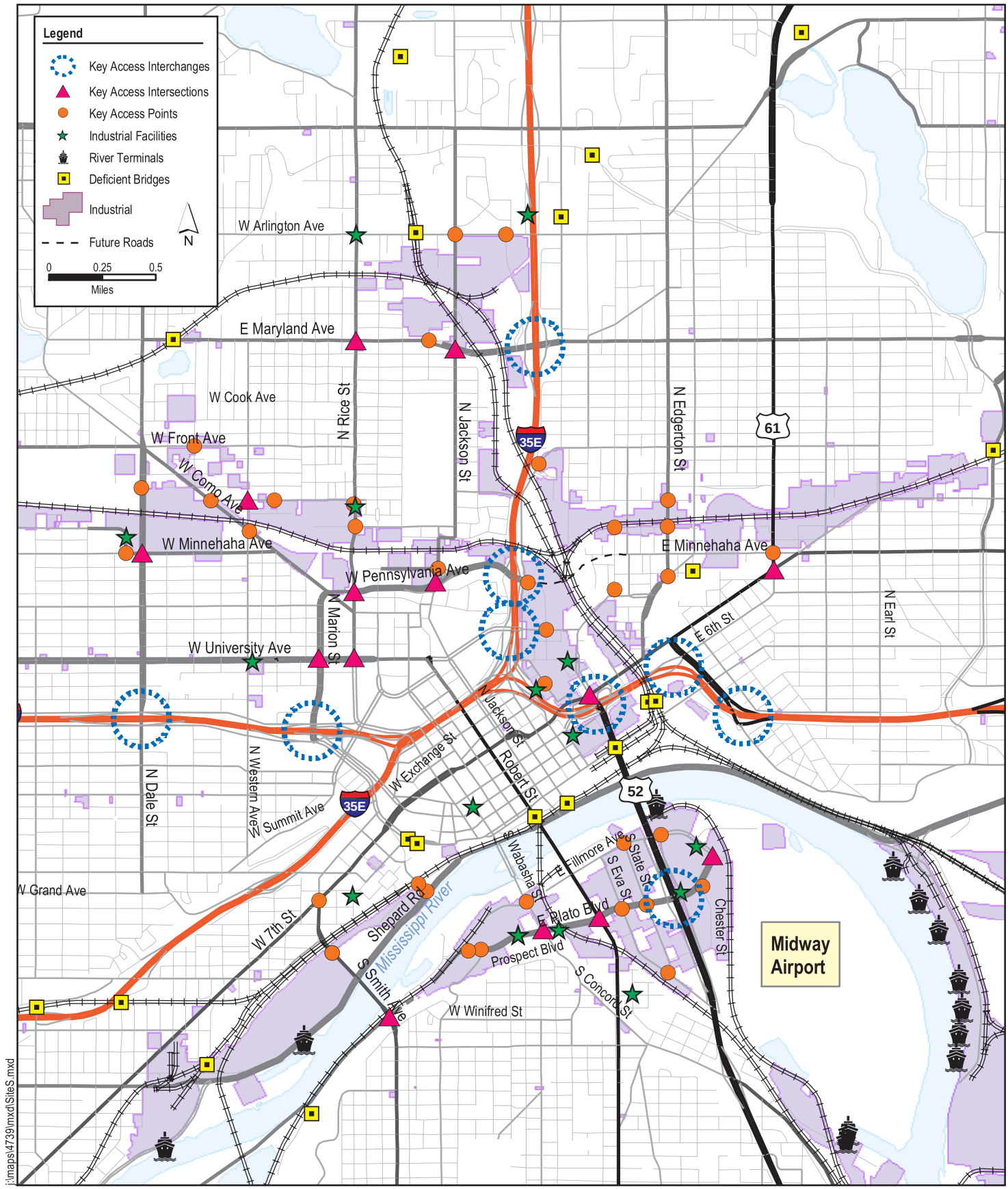
Facility Name	Business Type	Product Type	Location
Northern States Power Co.	Utility	Electric Services	St. Paul
Hallman Oil Co.	Wholesale or Distribution Center	Petroleum and Petroleum Products Wholesalers, Except Bulk Stations and Terminals	St. Paul
Old Home Foods	Manufacturing Plant	Natural, Processed, and Imitation Cheese	St. Paul
Farmers Union	Wholesale or Distribution Center	Petroleum and Petroleum Products Wholesalers, Except Bulk Stations and Terminals	St. Paul

Source: Mn/DOT Database.

Connectors/Regional Access Points

Industrial facilities located within Cluster Area "S" area have multiple access points to the regional transportation system (e.g., interstate, NHS, IRC), including the following access interchanges (also see figure B-20):

- Dale Street at Interstate 94
- Marion Street/Kellogg Boulevard at Interstate 94
- West 7th Street at Interstate 94
- 12th Street at Interstate 94
- Mounds Boulevard at Interstate 94
- University Avenue at Interstate 35E
- Pennsylvania Avenue at Interstate 35E
- County Road 31 (Maryland Avenue) at Interstate 35E
- Plato Boulevard at US Highway 52



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CLUSTER S - ST. PAUL

Figure B-20

ADEQUACY OF FREIGHT CONNECTIONS TO REGIONAL SYSTEM FOR THE TWIN CITIES METROPOLITAN AREA

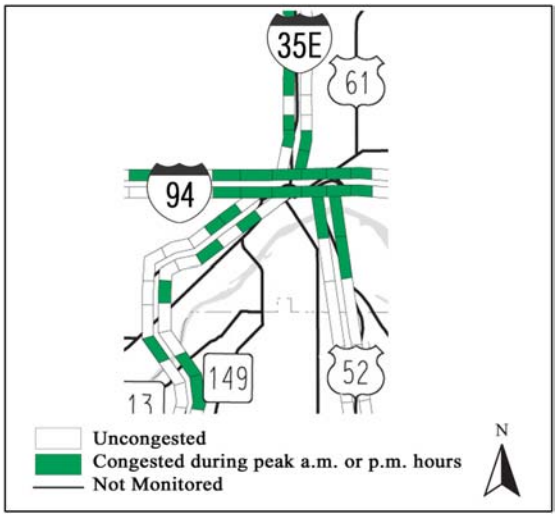
Minnesota Department of Transportation

Additionally, these interchanges are served by a well-connected set of minor arterials that are in good physical condition and support legal loads, including the following (also see figure B-20):

- Plato Boulevard
- University Avenue W
- W. Como Avenue
- Trunk Highway 5 (W 7th Street)
- Dale Street
- Trunk Highway 3 (Robert Street)
- County Road 37 (Shepard Road)
- County Road 31 (Maryland Avenue)
- County Road 49 (Rice Street)
- County Road 55 (Jackson Street)
- County Road 31 (Maryland Avenue)
- County Road 58 (Edgerton Street)
- Trunk Highway 61 (Arcade Street)

There are eighteen known deficient bridges with height or weight restrictions within the cluster area (see figure B-20).

Issues/Concerns



The roadway system in St. Paul must support intermodal connections to the Midway Airport, river terminals, and rail facilities. These connections are hindered by truck restrictions on Interstate 35E, by substandard infrastructure and geometrics along Interstate 35E immediately north of Interstate 94, by at-grade rail crossings on Plato Boulevard, and by springtime flooding of the Mississippi River. These limitations lead to congestion on local streets and the highway system (the downtown portions of I-35E, I-94, and US 52.) These facilities routinely experience congestion during peak hours (source: Mn/DOT Metro Division Transportation System Plan, January 2001).

Solutions

Capacity could be improved by adding one lane in each direction on 35E and by constructing bus-only shoulders along US-52. Traffic flow could be further improved on this roadway by reconstructing interchanges and controlling access from Concord Boulevard to Interstate 94. Planned improvements to increase access to Interstate 35E include reconstruction from Interstate 94 to Maryland Avenue, replacement of the Pennsylvania interchange with a new interchange at Cayuga Street, and extension of Phalen Boulevard to the Cayuga Street interchange. A corridor study of 35E from 94 to 694 would identify other projects to improve traffic flow within the cluster area.

CLUSTER T – EAGAN/MENDOTA HEIGHTS

General Location

Cluster Area "T" is located just south and west of the confluence of Interstates 35E and 494, and Trunk Highway 55 in the municipalities of Mendota Heights and Eagan (see figure B-21).

Business Types

Cluster Area "T" contains industrial land uses. A sample of businesses in this area includes the following (see figure B-21 and the table below):

Facility Name	Business Type	Product Type	Location
Interstate Detroit Diesel Inc.	Wholesale or Distribution Center	Industrial Machinery and Equipment	Bloomington
Northwest Airlines	Air Freight Terminal	Air Transportation, Scheduled	Eagan
Ecolab Inc.	Manufacturing Plant	Specialty Cleaning, Polishing, and Sanitary Preparations	Mendota Heights
Unisys Corp.	Wholesale or Distribution Center	Computers and Computer Peripheral Equipment and Software	Eagan

Source: Mn/DOT Database.

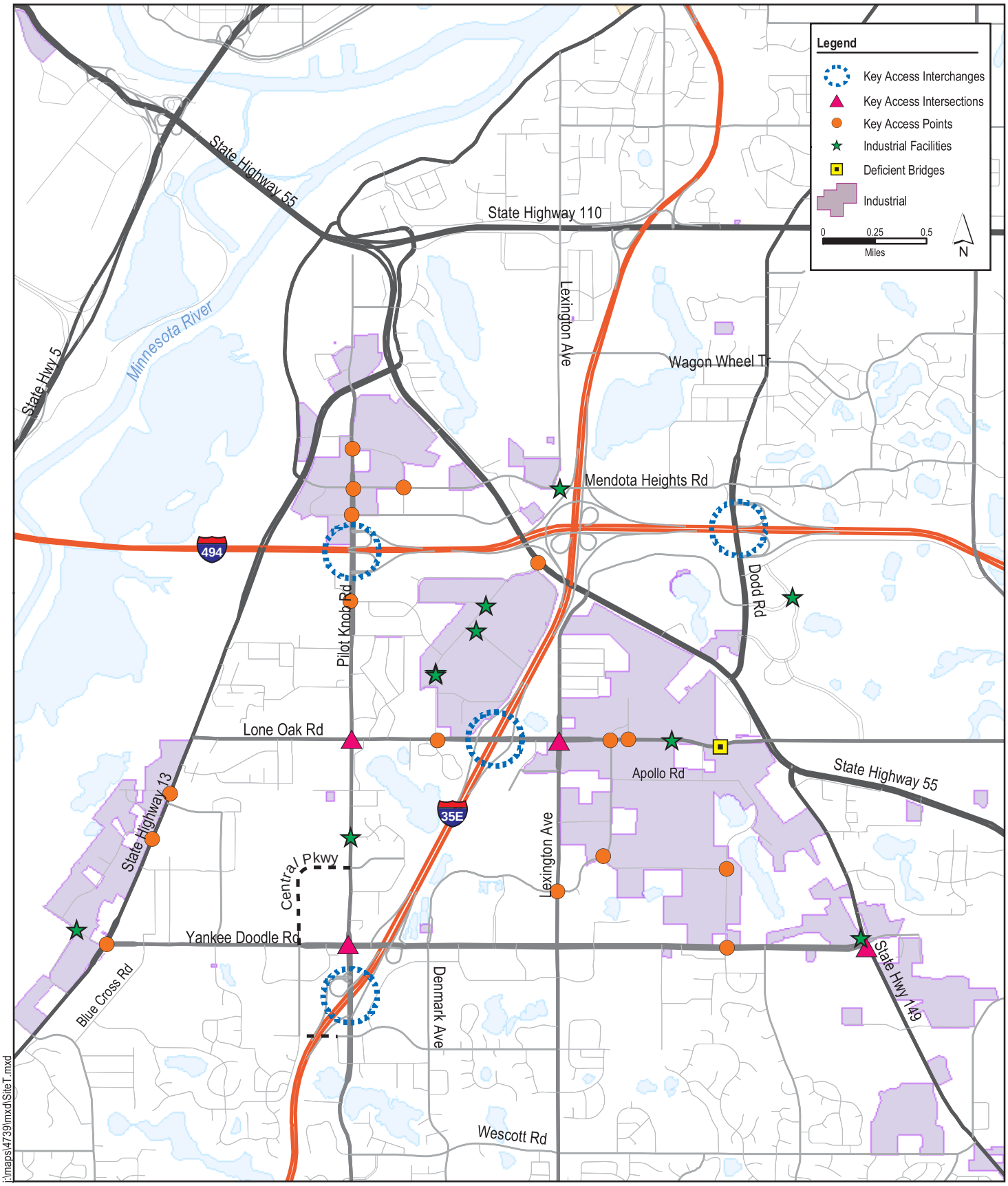
Connectors/Regional Access Points

Industrial facilities located within Cluster Area "T" have a limited number of access points to the regional transportation system (e.g., interstate, NHS, IRC), including the following access interchanges (also see figure B-21):

- County Road 31 (Pilot Knob Road) at Interstates 35E and 494
- County Road 28 (Yankee Doodle Road) at Interstate 35E
- County Road 26 (Lone Oak Road) at Interstate 35E

These interchanges are served by a well-connected set of minor arterials that are in good physical condition and support legal loads, including the following (also see figure B-21):

- Trunk Highway 13 (Sibley Memorial Highway)
- County Road 28 (Yankee Doodle Road)
- County Road 26 (Lone Oak Road)
- County Road 31 (Pilot Knob Road)



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CLUSTER T- EAGAN / MENDOTA HEIGHTS

Figure B-21

ADEQUACY OF FREIGHT CONNECTIONS TO REGIONAL SYSTEM FOR THE TWIN CITIES METROPOLITAN AREA

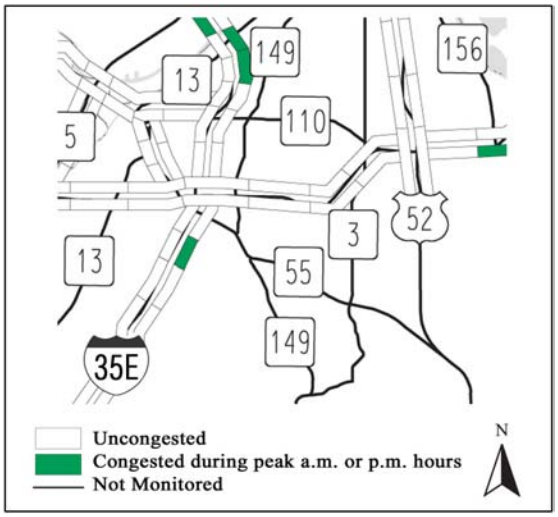
Minnesota Department of Transportation

- County Road 43 (Lexington Avenue South)
- Trunk Highway 149 (Dodd Road/ Jefferson Trail)

There is one known deficient bridges with height or weight restrictions within the cluster area (see figure B-21).

Issues/Concerns

This cluster area has a well connected and accessible street system. The most significant impediments to traffic flow include the steep grades present on roadways running away from the Mississippi River, and capacity of the regional system. I-35E, I-494, and TH 149 routinely experience congestion during peak hours (source: Mn/DOT Metro Division Transportation System Plan, January 2001). Long-term capacity issues are expected at Pilot Knob/I-35E and Yankee Doodle Road



Solutions

Access to regional roadways could be improved by extending Yankee Doodle Road east to Trunk Highway 3 and US Highway 52, constructing a local bridge over I-35E, and completing the Duckwood/Federal Road interchange. Completing the Central Parkway ring road would alleviate traffic on Yankee Doodle and Pilot Knob Roads by diverting local traffic away from these roadways. Traffic flow would be improved by adding turn lanes along TH 149 (Dodd Road) at Yankee Doodle Road, and adding a signal on TH 149 at Wescott Road

CLUSTER U – INVER GROVE HEIGHTS/ROSEMOUNT

General Location

Cluster "U" is located along US-52 from 105th Street East to 145th Street East in the municipalities of Inver Grove Heights and Rosemount (see figure B-22).

Business Types

Cluster Area U contains industrial and extractive land uses. A sample of businesses in this area includes the following (see figure B-22 and the table below):

Facility Name	Business Type	Product Type	Location
Ferrell Gas	Pipeline Terminal	Petroleum and Petroleum Products Wholesalers, Except Bulk Stations and Terminals	Inver Grove Heights
Cenex Distribution Center Warehouse	Wholesale or Distribution Center	Petroleum and Petroleum Products Wholesalers, Except Bulk Stations and Terminals	Inver Grove Heights
Spectro Alloys Corp	Manufacturing Plant	Primary Production of Aluminum	Rosemount

Source: Mn/DOT Database.

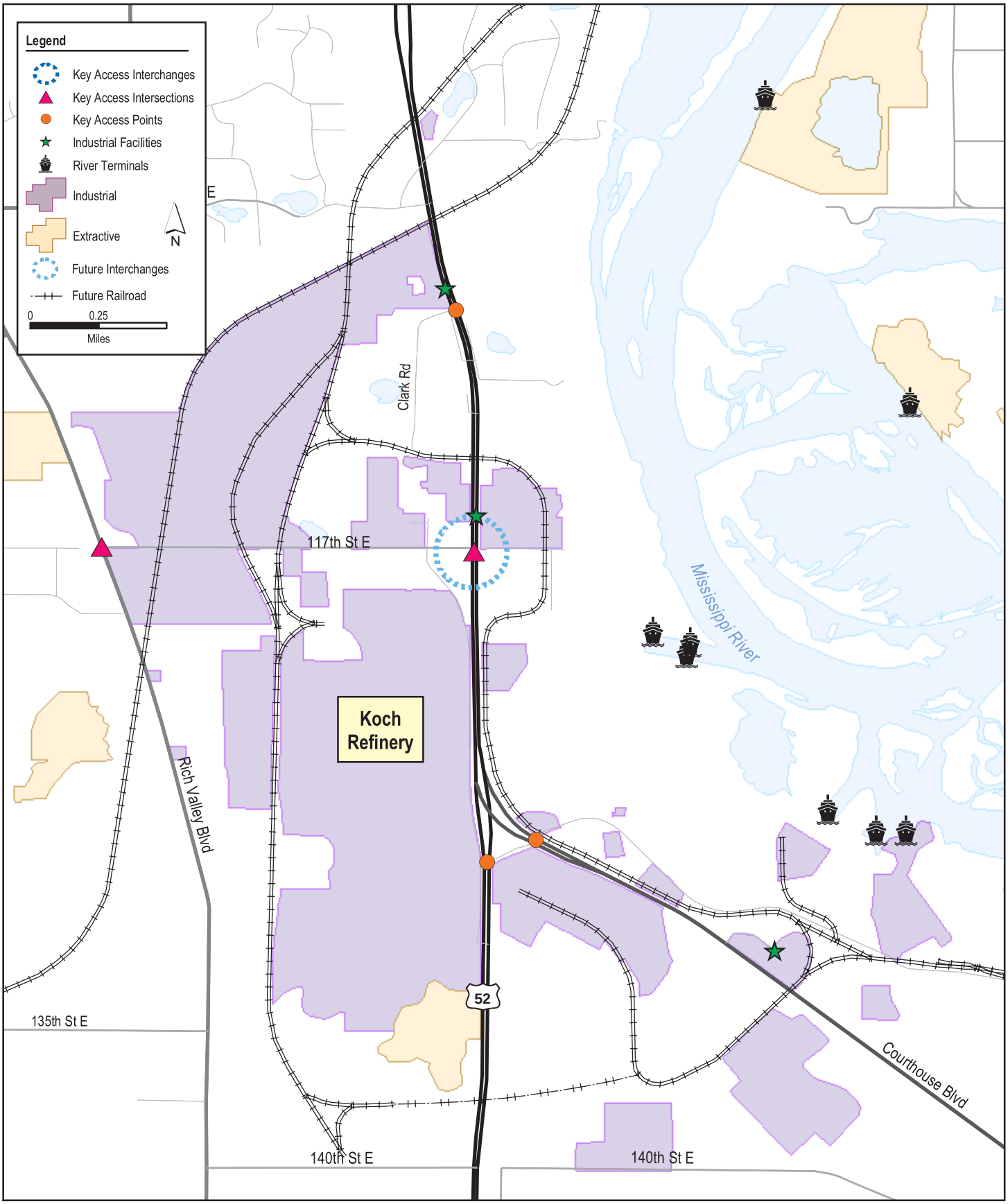
Connectors/Regional Access Points

There are no interchanges connecting local streets to the regional transportation system (e.g., interstate, NHS, IRC) A future interchange will be constructed at 117th Street and US Highway 52.

Industrial facilities in this corridor are served by a few arterials that are in good physical condition and support legal loads, including the following (also see figure B-22):

- County Road 71 (Rich Valley Boulevard)

There are no known deficient bridges with height or weight restrictions within the cluster area (see figure B-22).



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CLUSTER U - INVER GROVE HEIGHTS / ROSEMOUNT

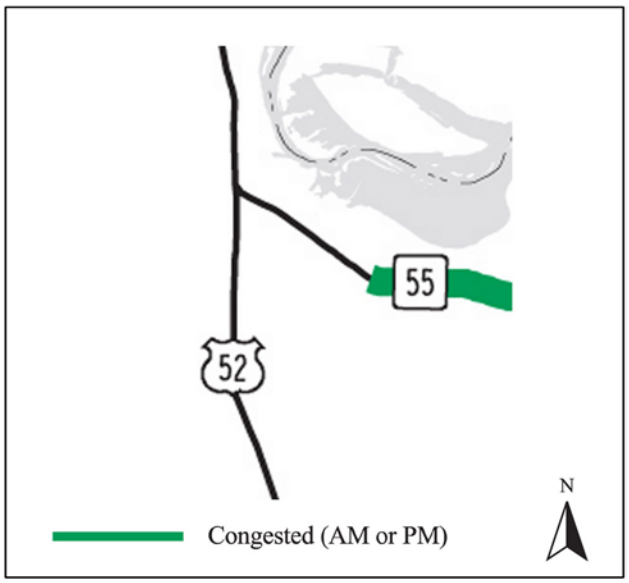
Figure B-22

ADEQUACY OF FREIGHT CONNECTIONS TO REGIONAL SYSTEM FOR THE TWIN CITIES METROPOLITAN AREA

Minnesota Department of Transportation

Issues/Concerns

Direct access, at-grade rail crossings, and the lack of local road service along US Highway 52 and Trunk Highway 55 affect roadway performance in this area. The Trunk Highway 55/US Highway 52 interchange causes problems as drivers often go the wrong way. The signalized intersection at US Highway 52 and 117th Street creates congestion and backups. Roadway congestion within this cluster area is not currently monitored by Mn/DOT's Traffic Management Center. It is expected that US Highway 52 will be congested at the peak hour by 2025.



Solutions

An access management plan identified strategies for preserving the safety and mobility of US Highway 52. Planned improvements to the corridor include constructing a bridge for local traffic and interchange at 117th Street, and by relocating the 117th Street at-grade rail crossing to a grade-separated crossing at 140th Street. Other improvements which have been identified, but are neither planned nor funded include adding a system interchange at US Highway 52 and County Road 42, relocating Trunk Highway 55 to an alignment along County Road 42, turning old 55 back to the local system, removing the TH 52/TH 55 split, and realigning Cliff Road to 117th Street.

CLUSTER V – NEWPORT/SOUTH ST. PAUL/ST. PAUL PARK

General Location

Cluster "V" is located on either side of the Mississippi River between US-52 and US-61 in the municipalities of Newport, South St. Paul and St. Paul Park (see Figure B-23).

Business Types

Cluster Area V contains industrial and extractive land uses. A sample of businesses in this area includes the following (see Figure B-23 and the table below):

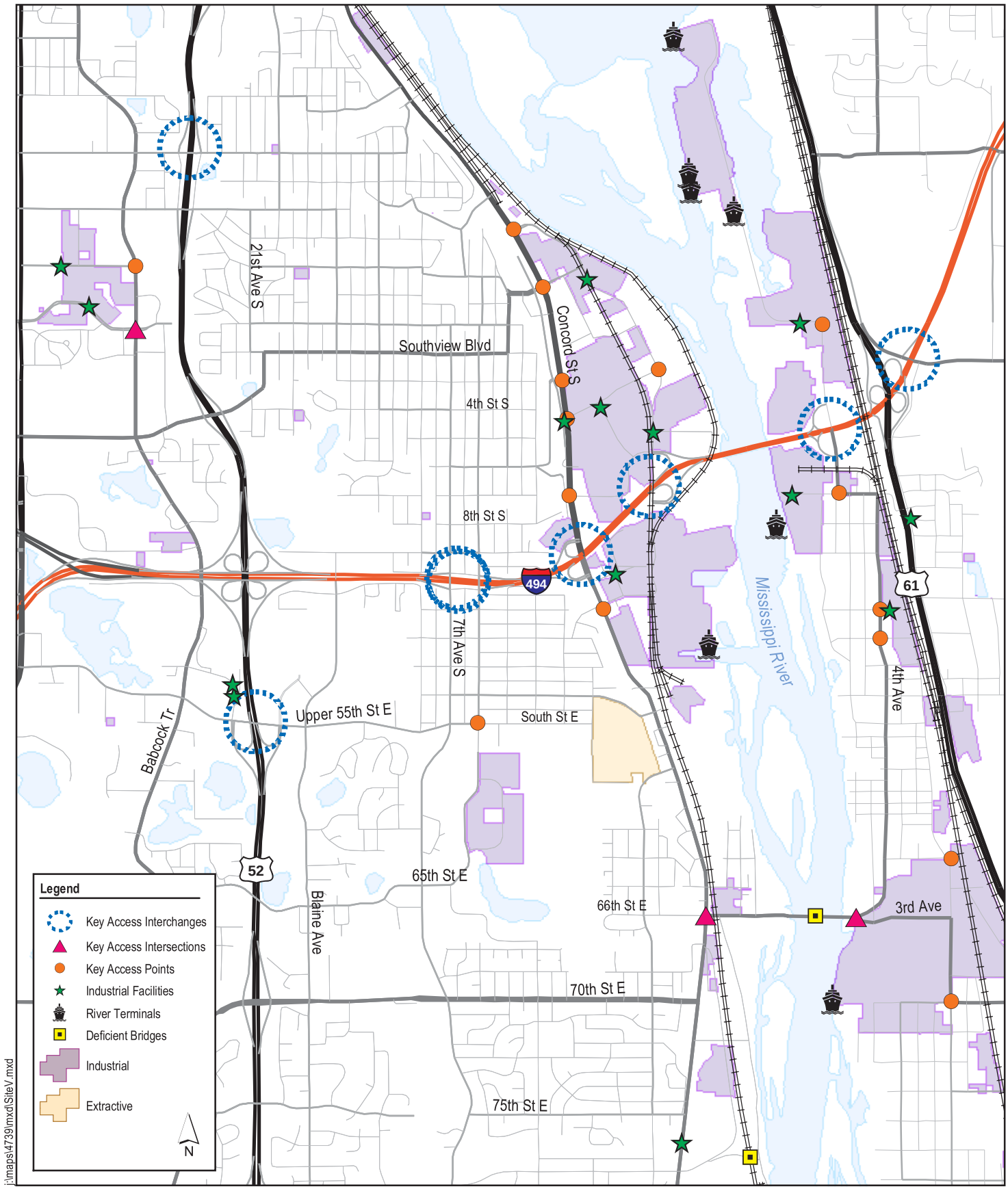
Facility Name	Business Type	Product Type	Location
North Star Steel Co.	Manufacturing Plant	Steel Works, Blast Furnaces (Including Coke Ovens), and Rolling Mills	St. Paul
Sportsman's Guide Inc.	Trucking Facility	Catalog and Mail-Order Houses	South St. Paul
Newport Marine Terminal	Pipeline Terminal	Petroleum and Petroleum Products Wholesalers, Except Bulk Stations and Terminals	Newport
Feed Ingredient Supply	Wholesale or Distribution Center	Farm Supplies	Inver Grove Heights

Source: Mn/DOT Database.

Connectors/Regional Access Points

Industrial facilities located within Cluster Area "V" have multiple access points to the regional transportation system (e.g., interstate, NHS, IRC), including the following access interchanges (also see figure B-23):

- County Road 26 (70th Street E) at US-52
- County Road 18 (Upper 55th Street East) at US-52
- County Road 6/8 (Thompson Avenue/Wentworth Avenue) at US-52
- Trunk Highway 156 (Concord Avenue) at Interstate 494
- Hardman Avenue at Interstate 494
- County Road 38A (Maxwell Avenue) at Interstate 494
- US Highway 10/61 (Hastings Avenue) at Interstate 494



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CLUSTER V - NEWPORT / SOUTH ST. PAUL

Figure B-23

ADEQUACY OF FREIGHT CONNECTIONS TO REGIONAL SYSTEM FOR THE TWIN CITIES METROPOLITAN AREA

Minnesota Department of Transportation

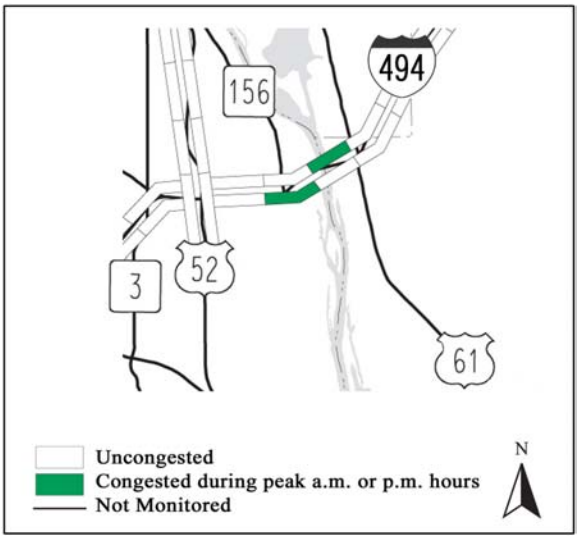
Additionally, these interchanges are served by a well-connected set of minor arterials that are in good physical condition and support legal loads, including the following (also see figure B-23):

- Trunk Highway 56/156 (Concord Street South)
- County Road 73 (Babcock Trail)
- County Road 38 (4th Avenue)
- County Road 26 (70th Street E)
- County Road 14 (Mendota Road/Southview Boulevard)

There are two known deficient bridges with height or weight restrictions within the cluster area (see figure B-23).

Issues/Concerns

A high concentration of intermodal facilities and high truck traffic along the Mississippi River crossing create the majority of issues and concerns in this area. Steep grades exist adjacent to the river, and this causes slowdowns for trucks on US Highway 61 and on east-west arterials. The other current issue is the Wakota Bridge crossing which causes congestion on I-494. It is expected that more sections of I-494 will be congested at the peak hour by 2025.



Solutions

The Wakota Bridge project, which includes reconstruction of the Wakota Bridge, construction of a new bridge over the Mississippi River with fly-over ramps on US Highway 61, and lane additions and interchange reconstruction along US Highway 61, will improve traffic flow safety in the area.

CLUSTER W – COTTAGE GROVE

General Location

Cluster Area "W" is located between US-61 and the Mississippi River in the municipality of Cottage Grove.

Business Types

Cluster Area W contains industrial land uses. A sample of businesses in this area includes the following (see figure B-24 and the table below):

Facility Name	Business Type	Product Type	Location
3M Corporation	Manufacturing Plant	Abrasive Products	Cottage Grove

Source: Mn/DOT Database.

Connectors/Regional Access Points

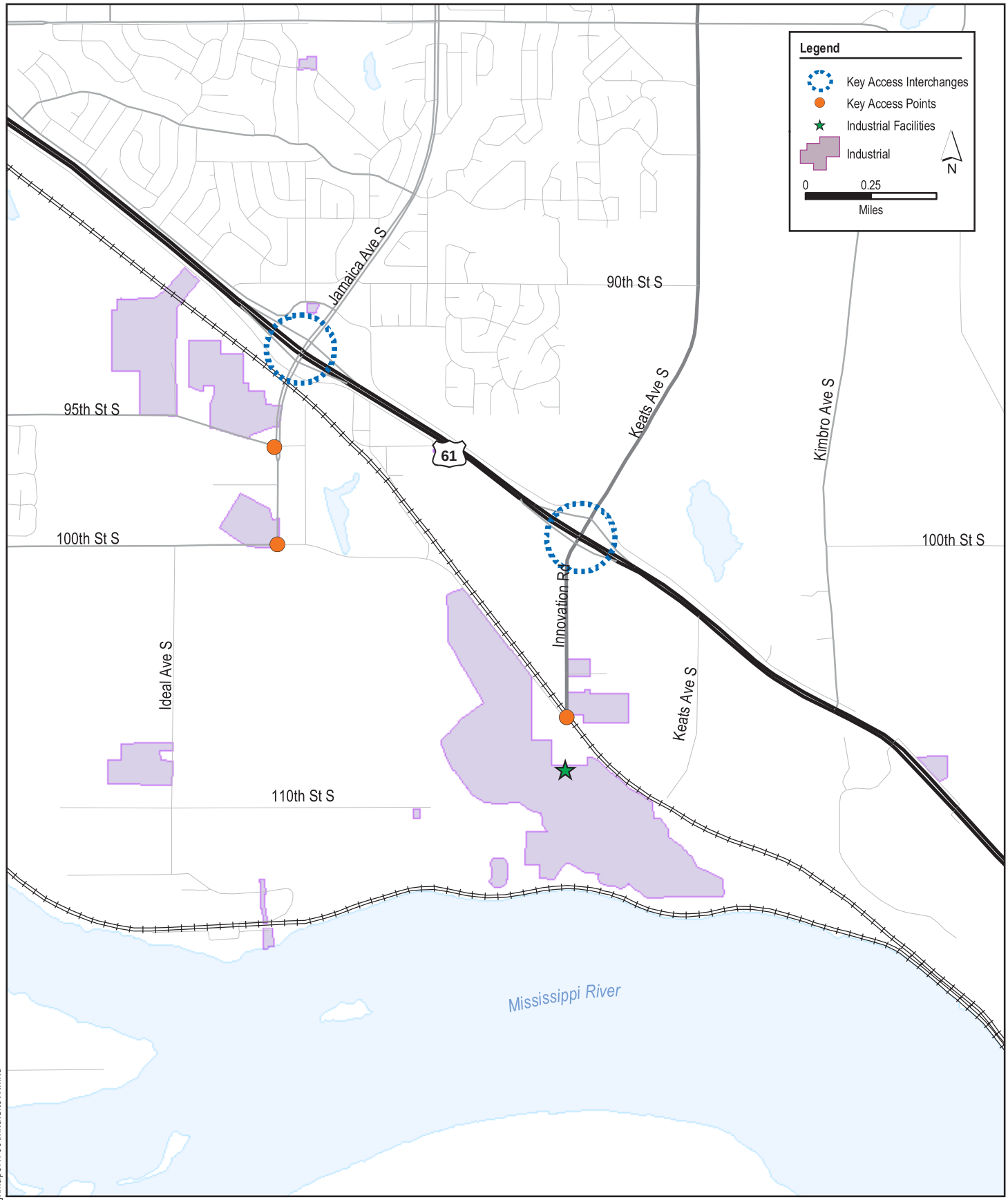
Industrial facilities located within Cluster Area "W" area have a limited number of access points to the regional transportation system (e.g., interstate, NHS, IRC), including the following access interchanges (also see figure B-24):

- Jamaica Avenue South at US-61
- County Road 19 (Innovation Road/Keats Avenue) at US-61

Additionally, these interchanges are served by arterials that are in good physical condition and support legal loads, including the following (also see figure B-24):

- Jamaica Avenue South
- County Road 19 (Innovation Road/Keats Avenue)

There are no known deficient bridges with height or weight restrictions within the cluster area (see Figure B-24).



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CLUSTER W - COTTAGE GROVE

Figure B-24

ADEQUACY OF FREIGHT CONNECTIONS TO REGIONAL SYSTEM FOR THE TWIN CITIES METROPOLITAN AREA

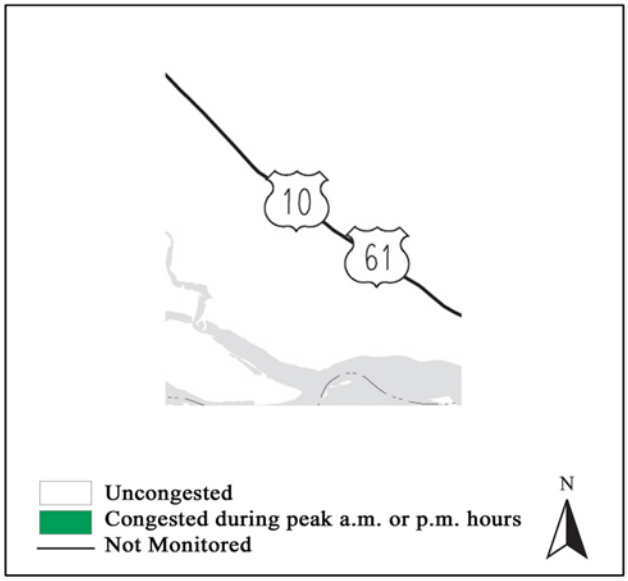
Minnesota Department of Transportation

Issues/Concerns

Congestion along US Highway 61 is not currently a problem in Cottage Grove. As the area develops, traffic has the potential to increase.

Solutions

No specific improvements are planned within the cluster area, but regional improvements to the Wakota Bridge area will improve Cottage Grove's access to the regional system. Another project, identified by the Inver Grove Heights plan which would affect the area is a new river crossing connecting Inver Grove Heights and Cottage Grove. This project will likely not occur within the 10 year or 20 year planning horizon.



CLUSTER X – PLYMOUTH/GOLDEN VALLEY

General Location

Cluster Area "X" is located north of Interstate 394 between Trunk Highway 100 and US Highway 169. The area encompasses the municipalities of Plymouth and Golden Valley (see figure B-25).

Business Types

Cluster Area "X" contains industrial land uses. A sample of businesses in this area includes the following (see figure B-25 and the table below):

Facility Name	Business Type	Product Type	Location
Ryerson Tull	Wholesale or Distribution Center	Metals Service Centers and Offices	Plymouth
General Mills Inc.	Manufacturing Plant	Food Preparations, NEC	Golden Valley
Michael Foods Inc.	Manufacturing Plant	Food Preparations, NEC	St. Louis Park
Novartis Nutrition	Wholesale or Distribution Center	Groceries, General Line	St. Louis Park

Source: Mn/DOT Database.

Connectors/Regional Access Points

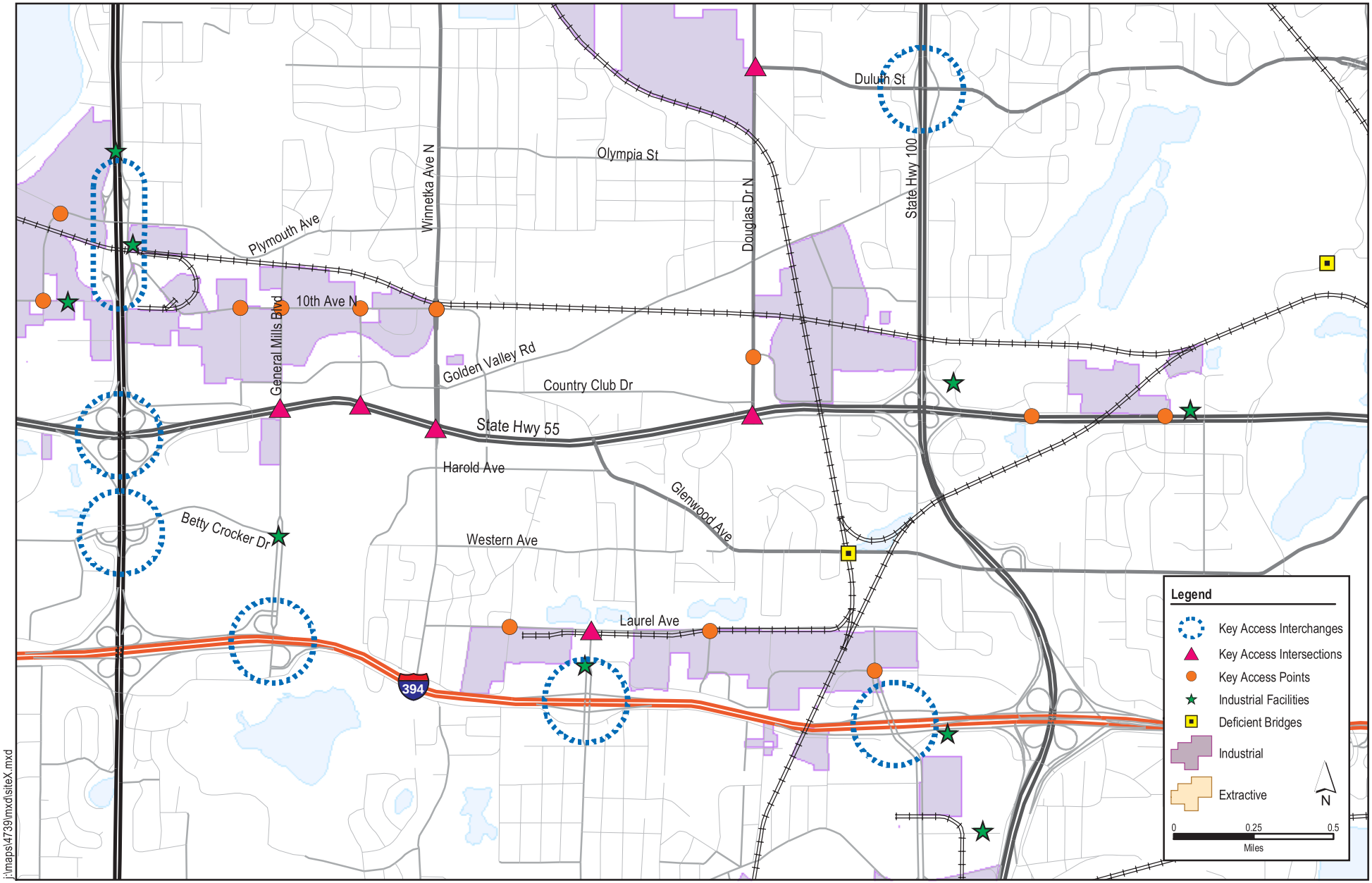
Industrial facilities located within Cluster Area "X" area have multiple access points to the regional transportation system (e.g., interstate, NHS, IRC), including the following access interchanges (also see figure B-25):

- Plymouth Avenue North at US-169
- Trunk Highway 55 at US 169
- Betty Crocker Drive at US-169
- General Mills Boulevard at Interstate 394
- Louisiana Avenue at Interstate 394
- Park Place Drive/Xenia Boulevard at Interstate 394
- County Road 66 (Duluth Street) at Trunk Highway 100

Additionally, these interchanges are served by a well-connected set of minor arterials that are in good physical condition and support legal loads, including the following (also see figure B-25):

- County Road 40 (Glenwood Avenue)
- County Road 66 (Duluth Street)
- County Road 156 (Winnetka Avenue N)

Figure B-25



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CLUSTER X - PLYMOUTH / GOLDEN VALLEY

Figure B-25

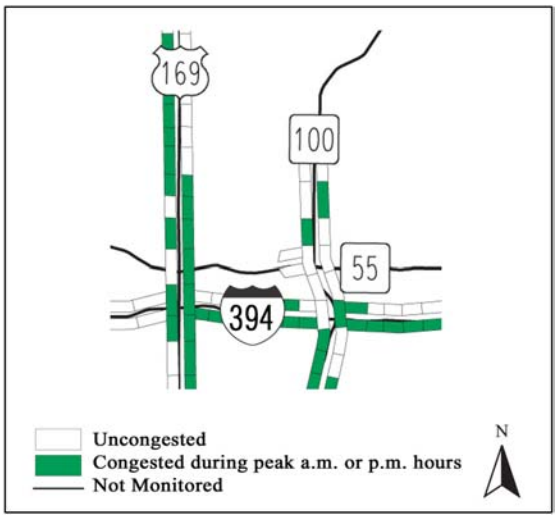
ADEQUACY OF FREIGHT CONNECTIONS TO REGIONAL SYSTEM FOR THE TWIN CITIES METROPOLITAN AREA

Minnesota Department of Transportation

There are two known deficient bridges with height or weight restrictions within the cluster area (see figure B-25).

Issues/Concerns

Major concerns within the cluster area include deficient bridges and capacity issues. US-169, I-394 and TH-100 routinely experience congestion during peak hours (source: Mn/DOT Metro Division Transportation System Plan, January 2001). It is expected that congestion will increase by 2025.



Solutions

Improvements to facilitate traffic flow along the northern section of TH 100 are currently under construction. The project includes interchange reconstruction and expansion of TH 100 to a six-lane freeway from Glenwood Avenue to County Road 81 and to a 4-lane freeway from CR 81 to 50th Street.

CLUSTER Y – COON RAPIDS/FRIDLEY

General Location

Cluster Area "Y" is located north of Interstate 694 and south of US Highway 10 in the municipalities of Blaine, Coon Rapids and Fridley (see figure B-26).

Business Types

Cluster Area Y contains industrial land uses. A sample of businesses in this area includes the following (see figure B-26 and the table below):

Facility Name	Business Type	Product Type	Location
Honeywell Inc. Commercial Avia	Manufacturing Plant	Aircraft Parts and Auxiliary Equipment, NEC	Coon Rapids
Minco Products Inc	Manufacturing Plant	Air-Conditioning and Warm Air Heating Equipment and Commercial and Industrial Refrigeration Equipment	Fridley
Frito Lay Inc.	Wholesale or Distribution Center	Groceries, General Line	Fridley
Crysteel Truck Equipment	Wholesale or Distribution Center	Automobiles and Other Motor Vehicles	Fridley

Source: Mn/DOT Database.

Connectors/Regional Access Points

Industrial facilities located within Cluster Area "Y" have multiple access points to the regional transportation system (e.g., interstate, NHS, IRC), including the following access interchanges (also see figure B-26):

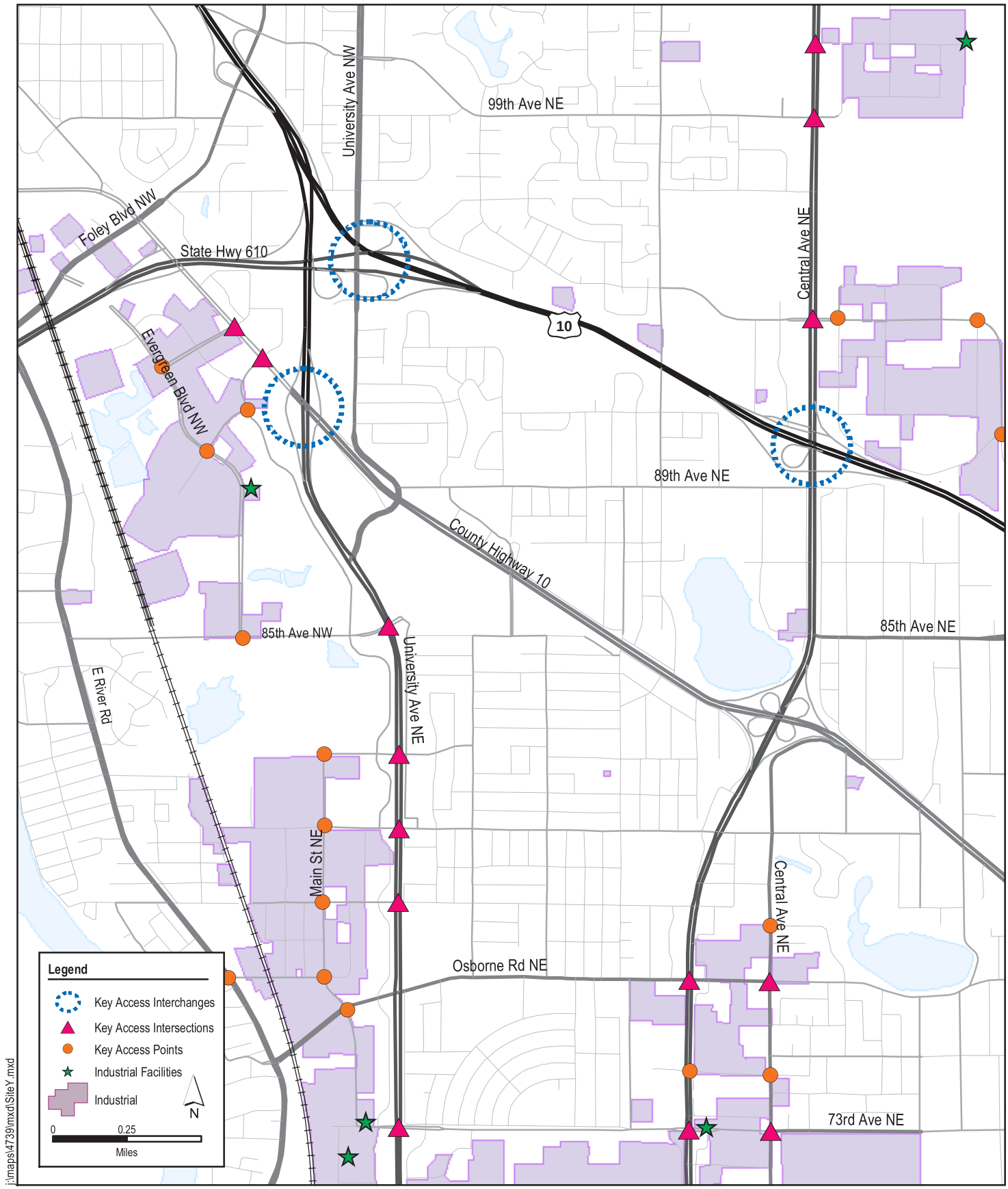
- Trunk Highway 65 (Central Avenue NE) at US Highway 10
- Trunk Highway 47 (University Avenue NE) at US Highway10 and County Road 10

These interchanges are served by a well-connected set of arterials that are in good physical condition and support legal loads, including the following (also see figure B-26):

- Trunk Highway 47 (University Avenue NE)
- Trunk Highway 65 (Central Avenue NE)
- County Road 11 (Foley Boulevard NW)
- County Road 108 (Osborne Road NE)
- County Road 1 (East River Road NE)
- County Road 10

There are no known deficient bridges with height or weight restrictions within the cluster area (see figure B-26).

Figure B-26



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CLUSTER Y - FRIDLEY / COON RAPIDS

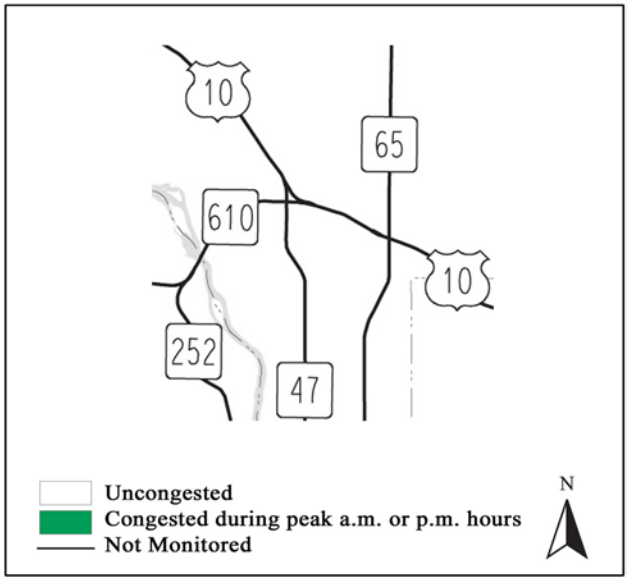
Figure B-26

ADEQUACY OF FREIGHT CONNECTIONS TO REGIONAL SYSTEM FOR THE TWIN CITIES METROPOLITAN AREA

Minnesota Department of Transportation

Issues/Concerns

Rapid growth and intensification of land uses along US Highway 10 and Trunk Highway 610, coupled with lack of rail and roadway access is the largest concern in this cluster area. The recent extension of MUSA service boundaries will further fuel development in northern Blaine and increase trips on US Highway 10. Congestion currently exists at intersections on Trunk Highway 65, and it is expected that Trunk Highway 47, Trunk Highway 252, and Trunk Highway 610 will also be congested at the peak hour by 2025.



Solutions

Capacity on US Highway 10 can be improved by adding a westbound lane from Egret to Round Lake Boulevard. When funding becomes available, a potential solution for managing future congestion in this area will include constructing Central Avenue, north of US 10, as a 3-lane expressway or a 2-lane freeway.

CLUSTER Z – ANOKA/RAMSEY

General Location

Cluster area "Z" is located along the railroad lines north of US 10 from Round Lake Boulevard NW, on the east, to Ramsey Boulevard, on the west. This cluster encompasses the municipalities of Anoka, Ramsey and Coon Rapids (see figure B-27).

Business Types

Cluster Area "Z" contains industrial and extractive land uses. A sample of businesses in this area includes the following (see figure B-27 and the table below):

Facility Name	Business Type	Product Type	Location
Anoka Municipal Utilities	Utility	Electric Services	Anoka
Egan Oil Company	Wholesale or Distribution Center	Petroleum and Petroleum Products Wholesalers, Except Bulk Stations and Terminals	Anoka
Connexus Energy	Manufacturing Plant	Electric Services	Ramsey

Source: Mn/DOT Database.

Connectors/Regional Access Points

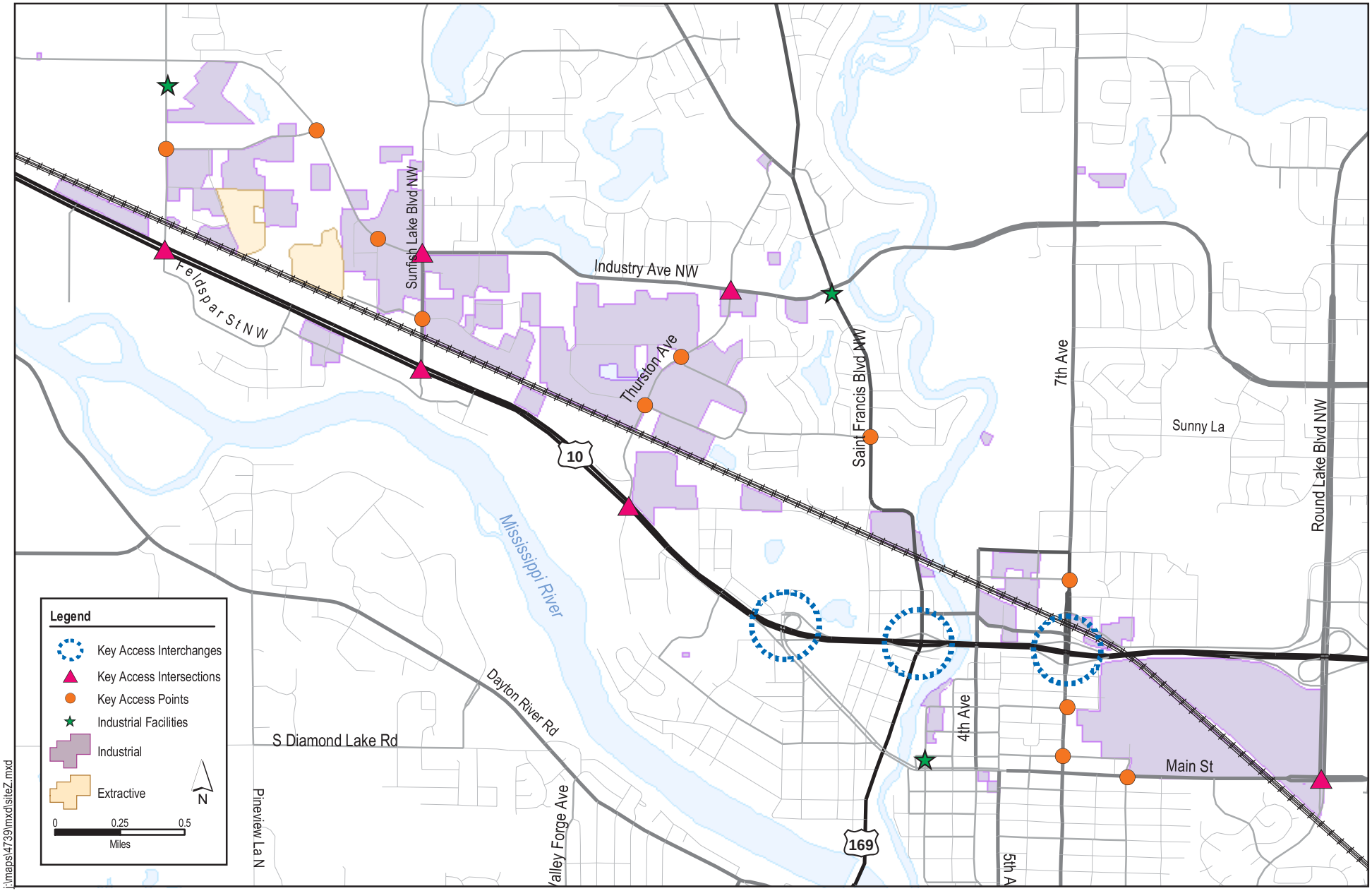
Industrial facilities located within Cluster Area "Z" have multiple access points to the regional transportation system (e.g., interstate, NHS, IRC), including the following access interchanges (also see figure B-27):

- Main Street W at US Highway 10
- Ferry Street/US-169 at US-10
- County Road 7 (7th Avenue North) at US-10
- County Road 9 (Round Lake Boulevard) at US-10

Additionally, these interchanges are served by a well-connected set of arterials that are in good physical condition and support legal loads, including the following (also see figure B-27):

- County Road 14 (Main Street)
- County Road 9 (Round Lake Boulevard)
- US-169/TH 47 (Ferry Street/St. Francis Boulevard)
- County Road 116 (Industry Avenue NW)
- Thurston/Dysprosum Avenue
- County Road 7 (7th Avenue)
- County Road 9 (Round Lake Boulevard)
- County Road 57 (Sunfish Lake Boulevard)

There are no known deficient bridges with height or weight restrictions within the cluster area (see figure B-27).



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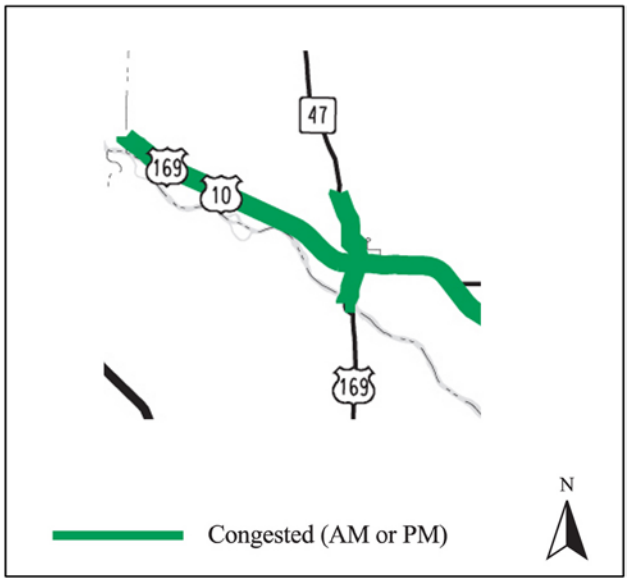
CLUSTER Z - ANOKA / RAMSEY

Figure B-27

ADEQUACY OF FREIGHT CONNECTIONS TO REGIONAL SYSTEM FOR THE TWIN CITIES METROPOLITAN AREA

Minnesota Department of Transportation

Issues/Concerns



Unmanaged access along 169, west of Anoka, and insufficient infrastructure are a major concern in the rapidly growing northern metro. It is expected that traffic volumes in Anoka will increase by anywhere from 46 to 130 percent by the year 2020. Circulation in this cluster area is further inhibited by the Mississippi River and existing rail lines.

The Anoka Community Plan has identified capacity deficiencies along US-10, US-169, TH 47 (US-10 to CSAH 116), 7th Avenue (US-10 to Garfield Street E), and Main Street E (US-169 to 7th Avenue). By 2020, additional capacity deficiencies will occur on TH 47 (north of CSAH 116), Main Street W (US-169 to US-10), Main Street E (east of 7th Avenue), 7th Avenue (north of Garfield Street E), Round Lake Boulevard. Congestion is expected on all arterials by 2020.

Solutions

Constructing an additional lane in each direction would improve capacity along US Highway 169. Because many physical barriers exist in this cluster area, new roadways are not always feasible, and TDM/TSM strategies would improve flow in the area. Long range studies suggest an alternate Mississippi River crossing in Ramsey. The Anoka County Road 116 study, which looked at future transportation and access needs, identified potential improvements to the roadway which included connecting CR 116 to TH 10, upgrading it to four-lanes, and limiting direct access. The study also identified strategies for improving flow along TH 10 which included limiting direct access to TH 10 by constructing interchanges at Sunfish Lake Boulevard and Thurston Avenue, and by closing access at Tungsten St. NW, Fairoak Ave, Feldspar Street NW, and Traprock Street NW.

CLUSTER AA – NEW HOPE/PLYMOUTH

General Location

Cluster Area "AA" is located between Trunk Highway 100 and US Highway 169 from Olson Memorial Highway (TH 55) north to Bass Lake Road. The area encompasses the municipalities of New Hope, Golden Valley, Plymouth and Crystal (see figure B-28).

Business Types

Cluster Area "AA" contains industrial land uses. A sample of businesses in this area includes the following (see figure B-28 and the table below):

Facility Name	Business Type	Product Type	Location
Exotic Rubber & Plastics	Wholesale or Distribution Center	Plastics Materials and Basic Forms and Shapes	Plymouth
Reed Spectrum	Manufacturing Plant	Plastics Material and Synthetic Resins, and Nonvulcanizable Elastomers	New Hope
Waymouth Farms Inc.	Wholesale or Distribution Center	Confectionery	New Hope
Icorp	Wholesale or Distribution Center	Durable Goods, NEC	New Hope

Source: Mn/DOT Database.

Connectors/Regional Access Points

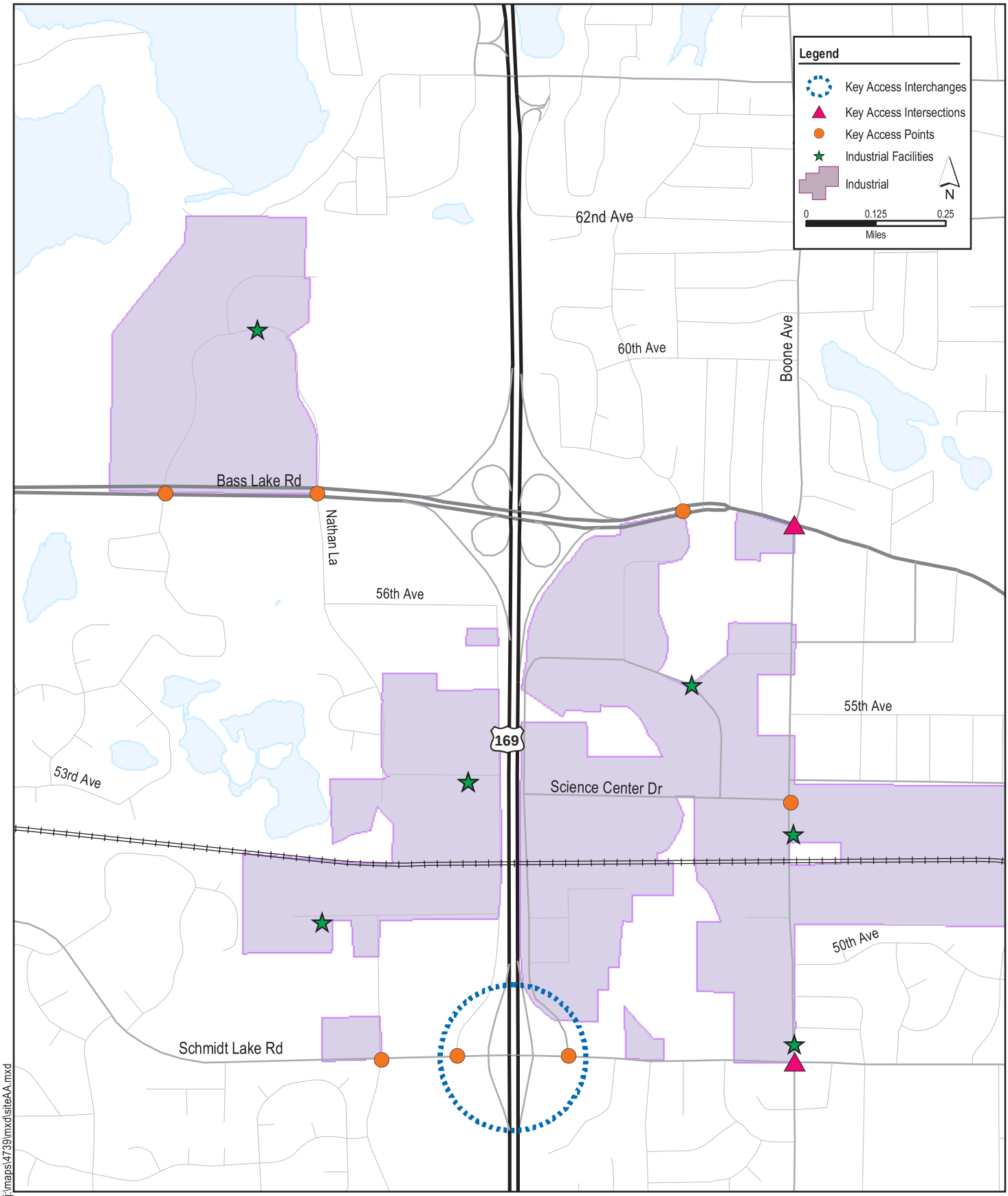
Industrial facilities located within Cluster Area "AA" area have a limited number of access points to the regional transportation system (e.g., interstate, NHS, IRC), including the following access interchanges (also see figure B-28):

- County Road 10 (Bass Lake Road) at US Highway 169
- Schmidt Lake Road North/49th Avenue North at US Highway 169

These interchanges are served by a well-connected set of minor arterials that are in good physical condition and support legal loads, including the following (also see figure B-28):

- County Road 10 (Bass Lake Road)
- Schmidt Lake Road
- Boone Avenue North

There are no known deficient bridges with height or weight restrictions within the cluster area (see figure B-28).



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CLUSTER AA - PLYMOUTH / NEW HOPE

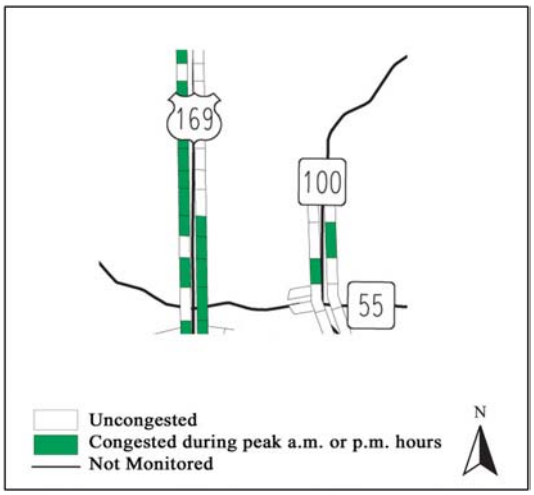
Figure B-28

ADEQUACY OF FREIGHT CONNECTIONS TO REGIONAL SYSTEM FOR THE TWIN CITIES METROPOLITAN AREA

Minnesota Department of Transportation

Issues/Concerns

Problems/concerns in this cluster area include high volumes of heavy commercial traffic, aging infrastructure, geometric deficiencies and congestion. US Highway 169 and Trunk Highway 55 routinely experience congestion during peak hours (source: Mn/DOT Metro Division Transportation System Plan, January 2001). It is expected that peak hour congestion will become more widespread on these freeways by 2025.



Solutions

Capacity improvements could be made by adding one lane in each direction and bus-only shoulders on US Highway 169, and by implementing TDM and TSM strategies along all roadways.