

## EXECUTIVE SUMMARY

The Minnesota Department of Transportation (Mn/DOT) has developed a 2,900 mile system of priority highway corridors connecting the major regional centers around the State, as documented in **Figure ES-1**. The objective of this effort is to support economic vitality by focusing the Department's efforts to identify, prioritize and select for improvement the small fraction of roads (about 2% of the State's total road mileage) that moves the bulk of the State's people and goods (more than one-third of total vehicle miles of travel).

Mn/DOT selected U.S. Trunk Highway (TH) 14 in southern Minnesota to be part of this priority statewide system of roadways for three key reasons:

- The historic significance of TH 14, going back to being part of the original government road system developed in the 1850's.
- The critical linkages provided by the present TH 14, including connecting New Ulm, Courtland, Nicollet and North Mankato to one another and to regional centers in Mankato, Owatonna, Rochester and Winona.
- The significant role played by TH 14 in supporting mobility in the region. Recorded daily traffic and truck volumes on TH 14 are higher than on any other east-west road in southern Minnesota, except I-90 – a multilane freeway.

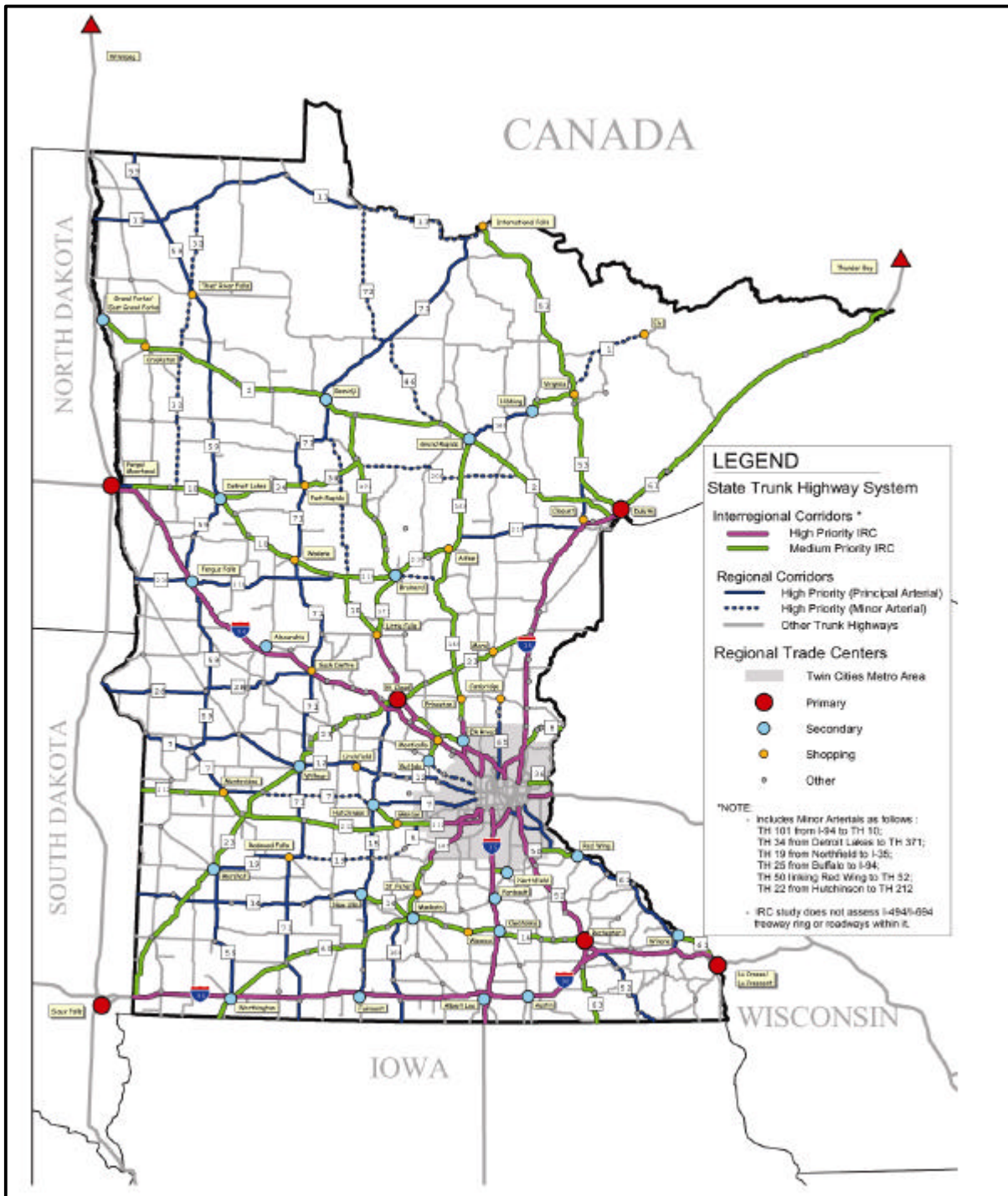
### History of the TH 14 Corridor

While Mn/DOT was developing their system of priority highways, local governments in the TH 14 Corridor formed an association to promote highway improvements in order to address concerns about safety, mobility and support for economic development. The Highway 14 Partnership worked with Mn/DOT staff to initiate the project development process in this segment of the TH 14 Corridor (between State Highway 15 near New Ulm and Nicollet County Highway 6 near North Mankato – **Figure ES-2**) and later, a number of the Partnership members along with local agency staff and elected officials participated on the Advisory Committee for the TH 14 project (**Figure ES-3**).

### Corridor Management Planning and Environmental Documentation

This Corridor Management Plan (CMP) was prepared for the purpose of guiding future highway planning efforts in the TH 14 Corridor. The CMP documents existing conditions in the Corridor, identifies traffic operations and safety deficiencies based on a comparison to established performance measures for priority corridors around the State and then presents a set of potential alternative improvement strategies.

At the same time the CMP was being finalized the project entered into the Scoping process. A Scoping Document was prepared, circulated through the required list of local, state and federal regulatory agencies for comments and then presented to the public at a Scoping Hearing. The Scoping Document is the first step in the environmental documentation process, consistent with policies, procedures and regulations established by the National and Minnesota Environmental Policy Acts (NEPA and MEPA). The Scoping Document presents



14 West IRC

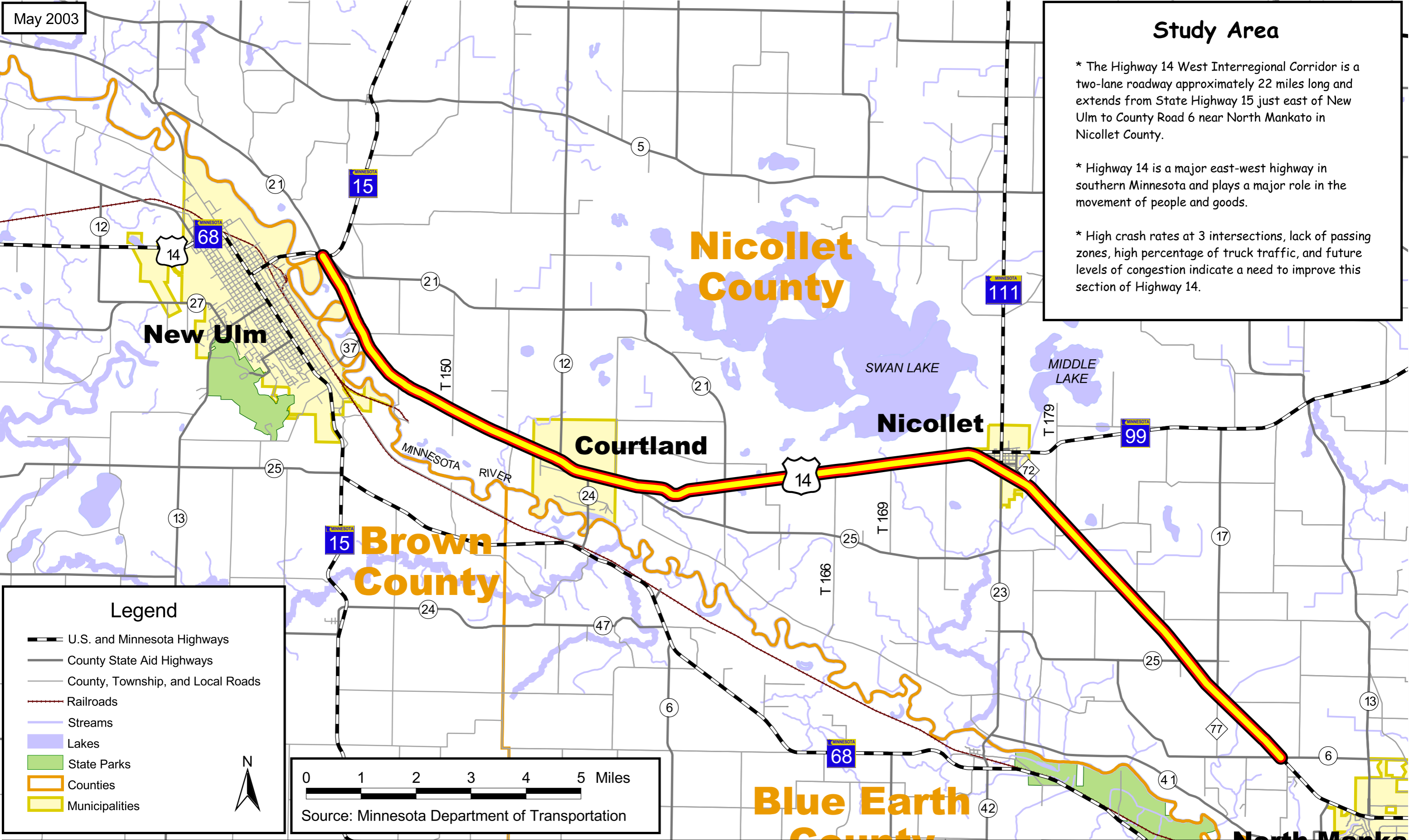


**Figure ES-1**  
**Interregional Corridor System Map**

May 2003

### Study Area

- \* The Highway 14 West Interregional Corridor is a two-lane roadway approximately 22 miles long and extends from State Highway 15 just east of New Ulm to County Road 6 near North Mankato in Nicollet County.
- \* Highway 14 is a major east-west highway in southern Minnesota and plays a major role in the movement of people and goods.
- \* High crash rates at 3 intersections, lack of passing zones, high percentage of truck traffic, and future levels of congestion indicate a need to improve this section of Highway 14.



### Legend

- U.S. and Minnesota Highways
- County State Aid Highways
- County, Township, and Local Roads
- Railroads
- Streams
- Lakes
- State Parks
- Counties
- Municipalities

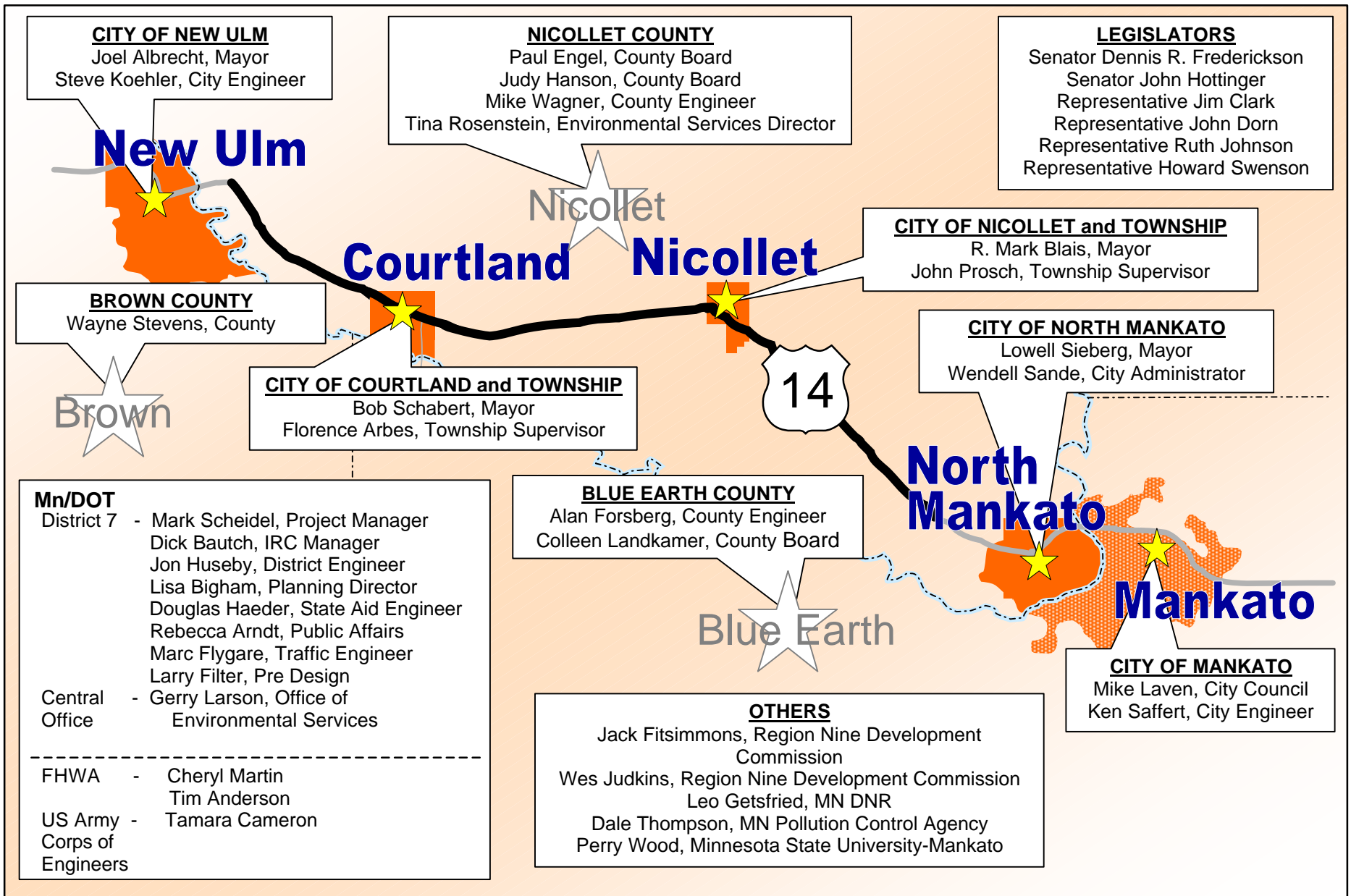


Source: Minnesota Department of Transportation



**14 West Interregional Corridor:**  
North Mankato to New Ulm

**Figure ES-2**  
Study Area



a purpose and need for moving forward with highway improvements in the Corridor, screens the set of alternatives based on each strategy’s ability to meet the Corridor performance goals for traffic operations, safety, consistency with local planning efforts, support for economic development and preserving environmental resources. At the end of the Scoping process, a Scoping Decision Document was prepared, identifying the alternatives to be carried forward and the social, economic, and environmental issues to be addressed in the subsequent Environmental Impact Statement (EIS).

Together the two documents, the CMP and the Scoping Decision Document, form a base for moving into the EIS phase of the environmental review process, which will focus on conducting detailed engineering, social, economic and environmental analyses in order to document a quantitative comparison of the effects of the various improvement alternatives.

### Existing and Forecast Conditions On TH 14

The study of the TH 14 Corridor documented the existing and forecast (Year 2025) conditions relative to the following issue areas:

**Section 3.1 – Roadway Function and Corridor Segments:** TH 14 is classified as a Principal Arterial and by definition, the highway’s primary function is to support regional and statewide mobility. This portion of the TH 14 Corridor is 22 miles of two-lane roadway and is divided into eight segments based on a rural versus urban designation (**Table ES-1**).

**Table ES-1  
Corridor Segments**

Segment	Location	Typical Section	Segment Length (Miles)
1	TH 15 / CSAH 21 to CSAH 37	Two-Lane Rural	1.8
2	CSAH 37 to Zieske Road	Two-Lane Rural	3.8
3	Zieske Road to CSAH 12	Two-Lane Urbanizing	0.4
4	CSAH 12 to CSAH 25	Two-Lane Urban	1.2
5	CSAH 25 to TH 99	Two-Lane Rural	6.5
6	TH 99 to TH 111 / CSAH 23	Two-Lane Urbanizing	0.6
7	TH 111 / CSAH 23 to CSAH 72	Two-Lane Urban	0.6
8	CSAH 72 to CSAH 6	Two-Lane Rural	6.8

Source: Howard R. Green Company and Mn/DOT Roadway Sufficiency and Reference Point Data



**Section 3.2 – Land Use:** The area along the TH 14 Corridor is predominantly agricultural, except in the built up areas in the Cities of Courtland and Nicollet. Three key land use issues were documented. First, Nicollet County has an agricultural land preservation ordinance that prohibits urban kinds of development in designated agricultural districts (basically all land outside of the incorporated municipalities). Second, the City of Courtland has adopted a future land use plan that calls for growth on the north side of the community (away from the floodplain of the Minnesota River) up to a natural ridge line that is considered to be the limits of an expanded municipal services area. Finally, the City of Nicollet has adopted a future land use plan that calls for residential growth to the north and an expansion of their industrial park to the south. (It should be noted that the expected growth in both Courtland and Nicollet’s future land use plans are independent of any future improvements to TH 14.)

**Section 3.3 – Environmental Overview:** The environmental overview consisted of a windshield survey of the Corridor and a review of readily available environmental databases. This overview was intended to identify relative potential for impacts to a standard list of known environmental resources and to support the development of conceptual layouts of alternative roadway alignments by documenting particularly sensitive areas that should be avoided. This overview does not replace the detailed comparison of impacts, typically described in subsequent environmental documents. The results of the overview indicate that there is some potential for impacting resources throughout the Corridor, both along the present highway alignment and along the new location alternatives. However, nothing was identified that would appear to preclude any of the alternative improvement strategies based solely on environmental considerations. A summary of the environmental overview is provided in **Table ES-2**.

**Section 3.4 – Traffic Operations:** The quality of traffic operations in the Corridor is basically a function of traffic volume characteristics and roadway geometry. Current traffic volumes range from 5,000 to 7,000 vehicles per day and year 2025 forecasts indicate future volumes will almost double as a result of planned growth in communities along the TH 14 Corridor (See **Figure ES-4**). The combination of these volumes and the present two-lane geometry with limited passing opportunities results in a quality of traffic operations above (worse than) Level of Service D (**Figure ES-5**) in over 20 percent of the Corridor today and along the entire Corridor in the design year (2025), as shown in **Table ES-3** and on **Figure ES-6**.

**Section 3.4 – Origin / Destination Survey:** An origin-destination survey was conducted along the TH 14 Corridor in order to understand travel patterns in the area and how those patterns influence the need for, and potential locations of, community bypasses. The survey involved capturing the license plate numbers of vehicles at seven sampling stations in the TH 14 study area using video cameras and then matching the license plate numbers from station to station. The results of the survey indicate that about 80 percent of the vehicles near New Ulm have a

**Table ES-2  
A Summary of the Environmental Overview**



# 14 West IRC

Alternatives			Environmental Impacts												
Segment	Alternative Code	Alternative Description	Environmental Impacts						Cultural Impacts			Visual	Economic and Social		
			Wetlands	Public Waters	Cuts into Bluff	T & E Species, Rare Natural Features, Biodiversity	Parks and Wildlife Management Areas	Noise	Historical	Archeological	Cemetery	Scenic Views	Consistent with Local Land Use Plans	Consistent with Community Qualities	Supports Economic Development
Segment 1: TH 15/CSAH 21 to T 150	A	No Build (Two-Lane) <sup>1</sup>	Moderate	Low / Moderate	Low	Moderate	Low	Low	Moderate	Moderate	Low	Moderate	Yes	--	--
	B	Existing Alignment (four-lane)	Moderate	Low / Moderate	Low	Moderate	Low	Low	Moderate	Moderate	Low	Moderate	Yes	--	--
	N1	River Valley Alignment	Moderate	Low / Moderate	Low	Moderate	Low	Low	Moderate	Moderate	Low	Moderate	Yes	Yes	Yes
	N2	Hwy 14/15 Top of Bluff Alignment	Low	Moderate	High	Low / Moderate	Low	Low	Low	Moderate	Low	High	Maybe	Yes	Yes
	N3	Hwy 14/15/37 Top of Bluff Alignment	Low	Moderate	High	Low / Moderate	Low	Low	Low	Moderate	Low	High	No	Yes	Yes
	N4	Courtland/Top of Bluff Alignment	Low	Moderate	Low	Low / Moderate	Low	Low	Low	Moderate	Low	Moderate	No	Maybe	Yes
	N5	Hwy 21 Alignment	Moderate	Moderate	Low	Low	Low	Low	Low	Moderate	Low	Low	Maybe	No	Maybe
N6	Courtland/Hilltop Alignment	Moderate	Moderate	Low	Low / Moderate	Low	Low	Low	Moderate	Low	Low	No	Maybe	Maybe	
Segment 2: T 150 to T 166	A	No Build (Two-Lane) <sup>1</sup>	Low	Low / Moderate	Low	Low	Moderate	High	High	Moderate	Moderate	Moderate	No	No	No
	B	Existing Alignment (four-lane)	Low	Low / Moderate	Low	Low	Moderate	High	High	Moderate	Moderate	Moderate	No	No	No
	N1	Courtland Northern Bypass #1	Low	Low	Low	Low	Low	Moderate	Low	Moderate	Moderate	Low	Yes	Yes	Yes
	N2	Courtland Northern Bypass #2	Low	Low	Low	Low	Low	Moderate	Low	Moderate	Low	Low	Maybe	Yes	Yes
	N3	Hwy 21 Alignment	Low	Low	Low	Low	Low	Low	Low	Moderate	Low	Low	No	No	Maybe
	S	Courtland Southern Bypass	Low / Moderate	Low	Moderate	Low / Moderate	Low	High	Low	Moderate	Low	High	No	No	No
Segment 3: T 166 to CSAH 6	A	No Build (Two-Lane) <sup>1</sup>	Low	Moderate/High	--	Low	High	High	Low / Moderate	Moderate	Low	Low	No	No	No
	B	Existing Alignment (four-lane)	Low	Moderate/High	--	Low	High	High	Low / Moderate	Moderate	Low	Low	No	No	No
	N	Nicollet Northern Bypass	Low / Moderate	Moderate/High	--	Low	Low	Moderate	Low	Moderate	Low	Low	No	No	Maybe
	S1	Nicollet Southern Bypass #1	Low	Low	--	Low	Low	Moderate	Low	Moderate	Low	Yes	Yes	Yes	Yes
	S2	Nicollet Southern Bypass #2	Low / Moderate	Moderate/High	--	Low	Low	Low	Low	Moderate	Low	Yes	Yes	Maybe	Maybe
	S3	Courtland - Nicollet Southern Bypass Connection	Low / Moderate	Moderate	--	Low	Low	Low	Low	Moderate	Low	Yes	Maybe	Maybe	Maybe
	S4	Hwy 25 Alignment	Low	Moderate	--	Moderate	Low	Low	Moderate	Moderate	High	Yes	Maybe	No	Maybe

Source: Howard R. Green Company

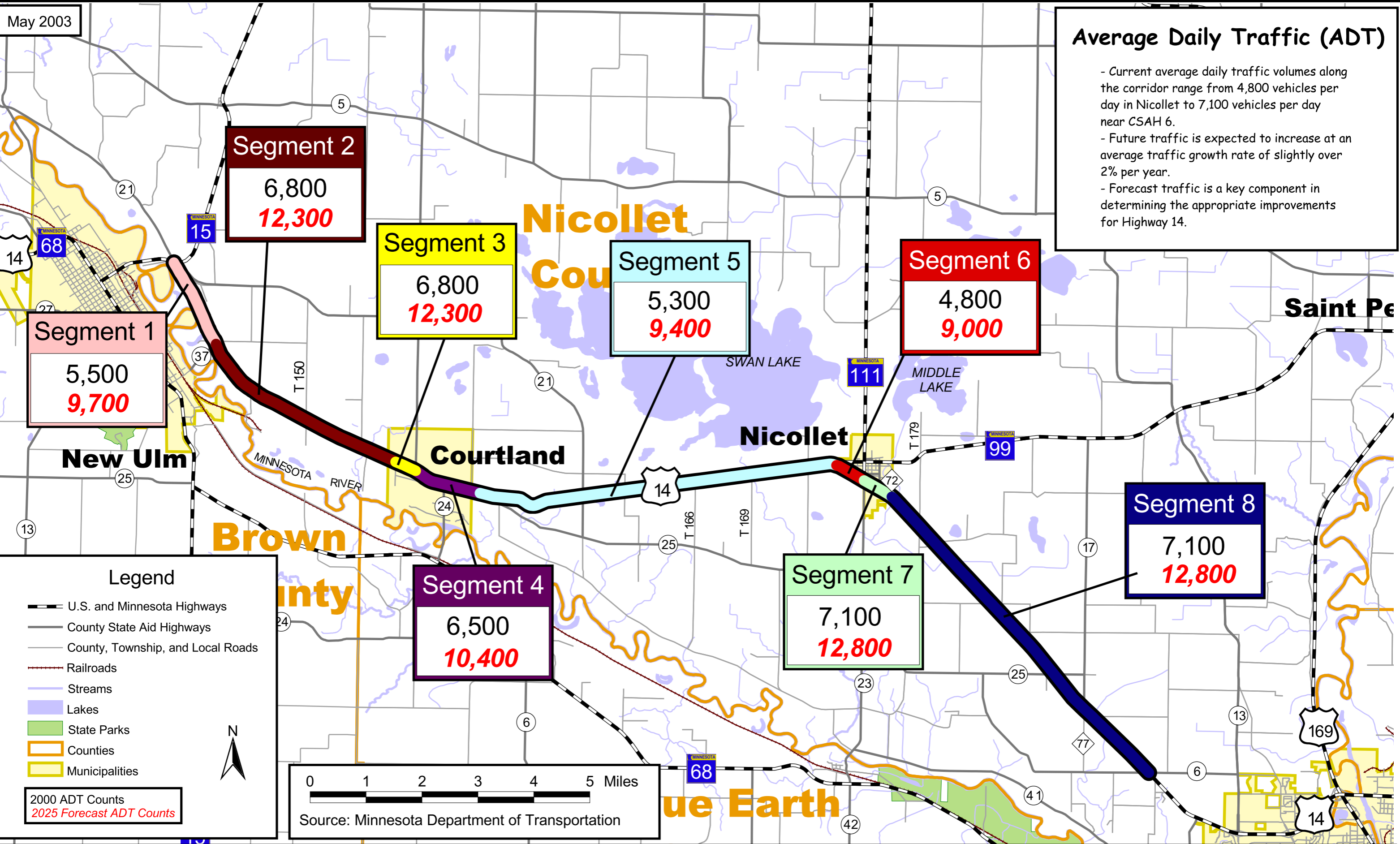
<sup>1</sup>The No Build alternative is listed for comparison purposes only, and is the only alternative evaluated as a two-lane facility.

<sup>2</sup>Traffic safety and mobility and traffic operations analysis were evaluated assuming no change in traffic control.

May 2003

**Average Daily Traffic (ADT)**

- Current average daily traffic volumes along the corridor range from 4,800 vehicles per day in Nicollet to 7,100 vehicles per day near CSAH 6.
- Future traffic is expected to increase at an average traffic growth rate of slightly over 2% per year.
- Forecast traffic is a key component in determining the appropriate improvements for Highway 14.



**Legend**

- U.S. and Minnesota Highways
- County State Aid Highways
- County, Township, and Local Roads
- Railroads
- Streams
- Lakes
- State Parks
- Counties
- Municipalities

2000 ADT Counts  
2025 Forecast ADT Counts

0 1 2 3 4 5 Miles

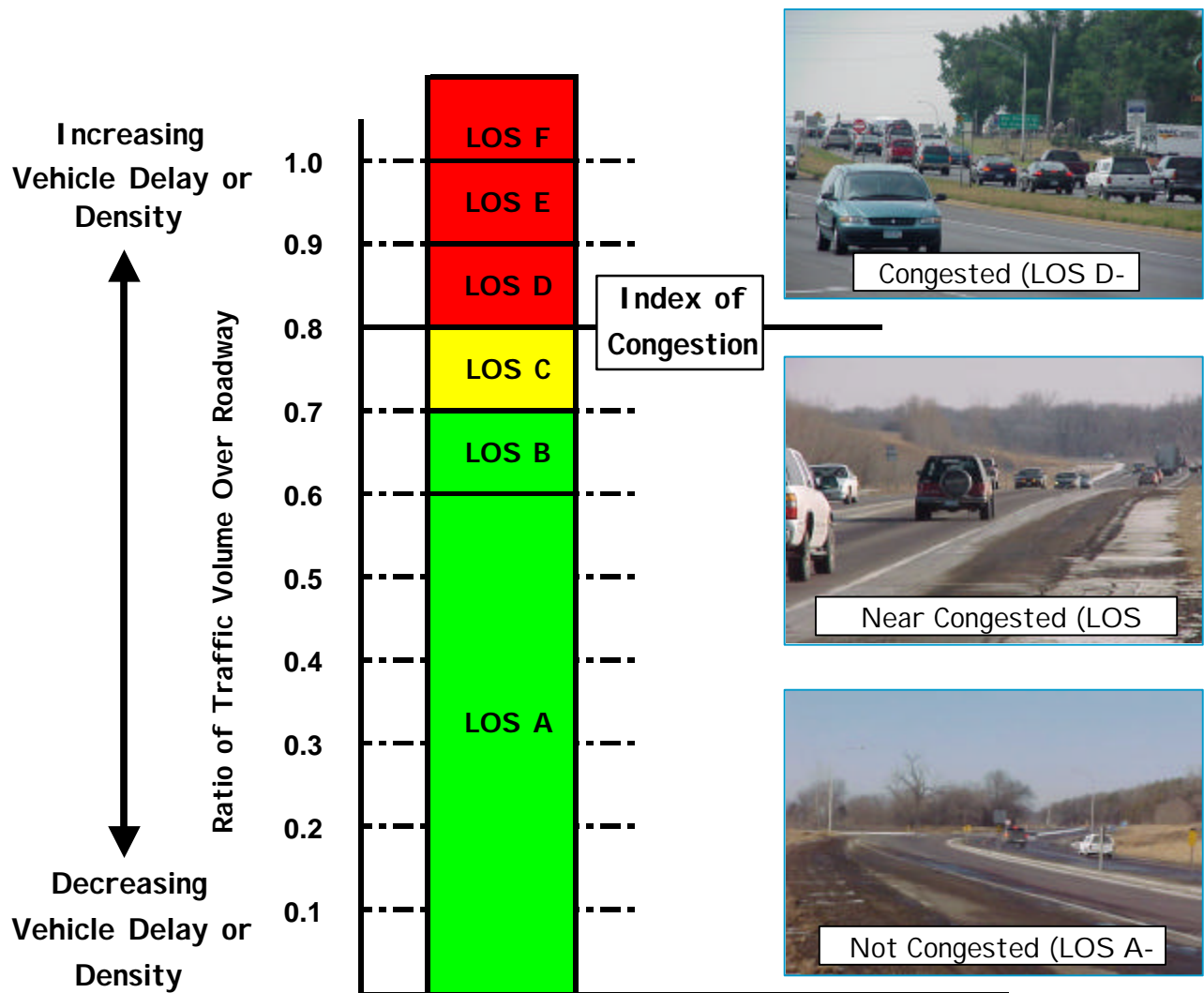
Source: Minnesota Department of Transportation

**14 West Interregional Corridor:**  
North Mankato to New Ulm

**Figure ES-4**  
Existing and Future Average Daily Traffic







**Definition of LOS:** Level-of-Service (LOS) is an Estimate of the Quality of Traffic Flow.

**Calculations**

**Based On:**

2000 Highway Capacity Manual (Transportation Research Board)

**Key Factors in**

**Determining LOS:**

1. Roadway Geometry
2. Traffic Volume Characteristics
3. Intersections / Interchanges

**LOS Used to Describe Traffic**

**Flow at or on:**

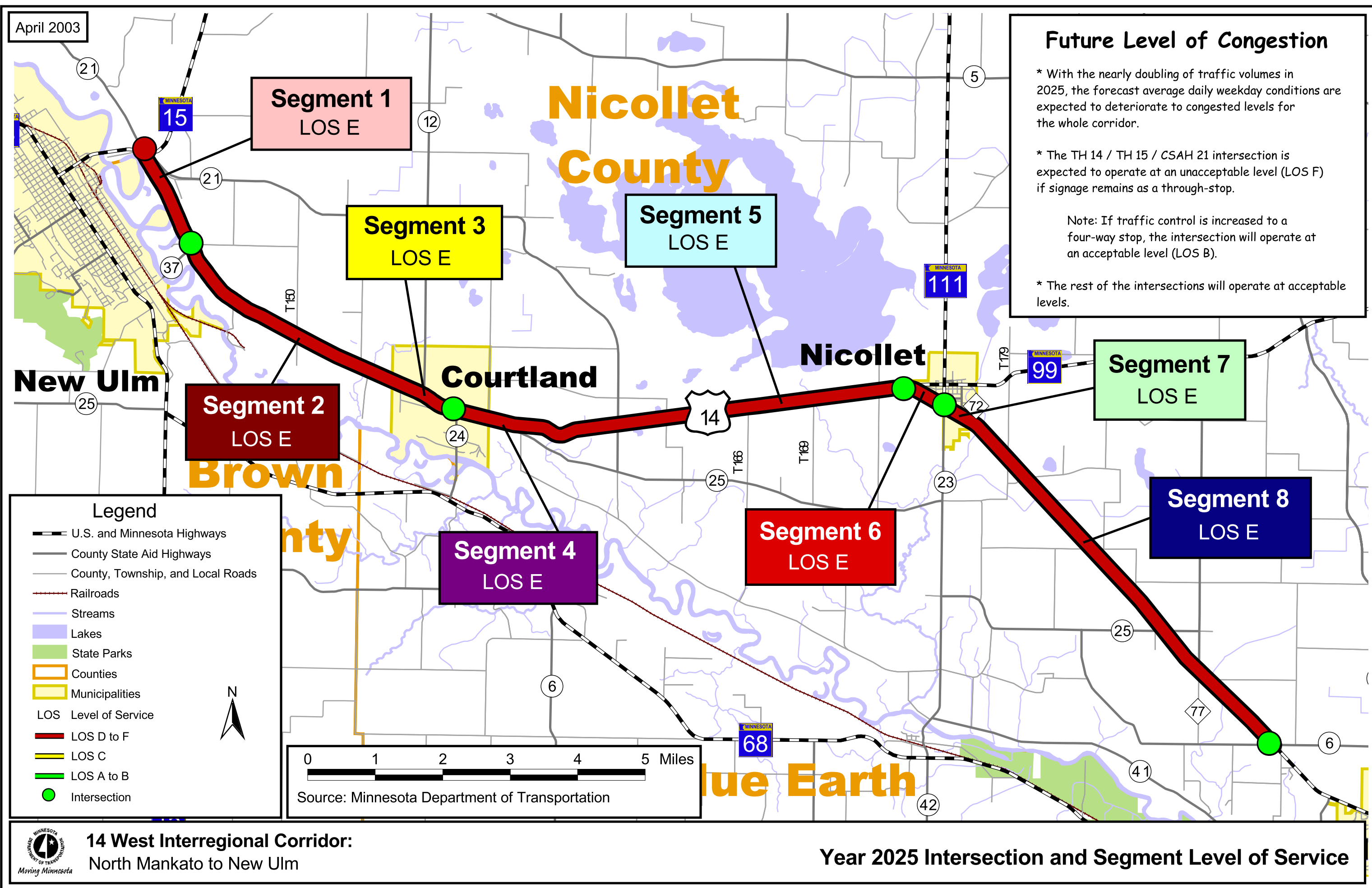
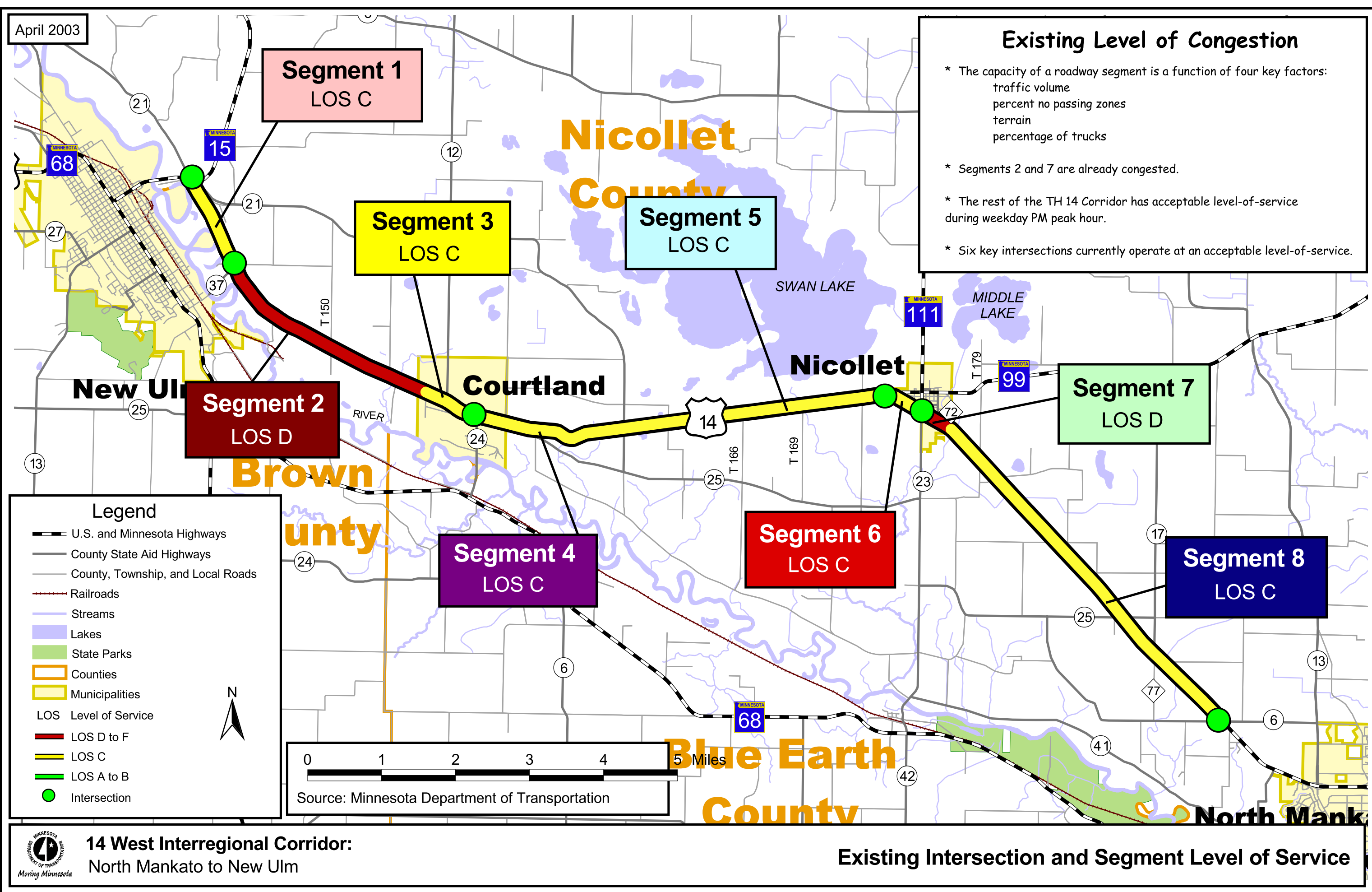
1. Segments - 2-Lane Rural Highway vs. Urban Arterial, etc...
2. Intersections - Signalized vs. Unsignalized

**Figure ES-5  
Level of Service Concept**

**Table ES-3  
Year 2000 and Future Year 2025 Segment Capacity**

Segment	Start Point (West)	End Point (East)	Typical Section	2000 ADT	2025 ADT	Existing Percent No Passing	2000 Segment LOS	2025 Segment LOS
1	TH 15 / CSAH 21	CSAH 37	2 Lane Rural	5,500	9,700	35.5%	C	E
2	CSAH 37	Zieske Road	2 Lane Rural	6,800	12,300	59.4%	D	E
3	Zieske Road	CSAH 12	2 Lane Urbanizing	6,800	12,300	0.0%	C	E
4	CSAH 12	CSAH 25	2 Lane Urban	6,500	10,400	0.0%	C	E
5	CSAH 25	TH 99	2 Lane Rural	5,300	9,400	47.5%	C	E
6	TH 99	TH 111 / CSAH 23	2 Lane Urbanizing	4,800	9,000	100.0%	C	E
7	TH 111 / CSAH 23	CR 72	2 Lane Urban	7,100	12,800	100.0%	D	E
8	CR 72	CSAH 6	2 Lane Rural	7,100	12,800	1.9%	C	E

Source: Howard R. Green Company



**14 West Interregional Corridor: North Mankato to New Ulm**

**Figure ES-6 Existing and Future Level of Service**

destination in New Ulm while less than one-half of the vehicles traveling near Courtland and Nicollet have destinations in those communities. These figures indicate the relative usage of a bypass of New Ulm would be low while the usage of bypasses of Courtland and Nicollet would be high.

**Section 3.4 – Traffic Safety:** The safety study documented crash frequencies, severity and the distribution of crash types for each major segment and intersection in the Corridor. The safety analysis identified higher than expected crash rates in the segment between TH 15 and Nicollet County Highway 37 and at three intersections – TH 15, County Highway 37 and TH 111/County Highway 23. The predominant crash types in the rural areas included single vehicle road departure and passing related with rear-end and right angle crashes in the urban areas.

## **Deficiencies in the TH 14 Corridor**

The results of the traffic operations and safety analyses were then compared to congestion and safety performance goals developed by Mn/DOT and adopted for the TH 14 Corridor by the Advisory Committee. The operational and safety objectives were defined as being above the Level of Service C/D boundary (**Figure ES-5**) and crash frequencies greater than the average for similar facilities. In addition, objectives were also developed relating to spacing and density of access to the highway and availability of passing opportunities. The traffic operations, safety, access, available passing opportunities and basic geometric characteristics for each of the eight TH 14 segments were compared to a total of thirteen identified performance objectives. The results of this effort are documented in **Figure ES-7** and summarized below:

- There are deficiencies in every segment of the Corridor.
- The rural segment between Nicollet and North Mankato (Segment 8) has the fewest deficiencies - 2 (future congestion and consistency with access spacing guidelines).
- The rural segment between TH 15 and Courtland (Segments 1 and 2) and the urban segment in Nicollet (Segment 7) have the most deficiencies - nine or ten, respectively (congestion, safety, mobility, access, passing opportunities and design issues).

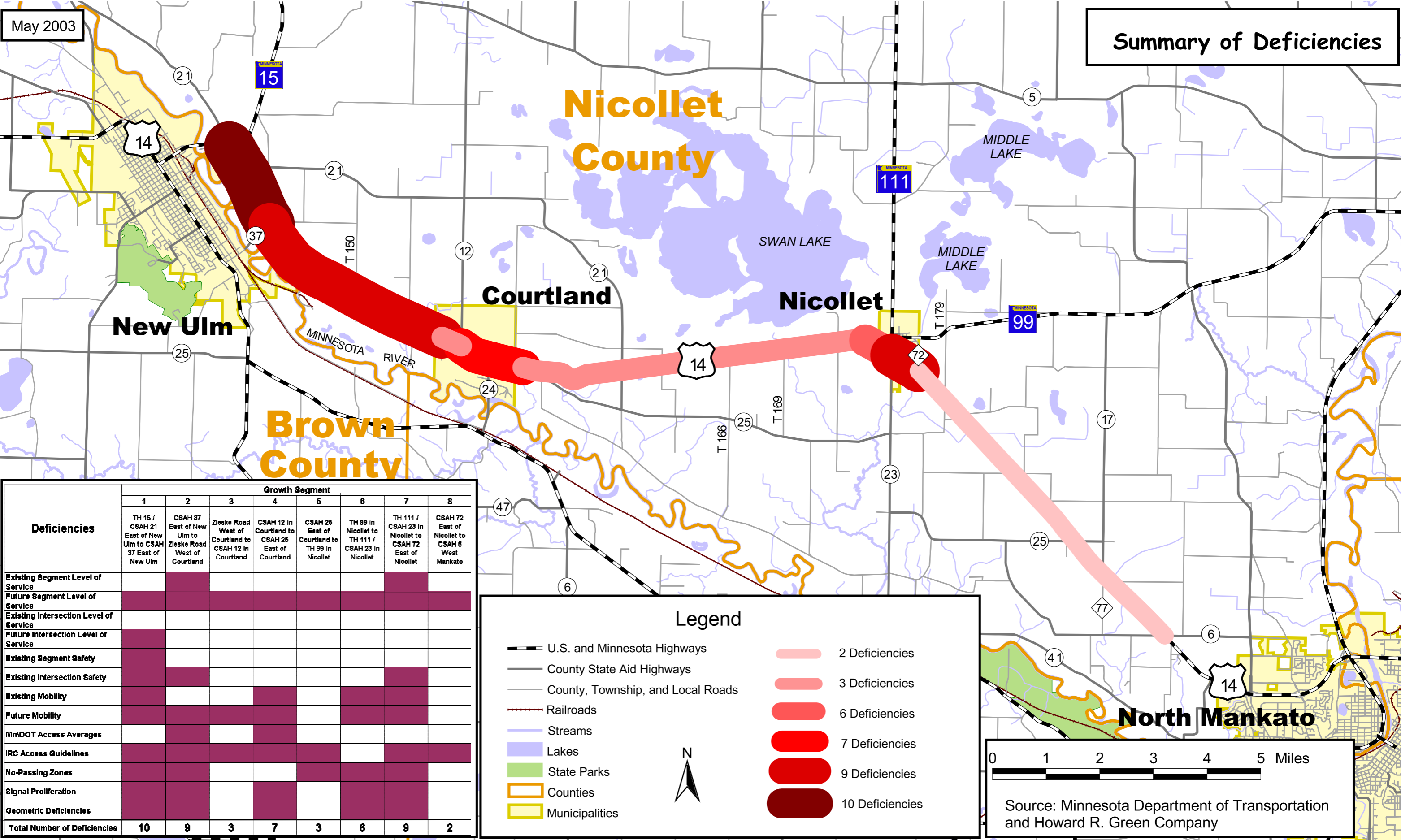
## **Development and Evaluation of Potential Improvement Strategies**

In response to concluding that there are operational, safety, access and design deficiencies in the Corridor, a variety of potential alternative improvements were developed specifically to address these needs. The process for developing these alternatives was based on input from the public, avoiding known environmental areas, consistency with local land planning efforts and consistency with Mn/DOT design guidelines (**Figure ES-8**). This process resulted in the development of two basic design alternatives, a modern two-lane facility and an expanded four-lane facility (**Figure ES-9**), and a variety of alignment alternatives including reconstruction of the existing roadway plus bypasses of Courtland and Nicollet and a new approach to the intersection with TH 15 (**Figure ES-10**).



May 2003

Summary of Deficiencies



Deficiencies	Growth Segment							
	1	2	3	4	5	6	7	8
Existing Segment Level of Service								
Future Segment Level of Service								
Existing Intersection Level of Service								
Future Intersection Level of Service								
Existing Segment Safety								
Existing Intersection Safety								
Existing Mobility								
Future Mobility								
MinDOT Access Averages								
IRC Access Guidelines								
No-Passing Zones								
Signal Proliferation								
Geometric Deficiencies								
<b>Total Number of Deficiencies</b>	<b>10</b>	<b>9</b>	<b>3</b>	<b>7</b>	<b>3</b>	<b>6</b>	<b>9</b>	<b>2</b>

**Legend**

- U.S. and Minnesota Highways
- County State Aid Highways
- County, Township, and Local Roads
- Railroads
- Streams
- Lakes
- State Parks
- Counties
- Municipalities

**Deficiency Count Legend:**

- 2 Deficiencies
- 3 Deficiencies
- 6 Deficiencies
- 7 Deficiencies
- 9 Deficiencies
- 10 Deficiencies

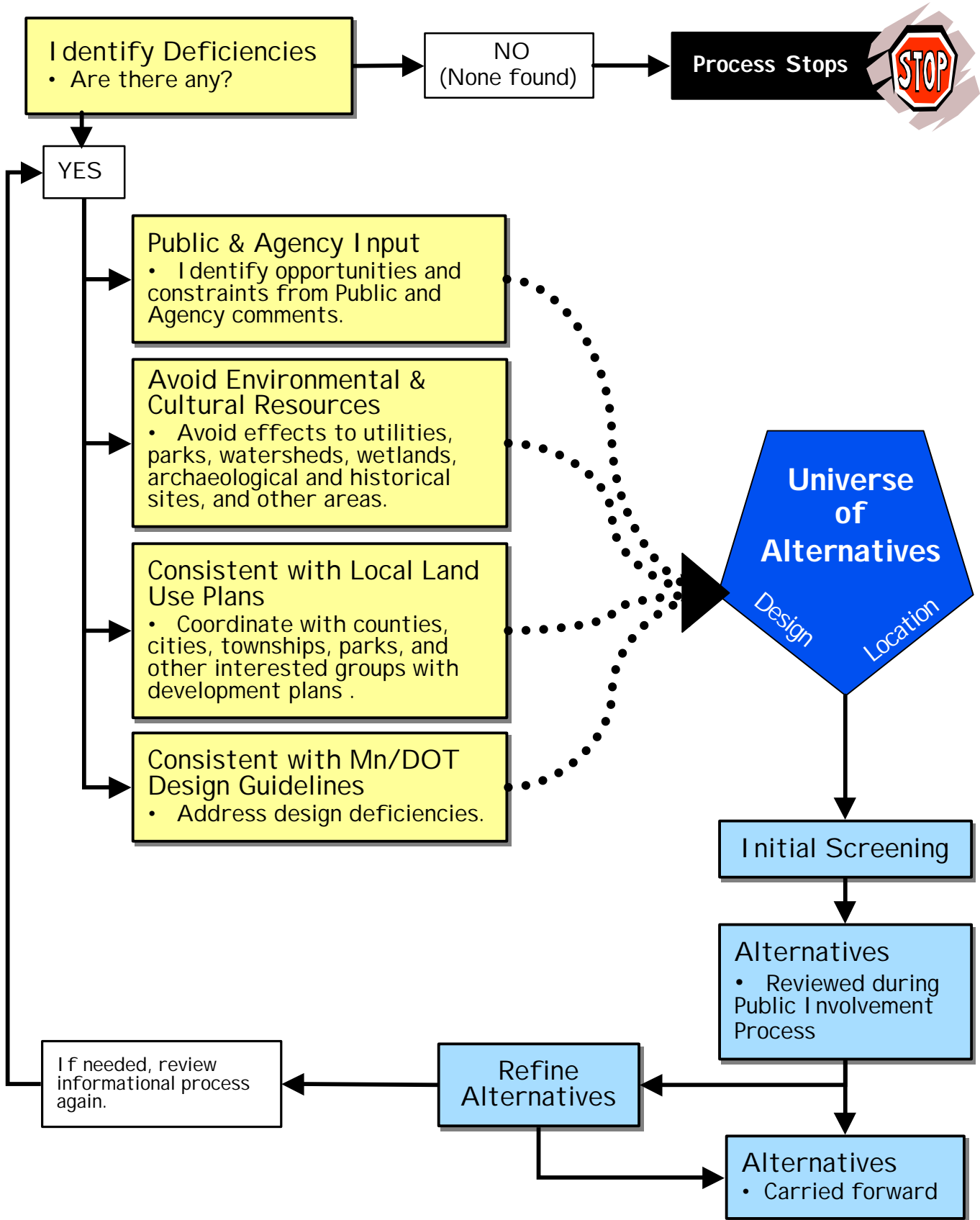


**14 West Interregional Corridor:**  
North Mankato to New Ulm

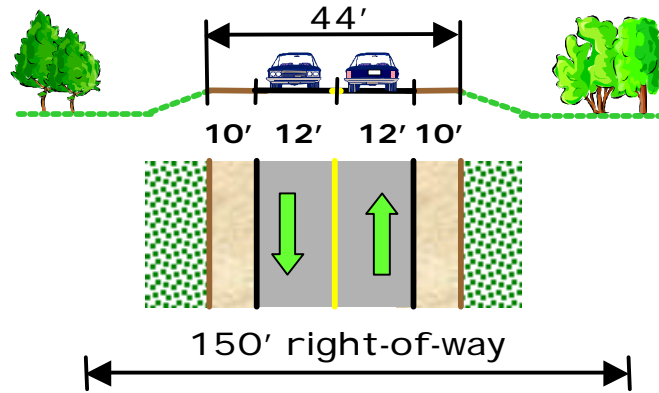
**Figure ES-7**  
**Summary of Deficiencies**



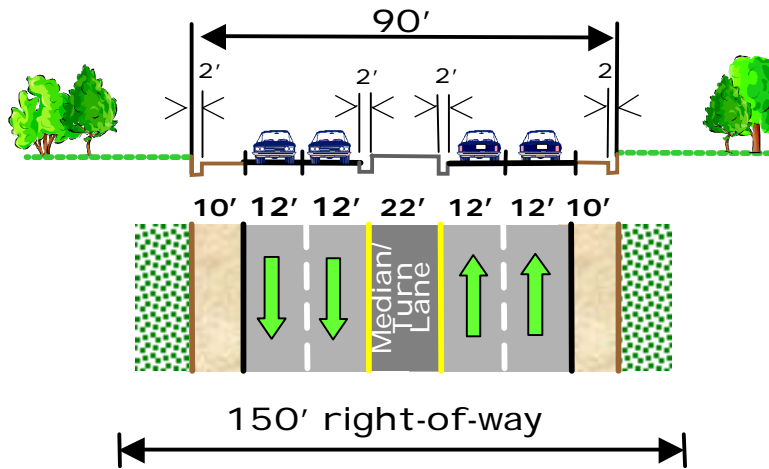
# Development of Alternatives Process



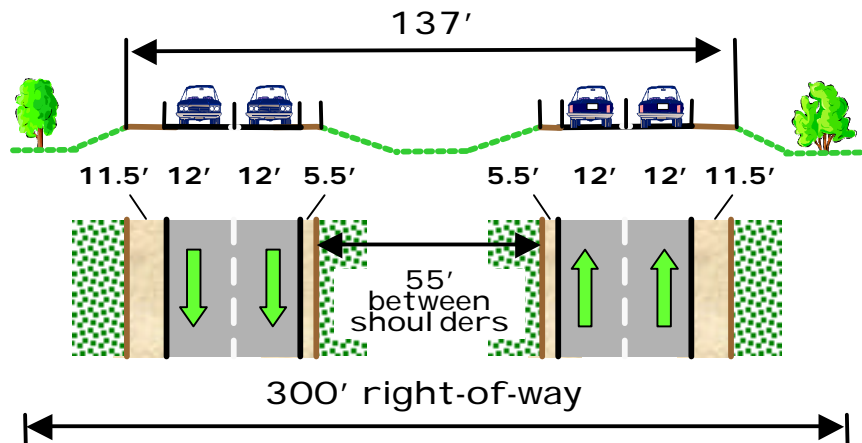
## Alternative A: Improved Two-Lane Rural Roadway



## Alternative B: Four-Lane Urban Roadway



## Alternative C: Four-Lane Rural Roadway

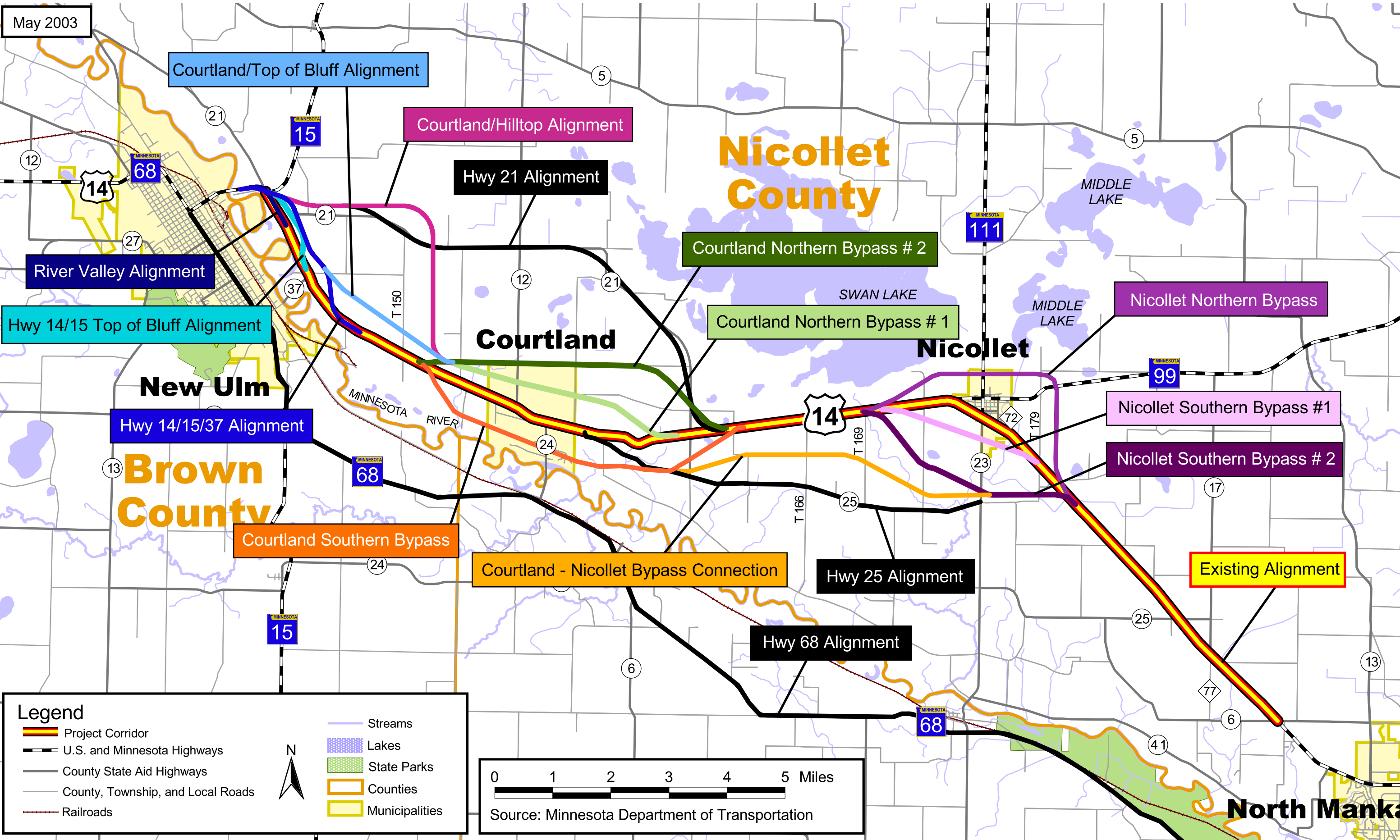


14 West Interregional Corridor:  
North Mankato to New Ulm

Not to scale

Figure ES-9  
Roadway Design  
Alternatives

May 2003



**Legend**

- Project Corridor
- U.S. and Minnesota Highways
- County State Aid Highways
- County, Township, and Local Roads
- Railroads
- Streams
- Lakes
- State Parks
- Counties
- Municipalities

North arrow pointing up.

0 1 2 3 4 5 Miles

Source: Minnesota Department of Transportation

These design and location alternatives were described and then evaluated in a Scoping Document based on the key steps in the alternatives development process – public input, environmental considerations, consistency with local land use plans and consistency with Mn/DOT corridor performance goals and design guidelines. The results of this concept level evaluation and screening of the design and location alternatives suggested that some alternatives be retained for future study because they are feasible solutions to the identified deficiencies in the Corridor and are most consistent with the established Corridor performance measures.

## **Scoping of Alternatives and Staging of Implementation**

### ***Alternatives Retained***

The Build alternatives that are recommended to be ***retained*** for future study include:

- Design Alternative: (**Figure ES-11**)
  - Expanded Four-Lane Facility
- Location Alternatives: (**Figure ES-12**)
  - Existing Alignment
  - New Approaches to TH 15 Intersection
  - North Bypass of Courtland
  - South Bypass of Nicollet

### ***Alternatives Dismissed***

The concept level evaluation also suggested that some alternatives be dismissed from further consideration because they are either not effective solutions to the identified deficiencies or are not consistent with the performance measures. The Build alternatives that are recommended to be ***dismissed*** include:

- Design Alternatives
  - Modern Two-Lane Facility
- Location Alternatives
  - Remote New Approaches to TH 15 Intersection
  - South Bypass of Courtland
  - North Bypass of Nicollet
  - Remote Highway Alignments (Highway 68 and County Highway 25)

### ***Prioritization of Projects***

Since funding limitations may not allow the entire 22-mile corridor to be constructed as one project, a prioritized implementation strategy was developed based on addressing immediate safety needs with short-term interim measures and then focusing the roadway expansion/reconstruction efforts first on the segments with the greatest documented needs as funding becomes available. This prioritization strategy results in the following implementation schedule:

- Priority #1 – Realign Approaches to TH 15 Intersection
- Priority #2 – Courtland Area
- Priority #3 – Nicollet Area
- Priority #4 – Rural Segments Between Cities

### *Interim Measures*

Since it is likely that funding for major projects will not be available for some time, it will be important to keep the corridor as safe and mobile as is reasonably possible in the interim. Measures to be taken include:

#### *Safety Mitigation*

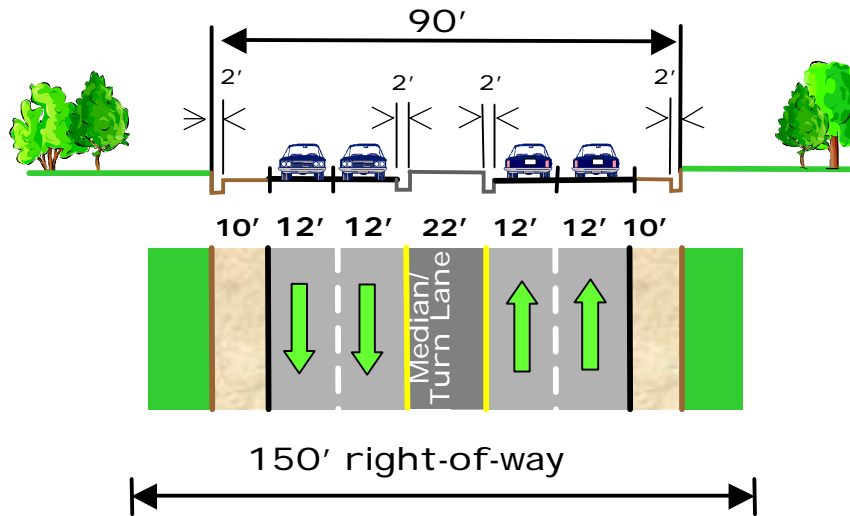
- TH 14/15 Intersection – Turn Lane and Traffic Control Modification
- TH 14/County Highway 37 Intersection – Turn Lane Modification
- TH 14/Highway 111 Intersection – Realign Minor Street Approaches
- Rural Segments – Edge Line and Center Line Rumble Strips
- Access conditions

#### *Corridor Management Strategies*

- Access Management Methods
- Corridor Preservation

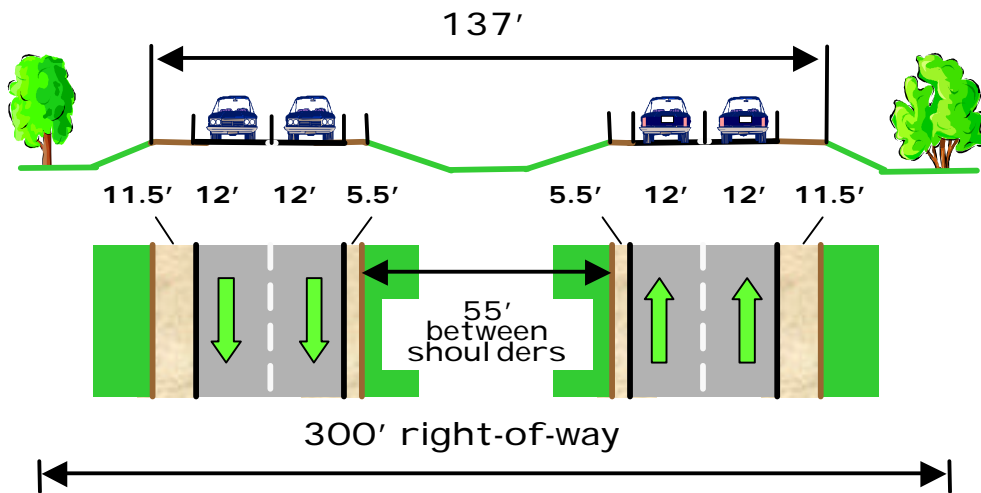


## Four-Lane Urban Roadway



# Carried Forward

## Four-Lane Rural Roadway



# Carried Forward

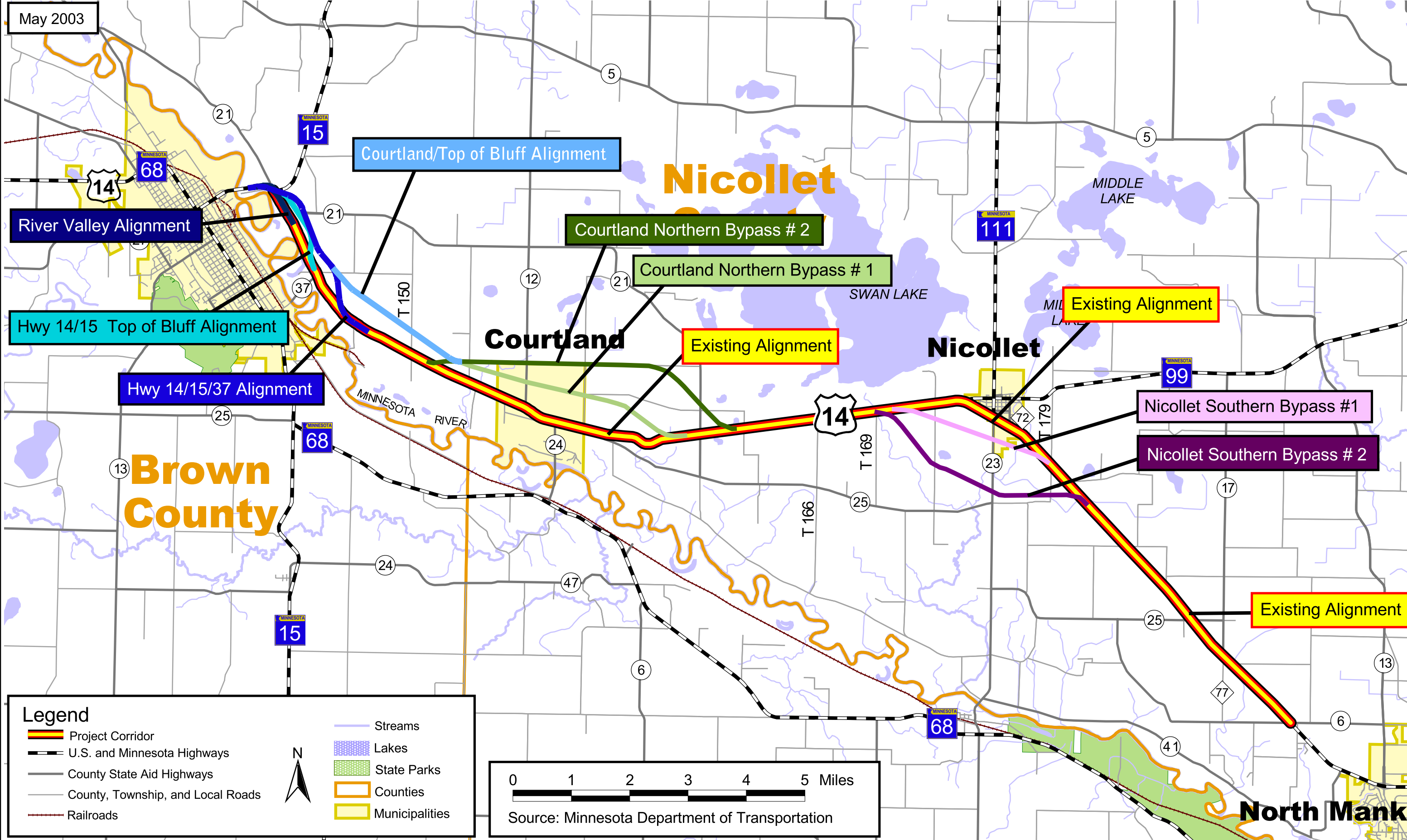


TH 14 West Interregional Corridor:  
North Mankato to New Ulm

Not to scale

**Figure ES-11**  
**Design Alternatives Retained for**  
**Further Analysis in the EIS**

May 2003



**Legend**

- Project Corridor
- U.S. and Minnesota Highways
- County State Aid Highways
- County, Township, and Local Roads
- Railroads
- Streams
- Lakes
- State Parks
- Counties
- Municipalities

0 1 2 3 4 5 Miles

Source: Minnesota Department of Transportation