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Draft Environmental Impact Statement

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FHWA-MN-EIS-90-3-D

T.H.14 from the junction of the North Mankato-Mankato Bypass and County Road 193 at the east edge of Mankato to Smiths Mill at the east Blue Earth County Line.

Minnesota Project F 007-2( )
Minnesota State Project 0702-87

Draft
Environmental Impact Statement
Submitted Pursuant to 42 U.S.C. 4332 (2) (c), 49 U.S.C. 303
and Minn. Stat., Chapt. 116D
by the
U.S. Department of Transportation,
Federal Highway Administration
and the
Minnesota Department of Transportation

Cooperating Agencies
U.S. Fish and Wildlife Service
Army Corps of Engineers
Minnesota Department of Agriculture
Minnesota Department of Natural Resources

9-6-90
Date of Approval

For Mn/DOT, E. E. Ofstead,
Assistant Commissioner of Technical Services

1-24-91
Date of Approval

For Federal Highway Administration,
Charles E. Foslien, Division Administrator

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The proposed action involves improvements to T.H.14 from the junction of the North Mankato-Mankato Bypass and County Road 193 east of Mankato, to Smiths Mill at the east Blue Earth County Line, a distance of 9.93 miles. Various location and design alternatives are discussed along with the social, economic and environmental impacts for each.

Comments on this Draft EIS are due by May 24, 1991 and should be sent to Robert P. Pecore, District Engineer; Mn/DOT; at the above address.

MAR 2 8 1991

TABLE OF CONTENTS

List of Tables **5**
List of Figures **6**
Errata **7**

SUMMARY **8**

A. PURPOSE AND NEED FOR ACTION **13**

I. The Existing Facility 13
II. Project History 13
III. Project Development 15
IV. Project Objectives 15
V. Classification and Condition 16
VI. Traffic 16
VII. Level of Service 18
VIII. Highway Capacity Analysis 18
IX. Roadway Deficiencies 19
X. Safety 21
XI. Convenience 23
XII. Summary of Purpose and Need 23

B. ALTERNATIVES INCLUDING THE PROPOSED ACTION **24**

I. Formal Scoping Process 24
II. Detailed Study Alternatives 24
A. Build Alternatives 26
B. Alternatives Eliminated from Further Consideration 27

C. AFFECTED ENVIRONMENT **31**

I. Natural Environment 31
A. Climate 31
B. Topography 31
C. Geology 31
D. Soils 31
E. Vegetation 35
F. Wildlife 35
G. Water Resources 35
H. Wetlands 38
I. Fisheries 38

II. Human Environment 41
A. General Land Use 41
B. Community of Eagle Lake 41
C. Social 41
D. Relocations 42
E. Economics 42

D. ENVIRONMENTAL CONSEQUENCES 43

I. Land Use 43
A. General Impacts 43
B. Parks and Recreation Information 43
C. Historical / Architectural Sites 43
II. Farmland Impacts 43
A. Prime and Unique Farmland 43
B. Other Federal Agricultural Programs 45
C. Mitigation 46
III. Social Impacts 46
A. General 46
B. Impacts 46
IV. Relocation Impacts 49
A. General 49
B. Residential Relocation 49
C. Business Relocation 51
D. Residential Availability 51
E. Relocation Assistance 51
V. Economic Impacts 53
A. Regional Economic Impacts 53
B. Community Business Impacts 53
C. Fiscal Impacts 54
D. Employment Opportunities 55
E. Accessibility 55
VI. Joint Development 55
VII. Considerations Relating to Pedestrians and Bicyclists 55
A. Bicycle Travel 55
B. Pedestrian Access 55
VIII. Air Quality Impacts 57
XI. Noise Impacts 57
A. Project Area 57
B. Noise Analysis Methodology 57
C. Alternatives 61
D. Mitigation 62

X. Water Quality Impacts 64
A. Surface Water Resources 64
B. Ground Water Resources 65
XI. Permits and Approvals 65
A. Federal and State 65
B. Regional and Local Approval 65
XII. Wetland and Wildlife Impacts 65
A. Wetlands 65
B. Wildlife 69
C. Comparison of Alternatives 70
D. Mitigation 70
XIII. Water Body Modification 71
XIV. Floodplain Impacts 71
XV. Wild and Scenic Rivers 73
XVI. Threatened and Endangered Species 73
XVII. Historic and Archeological Preservation 73
XVIII. Hazardous Waste 75
XIX. Vegetation: Analysis of Species Composition and Impacts 76
A. Prairie Remnants Assessment 76
B. Wetland Assessment 76
C. Woodlands Assessment 77
XX. Visual Quality 80
A. Inventory of Visual Resources 80
B. Visual Impact Assessment 83
C. Mitigation of Visual Impacts 85
XXI. Energy 86
XXII. Construction Impacts 86
A. Employment and Income 86
B. Materials/Supplies Acquisition 86
C. Other/Economic Impact 87
D. Air Quality 87
E. Construction Noise 87
F. Traffic 88
G. Pollution Control 89
H. Potential Soil Impacts 89
I. Erosion Control 89
J. Excess Material Disposal 90
XXIII. Transportation Impacts 90
XXIV. Relationship of Local Short-term Uses versus Long-term Productivity 91
XXV. Irreversible and Irretrievable Commitment of Resources 91

E. LIST OF PREPARERS 92

I. Preparers by Name, Education, Experience & Responsibility 92
II. Preparers by Subject 94

F. LIST OF AGENCIES, ORGANIZATIONS AND OFFICIALS TO WHOM COPIES OF THIS DRAFT-EIS ARE BEING SENT 95

I. Legislators 95
II. Federal Agencies 95
III. Minnesota State Agencies 95
IV. Regional, County and Local Agencies 96
V. Others 96

G. AGENCY COORDINATION AND COMMENTS 97

H. REFERENCES 98

APPENDICES 99

Appendix A. Photo Sequences 100
Appendix B. Traffic Forecasts 118
Appendix C. Correspondence 129

ABBREVIATIONS 164

INDEX 167

LIST OF TABLES

1. Comparison of project alternatives 12
2. Existing roadway characteristics from Mankato to Smiths Mill (T.H.14) 14
3. Existing and projected average daily traffic (ADT) for T.H.14 from Mankato to Smiths Mill 17
4. Level of service ratings for 70 MPH design speed 18
5. The number of lanes required in four segments of the proposed project 20
6. Accident statistics for existing T.H.14, 1986 — 1989 21
7. Accident analysis by type, driving conditions and roadway segment 22
8. Soil types associated with the proposed alternatives 34
9. Soil types of T.H.14 and the proposed alternatives: suitability of soils for construction 35
10. Wetland types according to Circular 39, USFWS 39
11. Comparison of two wetland classification systems used by USFWS 40
12. Farmland impacts: build alternatives 45
13. Predicted carbon monoxide concentrations at three selected locations 58
14. Noise measurement site locations, measured results and location 60
15. The number of receptors exceeding federal noise abatement criteria and/or state noise standards with different alternative combinations 61
16. The number of receptors where increases of 10 or more A-weighted decibels would occur upon construction 62
17. Wetland types and acreages: build alternatives 66
18. Wetland impacts: build alternatives west of Eagle Lake 67
19. Wetland impacts: build alternatives east of Eagle Lake 68
20. Comparison of total wetland impacts from combinations of alternatives 69
21. Comparison of mitigation costs for residential relocation and wetland impacts 70
22. Woodland types and acreages: build alternatives 77
23. Woodland impacts: build alternatives west of Eagle Lake 78
24. Woodland impacts: build alternatives east of Eagle Lake 79
25. Anticipated effects of construction on hours of labor, wage earnings, and expenditures for materials and supplies 87
26. Typical construction machinery noise in A-weighted decibels 89

LIST OF FIGURES

1. Project location 10
2. Study area ..... following page 10
3. Proposed alternatives ..... following page 24
4. Project development schedule ..... following page 29
5. Soil types, Mankato east ..... following page 31
6. Soil types, Eagle Lake east ..... following page 31
7. Woodlands ..... following page 35
8. Wetlands ..... following page 35
9. Eagle Lake zoning ..... following page 43
10. Relocation impacts ..... following page 49
11. Location of the Sakatah Singing Hills Trail 56
12. Air quality and noise analysis sites ..... following page 58
13. Flood Insurance Map, City of Eagle Lake 72
14. Archaeological/Historical sites ..... following page 73
15. Natural visual resources ..... following page 80
16. Cultural visual resources ..... following page 80
17. Costs on Federal Aid Highway Construction contracts 88

ERRATA

1. In Figures 2, 3, 7, 8, 10, 12, 14, 15, and 16, the map scale is incorrect. The scale given indicates that 1.2 inches on the map is equivalent to 1 mile on the ground. The correct scale is 1.5 inches on the map is equivalent to 1 mile on the ground.
2. In Figures 3, 5, 6, 7, 8, 10, 12, and 14, Alternatives B1 and B2 are indicated as having a common section at the west end of the project. Alternative W also shares a common section in this area with Alternatives B1 and B2.
3. In Figures 2, 3, 5, 6, 7, 8, 10, 12, 14, 15, and 16, the T.H.14 North Mankato-Mankato Bypass intersects County Road 193 at the northeast corner of Mankato. T.H.14 Bypass is on the map, but it is not labelled.
4. In Figures 2, 3, 5, 6, 7, 8, 10, 12, 14, 15, and 16, Trunk Highway 22 is indicated as being under construction. Construction is now complete on this section of roadway.
5. In Appendix A, Photo Sequences, Photo A1 shows the 2 bridges over County Road 193 aligned north and south. They should be aligned east and west.
6. In Appendix A, Photo Sequences, Photo A3 labels the radio towers with the station call letters of KEYC. The station call letters should be KDOG Radio and KTOE Television.

SUMMARY

SUMMARY

I. DESCRIPTION

The Federal Highway Administration (FHWA) and the Minnesota Department of Transportation (Mn/DOT) propose the improvement of Trunk Highway (T.H.) 14 between Mankato and Smiths Mill located within Blue Earth County in south central Minnesota (See Figure 1 and Figure 2 for project location and project study area). Smiths Mill is located at the Blue Earth Waseca County Line. This proposed major construction improvement is approximately ten miles in length and is a four-lane facility. The construction of this proposed project would be staged over a two year period.

II. OTHER GOVERNMENT ACTIONS

The only recent or proposed action in the T.H.14 corridor by governmental agencies germane to the T.H.14 project is the July 1988 letting of the T.H.22 Mankato Easterly Bypass Project; this was a project involving monies from the State, Blue Earth County and the City of Mankato. It was completed in 1989.

This action is discussed in the appropriate sections of this impact statement.

III. ALTERNATIVES

Alternatives considered include (a) no action, (b) two-lane reconstruction on the existing alignment, and (c) four-lane construction on new alignment in the northern portion of the corridor (See Figure 3) which includes Alternatives B1, B2 and W between Mankato and Eagle Lake, and Alternatives D, E and F between Eagle Lake and Smiths Mill. Construction on new alignment alternatives would occur the entire length of the project segment from Mankato to east of the T.H.60 junction. Safety improvements would be made under the existing alignment reconstruction alternative.

IV. SIGNIFICANT BENEFICIAL AND ADVERSE ENVIRONMENTAL IMPACTS

The proposed action would (see Table 1 for a summary of impacts):

A. Provide a substantially safer and more efficient transportation facility than now exists.

B. Provide for increased capacity and a higher level of service.

C. Displace up to 6 residences and 1 to 2 small businesses.

D. Cause the acquisition of 163 to 176 acres of prime farmland;

E. Affect between 4.1 and 21.6 acres of stream waterways and wetlands.

F. Lower noise levels within the City of Eagle Lake but increase noise levels near farmsteads (new alignment).

V. AREAS OF CONTROVERSY

Areas of controversy raised by agencies and the public include:

A. The issue of providing a two-lane versus four-lane facility on new alignment.

B. The locations of proposed intersections (If a four-lane facility is constructed).

C. The impact of the new alignments on a large wetland located between Mankato and Eagle Lake.

D. The effect of the new alignments on various historical and archaeological sites.

VI. FEDERAL PERMITS

The proposed project will require permits from the Department of the Army, Corps of Engineers, pursuant to Section 401, and Section 404 of the Federal Clean Water Act, Amendments

of 1977, et seq., for various stream and wetland impacts in the 9.93 mile project corridor.

VII. PREFERRED ALTERNATIVE

The preferred alternative combines Alternative D with one of the three western alternatives, B1, B2 or W. An interchange would be located at the intersection of the eastern terminus of the T.H.14 North Mankato-Mankato Bypass and County Road 193. The Preferred Alternative would cost from $8,750,000 to $9,050,000 depending upon the final combination selected.

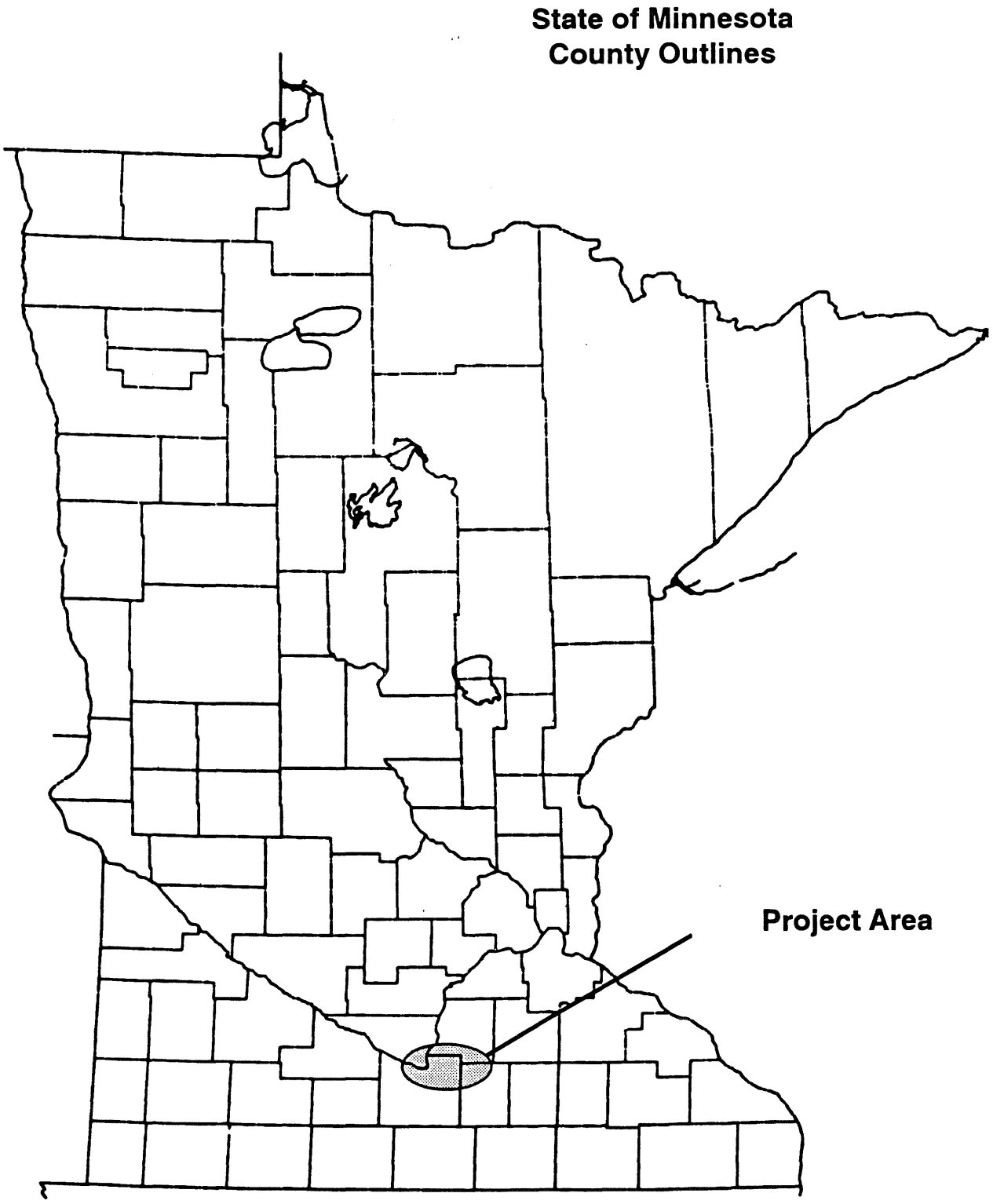
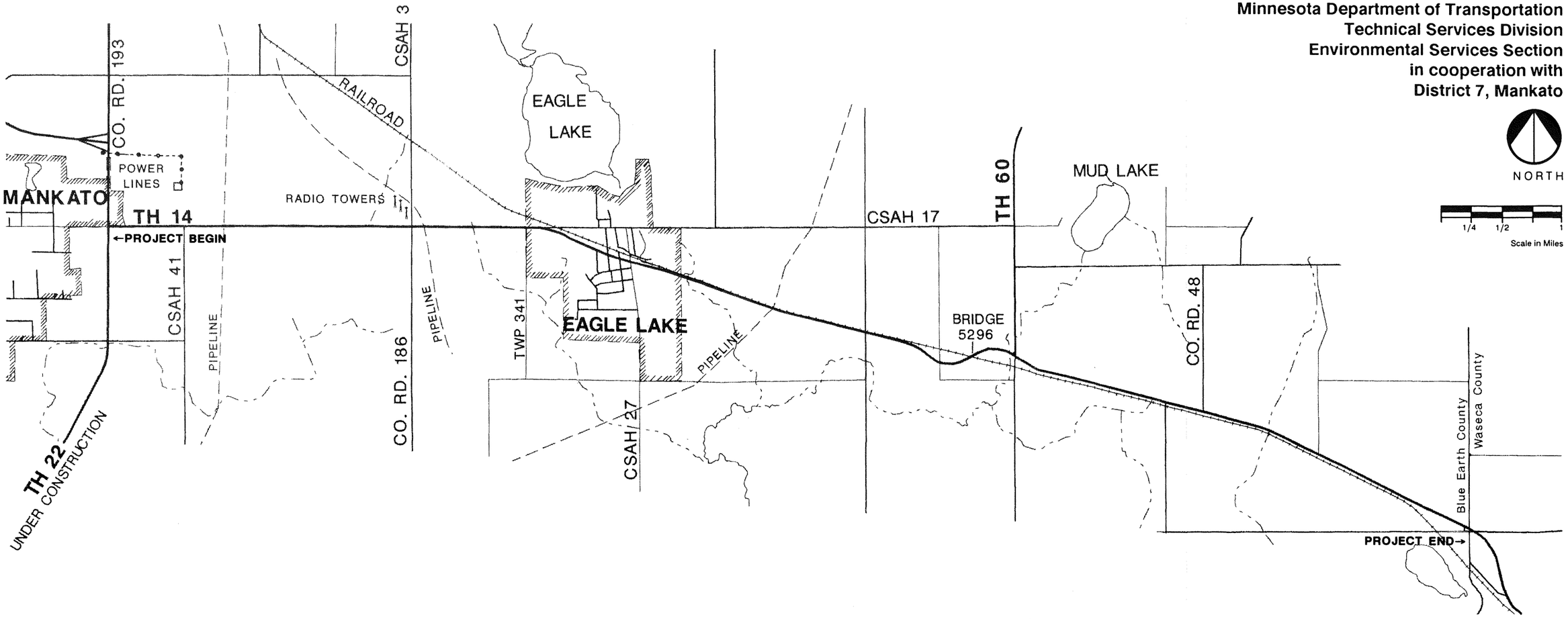


Figure 1. Project Location

TH 14

Mankato to Smith's Mill

Minnesota Department of Transportation
Technical Services Division
Environmental Services Section
in cooperation with
District 7, Mankato



Study Area
FIGURE 2

Table 1. Comparison of project alternatives[a].

Alternative	Continuity/ Alignment	Railroad Crossing	Interchanges	Wetlands	Farmland			Relocations	Cost Estimate
	Rating	Rating	Number	Acres Impacted	Total Acres	Acres Triangulated	Severed Parcels	Number	Dollars
B1	Good	Good	1	15.9	61.3	4.6	6	2	4,560,000
B2	Good	Good	1	14.1	62.1	3.2	6	2	4,560,000
W	Good	Good	1	14.7	60.0	6.4	4	3	4,860,000
D	Good	N/A	0	4.7	105.9	3.2	4	0	4,190,000
E	Good	N/A	0	5.4	101.0	9.2	7	6	5,720,000
F	Good	N/A	0	5.7	113.3	3.8	9	6	6,390,000
T.H.14 Reconst.	Poor	Poor	0	4.1	0.8	0.0	0	0	7,220,000
No Build	Poor	Poor	0	0.0	0.0	0.0	0	0	2,980,000

[a]Note: (1) *Alternatives D, E and F are possible continuations of Alternatives B1, B2 and W.*
(2) The impacts are described relative to one another, not against any project or standard.

Definition of Headings

Continuity/Alignment: Good indicates no traffic delays such as right angle turns or lane changes, as well as, rating the number and severity of curves, and how well the alignment ties in with existing T.H.14.

Railroad Crossing: Rating based on configuration of railroad bridge(s).

Interchanges: The number of interchanges to be built for each alternative (estimated cost is $1,500,000).

Wetlands: The number of acres impacted based on estimated right-of-way limits.

Farmland: Impacts based on estimated right-of-way limits, the acres of triangulation, and parcels severed.

Relocations: The number of probable relocations of businesses and/or residences.

Cost Estimate: Preliminary cost estimate is based on right-of-way acquistion, relocation estimates, severance and triangulation, the costs per mile for 4-lane construction, and for bridges and interchanges.

PURPOSE AND NEED

A. PURPOSE AND NEED FOR ACTION

I. The Existing Facility

This segment of United States Trunk Highway 14 (T.H.14) is located between Mankato and Smiths Mill, a distance of 9.93 miles. Mankato is one of the larger cities in south central Minnesota with a population of 29,743 (1985, U.S. Census). The City of Eagle Lake is located approximately in the middle of the project and has a population of 1,470. The existing facility passes through the city. Smiths Mill is a small unincorporated village without a post office and has a population of less than 50.

Minnesota Trunk Highway 60 (T.H.60) intersects T.H.14 east of the existing railroad overpass (Bridge No. 5296.) The two highways run together westerly to the junction of Minnesota Trunk Highway 169 on the north edge of Mankato. Minnesota Trunk Highway 22 (T.H.22) also coincides with a shorter segment of T.H.14 and T.H.60 on the northeast side of Mankato. T.H.14, T.H.22, T.H.60 are common with County Road 193 at the east terminus of the North Mankato-Mankato Bypass on the east edge of Mankato (see Figure 1 and Figure 2 for project locations and project area).

The existing pavement width is 24 feet with the newly widened sections constructed in 1987. The shoulder width varies from five to eight feet and the inslopes are 4:1 or steeper (see Table 2 for additional information). This segment also has substandard vertical and horizontal alignments as well as steep ditch slopes. The 1987 corrections were minor in nature and left a roadway that does not meet Tier I standards.

Prior to 1932, this segment was constructed as a gravel road. It was then paved in sections over a number of years between 1933 and 1936. Bridge No. 5296 is located 2.5 miles east of the City of Eagle Lake, crossing over the Dakota, Minnesota and Eastern Railroad (DME) tracks. These tracks formerly belonged to the Chicago and Northwestern Railroad. The bridge was constructed in 1934 but not used until 1936 when the paving of the highway had been completed. Several bituminous overlays were placed on the concrete surface during the next 40 years. In 1977, the portion of T.H.14 from Eagle Lake to the East County Line was resurfaced and turn lanes were added at the east T.H.60 junction. In 1978, the T.H.14 North Mankato-Mankato Bypass was completed and a traffic signal was installed at the junction of existing T.H.14, T.H.60, and T.H.22 on the east edge of Mankato. Most recently in 1987, the inplace 20 foot wide concrete was widened to 24 feet with bituminous widening and the entire surface was then overlayed with a bituminous overlay sufficient for a 10 year life span.

Bridge No. 5296 is a steel girder bridge with a deck 27 feet wide and a length of 160 feet (note location in Figure 2). This bridge is functionally deficient in width, and vertical and horizontal sight distances. This bridge is also a snow trap area. It has a sufficiency rating of 59.9 and has been repaired several times. The bridge is 54 years old and would require replacement within the next several years even without this project. Additional bridge information is available from the Mn/DOT Mankato District Office.

II. Project History

The preliminary planning for this project began in the mid 1960's. At that time a traffic study on the entire segment of T.H.14 from the South Dakota border to the municipality of Rochester was performed. As the result of this study, it was recommended that T.H.14 be improved to expressway standards from Sleepy Eye to Rochester. A North Mankato-Mankato Bypass was proposed and subsequent studies on this alternative were prepared. The most conclusive of these studies was the Mankato Area Transporta-

Table 2. Existing roadway characteristics from Mankato to Smiths Mill (T.H.14).

Reference Sections	Driving Lanes (Number & Width)	Shoulders (Number & Width)	Road Surface (Type)	Right of Way (feet)
T.H.14 Bypass to T.H.14/T.H.22 Intersection	4 at 12 feet	2 at 10 feet and 2 at 4 feet	Concrete with bituminous overlay	284
T.H.14/T.H.22 Intersection to end of channelization.	2 - 4 lanes at 12 feet	2 at 10 feet	Concrete with bituminous overlay	100 - 175
End of channelization to Eagle Lake.	2 lanes at 13.5 feet	2 at 5 feet	Concrete with bituminous overlay	100
In Eagle Lake.	2 lanes at 12 feet	2 at 8 - 18 feet	Concrete with bituminous overlay	100 - 250
Eagle Lake to Bridge 5296.	2 lanes at 12 feet	2 at 6.5 feet	Concrete with bituminous overlay	100 - 150
Bridge 5296.	2 lanes at 12 feet	2 at 1.5 feet	Concrete	Easement to cross RR
Bridge 5296 to East County Line.	2 lanes at 12 feet	2 at 6.5 feet	Concrete with bituminous overlay	105 - 150

tion and Planning Study (MATAPS) which is commonly referred to as a Section 701 Study. MATAPS was prepared under the Federal Urban Planning Assistance Program as authorized by the Housing Act of 1954. This study predicted higher 1988 average daily traffic (ADT) volumes on most segments of T.H.14 than the earlier traffic study and reached a major conclusion that the proposed T.H.14 North Mankato-Mankato Bypass should be built to freeway standards. MATAPS also presumed that T.H.14 would be constructed on new alignment to expressway standards east of the bypass.

A public hearing was held on March 7, 1968 to consider alternative alignments for T.H.14 from the west corporate limits of North Mankato to the east T.H.60 junction and T.H.14 (locally

known as the "Nine Mile Corner"). The preferred location for T.H.14 east of the bypass was Alternatives A and D. (See the alternatives section, Alternative A was eliminated in the Scoping Decision Document). At the time of this hearing, the only proposed interchange was to be at the junction of the North Mankato-Mankato Bypass and County Road 193. At-grade crossings were proposed at the west edge of Eagle Lake and at the E. Jct. of T.H.60. These crossings were to be upgraded to diamond interchanges at a later date. Also, Bridges were proposed over the DME Railroad (then Chicago and Northwestern Railroad) and CSAH 17. The bridge at CSAH 17 was to be upgraded to an interchange sometime in the future.

In April of 1971, a design public hearing was held. The proposal presented at this hearing suggested freeway standards on T.H.14 North Mankato-Mankato Bypass project and expressway standards from the bypass to T.H.60 easterly of Eagle Lake. At-grade crossings were proposed at CSAH 3, Eagle Lake, CSAH 17 and the east T.H.60 junction. A proposed interchange at the east T.H.60 junction was to be constructed at a future time. Several people at this hearing (including the Mayor of Eagle Lake) requested that serious consideration be given to constructing an interchange at the west edge of Eagle Lake. Several letters to this effect were received by Mn/DOT during the comment period after this hearing.

In November of 1973, a freeway design was proposed for the T.H.14 North Mankato-Mankato Bypass project and a draft EIS, which included information about the T.H.14 Major Improvement Project, was begun. Two parcels of land located within the T.H.14 Major Improvement segment were acquired based on hardship requests. In addition, a 284 foot wide strip of right of way was acquired from the junction of the North Mankato-Mankato Bypass and County Road 193 to the center of Section 11, a distance of one and a half miles.

After subsequent studies and the preparation of an EIS, the North Mankato-Mankato Bypass was constructed to freeway standards (1973-1979). Due to a lack of funding, the remaining segment of the T.H.14 Major Improvement project was deferred until 1984 when Mn/DOT management authorized the resumption of project development activities.

III. Project Development

The project development process and the project status are depicted in Figure 4. Since 1984, the project has undergone planning and preliminary design through the following stages:

July 2, 1987	Scoping Document completed
August 24, 1987	Agency Meeting*
August 27, 1987	Public Scoping Meeting*
September 4, 1987	Agency Field Review*
February 26, 1988	Scoping Decision Document completed
March 1988	Draft EIS started
May 20, 1988	Form AD 1006 completed (Farmland Impacts)
July 1, 1988	Traffic Forecast completed
August 26, 1988	FHWA Coordination*
September 1988	Noise Analysis completed (60/40 Traffic Split)
November 1989	Noise Analysis completed (80/20 Traffic Split)
January 1990	Preliminary Draft EIS review by agencies*

* Interagency coordination.

IV. Project Objectives

The objectives of the proposed project are to:

1. Improve traffic safety, capacity and convenience of a currently substandard roadway:

a. Provide an operating level of service (LOS) B during the design hour, which is the 30th highest hour.

b. Reduce the number of personal injury and property damage accidents

c. Reduce the number of turning conflicts (left turns from a two-lane roadway with no turn lanes.)

d. Improve the safety of the intersection of CSAH 17 and T.H.14.

e. Improve the safety at the railroad crossing by relocating Bridge No. 5296 and eliminating the in-place bridge.

f. Provide a high level of motorist comfort and convenience along the entire length of the project.

2. Respond to the many requests received from legislators, local government units, highway improvement organizations, and the general citizenry for improvement of this segment of T.H.14 , and to respond to the Regional Development Commission's number two priority for highway improvements in Region 9.

a. Extend the existing four-lane expressway (T.H.14 Bypass) to a logical terminus.

b. Stimulate and support business expansion and long term economic growth in the region by investing in transportation facility improvements.

3. Provide a needed high-level traffic route serving Mankato and the surrounding area to and from the east:

a. Provide a safe and efficient roadway while minimizing adverse social, economic and environmental impacts.

b. Safely accommodate bicycle and pedestrian traffic in the rural area.

4. Improve conditions within the City of Eagle Lake by reducing social impacts of inplace T.H.14 to the community.

a. Move traffic from the main part of the community to an area that is less populated. thereby making local travel easier and safer for pedestrians, bicyclists, and mobility impared citizens.

b. Reduce conflicts between local and through traffic.

c. Increase social cohesion by eliminating any barrier effect associated with the inplace facility.

V. Classification and Condition

T.H.14 is functionally classified as a principal arterial and should be constructed to Mn/DOT Tier I standards. This highway serves as a major east-west route across southern Minnesota from Wisconsin to South Dakota linking such cities as Winona, Rochester, Owatonna, Janesville, Mankato, New Ulm, Sleepy Eye, Springfield, and Tracy. T.H.14 also provides westerly linkage to the major north-south Interstate Highway in Minnesota (I-35).

Condition rating, which is a measure of rideability and structural integrity of the roadway, has a range of 0.0 to 4.5 with 4.5 being the best. The condition rating of the segment of T.H.14 from Mankato to Smiths Mill was 2.3 in 1984 before the 1987 maintenance overlay; these improvements raised the average condition rating to 3.0 in 1989. However, the rating ranges from 2.4 (Eagle Lake to the Junction of T.H.60, to 3.9 at the west edge of the proposed project. This compares to a statewide average of 3.2. Sufficiency rating, which is a measure of condition, safety and service of the roadway, has a range of 0.0 to 100.0 with 100.0 being the best. The sufficiency rating of this road was 47.4 in 1990. This compares to a statewide average of 76.0.

VI. Traffic

A traffic forecast for this project has been prepared by the Mn/DOT traffic forecasts unit (refer to Appendix B). In addition, a traffic count was performed by the District 7 Traffic Section to determine the peak hour directional split of 80/20.

Table 3. Existing and projected average daily traffic (ADT) for T.H.14 from Mankato to Smiths Mill at the Blue Earth/Waseca County Line.

Alternative/Reference Section	Existing ADT[a]	1992 ADT	2012 ADT
No Build or T.H.14 Reconst.			
T.H.14 Bypass to CSAH 3 N.	11,600		22,230
CSAH 3 N. to CSAH 17.	10,400		17,575
CSAH 17 to CSAH 27 S.	10,400		10,200
CSAH 27 S. to E. Jct. T.H.60.	5,650		7,165
E. Jct. T.H.60 to Smiths Mill.	4,000		7,080
CSAH17 E. of Eagle Lake.	2,700		5,410
Alternative D with B1, B2, or W[b]			
T.H.14 Bypass to CSAH 3.		7,140	11,595
CSAH 3 to W. Eagle Lake Intersection.		6,865	11,265
W. Eagle Lake Intersection to E. Eagle Lake Intersection.		5,985	10,165
E. Eagle Lake Intersection to E. Jct. T.H.60.		4,815	7,165
E. Jct. T.H.60 to Smiths Mill.		4,755	7,080
CSAH 17 E. of Eagle Lake.		3,485	5,410
Alternatives E & F with B1, B2, or W[b]			
T.H.14 Bypass to CSAH 3.		7,140	11,595
CSAH 3 to W. Eagle Lake Intersection.		6,865	11,265
W. Eagle Lake Intersection to E. Eagle Lake Intersection.		5,985	10,165
E. Eagle Lake Intersection to E. Jct. T.H.60.		8,300	12,575
E. Jct. T.H.60 to Smiths Mill.		4,755	7,080

[a] Measured in 1986.

[b] The analysis is the same with an intersection at TWP 341 or with CSAH 17.

The 1986 Average Daily Traffic (ADT) and projected ADT's for 1992 and 2012 are depicted in Table 3 for existing T.H.14 as well as the proposed alignments. The 1986 ADT's range between 4,000 and 11,600 along T.H.14 from Mankato to Smiths Mill (statewide ADT for all rural Trunk Highways is 1,759). The projected ADT for the preferred Alternative (D + B1, B2, orW) in the year 2012 ranges from 7,080 to 11,595. This is contrasted to the No-Build alternative where traffic is predicted to range from 7,080 to 22,230 in the year 2012. These projections are conservative when compared to recent projections prepared by the City of Mankato for commercial and light industrial development near the end of the existing T.H.14 Bypass (Mankato Regional Mall, 1989; Eastwood Industrial Center, 1990).

Table 4. Level of service ratings for 70 MPH design speed as they relate to density, average travel speed, volume to capacity ratio, and the maximum service flow rate (MSF)[a].

Level of Service	Density (pc/mi/ln)	Speed (mph)	v/c	MSF (pc/h/ln)[b]
A	≤ 12	≥ 60	0.35	700
B	≤ 20	≥ 57	0.54	1,100
C	≤ 30	≥ 54	0.77	1,550
D	≤ 42	≥ 46	0.93	1,850
E	≤ 67	≥ 30	1.00	2,000
F	> 67	≤ 30	*	*

[a] Excerpted from the "Highway Capacity Manual," Table 3-1, (1985).
[b] Rounded to the nearest 50 passenger cars per hour.
* Highly variable, unstable.
Abreviations: pc = passenger cars; mi = mile; ln = lane; v = volume; h = hour; c = capacity.
Notes:
(1). MSF is defined as the number of vehicles per lane passing a given point for a given 15 minute period during the day.
(2). Capacity under ideal conditions is 2000 cars per lane per hour.

VII. Level of Service

The traffic carrying ability of a road is measured by the "Level of Service" it provides under design hour traffic conditions. As such, it is a qualitative estimation of the maximum amount of traffic that can be accommodated by a road. The Level of Service (LOS) of a highway is rated as follows:

1. LOS A Free traffic flows with no restrictions on ability to select speed or lane.
2. LOS B Stable traffic flows with reasonable freedom to select speed and lane.
3. LOS C Stable traffic flows with some restrictions on speed and lane selection.
4. LOS D Approaches unstable flow with little freedom to maneuver.
5. LOS E Flow is unstable and there may be stoppages of momentary duration.
6. LOS F Stop-and-go traffic flow with highly unstable and unpredictable operations.

For a trunk highway constructed to a 70 mile per hour design speed such as proposed T.H.14 would be, Table 4 examines LOS as it relates to passenger car density, speed, the ratio of volume to capacity and the maximum service flow.

Rural trunk highways are normally designed to operate at a LOS B while urban highways are designed to operate at a LOS C. The existing level of service on this segment of T.H.14 is C. This LOS will continue to deteriorate with increasing traffic, and with no improvement. By the year 2012, with no improvements, a LOS E is projected between Mankato and Eagle Lake.

VIII. Highway Capacity Analysis

A complete Highway Capacity Analysis using Chapters 7 and 8 of the "Highway Capacity

Manual", TRB (1985), was performed for this segment of T.H.14 (analysis worksheets are available from the Mn/DOT Mankato District Office). This analysis estimates the maximum amount of traffic that can be accommodated by a road while maintaining defined operational conditions represented by "level of service" and uses the following factors in the analysis:

1. Terrain: The terrain between Mankato and Eagle Lake was classified as level. The terrain between Eagle Lake and the E. Jct. of T.H.60 was classified as rolling.
2. Per Cent No Passing: The District Traffic Engineer has determined that 52 percent of existing T.H.14 in the project area is marked for no passing.
3. Directional Split: The directional split obtained from the traffic count performed by the District 7 Traffic Section. During the morning and evening peak traffic flow periods, 80 percent of the traffic is going in one direction and 20 percent in the opposite direction (80/20).
4. Design Volume: The design volume is the 30th highest forecasted one hour traffic volume in a one year period.
5. Percent Trucks: The percentage of trucks ranged from 12.3 between Mankato and Eagle Lake to 14.0 between Eagle Lake and the E. Jct. of T.H.60 (no recreational vehicles were included because actual data are not available and the analysis is more conservative using trucks alone.)
6. Design Year: The design year is 20 years from the construction of the facility or, in this case, the year 2012.

A summary of the results of the highway capacity analysis is shown in Table 5 which indicates the number of lanes needed in each direction to maintain a LOS B through the year 2012. If the number is greater than 1.0, two lanes are required in each direction. The results of the highway capacity analysis suggest that four lanes are needed from the T.H. 14 Bypass to the east edge of Eagle Lake no matter which combination of the build alternatives is selected. If Alternative D is chosen as the eastern alternative less than four lanes would be required for capacity to maintain LOS B. If Alternatives E or F are chosen as the eastern alternatives, four lanes would be required to handle the additional traffic traveling west from T.H.60 on CSAH 17. If only one lane in each direction is constructed over the length of the project, a reduced level of service is projected by the year 2012 and this is undesirable. For example, according to the traffic forecast, the projected ADT for the year 2012 on the proposed new alignments ranges from 7,080 to 12,575 (Table 3). With this amount of projected traffic a LOS B cannot be maintained without constructing a four-lane facility.

If Alternative D is chosen, the current plan is to construct the transition from four lanes to two lanes just east of the east T.H.14/T.H.60 junction. There is insufficient room on the north east corner of Eagle Lake to construct a transition from four lanes to two lanes because of the proposed curves, the intersection with CSAH 17, the Eagle Lake Cemetary, and the wetland southwest of the cemetary (see Figure 8, WET 10). Safety considerations are also involved. This section has a high accident rate during daylight driving conditions when visibility is impared by rain, snow, sleet, fog or blowing dust.

IX. Summary of Roadway Deficiencies

This segment of existing T.H.14 is substandard in the following respects:

1. The existing two-lane roadway, from Mankato to the E. Jct. of T.H.60 has insufficient capacity to maintain a level of service B for projected traffic volumes in the year 2012.
2. The existing level of service on T.H.14 is C. This will continue to deteriorate. By the Year 2012 with no improvement, a level of service approaching E is projected between Mankato and Eagle Lake and a level of service C is projected between Eagle Lake and E. Jct. of T.H.60.
3. Previous major improvements to T.H.14 terminated at County Road 193 (T.H.22)

Table 5. The number of lanes required in each direction in four segments of the proposed project based on a level of service "B". Possible combinations of western and eastern alternatives are given.

Number of Lanes	Project Segment	Alternatives[ab]
1.16	T.H.14 Bypass to CSAH 3	B2 or W + D
1.16	"	B1 + D
1.16	"	B2 or W + E or F
1.16	"	B1 + E or F
1.12	CSAH 3 to W. Eagle Lake	B2 or W + D
1.12	"	B1 + D
1.12	"	B2 or W + E or F
1.12	"	B1 + E or F
1.04	W. Eagle Lake to E. Eagle Lake	B2 or W + D
1.04	"	B1 + D
1.04	"	B2 or W + E or F
1.04	"	B1 + E or F
0.93	E. Eagle Lake to E. Jct T.H.60	B2 or W + D
0.93	"	B1 + D
1.71	"	B2 or W + E or F
1.71	"	B1 + E or F

[a] With B2 or W, the intersection would connect to Township Road 341.
[b] With B1, the intersection would connect to CSAH 17.

leaving two right angle jogs in the existing alignment to reach the North Mankato-Mankato Bypass or existing T.H.14. These jogs cause delays, interference and lane changes for through traffic. Traffic delays are also caused by the traffic signal at the W. Jct. of T.H.14, T.H.60 and the new T.H.22 connection.

4. A large number of conflicting turning movements occur between Mankato and Eagle Lake due to the increased retail and commercial activity along T.H.14, and because T.H.14 is the principal route leading to residential properties in the area.
5. Substandard vertical and horizontal alignments and steep ditch slopes exist along this segment of T.H.14. Bridge No. 5296 is narrow, only 27 feet wide, and it has poor horizontal and vertical sight distances.
6. The existing shoulder width varies from five to ten feet (Table 2).
7. The 1989 condition rating ranges from 2.4 (Eagle Lake to the Junction of T.H.60) to 3.9 at the west edge of the proposed project. The average condition rating on the entire segment of existing highway is 3.0. This compares to a statewide average of 3.2. The

Table 6. Accident statistics for existing T.H. 14, 1986 — 1989. The numbers of accidents, types and accident rates are given for four different roadway segments.

Segment	Accidents	Accident Type[1]			Segment Length[2]	AADT[3]	Accident Rate[4]
		Fatal	Injury	Damage			
T.H.14 Bypass to West Eagle Lake	108	1	30	77	3.12	11,000	2.0
in Eagle Lake	25	1	7	17	0.83	10,400	2.9
E. Eagle Lake to T.H.60 Junct.	30	0	5	25	2.56	5,650	1.6
T.H.60 Junct. to Smiths Mill	14	0	4	10	3.25	4,000	0.7

[1] Fatalities, Personal Injury, Property Damage
[2] Miles
[3] Annual Average Daily Traffic
[4] Accidents per Million Vehicle Miles

sufficiency rating of this road was 47.4 in 1990. This compares to a statewide average of 76.0.

8. The 1986 to 1989 accident rate was 2.0 accidents per million vehicle miles of travel (acc/mvm). This is above the 1989 statewide average of 1.4 acc/mvm for similar roadways. In the vicinity of Bridge No. 5296, the accident rate was 4.6 acc/mvm.

X. Safety

A four-lane facility reduces the number of conflicts between opposing traffic which in turn reduces the number of head-on collisions. It also reduces the severity and number of accidents because there is more room for avoidance maneuvers. Further, increased passing opportunities reduce driver frustrations and they are less likely to take chances. Both a four-lane facility and an improved two-lane facility will reduce the number of rear-end accidents. Run-off-the-road accidents will occur in any facility. However, their severity would be reduced in either an improved two-lane facility or a four-lane facility because of safer design.

An analysis of accident statistics for T.H.14 from the end of the T.H.14 Mankato Bypass to Smiths Mill and comparisons to statewide average accident rates, indicate that there are safety problems associated with the inplace facility (Table 6) where T.H.14 is broken into four segments. The three segments west of the east T.H.60 junction have accident rates in excess of the 1989 statewide average for rural two-lane roadways (1.4 accidents per million vehicle miles). For example, the segment from the T.H.14 North Mankato-Mankato Bypass to the east edge of the City of Eagle Lake is 1.4 times the statewide average; the short segment within the City of Eagle Lake is 2.1 times the statewide average; and the segment from the east edge of Eagle Lake to T.H.60 is 1.1 times the statewide average; at Bridge No. 5296 the accident rate is 3.3 times the statewide average. East of the east T.H.60 junction, the accident rate is one-half of the statewide average. Fatalities have occurred within Eagle Lake and in the segment west of Eagle Lake (1986 — 1989). Seventy-three percent of the accidents involve property damage only; 26 percent involve injury and property damage.

Table 7. Accident analysis for existing T.H.14. Two collision types and four types of driving conditions are considered. Data are for four different roadway segments, 1986 — 1989.

Segment	Collision Types[1]		Accident Percentages, Four Conditions[2]			
	Head-on (percent)	Rear-end (percent)	Daylight		Night	
			Clear	Obsc.	Clear	Obsc.
T.H. Bypass to West Eagle Lake	9	70	54	13	16	3
In Eagle Lake	12	88	72	0	4	4
E. Eagle Lake to T.H.60 Junct.	30	37	23	40	7	10
T.H.60 Junct. to Smiths Mill	14	7	36	14	50	0

[1] These two types of collisions often result in serious injury and property damage. Other collision types are not included. Numbers do not add up to 100 percent.

[2] Driving conditions during daylight and darkness when visibility was clear, or impaired by rain, snow, sleet, fog, or blowing dust. Accidents occurring under other conditions were not included. Numbers do not add up to 100 percent.

Further analysis of the accident statistics indicates differences in types of accidents occurring within the different segments as well as differences attributable to driving conditions within the segments (Table 7).

1. From the T.H.14 North Mankato-Mankato Bypass to the west edge of Eagle Lake 70 percent of the accidents are rear-end collisions. Only 9 percent are head-on collisions. Most of the accidents (54 percent) occurred during daylight with clear driving conditions and 16 percent occurred at night under clear conditions. Thirteen percent occurred during daylight when visibility was impaired by rain, snow, sleet, fog, or blowing dust; only 3 percent occurred after dark under these conditions.
2. Within the City of Eagle Lake, 88 percent of the accidents are rear-end collisions and 12 percent are head-on collisions. Seventy-two percent of the accidents occurred during daylight and clear conditions. Impaired visibility was not a factor. Four percent occurred after dark under clear conditions and four percent occurred after dark under conditions of impaired visibility.
3. In the segment from the east edge of Eagle Lake to the east T.H.60 junction, the percentages of head-on and rear-end collisions are more equal, 30 and 37 percent respectively. However, only 23 percent of the accidents occurred during clear daylight driving conditions, while 40 percent occurred under impaired daylight driving conditions. Seven percent occurred during darkness under clear driving conditions and 10 percent occurred under impaired driving conditions. Eighty-one percent of the accidents occuring in the 0.5 mile segment around Bridge No. 5296 occurred under conditions of impaired visibility. Almost all were under daylight driving conditions.
4. In the roadway segment from the east T.H.60 junction to Smiths Mill, head-on collisions are twice as frequent as rear-end collisions but the two types only account for about 20 percent of the total accidents. Thirty-six percent of the accidents occurred under clear daylight driving conditions and fourteen percent occurred under daylight

driving conditions with impaired visibility. Fifty percent of the accidents occurred under clear night time driving conditions; there were no accidents after dark when visibility was impaired.

This analysis suggests that drivers are subjected to different risks while traveling on existing T.H.14 from the T.H.14 North Mankato-Mankato Bypass to Smiths Mill. In the City of Eagle Lake and near the City of Mankato, they are more likely to be involved in a rear-end collision than any other type of accident, and this is under good daylight driving conditions. East of Eagle Lake to the east T.H.60 junction, they are more likely to be involved in accidents when driving visibility is impaired by rain, snow, sleet, fog, or blowing dust. East of T.H.60, they are more likely to be involved in accidents after dark.

A new roadway would substantially reduce these risks because of safer design features. For example, the construction of an expressway from the end of the T.H.14 Bypass to the east T.H.60 junction should further reduce the number of accidents occurring in the T.H.14 corridor. This is anticipated because the statewide average accident rate for rural expressways is less than the accident rate on most segments of existing T.H.14. The reconstruction of T.H.14 on existing alignment would also be expected to reduce the average accident rate because of safety features such as left turn lanes or bypass lanes, channelization of intersections within the City of Eagle Lake, corrections of deficient curves, sight distances, and the replacement and widening of a narrow bridge.

Moving traffic from the existing facility within the City of Eagle Lake to a new alignment on the north edge of the city would substantially reduce the risks that pedestrians, bicylists and mobility impared citizens experience when crossing the highway.

XI. Convenience

The construction of an improved two lane or a new four-lane facility would increase convenience for the motoring public. For either example, travel times would be reduced by removing intersection conflicts and signal delays. A four lane facility would increase speeds through the City of Eagle Lake because rural speed limits could be maintained. It would also remove delays associated with waiting for opportunities to pass slow moving vehicles. This would not likely occur with reconstruction of T.H.14 as a two-lane facility on existing alignment because even though sight distances for passing would be improved, traffic density would limit opportunities for passing.

XII. Summary of Purpose and Need

The existing roadway is deficient in providing the condition, capacity, safety, and convenience required to adequately serve the motoring public. A new or upgraded two-lane facility would improve the ability to serve the needs of the motoring public. However, only a multi-lane facility will be sufficient to eliminate the sum total of all the deficencies which characterize the inplace highway. A divided expressway facility will provide fast, safe, and efficient transportation and serve as a transition between an existing urban freeway and the two-lane roadway that continues through the surrounding rural countryside.

B. ALTERNATIVES INCLUDING THE PROPOSED ACTION

The process for identifying reasonable alternatives, issues and impacts to be addressed in the Environmental Impact Statement is termed scoping. This activity started in June of 1986 and ended in February of 1988.

I. Formal Scoping Process

During the scoping process, preliminary design and environmental assessments were conducted for thirteen alternatives including a no-build alternative. Each of the 13 alternatives was assigned to one of three corridors (North, Central or South) depending on whether the alternative was routed north, within the City of Eagle Lake, or south of the city. Seven alternatives were within the North Corridor, four were located within the Central Corridor and two were located within the South Corridor.

An agency scoping meeting was held on August 24, 1987, and a field review was held September 4, 1987, with all agencies invited to attend. The public scoping meeting was held on August 27, 1987, at the American Legion Hall in Eagle Lake. At the scoping meeting, the 13 alternatives were presented and major issues and impacts for each alternative were identified. Written comments were received from agencies and the general public. A Notice of Intent was filed in the Federal Register on June 3, 1988, by the Federal Highway Administration, in which details of participation and timing of the EIS were delineated.

II. Detailed Study Alternatives

The alternatives which are studied in-depth in the EIS include Alternatives B1, B2, W, D, E, F, the Two-Lane Reconstruction on Existing Alignment Alternative (T.H.14 Reconst.) and the No-Build Alternative for a total of eight alternatives (see Figure 3).

A final decision to select an alternative will be made only after the location public hearing transcript and comments have been evaluated following circulation of the DEIS.

From Mankato to Eagle Lake there are five alternatives: Alternatives B1, B2, W, T.H.14 Reconst., and the No-Build Alternative. From Eagle Lake to the junction of T.H.60, there are five alternatives: Alternatives D, E and F, the extension of T.H.14 Reconst. and the No-Build Alternative. The T.H.14 Reconst. and No-Build Alternatives are common to both sides of Eagle Lake. However, combinations of old and new alignments are not mixed with the other build alternatives and as such are not considered in the DEIS.

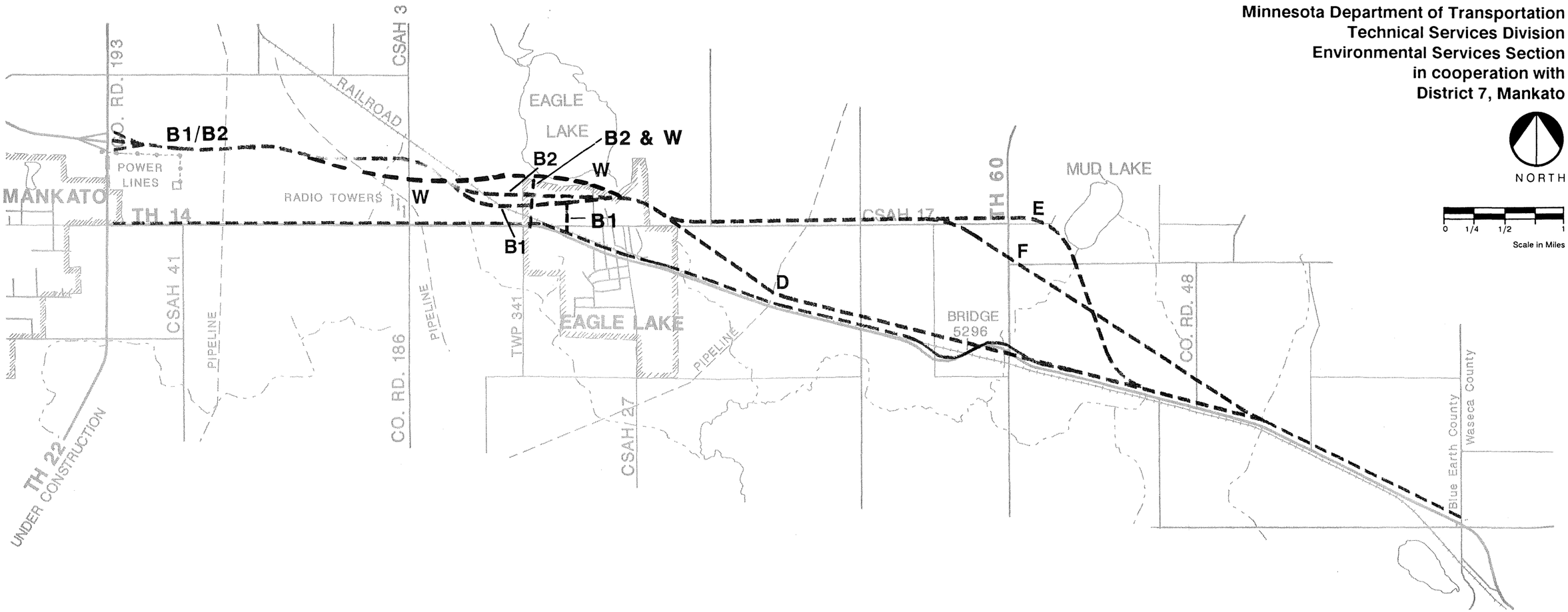
Alternative W was added to the North Corridor alternatives as the result of the field review. Alternative W was proposed by the United States Fish and Wildlife Service (USFWS) and became one of the detailed study alternatives with the concurrence of the Minnesota Department of Natural Resources (MNDNR). It extends in an easterly direction from the North Mankato-Mankato Bypass curving further south after the first mile in order to avoid the major portion of a large wetland/upland complex. It then crosses CSAH 3 and bridges the DME Railroad tracks before curving to avoid the lake of Eagle Lake.

Alternatives B1, B2, W, D, E and F are all four-lane divided highways constructed to expressway standards from Mankato to the east T.H.60 junction. Beyond the junction of T.H.60, there will be a transition area to tie back into existing T.H.14 which will be reconstructed as a two-lane roadway to Smiths Mill. Each of the new alignment alternatives would require a 284 foot wide strip of right-of-way excluding area for the one interchange. Mn/DOT acquired two parcels of land along Alternative D through hardship acquisition in the 1970's. In addition, Mn/DOT has acquired through advance purchase a 1.5 mile long and 284 foot wide strip of right-of-way along the center of sections 10 and 11 from the end of the T.H.14 North Mankato-Mankato Bypass east which would be partially utilized by Alterna-

TH 14

Mankato to Smith's Mill

Minnesota Department of Transportation
Technical Services Division
Environmental Services Section
in cooperation with
District 7, Mankato



Legend

Alternatives

Proposed Alternatives
FIGURE 3

tives B1, B2 and W. (The purchase of this right-of-way will not affect which alternatives will be selected.) The Two-Lane Reconstruction on Existing Alignment Alternative is the Transportation System Management Alternative and would remain a two-lane facility; but, it would require 150 feet of right-of-way, an increase of 25 feet on either side of the existing limits.

A. Build Alternatives

1. Two-Lane Reconstruction on Existing Alignment Alternative (T.H.14 Reconst.)

   This alternative which is the Transportation System Management Alternative, would include total reconstruction of the existing roadway on the existing alignment to Tier I standards. This would include removing and replacing the pavement, correcting vertical sight distance restrictions and replacing and widening the bridge over the DME Railroad east of Eagle Lake. The intersection of CSAH 17 would need to be realigned for safety reasons. Channelization of the intersection is likely. The estimated cost of this alternative is $7.22 million.

2. Alternatives B1 & B2

   Alternatives B1 & B2 depart from the existing T.H.14 alignment at the Jct. of County Road 193 and the east terminus of the North Mankato-Mankato Bypass. Alternatives B1 & B2 extend eastward on the same centerline for approximately two and one-quarter miles. They cross the southern edge of the large wetland/upland complex (see Figure 8, WET 1A) and CSAH 3. Past CSAH 3, they then curve southeasterly and cross and the northern edge of a wetland (see Figure 8, WET 4). They then parallel the DME Railroad before curving to the east. B1 takes the more southerly route and crosses a wetland (see Figure 8, WET5) while B2 crosses to the north of this wetland. Both bridge the railroad and provide for an at-grade access to the City of Eagle Lake at the west edge of Eagle Lake. East of the west Eagle Lake intersection both alternatives cross the Eagle Lake outlet and its associated wetland (see Figure 8, WET 8).

   There are two possible locations for the intersection at the west edge of Eagle Lake. Alternative B1 shows this intersection in the vicinity of the CSAH 17 connection to T.H.14. Alternative B2 shows this intersection connecting to Township Road 341. Alternatives B1 and B2 each have an estimated cost of $4.56 million.

3. Alternative W

   Similar to Alternatives B1 & B2, Alternative W begins at the Jct. of County Road 193 and the T.H.14 North Mankato-Mankato Bypass. It extends easterly for approximately one mile before curving southward to miss the major portion of the large wetland/upland complex (see Figure 8, WET 1A). However, Alternative W traverses the southern grassy portion of this wetland (see Figure 8, WET 1B). Alternative W then continues eastward, crossing CSAH 3 and the north edge of a wetland (see Figure 8, Wet 4), and the DME Railroad tracks. It then curves slightly to the north and east to avoid the City of Eagle Lake. This alternative includes an intersection at the west edge of Eagle Lake connecting to Township Road 341 and crosses the Eagle Lake outlet and its associated wetland (see Figure 8, WET 8). The estimated cost of this alternative is $4.86 million.

   Alternative W has been modified from what was suggested by USFWS because of conflicts between the required railroad bridge design, the geometric design of the intersection of CSAH 3 and proposed T.H.14, and the geometric design of the intersection of CSAH 3 and the DME Railroad, which is immediately north of the proposed T.H.14 intersection. The elevation of the railroad overpass bridge is fixed because of the required railroad clearance. Under the old Alternative W, T.H.14 would cross CSAH 3 twelve feet above the existing county highway. To build the required intersection on CSAH 3 with proposed T.H.14, the approaches to T.H.14 on the

county highway would be five feet above the elevation of the DME Railroad at the crossing. In this configuration, automobile traffic could not cross the railroad, so the highway alignment was shifted to the south.

4. Alternative D

Alternative D is a continuation of Alternative B1, B2 or W, east of the City of Eagle Lake. Alternative D intersects CSAH 17 just east of the City of Eagle Lake (west of the cemetery) and extends southeastward until the alignment approaches the railroad tracks. Then Alternative D parallels the railroad alignment on the north side until connecting into existing T.H.14 east of the T.H.60 junction. Beyond the transition area, existing T.H.14 will be reconstructed as a two-lane roadway. Alternative D has an estimated cost of $4.19 million dollars.

5. Alternative E

Alternative E is an extension of either Alternative B1, B2 or W. This alternative encompasses the alignment of CSAH 17 with additional needed right-of-way to be purchased on the north side. Alternative E follows the CSAH 17 alignment until its junction with T.H.60 then curves southeasterly to avoid Mud Lake and connects into existing T.H.14 approximately one mile east of the junction of T.H.14 and T.H.60. Beyond the transition area, existing T.H.14 will be reconstructed as a two-lane roadway. The estimated cost of this alternative is $5.72 million dollars.

6. Alternative F

Alternative F is a continuation of Alternative B1, B2 or W. Like alternative E, it also follows the CSAH 17 alignment but curves southeasterly approximately one half-mile west of T.H.60 and the intersection of T.H.60 and CSAH 17. Alternative F then follows a straight path southeasterly until connecting into existing T.H.14 with a smooth transition approximately 1.6 miles east of the junction of T.H.14 and T.H.60. Beyond the transition area, existing T.H.14 will be reconstructed as a two-lane roadway. Alternative F has an estimated cost of $6.39 million dollars.

7. Interchanges

Under each alternative, an interchange will be located at County Road 193 and the east terminus of the T.H.14 North Mankato-Mankato Bypass. The estimated cost of this interchange is $1.5 million dollars; these dollars are not included in the costs of each alternative. Interchanges were considered at the west edge of Eagle Lake, at the east edge of Eagle Lake and at the east T.H.60 junction but these were dropped for traffic engineering and economic reasons. At grade intersections should be sufficient until the year 2012.

8. No-Build Alternative

Due to the age of the underlying concrete pavement and the high traffic volumes on this segment of roadway, the No-Build Alternative would include heavy maintenance overlays to preserve the serviceability of the existing facility. The cost of this alternative is $2.98 million dollars. The level of service of the existing facility is "C" and would continue to deteriorate as future traffic volumes increase. The Minnesota Department of Transportation would like to maintain a level of service B on this section of rural highway.

B. Alternatives Eliminated From Further Consideration

Through the early activities and scoping processes described above, plus preliminary investigations of overall impacts, several alternatives were eliminated from detailed study in the DEIS. These eliminations were made on the basis of technical studies, major land use, environmental conflicts and/or notable public and official opposition without conspicuous

counteracting support. The eliminated alternatives are listed and described below with an accompanying explanation detailing the reason(s) for the decision.

1. Alternative A

Alternative A begins at the easterly terminus of the North Mankato-Mankato Bypass and County Road 193 and extends easterly along the center section line for approximately two miles bisecting a large wetland/upland complex (see Figure 8, WET 1A). Alternative A then crosses CSAH 3 and parallels the DME Railroad line on the south side before bridging the tracks west of the municipality of Eagle Lake. Alternative A shows an interchange between the lake of Eagle Lake and the Municipality of Eagle Lake and crosses the Eagle Lake outlet.

Alternative A was eliminated from further consideration due to the major negative impact this alternative would have had on the large wetland/upland complex located in Section 11 (see Figure 8, WET 1A). Both the USFWS and the MNDNR opposed this alternative because there were other feasible alternatives which impacted this particular complex to a lesser degree.

2. Alternative C

Alternative C also starts from the existing T.H.14 alignment at the easterly terminus of the North Mankato-Mankato Bypass and County Road 193 and extends easterly for approximately a mile and a quarter then curves slightly to the north and traverses through the north side of a wetland/upland complex (see Figure 8, WET 1A). Alternative C crosses CSAH 3 and bridges the DME Railroad at the same location and then curves southeasterly to avoid the lake of Eagle Lake. Alternative C also includes an interchange on the west edge of Eagle Lake and crosses the Eagle Lake Outlet in the same location as Alternative A.

Alternative C was eliminated for a number of reasons. This alternative would have had a moderately negative impact on the wetland/upland complex in Section 11 (see Figure 8, WET 1A) and would have had major negative farmland and proximity impacts. In addition, this alternative was opposed by the USFWS, the MNDNR and several members of the general public.

3. Alternative G

Alternative G (the continuation of Alternatives A, B1, B2, C and W) starts at the Eagle Lake outlet crossing and then follows the existing CSAH 17 alignment to approximately the same point as Alternative F. It then curves sharply southeastward to connect into existing T.H.14 one-half mile east of the junction of T.H.60.

Alternative G was excluded from further consideration because its farmland impacts surpass those of Alternatives E and F. For example, Alternative F is longer than Alternative G but it would cause less farmland damage by severance and triangulation than would Alternative G.

4. Alternative H

Alternative H starts from the existing T.H.14 alignment at the easterly terminus of the T.H.14 North Mankato-Mankato Bypass and County Road 193 and extends eastward for approximately one-half mile before curving southeasterly to connect to existing T.H.14 one mile east of the T.H.22/T.H.14 junction. Alternative H then follows the existing T.H.14 alignment to the east.

Alternative H's alignment would have interfered with several of the high voltage poles located just east of the inplace T.H.14 North Mankato-Mankato Bypass. The portion of this alignment which is the same as the existing T.H.14 alignment would have caused major socio-economic impacts and several relocations would have been necessary.

5. Alternative J

Alternative J begins at the junction of Hoffman Road and T.H.22 three-fourths of a mile south of the T.H.14/T.H.22 junction. This alternative extends easterly for one-half of a mile, then curve southeasterly and follows the section line east. This alignment remains south of the Burgess cemetery and the Country Manor Trailer Park on the south edge of the City of Eagle Lake. One and one-quarter miles east of the City of Eagle Lake, it curves northeasterly and bridges the railroad tracks just west of their present location. Finally, it ties back into existing T.H.14 just east of the east T.H.60 junction.

Alternative J received the most negative public input of all the alternatives. It would have poor continuity and it would be the longest travel route for through traffic. This alternative would split a new rural housing development located east of the City of Mankato and, it would increase the amount of traffic past Mankato East High School. Alternative J would also have notable floodplain impacts associated with five stream crossings. Neither the City of Eagle Lake nor Blue Earth County supported this alternative.

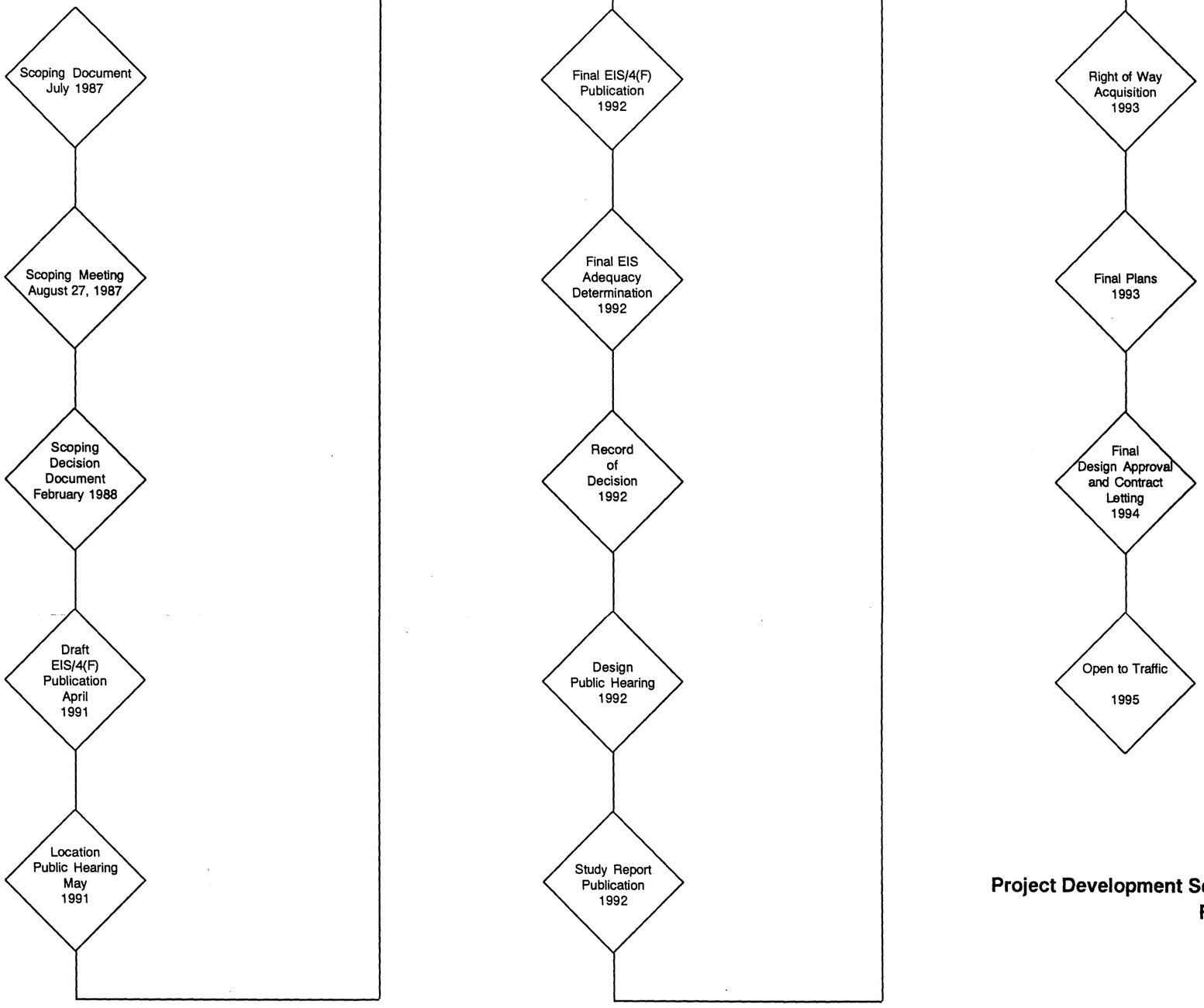
6. Alternative K

Alternative K begins at the east terminus of the T.H.14 North Mankato-Mankato Bypass and County Road 193 and extends easterly for a mile and a quarter, then curves southeasterly crossing existing T.H.14 west of the KTOE/KDOG radio towers and continues southeaserly until crossing CSAH 3 one-half mile south of existing T.H.14, it then curves easterly to follow the section line on the south side of Eagle Lake (same alignment as Alternative J).

Alternative K would cause major farmland and woodlot impacts (more than other alternatives) and also would have notable floodplain impacts like Alternative J. Also, Alternative K is one of the longest routes for through traffic.

7. Four-Lane Reconstruction on Existing Alignment

The Four-Lane Reconstruction on Existing Alignment (T.H.14) Alternative was omitted for a combination of reasons. This alternative would have major socio-economic impacts on the community of Eagle Lake, causing the relocation of several businesses in Eagle Lake as well as the natural gas pipeline terminals located on either side of T.H.14 west of Eagle Lake. A community park located within the City of Eagle Lake and a MNDNR-protected wetland located east of the City of Eagle Lake would also be affected.



The Current Phase is

Note: This Schedule is subject to change and will be updated as the project advances.

Project Development Schedule
Figure 4

AFFECTED ENVIRONMENT

C. AFFECTED ENVIRONMENT

This section describes the environmental setting of the T.H.14 study area. It consists of two categories: the natural environment and the human environment.

I. Natural Environment

The study area is located in south-central Minnesota, an area where approximately 90 percent of the total acreage is in farmland and most of the land area classified as farmland is used for crops rather than pasture or some other use. Historically, most of this area was prairie. The majority of the soils are wet, have slow percolation rates, and require drainage for high yield crop production.

A. Climate

The study area has a continental climate with cold winters and warm summers. Average annual precipitation is 29.6 inches, with about 70 percent of the annual precipitation occurring as rain during the growing season; annual snowfall is about 37 inches. On average, snowcover of an inch or more occurs during 82 days of winter. The prevailing wind direction is southerly during the summer months and north to northwesterly during the winter.

B. Topography

South-central Minnesota's land surface was shaped by the periodic advance and retreat of glacial ice. Thick layers of glacial drift deposited by the ice cover the underlying bedrock in the region and result in a nearly level to gently rolling topography. Elevations in the area range from approximately 1,000 feet to 1,060 feet above mean sea level. Natural drainage networks are poorly developed. The few large streams in the region occur outside of the study area. Lakes occur in areas of ice block depressions and wetlands are found in numerous small depressions.

C. Geology

The surficial deposits in the study area consist of patchy glacial lake sediments (mostly silt and clay) overlying glacial till (mostly silty, calcareous, shale-rich ground moraine). The fine-grained lake sediments were deposited when water and sediments were temporarily ponded behind ice-cored moraine dams and within unstable basins on the stagnant ice surface as the glaciers melted. Other features associated with ice disintegration, such as elongate sand and gravel crevasse fillings, outwash fans and ice block depressions are also found in the area. Bedrock in the Mankato area is sedimentary rock, primarily Cretaceous shale, Cambrian sandstone and dolomite. There are no known mineral resources in the proposed project area.

D. Soils

Most of the soils in the study area began to form when the last glacier retreated from the region approximately 12,000 years ago.

The locations of soil types in the study area are shown in Figures 5 & 6. These soils are generally classed as clay loam tills. They have also been grouped according to their suitability for farming and construction (Tables 8 & 9). The soils in the study area are generally considered poor for road construction because they can have high a moisture content, and they shrink or swell proportionately. Also, they are plastic and subject to frost action.

The soils in the study area are well suited for production of agricultural crops. They have high organic matter content, high natural fertility, and high available water capacity. Since the soils are generally wet and somewhat acidic, they require drainage and lime for the consistent production of crops.

Disruption of the soil and landscape will occur during highway construction. Erosion of exposed soil and underlying sediment is the primary concern. Erosion occurs when soil or

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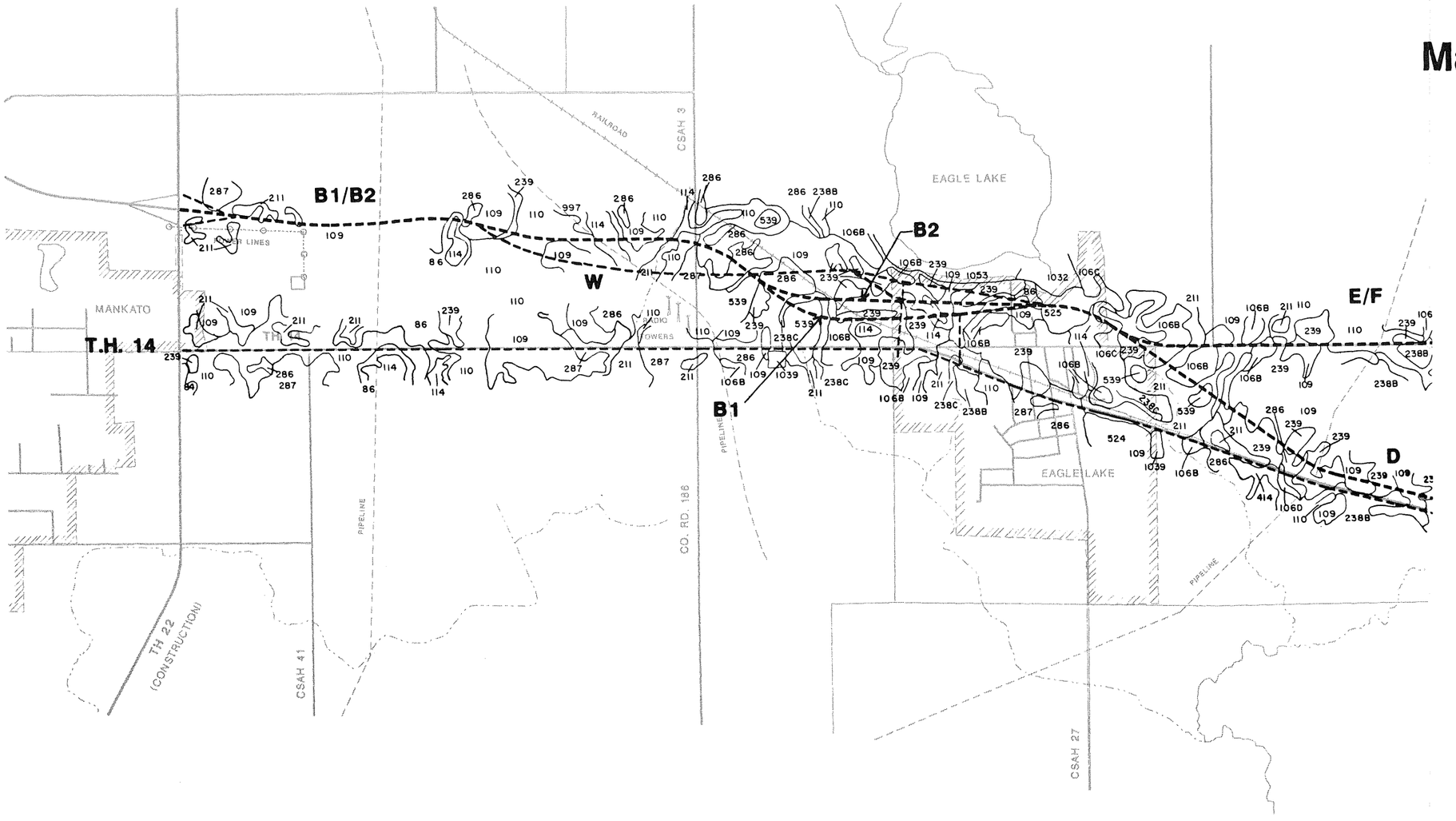

Legend

Numbers define Blue Earth County Soils

Alternatives

Soil Types, Mankato East
FIGURE 5

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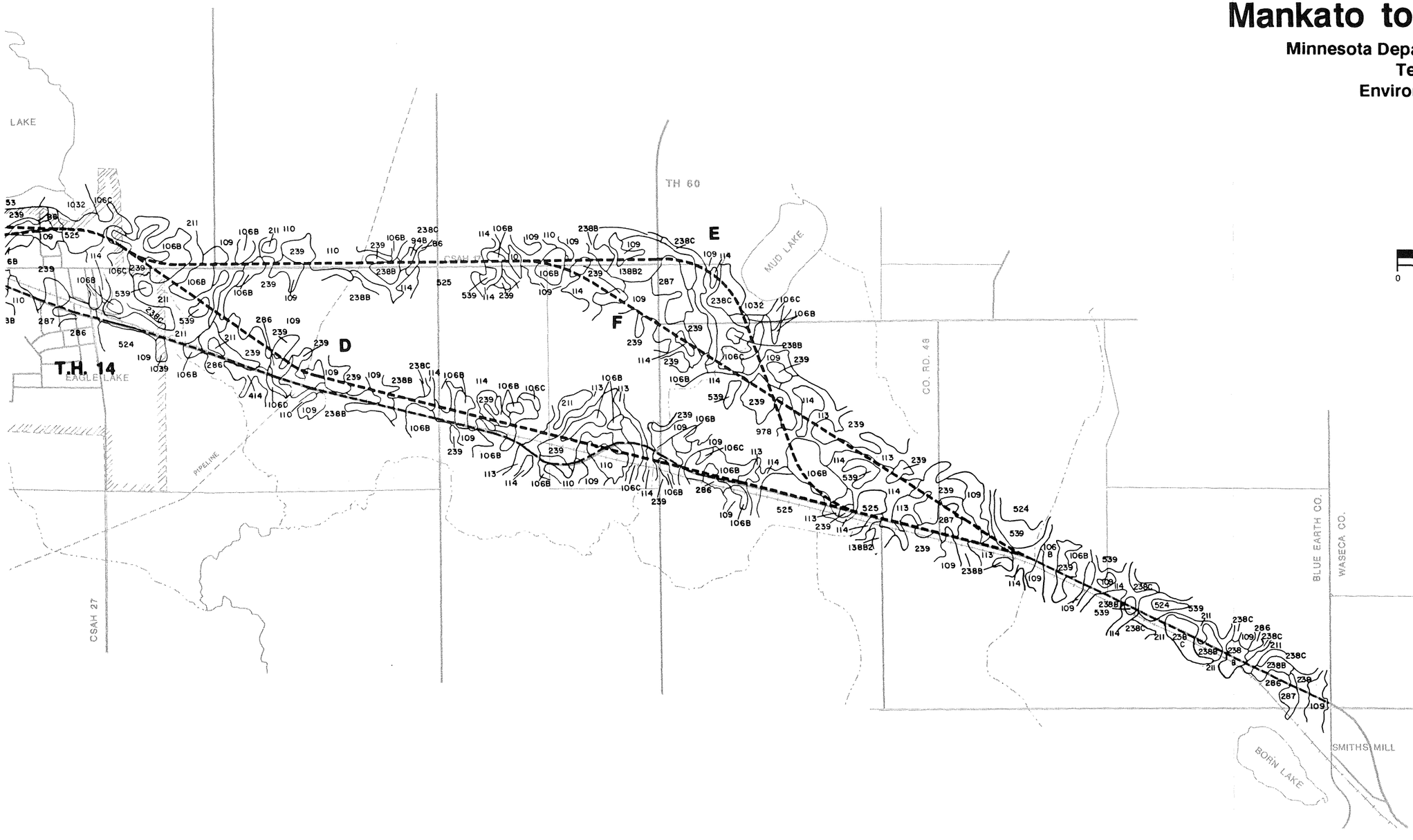

NORTH

0 1/4 1/2 1
Scale in Miles

Legend

Numbers define Blue Earth County Soils

Alternatives

Soil Types,
Eagle Lake East
FIGURE 6

Table 8. Soil Types associated with the proposed alternatives* (See Figures 5 & 6).

Mapping Unit Symbol	Mapping Unit Name
84[2]	Brownton silty clay loam, 0 to 2 percent slopes
86[2]	Canisteo silty clay loam, 0 to 2 percent slopes
94B[1]	Terril loam, 2 to 6 percent slopes
106B[2,3]	Lester loam, 2 to 6 percent slopes
106C[4]	Lester loam, 6 to 12 percent slopes
106D	Lester loam, 12 to 18 percent slopes
109[2]	Cordova clay loam
110[2]	Marna silty clay loam
113[2]	Webster silty clay loam
114[2]	Glencoe silty clay loam
138B2[2,3]	Lerdal silty clay loam, 2 to 6 percent slopes, eroded
211[2]	Lura silty clay
238B[1]	Kilkenny clay loam, 2 to 6 percent slopes
238C[3,4]	Kilkenny clay loam, 6 to 12 percent slopes
239[1]	Le Sueur clay loam, 1 to 3 percent slopes
286[1]	Shorewood silty clay loam, 1 to 6 percent slopes
287[2]	Minnetonka silty clay loam
414[2]	Hamel clay loam, 1 to 4 percent slopes
524[4]	Caron muck
525[4]	Muskego muck
539[4]	Palms muck
978[4]	Cordova-Rolfe complex
997[2]	Marna-Barbert complex
1032	Lake beaches, 1 to 3 percent slopes
1039	Urban land, 0 to 2 percent slopes

* Blue Earth County Soil Survey
[1] Prime farmland, all areas
[2] Prime farmland, where drained
[3] High erosion hazard
[4] Soils of statewide importance

Table 9. Soil types of T.H.14 and the proposed alternatives: suitability of soils for construction[a].

Soils Considered Good for Road Construction:				
None				
Soils Considered Fair for Road Construction:				
94B				
Soils Considered Poor for Road Construction:				
84	**109**	**211**	**287**	**978**
86	**110**	**238B**	**414**	**997**
106B	**113**	**238C**	**524**	**1032**
106C	**114**	**239**	**525**	**1039**
106D	**138B2**	**286**	**539**	

[a] Blue Earth County Soil Survey

sediment particles become detached from each other and are transported by wind or water.

E. Vegetation

Before settlement, vegetation was primarily either tall grass prairie or forest. Oak was the dominant tree in well drained upland soils. Elm, basswood, and aspen were dominant on river bottoms and wet upland soils. Common shrubs were sumac, prickly ash, gooseberries, hazel, bittersweet and chokecherry.

Existing vegetation may be classified into the following categories: woodlots (Figure 7), row crops, grassy areas, and wetland vegetation (Figure 8). Land use of the various vegetation types includes crops, pasture, woodlots and shelterbelts, fence rows, and wetlands. Most of the grassy areas are associated with waterways or roadside ditches. Tabulated impacts to woodlands and wetlands are presented in Tables 22-24 (pages 77-79) and Tables 17-20 (pages 66-69) for each alternative respectively.

F. Wildlife

A variety of wildlife are found in the study area, including white-tailed deer, mink, raccoon, muskrat, rabbits, squirrels, raptors, pheasants and various non-game species. The diversity of species is typical of farmlands interspersed with woodlots and wetlands. Although the project would generally reduce the available habitat for some species, no significant population reductions or changes in species diversity are anticipated. For a discussion of Endangered and Threatened Species see the Endangered and Threatened Species section of this document.

G. Water Resources

The major surface water resource adjacent to the proposed project is Eagle Lake and its associated wetlands. Other resources include numerous small and large wetlands, small intermittent streams, and drainage ditches. Two of the intermittent streams serve as outlets for Eagle Lake and Mud Lake, others are associated with the various wetland complexes. The general drainage pattern is from north to south with the intermittent streams serving as tributaries to the Le Sueur River.

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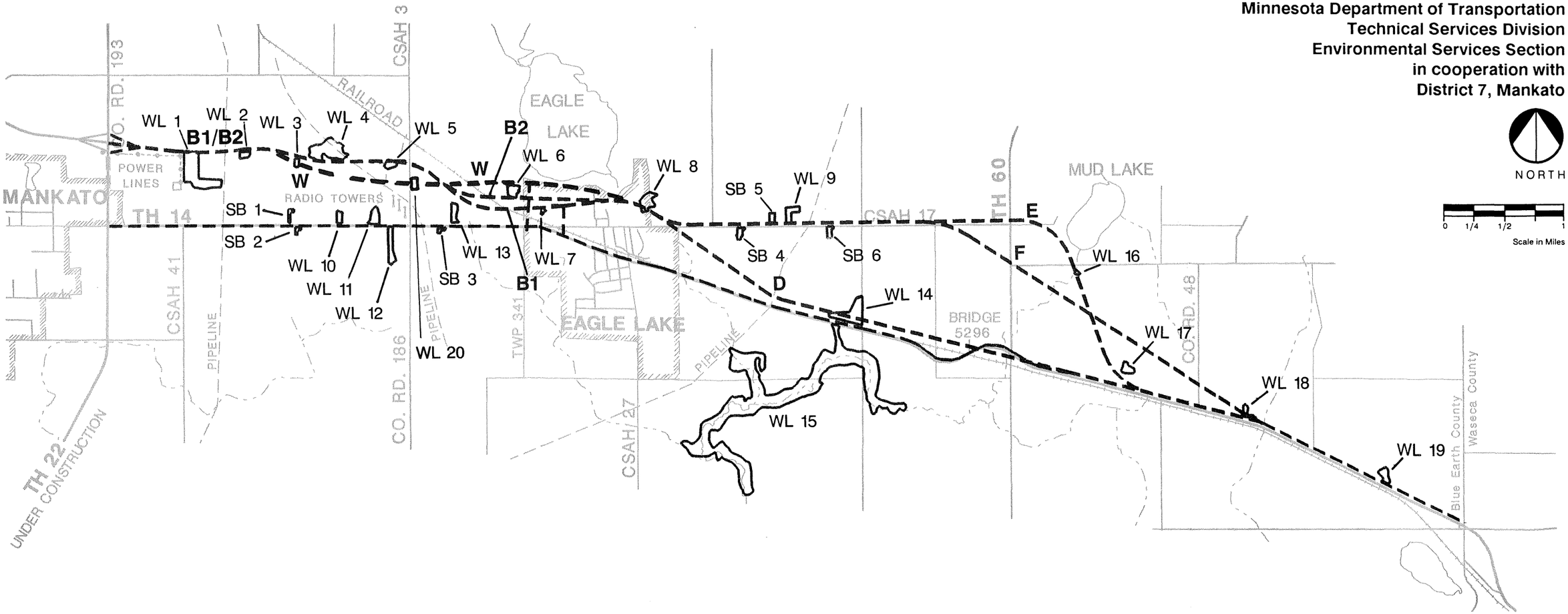

Legend

WL	Woodlot
SB	Shelterbelt
- - -	Alternatives

Woodlands
FIGURE 7

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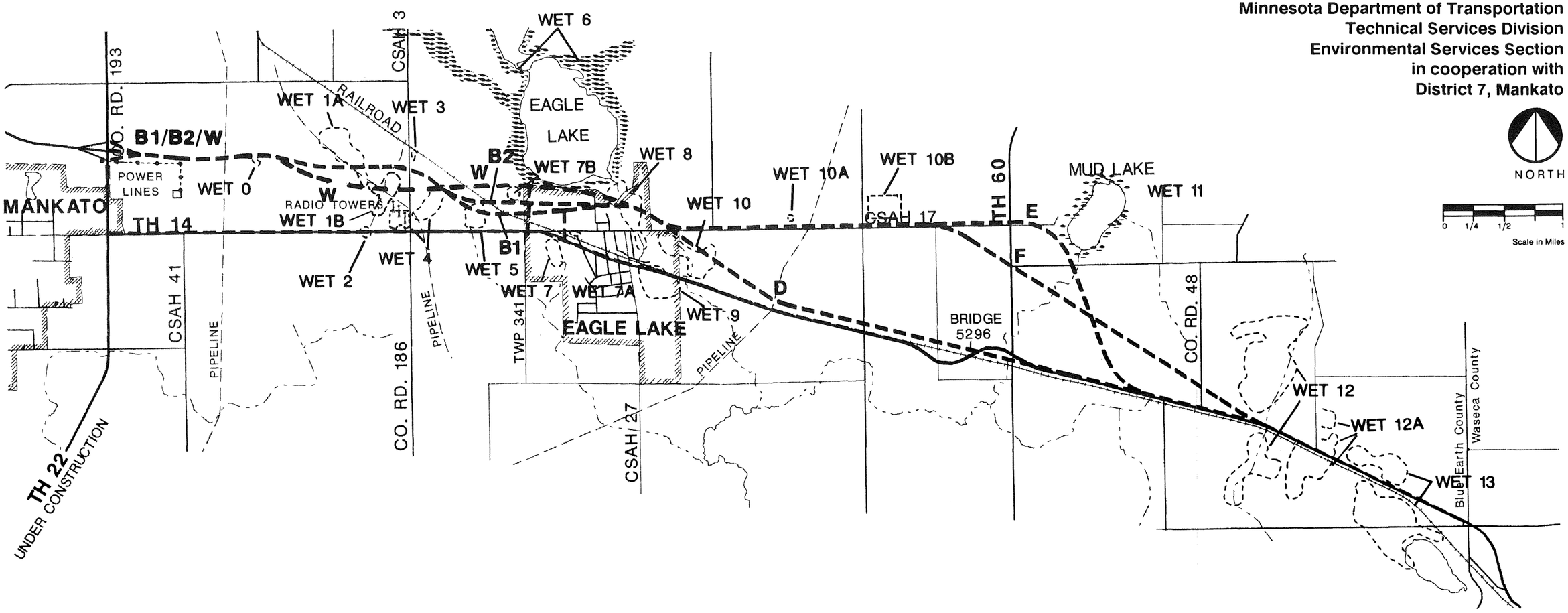

Legend

WET	Wetland
– – –	Alternatives

Wetlands
FIGURE 8

Ground water supplies are directly correlated with the thickness of the glacial drift and the underlying rock formations. In the project area, glacial deposits are 200 to 300 feet thick and yield little water. The underying rock formations include sandstones, shale, and dolomite. The sandstones are the best water sources.

H. Wetlands

Much of the project area is relatively flat. Wetlands occur in isolated basins and are often associated with natural drainage patterns. About 9.5 percent of the project acreage is in wetlands (Figure 8). Due to the flat and gently rolling topography, wetland vegetation grades gradually from lowland to upland or is sharply demarcated by crop cultivation. Cattail marshes and grassy meadow components are prevalent.

Wetlands were classified according to Circular 39 of the U.S. Fish and Wildlife Service (Table 10). The more recent U.S. Fish and Wildlife Service Classification of Wetland and Deepwater Habitats of the United States is also presented (Table 11).

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I. Fisheries

There are no major fisheries resources adjacent to or near the project. Eagle Lake is classified as a game lake and is shallow and nutrient enriched. Consequently, it is subject to winter kill and does not support a reliable fishery. It does support northern pike and black bullheads, which are tolerant to low oxygen conditions. Mud Lake is also a game lake. The intermittent streams do not support gamefish except during occasional conditions of high water.

Table 10. Wetland types according to Circular 39[a].

Wetland type		Description
Type 1	-	Seasonally flooded basin. Basin which is flooded only briefly during heavy rains or spring runoff. Vegetation is generally floodplain forest, weeds or cultivated crops.
Type 2	-	Sedge Meadow. Shallow wetland basin which has little open water in spring and merely waterlogged soil during dry periods. Vegetation is typically grasses or sedges.
Type 3	-	Shallow Marsh. Wetland basin, which is usually covered with six inches to two feet of water, and is heavily vegetated with cattails, bulrushes or broad-leaved aquatic plants. Small patches of open water may occur.
Type 4	-	Deep Marsh. Wetland basin which has permanent water depths from two to four feet. Open water areas are fringed by cattails, bulrushes, etc.
Type 5	-	Shallow Lake & Pond. Open water basin, from four to ten feet in depth, which is too shallow to support permanent gamefish populations. Basin is fringed by narrow band of vegetation.
Type 6	-	Shrub Swamp. Shallow wetland basin, which may only have waterlogged soil during dry periods. Basin is heavily vegetated with alder, willow or dogwood.
Type 7	-	Wooded Swamp. Wetland which may have standing water, but typically has only waterlogged soil and is vegetated with tamarack, black spruce, red maple and black ash.
Type 8	-	Bogs. Low lying or floating vegetative mat with waterlogged soils, which supports spongy covering of mosses, sedges or heathlike shrubs.

[a]Circular 39, USFWS, 1971.

Table 11. Comparison of two wetland classification systems used by USFWS.

Circular 39[a]		Classification of Wetland and Deepwater Habitats of the United States (Palustrine System)[b]
Type 1	-	Nonpersistent Emergent Wetand. Erect, rooted herbacious plants are dominant. Water regimes are temporarily or intermittently flooded.
Type 2	-	Persistent Emergent Wetland. Erect, rooted herbacious plants are dominant. Water regime is saturated.
Type 3	-	Persistent Emergent Wetland. Erect, rooted herbacious plants are dominant. Water regimes are semipermanently or seasonally flooded.
Type 4	-	Aquatic Bed, with floating vascular plants, fringed by persistent emergent wetland vegetation. Water regimes are permanently flooded, intermittently exposed or semipermanently flooded.
Type 5	-	Aquatic Bed, with floating vascular plants, and an unconsolidated bottom consisting of mud. Water regimes are permanently flooded and intermittently exposed.
Type 6	-	Scrub-Shrub Wetland, with predominantly broad-leaved deciduous plants. Water regimes are temporarily flooded, seasonally flooded, semi-permanently flooded, intermittently exposed and permanently flooded.
Type 7	-	Forested Wetland, with broad-leaved deciduous, needle-leaved deciduous and needle-leaved evergreen plants. Water regimes are identical to those for Scrub-Shrub Wetland above.
Type 8	-	Scrub-Shrub Wetland, Forested Wetland, Moss-Lichen Wetland with broad-leaved deciduous, needle-leaved deciduous and neeedle-leaved evergreen plants. Water regime is saturated.

[a] Circular 39, USFWS, 1971.
[b] Cowardin et al., 1979.

II. Human Environment

A. General Land Use

Land use in the project area varies considerably. Beginning in eastern Mankato, beyond the western project terminus, the predominant land use is commercial. A major strip type commercial development borders T.H.14 as it enters Mankato from the east. This extends westerly for perhaps a mile toward Victory Drive (former T.H.22 south). This area includes a number of major retailers, and smaller retailers as well, including food outlets, financial institutions, automobile dealerships, lumber/hardware dealers, department stores, and others. This area clearly serves as the major commercial and retail center of south central Minnesota.

Traveling east, between Mankato and Eagle Lake, the land is principally agricultural, both along the alignment of inplace T.H.14, and along the more northerly alternatives as well. A small number of commercial uses are found, but the dominating influence of agriculture is clearly evident. Within Eagle Lake, the land use along the inplace facility is principally commercial and institutional, with some scattered residential. Land located along the routes of the northerly alternatives is principally agricultural. Some low density residential uses are found along the northern alternatives, and a small number of commercial uses are also present. From the east border of Eagle Lake to the east project terminus, the predominant land use is again agricultural. This is true both of the land along inplace T.H.14, and land along the northern alternatives as well. Individual farmsteads are common along the routes. A cemetery is located along the route of Alternatives D, E, and F.

B. Community of Eagle Lake

Eagle Lake was at one time a small agricultural community. It is now principally a "bedroom community". It had a 1980 population of 1,464, an increase of 75 percent from the 1970 figure of 839.[1] The current (1986) population estimate is 1,503. The city more than doubled its housing stock between 1970 and 1980, from 239 in 1970 to 517 in 1980, an increase of 116 percent. The community has no industrial base of employment, although the area east of the city between CSAH 17 and existing T.H.14 is zoned for limited industry. The only employment centers are retail and service institutions, none of which are large. Clearly, Eagle Lake has come to be a bedroom community for the City of Mankato, and will continue to serve this function. Sixty-five percent of workers residing in Eagle Lake drive alone to work, with a one-way mean travel time of slightly more than 16 minutes. More than half (54.1%) of workers living in Eagle Lake drive between 15 and 29 minutes each way to work. Indeed, less than 15 percent drive less than fifteen minutes to work, indicating that most are employed outside the community.

C. Social

The proposed project is located in a rural area for most of the distance between the proposed termini of Mankato and Smiths Mill. Concentrations of people and homesteads are not common except in the City of Eagle Lake; the alternatives under consideration will be located in or near the community. Eagle Lake is like many small towns and cities throughout Minnesota, in that it developed along both sides of a major highway, with the community now being found on both the north and south side of T.H.14. However, most of the population of Eagle Lake live on the south side of the highway. Also, most of the new residential development in the community is located on the south side of the highway. The elementary school is approximately three blocks south of the highway and secondary school pupils are bused to Mankato.

[1] This and other statistics are either from 1980 census materials or are more recent estimates from the Office of State Demographer.

D. Relocations

A number of the alternatives under consideration will require the relocation of households; most of these would be in the rural section of the project. See page 49.

E. Economic

The proposed action is anticipated to strengthen the local and regional economy. The economy of the southern and southwestern part of Minnesota is predominated by agriculture and its associated industries. Minnesota Trunk Highway 14 is a major east-west transportation corridor in this part of the state. The communities and their agricultural economies are dependent on the highway for the provision of goods and services as well as the movement of commodities, agricultural supplies and equipment.

There are two business districts within the vicinity of the proposed action. The first is located in and near the city of Mankato, consisting of major strip development with large retail and commercial facilities. This is the site of many retail food outlets, convenience stores, and a large number and type of service facilities such as financial services, medical services, dental and many others. This area serves as a regional shopping center.

Eagle Lake has a very limited shopping area which is located principally near and along T.H.14. Facilities consist of the American Legion Hall, an on-off liquor outlet, a cafe, antiques shop, barber/hair salon, combination grocery/gas store and a few others. These serve primarily local consumers and are dependent upon repeat patronage.

Farming operations are within and adjacent to the proposed corridors outside of the communities of Mankato and Eagle Lake.

The proposed action will affect farm businesses immediately adjacent to the project. Regional farm business will benefit from better movement of commodities, agricultural supplies and equipment.

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ENVIRONMENTAL CONSEQUENCES

D. ENVIRONMENTAL CONSEQUENCES

I. Land Use

A. General Impacts

Land use within the community is not expected to change significantly because of the adoption of any of the proposed alternatives. Over the long term, there may be some shifting of service locations, or new development associated with the location of access points into and from the community and T.H.14. Land use along and adjacent to expressway facilities is frequently agricultural or of a commercial strip type. Service oriented establishments often locate along the highway near access points, and derive economic benefit from their proximity to the main traveled road. There does not exist a statistical model which could be employed to predict whether commercial development will take place in the present instance, or the timing and type of such development as may occur. However, such development is a historically common event along major highways, and it would be prudent to expect that, over the long term, some of the land along and adjacent to the highway in and near the city will undergo a transformation to some type of commercial use. Zoning is an administrative tool used by cities to control the location and type of development within the city. Eagle Lake has a zoning ordinance. The majority of the area north of the community affected by the bypass alternatives (B1, B2 & W) is zoned R-A, (Agriculture Residential); the remainder is zoned B1, (Commercial), or R-3, (Multiple Family Residential; See Figure 9). The existing T.H.14 corridor including the area between CSAH 17 and T.H.14 is zoned B-1, (Commercial). The area between CSAH 17 and T.H.14 east of the city is zoned L-1, (Limited Industry); a 300 foot wide outlot has been set aside by the community in this area for the corridor of the anticipated new highway. Neither the proposed action, nor any of the alternatives of the proposed action, are inconsistent with the zoning within Eagle Lake. Also, Mn/DOT is not aware of any large scale residential, industrial, or commercial development which is contingent upon construction of any of the build alternatives being evaluated. Neither is the proposed action thought to be associated with any major impacts on the local, regional, or state economy.

B. Parks and Recreation Information

None of the alternatives of the proposed action will use land from a publicly owned park, recreation area, or wildlife and/or waterfowl refuge.

C. Historical/Archaeological Sites

The historic review by the State Historic Preservation Officer has been requested. Initial review was done at the corridor level. It has not been completed in detail for each alternative, and as a result, it has not been determined if the proposed action will impact land from a historic site of national, state, or local significance. A detailed analysis will be completed following the selection of the preferred alternative. No significant impacts are anticipated.

II. Farmland Impacts

A. Prime and Unique Farmland

This project complies with the provisions of the Farmland Protection Policy Act (FPPA). Appropriate forms AD-1006 were developed by Mn/DOT and submitted to the USDA Soil Conservation Service (SCS) for the right-of-way acquisitions anticipated with each of the proposed alternatives. Currently, SCS does not have information available for Blue Earth County to fully complete the analysis contemplated by the FPPA. However, the SCS did return partially completed forms. These indicated that the land associated with the new alignments is generally highly productive farm-

TH 14

Mankato to Smith's Mill

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R-A Agriculture Residential

R-1 Family Residential

R-2 Suburban Residential

R-3 Multiple Family Residential

B-1 Shopping Center & Highway Commercial

L-1 Limited Industry

NORTH

0 1/4 1/2 1

Scale in Miles

Eagle Lake Zoning
FIGURE 9

Table 12. Farmland impacts: build alternatives.

Altern.	Acres Req.	Acres Prime Farmland	Avg. Farm Size	Acres Triang.	Parcels Sever.	Farms Reloc.
B1	61.3	61.3[a]	<160	4.6	6	1
B2	62.1	53.5	<160	3.2	6	1
W	60.0	60.0[a]	<160	6.4	4	1
D	105.9	94.7	<160	3.2	4	0
E	101.0	84.5	<160	9.2	7	6
F	113.3	100.8	<160	3.8	9	6
T.H.14. Reconst.	< 1.0	< 1.0	0	0.0	0	0

[a] Acres impacted may be somewhat less after the Soil Conservation Service's final evaluation.

land. However, SCS does not have sufficient information to assign relative value to the farmland that may be converted for highway construction (see Appendix C).

Twenty-five soil types occur in the proposed project area (Table 8, Figures 5 & 6). The Blue Earth County Soil Survey lists four soil types that occur in the proposed project area as being prime farmland. They are soil type numbers 94B, 238B, 239, and 286. Eleven soil types are listed as being prime farm ground where drained. They are soil type numbers 84, 86, 106B, 109, 110, 113, 114, 138B2, 211, 287, and 414; additional soils of statewide importance include 106C, 238C, 524, 525, 539 and 978. The SCS has estimated the total acres of prime and unique farmland which would be impacted by each of the proposed alternatives (Table 12). Greater than 80% of the converted land under the proposed new alignments would be classified as prime and unique farmland by the SCS. The amount of farmland converted under the worst case example (Alternates B2 & F) would be 0.045% of the farmable land in Blue Earth County. Le Ray Township could possibly loose from 0.74 to 0.81% of its tillable acres and Mankato Township could loose from 0.46 to 0.48% of its tillable acres. For each alternative, Table 12 shows the number of acres of farmland required, the number of acres of prime farmland required, the average farm size, the number of acres triangulated, the number of parcels severed and the number of farms that would require relocation.

B. Other Federal Agricultural Programs

After consulting with the local Soil Conservation Service Office, it was discovered that two parcels of land adjacent to Alternatives B1, B2, W, and D are currently in the Federal Water Bank Program. In addition, there is one such parcel located adjacent to each of Alternatives E and F. Alternative F has three parcels in the State Water Bank Program (under 10 year contracts). Alternatives B and F each have one parcel of land adjacent to the alternative which is in the Conservation Reserve Program. Finally, there is one parcel of land adjacent to Alternative F which is under a long term agreement with the USDA to establish conservation practices to control wind and water erosion. These programs are not incompatible with the acquistion of land for highway purposes.

C. Mitigation

Farmland impacts are substantial on this project. For this reason, it is proposed to minimize farmland impacts by using a 284 foot corridor of right of way instead of the standard 324 foot width of right of way commonly used for expressways. Also, proposed alignments follow section lines and/or abut railroad lines etc. As a mitigating circumstance, the proposed T.H.14 realignment should enhance the important regional function T.H.14 serves for the movement of agricultural commodities and equipment.

Existing T.H.14 from just east of the City of Eagle Lake to east of the east junction of T.H.60 will be obliterated. Once the existing pavement and its supporting base-course are removed, the land under the highway can be leveled and shaped to match the exiting land contours. Older highway construction methods generally used locally available soils to build the road-grade. Thus, fertile topsoils were used in construction. As a consequence, obliterating existing highways and reclaiming the land for agricultural purposes is generally very successful. This might return 44.1 acres to agricultural purposes.

III. Social Impacts

A. General

Major transportation projects have the potential to exert significant effects upon the social fabric of a community. They may physically divide an existing cohesive community, thereby separating people from social services, friends, shopping facilities, or other desired destinations. They have the potential to create a barrier of sorts between home and school, or some recreational facility. Over time, a highway may come to be used as an informal community boundary, or serve as a dividing line between neighborhoods. An expressway or freeway, where access and crossovers are controlled, will limit the number and location of points where the highway may be crossed. This could affect the provision of emergency services from one side of the highway to the other. In the case at hand, these and other adverse community impacts are unlikely. For most of the distance between the termini of the proposed action, it would be located in a rural area, where concentrations of people or homesteads are not great. As a result, no significant social impacts are likely to result. This is not to minimize the impacts which the proposed action may exert on those people directly affected as a result of their homes or farms being acquired for right of way. However, when considered at the level of state, region, county, or community, the alternatives under consideration are not anticipated to be associated with major adverse impacts. See the relocation section for a full discussion of the acquisition issue. In the City of Eagle Lake, the alternatives under consideration will be located in or near the community, with potential for impacts to social cohesion or other social variables. Eagle Lake is like many small towns and cities throughout Minnesota, in that it developed along both sides of a major highway. Inplace T.H.14 is located such that the community is found both north and south of the highway. Most of the population of Eagle Lake live on the south side of the highway. Most of the dwelling units in Eagle Lake are on the south side of the highway. The vast majority of the new residential development which is found in the community is located on the south side of the highway. The elementary school is approximately three blocks south of the inplace highway.

B. Impacts

1. Community/Neighborhood Cohesion

None of the alternatives being considered is expected to exert substantial effects upon community or neighborhood cohesion. However, the construction of any of the new alignment alternatives would remove the through traffic from the community, and as a result would be expected to have beneficial social effects. Each of the new alignment alternatives would be similar in the effects discussed below.

1a. Any new alignment alternative will make north-south travel from one part of town to the other, easier and safer for pedestrians

and bicyclists, and any others with a mobility impairment, especially children and elderly people.

1b. Any new alignment alternative will reduce conflicts between local and through traffic, increasing safety.

1c. Any new alignment alternative will reduce or eliminate any barrier effect which is currently associated with the inplace facility, thereby increasing social cohesion.

These effects would be expected to be produced by any new alignment alternative, regardless of which of the alternatives would be selected as a preferred alternative. The T.H.14 Reconst. Alternative would perpetuate the existing flow of traffic, and further, fix it in place for an indefinite but lengthy period into the future. The average daily traffic (ADT) on the highway at the present time is 5,650 through the city. Projected ADT on T.H.14 within the corporate limits of Eagle Lake is 7,165 in the year 2012. It does not appear that the highway currently acts as a barrier to social interaction in any appreciable manner at the present time. However, workday morning and evening traffic levels may pose a problem for pedestrian crossings. The through town alternative would perpetuate this. There would not be any additional travel lanes associated with this alternative. The through city alternative would result in a new pavement surface, and some additional minor improvements, but would not increase the capacity of the highway through the city, nor require right of way within the corporate limits of the city. It should be noted that the community has had this transportation facility located within it for a lengthy historical period. As a result of this history, residents have become accustomed to crossing the highway, and have adjusted their behavior to the level of traffic which is apt to be encountered. The facility itself is not projected to cause any growth in traffic.

None of the alternatives which would relocate the highway would be located in a densely populated urban residential area, and none would cause major adverse effects to neighborhoods. Selection of a through city route would not create any new adverse effect on community cohesion. However, as indicated above, the traffic is projected to increase over the current levels. The selection of the T.H.14 Reconst. Alternative as the Preferred Alternative would not reduce any current adverse impacts of the inplace highway. Neither would the no-build alternative reduce any adverse effect upon community cohesion. By removing through traffic from local streets, the adoption of any of the new alignment routes will facilitate travel within the city of Eagle Lake, particularly travel in a north-south direction across the existing facility.

2. Community Facilities

The proposed action is located in School District 77. Elementary school children attend school in Eagle Lake, while older children are bused to Mankato. Potential school district impacts include the number of school children impacted, and the possible impact on school bus routes. The number of school children potentially impacted was estimated. This procedure begins with the number of housing units likely to be displaced, and multiplies this by the average number of persons per housing unit in Blue Earth County. This is then multiplied by the proportion of the population aged 5-17 for the county or city. The result is an estimate of the school aged children which may be displaced. Although previous experience indicates that many displaced residents settle near their old residence, "worst case" analysis is used to estimate the maximum impact. For the present case, the worst case assumption is that all displaced residents will move from the region. If this were the case, District 77 might lose as many as four school aged children in any one year, or in each year following construction. The state of Minnesota guarantees school districts a certain level of expenditure per "pupil unit', which varies from year to year. The allocation formula is quite complex and includes a large number of variables. The formula requires that local factors be included in this computation. This process causes the actual amount of state aid received to vary between districts and

over time. Given that only a total of four school children would have anticipated to be relocated under the "worst case" scenario, it is not anticipated that this would cause significant adverse impact to School District 77.

3. Recreation

There are no designated recreation areas of public or private ownership between the termini of the proposed action that would be impacted by construction of any of the alternatives. There are open space areas within Eagle Lake which currently serve outdoor recreational functions. Directly adjacent to the highway on the north side, as one enters from the west, is the picnic shelter and open space of the American Legion facility. This consists of a shelter, several indoor and outdoor picnic tables, a trailer dump, a concrete pad, rest rooms and sound system. A large triangular shaped open space located west of the shelter is Mn/DOT right-of-way. A section this right-of-way would be used for an intersection with C.S.A.H.17; this area is 600 to 700 feet from the Legion shelter. Located four to five blocks further east along the north side of the highway, is a small triangular shaped area which contains a water supply, a grill, and a picnic table. Neither of the areas described above would be impacted by any of the project alternatives.

A large publicly owned park, the Eagle Lake Recreation Area, is located in the southwest section of the community. This is a large area, with many different facilities and recreational activities available. No Alternative is proposed to be located near this facility, as a result, the recreational area will not be impacted by any of the project alternatives.

An informal recreational use area is located at the Eagle Lake outlet. Eagle Lake is a lake designated by MDNR for wildlife management purposes and water levels in the lake are controlled by a water control structure built on private land under easement. Local residents use this area for fishing, canoe access, trapping and hunting. All of the build alternatives pass just to the south of the water control structure. Access to the water control structure would be maintained following construction and recreational use on the lake side of the structure would not be diminished.

4. Churches

A Lutheran church is located on the south side of T.H.14 in Eagle Lake, between Second and Third Streets. However, neither this nor any other church lying between the termini of the proposed action would be impacted in any way by construction of any of the alternatives being evaluated. The Eagle Lake Cemetary would not be impacted by any of the alternatives.

5. Public Safety

Police service within the City of Eagle Lake is provided by the Eagle Lake Police Department. Police service within the rural areas of the proposed action is provided by the Blue Earth County Sheriff's Department. Fire protection within the City of Eagle Lake is provided by the Eagle Lake Volunteer Fire Department. Fire protection in the rural area of the project is provided by either the Eagle Lake Volunteer Fire Department or the Janesville Volunteer Fire department depending upon location. No adverse impacts are anticipated to result from construction of any of the alternatives of the proposed action. Indeed, the construction of any of the alternatives will facilitate the movement of emergency vehicles in an east-west direction between project termini, and from outside the project termini as well. The basic county road infrastructure will not be impacted. If alternatives E or F were selected, a section of CSAH 17 would be replaced by state highway. However, there would be no change in opportunity for east-west travel.

6. Other Social Impacts

Previous research has revealed that some categories of people are particularly sensitive to the personal and social dislocations which transportation improvements sometimes cause. These categories include the elderly, handicapped, non-drivers, and minorities. The percentage of

minorities in the project area is exceedingly small. In the township of Le Ray, the 1980 census found 100 percent of the population was Caucasian. For Mankato Township the same statistic was 98.9, and for Eagle Lake, the figure was 99.6. As a result, the project is not anticipated to exert undue impact upon any minority group. The age structure in Blue Earth County is not substantially different from that of the state as a whole. In 1980, the U.S. Census found the median age in Minnesota was 29.2. In Blue Earth County this statistic was 26.1, in the City of Eagle Lake 24.9, in Le Ray Township 29.3, and in Mankato Township 25.7. This would indicate that the population in Blue Earth County, and especially in Eagle Lake, is younger than is true for the state. This is also revealed in the structure of the population. Whereas the percent of the population of Minnesota aged less than 18 was 28.7, in Blue Earth County it was 24.8, in Eagle Lake 37.4, in Mankato township 33.4, and in Le Ray township, 31.4. This is indicative that the population of Eagle Lake, as well as Mankato and Le Ray townships tends to be younger, and in active child bearing and child rearing years. The other end of the age structure reveals this as well. In 1980 11.8 percent of the population of Minnesota was aged 65 or greater. In Blue Earth County, the same statistic was 11.5 percent. However, in Eagle Lake this statistic was only 3.9 percent. In Mankato township and Le Ray township, the percent of population aged 65 or greater was 6.0 and 12.1, respectively. This reveals that the elderly are not likely to be unduly affected by any action within Eagle Lake. Generally, mobility impaired people would be beneficially impacted by selection of any of the alternatives which would route through traffic away from the center of the community. This would make it easier for these people to reach destinations on the other side of the inplace facility. The relatively higher proportion of children in the city of Eagle Lake would suggest that a new alignment alternative also would be of social benefit to the community because children moving about town on bicycles, or on foot would be at less risk from traffic accidents.

IV. Relocation Impacts

A. General

Most of the relocations would be rural in nature. Several of the residences are farms which have been in the same family for several generations.

Alternatives B1 and B2 may require the relocation of one household which is a combination residence and small business (R1, Figure 10) and one farm residence (R2, Figure 10). In addition to R1 and R2, Alternative W may require the relocation of one additional household (R10, Figure 10). Alternatives E and F also have relocation impacts. Alternative E would require the relocation of six households (R3-R7, R9, Figure 10). Alternative F would require the relocation of six households (five are the same potential displacees as those which would be displaced by Alternative E; R3-R8, Figure 10). The Two-Lane Reconstruction on Existing Alignment Alternative would not displace any residences or businesses.

The acquisition program will be conducted in accordance with the Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970, as amended by the Surface Transportation Act of 1987. Relocation assistance and compensation will be provided through the Mn/DOT Mankato District Relocation Office. Relocation resources are available to all potential residential and business relocatees without regard to race, color or national origin.

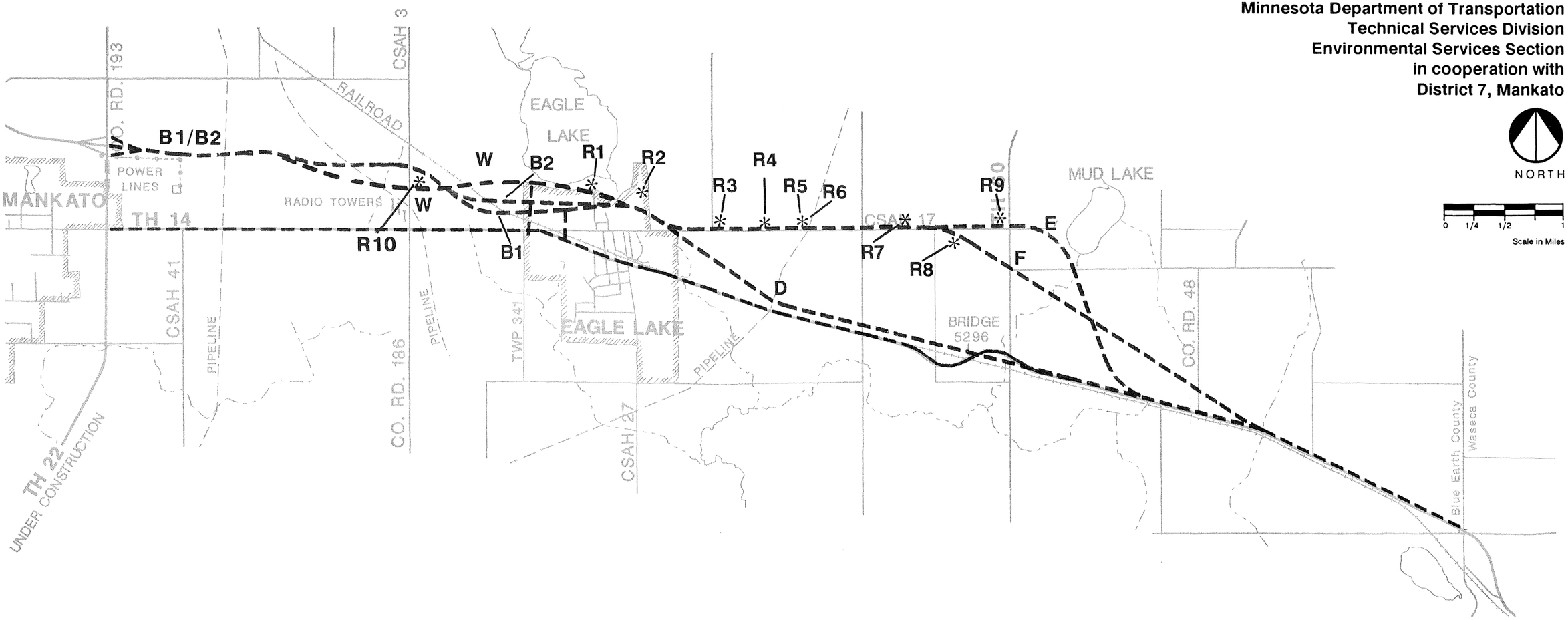
B. Residential Relocation

At this stage of project development, no contacts regarding purchase have been made with potentially affected property owners or rentors. Relocation was discussed at the August, 1987 Public Scoping Meeting and Mn/DOT staff were available to discuss the relocation process with area residents, and brochures detailing relocation benefits and procedures were available. Following the identification of the preferred alternative for the FEIS, the characteristics of the homes involved will be surveyed. In general, the potentially affected residences are rural

TH 14

Mankato to Smith's Mill

Minnesota Department of Transportation
Technical Services Division
Environmental Services Section
in cooperation with
District 7, Mankato



Legend

R	Site
- - -	Alternatives

Relocation Impacts
FIGURE 10

farmsteads and cover a range of characteristics common to the project area.

The homes tend to be typically well kept and maintained. The appearance of the homes would indicate that the income level of the families and individuals living in these properties is reasonably representative of the area.

C. Business Relocation

Bypassing the town of Eagle Lake on the north with alternatives B1, B2 or W, will possibly cause the relocation of one commercial/residential property located on the shore of Eagle Lake. This business is not oriented to transient motor traffic. If one of these alternatives is selected, the businesses may be served by an access spur, a median crossover, or it may be relocated. This will be determined by coordination with the owner/operator(s). The Mn/DOT relocation office will provide advisory services to this business in finding a suitable replacement site if it is relocated.

Farms are typically both a business and a residence. One farmstead would be relocated by the proposed realignment at CSAH 17. Others to the east along CSAH 17 would be impacted by alternatives E and F. In most cases, it may be possible to move the existing homes and buildings back from the new road on the same property. Another alternative is to construct new replacement buildings back from the new road on the same property. In some cases, this may not be possible or against the wishes of the owners. In these cases, the relocation office will provide advisory services to assist in finding suitable replacement farmsteads or housing.

D. Residential Availability

To determine the availability of suitable replacement housing, realtors in the project vicinity will be contacted, newspapers will be reviewed, and a field drive will be undertaken. This review is expected to reveal that an adequate supply of suitable housing is available to meet any demand for housing which the project could conceivably generate. The survey field review will examine evidence that any of the potential displaced residents have a mobility impairment, or other special needs. A large stock of available housing would be sufficient to insure that comparable replacement housing is available to meet the needs for housing which the preferred alternatives may generate. There are no other projects in the local area that would displace people to compete for available relocation facilities. It is not anticipated that the T.H.14 project will present significant problems in finding safe, sanitary, and decent replacement housing for all displaced households. The relatively small number of displacements should insure that functionally equivalent housing will be available for each displaced resident. Nor is it anticipated that the relocation required by this project will exert a significant disruptive effect upon the community in the project area.

E. Relocation Assistance

It is the policy of the Minnesota Department of Transportation that no person shall be displaced by its construction projects unless and until adequate replacement housing has already been provided for or is built and has been made available to all affected persons regardless of their race, color religion, sex or national origin. It is also the policy that, to the greatest extent practicable, no person lawfully occupying real property shall be required to move from his dwelling or move his business, farm operation, or nonprofit organization without written notice at least 90 days prior to the date such move is required. The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, codified in US Code, Title 42, Section 4601 et seq., has provided the legal framework which has regulated and guided relocation assistance since its passage. Regulatory material implementing this law is found in Code of Federal Regulations, Title 49, (49 CFR).

The purpose of the law and regulation was to establish a uniform policy for fair and equitable treatment of persons displaced as a result of federal and federally assisted programs in order that such persons shall not suffer disproportionate injuries as a result of programs designed for the benefit of the public as a whole. A state law

is found in Minnesota Statutes, Chapter 117, "Eminent Domain," which commits the Minnesota Department of Transportation to follow the procedures of the federal law and rule.

Together, these laws have provided that specific forms of assistance be granted to persons, businesses, farms, and non-profit organizations which are displaced by public improvements. Specific financial amounts and procedures were set forth as well. The actions of Mn/DOT have been regulated and guided in this matter by these laws for nearly two decades. The forms and amounts of assistance, and rights of property owners and others, are set forth in detail in two publications of the Minnesota Department of Transportation: "Guide for Property Owners," and "Relocation Assistance." These booklets were available at the 1987 public hearing and are available at Mn/DOT offices without charge.

The intent of these laws is to insure that each displaced household is relocated into decent, safe, and sanitary replacement housing within reasonable distances from their present place of employment. Mn/DOT attempts to complete each relocation within 90 days from the date of property acquisition. The Mn/DOT relocation office, through many sources, has listings of available homes for sale and homes and apartments for rent. Persons of lower income are given priority for public housing. Reasonable and necessary residential moving expenses are reimbursable, both for owner occupants and rentors. Businesses, non-profit organizations, and farm operations are also granted reasonable and necessary moving expenses, and payment for time spent in search of a replacement site. Appraisal fees are reimbursable, for residential, business, non-profit organizations, and farms. Other items are also reimbursable. A displaced owner-occupant may receive a supplemental replacement housing payment from Mn/DOT. This payment is the amount determined, which when added to the amount Mn/DOT pays for the acquired dwelling, equals the actual cost which the owner pays for a comparable dwelling or the amount determined by Mn/DOT as necessary to purchase a comparable dwelling, whichever is less. Increased interest payments are available to eligible owner-occupants to compensate for the increased cost required for financing a replacement dwelling. Mn/DOT will also pay most closing costs on the purchase of a replacement home. As a last resort, if satisfactory replacement housing of comparable value to that acquired cannot be located, Mn/DOT will locate the displaced household in other housing with no upper limit on cost. Given the housing situation in the area, it is doubtful that last resort housing will be needed. Owner-occupants and tenants of 90 days or more may be eligible for a rental assistance payment. This payment is designed to enable the displaced person or family to rent a comparable decent, safe, and sanitary replacement dwelling. If a replacement rental dwelling is chosen where the rental payments are higher than had been being paid, the rentor may be eligible for payments. Emphasis will be placed on providing relocation advisory services to businesses. Appropriate measures will be taken to ensure that all businesses which are to be displaced are fully aware of their benefits and entitlements, courses of action which are open to them, and any special provisions designed to encourage businesses to relocate within the same community.

The US Code regarding relocation assistance was substantially modified in April of 1987 by the US Congress. In April, 1987, the "Surface Transportation and Uniform Relocation Assistance Act of 1987," Public Law 100-17, became law. Title IV of that law is "Uniform Relocation Act Amendments of 1987". The revised law will provide increased benefits to residents, both owners and rentors. Increased benefits will also be available to business operators. Interested, or potentially affected residents, business operators, staff of non-profit organizations, or farmers are encouraged to contact the Mn/DOT district office for additional information.

V. Economic Impacts

Major transportation improvements have the potential to exert significant effects upon the local or regional economy. They may reduce transportation user costs, open new areas to development of residential or commercial uses, increase or improve the competitive advantage of a company or community, or in other ways exert a substantial economic effect.

A. Regional Economic Impacts

It is not anticipated that the proposed action will adversely affect the economic vitality at the local or regional level. Indeed, the proposed action is anticipated to strengthen the local and regional economy. The economy of the southern and southwestern part of Minnesota is predominated by agriculture and its associated industries. Minnesota Trunk Highway 14 is a major east-west transportation corridor in this part of the state. Entering the state in the east near La Crosse, Wisconsin, it travels west through some of the richest agricultural counties in the state and indeed in the nation. It exits the state to South Dakota in Lincoln County.

T.H.14 travels through a large number of relatively small communities in the southern part of Minnesota. These communities, and the agricultural sector of their economies, are dependent on T.H.14 for the provision of goods and services. T.H.14 also serves very important functions in the movement of commodities through the state from farm to market, and for the movement of agricultural supplies and equipment from plant to farm. The economic vitality of a region is dependent to a significant degree upon a strong, well developed and maintained "infrastructure". Surface transportation facilities are an important component of this infrastructure. The maintenance and improvement of a major transportation route is a measure which will provide underlying support for the economy of the region for many years. While the deterioration of major infrastructure is often not noticeable in the short term, over the long term infrastructure decay is a significant impediment to continued economic vigor and growth. Between the termini of the proposed action, it is not expected that any of the project alternatives will exert significant short-term economic effects. Mn/DOT is not aware of any large scale residential, industrial, or commercial development which is contingent upon construction of any of the build alternatives being evaluated. Neither is the proposed action thought to be associated with adverse impacts on the local, regional, or state economy. Minor economic impacts may be associated with the proposed action, as discussed below.

B. Community Business Impacts

This section will discuss the potential impact of the proposed action on established business districts of eastern Mankato and the community of Eagle Lake. It will also address the impact of the proposed action on farming operations. There are two business districts within the vicinity of the proposed action. The first is located in and near the city of Mankato. This consists of the major strip development which is found adjacent to T.H.14 at and beyond the west termini of the proposed action. Madison Avenue in this location is the major retail area, not only for Mankato, but for a significant part of south central Minnesota. Both east and west of old T.H.22 south (also called Victory Drive) large new retail and commercial facilities dominate the economic scene. This is the site of many retail food outlets and other convenience stores. Also represented are a large number and type of service facilities, including financial services, medical services, dental and many others. Major retailers have a substantial presence as well, including Sears, Shopko, K Mart, Menards, Walgreens, Cub Foods, and others. Financial institutions are represented. A number of automobile dealerships are also located here. This area currently receives traffic from a variety of sources. Traffic from westerly points of origin arrive at the area via Madison Avenue, T.H.22, T.H.14, or city streets. Consumers arriving from easterly directions use T.H.14 to access the area.

Following construction of any of the build alternatives, traffic will still be able to access

the area using essentially the same routes as are currently used. Construction of any of the build alternatives should remove some through traffic from Madison Avenue, thereby freeing some capacity for the use of those who have the shopping area as a destination. No adverse effects are anticipated regardless of the alternative selected. Minor positive impacts should occur from the provision of upgraded transportation service to and from the area.

In the vicinity of Eagle Lake, the construction of a new alignment alternative would result in through traffic motorists relocating away from the inplace facility. This is not expected to exert an adverse effect upon the local economy. Eagle Lake has a very limited shopping area, located principally near and along T.H.14 as it travels through the city. This consists of the American Legion facility, a on-off liquor outlet, a cafe, antique shop, barber/hair salon, furniture renovation, a superette, and a supermart-garage facility. These serve primarily local needs and are dependent upon repeat patronage of local consumers for success. Construction of any of the alternatives is not anticipated to exert a discernible effect upon commerce in Eagle Lake.

Farming operations are businesses of a special type. The proposed action will directly and indirectly affect these operations. Direct impacts would be to lose land currently in production to right of way acquisition. Some farms would lose land adjacent to existing roadways that may or may not be in production and others would lose land in production that is away from existing roads. If the owners of affected farms would elect to move or rebuild buildings taken for new right of way on the same property the move will still take land out of production. Indirect impacts occur when access to production land is diminished or the land is triangulated into smaller parcels which suffer from diminished access and less efficient operations (see Table 13). Both types of impacts can diminish operations to the point that the business is no longer viable. This might be due to inefficient operations or to a lack of sufficient capacity to be competitive.

C. Fiscal Impacts

Property acquired for transportation right of way is permanently removed from the rolls of each taxing district in which it is located. This may result in a temporary increase in the ad valorum tax on the remainder of real property in the district. If all or a substantial proportion of the displaced property owners choose to relocate outside of the taxing district, such an increase could be permanent. Previous experience of Mn/DOT suggests that most property owners will choose to relocate within the same general area. This may result in new homes being built to replace those which have been acquired. In such an eventuality, the fiscal impact from any of the proposed improvements would be negligible.

Mankato Township is a rapidly developing area and has undergone a 24 percent reduction in tillable acres between 1988 and 1989. Most of this loss is attrbutable to a change of use classification. Examples are farm to residential, farm to commercial, farm to highway (T.H.22), and annexation by the City of Mankato. For tax purposes, changes of use from farm to residential or commercial result in more revenue to the township because of increased valuation. Losses to highways and annexation are permanent and erode the township's tax base. However, the impacts of such losses are partially offset by not having to provide services. If the highway promotes development, the increases in tax revenues due to increased valuations would partially offset tax base loses from conversion to highway right-of-way.

The north-south township boundary between Mankato and Le Ray Townships is approximately at the west edge of the City of Eagle Lake. Since Le Ray Township is east of Mankato Township it is not likely to develop rapidly. Losses of tax base to highway right-of-way would not be offset by increased valuation for some time to come.

At the corridor level of analysis, it is very difficult to precisely estimate the nature and extent of fiscal impacts resulting from right-of-way acquisition. This is due to the lack of specificity of the relocation impacts which the

proposed action may require. In general, the greater the acreage impacted, the greater the magnitude of fiscal impact. In rural areas, the majority of impacts are of a "partial take" variety. The value of the remaining property is determined by the county assessor. In urban areas, the acquisition of highly developed, and therefore more highly assessed property, may cause greater impacts even though the total amount of right of way acquired for a through city route may be less. While a through town alternative generally results in fewer acres of right of way being acquired, the right of way costs and associated fiscal impacts are normally substantially greater when real property in a "higher and better" use is removed from the tax rolls.

D. Employment Opportunities

The proposed action is not expected to result in any significant post construction employment opportunities. The modernization of T.H.14 through the project area is necessary to insure the economic vitality of the region. While no specific economic development is thought to emanate from construction of any of the alternatives, T.H.14 is an important and integral part of the economic infrastructure of Minnesota and the region. The enhancement and timely maintenance of this facility should provide long term economic benefit to all residents of the region.

E. Accessibility

Any of the new alignment alternatives will increase accessibility to areas east of Mankato which are currently in an underdeveloped state. Over the long term, should construction occur in these corridors, some incremental development may occur along these routes, particularly at the location of roads or cross streets.

VI. Joint Development

There are no joint development projects between local communities and Mn/DOT associated with the proposed project.

VII. Considerations Relating To Bicyclists and Pedestrians

A. Bicycle Travel

T.H.14 is identified as a major bicycle corridor in need of improvement in the State Bicycle Transportation System Plan. Within the project limits, T.H.14 provides access to T.H.60 which in turn provides a connection to the Sakatah Singing Hills State Trail (see Figure 11). The Sakatah State Trail also provides a generally parallel route to T.H.14 for bicyclists travelling from Eagle Lake to the northern area of Mankato. However, east of Eagle Lake the trail extends farther north and then east-west parallel to T.H.60.

According to Mn/DOT's bikeway design standards, T.H.14 is currently rated "unsatisfactory" within the project area for bicycle travel due to its design and the high traffic volumes. If the two-lane reconstruction alternative is chosen, six to eight foot wide paved shoulders would be required east of the T.H. 14 junction with T.H.60 in order to provide a satisfactory bicycle travel route. Due to the high average daily traffic levels west of the junction of T.H.14 with T.H.60, a divided four-lane roadway with eight to ten foot wide paved shoulders would be necessary to provide a satisfactory bicycle travel route.

If a build alternative is selected, actual corridor selection will have little impact on bikeways; impacts will depend largely on roadway design which in part is dependent upon selection of the preferred alternative. However, any of the build alternatives on new alignment would result in some reduction in motor vehicle traffic on the existing T.H.14 section, thus somewhat improving the suitability of the roadway through Eagle Lake for bicycle travel. These issues will be addressed further in the FEIS.

B. Pedestrian Access

Since much of the present roadway extends through a rural area and is of rural design (shoulders and ditches), sidewalks are currently present only on a two block section of T.H.14

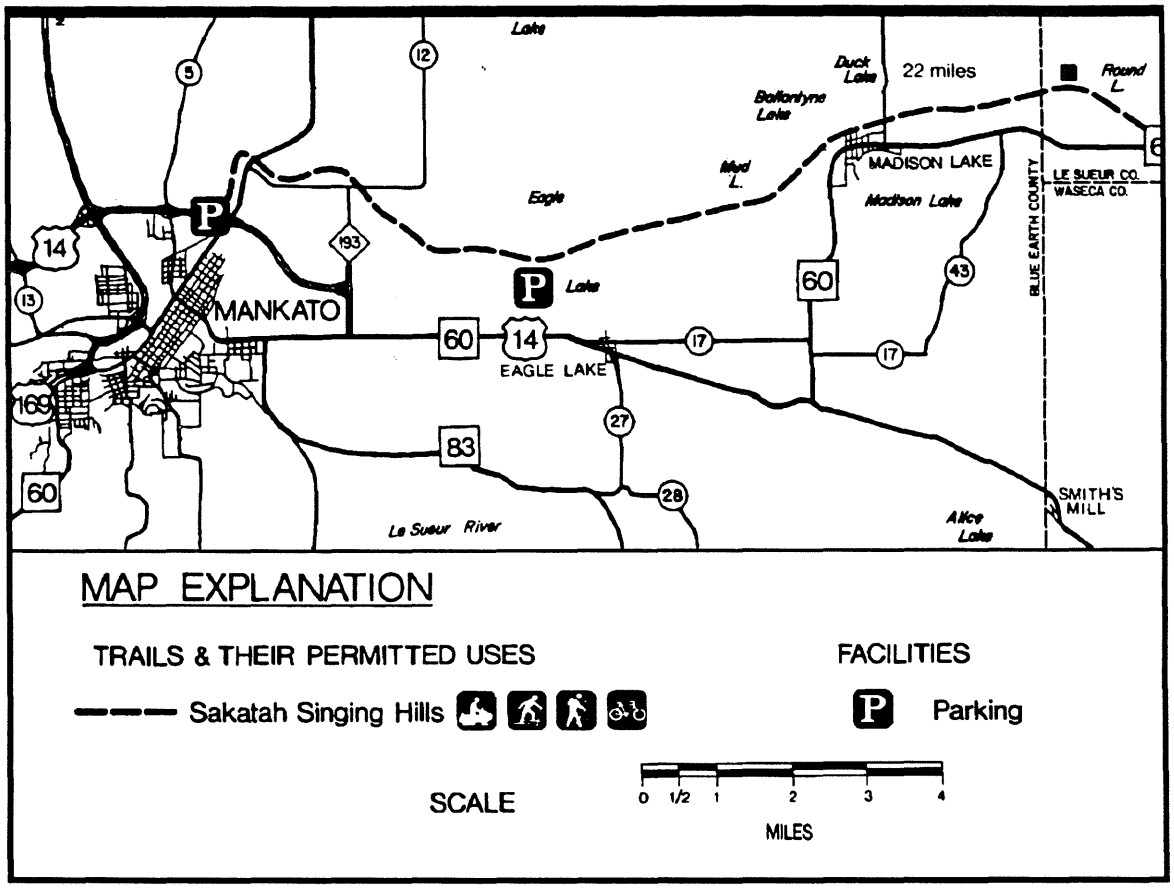


Figure 11. The proximity of the Sakatah Singing Hills Trail to Mankato and Eagle Lake.

in Eagle Lake. If one of the northern alignments (Alternative B, D, E, F, or W) is chosen, the existing T.H.14 roadway section will be turned back to the county, and the existing sidewalk section would likely remain. Sidewalks are not included along the proposed northern alignments, since these alignments do not pass through an area of homes or services which would require pedestrian access. Pedestrian access connecting homes and services in Eagle Lake is provided along local streets with relatively low traffic volumes. Hiking opportunities are provided along the Sakatah Singing Hills Trail,approximately two miles from Eagle Lake.

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VIII. Air Quality Impacts

The air quality impacts of the proposed project have been analyzed. Based on this analysis the proposed project is not anticipated to have significant air quality impacts and is considered consistent with the approved State Implementation Plan. A Memorandum of Understanding with the Minnesota Pollution Control Agency (MPCA) specifies that prior consultation with the MPCA is considered as accomplished for highway sections which are outside of a Standard Metropolitan Statistical Area. An Indirect Source Permit is not needed for this project.

An air quality analysis was done because the projected traffic volumes (including intersecting traffic) are greater than 20,000 ADT ten years after the proposed construction. The procedure used was based on EPA's Mobile3 vehicular emission factors for carbon monoxide and FHWA's CALINE3 dispersion model. The years of analysis used in the model were 1993 and 2002 representing the year following the estimated time of construction and ten years later; the results are presented in Table 13. The associated alternatives and site locations are presented in Figure 12. Site 1 is at the intersection of inplace T.H.14 and T.H.22 at the eastern edge of Mankato. Site 2 is at an open road location along T.H.14/T.H.22 north of the intersection used for Site 1. Site 3 is at the proposed intersection of T.H.14 and CSAH 17 north of Eagle Lake. No exceedance of the carbon monoxide standards was indicated by the analysis.

This project is in an area where the State Implementation Plan is not required to contain any transportation control measures. Therefore, the conformity procedures of 23 CFR 770 do not apply to this project. The construction will conform to local, state and federal regulations for airborne particulate matter.

XI. Noise Impacts

A. Project Area

The west end of the project starts at the east edge of the Mankato City limits in an area that contains a shopping mall and light industry; a prominent feature of this area is the intersection of T.H.14/T.H.60 and T.H.22. The city limits of Eagle Lake begin 2.75 miles east of the intersection noted above. T.H.14/T.H.60 transverses the City of Eagle Lake for about 1.1 miles. From the eastern city limits of Eagle Lake to Smiths Mill, the highway crosses a rural area.

Noise receptors along the existing facility and the various proposed alignments consist primarily of residences and businesses; the alternative alignments and site locations are presented in Figure 12. Outside of Eagle Lake, the residences are located on farmsteads. Businesses tend to be clustered on the east edge of Mankato, the edges of Eagle Lake and in Eagle Lake. One school in Eagle Lake is three blocks south of the existing highway facility. The major recreational park in Eagle Lake is located approximately one half mile south of existing T.H.14. A small community facility associated with the American Legion Club in Eagle Lake is adjacent to T.H.14. A number of multifamily housing structures are located on the northern edge of Eagle Lake and these would be close to the proposed build alignments.

B. Noise Analysis Methodology

Sound is produced by moving vehicles and the perception of this sound as noise is subjective, depending upon the quality of the sound and the attitude of the listener. Sound intensity is measured on a logarithmic scale based on the decibel (dB) with 0 dB being the threshold of hearing and 140 dB being the threshold of pain.

The human ear is differentially sensitive to the intensity of sound and its frequency. Generally, high frequency sounds are perceived as louder than low frequency sounds of the same intensity level. Because of this differential sensitivity, the decibel scale used in noise analysis has been modified to take this into account. A decibel scale weighted by frequency has been developed in an attempt to emulate the frequency response of the human ear. In this analysis, A-weighted decibels or dB(A) are used to record and predict noise levels.

Table 13. Predicted carbon monoxide concentrations in parts per million (PPM) at three selected locations.

Site	Alternatives	One Hour		Eight Hour	
		1993	2002	1993	2002
1). Intersection, T.H.14 & T.H.22 W. of Eagle Lake.	B/W + D	4.2	3.9	3.1	2.3
	B/W + E or F	4.2	3.9	3.1	2.3
	T.H.14 Reconst.	5.3	5.0	3.0	3.0
	No-Build	5.3	5.0	3.0	3.0
2). Open road, T.H.14/T.H.22, N. of Site 1.	B/W + D	3.0	2.6	1.9	1.6
	B/W + E or F	3.0	2.6	1.9	1.6
	T.H.14 Reconst.	4.2	2.6	1.9	1.6
	No-Build	4.2	2.6	1.9	1.6
3). Intersection, New T.H.14 & CSAH 17, N. of Eagle Lake.	B/W + D	3.5	2.8	2.3	1.7
	B/W + E or F	3.7	3.3	2.3	1.9
	T.H.14 Reconst.	2.9	2.5	1.8	1.5
	No-Build	2.9	2.5	1.8	1.5

Minnesota Standards: One Hour (30 PPM); Eight Hour (9 PPM).
Federal Standards: One Hour (35 PPM); Eight Hour (9 PPM).

The decibel scale is convenient for describing the magnitude of sound, but it does not reflect a simple relationship to loudness detected by the human ear. For example, a doubling of the traffic volume on a particular road will double the amount of noise energy. However, it will only increase the noise level by 3 dB(A). A doubling in perceived loudness would require an increase in noise levels of 10 dB(A) which represents a ten fold increase in noise energy or a ten fold increase in traffic levels.

Traffic noise measurements are taken at a variety of sites chosen to represent a range of traffic flow situations, from busy residential collector roads to highways. Representative sensitive noise areas along each alternative were determined and identified for field monitoring (Figure 12, Table 14). These sites were considered to be representative of where major changes in the noise environment would occur upon construction of the various alternatives.

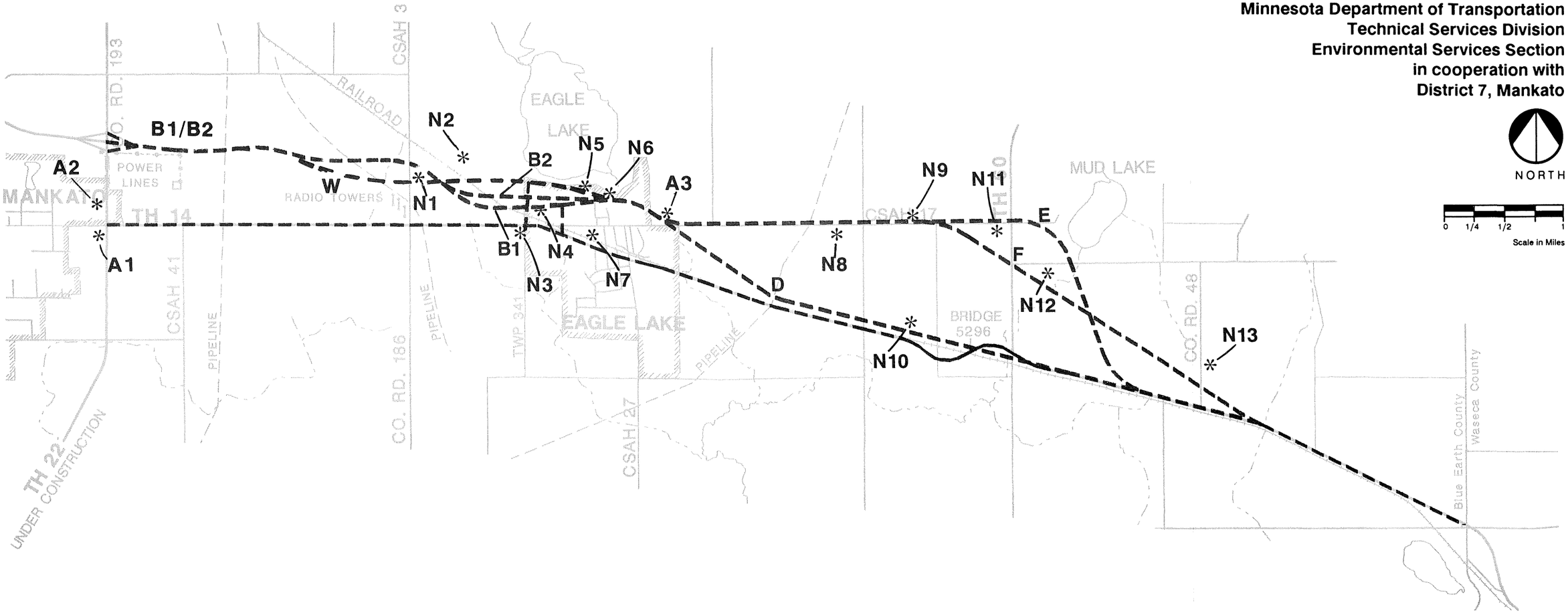
Existing noise levels at these areas were estimated using field noise measurements to calibrate the FHWA Noise Model RD-77-108 computer program known as STAMINA 2.0/ OPTIMA. The field measurements also serve as a baseline to be used in calibrating the noise model used in predicting future noise levels and noise levels under different traffic scenarios. These sites and their existing noise levels are tabulated in Table 14.

Using present and future traffic for each alternative, noise levels were determined with STAMINA 2.0. This information was then applied to aerial photos and maps of the proposed route. From this, a noise impact inventory was created for the number of receptors (receptor = residential building) that would be above the various state and federal standards and/or have impacts equal to or greater than 10 dB(A) under the different alternates. (A 10 decibel increase in ambient noise levels repre-

TH 14

Mankato to Smith's Mill

Minnesota Department of Transportation
Technical Services Division
Environmental Services Section
in cooperation with
District 7, Mankato



Legend

N	Site
- - -	Alternatives

Air Quality and Noise Analysis Sites
FIGURE 12

Table 14. Ambient noise measurement site locations, the measured results and a description of the location (also see Figure 12).

Measurement Site Number	L10[a] dB(A)	L50[b] dB(A)	Description
N1	52	48	House E. of CSAH 3 and S. of RR tracks.
N2	42	40	Cedar House N. of RR tracks.
N3	62	51	100 feet S. of T.H.14 and W. of T.H.14 and CSAH 17 Intersection.
N4	54	49	House N. of T.H.14 and CSAH 17 and RR tracks.
N5	45	40	House at end of dirt road and just south of Eagle Lake (lake).
N6	45	41	House at end of Lake View St.
N7	66	57	50 feet N. of T.H.14 adjacent to Amer. Legion Hall in Ealge Lake.
N8	58	50	Farm S. CSAH 17 and W. of T.H.60.
N9	48	43	Farm N. CSAH 17 and W. of T.H.60.
N10	50	43	Farm N. T.H.14 and N.W. of RR trestle over small creek.
N11	52	45	Farm S. CSAH 17 and W. of T.H.60.
N12	48	44	Farm S. CSAH 17 and E. of T.H.60.
N13	45	40	Field entrance on E. side of County Road 48 and N. of T.H.14.

[a] During 6 minutes of the measurement hour, the listed level will be exceeded.
[b] During 30 minutes of the measurement hour, the listed level will be exceeded
Note: Measurements were made between the hours of 9:00 AM and 4:00 PM.

Table 15. The number of receptors[a] exceeding federal noise abatement criteria and/ or state noise standards with different alternative combinations.

Alternative Combinations	Year 1992			Year 2012		
	Federal	State		Federal	State	
		Day	Night		Day	Night
No Build	19	55	73	52	64	78
T.H.14 Reconst.	19	55	73	52	64	78
D & B1	0	23	68	23	51	72
D & B2	0	22	70	23	50	74
D & W	0	24	69	22	51	72
E & B1	0	25	67	26	46	71
E & B2	0	24	66	26	45	70
E & W	0	26	67	25	46	71
F & B1	1	25	67	26	45	71
F & B2	1	23	66	26	44	70
F & W	1	25	67	25	45	71

[a] Receptor = residence

Note: The federal criterion is an L10 of 70 dB(A)
The state daytime standards for residences are an L10 of 65 dB(A) and an L50 of 60 dB(A). The state nighttime standards are an L10 of 55 dB(A) and an L50 of 50 dB(A). Nighttime is defined as the hours 10:00 PM to 7:00 AM.

sents a perceived doubling of existing loudness conditions.) Commercial businesses have higher standards than residences. Using residential receptors in the analysis represents a "worst case" scenario. The Alternative routes are presented in Figure 12 along with the measurement site locations.

Minnesota nighttime standards apply to a greater number of receptors than the Minnesota daytime standards. This is due to two primary reasons: 1) The Minnesota nighttime standard is 10 dB(A) lower than the Minnesota daytime standard; and 2) The Minnesota nighttime standard is applied over the period from 10 PM to 7 AM, which includes one of the busiest morning traffic hours, 6 AM to 7 AM.

C. Alternatives

The alternatives and the number of receptors that are predicted to exceed federal noise abatement criteria and state noise standards are presented in Table 15. This includes any residence within a 500 foot corridor of the alternative being evaluated. It should be noted that the estimated numbers in this table were obtained using recent maps, photos etc. If and when an alternative is built, the actual numbers could be larger due to the relocation of people and business closer to the new highway route.

1. No Build or T.H.14 Reconst.

Analysis indicates that present noise levels along T.H.14 exceed FHWA Noise Abatement Criteria. By 1992, nineteen traffic noise receptors will exceed federal criteria and Minnesota daytime noise standards will be exceeded at 55

traffic noise receptors. With the No Build alternative the number of receptors that are above state standards and/or federal criteria increases by the year 2012, particularly for the federal criteria. This increase is due to the expected increases in traffic volume on T.H.14 by the year 2012. With the increase in traffic there is a resultant increase in noise levels along T.H.14 and CSAH 17.

Table 16. The number of receptors associated with the various alternatives and their east-west combinations where increases of 10 or more A-weighted decibels would occur upon construction.

Alternatives/Combinations	Year 1992
No Build	0
T.H.14 Reconst.	0
D & B1	8
D & B2	8
D & W	11
E & B1	8
E & B2	8
E & W	11
F & B1	8
F & B2	8
F & W	11

Note: Noise levels would be below existing federal noise abatement criteria and state standards, but at least double existing conditions.

The No Build and T.H.14 Reconst. alternatives have the most receptors that would exceed state standards and/or federal criteria by the year 2012 (Table 15); note that for the federal criteria the increase is doubled over any of the build alternatives.

2. Build Alternatives

The various build alternatives on new alignment would generally not exceed federal criteria in 1992. However, by the year 2012, a large increase in the number of residences over the federal criteria is predicted. Primarily, this would be due to traffic growth and most of the affected residences would be located along the existing highways, CSAH 17 and T.H.14. One receptor associated with Alternative F would have levels exceeding federal criteria in 1992 if that alternative were built. All of the build alternatives would have noise levels exceeding state daytime standards by 1992 for 22 to 26 receptors and by the year 2012 for 44 to 51 receptors. Note that these increases are less than for the No Build Alternative or the T.H.14 Reconstruction Alternative, because the proposed build alternatives would produce an expressway on new alignment, the number of impacted receptors is lower.

The number of receptors that will experience noise level increases of 10 dB(A) or more above existing levels with any of the various alternative combinations are presented in Table 16. Generally, eight receptors would experience increases of 10 dB(A) or more. Three additional receptors are associated with alternative W so those alternatives paired with alternative W have eleven receptors having a 10 dB(A) or more increase.

D. Mitigation

Since both federal criteria and state standards would be exceeded for receptors in the build alternatives, mitigation will be considered. Since many receptors tend to be widely separated, it is unlikely that mitigation would be cost effective for all receptors. Before adoption of a FEIS, Mn/DOT will identify those noise abatement measures which are reasonable and feasible and are likely to be incorporated in the proposed project. Mn/DOT will also identify those noise impacts for which no apparent solution is available.

Any mitigative proposal will be evaluated using a number of criteria. Typical concerns are: a) Will a significant decrease in noise of 5 to 10 dB(A) be achieved? b) Will the cost of the barrier per decibel of noise reduction be reasonable? and c) Will the proposed mitigation be practical in its proposed location? Finally, to evaluate the effectivenss of mitigative measures a number of other things need to be considered. For an observer facing the highway and located 100 feet from the roadway, a rule of thumb is than an 85% reduction in noise would be perceived if the mitigative measure blocked sound 400 feet to the right and 400 feet to the left of the observer. The same proportions are applicable for any given distance away from the highway recognizing that noise levels decrease with distance from the source independent of barriers. Any breaks in a barrier reduce its effectiveness.

Possible noise abatement measures include acoustical barriers (noise walls), earth berms, sound insulation, vegetative screens, roadway surface type, traffic management and alignment changes. These measures have positive and negative points that are discussed below; they will have bearing on any decision employing mitigative noise measures.

1. Acoustical Barriers (Noise Walls) - Noise level reductions of from 5 to 10 dB(A) are considered typical with the use of this type of barrier. These barriers are effective in relation to their linear length and their height. Heights of 15 to 20 feet are typically used. Gaps due to intersections, numerous field or residential access points, or for intersecting roads reduce their effectiveness in protecting scattered receptors. One major advantage of noise walls is that they can be easily located within the existing right-of-way corridor because of their narrow width. Costs in 1986 dollars are from 80 to 120 dollars per lineal foot for wood construction.
2. Earth Berms - Earth berms or mounds are one of the most effective noise abatement methods currently in use. Berms of 15 to 18 feet in height would be effective in noise level reductions. In general, the existing right-of-way corridor will not be wide enough to construct berms of sufficient height to be effective. Additional right-of-way would require additional land which may be environmentally sensitive such as farm land or wetlands.

   A berm 15 feet in height with a top width of five feet and 3:1 side-slopes would require 100 feet of land perpendicular to the highway to hold the berm, plus 100 additional feet of land for the material to construct the berm, and cost approximately $2,000 per lineal foot exclusive of the right-of-way purchase.
3. Sound Insulation - Sound insulation requires retrofitting existing buildings. It is relatively expensive and does not reduce noise levels in adjacent outdoor areas. It may be best suited for large public buildings with little outside use, such as hospitals and churches.
4. Vegetative Screens - Vegetative screens can be effective but they require more right-of-way than do earth berms. A stand of extremely dense vegetation (evergreens) 15 to 20 feet high and 100 feet wide with no line of sight to the roadway will reduce noise by 5 dB(A). An additional strip 100 feet wide and of the same height, will offer an additional noise reduction of 5 dB(A). Additional right-of-way may come from sensitive areas and increase another type of environmental impact.

   Establishing a vegetative screen from seedling evergreens would be relatively inexpensive. Additional right-of-way would be the major expense. It would take 15 years for the trees to reach 15 feet in height. Using trees already grown to a height of five feet, it would take approximately eight years for them to grow to 15 feet in height. Costs for materials would be approximately $120 per lineal foot exclusive of right-of-way purchase and tree maintenance.
5. Roadway Surface Type - Roadway surface type is a variable considered for noise analysis. Mn/DOT has studied a variety of surface types to determine if some pavement

surfaces are inherently more noisy. In general, the rougher the surface, the more tire noise that will be generated by traffic, but when tire noise on new concrete surfaces is compared to new bituminous surfaces, the bituminous surface will be just perceptibly quieter (no real difference).

Tire noise becomes less of an issue when trucks are the major noise source because much of the noise generated by traffic comes from engines, dirve trains and exhausts. In the final noise analysis, roadway surface type is less important than the numbers and types of vehicles using newly constructed highways because surface type only influences a minor component of the total traffic noise. Thus, roadway surface type has no real bearing on the total noise generated on newly constructed highways.

6. Traffic Management Measures - The types of traffic management measures that would be considered to reduce noise include the prohibition of certain vehicle types, time use restrictions, modified speed limits and traffic control devices. These measures are often an inconvenience to the traveling public and may be incompatible with adjacent development and transportation facilities.
7. Alignment Changes - Alignment changes are being considered in the DEIS in the form of selecting a transportation alternative which will include one of the western alternatives (B1,B2,W) plus one of the eastern alternatives (D,E,F), the T.H.14 Reconstruction Alternative, or the No-Build Alternative. One of the considerations in making the choice is noise impacts. Once a choice has been made further substantial changes in alignment to reduce noise impacts will not be feasible. In any case, any alignment changes to reduce the noise levels to one area would increase noise levels at other areas. Overall reduction in noise impacts would not occur.

Following selection of a preferred alternative, a design study and noise report will be preparred to aid the detail design section in preparing the final plans. Noise abatement mitigation will be addressed at that time.

X. Water Quality Impacts

A. Surface Water Resources

The primary surface water resources in the project area consist of intermittent streams, shallow marshes and shallow lakes. The proposed alternatives would not directly impact the two larger bodies of water adjacent to the proposed project (Eagle Lake and Mud Lake). The outlets of these two lakes form intermittent streams which flow through the project area. There are no water quality data on these streams, but it may be expected that the water in these streams would display characteristics associated with hypereutrophic drainage from the parent lakes as well as surface runoff from surrounding agricultural lands; ie., the water would be turbid and fertile. These streams offer no unique aquatic habitat in their present condition and the situation is not likely to change, with or without highway construction.

Roadway runoff or non-point source pollution associated with highways or highway construction would have no adverse impacts on sensitive water resources such as water supply reservoirs, high quality streams, or ground water recharge areas because of the following reasons: 1) There are no water supply reservoirs or high quality streams in the project area; 2) Roadway drainage is mostly channeled through grassy ditches and settlement basins before it is allowed to flow to streams, wetlands or lakes; 3) Wetlands in the project area are primarily small isolated basins and therefore would not serve as significant groundwater recharge areas. Very little roadway drainage would be discharged directly to any wetlands; 4) Eagle Lake and Mud Lake would not directly receive roadway drainage that had not been channeled through grassy ditches; 5) Erosion control measures specified in the 1988 Mn/DOT "Standard Specifications for Construction," 1803.5, 2573 and special provisions, normally prevent or control erosion prior to the establishment of vegetative cover during and after construction.

B. Ground Water Resources

Principal drinking water wells for the City of Eagle Lake are located at depths of 270 and 399 feet; they draw water from the Jordan aquifer which is remote from surface aquifers. One well is located adjacent to existing T.H.14 and the other is located near the community recreation area south and west of T.H.14. Neither well would be impacted by highway construction.

Many rural farmsteads have their own wells which are likely to draw from shallow aquifers. Wells on those farmsteads adjacent to the project and outside of the proposed right-of-way limits would not be affected by construction; surface water runoff from any construction site would be directed away from farmsteads. Channelization of roadway drainage through grassy ditches and settlement basins before discharge into wetlands should prevent contamination of shallow aquifers that may be recharged by wetlands adjacent to the project. In addition, soils in the project area have slow percolation rates (64%), are wet (52%), or have slow to very slow infiltration rates (52%). Any wells on farmsteads that would be taken for construction purposes would be capped during construction to prevent contamination of local aquifers. Wells would be sealed in accordance with Chapter 326 of Laws of Minnesota 1989, "The Minnesota Ground Water Protection Act".

XI. Permits and Approvals

A. Federal and State

This project will require a Nationwide or an Individual 404 Permit from the US Army Corps of Engineers because the proposed alternatives will impact 3.5 to 20.3 acres of wetland. These wetland impacts are described in the Wetland and Wildlife Impacts section (see Tables 17-19). Also, as a result of the wetland impacts, a Section 401 (Water Quality Certification) will be required from the Minnesota Pollution Control Agency and a Protected Waters Permit may be required from the Minnesota Department of Natural Resources. On site mitigation for any such impacts will likely be coupled to the proposed project.

The Corps of Engineers, MNDNR, USFWS, and the MPCA have been involved in the development of this project through the scoping process. The newly proposed alternative (W) is a result of this coordination.

B. Regional and Local Approval

The Region 9 Development Commission and Blue Earth County will be asked to review and comment on the proposed project. Municipal Plan Approval by the affected communities of Mankato and Eagle Lake will be required for the various construction activities, including work involving controlled access locations, bridge replacement, and the rezoning and reconstruction of a principal trunk highway.

The City of Eagle Lake has expressed a preference to have T.H.14 pass just north of the City rather than have the highway through town. Eagle Lake has designated a corridor at the north edge of town and has discouraged development therein.

XII. Wetland and Wildlife Impacts

A. Wetlands

The topography of the area is characterized by flat terrain with shallow depressions containing lakes and marshes. Based on US Geological Survey Maps, fourteen wetland basins are in the general project area (Figure 8 and Table 17) and 11 of these basins could be affected by the various alternatives (see Tables 18 and 19).

1. Type Discussion

The dominant wetland types in the project area are type 2 (fresh meadow) and type 3 (shallow marsh) wetlands. The type 2 wetlands in the project area are dominated by tall, dense reed canary grass. The type 3 wetlands in the project area consist primarily of dense cattail stands. These types of wetlands function as wildlife habitat, floodwater storage areas and ground water recharge areas. The type 2 wetlands provide marginal breeding habitat for waterfowl

Table 17. Wetland types and acreages: build alternatives.

Wetland Number	Wetland Type[a]	Wetland Type[b]	Basin Acreage	Closest Alternative(s)
WET 0	2	PE[c]	8.1	B1/B2[d],W
WET 1A	2/3 (6 fringe)	PE/SSf	20.5	B1/B2
WET1B	2 (6 fringe)	PE/SS	22.9	W
WET 2	3 (7 fringe)	PE/Ff	2.2	T.H.14 Reconst.
WET 3	2/3	PE	2.1	B1,B2
WET 4	2/3 (6 fringe)	PE/SSf	24.4	T.H.14 Reconst.,B1,B2,W
WET 5	2	PE	12.8	B1,B2
WET 6	2/3 (fringe of 5)	PE	200.0 +	B1,B2,W
WET 7	2	PE	5.5	T.H.14 Reconst.
WET7A	3/4	PE	0.3	B!,B2,W
WET7B	7	FW	3.3	B2,W
WET 8	2 (4 channel)	PE	18.6	B1,B2,W
WET 9	2	PE	25.7	T.H.14 Reconst.
WET 10	3	PE	32.0	D
WET 10A	2	PE	1.6	E,F
WET 10B	2	PE	16.3	E,F
WET 11	2 (fringe of 5)	PE	100.0 +	E
WET 12	3	PE	100.0 +	T.H.14 Reconst.,F
WET12A	2	PE	53.0 +	T.H.14 Reconst.
WET 13	3	PE	100.0 +	T.H.14 Reconst.
			Total = 740.7 +	

[a] Circular 39, US Fish and Wildlife Service, 1971.

[b] Cowardin et. al., 1979.

[c] Ff = forested fringe; FW = forested wetland; PE = persistent emergent; SS = scrub—shrub; SSf = scrub—shrub fringe.

[d] B1/B2 = Same alignment for alternatives B1 or B2.

and mammals such as mink and raccoon. The reed canary grass does not provide a diverse habitat for wildlife and their food species, but provides some winter cover for pheasants. The type 3 wetlands provide marginal breeding habitat for wildlife because of their general lack of open water areas. These wetlands, however, provide important winter cover for deer and pheasants. The small type 2 and type 3 wetlands (less than 40 acres) tend to rate high in their effectiveness in flood-flow alteration. However, their opportunity to provide this function is rated low by the Minnesota Wetland Evaluation Methodology due to the limited size of their watersheds.

2. Wetland Evaluation

Wetlands 1A, 4 and 6 would be valuable in any area of Minnesota because they are diverse and isolated from human disturbance. The inherent value of Wetlands 8 and 10 has been diminished by artificial alterations, a lack of diversity and their proximity to urban land use. Both wetlands 8 and 10 are within the city of Eagle Lake. Wetland 8 is zoned agriculture-residential and wetland 10 is platted and zoned for limited industry (Figure 9).

The wetlands in the project area were evaluated using the wildlife function of the Minnesota Wetland Evaluation Methodology (WEM) for

Table 18. Wetland impacts: build alternatives[a] west of Eagle Lake.

Alternative	Wetland Number	Impact Acreage
B1	WET 1A	1.0
	WET1B	2.6
	WET 4	1.4
	WET 5	3.7
	WET7A	0.3
	WET 8	6.9
B2	WET 1A	1.0
	WET1B	2.6
	WET 4	1.4
	WET 5	0.3
	WET7A	0.3
	WET7B	1.5
	WET 8	7.0
W	WET1B	5.8
	WET4	1.4
	WET7A	0.3
	WET7B	0.1
	WET 8	7.1
T.H.14 Reconst.	WET 2	0.6
	WET 4	0.3
	WET 7	0.4

[a] Wetlands not listed are not impacted.

the North Central United States (MEQB 1988). Under this system wetlands may receive scores from 0 to 100. The four wetlands in the project area which received the highest scores are listed below.

2a. Wetland 1A (WEM score 67): This wetland basin is unique in the project area because it contains several wetland types, although type 2 and 3 are dominant. Its value is enhanced by the presence of a large woodlot, which provides good wildlife habitat, and its isolation. This area is known to harbor deer and other wildlife species.

2b. Wetland 4 (WEM score 69): This wetland basin is unique in the area ,because it contains an area of open water. This enhances its wildlife habitat value.

2c. Wetland 6 (WEM score 70): This wetland is valuable because it constitutes the fringe of Eagle Lake. This wetland fringe provides cover and foraging habitat for the waterfowl that inhabit the lake.

2d. Wetland 8 (WEM score 67): Although this wetland contains a dense stand of reed canary grass, its value for wildlife is enhanced

Table 19. Wetland impacts: build alternatives[a] east of Eagle Lake.

Alternative	Wetland Number	Impact Acreage
D	WET 10	4.7
E	WET 10A	0.6
	WET 10B	4.6
	WET 11	0.2
F	WET 10A	0.6
	WET 10B	4.6
	WET 12	0.5
T.H.14 Reconst.	WET 9	1.7
	WET 12	0.1
	WET12A	0.3
	WET 13	0.7

[a] Wetlands not listed are not impacted.

by a wide central ditch which provides areas of open water where waterfowl can forage. Wetland 8 also has additional value due to its proximity to the lake.

3. Impacts

It was not possible to develop a corridor that would avoid all wetland impacts (Figure 8), because wetlands are scattered throughout the project area. Most of the anticipated impacts resulting from the various alternatives will have a negligible impact on affected wetlands and their functions. Some of these impacts will be minor due to a relatively small encroachment into a large basin (WET 1A, 1B, 4, 7, 9, and 11 through 13) and some anticipated impacts will be negligible due to the limited opportunity that these wetlands have to provide the various wetland functions (WET 2 and 5). Moderate negative effects on wildlife resources in the area would occur from wetland impacts to Wet 4, 8 and 10. However, the negative effects on the combined floodwater storage and groundwater recharge values of these wetlands are anticipated to be minimal for the project area.

One of the area's most valuable wetlands (WET 6) will not be affected by any of the western alternatives. Two of three valuable wetlands in the area (WET 4 and 8) would be affected by all of the western alternatives except T.H.14 Reconst. (Table 18); WET 1A would be affected by Alternatives B1 and B2.

4. Avoidance, Minimization and Mitigation

In compliance with state and federal wetland protection regulations, avoidance and minimization will be investigated further. Off-site mitigation, i.e., compensation for project impacts, will be implemented only after practicable measures to avoid, minimize or accomplish on-site mitigation have been considered.

4a. Avoidance: Avoidance of wetland impacts can be integrated at various stages of project development. The first, and most effective measure, is to choose an alternative with the least wetland impacts. Once an alternative is selected, the road alignment can be adjusted to avoid wetlands. The practicability of these alignment changes depends on other factors, such as safety standards and other environmental concerns. For this project, the proposed alignments have been adjusted as much as possible to avoid wetlands at this stage of the design process. For example, the choice of 284 foot right-of-way limits rather

Table 20. Comparison of total wetland impacts from combinations of alternatives west and east of Eagle Lake.

Alternatives (Western + Eastern)	Wetland Acres (Western + Eastern)	Total Acres
B1 + D	15.9 + 4.7	20.6
B1 + E	15.9 + 5.4	21.3
B1 + F	15.9 + 5.7	21.6
B2 + D	14.1 + 4.7	18.8
B2 + E	14.1 + 5.4	19.5
B2 + F	14.1 + 5.7	19.8
W + D	14.7 + 4.7	19.4
W + E	14.7 + 5.4	20.1
W + F	14.7 + 5.7	20.4
T.H.14 Reconst.	1.3 + 2.8	4.1

than 324 foot right of way limits reduces potential impacts: for Alternatives B1+G, the savings is 3.8 acres; for Alternatives B1 + E or F, the savings is 2.8 acres; B2 +G, 3.8 acres; B2 +E or F, 2.9 acres W+G, 3.4 acres and W+E or F, 2.5 acres. All current impact estimates have been assessed on full right-of-way limits and all are over estimates at this time.

Depending on the selected alternative, the project has the potential to affect 4.1 to 21.6 acres of wetland (Table 20). The upgrading of T.H.14 by reconstruction would result in the least amount of wetland impact (4.1 acres). The amount of wetland impacted by the four-lane alternatives ranges from 14.1 to 15.9 acres for the western alternatives (Table 18) and from 4.7 to 5.7 acres for the eastern alternatives (Table 19). The combination of alternatives B2 and D would result in the least amount of impact for a four-lane construction (18.8 acres; Table 20).

4b. Measures to Minimize Harm: Minimization measures are typically implemented once an alignment has been selected. Minimization measures include the use of exceptions to design standards, such as sharper curves, steeper inslopes, broken-back inslopes into wetland areas, or the use of landscaping to provide visual buffers. Water quality can be maintained or improved by channeling water through vegetated inslopes or grassy ditches before it enters adjacent wetlands and by using standard erosion control methods.

4c. Mitigation: When impacts to wetlands cannot be avoided, Mn/DOT attempts to compensate for the losses within the project boundaries. New wetlands may be created in depressions within or adjacent to Mn/DOT right-of-way. Another mitigation measure involves modifying wetlands which exist on Mn/DOT right-of-way to improve their value for wildlife.

The search for wetland mitigation will be coordinated with the US Fish and Wildlife Service, the US Army Corps of Engineers, the Environmental Protection Agency, and the Minnesota Department of Natural Resources. If on-site wetland mitigation is not be possible, an off-site mitigation area for the project will be sought.

B. Wildlife

With the exception of impacts to WET 1A and woodlot WL4 (Figures 7 & 8; Tables 9 & 18), the various alternatives are not anticipated to have a major effect on wildlife populations in the area. The WET 1/WL 4 complex is one of the few good sites in the local area for deer to use spring, summer, and fall. Alternatives B1 and B2 may result in more adverse impacts on deer habitat since fragmentation of the wetland and upland hardwoods area would disrupt local deer movements. Also, see Section XXI, Vegetation: Analysis of Species Composition.

Table 21. Comparison of mitigation costs for residential relocation and wetland impacts for the three build alternatives east of Eagle Lake.

Alternative	Relocations		Wetlands		Total
	Number	Costs	Acres	Costs	Costs
D	1	$150,000	4.7	$397,000	$547,000
E	6	$700,000	5.4	$456,128	$1,156,128
F	6	$625,000	5.7	$481,468	$1,106,468

C. Comparison of Alternatives

The build-on-new-alignment alternatives will impact between 18.8 and 21.6 acres of wetlands (Table 20). Alternative B2 has more wetland impacts than Alternative W but less than Alternative B1. Alternative B2 would encroach upon two high quality wetlands and a mature stand of hardwoods, and both the USFSW and the MNDNR have indicated they would have major concerns about the implementation of this alignment.

Alternative D has from 0.7 to 1.0 acres less wetland impacts than either Alternative E or Alternative F. Alternative D was selected as the preferred alternative because of fewer farmstead relocations and because it is a shorter and a more direct alignment geometrically. This alignment can not be shifted to the north in the vicinity of CSAH 17 due to the Eagle Lake cemetery located in the southwest corner of the intersection of CSAH 17 and the east junction of CSAH 27. The cemetery association was contacted since the cemetery does have an outer fringe which is not used, but they declined to sell any portion of the land. Minnesota law prohibits taking cemetary land without permission of trustees.

A comparison of relocation costs versus wetland mitigation costs on Alternatives D, E and F is presented in Table 21. Alternative D would be $609,128 less expensive than Alternative E and $559,468 less expensive than Alternative F. Alternative D would reduce require only one residential relocation compared to six for Alternatives E and F.

D. Mitigation

WET 4 and WET 8 are high quality wetlands for the Blue Earth County area. Therefore, Mn/DOT considered constructing a partial bridge at the WET 4 location and bridges at the Wet 8 location. A partial bridge of the eastbound lane at the WET 4 site is estimated to cost $730,000. Replacing the 1.4 acres of wetland adversely affected would cost approximately $120,000. Not only would a partial bridge cost significantly more, but the wetland would be adversely affected as habitat for wildlife by increased noise, and the wetland under the bridge would be inaccessible.

The WET 8 site was also analyzed. Bridging this wetland would cost approximately $5.7 million. In comparison, wetland replacement costs would be approximately $0.64 million.

Crossing WET 8 at a narrower point is not practicable. Meeting 70 mph design speed is not possible without affecting the location of the railroad bridge or affecting the cemetery east of Eagle Lake. Also, relocation impacts would increase by 13 or more and the number of noise impacted residences would increase.

To narrow the road to two lanes beyond the new CSAH 17 connection at the east edge of the City of Eagle Lake to protect wetlands is not possible because of a lack of space. Three quarters of a mile is required to develop a taper section (in accordance with the Minnesota Manual of Uniform Traffic Control Devices) to go from 4-lanes to 2-lanes and WET 10 is within a quarter mile of this intersection. Therefore, neither WET 8 or WET 10 can be avoided.

The new highway will not impede water movement between wetlands 1A and 1B and between wetlands 8 and 10. Measures will be taken to prevent isolation of these wetlands.

Potential wetland mitigation sites are being reviewed by Mn/DOT personnel at several locations (both on site and off the right-of-way). A list of tentative sites has been developed. After the sites are reviewed by Mn/DOT, there will be further coordination with EPA, USFWS, COE, and MNDNR. A mitigation Plan will be part of the Final EIS.

XIII. Water Body Modification

Streams that occur within the project area are generally intermittent and will be crossed using culverts. These streams have no unique wildlife or fisheries value and are not normally used for recreational purposes.

The outlets from Eagle Lake and Mud Lake may flow for several months of the year, but they offer virtually no recreational opportunity and they are not used for water supply or other purposes. Alternatives B1, B2, or W cross the Eagle Lake outlet; the proposed crossing will employ culverts designed to pass the 100 year flood. The elevations of the stream bottom would remain the same. The Eagle Lake outlet does not support significant aquatic or terrestrial habitat for fish and wildlife. Alternatives D, E, and F cross the Mud Lake outlet which flows as an agricultural drainage ditch south of Mud Lake; the proposed crossing would be with culverts. They would be designed to pass the 100 year flood and the elevations of the stream bottom would remain the same. The Mud Lake outlet does not support significant aquatic or terrestrial habitat for fish and wildlife.

Federal (USFWS, COE, EPA), State (MNDNR) and local agencies (Blue Earth County and the City of Eagle Lake) reviewed the project during August and September of 1987. No special concerns for any of the stream crossings within the project area were noted.

XIV. Floodplain Impacts

A Federal Emergency Management Agency Flood Insurance Rate Map for Blue Earth County, Minnesota has been examined for floodplain encroachments. The map shows that no identified floodplains will be impacted in unincorporated areas.

A Flood Insurance Rate Map is not available for the City of Eagle Lake, Minnesota. It was assumed that the floodplain width within the City of Eagle Lake is approximately 300 feet, which is the floodplain width just outside of the City of Eagle Lake corporate boundaries. (See Figure 13.)

Any roadway alternatives through the City of Eagle Lake, Mn. are expected to have a 300 foot transverse crossing of the outlet channel for Eagle Lake. This crossing of the Eagle Lake outlet channel is not expected to have any significant impacts for the following reasons:

1. Potential for Interruption of Emergency Services

There is no significant potential for interruption or termination of a transportation facility which is needed for emergency vehicles or provides a community's only evacuation route.

1a. The roadway grade will be designed above the 100 year flood elevation for the Eagle Lake outlet channel.

2. Impacts on Natural and Beneficial Floodplain Values

No significant adverse impact on natural and beneficial floodplain values will result.

2a. No threatened or endangered plants or animals will be affected.

2b. Appropriate turf establishment and erosion control measures will be taken to minimize sedimentation.

2c. No fisheries impacts are expected.

2d. See wetlands section for wetland impacts.

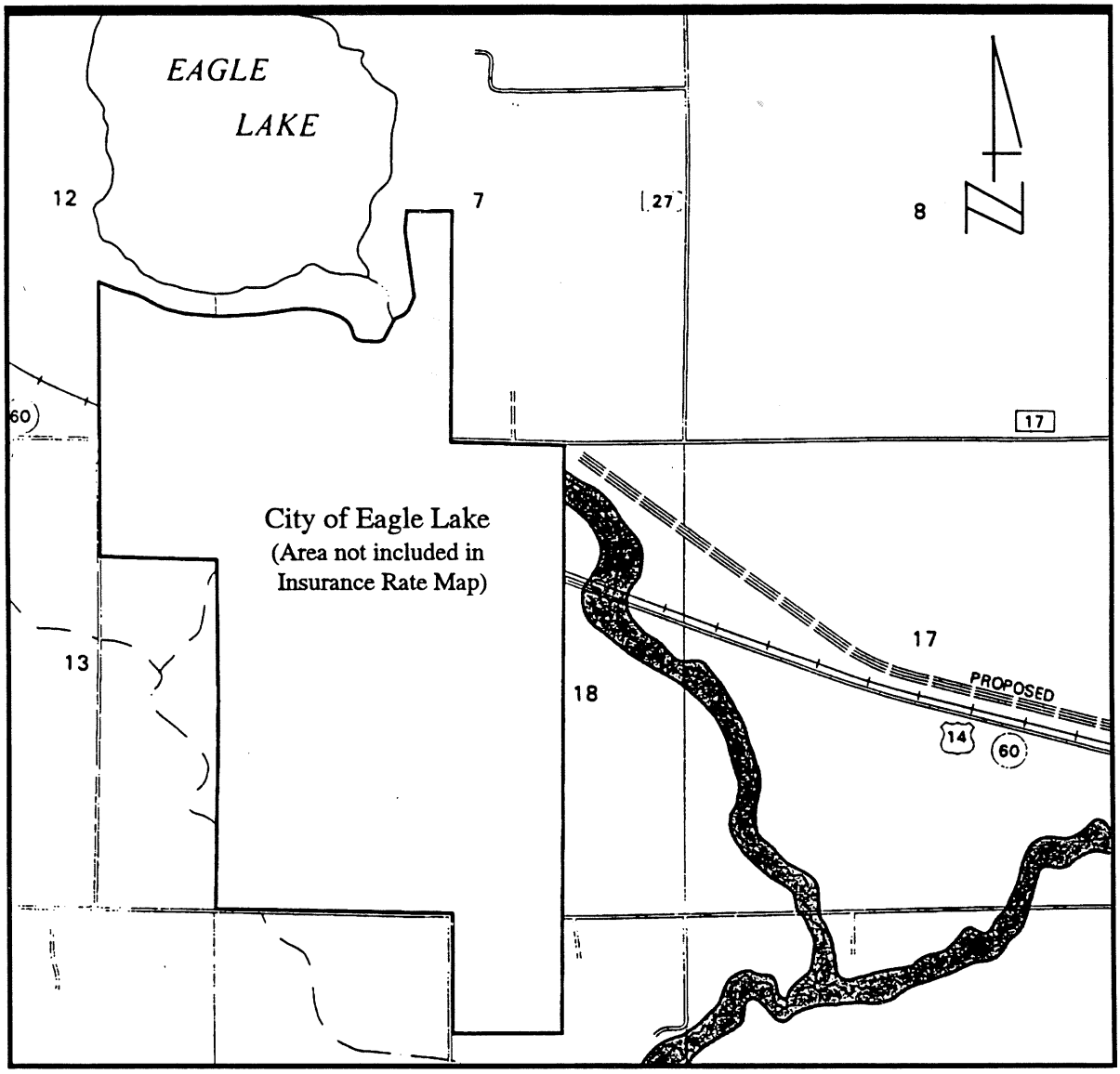


Figure 13. Federal Emergency Management Agency Flood Insurance Rate Map for Blue Earth County, Minnesota in the vicinity of Eagle Lake. Flood plain denoted by the darkened area east and south of the City of Eagle Lake.

3. Increased Risk of Flooding

No significant increased risk of flooding will result.

3a. The hydraulic structure to cross the outlet channel will be designed so that the headwater and tailwater elevations are comparable to those currently existing.

The structure will comply with all applicable Minnesota Department of Natural Resources requirements.

3b. The water level in Eagle Lake is controlled by a small dam on the south side of Eagle Lake. The dam was built in 1973. The dam has a crest elevation of 986.9 feet. No new OHW has been determined since the dam was built in 1973. Above elevation 990.0 the dam is overtopped. Any roadway structure chosen for the new crossing of the Eagle Lake outlet channel will to be compatible with the dam operating characteristics.

3c. Any alternative chosen for the four lane upgrading of T.H.14 will cross numerous small drainage-ways. During design, these drainage-ways will be examined for any localized flooding problems and corrected to the extent practicable.

4. Incompatible Floodplain Development

The proposed four lane from Mankato to the East Junction of T.H.60 will not support incompatible floodplain development for the following reasons.

4a. Blue Earth County has ordinances regulating floodplain development.

4b. No new access is being created to floodplain areas.

Based on the above assessment, no significant floodplain impacts are expected for any of the alternatives.

XV. Wild and Scenic Rivers

There are no Wild and Scenic Rivers associated with the Proposed project.

XVI. Threatened and Endangered Species

The Mn/DOT Wildlife Biologist has determined that the proposed project will not have an adverse affect on federally threatened or endangered species. Blue Earth County is within the wintering range of the bald eagle *Haliaeetus leucocephalus* and the western prairie fringed orchid *Platanthera praeclara* has been reported in the project area. Both are federally listed threatened species. However, because of the location and type of activity proposed, this project will not affect the bald eagle, the western prairie fringed orchid, or any other federally listed or proposed threatened or endangered species or their critical habitat (see letter in Appendix C).

The Department of Natural Resources Natural Heritage database indicates that there are other recorded occurrences in the proposed project vicinity of species which are on the Minnesota Official List of Endangered, Threatened, and Special Concern Plants and Animals. The are: 1) Wolf's spike-rush *Eleocharis wolfii;* 2) Hair-like beak-rush *Rhynochospora capillacea;* 3) Plains pricly pear *Opuntia macrorhiza;* 4) Three-lobbed coneflower *Rudbeckia triloba;* 5) Canadian black snakeroot *Sanicula canadensis;* 6) March arrow-grass *Triglochin palustris;* and 7) Snow trillium *Trillium nivale.* The Mn/DOT Botanist has checked the project area and did not find any of the indicated species or their critical habitat.

XVII. Historic and Archeological Preservation

In accordance with the National Historic Preservation act of 1966, as amended, and the Procedures of the National Advisory Council on Historic Preservation, the State Historic Preservation Officer (SHPO) has been consulted (see correspondence in Section F, Agency Coordination and Comments). A review of the project is being conducted by the Minnesota Historical Society (MHS).

The Minnesota Historical Society was provided the opportunity to review the original thirteen proposed alignments for historic impacts. MHS returned preliminary comments on each of these proposed alignments (see Section F). Alternatives B2 and W could potentially affect historic Indian campsites along the south side of Eagle Lake. All of the eastern alternatives include a proposed intersection with CSAH 17 east of the Eagle Lake outlet. This intersection will affect a potentially historic farmstead and one historic Indian campsite. Alternatives E and F would affect two additional potentially historic farmsteads along the north side of CSAH 17 east of the interchange (Figure 14).

None of these sites is currently listed on, or has a nomination pending to, the National Register of Historic Places (NRHP). However, none of these sites has been evaluated as to their potential eligibility for such nomination. All have been identified by MHS as having potential significance which may or may not classify them as potentially eligible for the NRHP.

TH 14

Mankato to Smith's Mill

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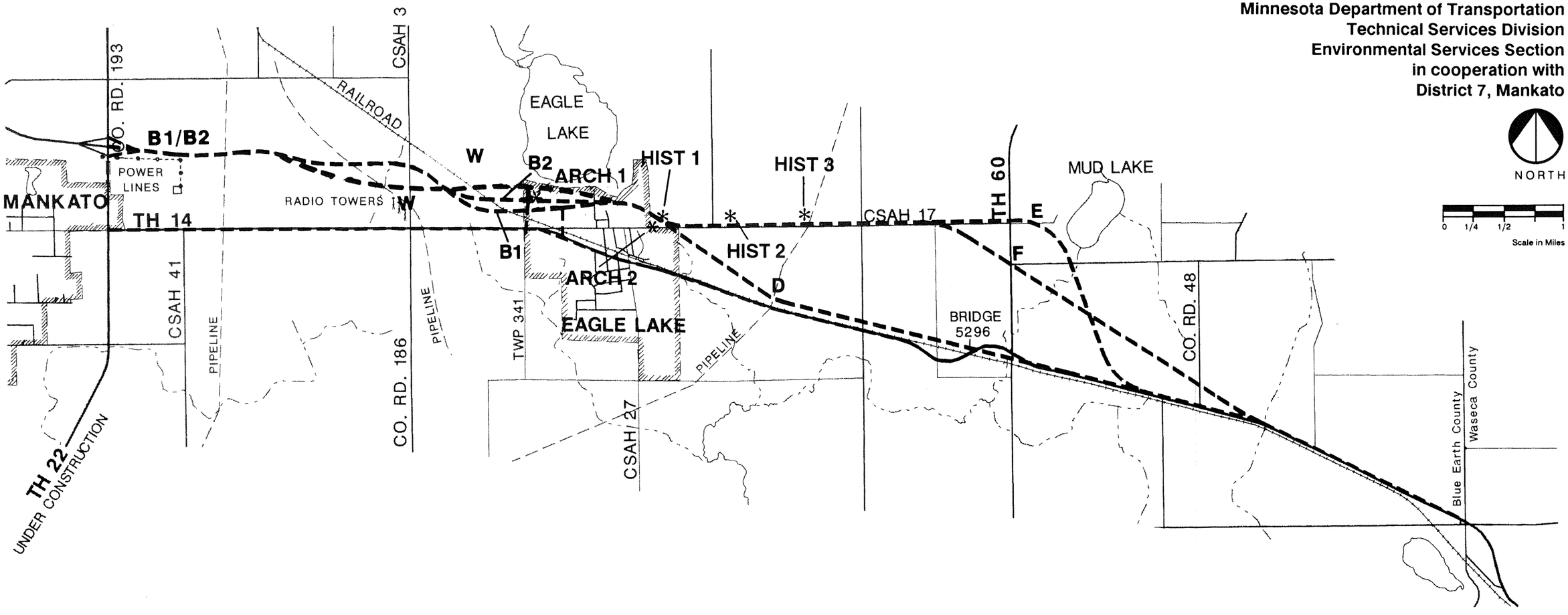

Legend

HIST, ARCH	Site
– – –	Alternatives

Archaeological/Historical Sites
FIGURE 14

The number of Mn/DOT proposed alignments was reduced in the Scoping Decision Document, and an additional alignment was added. Following this, a new map depicting the seven alignments selected for further study was sent to the MHS. A request has been made that MHS undertake a preliminary investigation and comment on potential historical impactes of the new alignment (Alternative W).

Surveys will be conducted by MHS to determine the significance of any archeological sites that could be affected by the project before the completion of the FEIS. In addition, the historic farmsteads will be evaluated for their potential eligibility to be listed on the NRHP. Should any of the historic or archaeological properties affected by the project be of such significance as to demand preservation in place, efforts will be made to avoid the sites. If the sites can not be avoided, mitigation such as relocation or archeological excavation would be undertaken.

XVIII. Hazardous Waste

During the environmental review process for Mn/DOT projects, properties potentially required for right-of-way are screened to identify present and potential environmental hazards. The suspicion of localized contamination and its presence or absence enters into the decision-making process for determining the preferred alternative. If necessary, following the selection of a preferred alternative from the DEIS process, a more detailed site evaluation is undertaken before right-of-way acquisition (if possible) to determine: 1) the presence, type and extent of contamination, 2) the remedial action necessary to clean up the site, and 3) the estimated cleanup costs that may be incurred.

A potential hazardous waste problem for any roadway is the possibility for spills of hazardous substances to occur both during construction and when the roadway is open to traffic. There are no unique problems anticipated based on the proposed design and location of this project. If a spill of hazardous or toxic substances occurs on Mn/DOT right-of-way, it is the responsibility of the transport company to notify the Department of Public Safety, Division of Emergency Management, and arrange for corrective measures to be taken.

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XIX. Vegetation: Analysis of Species Composition and Impacts

Native vegetation was primarily tallgrass prairie, wetlands or forest. Oak was the dominant tree in well drained upland soils. Elm, basswood and aspen were dominant on river bottoms and wet upland soils. Common shrubs were sumac, prickly ash, gooseberries, hazel, bittersweet and chokecherry.

A. Prairie Remnants Assessment

Few native wildflower/grasses remain in railroad rights-of-way after years of mowing and chemical management. They have been replaced through planting and invasion with smooth brome, canary grass, thistle, and sweet clover. Most of the woody plants are native implying a prairie past. They include: wild rose, poison ivy, raspberry, gooseberry, elderberry, wolfberry and sumac. Wild rose is prevalent in most sites. No segments deem preservation. However, the existing plant assembleges suggest that native prairie plantings would be successful following construction and a wide diversity of species is possible.

B. Wetland Assessment

Presettlement surveyors' records will show that prairie, wet prairie, shallow marsh, and scattered savannas once were the dominant plant communities in the area. Shallow marshes located in and near Eagle Lake are typically degraded from pristine conditions and encroached upon by urban development and farming; examples are WET 2,4,9, and 10, Figure 8. The main disturbance indicator, canary grass (Pharlaris canariensis), encircles or invades each marsh. Another indicator of compromised wetland health, which diminishes wildlife habitat, Purple Loosestrife (Lythrum salicaria), is absent. However, road construction might increase the likelihood of this invader becoming established.

Purple Loosestrife is an opportunistic invader of wet lowland areas. A major mechanism for its dispersal in Minnesota is via boat trailers. Seeds in sediments at boat launches cling to trailers. When dry, they fall off onto the roadway where they are dispersed by traffic and rain water runoff. Roadways with good grassey shoulders tend to prevent seeds from reaching water courses and subsequently germinating. Early turf establishment in areas near wetlands will be critical in reducing the likelihood of Purple Loosestrife invading local wetlands. This will be particularly true if the roadway is opened to traffic in late summer when Purple Loosestrife is going to seed.

The most valuable wetland west of Eagle Lake is the complex of lowland forest and shrub swamp, WET 1A/WL4; Figures 7 & 8). Its relative large size and overall natural appearance make it valuable both for its diversity of wildlife habitat, as well as its aesthetic appeal to highway users. Alternatives B1 and B2 would impact 1.4 acres of wetland and 5.2 acres of woodland in this complex (Tables 18 & 23). These areas represent approximately seven percent of WET 1A and 26 percent of WL 4. Wetland #5, (Figure 8) which currently serves as a mowing meadow appears to be a former sedge meadow that is dominated by canary grass which reduces its value compared to similar areas with native species.

Wetlands located east of Eagle Lake include WET 10, 10A, 10B, 11, 12, 12A and 13. WET 10 is degraded, 10A is a poor quality Type 2, and 10B is dominated by canary grass. WET 11 is the edge of Mud Lake. WET 12 and 13 are of greater value than WET 10 due to their larger size and overall integrity. The major portion of WET 12A (75%) is located south of the railroad tracks. The northern portion is pastured. No purple loosestrife and relatively little canary grass were observed in these wetlands.

Any plantings introduced to the site for erosion control, screening, and/or enhancement will be limited to the native plant species of those communities as much as possible. It is important to the success of the plantings to match the species to the environment of each community. For example, in right-of-way corridors fully exposed to the sun, prairie, wet prairie, and shallow marsh plants would be appropriate ground covers. When these corridors are adjacent to wooded areas, a transition of shrub

Table 22. Woodland types and acreages: proximity to build alternatives.

Woodland Type	Identification Number	Closest Alternative(s)	Total Acreage
Woodlot	WL1	B1/B2[a],W	12.5
	WL2	B1/B2,W	2.1
	WL3	B1/B2	0.8
	WL4	B1/B2	19.7
	WL5	B1/B2	2.1
	WL6	B2,W	3.3
	WL7	B1	0.7
	WL8	B1,B2,W	4.1
	WL9	E,F	3.2
	WL10	T.H.14 Reconst.	1.9
	WL11	T.H.14 Reconst.	3.4
	WL12	T.H.14 Reconst.	5.6
	WL13	T.H.14 Reconst.	4.9
	WL14	D	9.5
	WL15	T.H.14 Reconst.	20.0+
	WL16	E	0.5
	WL17	E	1.2
	WL18	D,E,F,T.H.14 Reconst.	1.4
	WL19	D,E,F,T.H.14 Reconst.	3.8
	WL20	W	1.0
			Total = 101.7+
Shelterbelt	SB1	T.H.14 Reconst.	0.9
	SB2	T.H.14 Reconst.	0.9
	SB3	T.H.14 Reconst.	0.8
	SB4	E,F	1.8
	SB5	E,F	0.9
	SB6	E,F	0.9
			Total = 6.2

[a] B1/B2 = Same alignment for alternatives B1 or B2.

swamp or oak savanna species would be naturals. Exotic species like canary grass, crownvetch, alfalfa, smooth brome, clovers or perennial rye that can invade and further degrade the wetland ecosystems would be avoided.

C. Woodlands Assessment

Woodlands in the project area can be classified as either woodlots or shelter belts based on their size, location and proximity to houses and buildings. They range in size from less than one

Table 23. Woodland impacts: build alternatives[a] west of Eagle Lake.

Alternative	Woodland Identification Number[b,c]	Impact Acreage
B1	WL1	1.5
	WL2	0.5
	WL3	0.3
	WL4	5.2
	WL5	0.8
	WL8	1.5
		Total = 9.8
B2	WL1	1.5
	WL2	0.5
	WL3	0.3
	WL4	5.2
	WL5	0.8
	WL6	1.5
	WL8	0.5
		Total = 10.8
W	WL1	1.5
	WL2	0.4
	WL3	0.4
	WL6	0.1
	WL8	0.3
	WL20	0.9
		Total = 3.6
T.H.14 Reconst.	WL10	0.2
	WL12	0.1
	WL13	0.2
	SB1	0.1
	SB2	0.3
	SB3	0.3
		Total = 1.2

[a] Woodlands not listed are not impacted.
[b] WL = Woodlot
[c] SB = Shelterbelt

Table 24. Woodland impacts: build alternatives[a] east of Eagle Lake.

Alternative	Woodland Identification Number[b,c]	Impact Acreage
D	WL14	4.9
	WL18	0.2
		Total = 5.1
E	WL9	0.4
	WL16	0.5
	WL17	0.9
	WL19	0.2
	SB4	0.2
	SB5	0.2
	SB6	0.1
		Total = 2.5
F	WL9	0.4
	WL18	0.9
	WL19	0.2
	SB4	0.2
	SB5	0.2
	SB6	0.1
		Total = 2.0
T.H.14 Reconst.	WL15	0.3
	WL18	0.2
		Total = 0.5

[a] Woodlands not listed are not impacted.
[b] WL = Woodlot
[c] SB = Shelterbelt

acre to more than 20 acres (Table 22). Minor impacts to shelter belts would occur with alternativs that follow existing roadway alignments (E, F, T.H.14 Reconst; Figure 7; Tables 23 & 24).

A ribbon of woodland that contrasts positively with the typically fragmented and squared woodlands throughout the local area is WL 14. It offers a wildlife corridor through the area and also allows the traveler a natural appearing woods for variety of visual experience. Alternative D would impact about 20 percent of this woodlot (Table 24). Another natural appearing lowland forest, WET 1A/WL4, was discussed under "Wetlands". The woodland west of Smiths Mill, WL 19, (Figure 7) is the most unique. This overgrown savanna has evolved to a dry mesic forest and it is the most compositionally diverse woodland on the project. Impacts to this woodland would be minor.

The preferred Alternative (W + D) would impact 8.7 acres of woodlots. Other combinations of eastern and western alternatives would have impacts ranging from 5.6 acres to 15.9 acres (Tables 23 & 24). Alternative W with Alternatives E or F would have the least woodland impacts.

Where revegetation of woodlands is required, a native wildflower/grass ground cover would be appropriate. Native trees and shrubs would be matched to site conditions as much as possible. Current inventories include: burr oak, red oak, basswood, green ash, black cherry, chokecherry, wild plum, aspen, staghorn sumac, grey dogwood, nannyberry, elderberry, wild rose, woodbine, and riverbank grape.

XX. Visual Quality

The following is a summary of the report, T.H.14 Visual Impact Assessment Special Study, which is available from the Mankato District Offices. The summary is divided into three sections: an inventory of visual resources, an assessment of visual impacts, and a discussion of possible mitigation techniques.

A. Inventory of Visual Resources

The following is a summary of the inventory presented in the Special Study. The inventory identified the prominent visual resources which may be affected by the proposed project. The affected visual resources are summarized in the following text and mapped in Figure 15: Natural Visual Resources and Figure 16: Cultural Visual Resources. The oblique aerial photographs of Appendix A (Photo Sequence A1-A16) supplement the text and maps by illustrating visual resources and the proposed alignments.

The inventory has been divided between those visual resources associated with alternatives west of the City of Eagle Lake (western) and those associated with alternatives east of the City of Eagle Lake (eastern). The western alternatives are: Alternatives B1, B2, W, T.H.14 Reconstruction, and No-Build. The eastern alternatives are: Alternatives D, E, F, T.H.14 Reconstruction, and No-Build. Natural and cultural resources are inventoried separately.

1. Western Alternatives, Natural Resources

   Between the cities of Mankato and Eagle Lake, the western alternatives pass through open country. The open countryside generates a feeling of expansiveness. Between the cities, resources from the natural environment dominate the visual experience of both neighbors and travelers. (See Figure 15 and Photos A1-A8).

   Important visual resources of the natural environment include: flat, open farmlands for row crops and pasture (Photos A2-A3); woodlands, such as treefarms, woodlots, and shelterbelts (Photos A1-A5); wetlands, which vary from open grassy meadows to cattail marshes to wooded swamps (Photos A2-A4); the lake of Eagle Lake (Photos A4 & A5); and small intermittent streams (Photos A3 & A8).

2. Western Alternatives, Cultural Resources

   Near the cities of Mankato and Eagle Lake, the open expansiveness of the natural envi-

TH 14

Mankato to Smith's Mill

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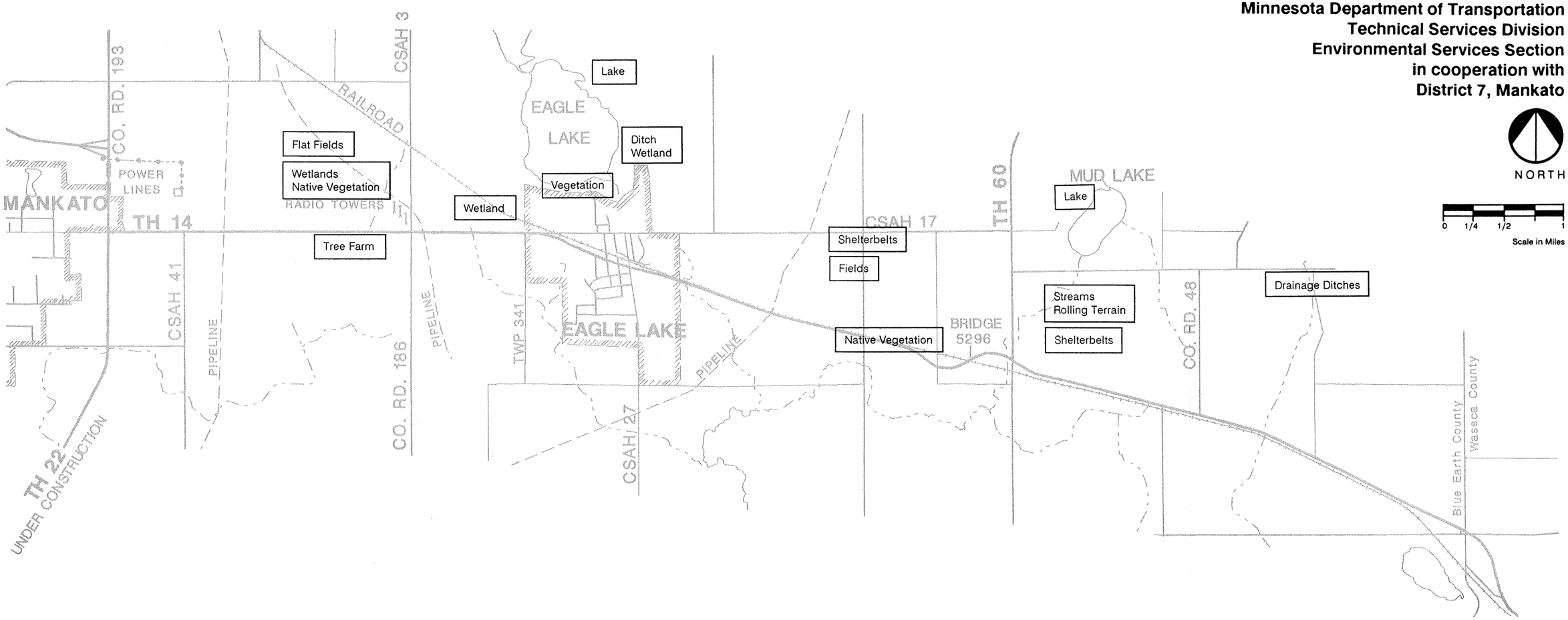

Natural Visual Resources
FIGURE 15

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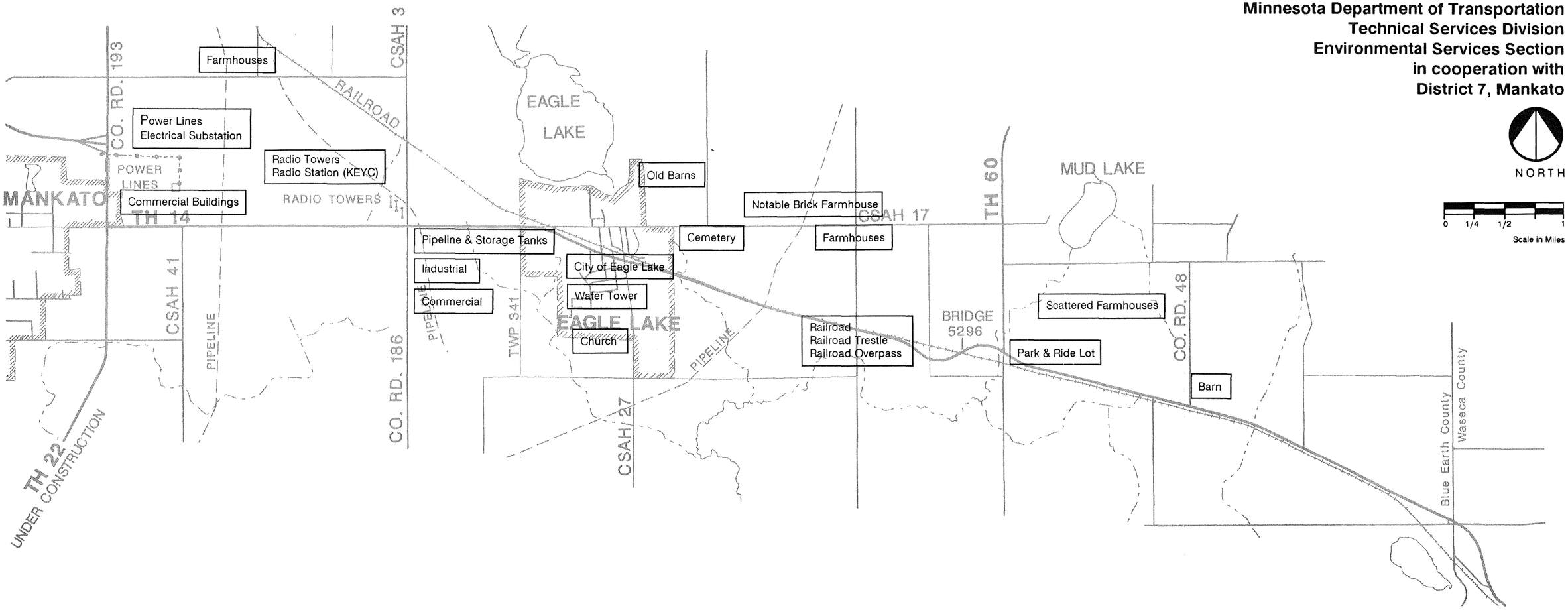


Cultural Visual Resources
FIGURE 16

ronment is reduced as the corridor becomes increasingly more urban. Visual resources of the cultural environment progressively dominate the visual experience of both neighbors and travelers as the alternatives approach the cities. Visual resources of the cultural environment serve as important landmarks which orient travelers and provide social continuity for neighbors.

Important cultural resources include: large commercial buildings at the east edge of Mankato (Photo A1; Figure 16); a string of overhead powerlines and an electrical substation (Photo A1); commercial buildings (Photo A1); the KTOE/KDOG radio towers (Photo A3); a gas pipeline substation (Photo A3); farmhouses and farm structures (Photos A2 & A4); the City of Eagle Lake, the Eagle Lake water tower, and the proposed railroad overpass (Photos A4 & A5).

3. Eastern Alternatives, Natural Resources

East of the City of Eagle Lake to Smiths Mill, the visual experience would be of a rural landscape dominated by natural resources. For Alternative D, the important natural resources include: open rolling farm fields (Photo A10); wetlands which vary from grassy meadows to cattail marshes, woodlots, shelterbelts, and intermittent streams (Photos A9 & A10). For Alternatives E and F, the important natural resources include: wetlands which vary from grassy meadows to cattail marshes (Photo A9), woodlots, shelterbelts (Photos A15 & A16), Mud Lake (Photos A12 & A13), and intermittent streams. Near Smith's Mill, there is a system of drainage ditches and a large wetland.

4. Eastern Alternatives, Cultural Resources

Near the City of Eagle Lake the landscape becomes increasingly dominated by cultural resources of the town. Visual resources of the cultural environment serve as important landmarks which orient travelers and provide social continuity for neighbors. For Alternative D, the important cultural resources include: the City of Eagle Lake, particularly its water tower (Photo A5) and the large commercial buildings on its eastern edge (Photo A8); the Eagle Lake Cemetery (Photos A8 & A9); scattered farmhouses and old barns; the DME railroad which runs parallel to much of the proposed alignment (Photos A10 & A11), a railroad trestle, an existing railroad overpass over T.H.14 (Photo A10); and a Park and Ride Lot at the intersection of T.H.14 and T.H.60. For Alternatives E and F, important cultural resources include: the City of Eagle Lake, particularly its water tower (Photo A5) and the large commercial buildings on its eastern edge (Photo A8); the Eagle Lake Cemetery (Photos A8 & A9); scattered farmhouses, including one notable old brick farmhouse, and old barns (Photos A15 & A16).

B. Visual Impact Assessment

The visual impacts which may be caused by the proposed project have been assessed for the six Build Alternatives (B1, B2, W, D, E, F), the T.H.14 Reconstruction Alternative, and the No-Build Alternative. The following discussion summarizes the visual impacts identified in the Special Study. The summary is divided between western and eastern alternatives. The assessment was done for both neighbors and travelers. Neighbors are people who would have views of the highway. Travelers are people who would have views from the highway.

1. Western Alternatives, Visual Impacts to Neighbors

Most of the existing visual resources would not be affected by the proposed project. Subsequently, the views of most neighbors would not be adversely affected by the various alternatives. The major alterations of existing natural resources would be removal of wetlands and woody vegetation. (See the

Wetlands and Vegetation sections of this report.) The major alterations of existing cultural resources would be the removal of the old barns northeast of the City of Eagle Lake (Photo A8) and the relocation of residences.

All of the build alternatives would add a cultural resource, a new or improved highway. A new highway would serve as a landmark for visual orientation and community cohesion for most neighbors. However, for some neighbors whose proximity to the highway would increase, a new highway would be an adverse visual impact.

Visual impacts would be experienced by those neighbors who would be relocated. Regardless of the alternative selected, at least one residence would be relocated (R2 on Figure 10). If Alternative W is selected, a second residence will be relocated (R10 on Figure 10). No residences would be relocated as part of the T.H.14 Reconstruction or No-Build Alternatives.

For Alternatives B1, B2, and W, adverse visual impacts would be experienced by neighbors who live on CSAH 3 and would be closer to the highway. Adverse visual impacts may also be experienced by neighbors who would have their view blocked by the proposed railroad overpass (Photos A3 and A4) and neighbors who would have their view impaired by the highway north of the City of Eagle Lake (Photo A5) may also experience adverse visual impacts.

The T.H.14 Reconstruction Alternative in rural areas would involve minor impacts to farmstead frontages and these would likely be viewed by neighbors as adverse visual impacts (Photos A2 & A3). Within the City of Eagle Lake, the adverse visual impacts of the T.H.14 Reconstruction Alternative would primarily occur as a consequence of increasing visual congestion. These changes may include an increase in signs, semaphores, concrete islands, safety barriers, turn-lanes and other incremental safety and traffic changes (Photo A5). Most of these adverse impacts would, in themselves, be minor.

There would be no adverse visual impacts associated with the No-Build Alternative.

2. Western Alternatives, Visual Impacts to Travelers

The impacts listed in the previous discussion would not be as evident to the traveler because travelers are less familiar with the details of the existing landscape than are neighbors. The removal of wetlands, woody vegetation, old farmhouses, and old barns would, however, reduce the diversity of natural and cultural resources. The reduction in visual diversity is an adverse impact even if it is not apparent to the traveler. As a beneficial impact, the overpasses at the County Road 193 and T.H.14 intersection and the DME Railroad would provide travelers with panoramic views.

3. Western Alternatives, Ranking Alternatives by Visual Impacts

Ranking the build alternatives in terms of their total impacts to the visual resources of the natural and cultural environment, Alternative W is greatest, Alternative B1 is next and the least visual impacts would be associated with Alternative B2. The T.H.14 Reconstruction Alternative would have fewer visual impacts than either any of the other build alternatives. There would be no visual impacts associated with the No-Build Alternative.

4. Eastern Alternatives, Visual Impacts to Neighbors

For Alternative D, the alignment is well integrated into the existing landscape of farmhouses, shelterbelts, cultivated fields and the railroad. Alternative D would have few adverse impacts to neighbors (Photo A10). One adverse impact would be to neighbors visiting the Eagle Lake Ceme-

tery where the new highway would decrease privacy (Photo A9).

For Alternatives E and F, adverse visual impacts would occur to both natural and cultural resources. These alternatives do not integrate well with the area's gently rolling terrain. They cut a discordant diagonal line across the gridded rural landscape (Photos A12 - A14). Neighbors of CSAH 17, particularly those residences requiring relocation and their neighbors, would be adversely affected (Photos A15 & A16; see R3 - R9 on Figure 10). The notable brick farmhouse on the north side of CSAH 17 would be lost. These alternatives would decrease privacy to visitors of the Eagle Lake Cemetery (Photo A9).

Minor adverse impacts would occur to wetlands and woodlands adjacent to T.H.14 under the T.H.14 Reconstruction Alternative (Photos A9 & A10). Neighbors would classify these impacts as being neutral or adverse depending upon the proximity of their residences.

No adverse visual impacts would occur with the No-Build Alternative.

5. Eastern Alternatives, Visual Impacts to Travelers

For Alternative D, the opportunity for travelers to approach the wetland just west of the Eagle Lake Cemetery for closer inspection is a beneficial impact (Photo A9). Beneficial visual impacts would also occur to travelers due to the proximity of the railroad and occasional freight trains. Stands of Cottonwood trees and a railroad trestle also would contribute to the visual diversity of this alternative. The loss of the existing railroad overpass would remove an opportunity for a panoramic view of the countryside (Photo A10).

Alternative E creates an opportunity for travelers to view Mud Lake. The new highway carries the traveler just to the southwest of this natural visual resource (Photo A13). The traveler would also have views to the north of Mud Lake as they pass over the lake's inlet (Photo A13).

6. Eastern Alternatives, Ranking of Visual Impacts by Alternative

Of the build alternatives, Alternative D is well integrated into the existing landscape and would have fewer adverse visual impacts than Alternatives E and F. Alternatives E and F are nearly equal in the magnitude of their visual impacts.

C. Mitigation of Visual Impacts

It is impossible for any build alternative to avoid adverse visual impacts. Regardless of the alternative chosen for this project, neighbors and travelers would be affected. However, most of the mitigation techniques discussed below minimize visual impacts.

Depending upon the alternative(s) selected, the following mitigations (measures to minimize harm) would be considered or used by Mn/DOT. Many of these measures are to rectify minor impacts. Rectifying many minor impacts may provide a major visual improvement.

1. Allow terrain, vegetation, and water bodies to influence the alignment and profile of the highway.
2. Minimize clearing of trees and shrubs along the right-of-way by varying the backslope to save existing topography and vegetation; salvage existing plant materials where possible.
3. Develop a planting plan to integrate the highway into the surrounding natural and cultural environments.
4. Enhance existing wetlands through excavating and planting to provide additional habitat for animals and visual interest to travelers.
5. Allow views of the native landscape from bridges by using rails and safety barriers which do not create visual obstacles.

6. Provide scenic views of the cultural environment; particularly landmark historic or civic buildings, structures, monuments, or landscapes. Integrate the alignment into the existing cultural environment.
7. Minimize adverse impacts to notable farm structures. Save such structures, to the greatest extent possible, by adjusting the alignment or relocating the structures.
8. Use curves with constantly changing degrees of curvature such as spiral or spline curves, instead of simple or compound curves.
9. All the non-structural items which are part of the highway, should be visually coordinated and standardized. Such appurtenances, include signs, rails, fences, walls, berms, lights, safety barriers, etc.
10. Design park and ride facilities as an integrated component of the highway.
11. Standardize highway signing and avoid grouping signs of different sizes and configurations.

XXI. Energy

The energy requirements for construction of all the build alternatives are greater than the no-build alternative. The energy requirements for the various build alternatives are similar. Energy consumed by construction will be offset, in the long run, by savings in vehicular fuel consumption. This is due to improved fuel mileage that vehicles will get because of improved flow of traffic with a build alternative.

XXII. Construction Impacts

A major transportation project will exert significant short term effects on the local and regional economy. This impact is caused by the introduction of employment, income, and the purchase of construction material and supplies. Construction costs estimates for T.H.14 vary between 10.25 million and 12.75 million dollars, depending on the build alternative selected. The No Build Alternative would have a cost of approximately 2.98 million dollars because of heavy maintenance overlays required to make the road serviceable through the year 2012..

The data presented and discussed below are based upon information empirically generated by the FHWA from contractors' reports. Although the data are quite precise for the level of aggregation and years indicated, there are two limiting conditions. First, the data are national averages. To the extent that a project is not "average", i.e. involves unique construction or engineering problems, the cost distributions may vary. Second, costs for highway construction have been subject to variable rates of change over the past few years. This means that the data discussed below should not be construed as a prediction of costs in 1992, but rather as a description of average projects constructed during 1986.

A. Employment and Income

The anticipated effects of construction on employment and income may be estimated based on the proposed construction costs, the proportion of those costs allocated to wages, materials and supplies and an estimate of the average hourly earnings for workers on highway and heavy construction projects. Table 25 estimates that the person-hours of labor required for a build alternative(s) range from 133,900 to 172,200 hours. Wage earnings would range from $1,741,000 to $2,239,000. This includes the various combinations of alternatives west and east of the City of Eagle Lake.

B. Materials/Supplies Acquisition

A project such as the one proposed involves the purchase of substantial quantities of construction material and supplies. Figure 17 presents data regarding the distribution of costs for construction projects. FHWA last published more precise estimates for costs of supplies and material on non-interstate federal-aid-projects in 1982. Estimates of the amount which would may be expended on T.H.14 can be estimated from Figure 17. Many of these cost items would

Table 25. Anticipated effects of construction on hours of labor, wage earnings, and expenditures for materials and supplies for each alternative.

Alternatives	Person-Hours of Labor[ac]	Wage Earnings at $13.00 per hour[abc]	Materials and Supplies[abc]
B1 & B2	69,800	$ 907,000	$ 2,125,000
W	74,400	967,000	2,265,000
D	64,100	834,000	1,953,000
E	87,600	1,138,000	2,666,000
F	97,800	1,272,000	2,978,000
T.H.14 Reconst.	111,000	1,437,000	3,365,000
No Build[d]	46,000	593,000	1,389,000

[a] Figures generated from Mn/DOT cost estimates (Table 1) and data in "Highway Statistics"1986, Federal Highway Administration.

[b] Mn Dept. of Economic Security. Average hourly earnings of highway and heavy construction workers was $13.00 in September 1988.

[c] Costs estimates are allocated by percentages given in Figure 17 (19.9% Wages, 46.6% Materials and Supplies).

[d] Heavy maintenance overlays on existing surface.

also involve labor impacts, e.g., the purchase of aggregates would cause employment for equipment operators, truck drivers, and others.

C. Other/Economic Impact

All funds introduced through project construction and right-of-way acquisition are subject to the "multiplier" effect. Purchases which are made from other regions require dollars to flow out of the local economy, while money received by local business may be used to pay wages, purchase products, pay taxes and become profits. Wages received will be partly saved and partly spent. Some of the products purchased from labor income will have been produced in the region, others from outside the region. This cycle repeats itself until the original money injection is completely dissipated.

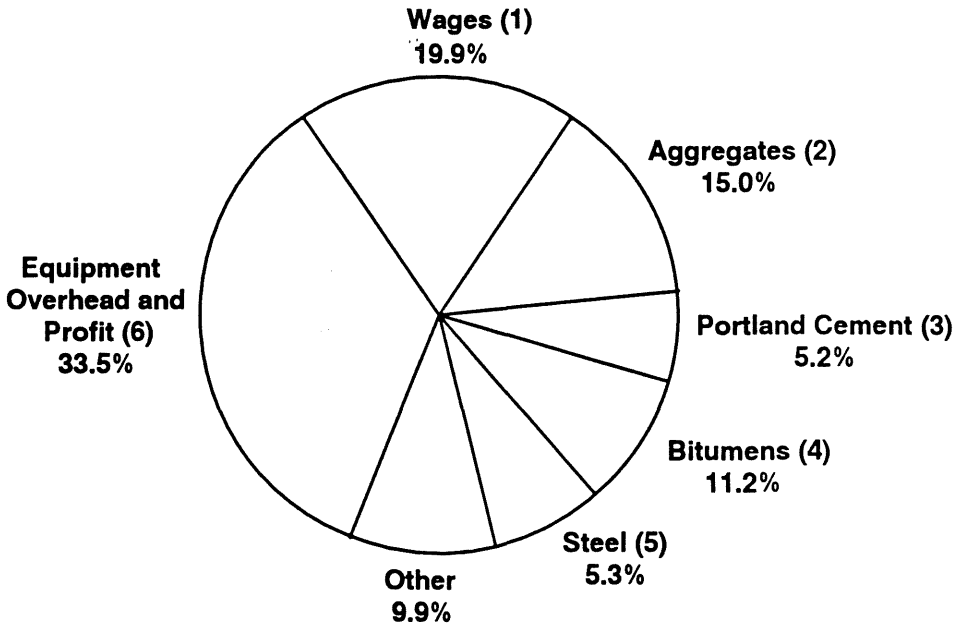
D. Air Quality

Construction will have a negative impact on air quality. Air pollution will include emissions from vehicles, equipment and also possibly a hot mix paving plant. Fugitive dust sources which are mainly from grading operations and temporary dirt roads, will also be a source of air pollution. Since this is an area of air pollution attainment (i.e., it has been designated as an area meeting ambient air quality standards) no special precautions or permits are needed to stay within the standards with the normal amount of construction required. Neither exhaust nor dust should be of a magnitude to constitute a health hazard.

Construction regulations and Mn/DOT's "Standard Specifications for Construction" outline ways to minimize any impact from excessive dust during construction.

E. Construction Noise

The high noise levels of typical construction equipment indicate a potential noise impact.



1) Gross earnings of contractors' employees in the following classifications: Administrative and Supervisory, Skilled, Intermediate, and Unskilled labor.
2) Aggregates consist of sand, gravel, slag, crushed stone, etc., for use in bases, portland cement concrete and bituminous surfaces, and portland cement concrete structures.
3) For both roadway and structures.
4) For various types of bituminous surfaces and bases.
5) Includes structural, reinforcing, culvert and miscellaneous steel.
6) Equipment includes fuel and lubricants 3.1%, but excludes operators' and mechanics' wages.

Figure 17. Distribution of costs on Federal Aid Highway Construction contracts over $500,000 completed in 1986. Source FHWA, "Highway Statistics," 1986.

Typical construction noise levels are listed in Table 26. No predictions of construction noise levels have been made, since it is impossible to accurately estimate the actual equipment that will be utilized at any given time.

The impact of construction noise can be minimized by restricting the hours of work, utilizing the quietest equipment available, constructing temporary barriers, and careful attention to muffler maintenance. Minnesota Standard Specifications for Highway Construction - Section 7, Subsection 1701, states in part that the contractor shall observe and comply with all applicable laws, ordinances, regulations, orders and decrees. This includes any federal, state or local noise control regulation.

F. Traffic

Construction work will cause some disruptions to local traffic patterns. Mn/DOT's specifications requires contractors to conduct their operations in a way that will cause the least obstruction to traffic. Access to adjacent property will be maintained. Construction will be scheduled in such a manner that alternative routes can be developed.

Table 26. Typical construction machinery noise in A–weighted decibels at 50, 100, and 200 feet from the source[a].

Source	dB(A) at 50'	dB(A) at 100'	dB(A) at 200'
Air Compressor	81	75	69
Backhoe	85	79	73
Concrete Mixer	85	79	73
Concrete Pump	82	76	70
Concrete Vibrator	76	70	64
Crane, Derrick	88	82	76
Crane, Mobile	83	77	71
Dozer	80	74	68
Generator	78	72	66
Grader	85	79	73
Jack Hammer	88	82	76
Loader	79	73	77
Paver	89	83	77
Pile Driver	101	95	89
Pneumatic Tool	85	79	73
Pump	76	70	64
Rock Drill	98	92	86
Roller	74	68	62
Saw	78	72	66
Scraper	88	82	76
Shovel	82	76	70
Truck	91	85	79

[a] Traffic Noise and Vibration Manual, Illinois Department of Transportation, March 1977.

G. Pollution Control

All applicable regulations of pollution control relating to the prevention and abatement of pollution shall be complied with during hauling and construction operations.

H. Potential Soil Impacts

The alternatives east and west of the City of Eagle Lake have similar soil compositions. According to the Blue Earth County Soil Survey, these soils have generally poor qualities for use in road construction. These soils could increase the costs associated with highway construction because they would need to be dried and mixed with other sandy soils to meet standards.

I. Erosion Control

Permanent, temporary and administrative controls will be used to minimize erosion. Permanent control measures include items such as

replacement of top soil, seed, sod and rock riprap. Seed, sod and topsoil are used to reestablish vegetation after construction. Vegetation cover is the best permanent means of controlling and reducing erosion on large exposed areas.

Temporary controls of erosion include items such as bale ditch checks, earth diversions, bale diversions, and temporary sediment basins. Temporary controls which will be included in construction plans are used at the discretion of the project engineer. Administrative erosion controls occur in the form of standard specifications, licenses, permits and requirements placed upon the contractor.

To establish vegetation in areas disturbed by construction, Mn/Dot usually requires topsoil, lime (if necessary), fertilizer, sod and/or seed and mulch. The type and rate of application of fertilizer used depends upon the nature of the topsoil.

Normally, topsoil within a construction area is salvaged and reused. When a project is being designed, existing topsoil is sampled and tested. Test results provide information on topsoil gradation, pH, organic matter, phosphorous and potassium content. From test information, the proper fertilizer type and rate of application may be derived. If more topsoil is required than may be obtained by salvaging inplace topsoil, topsoil borrow (topsoil obtained from a source other than the construction site) may be used.

J. Excess Material Disposal

While some Alternatives may require excavation of peaty soils and muck, it is estimated that this material can be disposed of within right-of-way limits. No significant impacts to wetlands from muck disposal is anticipated. In the event that unsuitable soils cannot be disposed of within right-of-way, Mn/DOT has Guidelines for the Disposal of Excess Material (Technical Memorandum No. 83-11-ENV-1) to aid in the determination of whether there are no feasible and prudent alternatives to disposal of excess materials in wetlands or other environmentally sensitive areas. In brief, these guidelines allow disposal in wetland areas only where cost or engineering considerations make removal of the material to upland sites extremely impractical. These conditions are usually encountered where a highway alignment traverses large expanses of unsuitable soils. This is unlikely to be a problem for this project.

The existing T.H.14 bridge over the DME Railroad would be torn down and salvaged. Concrete from the bridge deck would be disposed of under Mn/DOT guidelines.

XXIII. Transportation Impacts

The transportation improvements below are general and apply to all of the new alignment alternatives. Transportation improvements include:

1. Added Capacity

   By replacing a two-lane road with a four-lane facility, capacity of the road is naturally increased. The existing T.H.14 has insufficient capacity to maintain the level of service desired on a rural highway.

2. Increased Level of Service

   T.H.14 currently has a level of service C. This level of service will be improved to A or B.

3. No Delays for Through Traffic

   Through traffic will have a continuous route without delays caused by traffic signals, jogs in the alignments and lane changes.

4. Improved Safety at Intersections

   Safety at intersections will be improved by building the highway to expressway standards.

5. Increased Safety for Turning Traffic

   There will be increased safety for turning traffic because of the following reasons: 1) Channelized intersections on the new facility will remove turning traffic from the through flow; 2) A reduction of traffic on existing T.H.14 will reduce conflicts between through traffic and turning traffic accessing retail, commercial and residential properties.

XXIV. Relationship of Local Short-term Uses versus Long-term Productivity

The five build-on-new-alignment alternatives would have similar uses of natural resources. These resources necessarily include the land needed for the new alignment, fossil fuels, and highway construction materials. Transportation improvements in the vicinity of this proposed project are based on State and local comprehensive planning which consider the need for present and future traffic requirements within the context of present and future land use development. Residents in the immediate area, state and region will benefit from the improved accessibility and safety, savings in time and greater availability of quality services. As per this situation, it is concluded that the local short-term impacts and use of resources are consistent with the maintenance and enhancement of long-term productivity for the local area, State and region.

XXV. Irreversible and Irretrievable Commitment of Resources

Implementation of any of the proposed actions involves a commitment of a range of natural, physical, human and fiscal resources. Land used in the construction of the proposed facility is considered an irreversible commitment during the time period that the land is used for a highway facility. However, if a greater need arises for the use of the land or if the highway facility is no longer needed, the land can be converted to another use. At present, there is no reason to believe such a conversion will ever be necessary or desirable.

Considerable amounts of fossil fuels, labor and highway construction materials such as cement, aggregate and bituminous material will be expended. Additionally, large amounts of labor and natural resources are used in the fabrication and preparation of construction materials. These materials are generally not retrievable but may be recyled (ie. concrete and asphalt. However, they are not in short supply and their use will not have an adverse effect upon the continued availability of these resources. Any construction will also require a substantial one-time expenditure of both State and Federal funds which are not retrievable.

The commitment of these resources is based on the concept that residents in the immediate area, State and region will benefit by the improved quality of the transportation system. These benefits will consist of improved accessibility and safety, savings in time and greater availability of quality services which are anticipated to outweigh the commitment of these resources.

LIST OF PREPARERS

E. LIST OF PREPARERS

I. Preparers by Name, Education, Years of Experience, and Responsibility

NAME	EDUCATION	YEARS OF EXPERIENCE	EIS RESPONSIBILITY
MN/DOT: MANKATO DISTRICT			
Larry Filter	B.S. Civil Engr., P.E.	25 yrs	Project Oversight
Barb Tayeb	B.S. Civil Engr., P.E. B.S. Mathematics	5 yrs	Project Manager, Summary, Purpose & Need, Alternatives, Farmland Impacts, Relocation Impacts, Historic & Archeol. Preservation, Trans. Impacts, Short-term Uses vs. Long-term Productivity, Irrevers. & Irretriev. Commit. of Resources
MN/DOT: CENTRAL OFFICE			
Dennis Adams	B.S. Landscape Arch.	19 yrs	Visual Impacts EIS Editing
Patricia Bursaw	B.A. Amer. Studies	10 yrs	Pedestrians & Bicyclists
Greg Busacker	B.S. Zoology M.A. Fisheries Ph.D. Biological Sci.	9 yrs	Project Manager-EIS Preparation EIS Editing Affected Environment Environ. Consequen. Water Qual. Impacts Construction Impacts
Scott Carlstrom	B.S. Civil Engr. B.S. Forestry M.S. Hydrology	11 yrs	Permits
Shawn Chambers	B.S. Biology M.A. Cartography	9 yrs	Bicyclists
Craig Chuchward	B.L.A.	10 yrs	Visual Impacts
L.E. Foote	B.S. Agriculture Econ. M.S. Farm Crops Ph.D. Agronomy	26 yrs	EIS Editing

Bonnie Harper	B.S. Education M.S. Landscape Arch.	12 yrs	Vegetation
Gerald Larson	B.A. Sociology/English M.A. Sociology	9 yrs	Land Use Impacts Social Impacts Economic Impacts
Norm Mellum	B.C.E., P.E.	14 yrs	Air Quality Energy
Frank Pafko	B.S. Fisheries	13 yrs	EIS Editing
Nancy Radle	B.S. Biology B.S. Geology M.S. Geology	6 yrs	Hazard. Waste Sites
Mel Roseen	B.S. Civil Engr., P.E.	15 yrs	Noise Impacts
Sarma Jatnieks-Straumanis	B.S. Zoology M.S. Wildlife Biology	6yrs	Wetlands & Wildlife Endangered Species
Joe Thomas	B.S. Civil Engr. B.S. Soil and Water Mgt	10 yrs	Water Body Mod. Floodplain Impacts
Anders Wisnewski	B.S. Landscape Arch.	5 yrs	Visual Assessment
FHWA:			
James Cheatham	B.C.E., P.E. M.S. Civil Engr.	17 yrs	District Engineer
Gerard Geib	B.C.E.	5 yrs	Area Engineer

II. Preparers by Subject

NAME	SUBJECT
Greg Busacker	General Organization of Document & Coordination Affected Environment Environmental Consequences Water Quality Impacts Construction Impacts
Patricia Bursaw	Pedestrians & Bicyclists
Scott Carlstrom	Permits
Craig Churchward	Visual Assessment
Shawn Chambers	Bicyclists
Bonnie Harper	Vegetation
Gerry Larson	Land Use Impacts (4f) (6f) Social Impacts Economic Impacts
Norm Mellum	Air Quality Impacts Energy
Mel Roseen	Noise Impacts
Nancy Radle	Hazardous Waste
Sarma Jatnieks-Straumanis	Wetland and Wildlife Impacts Threatened or Endangered Species
Barb Tayeb	Purpose and Need for Action Alternatives Farmland Impacts Relocation Impacts Historic and Archaeological Preservation Transportation Impacts Relationship of Local Short-term Uses vs. Long-term Productivity Irreversible and Irretrievable Commitment of Resources
Joe Thomas	Water Body Modification Impacts Floodplain Impacts
Anders Wisnewski	Visual Assessment

F. LIST OF AGENCIES, ORGANIZATIONS AND OFFICIALS TO WHOM COPIES OF THIS DRAFT EIS ARE BEING SENT

I. Legislators

U.S. Representative	Timothy J. Penny
State Senators:	Richard H. Day — District 30 Dennis L. Frederickson — District 23 John C. Hottinger — District 24 Thomas M. Neuville — District 25
State Representatives:	Richard H. Anderson — District 30B John W. Dorn — District 24A Marcel "Sal" Frederick — District 24B Don Ostrom — District 23B Peter G. Rodosovich — District 25B Robert E. Vanasek — District 25A

II. Federal Agencies

Advisory Council on Historic Preservation
Department of Agriculture
    Soil Conservation Service
Department of the Army
    Corps of Engineers, St. Paul District
Department of Commerce
Department of Energy
Department of Health, Education and Welfare
Department of Housing and Urban Development
Department of the Interior
    Office of Environmental Project Review
    Fish and Wildlife Service
Department of Transportation
    Federal Railroad Administration
    Urban Mass Transportation Administration
Council on Environmental Quality
Environmental Protection Agency
Federal Emergency Management Agency
Federal Power Commisson
Federal Public Health Service, Center for Disease Control
US Coast Guard

III. Minnesota State Agencies

Department of Agriculture
Department of Energy and Economic Development
Department of Health
Department of Natural Resources
Department of Public Service
Environmental Conservation Library

DISTRIBUTION LIST

Environmental Quality Board
Historical Society
Legislative Reference Library
Pollution Control Agency
Soil and Water Resources Board
State Planning Agency

IV. Regional, County and Local Agencies

Region Nine Development Commission
Blue Earth County
- Board of Commissioners
- Planning Commission

Waseca County
- Board of Commissioners
- Planning Commission

LeRay Township
Mankato Township
City of Eagle Lake
City of Mankato
Minnesota School District 77

V. Others

Railroads
- Dakota Minnesota and Eastern Railroad

Pipelines
- Dome Pipeline Corporation
- Enron Gas Pipeline Company
- MidAmerican Pipeline Company

Power Companies
- Frost Benko Wells Electric
- Northern States Power Company

Minnesota Good Roads

Copies of the DEIS are also available for public inspection at the following locations:

Mn/DOT District 7 Office
501 South Victory Drive, Mankato

Mn/DOT Central Office
124 Transportation Building, St. Paul

Minnesota Valley Regional Library
100 East Main Street, Mankato

AGENCY COORDINATION

G. AGENCY COORDINATION AND COMMENTS

During the Scoping Process, Mn/DOT solicited comments from state and federal agencies (see pages 15 & 24). As a result of this coordination an agency meeting and an agency field review was held in August and September of 1987. Subsequently Mn/DOT received a number of letters regarding possible alternatives for further study in a DEIS (see Appendix C). The USFWS suggested a new alignment "W" to replace Alignment A and all of the proposed alignments were shifted as much as possible to avoid wetlands and sensitive areas. In August of 1988, the project was field reviewed with the FHWA District Engineer. A preliminary draft of the DEIS was reviewed by state and federal agencies in early 1990. As a result of this review, additional changes were incorporated into the document. See Appendix C for pertinent correspondence.

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H. REFERENCES

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APPENDICES

APPENDICES

A. Photo Sequences 100
B. Traffic Forecasts 118
C. Correspondence 129

APPENDIX A

Photo Sequences

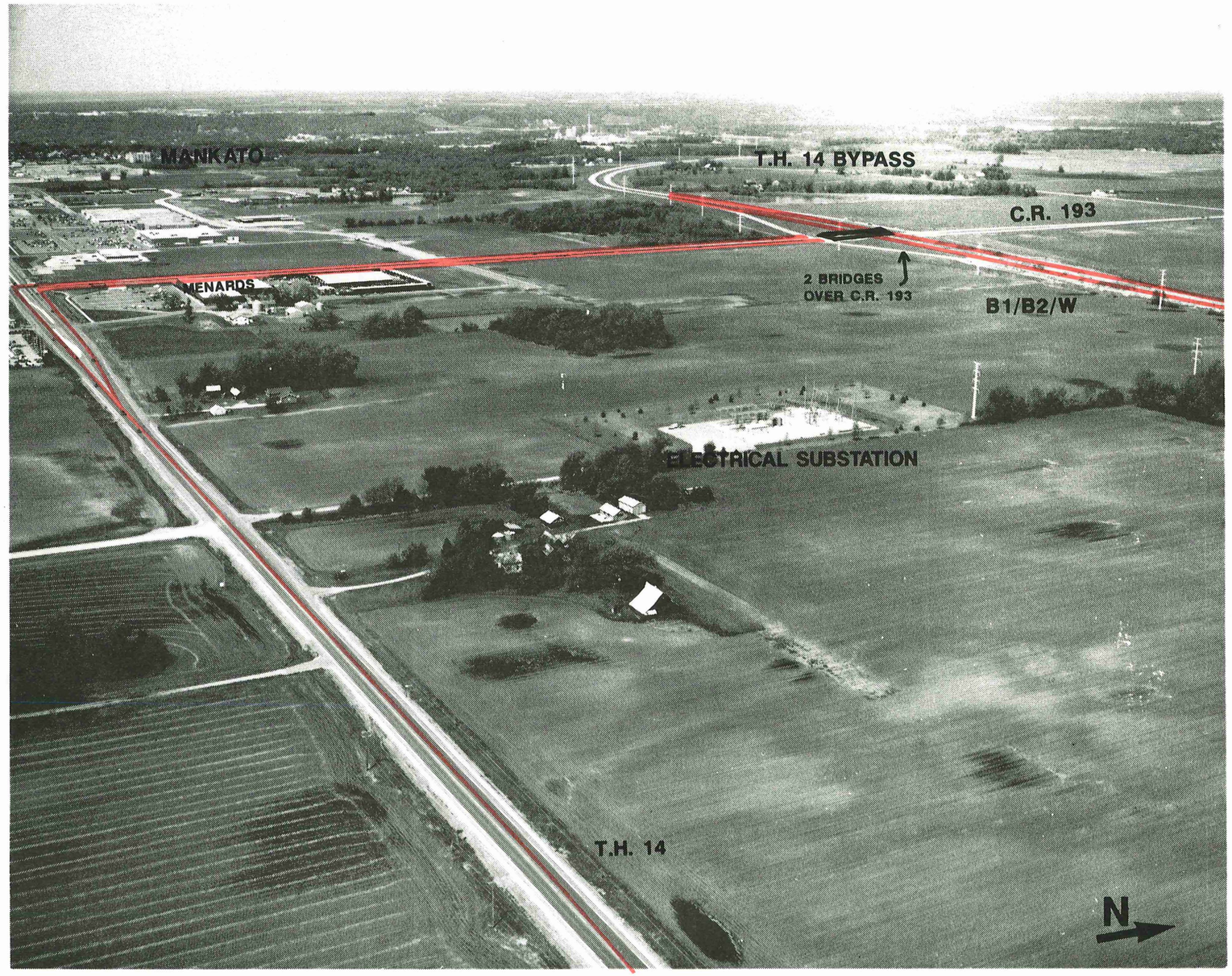
List of Photos

1. Photo A1: View northwest from T.H.14, 0.7 miles east of Mankato
2. Photo A2: View northwest from T.H.14, 1.9 miles east of Mankato
3. Photo A3: View northwest from T.H.14, 2.2 miles east of Mankato
4. Photo A4: View southeast from CSAH 3, two miles east of T.H.14 bypass
5. Photo A5: View northwest from City of Eagle Lake
6. Photo A6: View northwest from City of Eagle Lake, connections to city
7. Photo A7: View northwest from T.H.14/CSAH 17 intersection, connections to city
8. Photo A8(a): View southeast from Eagle Lake outlet
9. Photo A8(b): View southeast from Eagle Lake outlet, connections to City of Eagle Lake
10. Photo A9(a): View southeast from CSAH 17. Photo A9(b) Has been deleted.
11. Photo A10: View northwest from T.H.14/T.H.60 intersection, 2.3 miles east of Eagle Lake
12. Photo A11: View northwest from T.H.14, 2.8 miles east of Eagle Lake
13. Photo A12: View southeast from CSAH 17, 1.8 miles east of Eagle Lake
14. Photo A13: View south from Mud Lake, 2.8 miles east of Eagle Lake
15. Photo A14: View northwest from T.H.14, 4 miles east of Eagle Lake
16. Photo A15: View south from CSAH 27, 0.3 miles east of Eagle Lake
17. Photo A16: View southeast from CSAH 17, 0.5 miles east of Eagle Lake

TH 14

Mankato to Smith's Mill

Minnesota Department of Transportation
Technical Services Division
Environmental Services Section
in cooperation with
District 7, Mankato



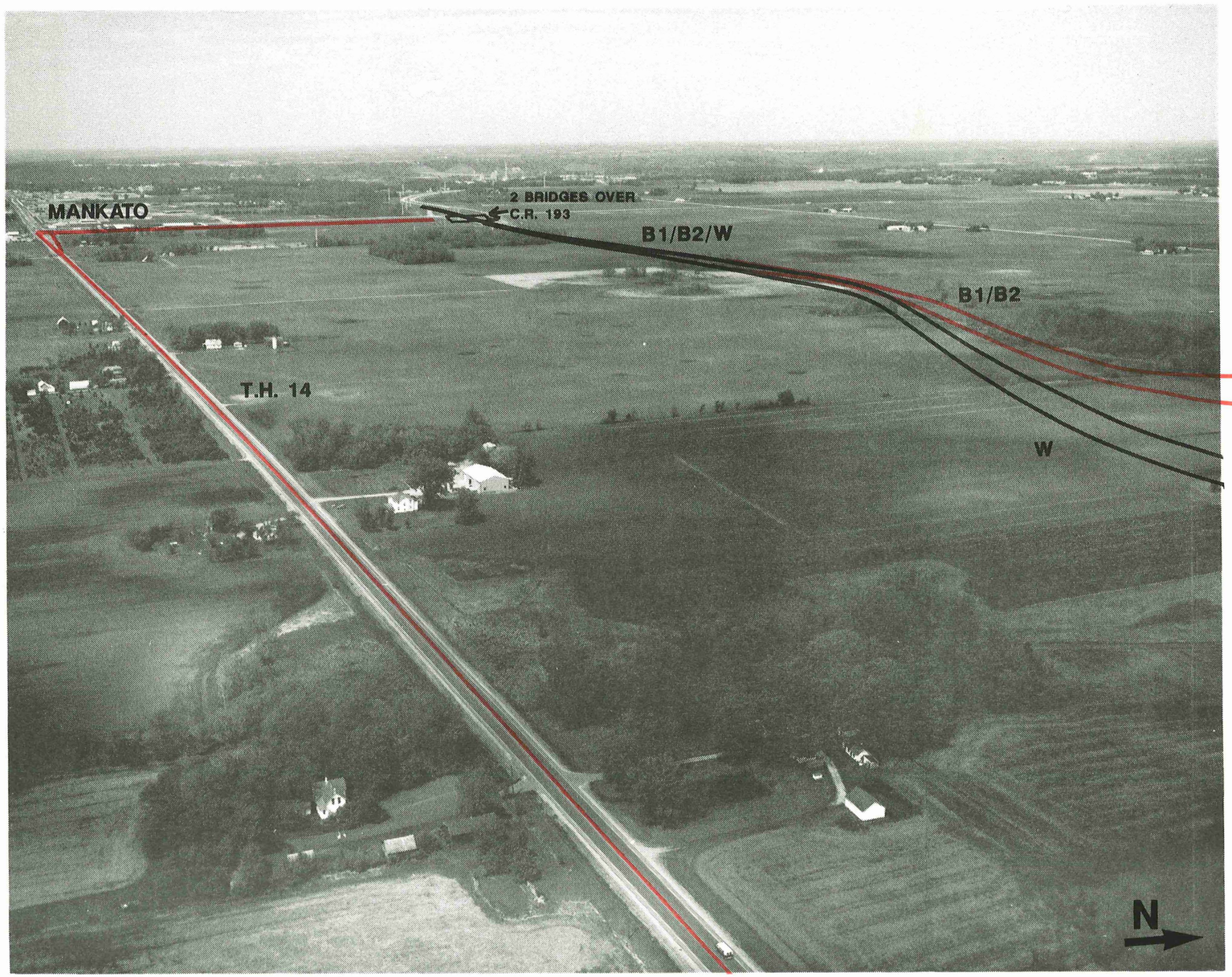
View northwest from T.H.14, 0.7 miles east of Mankato: note alternatives.

PHOTO A1

TH 14

Mankato to Smith's Mill

Minnesota Department of Transportation
Technical Services Division
Environmental Services Section
in cooperation with
District 7, Mankato

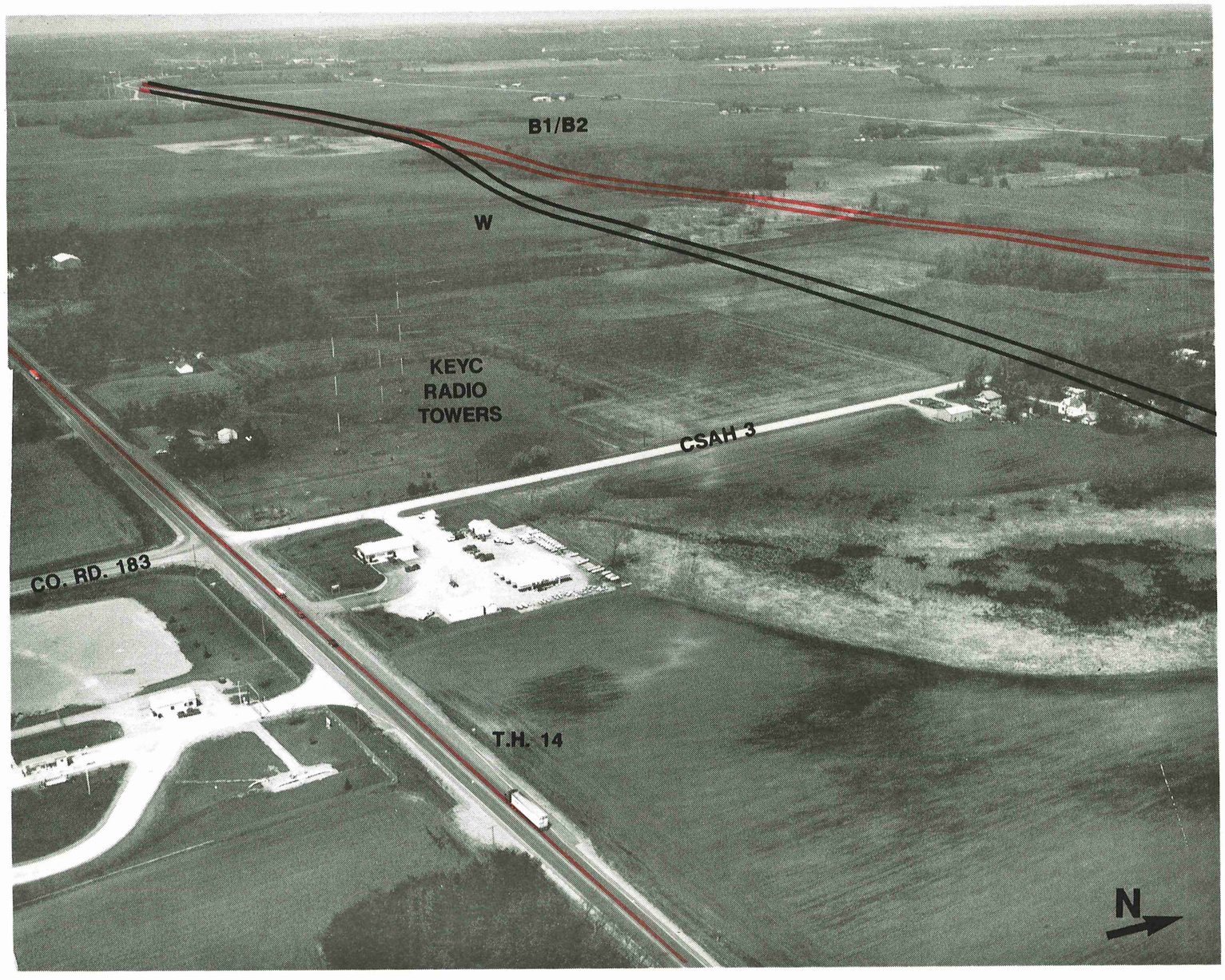


View northwest from T.H.14, 1.9 miles east of Mankato: note alternatives.

TH14

Mankato to Smith's Mill

Minnesota Department of Transportation
Technical Services Division
Environmental Services Section
in cooperation with
District 7, Mankato



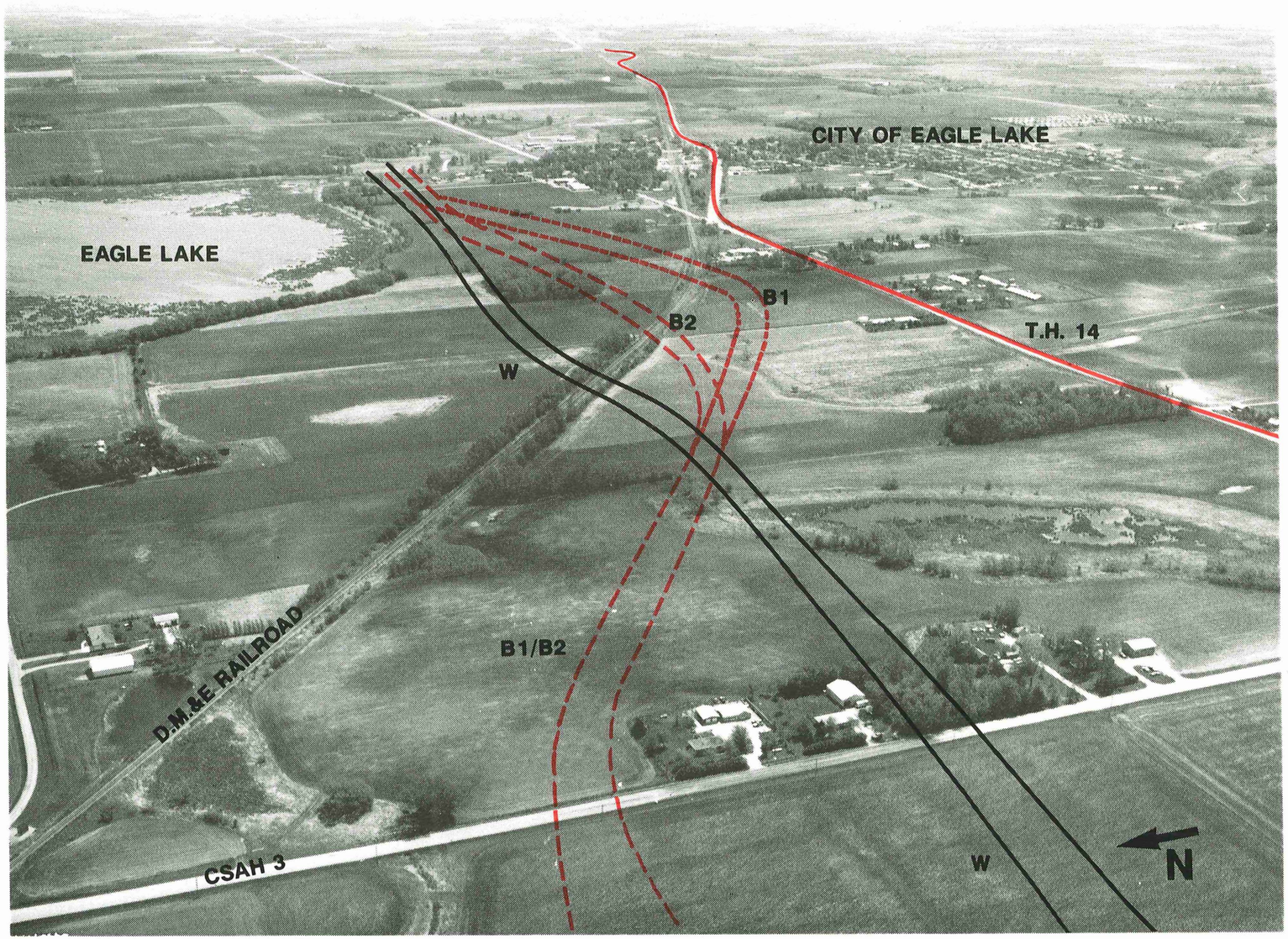
View northwest from T.H.14, 2.2 miles east of Mankato: note alternatives.

PHOTO A3

TH 14

Mankato to Smith's Mill

Minnesota Department of Transportation
Technical Services Division
Environmental Services Section
in cooperation with
District 7, Mankato



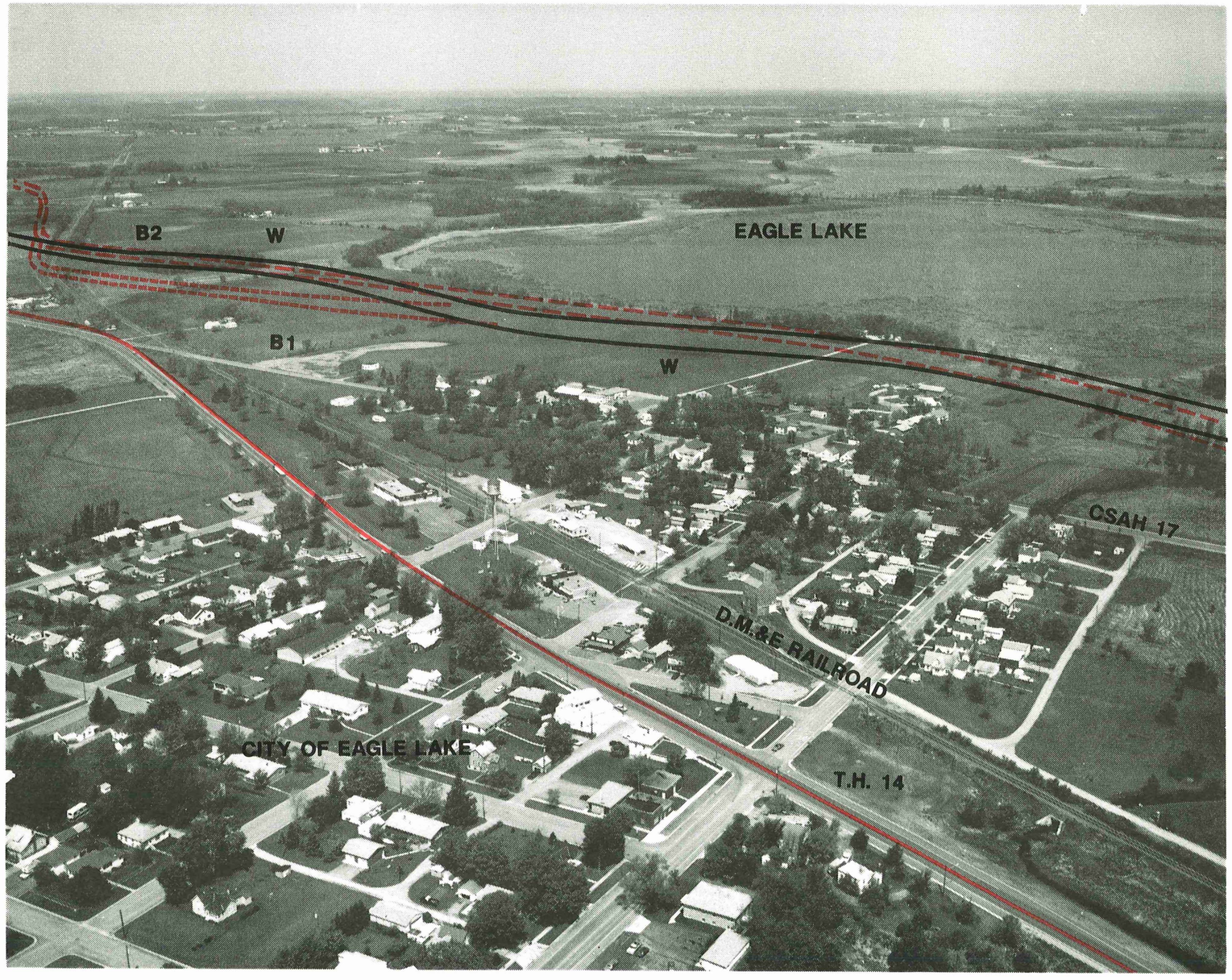
View southeast from CSAH 3, two miles east of T.H.14 bypass: note alternatives.

PHOTO A4

TH 14

Mankato to Smith's Mill

Minnesota Department of Transportation
Technical Services Division
Environmental Services Section
in cooperation with
District 7, Mankato



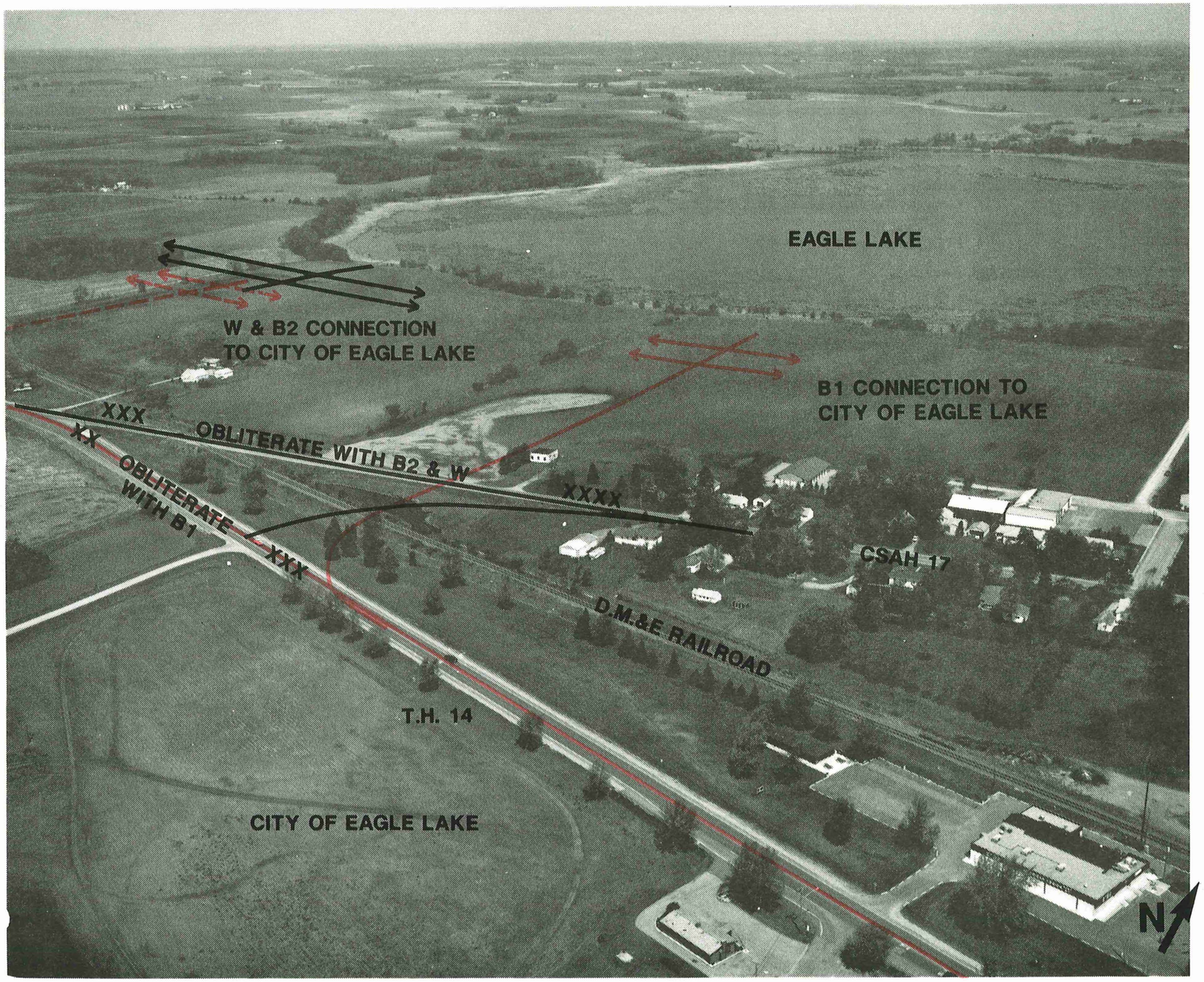
View northwest from City of Eagle Lake: note alternatives.

PHOTO A5

TH 14

Mankato to Smith's Mill

Minnesota Department of Transportation
Technical Services Division
Environmental Services Section
in cooperation with
District 7, Mankato

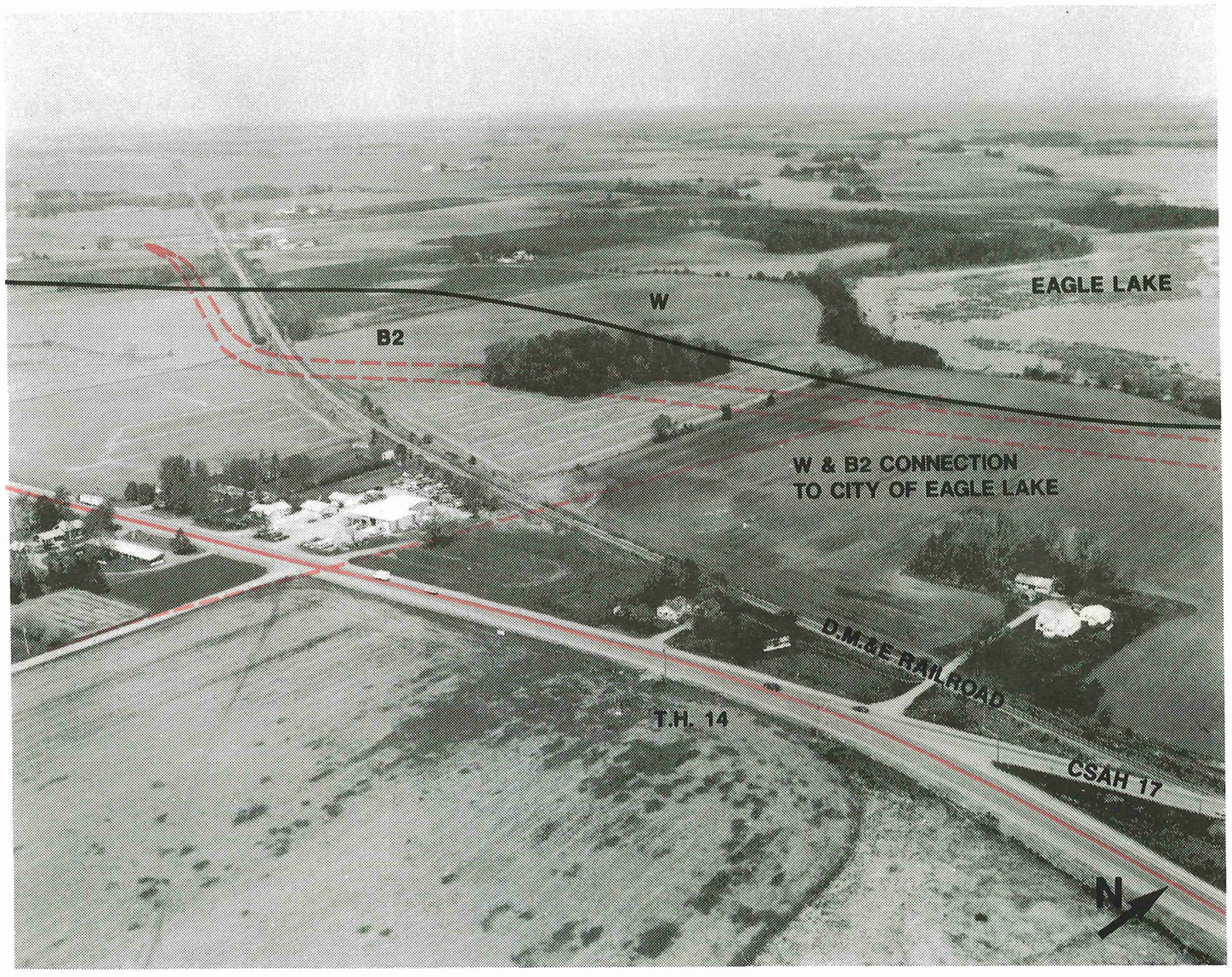


View northwest from City of Eagle Lake: note connections to city.

PHOTO A6

TH 14
Mankato to Smith's Mill

Minnesota Department of Transportation
Technical Services Division
Environmental Services Section
in cooperation with
District 7, Mankato



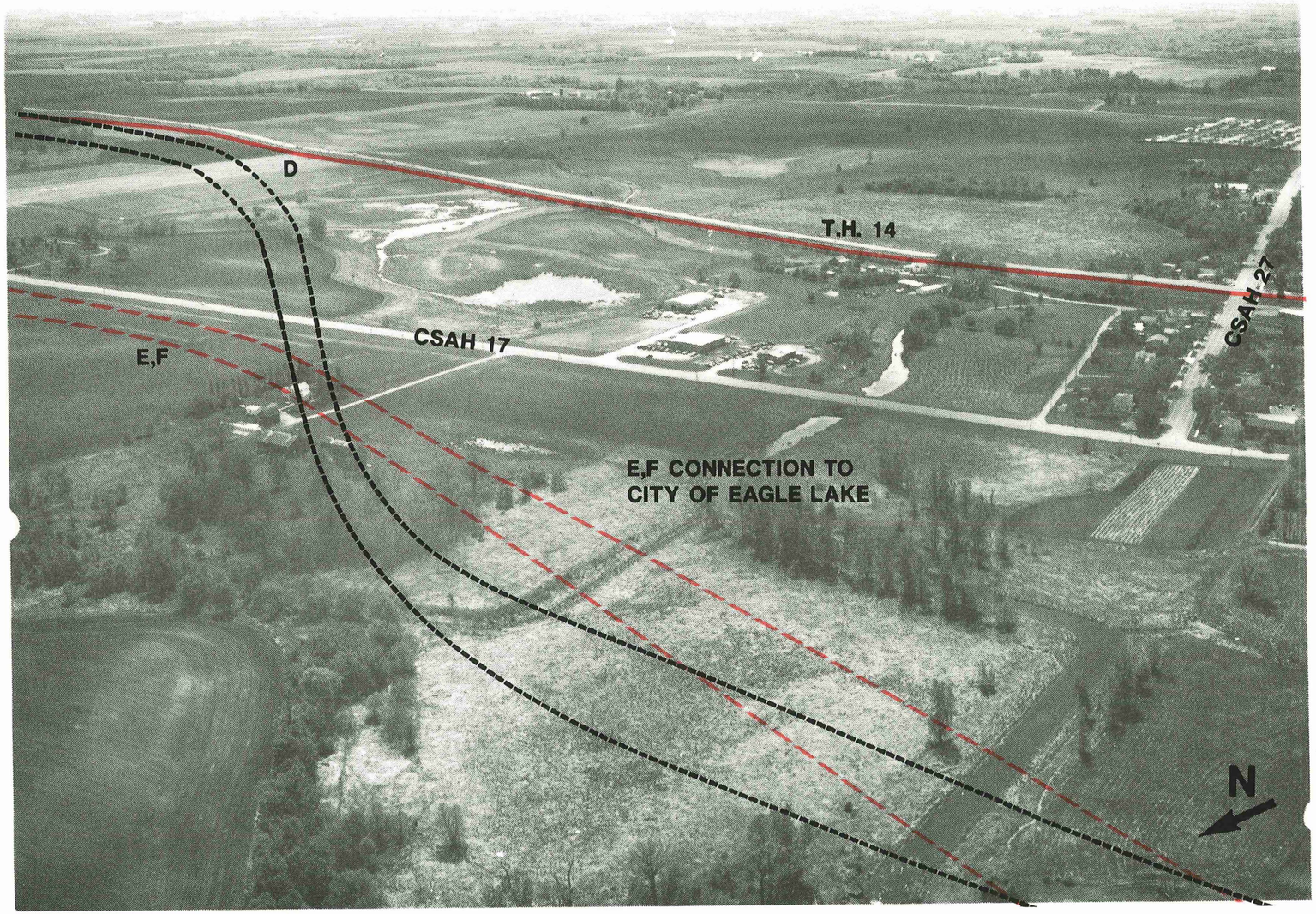
View northwest from T.H.14/CSAH 17 intersection: note connections to city.

PHOTO A7

TH 14

Mankato to Smith's Mill

Minnesota Department of Transportation
Technical Services Division
Environmental Services Section
in cooperation with
District 7, Mankato



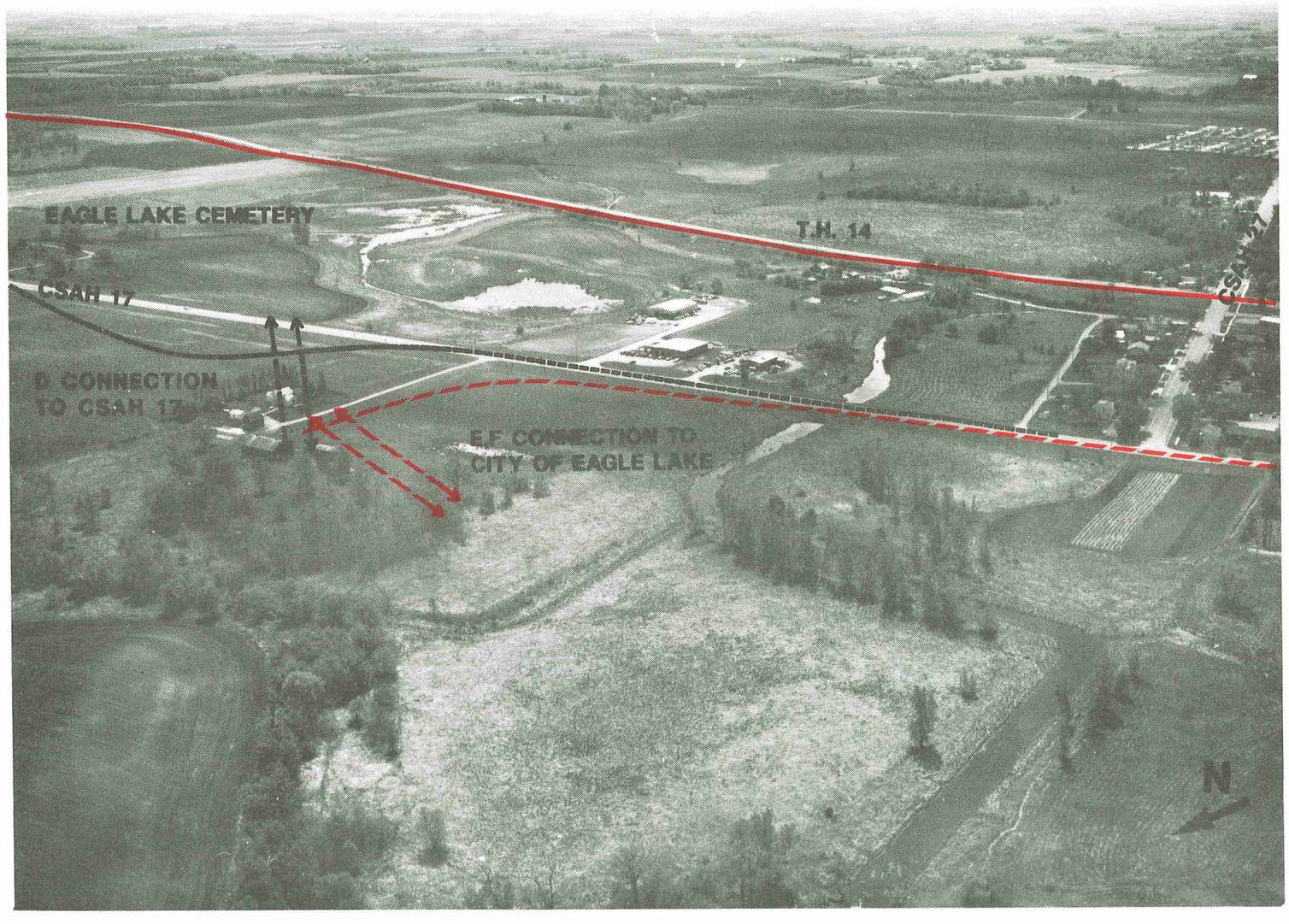
View southeast from Eagle Lake outlet: note alternatives.

PHOTO A8(a)

TH 14

Mankato to Smith's Mill

Minnesota Department of Transportation
Technical Services Division
Environmental Services Section
in cooperation with
District 7, Mankato



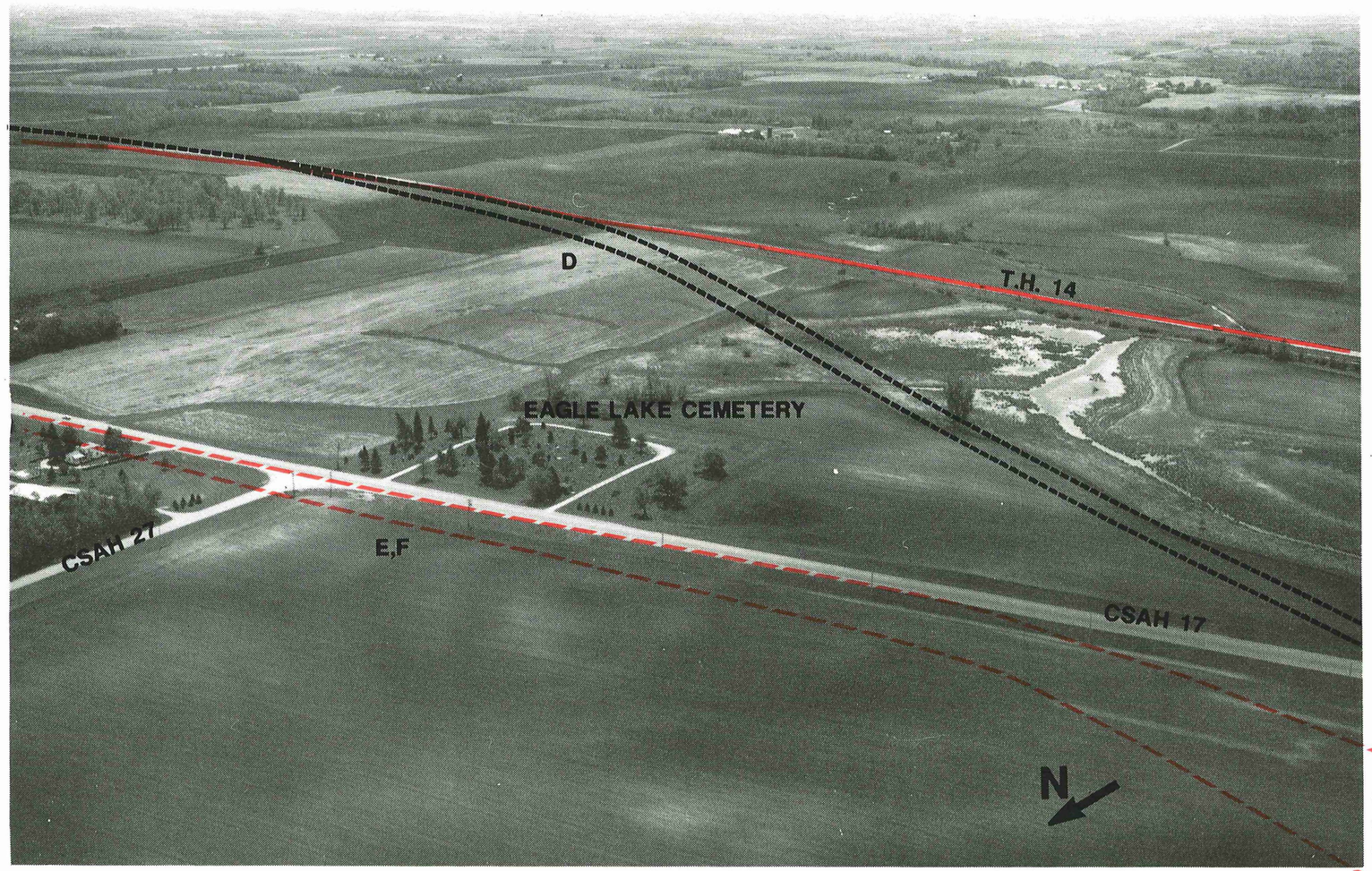
View southeast from Eagle Lake outlet: note connections to City of Eagle Lake.

PHOTO A8(b)

TH 14

Mankato to Smith's Mill

Minnesota Department of Transportation
Technical Services Division
Environmental Services Section
in cooperation with
District 7, Mankato



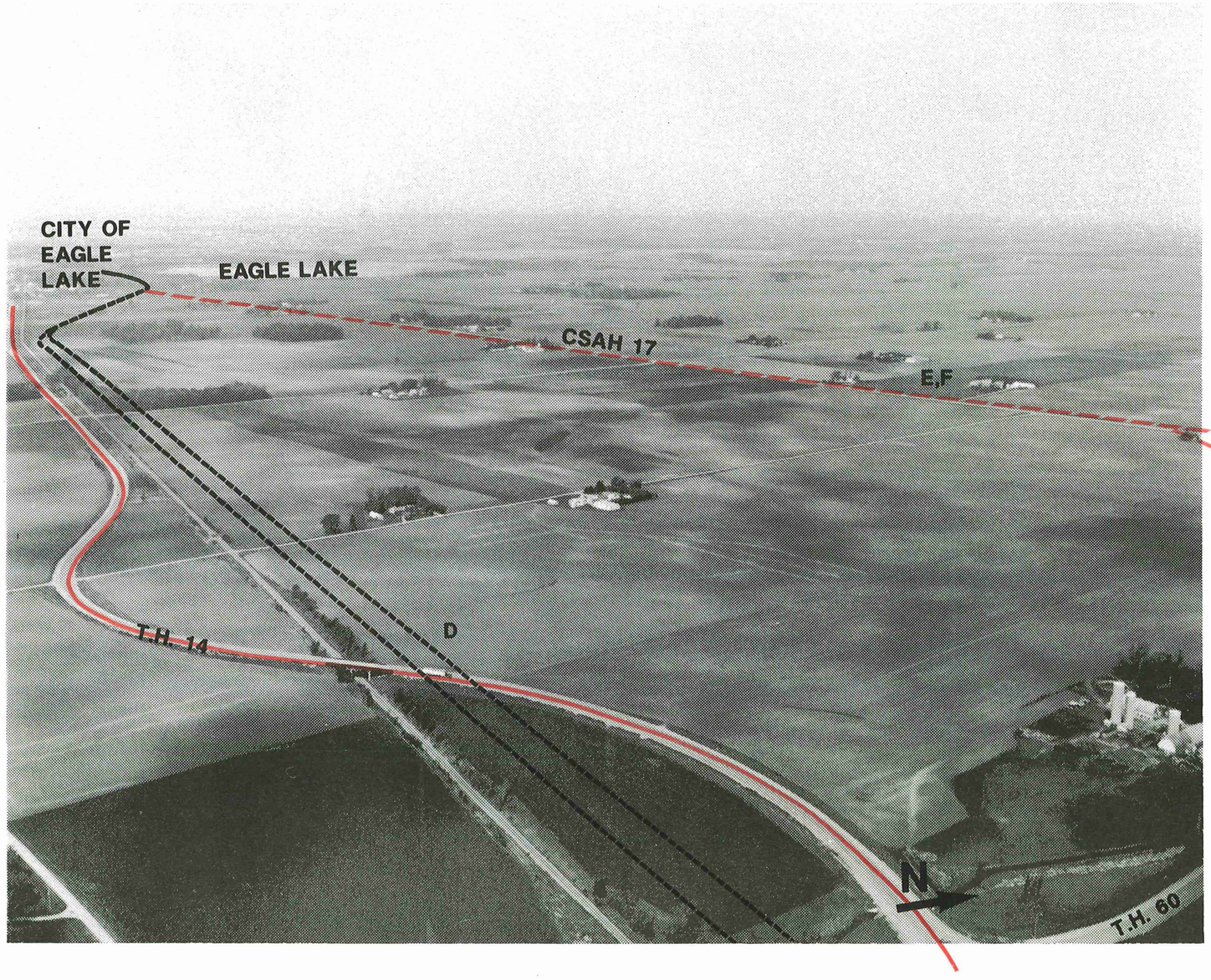
View southeast from CSAH 17: note alternatives.

PHOTO A9(a)

TH 14

Mankato to Smith's Mill

Minnesota Department of Transportation
Technical Services Division
Environmental Services Section
in cooperation with
District 7, Mankato



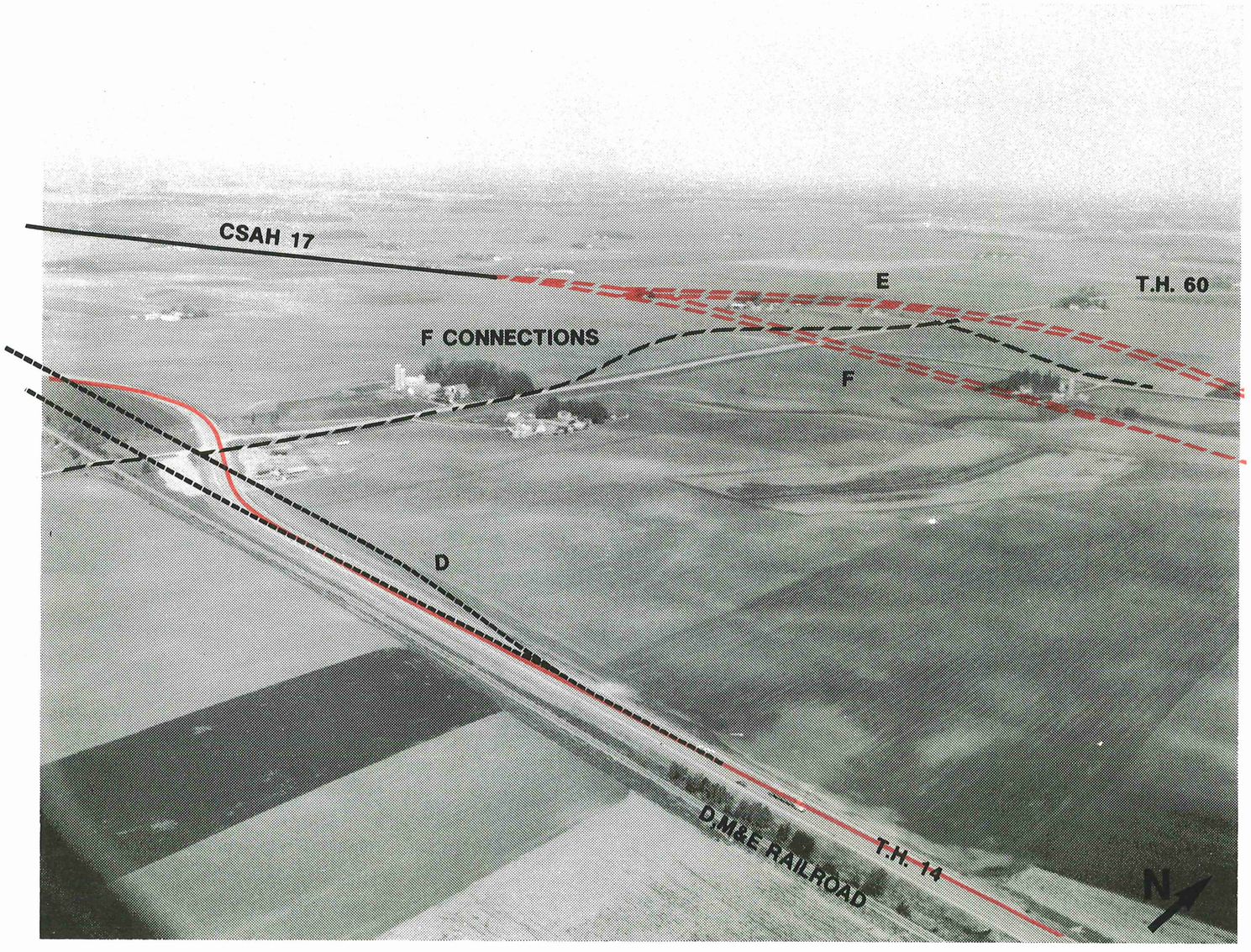
View northwest from T.H.14/T.H.60 intersection, 2.3 miles east of Eagle Lake: note alternatives.

PHOTO A10

TH 14

Mankato to Smith's Mill

Minnesota Department of Transportation
Technical Services Division
Environmental Services Section
in cooperation with
District 7, Mankato



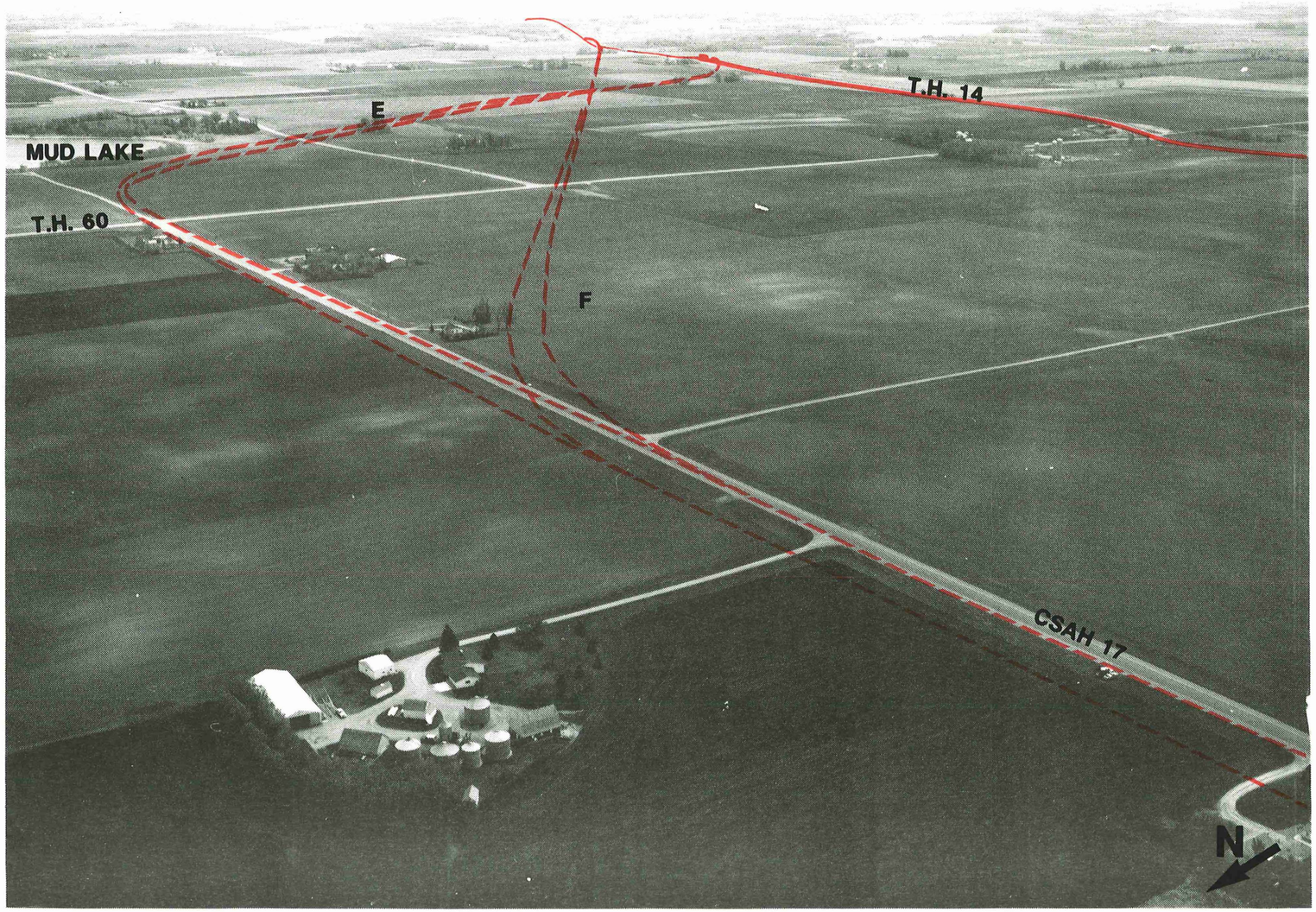
View northwest from T.H.14, 2.8 miles east of Eagle Lake: note alternatives.

PHOTO A11

TH 14

Mankato to Smith's Mill

Minnesota Department of Transportation
Technical Services Division
Environmental Services Section
in cooperation with
District 7, Mankato

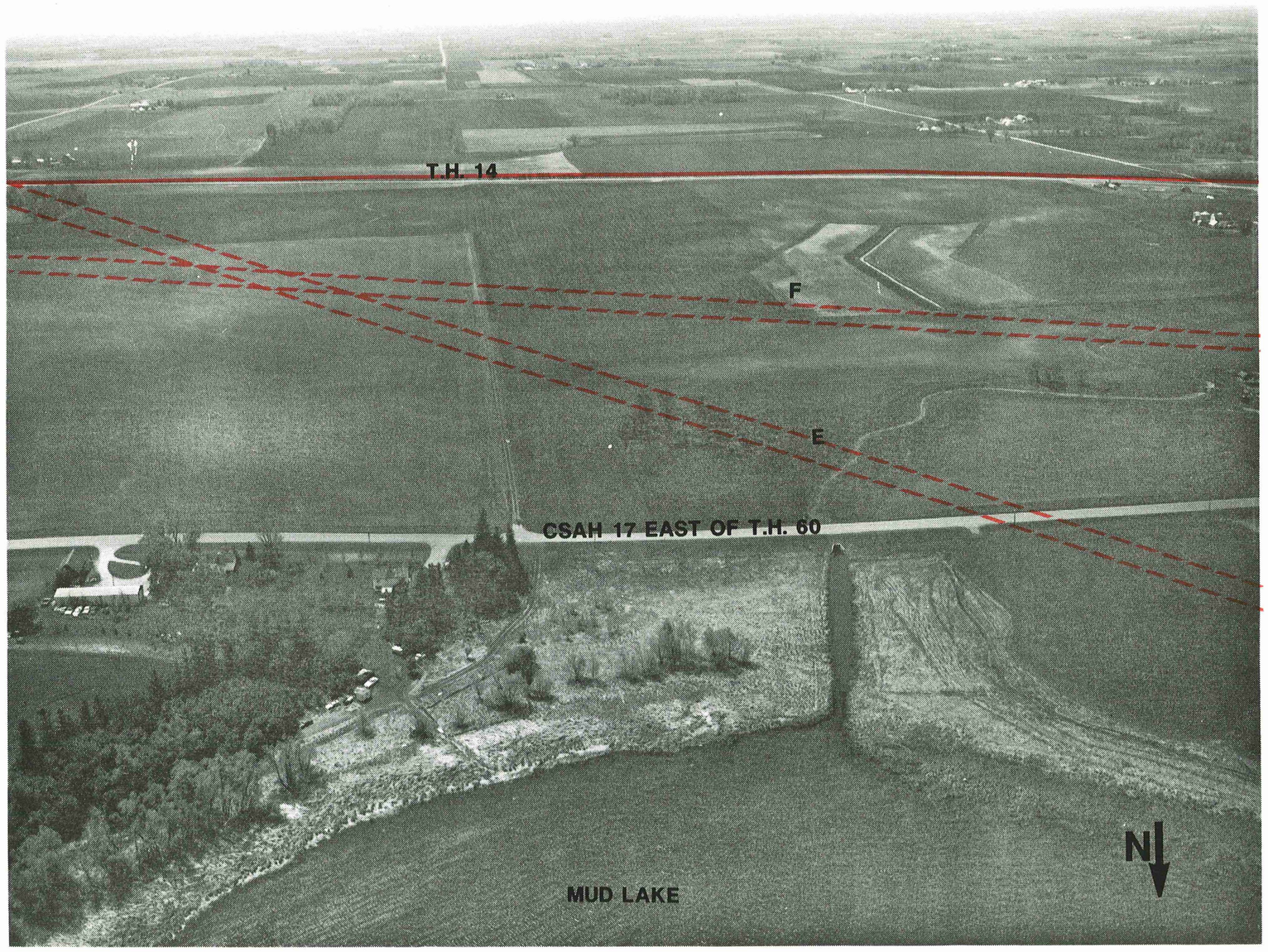


View southeast from CSAH 17, 1.8 miles east of Eagle Lake: note alternatives.

TH 14

Mankato to Smith's Mill

Minnesota Department of Transportation
Technical Services Division
Environmental Services Section
in cooperation with
District 7, Mankato



View south from Mud Lake, 2.8 miles east of Eagle Lake: note alternatives.

TH 14

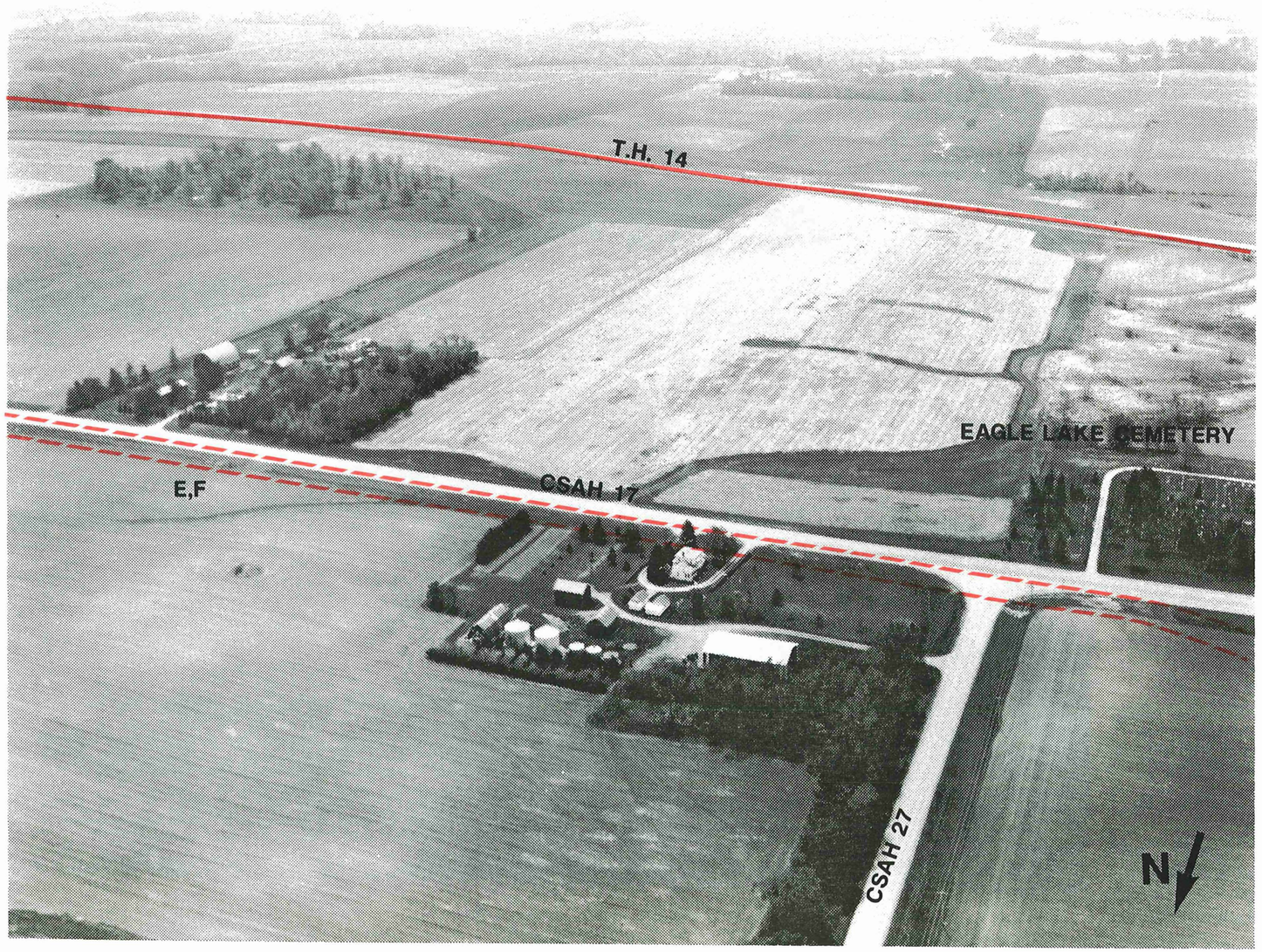
Mankato to Smith's Mill

Minnesota Department of Transportation
Technical Services Division
Environmental Services Section
in cooperation with
District 7, Mankato

View northwest from T.H.14, 4 miles east of Eagle Lake: note alternatives.

TH 14
Mankato to Smith's Mill

Minnesota Department of Transportation
Technical Services Division
Environmental Services Section
in cooperation with
District 7, Mankato

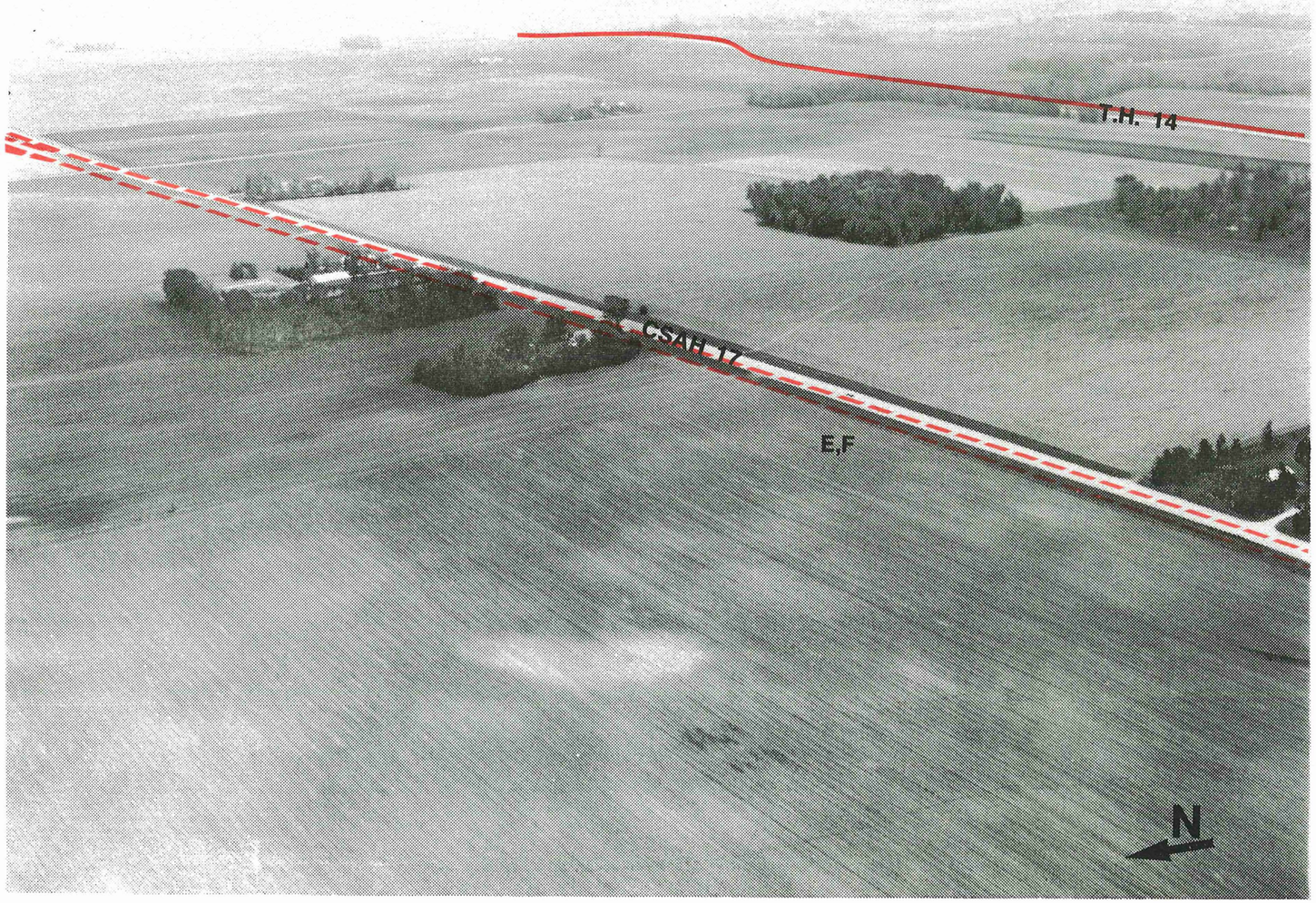


View south from CSAH 27, 0.3 miles east of Eagle Lake: note alternatives E,F.

TH 14

Mankato to Smith's Mill

Minnesota Department of Transportation
Technical Services Division
Environmental Services Section
in cooperation with
District 7, Mankato



View southeast from CSAH 17, 0.5 miles east of Eagle Lake: note alternatives E,F.

APPENDIX B

Traffic Forecasts

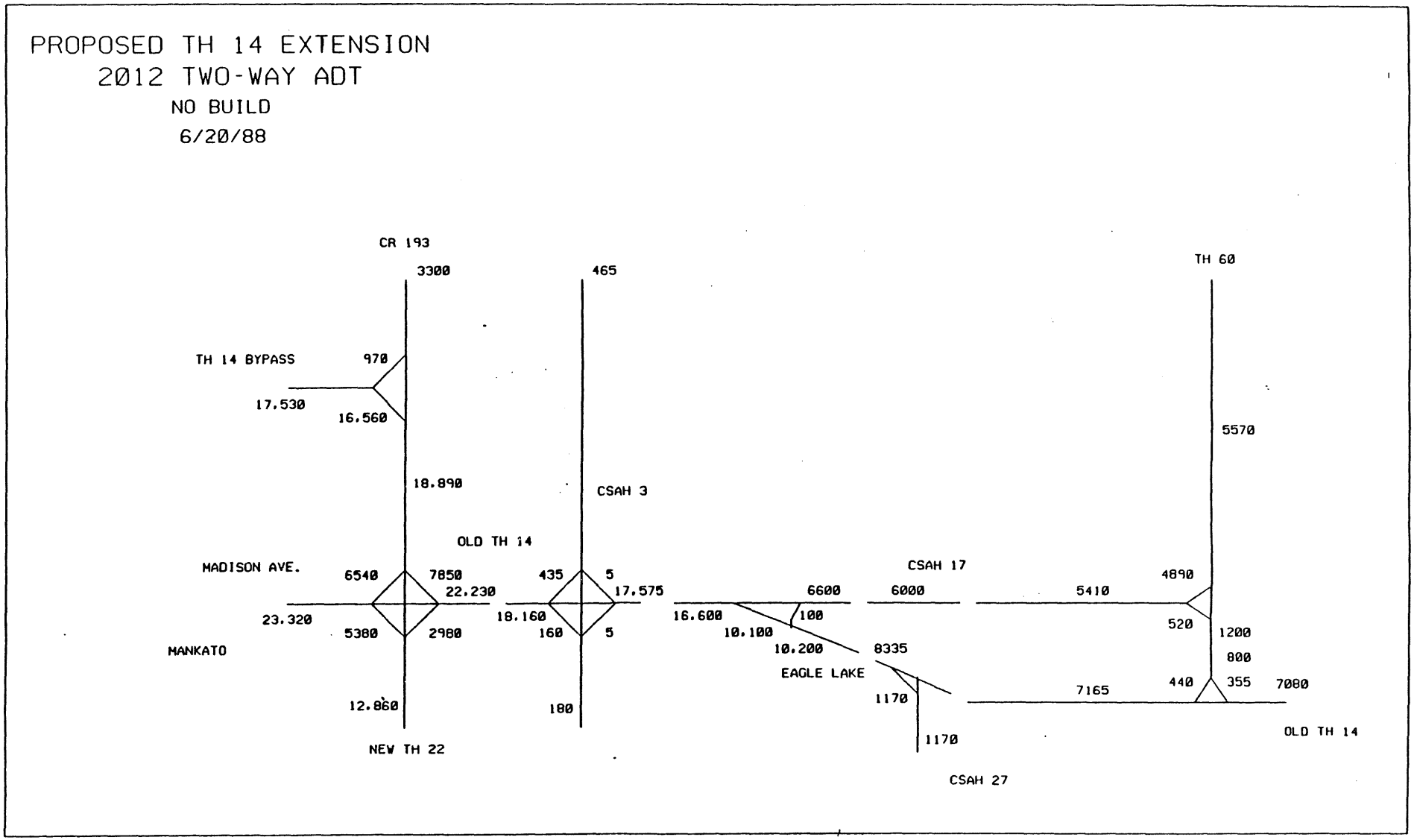

PROPOSED TH 14 EXTENSION
2012 TWO-WAY ADT
NO BUILD
6/20/88
CR 193
3300
465
TH 60
TH 14 BYPASS
970
17.530
16.560
5570
18.890
CSAH 3
OLD TH 14
MADISON AVE.
6540
7850
435
5
CSAH 17
4890
22.230
17.575
6600
6000
5410
23.320
18.160
16.600
100
10.100
520
1200
5380
2980
160
5
10.200
8335
800
MANKATO
EAGLE LAKE
440
355
7080
7165
1170
12.860
180
OLD TH 14
1170
NEW TH 22
CSAH 27

EXHIBIT 1

PROPOSED TH 14 EXTENSION
2012 TWO-WAY ADT
ALTERNATE D
INTERCHANGE WITH TWP. 341
6/20/88

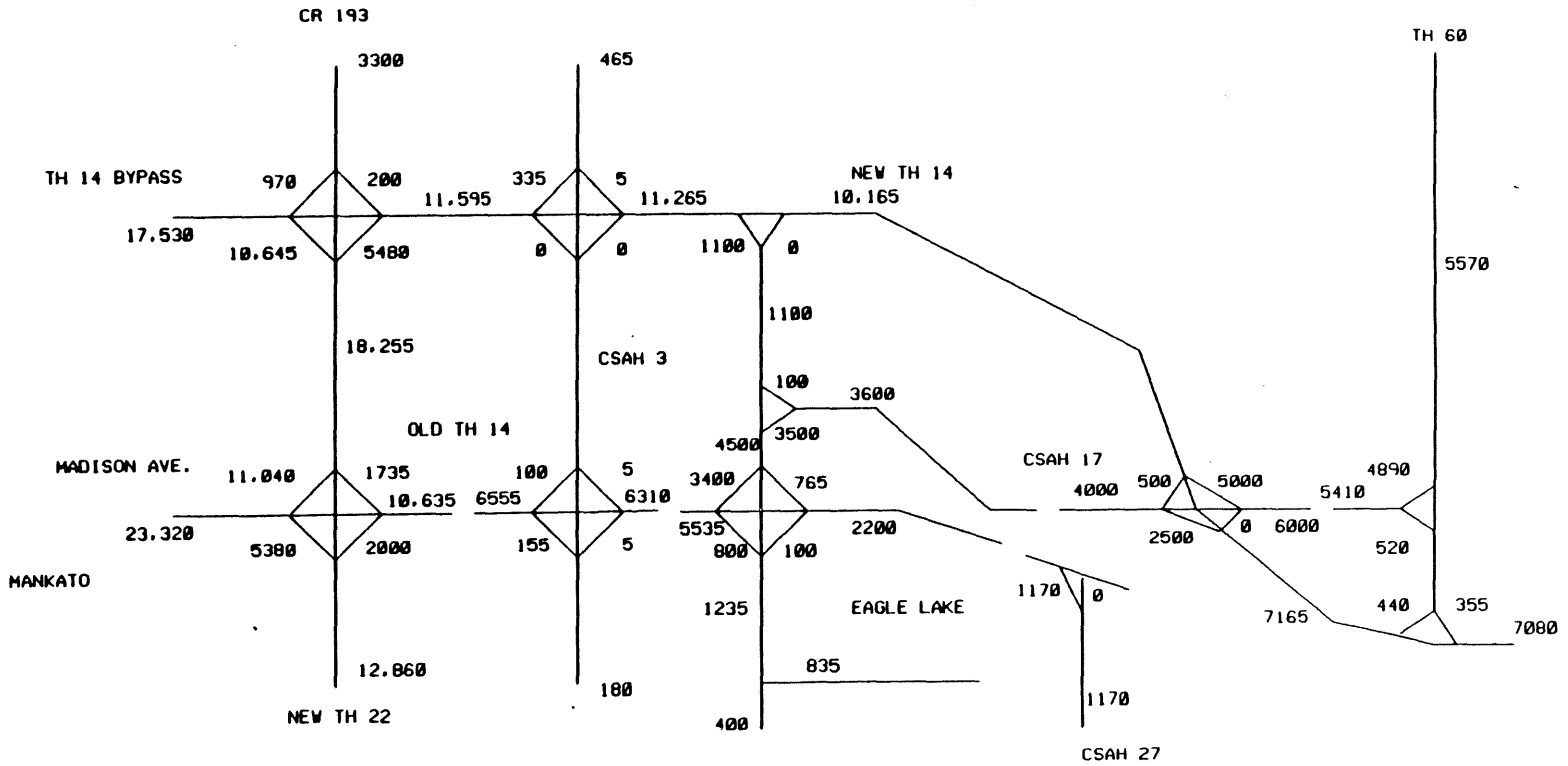


EXHIBIT 2

PROPOSED TH 14 EXTENSION
2012 TWO-WAY ADT
ALTERNATES E, F
INTERCHANGE WITH TWP. 341
6/20/88

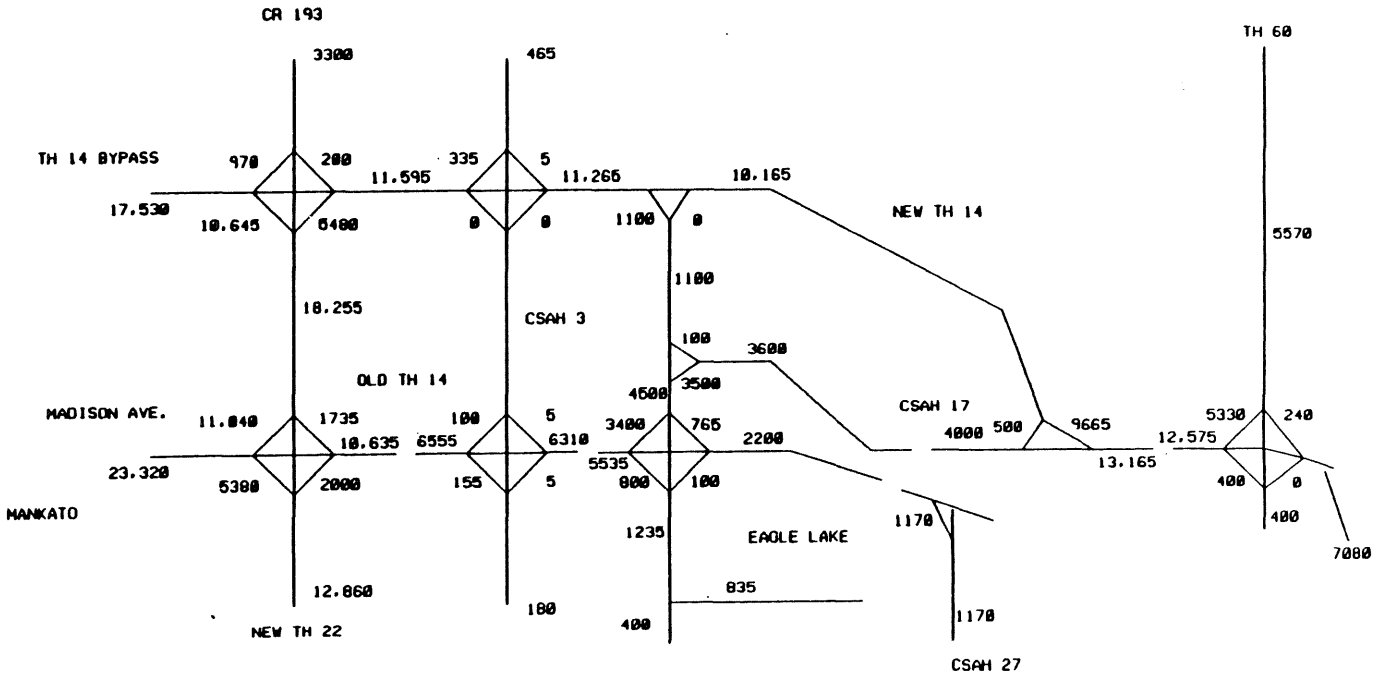


EXHIBIT 3

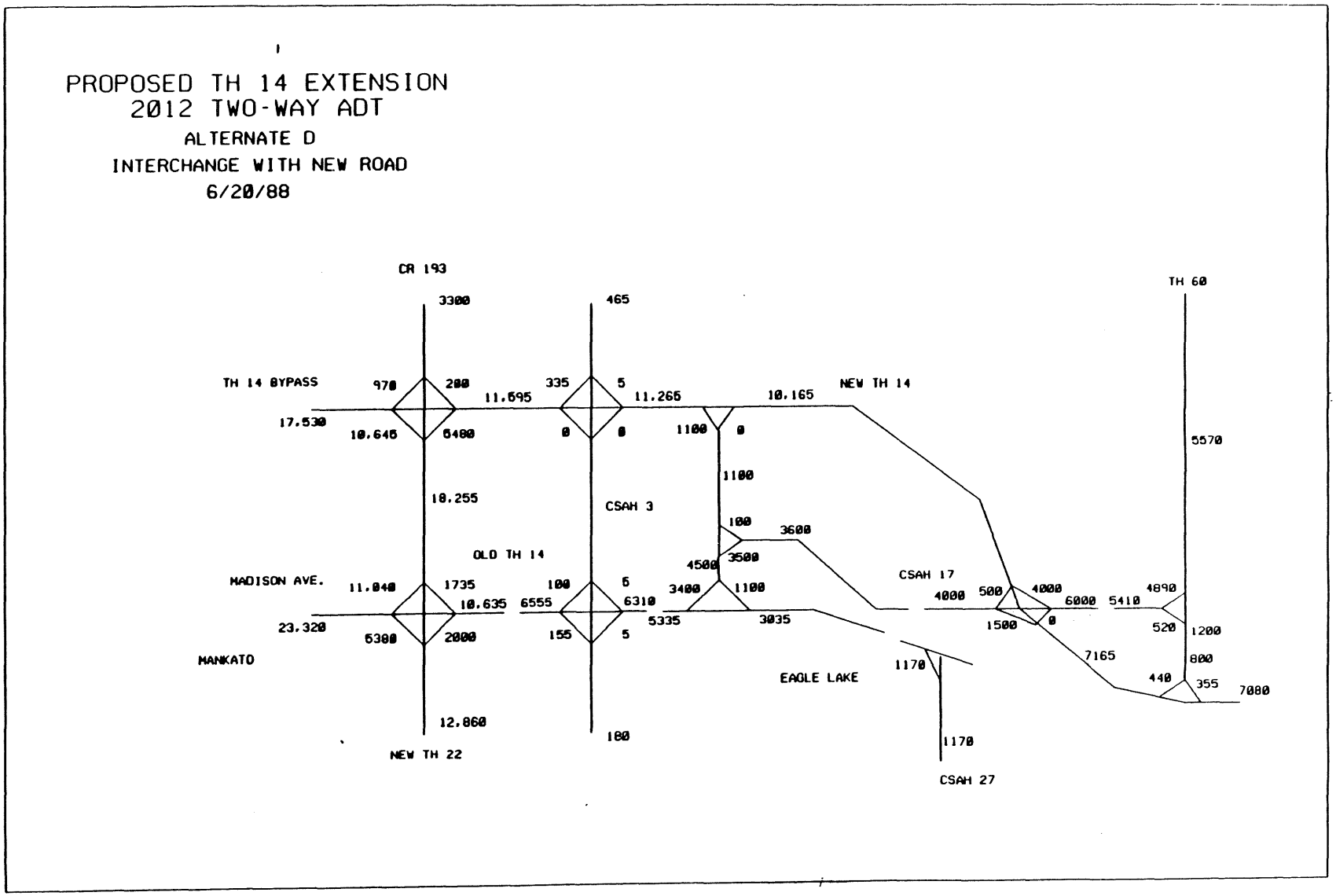

PROPOSED TH 14 EXTENSION
2012 TWO-WAY ADT
ALTERNATE D
INTERCHANGE WITH NEW ROAD
6/20/88
CR 193
3300
465
TH 60
TH 14 BYPASS
970
280
11.695
335
5
11.265
10.165
NEW TH 14
17.530
10.645
5400
0
0
1100
0
5570
1100
18.255
CSAH 3
100
3600
OLD TH 14
4500
3500
MADISON AVE.
11.840
1735
100
5
3400
1100
CSAH 17
4000
500
4000
4890
10.635
6555
6310
6000
5410
23.320
5335
3035
1500
0
520
1200
6300
2000
155
5
MANKATO
7165
800
EAGLE LAKE
1170
440
355
7080
12.860
180
1170
NEW TH 22
CSAH 27

EXHIBIT 4

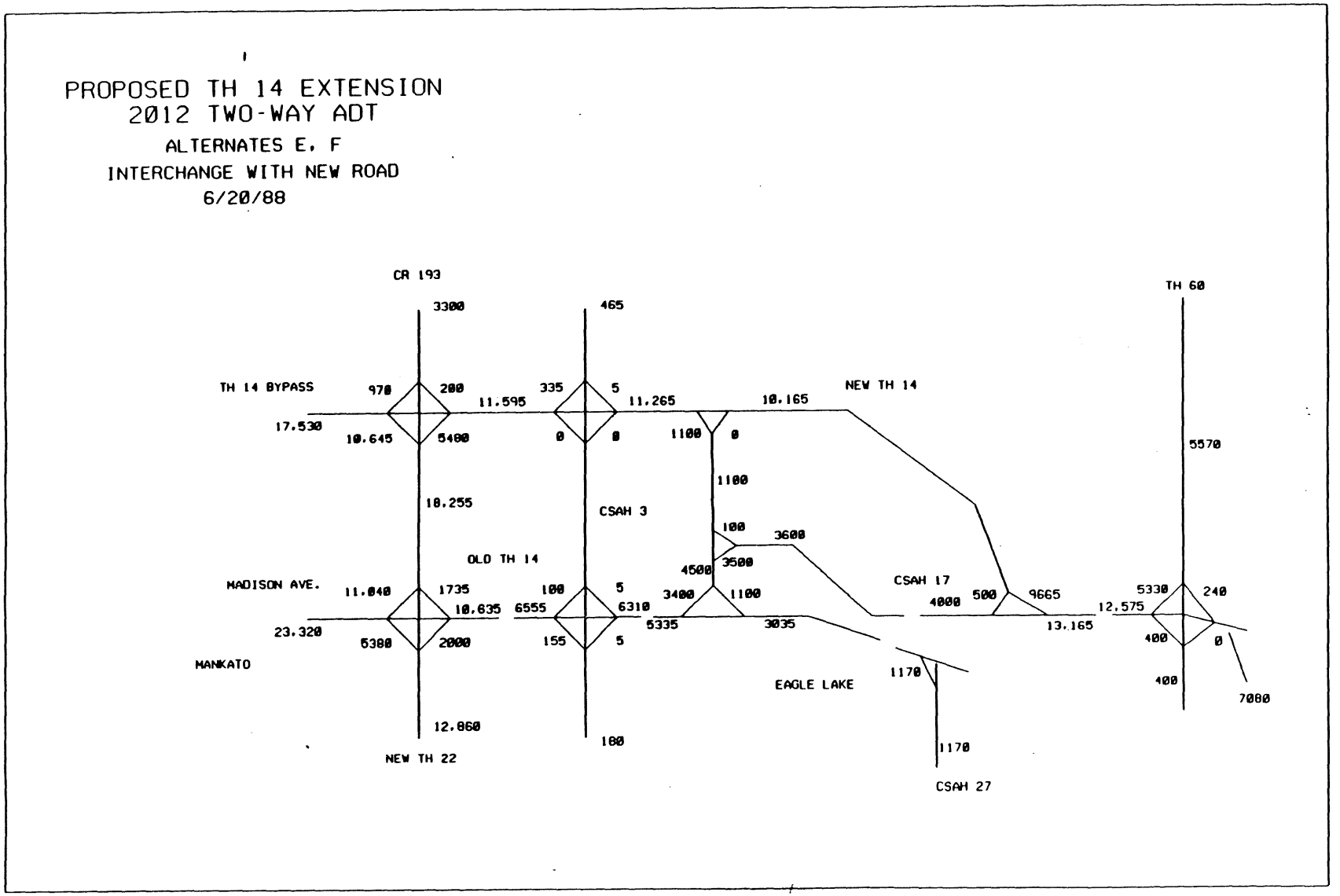

PROPOSED TH 14 EXTENSION
2012 TWO-WAY ADT
ALTERNATES E, F
INTERCHANGE WITH NEW ROAD
6/20/88
CR 193
3300
465
TH 60
TH 14 BYPASS
970
200
11.595
335
5
11.265
10.165
NEW TH 14
17.530
10.645
5400
0
0
1100
0
5570
1100
18.255
CSAH 3
100
3600
OLD TH 14
4500
3500
MADISON AVE.
11.040
1735
100
5
3400
1100
CSAH 17
4000
500
9665
5330
240
10.635
6555
6310
12.575
23.320
5380
2000
155
5
5335
3035
13.165
400
0
MANKATO
EAGLE LAKE
1170
400
7080
12.860
180
1170
NEW TH 22
CSAH 27

EXHIBIT 5

PROPOSED TH 14 EXTENSION
1992 TWO-WAY ADT
ALTERNATE D
INTERCHANGE WITH TWP. 341
6/20/88

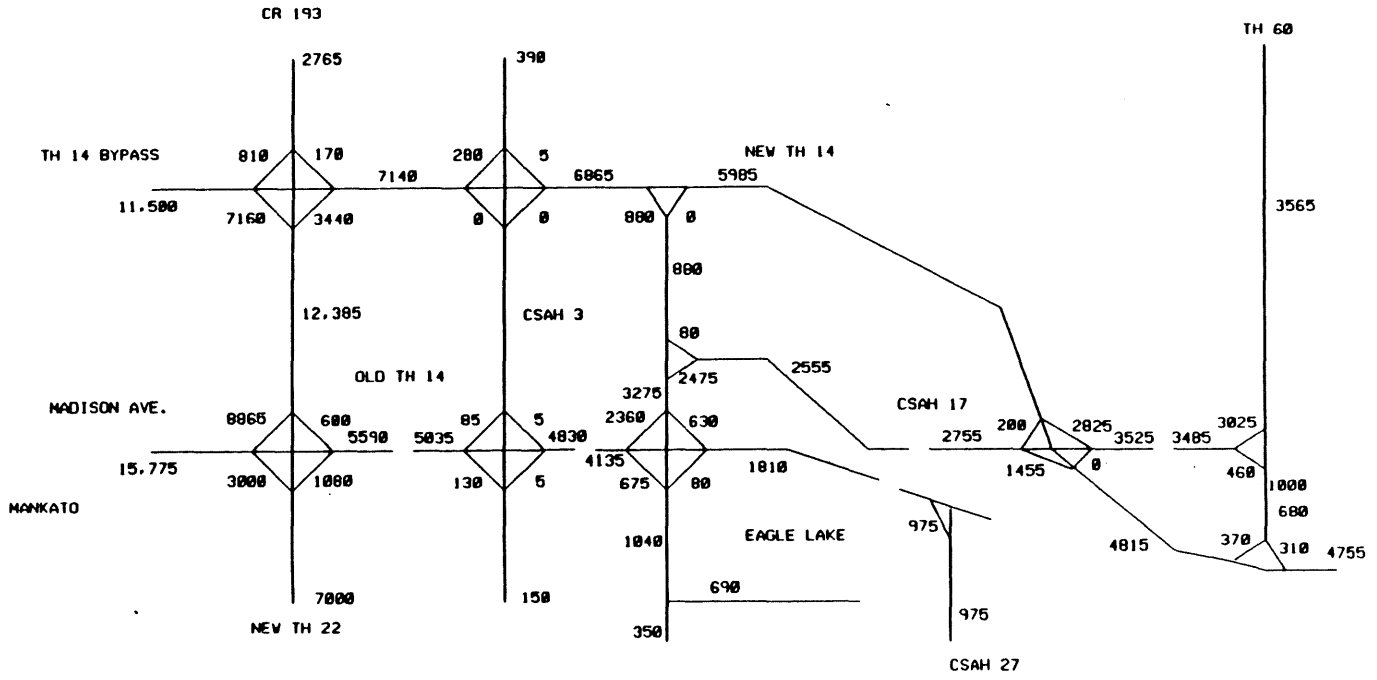


EXHIBIT 6

PROPOSED TH 14 EXTENSION
1992 TWO-WAY ADT
ALTERNATES E, F
INTERCHANGE WITH TWP. 341
6/20/88

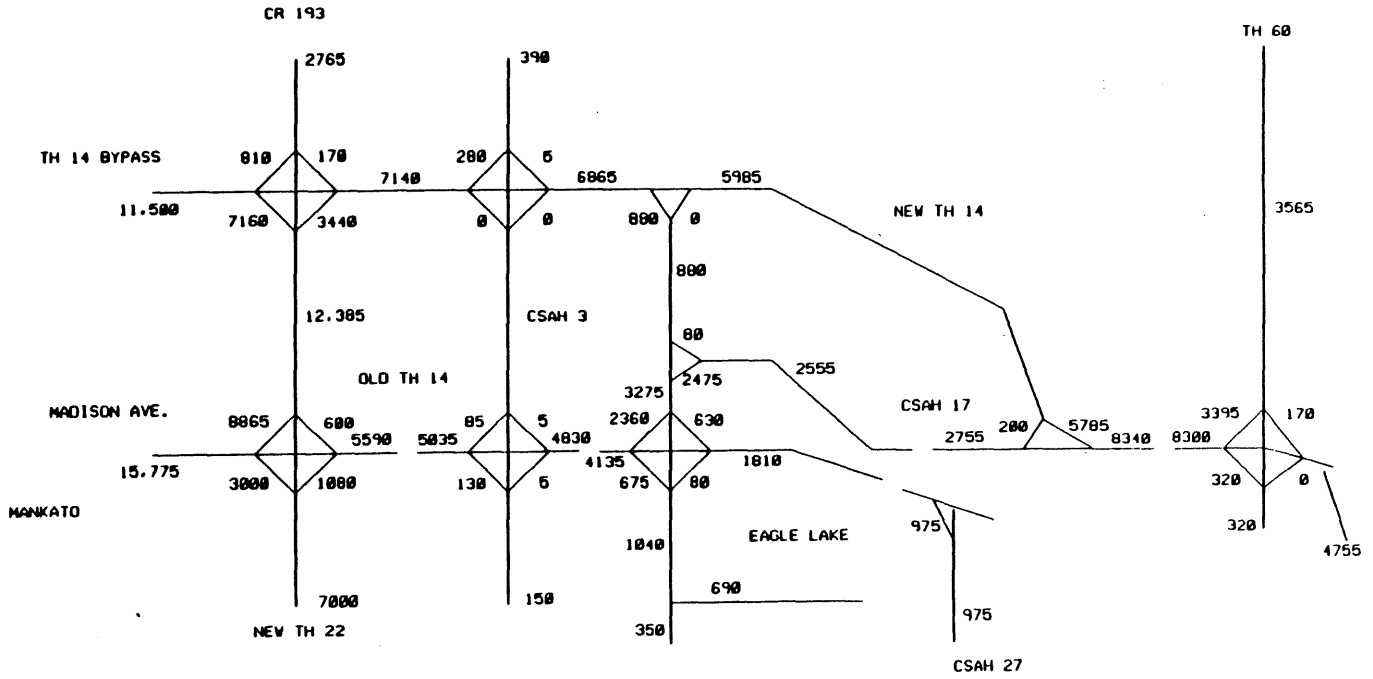


EXHIBIT 7

PROPOSED TH 14 EXTENSION
1992 TWO-WAY ADT
ALTERNATE D
INTERCHANGE WITH NEW ROAD
6/20/88

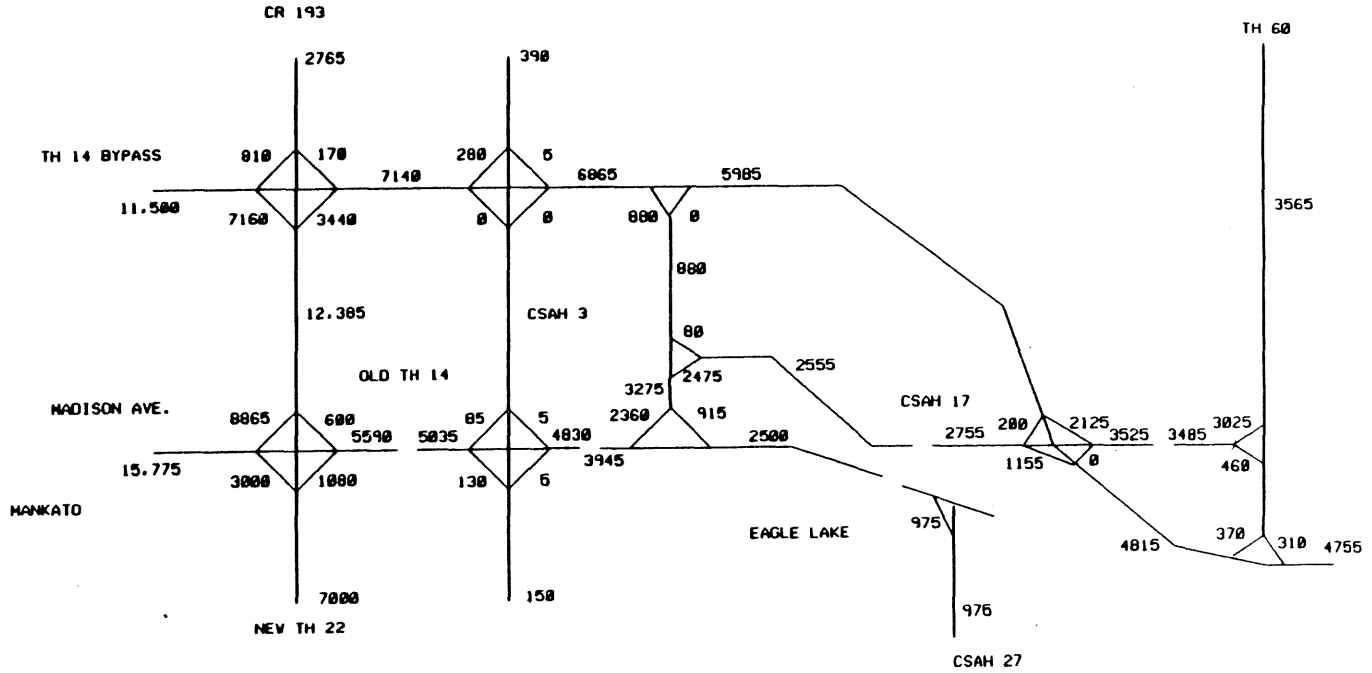


EXHIBIT 8

PROPOSED TH 14 EXTENSION
1992 TWO-WAY ADT
ALTERNATES E, F
INTERCHANGE WITH NEW ROAD
6/20/88

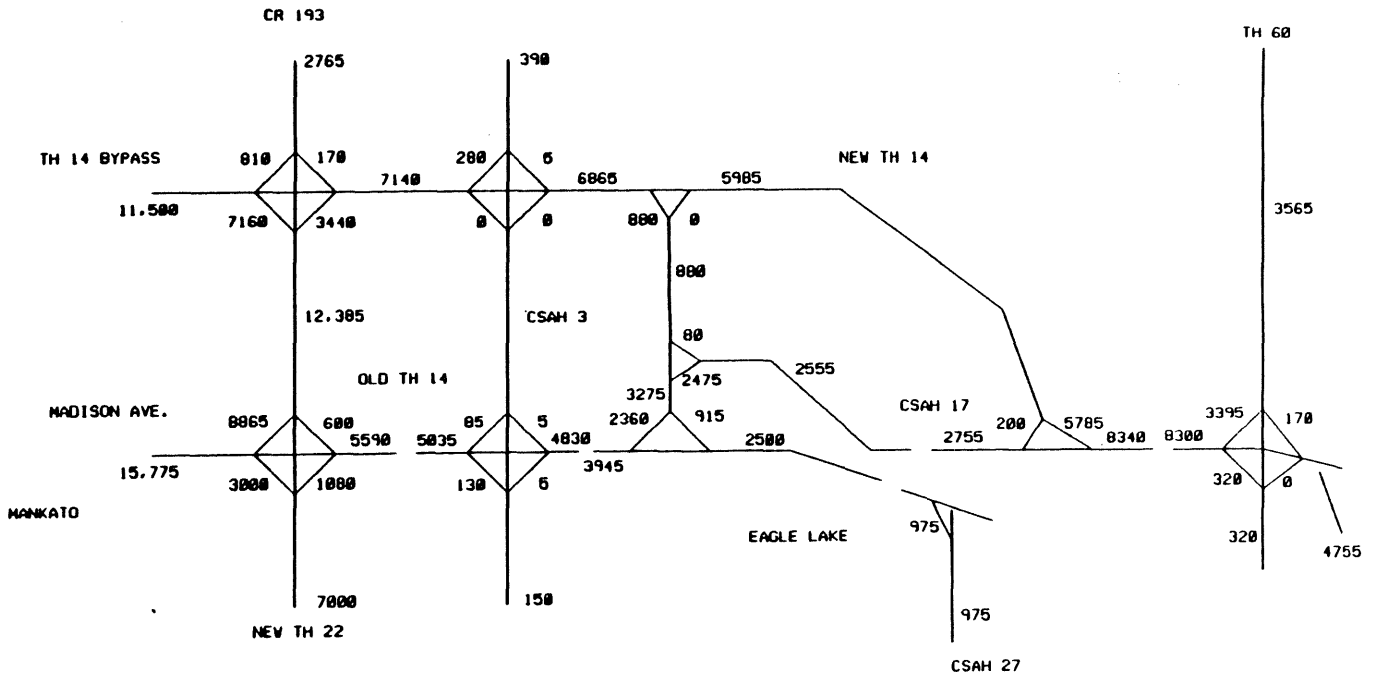


EXHIBIT 9

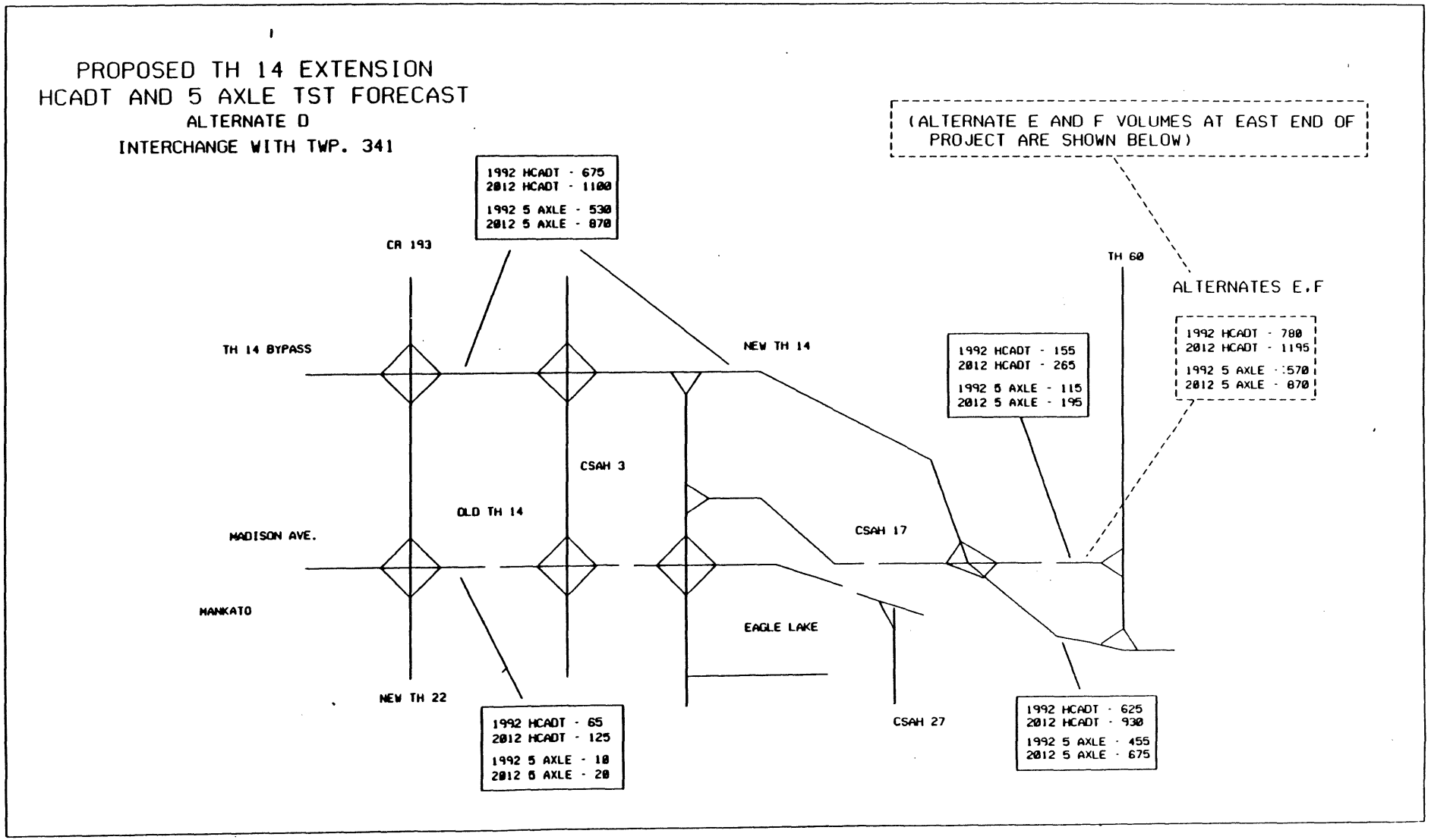

PROPOSED TH 14 EXTENSION
HCADT AND 5 AXLE TST FORECAST
ALTERNATE D
INTERCHANGE WITH TWP. 341
(ALTERNATE E AND F VOLUMES AT EAST END OF PROJECT ARE SHOWN BELOW)
1992 HCADT - 675
2012 HCADT - 1100
1992 5 AXLE - 530
2012 5 AXLE - 870
CR 193
TH 60
ALTERNATES E,F
1992 HCADT - 780
2012 HCADT - 1195
1992 5 AXLE - 570
2012 5 AXLE - 870
TH 14 BYPASS
NEW TH 14
1992 HCADT - 155
2012 HCADT - 265
1992 5 AXLE - 115
2012 5 AXLE - 195
CSAH 3
OLD TH 14
MADISON AVE.
CSAH 17
MANKATO
EAGLE LAKE
NEW TH 22
CSAH 27
1992 HCADT - 65
2012 HCADT - 125
1992 5 AXLE - 10
2012 5 AXLE - 20
1992 HCADT - 625
2012 HCADT - 930
1992 5 AXLE - 455
2012 5 AXLE - 675

EXHIBIT 10

APPENDIX C

Correspondence

STATE OF MINNESOTA

Department of Transportation

OFFICE MEMORANDUM

TO : Leslie D. Peterson
Trunk Highway Archaeologist
Minnesota Historical Society

August 14, 1987

FROM : C. P. Kachelmyer
Preliminary Design Engineer

612/296-3276

SUBJECT : S.P. 0702-87 (T.H. 14)
From Jct. Co. Rd. 193 at Mankato
To E. Co. Line at Smiths Mill
Blue Earth County

Enclosed is the Scoping Document for a major improvement project for T.H. 14 between Mankato and Smiths Mill.

The alternative study corridors are shown on page 14. We request that these corridors be reviewed to identify known sites and would appreciate being notified of the results by September 23, 1987.

A more detailed layout with construction limits will be furnished at a later date with a request for full review.

This project is scheduled for construction contract letting in 1991.

cc:
R. D. McAtee
D. W. Gerdes
R. P. Pecore
L. W. Filter-B. Tayeb
C. P. Kachelmyer

MINNESOTA HISTORICAL SOCIETY
FOUNDED IN 1849
Fort Snelling History Center, St. Paul, MN 55111 • (612) 726-1171

Clement P. Kachelmyer
Preliminary Design Engineer
Minnesota Department of Transportation
612H Transportation Building
St. Paul, Minnesota 55155

19 August 1987

Re: S.P. 0702-87 (T.H. 14)
From East Edge of Mankato
To East Blue Earth County Line at Smiths Mill
Scoping Document and Documentation for State and Federal Agency Meeting

Dear Clem:

Thank you for the opportunity to review and comment on the scoping document and to participate in the State and Federal Agency Meeting for the above project. As I am unable to attend the inter-agency meeting, I submit the following written comments with the hope that it may be of help in anticipating cultural resource issues that may arise as project planning continues.

Each of the project alternatives currently under consideration appears to have potential for affecting recorded historic or prehistoric cultural resource sites. The recorded sites that may be affected are listed relative to the alignment alternatives below. Note that the general locations of these properties are indicated on the attached Scoping Document maps.

Corridor	Alternative	Potentially Affected Property
North	A, B, and C	**21-BE-21 and 21-BE-22:** Prehistoric Indian campsites near the shore of Eagle Lake.
	E, F, and G	**BE-LER-002, 003, 004:** Existing historic farmsteads along the north side of CSAH 17.
Central	H	**21-BE-67:** Prehistoric Indian campsite. **21-BE-FS2:** Undefined prehistoric Indian activity area. (Both sites along the south side of existing T.H. 14 east of Eagle Lake.) **BE-ELC-002:** Church on the south side of existing T.H. 14 in Eagle Lake.
South	J, K	**21-BE-67:** Prehistoric Indian campsite on the south side of existing T.H. 14 east of Eagle Lake.

While all of the above properties have been inventoried, they remain unevaluated as to their potential eligibility for nomination to the National Register of Historic Places. If, after consideration of all alternatives, it appeared that any of these sites could not be avoided, NRHP evaluations would have to be prepared so that appropriate site management decisions can be made. Such evaluations could be completed by our office under the auspices of the Minnesota Trunk Highway Archaeological Reconnaissance Survey and each would require from several days to several weeks of field work. On the basis of the present evidence, it seems unlikely that any of the potentially affected, previously recorded historical and archaeological properties would be of such significance as to demand preservation in place, but it is possible that significant new sites and data may be recorded in the project study area during the course of intensive cultural resource reconnaissance surveys.

Previous archaeological research in Blue Earth and Waseca counties indicates that prehistoric campsites are often located on hill crests or uplands adjacent to current wetlands or drained lake basins. Since each alternative includes such areas, field surveys must be undertaken to attempt to locate further resources. Completion of these reconnaissance surveys would require several days for each alternative except H (existing alignment), portions of which have already been examined by our staff. In the event that additional resources are identified, the same procedures relative to NRHP eligibility determination and site management planning as noted above would apply. Final recommendations relative to the management of any affected resources must ,of course await completion of these inventory and evaluation studies. In this case, as always, we urge that efforts be made to avoid these fragile and irreplaceable resources in order to preserve them for future study.

Since each of the alternates includes considerable new construction through terrain of poorly know cultural resource potential, it is impossible to accurately predict which alternative (except for no-action) would be preferable in terms of cultural resource management. Assuming the worst case, that none of the resource sites could be avoided, alternatives H, J, or K would be preferable on the basis of present information, acknowledging that reconnaissance survey may identify further resources. In any event, please bear in mind that relatively minor alignment changes may be all that is necessary to avoid the sites. As project planning progresses, we would be happy to provide more accurate data regarding site locations and limits as we now understand them so that efforts can be made to avoid potential problems early in the planning process.

Thank you for the opportunity to address these concerns early in the planning process. Please feel free to contact me if additional information is desired.

Sincerely,

Leslie D. Peterson

Leslie D. Peterson
Trunk Highway Archaeologist

Enclosure

cc: Barbara Tayeb, MnDOT Mankato

CITY OF NORTH MANKATO
MINNESOTA 56001

Filter

October 22, 1987

Office of
CITY ADMINISTRATOR

Mr. Emerson Yess
Public Affairs Director
MnDOT-District 7
501 S. Victory Drive
Mankato, MN 56001

Dear Mr. Yess:

It has come to my attention that MnDOT is holding public hearings throughout the state regarding establishing priority ranking for road repairs. Not only is it important for MnDOT to build new roads but they must also maintain the present road system and in many cases, upgrade some of the present road systems.

Unfortunately, the greater Mankato area is not served by an interstate highway system. For that reason, it is very critical that Hwy. 169 receive a high priority for maintenance and upgrading. It is our only major interconnect to the metro area.

Furthermore, it is also very important to maintain and upgrade Hwy. 14 from Mankato to Owatonna to give us that necessary interconnect to the interstate highway system. They are presently upgrading Hwy. 14 to a ten-ton design but on a two-lane highway. I think that displays some very short sightedness on the part of MnDOT. It should have been a four-lane highway. I would hope that long range plans would call for a four-lane Hwy. 14 between Mankato and Owatonna.

Please enter my letter in the official testimony on priorities for highway repairs.

Sincerely,

THE CITY OF NORTH MANKATO

Bob Ringhofer

Bob Ringhofer
City Administrator

BR:mp

cc: Representative Sal Frederick
Senator Glen Taylor

BJT
T.H. 14 DEIS

P.O. Box 2055 1001 Belgrade Avenue • North Mankato, Minnesota 56001 • Telephone 507-625-4141
An Equal Opportunity - Affirmative Action Employer

CITY OF EAGLE LAKE

INCORPORATED 1902

September 4, 1987

MN Dept. of Transportation
501 Victory Dr.
Mankato, MN 56001

RE: MN Trunk Hwy 14 bypass.

To whom it may concern:

The City of Eagle Lake discussed the alternatives for the Trunk Highway 14 Bypass and on a 3 to 2 vote decided to support the Trunk Highway 14 Bypass to be located on the North side of Eagle Lake as the first choice and the 2nd choice would be to upgrade the current location of Trunk Highway 14.

The Council feels by going North of Eagle Lake it would better benefit the City of Eagle Lake then any of the other alternatives.

Sincerely,

Joanne M. Malinski

Joanne M. Malinski
City Administrator
City of Eagle Lake

Corr 1-8-87

BLUE EARTH COUNTY

MANKATO, MINNESOTA 56001

BJT

September 03, 1987

Barbara J. Tayeb
Project Manager
MN Dept. of Transportation
501 S. Victory Drive
Mankato, MN 56001

Ref: SP 0702-87, T.H.#14 Alignment
Mankato to the East Blue Earth Co. Line
Scoping Document Comments

Dear Barb:

I would like to offer the following comments regarding the above referenced proposed re-alignment of Trunk Highway No. 14 east of Mankato. These comments do not represent the position of Blue Earth County, but just my immediate observations concerning Blue Earth County's interest.

It would appear the northern corridor would be the preferable route of the alternates proposed. Regardless of the alternate selected, it is most likely a considerable amount of existing T.H. No. 14 will be turned back to Blue Earth County. With this in mind, Alternate "D" east of Eagle Lake would be preferable if the old trunk highway can be obliterated. However, if the old trunk highway cannot be removed, then we would prefer the most northerly alternate ("E", "F", or "G") utilizing County State Aid Highway No. 17.

Regardless of the alternate selection, we would encourage Mn/DOT to minimize the duplication of road systems. As new ideas develop, we would appreciate an opportunity to review and comment.

Yours truly,

Ralph E. Sleeper, Jr., P.E.
PUBLIC WORKS DIRECTOR

RES:jj

COURTHOUSE
204 South Fifth Street
P.O. Box 8608
Ph. (507) 625-3031

Assessor, Auditor, Board of Commissioners, Central Services, Clerk of Court, County & District Courts, Recorder, Treasurer

COUNTY GOVERNMENT CENTER
410 South Fifth Street
P.O. Box 8608
Ph. (507) 625-3031 Ph. (507) 625-9034

Community Corrections, Probation & Parole, Extension Office, License Bureau, Veterans Service, Human Services, Administration, Health & Social Development, Income Maintenance

HIGHWAY BUILDING
35 Map Drive
P.O. Box 3083
Ph. (507) 625-3281

Highway & Public Works

LAW ENFORCEMENT CENTER
710 South Front Street
P.O. Box 228

Sheriff Ph. (507) 625-5551
Emergency Services (Civil Defense) Ph. (507) 387-6407

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T.H.14 DEIS

BLUE EARTH COUNTY

Offices in Mankato, Minnesota 56001

September 22, 1987

Attention: Barb Tayeb
MN Department of Transportation
501 South Victory Drive
Mankato, MN 56001

Dear Ms. Tayeb:

SCOPING COMMENTS---T.H. #14 Realignment Project (SP 0702-87)

The attached resolution was proposed by the County Board on September 22, 1987 relative to the above project.

Sincerely,

Shelly Schulz

Shelly Schulz
Administrative Secretary

Enclosure (1)

COURTHOUSE
204 South Fifth Street
P.O. Box 8608
Ph. (507) 625-3031

Administrative Services
Assessor
Auditor
Board of Commissioners
County & District Courts
Court Administrator
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35 Map Drive
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Highway & Public Works

ECLIPSE
415 South Broad Street
Ph. (507) 388-9321

LAW ENFORCEMENT CENTER
710 South Front Street
P.O. Box 228
Sheriff Ph. (507) 625-5551
Emergency Services Ph. (507) 387-6407
(Civil Defense)

AN EQUAL OPPORTUNITY - AFFIRMATIVE ACTION EMPLOYER

September 22, 1987

The County Board discussed MN Department of Transportation's proposed realignment of Trunk Highway #14 and the various alternates between Mankato and the LeSueur County line. Commissioner Tacheny moved and Commissioner Carlson seconded the motion that Blue Earth County concurs with the Village of Eagle Lake that the proposed construction of T.H. #14 be located on the North side of Eagle Lake and will recommend this to the MN Department of Transportation. The motion carried.

STATE OF
MINNESOTA
DEPARTMENT OF NATURAL RESOURCES

BOX , 500 LAFAYETTE ROAD • ST. PAUL, MINNESOTA • 55155-40_____

DNR INFORMATION
(612) 296-6157

September 23, 1987

Mr. Lawrence W. Filter
District Preliminary Design Engineer
Minnesota Department of Transportation
501 South Victory Drive
P.O. Box 3049
Mankato, Minnesota 56001

RE: Scoping Document for S.P. 0702-87, TH 14
from Mankato to Smiths Mill, Blue Earth Co.

Dear Mr. Filter:

The Department of Natural Resources (DNR) has reviewed the above-referenced document and participated in meetings and field review with Mn/DOT staff, and offers the following comments for your consideration.

Our primary concern is the wetland impacts that would be associated with alternatives A, B and C in the north corridor. All three of these segments would significantly impact wetland resources. We suggest that these three alternatives be dropped from further consideration.

Instead, a new northern alternative as discussed during the field review and identified on the attached map should be considered and carried forward to the EIS if found to be feasible. It would avoid the high quality wetland/upland hardwood area in section 11 as well as the two wetlands in section 12.

The alternatives in the eastern half of the northern corridor (D, E, F and G) would have little impact on natural resources, and we have no preference as to which of these should be eliminated from further consideration.

In the central corridor, it does not appear feasible to upgrade existing TH 14 to four lanes because of existing development and other constraints, and therefore it could be dropped from further consideration unless Mn/DOT wishes to carry it forward for discussion purposes.

In the southern corridor, both Alternatives J and K would encroach into wetland areas, and both would require three bridges over two streams and a ditch. However, one of these alternatives should probably be retained for discussion in the EIS. It would appear that K would be the more logical from a transportation standpoint, having a direct connection with the existing Mankato by-pass four lane segment. However, it also involves a substantial length of diagonal crossing of agricultural land.

AN EQUAL OPPORTUNITY EMPLOYER

We would anticipate that the EIS will document measures taken to avoid impacts to wetlands and other natural resources, and will propose appropriate mitigation measures for those areas where unavoidable impacts occur.

The EIS should also discuss what will be done with the old highway when the new one is completed. It appears that there are areas of good quality native prairie adjacent to the existing roadway. Therefore, if the old road is to be abandoned, a survey of the right-of-way should be made to determine if it contains any extant prairie remnants. If so, Mn/DOT should provide for either preserving the significant remnants or salvaging the prairie plants as part of the TH 14 project.

We also recommend that just prior to construction Mn/DOT conduct a survey of the proposed right-of-way for the occurrence of purple loosestrife in wetlands, lakes and riparian areas. This survey could be used to insure that loosestrife is not spread by the project. This should be the responsibility of Mn/DOT as part of the TH 14 project.

We will look forward to receiving the scoping decision on this project. Thank you for the opportunity to comment on the scoping document. If you have any questions, please call Ken Wald of my staff at 296-4790.

Sincerely,

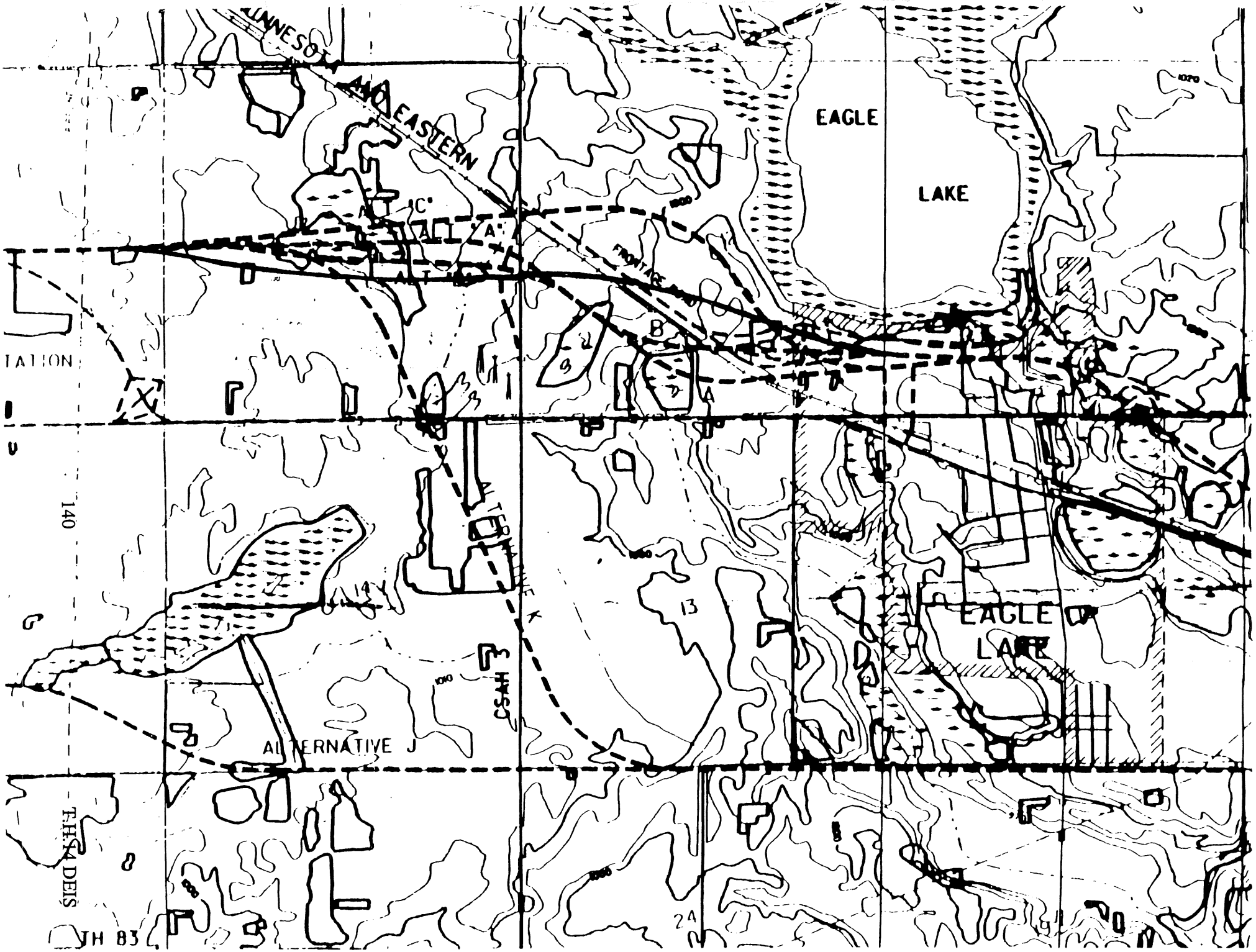
Thomas W. Balcom

Thomas W. Balcom, Supervisor
N.R. Planning and Review Section

c: Dave Johnson
Laurel Reeves
Jim Schneider
Robert Welford, U.S. Fish and Wildlife Service

9-29-87

ken10/MISC5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United States Department of the Interior

IN REPLY REFER TO:

FISH AND WILDLIFE SERVICE
ST. PAUL FIELD OFFICE, (ES)
50 Park Square Court
400 Sibley Street
St. Paul, Minnesota 55101

September 21, 1987

Mr. Lawrence W. Filter
District Preliminary Design Engineer
Minnesota Department of Transportation
501 South Victory Drive
P.O. Box 3049
Mankato, Minnesota 56001

Dear Mr. Filter:

This provides U.S. Fish and Wildlife Service (Service) preliminary comments relative to the District's proposed major improvement and the realignment and possible new 4-lane construction of TH 14 from the junction of County Road 193 and the TH 14 Mankato Bypass to the unincorporated village of Smith Mills in Blue Earth County, Minnesota (S.P. 0702-87). The project length will be between 7 and 10 miles, depending upon the roadway alignment that is ultimately selected. Presently, 13 roadway alignment alternatives within three general corridors (North, Central and South) are being considered and, because of its potential social, economic and environmental impacts, the Minnesota Department of Transportation (MDOT) has indicated that they will be preparing an environmental impact statement on the project.

Our review of the Scoping Document provided and subsequent field review of the project area on September 2, 1987 revealed that a number of high quality palustrine emergent (Type 2, 3 and 4) wetlands and three or four riverine floodplain areas potentially could be adversely impacted by this highway project. Since federal funds will be involved with the project, all practical measures must be undertaken by MDOT to avoid, or minimize to the extent possible, the encroachment into and impacts on these wetland/floodplain areas.

One area of particular concern to the Service is with regard to three of the new roadway alignments (Alternatives A, B and C) that are presently being considered by MDOT within the North Corridor and are identified on Exhibit 6 of the Scoping Document. All three of these alternative roadway alignments would pass through and substantially adversely impact a high quality (Type 3) wetland as well as a mature stand of upland hardwoods on the southwest side of this wetland in the middle of Section 11 of Mankato Township. Alternative C would likely have the most adverse environmental impacts because it would pass directly through the middle

of this wetland basin. Alternative Alignments A and B would also encroach into one or two other wetland areas (one Type 3 and one Type 2) in the SW¼ of Section 12 of Mankato Township. We believe that the delineated roadway alignments within these wetland areas are unnecessary and avoidable.

Based on the above environmental concern and our field review of these three general corridors, we recommend that the following actions and/or measures be undertaken by the District to minimize the wetland, riverine floodplain and other environmental impacts due to this highway project:

1. An alternative roadway alignment within the North Corridor be selected for this roadway. We believe that this corridor would be the most practical and environmentally sound location for this upgraded two or four lane highway. Upgrading TH 14 along its present roadway alignment (Alternative H) within the Central Corridor, in our view, is impractical because it would require the relocation of five to ten homes or businesses and two northern gas terminals. Alternative roadway alignments within the South Corridor (Alternatives J and K) would encroach into and substantially adversely impact various riverine floodplain/wetland areas southeast of the City of Eagle Lake.

2. An alternative roadway alignment similar to the one we suggested during our field review and have now identified on the attached map be evaluated by the District and adequately addressed in the forthcoming Draft Environmental Impact Statement. This roadway alignment would be just south of the high quality wetland/upland hardwood area of concern in Section 11 and also would not encroach into either of the two wetlands in Section 12.

3. The encroachment into wetland and riverine floodplain areas be avoided to the extent possible (particularly in areas where the upgraded roadway would be on new alignment).

4. A 6:1 - 4:1 broken-back inslope be constructed in those locations which would require the placement of fill material within any wetland or floodplain area.

5. No excavated spoil or fill material of any kind be placed beyond the toe of the new roadway inslopes within any wetland or floodplain area.

6. No construction of new roadside ditches or deepening of existing ditches be undertaken within or directly adjacent to any wetland areas.

7. Any proposed new or replacement culverts be installed in a manner so that the existing flow characteristics and water levels within any adjacent wetland areas will be maintained and the project does not facilitate the drainage of any wetlands.

8. All practical measures be undertaken, both during and following construction, to minimize erosion, turbidity and other environmental impacts to wetland/floodplain areas.

9. All practical measures be undertaken to minimize the impacts of this project on fish and wildlife resources and/or its habitat (wetlands, protected waters, wildflowers, etc.) in any environmentally sensitive areas identified by the Minnesota Department of Natural Resources.

Please provide us with a copy of the Scoping Decision Document when it has been prepared for this project. The Draft Environmental Impact Statement should address why the proposed encroachment into any wetland/floodplain areas cannot be avoided and, if unavoidable, what measures are being proposed to minimize, to the extent practicable, the project's impacts on these areas. Any wetland habitat unavoidably impacted by the project should either be compensated for in the vicinity of the project or be debited to the District's Wetland Habitat Mitigation Bank.

Endangered Species Comments

Blue Earth County is within the wintering range of the bald eagle, a federally listed threatened species. However, because of the location and type of activity proposed, this project will not affect the bald eagle or any other federally listed or proposed threatened or endangered species or their critical habitat. This precludes the need for further action on this project as required under Section 7 of the Endangered Species Act of 1973, as amended. However, if new information becomes available which indicates that threatened or endangered species may be affected, consultation with this office should be reinitiated.

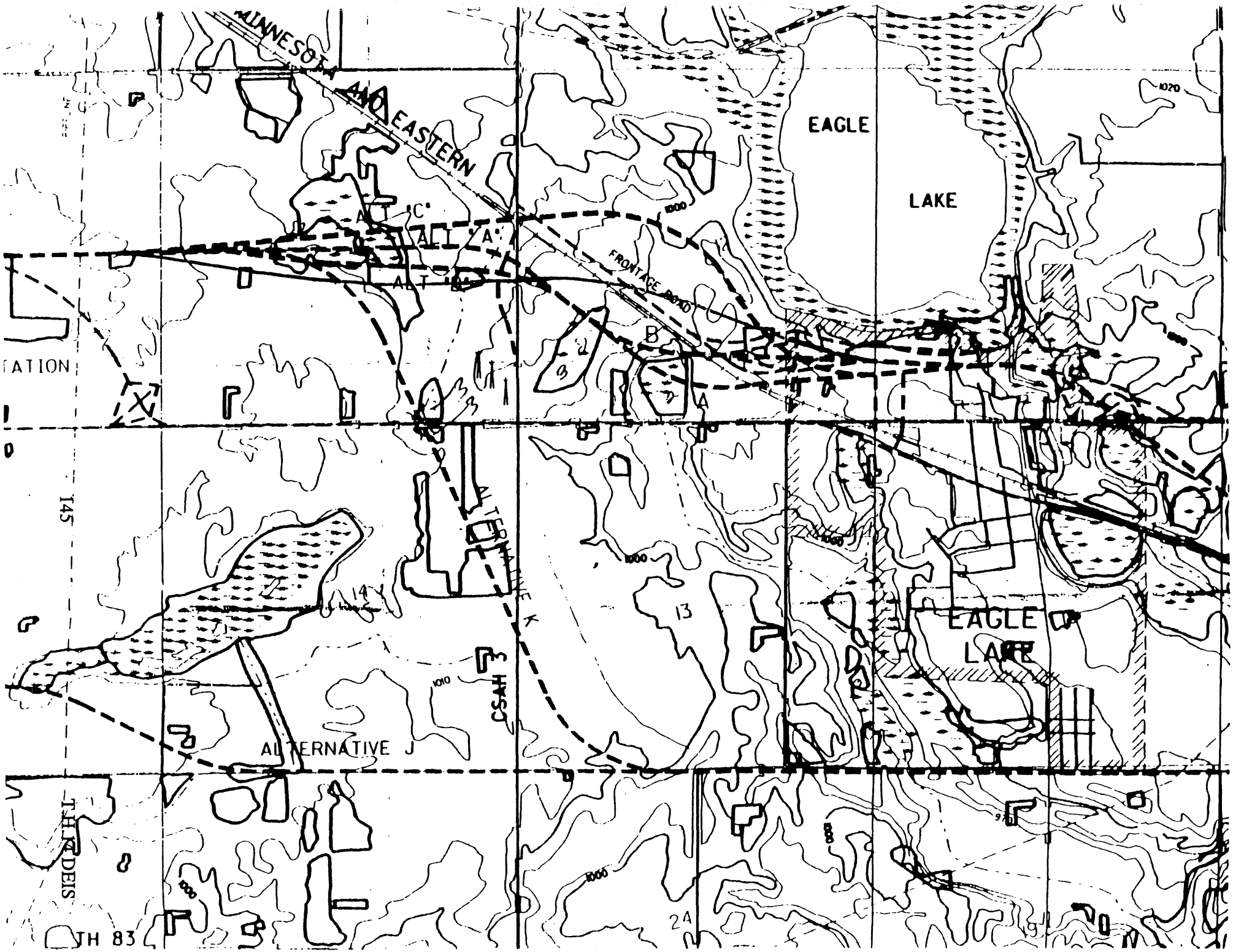
These comments have been prepared under the authority of and in accordance with provisions of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et seq.), the National Environmental Policy Act and the Fish and Wildlife Service's Mitigation Policy. This proposal was also examined for its conformance with the Endangered Species Act of 1973, as amended and Executive Orders 11988 and 11990.

Sincerely,

James L. Smith
Assistant Field Office Supervisor

Attachment

cc: MN Department of Natural Resources, St. Paul (Larry Shannon)
MN Department of Natural Resources, New Ulm (Ray Nyberg)
MN Department of Natural Resources, Mankato (Roy Nelson)
MN Department of Transportation, St. Paul (Frank Pafko)
MN Pollution Control Agency, St. Paul
US Corps of Engineers, St. Paul
US Environmental Protection Agency, Chicago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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

REPLY TO THE ATTENTION OF:

21 NOV 1989

Ms. Barbara Tayeb
Project Manager
Minnesota Department of Transportation
District 7
501 South Victory Drive
P.O. Box 4039
Mankato, Minnesota 56001-40039

Dear Ms. Tayeb:

We are writing in response to your letter dated November 14, 1989 which requested our Agency become a cooperating agency for the Environmental Impact Statement (EIS) for the proposed Trunk Highway 14 project realignment project from County Road 193 at Mankato to Smiths Mill.

We regret that, due to a lack of resources and travel funds, we are unable to be a cooperating agency for this project. However, we would be willing to provide scoping comments on this project as well as provide comments on both the draft and final reports for this study when they become available. We will also attempt to attend coordination meetings and joint field reviews as often as necessary provided that our Agency has the resources and travel funds available for this purpose.

The information provided does not include sufficient detail for our Agency to submit any specific scoping comments at this time. We can, however, provide you with general comments. The project will involve dredge and fill activities within wetlands. We recommend that the Draft EIS include a map of wetlands in the project vicinity. Each of the proposed alternative alignments should be superimposed over this map. A listing of wetland types by acreage impacted should also be included for each alternative. Section 404(b)(1) Guidelines and Executive Order 11990 require that projects avoid wetlands unless no other practicable alternatives exist. If wetlands cannot be avoided, then measures must be taken to minimize impacts on existing wetlands. Mitigation must be provided for all unavoidable losses such that no net loss of wetlands will occur. We recommend that a conceptual wetland mitigation plan be prepared and coordinated with the appropriate resource agencies, including our Agency..

cc: Paul Kanarr
Greg Buesacker

BJT 11-27
BJT 11-27-89
T.H.14 DEIS

If noise-sensitive land uses would be impacted, then we recommend that a noise analysis be prepared which assesses the impacts of all feasible alternatives (including no-action) at the time of construction completion and for the design year. The worst hourly traffic noise impact should be modeled. Abatement/mitigaton should be considered for each alternative to those areas exposed to substantial noise levels. Our Agency considers "substantial" as any noise-sensitive receptor exposed to noise levels exceeding Federal Highway Administration noise abatement criteria or any such receptor being exposed to an increase of ten decibels or more as a result of project implementation. Effectiveness of proposed abatement measures for each alternative, as well as costs, should be presented.

We appreciate this opportunity to provide comments on this project. If you have any questions about these comments, please contact Jerri Horst at (312) 886-4244.

Sincerely yours,

William D. Franz

William D. Franz, Chief
Environmental Review Branch
Planning and Management Division

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

REPLY TO ATTENTION OF:

30 JAN 1990

Mr. Robert Pecore
District Engineer
Minnesota Department of Transportation
501 South Victory Drive
Mankato, Minnesota 56001

Dear Mr. Pecore:

We have reviewed the preliminary Draft Environmental Impact Statement (Pre-Draft EIS) for Trunk Highway 14 from Mankato to Smith's Mill, Blue Earth County, Minnesota. The proposed project consists of construction of a four-lane divided highway on new alignment for a distance of approximately ten miles. A right-of-way of 284 feet would be provided, and an interchange with County Road 193 would also be constructed. Several alternatives were examined in the Pre-Draft EIS. Build alternatives from Mankato to Eagle Lake include Alternatives B1, B2, and W. Build alternatives from Eagle Lake to the junction of TH 60 include Alternatives D, E and F. The Pre-Draft EIS also examines the reconstruction of existing TH14 and the no-build alternative. The preferred alignment, as designated in the Pre-Draft EIS, consists of a combination of Alternatives W and D.

Our concerns relate to the project's potential impacts on wetlands, water quality, and noise in the surrounding community. With regard to wetlands, the alternatives will impact between 12.5 and 20.3 acres. Shown below are the number of wetland acres impacted for each alternative:

Alternative	Number Wetland Acres	Total Acres
B1+D	15.6+4.7	20.3
B1+E	15.6+0.2	15.8
B1+F	15.6+0.5	16.1
B2+D	12.3+4.7	17.0
B2+E	12.3+0.2	12.5
B2+F	12.3+0.5	12.8
W+D (preferred)	14.3+4.7	19.0
W+E	14.3+0.2	14.5
W+F	14.3+0.5	14.8

Both the U.S. Fish and Wildlife Service and the Minnesota Department of Natural Resources have indicated that they would have major concerns with the implementation of any alternative utilizing alignments B1 or B2 because of the encroachment upon high quality wetlands and a mature stand of upland

hardwoods. Although Alternative W impacts a larger number of acres of wetlands than Alternative B2, Alternative W avoids the high quality wetland 1A, wetland 5 and the upland hardwoods. Alternatives B1 and B2 may also result in more adverse impacts on deer habitat since fragmentation of the wetland and upland hardwoods area would disrupt local deer movements. We agree that Alternative W is preferable to Alternatives B1 or B2.

Alternative W will impact 7.1 acres of an 18.6 acre wetland, designated as wetland 8, and 1.4 acres of a 15.8 acre wetland, designated as wetland 4. You have indicated that both are high quality wetlands and that wetland 4 is unique in this area. Your Agency should consider providing full or partial bridges to span these wetlands. The Draft EIS should discuss the costs of providing bridges and the anticipated benefits to wetlands. These costs and benefits should be compared to the costs of providing adequate mitigation for the loss of wetlands. The feasibility of crossing wetland number 8 at a right angle or at a narrower point to minimize wetland impacts should also be investigated. The Draft EIS should indicate what impacts the shifting would have on factors such as farmland severances, prime farmland, residence and business relocations, noise, and the design of the highway.

Alternative D will impact approximately four more acres of wetlands than Alternatives E or F. The Pre-Draft EIS is unclear on the reasons for selecting Alternative D. From a wetlands standpoint, this alignment has greater adverse impacts. The Draft EIS needs to clarify the reasons for choosing Alternative D as the preferred alignment. If fewer relocations of homes and/or businesses are the major reasons for selecting D, then you should compare the costs of relocating the homes and businesses to the costs of providing wetland mitigation. Alternative D should not be chosen for implementation if there are feasible alternatives which avoid or minimize wetland impacts. If there is no practicable alternative to D, then the Draft EIS should examine the feasibility of shifting Alternative D to the north to avoid or minimize impacts to Wetland Number 10, which is a high quality wetland. The Draft EIS should indicate what impacts the shifting would have on other factors. If it is feasible to shift this alignment, and minimize or avoid environmental impacts, then it should be done.

The Pre-Draft EIS states that, with no improvement, the level of service (LOS) anticipated by the year 2012 is LOS E between Mankato and Eagle Lake and LOS C between Eagle Lake and Smith's Mill. The Draft EIS should indicate the point in Eagle Lake where the level of service changes. If future LOS C is expected in the area of Wetlands 8 and 10, then we recommend that the highway be narrowed to 2 lanes in this area to avoid or minimize impacts to these two high quality wetlands.

Page 43 of the Pre-Draft EIS indicates that, to minimize farmland impacts, a 284 foot right-of-way will be used instead of the usual 324 foot right-of-way. We recommend that the Draft EIS show estimates of the number of wetland acres which will saved by providing a narrower width of right-of-way.

The Draft EIS should also examine the impacts that the construction of the preferred alternative would have on any wetlands which may be hydraulically

connected. Specifically, the Draft EIS should indicate whether the highway will impede water movement between Wetlands 1A and 1B and within Wetland Numbers 8 and 10. Measures must be taken to prevent isolation, which can cause degradation of these wetlands.

It is unclear whether the highway will have controlled or unlimited access. However, we recommend that the project be designed with controlled access to minimize secondary development into other wetlands in the vicinity.

Page 74 states that, although no purple loosestrife has been detected, the construction of the highway will increase the likelihood of this invader becoming established. The Draft EIS should outline measures which will be taken to minimize this likelihood.

The Pre-Draft EIS discusses mitigation for unavoidable impacts in general terms. We recommend that a conceptual mitigation plan be prepared for the preferred alternative which provides more detailed plans for mitigation of losses. Potential mitigation sites should be delineated. The plan should be prepared either in conjunction with the Draft EIS or prior to publication of the Final EIS. The plan should also be coordinated with the appropriate resource agencies, including our Agency. Mitigation must be provided, preferably in advance of highway construction or during highway construction.

Pages 66-69 of the Pre-Draft EIS (Water Body Modification and Wildlife Impacts) were omitted from the copies sent to us. Therefore, we are unable, at this time, to provide full comments on the water quality and wildlife impacts. We can, however, provide preliminary comments on the water quality aspects of this project. The Pre-Draft EIS indicates that permanent, temporary and administrative erosion controls will be used to minimize erosion. The administrative controls occur in the form of standard specifications, licenses, permits and requirements placed upon the contractor. We recommend that the administrative controls include some mechanism to enforce implementation of proper erosion controls. This mechanism could be in the form of a performance bond placed on the contractor or the issuance of penalties to contractors not conforming to specified erosion controls.

All of the build alternatives would involve exceedances of the Federal noise abatement criteria and State noise standards by the year 2012. However, the increases are less for the build alternatives than for the no build alternative or the TH 14 reconstruction alternative. The Pre-Draft EIS indicates that mitigation will be considered. Possible noise abatement measures include acoustical barriers, sound insulation, vegetative screens, traffic management and alignment changes. The Pre-Draft EIS also states that mitigation will not be addressed until the design phase of the highway project. However, FHWA Technical Advisory T6640.8A requires an EIS to include information on measures which would likely be incorporated into the proposed project. The estimated costs and anticipated reductions in noise levels should also be included. This information should be included in the Draft EIS.

We appreciate this opportunity to provide comments on the Pre-Draft EIS for this project. If you have any questions, please contact Jerri Horst at (312) 886-4244.

Sincerely yours,

William D. Franz, Chief
Environmental Review Branch
Planning and Management Division

STATE OF
MINNESOTA
DEPARTMENT OF NATURAL RESOURCES

DNR INFORMATION
(612) 296-6157

500 LAFAYETTE ROAD • ST. PAUL, MINNESOTA • 55155-40_____

Celebrate MINNESOTA 1990

January 31, 1990

Greg P. Busacker
EIS Project Coordinator
Minnesota Department of Transportation
704 Transportation Building
St. Paul, MN 55155

Re: Trunk Highway 14 (S.P. 0702-87)
Preliminary Draft Environmental Impact Statement

Dear Mr. Busacker:

The Minnesota Department of Natural Resources (DNR) appreciates the opportunity to review the Preliminary Draft EIS on the proposed improvements to TH 14 between Mankato and Smiths Mill in Blue Earth County. The following comments are provided for your consideration in finalizing the Draft report.

At the present time, we do not have any concerns about the project as described in the document in regard to wildlife habitat and usage. We did note that although pheasant utilization is discussed in Paragraph A. 1. on Page 62 concerning wetland and wildlife impacts, pheasants are not mentioned in the discussion of wildlife in Paragraph F., Page 30.

Following field review of the proposed project area, the DNR would still support selection of Alternates "W" and "D" as the most desirable routes to follow. These routes would not impact marshlands involved to any great degree. Possibly some minor revisions in the plan can be made to limit encroachment into these areas or mitigation can be implemented before construction is started to offset losses.

No protected waters or wetlands appear to be impacted by Alternates "W" and "D". Reconstruction of TH 14 along existing alignment east of Eagle Lake would impact what is referred to in the EIS as "WET 9". This is a protected wetland and infringement would require a Protected Waters Permit from the DNR.

If you have questions regarding our comments, or if you require additional information from the DNR, please contact Cheryl Heide from my staff at 296-9228.

Sincerely,

Thomas W. Balcom

Thomas W. Balcom, Supervisor
Natural Resources Planning and Review Services

c. James Schneider
Steve Colvin
Laurel Reeves
Bonita Eliason
Robert Welford--U.S. Fish and Wildlife Service

880031-3

United States Department of the Interior

FISH AND WILDLIFE SERVICE

ST. PAUL FIELD OFFICE (ES)
50 Park Square Court
400 Sibley Street
St. Paul, Minnesota 55101

IN REPLY REFER TO:
SPFO

February 1, 1990

Mr. Greg P. Busacker
EIS Project Coordinator
Minnesota Department of Transportation
704 Transportation Building
St. Paul, Minnesota 55155

Re: Preliminary Draft Environmental Impact Statement
TH 14 Mankato to Smith's Mill

Dear Mr. Busacker:

The Fish and Wildlife Service (Service) has reviewed the referenced document. The following comments are provided for your consideration during future project planning phases. These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (16 U.S.C. 661 et seq.), the National Environmental Policy Act of 1969 (42 U.S.C. 4321-4327), the Endangered Species Act of 1973, (16 U.S.C. 1531-1543), as amended, and the U.S. Fish and Wildlife Service's Mitigation Policy.

The Service, along with the Minnesota Department of Natural Resources, has been involved in planning on this project for a number of years. Biologists from these agencies are members of the inter-agency mitigation banking team that will assess the impacts of the final alignment and determine the amount of compensation needed to offset unavoidable wildlife habitat losses. With this in mind, project planners must continue to do everything possible to accomplish the other aspects of mitigation (i.e., avoid the impact; minimize the impact; rectify the impact; and reduce or eliminate the impact over time). When these steps are taken in order and to the greatest extent possible, the need for compensation will be minimized.

Each of the alternatives will impact wildlife habitat (including wetlands) to some degree, as has been documented in the preliminary EIS. Alignment changes have been made as recommended by members of the mitigation banking team. These changes are reflected in: selection of a new alternative (alternative W); combining of several alternatives into one; and elimination of some alternatives. The challenge now is to select the alternative or combination of alternatives that will serve the needs of the motoring public and still protect the environment. From the Service's perspective, considering the cumulative loss of wetlands that has already occurred in this area, any additional wetland loss is significant. Therefore, we can only support a project that will impact the minimum wetland acreage. We will continue to work with project planners to modify project size, design, alignment, timing, etc. to accomplish this.

Upon completion of the planning effort, and before construction bids are let, an approved mitigation/compensation proposal must be ready to proceed concurrently with project plans for funding and construction.

We appreciate the opportunity to review the preliminary environmental impact statement for this project. If you have any questions regarding this response or if we can be of further assistance, please contact us at your convenience.

Sincerely,

James L. Smith
Assistant Field Supervisor

cc: MN Dept. of Natural Resources, St. Paul
MN Pollution Control Agency, St. Paul
MN Dept. of Transportation, Mankato
U.S. Army Corps of Engineers, St. Paul
U.S. Environmental Protection Agency, Chicago

United States Department of Agriculture

Soil Conservation Service

410 South 5th Street
P.O. Box 8608
Mankato, MN 56001

February 13, 1990

Minnesota Department of Transportation
Greg P. Busacker
EIS Project Coordinator
704 Transportation Bldg.
St. Paul, MN 55155

SUBJECT: TH 14 Draft EIS

Dear Sir:

I am pleased to make comments in regard to State Project No.0702-87, TH14 east of Mankato to county line. I realize that your deadline of the DEIS was 1-15-90 but as I explained on the phone my year-end vacation interrupted the flow of paperwork. I hope I still can make the deadline of 2-15-90 as published on the cover page of this document. I will send a letter to Mr. Pecore at the Mankato District also.

Items that were noticed in this report express concerns, opinions and editorial items.

We found on page 6, Section II, a statement which indicates or leads the public to believe the project (SR22 Bypass) is not complete. I was lead to believe it was completed late in the fall of 1989.

On page 29, Table 6, there is a foot note (**) making reference to Prime Farm Land where drained or a classification of drainage has been assigned to soils which are erodible and not wet soils. Examples of the latter is soil 106B. The soil 997 is a soil considered Prime Farmland when drained was not foot-noted. This entire list should be rechecked. Enclosed is Exhibit 1 (SCS), (1-3)pps. Additionally, a classification of high erosion hazard (***) for this table left out soil 138B2. Another classification should be added which is statewide importance. This includes the balance of this table except soil map units 1032 and 1039.

Figure 8 (Wetlands) our office has found three wetlands (USDA & USDI-FWS) identifiable wetlands not shown. The first is between alternative routes W & B2 west of the proposed Eagle Lake access road (North of Twp Rd 341). This is a type 6 and 7 (woody) wetland. The second wetland is located within the Eagle Lake city limits at the intersections of CR 17, the railroad and TH 14. It extends across CR 17 to the north and west (North of Wetland #7). The third wetland absent is a type 2 & 3 wetland located between wetland #12 & #13. It extends

north and south of TH 14 and east along of Twp Rd to the north of TH 14.

On page 43 of the text, there is a poor comparison used with the taking of prime farmland. I realize this is problem within the system of reporting from the form AD1006 furnished by our agency. Comparing the relative number of acres lost from farmland production in a given township has greater local economic impact than when you include all the acres of a county such as Blue Earth which has 748 square miles of land area. Mankato township is a fast growing township that has had many annexations occurring in the past and present to the city of Mankato. This growth already is causing a major concern for this unit of government which if not dealt with properly, will cause economic crises in the near future. The new road causes tax loss to the township, not only through the loss of land but by the increased annexation into the city of Mankato since township officials will not be able to provide necessary services. Mn DOT should be commended for their mitigation action proposed on page 44 of the DEIS. I would state this, that where it is possible to preserve or enhance wetlands and woodlands along the old right-of-way, the Mn DOT should seek to have these maintained as such with a permanent easements attached to land transfers so as to protect these dwindling resources.

The subject area of recreation we felt missed one area owned by the State of Minnesota. Lower Eagle Lake basin outlet has a joint federal, state and landowner cost-shared project to maintain an adequate level of water in this basin. Mn DNR currently is the management agency and should be recognized for operation and maintenance plus be allowed public access off the new right-of-way since the proposed road is immediately adjacent.

On page 46, item 6, there is mention of an Eagle Lake Township in Blue Earth County regarding a population statistic. Rest assured that there is a city of Eagle Lake but no township so named in Blue Earth County. City of Eagle Lake is comprised of Mankato and Leray Townships with very little in Mankato Township. Page 60 & 61 discusses water quality impacts. One area of concern not fully addressed is that the outlet to Eagle Lake has an approved county ditch system on record. It's bridge and/or culvert to be located across this stream must be designed at grade elevation determined by the ditch design so as not to impede the outfall of this lake. In regards to ground water resources tile outlets presently known and future outlets need to be identified and planned before future drainage paths are blocked. The later statement applies to agricultural producers. All to often agricultural producers look only 1-2 years ahead and fail to identify their needs and concerns until it is too late. We suggest a letter to each affected agricultural producer asking for their intentions before the road is finalized.

Remarks about Eagle Lake and Mud Lake not receiving roadway drainage is not 100% true. West of Eagle Lake the proposed road construction does have drainage that go indirectly through open ditches or tiles with surface inlets to the lower Eagle Lake basin or an adjacent wetland of this basin. The proposed alignment will all generate surface runoff in both directions, north and south. This also occurs with alternative E at Mud Lake.

Page 62 comments leads one to believe that small wetlands are not important. Mn DOT will need to specify what is a small wetland. As an agency you are telling myself and the public that small wetlands play insignificant roles when other agencies and private parties have recognized the importance of each and every wetland. This is expressed all the way down the chain of command from the President of United States to the various programs made available to private landowners both on the national and state levels. Statements such as these only add confusion to already in-place valid programs.

Page 65 makes a statement that no recreational values or recreational opportunity exist for the Eagle Lake outlet. As a former resident of the city of Eagle Lake, living within 250 feet of the outlet I personally experience recreation at the site. There are very few days out of the year where children and/or adults do not use the Eagle Lake outlet for fishing, canoe access, trapping and hunting. Yes, swimming is not generally done but I have seen that also.

Erosion control measures are generalized at this stage which is understandable. Earlier in the DEIS a discussion was presented that seeding and woody plantings would be put back to natural prairie species of southern Minnesota. I like this concept and challenge the project engineer to incorporate this into the total reseeding plan along the route. Additionally the local sportsmen clubs such as Mn. Pheasants Inc, Blue Earth County Chapter would be willing to discuss and allocate funds to re-establish natural areas to include native plant species. Another program called Mn DNR Roadside Seeding Program has cost-share programs to assist in re-establishing native plants. A 3-way partnership in Blue Earth Co. established a Roadside Seeding Projects on two CSAH reconstructions completed in 1989. This to can be used for TH 14.

In conclusion as I read your report and reviewed all of your data I have come to the opinion that the least amount of environmental, social, and economic impacts would be served using alternative W and D to accomplish your mission of upgrading TH14. Alternative W has the least impact on wetlands, woodlands and shelterbelts. Additionally the figure for triangulated acres actually will mostly involve wildlife/wetland areas already in place and there will not be any farms relocated. Acres of prime farmland lost is not that severe.

Alternative D which follows the TH14 alignment on the north side of the railroad has less acres triangulated, middle loss of prime agricultural lands is minimal when you consider the potential of return 44.1 acres back into production thus a loss of only 50.6 acre total. The woodland loss here is more than alternatives E and F but it is only of one large block. The economic and social impact appears to be greater with alternatives E and F. Alternatives E and F sever more parcels and cause greater farm relocation.

One last item is to call your attention to alternative D on Table 13 regarding Farms Relocated. We looked over the alignment proposed and could only find a maximum of three sites versus six sites that would be physically impacted by your alignments.

Respectfully,

Donald L. Schuster
District Conservationist

Enc:
cc: Robert Pecore, Mn DNR, Mankato District

LAND OF QUALITY FOODS

90 WEST PLATO BOULEVARD
SAINT PAUL, MINNESOTA 55107

STATE OF MINNESOTA

DEPARTMENT OF AGRICULTURE

February 16, 1990

Mr. Greg Busaker
T. H. 14 EIS Project Coordinator
Minnesota Department of Transportation
704 Transportation Building
St. Paul, MN 55155

Dear Mr. Busaker:

As we discussed over the telephone, the Minnesota Department of Agriculture has reviewed the preliminary Draft Environmental Impact Statement for the Trunk Highway 14 realignment from Mankato to Smiths Mill. The document appears to adequately identify the impacts on agricultural lands.

Those impacts appear to be fairly significant. However, the improved farm-to-market function of the roadway will benefit the movement of agricultural commodities. In general, the department prefers those routing alternatives with the least amount of agricultural land impacts. In addition, while the document indicates that the section of old roadway to be abandoned "might return xxx acres to agricultural purposes," the document does not indicate a commitment to reclaiming abandoned roadway to agricultural purposes. We would like to see an indication of intent as to whether this will be accomplished, depending upon the selected alternative.

Thank you for the opportunity to comment on this proposal.

Yours truly,

MINNESOTA DEPARTMENT OF AGRICULTURE

Paul Burns

Paul Burns, Coordinator
Natural Resources Planning

PB:kvr

United States Department of the Interior
BUREAU OF MINES
INTERMOUNTAIN FIELD OPERATIONS CENTER
P.O. BOX 25086
BUILDING 20, DENVER FEDERAL CENTER
DENVER, COLORADO 80225

November 5, 1990

Mr. James A. Cheatham, District Engineer
Federal Highway Administration, St. Paul Office
Metro Square Building, Suite 490
St. Paul, Minnesota 55101

Dear Mr. Cheatham:

Subject: Review of Notice of Intent to Prepare an Environmental Impact Statement for New Corridor South of Mankato, Blue Earth County, Minnesota (ER-90/915)

Personnel of the Intermountain Field Operations Center, Bureau of Mines, reviewed the subject Notice of Intent for possible conflict with mineral resources and mineral-producing facilities, as requested by the Director, Office of Environmental Affairs, U.S. Department of the Interior.

The Bureau of Mines' primary concern is potential project impacts to mineral resources and their development. Known mineral resources in Blue Earth county include sand and gravel and limestone-dolomite suitable for use as both crushed stone and dimension stone. Only sand and gravel pits may occur in the project area, but without a map showing the exact location of the proposed route, we are unable to determine if these mineral resources would be affected. Each alternative, however would cross several pipelines which may require relocation or protection. Therefore, we suggest that mineral resources be assessed in the environmental document including a description of mineral resources and pipelines in the project area and a discussion of potential impacts, either adverse or beneficial, on mineral production and development. If no impacts would occur, then a statement to that effect should be included. Such an inclusion would provide users of the document with knowledge that mineral resources had been considered during project planning.

Sincerely yours,

William Cochran, Chief
Intermountain Field Operations Center

jjs/bde

United States Department of the Interior
NATIONAL PARK SERVICE
MIDWEST REGION
1709 JACKSON STREET
OMAHA, NEBRASKA 68102-2571

TAKE PRIDE IN AMERICA

IN REPLY REFER TO:
L7619(MWR-PQ)
ER-90/0915

NOV 07 1990

Mr. James A. Cheatham
District Engineer
Federal Highway Administration
Suite 490
Metro Square Building
St. Paul, Minnesota 55101

Dear Mr. Cheatham:

This is to provide early coordination review of the proposed new 10-mile roadway corridor on existing and new alignments approximately 2 to 3 miles south of Mankato, Minnesota.

Based on the information in your September 13 Notice of Intent, and our general knowledge of the area, it does not appear that construction of such a corridor will adversely affect any unit of the National Park System.

Section 130 of the Surface Transportation and Uniform Relocation Assistance Act of 1987 amended 23 U.S.C. 319 by adding a requirement that native wildflower seeds or seedlings or both be planted as part of any landscaping project undertaken on the Federal aid highway system. This provision requires that every landscaping project include the planting of native wildflowers unless a waiver has been granted.

We urge that wildflower plantings be included in the above-mentioned project and that a "landscaping project" be clearly identified as a separate line item for the proposed project. Sufficient funding should be set aside to ensure a comprehensive wildflower planting and maintenance program along the proposed route. Wildflower plantings and other landscaping measures should be described in your environmental documentation as mitigation for installing highway pavement over fertile land and foreclosing other uses thereof.

We realize that the Minnesota Department of Transportation has a Turf Establishment and Erosion Control Unit in St. Paul, Minnesota. We urge you to use those species currently identified by this unit for use on Minnesota roadsides. We understand that the unit has a limited seed supply, but that they will provide reference to additional seed sources as needed.

We also recommend that you consider, for mitigation purposes, acquisition in fee or less-than-fee interest and improvement of adjacent strips of land or water areas ". . . for restoration, preservation, and enhancement of scenic beauty." (Federal-Aid Highway Program Manual Transmittal 413, Volume 6, Chapter 2, Section 5, Subsection 1).

We urge that you coordinate with the Minnesota State Historic Preservation Officer to ensure that you comply with all mandates pertaining to the identification and protection of cultural resources. She is:

Dr. Nina M. Archabal
State Historic Preservation Officer
Minnesota Historical Society
Fort Snelling History Center
St. Paul, Minnesota 55111

These comments are provided as informal technical assistance and are not intended to reflect our probable response to any document which may be prepared in this matter to comply with the National Environmental Policy Act of 1969 or the Department of Transportation Act (49 U.S.C. 303). If you wish to discuss our recommended landscaping mitigation measures, including wildflower planting and maintenance and acquisition of scenic lands, please contact Mr. Terry Cederstrom of my staff at 402-221-3485.

Sincerely,

Don H. Castleberry
Regional Director

cc:
Mr. Bob Jacobson
Botanist
Turf Establishment and
Erosion Control Unit
Minnesota Department of Transportation
1400 Gervais Avenue
Maplewood, Minnesota 55109

Dr. Nina M. Archabal
State Historic Preservation Officer
Minnesota Historical Society
Fort Snelling History Center
St. Paul, Minnesota 55111

ABBREVIATIONS

ABBREVIATIONS

A	Air quality field measurement monitoring site
AADT	Annual Average Daily Traffic
acc/mvm	Accidents per million vehicle miles of travel
ADT	Average daily traffic
Amer.	American
ARCH	Known archaeological site
Arch.	Architecture
Archeol.	Archaeological
B.C.E.	Bachelor of Civil Engineering Degree
B.L.A.	Bachelor of Landscape Architecture Degree
B.S.	Bachelor of Science Degree
B-1	Municipal zonning designation for commercial use
B1	Alternative alignment from Mankato to Eagle Lake
B2	Alternative alignment from Mankato to Eagle Lake
c	capacity
CALINE3	FHWA computer program for predicting dispersion of engine exhaust pollutants
CFR	Code of Federal Regulations
COE	United States Army Corps of Engineers
Commit.	Commitment
CSAH	County State Aid Highway
D	Alternative alignment from Eagle Lake to Smiths Mill at the Blue Earth/Waseca County Line
dB	decibel
dB(A)	A-weighted decibel
DEIS	Draft Environmental Impact Statement
DME	Dakota, Minnesota and Eastern Railroad
E	Alternative alignment from Eagle Lake to Smiths Mill at the Blue Earth/Waseca County Line
EIS	Environmental Impact Statement
Engr.	Engineer
EPA	United States Environmental Protection Agency
F	Alternative alignment from Eagle Lake to Smiths Mill at the Blue Earth/Waseca County Line
Ff	Forested fringe of wetland
FHWA	Federal Highway Administration
Form AD 1006	Farmland Impacts Form
FPPA	Farmland Protection Policy Act
FW	Forested wetland

h	hour
Hazard.	Hazardous
I-35	Interstate Highway 35
Irretriev.	Irretrievable
Irrevers.	Irreversible
Jct.	Junction of two highways
KDOG	Commercial radio station
KTOE	Commercial television station
L-1	Municipal zonning designation for limited industrial use
ln	lane
LOS	Level of Service
M.A.	Master of Arts Degree
M.S.	Master of Science Degree
MATAPS	Mankato Area Transportation and Planing Study
MEQB	Minnesota Environmental Quality Board
MHS	Minnesota Historical Society
mi	mile
Mn/DOT	Minnesota Department of Transportation
MNDNR	Minnesota Department of Natural Resources
Mobile3	EPA computer program for predicting future carbon monoxide levels based on traffic predictions
MPCA	Minnesota Pollution Control Agency
MPH	miles per hour
MSF	Maximum Service Flow
N	Noise analysis field measurement site
NRHP	National Register of Historic Places
OPTIMA	FHWA computer program for predicting future noise impacts based on traffic predictions
P.E.	Professional Engineer Certification
pc	passenger cars
PE	Persistent emergent wetland vegetation
pH	Expression relating to the acidity of a compound or a mixture of compounds
Ph.D.	Doctor of Philosophy Degree
PPM	parts per million
Qual.	Quality
R	Potential relocation impact
R-3	Municipal zonning designation for multiple family residential use
R-A	Municipal zonning designation for agriculture or residential use
SB	Shelterbelt
SCS	Soil Conservation Service
SHPO	State Historic Preservation Officer
SS	Scrub—shrub wetland vegetation

SSf	Scrub—shrub vegetation on fringe of wetland
STAMINA	FHWA computer program for predicting future noise impacts based on traffic predictions
T.H.	Minnesota Trunk Highway
Trans.	Transportation
TRB	Transportation Research Board
TWP	Township road
US	United States
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
v	volume
W	Alternative alignment from Mankato to Eagle Lake
WEM	Minnesota Wetland Evaluation Methodology
WET	Wetland
WL	Woodland

INDEX

INDEX

Access to property, 88
Accessibility, 55
Accidents, 15,19-23
  rate, 20,23
  type, 20,22-23
ADT, 14,17,19,47,57
Agriculture, 31,41-43,45-46
Air quality, 57-59
Alignment, 12,14,24,45-46,57,97
Alternatives, 8,13-14,17,19,24,26-28,43,45-46,48-49,53-56,61-62,66-70,73,75,80,83-85
  eliminated 25-29
  preferred, 9,17,47,80
Aquifer, 65
Archaeological sites, 8,43,73-74
Bald eagle, see endangered species
Bedrock, 31
Bicyclists, 16,23,55-56
Blue Earth County, 8,17,29-30,43,47,49,65,71,73,89
Bridges, 13,15-16,20-22,26,70,85,90
Business, 16,29,41-43,51,53-54,61,86-87
Capacity, 8,15,18-19,23,90
Cemetery
  Burgess, 29
  Eagle Lake, 19,41,48,70-71,83-85
Churches, 48
Classification, 16
Clean Water Act, 8
  Section 401, 8,65
  Section 404, 8,65
Climate, 31
Condition, 16,20,23
Conservation Reserve Program, 45
Continuity, 12
Controversy, 8
Convenience, 15-16,23
Coordination, 15
Corps of Engineers, 8,65,69-70
Costs, 9,12,26-27
Country Manor Trailer Park, 29
County Road 48, 60
County Road 193, 9,13,19,26-29,84
County State Aid Road, see CSAH
CSAH 3, 15,17,24,26-28,48,84
CSAH 17, 15-17,19,26-28,41,43,48,60,62,70,73
CSAH 27, 17,70
DEIS, see Environmental Impact Statement
Design hour, 15
Dust, 87
Eagle Lake
  City of, 8,13,15-16,18,24,26,28-29,41-43,46-48-49,53-57,70,80,84,86,89
  Lake, 26-29,38,64,71-73
  School, 41,46-47,57
Economic, 16,28-29,87
Economy, 16,42
EIS, see Environmental Impact Statement
Emergency services, 46
Employment, 41,55,86
Endangered and Threatened Species, 35,71-73
Energy, 86
Environment
  consequences of proposed action, 43-91
  human, 41
  natural, 31
Environmental Impact Statement, 15,24,27,71,75,97
Environmental Protection Agency (EPA), 57,69,71
Erosion, 31,64,76,89-90
Excess material, 90
Expressway, 15-16,23,46
Facility
  number of lanes, 8,13,19-21,23-24
  inplace, 16

Farmland, 8,12,15,28-29,41-42,45-46,54,83
Farmland Policy Protection Policy Act, 43
prime and unique, 43,45
relocation, 45-46,51-52
severance, 12,28,45
triangulation, 12,28,45
Federal Highway Administration, see FHWA
Federal Register, 24
FEIS, see environmental impact statement
FHWA, 8,15,24,57,61,86,88,97
Field review, 15,24
Fire Department, 48
Fish and Wildlife Service, see USFWS
Fisheries, 38,71
Floodplain, 29,71-73
Freeway, 15,23,46
Geology, 31
Glacial, 31
Ground water, 38
Handicapped, 16,23,47-49
Hazardous waste, 75
Hearing, public, 15
Historical sites, 8
Hoffman Road, 29
Impacts
air quality, 57,87
construction, 86
economic, 16,53-55,87
environmental, 16,27
fiscal, 54-55
noise, 57-62,88-89
social, 16,46-49
soils, 89
transportation, 90
visual, 80-86
wetland, see wetlands
woodlands, see vegetation
Indian, see Native American
Interchange, 9,12,15,24,27
Intersection, 9,15-16,26
Janesville, City of, 16,48
Joint development, 55
KDOG, 29,83
KTOE, 29,83
La Crosse, 53
Land use, 41,43,91
Le Ray Township, 45,49,54
Le Sueur River, 35
Level of service, 8,15,18-19,27,90
LOS, see level of service
Mankato, City of, 8,13,15-18,20-24,26,28,
31,41-42,53-55,57,80
East High School, 29
Mankato Township, 45,49,54
MATAPS, 14
Materials, 86-88
Maximum service flow, 18
Meeting
agency, 15,24
public, 15,24,49
Mineral resources, 31
Minnesota, 13,31,42,47,49,61,70,88
Historical Society, 73,75
Department of Natural Resources, see
MNDNR
Department of Transportation, see Mn/DOT
Pollution Control Agency, see MPCA
Minorities, 48-49
Mitigation
farmland, 46
noise, 62-64
visual, 85-86
wetland, see wetlands
Mn/DOT, 8,13,15-16,19,24,27,43,49,51-
52,64,71,73,75,85,87-88,90,97
MNDNR, 24,28-29,48,65,69,70,72-73
MPCA, 57,65
Mud Lake, 35,38,64,71,76,85
National Register of Historic Places, 73,75
Native Americans, 73
Need, 13
New Ulm, City of, 16
Noise, 8,15,57-62
North Mankato, City of, 13-15,20-22,24,28-29
Owatonna, City of, 16
Park and ride, 86

Parks, 29,43,48
Pedestrians, 16,23,46-47,55-56
Permits, 65
Pipeline, 29
Pollution control, 89
Population, 35,41
Productivity, 91
Public Safety, 48,75
Purple Loosestrife, 76
Purpose, 13
Railroad, 12-13,15-16,24,26,28-29,46, 60,76,82-83,90
Recreation, 43,48
Region 9 Development Commission, 16,65
Relocations, 8,12,28,42,46,49-52,70,84-85
  assistance, 49,51-52
Requests, improvement, 16
Residential, 41,46-47,49,51-52,54,61
Resources, irreversible and irretrievable commitment, 91
Right-of-way, 14,24-26,48,65,76
Roadway deficiencies, 19
Rochester, City of, 13
Safety, 8,15-16,19-21,23,47,82,85-86,90-91
  no passing, 19
  turning, 16,20,90
Sakatah State Trail, 55-56
School District 77, 41,46-48,57
Scoping Decision Document, 15
Scoping Process, 24,27,97
Scoping Document, 15
Sheriff 48
Sight distance, 20,23,26
Sleepy Eye, City of, 13,16
Smiths Mill, Community of, 8,13,16-17,20, 22,41,57,83
Social
  cohesion, 16,46
  impacts, 46-49
Soil Conservation Service (SCS), 43,45
Soils, 31,89-90
  types, 32-35,45-46
South Dakota, 13,53
Species, see endangered species
Speed, 18
Springfield, City of, 16
Standards, 16,20,26
State Historic Preservation Officer (SHPO), 43,73
Streams, 8,29,38,80,83
Sufficiency, 16,20-21
T.H.14, 8,13-17,19-24,26-29,41-43,46,53-55,57,60,62,65,73,80-86,90
T.H.22, 8,13,20,28-29,41,53,57
T.H.60, 8,13-17,19-24,26-29,46,55,57,60,73
T.H.169, 13
Terrain, 19
Threatened species, see endangered species
Topography, 31,38,65,85
Township Road 341, 17,26
Tracy, City of, 16
Traffic, 15-16,20,29,47,62-64
  density, 18,23
  design volume, 19
  design year, 19
  directional split, 19
  percent trucks, 19
Trucks, 19
Transportation System Management Alternative, 6
USFWS, 24,26,28,38,65,69-71,97
Vegetation, 35,63-64
  grasses, 35,83
  prairie grasses, 35,76
  shelterbelts, 35,76-80,83
  shrubs, 35
  trees, 35,76
  wetland, 38-40,65,76,83
  woodland, 35-36,69,76-80,83
Visual resources, 80-83
  assessment, 83-85
  cultural,80,82-83
  natural, 80-81,83
Wages, 86-87
Waseca County, 8,17

Water
drinking, 65
ground, 65
quality, 64-65
resources, 35
surface, 64
Water Bank Program, 45
Wells, 65
Wetlands, 8,12,19,26,28-29,31,37-40,64-65, 80,83,85,90
avoidance, 68-69
evaluation, 66-68
impacts, 67-69
minimization, 68-69
mitigation, 68-71
type, 65-66
vegetation, see vegetation
WET0, 37,66
WET1A, 26,28,37,66-68,71,76
WET1B, 26,37,66-68,71
WET2, 37,66-68,76
WET3, 37,66
WET4, 26,37,40,66-68,76
WET5, 26,37,66-68,76
WET6, 37,66-68
WET7, 37,66-68
WET7A, 37,66-67
WET7B, 37,66-67
WET8, 26,37,66-68,70-71
WET9, 37,66,68,76
WET10, 37,66-68,70-71,76
WET11, 37,66,68,76
WET12, 37,66,68,76
WET12A, 37,66,68,76
WET13 , 37,66,68,76
Wild and Scenic Rivers, 73
Wildlife, 35,43,48,65-71
birds, 35,43,65-66
mammals, 35,66
diversity, 35
Winona, City of, 16
Wisconsin, 16,53
Woodlot, 29,36
(also see vegetation)
Zoning, 43-44,66