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PARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

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FINAL
ENVIRONMENTAL IMPACT STATEMENT
FOR TRUNK HIGHWAY 65

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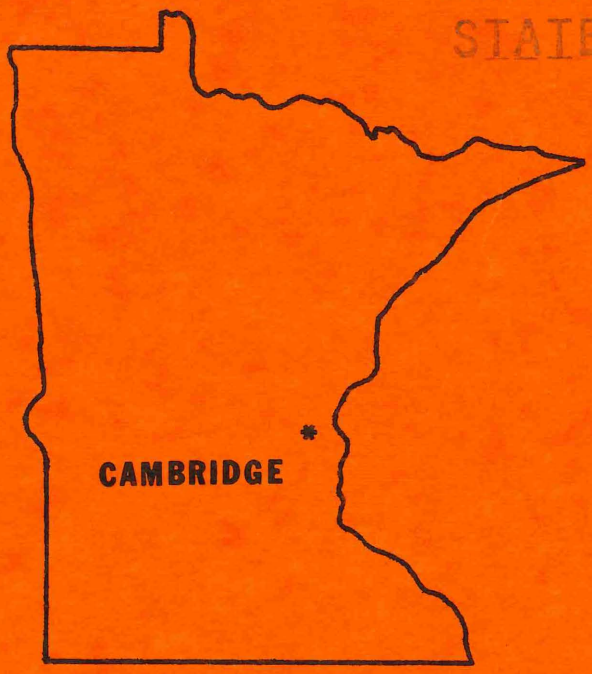

FROM COUNTY STATE AID HIGHWAY 5, 5.7 MILES SOUTH OF CAMBRIDGE
TO TRUNK HIGHWAY 107, 9.5 MILES NORTH OF CAMBRIDGE

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PREPARED BY

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION

Report No. FHWA-MN-EIS-78-01-F
Federal Highway Administration
Region 5

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STATE OF MINNESOTA

T.H. 65 Bypass of Cambridge, Minnesota
Isanti County
Minn. Project F005-3 ( )
State Projects 3003-17 & 3004-32

Environmental Impact Statement Limits
From Jct. with CSAH 5 5.7 Miles South of Cambridge
To Jct. with TH 107 9.5 Miles North of Cambridge

ADMINISTRATIVE ACTION

FINAL

ENVIRONMENTAL IMPACT STATEMENT

U.S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

Submitted pursuant to 42 U.S.C. 4332 (2) (c) & 23 U.S.C. 128(a)

and

Minnesota Statutes 1160.01, et. seq.

November 8, 1978
Date

for Kermit K. McRae
Harry Reed
Deputy Commissioner
Minnesota Department of Transportation

MAR 2 0 1979
Date

/s/ W. G. Emrich

Director
Office of Environment and Design
FHWA, Region 5

The Draft Environmental Impact Statement for this proposal has been revised as follows:

DEIS Page	FEIS Page	Revision
1	1	New Title Sheet
2	2	Errata Sheet added
3	4	SECTION X added
		SECTION XI in DEIS revised to SECTION XI
5	5	'Draft' to 'Final'
		Summary of Agricultural Impacts revised
6	6	Selection of Alternative added
7	7	Responding agencies noted
15	15	Draft Mn/DOT Plan discussion revised
16	16	Public Hearing discussion updated
		Park and Ride discussion revised
17	17	Accident data updated
26	26	Groundwater Section revised
	27	Groundwater Quality Tables added
38	40	(Cambridge Township) changed to (Isanti Township)
45	47	Hazardous Spills discussion revised
50	52	Wetlands Table revised
53	55	Impact Area A, Wetland impacts revised
54	56	Impact Area B, Wetland impacts discussion revised
55	57	Impact Area D, Ponding area discussion added
56	58	Impact Area E, Ponding area discussion added
58	59	Impact Area H, Wetland impacts revised
	60	Impact Area H, Ponding area discussion added
59	61	Impact Area I, Ponding area discussion added
59-60	61-62	Wetland mitigation measures revised
64	66	Farmland severance discussion added
66	68	Ponding areas historical review discussion added
67	69	Carbon monoxide predictions updated (new emission factors), traffic volumes added
69	72	MPCA standards discussion revised
70	72	Noise abatement measures discussion revised
	73	FHWA noise standards table added
	74	MPCA noise standards table added
71	75	Noise abatement for residential sites 6A and 6B rev.
72	76	Noise report discussion revised
		Date of public knowledge clarified
80	84	Farmland severance discussion revised
82	86	Public buildings discussion revised
85	89	Relocation survey discussion revised
87-88	91-92	Secondary Impacts discussion revised
	93	Accident data updated
89	95	Location alternative selection added
	111	SECTION X IMPACT ON STATE GOVERNMENT AND MULTI-STATE RESPONSIBILITIES ASSOCIATED WITH THE PROPOSED ACTION added
105	113	Agency response letters referenced
106	114-116	Discussion on Public Hearing held on July 6, 1978 added
	125	Ponding areas historical review letter added
	135-164	Agency letters and responses added
127-131	165-169	Pondings areas indicated on Project Maps
131	169	Gas pipelines indicated on Project Map

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SUMMARY SHEET

(1) Federal Highway Administration
Administrative Action Environmental Statement

( ) Draft (X) Final

( ) Section 4(f) Statement attached

(2) Additional information about the proposal and statement can be obtained from:

District Director
Minnesota Department of Transportation
Box H, Brainerd, Minnesota 56401
218-828-2463

FHWA Division Administrator
Metro Square Building, Suite 490
St. Paul, Minnesota 55101
612-725-7001

(3) Description

The proposed improvement is located in east central Minnesota in Isanti County approximately 40 miles north of Minneapolis-St. Paul. The project involves the construction of TH 65 on new location east of the City of Cambridge (Cambridge Bypass). The proposed bypass extends from 3.1 miles south to 3.3 miles north of the present junction of TH 65 and TH 95 in Cambridge. The proposed bypass, approximately 6.7 miles in length, will be a four-lane divided highway (freeway design with fully controlled access).

The termini for this EIS extends from the present junction of TH 65 and CSAH 5 (approximately 5.7 miles south of Cambridge) northerly to TH 107 (approximately 9.5 miles north of Cambridge). The limits of this EIS exceed the limits of the proposed bypass to establish a highway section with logical termini and to analyze the secondary impacts on those sections of TH 65 beyond the limits of the proposed bypass but contained within the termini of the EIS.

(4) Environmental Impacts

- Approximately 383 acres (187 acres farmland, 62 acres wooded, 26 acres residential, 20 acres wetlands, 10 acres abandoned farmland and 78 acres present roadway right of way) are required for highway right of way. An estimated 42 acres of wooded, 14 acres of wetlands and 7 acres of abandoned farmland will be destroyed by construction activities.

- Highway construction will result in a loss of habitat for game and non-game species of wildlife.

- Approximately 187 acres of farmland will be taken out of production and 11 farms will incur severance damages. It is anticipated that approximately 7 acres of "uneconomic" remnants of severed parcels of land will be taken out of agricultural production.

- Twenty-one families and two businesses will require relocation.

- Traffic sensitive businesses within Cambridge may be adversely affected.

- Fourteen receptors along the proposed bypass will experience a significant increase in noise levels. Forty-eight receptors along TH 95 will be exposed to noise levels exceeding the Federal Design Noise Levels whether or not the proposed project is built. There will be a reduction in noise levels to 159 receptors along the existing route due to removal of through traffic.

(5) Alternatives

- Improvement of the existing route.

- "Do Nothing" alternative.

- Construct bypass on new location.

The alternative of constructing a bypass on new location was selected to divert the heavy volume of through traffic from traveling through the central business district of Cambridge. This diversion will reduce accident potential on present TH 65 and provide a satisfactory level of service on both the present highway section to be turned back to local jurisdiction and the proposed bypass. This bypass concept is consistent with the comprehensive plan and the Plan for the Central Business District for Cambridge.

(6) Organizations and persons consulted in the preparation of this Environmental Impact Statement:

U.S. Department of Agriculture
Soil Conservation Service

U.S. Army Corps of Engineers

U.S. Department of Interior
U.S. Fish & Wildlife Service

Minnesota Department of Natural Resources
Fish & Wildlife Division
Waters, Soils & Minerals Division

Minnesota Historical Society

Minnesota Pollution Control Agency
Division of Water Quality

East Central Regional Development Commission

Isanti County
Historical Society

Isanti County
Zoning Administrator

City of Cambridge
City Administrator

(7) Actions required by other Federal and State Agencies:

- U.S. Army Corps of Engineers - Section 404 Permit

- Minnesota Department of Natural Resources - Permit to work in public waters

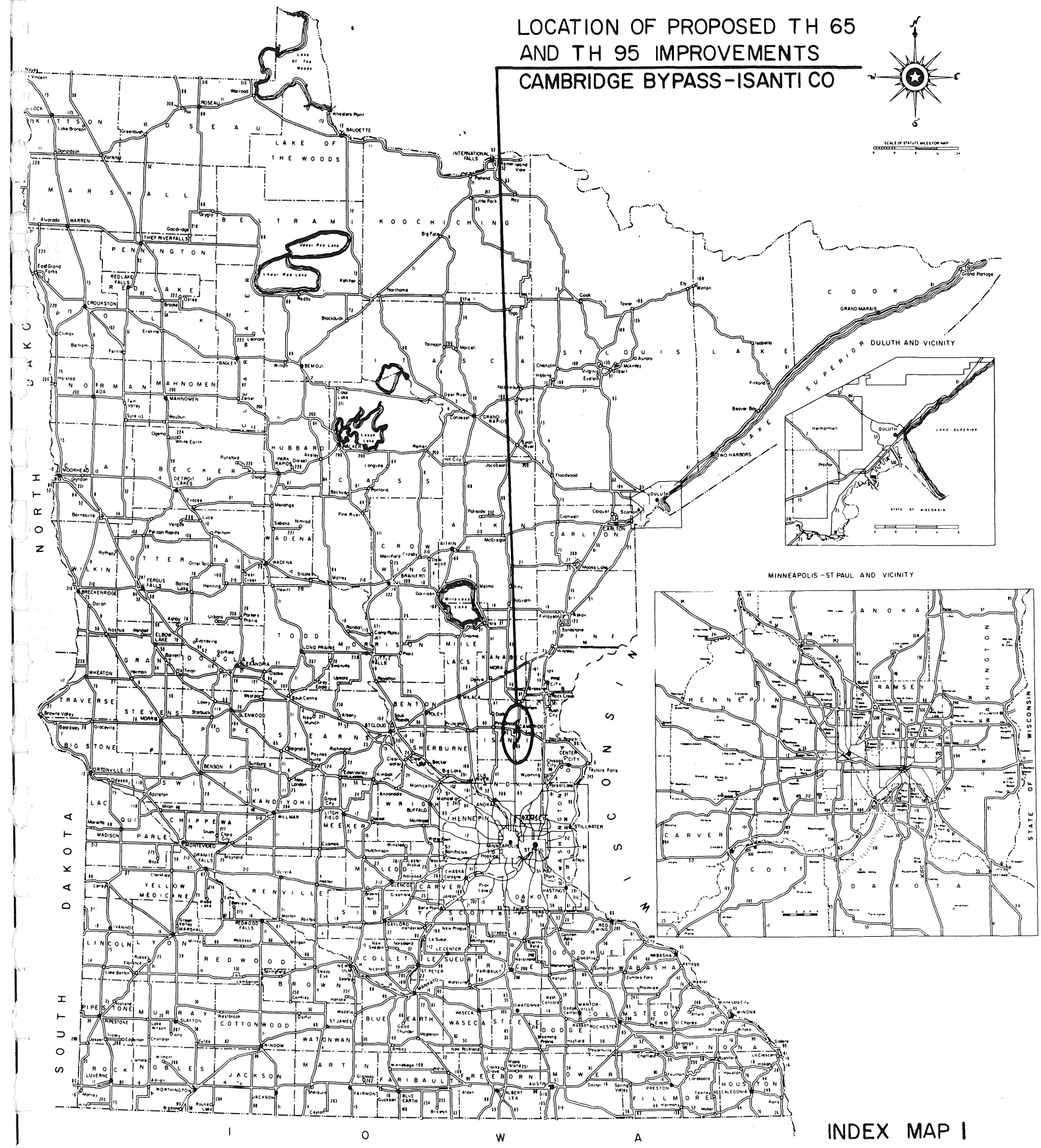
(8) The Draft Environmental Impact Statement was mailed to the Environmental Protection Agency on May 22, 1978 and a period of 65 days from that date was established for review and comment. The draft statement was also distributed to the following for review and comment:

Department of Transportation (TES)
Department of Commerce
* Department of the Interior
* Environmental Protection Agency
* U.S. Army Corps of Engineers
* Second Coast Guard District
* Department of Housing and Urban Development
Department of Health, Education and Welfare
Department of Agriculture
* Federal Energy Administration
* Federal Railroad Administration
* Federal Aviation Administration
Urban Mass Transportation Administration
* Minnesota Pollution Control Agency
Minnesota Environmental Quality Board
* Minnesota Department of Natural Resources
Minnesota Planning Agency (A-95 Clearinghouse)
* East Central Regional Development Commission
(A-95 Clearinghouse)
* Minnesota Historical Society
Isanti County Board
City of Cambridge
Cambridge Township
Isanti Township
Stanchfield Township

* Submitted responses

STATE OF MINNESOTA
DEPARTMENT OF TRANSPORTATION
WORK MAP

LOCATION OF PROPOSED TH 65 AND TH 95 IMPROVEMENTS CAMBRIDGE BYPASS-ISANTI CO



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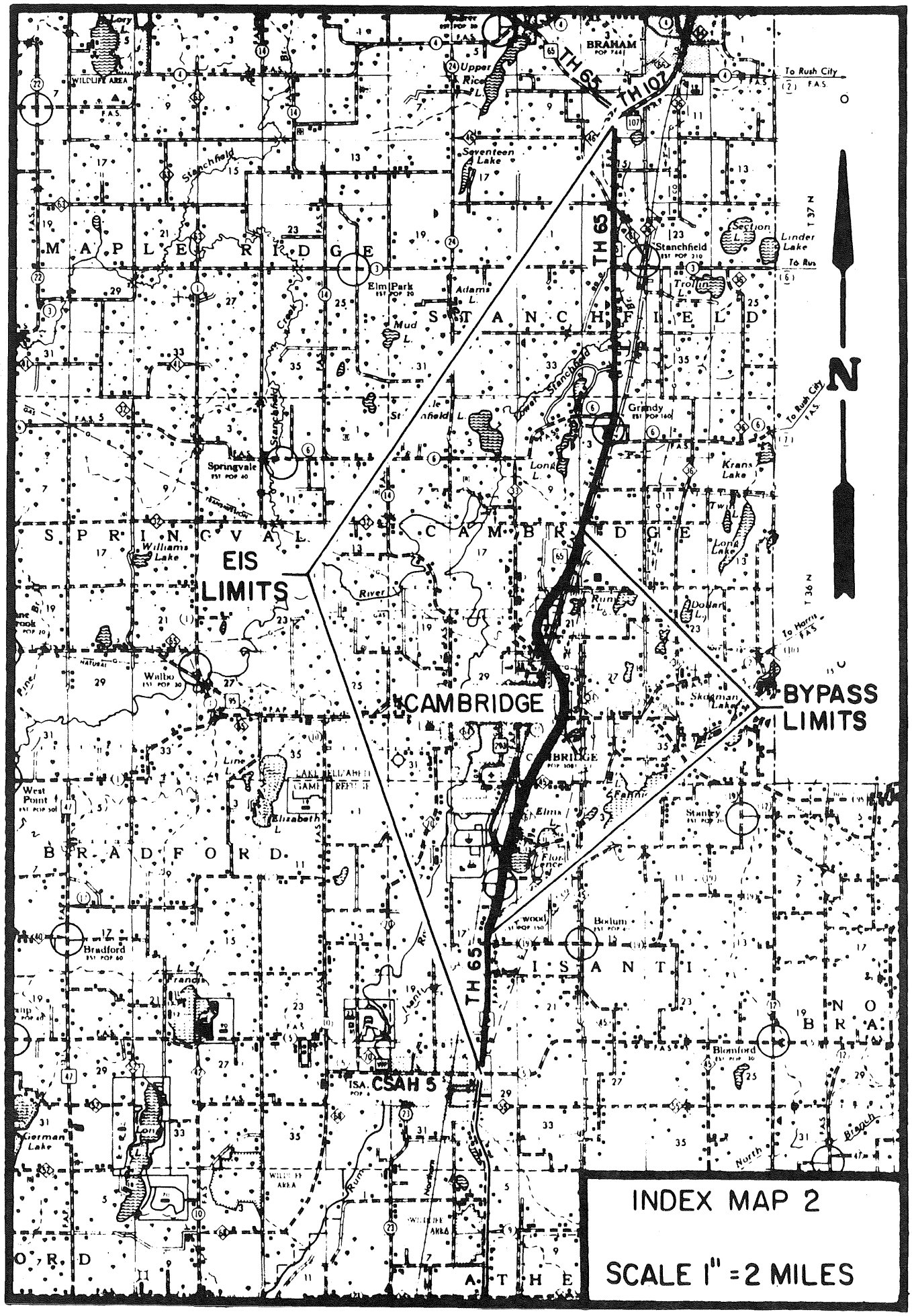
Map Prepared By Bureau of Policy and Planning — Revised January 1977


EIS LIMITS
BYPASS LIMITS
CAMBRIDGE
TH 65
TH 107
CSAH 5
BRAHAM
MAPLE RIDGE
STANCHFIELD
SPRINGVALE
CAMBRIDGE
BRADFORD
ISANTI
N
To Rush City
To Rush City
To Harris
Grandy
Springvale
Wyoming
Bradford
Stanchfield
Elim Park
Blomford
Seventeen Lake
Upper Rice L.
Linder Lake
Krans Lake
Skoman Lake
Williams Lake
Elizabeth L.
Mud L.
Adams L.
Long L.
Dollar L.
Section L.
Stanchfield Creek
Rum River
Goose Creek
Pine Creek
Lower Stanchfield L.
Stanchfield L.
Trout L.
Tw L.
Stanley
Elmo
Florence
Beckum
Wood
Bradford
West Point
Wildlife Area
Wildlife Area
Wildlife Area

I. BASIS FOR THE PROPOSED IMPROVEMENT

A. Existing Facilities

1. Trunk Highway 65

Present TH 65

Trunk Highway 65 (TH 65) is a north-south highway (major arterial) in Isanti County that largely serves traffic traveling to and from the recreational areas and lakes in north central Minnesota. A large percentage of this recreational traffic originates in the seven county metropolitan area of Minneapolis and St. Paul.

The section of existing TH 65 from approximately 5.7 miles south (County State Aid Highway 5) to 3.1 miles south of the Jct. TH 65 & 95 in Cambridge is a four-lane divided expressway facility (84 feet between roadway centerlines) with a right of way corridor generally 284 feet wide.

Southerly EIS Terminus - CSAH 5

The junction of County State Aid Highway 5 (CSAH 5) with TH 65 is the southerly terminus of this EIS. East of TH 65, CSAH 5 consists of a 24-foot roadway reconstructed in 1958 and overlaid in 1976. The section of CSAH 5 west of TH 65 was regraded in 1937 and the 24-foot roadway surfaced in 1942. Isanti County has plans for upgrading this section of CSAH 5 to a 24-foot roadway and 10-foot shoulders by 1982.

An evaluation of CSAH 5 was made to determine the traffic volumes it could accommodate. This analysis revealed that the hourly capacity of this highway is approximately 1,840 vehicles. For comparison purposes, a tabulation of approximate Design Hour Volumes (DHV's) and Annual Average Daily Traffic volumes (AADT's) follows:

Location	1977 DHV (AADT)	2000 DHV (AADT)
East of TH 65	61 (614)	94 (942)
West of TH 65	101 (1012)	171 (1710)

It is evident that the capacity of this roadway far exceeds the present and projected traffic volumes.

Deficiencies of TH 65 in Cambridge

Present TH 65 traversing Cambridge is generally a two-lane facility with uncontrolled access and a right of way corridor varying from 66-150 feet in width. Approximately 0.8 miles is of urban design with curb and gutter on both sides of the highway. This urban area with a posted speed of 30 mph varies from 44 to 64 feet curb to curb. The 64 foot width is striped as a four-lane undivided highway for a three-block section in the vicinity of the present TH 65 & 95 intersection. Parking lanes are provided on each side of TH 65 in the entire urban area.

Accident Problems

Accident rates on this section of TH 65 through Cambridge are in excess of the statewide average. Contributing factors to these accidents include the uncontrolled access feature of this section of highway (numerous cross streets and entrances), the fact that this facility traverses the Central Business District, and the mixture of through and local traffic. Accident potential is further generated by the heavy recreational demand in summer months.

2. Trunk Highway 95

Present TH 95

Existing Trunk Highway 95 (TH 95) is an east-west highway beginning at St. Cloud (46 miles west of Cambridge), proceeding easterly and passing through Taylors Falls at the east state line (34 miles east of Cambridge). TH 95 is classified as a rural minor arterial highway and intersects TH 65 in the downtown area of Cambridge. The section of TH 95 in the urban area of Cambridge varies from 44 to 50 feet in width with curb and gutter. The present right of way corridor on TH 95 varies from 66 feet to 150 feet.

Uncontrolled Access

Since access along these urban sections of TH 65 and 95 is not controlled, numerous entrances and street intersections exist due to community development. Commercial development along these sections includes motels, hotels, service stations, new and used car dealerships, supermarkets and other small businesses.

Capacity Problems

Traffic backups in excess of one mile on TH 65 and excessive delays for TH 95 traffic occur during peak summer recreational demand periods. This is due to the traffic signal at the TH 65 and TH 95 intersection and the fact that these peak traffic demands exceed the capacity of the existing facilities.

B. Transportation Demand and Planning

Interim Service Level Plan

The Minnesota Highway Department adopted an Interim Service Level Plan in 1966 as a basis for developing the Trunk Highway System in Minnesota. In this plan, TH 65 was classified as an expressway facility from Minneapolis-St. Paul to Cambridge. The two-lane facility up to 3.1 miles south of the present TH 65 and TH 95 intersection was upgraded to four-lane expressway design and opened to traffic in October, 1970.

Backbone Concept

Since the entire Interim Service Level Plan was financially unrealistic, a realistic plan to be accomplished in 20 years was developed and compiled in a report titled "A Backbone Concept for Development of Minnesota Trunk Highways" dated May, 1972. Emphasis in this report was placed on those routes which promote outstate economic development, improve accessibility to the major recreation areas and serve the greatest number of highway users. TH 65 from the Twin Cities to TH 107 was identified as being of major importance in the category of road user benefits.

TH 65 - First Priority Route

With the projected year 2000 traffic volumes in excess of 7000 ADT from Cambridge to TH 107, an expressway facility should ultimately be constructed to provide a reasonable level of service to the highway users. Therefore, TH 65 from south of Cambridge to TH 107 was designated as a first priority route for upgrading to freeway/expressway standards.

Post-1980 Planning Program

In 1975 a post-1980 planning program was developed due to inflation and a decreased growth rate of gasoline sales adversely affecting the financing of improvements recommended in the Backbone Plan. The primary purpose of this Planning Program from 1980-2000 was to ".... provide continuity in the redevelopment or updating of a limited number of our major trunk highways."

State Transportation Plan Status

As a result, the rural expressway concept from Cambridge to TH 107 was omitted from this Planning Program partially due to the fact that this section of TH 65 was reconstructed in 1965. Although the Draft Mn/DOT Transportation Plan, completed on July 1, 1978, also did not include this expressway concept, this Plan must undergo a public hearing process throughout the State in October and November, 1978. Therefore, present plans and programs are subject to revision following completion of the Final Mn/DOT Transportation Plan after the public hearings. Construction of the TH 65 Cambridge Bypass from 3.1 miles south to 3.3 miles north of the junction of TH 95 will not restrict future alignment alternates from the north end of the bypass to TH 107.

1. Historical development of project

Location Public Hearing

On May 14, 1969 the Location Public Hearing was held in Cambridge for the proposed relocation of TH 65 from 3.1 miles south of Cambridge to TH 107. Location approval for this highway section was given by the FHWA on November 7, 1969.

Design Public Hearings

The Design Public Hearing for the proposed Cambridge Bypass was held on January 14, 1970. Design approval for the bypass was received from the FHWA on January 29, 1971. Subsequent design modifications required submittal of a supplemental design study report. This was approved by the FHWA on January 11, 1972. A second Design Public Hearing on the current design concept (revised since January, 1972) was held on July 6, 1978 in Cambridge.

Right Of Way Acquired

Right of way acquisition began in 1970. During 1970 and 1971 two residences were acquired by hardship. In 1972 nine more residences were acquired and an additional two residences and a combination residence/business were acquired in 1973. In 1974 three small parcels of land were acquired.

Cost Estimates, Letting Date

Estimated costs for the grading, surfacing and bridges are approximately $3.9 million. The cost of the 359 acres of right of way yet to be acquired is estimated at approximately $0.3 million. That land already acquired under the original design amounts to 44 acres at a cost of approximately $0.3 million. Approximately 20 acres of land previously acquired will not be required for the current proposed design. Although the Draft EIS indicated this excess right of way was being considered for a park and ride facility, it is Mn/DOT policy to construct such a facility only if there is a demonstrated need. Since such a need exists south of Cambridge, a park and ride facility will be constructed upon completion of the necessary studies. A portion of the 20 acres of excess right of way will be retained for a future park and ride facility if a demonstrated need arises in this area. The current estimated letting date for the proposed bypass is October, 1980.

Comprehensive Plans

The bypass concept is in agreement with the comprehensive plan for the City of Cambridge developed in 1963. The Plan of the Central Business District for Cambridge developed in 1967 identified the need for a bypass to accomplish the division of local and through traffic.

Importance of Cambridge

The City of Cambridge, being the largest community in Isanti County, serves as a retail trade center for the county. The city is served by TH 65 the main route in Isanti County linking the Twin Cities to recreation areas and Iron Range cities of Northern Minnesota. The importance of this route is further strengthened by the proximity of Cambridge to the Twin Cities metropolitan area. With the ongoing growth in the Cambridge area, coupled with the present commercial and recreational traffic usage, traffic congestion and associated accident problems on present TH 65 through Cambridge will ultimately increase (if the bypass is not constructed) to a level of service the present highway is incapable of accommodating.

Present TH 65 Capacity Problems

The projected year 2000 traffic volumes were analyzed to determine the level of service the existing two-lane facility would provide if the bypass were not constructed. In excess of 13,000 vehicles (AADT) would be traveling on present TH 65 through the City of Cambridge. This volume would render a level of Service F, which is defined as "forced flow." This level of service indicates that this major north-south highway route for Isanti County would be overloaded.

2. Accident data

Accident Rates

An accident analysis was conducted on the existing portion of TH 65 to be turned back to local jurisdiction. This analysis revealed accident rates in excess of the statewide average of 2.5 accidents per million vehicle miles (Acc/MVM) for 1974 and 2.9 for 1975. The annual accident rates for January, 1974 - December, 1976 exceed 10.0 Acc/MVM in the Central Business District. This 6.4 mile section of TH 65 had an average of 65 accidents annually for this three-year period. It is anticipated that traffic utilizing the proposed bypass (freeway design) will experience significantly less accidents annually. This assumption is based on the following historical data. The estimated statewide rural interstate accident rates for this same three-year period are as follows: 1974 - 0.7 Acc/MVM, 1975 - 0.9 Acc/MVM, 1976 - 0.7 Acc/MVM. These values were obtained from the Minnesota Department of Transportation, Traffic Engineering Office, Accident Surveillance Section, in St. Paul on August 22, 1977.

The proposed bypass of the City of Cambridge will provide much safer facilities for the motoring public. The separation of through and local trips onto the proposed bypass and present TH 65 through Cambridge, respectively, will contribute to safer facilities due to this reduction of traffic volumes.

II. DESCRIPTION OF THE PROPOSED ACTION

A. General

EIS Termini

The termini for this EIS extends from the present junction of TH 65 and CSAH 5 (approximately 5.7 miles south of Cambridge) northerly to TH 107 (approximately 9.5 miles north of Cambridge). The limits of this EIS exceed the limits of the proposed bypass to establish a highway section with logical termini and to analyze the secondary impacts on those sections of TH 65 beyond the limits of the proposed bypass but contained within the termini of the EIS.

The present 6.4 mile section of TH 65 proposed for improvement begins on inplace TH 65 approximately 3.1 miles south of the present TH 65 and TH 95 intersection in the city of Cambridge. It proceeds north and bypasses (to the east) the city of Cambridge on new location, then rejoins existing TH 65 approximately 3.3 miles north of the inplace TH 65 and TH 95 intersection. Refer to Project Maps, pages 165-169.

The improvement will provide for two roadways (northbound and southbound) separated by a depressed grass-covered median. (See page 23 for typical section.)

Proposed TH 65

The proposed facility will be constructed on new location to bypass the developed areas of the city of Cambridge. Existing TH 65, which will remain inplace to provide access to the community from the relocated highway, will be taken off the trunk highway system and turned over to local jurisdiction. Access to and from the new bypass will be provided only at the interchanges. Five frontage roads comprising a total length of approximately 1.9 miles will be constructed to minimize effects on local traffic circulation.

Proposed TH 95

Approximately one-half mile of TH 95 at the proposed TH 65 interchange will be widened to allow one lane of through traffic and a continuous right turn lane in each direction separated by a raised concrete median. Left turn lanes will be provided at the ramp terminals and major street intersections. (See page 23 for typical section.)

B. Major Design Features

1. Interchanges

Interchanges are proposed at the following locations:

- South of Cambridge at the junction of proposed TH 65 and County Road 43 (CR 43)/existing TH 65 (two bridges).

- At the intersection of proposed TH 65 and present TH 95 (two bridges).

- North of Cambridge at the junction of proposed TH 65 and township road/existing TH 65 connection (one bridge).

2. Separation structures

Grade separation structures are proposed at the following locations:

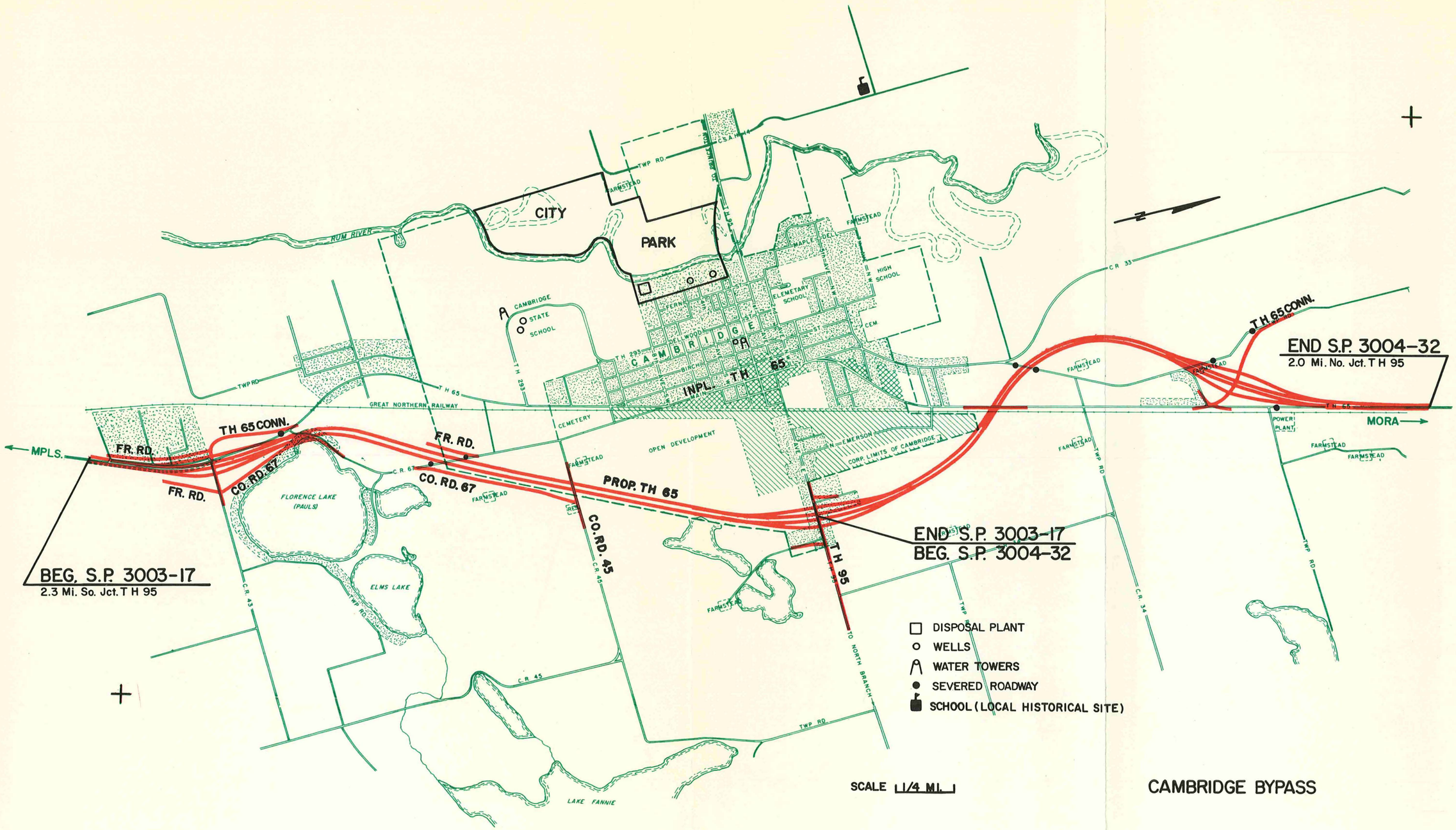
- Proposed TH 65 over CR 45 south of Cambridge (two bridges).

- Old TH 65 over Burlington Northern Railroad. (Although the present two-lane bridge will remain inplace until the proposed bypass is opened to traffic, a subsequent contract will be let for replacement of this bridge.)

- New TH 65 crossing of the Burlington Northern Railroad and existing TH 65 north of Cambridge (two bridges).

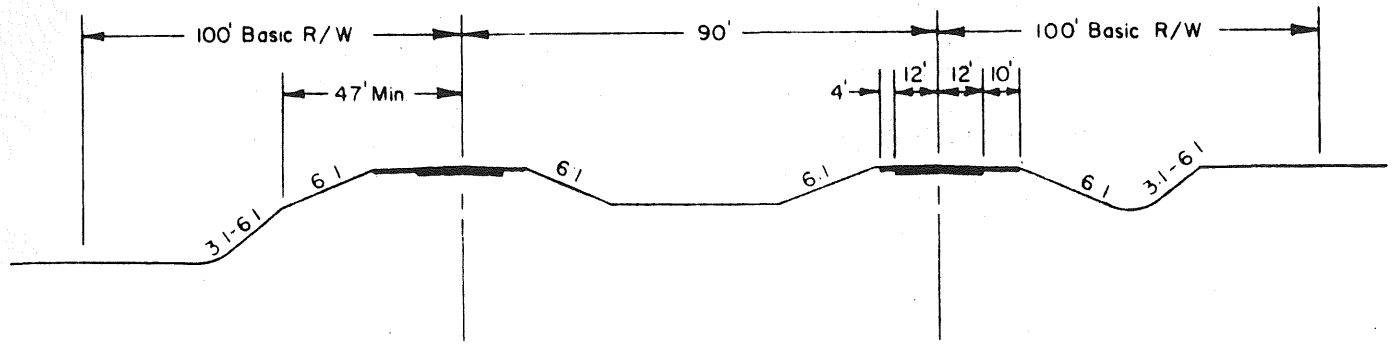
3. Local road modifications

Access to the proposed TH 65 Cambridge Bypass will be fully controlled (i.e., ingress and egress to the highway will be at interchanges only). The proposed bypass intersects some existing local roads and isolates various parcels of land near the bypass. Thus, some minor relocation of these roads will be required to provide continuity. Frontage roads will be constructed to provide access to the isolated parcels of land. The local roads affected are CR 67 (south of Cambridge) and CR 45 (east of Cambridge).

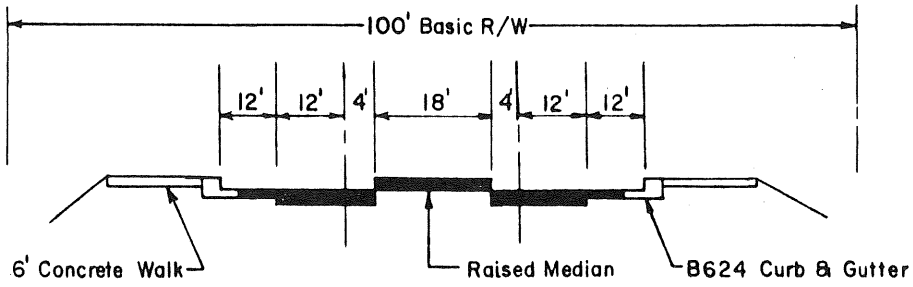


CAMBRIDGE BYPASS

PROPOSED TYPICAL SECTION
TH 65



TH 95



III. ENVIRONMENTAL, SOCIAL & ECONOMIC CONTEXT OF THE AREA

A. Natural Environment

1. Terrain

Topography

The topography of the project area is typical of east central Minnesota's glaciated landscape. Land forms are dominated by glacial and postglacial deposits ranging from gently rolling moranic terrain to relatively level outwash sand plain. Land surface altitude ranges from 900 to 1000 feet above mean sea level.

Soils

Soils found in the project area are characteristic of the Zimmerman-Lino Association, having developed from water and wind deposited sands of the Anoka Sand Plain. Soils within the bypass corridor are composed of approximately 60% Anoka (loamy fine sand), 15% Lino (loamy fine sand), 15% deep peat, 6% Isanti (loamy fine sand), 4% Zimmerman (loamy fine sand and/or fine sand), and less than 1% Blomford (loamy fine sand).

The fine sand and loamy fine sand soils range from 30 to 40 feet deep and are generally droughty, acidic and low in natural fertility. When not properly managed and left exposed, these excessively drained, porous soils are subject to wind and water erosion. Topsoil ranges from 0 to 12 inches.

Peat soils occur frequently along the proposed alignment, especially north of Cambridge. The poorly drained, organic soils are mainly found in low-lying swamp or boggy areas, wet depressions and former lakes, ponds, and abandoned glacial stream channels.

Bedrock

Under the deep glacial drift, which is variable but averages 100 feet, is sedimentary bedrock which is mostly composed of sandstone deposits. There is no exposed bedrock.

2. Climate

The Cambridge area has a continental climate with a wide variation in temperature. The long, cold winters have low precipitation, mainly in the form of snow. Normally there is adequate rainfall during the short, mild summers. Annual precipitation is approximately 27 inches with the majority during the growing season, May to September. On the average, 25 to 30 thunderstorms occur per year, with at least one damaging or excessive rainstorm each year. The climate, with an average of 138 frost-free days, is favorable for forage crops, especially pasture, hay and silage, and early maturing hybrid corn. Average winter temperature is approximately 14° F. Summer temperatures average 70° F.

3. Water resources

Groundwater

Groundwater Wells

The majority of the water used in the Rum River Watershed is obtained from groundwater wells. These wells are of three basic types: shallow glacial drift wells; deep drift wells; and bedrock wells.

Shallow glacial drift wells utilize the near surface water table as a water source and are usually 20 to 45 feet deep. Many of the private-domestic wells for human consumption and practically all stock water wells are of this type. These wells are normally driven sand points. The deep drilled glacial drift wells are much deeper, usually 70 to 90 feet below the surface. They tap a sand and travel water-bearing layer above the bedrock. The deepest of all wells tap sedimentary rock deposits below the glacial drift. These sandstone aquifers supply water for most large community-domestic and industrial wells. Depths of these wells are variable, with the shallowest an irrigation source at 250 feet and the deepest a Cambridge city well at 630 feet below ground. Groundwater in the project area is of calcium magnesium bicarbonate type and good quality for domestic consumption, stock watering and irrigation. (See Groundwater Quality tables, page 27.)

Surface water

Isanti County has 145 lakes and two rivers, also streams, marshes and bogs comprising approximately 12,164 acres. These surface waters are important for recreation, fish and wildlife habitat, nutrient and sediment entrapment, water supply, groundwater recharge and floodwater retention.

Lakes

Florence Lake

A chain of five lakes including Skogman, Fannie, Mud, Elms and Florence begins about four miles east of Cambridge and extends in a southwesterly direction to just south of Cambridge. This lake chain outlets into Isanti Brook and hence into the Rum River. Florence Lake (known as Paul's Lake to most area residents and identified as DNR Lake No. 30-35) is adjacent to the proposed bypass right of way. Florence is a shallow, highly eutrophic lake with about 80% of its shoreline developed. Its main importance is as a fisheries resource and recreation area. Fishing has been good, especially for panfish, bullheads and northern pike.

Joe's Lake

A large Type 5a wetland (identified as DNR Lake No. 30-55) south of TH 95 is called Joe's Lake by some

Groundwater Quality of Wells in the Rum River Watershed

Source of Groundwater	Statistical Parameter	Chemical constituents and hardness, in milligrams per liter & laboratory pH													
		Silica	Iron	Manganese	Calcium	Magnesium	Sodium	Potassium	Sulfate	Chloride	Fluoride	Nitrate	Dissolved Solids (Residue)	Hardness at $CaCO_3$	pH
Glacial Drift[1]	Maximum	39	42	1.6	88	38	18	3.4	46	39	0.3	42.4	420	330	8.2
	Median	23	.42	.13	52	15	7.2	1.9	8.8	3.0	.2	.4	248	198	7.9
	Minimum	13	.03	<.02	14	.1	2.8	<1	.9	.7	0	0	123	48	7.4
Bedrock[2]	Maximum	30	3.8	.36	68	27	14	2.8	13	33	.9	11	390	260	8.0
	Median	22	.70	.16	60	14	5.0	1.3	5	<1	.2	1.0	240	200	7.6
	Minimum	16	.04	<.02	35	7.3	2.0	<1	5	<1	.01	0	160	120	7.3
Recommended limits for domestic consumption (Minnesota Water Pollution Control Commission, 1967).			.30	.05					250	250	1.5	45	500		

1 Data based on 24 samples except silica, potassium and boron, which are based on 21 samples.
2 Data based on 15 samples except silica, potassium and boron, which are based on 9 samples.
Source: D.W. Ericson et. al., Water Resources of the Rum River Watershed, H.A. 509

Groundwater Quality of Wells Located Near Proposed Cambridge Bypass

Sample Date	Depth Feet	Iron	Manganese	Calcium	Magnesium	Sodium	Potassium	Sulfate	Chloride	Fluoride	Nitrate	pH	Total Hardness	Total Alkalinity	Total Dissolved Solids	Coliforms
1968	368	.09	.16	150		3.0		7.8	1.00	.24	2.40	7.6	220.	200	280	
1968	324	.12	.24	170		2.0		5.0	1.00	.23	1.00	7.7	250.	240	300	
1968	630	.32	.16	170		3.0		5.0	1.00	.21	1.00	7.3	260.	250	280	
1975	216	.19	.36	40	76	4.4	1.1	5.0	.95		<.10	8.1	120.	151	164	<2.2
1975	113			130	80			14.0	1.40	.17	<.10	8.3	210.	180		<2.2
1975	74	2.60	.21	160	70	5.4	0.8	5.0	1.40	.18	<.10	7.3	230.	230	280	5.1
1975	66	9.00	.50	170	80	3.0	1.1	5.0	4.40	.11	<.10	7.4	250.	240	320	<2.2
1975	?	1.10	1.60	170	99	3.3	1.2	5.0	.55	.15		7.4	270.	270	270	<2.2
1970	130	.04	<.02	160		5.0	<1.0	13.0	15.0	.13	1.20	7.6	220.	150	390	
1968	?	.09	.16	60	17	3.0		7.8	1.00	.20	.18	7.6	220.		280	
1968	?	.13	.34	68	20	2.0		5.0	.03	.01	.07	7.7	250.		300	
1970	130	.04	<.02	64	15	5.0	<1.0	13.0	15.0	.10	5.30		220.		390	

Source: Minnesota Department of Public Health, U.S.G.S.

area residents. This wetland consists of two basins divided by a farmstead driveway. The northeast basin has been used in the past by DNR-Fisheries for rearing walleye fingerlings for restocking in other lakes. Adjacent to the proposed bypass alignment is the shallower southwest basin of Joe's Lake which is used for livestock watering and is fair waterfowl-shorebird habitat.

Streams

Rum River

The proposed bypass is located within the Rum River Watershed and roughly parallels the river about one mile to the east. The Rum is important for its fishing, hunting and other types of recreation and is also a designated canoe route.

Two streams drain the project area - Isanti Brook and Beckins Creek. These streams have seasonal fish spawning runs and resident populations of minnow (cyprinids).

Wetlands

Wetlands are common in the swales and depressions of the outwash plain. They range from low-lying saturated or seasonally inundated areas to open water.

Wetlands in the project area were classified into wetland types as described by The Department of Interior Circular 39, U.S. Fish and Wildlife Service (Shaw and Fredine 1971). (See project maps, pages 165-169.)

Type 1 - Seasonally flooded basins or flats. Soil is inundated for short time periods with shallow water, but is usually well drained for most of the growing season. Common vegetation is grass and forbs, sometimes with scattered light brush or tall weeds. These areas are often farmed or pastured.

Type 2 - Fresh Meadows. Soil is without standing water most of the growing season, but remains waterlogged within a few inches of its surface. Vegetation includes grasses, sedges, broad-leaved plants and woody forbs.

Type 3 - Shallow Marsh. Soil is waterlogged to surface and often covered with 6 inches or more of water. Vegetation includes grasses, rushes, cattails, arrowheads and smartweeds. The vegetation may form a complete cover or may have scattered areas of open water.

Type 4 - Deep Marsh. Soil is covered with 6 inches to 3 feet or more of water during the growing season. Emergent vegetation is usually confined to the marsh rim or forms scattered clumps and islands. Vegetation includes cattails, sedges, rushes, arrowheads, duckweeds and submerged aquatic plants.

Type 5a - Open Water. Pond with water less than 10 feet deep and fringed by a border of emergent vegetation. Aquatic plants include cattails, rushes, arrowhead, pondweeds, coontail, etc.

Type 6 - Shrub Swamps. Soil is waterlogged during the growing season and often covered with up to 6 inches or more of water. Common vegetation includes alders, willows and dogwoods which form a dense, woody cover. Understory vegetaion may consist of grass, sedge, horsetail and cattail.

Type 7 - Wooded Swamps. Soil is at least waterlogged close to the surface during the growing season and is often covered with 1 foot or more of water. Woody vegetation includes ash, elm, willow, alder, dogwood and tamarack.

These wetlands are ecologically significant, with their prime importance being wildlife habitat.

Receiving waters

Drainage from proposed TH 65 will enter several lakes, streams and wetlands. The following is a summary of limnogical characteristics of the surface waters that will receive runoff from TH 65.

Florence Lake

Florence Lake is a largemouth bass-panfish-northern pike lake of 140 acres. It has a maximum depth of 26 feet, median depth of 7 feet and 90% of the lake is less than 15 feet deep. Aquatic plants found in a 1955 DNR survey were cattail, burrweed, water lily, duckweed, arrowhead, bulrush, coontail, wild celery and various pondweeds. These plants are characteristic of hardwater lakes and are generally tolerant to higher concentrations of chloride ion.

High Nutrient Concentrations

The lake has high concentrations of nutrients and is biologically productive (eutrophic), with frequent algae blooms. The high concentrations of nutrients are caused by the shallowness of the lake, which allows waves to stir up bottom nutrients, lakeshore development, proximity of private septic tanks to the lake, and agricultural runoff.

Dissolved Oxygen Levels

Florence Lake often develops a dissolved oxygen (D.O.) deficit. This is a natural problem, accentuated by the addition of nutrients. During winter, D.O. levels may become so low that the fish population is totally or partially eliminated. When the dissolved oxygen concentration drops below 2 milligrams per liter (mg/l), the DNR usually opens the lake to promiscuous fishing, which allows fishermen to harvest the oxygen-stressed fish population. The lake was opened to promiscuous fishing five of the last 15 years and fish kills occurred four of those years.

Florence Lake is receiving salt from highway deicing operations, but the concentrations of chloride ion is low (5 to 12 mg/l) and not harmful to aquatic life.

Joe's Lake

The southwest basin is a Type 5a wetland (marginal fish/game lake) of approximately 20 acres. Levels of nutrients and pH varied greatly in the last two years but the pond is eutrophic and turbid. Its major importance is for wildlife habitat and livestock watering. Commercial bait dealers have seined minnows from the pond for several years.

The northeast basin is a walleye rearing pond owned by a local sportsmen's club. Highway runoff will not enter this pond.

Beckins Creek

Beckins Creek is a permanent, warmwater stream with low flows of 1 cfs and maximum flows of 11 cfs and higher. It is tributary to the Rum River. The stream has a resident minnow (cyprinid) population and may be used seasonally by northern pike and suckers. The stream is high in nutrients, fecal coliform and streptococci, probably from agricultural, barnyard and septic tank runoff.

Isanti Brook

Isanti Brook is an intermittent warmwater stream flowing from a chain of five lakes (including Florence) southeast of Cambridge, to the Rum River. A rough fish barrier has been installed at the outlet of Florence Lake. The stream normally contains a small resident minnow population and may support seasonal fish movement as well. The stream is high in nutrients and coliform bacteria, probably the result of agricultural and barnyard runoff.

4. Vegetation

Isanti County was originally a transitional zone of climax plant communities. To the north was the northern coniferous forests and to the south deciduous forests. These original plant communities have been almost totally altered by lumbering and farming activities.

Forest Type

The most common forest type in the project area is deciduous with oak and aspen dominating the uplands, and ash, willow, elm, birch, aspen and tamarack common in the lowlands.

Lakes, streams and wetlands in the project area contain a variety of emergent and submergent aquatic vegetation. Some wetlands have a heavy growth of shrubs such as willow, dogwood, alder and sapling trees.

5. Wildlife

Habitat

The numerous wetlands and wood lots in the Cambridge area provide suitable habitat for a wide variety of game and non-game animals. There is a good population of small game animals providing hunting opportunities for area sportsmen. Because of the transitional nature of the vegetation, an unusual situation occurs. Ringnecked pheasant, a farmland species, and ruffed grouse, a forest species, are found in close proximity. Even though both species are near their range limits, they have stable, huntable populations. Waterfowl production is normally fair to good, depending on available water in marshes and ponds. Many other species of migratory birds nest in or travel through the area. The only big game animal commonly occurring near the project area is the white-tailed deer.

There are no known threatened or endangered species of wildlife found along the proposed route.

B. Social-Economic Environment

1. Population

Cambridge - Commuting Center

The City of Cambridge, located in Isanti County in east central Minnesota, is within one hour driving time of Minneapolis-St. Paul. Due to its unique location within commuting distance of the Twin Cities, a substantial number of county residents earn a living off Twin Cities jobs. As the Twin Cities metropolitan area continues to expand, the number of persons residing in the county increases proportionately.

Isanti County is composed of three major population categories which have experienced the following changes between 1960 and 1970:

Population	1960	%	1970	%
Urban	3977	29.4	5633	34.0
Rural				
Farm	5204	38.5	3490	21.0
Non-Farm	4349	32.1	7437	45.0
Total	13530	100.0%	16560	100.0%

Source: U.S. Population, Minnesota, U.S. Dept. of Commerce, Bureau of Census.

State of Minnesota, 1973, Pocket Data Book, State Planning Agency, December, 1973.

Nationality Origins

Nationality origins were evaluated in the Basic Research Report - Isanti County, August, 1968. Based on the 1960 county population for country of origin for first-born and first generation, Sweden accounted for 2,537 and Germany for 625 of the total 1960 foreign stock of 4,225. Diversification of ethnic descent will occur with population growth (predominantly in migration). No members of any minority populations are located in the area of the proposed bypass.

Further analysis of population trends clearly indicate significant growth in the Cambridge area.

	1960	1950-60 % Change	1970	1960-70 % Change	2000	1970-2000 % Change
Isanti County	13530	11.6	16560	22.4	37000	123.4
Isanti Twp.	1172	52.2	1649	40.5	3071	86.2
Cambridge Twp	1427	4.4	2167	65.9	5698	162.9
Braham	728	4.4	744	2.2	1924	158.6
Isanti	521	23.5	679	30.0	1443	112.5
Cambridge	2728	52.4	3467	27.1	6327	82.5

Source: Isanti County Overall Economic Development Plan, May, 1977.

Accelerating Rate of Growth

The population increases for Isanti County and Cambridge and surrounding townships from 1960 to 1970 are substantially higher than the same 10-year increase of 11.5 percent for the State of Minnesota. The population figures of Isanti County and Cambridge indicate an accelerating rate of growth pattern. These growth trends indicate that the Cambridge area will continue to attract a significant proportion of the projected county population growth. The population gain of Isanti County from 1960 to 1970 was greater than its gain for the last 60 years.

2. Employment

The demand for professional services is already increasing in the county. Following is a tabulation of employment trends for the 20-year period from 1950 to 1970:

Industry	1950	% Total	1960	% Total	1970	% Total
Agriculture	2228	51.5	1334	31.4	510	8.6
Construction	199	4.6	272	6.4	519	8.8
Manufacturing	369	8.5	585	13.8	1344	22.7
Wholesale and Retail Trade	495	11.4	652	15.4	1055	17.8
Professional and Related Services	604	13.9	791	18.6	1474	24.9
Total Employed	4330		4242		5918	

Source: 1950, 1960 & 1970 U.S. Census.

General wage levels of all trades and occupations appear to be the same or slightly above those of surrounding counties.

Agriculture's Influence

Although agricultural employment has decreased dramatically and Isanti County does not contain extremely high productive soils, agriculture is still the key factor influencing the economic situation of Isanti County.

Agriculture is still the principal land use comprising slightly less than half of the total area of Isanti County. The average size of farms decreased from 157 acres in 1954 to approximately 149 acres in 1973.

3. Community facilities

Community Facilities

The City of Cambridge is the county seat and largest community in Isanti County. Community facilities include:

Cambridge Airport - only airport in county. It has a 3200-foot hard-surfaced, lighted runway. Metropolitan expansion of Minneapolis-St. Paul will increase the demands on this facility.

Independent School District 911 (3,850 pupils).

Cambridge Memorial Hospital - a 62-bed general hospital. It is the major health institution in Isanti County.

Cambridge State Hospital - state tax supported facility administered by the Medical Services Division of the State Department of Public Welfare. This mental health institute is one of 19 in Minnesota.

Cambridge Nursing Home - a proprietary nursing home with 100 beds.

Grandview Christian Nursing Home - a non-profit association which has a capacity of 40 beds. It is also considered a boarding care facility.

County Nurse's Office - conducts a home visiting service. Services include skilled nursing care for the elderly.

Construction has been authorized for a community college at Cambridge although funding by the state legislature has not yet been approved.

Cambridge CBD Plan

The City of Cambridge developed a Central Business Disrict Plan in December, 1967 through the efforts of the Cambridge Planning Commission, City Council and a Downtown Committee. It was recognized in this plan that the Cambridge merchants will be competing with commercial areas of the Twin Cities as highways and population mobility improve. In order to retain its share of the market, improvements to the Cambridge Central Business District must be made.

Most existing development in Cambridge is located between the Rum River and TH 65. The southwest and northwest

portions of Cambridge are developed for residential use with scattered development occurring east of TH 65.

Industrial Development

As evidenced by current trends in employment of the labor force, industrial development has substantially increased since 1950. This growth is important to economic development since it affects the tax base (both local and county), is a catalyst to other forms of urban growth, and is basic to any major employment growth. Cambridge is the only community of the three communities in Isanti County which has industrial areas for development.

4. Recreational and cultural facilities

Cambridge City Park

There is one major recreational area in the city of Cambridge. The Cambridge City Park (approximately 70 acres) is located near the west corporate limits and south of TH 95 approximately one mile west of the proposed bypass (see exhibit, page 21). The northerly 30 acres of this park have been primitively developed. The Rum River flowing through this portion of the park has contributed to the nature of development by the community. Present facilities include a boat landing, hiking/snowmobile trails, a fountain (artesian well), two shelters and outdoor toilets. No additional development is planned. The city of Cambridge does not intend to develop the southerly 40 acres of the park.

County Historical Sites

Contact with the Isanti County Historical Society revealed a cultural site of local historic significance in the vicinity of Cambridge. The West Riverside School located northwest of Cambridge is approximately 1.5 miles west of the proposed bypass (see exhibit, page 21). This old brick structure is owned by Cambridge Independent School District 911 and leased to the West Riverside School Committee, which is affiliated with the Isanti County Historical Society. In June of each year two weeks of classes are held. Participants' attire and subjects taught typify a school in the late 1800's.

IV. LAND USE

A. Present

Isanti County has a variety of land uses of which agriculture is predominant. The following is a breakdown of Isanti County into 40 acre parcels, with the classification of each parcel determined by its dominant land use:

GENERAL LAND USE OF ISANTI COUNTY

	40-Acre Parcels		40-Acre Parcels
Forested	1622	Marsh	214
Cultivated	2376	Urban	182
Pasture and open	2720	Extractive	0
Water	182	Transportation	0

Total Parcels - 7296

Source: State Planning Agency, Pocket Data Book.

Even though agriculture has in the past and will continue to be the major land use, Isanti County has experienced a downward trend in land devoted to agriculture. Following is a tabulation of this trend (expressed as a percent of the total area of the county):

	1954	1959	1969	1973
Farmland	82%	75%	52%	46%

This is due to two factors: the abandoning of land formerly used for livestock grazing and row crop and the conversion of farmland to non-farming uses, mainly residential. Even though some areas are being abandoned, the more productive land is becoming intensively farmed.

B. Future Planning

Land Conversion

Land uses are changing and expected to continue to change whether or not the proposed highway improvement is constructed. The expanding population and economy of the area has resulted in this change. Farmland and undeveloped areas are being converted into residential and industrial-commercial sites. It is also expected the trend of people working in the Twin Cities metropolitan area but living in Cambridge or rural areas of Isanti County will continue.

Local Zoning

Land development in the project area is regulated by zoning ordinances promulgated by the city of Cambridge or Isanti County (see zoning map, page 41). Land adjacent to the proposed right of way corridor is zoned as follows:

Agricultural	41%
Residential	26%
Shoreland district	14%
Limited industrial	12%
Highway business	7%

Comprehensive Plan

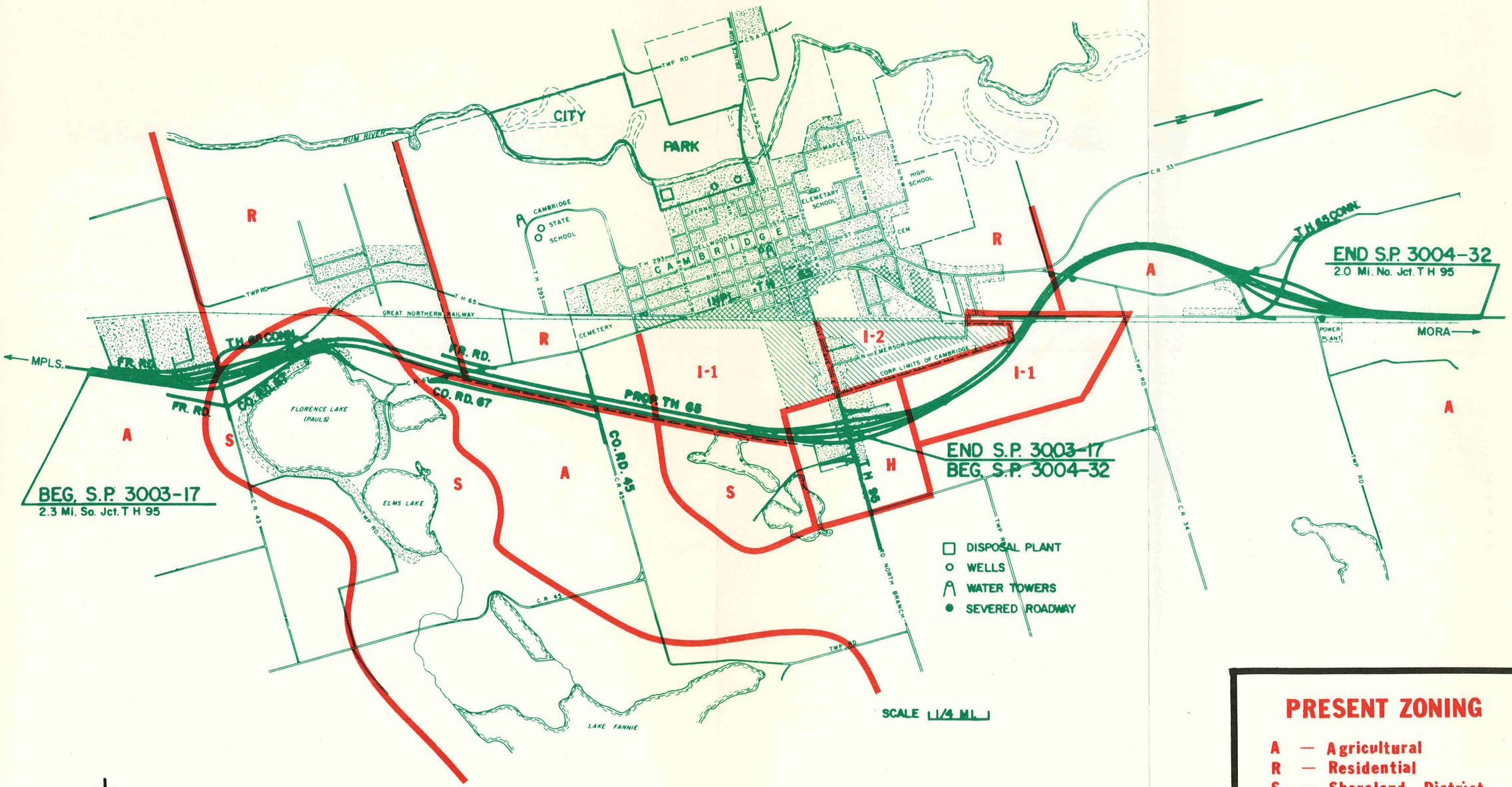
Both Isanti County and the city of Cambridge have developed Comprehensive Plans for their physical development. The proposed bypass is consistent with these comprehensive plans and it has been taken into consideration in their land use planning and zoning ordinances.

Annexed Properties

The city of Cambridge recently annexed additional properties to be included within its corporate limits. This will incorporate all land west of the proposed alignment, south of TH 95 to the east-west quarter line of Section 5 (Isanti Township).

Development along the proposed right of way corridor will be limited since TH 65 will have controlled access. All development is expected to be consistent with the applicable zoning ordinance. No federal or state agencies have control over land adjacent to the proposed highway alignment.

CAMBRIDGE BYPASS



PRESENT ZONING

- A — Agricultural
- R — Residential
- S — Shoreland District
- I-1 — Limited Industrial
- I-2 — General Industrial
- H — Highway Business

V. IMPACTS

A. Water Resources

1. General

The proposed improvement should have a minimal impact on water resources in the Cambridge area. Construction activities should create no water quality problems because there are no water crossings of rivers or perennial streams or encroachment in lakes or flood plains. Most drainage structures (culverts) will be placed under dry or low water conditions to minimize sediment entering public waters.

2. Groundwater

This project includes no deep cut sections and extensive excavation will be limited to areas of unusable soil (peat and muck). No fill material containing toxic substances or biological pollutants that would leach into the water table and degrade ground water quality will be used on this project. Because of these factors, this project should not have any impact on ground water supplies nor be a hazard to public health. No public drinking water supplies such as city of Cambridge wells and Cambridge State Hospital wells will be affected. The project will not contaminate any aquifers designated for special protection.

3. PCA Classification and Standards

The Cambridge Bypass is within the Rum River Watershed and therefore it will be the ultimate receptor for much of the bypass drainage. No runoff will directly enter the Rum River except by way of streams, ditches, etc. Runoff will enter four main receiving waters (Florence Lake, Joe's Lake, Beckins Creek, and Isanti Brook) and several wetlands along the proposed route.

State Water Pollution Control Statutes

The State of Minnesota has established water pollution control statutes for the classification of intrastate waters (WPC 24) and the establishment of standards of quality and purity (WPC 14). The Rum River and Beckins Creek are currently classified 2B, 3C, 4A, 4B, 5 and 6 based on WPC 24. Other water bodies in the project area are not specifically classified by this regulation. Receiving waters such as Isanti Brook, Florence Lake and Joe's Lake have a general classification of 2B, 3B, 4A, 4B, 5 and 6.

BRIEF DESCRIPTION OF PERTAINING WPC CLASSIFICATIONS

2 Fisheries and Recreation
B - Propagation and maintenance of cool or warm water fishes and aquatic recreation of all kinds

3 Industrial Consumption
B - General industrial purposes
C - Industrial cooling and material transport

4 Agriculture and Wildlife
A - Irrigation
B - Livestock and wildlife consumption

5 Navigation and Waste Disposal

6 Other Uses

(Excerpted from MPCA Rules and Regulations WPC 14)

4. Surface waters

Certain components of highway runoff have potential for contaminating receiving waters. Potential pollutants are:

Pollutants

Physical - Sediment (suspended and bedload)
Turbidity
Solid Particles (rubber, metals, asbestos, etc.)
Litter

Chemical - Herbicides, Fertilizer, Toxics (accidental spills)
Oil, Grease, Fuels, Lead and Exhaust Emissions
Salts (de-icing operations)

Biological - Bacteria, Coliform (fecals, other pathogenic)

Sedimentation

Changes in water quality resulting from this project will occur mainly as physical pollution in the form of sediment from land disturbing activities during construction. Chemical and biological pollution may result from this project but it should be much less significant.

In order to assess the impact of proposed TH 65 drainage on water quality, an investigation was conducted to determine existing water quality and its usage and to identify and address potential impacts on the water resources.

Water Resource Report

For detailed information concerning this study, see the Cambridge Bypass Water Resource Report. This report can be obtained from Mn/DOT Brainerd District Office.

The following is a summary of water quality impacts this highway improvement will have on receiving waters in the project area:

Florence Lake - Not Classified

Florence Lake - No Encroachment

Bypass construction, operation and maintenance should not degrade water quality nor impact the water resource of Florence Lake. There will be no direct encroachment into the lake; no fill or riprap will enter the water. A very limited amount of runoff will enter the lake during construction when erosion and sedimentation problems are most critical. Erosion control techniques will be utilized to minimize physical pollutants entering this receiving water. The majority of the runoff from the section of roadway in close proximity to Florence Lake will drain to the southwest, greatly reducing the potential for pollution. The only section of roadway directly draining into the lake will be 0.38 miles of CR 67 east of the south interchange. The amount of traffic and maintenance operation will be similar to that on the inplace road so no significant changes are anticipated.

Lack of Dissolved Oxygen

The most critical water quality problem affecting Florence Lake is a seasonal lack of dissolved oxygen. This project should not result in an increase in organic material or biological activity and therefore the effect on dissolved oxygen levels should be insignificant.

Joe's Lake - Not Classified

Joe's Lake - No Encroachment

Although there will be no encroachment into this Type 5a wetland, it will receive a large quantity of drainage. Approximately 0.78 miles of proposed TH 65, 0.72 miles of TH 95 and the south half of the TH 65 & 95 Interchange will drain into this water body.

Dissolved Salts

Dissolved salts in highway runoff will be the most significant influence upon water quality. There is insufficient information about the toxicity of dissolved salts to aquatic organisms. Due to the variability of species tolerance, it is suspected that salt has the potential for acting as a selection agent in the natural environment, favoring certain species of aquatic plants.

Joe's Lake is shallow and non-stratified and therefore the possibility of salt accumulation in deep holes or the development of a sterile lower level (hypolimnion) would be highly unlikely. The total dissolved salt concentration, even with the addition of de-icing salts from winter maintenance operations will be far below the limit of 700 mg/l established by the Minnesota Pollution Control

Agency for waters used by wildlife and livestock. Chloride concentrations will be far less than the safe levels for livestock watering (1500 mg/1)[1] and warm water fish species (4000 mg/1)[1].

Beckins Creek - Classified 2B

Beckins Creek will receive drainage in two ways: (1) surface flow conducted by ditches to the creek or (2) surface flow to adjacent wetlands, temporary storage and eventual outfall (flow, seepage, etc.) to Beckins Creek. The first situation does not allow for extensive natural purification and dissipation of pollutants to take place as it does during temporary storage in wetlands.

Runoff from TH 65 should contain a minimal amount of nutrients and therefore the artificially high ambient concentration of phosphorous and nitrogen will not be significantly increased.

Temporary degradation of water quality may result from sediment entering the creek during construction. Erosion control measures will be implemented to reduce pollution potential.

Isanti Brook - Not Classified

Drainage from the south interchange will be conducted to Isanti Brook by way of Florence Lake and a Type 6 wetland with no runoff directly entering the stream. (Runoff entering Florence Lake has been discussed previously.) The temporary storage allowing for natural purification should be sufficient to remove contaminants in the runoff so when it eventually enters Isanti Brook it should not affect the quality of its water.

Miscellaneous wetlands

Wetland Effects

Runoff will enter several wetlands along the proposed route. Some of these wetlands are contiguous to other aquatic systems and therefore provide temporary storage before eventual outfall. Other wetlands are isolated catchment basins and so drainage being stored there will eventually enter the water table or evaporate.

The wetlands in the project area should not be sensitive to the types and concentrations of contaminants thought to be constituents of highway runoff. In fact, the addition of water in most cases will improve productivity and viability of adjacent wetlands.

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[1] Water Quality Criteria, State of California Water Resource Control Board, Reprint 1974.

Wetlands are important for natural purification of runoff from both transportation facilities and farming operations. They affect the quality and quantity of water by retention during wet periods and release during dry periods, thus keeping the water table fairly stable. Wetlands act as a holding basin allowing sediment to settle out and aquatic plants to incorporate nutrients into their biomass. Wetlands will be used to their fullest potential to improve water quality when this will pose no danger to their biological productivity and inherent ecological sensitivity.

Surface water quality summary

Highway Runoff

It is not anticipated that the addition of contaminants from highway runoff to those already present in the receiving waters will render that water less useful or valuable to the users it benefits. Water quality will not be significantly affected by this project and therefore there will be no change to MPCA General Classification for waters in the project area. There should also be no major resultant change in species composition in the aquatic community.

Runoff will be collected in grassy ditches rather than drainage structures incorporated under urban design employing curb and gutter. Grassy ditches slow the rate of surface runoff and cause many contaminants to be filtered out.

Fertilizer

Fertilizer will be used to promote a dense growth of grasses and legumes. Minor contamination of surface water by fertilizer may occur, but the prevention of erosion and sedimentation, a direct result of fertilizer usage, is extremely beneficial and desirable. In order to prevent an excessive use of fertilizer, samples of topsoil will be analyzed to determine nutrient deficiencies. Fertilizer recommendations will then be matched to topsoil conditions.

Hazardous Spills

In the event of a hazardous materials spill, the Department of Public Safety, Division of Emergency Service will be immediately notified. This agency has an officer on duty 24 hours a day, 7 days a week, and will relay information to the proper departments of state government, including the MPCA and Health Department. Depending on the magnitude of the spill, the MPCA may send inspectors to survey the situation and recommend the implementation of cleanup procedures.

As a contingency solution when problems arise, Mn/DOT maintenance forces will clean up a spill if the material does not pose as a severe danger to maintenance workers. Emergency handling procedures outlined in the Department of Public Safety's Hazardous Materials manual will be followed using available equipment and materials.

This manual is available for agency or public review at the Mn/DOT Brainerd District Office. When special cleanup and handling techniques are required due to the toxicity or danger of materials encountered, the cleanup operation will be contracted to professionals.

Pesticides & Fungicides

Although their use is a rare occurrence, pesticides and fungicides are used by the Department in instances where no other method of insect or disease control has proven effective. These chemicals, which present a potential hazard to the environment, are used only in specific areas where infected trees represent a danger to neighboring trees. The use of such chemicals in the Cambridge area is not foreseen.

DNR Permits

The Department of Natural Resources - Division of Waters has been contacted regarding the need for permits to work in public waters and it was stated that several of the drainage structures, especially those in the north interchange area, may need permits. The final permit requirement determinations will be made when more hydraulic and design information is available during the detailed design phase of the project.

COE Permits

Preliminary review of this project has been made by the U.S. Army Corps of Engineers (COE) regarding their jurisdiction under Phase III of the Section 404 Permit Program. North of Cambridge and west of inplace TH 65 are Type 6 and 7 wetlands that are considered by the COE as contiguous to the Rum River. Fill placement in these wetlands (identified on the aerial project map, page 169 , as impact areas H & I) will require a Section 404 permit.

Special provisions or recommendations suggested by agencies having permit authority as precautions against environmental damage will be incorporated into the contract for this project.

This project does not involve any Watershed Districts.

Erosion mitigation

In the construction of the Cambridge Bypass, three approaches to erosion mitigation will be used: permanent, temporary and administrative.

Permanent

Erosion Control Measures

Examples of permanent control items are topsoil, seed, sod and rock riprap. These items are provided for in the plans and specific areas are designated for their use. They are provided to function both during and after construction.

The following recommendations involve permanent control items which will be used on the TH 65 Cambridge Bypass:

- Topsoil

  Soil borings along the bypass corridor indicate topsoil varying from 0.2 to 2 feet, averaging one foot in depth. Existing topsoil will be salvaged to the extent available, stockpiled and reapplied as a growth medium.

- Fertilizer

  To compensate for the low fertility of soils in the project area, a specific analysis fertilizer will be applied at a specific rate by split application (fertilize at seeding and again early the following Spring).

- Seed

  During field investigation, the following desirable vegetation was found growing along the existing roadsides in the Cambridge Bypass area: smooth brome, sand dropseed, red fescue, alfalfa, rabbit's foot clover, small hop clover, hairy vetch, little bluestem and big bluestem. The suggested seed mixture will be Mn/DOT Seed Mixture 3 (given below) modified to include 5 pounds/acre of alfalfa, 2 pounds pure live seed/acre of big bluestem and 15 pounds seed/acre of red fescue.

Mixture	Species	Rate Lbs./Acre
3	Red Clover	5
	Alsike Clover	3
	Birdsfoot Trefoil,Empire	3
	Hairy Vetch	13
	Sand Dropseed	2
	Timothy	4
	Perennial Ryegrass	10
	Total	40

- Mulch

  A straw and asphalt mulch (Mn/DOT Type 3) will work best to protect seed and topsoil on this project.

- Riprap

  Riprap will be provided to anchor slopes and reduce erosive potential of moving water, mainly at culvert outlets.

- Sod

High runoff concentrated areas will be sodded to control erosion. These areas will include, but not be limited to, steep ditch slopes, backslopes, flumes and cut or fill runouts.

Temporary

Examples of temporary control items are bale ditch checks, earth diversions, bale diversions and temporary sediment basins. These items are generally provided for in the plans but with no specific areas designated for their use. These items are included in the plans to provide the project engineer with erosion control items which he can use as and where he may deem necessary.

Temporary control items which will be used on TH 65 (Cambridge Bypass) will include bale ditch checks and bale diversions. Bales have proven to be 68 percent effective in removing sediment when they are installed and maintained properly. Bales are very effective in removing the larger size sediment (silt and sand) and therefore should be very effective on this project.

Administrative

Standard Specifications

Administrative control items are generally in the form of a standard specification which pertains to material quality, licenses, permits, the contractor's methods, prosecution progress, etc., to insure an effective means of erosion control.

One of the most important administrative controls is the ability of the project engineer to limit the surface area of erodible earth material exposed at one time by excavation, borrow or embankment operations as determined by his analysis of project conditions.

B. Flood Hazard Evaluation

Hydraulic Design Of Structures

Drainage structures used on rural sections of TH 65 will be designed with a hydraulic capacity to accommodate the runoff from a storm of the duration and intensity that would occur once every 50 years.[1] The damage potential of a 100-year storm[1] will be analyzed and if significant, hydraulic capacity will be increased.

Storm sewers in urban areas (TH 95 Interchange) will be designed for a 10-year storm frequency[2] with the damage potential of a 50-year storm[1] also taken into consideration.

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[1] 50- and 100-year storms are calculated using Minnesota Highway Department-Design Discharge Curves.

[2] 10-year storm is calculated using Rational Formula.

These criteria represent a compromise between the cost to construct the drainage system and the adverse effect on public safety, flood damage, etc., of a storm of a frequency whose discharge is too large for the system to handle.

Rum River Watershed

This project is located within the Rum River Watershed. During periods of extreme high water the Run River backs up into Beckins Creek and inundates the adjacent lowland area. The section of proposed TH 65 south of the north interchange fringes this lowland area but does not encroach into the floodplain. The closest this project comes to the Rum River floodway is approximately 1/2 mile to the east.

C. Biological & Ecological

1. General

Overall Biological Impact

The overall impact of the bypass construction, operation and maintenance on biological resources (plant and animal populations) should not be significant.

- There are no known rare or endangered species of plants or animals found along the proposed route.
- There are no publicly-owned wildlife refuges or management areas affected by this routing.
- There are no unusual or unique productive plant associations found along the bypass route.

Bypass construction will result in a permanent loss in terrestrial and aquatic wildlife habitat. This loss will be minimized by preserving and promoting natural vegetation where possible. Of the land acquired for the right of way corridor only that within the construction limits will be disturbed.

The following is a breakdown of open space land to be acquired for the bypass:

Type		Within R/W	Altered by Construction
Wetlands -	Type 2	2.2 acres	1.5 acres
	Type 3	1.0 acres	0.9 acres
	Type 4	2.7 acres	2.5 acres
	Type 5a	0.2 acres	0
	Type 6	14.0 acres	9.1 acres
	Total	20.2 acres	14.0 acres

(DOI - U.S. Fish & Wildlife Service, Circular 39)

Forested -	Deciduous	16 acres	11 acres
	Lowland deciduous	31 acres	21 acres
	Oak Savanna	4 acres	3 acres
	Conifer	11 acres	8 acres
	Total	62 acres	43 acres

Throughout the development of this project, a concerted effort has been and will continue to be made to minimize environmental impacts.

Design & Construction Techniques

Following is a recap of the actions that have been or will be taken to accomplish an environmentally acceptable design:

- Roadway alignment has been shifted to avoid environmentally sensitive areas such as wetlands and productive upland habitat to the extent practicable.

- In order to minimize encroachment in critical areas where it cannot be avoided, inslopes have been steepened outside of the 30 foot safety zone adjacent to the driving lanes. On sections of roadway adjacent to wetlands with a fill height of at least 10 feet, the inslopes will transition from a 6:1 slope within the safety zone to a 3:1 slope outside the safety zone.

- Roadway gradelines have been planned so as to avoid deep cuts that would lower water table elevations.

- The alignment has been shifted to avoid or minimize impacts on existing development. These adjustments involved manufacturing plants, utilities, residences and farmsteads.

- Alignment and grades have been adjusted to avoid significant changes in natural drainage courses.

- Clearing and grubbing of wooded areas will be restricted to that which is within the normal grading construction limits. "Clear-cutting" of the entire right of way corridor will not be done. The normal variation in construction limits will result in an irregular edge of natural vegetation. This will "soften" the aesthetic impact of the roadway.

All of the above have been or will be coordinated into a geometric design that will provide for safe, smooth, efficient traffic operations and ease of maintenance.

Reseeding

Roadsides will be revegetated with a dense growth of legumes and grasses including several native prairie species. Roadsides are readily used for nesting by pheasants, certain puddle ducks and many ground nesting species of perching birds. The Department enforces the policy of delaying roadside mowing operations until after the game bird nesting season (usually July 15). After this time, only a limited amount of mowing is done.

Forest Resources

Plant material salvage

An analysis was conducted by Mn/DOT to study the conservation of forest resources affected by this project. Emphasis was placed on vegetation preservation, timber salvage and transplant possibilities.

Preservation

Preservation of vegetation is the key salvage aspect along this proposed route. Conserving natural vegetation whenever construction procedures and safety allow is important to minimize the disruptive effects, both visual and ecological, of construction activities by accelerating naturalization, promoting a natural appearance and retaining wildlife habitat. Special preservation

considerations will be given to areas of desirable plant associations, especially oak stands, red maple - black cherry and conifer plantings.

Timber Salvage

The DNR, Forestry Division, was contacted regarding timber salvage possibilities. It appears firewood is the best use for most of the timber in the project area. There is also a market for pine posts and poles of the size and quality encountered within the proposed right of way. A few of the oak and pines will qualify as saw log material.

There is not sufficient high quality material to warrant a separate timber contract, however, the DNR District Forester will be consulted just prior to construction in order to realize the best use of the trees that are certain to be impacted by highway construction.

Transplants

In the study conducted by Mn/DOT's forester, only 8 trees were considered to be of the quality, size and species that were considered large tree transplant possibilities. With such a small number of specimens, a transplant contract is not warranted.

2. Specific impact areas

Nine site specific impact areas have been identified and evaluated with respect to the proposed bypass construction. Seven of these 9 sites involve wetlands and have therefore been evaluated in accordance with Executive Order 11990. E.O. 11990 (Sec. 2(a)) states, "...each agency, to the extent permitted by law, shall avoid undertaking or providing assistance for new construction located in wetlands unless the head of the agency finds (1) that there are no practicable alternatives to such construction, and (2) that the proposed action includes all practicable measures to minimize harm to wetlands which may result from such use."

Wetland Involvement - E.O. 11990

In all instances, it has been determined that there is no practicable alternative to such construction and the proposed bypass concept includes all practicable measures to minimize harm to wetland areas.

No-Build Alternate In Wetland Areas

Due to the number and distribution of wetlands in the project area, it would be impossible to design and construct a bypass of Cambridge using current design standards without some wetland encroachment. Therefore, in several situations the only alternatives to such construction are the "no-build" or upgrading inplace TH 65. These alternatives were found to be neither practicable nor in the public's best interest as discussed in SECTION VI, page 95.

Techniques to minimize and mitigate detrimental impacts to wetlands will be used in all impact areas and will include preservation of aquatic vegetation to the extent practicable. Erosion control measures are proposed to minimize erosion within the construction areas and sedimentation in the adjacent wetland. In no instance will this project result in a lowering of the water table or drainage of wetlands.

All 9 impact areas are depicted on the Project Maps (pages 165-169) and identified by capital letters. Those directly involving wetlands are identified as sites A, B, C, D, E, H & I. Following is an assessment of impacts and mitigation measures proposed at these 9 sites:

Type 6 Wetland

A - The southeast ramp of the CR 43/TH 65 interchange and Frontage Road 2 intrude into a wooded area that was at one time pastured and is now becoming overgrown. Approximately six acres of oak savanna upland and brushy lowland (Type 6 wetland) will be altered by construction activities. There are presently two residences located on the north end of the wood lot. To the south and east, the brushy lowland continues to Isanti Brook. This naturalized area is good quality habitat for game species such as squirrels, rabbits, woodcock, pheasants and white-tailed deer, also non-game species such as rodents and songbirds.

Clearing and grubbing operations will be limited to preserve as much natural vegetation as possible, especially the dominant red, pin and burr oaks. Considering the size of the area left undisturbed, the alteration of six acres should not significantly affect overall wildlife numbers.

Frontage Road 2 will be constructed to provide access to a residence southeast of the south interchange. The frontage road traverses the Type 6 wetland adjacent to Isanti Brook with approximately two acres within the proposed right of way. An estimated 1.1 acres would be altered or receive fill.

In order to avoid this wetland encroachment, three alternatives exist: (1) provide no access for the residence onto TH 65 in which case the residence would be isolated, (2) shift the entire interchange westerly approximately 150 feet, which would eliminate six residences, or (3) extend the frontage road south from the residence it serves paralleling TH 65 for about 2,100 feet to an inplace crossover. This alternative would require the alteration of from 0.5 to 1 acre of Type 2 wetland and also woods and farmland.

None of the three alternatives are a more desirable design or result in less overall adverse impacts.

B - Sandwiched between southbound TH 65 and Connector Road A, is a small, isolated, Type 3 wetland of less than 1/2 acre. This pond has in the past been utilized by waterfowl, with sightings of 1 to 3 broods of blue-winged teal not uncommon. During periods of low water the pond dries up and is used as a dumping area for dead trees, rocks, etc.

Type 3 Wetland

Grading of the TH 65 southbound lane and Connector Road A will completely fill this pond. See project map, page 165.

Because of the location of the pond it is not possible to shift the alignment to minimize encroachment. Also, any alignment shift in an easterly direction would result in CR 67 encroaching into Florence Lake, which would be very undesirable.

C - At this location between inplace TH 65 and Florence Lake is a six-acre woodlot of mixed deciduous-coniferous trees with heavy underbrush on the east edge. Near the middle of the woodlot is a small wet depression of less than 1/2 acre that could be classified as a Type 2/6 wetland. Due to the location and extremely small size, it appears this wetland will be destroyed by construction activities.

Type 2/6 Wetland

Because of the restrictions of Florence Lake on the east and the inplace roadway and B.N. Railroad on the west, no alignment shift is possible without greatly increased expense or substantial adverse environmental consequences such as lake encroachment. The woodlot will be bisected by the proposed bypass alignment, eliminating 60% to 70% of the mature trees.

Due to the disturbances created by the inplace roadway, railroad and residences, and the woodlot's isolation from other wildlife habitat, it is questionable how significant the woodlot is to wildlife. The mature pine, spruce and oak trees are aesthetically important and as many as possible will be saved.

D - The proposed highway alignment will encroach on the north and south ends of a six-acre, Type 3 wetland and traverse a small Type 2 wetland less than two acres.

Type 2 & 3 Wetlands

These wetlands and adjacent grasslands are fair to good waterfowl and upland game producers during normal years, providing loafing and feeding areas as well as good nesting cover. Alteration of the Type 3 wetland will be kept to a minimum and should amount to about 1/2 acre. The Type 2 wetland will be virtually lost, with approximately 3/4 acres filled by road embankment.

Alternatives were researched to minimize impacts on this wetland area. An alignment shift to the east is impractical because even with a maximum allowable degree of curvature, encroachment in the wetland could not be eliminated and would result in problems associated with Florence Lake, i.e. fill placed in the lake, shoreline disturbance, etc. Shifting the alignment west to locate the right of way corridor adjacent to the Burlington Northern Railroad would result in less impacts to the Type 2 wetland but similar overall detriments to the more valuable (as waterfowl habitat) Type 3 wetland. Independent roadways with the northbound lane east of the wetland and southbound lane between the wetland and the railroad were also analyzed. Although direct impact could be minimized, the resultant isolation of the wetland would no doubt decrease its value to wildlife. It would also be more costly and require more right of way to be purchased. None of these alternatives are desirable because they would result in a poorer geometric design.

In order to minimize adverse impact, construction limits (which limit a contractor's activity within the right of way corridor) will be adjusted to preserve natural vegetation. Outside of the 30-foot safety zone, slopes will be steeped from 6:1 to 3:1. Also, drainage will be conducted to this wetland, hopefully raising water levels and increasing productivity.

Two ponding areas are proposed in this area. South of the existing Type 3 wetland will be a pond of approximately 4 acres (see project map, page 165). A 1-2 acre pond east of the Type 3 wetland will enhance the existing wetland (see project map, page 167).

E - North of CR 45, the bypass traverses an eight-acre pasture which is presently used for grazing cattle. Within the pasture is a Type 4 wetland of approximately three acres. Type 4 wetlands are normally the best breeding-feeding areas for waterfowl. This pond is used by ducks, herons and shorebirds. Mallards, wood duck and teal have been observed feeding and although no broods were sighted, the pond should produce several broods of puddle ducks per year.

Type 4 Wetland

The proposed bypass alignment will nearly eliminate this pond and its usefulness as wildlife habitat will be greatly reduced. Because of this wetland's small size, it could not be considered a major wetland but its destruction is probably the project's most significant single impact to biological resources. Approximately 2.5 acres will be filled.

The proposed roadway alignment in the vicinity of the wetland is on tangent or straight for approximately 1-1/2 miles. Any alignment shift to avoid this wetland would result in a greatly reduced tangent section and a poorer overall geometric design.

Shifting the alignment east would reduce the length of tangent to approximately 1/2 mile and would require two additional curves. CR 45 would also have to be bridged by TH 65 on curve which is more costly and a less safe design. A shift of TH 65 mainline roadways would require a consequential shift of CR 67 resulting in a disruption of a small Type 3 wetland (east of proposed TH 65, south of CR 45) and conifer woodlot. A westerly shift would destroy the adjacent Type 3 wetland and require the displacement of an additional residence.

Impact to the wetland could be minimized by bridging. A pair of bridges 500 feet long, costing $500,000 to $600,000 each, would result in only minimal physical disturbance to the wetland but may have adverse ecological effects due to lack of sunlight under the bridges.

Two ponding areas are proposed at this site. The pond north of the proposed alignment should be about 1 acre in size. South of the alignment a 4 acre ponding area is proposed. See project map, page 167.

Type 5 Wetland

F - The oak savanna cattle pasture adjacent to the Type 5 wetland (Joe's Lake) may provide some nesting cover for game birds and songbirds. It is also used by rodents - especially squirrels.

As many oak trees as possible will be protected for aesthestic reasons.

Other than minor disturbance during construction, such as noise, dust, etc., the Type 5 wetland and its riparian vegetation will not be affected. There will be no encroachment or fill entering this wetland.

Type 5 Wetland

G - North of the TH 65/95 interchange, TH 65 traverses a 40-acre woodland/wetland complex. The wooded area is mixed deciduous with a heavy undergrowth of brush, sapling trees, vines and woody forbs. The wetland, a 13-acre Type 5, is the best waterfowl habitat within the project area. There were also sighting and sign of shorebirds, heron, furbearers and songbirds.

Approximately seven acres of this wooded complex will be within the right of way corridor and about five acres will be devegetated.

There is a small slice of this wetland within the proposed right of way corridor. Steepening the inslope from 6:1 to a 3:1 outside of the safety zone will eliminate any fill encroachment in this wetland. No alteration of emergent aquatic vegetation should result.

Removal of approximately five acres of wooded habitat and bisection of the woodlot may result in a decrease of rodents, songbirds, and small game species that utilize this woodland/wetland complex.

The main impact on the wetland will be short term construction related disturbance and operational disturbance such as noise. These disturbances will be minimized by maintaining a fringe of trees to act as a buffer between the roadway and the wetland.

Type 6 Wetland

H - North of Cambridge and west of inplace TH 65 there is a mixture of pine grove, hardwoods, low brush, Type 6 wetlands and abandoned pastureland. This blend of plant associations creates numerous "edges" that are important wildlife areas. The area is good winter cover for certain game species, especially pheasant. It also provides upland nesting areas.

There may also be white-tailed deer that are seasonal residents or migrate through the area.

Due to the maze of wetlands north of Cambridge, it is impossible to construct TH 65 on new location without traversing and destroying a certain amount of wetlands.

Approximately five acres of the Type 6 wetland in the impact area are within the proposed right of way corridor. Construction activities will alter approximately three acres of wetland vegetation.

The proposed crossing of this wetland is the best location in respect to impacts, residences and other adjacent wetland. Other alignment controlling factors are the inplace TH 65, Burlington Northern Railroad and Rum River Flood Plain.

An alternative to this alignment is upgrading the inplace roadway in this location which would require transitioning into the inplace two-lane roadway further south. This alignment revision would severely impact the residential industrial area of Cambridge north of TH 95 and east of inplace TH 65.

Another alternative is running the roadway over the wetland using bridges. Bridging this wetland would require a pair of bridges 750 feet long at a cost of 1.5 to 2 million dollars. Pier construction and placement would also cause a disturbance of this wetland.

The most important mitigation measure for this area will be to limit construction disturbance, thereby conserving natural vegetation and minimizing the impact to wildlife habitat. Present drainage patterns will be maintained. Water levels will not be lowered as a result of this project.

South of the north interchange and west of the proposed alignment a long, narrow ponding area is proposed. This excavated pond should be about 5 to 6 acres in size and will be adjacent to the existing Type 6/7 wetland. See project map, page 169.

I - From the north interchange to the project's northern terminus, the proposed alignment traverses a lowland area of approximately 300 acres. The area is dominated by deciduous trees and a few tamarack, tolerant of occasional wet conditions. There are also a few high oak knobs and Type 2, 6 and 7 wetland interspersed. This lowland is drained by several channelized intermittent streams that drain into the Rum River by way of Beckins Creek.

Types 2, 6 & 7 Wetlands

The dense vegetation provides cover and food for white-tailed deer, ruffed grouse, rabbits, squirrels and many species of songbirds and other non-game animals.

Construction of this section of the bypass will result in alteration of an estimated six acres of Type 2 and 6 wetlands and 13 to 15 acres of woodland.

An alignment shift to the east would minimize impact on the wetlands. This alternative is not feasible because it would displace five residences. The wetland is not of sufficient value to warrant the increased socio-economic impacts. Impacts will be mitigated by preserving natural vegetation whereever possible and also revegetation of the interchange area with plant species to provide food and protective cover for wildlife.

Southwest of the Township Road Connection a 2 acre ponding area is proposed. This pond appears to be more feasible and desirable than ponds within the loops of proposed north interchange. See project map, page 169.

Wetland mitigation measures

In the Bypass Study Area, which is a corridor approximately 2000 feet wide and 6.7 miles long containing the proposed alignment, there are numerous wetlands and other water bodies totaling over 450 acres. It is estimated the bypass will destroy approximately 14 acres of Type 2, 3, 4 and 6 wetlands, which is about 3 percent of the total in the study area.

Overall Wetland Impact

Considering the size of the project and the number of wetlands in the Cambridge area, overall wetland impact is minimal. This is mainly due to special design techniques enumerated on page 52-53 that minimize disruption of wetlands. No major wetland systems are destroyed or significantly affected, but the accumulative effect of encroachment on several small wetlands will mean a loss in wetland habitat and a corresponding loss in vegetation and wildlife.

Wetland Replacement

Wetland destruction resulting from this project should be equitably supplanted by the construction of six shallow water ponds totaling an estimated 18 acres. The replacement wetland concept will be a mutually beneficial design (compatable engineering and environmental considerations) because they will also be used as an important source for borrow material.

Ponding Areas

All ponding areas will be constructed adjacent to the proposed bypass right of way and contiguous to natural wetlands. In order to construct potentially viable, diverse and productive wetlands the ponds will have irregular shorelines and variable depths with loafing or nesting islands. Maximum water depths will range from 2 to 4 feet with most of the shorelines gradually sloped to promote a dense growth of emergent aquatic vegetation. Surrounding uplands will be revegetated with a compatible vegetation planting. These "created" Type 4 wetlands should augment the natural productivity of the remaining wetlands and other wildlife habitat and enhance the intrinsic value of the landscape.

These ponding areas are indicated on project maps, pages 165-169.

Easements will be acquired for properties needed to effectuate the borrow pit/ponding areas. Stipulations of these easements will be determined by site specific conditions at each proposed ponding area. There would be no custodial control conveyed to the DNR or other State or Federal agencies.

After consultation with the Minnesota Office of the Attorney General it was concluded that in this case State Highway Trust Funds could not be allocated to other agencies or organizations for conservation purposes or for the acquisition of existing wetlands to protect against future destruction.

Highway drainage will be conveyed to wetlands wherever practicable to increase water levels and purify runoff.

Inundation of highway right of way and adjacent properties by the placement of undersized drainage structures or elevated culvert flow lines has been investigated and found to be not an advantageous situation. The normal right of way corridor is not sufficient to accommodate a productive wetland without ponding water on adjacent properties. Damages paid for inundated properties (due to the decrease in value or agricultural productivity) would equal total land value. The resulting replacement wetlands would not be more desirable or productive than the excavated ponding areas. (By manipulating slope, depth and contour, excavated ponds should precipitate higher quality habitat because of greater diversity and interspersion of cover.)

Undersized or elevated culverts could also result in an increase in flood damage potential because of incidental changes in hydraulic effectiveness and decreased capacity of drainage structures.

Interagency Coordination

Interagency coordination has been maintained throughout the development of this project to insure its consistency and compatibility with State and Federal policies for protection of the environment. Field reviews have been conducted by the Department of Interior, U.S. Fish & Wildlife Service and the Minnesota Department of Natural Resources, Division of Fish and Wildlife. (See Section XI, COORDINATION, page 113). Their concerns have been taken into consideration in the development of this project. Impacts to wetlands were identified as the most significant environmental consequence. Measures to minimize harm and mitigation features specifically recommended by these agencies have been incorporated into the bypass design. These agencies have also reviewed and concurred with the replacement

wetland (ponding areas) concept and will continue to be involved in the planning and implementation of wetland mitigation.

Ecological summary

Biotic Community

Due to the historical disruption of natural succession by lumbering and agriculture, the biotic community is not at a mature or climax stage. The project area is in several successional stages from constantly disrupted row-crop fields to more advanced deciduous forest. These woods, wetlands and farmland have a variety of dominant plant associations and vegetation that is the major determining factor in the relative importance of the area as suitable wildlife habitat.

Plant Associations

The proposed bypass construction will result in a disruption of dominant plant associations. All disturbed areas not paved will be revegetated, resulting in a change in plant species and a change in species diversity for both plant and animal populations. These changes may be beneficial in certain situations. Revegetated roadsides will generally be better quality wildlife habitat than farmland but poorer quality than "wild" or "naturalized" areas to be altered by proposed bypass construction.

Ecosystem

It is doubtful the project will have any significant effect on the ecosystem with replacement vegetation adequately filling the niche of primary producers eliminated by construction activities. Individual plants and animals may be eliminated and there will will no doubt be a change in dominant species but the food chain will not be permanently altered and new species will fill vacant niches. Therefore, energy and nutrient exchange should remain in a steady-state condition.

D. Agriculture

Farming

Farming activities presently comprise the major land use in the project area. Due to the low natural fertility of the excessively drained sandy soils, area farms are not particularly productive. Improved farming practices such as irrigation are greatly improving agricultural production. There is no irrigation within the right of way corridor.

Agricultural Land Classification

The Department of Agriculture - Soil Conservation Service has a Land Inventory and Monitoring Memorandum (MN-1) regarding identification, location and mapping of prime agriculture land. This inventory classifies land according to present and potential agricultural projectivity and includes the following categories:

1. Prime Farmland
2. Good Farmland
3. Marginal Farmland
4. Submarginal Farmland
5. Unique Farmland

The following is a breakdown of land within the right of way corridor and a description of each classification:

Good Farmland is that land which has the soil and climatic qualities needed to produce high yields of crops for food or fiber when intensive management is applied to overcome the hazards and limitations.

82% of the right of way corridor

Marginal Farmland is that land which has soil and climatic qualities such that the production of food and fiber is restricted even when the above normal level of modern farm management is applied.

16% of the right of way corridor

Submarginal Farmland is land that has extreme hazards of wetness, drouthiness, or erosion and generally is not suited to cultivation. It is mostly used as grazing land or woodland and may be moderately productive when managed.

2% of the right of way corridor

Prime or Unique Farmlands

The U.S. Department of Agriculture, Soil Conservation Service, has reviewed this project and has determined that there are no prime or unique farmlands present; however, the sand soils would be considered such if they were irrigated.

Of the 383 acres needed for the proposed improvement, approximately half is used for agriculture activities. Presently 169 acres are used for row crop production and 18 acres are pasture.

Farms Affected

Seventeen farms will be affected by the proposed bypass. All will experience a loss in production (productive land) due to the right of way acquisition.

Of these farms, two are diversified row crop-fee grain-livestock operations, while 15 are devoted to cash crop production.

AGRICULTURE IN ISANTI COUNTY

	1954	1959	1969	1973 (estimate)
Total Farms	1,470	1,306	934	879
Average Size of Farms (acres)	157	161	157	149
Land in Farms (acres)	232,150	210,859	146,471	131,180
Livestock (numbers):				
Dairy Cows	12,448	10,428	6,279	5,900
Beef Cattle	815	1,014	1,812	2,600
Hogs	8,688	12,285	7,000	8,100
Sheep	2,441	3,190	757	600
Poultry	156,000	87,000	180,000	192,000
Crops (acres):				
Corn (Grain)	15,643	19,426	15,694	22,500
Corn (Silage)	7,760	6,626	3,922	4,500
Small Grains	27,742	17,306	9,019	9,100
Soybeans	N.A.	4,165	9,244	8,800
Hay (All)	27,780	22,890	19,800	14,700

Source: Isanti County - Overall Economic Development Plan, May, 1977.

A disruption of normal farming activities will result from the severing of 11 farms. Most severed parcels will be large enough to farm but due to the freeway design, access will only be provided via interchanges and frontage roads.

Farmland severance will result in several remnants being isolated.

- Impact Area D
  Less than one acre of farmland exists between the proposed right of way and the crescent shaped Type 3 wetland. This parcel will be inaccessible and therefore lost to production. A borrow pit/ponding area appears to be compatible at this site and is proposed.

- Northwest of the TH 95 interchange is a 900' sliver of row crop field which will be severed from the main (remaining) field. This remnant of slightly more than one acre will no doubt experience a change in land use.

- Impact Area H
  Approximately 1/2 acre of farmland will be isolated between the proposed roadway and the Type 6 wetland.

- Southwest of the north interchange (between Impact Area H & I) will be a row crop field of about 4.5 acres isolated between the proposed roadway and the Beckins Creek wetland (Type 6 & 7) complex. Access to this area will not be provided due to increased wetland destruction resulting from an access road. It is proposed that this remnant be converted to a borrow pit/pond area and therefore would be lost as agriculture production.

Total acreage of these "uneconomic" remnants to be lost to agriculture production is anticipated to be approximately 7 acres.

All other remaining agriculture lands should not experience a change in land use directly resulting from bypass construction (due to uneconomic remnant, circuitous travel, etc.). Just compensation for severance of farmlands will be made.

E. Parks, Recreation Areas, Historic and Cultural Sites

Parklands and Recreational Areas

The proposed project will not require the use of land from any publicly owned parklands or recreational areas of national, state or local significance for which approval under Section 4(f) is required. The location of the Cambridge City Park is indicated on exhibit page 21.

Local Historic Sites

The Isanti County Historical Society was contacted to determine locations of any local historically significant sites. A review of these sites revealed that none are located within the vicinity of the proposed improvements.

Minnesota Historical Society Review

The Minnesota Historical Society surveyed the proposed improvements in 1971. A small prehistoric habitation site was discovered in the southeast quadrant of the proposed TH 65 and 95 interchange. In 1975 the Minnesota Historical Society re-surveyed the area to validate the 1971 survey data. Testing on the site reported in 1971 (the Lindbergh Site) revealed cultural materials occurring with a very low density. This site had also been completely disturbed by long-term cultivation. For these reasons, the Minnesota Historical Society recommended that no further consideration is required for this site.

Since the 1975 survey, a revised layout has been developed for the proposed bypass. Revisions include:

- The south interchange has been shifted westerly to improve interchange geometrics and avoid encroachment into Florence Lake (Paul's Lake).

- Mainline alignment shifts were made between the south interchange and TH 95 interchange to minimize involvement with a natural drainage channel (easterly shift) and eliminate encroachment into Joe's Lake (westerly shift).

- Mainline (TH 65) curve was placed within the TH 65 and 95 interchange.

- North of TH 95 interchange the two mainline curves have been replaced by a long compound curve to avoid pond encroachment.

- Railroad track crossing revised to minimize impact on a manufacturing plant (expansion plans) and avoid a high-pressure gas line.

The Minnesota Historical Society was contacted due to the proposed alignment revisions. The Society requested that a copy of the revised layout, recently staff approved, be forwarded for review. This review revealed no sites of

historic, architectural, cultural or archaeological significance within the area of the proposed improvement. There are no sites in the area which are on the National Register or eligible for inclusion on the National Register and, therefore, none which may be affected by the proposed bypass. A copy of the letter of effect from the State Historic Preservation Officer is included in Section XI, COORDINATION, COMMENTS & RESPONSES, page 113.

A copy of the staff layout for the Cambridge Bypass with the six proposed ponding sites was sent to the Minnesota Historical Society for review. This review revealed no sites in the area which are on the National Register, or eligible for inclusion on the National Register, and, therefore, none which may be affected by construction of the ponding areas. A copy of the letter from the State Historic Preservation Officer is included in Section XI, COORDINATION, COMMENTS & RESPONSES, page 113.

In the event an archaeological or cultural site is discovered during construction, it is the policy of Mn/DOT to notify the State Historic Preservation Officer immediately and discontinue any construction operations in the immediate vicinity of the discovery until an inspection can be made of the site by the State Historic Preservation Officer.

F. Air Quality

MPCA Memorandum Of Understanding

The air quality impact of the proposed improvement has been analyzed. The proposed improvement is not anticipated to have significant air quality impacts and is considered consistent with the approved State Implementation Plan (SIP). A memorandum of understanding with the Minnesota Pollution Control Agency (MPCA) specifies: (1) that prior consultation with the MPCA is considered as accomplished for highway sections outside of a Standard Metropolitan Statistical Area (SMSA); and (2) an air quality analysis, which demonstrates that the project is considered consistent with the approved SIP, is considered as accomplished for highway proposals outside of SMSA where the annual average daily traffic is not expected to exceed 20,000 vehicles per day (including intersecting traffic) within 10 years following construction. This highway proposal meets these criteria.

Screening Procedure

The EPA 1975 Volume 9 screening procedure, Evaluating Indirect Sources, updated with the EPA 1978 (Mobile One) emission factors was also used to estimate the peak carbon monoxide concentration at the nearest critical receptors along this project. The screening procedure assumptions include a 1 meter per second wind at 10^{o} to the roadway (variable direction at intersections), a Pasquill-Gifford stability classification of "D", an 8-hour persistence factor of 0.6, 10% cold starts at 20^{o}F, and a 1975 background concentration of 5 and 2 ppm for 1- and 8-hour periods, respectively. The 1975 background concentration for rural areas is 1 ppm for both the 1- and 8-hour periods. The following 1- and 8-hour concentrations have been calculated (and background concentrations added) for the critical receptors. Hourly traffic volumes utilized are in parenthesis.

Receptor Location ***	1983 1-Hour	1983 8-Hour	2000 1-Hour	2000 8-Hour
(1) South of South Interchange on Bypass (residence) 4-lane divided (170 feet west of proposed southbound roadway)	2.3* (1145)	1.3* (477)	1.6* (1935)	1.1* (806)
(2) Present TH 65 and TH 95 signalized intersection (Hotel) 4-lane undivided (42 feet east of TH 65 centerline)				
a. With bypass constructed	16.8** (934)	4.7** (389)	7.3** (1370)	2.4** (570)
b. Without bypass constructed	20.3** (2079)	5.9** (866)	9.3** (3016)	2.8** (1257)

* Rural background concentration used.
** Urban background concentrations used.
*** See map on page 79 for receptor locations.

Federal and State Air Quality Standards

Although the do-nothing alternate would increase the concentrations at the present signalized intersection in Cambridge, all predicted concentrations are well below the Federal Standards of 35 ppm and 9 ppm and the Minnesota Standards of 30 ppm and 9 ppm for 1- and 8-hour concentrations, respectively.

G. Noise

The proposed TH 65 bypass (fully controlled access freeway) passes through mainly rural undeveloped land with some residential strip development present along TH 65 and 95 and local county roads.

Noise Analysis

This noise analysis is based upon field noise readings (measured in decibels or dB) and projected traffic volumes contained in Systems Planning and Analysis Report No. S-196. Noise levels were predicted in accordance with the procedures outlined in National Cooperative Highway Research Program reports 117/144.

Sites Exceeding Federal Standards

Based upon this analysis, it has been determined that 32 businesses along existing TH 65 are currently exposed to noise levels exceeding the Federal Design Noise Level of 75 decibels (dBA) with 76 dBA maximum at the closest receptor. Analysis of the no-build alternative reveals that the present noise levels on TH 65 would increase by up to 12 decibels by the year 2000. This increase exposes an additional 12 businesses to noise levels exceeding the Federal Standard of 75 dBA (Category C). This increase exposes 44 residences to noise levels exceeding the Federal Standard of 70 dBA (Category B).

Sites Impacted After Bypass Completion

A decrease of up to seven decibels (based upon predicted noise levels) along present TH 65 is expected upon diversion of through traffic onto the completed bypass. There will be no receptors along present TH 65 exposed to noise levels in excess of Federal Design Noise Levels upon completion of the bypass.

Sites Exceeding State Standards

An analysis was also made using the MPCA NPC-2 Noise Standards of 65 dBA (L10) residential and 70 dBA commercial. At the present time there are 39 residences and 46 businesses along inplace TH 65 that are exposed to noise levels in excess of these standards (residential up to 73 dBA, commercial up to 76 dBA). If the proposed bypass is not built, there would be 148 receptors (92 residences, 56 businesses) exposed to noise levels in excess of these standards by the year 2000. With the construction of this proposed facility, this number of noise receptors will drop to 74 (42 residences, 32 businesses) by the year 2000.

Construction of the bypass will expose a number of receptors to noise levels exceeding MPCA NPC-2 Daytime and Nighttime Standards by the year 2000. Following is a tabulation of impacted sites and maximum noise levels in parenthesis.

		Daytime		Nighttime	
		L_{50}	L_{10}	L_{50}	L_{10}
(NAC-1)	Residences on TH 65 Bypass	3 (63dBA)	5 (69dBA)	8 (57dBA)	9 (64dBA)
(NAC-1)	Residences on TH 95	68 (69dBA)	80 (79dBA)	85 (58dBA)	89 (69dBA)
(NAC-2)	Businesses on TH 95	9 (70dBA)	15 (81dBA)	0 (61dBA)	7 (71dBA)

For a detailed evaluation of these impacted sites (MPCA criteria) refer to the supplement to the Preliminary Noise Report available at the Mn/DOT, Field Operations Division, Brainerd.

Following is a tabulation of the sites impacted (FHWA criteria) by the proposed improvement. See Exhibit, page 79 for receptor locations. For FHWA and MPCA noise standards see pages 73 and 74, respectively.

Site	Receptors	Category	1977 Ambient	Year 2000 No-Build	Year 2000 Built	Abatement Considered
1	6	B	47-41	(1)	66-55	Yes (2)
2	5	B	45	(1)	60	Yes (2)
3	1	B	43	(1)	64	Yes (2)
4	1	B	49	(1)	67	Yes (2)
5	1	B	45	(1)	58	Yes (2)
6A	31	B	67-64	77-74	79-76	Yes
6B	5	B	67	72	72	Yes
6C	12	C	71	80	81	Yes

(1) No change over ambient levels anticipated.
(2) Abatement considered due to substantial increases in noise levels.

Noise abatement measures were evaluated to lessen the noise impacts from this project. Acoustical barriers were studied to determine their cost/effectiveness. Following is a summary of site evaluations:

Sites 1-5

Noise Abatement Measures

Noise abatement measures were evaluated for these sites. Although the predicted noise levels for these sites do not exceed Federal Design Noise Levels, they will experience a significant increase in noise levels. Since this analysis indicated that timber walls (the least expensive type of abatement) are not economically justified, no walls are proposed. Other noise abatement measures (noise insula-

FHWA DESIGN NOISE LEVEL (dBA)/ACTIVITY RELATIONSHIPS

Land Use Category	L_{10}	Description of Land Use Category
A	60 (Exterior)	Tracts of lands in which serenity and quiet are of extraordinary significance and serve an important public need, and where the preservation of those qualities is essential if the area is to continue to serve its intended purpose. Such areas could include amphitheaters, particular parks or portions of parks, or open spaces which are dedicated or recognized by appropriate local officials for activities requiring special qualities of serenity and quiet.
B	70 (Exterior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, picnic areas, recreation areas, playgrounds, active sports areas, and parks.
C	75 (Exterior)	Developed lands, properties or activities not included in categories A and B above.
D	--	For requirements on undeveloped lands, see paragraphs 11c and a of FHPM 7-7-3.
E	55	Inside residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals and auditoriums.

MPCA DESIGN NOISE STANDARDS (dBA)/ACTIVITY RELATIONSHIPS

Noise Area Classification	Day (0700-2200) L_{50}	Day (0700-2200) L_{10}	Night (2200-0700) L_{50}	Night (2200-0700) L_{10}	Description of Land Activities
1	60	65	50	55	Household units, group quarters, residential hotels, mobile home parks or courts, transient lodging, motion picture production, medical and other health services, correctional institutions, educational services, religious activities, cultural activities and natural exhibitions, entertainment assembly, designated camping and picknicking areas, resorts and group camps, and other related cultural, entertainment and recreational activities.
2	65	70	65	70	Rail and bus terminals, air terminals, marine terminals, automobile parking, telegraph message centers, transportation services and arrangements, wholesale trade, retail trade, professional services, contract construction services, government services, public assembly, amusements, recreational activities, parks.
3	75	80	75	80	General manufacturing, industry, transportation (except terminals), highway and street right of way, communications, utilities, fairgrounds, amusement parks, agriculture and related activities, forestry and related services, fishing and related services, mining and related services, and other resource production and extraction not mentioned elsewhere.

tion, etc.) were considered although none would be practical for the elimination or reduction of highway noise impacts on these affected receptors. For a discussion of additional measures considered see page 76.

Sites 6A, 6B & 6C

These sites consist of that portion of TH 95 on the east side of Cambridge extending from approximately 1/2 mile east of the interchange with proposed TH 65 westerly to the present junction with inplace TH 65 in Cambridge. This segment of road is approximately 1.25 miles in length. Thirty-six residences and 12 businesses will realize noise impacts along this portion of roadway. The businesses affected are all located in a three block section of the Central Business District (CBD) of Cambridge from the junction of inplact TH 65 to three blocks east (0.28 miles). The 36 residences are located on the easterly 0.97 mile section of TH 95.

RESIDENTIAL

Site 6A

The ambient noise levels for the residential area west of the proposed interchange (31 receptors) range from 67-64 dBA.

Site 6B

The ambient noise level for the residential area east of the proposed interchange (5 receptors) is 67 dBA at the closest receptor.

According to projected traffic volumes, these residential areas along TH 95 will experience a noise impact (79 dBA at closest receptor) by the year 2000 with or without the construction of proposed TH 65.

To lessen the impact of traffic noise, timber walls were considered for sites 6A and 6B. Since this highway section has uncontrolled access, the numerous entrances and street intersections would require gaps in a noise wall to perpetuate local traffic. These gaps tend to have an amplifying effect on traffic noise. Experience indicates that a noise wall is ineffective unless it is continuous. Therefore no walls are proposed. Other noise abatement measures (noise insulation, etc.) were considered although none are proposed. See discussion following Commercial Site 6C evaluation.

COMMERCIAL

Site 6C

Noise abatement measures were considered in this area although none are proposed. Noise abatement is not feasible due to the urban design of the inplace roadway and the fact

that the store fronts abut the limited (66 feet) highway right of way corridor. Wall construction would also block the view of the store fronts from the public, causing inconvenience and the loss of visual advertising. Other noise abatement measures (noise insulation, etc.) were considered although none are proposed. See discussion below.

Noise Insulation

Noise insulation of the affected receptors would not be financially or economically feasible, since this type of noise abatement is generally used for non-profit institutional structures and it would do nothing to abate outside noise.

Traffic Control

Traffic control devices for prohibition or time use restriction of certain vehicle types such as heavy commercial would also be impractical. The primary purpose of proposed TH 65 (of freeway design) is to move the heavy concentration of traffic out of the city of Cambridge and onto a facility that can adequately handle the traffic volumes without reduced speeds. For this reason, speed limit modifications would also be impractical.

MPCA Truck Noise Standards

The noise predictions are based on projected traffic counts for the year 2000 but use present day traffic noise emissions for comparison. At the present time there are programs in operation to lower the noise output of traffic related noise generators. Areas of concern are muffling systems on trucks and tire designs. The Minnesota Pollution Control Agency, in cooperation with the Environmental Protection Agency, has established a maximum noise level of 83 dBA at 50 feet for trucks traveling at 35 miles per hour. This standard went into effect on January 1, 1978, and applies to all trucks manufactured after that date. By January, 1982, this standard will be lowered to 80 dBA. The present noise levels at 50 feet for trucks traveling at 35 miles per hour is 88 dBA.

Noise Report

The Preliminary Noise Report for this project was prepared and copies forwarded to the Minnesota Pollution Control Agency and U.S. Environmental Protection Agency for review and comment. Their comments and Mn/DOT responses are included in Section XI, COORDINATION, COMMENTS & RESPONSES, page 113 . This noise report is available at the Minnesota Department of Transportation, Field Operations Division, Brainerd.

Construction Noise

Construction noise has been considered and no long term impacts are anticipated. Those residences located near proposed bridges may be exposed to excessive noise levels due to pile driving operation. Effects will be short term and limited to daytime activity hours. The Minnesota Standard Specifications for Highway Construction, Section 7, Subsection 1701, states

in part that the contractor shall comply with all applicable laws, ordinances, regulations, orders and decrees in the performance of the construction. This would include any local noise control laws.

The Audible Landscape

The Minnesota Department of Transportation has furnished all Cities, Counties and Regional Development Commissions in Minnesota with copies of "The Audible Landscape." This handbook provides guidance for land use planning, plat layout and building design for compatible development near traffic noise corridors.

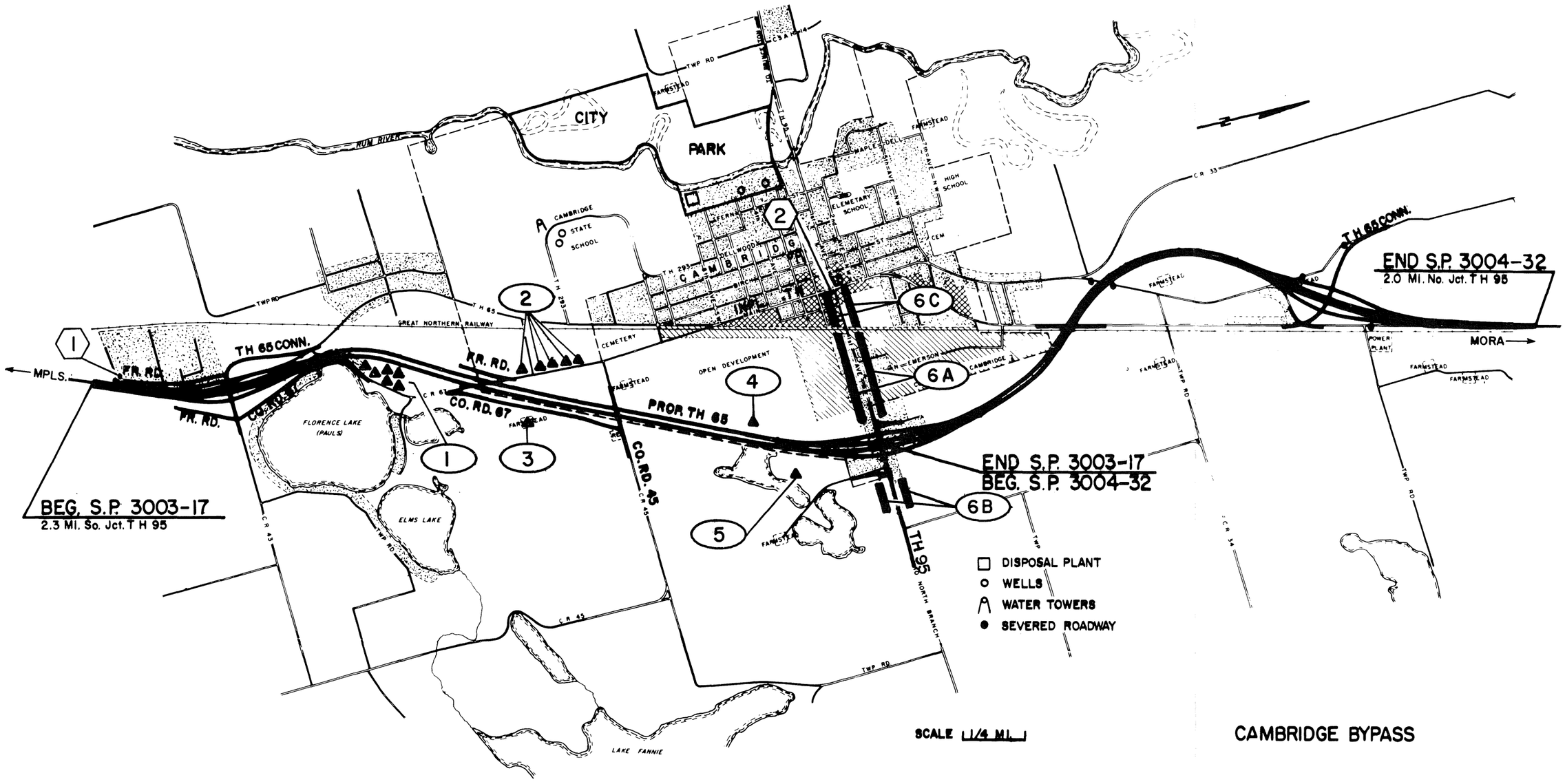
Local Coordination

A summary of the noise analysis for this project has been furnished to local officials to assist them in developing future land uses adjacent to the proposed highways.

In addition, those officials were informed that noise abatement measures will not normally be approved by the FHWA for those activities and land uses which come into existence after the date of public knowledge of the project. As established in the Draft EIS, this date of public knowledge occurred on July 6, 1978 the second Design Public Hearing on the Cambridge Bypass and Draft Environmental Impact Statement.

Plat Reviews

Proposed plats for land adjacent to all Minnesota State Highways are submitted to the Department for review prior to plat approval. When potential for noise impact is identified in the review process, it is noted in the review comments to insure that the approving authority is aware of an existing or possible highway noise impact on proposed noise sensitive areas.



CAMBRIDGE BYPASS

H. Construction

Borrow Sites

The majority of the fill material for this project will be obtained from cut sections with an estimated 1 to 1.5 million cubic yards moved within the proposed highway corridor. Borrow areas required as sources of embankment material and aggregates for bituminous and/or concrete must be finished to a desirable appearance with gentle slopes for future land use. The existing topsoil is removed prior to use of the borrow area and stockpiled for replacement subsequent to construction. It is not anticipated that locating borrow sources will be a problem.

SHPO Review

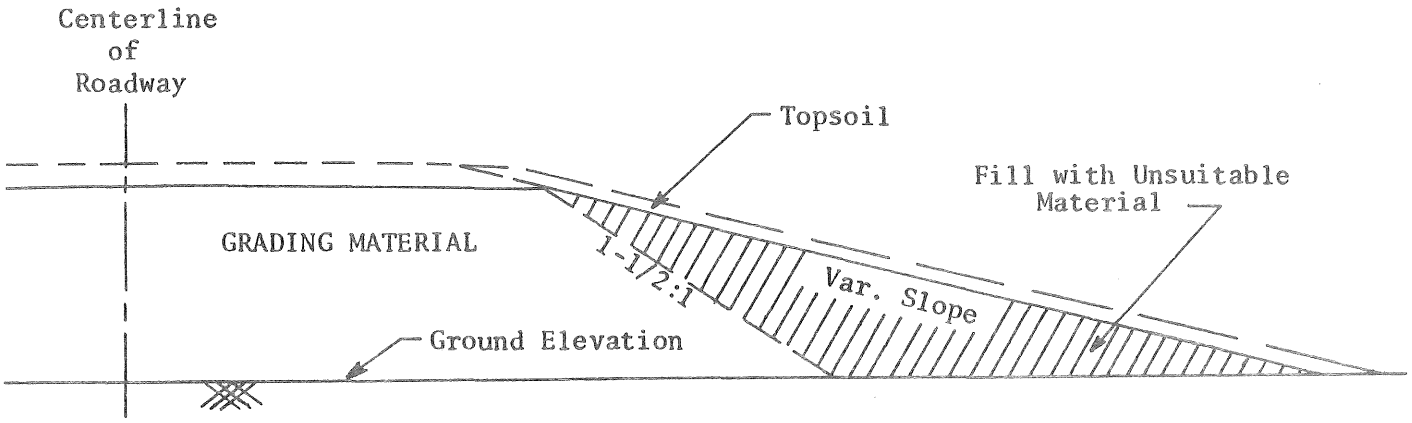
The special provisions for this contract will require the contractor to notify Mn/DOT of borrow pits (after rights have been acquired) to be utilized in the construction areas under Section 404 authority of the Corps of Engineers. Necessary clearance must be obtained from the State Historical Preservation Officer before borrow removal may begin.

Topsoil needed for revegetation and turf establishment will be salvaged from the grading sections and reused.

Unsuitable Soil Disposal

Materials usable for road building encountered in cut sections will be reused in adjacent fill sections. Unsuitable soil such as peat and muck will be disposed of in one of two ways:

- waste and disposal areas normally located outside of the permanent highway right of way.
- disposal within the right of way, placed on inslopes outside of a 1-1/2:1 grading slope.



Factors used in determining the type of treatment for unsuitable soil disposal are:

- degradation of water quality
- destruction of wildlife habitat
- destruction of important plant associations
- construction economics (ease and length of handling, consistency of material, type of roadway section, etc.)

In critical areas where the potential for environmental damage is significant, these materials will be used on inslopes of the roadway grade to the extent reasonable and practicable.

Design Considerations

Grade lines that are as compatible to the existing terrain as possible, along with the use of flat inslopes and backslopes with liberal landscaping, will be incorporated into the design plans to blend the roadway into the natural terrain. In those areas where environmental damage will occur, the construction limits will be minimized.

Contractor requirements

Air & Water Pollution

Precautionary measures will be utilized during the construction of this project to prevent air and water pollution. Controls over contractor's construction operations will be provided by the Minnesota Division of Highways "Standard Specifications for Highway Construction" and other regulations in effect at the time of construction. Additional controls relating to noise, air and water pollution will be included in the special provisions for the contract. The contractor is required to submit an erosion control plan for approval prior to construction. Necessary measures are taken to prevent pollution and degradation of any waters located within the construction area.

Erosion Control

The contractor will be required to incorporate all permanent erosion control features into the project at the earliest practicable time. Temporary pollution control measures will be used to correct conditions that develop during construction that were not foreseen during the design stage; that are needed prior to installation of permanent erosion control features; or that are needed temporarily to control erosion that develops during normal construction practices, but are not associated with the permanent control features on the project. Some examples of temporary control devices are mulches, slope drains, dikes, sediment basins, and turf establishment.

Clearing & Grubbing Operations

Where erosion is likely to be a problem, clearing and grubbing operations will be so scheduled and performed that grading operations and permanent erosion control features

can follow immediately thereafter if the project conditions permit; otherwise, temporary erosion control measures may be required between successive construction stages.

Temporary pollution control will include construction work outside of the right of way where such work is necessary as a result of borrow pit operations, haul road construction, equipment storage, and plant or waste disposal sites.

The engineer will limit the area of excavation, borrow and embankment operations in progress commensurate with the contractor's capability and progress in keeping the finish grading, mulching, seeding, and other such permanent erosion control measures current in accordance with the accepted schedules. Should seasonal limitations make such coordination unrealistic, temporary erosion control measures will be taken immediately to the extent feasible and justified.

Pollution Control Requirements on Paving Plants, Crushers, Etc.

Wherever a hot-mix paving plant, aggregate crusher or similar operation is to be conducted, the contractors will be required to acquaint themselves with the local conditions and regulations pertaining to air pollution before commencing operations. Water containing sediment from aggregate (or other) wash operations will not be allowed to enter public waters until its sediment content has been reduced by filtration, settlement, or other means to no more than that of the water into which it is discharged or will eventually enter. Wash water or waste from concrete mixing operations shall not be allowed to enter live streams. All applicable rules and regulations for pollution control, by any federal, state or local agencies relating to prevention and abatement of pollution, will be complied with in the performance of the contract work. The specifications contolling the construction perations do require, by reference, adherence to local and state laws pertaining to fugitive dust emissions and disposal of debris.

During construction, potentially harmful or toxic materials such as gasoline and oil will be kept in confined areas where spill impact will be minimized.

In conjunction with the proposed bypass construction, five frontage roads comprising a total length of approximately 1.9 miles will be constructed to minimize effects on local traffic circulation.

I. Social-Economic

1. Relocation

The right of way acquisition of approximately 383 acres for the Cambridge Bypass will affect the following:

Farms	17
Residences	20*
Businesses	2**
Public Buildings	1

Farms

Farmlands Acquired

Of the 17 farms affected, one had farmland severed when acquired in 1972 under the original proposed alignment in the vicinity of TH 65 and TH 95 interchange. Acquisition of one farm in 1972 required removal of the residence. The owner moved into Cambridge. The severed parcels of this farm are currently cultivated. Additional acquisition of one of the severed parcels is necessary for the currently proposed right of way corridor. The remaining portion of this parcel not to be acquired will be large enough to farm.

Farms Severed

Of the other 16 farms to be affected by the proposed Cambridge Bypass, 10 will have their productive agricultural lands severed. Generally, the severed parcels will be large enough to farm although direct access between severed parcels of each farm cannot be provided under the freeway design concept proposed for the bypass. The only means of access across the proposed bypass will be via the bridges at the three interchanges and CR 45 and the frontage road system. Severed parcels which may be too small for normal farming operations will be converted to other uses. Severance will result in approximately 7 acres of uneconomic remnants. Just compensation for severance of farmlands will be made.

The other six farms will be affected to the extent that a portion of their productive farmlands will be required for the proposed right of way corridor. Acquisition of one parcel by hardship was completed in 1974. Conversion of these parcels of land from agricultural to highway usage should not have a detrimental effect on normal farming operations on the remaining farmlands.

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* Includes two mobile homes, 16 single family residences, one unoccupied basement for a new home, and one combination residence/business.

** Includes a motel and a bottle gas storage area.

The proposed right of way corridor near the north interchange will require acquisition of three barns, a granary and a single car garage from one farm. There will be sufficient land on which to rebuild or relocate these structures if normal farming operations are to be continued.

Residences

Residential Tracts Acquired

Of the 20 residences affected by the TH 65 Cambridge Bypass, 14 parcels were acquired between 1970 and 1973. Following is a tabulation of all parcels acquired in the vicinity of the proposed TH 65 and TH 95 interchange:

1970

- One residence (acquired by hardship) - rentor moved to Rochester.

1971

- One residence (acquired by hardship) - owners were elderly couple, bought a home near Cambridge.

1972

- Three residences acquired - owners bought homes in Cambridge (one couple elderly).
- One residence acquired - owner moved to Bethel.
- One mobile home acquired - retired owner bought home near Cambridge.
- One residence acquired - rentor bought home near Cambridge.
- Two residences - rentors moved homes outside of Cambridge area.
- One mobile home - rentor moved to Grandy, owner relocated mobile home.

1973

- Garage and shed acquired on one parcel.
- Two residences - owners bought homes in vicinity of Cambridge.
- One residence/business (electrical supplies and contracting) - owner moved house and business into Cambridge.

1974

- Small parcels purchased from three property owners.

Minorities

This land acquisition is depicted on exhibit, page 87. No members of any minority group were affected by this acquisition.

Residences To Be Affected

In addition to the above acquired parcels, the proposed right of way corridor will also require the relocation of five single family residences and the basement for a new house (recently acquired by hardship).

The residents will not have sufficient land on which to relocate.

Businesses

Bottle Gas Storage Area

Two businesses may be affected by the proposed bypass. One business is a bottle gas storage area which may have sufficient land on which to relocate storage tanks. The owner has stated that he may relocate this business. This business is located in the northwesterly corner of the south interchange between the proposed southbound roadway and the connection to inplace TH 65.

Motel

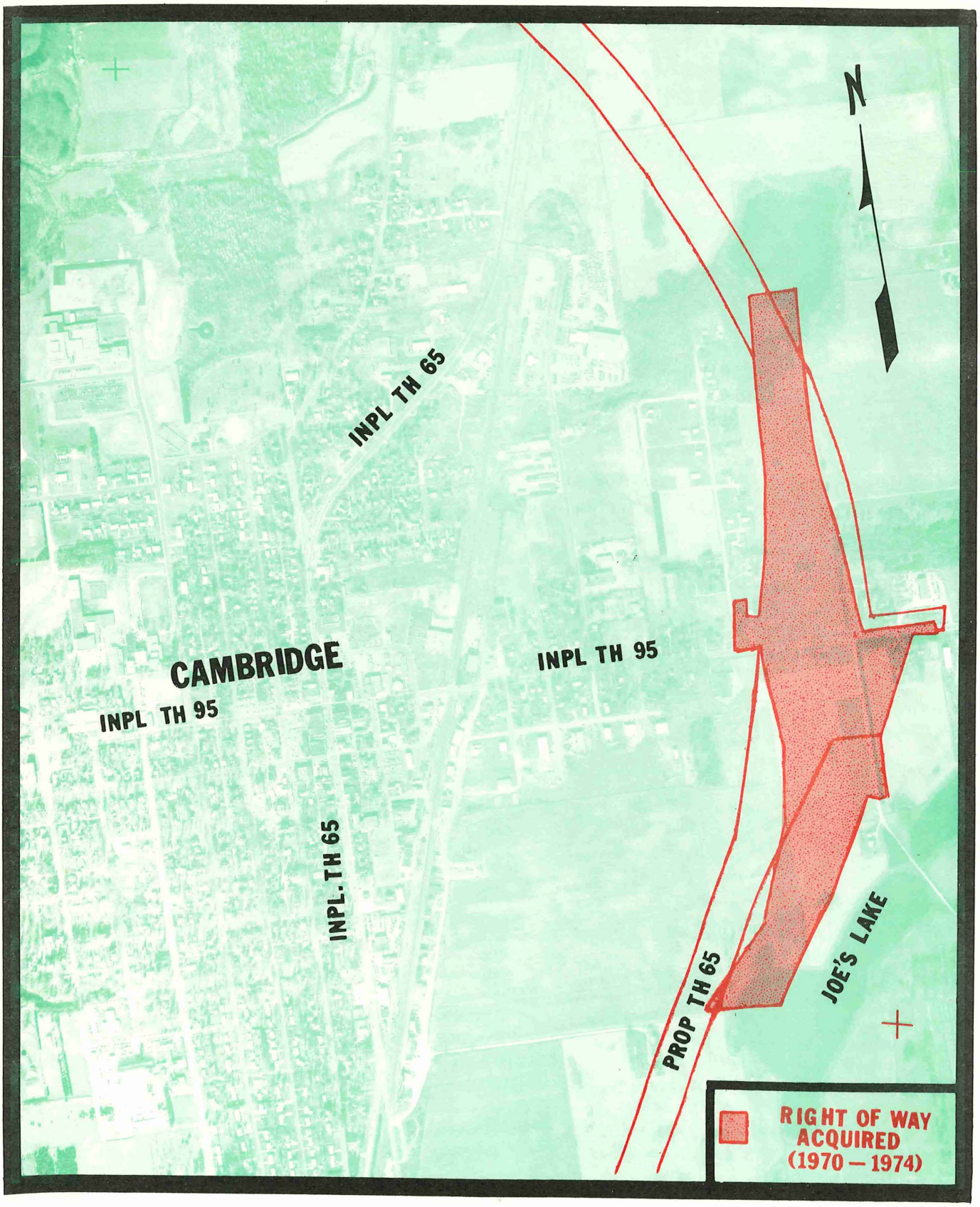
The owner of the other business requested that his motel be taken. Construction of the connection to inplace TH 65 at the south interchange will require relocation of this motel. The owner may relocate or rebuild on the remaining westerly tract of land.

Refer to Project Map, page 165 for these locations.

Public buildings

Township Hall

The public building affected is a Township Hall. In addition to being used as a youth care center (as documented in the Draft EIS) it also serves as the meeting hall for the Isanti Township Board and Alcoholics Anonymous. Since the Draft EIS was printed, Mn/DOT representatives have met with the Isanti Township Board. A frontage road alignment revision, acceptable to Isanti Township, will not require relocation of this public building from its present site.


N
INPL TH 65
CAMBRIDGE
INPL TH 95
INPL TH 95
INPL. TH 65
PROP TH 65
JOE'S LAKE
RIGHT OF WAY
ACQUIRED
(1970 – 1974)

Relocation Survey

A relocation survey has been conducted for the proposed improvement. There appears to be a range of income levels, family size and age groups. Contact with real estate agencies and examination of newspaper ads indicated that an adequate supply of decent, safe and sanitary housing is available in the area. Low income senior citizen housing is also available.

Compensation To Displacees

Fair and just compensation will be made for the lands and buildings affected by the right of way needs for the proposed improvement. A Comprehensive Relocation Assistance and Payment Program is available to assist displacees.

Financial Assistance

Rising housing costs, interest rates and moderate income may present a problem for some families. This problem should be alleviated with supplemental housing payments and interest differential payments. Maximum assistance will be provided in all cases. It is not anticipated that any minority groups will be affected by right of way acquisition.

2. Community, regional and state

Retail Businesses

Trunk Highways 65 and 95 presently pass through the business district of Cambridge. Numerous traffic-sensitive retail businesses exist along both highways with the majority of businesses along TH 65.

Economic Reports Of Similar Bypassed Communities

Since the proposed improvement involves construction of a freeway bypass around the City of Cambridge, reports of previously bypassed communities (1000-5000 population and exhibiting economic growth) were analyzed to determine economic effects the proposed facility may have. These reports include "The Economic Impact of a Freeway Bypassing Luverne, Adrian and Worthington" dated April, 1970 and "The Economic Effects of Interstate 94 on TH 10 Communities" dated December, 1972. These reports, which were prepared by the Minnesota Highway Department, Office of Engineering Standards, Research & Standards Division are available at the Minnesota Department of Transportation, Field Operations Division, Brainerd.

Bypass Effects On Economy

These reports indicate that those communities showing economic growth are least adversely affected by construction of a community bypass. Businesses dependent on local area trade generally show sales trends similar to those experienced before construction of a bypass facility.

These studies indicate that those traffic-sensitive businesses (eating and drinking places and service stations) dependent largely on passing traffic may suffer economic hardships when the bypass is constructed.

Many of these businesses, anticipating such a loss, may adjust their sales emphasis by concentrating on building up the local clientele, adding new products or improving their service. Such actions, as in the city of Luverne, have offset anticipated losses.

Bypass Benefits

The proposed Cambridge Bypass will benefit the community in the long run by reducing the present traffic noise and congestion and parking problems in the business district.

Cambridge CBD Plan

The Plan of the Central Business District for Cambridge developed in December, 1967, recognized as one of its primary goals the division of through traffic and local traffic through Cambridge. This plan stated that "...the development of a bypass route for Highway 65, outside the CBD area, will do much to accomplish this division." It further states that since traffic volumes on existing TH 65 between 1963 and 1990 are expected to nearly double, "...it is almost certain that a bypass route for Highway 65 will become a reality long before 1990. This will relieve much of the traffic pressure on Main Street in the CBD."

Diversion of the through traffic onto the proposed bypass will create a more relaxed shopping atmosphere and increase the attractiveness of Cambridge as a retail trade and service center.

Bypass Effects on Community, Neighborhoods

Since the proposed bypass is located along the east corporate limits, neither the community nor local neighborhoods will be split. The freeway bypass and its proposed location are consistent with the planning goals of the City of Cambridge. The proposed facility is reflected in the comprehensive plan for the City of Cambridge.

Industrial Development Potential

The proposed interchanges and easy access to the industrially zoned areas on the east side of Cambridge may attract new industry to this area. Although a loss of tax base will occur due to right of way acquisition, potential industrial development and increased land values in the interchange areas should offset such losses.

Economic Growth

Inevitable economic growth stimulated by construction of the proposed freeway bypass should more than offset any loss of business (including farming) due to displacement and relocation. It is anticipated that the sales tax base for financing state government will remain essentially unchanged by any effects directly attributable to this highway improvement.

3. Secondary

Development

The proposed freeway bypass of Cambridge has three interchanges; one at both the north and south connections to inplace TH 65 and one at existing TH 95. Bypassing of a community typically generate commercial and economic development near the accesses to the relocated highway facility which in this case are the three interchanges.

In the vicinity of the south interchange, residential development is already occurring west of present TH 65 and around Florence Lake east of TH 65. The area of this development lies in the southwest and northeast quadrants of the proposed South Interchange. It is not anticipated that commercial or industrial development will occur with the current zoning established by the county. The two southerly quadrants of the interchange are zoned agricultural, the northwesterly residential and the northeasterly shoreland district. The presence of Florence Lake in the northeast quadrant eliminates the potential of future development. If any secondary development near the south interchange does occur it will result in a corresponding loss in agriculture production.

The north interchange has a potential for development although the current county zoning is agricultural. Anticipated development includes residential and highway commercial. Farmland, wooded terrain and possibly Type 6 wetland could be affected by this potential development.

The proposed interchange of TH 65 and TH 95 has been identified by both the City of Cambridge and Isanti County as the most desirable area for development. Both the city and county have zoned this land accordingly. Residential strip development and scattered commercial development already exist along TH 95 in the area of the proposed bypass. Completion of the bypass is expected to encourage this development. For the most part, future development will utilize what is presently farmland. New commercial establishments may displace residential properties along the TH 95 strip development.

Several Cambridge area institutions and establishments, including School District No. 911 and Memorial Hospital, were contacted regarding a potential increase in demand for their services resulting from amplified development. These institutions anticipate no problems because presently they are not operating under maximum capacity conditions. Also, the growth of the Cambridge area has been taken into consideration in their long range planning thereby circumventing future capacity problems.

Cambridge Residential Development

The City of Cambridge is experiencing residential development due to its proximity to the Twin Cities metropolitan area. Most existing development lies within a north-south corridor between TH 65 and the Rum River. Scattered development is occurring east of TH 65 although most of the southwest and northwest areas of the community are developed for residential usage. The present central sewage system currently extends as far north as gravity flow will allow. In anticipation of future growth in this area, three lift stations have also been constructed.

County Economic Development Plan

The Isanti County Overall Economic Development Plan recognizes that providing utilities for the elongated development pattern of this community will be more costly than for expansion west of the Rum River. The present treatment facilities can handle the extensions anticipated by 1982 although growth to the west or north would require upgrading and enlargement of the present plant facilities. It is not anticipated that the proposed bypass will have any effect on the future expansion of the city water and sewer systems.

Local Zoning

The proposed bypass will generally serve as the east boundary of the urban limits of Cambridge; the city has already annexed this property and zoned it industrial. Development outside of these urban limits is subject to zoning by Isanti County.

Capacity On Existing TH 65

No significant secondary impacts on the adjoining highway sections covered in this EIS have been identified. The proposed bypass is anticipated to have projected traffic volumes (AADT's) ranging from 12,900 vehicles at the south end to 7,900 vehicles at the north end by the year 2000. The existing four-lane expressway south of the bypass presently handles 6,790 vehicles (1976 AADT). With this demand, this facility operates in a level of Service A defined as "free flow." The year 2000 traffic volume of 12,900 vehicles will also operate in level of Service A.

The existing two-lane facility north of the Cambridge Bypass to TH 107 can accommodate the present traffic volumes (1976 AADT's range from 4,120 to 4,790 vehicles) under level of Service B defined as "stable flow (upper speed range)." With the year 2000 traffic demand of 7,900 vehicles, this existing two-lane facility would operate in level of Service C defined as "stable flow." This would be an acceptable level of service for this facility.

Accident Rates

A three-year (1974-1976) accident analysis was also conducted for this 6.2 mile rural highway section. The accident rates per million vehicle miles (Acc/MVM) are as follows: 1974 - 1.2 Acc/MVM, 1975 - 2.0 Acc/MVM, 1976 - 1.9 Acc/MVM. An average of 17 accidents occurred annually on this highway section. For comparison purposes, the statewide trunk highway accident rates were

2.5 accidents/million vehicle miles in 1974 and 2.9 in 1975.

Upon completion of the proposed TH 65 bypass, existing TH 65 between the north and south interchanges will be turned back to local jurisdiction. This turn-back section is approximately 6.4 miles in length.

VI. ALTERNATIVES

A. Location

Bypasses

At the Location Public Hearing in Cambridge on May 14, 1969, an east bypass and a west bypass of Cambridge were considered. The east bypass alternate was selected based on comments received at the public hearing and on the Draft EIS.

The east bypass alternate was selected since it causes the least overall engineering, social, economic and environmental effects of all alternatives considered. The west bypass would cause extensive flood plain encroachment, an extensive channel change of the Rum River, destruction of more wetlands and potential Section 4(f) involvement (Cambridge City Park and High School). In addition, comments received at the public hearings and on the Draft EIS supported the east bypass of Cambridge.

1. East bypass

An east bypass was considered more desirable for the following reasons:

- The east bypass offers the most potential for future development of industrial-oriented business.
- The east bypass does not affect the residential expansion area to the south and west of Cambridge.
- The east bypass does not affect the high school and grade school in the northwest part of Cambridge. The west bypass would take part of the school grounds and future expansion area.
- Right of way costs are substantially lower and relocation problems are fewer for the east bypass.
- The east bypass would require no crossing of the Rum River whereas the west bypass would require two crossings of the Rum River and an extensive channel change.
- The Cambridge City Council, the Planning Commission of Cambridge, and the Isanti County Engineer favored the east bypass.

2. West bypass

An alternative investigated was the bypassing of Cambridge on new location, west of the major development area. This route has significant adverse impacts and construction problems resulting in greater costs and environmental detriments. Due to the numerous problems, this alternate was considered not practicable nor in the public's best interest.

Rum River Impacts

The West Bypass Alternate would result in extensive disruption of the Rum River in the Cambridge area. A portion of the alignment would parallel the Rum River flood plain and require two river crossings. Approximately 1.8 miles of this alignment would encroach into the Rum River flood plain and 1.2 miles would encroach into the floodway. Roadway embankment within the flood plain would decrease storage capacity and therefore compound potential flood problems. Fill would also encroach into three abandoned oxbows.

The TH 65/95 interchange would be located within the Rum River flood plain. The natural river channel would be in conflict with this interchange due to its close proximity and require a relocation of the channel. (See exhibit, page 101.) A 3970 foot channel change replacing 5610 feet of natural channel and reducing the river length by 1630 feet would be necessary for a suitable crossing of the Rum River. Approximately 640 feet of natural river channel would be filled. This channel change would also destroy the best flood plain marsh (Type 4 wetland) in the Cambridge area.

Wetlands

A west bypass would have a devastating effect on flood plain wetlands with an estimated 38 acres destroyed. The following is a breakdown of wetlands filled or physically altered by construction activities:

Type 2	6 acres
Type 3	7 acres
Type 4	4 acres
Type 6	21 acres

The Rum River flood plain and adjacent uplands traversed by this route are heavily wooded. Implementation of this alternative would result in the destruction of 28 to 33 acres of forest.

Cambridge City Park

The Cambridge City Park (shown on map, page 101) would be bisected by a west bypass. This alternate would require the acquisition of an estimated 24 acres of park property for right of way. Cambridge High School property would also be affected. The four acres of high school property needed for right of way includes a portion of an athletic training field. These properties fall within the purview of Section 4(f) of the Department of Transportation Act of 1966 (49 U.S.C. 1653 (f)).

Two rapidly developing residential areas would also be affected. A total of 16 residences would be displaced.

Right Of Way Acquisition

West bypass right of way acquisition:

Wetlands -	Type 2	8 acres
	Type 3	11 acres
	Type 4	7 acres
	Type 6	31 acres
Forested -	Deciduous	25 acres
	Lowland Deciduous	13 acres
	Conifer	3 acres
Agriculture land		31 acres
Abandoned farmland		7 acres
School property		4 acres
Residential		15 acres

Costs

Right of way and relocation costs could run in excess of $0.8 million. Construction costs (grading, surfacing, bridges, channel change, etc.) could run in excess of $5 million.

3. Upgrade existing facility

Existing Facility - Capacity & Accidents

As documented in Section I, BASIS FOR THE PROPOSED IMPROVEMENT, the existing two-lane facility traversing the City of Cambridge is incapable of accommodating future traffic demands. It would be necessary, therefore, to upgrade this highway section to a 4-lane facility with controlled access and provide sufficient width to accommodate left and right turn lanes. This would minimize accident potential and provide maximum capacity for this 4-lane facility.

Right Of Way Acquisition

Acquiring the right of way required for this 4-lane facility would require removal of all commercial development comprising the Central Business District along TH 65 in Cambridge. Within this 3-block section all 32 businesses would have to be removed. In addition, damages would have to be paid for acquisition of land from 60 additional businesses along TH 65. Parcels of land would also need to be acquired from 86 residences along this 6.4 mile section of TH 65. The cost of acquiring the necessary rights of way for this 4-lane facility could run in excess of $7 million. Construction costs for upgrading this 6.4 mile section of TH 65 could run in excess of $6 million.

Community And Neighborhood Effects

Upgrading the present facility would split the community and divide neighborhoods which have developed. The demand for crossing this upgraded facility at its junction with TH 95 would eventually necessitate construction of some 4-way traffic control measures, possibly a traffic signal.

Comprehensive Plan

Based on these factors and the fact that this alternate is not compatible with the comprehensive plan for the City of Cambridge, this alternate would not be feasible or prudent.

4. No-build

Capacity And Accidents - Present Facility

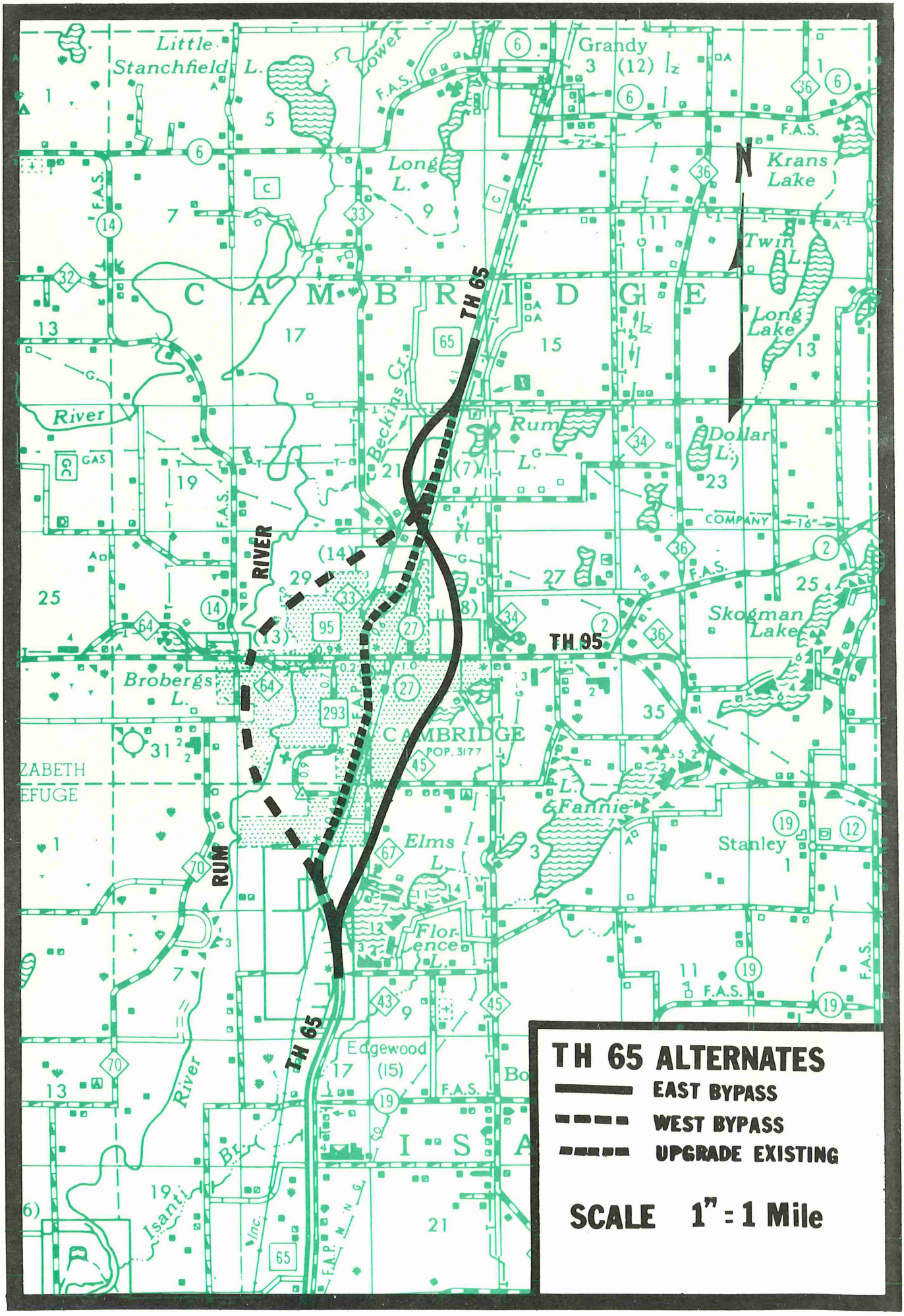
The "no-build" alternative was also considered although it would not provide any solutions to identified problems. Under this alternative, traffic congestion and accident potential would continue to increase through the CBD of Cambridge. Present accident rates on the existing facility already exceed acceptable levels.

This increased congestion would necessitate lower traffic speeds and increase noise levels and inconvenience to local residents.

Presently TH 65 carries AADT's up to 10,585 vehicles with frequent traffic delays occurring during peak traffic periods (summer recreational through-traffic). The year 2000 AADT, which exceeds 13,000 vehicles, could not be accommodated at an acceptable or tolerable level of service.

Comprehensive Plan

As evidenced in the comprehensive planning by the City of Cambridge, there is a definite need for construction of a bypass to divert the through traffic away from the CBD and developed areas of Cambridge and thereby reduce the congestion problems.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TH 95
Skogman Lake
Brobergs L.
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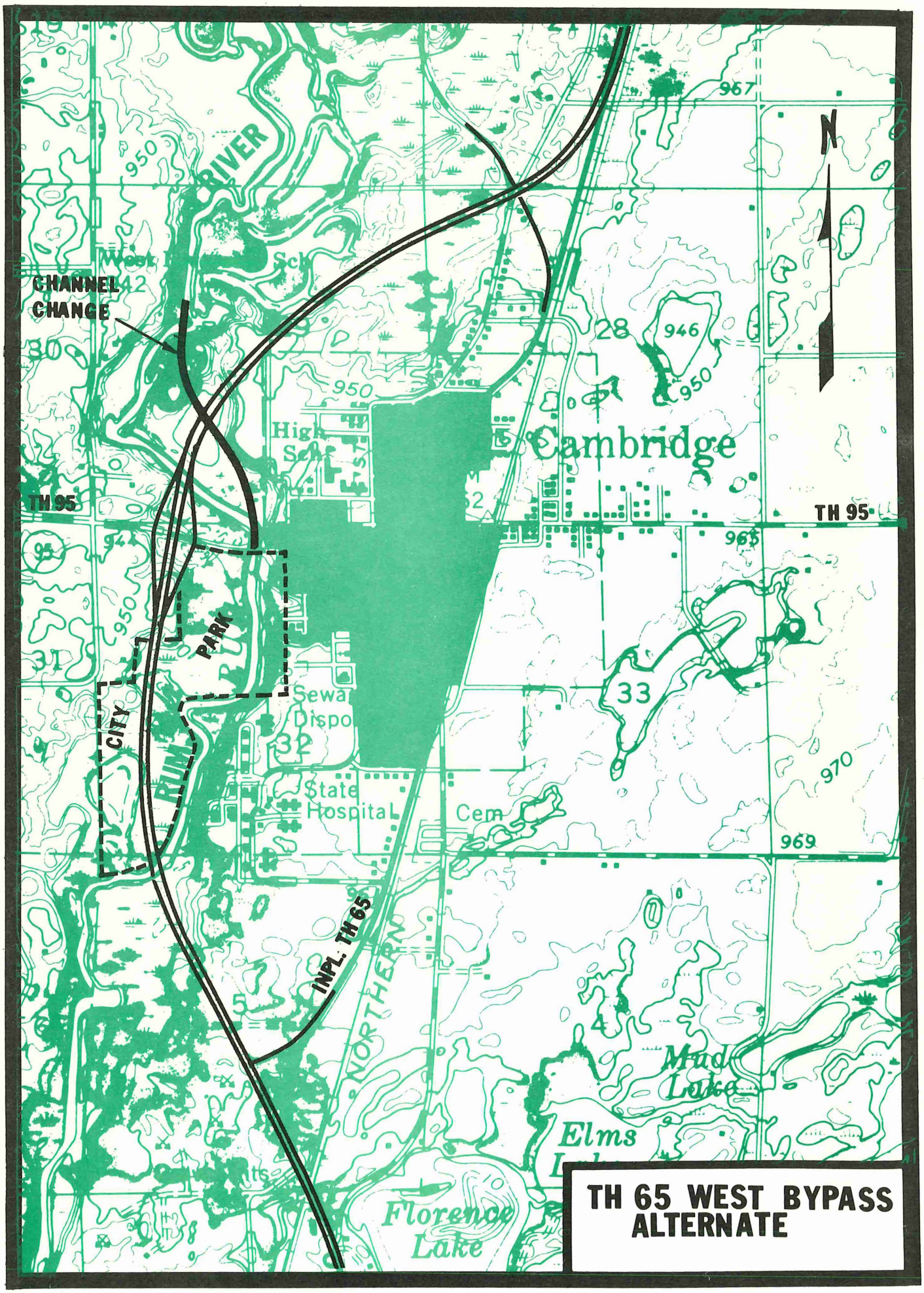


TH 65 WEST BYPASS ALTERNATE

B. Design

1. South interchange

Standard Diamond

A standard diamond interchange is proposed for the junction of TH 65 and CR 43 near the south end of the bypass. Two alternate interchange designs were considered - a modified diamond interchange and a directional interchange.

Modified Diamond

The modified diamond interchange would have had standard ramps in the two easterly quadrants. Hook ramps were proposed in the westerly half of the interchange to avoid the residential development southwest of existing TH 65. After further study, it was determined that a standard diamond interchange could be constructed that would avoid the residential development and would also provide a safer and more efficient interchange of traffic.

Directional

The directional interchange was undesirable for the following reasons:

- The northbound ramp onto existing TH 65 would cause severe right of way damage to the development along Florence Lake.
- There would be difficulty in providing all traffic movements.
- A directional interchange is not compatible with local access in this situation. There would be difficulty in maintaining continuity of local traffic generated by the residential development along Florence Lake and to the southwest.

2. TH 65 - TH 95 interchange

Full Diamond

A full diamond interchange is proposed at this location. Only two designs were considered - TH 65 over existing TH 95 or TH 95 over proposed TH 65. Since the latter design would require considerably more disruption (acquisition of right of way, residences, and possibly businesses), this alternate was discarded.

3. North interchange

Standard Diamond

A standard diamond interchange is proposed near the north end of the Cambridge bypass. Several alternate designs and various combinations of connector roads were considered.

Half Diamond

A half-diamond interchange was considered at the north edge of Cambridge where the bypass crosses existing TH 65. This interchange design was discarded in favor of a standard diamond interchange, with a mainline alignment revision, located near the north end of the bypass. This type of interchange is less confusing to the driver, allows maximum usage of land in the immediate area and causes the least indirection of travel. This full interchange will also optimize future land use in this area. Consideration was given to the earthwork involved and the Midwestern Natural Gas transmission line which would have to be lowered if the previous alignment were used.

Partial

A partial interchange consisting of a southbound exit ramp from proposed to existing TH 65 was also considered. Due to the design requirements at the T-intersection of this exit ramp with present TH 65, this partial interchange design was dropped. The potential existed for motorists to mistake inplace TH 65 (two-lane, two-way roadway) as a one-way roadway between the bridges and the ramp junction.

4. Grade separation at CR 45

CR 45 Severance

An earlier design proposed a connector road on the east side of the bypass between CR 45 and TH 95. This connector road provided continuity for local traffic demands on those sections of CR 45 and CR 67 severed by the proposed bypass. Under this concept, this connector road extended northerly from CR 45 to junction with TH 95 at the present TH 95 and CR 34 intersection. This road would encroach into Joe's Lake and be a circuitous route for local traffic.

Grade Separation Need

Local concern for a more direct access from the Florence Lake area to Cambridge led to researching the possibility of a grade separation with proposed TH 65 over CR 45. This grade separation eliminates the need for the connector road from CR 45 to TH 95. This concept eliminates encroachment into Joe's Lake, is less circuitous for local traffic and involves less right of way acquisition.

C. Modes

Alternate modes of transportation are not appropriate for consideration in this type of rural highway.

VII. PROBABLE UNAVOIDABLE ADVERSE ENVIRONMENTAL EFFECTS

The construction of this improvement will have certain adverse effects on the environment which cannot be avoided if the project is implemented.

Right of Way

Right of way acquisition will displace 21 families and two businesses. Approximately 187 acres of farmland will be acquired and 11 farms will be severed, causing a reduction in agriculture productivity.

Land Alteration

Alteration of approximately 14 acres of wetlands, 42 acres of wooded lands and 7 acres of abandoned farmland represents a loss in wildlife habitat. Disruption of these wild or naturalized areas will result in a decrease in overall wildlife numbers, both game and non-game species.

Noise

The proposed TH 65 bypass traffic will create substantial noise level increases for 14 receptors although the year 2000 predicted noise levels are within federal standards. Two of these receptors will be exposed to predicted noise levels exceeding state standards.

A sixth site consisting of 36 residences and 12 businesses is currently exposed to noise levels exceeding state standards. These receptors will be exposed to predicted (year 2000) noise levels exceeding both state and federal standards whether or not the bypass is constructed.

VIII. THE RELATIONSHIP BETWEEN LOCAL SHORT TERM USES OF MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG TERM PRODUCTIVITY

Land Conversion

Present usage of the majority of land included in the study area is agriculture. Land use is presently changing and will continue to change whether or not this improvement is constructed.

Much of the land presently used for farming will be converted to residential, commercial or industrial. This change in land use is not dependent on the bypass construction but may be accelerated by it. Future development will be compatible with zoning ordinances and the controlled access feature of the proposed improvement. The proposed facility will then effectively serve both the needs of transportation and urban-suburban development.

The wetlands, woods and cropland to be altered by construction activities will undergo what is essentially a permanent change, i.e., long term relative to the life of the highway.

Development of Cambridge

Cambridge will continue to develop as a regional trade center due to its proximity to the Twin Cities metropolitan area and the attractiveness of the area for residential development. Development of the industrially zoned area abutting the bypass will attract industry and business. This will create job availability which would benefit the area. The proposed bypass will aid in promoting the establishment or expansion of traffic and transportation oriented businesses.

Bypass Impacts

Economic hardships may occur for those traffic sensitive businesses dependent largely on present TH 65 traffic. This loss is only temporary in most instances. The proposed bypass will benefit the community in the long run by reducing traffic noise and congestion and parking problems in the business district.

IX. IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

The proposed Cambridge Bypass will require the acquisition of approximately 383 acres of land. A breakdown of land types is as follows:

1. Agriculture production	187 acres
2. Forested land	62 acres
3. Residential	26 acres
4. Wetlands	20 acres
5. Abandoned farmland	10 acres
6. Present roadway right of way	78 acres

Lands acquired for this improvement will be utilized for highway rights of way for an undetermined length of time. This commitment should be considered irretrievable. Also, any vegetation, wildlife, crops, etc., produced within the proposed construction limits will be altered or lost.

All funds, manpower, and material to be used in constructing and maintaining the facility will be virtually irretrievable for other uses.

X. IMPACT ON STATE GOVERNMENT AND MULTI-STATE RESPONSIBILITIES ASSOCIATED WITH THE PROPOSED ACTION

A. Impact on State Government of any Federal Controls Associated with the Proposed Action

Executive Orders 11990 (on the protection of wetlands) and 11988 (on the protection of flood plains) impose restrictions on the use of Federal funding for construction in wetlands and flood plains. Federal funding cannot be used for construction in wetlands unless:

(1) there are no practicable alternatives to avoid these areas,
(2) all practicable measures have been taken to minimize harm to these areas, and
(3) an opportunity for public involvement has been given.

Permits may be required from two agencies in order for Mn/DOT to commence construction of the project. The Minnesota Department of Natural Resources may require permits for several drainage structures. Final determinations will be made when hydraulic and design information become available. Wetlands contiguous to the Rum River will require Section 404 permits from the U.S. Army Corps of Engineers.

B. Multi-State Responsibilities Associated with the Proposed Action

The proposed project lies entirely within Minnesota borders and has no environmental effects on adjacent states.

XI. COORDINATION, COMMENTS & RESPONSES

A. Coordination

Local

Coordination on the local level has included meetings with the public to discuss location and design features of the proposed facility and impacts that the bypass may have. Minnesota Department of Transportation representatives have met with the Isanti County Board, Cambridge Chamber of Commerce, Cambridge City Council, members of the City Planning Commission, and locally concerned citizens.

Agency

During the development of this project, meetings and/or field reviews have been conducted with the following agencies:

U.S. Department of Agriculture -
Soil Conservation Service
U.S. Department of the Interior -
Fish & Wildlife Service
Minnesota Historical Society
Isanti County Historical Society
Minnesota Department of Natural Resources
Minnesota Pollution Control Agency

Copies of coordination letters from these agencies are included on pages 117-133.

The preliminary Draft Environmental Impact Statement (DEIS) has been reviewed by the U.S. Army Corps of Engineers. This agency suggested that certain information be added to the DEIS. Comments have been considered in the revision of the preliminary draft. A copy of their correspondence is included on page 132.

Agency letters on the Draft EIS and responses to those commenting are included on pages 137-164,
(See Index, page 135).

B. Public Hearing Comments and Responses

Location Hearing

The Location Public Hearing was held on May 14, 1969, in Cambridge to discuss the proposed location of TH 65 from 3.2 miles south of Cambridge to the junction of TH 107. The east bypass was favored by the Cambridge City Council, Cambridge Civic and Commerce Association, and the Isanti County Engineer. There was little opposition voiced to the proposed location of the facility and no environmental concerns at this hearing. Location approval was given by the FHWA on November 7, 1969.

Design Hearings

The Design Public Hearing for the proposed Cambridge Bypass was held on January 14, 1970. There were no comments on the effects of the design proposed at this hearing nor environmental issues raised.

The second Design Public Hearing was held on July 6, 1978 in Cambridge to discuss the major design features of the proposed bypass and the Draft Environmental Impact Statement. The following comments were raised at the hearing.

- Local businessmen felt additional access points should be provided along the bypass to provide easier access to the community. Action taken: the concept of additional interchanges was discussed at the hearing. The additional access locations had been evaluated during the development of the project (prior to current design) and dismissed when the currently proposed concept was developed.

- Two landowners expressed concern about noise impacts from the project and whether or not some abatement measures were proposed. Action taken: at the hearing it was explained that a noise study has been conducted, and a report compiled, for all receptors impacted by traffic noise from the proposed bypass. A copy of the Preliminary Noise Report was transmitted to these individuals. They were also informed, at that time, that their residences would not be noise impacted according to FHWA regulations (both residences will experience a 7 decibel increase by the year 2000 to levels less than MPCA Daytime Noise Standards). Mn/DOT has received no further contact from these individuals.

- Concern was expressed about the fact the proposed bypass would require relocation of the Township Hall at the south interchange. Action taken: Mn/DOT representatives have met with the Isanti Township Board and a revision to the frontage road alignment has been made. This revision, acceptable to the Town Board, will not require relocation of this public building.

- A local farmer located north of Cambridge expressed concern that construction of TH 65 in 1941 caused additional runoff which has produced gullies and flooding in his fields. He now feels that construction of the bypass in the vicinity of his farm will cause additional flooding. Action taken: Mn/DOT Brainerd District personnel are currently studying his problem to determine if the flooding is highway related. If this is the case, some type of corrective measures will be pursued. Drainage from the proposed bypass is also being studied in this area to determine if additional runoff onto his land will occur. If significant, remedial measures will be investigated by Mn/DOT.

- A local property owner questioned design standards for the bypass - why his present access (south of the proposed south interchange) onto TH 65 for his residence/business warehouse would have to be removed and replaced with a frontage road from the south interchange to his property. Action taken: Brainerd District personnel have contacted him and explained the need to remove his access from a highway safety and geometric standpoint for freeway/expressway transitional areas. It was also explained that with the traffic volumes and characteristics displayed by TH 65 Mn/DOT is proposing the safest type of highway facility around Cambridge. Although not completely satisfied, he understands the reasons why his access is being replaced with a frontage road to his land.

  He was also concerned about whether or not the bypass will be fenced. Action taken: he was informed that the bypass will be fenced. Since the bypass is relatively close to town it is possible that a chain link fence will be built. Again he understood why fencing is necessary but is generally dissatisfied with effects the bypass will have on his land.

  He also stated that the oak trees on his land should not be removed since they act as a noise barrier. Action taken: since his trees are not of sufficient density or depth to act as a natural traffic noise barrier, he was informed that their effect is psychological. Construction of the proposed interchange design (including frontage roads) will require removal of a majority of these trees.

A comparison made of the existing and predicted (year 2000) noise levels generated by TH 65 traffic revealed this receptor will not experience a substantial increase in noise levels (1977 noise level of 63dBA and year 2000 noise level of 69dBA). The predicted noise level will not exceed the Federal Design Noise Level of 70dBA for residential areas.

Agency comments on the Draft Environmental Impact Statement and a response to those comments can be found on pages 137-164.

UNITED STATES DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Eastside Office Bldg.,P.O.629
Cambridge, Minnesota 55008
Aug. 26, 1977

Mr. Joe Hensel
Minnesota Dept. of Transportation
301 Laurel St., Box 14
Brainerd, Minnesota 56401

In reply to:
S.P. 3003-17, 3004-32 (T.H.65)
Cambridge By-Pass - Environmental Review

Dear Mr. Hensel:

A soils map, soil description and land inventory classification have been compiled regarding your request in relation to project, S.P. 3003-17, 3004-32 (T.H.65). The proposed route has been plotted on the soils map. All soils in the immediate area have been included. Soils have been classified and classifications underlined in red on the land inventory and monitoring memorandum MN-1, as shown on sheet #2. There are no unique farmlands present, however; the sand soils would be considered such if they were irrigated.

If you have any further questions, please notify our office.

Prepared by Keith Grow
District Aide

Gary Ewert
District Conservationist

enc.:

KR:js

United States Department of the Interior

IN REPLY REFER TO:

FISH AND WILDLIFE SERVICE

St. Paul Field Office
538 Federal Building and U.S. Court House
316 North Robert Street
St. Paul, Minnesota 55101

Mr. Micheal Weiss
District Preliminary Design Engineer
Minnesota Department of Transportation
310 Laurel Street, Box H
Brainerd, Minnesota 56401

August 29, 1977

Dear Mr. Weiss:

This letter provides U.S. Fish and Wildlife Service preliminary comments regarding the Minnesota Department of Transportation proposed Cambridge Bypass in Isanti County, Minnesota.

This project was examined for its conformance with the National Environmental Policy Act of 1969 (P.L. 91-190, 83 Stat. 852), Section 4(f) of the Department of Transportation Act (P.L. 89-670, 80 Stat. 931) and Executive Order 11990 of May 24, 1977. Our review included a field inspection of the proposed corridor with you and other MDOT representatives on August 16, 1977.

Bypass construction as proposed would be about 4.5 miles in length and would traverse a rural, basically agricultural area with numerous lakes and wetlands and a few blocks of relatively undisturbed woodland habitat east and northeast of the city of Cambridge.

Our field review indicated that, although major lakes have been avoided, at least 8, and possibly 11 or 12 wetlands (Types II, III, IV, V and VI) may be partially or totally impacted by the proposed 290 foot-wide corridor. During the field review a number of slight alignment shifts in the corridor and other measures were discussed as possibilities to avoid or minimize the encroachment into some of these wetland areas. Various potential mitigation measures were also discussed for those areas that could not be avoided.

Based on our August 16 field review, the U.S. Fish and Wildlife Service offers the following recommendations to minimize project impacts on fish and wildlife resources:

1. Station 445 to 455 - Proposed bypass consruction would impact an oak savanna area in the vicinity of the south interchange. An attempt should be made to preserve as many of the oak trees as possible in this area.

Impact Area A, See page 55

2. Station 447 - Construction of the proposed frontage road near the south interchange would encroach into the west end of a Type VI wetland and result in the loss of about 2.0 acres of wetland habitat.

This frontage road should be shifted slightly to the west if at all possible to avoid the encroachment into this wetland. If this is not feasible, this wetland acreage lost should be replaced (see recommendation number 14).

Impact Area A, See page 55

3. Station 472 to 473 - The proposed corridor would encroach into a small (less than one acre) Type III wetland in this area. Steeper (3:1) back slopes and possibly guardrails should be constructed to minimize encroachment into this wetland. This wetland loss could possibly be mitigated by enlarging the north end of this wetland basin and diverting highway runoff into it.

Impact Area B, See page 56

4. Station 479 to 481 - The proposed corridor in this area would result in the total loss of a 0.5 acre Type II wetland. This wetland acreage lost should be replaced (see recommendation number 14).

Impact Area C, See page 56

5. Station 489 (approx.) - About a 0.1 acre stock pond (Type V wetland) would be lost in this area which is not presently being used by livestock. Since this wetland contains a rather permanent water supply that various wildlife species in the area would utilize and benefit from this wetland loss should also be replaced (see recommendation number 14).

6. Station 492 to 494 - The proposed corridor would encroach into the southeast end of a Type III wetland in this area and result in the loss of 0.6 acre. Encroachment into this wetland should be minimized to the extent possible by narrowing the construction limits in this area utilizing steeper (3:1) back slopes and, if necessary, installing guardrails. During our August 16 field review we also discussed the possibility of diverting highway runoff into this area to increase the water level of this wetland. If this can be done we believe it would provide adequate mitigation for this wetland loss.

Impact Area D, See page 56

7. Station 494 to 510 - The proposed corridor would pass through the middle of a Type II wetland in this area and result in the loss of 1.2 acres of wetland habitat. Here we recommend that the construction limits be narrowed and steeper (3:1) back slopes be utilized on both sides of the roadway. Culverts should be installed in this location in such a way that the existing drainage pattern and water levels on both sides of the roadway are maintained. Diverting highway runoff into this wetland would also improve this area and should provide adequate mitigation for this wetland loss.

8. Station 550 to 554 - The proposed corridor would pass directly through

and totally eliminate a 3.0 acre of Type IV wetland in this area. Our field review indicated that no other feasible alternative was available to avoid this wetland without encroaching into a number of other wetlands in this area. This wetland acreage lost should be replaced (see recommendation number 14).

Impact Area E, See page 57

9. Station 577 to 582 - An oak savanna would be inpacted in this area. Here again, an attempt should be made (narrow construction limits, selective cutting, etc.) to preserve as many of the oak trees in this area as possible.

Impact Area F, See page 58

10. Station 623 to 634 - The proposed corridor in this area traverses a deciduous wood lot adjacent to an unnamed lake (Type V wetland). The construction limits should be narrowed in this area and, if possible, the alignment shifted somewhat to the west to avoid any encroachment into this more permanent wetland. A buffer zone with a few trees and brush should be maintained along the shoreline between the highway and the lake and the existing drainage into this wetland should be maintained. If any encroachment into this wetland basin occurs this wetland loss should also be replaced (see recommendation number 14).

Impact Area G, See page 59

11. Station 662 to 689 - The proposed corridor traverses through an area of lowland brush (possible Type VI wetland), a pine plantation, a few mixed hardwoods and an abandoned pasture. This area provides excellent winter and summer cover for deer, pheasants, grouse, rabbits, squirrels, and many species of songbirds and other non-game species. The construction limits should be narrowed to the extent possible through this area to minimize the habitat loss and impact to the wildlife species that utilize these areas. The present drainage patterns in this area should also be maintained. The highway corridor will inhibit wildlife movement to some degree in this area and also result in increased wildlife car kills but the impact should not be significant.

Impact Area H, See page 59

12. Station 705 to 735 - This is the area proposed for the North Interchange and should result in only minimal environmental impacts. However, a few small Type VI wetlands would be impacted in this area and this wetland loss should be replaced (see recommendation number 14). The present drainage patterns should also be maintained.

Impact Area I, See page 60

13. Station 735 to Northern Terminus - Approximately 17 acres of mixed lowland hardwoods with a few tamarack would be lost in this area. Since this alignment would only encroach into the southeast corner

Impact Area I, See page 60

of a large block of timber (about 100 acres on size) the impact on the deer and other wildlife in this area should not be significant.

14. Additional wetland habitat should be created somewhere in the vicinity of the proposed highway corridor to mitigate for the wetland acreage lost due to the construction of this project (see recommendations number 2, 3, 4, 5, 8 , and 12). We estimate that at least 7.6 acres of wetland habitat would be lost within the proposed corridor. Also, an additional 1.9 acres of wetland habitat (see recommendations number 6, 7, and 11) should be replaced if not mitigated by some other means such as we have suggested. To adequatly compensate for these wetland losses at least 7.6, and possibly 9.5+, acres of wetland habitat should be created to prevent the cumulative wetland loss of this wetland habitat. This could be accomplished in one area; however, in our opinion, it would be more beneficial for the resource to create possibly three or four smaller wetlands, The Office of Environmental Affairs has recommended a number of possible locations (borrow pit areas, etc.) where replacement wetlands could be created. We recommend that, if possible, any wetland basin(s) created be about three to four feet deep in the center and taper off to the sides. An irregular-shaped margin would provide more edge effect and be more desireable for wildlife and especially waterfowl. If the wetland is adequate in size, a few nesting islands possibly could also be created in the wetland basin(s). If this was properly done, possibly one wetland about four acres in size would be adequate mitigation for the wetland acreage lost as a result of this highway construction project. Various other possibilities also exist and we recommend that continued coordination with the Service be made regarding any mitigation proposed for this project.

15. We also recommend that the Corps of Engineers be contacted regarding this project. We suspect a Section 404 permit may be required due to the number of lakes in the vicinity of the proposed corridor.

During our field review on August 16 we were told that a Project Development Report was not written for this project and that the draft Environmental Impact Statement was under preparation. We suggest that these Service recommendations be included and properly addressed in the draft EIS. We will provide you with our final comments regarding this project after we have received and reviewed the draft.

We would like to thank you for meeting with us on August 16 and also thank Joe Hensel for sending us the various maps and other information regarding this project that we requested prior to the field review. We are especially pleased with

the cooperative efforts that have been made between the Office of Environmental Affairs (particularily Rich Staffon) and the Service in the past few months and we hope this effort will continue to avoid, minimize, or mitigate environmental impacts associated with these highway construction projects.

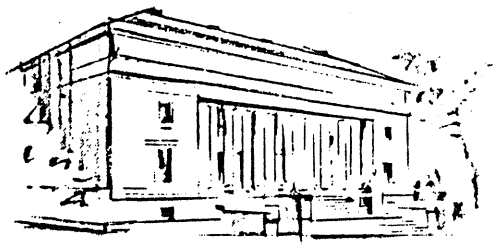
We would appreciate your reaction to our recommendations on this project.

Sincerely,

Richard F. Berry

Richard F. Berry
Field Supervisor

cc: Corps of Engineers, St. Paul District
St. Paul, MN
Leonard G. Eilts, MDOT
St. Paul, MN
Richard Staffon, MDOT
St. Paul, MN
MDNR, St. Paul, MN



MINNESOTA HISTORICAL SOCIETY

690 Cedar Street, St. Paul, Minnesota 55101 • 612-221-2747

Recommend FHWA concurrence Thomas J Chapera 1/5/78
DATE

29 December 1977

Mr. C.P. Kachelmyer
Preliminary Design Engineer
Department of Transportation
Room 604 - Transportation Building
St. Paul, Minnesota 55155

Dear Mr. Kachelmyer:

Minn. Proj. F 005-3

RE: S.P. 3003-17 & 3004-32 (T.H. 65)
Realignment from 2.3 miles south
to 2.0 miles north of Jct. T.H. 95
Cambridge Bypass
Isanti County

The project described above has been reviewed pursuant to responsibilities given the State Historic Preservation Officer by the National Historic Preservation Act of 1966 and the Procedures of the National Advisory Council on Historic Preservation (36CFR800).

This review reveals the location of no sites of historic, architectural, or cultural significance within the proposed project area. Field surveys in 1971 and 1972 revealed the location of one possible archaeological site (reported in the 1971 Annual Report of the Minnesota Trunk Highway Archaeological Reconnaissance Survey (p.23)). Although this small scatter of lithic debris reported as the Lindbergh site, 21 IA 14, was located within the proposed construction zone in the SW¼, NE¼, Sec. 34, T36N, R23W, subsequent test excavations in 1972 resulted in the determination that the site required no further consideration due to its sparse content and disturbed nature (1972 Annual Report, p.19).

Continued reviews for revised project specifications in 1975 and 1977 have indicated that no other cultural data should be affected by project completion as proposed in Layout #3. There are, therefore, no sites in the area which are on the National Register or eligible for inclusion on the National Register, and, therefore, none which may be affected by your proposal.

Sincerely,

Russell W. Fridley

Russell W. Fridley
State Historic Preservation Officer

RWF/fr

EIS #E697

FHWA concurs with the SHPO's determination of no effect and/or identification of no properties within the area of the proposed Federal-aid highway project's potential environmental impact in or eligible to be on the National Register of Historic Places.

District Engineer DATE 1/6/78
For E. Dean Carlson, Division Administrator

COPIES:
F.C. Marshall
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L.G. Eilts
D.E. Durgin
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File

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C.P. Kachelmyer
File

MINNESOTA HISTORICAL SOCIETY
690 Cedar Street, St. Paul, Minnesota 55101 • 612-221-2747

October 20, 1978

Recommend FHWA concurrence Thomas J. Chapera Oct. 31, 1978
DATE

Mr. C.P. Kachelmyer
Preliminary Design Engineer
Department of Transportation
Room 604 - Transportation Building
St. Paul, Minnesota 55155

Dear Mr. Kachelmyer:

Minn. Proj. F 005-3( )

RE: SP 3003-17 & 3004-32 (TH 65)
Cambridge Bypass Ponding Areas
Isanti County, Minnesota

MHS Referral File Number E697

Thank you for the opportunity to review and comment on the above project. It has been reviewed pursuant to responsibilities given the State Historic Preservation Officer by the National Historic Preservation Act of 1966 and the Procedures of the National Advisory Council on Historic Preservation (36CFR800).

This review reveals the location of no sites of historic, architectural, cultural, or archaeological significance within the area of the proposed project. There are no sites in the area which are on the National Register or eligible for inclusion on the National Register, and, therefore, none which may be affected by your proposal.

Again, thank you for your participation in this important effort to preserve Minnesota's heritage.

Sincerely,

Russell W. Fridley

Russell W. Fridley
State Historic Preservation Officer

RWF /cjb

FHWA concurs with the SHPO's determination of no effect and/or identification of no properties within the area of the proposed Federal-aid highway project's potential environmental impact in or eligible to be on the National Register of Historic Places.

District Engineer
For E. Dean Carlson, Division Administrator

10/31/78
DATE

Cambridge, Minnesota
January 16, 1978

Mr. Micheal Weiss
District Preliminary Dessign Engineer
Minnesota Department of Ttransportation
Brainerd, Minnesota

Dear Sir:

In regard to your request for information regarding possible concern for the welfare of our historical sites in Isanti County I can report the following:

Representatives of the Minnesota Department of Transportation, Brainerd Office, have met with members of the Isanti County Historical Society and the West Riverside School Restoration Committeee to determine if any significant historic, architectural, cultural, or archaeological sites will be affected by the proposed East By-Pass of Cambridge. Upon reviwing the sites identified to date, no sites will be affected by the proposed By-Pass.

The closest site to Proposed Trunk Highway 65 is West Riverside School, a brick structure built in 1880. This site, situated approximately 1½ miles west of the proposed by-pass, will not be disturbed by construction of proposed Trunk Highway 65 around Cambridge.

Signed
Lillian Bergstrom
President of Isanti County Hist. Soc
(also) Member of West Riverside
Restoration Committee

Andrew T. Blomgren
Secretary of Isanti County Hist. Soc

STATE OF
MINNESOTA
DEPARTMENT OF NATURAL RESOURCES

Regional Headquarters, 217 N.W. Fourth Street, Brainerd, Minnesota 56401

July 19, 1977

Mr. Michael Weiss
District Preliminary Design Engineer
Minnesota Department of Transportation
Brainerd, Minnesota 56401

RE: Cambridge Bypass

Dear Mr. Weiss:

This letter is written to provide input from the Department of Natural Resources, Section of Wildlife, concerning the proposed routing of Highway #65 around the City of Cambridge.

Richard Tuszynski is the Area Wildlife Manager stationed at Cambridge. He has done the field investigation for the Section of Wildlife and provides the following information:

1. There are no known rare or endangered species of plants or animals found along the proposed route.

2. There are no publicly owned wildlife refuges or wildlife management areas affected by this routing.

3. There are several wetland areas (marsh type II and III) that will be permanently altered. While one three-acre type III will be destroyed, two others could actually benefit from the alteration if the increased runoff from the highway increases their water level.

4. Wildlife wintering areas will be adversely affected by the bypass simply by reducing the amount of available cover to small game and birds, as well as the disturbance caused by noise and, undoubtedly, additional mortality from wildlife-auto collisions. Approximately one-fifth of this type habitat presently available in the immediate vicinity will be destroyed.

5. It is anticipated that the overall impact to wildlife along the proposed route will have a detrimental effect on reproduction, but the overall impact should not be so severe as to request realignment of the route.

6. It is requested that all roadsides be well seeded with grasses and legumes to provide nesting cover, with species of grasses and legumes selected to achieve a height of 18-36 inches. Mowing for hay should not be allowed.

Sincerely,

Henry F. Wulf

Henry Wulf
Regional Wildlife Supervisor

HFW:jd

cc: R. Tuszynski

Minnesota Pollution Control Agency

June 8, 1977

(612) 296-7250

Mr. Michael Weiss
District Preliminary Design Engineer
Minnesota Department of Transportation
District 3
301 Laurel Street, Box H
Brainerd, Minnesota 56401

Dear Mr. Weiss:

Reference is made to your May 9, 1977 letter which requested information for the Water Resource Report currently being prepared on the TH65 Cambridge Bypass.

The Rum River and Beckins Creek are currently classified 2B, 3C, 4A, 4B, 5 and 6 based on State of Minnesota regulation WPC-24. This same regulation applies a general classification of 2B, 3B, 4A, 4B, 5 and 6 to Isanti Brook, Florence Lake and any other water bodies in the drainage area. State of Minnesota regulation WPC-14 specifies the following water quality standards for these classifications.

Parameter	Limiting Concentration or Range	
	Class 2B, 3B, 4A, 4B, 5 & 6	Class 2B, 3C, 4A, 4B, 5 & 6
Total Solids	X	X
Suspended Solids	X	X
Dissolved Solids	X	X
Volatile Suspended Solids	X	X
Turbidity	25	25
Specific Conductance	1000 micromhos/cm	1000 microhos/cm
Total Organic Carbon	X	X
Total Nitrogen	X	X
Nitrate as N	X	X

Parameter	Limiting Concentration or Range	
Nitrite as N	X	X
Ammonia (N)	1.0 mg/1	1.0 mg/1
Total Phosphorus	X	X
Biochemical Oxygen Demand	X	X
Chemical Oxygen Demand	X	X
Dissolved Oxygen	6 mg/1 April 1 to May 31 5 mg/1 at other times	
pH	6.5 - 8.5	6.5 - 8.5
Chloride	100 mg/1	250 mg/1
Sodium	60% of total cations as milliequivalents per liter.	
Oil and Grease	.5 mg/1	.5 mg/1
Cyanides	.02 mg/1	.02 mg/1
Chromium	.05 mg/1	.05 mg/1
Copper	.01 mg/1	.01 mg/1
Iron	X	X
Lead	.05 mg/1	.05 mg/1*
Zinc	.05 mg/1*	.05 mg/1*
Nickel	.1 mg/1*	.1 mg/1*
Total Coliform	X	X
Fecal Coliform	200 MPN/100 ml	200 MPN/100 ml
Fecal Streptococci	X	X

X No specific standard specified in WPC-14.

* 1/100 96hr. TLM value from EPA Quality Criteria for Water applied consistent with Section c(14) of WPC-14.

It should be noted that all parameters mentioned in your letter along with other parameters of importance are included above.

It is not possible to establish maximum allowable concentrations of constituents in the runoff. This must be determined as part of the EIS evaluation and should take into consideration what loadings will cause violations of water quality standards or significant degradation in any of the affected water bodies. Components of the evaluation would include establishment of base line water quality levels, estimation of volume and quality of runoff to each water body, and projections of water quality impacts. Our Agency currently samples the Rum River monthly at Anoka and Isanti and can provide this data upon request.

If we can provide you with any additional information, please let us know.

Yours truly,

Louis J. Breimhurst, P.E.
Director
Division of Water Quality

LJB/LRP:11b

DEPARTMENT OF THE ARMY
ST. PAUL DISTRICT, CORPS OF ENGINEERS
1135 U. S. POST OFFICE & CUSTOM HOUSE
ST. PAUL, MINNESOTA 55101

✓	CT	✓
✓	ADA	
	DIST A	
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REPLY TO
ATTENTION OF:
NCSCO-G(S.F. 77-733)

30 December 1977

Mr. Ronald Lacy
Federal Highway Administration
Suite 490, Metro Square Building
St. Paul, Minnesota 55101

Dear Mr. Lacy:

Reference your letter dated 26 October 1977 with attached pre-draft environmental impact statement (EIS) for Trunk Highway 65 bypass of Cambridge.

The wetlands along the proposed corridor are under jurisdiction of Section 404 of the Federal Water Pollution Control Act Amendment of 1972. A Department of the Army permit would be required for placement of fill material in these wetlands.

We concur with the proposal that you serve as the lead agency for the development of the environmental documentation for this highway section.

We have reviewed the pre-draft EIS and our comments providing guidance on writing the draft EIS are attached.

The St. Paul District should review and comment on the draft EIS after its preparation by the Minnesota Department of Transportation but prior to its acceptance by your agency and circulation for public comment.

Sincerely,

For WILLIAM D. PARSONS
Chief, General Regulatory Branch
Construction-Operations Division

1 Incl
As stated

COMMENTS ON PRE-DRAFT EIS ON TRUNK HIGHWAY 65

1. The discussion of the east and west bypass alternatives should compare in acres the following potential impacts from construction and/or secondary developments: total wetland fill, use of farm land, displacement of residences and businesses, and clearing of terrestrial habitat.

2. The west bypass needs to be illustrated on aerial photographs.

3. If the west bypass requires wetland fill, please describe these wetlands in the same manner that the east bypass was described.

4. In cases where the bypass requires wetland fill, the consequences of a slight shift in alignment to avoid that fill should be explained.

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AND RESPONSES TO COMMENTS

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JUL 14 1978

United States Department of the Interior

OFFICE OF THE SECRETARY
NORTH CENTRAL REGION
2510 DEMPSTER STREET
DES PLAINES, ILLINOIS 60016

ER 78/488

July 12, 1978

Mr. E. Dean Carlson, Division Administrator
Federal Highway Administration
Suite 490, Metro Square Building
Seventh and Roberts Streets
St. Paul, Minnesota 55101

Dear Mr. Carlson:

This responds to the Minnesota Department of Transportation May 22, 1978 letter requesting Department of the Interior comments on the draft environmental impact statement for the proposed Trunk Highway 65 bypass at Cambridge, Isanti County, Minnesota (FHWA-MN-EIS-78-01-D).

The statement is adequate with regard to our areas of jurisdiction and expertise. The Minnesota Department of Transportation is to be commended for their excellent coverage and consideration of wetland values.

Sincerely,

David L. Jervis
Regional Environmental Officer

copy to:
Mr. Darryl E. Durgin, District Director
Minnesota Department of Transportation
301 Laurel Street
Box H
Brainerd, Minnesota 56401

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

JUL 31 1978

Mr. Darryl E. Durgin
District Director
Minnesota Department of Transportation
301 Laurel STreet
Box H
Brainerd, Minnesota 56401

RE: 78-042-424
D-FHW-F401140-MN

Dear Mr. Durgin:

We have completed our review of the Draft Environmental Impact Statement (EIS) for Trunk Highway 65, Cambridge Bypass, Cambridge, Isanti County, Minnesota. Mr. Eilts letter of May 22, 1978, requested our views and comments on the proposed bypass. Some of the impacts of this project will be significant in nature; however, it appears that these impacts can be avoided or mitigated. The impacts to which we refer are the loss of wetlands as a result of the construction of the proposed bypass.

A Regardless of the route selected, wetlands will be impacted by this bypass. The EIS said mitigative actions to offset the loss of wetlands are under consideration. The Fish and Wildlife Service (F&WS) has made recommendations on how this mitigation might be accomplished. We agree that mitigative measures are necessary. To the greatest extent possible, the creation of wetlands or the addition to existing wetlands should be accomplished within the right-of-way of the project. The selected mitigative measure should be provided in the Final EIS.

B Wetland area A, page 127 will be impacted by the construction of an access road to a private resident. The EIS said that the movement of this road to the west would result in the taking of six additional residences. However, we request that consideration be given to the relocation of this access road immediately adjacent to the exit ramp for C.R. 43. This relocation would place the access road behind the houses further to the west and should be investigated and discussed in the Final EIS.

C The overall noise impacts will be reduced by the completion of this project; however, some residences will be impacted by increased noise levels. Barriers are under investigation but preliminary information indicates they are not economic. Other noise reduction methods are available and

C those methods should be implemented. Measures which can be used but not limited to are the use of asphalt type pavement, reduction of the median width, and the use of a vegetative barrier which may result in a psychological reduction in noise levels.

D The air quality analysis indicates there should not be any adverse air impacts. We agree in this finding; however, we would appreciate information in the Final EIS on the volume of traffic used in the analysis and at what time period these traffic levels occur. From information in the EIS, it appears that the worst air quality condition will occur over a weekend and as a result of persons travelling from the Twin Cities.

E To further reduce air quality impacts, we recommend the use of a water based asphalt batching plant.

Based upon our review of this EIS, we have rated the project as ER (environmental reservations). This is based upon our concern for the need to provide mitigation for the loss of wetlands. We have classified the EIS as Category 2 (additional information necessary). The date and classification of our comments will be published in the Federal Register in accordance with our responsibility to inform the public of our views on other agencys' projects.

We appreciate the opportunity to review this Draft EIS. If you have any questions in regard to our comments, please contact me at 312-353-2307.

Sincerely yours,

Joseph Lovick

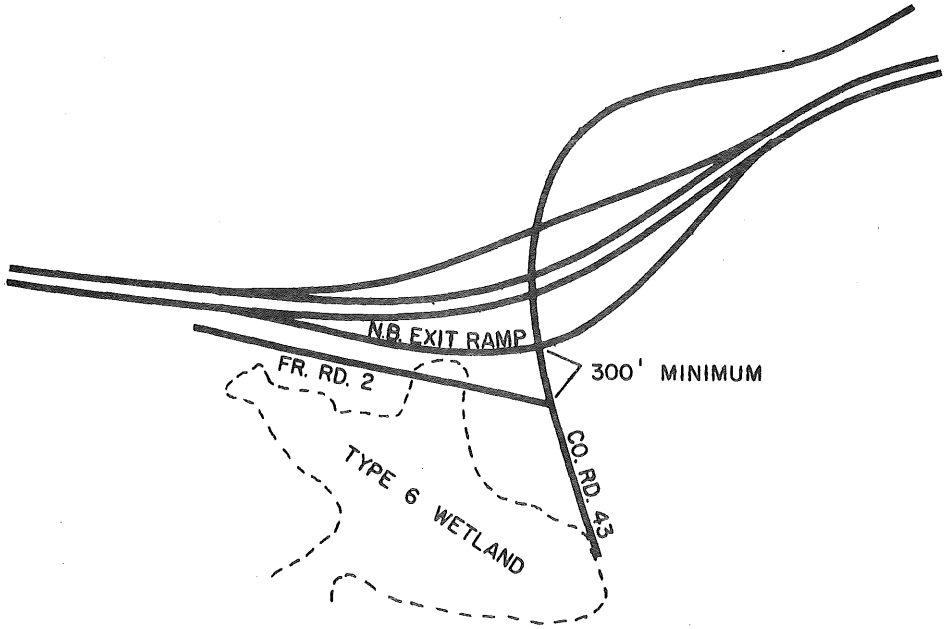
for William D. Franz
Acting Chief
Environmental Impact Review Staff
Office of Federal Activities

RESPONSES TO ENVIRONMENTAL PROTECTION AGENCY

A The equitable mitigation of wetland impacts is an important concern in the design and construction of the proposed Cambridge Bypass. Although the replacement of wetlands within the right of way corridor appears to be a plausible method of wetland mitigation there are several inherent design and maintenance problems. The 290-foot wide right of way corridor lacks sufficient area to construct ponds of a size and contour that would produce food and cover needed for high quality habitat and therefore would be of dubious importance to wildlife. A more productive alternative is to construct ponding areas outside of the normal right of way. This project will have approximately 18 acres of replacement wetlands to compensate for 14 acres altered by construction. This concept is explained in Wetland mitigation measures, page 61.

B The original proposed south interchange concept (as documented in the Draft EIS) encroached into the 23 acre Type 6 wetland southeast of the interchange. An estimated 1.5 acres would have been filled by Frontage Road 2 grading. Since that time more detailed engineering studies have been conducted. These studies resulted in a shift of Fr. Rd. 2 50 feet westerly (in the area of the Type 6 wetland) thereby decreasing wetland encroachment by 0.4 acres with a resultant encroachment of 1.1 acres.

Any further alignment shift to minimize wetland alteration is controlled by two factors: (1) the minimum distance required between the junction of the exit ramp and Co. Rd. 43 and the junction of Fr. Rd. 2 and Co. Rd. 43, and (2) the grade differential between the exit ramp and Fr. Rd. 2



Geometric design standards specify the spacing between exit ramps and access roads (MHD Standard - Right of Way Manual: Access Control - Freeway Design Fig. E5-491.111). This minimum allowable distance is 300 feet.

Due to the difference in elevations of the exit ramp and Fr. Rd. 2 the maximum additional shift would be approximately 22 feet and would require an "S" (reverse) curve. The additional shift would result in only a 0.15 acre reduction of wetland fill but poorer geometric design and therefore is not justifiable.

C Since analysis indicates timber wall barriers are not economical, no abatement structures are proposed. Currently no conclusive evidence exists that surface type is the determining factor in tire-pavement interaction noise generation. Median width reduction, even to the extreme case of an urban design with a raised concrete median between roadways, would create no noticeable reduction in predicted noise levels. Therefore the implementation of such geometric modifications is not justifiable. Vegetative screens can provide some degree of noise attenuation although only 5dBA reduction is typically achieved for dense and deep vegetation high enough to be well above the line of sight between the highway and the observer's position. Substantial right of way and many years would be needed for planting to create this noise level reduction. Currently this method of attenuation can be considered only where the required vegetation already exists.

D The traffic volumes utilized in the air quality analysis was derived from a study projecting traffic volumes to the year 2000. Typically, these traffic volumes would occur as a result of traffic generated by the Twin Cities during periods of heavy recreational demand (weekends, holidays, etc.). For the hourly traffic volumes utilized in the predictions, see Air Quality, page 69.

E Mn/DOT surface determination of bituminous surfacing for the proposed bypass was made in April, 1977. For this type of construction, Mn/DOT presently specifies asphalt cement for plant (hot) mixed bituminous surfacing. It is Mn/DOT policy to use emulsions for bituminous tack coat whenever possible rather than asphalts thinned with petroleum based products which emit hydrocarbons.

DEPARTMENT OF THE ARMY
ST. PAUL DISTRICT, CORPS OF ENGINEERS
1135 U. S. POST OFFICE & CUSTOM HOUSE
ST. PAUL, MINNESOTA 55101

REPLY TO
ATTENTION OF:

NCSED-ER

28 June 1978

Darryl E. Dargin, District Director
Minnesota Department of Transportation
301 Laurel Street
Box H
Brainerd, Minnesota 56401

Dear Mr. Dargin:

Our District staff has reviewed the draft environmental impact statement on the Trunk Highway 65 Bypass of Cambridge, Minnesota. Our suggestions for the pre-draft EIS have been satisfactorily incorporated into the draft EIS, and we have no additional comments.

Thank you for the opportunity to comment on this statement. We look forward to receipt of the final environmental impact statement and to continued close coordination.

Sincerely,

FORREST T. GAY, III
Colonel, Corps of Engineers
District Engineer

DEPARTMENT OF TRANSPORTATION
UNITED STATES COAST GUARD

MAILING ADDRESS:
Commander (dpl/eis)
Second Coast Guard
District
1430 Olive Street
St: Louis, MO 63103

16475
Ser 134
6July 1978

Leonard G. Eilts
Design Engineer
Minnesota Department of Transportation
St. Paul, MN 55155

Gentlemen:

We have reviewed the draft environmental impact statement for 330 FHWA-MN-EIS-78-01-D, Trunk Highway 65 bypass of Cambridge, Minnesota. We have no comment to offer on this document.

Thank you for the opportunity to review this environmental impact statement.

Sincerely,

W. R. GLENNING
Commander, U. S. Coast Guard
Chief, Planning Branch
By direction of the District Commander

Copy to:
COMDT (G-WEP-7)
DOT SECREP Region V
DOT (tes), Office of Environemtal Affairs

DEPARTMENT OF HOUSING AND URBAN DEVELOPMENT
AREA OFFICE
6400 FRANCE AVENUE SOUTH
MINNEAPOLIS, MINNESOTA 55435

REGION V
300 South Wacker Drive
Chicago, Illinois 60606

June 2, 1978

IN REPLY REFER TO:
5.6CS:RH

E. Dean Carlson
Division Administrator
Federal Highway Administration
Metro Square Building, Suite 490
St. Paul, Minnesota 55101

Dear Mr. Carlson:

Subject: Draft EIS for TH 65
From CSAH 5 to TH 107

The HUD Minnesota Area Office has reviewed the subject impact statement. The environmental staff has determined that no HUD projects will be adversely affected by the proposed action. As such, we have no substantive comments regarding the proposed project.

Thank you for the opportunity to review this impact statement.

Sincerely,

Thomas T. Feeney
Area Director

FEDERAL ENERGY REGULATORY COMMISSION

[redacted]

Federal Building - Room 3130
230 South Dearborn Street
Chicago, Illinois 60604

In reply refer to:
OEPR-CH

July 7, 1978

Mr. Darryl E. Durgin, District Director
Minnesota Department of Transportation
301 Laurel Street
Box H
Brainerd, Minnesota 56401

Dear Mr. Durgin:

We have reviewed the Draft Environmental Impact Statement for Trunk Highway 65 Bypass of Cambridge, Minnesota, Isanti County, which was sent to our office for comment by your May 22, 1978 letter. The comments of this office are made in accordance with the National Environmental Policy Act of 1969 and August 1, 1973 Guidelines of the Council on Environmental Quality.

Our review of the statement is principally oriented toward determining the effect of the proposals on matters related to the Commission's responsibilities. These responsibilities pertain to the development of hydroelectric power, the assurance of reliability and adequacy of bulk electric power facilities, and the construction and operation of natural gas pipeline facilities.

Since the planned study would not pose a major obstacle to the construction or operation of such facilities, and since the Draft Environmental Impact Statement does not indicate that natural gas and electric utilities would be affected, we have no comments. However, there are two gas pipelines of 16 inches (Northern Natural Gas Company) and 24 inches (North Central Public Service Company) in diameter in the vicinity of the proposed plan. Care should be taken to protect the pipelines.

A

Very truly yours,

Bernard D. Murphy

Bernard D. Murphy
Regional Engineer

RESPONSE

A **Two gas pipelines located near the north interchange of the proposed bypass have been added to the Project Map, page 169 . The Minnesota Department of Transportation will notify all public utility companies as to their properties located within the proposed right of way that must be moved or relocated to complete the project.**

DEPARTMENT OF TRANSPORTATION
FEDERAL RAILROAD ADMINISTRATION
536 South Clark Street
Room 210
Chicago, Illinois 60605

REGION THREE
Chicago, Illinois

MAY 30 1978

Mr. Darryl E. Durgin
District Director
Minnesota Department of Transportation
301 Laurel Street - Box H
Brainerd, Minnesota 56401

Dear Mr. Durgin:

This is in response to Mr. Eilts' letter of May 22, 1978, in which a copy of the Draft Environmental Impact Statement for Trunk Highway 65 Bypass of Cambridge was enclosed.

We appreciate the opportunity afforded us to review the Draft; however, at present this office has no jurisdiction or special expertise pertaining to projects such as this. Therefore, we have no comments to offer at this time.

Sincerely,

J. J. Sharpe
Regional Director of
Railroad Safety

Attachment

JJS:pc

DEPARTMENT OF TRANSPORTATION
FEDERAL AVIATION ADMINISTRATION

330
FHWA-MN-EIS-78-01-D

GREAT LAKES REGION
2300 EAST DEVON AVENUE
DES PLAINES, ILLINOIS 60018

MAY 30 1978

Mr. Darryl E. Durgin, District Director
Minnesota Department of Transportation
301 Laurel Street, Box H
Brainerd, Minnesota 56401

Dear Mr. Durgin:

In response to your request of May 22 for comments on the Draft Environmental Impact Statement for Trunk Highway 65 Bypass of Cambridge, MN, Isanti County, Minnesota Project F 005-3( ), we have none to offer. We do not require a copy of the Final EIS.

Sincerely,

Kenneth A. Kraus

KENNETH A. KRAUS
Environmental Officer, AGL-4.5

Minnesota Pollution Control Agency

July 12, 1978

Mr. Darryl E. Durgin
District Director
Minnesota Department of Transportation (Mn/DOT)
?01 Laurel Street
Box H
Brainerd, Minnesota 56401

Dear Mr. Durgin:

This is in response to the Draft Environmental Impact Statement for Truck Highway 65 "Cambridge Bypass". The staff has reviewed the Draft Environmental Impact Statement, The Water Resource Report, and the Noise Report for the proposed project, the following comments are offered for your consideration:

Page (17)

A As justification for the project, accident data has been provided which compares this 30 mile per hour urban uncontrolled access highway with the estimated state-wide rural interstate accident rates. If comparisons are to be made, they should be made on data from similar highway sections.

Page (41)

B The impact on water resources in the Cambridge area are minimized by the alignment which avoids water crossings or encroachment on lakes or floodplains. We support and encourage such efforts to minimize water quality impacts.

B In the section entitled Ground Water there should be an identification of private wells which may be impacted particularly since the soils in the area are pervious and offer recharge to underground water supplies. In the Draft EIS and Water Resources Report there is no mention of existing ground water quality so that possible future groundwater impacts can be documented. As well, by locating private water supplies and defining the direction and flow of ground water, potential impacts can be identified. As a whole the section on groundwater impacts should be expanded to document existing supplies, quality and define possible impacts.

1935 West County Road B2, Roseville, Minnesota 55113
Regional Offices • Duluth / Brainerd / Fergus Falls / Marshall / Rochester / Roseville
Equal Opportunity Employer

Page (42) The MPCA respectfully requests that all Water Resource or Water Quality Reports as well as Air Quality and Noise Reports be supplied to the Agency prior to receipt of the Draft Environmental Impact Statement. This will allow for early identification of issues and time constraints in the review of the Draft Environmental Impact Statement, while awaiting the receipt of requested supplemental reports.

Page (43) It has been identified that the most critical water quality problem affecting Florence and Joe's Lake is a disolved oxygen deficit. An in increase turbidity will reduce water clarity and can reduce disolved oxygen content. Increased erosion during construction and operation of the facility may exacerbate current disolved oxygen problems. Therefore, there should be a discussion on mitigating measures to avoid direct discharge of runoff, particularly during the construction phase by providing desilting basins, etc.

C

Page (44) In the discussion on wetland effects, it should be recognized that wetlands provide habitat for not only water fowl, but are in some cases important spawning areas. Upon defining those wetlands which are potential spawning areas, mitigation may include minimizing construction activities during critical spawning and larvel life stages.

D

Page (45) The MPCA supports the spill measures outlined in the DEIS. In the event that a spill reaches waters of the state, does Mn/DOT have containment or absorbent booms, sheets or rolls of absorbent pads or other equipment necessary to sucessfully recover the spilled material? If not what measures can Mn/DOT take to recover spilled material which have entered state waters through highway drainage facilities?

E

Page (46) Reference is made to 404 permits for the placement of fill in wetlands. Since the MPCA is responsible for certification under 401 of the Federal Water Pollution Control Act for those permits issued by the U.S. Army Corps of Engineers, copies of all correspondence relative to 404 permits should be sent to the MPCA.

F

Page (52) Specific wetland areas which will be impacted are discussed in this section. It is unclear as to what wetlands will receive drainage, how many acres of highway will drain to each wetland or receiving water and what specific measures can be used to minimize adverse impacts. The MPCA supports the wetland treatment concept for highway drainage, however, spill preventative measures should be made available where possible to avoid allowing spilled materials to enter major wetland areas.

G

Page (59) The MPCA encourages the incorporation of ponding areas into interchange designs.

H

Page (69) Minnesota Noise Standards have daytime and nighttime L_{10} and

I

L_{50} standards. This section deals with only the daytime L_{10} standards. This is misleading since the numbers of receptors being exposed to excessive noise may increase when nighttime or L_{50} standards are examined. This failure to address State standards has been a reoccurring problem in Mn/DOT Environmental Impact Statements and is unacceptable to the MPCA.

Page (70)

J

Table. Minnesota Noise Standards are the measure by which acceptable levels of noise are determined in the state. They should be used as the primary comparison to determine the necessity for abatement measures. "Categories" in the table should reflect NPC-2 Noise Area Classifications in addition to, if not instead of, the Federal Land Use Category so accurrate interpretations of data related to State standards can be made more easily.

Page (70)

K

Sites 1-5. In describing mitigative measures for noise, the DEIS states that in several cases "preliminary analysis indicates that walls are not cost effective." What criteria were used in determining cost effectiveness? At what point are mitigative measures economically feasible?

Page (71)

L

Site 6B. The DEIS states that "Research shows that a noise wall is ineffective." The research used should be cited.

Page (71)

M

Site 6C. What types of noise walls were considered for commercial type development? What height was determined to be necessary to bring the development into commpliance with State standards? What "inconvenience" would be caused? The assumption has been made that owners of commercial property prefer noise in violation of State standards to be possible loss of visual advertising. What documentation exists to support this assumption?

Page (71)

N

Noise Insulation. The use of insulation, although not abating outside noise, can mitigate noise levels inside buildings. This mitigative measure merits more discussion. What would determine the financial or economic feasibility for implementing this type of mitigation?

Page (71)

O

In discussing the various types of noise abatement measures, the use of different road surfaces was not discussed in the EIS although it was presented in the preliminary noise report on this project. The noise effects of various road surfaces are currently under study by the MPCA. This type of abatement should be addressed in the DEIS.

Page (72)

P

Local Coordination. Since the Minnesota Department of Transportation did not address the nighttime L_{10} and L_{50} standards, or the daytime L_{50} standard, the incomplete information provided to local communities may, in fact, encourage incompatible development in areas where acceptable noise levels will not be met for a particular type of development.

Page (75) P — Map. What areas are unsuitable for residential, or commercial development because of projected violations of State Noise Standards? Noise contours should indicate where residential, commercial or industrial types of development should occur in order to assist local communities in their land use and zoning plans.

Page (85) A — Further discussion should be provided in the section on accident rates. It again appears that comparable statistics are not being used. Why haven't more current statewide accident rates been use? (1974 data was used).

Page (89) Q — Based on the available information in the Draft EIS the MPCA would favor the East alternative bypass, thus avoiding major stream crossings and diversions.

R — In general, the DEIS covers most areas of environmental concern. Two sections required under MEQC 30 D "the Impact on State Government of any Federal Controls Associated With the Proposed Action" "Multi-State Responsibilities" should be provided in the Draft EIS. In particular, the relationship between Federal and State Environmental Standards, as well as, the designs constraints imposed by FHWA should be discussed. Those design constraints have a significant impact on state actions and should be throughly discussed in the Draft EIS.

The MPCA appreciates the opportunity to comment on the Draft EIS for the proposed trunk Highway 65 Cambridge bypass. If you have any questions please contact me.

Yours truly

Sandra S. Gardebring
Executive Director

JC/smk

cc: FHWA Division Administrator, Metro Square Building, Suite 490
St.Paul, Minnesota 55101
Jim Harrington, Mn/DOT
Terry Hoffman, Mn/DOT
U.S. Fish and Wildlife Service, Federal Building, Fort Snelling,
Twin Cities, MN 55111
Bill France, U.S. EPA, Region V, 230 South Dearborn St.,
Chicago, Illinois 60604
Minnesota Department of Natural Resources, Joseph Alexander,
Commissioner, 3rd Floor, Cent. Office Building, 658 Cedar St.,
St. Paul, MN

RESPONSES TO MINNESOTA POLLUTION CONTROL AGENCY

A The intent of this discussion is to relate to the reader of the magnitude of the present accident rates on T.H. 65. Since no comparative accident data for similar highways is currently available the statewide rural interstate accident rates were utilized to show the anticipated magnitude of accident rates on the proposed T.H. 65 Bypass. The 1975 statewide accident rate was recently compiled and included in this EIS.

Since 1976 Mn/DOT,in conjunction with the Department of Public Safety, has been developing a traffic accident record (accident data base) and an accident analysis system that will develop accident rates for like categories of roadways for each Mn/DOT District and statewide. Mn/DOT anticipates implementing this program in 1979.

B The complexities of ground water hydrology and the paucity of valid research make it difficult to predict changes in ground water quality resulting from highway runoff. Research seems to indicate that de-icing salt is the only potentially polluting constituent of highway runoff to ground water wells. The only known case histories of well contamination in Minnesota involving highways resulted from salt storage stockpiles. Presently de-icing salt is stockpiled at the Cambridge Sub-Area Maintenance Yard. De-icing salt at this site is stored in covered storage facilities. The sand-salt mixture stockpile has modified drainage to control runoff and direct it away from water supplies. There has never been any reported ground water quality problem resulting from the storage of de-icing salt at this site.

The local movement of near-surface ground water is generally towards effluent water courses such as the Rum River, Beckins Creek, and Isanti Brook. Ground water is discharged as base flow to these streams. Regional ground water movement is generally toward the southeast. Very little near-surface ground water in the Anoka Sand Plain recharges deep glacial drift or bedrock aquifers.

Due to the pervious fine sand and loamy fine sand outwash of the Anoka Sand Plain found in the project area, much of the highway runoff will drain vertically. Vertical drainage augments the infiltration of runoff contaminants into the near-surface ground water table. As highway runoff percolates into the soil it is filtered and diluted to a point where it is insignificant. Although definitive information regarding migration characteristics of potential pollutants is lacking, it can be assumed concentration decreases with depth and distance from the roadway.

Of the three types of wells found in the Cambridge area (shallow glacial drift wells, deep drift wells and bedrock wells) only shallow drift wells are vulnerable to this form of pollution.

The zone of influence paralleling the roadway is variable depending on many factors (e.g. surficial runoff, transmissivity of the soil, natural purification of runoff, well pumping rates - drawdown - cone of depression, local ground water gradients, etc.). Based on previous investigations and published reports on shallow drift wells, there should be no significant impact beyond 200 feet from the roadway.

All wells including private wells have been identified on the Water Resource Map (Water Resource Report, page 4). Of these, only four wells are within the zone of influence. Three of these are shallow drift wells. The other is in deep drift and therefore should not be affected. Present State Health regulations prohibit new domestic wells from tapping the near-surface water table.

Even though three wells have been identified as being within the zone of possible impact, history would seem to lend credence to our contention that there should be no impact on ground water supplies.

Analyses of these wells are being conducted to establish base line water quality data. Testing will also be conducted during construction and after the bypass is open to traffic to identify and document any changes in the water quality of these wells. Ground water quality information found on page 27 has been obtained from analyses conducted by other State and Federal agencies.

The MPCA has received a copy of the Cambridge Bypass layout showing all wells within the zone of potential influence on ground water quality. This map is available for public and agency review.

C Pollution potential during bypass construction operations will be reduced by implementing temporary erosion control measures (see page 50).

Temporary sediment basins to settle out suspended material or topsoil berms to divert runoff will be used to reduce sedimentation from occurring in Florence and Joe's Lake.

D Wetlands affected by this project are not normally fish spawning areas because there is not sufficient water in the Type 2 and 6 wetlands or there is no interconnecting water course of sufficient depth to carry a migration run.

E Mn/DOT is researching and formulating a spill plan to be adopted in the near future. Presently this agency has no absorbent booms, pads, containers or other spill recovery equipment. Until the spill plan is adopted and implemented Mn/DOT will have to rely on competent professionals when sophisticated procedures and equipment are required. See page 47, Hazardous Spills.

F MPCA along with EPA and U.S. Fish and Wildlife Service presently receives copies of Department of the Army Permit correspondence from Mn/DOT. This procedure will also be used for this project.

G A large scale drainage map has been developed showing highway runoff and outfall into wetlands or other receiving waters. This map has been reviewed by the MPCA and is also available to the public and other agencies. The majority of highway runoff wil enter small wetland basins, excavated ponding areas, or areas where the terrain and vegetation will allow the isolation and containment of accidental spills. The probability of hazardous spills adversely affecting large wetlands, lakes and streams in the project area is slight. Special containment basins were researched but found to be not practicable because of the minimal anticipated impact.

H See Wetland mitigation measures, page 61 , and EPA response A, page 140.

I A supplement to the Preliminary Noise Report has been prepared to address MPCA daytime and nighttime L_{10} and L_{50} standards. A copy of this supplement will be furnished to MPCA with the Final EIS. A summary of receptors exposed to noise levels exceeding these standards is included on page 72.

J A chart with MPCA Noise Area Classifications and daytime and nighttime standards has been added to the noise analysis discussion on page 74 . This chart is also included in the supplement discussed in response I above.

K Presently there are no criteria for determining cost effectiveness in outstate Minnesota. The cost of timber noise walls (based on 1977 Cost Estimates developed for statewide Mn/DOT usage) for each site was determined to range from $65,000 to $215,000 per receptor. This was assumed to be economically unjustified in the Preliminary Noise Report. This sentence in the discussion of sites 1-5 in the Draft EIS has been re-written to read "Preliminary analysis indicates that walls are not economically justified."

L The Draft EIS discussion of Site 6B stated "research shows that a noise wall is ineffective unless it is continuous." The words "experience indicates . . ." have been substituted for "research shows . . ."

M No abatement was analyzed to the level of determining costs or reducing noise levels to the State L_{10} Daytime Standard. Any type of noise wall would have to be constructed on the sidewalk due to the existing limited right of way. The assumption is true based on extensive experience. One source which could be consulted is the Transcript on the Interstate 94 North Minneapolis Noise Variance Application Hearing (Minnesota Project Number 2781-09) held in September, 1978.

N Noise insulation of private residences or businesses is not within the scope of the Federal Highway Administration's regulations (FHPM 7-7-3). If the noise impact is especially severe and if conventional abatement measures are unacceptable, this extraordinary measure could be considered on a case by case basis. FHPM 7-7-3 does not define especially severe impacts. This determination must be made by Mn/DOT. Any proposal of extraordinary abatement measures must be approved by the Regional Federal Highway Administrator. With the proposed project, however, the noise analysis indicates that the impacts on adjacent properties are not severe enough to warrant noise insulation.

O Since the current studies are not yet conclusive, noise effects of various road surfaces were not included in this noise analysis. The determination for bituminous surfacing for the proposed bypass was made in April, 1977. Our agency is currently conducting extensive research on possible noise effects of pavement types.

P A copy of the Preliminary Noise Report and the supplement addressing MPCA standards will be furnished to local officials to identify development areas compatible with respective State standards.

Q The east alternate has been selected.

R There is a difference of opinion in the interpretation of 6MCAR3.030 among State agencies as to what is really required. Section X. IMPACT ON STATE GOVERNMENT AND MULTI-STATE RESPONSIBILITIES ASSOCIATED WITH THE PROPOSED ACTION has been added on page 111.

STATE OF
MINNESOTA
DEPARTMENT OF NATURAL RESOURCES
CENTENNIAL OFFICE BUILDING • ST. PAUL, MINNESOTA • 55155

June 28, 1978

DNR INFORMATION
(612) 296-6157

Mr. Darryl E. Durgin, District Director
Department of Transportation
301 Laurel Street - Box H
Brainerd, Minnesota 56401

Re: Draft Environmental Impact Statement for
Trunk Highway 65 Bypass of Cambridge, Minnesota
Isanti County
State Projects 3003-17 & 3004-32
From Jct. with CSAH 5, 5.7 Miles South of Cambridge
To Jct. with T.H. 107, 9.5 Miles North of Cambridge

Dear Mr. Durgin:

The Department of Natural Resources (DNR) has reviewed the Environmental Impact Statement (EIS) and Water Resource Report on the above referenced project and offers the following comments.

A Page 38 - Annexed Properties - Last sentence should read "Junction 5 (Isanti Township)".

B The major environmental impact from construction of the by-pass on Hwy. 65 near Cambridge will be the loss of approximately 14 acres of type 2-6 wetlands. This represents about 3% of the wetlands in the project area. We would like to recommend that the following proposed wetland mitigation measures receive a more thorough discussion in the Final EIS:

1) Development of existing ponding areas, i.e. enlargement of existing wetlands and increased water levels, etc.

2) Replacement of wetlands by construction of nearby ponding areas and improvement of borrow pits for wildlife habitat.

3) Acquisition of "odd lots" and excess right-of-ways for development of wildlife habitat areas and to be turned over to the DNR for maintenance.

4) The allocation of grants to this project for development of wetlands and other wildlife habitat areas.

Sincerely,

Jerome H. Kuehn

Jerome H. Kuehn, Administrator
Bureau of Planning Services and Review

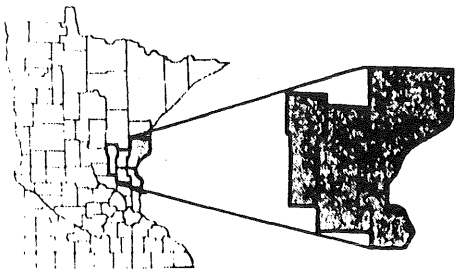
JHK:mn

AN EQUAL OPPORTUNITY EMPLOYER

RESPONSE TO MINNESOTA DEPARTMENT OF NATURAL RESOURCES

A Correction made in Final EIS, page 40.

B Wetland impacts will be mitigated by the construction of six ponding areas totaling approximately 18 acres. These replacement wetlands and other methods researched to compensate for the destruction of wetlands are discussed in the Final EIS, Wetland mitigation measures, page 61.



EAST CENTRAL REGIONAL DEVELOPMENT COMMISSION

SERVING LOCAL GOVERNMENTS IN CHISAGO, ISANTI, KANABEC, MILLE LACS AND PINE COUNTIES

NOTIFICATION OF FINAL EC RDC REGIONAL (A-95) REVIEW

DATE: June 29, 1978
PROJECT TITLE: Trunk Highway 65 Cambridge Bypass Draft EIS
EC RDC PROJECT NO: 78-5-20-7E(I)
APPLICANT: Minnesota Department of Transportation
CONTACT PERSON: Darryl Durgin
DATE RECEIVED BY EC RDC: May 26, 1978
EC RDC ACTION: Positive Review with Comments

EC RDC COMMENTS:

At the meeting of June 26, 1978, the East Central RDC determined that the Trunk Highway 65 Cambridge Bypass draft EIS is consistent with regional goals and policies. The Commission also determined that the addition of a bus stop and a park-and-ride facility would further the achievement of two additional regional transportation policies. Specifically, the proposal furthers achievement of:

Transportation Goals:

II. To establish a comprehensive region-wide transportation system which provides the capacity to move people and material goods with maximum efficiency, comfort and safety as well as one which will serve the existing regional land use pattern and meet the anticipated travel demand by the existing and proposed land uses.

III. To reduce traffic congestion and accident exposure, particularly in the Region's urban centers.

IV. To minimize dislocation of people, disruption of business, and defilement of natural resources in the delineation of new highway routes and the construction of transportation facilities.

Transportation Policies:

4. Greater consideration should be given to environmental, social, and economic factors in highway location and design.

FULL COMMISSION

CHISAGO COUNTY
Richard Bruns
L. J. Wheeler
Donald Hestbeck
Barry L. Blomquist

ISANTI COUNTY
Edgar Hass
Ray Stoeckel
Laurence Collin
Philip Gelhorn

KANABEC COUNTY
Tom Roeschlein
Donald Holland
Gin Peterson
Wilbert Strelow

MILLE LACS COUNTY
Gloria Habeck
Richard Anderson
George Alderink
Mark Sederquist
James Bergstrom

PINE COUNTY
James Youngbauer
James Tuttle
William Jokela
Thomas Dignan
Herbert Sikkink

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Richard Bruns
Edgar Hass
Donald Holland

EXECUTIVE DIRECTOR

Philip D. DelVecchio

KANABEC COUNTY COURTHOUSE — 18 NORTH VINE STREET, MORA, MINNESOTA 55051 — (612) 679-4065

EC RDC COMMENTS: (continued)

The negative impact of new routes on the natural landscape and local communities should be minimized and eliminated where possible.

5. Future highway routes should be functionally and visually harmonious with other elements of the Region's physical form. This may be achieved by greater use of grade separations, landscaped buffers, and the use of air rights over public streets for building purposes.

6. Every effort should be made to eliminate all forms of environmental pollution resulting from transportation activities.

The proposed facility could be improved by adding a park-and-ride facility for existing commuters with a bus stop located nearby for use by the inter-city bus running between Mora and Minneapolis.

These additions would produce additional beneficial impacts. They are: reduced energy consumption, improved coordination between bus and auto travel modes, increased emphasis on public transit, and reduced use of long-term stalls in downtown Cambridge for commuter parking.

The above impacts have been identified by a carpool survey conducted in Cambridge by the East Central RDC in July 1977. Survey findings showed the need for a park-and-ride facility capable of serving 20 to 30 automobiles. It also indicated that carpooling in the Cambridge area resulted in a high vehicle ridership level of 3.9 persons/vehicle.

The addition of a bus stop and park-and-ride facility would further the achievement of:

Transportation Policies:

2. Public transit should be emphasized in the planning of the transportation system. It is currently the only means of transportation service available to many groups of disadvantaged people in the Region, (e.g. elderly, handicapped, and the young).

8. The EC RDC should coordinate transportation with planning and programming in other areas such as energy, land use and growth, open space, public utilities and services, environment, housing, health, welfare, economic development, etc.

In conclusion, a copy of the report on the Cambridge Carpool Survey and comments received on the proposed Cambridge Bypass are attached for your direction.

EC RDC COMMENTS: (continued)

This notification shall be included in the project sponsor's application to the State agency as evidence that Regional (A-95) Areawide Clearinghouse review has been completed.

Sincerely,

Philip D. DelVecchio

Philip D. DelVecchio
Executive Director

Enclosures

cc: State Clearinghouse

PD/ja

AGENCY COMMENTS

Cambridge Civic and Commerce Association

- Delays in this project have had a serious negative impact on economic development in Cambridge. Please keep us informed of the timetable and expedite the plan without further delay.

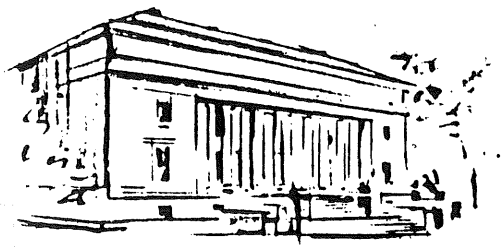
- Please implement the plan as soon as possible to alleviate dangerous traffic congestion on Highways 65 and 95 through Cambridge.

City of Cambridge

- The City would appreciate any and all help to aid in the commencement of construction of this project. It is the City's opinion that this project can not be completed soon enough.

RESPONSE

A Further research has been conducted since the Draft EIS. A portion of the excess right of way will be retained for a future park and ride facility if a demonstrated need arises. See revised discussion on page 16.



MINNESOTA HISTORICAL SOCIETY

690 Cedar Street, St. Paul, Minnesota 55101 • 612-296-2747

22 June 1978

Mr. C.P. Kachelmyer
Preliminary Design Engineer
Department of Transportation
Room 604 - Transportation Building
St. Paul, Minnesota 55155

Dear Mr. Kachelmyer:

RE: 330
FHWA-MN-EIS-78-01-D
Draft Environmental Impact Statement for
Trunk Highway 65 Bypass of Cambridge
Minn. Proj. F 005-3( )
State Projects 3003-17 & 3004-32
From Jct. with CSAH 5, 5.7 miles South of Cambridge
To Jct. with T.H. 107, 9.5 miles North of Cambridge
Isanti County

MHS Referral File Number E697

Thank you for the opportunity to review and comment on the above project. It has been reviewed pursuant to responsibilities given the State Historic Preservation Officer by the National Historic Preservation Act of 1966 and the Procedures of the National Advisory Council on Historic Preservation (36CFR800).

Our review comments stating that there are no places of historic, architectural, cultural, or archaeological significance which may be affected by the Trunk Highway #65 Bypass of Cambridge Minnesota appear on pages 115-116 of the draft environmental impact statement. Review of the draft report indicates that in the event an archaeological or cultural site is discovered during construction

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the State Historic Preservation Officer will be notified and construction will be discontinued until an inspection can be made by the State Historic Preservation Officer. This policy insures that there will be no adverse affects to historic or prehistoric resources caused by the proposed construction. We find no reason to alter our previous comments.

Thank you for your continuing attention to Minnesota's cultural resources during your planning process.

Sincerely,

Russell W. Fridley
State Historic Preservation Officer

RWF/fr

cc: Darryl E. Durgin, District Director
Minnesota Department of Transportation
301 Laurel Street
Box H
Brainerd, Minnesota 56401

scenic minnesota lines, inc.
P.O. Box 1 ● St. Cloud, Minnesota 56301

June 20, 1978

Mr. Darryl E. Durgin, District Director
Minnesota D.D.T.
301 Laurel Street
Box H
Brainerd, MN 56401

Dear Mr. Durgin:

RE: Project 3003-17 Hwy 65 Cambridge Bypass

I have reviewed the EIS draft for the proposed Highway 65 Cambridge bypass and wish to offer the following comments.

Scenic Minnesota Lines is a common route carrier, and our goals are to serve the people. Cambridge is the largest city on the Mora - Minneapolis schedule. Cambridge also has the best producing agent, and this is very important to the company and community.

A "Park-n-Ride" lot loacted near an approach onto Hwy 65 south of the junctions of MN 95 and MN 65 would be our first choice. In this manner we can best serve the commuter bus riders and continue to accommodate express shipments via our present agent.

From our experience in operating Hwy 65, we find the four lane divided highway with the wide shoulders (that portion south of Cambridge) is much safer for those occasions when the bus must pull off the roadway to discharge a passenger.

We do support the Hwy 65 bypass as proposed in the EIS. At such time it is deemed necessary, we will redesign the schedule in a manner which best serves Cambridge.

Sincerely,

Melvin A. Voigt

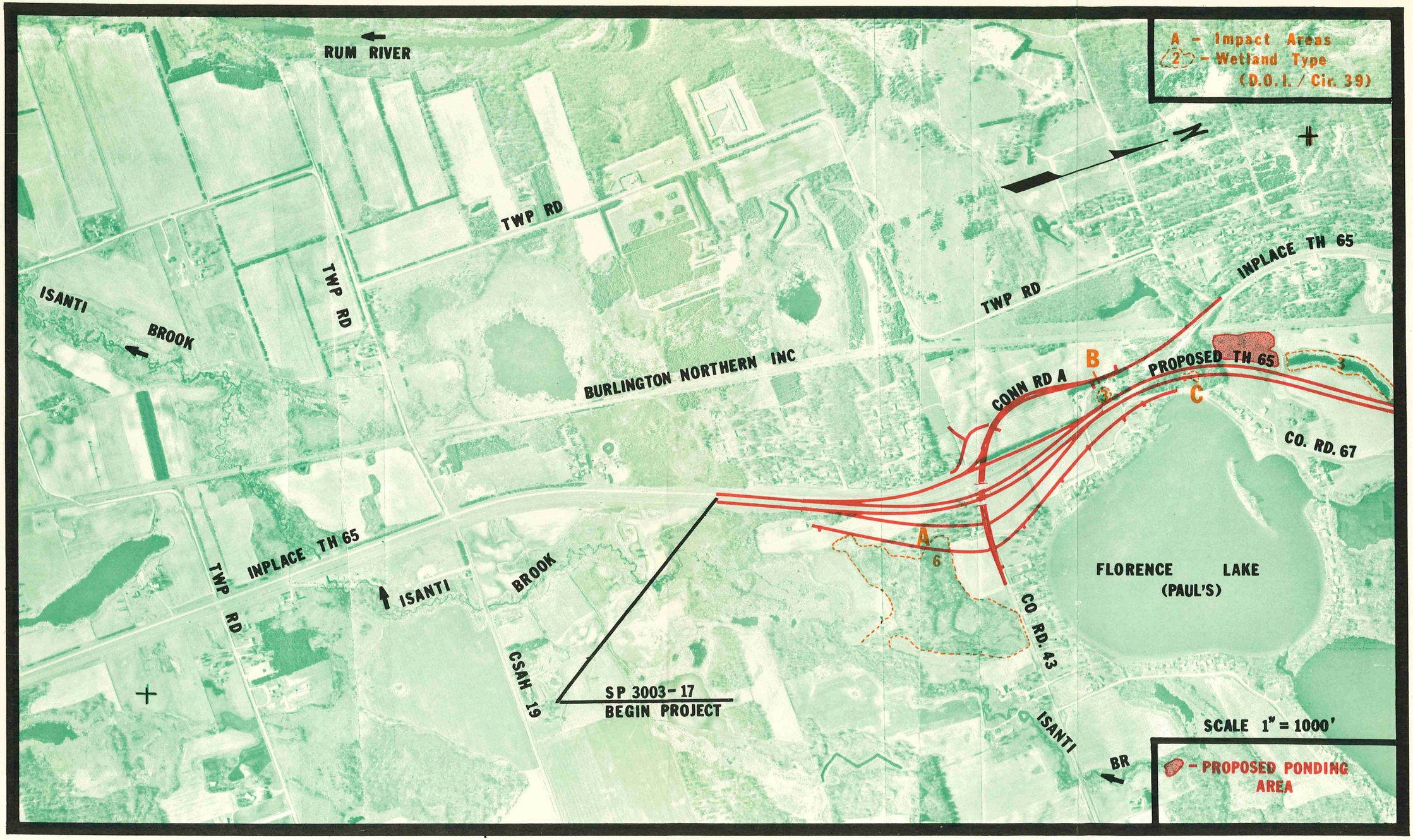
Melvin A. Voigt
Vice President

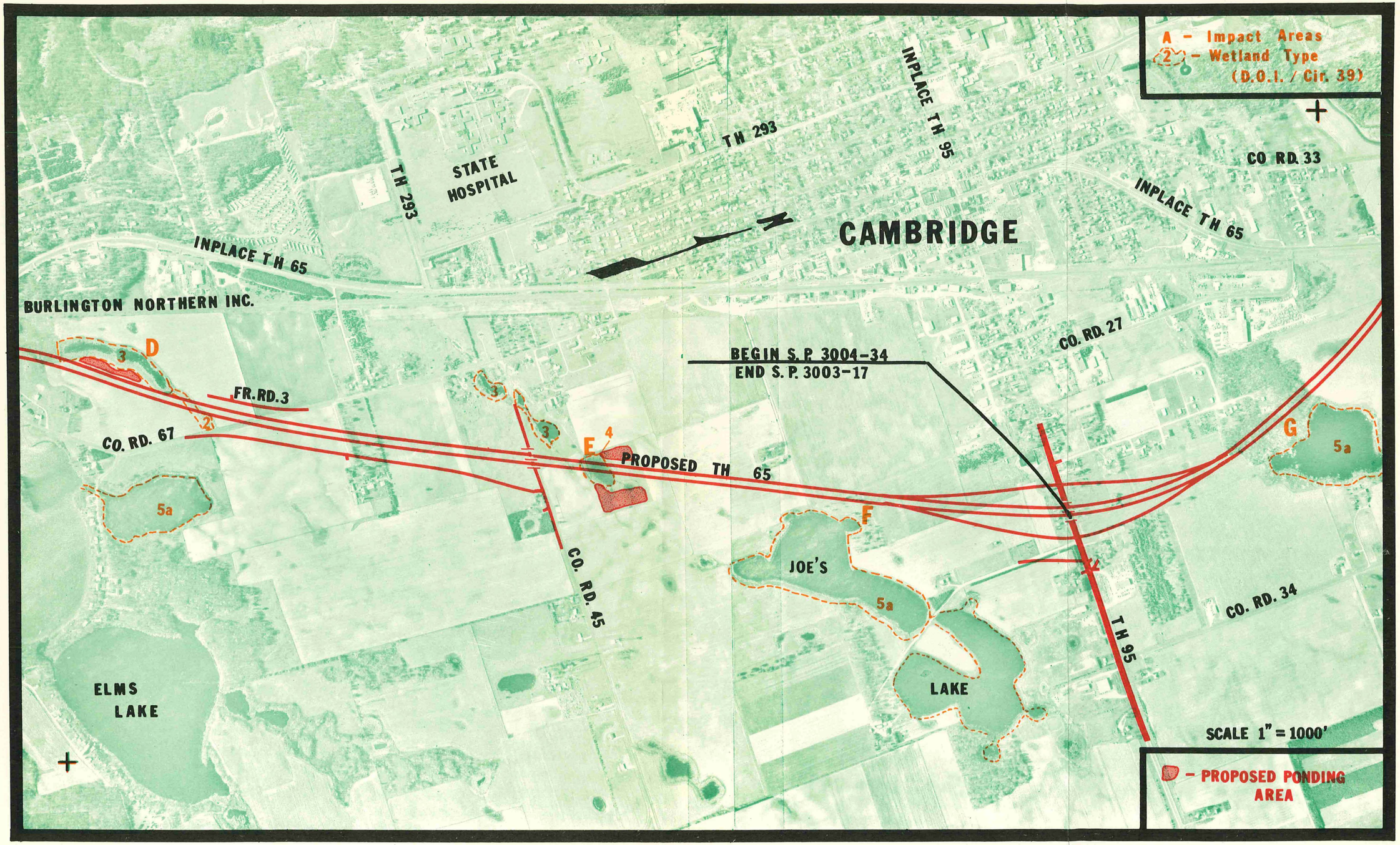
ck

cc Tom Foley
Michael Wiess

RESPONSE TO SCENIC MINNESOTA LINES, INC.

A Further research has been conducted since the Draft EIS. A portion will be retained for a future park and ride facility if a demonstrated need arises. See revised discussion on page 16.


A - Impact Areas
(2) - Wetland Type
(D.O.I. / Cir. 39)
RUM RIVER
TWP RD
TWP RD
TWP RD
ISANTI
BROOK
BURLINGTON NORTHERN INC
INPLACE TH 65
CONN RD A
B
PROPOSED TH 65
C
CO. RD. 67
FLORENCE LAKE
(PAUL'S)
A
6
CO RD. 43
INPLACE TH 65
TWP RD
ISANTI
BROOK
CSAH 19
SP 3003-17
BEGIN PROJECT
ISANTI
BR
SCALE 1" = 1000'
- PROPOSED PONDING AREA


A - Impact Areas
2 - Wetland Type
(D.O.I. / Cir. 39)
TH 293
INPLACE TH 95
CO RD. 33
STATE HOSPITAL
TH 293
INPLACE TH 65
CAMBRIDGE
BURLINGTON NORTHERN INC.
D
3
FR. RD. 3
2
CO. RD. 67
5a
BEGIN S. P. 3004-34
END S. P. 3003-17
CO. RD. 27
G
5a
E
4
PROPOSED TH 65
F
JOE'S
5a
CO. RD. 45
CO. RD. 34
TH 95
ELMS LAKE
LAKE
SCALE 1" = 1000'
- PROPOSED PONDING AREA

A - Impact Areas
2 - Wetland Type
(D.O.I. / Cir. 39)
RUM RIVER
24" H.P.
TRANS. CO.
16" H.P.
CO. RD. 33
CO.
BECKINS
CREEK
TWP RD
RD
TWP
S.P. 3004-34
END PROJECT
PROPOSED TH 65
6 & 7
2
6
INPLACE TH 65
BURLINGTON NORTHERN INC.
MIDWESTERN GAS
TWP RD
NORTHERN
SCALE 1" = 1000'
- PROPOSED PONDING AREA