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DRAFT NewTrunk Highway 10 **ENVIRONMENTAL IMPACT STATEMENT**

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FHWA-MN-EIS-79-02-D
Federal Highway Administration
Region 5

New Trunk Highway 10

From

Hanson Boulevard
in Coon Rapids, Minnesota
Anoka County

To

I-35W
in Mounds View, Minnesota
Ramsey County

ADMINISTRATIVE ACTION

DRAFT

ENVIRONMENTAL IMPACT STATEMENT

U.S. Department of Transportation
Federal Highway Administration
and
The State of Minnesota
Department of Transportation

Submitted pursuant to:

42 USC 4332(2)(c), 23 USC 128(a)
and
Minnesota Statute 116D.01 et. reg.

Feb 20, 1979
Date

Kermit H. McRae
Minnesota Department of
Transportation

2 - 20 - 79
Date

E. Dean Carlson
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Division Administrator
Federal Highway Administration

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SUMMARY

Federal Highway Administration

Environmental Statement

(x) Draft () Final

() Section 4(f) Statement

Additional information about the proposed action and about this Environmental Impact Statement can be obtained from:

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District 5
2055 North Lilac Drive
Golden Valley, Minnesota 55422
Telephone (612) 545-3761

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St. Paul, Minnesota 55101
Telephone (612) 725-7001

DESCRIPTION

The proposed Federal Highway Administration (FHWA) action is the participation, with funds administered by the FHWA, in construction/reconstruction of about a 6 mile segment of Trunk Highway 10 between Hanson Boulevard, Coon Rapids, Minnesota and I-35W in Mounds View, Minnesota. The proposed action is to provide a four lane divided expressway built to freeway standards with controlled access between these two termini.

The proposed construction (referred to as New Trunk Highway 10 in this Draft Environmental Impact Statement) would begin at Egret Boulevard in Coon Rapids, Minnesota and pass through Blaine and Mounds View, Minnesota and terminate at its interchange with I-35W in Mounds View, Minnesota.

ACTIONS REQUIRED BY OTHER FEDERAL AGENCIES

General or individual Section 404 permits will be required from the U.S. Army Corps of Engineers.

ENVIRONMENTAL IMPACTS SUMMARY

The proposed improvement will provide a direct route through the project area for regional and trunk route motorists and improve travel conditions for local motorists. In addition it will divert traffic away from several congested highways, thereby reducing the accident potential and fuel consumption and help the local communities to reach their development goals.

The implementation of the proposed action will require the removal and or relocation of some residences and businesses and the commitment of additional land for right-of-way. There will be changes to the landscape, removal of wetlands, vegetation, wildlife habitat, and a visual intrusion on new areas. Also the proposed action may introduce noise and air pollution into a new corridor. A summary of the impacts is contained in Table 10 of this document.

4(F) INVOLVEMENT

This proposed action does not include the use of any land which would constitute 4(f) involvement.

ALTERNATIVES

This EIS considers the No-Build Alternate and two route alternatives. The No-Build Alternative would be to use existing Trunk Highway 10 as it is today with no major improvements. One of the route alternatives, designated Relocated TH 10, would include 3.5 miles of new highway on new alignment connecting to existing portions of Trunk Highway 10 on both ends. This route would parallel the existing Trunk Highway 10 alignment. The other route alternative, designated Upgraded Existing TH 10, would be to bring the existing alignment up to freeway standards.

THE IMPACT ON STATE GOVERNMENT OF ANY FEDERAL CONTROLS

Federal funding will be requested for this proposed action. Controls may be imposed as a result of conditions placed upon the issuance of Section 404 permit(s) by the U.S. Army Corps of Engineers.

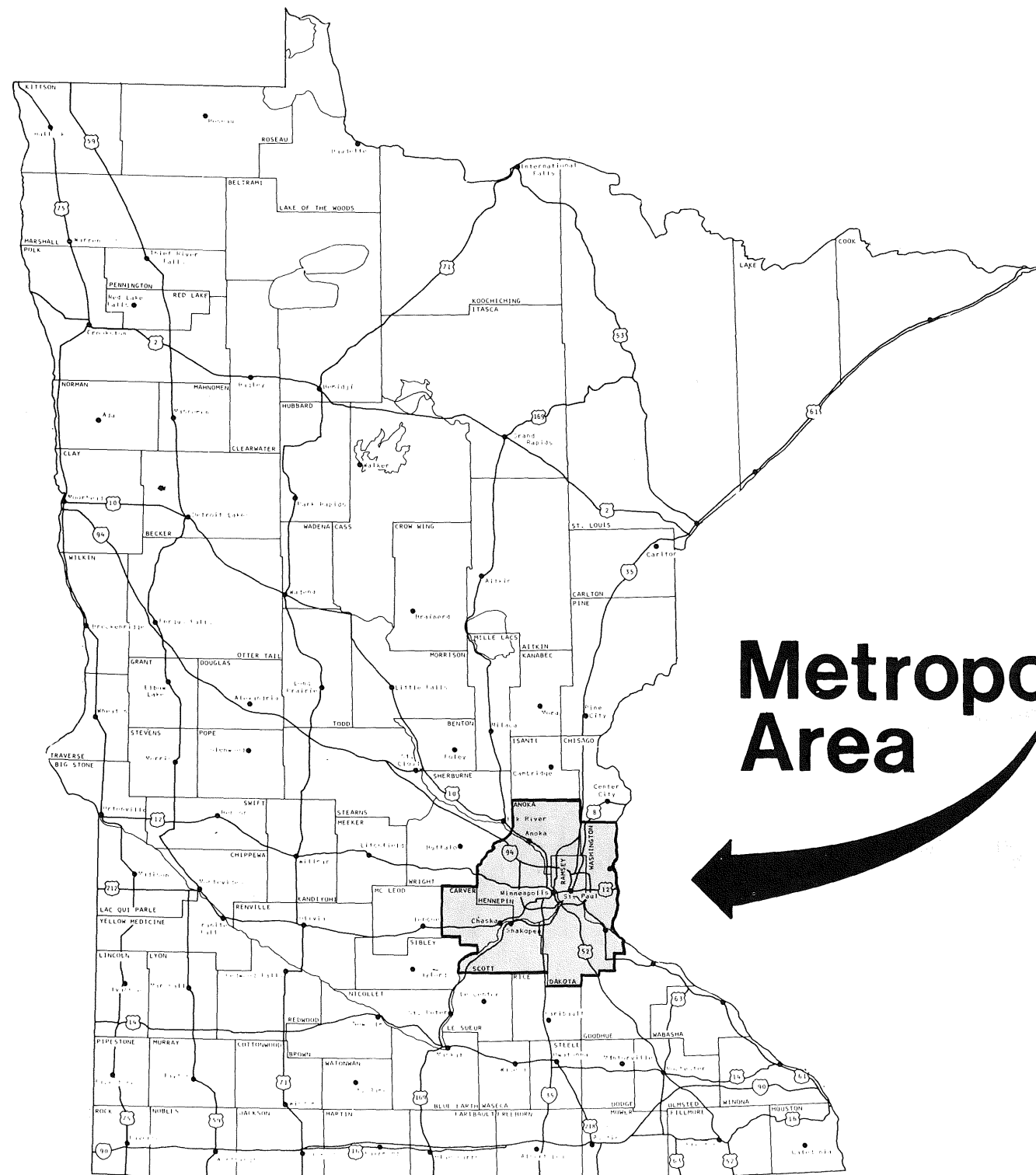
The use of federal aid stipulates that specified policies, procedures, and design criteria have to be satisfied by state government. State government is affected by these controls.

MULTI-STATE RESPONSIBILITIES

This proposed action will have no impact on adjacent states and there are, therefore, no multi-state responsibilities involved.

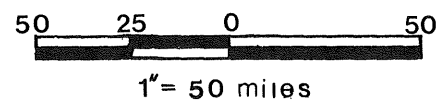
**COMMENTS ON THIS STATEMENT HAVE BEEN REQUESTED
FROM THE FOLLOWING AGENCIES AND PUBLIC GROUPS:**

U.S. Department of Agriculture	Minnesota Energy Agency
U.S. Department of the Army	Minnesota Department of Economic Development
Corps of Engineers, St. Paul District	Minnesota Environmental Quality Board
U.S. Department of Housing and Urban Development	Minnesota Historical Society
U.S. Department of Health, Education and Welfare	Minnesota Department of Natural Resources
U.S. Department of Interior	Minnesota Pollution Control Agency
Fish and Wildlife Service	Minnesota State Planning Agency
Heritage Conservation and Recreation Service	Metropolitan Council (A-95) Clearinghouse
U.S. Department of Transportation	Metropolitan Transit Commission
Second Coast Guard District	Metropolitan Airport Commission
Federal Railroad Administration	Anoka County
Federal Aviation Administration	Ramsey County
Urban Mass Transportation Administration	City of Blaine
Advisory Council of Historic Preservation	City of Coon Rapids
Environmental Protection Agency	City of Mounds View
Federal Energy Administration	City of Spring Lake Park

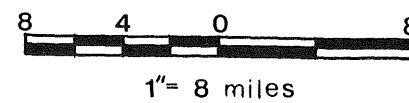


Metropolitan Area

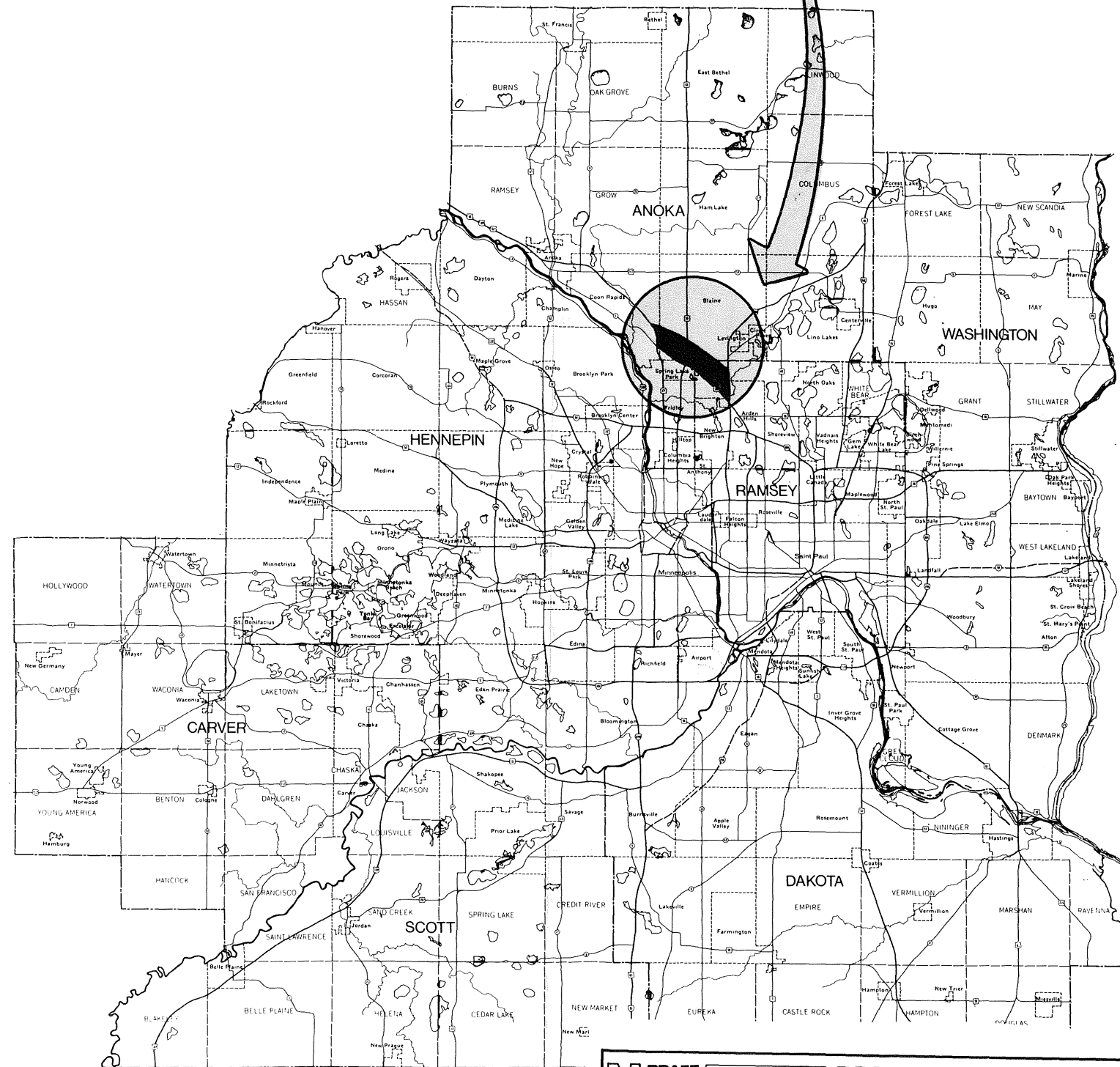
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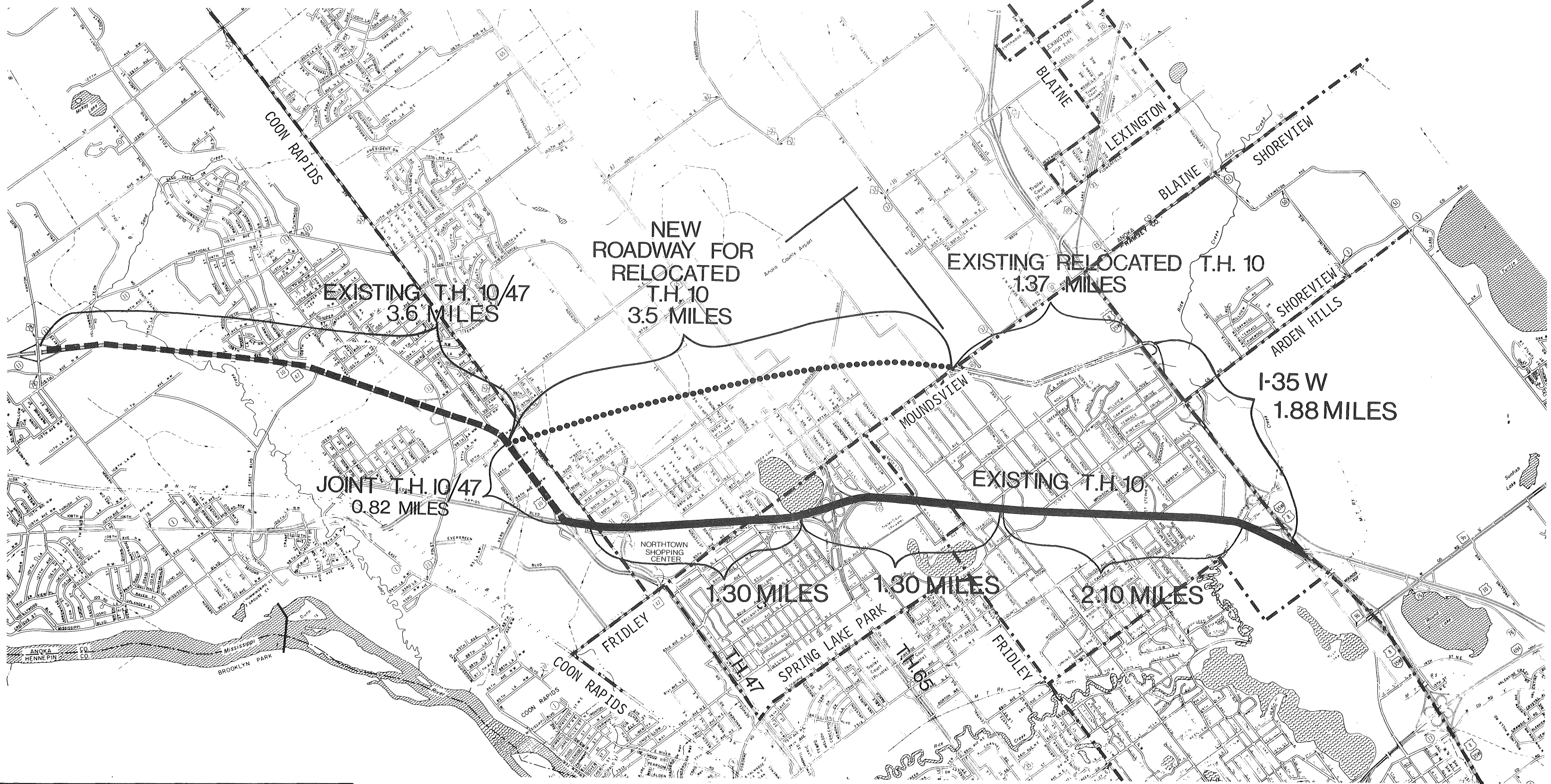


PROJECT LIMITS



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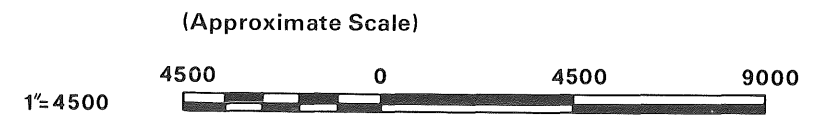
FIGURE 1
PROJECT LOCATION



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FIGURE 2
SEGMENTS OF THE
PROPOSED ACTION

- RELOCATED T.H.10
- SEGMENT COMMON TO BOTH ALTERNATIVES
- UPGRADED T.H.10



SECTION I NEED FOR THE PROPOSED ACTION

INTRODUCTION

The proposed action, New Trunk Highway 10, has been identified by the Minnesota Department of Transportation and the Metropolitan Council which serves as the 3-C (Continuing, Comprehensive and Cooperative) planning agency for the seven-county Metropolitan Area of Minnesota, as being a necessary systems link in their ultimate development plan. Figure 1 (refer to Summary) depicts the location of the seven-county Metropolitan Area in relation to the State of Minnesota, as well as the location of new TH 10 within the seven-county Metropolitan area.

The need for the proposed action is outlined in the Metropolitan Transportation Development Guide-Policy Plan, final draft approved by the Metropolitan Council on January 8, 1976. The discussion and need for an improved TH 10 corridor dates back to December 13, 1956 when a public hearing was held in St. Paul. This public hearing discussed TH 10 from Interstate Route 394-1 (I-35W), TH 8 to the junction of TH 65. The proposed action which extends from Interstate 35W to the junction of Trunk Highway 47 and Trunk Highway 10, is a necessary connecting systems link for this northern tier of suburbs of the Metropolitan Area.

Figure 2 (refer to Summary) illustrates the location of two alternatives for the proposed action, Relocated TH 10 and Upgraded TH 10. It can be seen from this Figure that Relocated TH 10 is an extension of existing "new" TH 10 (constructed in 1971). The existing segment of 1.37 miles extends from I-35W to 85th Avenue North. Several specific factors were considered in determining the need for improved facilities within the proposed corridor. These are discussed in the following paragraphs.

TRANSPORTATION DEMAND

The existing section of TH 10 from I-35W to TH 47 is a four-lane divided arterial roadway characterized by the presence of numerous at-grade crossings, some signalized, some not. There are also many driveways, serving abutting land uses, along TH 10. The existing route accommodates average daily traffic (ADT) volumes ranging from 26,650 to 29,750 dependent upon the particular segment viewed. The 1976 average daily traffic volumes on the area roadways are shown on Figure 3. The roadway, in addition to providing land access, also serves as a commuter route for the north suburbs and is a heavily traveled recreation route providing access to/from the northern part of the State of Minnesota.

TH 10 provides a link from certain northerly suburbs to three Interstate routes; I-694, 35W, and 35E. TH 10 also provides a link to the northern part of the State. There is a strong directional traffic trend during the morning and evening peak traffic periods, illustrating the use of the route as work/home trip facility. An analysis of TH 10 intersection counts conducted during the past three years indicate during the morning peak hour 75 percent of the two-way traffic total along TH 10 is destined inbound (southeasterly) while this trend reverses itself during the afternoon peak hour. This strong peak directional flow, which ranges from approximately 1,800 to over 2,200 vehicles in one direction during a peak hour, dependent upon the intersection analyzed, causes delay and congestion to users of the facility. The resultant roadway capacity is not sufficient to accommodate these volumes. Analysis of the roadway capacity will be presented in a later portion of this section.

The Minnesota Department of Transportation made a series of traffic projections for the year 2000. These projections considered the three basic alternatives for the volume assessment. The first was retention of the existing TH 10 character (No-Build). The second considered an upgrading of TH 10 to freeway status complete with interchanges at specific locations (Upgraded TH 10 alternative). The third allowed for TH 10 to be relocated to a new alignment northerly of the existing alignment. The relocated TH 10 would be a freeway facility and existing TH 10 would remain as is

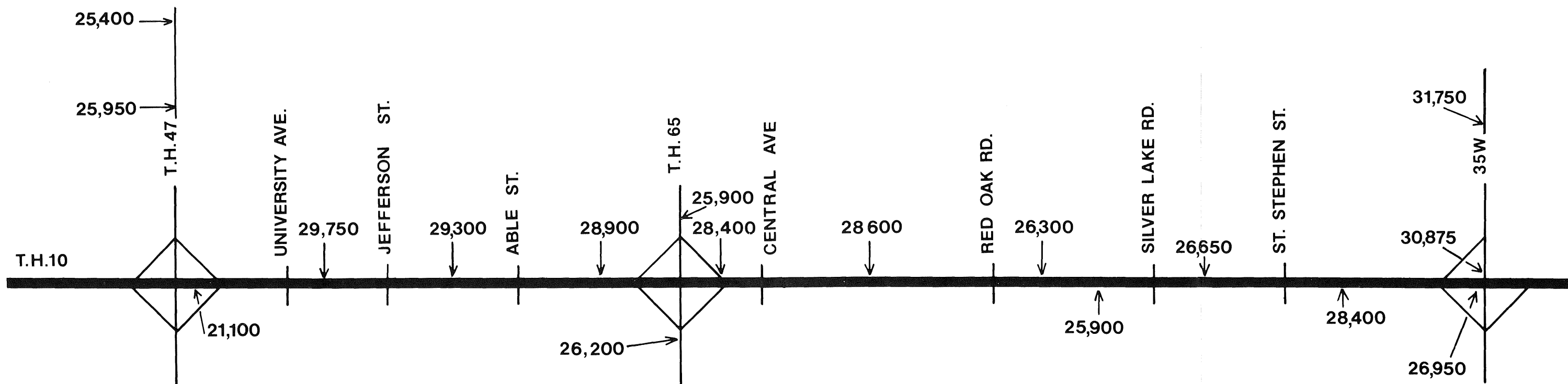


FIGURE 3
EXISTING T.H. 10 AVERAGE
DAILY TRAFFIC VOLUMES
(ADT)

in the third alternative. The results of these traffic projections are contained in two separate documents.^{1,2}

The year 2000 projected traffic volumes utilizing an existing TH 10 (no-build alternative) are shown on Figure 4. Traffic volume projections for Upgraded TH 10 to freeway standards on the existing alignment are contained on Figure 5. The projections for a Relocated TH 10 are shown on Figure 6. This illustration also contains the resultant projections along existing TH 10 with the alternative assumed to be in place.

The traffic projections along this northwest-southeast corridor illustrates an increasing demand. The projections along TH 10 considering the no-build or Upgraded TH 10 represent increases over the existing average daily volume ranging from 25 percent (just west of I-35W) to 50 percent (just east of TH 10/47).

Considering the assumption of a Relocated TH 10, the projected volumes along the two combined roadways provide a corridor volume increase ranging from 50 percent (west of I-35W) to 62 percent (between TH 65 and University Avenue) over the existing volumes. The projections for this alternative indicate the evident demand thru the corridor is greater given the provision of two separate facilities. This increase, in part, would seem to be trips using other facilities redistributed to TH 10 should the additional routes be provided.

It is evident, from the projected volumes for the year 2000 that the transportation demand will increase substantially.

FUNCTIONAL CLASSIFICATION

The Metropolitan Council of the Twin Cities Area has been given the authority by the Minnesota State

¹Minnesota Department of Transportation, Office of System Planning, System Planning Analysis Report M191, September, 1976.

²Minnesota Department of Transportation, Office of System Planning, System Planning Analysis Report 201, August 2, 1977.

Legislature for planning the development of the seven-county Metropolitan Area³ and has been designated by the Governor as the Metropolitan Planning Organization and the A-95 Clearinghouse Agency. The Council also serves as the 3-C Planning Agency for the Metropolitan Area. In keeping with the policy of relying on streets and highways for movement of people and goods, the Metropolitan Council has developed a⁴ guide for the orderly growth of the Metropolitan Area.

As part of the guide for transportation development in the Twin Cities area, the Metropolitan Council has established a system of functional classifications for area streets and highways.⁵ The functional level classification of Principal Arterial as detailed in the Transportation Section of the Metropolitan Development Guide, applies to a major facility capable of carrying large amounts of traffic at moderately high speeds with few interruptions in the traffic flow. Among the characteristics of a principal arterial are the elimination of local land access, prohibition of parking alongside the roadway, grade-separated interchanges of traffic from one route to another, right-of-way of 300 feet, elimination of cross-traffic and a capacity for carrying from 20,000 to 100,000 vehicles per day. The function of a principal arterial can, in theory, be served by either highway or mass transit. The functional level classification of intermediate arterial also applies to a major facility accommodating high traffic volumes at moderately high speeds. Among the characteristics of an intermediate arterial are elimination of local land access except to major traffic generators, prohibition of parking, right-of-way from 100 to 300 feet, grade separated or high-capacity

³The Metropolitan Council guides the planning and development for 137 municipalities, 53 townships, 49 school districts, 7 counties, 5 metropolitan-wide agencies, and 10 special districts.

⁴Metropolitan Council, Metropolitan Transportation Development Guide-Policy Plan, final draft adopted by the Metropolitan Council on January 8, 1976.

⁵For the definition of the functional classification used refer to Appendix A.

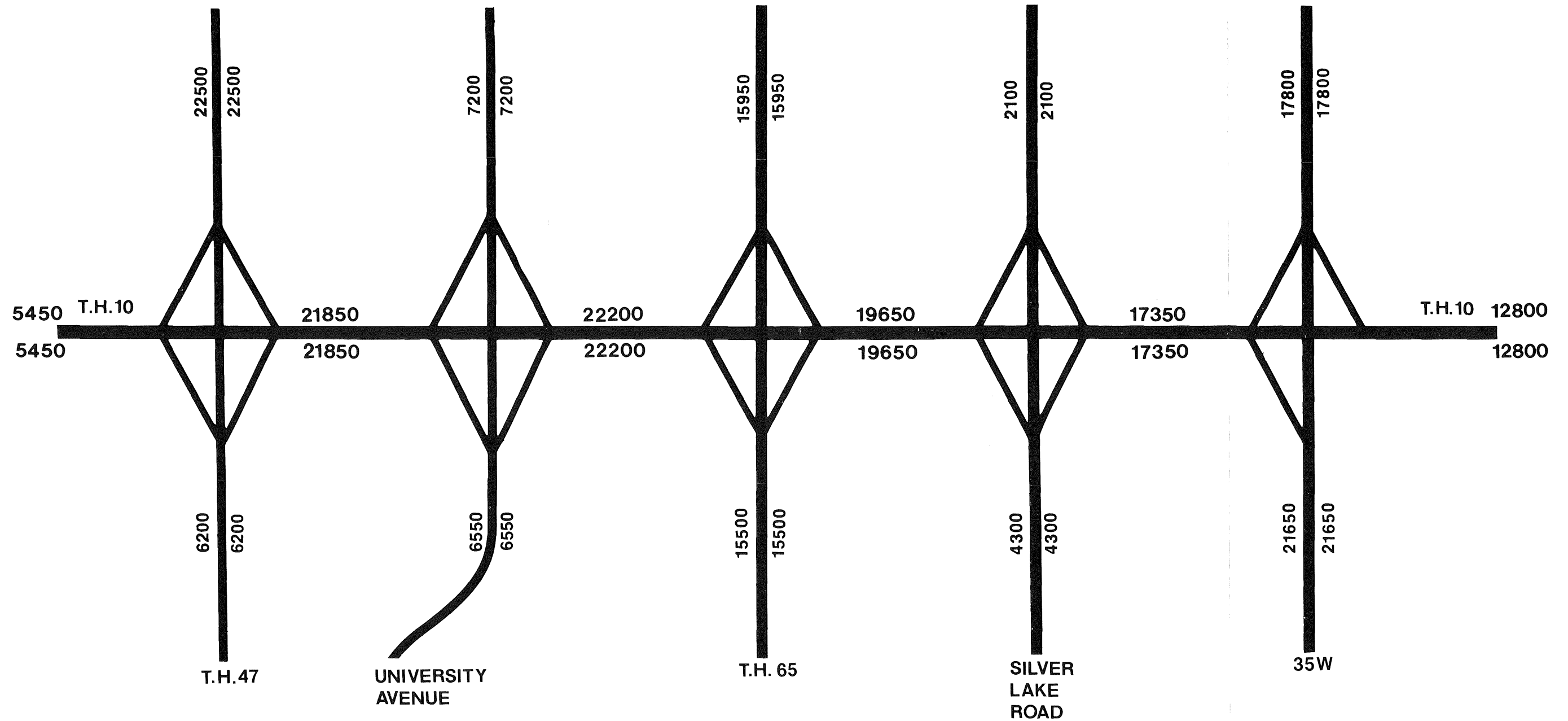


FIGURE 4
 NO BUILD ATERNATIVE -
 AVERAGE DAILY TRAFFIC
 VOLUMES (YEAR 2000)

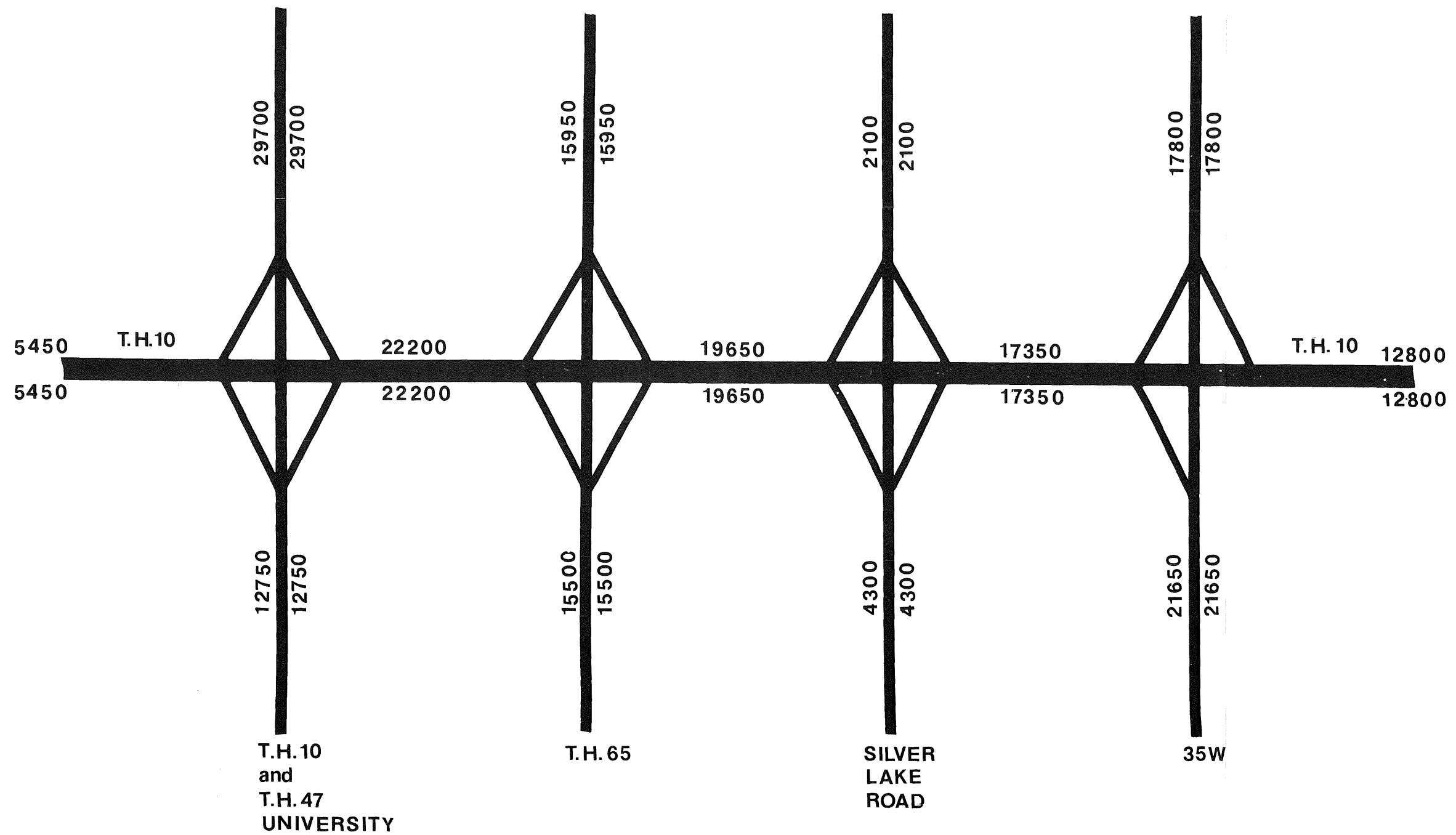
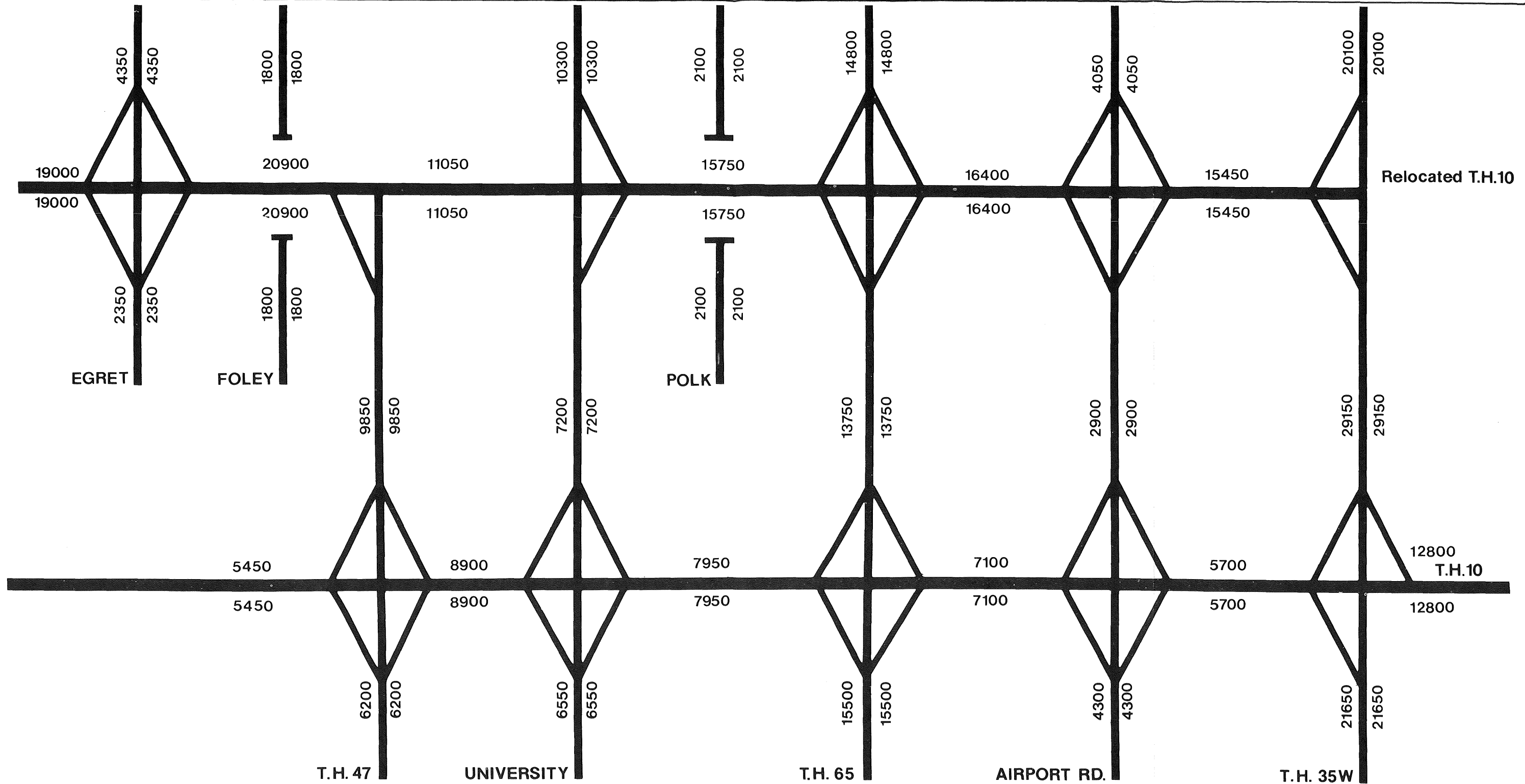


FIGURE 5
UPGRADED T.H. 10
ALTERNATE - AVERAGE
DAILY TRAFFIC VOLUMES
(YEAR 2000)



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FIGURE 6
 RELOCATED T.H.10
 ALTERNATIVE - AVERAGE
 DAILY TRAFFIC VOLUMES
 (YEAR 2000)

controlled at-grade intersections, and capacity for accommodating from 20,000 to 100,000 vehicles per day dependent upon demand.

The Metropolitan Development Guide contains a 1975 metropolitan highway system plan which shows Principal and Intermediate Arterials that exist or that are on alignments proposed for relocation or major upgrading. The 1990 metropolitan highway system plan illustrates the location of all Principal and Intermediate Arterials within the seven-county area. The 1975 metropolitan highway system plan shows existing TH 10 from I-35W to TH 10/47 as a Principal Arterial on Alignment Proposed for Relocation or Major Upgrading. The segment connects two Principal Arterials at either end, TH 10/47 and I-35W.

Relating to future demand and planning, the 1990 metropolitan highway system plan does not classify the existing section of TH 10 from I-35W to TH 10/47 as either a principal or intermediate arterial. The extension of the TH 10 principal arterial (to/from the northwest) to the I-35W principal arterial is shown along a relocated TH 10 route. The existing segment of TH 10, not being a principal or intermediate arterial becomes something less, probably a minor arterial. A minor arterial is characterized by a route carrying 5,000 to 30,000 vehicles per day, right-of-way of 66 to 150 feet, signalized intersections and cross street stops, limited direct land access, and generally applies to the existing and planned function of the present routing of TH 10 between I-35W and TH 10/47.

SOCIAL SERVICE AND ECONOMIC DEVELOPMENT

The Metropolitan Council has projected an increase in population and employment in the study area. The need for social services will be generated principally by the increase of the population. The projections of population were not influenced by the provision of the proposed action since at present there are highways which connect the study area to the central Cities of Minneapolis and St. Paul and the remainder of the region to the south and east.

The economic developments that will be generated by the proposed action relate principally to the improved accessibility to the industrial-zoned land adjacent to the Anoka County Airport. This area has experienced new development and is projected to continue to increase in the number of businesses. The airport will also be a factor in the type and amount of industry that

will locate in this area. A detailed discussion of economic development in the project area is contained in Sections III and IV.

MODAL INTERRELATIONSHIPS

The Metropolitan Council's guide for the transportation planning process concludes "...the metropolitan area should pursue the development of a transportation system that would be more balanced between highway and transit facilities and services...."⁶

Among the Council's recommendations are upgrading and completion of the area highway system to the extent needed to ensure area-wide accessibility.

The Council has determined that the highway proposal discussed in this Draft EIS is a high priority in the implementation of the metropolitan highway and transit plan and should be built to serve the 1990 population of the Twin Cities Metropolitan Area.⁷ Recommended coordination with other modes of transportation would include preferential treatment of buses operating in mixed traffic. Express buses operating on an improved highway system could then divert people from private vehicles, while computer-matching of potential car pool users, similar to the system already in use in the Twin Cities area, would encourage shared rides.

The corridor within which the proposed action lies is not proposed for an exclusive transit corridor because of the diversity in origin and destination of its present and potential users.

SYSTEM LINKAGE

Within the northwest and north central suburbs of the seven county metropolitan area, TH 10 provides an arterial link to I-35W and thence to I-694 and I-35E. Extending northwesterly, the arterial continues through the City of Anoka to the north central and western part of the State of Minnesota. The segment of TH 10 from Anoka to its conjunction with TH 47 is constructed as a freeway. The segment from TH 47 to I-35W is a four-lane divided roadway with numerous at-grade intersections.

⁶Met Council, Transp. Dev. Guide

⁷Met Council, Transp. Dev. Guide

There is an evident demand, as indicated by existing and projected traffic volume data, for providing a more efficient link between I-35W and TH 10 (at its interchange with TH 47) thus replacing the "weak link" along this northwest/southeast corridor. Provision of a freeway between the existing freeway segments of TH 10 and I-35W would complete the principal arterial system providing for vehicular movement through the corridor. As previously mentioned, the provision of this principal arterial connection is a part of the Metropolitan Council's 1990 highway system plan.

A related action which pertains to the system of arterials within the north and northwest suburban area is the Northtown Corridor. This corridor which connects TH 10, northerly of the TH 10/47 interchange area, to I-94 to the west provides a proposed additional crossing of the Mississippi River and an east-west arterial through the affected suburbs. While the final location of the Northtown facility has not yet been determined, the connection between two principal arterials, I-94 and TH 10, is a part of the system plan. With the TH 10 link, and the Northtown Highway, a completed east-west arterial link from I-35W on the east to I-94 in the northwest suburban area would be provided.

SAFETY

Increased safety is an objective when considering any roadway improvement. The segment of TH 10 from I-35W to TH 47 experienced an accident rate of 4.8 accidents per million vehicle miles of travel in both 1975 and 1976. Interstate freeways in this vicinity experience accident rates ranging from 2.0 to 3.2 accidents per million vehicle miles of travel. Provision of a freeway segment between I-35W and TH 10/47 would then appear to provide a reduced accident rate along the TH 10 routing. This would provide overall economic and safety benefits to the users of the TH 10 facility.

CAPACITY

TH 10, for purposes of determining its capacity and its level of service, can be considered to be a suburban multi-lane highway without strict access control. The Highway Capacity Manual⁸ defines capacity as "the maximum number of vehicles which has a reasonable

⁸ Highway Research Board, Special Report 87, Highway Capacity Manual, 1965.

expectation of passing over a given section of a lane or a roadway in one direction (or in both directions for a two-lane or three-lane highway) during a given time period under prevailing roadway and traffic conditions. In the absence of a time modifier, capacity is an hourly volume."

Level of service is defined in the Highway Capacity Manual as "a term which, broadly interpreted, denotes any one of an infinite number of differing combinations of operating conditions that may occur on a given lane or roadway when it is accommodating various traffic volumes."

There are six levels of service as follows:

Level of Service A - A condition of free flow, with low volumes and high speeds.

Level of Service B - Operating speeds beginning to be restricted somewhat by traffic conditions, but in the zone of stable flow.

Level of Service C - Still in the zone of stable flow, but speeds and maneuverability are more closely controlled by the higher volumes. This level of service is generally used as a design value.

Level of Service D - Approaching unstable flow, with tolerable operating speeds being maintained though considerably affected by changes in operating conditions.

Level of Service E - Flow is unstable and there may be stoppages of momentary duration. Volumes are at or near capacity.

Level of Service F - Forced flow resulting from queues of vehicles backing up from a restriction downstream. In the extreme, volume and speed can drop to zero.

The description of the capacity or level of service of a road such as TH 10 is complex. The presence of at-grade intersections and access drives create capacity restraints along the roadway. The greatest restraints along existing TH 10 are the signalized intersections. Capacity analyses of some of these signalized intersections have been conducted. These analyses use the most recent available intersection traffic counts, some

dating back to 1974, and the Highway Capacity Manual as the guideline document.

In each case analyzed, and based upon volume demand at the intersections, there was not sufficient signal green time available at the intersections to accommodate the volumes. Specifically, during the morning and evening peak hours, the heavy direction of flow along TH 10 (southeasterly in the morning, northwesterly in the evening) had a volume to capacity ratio in excess of 1.0 which indicates operation at level of service E which is highly undesirable.

Considering the projected volumes to the year 2000 along existing TH 10, the situation deteriorates further. The projections indicate that the peak hour volumes in the predominant direction of flow range from 2,185 to 2,815 vehicles. Also, north-south roadways intersecting TH 10 experience increased volume levels thus worsening the situation at the intersections.

In summary, the existing level of service is E for the predominant direction of flow along TH 10 during the peak hours. Projections to the year 2000 indicate the situation will grow worse and the cross streets will begin to experience unacceptable levels of service (D and E).

SECTION II THE PROPOSED HIGHWAY IMPROVEMENT

DESCRIPTION OF THE PROPOSED ACTION

This Draft Environmental Impact Statement (DEIS) discusses the proposed construction/reconstruction of 6.0 miles of Trunk Highway 10 in Coon Rapids, Blaine, Spring Lake Park, and Mounds View, Minnesota. The proposed action is termed New Trunk Highway 10. As shown previously on Figure 2, two route alternatives are examined in this document as reasonable alternatives, either of which would accomplish the proposed action. A brief description of these two alternatives is presented here while the detailed discussion of all alternatives considered is deferred until Section V. The two reasonable alternatives are analyzed and compared in detail as to their probable impacts in Section VI along with the No-Build Alternative. In reviewing the discussion in the following paragraphs, the reader is referred back to Figure 2 on page x.

Relocated TH 10

The first alternative shown on Figure 2 is designated Relocated TH 10. Relocated TH 10 is located in the north central portion of the Twin Cities Metropolitan area of Minnesota, traverses the southeast corner of Coon Rapids, Minnesota and traverses the southeast corner of Blaine, Minnesota. The approximate right-of-way width studied was 300 feet. Both Blaine and Coon Rapids are located in the southern portion of Anoka County, Minnesota. Relocated Trunk Highway 10 also traverses the northeast corner of Mounds View, Minnesota, which is in Ramsey County, Minnesota.

Relocated TH 10 includes upgrading of 1.16 miles of the existing highway jointly designated Trunk Highway 10 and 47 on the northwest end from Egret Boulevard southeast, and the existing 1.37 mile segment of Relocated Trunk Highway 10 on the southeast end from 85th Avenue North (County Road J) southeast to I-35W. Between these two segments, 3.5 miles of new roadway would be constructed on new alignment. It also includes reconstruction of 0.82 miles of what is jointly designated Trunk Highways 10 and 47. This 0.82 miles of

reconstruction would include the northbound lanes only and would be required to provide the necessary vertical and horizontal separation to provide for a central access intersection. These segments are shown on Figure 2. The segment from Egret Boulevard to Hanson Boulevard would remain as is existing.

Relocated Trunk Highway 10 will be designed to urban freeway standards and will have two lanes in each direction from the junction with Trunk Highway 47 to the I-35W interchange. The upgrading of the existing segment of Trunk Highway 10 from Egret Boulevard to the junction with Trunk Highway 47 will add one lane in each direction to provide three lanes in each direction for this segment.

Upgraded TH 10

The second alternative, also shown on Figure 2, is designated as Upgraded TH 10. Upgraded TH 10 would be located following the alignment of existing TH 10 from Egret Boulevard in Coon Rapids southeast through the southwest corner of Blaine, Minnesota, the north-eastern corner of Spring Lake Park, Minnesota, and the central portion of Mounds View, Minnesota. This alternative would terminate at I-35W in the south-eastern corner of Mounds View.

This alternative would be comparable to Relocated TH 10 in that 1.16 miles of existing TH 10/47 would be upgraded and lane modifications would occur along the segment that is 0.82 miles long. The remainder of this alternative (approximately 5.3 miles) would involve upgrading to freeway standards provide controlled access and provision of frontage roads in areas where businesses presently have direct access to TH 10. The segment from Egret Boulevard to Hanson Boulevard would remain as is existing.

DESIGN FEATURES

Elevation

The elevation of the new alignment segment of New Trunk Highway 10 has not been determined. The location of the roadway will most likely follow the existing terrain except at overpasses. The area traversed by the new alignment is primarily undeveloped and has very little elevation relief throughout.

In those areas where the proposed action follows existing alignment, no major grade change from the existing is anticipated. These areas are primarily at ground level.

Design Criteria	The design speed will be 70 miles per hour and the posted speed limit will be 55 miles per hour. The maximum percent grade would be 3% and the maximum curvature would be 3 degrees. These are current freeway design standards. Although the speed limit will be 55 miles per hour, the design speed of 70 miles per hour is used because it provides a safer facility with better operating efficiency. This is because of longer sight distances, flatter curves and more gentle slopes.
Estimated Traffic	Traffic forecasts, based on a SPAR M-191 report, are shown on Figures 4, 5, and 6.
Interchanges	Access will be fully controlled and grade separations would be used. Interchanges will be considered in the design of the proposed action and are discussed in this Draft Environmental Impact Statement. The design of each of the interchanges will be a function of mitigating measures (as identified during the EIS process) and design constraints.
TECHNICAL, SOCIAL AND ECONOMIC STUDIES	The following is a list of special studies which were undertaken relevant to the New Trunk Highway 10 corridor. These studies have been of two types: planning studies and potential impact studies.

Planning Studies

Traffic projections
Northtown Corridor Study
Project Development Report
Preliminary Location Report

Impact Studies

Air quality
Noise levels
Wetlands

Location Study and Design Study Reports will be prepared after the publication of the Final EIS and will incorporate the findings and comments of the public hearings.

The major findings of each study are incorporated in the appropriate sections of this Draft Environmental Impact Statement. Further reports may be required prior to the preparation of the Final EIS in response to findings and comments of the public hearing for the DEIS. Copies of the reports and studies are available through the New Trunk Highway 10 Project Manager; Minnesota Department of Transportation, Highway Division, District 5; 2055 North Lilac Drive; Golden Valley, Minnesota 55422.

HISTORICAL RESUME

On December 13, 1956, the Minnesota Highway Department conducted a public hearing on the total freeway plan for the Twin Cities Metropolitan Area of Minnesota. At that meeting, it was concluded that this section of Trunk Highway 10 should be a part of that total freeway plan. Plans for completing the freeway link from Egret Boulevard to I-35W were completed in 1968 and the existing 1.37 mile segment of Relocated Trunk Highway was completed in 1971. In 1970, Hennepin County and the municipalities of Brooklyn Park and Maple Grove prepared preliminary plans for the location of a Northtown transportation facility crossing the Mississippi River. The proposed action was part of that transportation facility. In 1971, a study design was prepared and in March, 1972, a study was implemented which subsequently became the Northtown Corridor Study which was completed in July, 1973. The Northtown Corridor Study addresses the total system linkage from I-35W to I-94 in Maple Grove and includes most of the 6 mile segment of New Trunk Highway 10 which is under consideration in this Draft Environmental Impact Statement.

COSTS

The estimated construction cost for Relocated Trunk Highway 10 is \$11.5 million. In addition, Relocated Trunk Highway 10 has estimated right-of-way costs of \$1,087,000 and estimated relocation costs of \$66,000. The estimated construction cost for an Upgraded Trunk Highway 10 is \$9.5 million and in addition would have an estimated right-of-way cost of \$5,427,000 and estimated relocation costs of \$209,000.

FUTURE ACTIVITIES

The following dates are estimates of the future activities of the proposed action:

Location Public Hearing	Spring 1979
Final EIS	Fall 1979
Location Study Report	Winter 1979/80
Preliminary Design Report	Spring 1980
Design Public Hearing	Summer 1980
Design Study Report	Fall 1980
Plans, Specifications and Estimate	Summer 1983
Contract Letting Date	Summer 1983
Construction Completion Date	Fall 1987

If the action is approved as proposed, right-of-way acquisition would occur during the preparation of Plans, Specifications and Estimate.

SECTION III EXISTING SOCIAL, ECONOMIC AND NATURAL CONDITIONS

DEMOGRAPHIC CONDITIONS

Population

The study area is the home for a growing number of people in the seven-county Metropolitan Area. During the period from 1970 to April, 1977, each of the four communities in the study area and Anoka County had increases in population according to the Metropolitan Council's most recent population estimates (Table 1). The population in Blaine increased by approximately 39% in the 7 years. The lowest percentage of growth was recorded by Spring Lake Park which increased by approximately 14%. Both Mounds View and Anoka County had population increases of over 20%. Ramsey County's population decreased by approximately 9,000 in the past 7 years.

The population in the seven counties increased by approximately 100,000 over the seven-year period. The four communities in the study area increased their population by 15,739 which represents approximately 16 percent of the growth in the region. Anoka County, including three of these communities increased its population by 35,488. This growth represents approximately 36% of the regional population increases.

Blaine and Coon Rapids are projected to continue to grow to the year 2000 (Table 1). The rate of growth will fluctuate, but Blaine will grow by over 50 percent between 1977 and the year 2000, while Coon Rapids will increase by over 60 percent. By 1990, Mounds View's population will reach 14,000 and stabilize. Spring Lake Park is presently at a population size which will remain relatively constant through the year 2000.

Anoka County's population has increased by approximately 23% during the past 7 years. While the rate of growth will be slower, the county will grow by 25% from 1977 to the year 2000. Ramsey County has lost

TABLE 1
EXISTING AND PROJECTED STUDY AREA POPULATION

	1970*	April 1 1977**	% Incr. over 1970	1980	% Incr. over 1977	1990	% Incr. over 1980	2000	% Incr. over 1990
Blaine	20,568	28,580	38.9	31,500	10.2	40,500	28.6	44,000	8.6
Coon Rapids	30,505	35,040	14.9	39,000	11.3	51,000	30.8	57,000	11.8
Mounds View	10,599	12,890	21.6	13,500	4.7	14,000	3.7	14,000	-
Spring Lake Park***	6,319	7,220	14.3	7,000	(-3.0)	7,100	1.4	7,000	(-1.4)
Anoka County	154,712	190,200	22.9	204,450	7.5	237,100	16.0	254,940	7.5
Ramsey County	476,255	467,500	(-1.8)	475,900	1.8	496,700	4.4	519,000	4.5
Seven-County Region	1,874,612	1,973,470	5.3	2,036,000	3.2	2,288,650	12.4	2,487,000	8.7

* U.S. Census adjusted April 1, 1970.

** All other data used was developed by the Metropolitan Council. The 1977 Population Estimates were developed on June 30, 1977.

*** Partial population estimate.

approximately 2% in population over the past 7 years. This population loss is projected to be recovered by 1980. The population will increase by 4% to 5% during the next two decades.

Blaine and Coon Rapids are representative of fringe suburbs, which will exhibit the largest percentage of growth in the coming decades. Spring Lake Park and Mounds View have already or will soon reach a level of development which will stabilize due to lack of additional land which is indicative of the inner ring of suburbs.

Characteristics of Population

The percentage of non-white residents in each of the four cities and Anoka County is below that of the total Standard Metropolitan Statistical Area (SMSA) which is comprised of 2.8% non-whites. Ramsey County's population includes 3.3% non-white individuals (Table 2).

The population of the four cities in the study area have similar percentages of individuals over 65 years as recorded by the 1970 Census. The percentage of those over 65 years ranges from a low of 1.3% in Blaine and Spring Lake Park to a high of 1.5% in Mounds View. Ramsey County, with 10.2%, was the only political subdivision in the study area which exceeded the SMSA percentage of 8.7%.

The four cities and Anoka County had a higher percentage of young residents than the SMSA. The youngest population was found in Coon Rapids where over 48% of residents were under 16 years in 1970. Just over 31% of Ramsey County's population was less than 16 years old, which was below the SMSA average of 32.6%.

All of the political subdivisions were similar to the SMSA percentage of high school graduates with the exception of Spring Lake Park. The percentage of residents 25 years old and older that were high school graduates in 1970 ranged from a low of 48.3% in Spring Lake Park to a high of 68.9% in Blaine and Coon Rapids. Both Coon Rapids and Blaine had a higher percentage of high school graduates than the SMSA while Mounds View, Anoka County and Ramsey County had a slightly lower percentage of graduates.

TABLE 2
DEMOGRAPHIC CHARACTERISTICS OF STUDY AREA POPULATION*

	SMSA	Blaine	Coon Rapids	Mounds View	Spring Lake Park	Anoka County	Ramsey County
Percent of Non-White Residents	2.8%	0.8%	0.8%	0.8%	0.4%	0.8%	3.3%
Percent of Persons Age 65 and Older	8.7	1.3	1.4	1.5	1.3	3.2	10.2
Percent of Persons Under 16 Years Old	32.6	46.2	48.4	40.9	45.7	41.7	31.3
Median School Years Completed	12.4	**	12.4	**	**	12.3	12.3
Percent of High School Graduates	66.1	68.9	68.9	64.0	48.3	65.1	62.6

* Source: 1970 U.S. Census.

** This data could not be calculated from Census Data.

TABLE 3
FAMILY HOUSING CHARACTERISTICS*

	Percent of Total Housing Units Occupied by Owner	Median Value of Occupied Homes
SMSA	63.2%	\$21,500
Blaine	91.5	**
Coon Rapids	92.4	20,900
Mounds View	75.2	**
Spring Lake Park	79.5	**
Anoka County	79.4	21,000
Ramsey County	60.3	20,200

*Source: 1970 Census Data.

**This data could not be calculated from Census Data.

Housing

The housing in each of the four communities is generally single-family detached units. Within Spring Lake Park (according to the Comprehensive Plan), 330 acres are developed as single-family units with 22 acres multiple-family units. Included in the single-family units are two mobile home courts. Within Mounds View, single-family homes occupied approximately 1,000 acres of the 1,150 acres of residentially used land in 1974. Multiple dwellings occupied approximately 55 acres while mobile homes occupied 78 acres. The residential development in Coon Rapids is also dominated by single-family homes. There are 550 apartment units and 325 townhouse units. The one mobile home park has 180 units. In Blaine, housing units are almost exclusively either single-family detached units or mobile homes. Approximately 1/4 of the dwelling units are mobile homes.

The percentage of owner-occupied housing units in the study area is indicative of the high number of single-family homes. Each of the four communities and Anoka County exceed the regional percentage of owner-occupied housing units (Table 3). Only Ramsey County illustrated a lower percentage. In both Blaine and Coon Rapids, over 90% of the housing units in 1970 were owned by the occupants.

The median value of occupied homes in the area was slightly below that of the SMSA. (Table 3)

ECONOMIC CHARACTERISTICS

The economic setting of the study area has been reviewed based on the characteristics of employment and labor force, place of employment, family income, and tax structure. The material that follows records various factors that compare the study area to either the Minneapolis/St. Paul Standard Metropolitan Statistical Area (SMSA) or the seven-county Metropolitan Area, depending on the availability of data.

Employment

The number of jobs located in the study area and the labor force of the various governmental subdivisions are recorded in Table 4. The 1970 Labor Force in Blaine, Coon Rapids, Spring Lake Park and Anoka County exceeded the numbers of jobs in these cities and the County in both 1970 and in 1973. Therefore, these cities and Anoka County export labor to other areas predominantly within the SMSA. Both Mounds View and Ramsey County import labor to fill jobs.

TABLE 4
EXISTING AND PROJECTED EMPLOYMENT AND LABOR FORCE

	SMSA	Blaine	Coon Rapids	Mounds View	Spring Lake Park	Anoka County	Ramsey County
Labor Force 1970	786,806	7,673	10,859	4,217	3,263	60,921	204,792
Employment 1970	573,761	1,918	3,414	10,599	898	31,587	476,255
1973 Estimate	667,372	4,506	6,600	13,193	1,032	44,160	481,540
1980 Projected	720,790	8,000	8,500	13,500	1,300	60,810	475,900
1990 Projected	859,660	11,000	13,500	14,000	1,500	74,400	496,700
2000 Projected	959,180	15,000	19,000	14,000	2,000	91,800	519,100

Source: Metropolitan Council, 1977.

A review of the projected number of jobs illustrates that in each of the communities, an increase will take place between 1970 and the year 2000 (Table 4). In Blaine, Coon Rapids, Spring Lake Park and Anoka County, a continuous increase in the number of jobs is projected. Employment in Mounds View will stabilize at 14,000 in 1990. Ramsey County's employment will fluctuate around the 1970 level and increase to 519,000 by the year 2000.

Place of Employment The place of employment of the study area labor force is recorded in Table 5, as reported in the 1970 Census. In each of the four communities and two counties, over 90% of the labor force worked within the SMSA. This is indicative of the region where over 93% of the SMSA labor force worked in the SMSA.

While 55% of the SMSA labor force worked in Hennepin County, between 39 and 45% of the labor force in Blaine, Coon Rapids, Mounds View and Anoka County work in Hennepin County. The SMSA labor force working in Ramsey County was reported to be 28% in 1970. The percentage of study area labor force working in Ramsey County varied from a high of 74% of the Ramsey County labor force to a low of 14% in Spring Lake Park. Similar to Spring Lake Park were Anoka County (17.3%) and Coon Rapids (16%). Mounds View reported the highest percentage (41%) of the labor forces working in Ramsey County in the four communities.

Family Income All the political subdivisions in the study area reported mean family incomes above that of the SMSA for 1970. The highest reported was in Ramsey county, which was \$12,677 in comparison to the SMSA of \$10,600. All of the communities and Anoka County were above \$11,000.

The source of family income is recorded in Table 6. The percentage of families having wage or salary income was higher in each of the four cities and in Anoka County than that of the SMSA. Only Ramsey County had a lower percentage. Conversely, all of the cities and Anoka County reported a lower percentage of families receiving public assistance or public welfare than the SMSA as a whole. Ramsey County reported a percentage higher than that reported for the SMSA. Correspondingly, the percentage of families reporting incomes below the poverty levels was less than the SMSA in the four cities and Anoka County, while Ramsey County had a higher percentage.

TABLE 5
PLACE OF WORK (PERCENT)*

Percent of Workers In	SMSA	Blaine	Coon Rapids	Mounds View	Spring Lake Park	Anoka County	Ramsey County
SMSA\	93.6%	95.5%	93.4%	94.0%	90.6%	93.2%	94.2%
Minneapolis CBD	7.3	5.1	5.4	5.5	3.2	5.8	1.6
Remainder of Minneapolis	26.6	24.0	22.5	22.7	17.3	25.8	8.9
Remainder of Hennepin County	21.7	16.4	14.0	11.1	8.4	12.2	4.6
Hennepin County	55.6	45.5	41.9	39.3	28.9	43.8	15.1
St. Paul CBD	4.4	1.1	0.6	1.2	1.5	0.6	12.7
Remainder of St. Paul	16.8	9.4	5.4	11.1	3.6	6.7	45.2
Remainder of Ramsey County	6.8	13.5	10.0	28.8	9.0	10.0	16.4
Ramsey County	28.0	24.0	16.0	41.1	14.1	17.3	74.3
Anoka County	3.9	22.3	34.7	11.5	45.8	31.3	1.4

*Source: 1970 Census Data.

TABLE 6
FAMILY INCOME CHARACTERISTICS*

	SMSA	Blaine	Coon Rapids	Mounds View	Spring Lake Park	Anoka County	Ramsey County
Mean family income	\$10,614	\$11,770	\$12,353	\$11,606	\$11,990	\$11,459	\$12,677
Percent of families with wage or salary income	91.0	97.0	97.4	96.4	96.6	95.3	90.0
Percent of families below poverty level	4.6	2.7	3.4	4.0	1.7	3.4	5.1
Percent of families with public assistance or public welfare income	4.1	2.3	2.7	3.9	2.0	2.9	4.5

*Source: 1970 Census Data.

Government Revenue The revenue that is available to a city or county is largely based on its assessed or taxable valuation and the tax rate. This data is recorded in Table 7 for the project area.

PUBLIC FACILITIES AND SERVICES

The four cities provide a variety of public facilities and services to meet the needs of residents. In a general comparison to the other urbanized communities in the seven counties, most of the basic services are available. The Metropolitan Council, in 1975, inventoried each community in the seven-county region to determine the availability and level of service of public services and facilities. The services that were inventoried included: (1) public water systems, (2) storm sewers, (3) sanitary sewers, (4) full-time police service, (5) fire insurance ratings of 6 or less,¹ (6) scheduled bus service, and (7) 30-minute travel time to Minneapolis or St. Paul. Each of the four communities had or met at least six of these services or criteria.

Fire Protection

The Cities of Blaine, Mounds View and Spring Lake Park are served by one volunteer fire department, having fire stations located at Spring Lake Park Road and TH 10 in Mounds View, 109th Avenue and Buchanan Street NE in Blaine, at 91st Avenue and TH 65 in Blaine, and West Lever Street and 103rd Avenue NE in Blaine. The stations and service areas of each of the stations are recorded in Figure 7. Coon Rapids has its own volunteer fire department. Three stations are operated in the city.

¹The Insurance Services Organization (ISO) determines ratings by surveying a community for various physical development characteristics and reviewing the quality of specific municipal services. Municipal fire ratings are presented on a one to ten scale with one representing the best level of fire protection services. Fire ratings are based on a number of factors. The fire department (manpower, professionalism, equipment, station location), water supply, and distribution system generally determine about 75 percent of a rating. The development pattern of a community, building types (materials, construction, heights, etc.) and road network account for the other 25 percent of a rating.

TABLE 7
ASSESSED VALUATION**

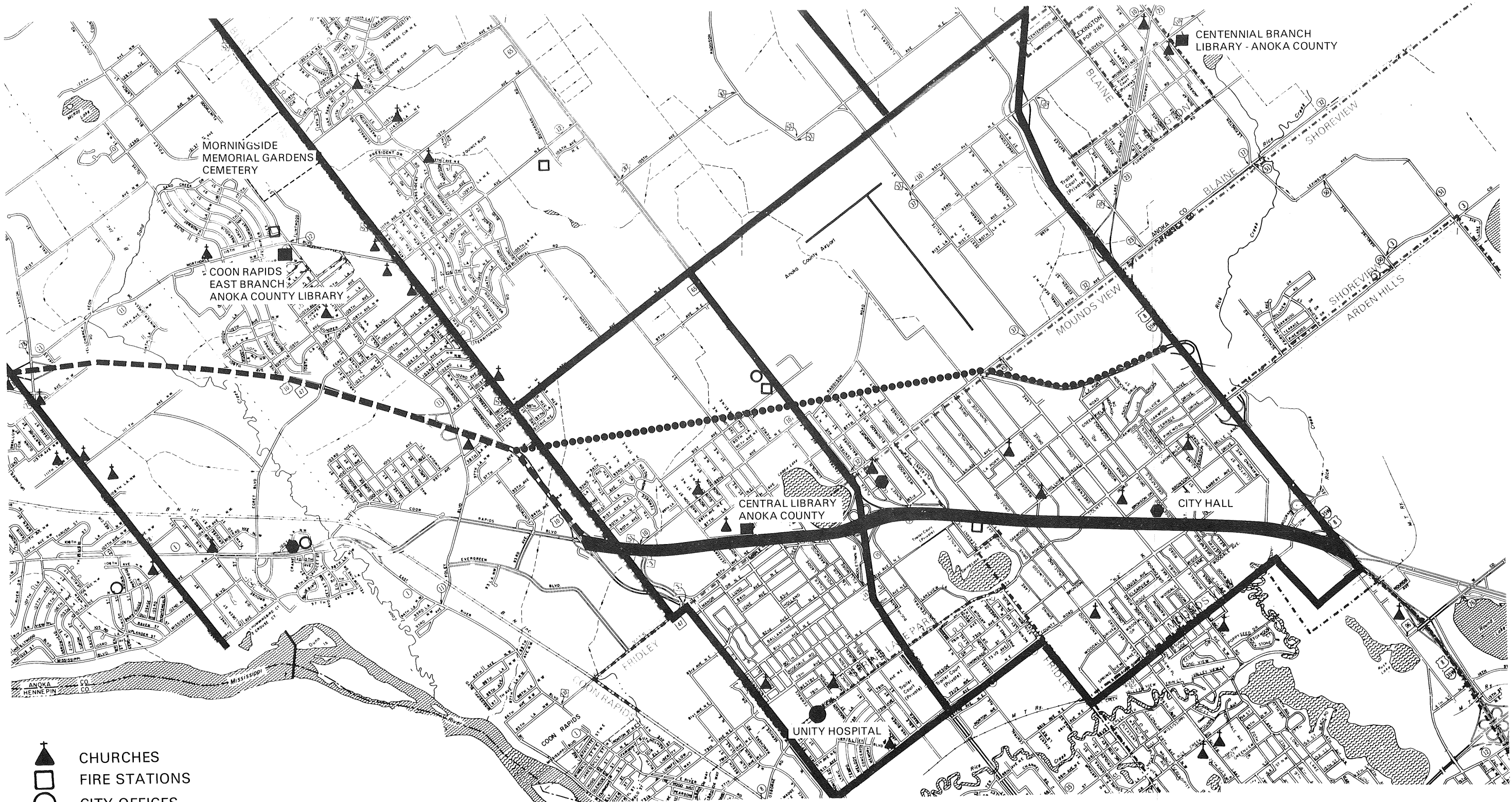
	Blaine	Coon Rapids	Spring Lake Park	Mounds View	Anoka County	Ramsey County
1976 Taxable Value						
Real Property	\$71,422,531	\$106,843,055	\$18,886,780	\$26,855,515	\$569,966,218	\$1,495,605,447
Mill Rate	97.530	104.21	100.170	123.002	19.84 in	35.494
	97.830	104.66	100.470		Anoka and	
	98.980		115.537*		Columbia	
	102.750				Heights	
	103.050				2.21 in	
	103.200				all other	
	103.550				cities	
	114.580					
	115.080					
	118.117*					

*Ramsey County.

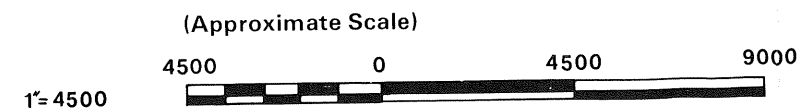
**Source: Ramsey and Anoka County, 1976.

The operation of the two fire departments is similar. The individual stations respond to the non-structure fires in their own service area. A structure fire automatically generates a response by the adjacent stations. Most fire departments in the Metropolitan Area also have a mutual service agreement that allows other departments to be called upon to respond to major fires at the request of the local department. Both Coon Rapids and the Blaine/Spring Lake Park/Mounds View departments have entered into this agreement.

Police Protection	Each of the four cities has its own police force. The locations of the police stations are also indicated on Figure 7. In each of the four cities, the police station is located within the City Administrative Office complex. The police station serves the entire city in each case.
Libraries	There are five Anoka County public libraries in or adjacent to the project area. Two are located in Coon Rapids (see Figure 7) and one library each in Blaine, Fridley and Circle Pines.
Hospitals	The area is served by two hospitals, one of which is identified on Figure 7. The other, Mercy Hospital in Coon Rapids is located west of the project area. Unity Hospital is located in Fridley, south of the project area.
Education	Educational services for the study area are provided by three independent school districts: 11, 16 and 621. The location of elementary, junior and senior high schools is indicated in Figure 8. Due to a variety of reasons, the attendance area of any one school can be extended over a fairly large geographic area. In some instances, the attendance area has little relationship to the concept of walking neighborhoods which at one time defined an elementary school attendance area. In the Cities of Spring Lake Park and Mounds View, a higher percentage of the area is developed and the attendance areas are more concentrated. In Coon Rapids and Blaine where the percentage of the area developed and the density is lower, the attendance areas are larger.
Parks and Recreation	A number of local and county parks and recreation areas serve the study area. The location of these facilities is recorded on Figure 9.
Airport	The Anoka County Airport is a general commodity airport operated by the Metropolitan Airport Commission. No scheduled flights use the Anoka Airport, but a

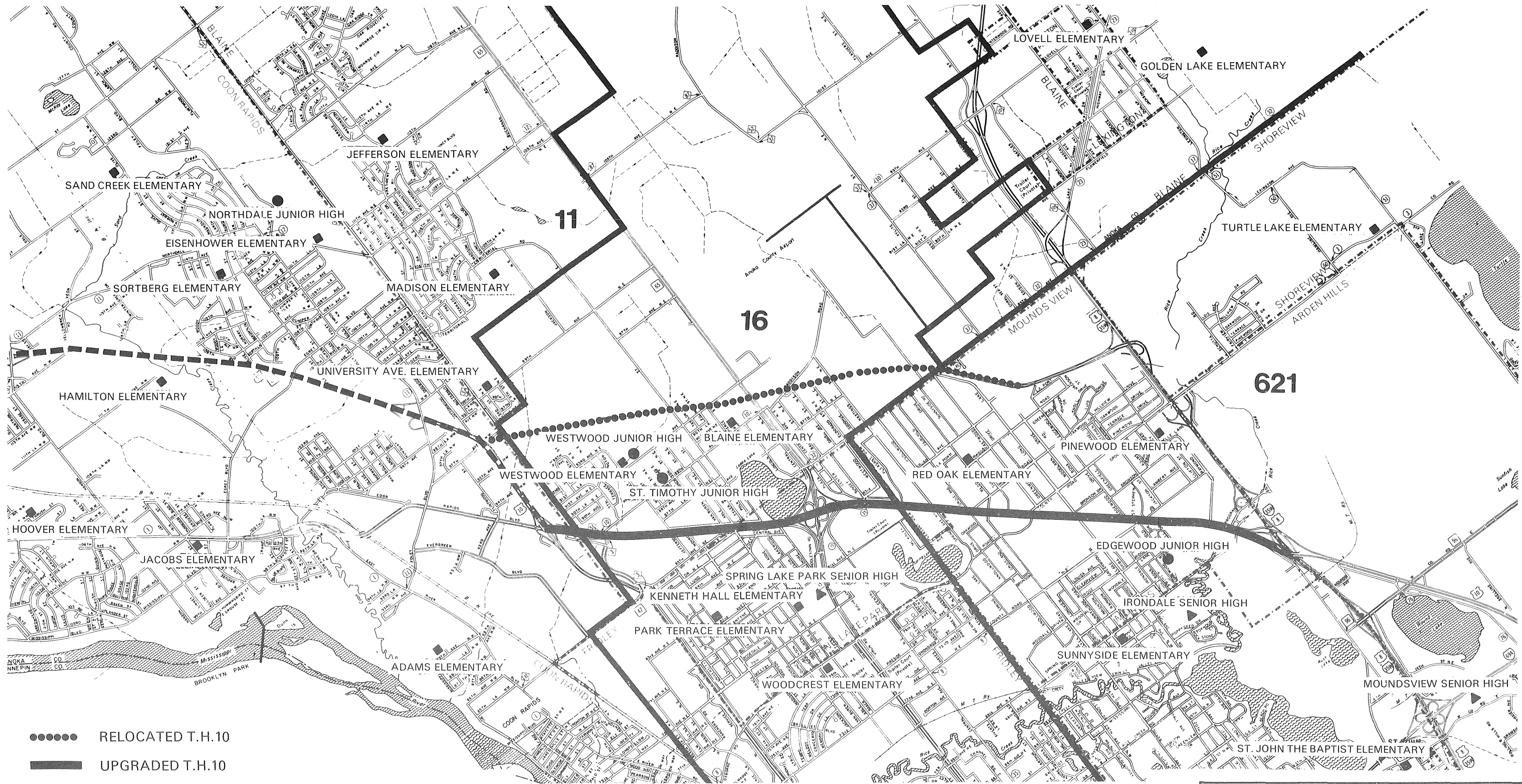


-  CHURCHES
-  FIRE STATIONS
-  CITY OFFICES
-  POLICE STATIONS
-  HOSPITALS
-  LIBRARIES
-  FIRE DISTRICT BOUNDARIES
-  RELOCATED T.H.10
-  UPGRADED T.H.10
-  ROADWAY COMMON TO BOTH



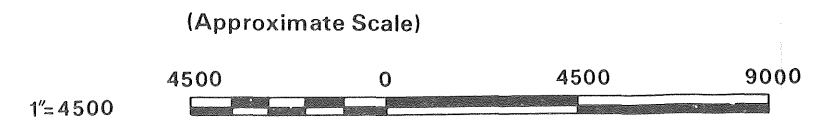
DRAFT
NewTrunk Highway 10
 ENVIRONMENTAL IMPACT STATEMENT

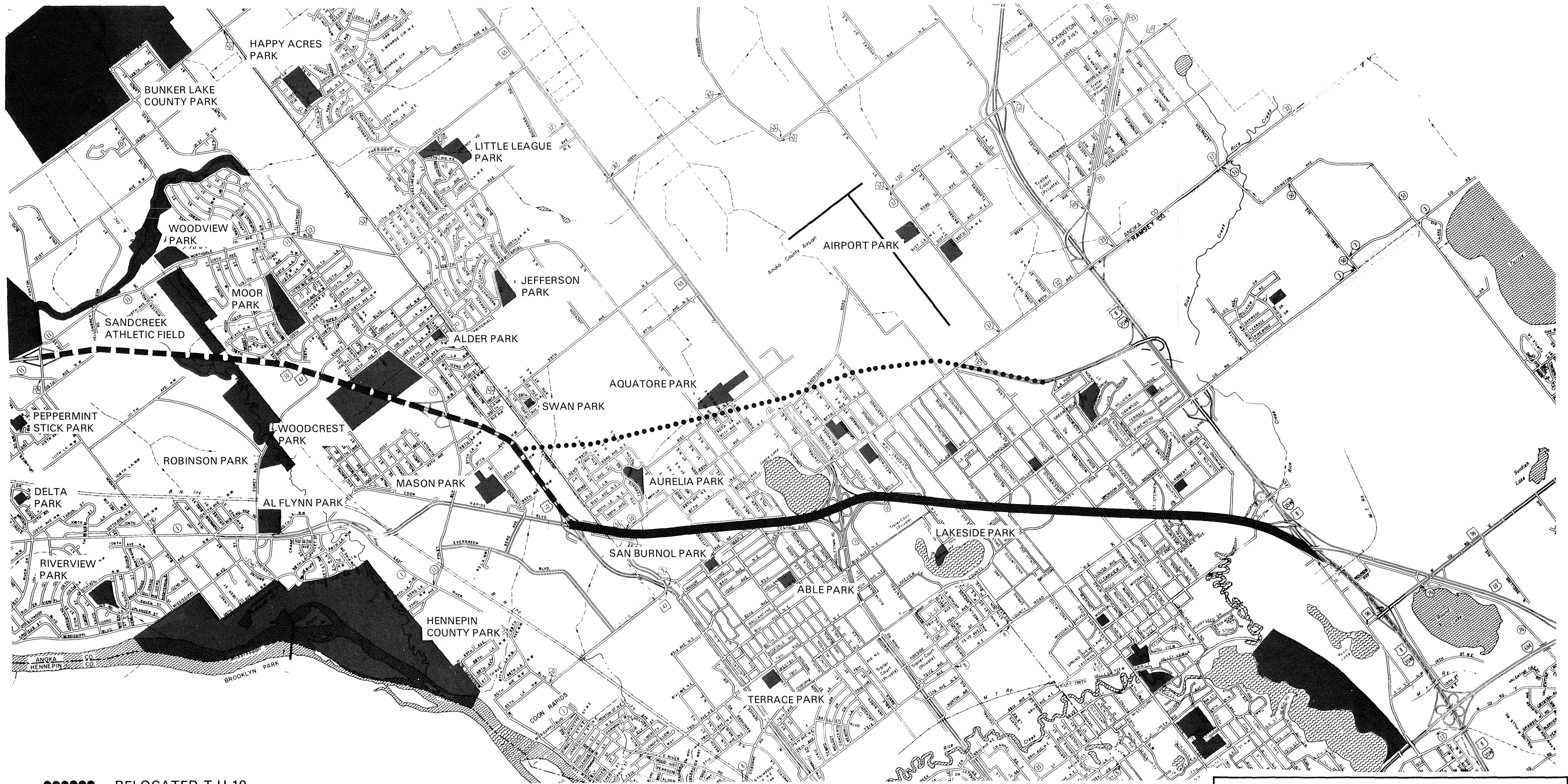
FIGURE 7
COMMUNITY FACILITIES



DRAFT
NewTrunk Highway 10
 ENVIRONMENTAL IMPACT STATEMENT

FIGURE 8
SCHOOLS AND
DISTRICT BOUNDARIES

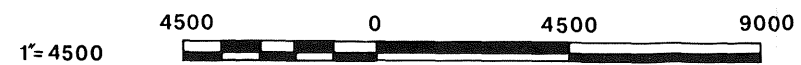




- RELOCATED T.H. 10
- UPGRADED T.H. 10
- - - - SEGMENT COMMON TO BOTH



(Approximate Scale)



DRAFT
NewTrunk Highway 10
 ENVIRONMENTAL IMPACT STATEMENT

FIGURE 9
PARKS AND
RECREATIONAL FACILITIES

number of private planes use the airport for business and recreational purposes.

NATURAL CONDITIONS

Meteorology and Climatology

Meteorological and climatological data are utilized in assessing changes in air quality attributable to the proposed New TH 10. The following paragraphs are intended to serve as an introduction to the pertinent terminology and analytical considerations which are important in the development of the air quality model.

General. The primary factors affecting climate of the Twin City Metropolitan Area are the movements of continental polar air masses intermingled with warm moist air masses from the Gulf of Mexico. These features tend to produce extremes in climatic conditions.

The air quality of a given location is directly affected by the meteorological characteristics of the area; thus, air pollution in the vicinity of New TH 10 is related to the localized capacity of the atmosphere to transport and disperse pollutants. The primary meteorological parameters which determine this capacity are wind direction and speed, atmospheric stability, and mixing heights. Atmospheric stability near ground level is affected by surface roughness and solar heating. The optimum condition for dispersion of emission from a ground level source consists of a high degree of ventilation combined with a relatively unstable atmosphere. Conversely, atmospheric mixing is minimal in the presence of a ground base temperature inversion.

Wind Speed and Direction. Because Anoka County has, for the most part, the character of a flat plateau, the movement of air masses across the area is relatively unimpeded. The wind speed averages just over 10 mph with little variation from month to month.

The prevailing winds are from the northwest in the winter and from the southeast in the summer. Lower wind speeds are more frequent at night occurring at less than 8 mph from 40 to 50 percent of the time. The prevailing direction of winds of less than 8 mph is southwest in the winter and southeast in the summer.

Geology

Topography and Soils. The vast majority of the project area is uniformly flat in character with slopes rarely in excess of 1%. Exceptions are the broad valleys of Rice Creek on the southeast corner and Coon Creek on the northwest corner.

Soils of the project study area are the result of glacial erosion and deposition followed by sedimentation from glacial meltwater. The latter event occurred when the study area was overlain by Glacial Lake Fridley about 10,000 to 13,000 years ago. Lake sediments are evident in the form of fine sands which vary from 20 to 50 feet in thickness in this portion of the Metropolitan Area.

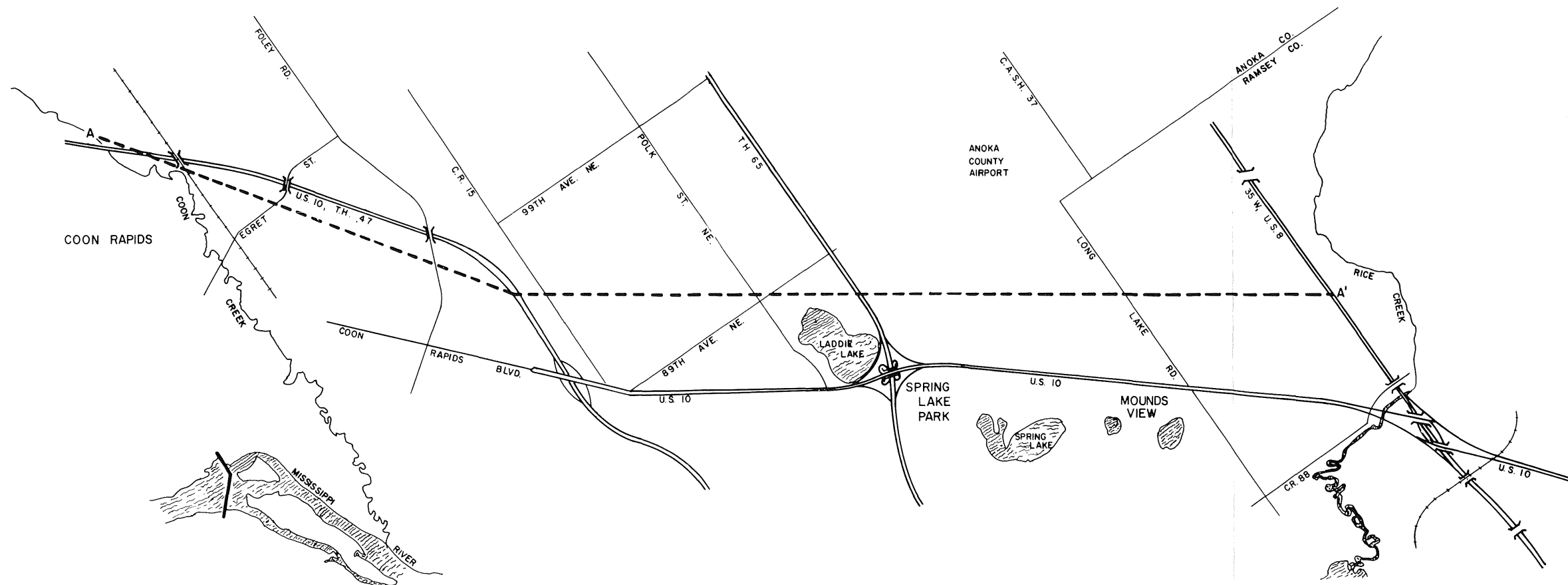
In recent times, depressions in the topography have been progressively filled with peat and organic deposits resulting from plant growth. These deposits, together with alluvial deposits along the streams represent the only major variations in soil conditions. Elsewhere, the sandy soils do differ somewhat in color, groundwater, and drainage characteristics.

Bedrock. The geologic profile (Figure 10) depicts the general relationship of the proposed grade to the surficial geology, bedrock geology and groundwater. In general, bedrock lies at a depth of between 120 and 150 feet from the surface. As evidenced in Figure 10, erosion of certain bedrock formations has occurred due to glacial movement. The deepest known bedrock valley (approximately 250 feet of relief) runs southwest to northeast through the southeastern corner of the project study area.

Special Features. The bedrock formations are said to be permeable in that they permit the downward movement of water through cavities which are irregularly distributed in the bedrock surface. However, the overlying glacial till is capped by a glacial deposit called the Twin Cities Formation. This formation, because of its high clay content, serves as a barrier (aquitard) to the downward movement of water from the Fridley sands.

With the exception of outwash plains and stream valleys created by runoff from the glaciers, the project study area has no unusual geological features. Of greatest interest are the geologic processes which resulted in the uniformly flat topography.

Erodible Slopes. Surface soils in the project area are included within the Zimmerman-Isanti-Lino Association.



ELEVATION
10.00'

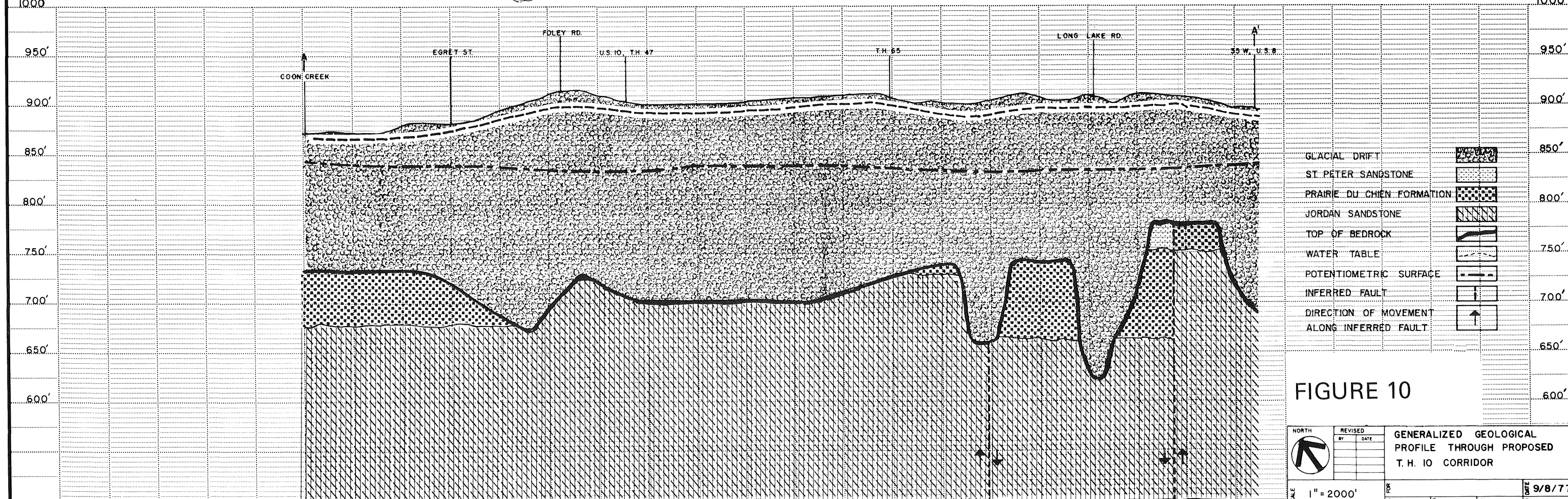


FIGURE 10

NORTH [North Arrow]	REVISED	GENERALIZED GEOLOGICAL PROFILE THROUGH PROPOSED T.H. 10 CORRIDOR	
	BY	DATE	
SCALE 1" = 2000'	DATE	9/8/77	
BARTON - ASCHMAN ASSOCIATES, INC.		180 SOUTH SIXTH STREET, MINNEAPOLIS, MN 55424	

This association is characterized by fine sandy soils having a high degree of permeability. Such soils are generally susceptible to wind and water erosion from slopes which are level or nearly level. However, the only problems which could be considered severe presently occur on slopes which exceed 12% (12 feet of fall per 100 feet of length). Such slopes are limited to areas next to drainageways, culverts, and large depressions. The potential for erosion is in part attributable to the difficulty of establishing and maintaining vegetation under conditions of limited moisture availability.

Groundwater

Groundwater is contained in bedrock formations and in the overlying glacial drift. The uppermost boundary of a bedrock aquifer is defined as the potentiometric surface, while the surface elevation of groundwater found in the glacial drift is termed the near surface water table. The former boundary is determined by the amount of pressure created by the confinement of the water within the bedrock; the latter is generally related to the surface topography in that it follows the slope of the land (e.g., the elevation of water in lakes and marshes usually coincides with the near surface water table).

Within the study area, the potentiometric surface of the nearest bedrock aquifer (Prairie du Chien-Jordan) is at approximately elevation 840; the near surface water table may be found from 0 to 15 feet below the surface.

Groundwater Movement. Groundwater may move either vertically or horizontally. Horizontal or lateral movement of groundwater occurs in the glacial drift in response to the gradient and the soil permeability. The direction of this movement is generally towards surface water outlets (streams and ditches). Because much of the precipitation over the study area infiltrates into the sand layers, groundwater provides a critical component of the base flow of streams during dry years or periods of seasonal dryness. Groundwater may also augment lake and wetland water levels under dry conditions. In general, the storage and lateral movement of water in the glacial drift serves to buffer extremes of precipitation.

Recharge Potential. In addition to the movement of groundwater horizontally, water in the glacial drift may also move vertically, or upward (capillary). This movement occurs because of the seepage of the water through the underlying geological formations. The rate

of this seepage depends on differences in permeability and pressure and depth among the various strata.

As noted in the previous section on geology, the permeability of the Twin Cities Formation is relatively low. On the other hand, it is not known whether this formation is continuous across the project study area. Therefore, recent investigators have tentatively concluded that, while the potential for recharge to underlying aquifers from the Anoka sand plain certainly exists, the magnitude and significance of this recharge is unknown.

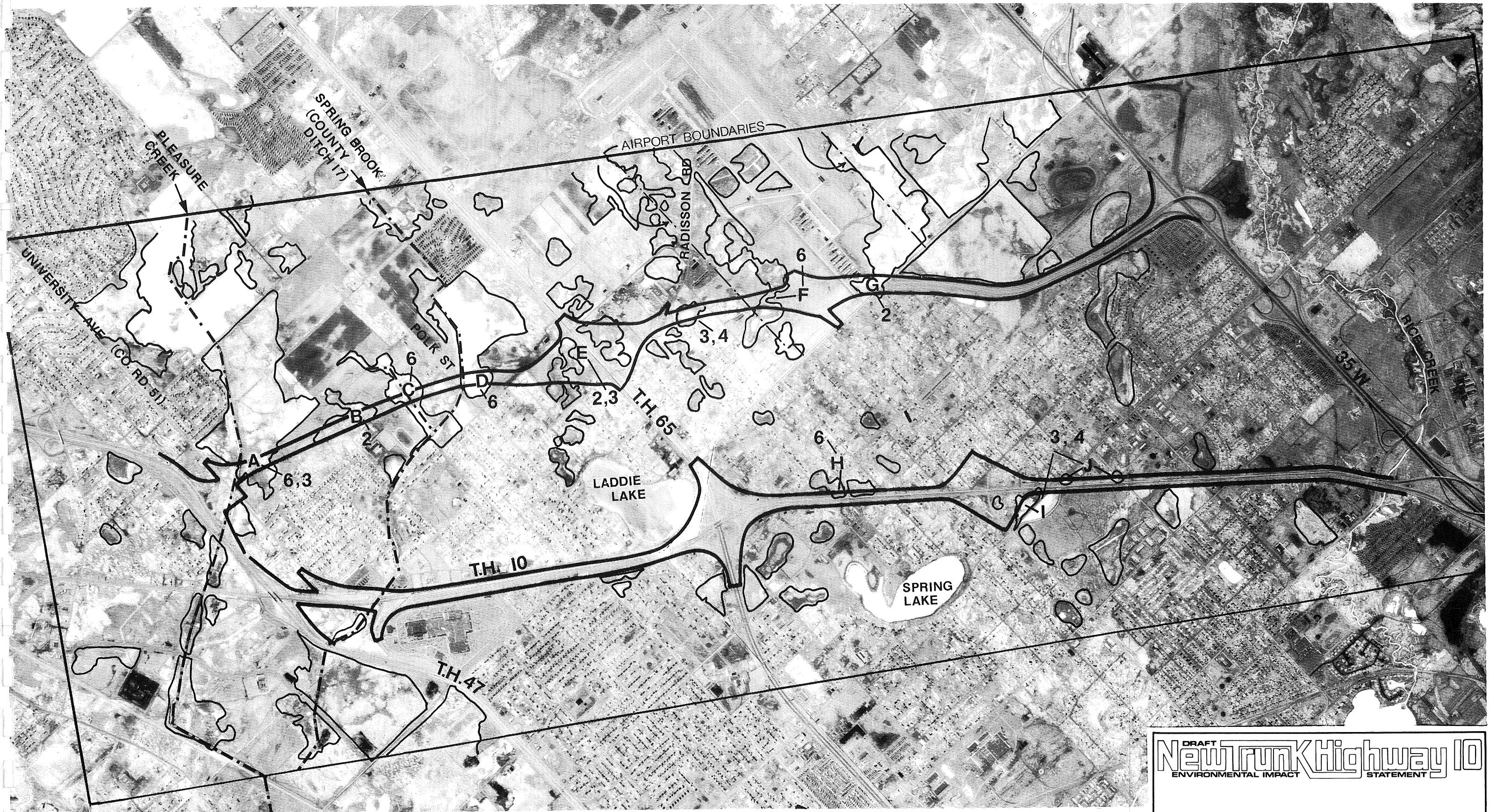
Water Supply. The communities within the study area for the proposed project are in various stages of completing their water supply, storage, treatment, and distribution systems. Potable water sources for the study area currently include both municipal and private wells.

Well logs for 21 municipal wells along with data from Norvitch (1973) were utilized in preparing the geological profile previously presented as Figure 10. The remaining four are finished in the Prairie du Chien-Jordan aquifer at depths of 150 to 350 feet below the surface. Private domestic wells in the project area are generally finished in the glacial drift at depths of 80 to 120 feet below the surface.

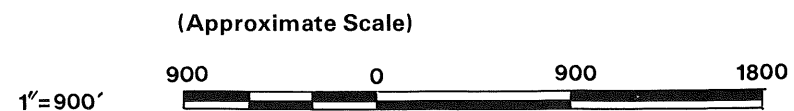
Surface Water

Introduction. For purposes of comparing surface waters, within and adjacent to the alternative corridors, a project study area was defined. This study area includes the one-half mile wide corridor between the Upgraded TH 10 and Relocated TH 10 alternatives. An additional one-half mile to the north of the corridor and to the south is also included in the study area. Thus, the study area is approximately one and one-half miles wide and six miles long. (Refer to Figure 11.) There is no involvement of wetlands west of Foley Boulevard.

²R. F. Norvitch, T. G. Ross, and Alex Brietkrietz, Water Resources Outlook for the Minneapolis-St. Paul Metropolitan Area, Minnesota, Prepared by U.S. Geological Survey, Published by Metropolitan Council of the Twin Cities Area, 1973.



- | | | | |
|--|--|----------|----------------------------|
|  | STUDY AREA BOUNDARIES | A | WETLAND I.D. LETTER |
|  | WETLAND AREAS | 3 | WETLAND TYPE (CIRCULAR 39) |
|  | ESTIMATED NEW T.H. 10
RIGHT-OF-WAY REQ. | | |



DRAFT
NewTrunk Highway 10
ENVIRONMENTAL IMPACT STATEMENT

FIGURE 11
NATURAL FEATURES

The most significant surface water in the study area is distributed among numerous, small wetlands which have developed because of water storage in low areas. Approximately 20 percent of the land surface may be classified as wetlands according to the U.S. Fish and Wildlife Service classification system outlined in Circular 39.³ Figure 11 shows some 100 wetland areas of (Types 2, 3, 4, or 6) ranging in size from two (2) acres to over 300 acres. The total acreage of wetlands in the study area is approximately 1,200 acres exclusive of lakes. Figure 11 also shows the major wetlands (labeled A to J) which would be crossed by the New TH 10 rights-of-way. The relocated TH 10 alternative would involve areas A-G while the Upgraded TH 10 would involve H-J. Wetlands along the Relocated T.H. 10 alternative have been field checked for classification by the Minnesota Department of Natural Resources and the U.S. Fish and Wildlife Service. (Refer to Section X, Coordination.)

Table 8 provides a general breakdown of this acreage according to Circular 39. Attention is also called to the description of the different wetland types provided in the table. Classification is based upon depth and permanence of water during the growing season and upon the dominant form of vegetation. Within any wetland area, a mixture of classes and intergradations between classes may be present. Where this occurs, the dominant vegetation pattern has been estimated for comparative purposes.

Wetland Areas A, C, D, and H. Wetland area A (Type 6) is a portion of a wetland 220 acres in size exclusive of a sod farm in the headwater area of Pleasure Creek. Pleasure Creek is part of an agricultural ditch system developed in the early 1900's.

Wetland area C, also type 6, is a portion of a 40 acre wetland drained by a tributary of County Ditch 17 (Spring Brook). The headwaters area of County Ditch 17 has been largely utilized for agriculture and residential (mobile home) development.

³S. P. Shaw and C. G. Fredine, Wetlands of the United States, and their value to waterfowl and other wildlife, U.S. Fish and Wild. Serv. Circ. 39, 1971.

TABLE 8
INVENTORY OF WETLANDS IN STUDY AREA BY TYPE

Wetland Type*	Total Acres in Study Area	Relocated TH 10 Right-of-Way	Upgraded TH 10 Right-of-Way
Type 2	174	15.9	0.9
Type 3	126	14.8	0
Type 4	41 ^(**)	4.8	2.3 ^(***)
Type 6	859	10.4	2.6
Totals	1,200	45.9	5.8

(*) Wetland Types:

Type 2 - Inland Fresh Meadow. Shallow depressions without standing water, but waterlogged within at least a few inches of the surface during the growing season. Common vegetation is sedges, reed canary grass, smartweed and burreed.

Type 3 - Shallow Marshes. Marshy depressions which may have variable water depths up to 30 inches or which may be merely waterlogged. They are usually covered with heavy-stalked emergents such as cattail, cane and bulrush. The emergents may form a dense cover or there may be scattered open-water areas.

Type 4 - Deep Marsh. Water depths to 6 feet. Emergent vegetation, if present, is either confined to a fringe or to scattered plants or clumps of bulrush or cane.

Type 6 - Shrub Swamp. Soil usually waterlogged during the growing season and is often covered with as much as 6 inches of water. Vegetation includes alders, willows, buttonbush, dogwoods and swamp privet.

(**) Includes one existing highway retention pond of five acres.

(***) Includes two existing highway retention ponds totaling 0.9 acres.

Wetland area D is a portion of the 70 acres of Type 6 wetland along the east side of the main channel of County Ditch 17.

Wetland area H is a segment of a 7-acre Type 6 wetland which would be required for right-of-way if the Upgraded TH 10 alternative was selected. Wetland area H is within the northernmost segment of the area which physically drains to Spring Lake.

Wetland Areas B, F, and G. These wetland areas are Type 2 wetlands, inland fresh meadows. Wetland area B is part of an 18-acre depression which, together with surrounding land, was formerly utilized as pasture by Cloverleaf Farm Creamery. The depression does not have a surface water outlet.

Wetland area F is at the tip of a linear sequence of potholes and depressions which extend north and form the headwaters of Sand Creek, a tributary of Coon Creek. The wetland complex, of which wetland area F is a part, is scattered across a large area including portions of the Anoka County Airport (refer to Figure 11). In the study area, wetlands which are a part of this complex total approximately 110 acres.

Wetland area G is located at the westernmost extremity of a large tract of wetlands which are predominantly Type 6. This tract, totaling 350 acres in the study area, is drained by the Judicial Ditch #1 system of ditches. (Judicial Ditch #1 is tributary to Rice Creek.)

Much of the 350 acre tract, of which wetland area G is a part, is contained within the boundaries of Anoka County Airport. There has been little physical/subdivision other than the road system which does divide the tract into several relatively large parcels. The existing 1.37 mile segment of the Relocated TH 10 alternative crosses the southern tip of the tract and terminates at County Road J at a point immediately southeast of wetland area G.

Wetland areas E, I, and J. A complex of pothole depressions east and west of TH 65 at its intersection with the relocated TH 10 alternative is designated wetland area E. Wetland area E is predominantly Type 3, inland fresh water marsh, interspersed with meadow (Type 2). A significant Type 4 (deep fresh water marsh) occurs south of Radisson Road on the eastern perimeter of the wetland area E complex. Drainage of that

portion of wetland area E east of TH 65 is generally northwest toward County Ditch 17. The Type 4 wetland drains southwest toward Laddie Lake. West of TH 65, the wetland complex also drains south toward Laddie Lake.

Wetland I is the perimeter of a significant 6-acre Type 4 wetland located adjacent to the Upgraded TH 10 alternative. This wetland is within the area physically draining to Spring Lake.

Two existing highway retention facilities (designated as Area J) also occur within the right-of-way for the upgraded TH 10 alternative. These have also been classified as Type 4.

Vegetation

In addition to wetlands, various other types of vegetation have developed in the study area in response to environmental conditions. The three major physical variables affecting vegetation are: topography, including slope and drainage; composition of the soils formed on the glacial deposits; and climate, especially the amount of rainfall annually. The majority of Anoka County, Minnesota lies within a relatively broad transitional area, or ecotone, between two major ecological units, the grassland biome to the west and the deciduous forest biome to the east. This ecotone is termed oak savanna.

Oak Savanna. Oak savanna is a region of oak trees and oak groves on the prairie. Under undisturbed conditions, bur oak and other oak species exist singly or in scattered groves in association with plants characteristic of the tall grass prairie. Such prairie plants include big bluestem, little bluestem, panic grass, timothy, spurge, toadflax and wild bergamot.

The oak savanna assemblage of plants requires fire for its perpetuation. Since the settlement of the land, fires have been largely controlled, resulting in a greater survival of young oak trees and the gradual replacement of the prairie vegetation. Consequently, oak forests now exist in the study area in many areas which were once oak savanna. Disturbed oak savanna still exists in the study area on old pasture and fallow lands. In these areas, mixed grasses are interspersed with oak.

Oak Forest. Oak forests exist in areas which have not been farmed extensively. Such forest areas include red, pin, burr and white oak in various proportions and

densities. In general, pin oak is predominant on sandier soils (Zimmerman-Isanti-Lino), whereas white oak is found in greatest abundance on moist, acid soils, and burr oak on calcareous soils. Red oak, black cherry, and aspen are species which occupy secondary positions in the oak forest.

Other Vegetation Types. In addition to the above types, the study area includes vegetation that is a mixture of grasses and non-woody shrubs that may be found in idle farmlands, pasturelands and cultivated lands. Such vegetation is identified as mixed grassland. Sod farming is a relatively common agricultural land use in the study area and represents a distinct type of grassland.

Wildlife

Habitat. Habitat provides the basic requirements for wildlife survival: food, water, shelter and reproduction areas. Although urbanization in the southern half of the study area has reduced habitat for many species, there are a substantial number of areas which provide these basic requirements. Such areas vary from a few acres to several hundred acres in size.

Amphibians. Amphibians include the salamanders and the various families of toads and frogs. Many species within these groups display a very high preference for habitats which include or are closely related to permanent or temporary standing water. The reproductive phases of the life cycle occur in and are dependent upon water.

Examples of this class of organisms may be found in the study area and specifically in habitats within and adjacent to the New TH 10 alternatives. Type 2 wetlands (Areas B, F, and G as shown previously on Figure 11) are representative of the type of seasonally wet meadows which would be attractive breeding areas for the swamp tree frog. Similarly, the leopard frog and the American toad would be likely to breed in these areas of temporary standing water before dispersing to the areas of permanent standing water (Areas E, I, J, county ditch systems, lakes, etc.).

Other examples of amphibians require standing water virtually year around. These include the green frog and the common tree frog. The latter, in addition to requiring permanent water, apparently prefers water within or along the margin of moist woodlands such as that portion of area E east of TH 65.

Reptiles. Reptiles include various species of turtles, lizards and snakes. Lizards and snakes occur primarily, but not exclusively in habitats which are considered to be agriculturally marginal. These include all wetland types and such mixed grassland vegetational types as brushy abandoned fields, pastures and meadow. Important refuges also consist of the "edges" or margins between plant communities such as thickets and hedgerows. Based on specimen collection records compiled by Breckenridge⁴, the dry, outwash areas characterized by oak savanna may be the preferred habitat for several species.

Along the relocated TH 10 alternative right-of-way approximately 40 acres adjacent to University Avenue and TH 10/47 is representative of the sandy soil and scattered oak growth which is suited to the black-banded skink. Minimal disturbance and excellent vegetative cover are afforded here.

The open, grassy habitat of the smooth green snake may be found in many areas. The interspersed grasslands and wetlands (Type 2) along the relocated TH 10 alternative provide important areas for reproduction, food and protection. In general, however, this species and others may also occur in low density urban areas proposed for right-of-way. The value of urban habitats for species considered economically unimportant, has been little explored.

Several other species are found principally in sandy or gravelly plains and slopes. Those which may be expected to occur in the denser vegetation of the Type 6 wetland include the eastern and western hog-nosed snakes, fox snake, common garter snake, and milk snake. Although at the western extremity of its range, the western hog-nose snake has been reported to occur in the vicinity of Laddie Lake.⁵ The plains garter snake is generally found in moist lowlands (Type 2) and permanent wetlands (Type 3, 4).

The study area also provides likely habitat for four species of turtles. Two (the painted turtle and the spiny

⁴W. J. Breckenridge, Reptiles and Amphibians of Minnesota, (Minneapolis: Univ. of Minn. Press, 1970).

⁵Breckenridge.

soft-shelled turtle) have definite preferences for larger lakes or streams. Therefore, if present, they would be restricted to Laddie and Spring Lakes. The snapping turtle also prefers permanent water but has been found in Type 3 and 4 wetlands in addition to lakes. Blanding's turtle, while its habitat is reported to be highly aquatic, is also known to follow sluggish streams or agricultural ditches, and to forage extensively on land. In addition to Area E, therefore, this species could be encountered as casual or occasional in Areas A, C, and D. Blanding's turtle is considered a species of changing or uncertain status in Minnesota. The snapping turtle is listed as a species of special interest.⁶

Birds. Based on field observations and data on ranges compiled by Green and Janssen,⁷ the study area offers breeding habitat or potential breeding habitat for approximately 70 different bird species. Eight species have wetland habitat preferences and ranges which overlap in this portion of the state, nine species have grassland habitat preferences and overlapping ranges and eight species have preferences for deciduous forest. The remainder are considered to be more or less generally distributed (including urban) because precise habitat requirements are poorly understood and these requirements may, in themselves, be general. In addition to breeding birds, many additional species

⁶ Minnesota Department of Natural Resources, Special Publication #104, Minnesota Animals and Plants in Need of Special Consideration, July 1974.

Species of Changing or Uncertain Status -- Species that are uncommon or local in Minnesota but which are not presently endangered or threatened but which could become threatened. Conversely, they could increase under favorable circumstances.

Species of special interest -- Species that merit special consideration in Minnesota, and in some places and at some times merit special management, because of unusual or unique values, special public interest, or vulnerability of habitat. They are not presently endangered or threatened or apt to become so in the near future but should be watched.

⁷ J. C. Green and R. B. Janssen, Minnesota birds: where, when, and how many. (Mpls: Univ. of Minn. Press, 1975).

would be likely to migrate through the study area and others may be residents at other times of the year than the breeding season.

Of the species that could occur as breeding species in the study area, the exact occurrence and overall status of several is unknown. This is due frequently to the sporadic nature of documented observations and, in part, to the natural reclusiveness (and low population densities) of some species.

Fifteen of the bird species with potential breeding habitat in the study area are recorded in the National Audubon Society's Blue List for 1977. These birds include the red-necked grebe, American bittern, marsh hawk, American kestrel, red-shouldered hawk, yellow-billed cuckoo, common nighthawk, red-headed woodpecker, hairy woodpecker, purple martin, logger head shrike, yellow warbler, grasshopper sparrow, Henslow's sparrow and vesper sparrow.

Four bird species have economic and recreational importance because they are regularly hunted in Minnesota. These species include mallard, blue-winged teal, wood duck and ring-necked pheasant.

Bird species are also included in the Department of Natural Resource's list of animals and plants in need of special consideration. While no species occurring in the study area are listed in the endangered or threatened classification, two bird species have been designated as species of changing or uncertain status. These are the marsh hawk and the red-shouldered hawk. Two species, occurring in the study area as migratory species, and listed by the State as species of special interest, are the great blue heron and the common egret.

Mammals. The only species of large mammals present in the study area is the white-tailed deer. The highest deer population occurs in that portion of the study area east of Radisson Road and north of Relocated TH 10 where there is a reported summer concentration of 15-20 deer per square mile.⁸ West of Radisson Road to TH

⁸Source: Mr. Lloyd Knutson, Minnesota Department of Natural Resources, personal communications.

65, the summer population ranges from 10 to 15 deer per square mile. West of TH 65, the study area contains five deer per square mile. Deer are not known to winter in the study area to any great extent.

Deer are known to have a fairly extensive range size and pattern of daily movement. Consequently, deer habitat generally includes several different vegetation types including forests, cultivated fields and drier portions of various wetland types, particularly Type 6 (Areas A, C, D).

Smaller species likely to occur in the study area are squirrel, rabbit, muskrat, raccoon, skunk, woodchuck, fox, field mouse, vole, masked and pygmy shrews, short tailed shrews, long and short tailed weasels, chipmunks, ground squirrels, pocket gophers, spotted skunk and bats. None of the mammals found in the study area are considered threatened or endangered.

SECTION IV LAND USE PLANNING

STATUS OF PLANNING

The planning effort of the four communities are in various stages of development. The Cities of Spring Lake Park and Mounds View have completed Comprehensive Plans recently, 1972 and 1975 respectively. Coon Rapids prepared a Community Plan in 1976 which records goals and policies, a generalized future land use plan and a series of implementation tools. Blaine contracted with a consultant to prepare a series of reports in the early 1970's that were to result in a Comprehensive Plan. The status of those reports is somewhat uncertain at this time. The City does not have an adopted Comprehensive Plan, but is now in the process of contracting with a consultant to prepare such a plan in accordance with the Metropolitan Land Planning Act. Due to the passage of this Act, each of the other communities will be modifying or revising their Comprehensive Plans during the next three years.

Neither Anoka nor Ramsey County have adopted Comprehensive Plans. Both Counties must adopt Comprehensive Plans by 1980 in accordance with the Land Planning Act. Anoka County prepared and adopted a Thoroughfare Plan in 1974.

The Metropolitan Council of the Twin Cities has prepared and adopted a Development Framework Plan and a series of individual plans relating to transportation, housing, sewers, and parks and open space which have been incorporated into a Development Guide for the region.

EXISTING LAND USE

The land uses in the project area are identified in Figure 12. Urban land uses are concentrated in the southern area with a greater amount of agricultural uses in the north. The communities of Mounds View and Spring Lake Park are developed to a higher degree than Blaine or Coon Rapids. Blaine's developed area is located in the southwestern and western segment of the community. Coon Rapids' development is concentrated

in the southern part of the city between the Mississippi River and TH 10/47. Development also exists along the eastern boundary adjacent to Blaine.

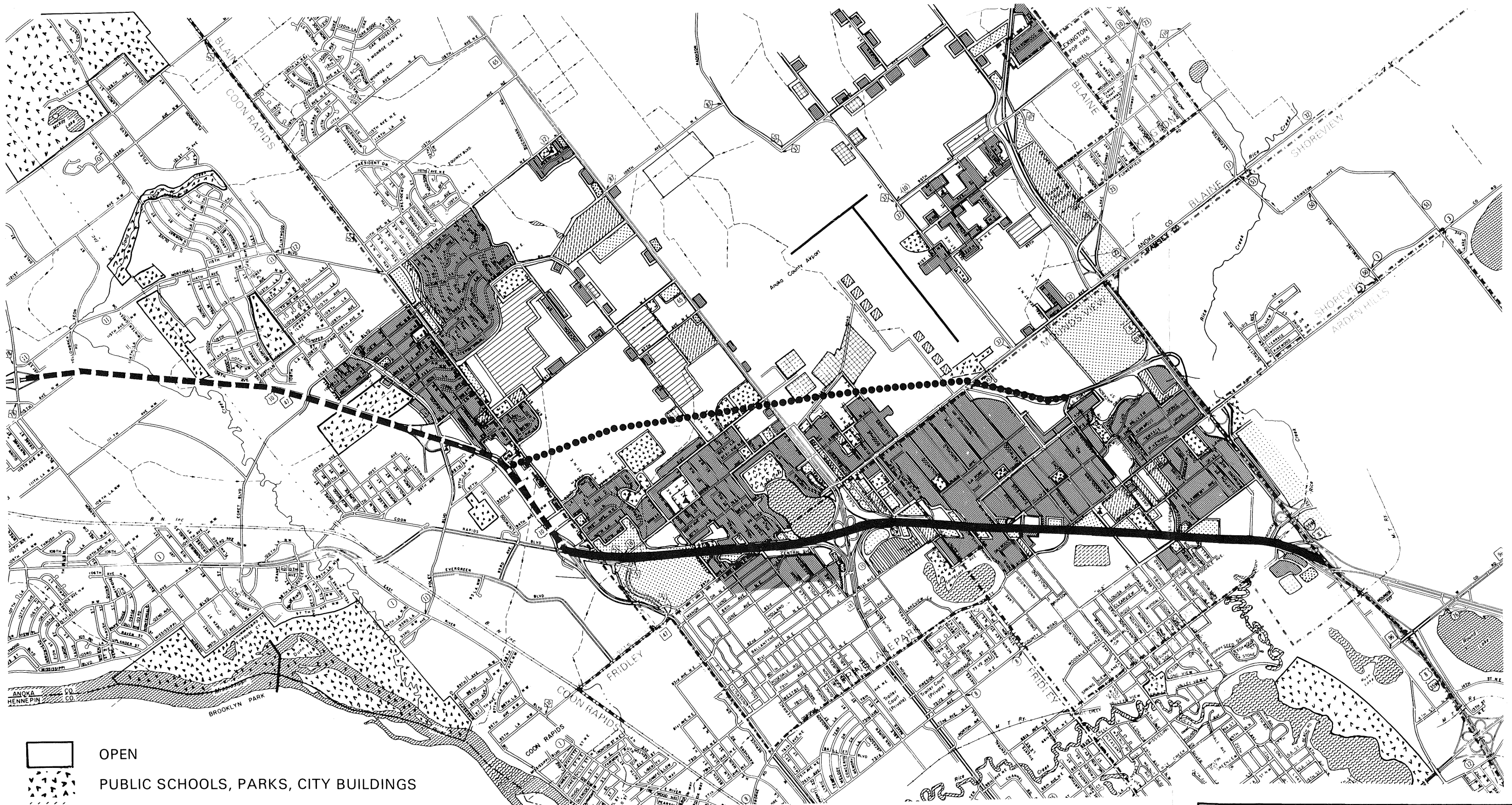
FUTURE LAND USE - ZONING

The future planned land uses in the project area are illustrated by the zoning designation shown in Figure 13. While Mounds View, Spring Lake Park and Coon Rapids have adopted future land use plans, the City of Blaine has not adopted such a plan. Therefore, to insure consistency, the zoning ordinances of the four cities have been recorded as an indication of desired future development. The zoning ordinance is one tool to help implement and direct future growth and, as such, should reflect the policies of the various cities. The composite map will allow comparisons between the communities and the identification of provisions for future growth.

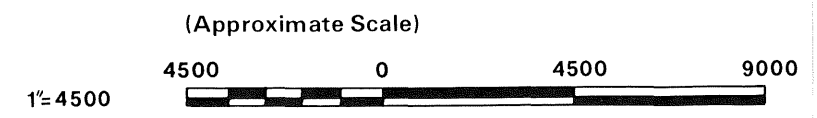
The plans and zoning patterns illustrate the predominance of residentially designated land. Commercially zoned land closely follows the major highways. There is an abundance of industrially zoned land, particularly in the northeastern area of Blaine near the Anoka County Airport. Current industrial development is taking place in Blaine and Coon Rapids.

New development is now taking place which will help to accommodate projected increases in population and employment. The proposed projects in the four communities are recorded in Table 9. A mix in development types is represented by the projects. The residential development illustrates a predominance of single-family units with some apartments and duplexes. Commercial and light industry are also being developed. Some of the proposed developments are adjacent to the alternatives in Blaine and Mounds View. The Clover Leaf Farm Property north of the proposed action corridor has received preliminary plot approval for 182 units, a majority of which will be single-family, detached homes. These homes are projected to sell for \$44,000 to \$60,000.

In Coon Rapids, the new developments are concentrated in the southeastern quadrant of the city. This development includes two apartment complexes containing a total of 208 units, and two areas which will have lots sufficient for 103 single-family units. In addition, commercial and office space will be developed.

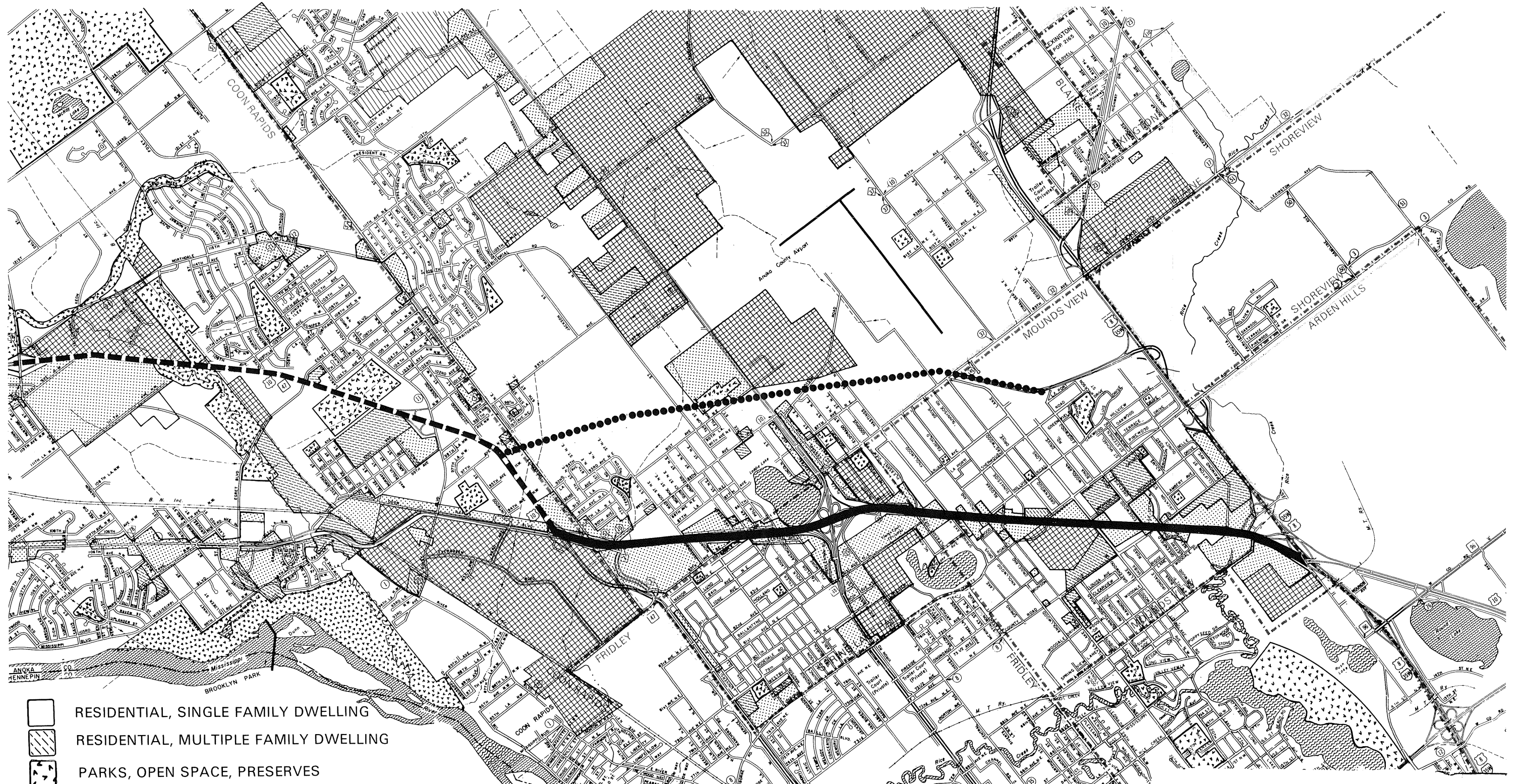


-  OPEN
-  PUBLIC SCHOOLS, PARKS, CITY BUILDINGS
-  RESIDENTIAL, APARTMENTS OR DUPLEXES
-  RESIDENTIAL, SINGLE FAMILY AND MOBILE HOME
-  BUSINESS OR COMMERCIAL
-  INDUSTRIAL
-  AGRICULTURAL
-  CHURCH



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FIGURE 12
EXISTING LAND USE
IN PROJECT AREA



(Approximate Scale)



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FIGURE 13
COMPOSITE ZONING OF
PROJECT AREA

TABLE 9
DESCRIPTION OF PROPOSED MAJOR NEW DEVELOPMENT*

City	Type	Location	Amount
Coon Rapids	Expansion of City Hall	Coon Rapids Boulevard	17,000 sq.ft.
Coon Rapids	Office Building	Southeast quadrant of the TH 47 & TH 10	12,000 sq.ft.
Coon Rapids	Shopping Center	Co. Road 132 (85th Avenue N.W.)	112,000 sq.ft.
Coon Rapids	Apartment Complex	Egret Boulevard	108 units
Coon Rapids	Single Family	111th Avenue N.W.	65 units
Coon Rapids	Single Family	98th Avenue N.W. and Cottonwood St.	18 units
Blaine	Single Family & Duplexes	Bound by 99th Ave., Polk and University	182 units (80 acres)
Blaine	Single Family	85th Avenue and Lexington	147 units (80 acres)
Mounds View	Mixed PUD (Commercial, Light Industry, Residential)	Approx. 2245 TH 10 (North on TH 10, west of I-35W, south of Co.Rd. H-2)	55 acres
Mounds View	Limited Business & Duplexes	Approx. 2550 TH 10 (South of TH 10, north of Co.Rd. H-2, east of Long Lake Rd.)	24 acres
Mounds View	Single Family	Approx. 8270 Groveland Road (North of Ardan Ave. between Groveland Rd. and Knollwood Drive)	14 units (4.5 acres)
Mounds View	Single Family	Approx. 5091 Edgewood Dr. (North of Co.Rd. H between Edgewood Dr. & proposed Bona Rd.)	23 units (5.5 acres)
Spring Lake Park	Single Family	81st Ave. N.E., Able, 83rd Ave. N.E. & Taylor	60 units

*Source: City staffs of Coon Rapids, Blaine, Mounds View and Spring Lake Park, 1977.

The Regional Plan for the Twin Cities Metropolitan Area is contained in the Metropolitan Development Framework which was adopted by the Metropolitan Council on March 27, 1975. The policies in the plan were developed to assist local units of government make development decisions that affect and are affected by metropolitan services which includes public and private transportation and sewers.

The study area is totally within the Urban Service Area, shown on Figure 14, as defined by the Metropolitan Council. The Regional urban services, such as transportation and sewers are available or will be made available to encourage and/or serve urban development in this area. Given this availability or commitment to provide these facilities, the availability of other public services (such as police and fire protection, public water supply), the availability of land and the various attributes of the area, the Metropolitan Council has projected population for the area. The population of the study area is expected to increase between now and the year 2000.

PLAN COMPATIBILITY

The plans of four communities, two counties and the Region, all influence the development of the area. Through review of the plans and discussion with the staffs of the cities and counties, the consistencies and conflicts of plans with the proposed action have been identified.

Local Plans and Policies. Based on the existing Comprehensive Plans and zoning ordinances of Coon Rapids, Mounds View and Spring Lake Park, and the zoning of Blaine no conflicts can be found with the proposed action. Each community has either prepared plans which include the proposed action or has assumed that the proposed action would be constructed. Each of the four communities have made plans assuming the proposed action would be relocated. In some instances, a corridor has been indicated on official plans. In no instance do the plans reject the need for an improved highway in this area.

Each community was contacted during the preparation of the Draft EIS and asked if they knew of any problems created by the proposed action or conflicts that existed between the plans of the community and the alternative. None of the communities indicated any conflict with the general corridor location. Discussion with the staffs of the four cities and Anoka and Ramsey

Urban Service Area

-  Fully Developed Area
-  Planned Urbanization, 1975
-  Additions 1976-1980
-  Additions 1981-1990
-  Freestanding Growth Centers

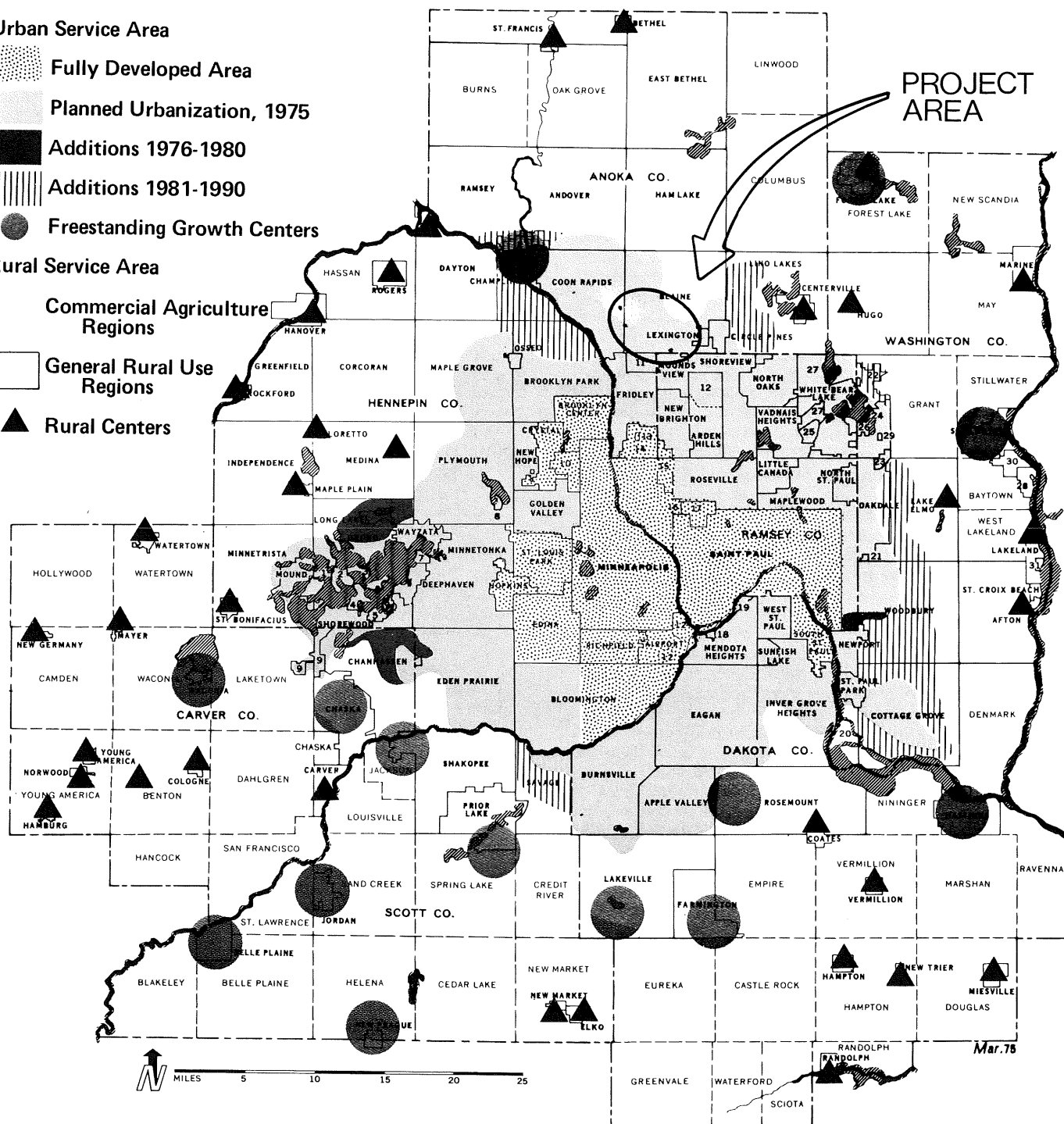
Rural Service Area

-  General Rural Use Regions
-  Rural Centers

Commercial Agriculture Regions

-  General Rural Use Regions

-  Rural Centers



TWIN CITIES METROPOLITAN AREA

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 ENVIRONMENTAL IMPACT STATEMENT

FIGURE 14
DEVELOPMENT
FRAMEWORK PLAN

Counties identified that the design of interchanges was a concern. Since these decisions are not a part of the route location, this issue will be resolved in the design study phase of project development. Further discussion of these interchanges is contained in Section V Part III of this document.

Both Coon Rapids and Blaine have made strong commitments in support of the construction of the relocation of TH 10. Blaine has included a corridor for relocated TH 10 in the project area in its zoning map since 1962. The location of various buildings, both public and private, have been planned and constructed to avoid conflicts with the relocation alignment when and if it is built. Based on the compatibility of these plans and policies, it must be assumed that the relocation alternative supports the desires of the communities.

The 1970 Coon Rapids Future Land Use Plan included a corridor in approximately the location of the relocated TH 10 alternative route. The City has adopted a resolution approving the proposed action. While the City has not restricted development within the relocated corridor, they have been discouraging owners from developing their property so as not to interfere with the construction should the relocated TH 10 alternative be selected.

Coon Rapids' support for the proposed action stems from the increase in accessibility that will be provided. Unless each alternative provides a similar level of accessibility, Coon Rapids may be opposed to their implementation.

The existing Trunk Highway 10 alignment traverses the City of Mounds View and Spring Lake Park. The Spring Lake Park Comprehensive Plan was prepared with the assumption that the proposed action would be relocated north into Blaine about one mile. The City has subsequently developed their street plan with the idea that existing TH 10 would be turned over to Anoka County to become a county route.

The City of Mounds View includes existing TH 10 and the spur which connects I-35W and 85th Avenue North (County Road J) which is referred to as New TH 10 in the Comprehensive Plan. The planning for the area adjacent to existing TH 10 presupposes that the proposed action will be located on an alignment other than existing TH 10.

Neither Comprehensive Plan analyzes the pros and cons of upgrading TH 10 instead of the relocation alternative. Spring Lake Park's major objective at present concerning this highway section is to reduce the traffic congestion at the intersection of 85th Avenue North (County Road J) and TH 65. The section of New TH 10 which has been constructed from I-35W to 85th Avenue North (County Road J) has caused an increased amount of traffic to be routed on 85th Avenue North (County Road J). This has caused traffic congestion at the intersection of 85th Avenue North (County Road J) and TH 65. The City of Spring Lake Park and its residents have requested that this condition be rectified. Four-way STOP signs have been installed to discourage traffic on 85th Avenue North (County Road J) in this area and to reduce vehicular speeds.

The Mounds View Comprehensive Plan also assumes new TH 10 will be located on a new northern alignment. The Comprehensive Plan did not evaluate alternatives to that location. The Plan states that existing TH 10 fragments the community. One of the major concepts in the Plan is to develop a City Center which straddles TH 10. By development of this concentrated retail, commercial, civic center and residential center, an attempt will be made to reduce this fragmentation.

Mounds View's Comprehensive Plan has designated existing TH 10 as a future minor arterial. The Plan recommends that the economic feasibility of grade-separated crossing of existing TH 10 at the City Center be investigated, that further direct land access to properties along existing TH 10 be prohibited, and that use of alternative access points rather than access from TH 10 be encouraged. While the upgrading of TH 10 appears to be compatible if the major intersections are grade-separated in conformance with the City Center concepts, the no-build alternative appears to be in conflict. The high traffic volume would continue to fragment the community.

County Plans. Anoka County prepared a thoroughfare plan in 1974 which analyzed the highway transportation needs of the county. The thoroughfare "sketch plan" was developed based on the Twin Cities Development Guide regional highway framework (these documents preceded the Development Framework and Transportation Guide chapter which presently reflects the plans and policies of the Metropolitan Council). A basic premise of the study was that travel demand does not

occur as an isolated phenomenon but, rather as a result of the land uses within the area and the location of the county within the greater metropolitan area.

A complete inventory of development trends and plans of the civil subdivisions within the county was made to provide a broad base for analyzing present conditions. By utilizing the land use plans of the various communities within the county, the thoroughfare plan identified and took into account trends in development. The plan was developed to conform to growth forecasts and anticipated constraints as well as the goals of the County Board.

The Thoroughfare Plan recommended that the corridor conforming to a grid pattern approximately 3 to 6 miles north of I-694 be used for a Northtown Route. Since official adoption of the Thoroughfare Plan, the County Board of Commissioners has passed various resolutions which support and encourage the expeditious construction of the relocation alternative. The County believes the corridor has been carefully located to minimize the relocation of homes or businesses, while still allowing the proposed action to meet the above described objectives. In recent discussions with Anoka County staff, they do not know of any local citizen groups that object to the relocation alternative.

Regional Plans. The proposed action is one of 29 highway projects required to complete the 1990 Metropolitan Highway System. The proposed action was evaluated based on the policies of the Development Framework and the Transportation Guide in the Transportation Guide Chapter published in July, 1976. This evaluation ranked the proposed action as the 17th priority of the 29 projects needed to complete the 1990 highway system.

The Highway Plan was developed to further the policies of the Development framework and, therefore, is an integral part of the Regional Plan. A major facet of the Development framework is to concentrate development in the Metropolitan Urban Service Area (MUSA) and, therefore, to reduce sprawl-type growth. The potential implementation of this overall Guide policy rests with the location and provision of Metropolitan public facilities and services such as sewers and transportation. The Metropolitan Council is committed to provide these services to the MUSA. The proposed action is completely within the MUSA and would be

serving an increasing number of new residents and jobs in the study area. No conflicts can be found with regional plans or policies and the upgrading or relocation of TH 10.

SECTION V ALTERNATIVES

SECTION V, PART I HISTORICAL RESUME

In 1970, the Metropolitan Council of the Twin Cities identified the need for a major transportation facility through the study area, in the Transportation Section of the Metropolitan Development Guide. Subsequently, in 1972 a cooperative planning study was undertaken jointly by local and regional units of government for the purposes of developing alternative route locations and selecting a recommended location for a major facility (thereafter called the Northtown Crosstown Highway).

The results of the study are contained in two documents:

1. Design Framework, Northtown Corridor Study, Barton-Aschman Associates, Inc., 1973.
2. Northtown Corridor, Final Report, Barton-Aschman Associates, Inc., July, 1973.

The alternatives explored in these studies relate directly to the proposed New TH 10 in the following respects:

1. The New TH 10 study area forms the easternmost third of the Northtown Crosstown study area.
2. New TH 10 Alternatives 1A, 1B, 1C, 1D (Relocated TH 10), and 2A, shown in Figure 15 were considered for the corresponding segment of the Northtown Crosstown Highway.

These are the alternatives the Northtown Study evaluated and developed through citizen participation

techniques including attitude surveys, community forums and representation on a Technical Task Force.

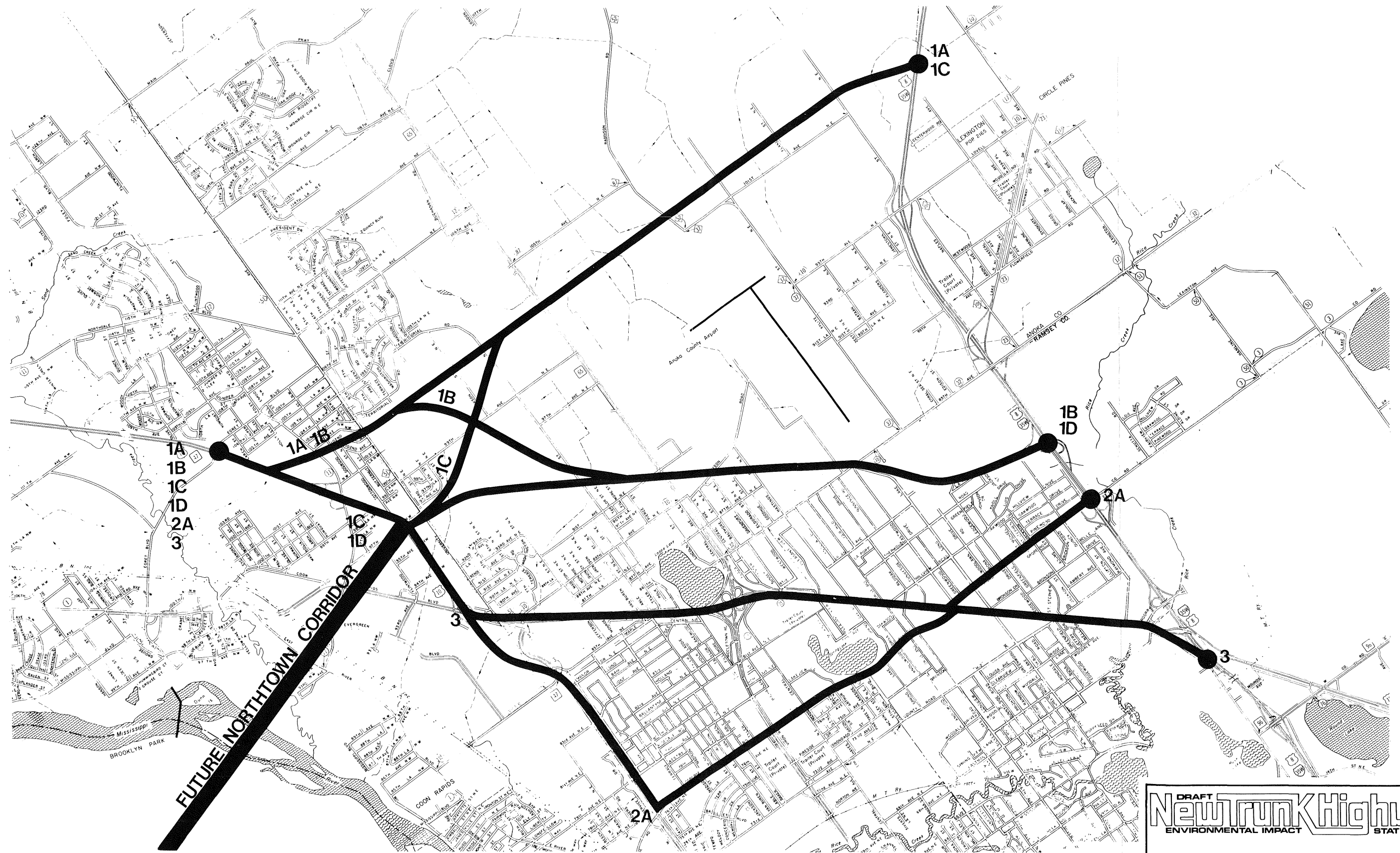
It was recognized at the outset of the current New Trunk Highway 10 Location Study that additional alternatives, which were not considered in 1973, may now be desirable to local communities. For this reason, a meeting was held on April 20, 1977 with officials from the various units of local and regional government. These officials were requested to identify any additional alternatives and criteria for the route location of New Trunk Highway 10 which they felt merited consideration. No additional alternatives were recommended. There was general agreement that those route location alternatives considered in the Northtown Study accurately reflected the full range of alternatives for the New Trunk Highway 10 location. These New Trunk Highway 10 route location alternatives are described in the following sections and shown on Figure 15.

Alternative 1A

Alternative 1A would be comprised of a combination of existing TH 10 along the northwest end of the corridor for approximately 0.4 miles and a new alignment for approximately 5.25 miles connecting with Interstate 35W. Moving east from the western terminus at Hanson Boulevard, this alternative encounters substantial residential development along University Avenue. This area is fully developed residentially and offers no undeveloped area for the roadway alignment even though the corridor for this alternative was selected to minimize the total amount of residential area to be utilized. To the east of TH 65, the route passes through a predominantly undeveloped section of the study area including wetlands.

Alternative 1B

Alternative 1B corresponds to Alternative 1A throughout the western portion of the study area to University Avenue. At University Avenue, Alternative 1B turns southeasterly through approximately 100 acres of wetlands. East of TH 65, the route follows a southeasterly course around the southern boundary of the Anoka County Airport connecting to a previously constructed segment of New Trunk Highway 10 which connects to I-35W. New alignment of approximately 4.05 miles would be required for this alternative, while existing alignment could be used for 1.80 miles.



(Approximate Scale)

1" = 4500'



DRAFT
NewTrunk Highway 10
 ENVIRONMENTAL IMPACT STATEMENT

FIGURE 15
ALTERNATIVES

Alternative 1C

Alternative 1C corresponds to Alternative 1A in that portion of the study area east of TH 65. The route in the western portion of the study area extends south from Egret Boulevard along existing TH 10 to a point south of 97th Avenue. The route then crosses University Avenue and follows a northeasterly direction through the same 100 acre wetland area as Alternative 1B. Existing TH 10 alignment of 1.25 miles could be utilized with this alignment while approximately 4.95 miles of new alignment would be required.

Alternative 1D
(Relocated TH 10)

This alternative referred to as Relocated TH 10 in this Draft EIS, was described in the Project Development Report, approved February 1977, and is also shown on Figure 15. It corresponds with Alternative 1C in that it follows existing TH 10/TH 47 south from Egret Boulevard for a distance of 1.25 miles. The route then proceeds east on new alignment, crosses University Avenue, turns southeasterly through relatively undeveloped farmlands, and interchanges with TH 65 in the vicinity of Blaine City Hall. Alternative 1D then follows Alternative 1B around the southern part of the Anoka County Airport to the constructed segment of Relocated TH 10 (1.37 miles to I-35W). New alignment for this alternative is 2.88 miles.

Alternative 2A

This route is the southernmost alternative described. Beginning at Egret Boulevard, the route extends south along existing TH 10/TH 47 to 77th Way. From TH 47 and 77th Way, the route would proceed easterly eventually connecting with Osborne Road in the vicinity of Terrace Road. The route then follows Osborne Road easterly to I-35W. Eventual improvement of Osborne Road would occur under this alternative. Development along Osborne is generally complete. Existing alignment of approximately 7.35 miles could be utilized with this alternative.

No-Build
Alternative

This alternative, also considered in the Northtown Study, would be not to construct any new transportation facility in the New TH 10 study area.

Alternative 3
(Upgraded TH 10)

In addition to those alternatives considered in the Northtown Study, for purposes of this evaluation an additional alternative would be the upgrading of existing TH 10 (Alternative 3). Existing TH 10 functions as a principal arterial through the Cities of Mounds View, Spring Lake Park and Blaine. Access is partially uncontrolled from I-35W west to TH 47 and both residential and commercial developments have occurred

Mass Transit
Alternatives

along virtually the entire length of this segment. The roadway is within 100 feet of the shoreline of Laddie Lake in the northwest quadrant of the interchange of TH 65 and existing TH 10.

An alternative to the proposed action that has been considered would be substitution of a mass transit fixed-guideway system for the freeway facility. This alternative is not considered acceptable for the following reasons.

Substitution of a fixed-guideway mass transit system for the TH 10 freeway is not consistent with the Metropolitan Council's Transportation Development Guide-Policy Plan. This alternative would require a change in the plans and goals that the Council has established for the metropolitan area.

A fixed-guideway as used in this discussion, is a permanent fast-link facility incorporating vehicle guidance devices. Examples are railroad tracks, mono-rails and other devices which physically contact and guide the vehicle.¹ Such a system would require an ambitious and costly program of expanding, improving and constructing a mass transit system in conjunction with existing streets and highways. Such a system would require careful study to accommodate both regional and local travel demands. The Metropolitan Council has also said, "the cost of constructing and operating this system is clearly far beyond the capabilities of the Metro Area."²

¹ MTC, Development of Performance Specifications for the Regional Fixed Guideway System, prepared January, 1974.

² Met. Council Trans. Dev. Guide-Policy Plan, p. 63.

SECTION V, PART II CONSIDERATIONS

The Northtown Study utilized citizen participation to generate all but one of the alternatives (Alternative 3) that are evaluated in this study as to their reasonableness. In the Northtown Study, a Technical Task Force comprised of representatives of the communities, private enterprise and special interest groups was asked to assign weights to 27 criteria which were identified in citizen forums and measured quantitatively. The Technical Task Force was then asked to weigh each of these criteria. A complete description of how this was accomplished is contained in the two documents previously referenced on the Northtown Study. Based upon a determination of relative values and relative value ratios, a recommended alternative (1D) was selected from this process.

As a follow-up to this study to determine reasonable alternatives for New TH 10, the meeting of April 20, 1977 was used to expand, reduce, or update the 27 criteria. Each of the representatives of local and regional agencies was asked to review the goals and criteria in the Northtown Study and to note any changes they desired.

CRITERIA

Based upon oral comments received at this meeting and written comments received on the Project Development Report, approved February 1977, five criteria were selected as being most critical for the determination of reasonableness. These criteria are:

1. Alternatives selected for further study should conform with and support policies set forth by the Metropolitan Council in the Metropolitan Development Guide. The relevant policies of the Metropolitan Council are:
 - to limit outward expansion of urban development according to specific growth boundaries

- to promote more compact metropolitan development by encouraging in-filling rather than continued outward expansion
 - to provide a region-serving transportation network
 - to provide the highest level of service possible to major metropolitan commercial and employment centers
 - to promote the development of transportation facilities to increase access between all metropolitan area communities
 - to promote the development of a balanced metropolitan transportation system to alleviate congestion
 - to give priority to transportation facilities that will enhance accessibility for persons of low mobility and those areas having low accessibility.
2. Alternatives studied should be those which avoid unnecessary division of neighborhoods and relocation of families.
 3. Alternatives studied further should minimize conflicts with community land use plans.
 4. Alternatives studied further should minimize loss of or impact to sensitive areas of ecological or recreational importance including streams, lakes and wetlands.
 5. Alternatives studied further should attempt to avoid unnecessary construction, maintenance and user costs.

ALTERNATIVES ELIMINATED

When the above five criteria were applied to the alternatives described previously, the following alternatives were eliminated for the reasons cited.

Alternative 1A & Alternative 1C

These alternatives do not support the policies of the Metropolitan Council with respect to the extension of urban services to undeveloped areas (Criteria 1). An unreasonable degree of development could be encouraged or stimulated outside of Metropolitan Council expansion limits.

Alternative 1B

In proceeding down from the northwest to TH 65, Alternative 1B would require the relocation of an estimated 60 families in the residential area immediately east of existing TH 10 and along Territorial Road. Since a relocation of this magnitude can be avoided by

other alternatives, this alternative is considered unreasonable based on Criteria 2.

Secondly, this alternative would bisect a 100 acre wetland parcel. Loss of habitat and the creation of a barrier to the movement of deer and other wildlife has been noted by the Minnesota Department of Natural Resources. Based on Criteria 4, this alternative is considered unreasonable when other alternatives are available.

This alternative also does not conform to the land use plan of the City of Blaine. It is, therefore, considered unreasonable based on Criteria 3.

Alternative 2A

Alternative 2A would result in a small increase in relative accessibility to the metro area. It would also provide only a minimum time savings with respect to the trip desires of persons within the study area. Because of these factors, this alternative conflicts with Criteria 1 and is considered unreasonable.

Mass Transit Alternatives

As explained in the description of this alternative, there are substantive conflicts with Criteria 5. It is therefore considered unreasonable.

REASONABLE ALTERNATIVES

Based on the established criteria, the following route alternatives were selected for study in this Draft Environmental Impact Statement, and one still under consideration until the route is selected after the Public Hearing for this document.

Alternative 1D (Relocated TH 10)

This alternative meets the five criteria for reasonableness established above. It has also been selected in two previous studies as the preferred alternative for a major transportation facility. Accordingly, it was recommended for further study during the Draft EIS.

Alternative 3 (Upgraded TH 10)

Although this alternative may present some conflicts with respect to community land use plans, it has not been studied in detail previously. To determine whether substantive conflicts with Criteria 1 or other criteria would occur by upgrading existing TH 10, it was recommended that this alternative be examined further in the Draft EIS. This alternative is referred to as Upgraded TH 10 in the Draft EIS.

No-Build Alternative

The alternative of not constructing any new transportation facility within the study area was recommended for study according to guidelines for the National

Environmental Policy Act. It is, therefore, examined in detail in the Draft Environmental Impact Statement.

As confirmed in discussion with state, regional and local agencies, and with local citizens, these three alternatives reflect the range of concerns likely to be encountered in the proposed action. Detailed evaluation of these in this EIS study is likely to result in the selection of an alternative which provides for the best interests of public safety and welfare.

SECTION V, PART III DESIGN ALTERNATIVES

Alternative designs considered for the New Trunk Highway 10 proposal are the geometrical connections at the proposed interchanges of the major cross streets on the project. Other design alternatives are: noise abatement, drainage alternatives, roadway alignment, and profile and cross section. All of these alternatives will be addressed and treated in the Design Study Report identified in Section II under FUTURE ACTIVITIES of this Draft Environmental Impact Statement.

Those major interchanges to be evaluated are as shown and discussed below.

Egret/Foley Boulevards. The proposed New Trunk Highway 10 construction will begin at Egret Boulevard. Due to the proximity of the junction of Trunk Highway 47, University Avenue Extension and the proposed Northtown Corridor, the existing interchange at Foley Boulevard may be deleted. The ramifications of both of these interchanges will be considered in the Design Study Phase as to how they relate to other interchanges. A Project Development Report for the proposed Northtown Corridor was approved November 22, 1976 and the proposed corridor is shown on Figure 15 (page 75).

University Avenue Extension (Anoka County Road 51). The interchange of University Avenue Extension and New Trunk Highway 10 may also be affected by the connection of the Proposed Northtown Corridor and the ultimate disposition of Foley and Egret Boulevards. The design constraints of the ramps for the Northtown Corridor may not allow sufficient room for access connections between the University Avenue Extension and New Trunk Highway 10.

Trunk Highway 65. Trunk Highway 65 (Central Avenue) runs north-south in Blaine, Minnesota. This proposed interchange is midway along the proposed action. Due to the projected traffic volumes for this interchange, a major interchange design similar to the existing interchange between Trunk Highway 65 and existing Trunk Highway 10 would probably be required for either the relocated or upgraded TH 10 alternatives.

Airport Road. The Relocated Trunk Highway 10 alternate crosses the existing access road for the Anoka County Airport and Ramsey County Road J at approximately the same location. This is the same area where the Relocated Trunk Highway 10 would connect with the existing portion of Relocated Trunk Highway 10 which ultimately connects to I-35W.

The Upgraded TH 10 alternate, although not as directly concerned with 85th Avenue North (County Road J), would have a similar intersection study at Silver Lake Road/Red Oak Drive with the same issues.

There are a number of issues that surround these intersections and the adjacent area. These issues are enumerated below:

1. Residents along Red Oak Drive in the City of Mounds View have indicated they do not want a connection between Red Oak Drive and New Trunk Highway 10 or Airport Road. Their concern is that it will bring undesirable traffic types and volumes into the neighborhood.
2. The present traffic volumes are extremely high along County Road J in this area. This is attributable in part to the fact that the existing portion of Relocated Trunk Highway 10 now terminates at County Road J. There has been discussion by the local units of government (Anoka and Ramsey Counties and the Cities of Blaine, Spring Lake Park, and Mounds View) concerning the large volumes of traffic on 85th Avenue North (County Road J).
3. The future disposition of Anoka County Airport, to be determined by the Metropolitan Council and the Metropolitan Airport Commission, is also a major consideration for this area. This is a regional issue in scope and the ultimate decision upon the use of the airport property will have a direct bearing on the access requirements of this area.

4. The future land use and development of the City of Blaine for this area also has a direct bearing on this interchange. Should the Airport land be turned back to the City, the access to this area from the New Trunk Highway 10 facility would be extremely critical.

The ultimate design of either the Relocated TH 10 or the Upgrading Existing TH 10 alternate will be a result of resolving the issues listed above, design constraints and mitigating measures as defined through the Environmental Impact Statement process.

SECTION VI PROBABLE IMPACTS

INTRODUCTION

The Probable Impacts of the Proposed Action and Alternatives are organized by major environmental components. Section III, Existing Cultural, Economic and Natural Conditions in the Study Area, provided the framework for describing the probable impacts expected to result from actions described in Section V, Alternatives. It is important to have an understanding of the actions and the environmental setting prior to reviewing Section VI.

The following Table 10, Generalized Comparison of Impacts by Alternative, provides a brief overview of information contained in this section of the Draft EIS. Additional information on impacts in each topical area, and detailed discussion of the information presented in Table 10, may be found in the following paragraphs.

TRANSPORTATION

Relocated TH 10

The Relocated TH 10 alternative fulfills certain transportation planning objectives. The corridor location of this alternative adheres to the Metropolitan Development Guide Plan. That plan, as previously discussed, indicates that a principal arterial roadway connecting I-35W to TH 10/47 is needed to provide route continuity for the corridor. The Relocated TH 10 alternative will be able to utilize an existing 1.37 mile roadway section from I-35W to County Road J. Provision of the roadway would complete the TH 10 section designed to freeway standards and serving the north and northwest suburbs of the metropolitan area.

Projected volumes for the year 2000 along existing TH 10 indicate that the four-lane divided arterial would

TABLE 10
GENERALIZED COMPARISON OF IMPACTS BY ALTERNATIVE

Impact Categories	Relocated TH 10	Upgraded TH 10	No-Build
Project Costs:			
Construction	11,653,000	9,500,000	Not applicable
Right-of-way	1,089,000	5,427,000	
Relocation	66,000	209,000	
	<u>12,808,000</u>	<u>15,136,000</u>	
Traffic Service	Level of service "C" (acceptable)	Level of service "C" (acceptable)	Level of service "D" and "E" (unacceptable)
Conservation/preservation of natural resources (acres of wetlands lost)	45.9	5.8	0
Air Pollution Impact (carbon monoxide levels)	No violation of standards	No violation of standards	No violation of standards
Design Noise Levels (FHWA) exceeded after abatement (Number of structures or activity centers)	100	26	226
Relocation			
Residential Units	12	37	0
Business Firms	0	17	0
Churches	0	1	0
Long Term Consistency With Regional and Community General Plans and Proposed Land Use.	Excellent	Poor	Poor
Influence on community quality/cohesion	Fair	Poor	Poor
Energy conservation (Gallons of gasoline consumed per day)	2,736	2,503	3,275

operate at level of service E. It could be expected that delay and congestion would be intolerable. A Relocated TH 10 would attract the majority of the trips through the corridor that have destinations outside the vicinity. This would allow existing TH 10 to function more efficiently as a roadway for serving short and medium length trips while providing direct land access. The existing street system in the vicinity of TH 10, as it interfaces with TH 10, can remain unchanged thus not creating any negative impact upon existing residential area access.

The Relocated TH 10 alternative can accommodate projected volumes at an acceptable level of service. As important, projected volumes on existing TH 10, with relocated TH 10 in place, can also be accommodated at level of service C. Congestion and delay will be decreased and carbon monoxide levels would also have a potential of being reduced.

A Relocated TH 10 would be beneficial to truck traffic, emergency vehicles, and transit vehicles. Heavy commercial vehicles would experience reduced trip times through the corridor. Emergency vehicles, whether they utilize relocated TH 10 or the existing roadway, would be able to reduce trip times required to respond to emergencies due to decreased congestion. The alternative could be responsive to design techniques for providing preferential treatment for transit vehicles even though this corridor is not identified for increased transit use in the future. Additionally, buses on existing TH 10 would function more efficiently, again due to decreased congestion and delay.

The existing accident rate along TH 10 for the past two years (1975-1976) has been 4.8 accidents per million vehicle miles of travel. Assuming a reduction to 4.0 accidents per million vehicle miles of travel, using an average of the projected volumes along the 4.8 mile segment of roadway, it can be estimated that there would be 104 accidents per year. Then assuming an accident rate of 2.6 along Relocated TH 10 and using an average volume along the 6.0 mile segment, the accidents per year would be estimated to be 182. In order to determine if there is an estimated accident reduction attributable to the Relocated TH 10 alternative, the projected volumes for the no-build alternative with an accident rate of 4.8 yield an estimated year. Therefore, Relocated TH 10 could realize a decrease in accidents along the corridor of 46 per year ($332 - (104 +$

182)). The accident analysis, however basic, does indicate a beneficial result in the safety aspects of the alternative.

In summary, this alternative provides a number of positive transportation impacts. These are:

- Allowance for separation of traffic with differing trip purposes.
- Provides a continuance of a primary arterial through the travel corridor.
- Satisfies future traffic demand while attracting trips from other facilities thus providing some relief to those roadways.
- Has a potential accident reduction benefit through the corridor.
- Allows existing TH 10 and area roadways to retain existing access and traffic interface.
- Has the potential to provide time savings, decreased fuel consumption, and reduction in areawide CO emissions to the users of the facility.
- Provides a connection to the Northtown Corridor proposal, a related action.
- Provides a more efficient regional connection to the Anoka County Airport.
- Has a potential to decrease travel times for buses, police, fire, and other emergency service vehicles.
- Provides a more efficient route for heavy commercial vehicles.

Upgraded Existing
TH 10

There are certain transportation considerations which indicate that this alternative is not desirable. From a transportation viewpoint upgrading the existing facility would necessitate loss of direct property access that exists along the route. Access (indirect) could be provided through construction of frontage roads. This would require the purchase of additional right-of-way and/or relocation of businesses and dwelling units. The street system within the area of TH 10 would have to

undergo extensive reconstruction and redirection in order that access to the upgraded portion of TH 10 be provided at interchanges.

The volumes projected to the year 2000 could be accommodated along TH 10 if the facility were a freeway. There are certain interchanges (i.e., at TH 10/47 and at I-35W) that could be congested and may require redesign in order to accommodate the traffic projections.

As with the no-build alternative, the existing TH 10 is not designated to be a future principal arterial roadway. This would not be in accord with the metropolitan area plan.

Reconstruction to freeway standards would create numerous traffic and access problems during the time period that the roadway would undergo construction.

No-Build Alternative

Continued use of TH 10 as the primary arterial thru the corridor violates the 1990 highway system plan provided in the Metropolitan Development Guide. Existing TH 10 is not designated as a principal arterial in that plan.

Existing TH 10 operates at level of service E in the peak flow direction during morning and evening peak traffic periods. Projected volumes for the year 2000 along the no-build alternative further degrades the level of service of the facility. This service level degradation will create additional time delays to motorists.

The accident rate will be difficult to improve. Emergency vehicles will realize longer trip times thru the corridor as will heavy commercial truck traffic. Transit along the route could also be faced with increased trip times along the roadway.

As the roadway becomes further congested, users of the facility could attempt to find different travel routes in the immediate vicinity. This could place them on roadways not designed to accommodate additional traffic burden, such as collectors, and possibly some residential streets.

As traffic increases, there could be additional demand created for signalized intersections to allow access to/from TH 10. This would serve to further decrease the efficiency of the main line as signal timing to provide progressive traffic movement would become more difficult.

The no-build alternative could create complications for a connection to the proposed Northtown Corridor in the vicinity of TH 10/47 and Coon Rapids Boulevard area.

Finally, the no-build alternative is unable to efficiently accommodate existing corridor demand, not to mention the projected future demand.

ECONOMIC IMPACTS

Right-of-Way Acquisition

The acquisition of right-of-way for the relocating or upgrading of existing TH 10 will require the purchase of residential, commercial, tax-exempt (public and semi-public) and vacant properties. The number and type of properties are recorded in Table 11 along with the estimated market value taken from city or county assessor records. It should be noted that when acquisition is undertaken actual market value is used. In both cases, the identification of the required parcels was done by use of aerial photography and plat maps. The objective of this analysis was to approximate the needed properties but with the intent to represent a worst case situation. Therefore, when a segment of a residential property was needed for the right-of-way, it was assumed the structure as well as the land would be acquired. The same was done for commercial properties unless there was a clear option to purchase only a portion of the parcel. In the case of large vacant, open or agricultural parcels, only the land area needed was assumed to be acquired unless the right-of-way clearly would make the remaining parcels unusable.

A number of properties were found to be owned by public bodies such as the Metropolitan Airport Commission or were tax-exempt for various reasons. These properties and structures are recorded in a separate category in Table 11. Due to the lack of estimated market or assessed value for tax-forfeited properties in the City or County assessor records, the total estimated market value for both right-of-ways may be somewhat lower than actual.

The acquisition of the right-of-way for relocating TH 10 would require 15 agricultural, or other vacant parcels, 12 houses and 10 public or semipublic parcels or structures. The 1976 market value of the right-of-way is estimated at \$1,087,000. The acquisition of the right-of-way to upgrade existing TH 10 would require the taking of 57 agricultural or otherwise vacant parcels, 37 homes, 17 businesses, and 4 public or

TABLE 11
POTENTIAL ACQUISITION PROPERTIES***

	Relocate TH 10			Upgrade TH 10		
	Parcels Lots	Structures	Estimated Market Value 1976	Parcels Lots	Structures	Estimated Market Value 1976
Agricultural/Open/ Vacant	15	-	\$ 318,000	57	-	\$ 452,000
Residential	-	12	499,000	-	38 ^(**)	1,583,000
Commercial	-	-	-	-	17	2,251,000
Public (includes tax-exempt and tax-forfeited property)	10 ^(*)	-	270,000	4 ^(*)	1	1,141,000
TOTALS			1,087,000			5,427,000

(*) Market value was not available for tax-forfeited properties. (In the Relocating of TH 10 alternative corridor there are 6 tax-forfeited properties, five of which are now owned by MnDOT. In the Upgrading alternative corridor there are two tax-forfeited parcels.)

(**) There is one apartment building. The number of units was not available through the records of the assessor.

(***) Source: Barton-Aschman Associates, 1977.

semipublic parcels and 1 church. The estimated 1976 assessed value of the right-of-way is \$5,427,000.

The no-build alternative would not require right-of-way acquisition.

Reduction in Tax Base

The acquisition of right-of-way for either alternative would reduce the tax base of the study area cities, counties and school districts. The comparison of the assessed value of right-of-way to the total assessed value of the various taxing districts is recorded in Table 12. The impact of this reduction is a function of the amount of taxable property lost and the total assessed value of the area. Relocating TH 10 will reduce the tax base of Coon Rapids, Blaine, Anoka County and School Districts 11 and 16. The upgrading alternative would reduce the tax base of Coon Rapids, Blaine, Mounds View, Spring Lake Park, Anoka and Ramsey County and School Districts 11, 16, and 621.

The acquisition required for relocating TH 10 would reduce the tax base of Blaine by 0.32% and 0.33% of School District 16. The upgrading of existing TH 10 would reduce the tax base of Mounds View by 3.3% and Spring Lake Park by 1.3%.

Effort to Minimize Harm. While the amount of right-of-way needed could possibly vary somewhat, this cannot be determined at this stage in the planning for either alternative. During the design stage the alignment may be shifted or other modifications made to reduce the required acquisition. As noted above, the analysis attempted to insure that all possible properties that may potentially be needed were identified. In some instances, a portion of a residential parcel may be sufficient without acquiring the entire lot and house. Again, this cannot be determined until the design stage.

Relocation

The acquisition of right-of-way for either alternative would require relocation. Relocating TH 10 would require 12 families to be relocated. Upgrading of TH 10 would require the relocation of 37(+) families, 17 businesses and one church.

A number of factors would influence the ease by which a family obtains suitable relocation housing including: availability of homes for sale or rent, locational choice, and relocation assistance. The existing housing supply, the projected housing construction, cost of new housing

TABLE 12
 ASSESSED VALUE OF RIGHT-OF-WAY AND RELATIONSHIP TO TOTAL ASSESSED VALUE*

	Relocated TH 10 Alternative			Upgraded TH 10 Alternative	
	Total 1976 Assessed Value	1976 Assessed Value of ROW	% ROW Represents of Total	1976 Assessed Value of ROW	% ROW Represents of Total
Coon Rapids	\$106,843,055	\$ 53,737	0.047%	\$187,288	0.175%
Blaine	71,422,531	226,840	0.32	202,468	0.75
Mounds View	26,855,515	-	-	889,297	3.3
Spring Lake Park	18,886,780	-	-	240,882	1.3
Anoka County	569,966,218	280,577	0.049	630,638	0.11
Ramsey County	1,495,605,447	-	-	889,297	0.059
School District 11 (Coon Rapids)	327,652,951	53,737	0.015	187,288	0.057
School District 16 (Spring Lake Park & Blaine)	69,462,000	226,840	0.33	443,350	0.64
School District 621 (Mounds View)	210,403,385	-	-	889,297	0.42

*Does not include potential taxes on presently tax forfeited land.

Source: Barton-Aschman Associates, 1977.

and the present vacancy rate will all, to some extent, help to determine the availability of homes for relocation.

The total housing supply in the four cities which contain the alternative corridors in 1976 was estimated to be 21,836 units. The regional planning agency predicted that these four cities would contain 24,650 units in 1980 and 34,100 units in 1990. This represents a 12.9 percent and a 56.2 percent increase in housing units in 1980 and 1990 respectively. Indicative of this active housing market are the number of new units that were built during the January to June period in 1978. In Coon Rapids 180 units were built, Blaine was the site of 184 units, and Spring Lake Park 11 units. The total of 375 units in a six month period represented 33 percent of the total 1,120 units constructed in Anoka County. The units in Anoka County represented 13.6 percent of the new units in the SMSA.

An additional 38 units were constructed in Mounds View (Ramsey County) during this period. In total the 413 units that were built in the four cities represented 4.15 percent of the 9,946 new units built in the SMSA during this six month period.

The cost of housing and the income of the families needing housing are an important consideration in determining housing availability for relocation. This is especially important at this time given the dramatic increase in housing cost. The economic conditions of study area families in 1970 was generally better than in the SMSA as a whole. Mean family income was higher in each of the four cities and the two counties than in the SMSA. The percentage of families that received public assistance or public welfare was lower in the four cities than in the SMSA as was the percentage of families below the poverty level at that time.

While the income levels of the four cities is higher than the SMSA the availability of lower cost housing is important for those families that might live in the impacted area which have incomes at the lower end of the income scale. In comparison to the SMSA the housing construction cost is substantially lower in the two Counties (and the four cities) in which the alternatives are located. During the January to June 1978 period the average cost of a single-family home constructed in the SMSA was \$46,019. The comparable figure in Anoka County was \$42,441 and \$40,571 in

Ramsey County. This is also indicative of the cost of new housing built during 1976 and 1977. The SMSA average cost was \$38,287 and \$41,621; Anoka County costs were \$36,082 in 1976 and \$37,858 in 1977. New housing costs in Ramsey County were \$38,361 in 1976 and \$37,549 in 1977.

The construction cost of multiple housing units followed these same trends. The SMSA in each of these three periods illustrated higher costs than the two counties. During the January to June 1978 period the cost for one unit in the SMSA was \$28,357 while in Anoka and Ramsey Counties the costs were \$24,814 and \$20,844 respectively.

Given the higher incomes of families in the two Counties and the four cities and the substantially lower cost for new housing, the availability of replacement housing should not cause a significant impact to those families that have to relocate. This would be true for both the families that want to buy homes and those that would rather rent housing.

Vacancy rates are a temporary condition which reflects a comparison of the housing demand to the existing supply. The larger the housing supply and the smaller the demand the greater the vacancy rate. The latest vacancy rate data available for the region is April to June 1978.¹ During that three month period 1.9 percent of the total housing units in Anoka County were vacant. In Ramsey County 2.3 percent of units were vacant. This compares to the seven county region which had a vacancy rate of 2.5 percent. Generally, the vacancy rates for single-family homes were lower than multiple units. In Anoka and Ramsey Counties and the region the single-family vacancy rates were 0.7 percent, 0.5 percent and 0.9 percent respectively. The multiple vacancy rate for Anoka County was 6.4 percent, 5.6 percent for Ramsey County and 6.2 percent for the region.

¹Source: DATA-LOG Social and Demographic Report No. 27, April-June 1978, Metropolitan Council of the Twin Cities Area.

The four cities in which the alternative corridors are located generally exhibit similar vacancy rates as the two counties. The single family vacancy rate ranges from a low of 0.5 percent in Blaine to a high of 0.8 percent in Spring Lake Park. The multiple units vacancy rate range from 8.5 percent in Spring Lake Park to a high of 13.1 percent in Moundsvew.

The single family vacancy rate illustrates a tight housing market. This is especially true since the April to June period typically has higher vacancy rates due to increased mobility during the warm weather months following the end of the school year. The multiple unit vacancy rate is quite high in the four cities but more nearly normal in the two counties. Locating a rental unit at this time in the four cities would not be difficult.

The problems of predicting available relocation sites for businesses is similar to predicting housing availability. The developing nature of the study area and availability of vacant land zoned for various commercial and industrial activities indicates there is a potential source of sites.

A number of problems are associated with the relocation of a business. Many businesses are located initially to take advantage of various features of a site including the market to be served, relationship to other similar businesses and availability of a building having the correct space and design features. Relocation will mean that a new site must be found which will meet the needs of each business. In many instances businesses find it difficult to locate a site that meets all the criteria. This can result in the business not relocating. If this occurs, there is a loss of employment and tax revenues.

During relocation there is also the potential of less revenue. Present customers are lost before new customers become accustomed to the new business. This results in a loss of income to the owner.

Efforts to Minimize Harm. MnDOT provides a variety of assistance to families and businesses that must be relocated. The state allows a minimum of 90 days for families to relocate after their homes are purchased. The Relocation Office will insure that all persons without regard to race, color, religion or national origin, would be relocated into decent, safe and sanitary

housing within the financial means of the families, and in an area that is generally as desirable with respect to the type of neighborhoods, schools, commercial shopping areas and distance to any social institutions, such as religious and community facilities.

The Relocation Office, to provide replacement housing, maintains many contacts with the various housing, apartment, and real estate agencies. Listed below are some of the methods of securing housing information:

1. Newspaper subscriptions.
2. Personal contacts with realtors.
3. Visual inspection of neighborhoods for privately listed homes.
4. Complete city-wide MLS listings.
5. Listing of VA (Veterans Administration) and FHA (Federal Housing Administration) repossessions.
6. Personal contact with apartment complex managers.
7. The Apartment Guide of the Twin Cities.

The State of Minnesota will make all relocation payments in accordance with the "Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970" further detailed in Volume 7, Chapter 5, of the Federal Aid Highway Program Manual. These payments are listed in the Relocation Booklet which will be given to each individual relocatee and fully explained to them at the time of the state's detailed relocation study and again at the initiation of negotiations for the parcel. Relocation monies are provided for housing supplements, moving costs, closing costs, interest differential, and appraisers fees. Business concerns are eligible for payments for moving expenses, actual direct loss of tangible personal property, discontinued business payment, searching fees, and appraisal fees (to owners of real property).

The relocation costs for the upgrading TH 10 alternative will be higher than the relocating TH 10 alternative since the 17 businesses will have to be acquired for the upgrading alternative and none for the relocating alternative.

One church will also have to be relocated if upgrading existing TH 10 is carried out.

Impacts to
Potentially
Sensitive Groups

Potential social and economic impacts of the proposed action construction were assessed by analyzing certain characteristics of the communities and sub-community areas which contain the alternative corridors. The characteristics relate to income levels, housing availability, housing values, age distribution and race. The major findings follow.

The residents of the four communities which contain the alternative corridors are in general, wealthier, younger, occupy their own homes in more cases and include less non-whites than the typical Minneapolis-St. Paul SMSA resident. These characteristics generally indicate less of a sensitivity to or a greater adaptability to the disruptions associated with the construction and operation of a transportation facility.

The population of the four communities is made up of a smaller proportion of elderly who are typically very sensitive to relocation. While the SMSA population contains 8.7 percent of persons over 65 years of age or older, none of the four communities have more than 1.5 percent of their population in this group. In Discussions with the four communities it was found that the areas immediately adjacent to the proposed corridors are similar in that there are no significant concentrations of elderly in the impact areas.

The average family income of the four communities range between \$11,606 and \$12,353 which is significantly higher than the SMSA figure of \$10,614. In turn the number of families below the poverty level is lower in these communities than in the SMSA. Within the four communities between 2.4 and 4.0 percent of the population have incomes which were below the poverty level while the SMSA had 4.6 percent of families in this category. The number of families receiving public assistance or welfare in the four communities was also below the SMSA figure of 4.1 percent.

The areas adjacent to the proposed corridors are similar to the entire communities. There are no significant concentrations of low income families in these areas.

The population of the four communities has fewer non-whites than the metropolitan area. The percentage of non-whites range from 0.4 to 0.8 in the four cities. The SMSA population represents 2.8 percent non-whites. The areas of the four communities adjacent to the

alternative corridors do not contain any concentrations of non-whites.

The only group potentially more sensitive to the impacts of the proposed action found in higher proportions in the four communities than in the SMSA are those 16 years of age or under. The SMSA population is made up of 32.6 percent of young people, while the four communities' populations contain from 40.9 to 48.4 percent of this age group. Generally, the areas adjacent to the proposed corridors also contain a similar percentage of younger people.

Increased Land
Value

The economic loss due to reduction in the tax base caused by right-of-way acquisition for the proposed action will be offset to some degree by the increased value of land caused by the new or improved highway facility. A study analyzing the Socio-Economic Impact of the Capital Beltway on Northern Virginia found that the value of industrial, commercial and multi-family zoned land increased with access to the freeway, whereas single family residential land² tended to appreciate independently of the Beltway.² Averaging results of like studies in several states disclosed that median annual percentage increase in constant dollars of property value along selected major highways was generally 8% to 12%, depending on type of land use, with industrial land increasing over 17%.³ Another study demonstrated that residential land within 1/4 mile of a major highway, and land over one mile from the highway experienced slower land value increases than that between 1/4 and one mile from the major highway.⁴

²The Socio-Economic Impact of the Capital Beltway on Northern Virginia, University of Virginia, 1968.

³U.S. Department of Commerce, Bureau of Public Roads, Highways and Economic and Social Changes, 1964, p. 24.

⁴U.S. Department of Transportation, Federal Highway Administration, Economic and Social Effects of Highways, 1972, p. 20.

Increased Assess
Value

The land adjacent to the relocated TH 10, especially that in the area of interchanges would increase in value beyond what could be expected if the highway was not built. Due to the desirability of such interchanges to industry, it can be assumed that this land would be developed, thus adding to the tax revenues of the various taxing districts.

While the land adjacent to an upgraded TH 10 would also be expected to increase in value, such increase would be lower since this area at present must be assumed to represent higher values due to the accessibility offered by existing TH 10 than land adjacent to the relocation corridor. In addition, there is less undeveloped land along this corridor which is available for development. Therefore, there would be less new construction.

It should be noted that due to the Fiscal Disparities Legislation in the Metropolitan Region, not all of increased assessed value due to industrial or commercial properties would stay in the community. Forty percent of the assessed value must be "put into" the Metropolitan Fiscal Disparities pool. A portion of this is returned to the community determined by a formula which considers many factors.

Construction Labor

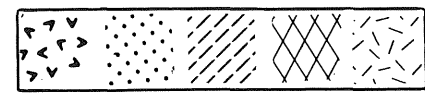
Both construction alternatives would require expenditures for labor and materials principally from within the Metropolitan Area.

COMMUNITY
IMPACTS

Highways have the potential of dividing neighborhoods or disrupting various social patterns. Relocated TH 10, being a new facility, has such potential. The upgrading of TH 10 has less potential to cause disruption since the surrounding neighborhoods and social patterns have developed in recognition of its presence. Recorded below is a discussion of the impact of the two alternatives on school attendance and walking areas, identified neighborhood units and on social interactions in the study area.

School Attendance
Patterns and
Walking Distances

Three school Districts serve the study area: Anoka-Hennepin School District 11, Spring Lake Park School District 16, and Mounds View School District 621. The location of schools, the attendance area and the expected walking distance for each school is identified on Figure 16. The attendance areas are generally greater than the distances students are expected to



SCHOOL ATTENDANCE AREAS

- SCHOOL WALKING DISTANCE
- SENIOR HIGH SCHOOLS (SR. H.)
- JUNIOR HIGH SCHOOLS (JR. H.)
- ELEMENTARY

- RELOCATED T.H.10
- UPGRADED T.H.10
- SEGMENT COMMON TO BOTH



1"=4500

(Approximate Scale)



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NewTrunk Highway 10
ENVIRONMENTAL IMPACT STATEMENT

FIGURE 16
SCHOOL ATTENDANCE
AREA AND WALKING
DISTANCES

walk to schools. School bus service is provided to all students that live beyond the walking distance and in areas which are separated from the schools by hazardous conditions.

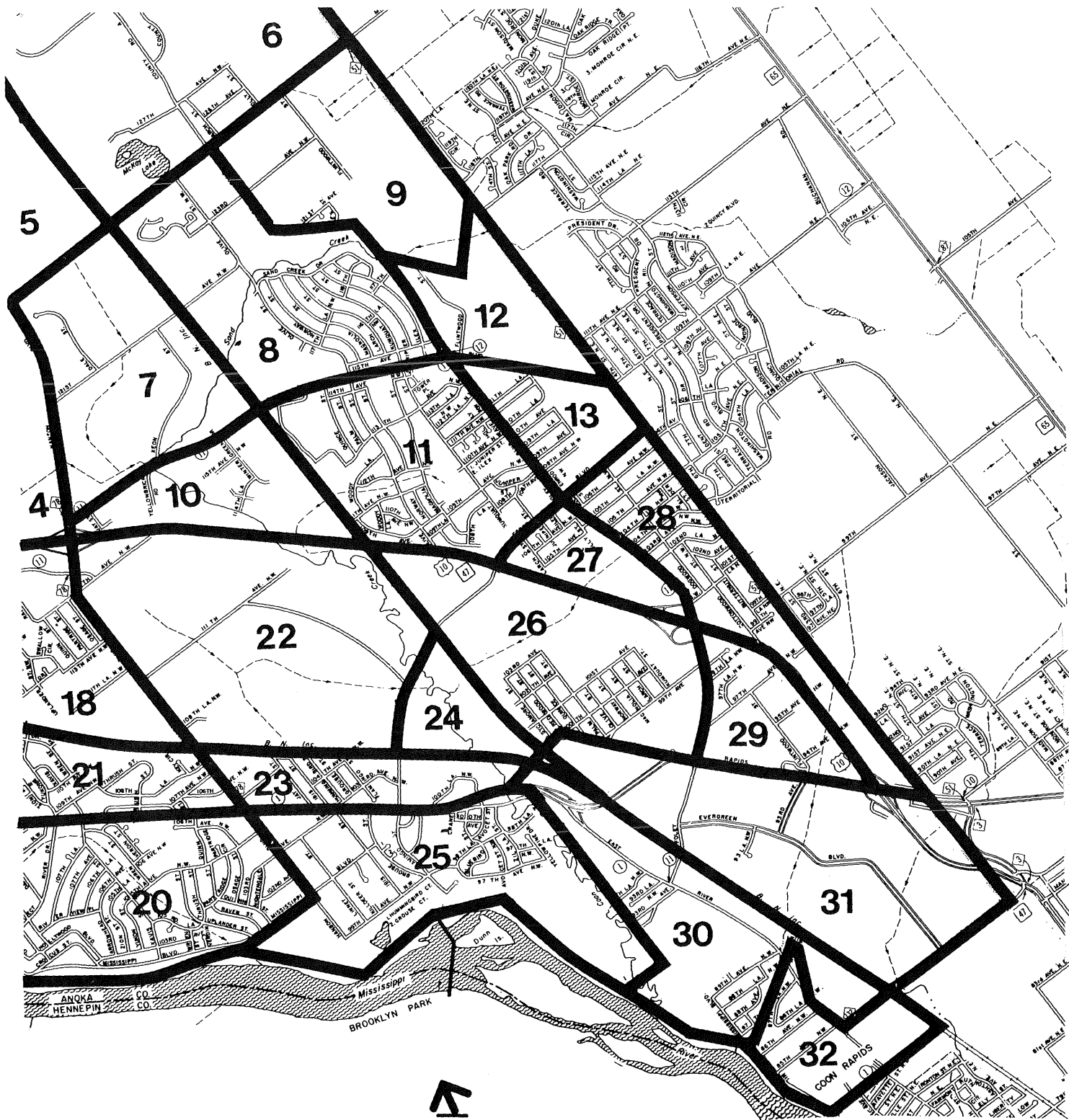
The impact of the alternatives will be most evident on the walking distance to the schools. School Districts 11 and 16 expect all students to walk up to a distance of one mile. School District 621 expects elementary students to walk 1/2 mile and junior and senior high school students to walk one mile. Relocated TH 10 would traverse the student walking area of Blaine Elementary, Westwood Elementary and Junior High, and University Avenue Elementary schools in addition to St. Timothy School. (This is a private school.) This would require either busing of students, development of safe walking routes or adjustments to the attendance areas.

At present, the attendance areas of a number of schools extends from one side of TH 10 to the other; but the average walking distance is crossed by TH 10 in only one case - St. Timothy School. Since existing TH 10 is a hazardous barrier for students to cross, provisions have been made to alleviate this situation through busing.

The state provides additional transportation money to school districts for busing students to avoid hazardous conditions. Where an alternative traverses a walking area of a school, the school district extends the area of busing. While this would increase the cost of busing, the safety of the students would be protected.

Neighborhoods

Coon Rapids is the only community in the study area that has identified neighborhoods. These are illustrated in Figure 17. The relocation of TH 10 would divide neighborhood unit 28. This neighborhood extends from the intersection of TH 10/47 and University Avenue North to the intersection of Egret Boulevard and University Avenue. The relocation of TH 10 would divide the area south of 96th Avenue N.W. from the remainder of the area. The majority of this area is composed of vacant land. There is a commercial area at the southernmost tip and a self-service warehouse. There are also four single-family homes in this area. A 100-unit apartment complex has been proposed in the southern part of this neighborhood on University Avenue in the area of 71st and 93rd Avenues N.W. A single-family development of 18 lots is proposed on University Avenue at approximately 98th Avenue N.W. This southern area is divided from the remainder of Coon Rapids presently by TH 10/47.



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NewTrunk Highway 10
 ENVIRONMENTAL IMPACT STATEMENT

FIGURE 17
NEIGHBORHOOD UNITS -
CITY OF COON RAPIDS

1"= 4500 (Approximate Scale)



Due to the limited development of the southern segment of the area, few strong ties have probably developed between the two segments of the neighborhood. Whatever ties have developed can be continued as long as University Avenue is maintained as a through street in this area.

Neither alternative appears to have any other impacts on the designated neighborhood units in Coon Rapids.

Social Interactions

Since the communities of Blaine, Mounds View, and Spring Lake Park have not identified neighborhood units, the social interactions of its residents were analyzed to determine the impacts of the proposed action and the alternatives. The main sources of data used to identify these interactions were discussions with city staff members and review of city plans.

Blaine. The proposed action would separate an area of single-family residential units and commercial activity located between existing TH 10 and relocated TH 10 from the remainder of the city. This division appears to have been encouraged by the official designation of a corridor for the future location of the Relocated TH 10. Blaine identified this corridor as early as 1962 and has since discouraged its development. This has created a confined neighborhood, though not designated, which extends from existing TH 10 north to the designated corridor.

The relocation of TH 10 would further define this "neighborhood" boundary, but it would also separate the neighborhood from the city administrative office, police station and Aquatore Park.

The Northtown Shopping Center is separated from the remainder of the city by TH 10. Upgrading of TH 10 would increase traffic but would also require some grade-separated crossings. Depending on the location of these crossings, the accessibility of the Northtown Shopping Center to the remainder of the city may or may not be improved. If the relocating alternative reduces traffic on existing TH 10, the access between the Northtown Shopping Center and the remainder of the city would be improved. The no-build alternative would further decrease access.

Mounds View. Existing TH 10 divides Mounds View into two almost equal-size areas. A large number of businesses are located on both sides of TH 10 in this

area. Mounds View City Hall and police station and Mounds View Square, a shopping center of approximately 10 businesses, are located on the north side of TH 10. This creates the need to cross TH 10 from the south half of the community, which is principally residential in character. There are a number of other businesses which may also generate demand from the opposite side of TH 10. These include Country Kitchen, McDonalds, Perkins, Bridgemans, a superette, a real estate office, and two liquor stores.

City staff members indicated that the reduction of traffic on existing TH 10 would help to alleviate the problem of access (pedestrian, bicycle and automobile) from the two sections of the community. This issue was not addressed in detail in the city's Comprehensive Plan because the city was working under the assumption that a northern location was the accepted alternative for new TH 10. The Comprehensive Plan states that existing TH 10 fragments the community. The Comprehensive Plan refers to the relocation of TH 10 and has worked on this assumption in development of its plan (this is discussed in more detail in the Land Use Planning section of this report). Both alternatives may help to reduce this fragmentation and make the crossing of existing TH 10 easier. Relocating TH 10 should reduce traffic volumes on existing TH 10 and upgrading of TH 10 would include grade-separated crossings. The locations of those grade-separated interchanges would be an important factor in determining if access between the two segments of the community would be improved.

Spring Lake Park. Existing TH 10 separates two areas of Spring Lake Park from the remainder of the city. These areas are located in the northwest and the northeast quadrants of the TH 10 and TH 65 intersection. Little activity takes place in the northwest quadrant, but the northeast quadrant is the site of a variety of commercial activities in addition to the city administrative office and the police station.

A number of activities take place north of TH 10 which attracts residents of Spring Lake Park even though they are not within the city borders. The Anoka County Library and two churches (one Catholic and one Lutheran) attract residents of Spring Lake Park. Lakeside Park in Spring Lake Park attracts people from both Mounds View and Blaine. This park provides a swimming beach, so much of the activity is concentrated in the summer and many of the users are of school age.

HISTORIC PRESERVATION AND SECTION 4(f) CONSIDERATIONS

The relocation of TH 10 should reduce traffic on TH 10 which would help to increase accessibility across TH 10. The upgrading of TH 10 would provide grade-separated crossings which would also improve the accessibility from one side of TH 10 to the other. The direct effect can only be determined once the location of these grade-separated interchanges is decided. The no-build alternative would decrease the accessibility between these areas due to increased traffic.

The New Trunk Highway 10 project has been reviewed by the Minnesota Historical Society and reveals no known sites of historic architectural, cultural, or archaeological significance within the project boundaries. A copy of the letter is in Section X, Coordination.

The Minnesota Historical Society surveyed the proposed corridor in 1978. That survey revealed the location of no sites of historic, architectural, cultural, or archaeological significance within the area of the proposed project. In addition, there are no sites in the area which are on the Natural Register or eligible for inclusion on the National Register, and, therefore, none which may be affected by the proposed action. A copy of the letter from the State Historical Preservation Officer relaying this finding is in Section X, Coordination, of this document.

The alternatives under consideration have been reviewed to determine the possible involvement of lands and properties falling under the provisions of Section 4(f) of the Department of Transportation Act of 1966.

Neither alternative or the no-build would require the use of any publicly owned land from a park, recreation area, wildlife or waterfowl refuge of National, State or local significance.

No parkland would be required for right-of-way purposes for either alternative or the no-build. There are parklands adjacent to the proposed action as shown on the land use maps. Other potential parkland impacts such as air and noise pollution are addressed in the specific sections of this Draft Environmental Impact Statement.

AESTHETICS

Background

Relocated TH 10. Lack of development along this corridor has left considerable amounts of open space which offer a variety of aesthetically pleasing natural

features including: wetlands, open meadows, oak forest and oak savanna. These features provide visual resources which positively affect the view "from the road." These features could also improve the view "of the road" depending on how sensitively they are handled during construction of the highway and adjacent lands.

It is important to note, however, that the property has not reached its development potential. This is largely due to city involvement which has generally discouraged development along the proposed corridor. Once a highway is built, the adjacent property will begin to develop. It should be realized that most of the pleasant open space will not survive this development pressure, unless proper land use controls are instituted. It is expected, however, that the property will develop in a more orderly and aesthetically pleasing way than did the property along existing TH 10.

The land use types adjacent to this corridor form an interesting pattern. The property to the south is almost evenly divided between residential and undeveloped with some civic and commercial. The property to the north is almost evenly split between industrial/airport uses and undeveloped with a small amount of civic and residential. Should this pattern continue, a Relocated TH 10 would serve as a barrier between the two somewhat conflicting land uses.

This situation would be considerably different from the intermixed land uses found along existing T.H. 10.

The following photographs illustrate the Relocated TH 10 route and its adjacent land uses.

Upgraded TH 10. Approximately 80% of the property adjacent to this corridor is developed. The land uses vary in type and location with commercial, residential and industrial intermixed. The transition from one land use type to another is frequently abrupt and results in a sometimes confusing array of visual impressions.

Residences are generally directed onto side streets where the dominant oak-savanna vegetation partially screens the homes from the road. Most of the commercial and industrial developments are directed onto TH 10 with most of them having direct access. There is little or no screening or buffering of these land uses.

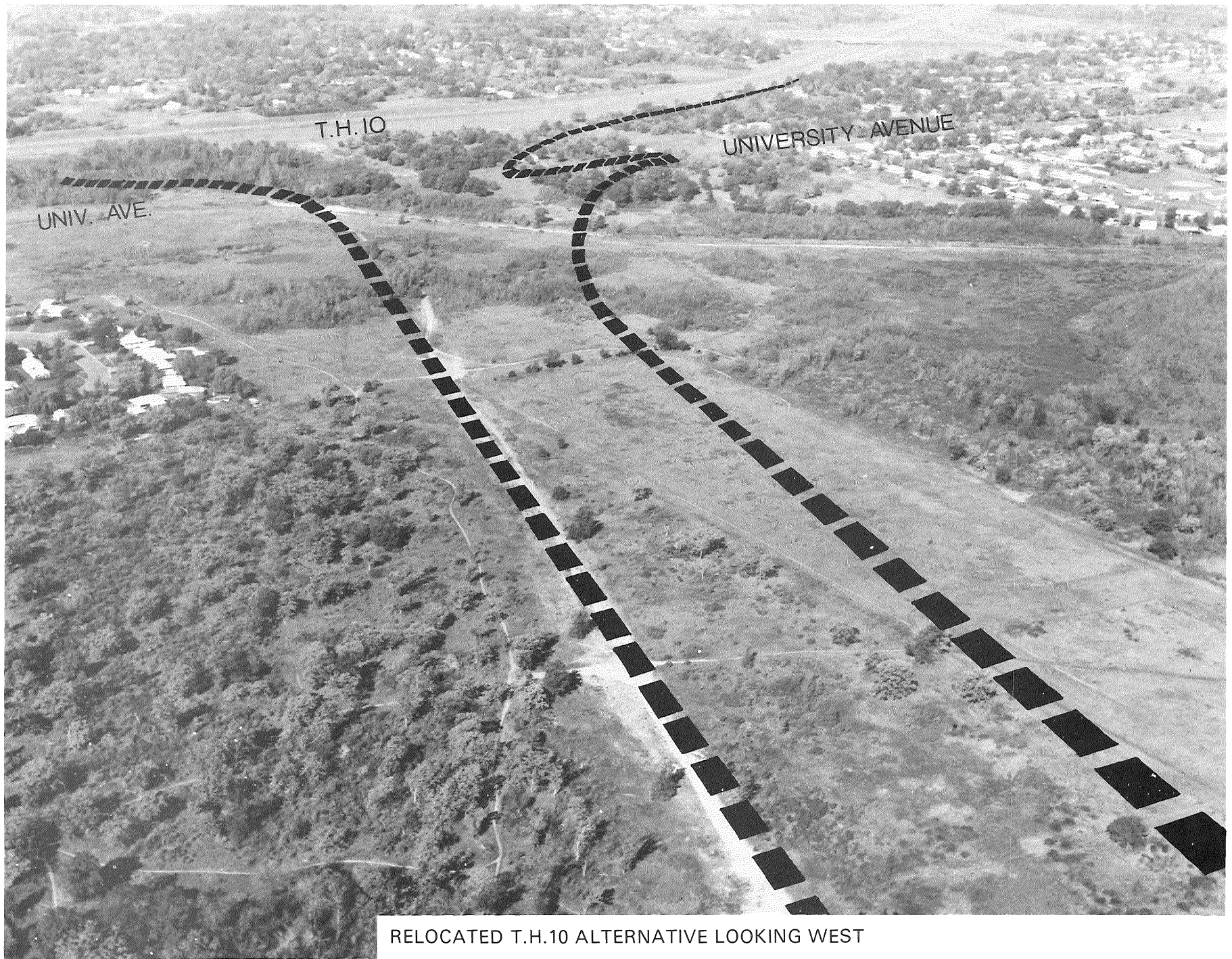


RELOCATED T.H.10 ALTERNATIVE - ANOKA COUNTY AIRPORT LOOKING NORTHWEST



RELOCATED T.H.10 ALTERNATIVE BLAINE'S AQUATORE PARK LOOKING WEST

--- AQUATORE PARK BOUNDARIES



RELOCATED T.H.10 ALTERNATIVE LOOKING WEST

Larger commercial developments such as Mounds View Square, K-Mart and Northtown affect the "view from the road" by introducing buildings, signs, traffic and large expanses of parking. This somewhat negative feature has positive aspects as the commercial strip along the highway tends to act as a buffer between the highway and the residential areas.

Those areas that are not developed provide a pleasant break from the confusing developed areas. A few large parcels of vacant land located southeast of County Road I in Mounds View offer an interesting variety of natural features including: oak forest, oak savanna, open field and steep slopes. These few areas could offer continued pleasing views if developed in a visually sensitive manner. Laddie Lake offers a contrast to development along this corridor as well as providing color, reflective quality and other aesthetically pleasing characteristics.

The following photographs illustrate the Upgraded TH 10 route and adjacent land uses.

Probable Aesthetic
Impacts

Although there are only two alternative alignments, there are three courses of action: (1) Relocated TH 10 (2) Upgraded TH 10, and (3) "no build." The anticipated aesthetic impacts of the "no build" option are not a major concern since the only noticeable change would be an increase in traffic. The following summarizes the probable impacts of highway construction on the aesthetic features of the two alternatives.

Upgraded TH 10. Should this alternative be chosen, the noticeable improvements would consist of: interchange construction somewhere near Silver Lake Road; grade separated crossings at various locations; service road construction and grading. The visual impact of the lane construction will not be substantial since TH 10 is already a four-lane divided highway.

The proposed improvements will have some positive impact on both the views "of the road" and "from the road." It is anticipated that the upgrading will require acquisition of some of the unsightly adjacent development, and channel local traffic and commercial focus onto the service roads rather than the main thoroughfare.

Upgrading TH 10 will increase traffic volume thereby causing some aesthetic disadvantages but the improvements will also eliminate the noisy stop/start traffic caused by the traffic signals.



EXISTING T.H.10 - COUNTY ROAD H LOOKING WEST



EXISTING T.H.10 - GROVELAND ROAD LOOKING WEST TO LADDIE LAKE



EXISTING T.H.10 - LADDIE LAKE LOOKING WEST TO NORTHTOWN CENTER

Relocated TH 10. Many of the aesthetically pleasing features of this alternative route will be eliminated should construction occur. The impact that this will have on the view "of the road" and "from the road" will depend on many factors including: final corridor location, limits of construction, construction techniques and development of adjacent land use. The impact of highway construction on an area where there was no highway before, is obvious. The view "of the road" will not be as pleasing as the view of the site in its natural condition. The amount of this impact will depend on the factors listed above.

The view "from the road" of this alternative route has much more potential for a pleasing aesthetic experience than does the option of upgrading TH 10. But, as previously mentioned, this land will not remain undeveloped for long. The way in which this property develops will definitely have impact on the aesthetic experience as viewed "from the road." There are existing natural features that could be incorporated into the design of the highway and the development of the adjacent property that would help integrate the highway into the landscape and provide a more desirable aesthetic experience.

Measures to
Minimize Adverse
Environmental
Impacts

There are measures that can be incorporated into the highway design of either of the alternative alignments, that can improve their visual appearance. The following suggestions are directed toward reducing the negative features and emphasizing the positive features while integrating the facility into the existing environment. Specific proposals will be included in the Final EIS.

Upgraded Trunk Highway 10.

- Acquisition and removal of strip highway development for purposes of providing additional highway and service road right-of-way should improve the existing cluttered appearance.
- Plant materials and mounding can be used to screen the highway from adjacent development. This would improve views "from the road" and "of the road."
- Provide random plantings along median to break up monotony.
- Provide heavy plantings at interchanges and overpasses to soften appearance and provide identity.
- Emphasize desirable view such as Laddie Lake by enclosing motorists' views from other directions.

Relocated TH 10.

- Establish limits of construction in efforts to retain maximum amounts of existing vegetation.
- Preserve large trees and significant stands of trees in interchange areas.
- Use native plant materials when designing planting areas and also when replanting disturbed areas.
- Blend disturbed areas with undisturbed areas.
- Incorporate indigenous materials in the construction of appurtenances such as retaining walls, sign posts, bridge abutments, etc.
- Use existing wetlands for drainage detention areas, wherever possible.
- Construct drainage retention areas and borrow pits in a natural configuration and introduce native plant materials in planting in and around them.
- Screen objectionable views "of" and "from" the road with a combination of topographical variations and new and existing plant materials.
- Emphasize vistas or other visually pleasing features by enclosing the motorists' views in other directions.

IMPACTS TO TERRESTRIAL VEGETATION AND WILDLIFE

Impact to Prime or Unique Farmlands

The United States Department of Agriculture, Soil Conservation Service has indicated that there is very little agricultural activity in either of the alternative New TH 10 rights-of-way (refer to Section X, Coordination). There are no prime agricultural lands. Some unique farmlands (100-120 acres) occur north of 99th Avenue and south of Terretorial Road, adjacent of Pleasure Creek. This area is approximately 2,500 feet north of the Relocated TH 10 alternative and would, therefore, not be impacted by acquisition of right-of-way.

Removal of Vegetation

Removal of vegetation is a primary, direct impact of highway construction. This impact occurs within the rights-of-way for the two build alternatives. The amount of vegetation removed within the rights-of-way is variable from place to place because of differences in design, access and safety requirements. Some existing vegetation averaging approximately 15% will generally remain along the edges of the rights-of-way after

TABLE 13
ESTIMATED ACRES OF VEGETATION IN RIGHTS-OF-WAY*

General Classification	Relocated TH 10 Alternative		Upgraded TH 10 Alternative	
	Acres	Percent of Right-of-Way	Acres	Percent of Right-of-Way
Wetlands	46	25	6	7
Disturbed Oak Savanna	43	24	6	7
Oak Forest	9	5	6	7
Mixed Grasslands	79	44	7	9
Urban	4	2	59	70
TOTALS	181	100	84	100

*Source: Barton-Aschman Associates, 1977.

These figures represent a "worst case," situation because not all of these acreages will be impacted by actual construction.

construction is completed. To provide a quantitative assessment of the direct impacts, acreages of the five vegetative types described previously (see discussion on Natural Conditions) were enumerated for the rights-of-way. Table 13 shows the estimated acreages of the vegetative types within the rights-of-way for the two build alternatives.

Secondary Effects

In addition to direct removal of vegetation, the proposed action will also have secondary effects on areas outside of the right-of-way. The principal secondary effects are a result of (1) conversion of wildlife habitat to other land uses due to provision of access; (2) changes in moisture regime in areas adjacent to right-of-way; (3) changes in water quality which affect plant life (refer to section on Water Quality).

Vegetation is also impacted by the opening up of the forest canopy due to tree removal. This allows greater sunlight penetration to the understory plants. Increased sunlight will generally favor the growth of those species which are shade-intolerant over those which are shade-tolerant. Gradually the composition, density and diversity of the plant community will change accordingly.

Salt Accumulation. Salt is applied to the paved surface of a highway as a deicing compound during the winter months. The greater percentage of the applied salt is carried in runoff to ditches and streams (refer to section on Water Quality). However, when snow and ice are repeatedly piled along the shoulders of a roadway, a buildup of salt in underlying soils may occur. The zone of this buildup is generally 10 to 30 feet in width from the edge of the roadway. It is for this reason that only very tolerant landscape materials will be planted within this 30-foot zone.

Salt Spray. Beyond 30 feet, the impact due to salt accumulation in the soil is generally minimal. From 30 to 150 feet from the edge of a travel lane, salt spray will also have an impact on sensitive vegetation. This impact is not so severe as to result in substantial direct mortality. Rather differential rates of growth occur between tolerant and intolerant plants. This results in a shift in the composition of the plant community to the more tolerant species.

Loss of Wildlife Habitat

Figure 18 provides a qualitative assessment of the relative value of various portions of the alternative rights-of-way to wildlife. As shown in the figure, the

major habitat resources consist of wetlands which have collectively experienced the least pressures from agriculture and urbanization. The primary resource associated with Relocated TH 10 is the wetland complex located within the proposed interchange of New TH 10 and TH 65. This complex is comprised of Type 3 wetlands interspersed with a significant acreage of Type 2 and Type 4 wetlands. In total, this complex is judged to be of very high value to wildlife. Approximately 19 acres would be lost.

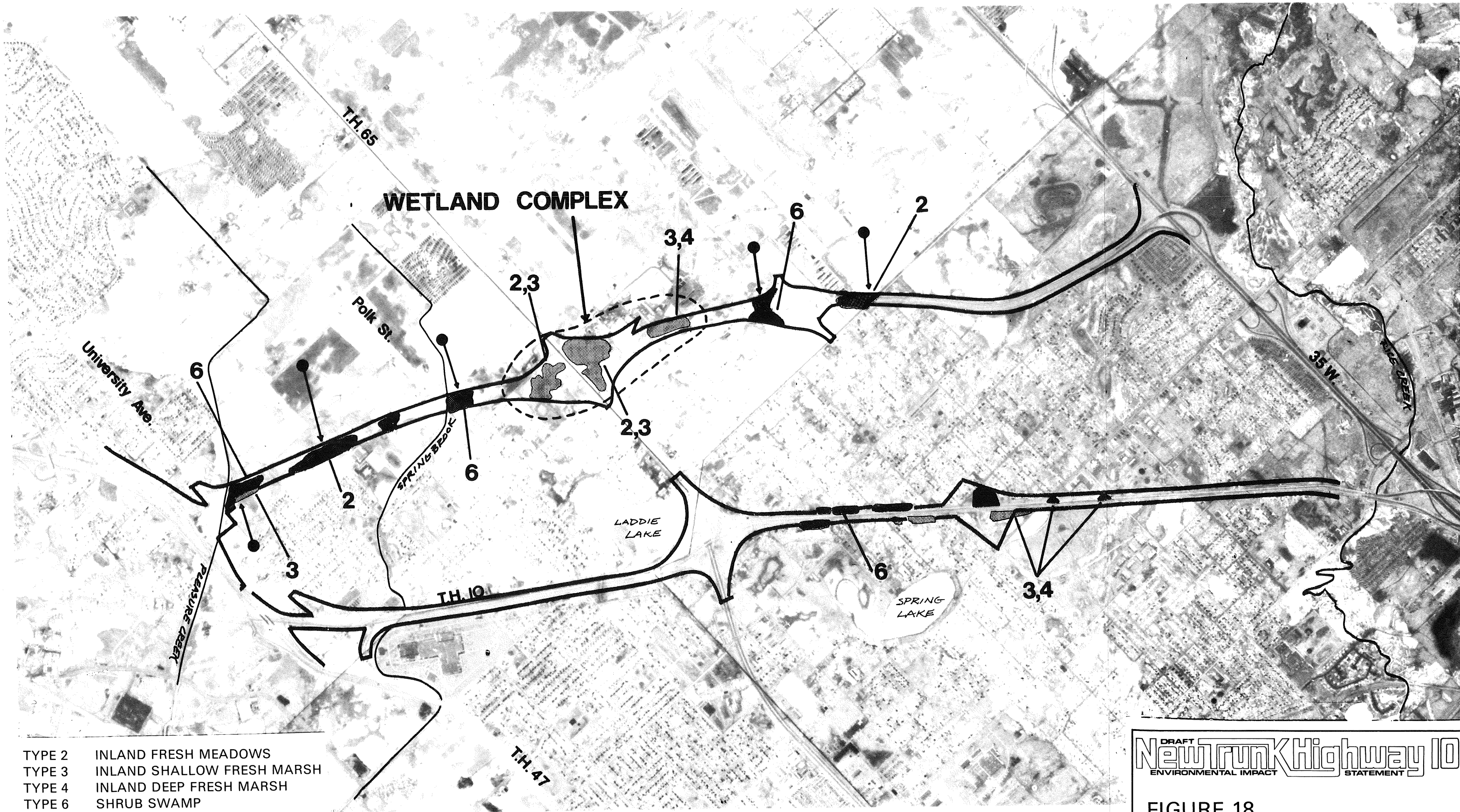
The primary resource values along the Upgraded TH 10 alternative are the remaining wetland areas which serve as supplemental breeding and feeding areas for waterfowl in the vicinity of Spring Lake. Approximately 6 acres would be lost if this alternative was selected.

Changes in Wildlife Population

Losses of wildlife habitat result in changes to animal populations which depend on the habitat for food and shelter. Some species of animals are fairly specific in their habitat requirements; other species are more general and may be found in several different types of habitat.

Amphibians and Reptiles. Amphibians and reptiles are the least mobile of the animal groups considered. Further, of the five (5) species of amphibians and nine (9) species of reptiles known or expected to occur in habitats represented within the study area, eleven (11) species have primary or secondary habitat preferences for one or more of the various wetland types present within the alternative rights-of-way. The proposed action, therefore, would result in population declines locally, and these losses would be roughly in proportion to the acreages of wetlands lost (refer back to Table 13).

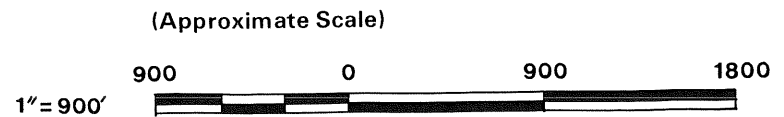
Birds. The post-construction right-of-way will contain fewer species of birds and lower diversity than the pre-construction right-of-way. The post-construction vegetation does, however, provide a type of grassland habitat and an "edge" between this habitat and the vegetation outside of the right-of-way. Species that will benefit from this effect include starling, song sparrows, indigo buntings, killdeer and crows. The ring-necked pheasant will also be positively affected if vegetation in the right-of-way is not mowed until the middle of July.



- TYPE 2 INLAND FRESH MEADOWS
- TYPE 3 INLAND SHALLOW FRESH MARSH
- TYPE 4 INLAND DEEP FRESH MARSH
- TYPE 6 SHRUB SWAMP

HABITAT QUALITY

-  VERY GOOD TO PRIME
-  MEDIUM TO GOOD
-  IMPROVABLE WETLANDS



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Newtrunk Highway 10
ENVIRONMENTAL IMPACT STATEMENT

FIGURE 18
WETLAND TYPES
AND HABITAT QUALITY

On the other hand, certain species are highly restricted to habitats which will be replaced by right-of-way vegetation. Woodpeckers, for example, are adapted to live in forested areas and cannot live in areas lacking trees. Where oak forest is the vegetation type, it is expected that numbers of the following species will decrease with construction: red-eyed vireo, tufted titmouse, downy woodpecker, hairy woodpecker, red-headed woodpecker, red-bellied woodpecker, wood-thrush, Eastern wood peewee and scarlet tanager. Decreases in numbers of these species over the long term will be primarily a function of the acres of their habitat directly lost (Table 13) and those acres lost because of induced growth in the study area.

The loss of wetlands will have an adverse effect on bird species which are largely restricted to that habitat. These species include the green and blue heron, common egret, American bittern, long-billed marsh wren, short-billed marsh wren, yellow-headed blackbird, red-winged blackbird, marsh hawk, grebes, coots, gallinules, rails, shorebirds, and ducks.

It should be noted that numbers of red-tailed hawks and kestrels could increase due to the proposed action. These species have been noted to benefit from the increased food supply in the form of living animals along highway rights-of-way. Apparently prey species (grasshoppers and mice) are more abundant or more readily available. Also the kestrel may benefit from the wires, poles and fences which serve as observation posts for prey location.

Significance of Bird Habitat Loss. The relative impact of habitat loss upon a species depends on its present population size (abundance). A recent report,⁵ based on field observations by a number of investigators, provides a qualitative estimate of abundance for species in Anoka County.

⁵Kenneth J. LaFond, "An Annotated List of Anoka County Birds," The Loon, Summer, 1978, pp. 84-99.

It should be noted that none of the species listed are considered threatened or endangered under Federal or State of Minnesota law.

Mammals. As with birds, the various species of mammals are expected to be affected by the proposed action. Where preferred habitat is clearly being lost, the impact will be adverse. One habitat criterion that is common to the vast majority of mammals in the study area is the need for water. Consequently, all classified wetlands and all wet situations, whether occurring in forests, grasslands, brushland or marshes are extremely important. Because the proposed action will reduce the number of such wet situations, it is expected that a decrease in mammal populations will occur over the long term.

Deer-Vehicle Collisions

When a new highway is constructed, the incidence of deer-vehicle collisions is high initially. This occurs because the highway severs relatively narrow bands of vegetation which are utilized by the deer as corridors for free-ranging movement and feeding activity. The exact movements of the deer are not known but would likely coincide with the rather sizeable bands of Type 6 wetland in the central portion of the study area.

Deer-vehicle collisions will be significant during the first two or three years after the highway is opened to traffic. Existing rates of deer-vehicle collisions on roads in this area, which have been in place for many years, are still high relative to the metropolitan area and the State as a whole. For example, existing T.H. 10 has a current annual rate of five deer-vehicle collisions per mile of roadway. (Source, Minnesota Department of Natural Resources statistics). This compares with rates varying from 1-4 deer per mile of roadway in other areas identified as "hot spots" for this type of accident.

Over a period of time, and as the study area develops further, the portions of the vegetation bands which are to the south of the highway will be eliminated from the deer range. This is considered detrimental to the deer because the population must be reduced accordingly. Either an increase of traffic kills will occur or the reduction in habitat will initiate natural population controls to reduce the number of animals.

Threatened and Endangered Species. As noted previously, no species identified in this report are included on state or federal lists of threatened or endangered species. There are, however, six species occurring in the study area which are discussed in Special Publication 104, "Minnesota Animals and Plants in Need of Special Consideration." Three (3) are listed as species of changing or uncertain status (marsh hawk, red-shouldered hawk, and Blanding's turtle). Three (3) are listed as species of special interest (great blue heron, common egret and snapping turtle).

Executive
Order 11990

Executive Order 11990 was issued May 25, 1977 and deals with the avoidance of adverse impacts associated with the destruction or modification of wetlands. Federal funding can be granted for an action which involves construction in wetlands, only when the following findings have been made: (1) there is no practicable alternative to construction in wetlands; (2) the proposed action includes all practicable measures to minimize the harm to the wetlands.

Practicability of
Alternatives

The two route locations for New TH 10 analyzed in this Draft EIS were developed utilizing the avoidance of wetlands as one of five planning criteria (refer to Section V, Alternatives). Wetland acreages were estimated for each of the six initial route locations. The Relocated TH 10 and the Upgraded TH 10 alternatives were the two route locations which minimized the loss of wetlands and still met the objectives of providing the facility. Also, the Upgraded TH 10 alternative was recommended for study by both the Minnesota Department of Natural Resources and the U.S. Fish and Wildlife service as an alternative which would minimize the impact to wetlands (refer to Section X, Coordination).

Measures to
Minimize Harm

The following measures, singly or in combination, will be utilized to minimize harm to wetlands and associated wildlife:

1. Design modifications and minor alignment shifts within the corridor to avoid wetland areas entirely.
2. Design modifications or minor alignment shifts within the corridor that minimize severance of wetlands, i.e. follow perimeter or edge.
3. Provision of culverts every 100 feet along alignments traversing wetland areas where appropriate to maintain the existing drainage to whatever extent possible.
4. Design of culverts as dams in order to create ponds and marshes in areas where they do not presently exist or to upgrade existing wetlands of low quality (refer back to Figure 18).
5. Strict adherence to erosion controls as specified in the Minnesota Department of Transportation's "Standard Specifications for Highway Construction."
6. Design of interchanges to incorporate wetlands into the open "island" areas.
7. Design of drainage system so that some water can be retained, or ponded, in open ditches.
8. Utilization of organic soils from cut areas as topping for drainage swales and special plantings of aquatic plants.
9. Design of borrow pits to provide irregular shorelines and side slopes.

Coordination

Considerations in mitigation of any wetlands encroachment will be developed during preliminary and final design of the proposed project. This will be done in consultation with, and with assistance from, various State and Federal agencies. Preliminary comments have been received from the U.S. Army Corps of Engineers, the U.S. Department of the Interior, Fish and Wildlife Service, and the Minnesota Department of Natural Resources. These comments are contained in Section X, Coordination.

U.S. Fish
and Wildlife
Service

Briefly summarized, the comments of the agencies and the Department of Transportation are as follows.

1. Shift the alignment (Relocated T.H. 10) slightly to the north to avoid the Type III wetland southeast of Radisson Road.

Response: The Minnesota Department of Transportation agrees with this suggestion and will implement it provided that Relocated T.H. 10 is selected as the preferred alternative.

2. Shift the alignment (Relocated T.H. 10) slightly to the south to avoid the larger Type II wetland just east of T.H. 65.

Response: Same as for #1 above.

3. Avoid encroachment into Aquatone Park.

Response: No encroachment into Aquatone Park will occur with either of the build alternatives.

4. Avoid encroachment into the Type III wetland just east of University Avenue. (It appears that the proposed corridor would not affect this wetland.)

Response: Encroachment into this wetland will also be avoided provided Relocated T.H. 10 is selected as the preferred alternative.

5. Stay as far south as possible through the Type VI shrub swamp just east of Polk Street and the Type VI shrub swamp east of University Avenue.

Response: Encroachment into this wetland will be minimized to the extent practicable and in a design consistent with avoiding the primary wetlands along the Relocated T.H. 10 route.

6. Avoid encroachment into Palm Olive Park south of Egret Boulevard.

Response: No encroachment into Palm Olive Park would occur with either of the build alternatives.

7. Construct an interchange at County Road J rather than at the proposed Anoka County Airport Road. We also recommend that an interchange not be constructed at Polk Street. In our judgement, an

interchange at Polk Street is not necessary. It would also increase accessibility, development and the potential loss of adjacent wetlands and other wildlife habitat in this area.

Location of interchanges will be decided upon only after the public has had an opportunity to comment on the route alternatives.

U.S. Army Corps
Of Engineers

1. Wetland impacts for all alternatives should be summarized in a table. This table should list the number of acres of each type of wetland that would be filled for each alternative.

Response: Such a table (Table 8) is provided in the Draft EIS.

2. Figure 11 should identify the wetlands that are subject to Corps of Engineers requirements to obtain permits for fill.

Response: Assuming the Relocated T.H. 10 alternative is selected, only the Type 6 wetlands shown on Figure 11 would require Section 404 permits. Other wetlands would be avoided in response to requests of the U.S. Fish and Wildlife Service. If the upgraded T.H. 10 alternative was selected, all wetlands in the right-of-way for that route would require permits.

3. Other possible impacts of using salt as a highway de-icing compound should be considered, including possible adverse impacts to utility structures, to public health via the water supply, and to vehicles.

Response: The Minnesota Department of Transportation recognizes these disadvantages of salt application to highways. However, such effects cannot be quantified with any degree of certainty. Nor has any other ice control technology been developed that is expected to replace salt application in the near future.

Minnesota
Department of
Natural Resources

We feel that the two Type III - IV wetlands just west of the Anoka County Airport should be preserved, and that mitigation should be provided for the other wetlands lost.

Response: These wetlands will be avoided. (Refer to U.S. Fish and Wildlife comments 1 and 2) Avoidance of these wetlands and upgrading of any additional wetlands

in the drainage design is the mitigation contemplated for encroachment on the Type 6 wetlands. (Refer to entire list of measures to minimize harm above).

HYDROLOGICAL IMPACTS

Increase in Runoff

Highway drainage design is based on two basic principles: to perpetuate flows across the highway right-of-way and to keep to a minimum the diversion of runoff from one watershed to another. Figure 19 depicts the existing hydrological system of the study area including watershed boundaries, subdrainage areas and direction of flows in streams and ditches.

The surface water from either the Relocated or Upgraded TH 10 alternative will flow to existing wetlands or constructed ponding areas adjacent to the corridor. Existing outlets to the Mississippi River (Coon Creek, Pleasure Creek, Spring Brook and Rice Creek) will then be utilized to transport the runoff out of the study area. Stormwater will arrive at the outlets through a number of municipal storm sewer systems as well as the open channels along the highway.

Because of the existing amount of depression storage and high degree of soil permeability, a relatively small percentage of precipitation currently leaves the right-of-way as surface runoff. Due to the expected increase in impervious surface, the quantity of runoff leaving the right-of-way will be increased by a factor of 3 to 4 times after construction is completed.

Coordination

The increase in runoff will be accommodated according to the rules and regulations of the various watershed districts having jurisdiction (Rice Creek Watershed District, Coon Creek Watershed District and independent districts of Pleasure Creek and Spring Brook). These agencies have been contacted to obtain copies of their currently approved drainage plans.

All known existing and future drainage-related plans by these and other governmental agencies will be taken into account during the drainage analysis conducted in the design study.

Stream Modifications

The Relocated TH 10 alternative crosses two streams as identified on the drainage map of this Draft Environmental Impact Statement. They are Pleasure Creek on

the west end of the project and Spring Brook (County Ditch #17) which is midway on the project.

Pleasure Creek. The Relocated TH 10 corridor crosses Pleasure Creek near the University Avenue Extension, and also along the Trunk Highway 47 northbound lane modification. Every precaution will be taken in design and construction to assure that this stream will have a minimum disruption throughout the course of the project. Erosion controls as specified in Minnesota Department of Transportation's "Standard Specifications for Highway Construction" will be implemented. A monitoring system will be established to provide an early warning system for erosion and turbidity problems so that corrective action can be taken to protect downstream areas.

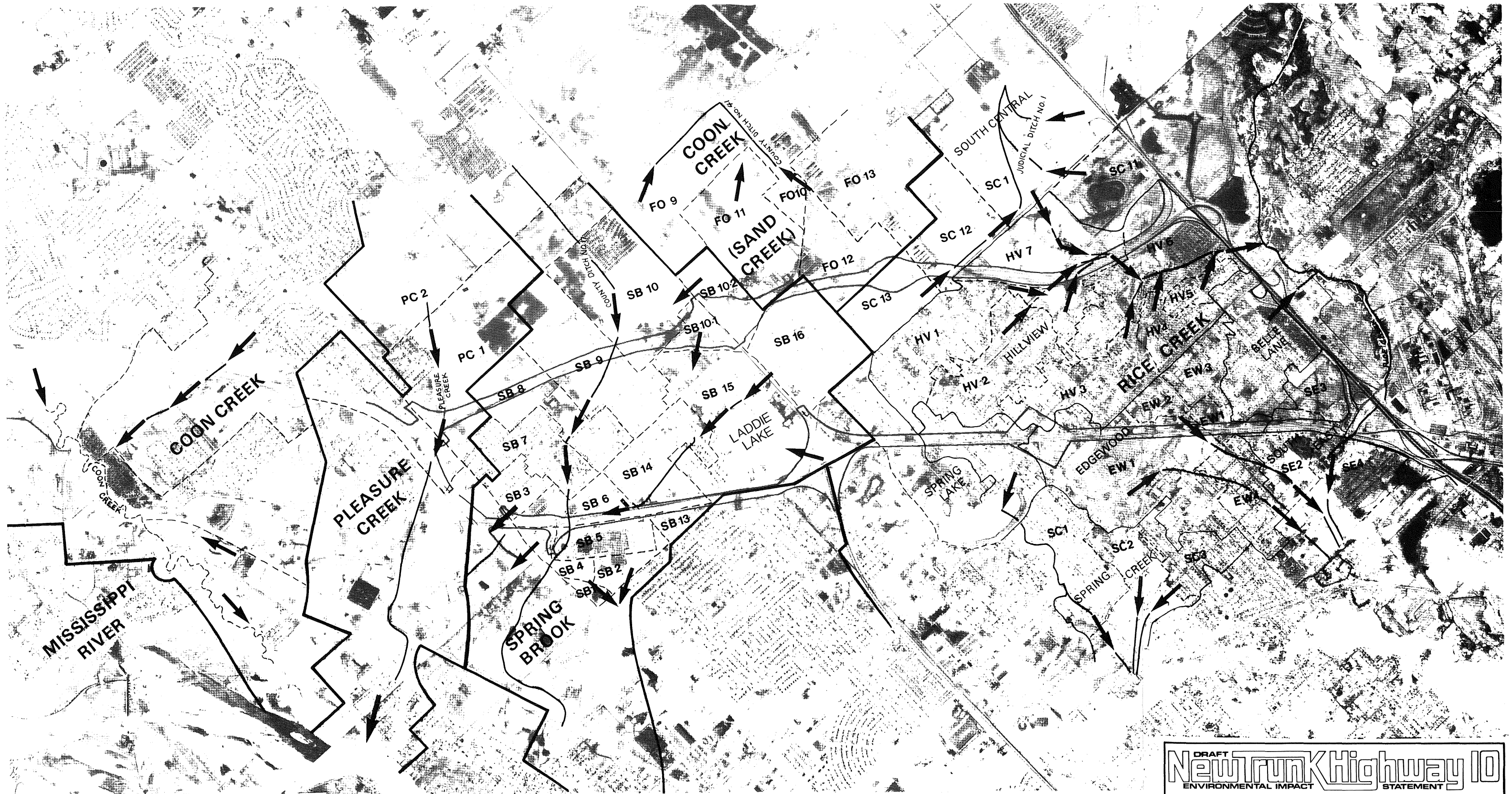
The design of the facility will be such that it will preserve the existing gradient and hydraulic characteristics of the existing stream bed. The crossing will be designed so as not to block the movement of spawning Northern Pike.

For the Upgraded TH 10 alternative or the "no-build" alternative, there would be no impacts to this stream as the crossing would occur on that segment of Trunk Highway 10 which is already completed north of the existing junction of Trunk Highways 10 and 47.

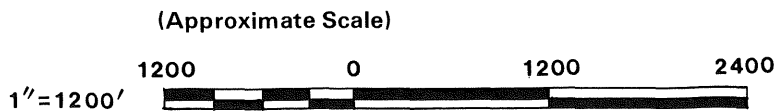
Spring Brook. The Relocated TH 10 corridor crosses Spring Brook at the Polk Street intersection. As with the Pleasure Creek crossing, the channel and hydraulic characteristics of this stream would be preserved in the design of the crossing, and monitoring would be done to determine the effectiveness of erosion controls during construction.

For the Upgraded TH 10 alternative and the no-build, a crossing already exists just north of the Northtown Shopping Center. This crossing would be protected during construction of the upgrading of existing TH 10. There would be no impacts for the "no-build" alternative.

Flood Plain Encroachment. There are no flood plains within the project area of New Trunk Highway 10. Therefore, there are no flood plain impacts associated with the proposed action.



- ← DIRECTION OF FLOW
- WATERSHED BOUNDARIES (LEGAL)
- DRAINAGE AREAS
- SUBDRAINAGE AREA DIVIDES
- SB7 SUBDRAINAGE AREA DESIGNATION



DRAFT
NewrunK Highway 10
 ENVIRONMENTAL IMPACT STATEMENT

FIGURE 19
 STUDY AREA WATER -
 SHEDS, DRAINAGE AREAS
 AND SUBDRAINAGE AREAS

Permits Required

In addition to State and Watershed District permits, the proposed action will require a Section 404 permit from the Corps of Engineers. Contiguous wetlands of secondary tributaries of the Mississippi River are proposed to be filled. The authority of the Corps has recently been extended to include such non-navigable streams and wetlands. Since no channel changes or other modifications of the hydraulic characteristics of either Spring Brook or Pleasure Creek are proposed, it is not anticipated that Corps of Engineers permits will be required for these crossings.

WATER QUALITY IMPACTS

Wetland Removal

The proposed action will have several direct impacts on surface waters in the study area. Most important will be the infilling of some of the existing wetland areas within the right-of-way. The Relocated TH 10 alternative has 46 acres of wetlands within the right-of-way while the Upgraded TH 10 alternative has 6 acres. Loss of wetlands will impact water quality because wetlands are known to remove a variety of potential pollutants by means of physical entrapment, microbial transformation and biological utilization.

Measures to Minimize Harm. While some existing wetlands will be lost, the proposed action does offer the opportunity to restore wetland functions in areas where highway embankments and drainage facilities can be used to impound water (refer to section on Impacts to Vegetation and Wildlife). Careful location and development of borrow pits can be equally important in creating or upgrading wetlands to serve water quality functions.

Increased Turbidity During Construction

The following chart presents data on existing turbidity levels as measured for the four principal streams and two lakes within the study area.

	Rice Creek at TH 47 (Fridley)	Coon Creek at 93rd Ave NE (Coon Rapids)	Spring Brook at Polk St. 4/13/77	Pleasure Creek at University Ave. 4/13/77	Laddie Lake 8/18/77 (four stations)	Spring Lake 8/22/77 (four stations)
	(a)	(a)	(b)	(b)	(b)	(b)
Range	2.3-132 FTU(c)	3.5-95 FTU	8.7 NTU(d)	3.7 NTU	12-13 NTU	6.5-9.0 NTU
Average	18.7 FTU	19.8 FTU	-	-	12.5 NTU	7.0 NTU

- a. STORET data provided by Minnesota Pollution Control Agency.
- b. Minnesota Department of Transportation sampling program-preliminary data.
- c. Formazan Turbidity Units.
- d. Nephelometric Turbidity Units.

The construction of the proposed action will result in erosion due to the temporary removal of vegetative cover. This erosion will result in an increase in the suspended solids concentration in drainage from the construction area during a runoff producing event. Turbidity readings will, therefore, be elevated during this period.

Sedimentation impacts to fish and wildlife cannot be avoided entirely. Impacts can be reduced to a tolerable level by applying proper erosion control techniques.

Even with erosion controls, however, solids particles remaining in suspension can impact aquatic life. The solids particles in suspension will impact aquatic life in receiving waters in several ways. There can be increased mechanical abrasion and clogging of the gill tissues of fishes. In addition, there can be inhibition of normal temperature fluctuations and reduced light penetration which can affect the primary productivity of the receiving water. These impacts can have secondary effects on food chain dynamics, thus reducing the diversity and stability of the aquatic ecosystem as a whole.

Increases in suspended particles can also cause secondary effects to other water quality parameters. Chemicals which are deleterious may be absorbed or adsorbed onto soil particles in suspension. Such materials include oxygen demanding chemicals as well as nutrients.

Steps to Minimize Harm. The retention of existing slopes and gradelines which are flat, can minimize the quantity of runoff from the construction areas.

Where grade changes are designed for drainage, borrow areas and depressed roadway sections, it is anticipated that temporary erosion control measures will be necessary. This is due to the difficulty of establishing vegetative cover in the droughty soils characteristic of the area. Temporary measures include mulches, slope drains, dikes, and sediment basins. Wherever possible, activities necessary to achieve permanent erosion control will commence immediately following finished grading.

In all matters of erosion control, whether temporary or permanent, the contractor's work will be governed by Minnesota Division of Highways "Standard Specifications for Highway Construction." Any additional specifications determined during the design study for the proposed action will be included in the construction contract. Proper erosion controls will minimize the adverse impacts to the aquatic ecosystem.

Increased Salt Concentrations in Surface Waters

The following chart presents data on existing chloride levels as measured for the four principal streams and two lakes within the study area.

	Rice Creek at TH 65 (Fridley)	Coon Creek at 93rd Ave NE (Coon Rapids)	Spring Brook at Polk St. 4/13/77	Pleasure Creek at University Ave. 4/13/77	Laddie Lake 8/18/77 (four stations)	Spring Lake 8/22/77 (four stations)
	(a)	(b)	(c)	(c)	(c)	(c)
Range	14-96 mg/l(d)	0.5-22 mg/l	26 mg/l	18 mg/l	115-130 mg/l	17.5-25 mg/l
Average	40.4 mg/l	8.7 mg/l	-	-	123 mg/l	20.4 mg/l

- a. Rice Creek Watershed data.
- b. STORET data provided by Minnesota Pollution Control Agency.
- c. Minnesota Department of Transportation sampling program-preliminary data.
- d. Miligrams per liter.

The two alternatives for the proposed action would both result in increases in chloride ion concentrations in surface waters. The Relocated TH 10 alternative would generate the greatest total mass of chloride ions. As Table 14 illustrates, however, the surface waters impacted and the magnitude of the expected impact does vary between the two alternatives considered.

Surface Water Uses

The impact of the projected water quality conditions is dependent on the number and types of uses (resource values) which occur in a particular surface water. The quality of major surface waters within the study area is governed by Minnesota Pollution Control Agency standards for fisheries and recreation - Class B. The quality of Class B water permits the propagation and maintenance of cool or warm water fishing (excluding trout) and aquatic recreation of all kinds including bathing. These standards are summarized on the following chart.

Summary of MPCA Class 2B Water Quality Standards

<u>Characteristics</u>	<u>Units</u>	<u>Surface Water Classification - 2B</u>
Ammonia (N)	mg/1	1.00
Chromium (Hexavalent, Cr)	mg/1	0.05
Copper (Cu)	mg/1	0.01
Cyanides (CN)	mg/1	0.02
Dissolved Oxygen (April & May)	mg/1	6.00
(June-March)		5.00
Fecal Coliform	MPN/100 ml	200.00
Oil	mg/1	0.50
Phenol	mg/1	0.01
Temp. Above Natural Lakes	°F	5.00 Streams °F 3.00
Turbidity	JTU	25.00

Lakes. Laddie Lake is presently utilized as a waterfowl lake and has very limited recreational usage. Its shallow depth (2.5 feet on the average in August, 1977) and lack of public access detract from its potential for warm water fishing opportunities. The lake is subject to winter kill and supports no permanent gamefish population. Home sites occupy the majority of the shoreline and a substantial portion is existing TH 10 right-of-way. There are no swimming beaches or other recreational facilities.

Spring Lake has a public swimming beach and is utilized extensively for other activities including fishing and canoeing. Incidents of winter kill have been reported but a deep basin (10-18 feet range) in the eastern portion of the lake reduces the probability of total freeze-up of the lake.

There is very little current information on fisheries productivity in Spring Lake. The available information does suggest that the lake should support viable bass and panfish populations.

Streams. The two primary streams crossed by the proposed action are Spring Brook and Pleasure Creek. Both are agricultural drainage ditches dredged in the early 1900's through wetland areas. These streams are presently of marginal aesthetic and recreational value and are primarily useful in providing limited nesting and feeding habitat for waterfowl. Drainage ditches also have very limited fisheries value (primarily carp and minnows) but may be useful to spawning Northern pike from the Mississippi River provided the ditches terminate in suitable wetland areas. The upstream wetlands of Spring Brook and Pleasure Creek have largely been converted to sod farming operations. This would suggest that, if Northern pike runs do occur, they do not result in any significant recruitment to the regional population.

Effect of Salt. The impact of salt concentrations is shown in Table 14. These estimates assume a "worst case" situation in that all salt applied to a roadway is assumed to reach a receiving body. In actuality, salt concentrations are highly variable depending on differences in weather and hydrology that occur from year to year. As yet, there is no approved methodology for taking these differences into account. The estimates shown are, however, constructive in indicating that a state water quality standard for chloride of 250 mg/l is not likely to be exceeded.

At the same time, the calculations also indicate that an impact will probably occur to lakes and streams where chloride levels exceed 30 mg/l. This occurs due to replacement of aquatic vegetation which is intolerant to chloride levels exceeding this value. The diversity of aquatic plants and, ultimately, the habitat value of the lakes for fish and wildlife will be reduced accordingly. Considering the present uses and existing water quality, this impact will be greater for Spring Lake (Upgraded TH 10) than for Laddie Lake (Relocated TH 10).

Over the long term, the impact to Spring Lake will also be greater than for Laddie Lake. This is due to the consideration that Spring Lake is a landlocked lake which is not flushed periodically. A period of drought weather conditions and the hydrologic character of the deep basin in the eastern portion of the lake could both contribute to the buildup of salts in that basin. The higher the concentration in the basin, the greater will be the toxicity to plants and animals, and alteration of the present ecosystem.

TABLE 14
ESTIMATED SALT CONCENTRATIONS OF SURFACE WATERS AFTER CONSTRUCTION*

Surface Water	Highway Drainage System Area (Square Miles)		Additional Lane Miles		Average Salt Concentrations (Milligrams Per Liter)			
	Relocated TH 10	Upgraded TH 10	Relocated TH 10	Upgraded TH 10	Seasonal Relocated TH 10	Seasonal Upgraded TH 10	Yearly Relocated TH 10	Yearly Upgraded TH 10
Rice Creek	0.31	1.22	3.42	4.15	53	53	18	18
Spring Brook	1.36	2.87	6.09	1.31	158	38	53	13
Pleasure Creek	1.36	No Change	3.58	0	99	No Change	33	No Change
Laddie Lake	1.05	No Change	3.04	0	177	No Change	59	No Change
Spring Lake	No Change	.47	0	3.60	No Change	208	No Change	69
Coon Creek (Sand Creek Tributary)	0.53	No Change	2.11	0	30	No Change	10	No Change

*Calculations assume an application rate of 11.4 tons per lane mile per winter and conservation of mass.

Concentration of chlorides in runoff water discharged to wetlands or holding ponds are anticipated to be higher than for either streams or lakes. This occurs because the runoff is frequently entirely highway originated and there is little dilution available. Concentrations in ponds or wetlands would generally not exceed 1,500 mg/l and, therefore, they would not be high enough to seriously affect wildlife. As with lakes, however, certain aquatic plants would be significantly affected.

Steps to Minimize Harm

There are two steps that would be taken to minimize the effects of salts on water quality:

1. The application of deicing salts to the roadway will be kept to a minimum.
2. Runoff from the highway will be diverted from Spring Lake and the prime habitat areas shown on Figure 18 (page 123).

Potential for Chemical and Oil Spills

The pollution from chemical and oil spills would probably be local and would not contaminate water resources near the Proposed Action. The Minnesota Department of Transportation's procedure in case of oil or chemical spills is to first contain the spill by placing a sand ditch block on the downstream side of the spill. If possible, highway maintenance forces remove the spilled material by pumping or sponging. If it is not possible to remove the material before it soaks into the soil, the maintenance forces remove the contaminated soil, haul it to an appropriate dump, and replace it with clean soil. The Minnesota Department of Transportation's maintenance forces automatically call the Minnesota Pollution Control Agency (MPCA) in an accident involving oil or chemical spills. The MPCA monitors the clean up and the impacts.

Impact of Fertilizers, Pesticides and Herbicides

The construction plans would include commercial, granular fertilizer for establishing the ground cover disturbed by construction. These granular fertilizers are mixtures of compounds of nitrogen, phosphorus, and potassium. They do not include any urea, gaseous, or liquid fertilizers. On new construction projects, an analysis of the topsoil for fertility, texture, and PH determines the type and application rate of fertilizer.

Highway fertilizers do not seem to represent a significant contaminant of natural waters, but they do provide a positive impact by preventing erosion and sedimentation.

Herbicides are used on noxious weeds within the highway right-of-way. The herbicide used is 2 and 4-D, all formulated into an anti-drift emulsion.

Insecticides and pesticides would be used only in specific areas where infected trees are a danger to neighboring trees. These chemicals are a potential hazard to the environment, but they are effective where no other method of control has proven effective. Their use along highways is very rare.

ENERGY

The upgrading of TH 10 to freeway standards has a positive energy impact since it will allow motor vehicles to operate at highway speeds on a highway section as opposed to an urban road section. As shown in the auto gasoline-mileage list produced by the Environmental Protection Agency, models have an increased efficiency of 30% to 50% in the highway tests as opposed to the city tests. Therefore, either upgrading the existing TH 10 to freeway standards or the construction of the New TH 10 would have a positive impact over the no-build alternative.

The illustrations of comparative energy uses for each alternate are demonstrated by an analysis of the 1.0 (one) mile segment from Trunk Highway 65 and proceeding east. This segment was selected because the average daily traffic (ADT) volumes on this segment represent a mean volume for all alternatives. These volumes are taken from the Systems Planning Analysis Reports (SPAR) prepared by the Minnesota Department of Transportation. For the Relocated New Trunk Highway 10 the source is SPAR 201 and for the Existing and Upgrading Trunk Highway 10 the source is SPAR M-191. The projected ADT volumes for the year 2000, for this segment described above are as follows:

Existing TH 10	39,300
Upgraded TH 10	39,300
Relocated TH 10	32,800
+ Existing TH-10	14,200

Considering only automobiles, since that is the predominant component of the ADT volume (85 to 95%), the average fuel consumption (in miles per gallon), for suburban-urban travel with an operating speed range of

15 to 35 miles per hour, is 12.0 miles per gallon.⁶ This best describes the existing conditions of Trunk Highway 10 under the no-build concept. For intercity travel with an operating speed range of 40 to 60 miles per hour, the average automobile fuel consumption is 15.7 miles per gallon (mpg). This would be applicable for upgrading existing Trunk Highway 10 and relocated Trunk Highway 10 which would both be designed to freeway standards.

Therefore using these figures a comparison of fuel consumption along the one (1.0) mile segment can be computed as follows:

Existing TH 10: $39,300 \text{ ADT} \times 1 \text{ mile} \div 12.0 \text{ mpg} = 3,275 \text{ gallons consumed per day}$

Upgrading Existing TH 10: $39,300 \text{ ADT} \times 1 \text{ mile} \div 15.7 \text{ mpg} = 2,503 \text{ gallons consumed per day}$

Relocated TH 10: $32,800 \text{ ADT} \times 1 \text{ mile} \div 15.7 \text{ mpg} = 2,089$

Plus Existing TH 10: $14,200 \text{ ADT} \times 1 \text{ mile} \div 12.0 \text{ mpg} = 1,183$

Combined 3,292 gallons consumed per day

The comparison of these figures indicates that fuel consumption for Upgrading TH 10 is significantly lower than Relocated TH 10 alternate. However, the Relocated TH 10 also includes the existing segment of TH 10 since this roadway would remain and would function as an auxiliary street in the area. Also, the combined figure for Relocated TH 10 considers an ADT volume of 47,000 vehicles as opposed to 39,300 for the other two alternates. Therefore in order to have a more realistic comparison the ADT volumes should be pro-rated. This would be as follows:

$\frac{32,800}{32,800+14,200} \times 39,300 \times 1 \text{ mile} \quad 15.7 \text{ mpg} = 1747$

Plus $\frac{14,200}{32,800+14,200} \times 39,300 \times 1 \text{ mile} \quad 12 \text{ mpg} = 989$

Combined 2,736 gallons consumed per day

⁵Source: Alan M. Voorhes and Associates, Inc. "Energy Efficiencies of Urban Passenger Transportation" Technical Study Memorandum No. 9 (McClean, Va. 1974) p. 18.

This places the relative fuel consumption in perspective.

Thus the alternate with the highest fuel consumption would be the "no build," and the Upgrading TH 10 and the Relocated TH 10 alternates would be comparable. As mentioned, this comparison is for a one mile segment. The project length is approximately six miles and the relationship would remain the same throughout the project length.

A short range impact is the energy which would be expended to construct the new facility. No attempt was made to quantify this impact. The no-build alternative would have a minimal construction energy demand.

As explained in the Need for the Proposed Action of this Draft Environmental Impact Statement, the proposed New TH 10 is a recommended transportation segment needed for the projected 1990 demands of the metropolitan area. However, by itself the proposed highway improvement would not create an unnecessary demand or increase in the use of petroleum products in the transportation sector.

AIR QUALITY

An Air Quality Report on the proposed project has been prepared by the State of Minnesota, Department of Transportation (MnDOT). The report has been reviewed by the Minnesota Pollution Control Agency and by the USEPA. Copies of the Air Quality Report are available for review and may be obtained by contacting the Project Engineer at the District 5 office in Golden Valley. The analysis contained within the Air Quality Report has been revised to reflect updated mobile source emission factors, using the USEPA Mobile One program. This section summarizes these revised findings.

The analysis describes the effects of the proposed project on ambient concentrations of carbon monoxide (CO) at a number of receptors along the rights-of-way and in the vicinity of project alternatives. Also included is an estimate of total CO, HC, and NO_x emissions for the Relocated TH 10, Upgraded TH 10 and No Build alternatives.

The analysis procedure used to estimate CO concentrations followed the U.S. Environmental Protection Agency (USEPA), "Guidelines for Air Quality Maintenance Planning and Analysis, Volume 9: Evaluating Indirect Sources."

The air quality analysis was conducted for the Relocated TH 10, the Upgraded TH 10 and the No-Build alternatives.

The changes in carbon monoxide concentrations at a receptor are caused in part by differences in meteorological conditions. Elements of meteorology which affect the dispersion of motor vehicle emissions in the micro-scale (i.e., less than 200 meters from the roadway) are atmospheric stability, wind direction and wind speed.

Ambient temperature and vehicle operation such as cold starts affect the emission rate from motor vehicles. The analysis assumed an ambient temperature of 20°F and adjusted for cold starts and hot starts by lane of the segment of highway that was examined.

The meteorological assumptions used in the air quality analysis were as follows:

1. A Pasquill-Gifford Stability Class D (this stability class, when used in the dispersion model, is believed to be conservative).
2. In general, a wind direction making an angle of 10 degrees with the roadway.
3. A wind speed of one meter per second.

Estimates of peak 1 hour CO concentrations at receptors assumed the unfavorable meteorological parameters will persist for at least an hour during the period the roadway will be utilized at peak traffic levels. That is to say, all unfavorable conditions are assumed to occur simultaneously and to persist 1 hour. In developing estimates of the peak 8 hour CO concentrations, a persistence factor of 0.6 is used to reflect meteorological variability during an 8 hour period.

Traffic

Basic traffic data used in the air quality analysis was prepared by the MnDOT, Office of Systems Planning, as reported in Systems Planning and Analysis Report's (SPAR) M-191 and M-201. The SPAR report gives estimated 2000 ADT and peak hour volumes. 1980 and 1990 volumes are based on the projected 2000 volumes.

Receptors

The traffic and roadway parameters provide the information required to define the source of carbon monoxide emissions. The meteorological information is used to describe the transport and dispersion of the source emission in the atmosphere. The third necessary element of air pollution is a receptor of the contaminants in the air. The receptor is a key element in determining the impact of any source of air contamination. It is the receptor that is to be protected from excessive air pollution. The criteria for receptor site selection was twofold: (1) it is a location where the general public has access for 1 or 8 hour periods; and (2) it is a location in the vicinity of portions of the traffic network where the combined impact of traffic attributed to the proposed project and other traffic is likely to result in the highest traffic volumes and most traffic congestion. The receptor sites selected for analysis are shown on Figure 20.

Background Concentrations

The background levels reported by the USEPA in Vol. 9 of their "Guidelines for Evaluating Indirect Sources" were used in the analysis. These 1975 levels are 5 ppm for 1 hour and 2 ppm for 8 hours. These levels were adjusted for (1) the effects of the Federal Motor Vehicle Control Program and (2) projected increase in area VMT of 2% per year. The background level estimates are:

<u>Concentration (ppm)</u>		
<u>Year</u>	<u>1-Hour</u>	<u>8-Hour</u>
1977	3.6	1.5
1980	2.8	1.1
1990	1.3	1.0
2000	1.6	1.0

Maximum CO Concentrations

The total estimated CO concentration (includes background) at the receptors is shown on Table 15. The highest levels of CO at receptors along the Relocated TH 10 route occur at receptor 1. The highest levels of CO at a receptor affected by the no build alternative occur at receptor 6. For the upgraded TH 10, the highest CO levels occur at receptor 9. The one-hour ambient air quality standard for CO in Minnesota is 30 ppm. The national one-hour standard is 35 ppm. The eight-hour CO ambient air quality standard, both Minnesota and national, is 9 ppm. None of these standards is to be exceeded more than once per year.

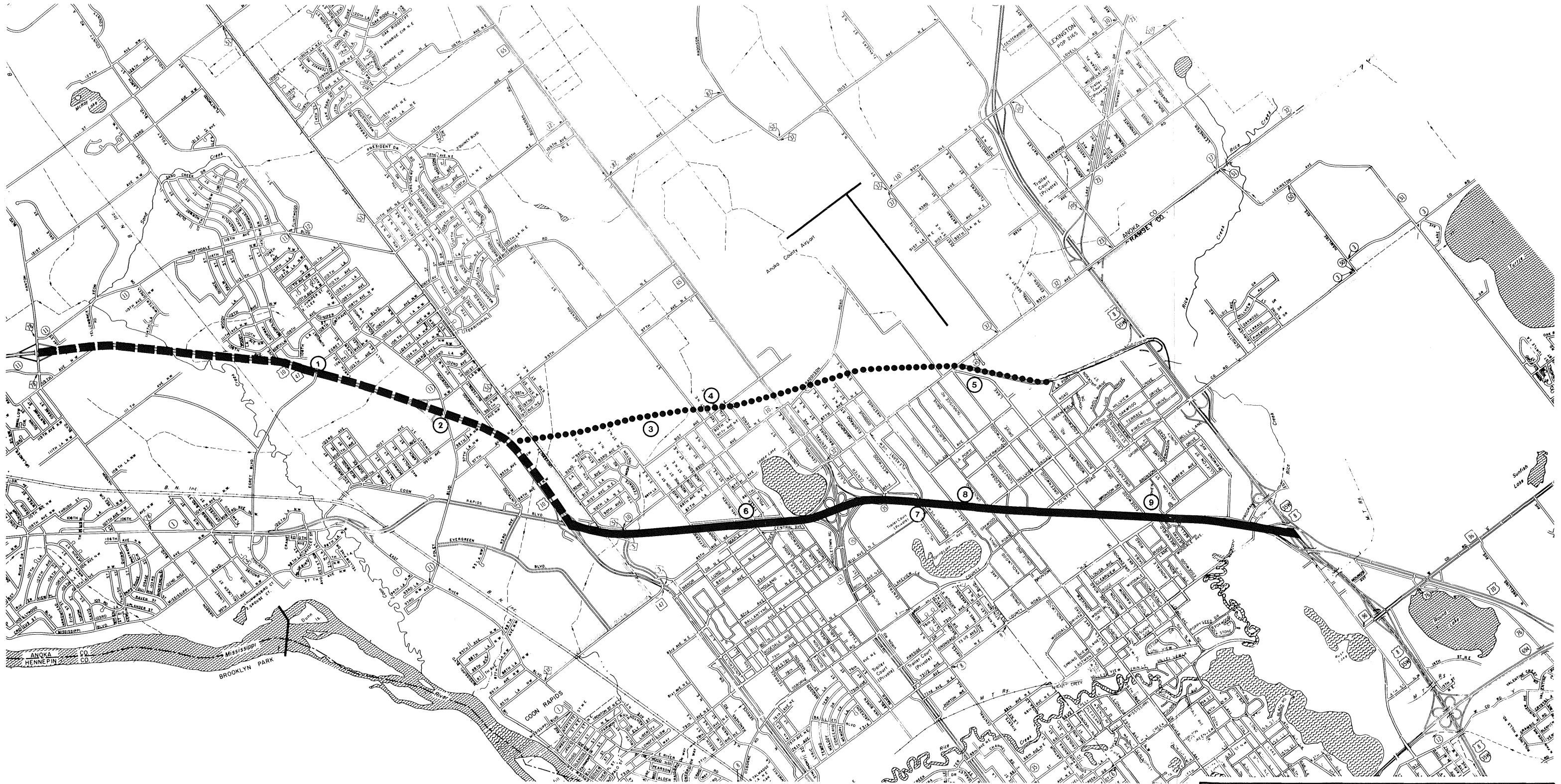
TABLE 15
ESTIMATED CARBON MONOXIDE CONCENTRATIONS (ppm)

Receptor	Peak 1-Hour ⁽¹⁾ Concentration			Peak 8-Hour ⁽²⁾ Concentration		
	1980	1990	2000	1980	1990	2000
<u>Proposed New TH 10</u>						
1. Single Family Residence	6.3	2.5	2.9	3.5	1.4	1.4
2. Church Grounds	6.0	2.4	2.6	3.0	1.2	1.3
3. School Yard	5.3	2.1	2.5	3.3	1.3	1.3
4. Ballparks	4.3	1.7	2.0	2.8	1.1	1.2
5. Single Family Residence	4.8	1.9	2.3	3.0	1.2	1.3
6. Single Family Residence	5.6	2.3	2.7	3.5	1.4	1.4
7. Trailer Park	5.3	2.1	2.4	3.3	1.3	1.3
8. Single Family Residence	5.5	2.2	2.6	3.5	1.4	1.4
9. Single Family Residence	5.3	2.1	2.5	3.3	1.3	1.4
<u>"No Build"</u>						
6. Single Family Residence	14.3	5.7	8.6	6.0	2.4	2.5
7. Trailer Park	10.5	4.2	5.2	5.3	2.1	2.3
8. Single Family Residence	12.3	4.9	6.2	5.6	2.3	2.3
9. Single Family Residence	10.3	4.1	4.8	5.0	2.0	2.1
<u>Upgrade Existing TH 10</u>						
6. Single Family Residence	7.3	2.9	3.4	4.0	1.6	1.6
7. Trailer Park	6.0	2.4	2.8	3.5	1.4	1.4
8. Single Family Residence	6.8	2.7	3.1	3.8	1.5	1.5
9. Single Family Residence	7.5	3.0	3.0	3.5	1.4	1.5

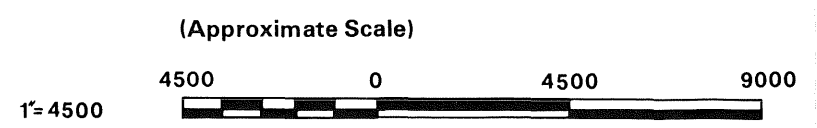
(1) The 1-Hour MPCA CO ambient air quality standard is 30 ppm. The USEPA 1-Hour standard is 35 ppm.

(2) The 8-Hour MPCA and the USEPA CO ambient air quality standard is 9 ppm.

NOTE: Background concentrations are included in the reported concentration estimates.



- RELOCATED T.H.10
- SEGMENT COMMON TO BOTH ALTERNATIVES
- UPGRADED T.H.10



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 ENVIRONMENTAL IMPACT STATEMENT

FIGURE 20
AIR QUALITY
ANALYSIS RECEPTORS

Total Burden
Analysis

Gross emissions in 1990 for carbon monoxide (CO), hydrocarbons (HC) and nitrogen oxides (NO) for the Relocated TH 10, Upgraded TH 10 and No-Build alternative were calculated. The results are shown in Table 16.

Both the Relocated TH 10 and the Upgraded TH 10 reduce HC emissions. The No-Build alternative has the lowest nitrogen oxide emissions, and the Upgraded shows the lowest CO emissions.

Regional Burden

MPCA comments regarding the Air Quality Report prepared for New Trunk Highway 10 (refer to Section X, Coordination) request that a total burden analysis be conducted to evaluate the three alternatives for impact on regional emissions of CO, HC, and NO_x.

The Minnesota Department of Transportation has recently completed an inventory of CO, HC, and NO_x emissions from mobile sources for the seven county Twin Cities Metropolitan Area. The inventory was compiled using the SAPOLLUT program, and was based on revised emission factors derived from the EPA's Mobile One program.

The inventory was conducted for a 1977 base year and for the target air quality attainment dates of 1982 and 1987. The inventory was prepared for use by the Metropolitan Council as the basis for the agency's current effort toward revision of the transportation element of Minnesota's Air Quality Implementation Plan for the Metropolitan Area.

The inventory provides a suitable regional burden analysis for purposes of addressing the MPCA's request. The 1987 MnDOT inventory incorporates the relocated Trunk Highway 10 alternative as part of the network for analysis. The 1987 date is an appropriate year of analysis due to its sensitivity as the latest possible EPA attainment date for CO and O_x ambient air quality standards.

The MnDOT 1987 inventory provides a 1987 regional pollutant burden which includes relocation of TH 10. To assess the difference in impact on regional burden between the three alternatives, the corridor burden analysis contained in Table 16 was used to adjust the regional inventory. The adjusted inventory is as follows:

TABLE 16
TOTAL AIR EMISSION BURDEN - 1990 (kg/day)

	CO	HC	NO _x
Relocated TH 10	4,891	347	1,012
Upgraded TH 10	4,441	309	979
No-Build	4,855	362	777

Kilograms per Day of:	CO (@20°F)	HC (@ 75°F)	NO _x (@75°F)
1977	2,079,500	191,000	27,979,200
1987			
Relocate	855,100	65,720	33,337,900
Upgrade	854,650	65,684	33,337,867
No Build	855,064	65,735	33,337,665

As can be seen from the analysis, the difference between the three alternatives in impact on net regional emissions is negligible.

Conclusion

The Air Quality Report analysis demonstrates the maximum CO concentrations at receptors affected by the proposed New TH 10 will be below the Minnesota and National Ambient Air Quality Standards. It is therefore determined that the Relocated TH 10, Upgraded TH 10 and No-Build alternatives are not inconsistent with the approved State Implementation Plan. The MPCA concurs with this determination in their letter of May 30, 1978, a copy of which is in Section X, Coordination.

LEAD ANALYSIS

On October 5, 1978, the U.S. EPA established a material ambient air quality standard for lead at a level of 1.5 micrograms (mg) load per cubic meter of air, averaged over a calendar quarter. The Minnesota Pollution Control Agency is now monitoring and conducting other studies to identify areas of non-attainment. The EPA standard must be attained by October, 1982. It is expected that the reduction of lead in gasoline will allow most areas to meet the standard by that date.

An analysis of airborne lead at critical receptors along the Trunk Highway 10 alternates has been conducted using a procedure based upon a 1/31/78 FHWA memorandum, "Proposed National Ambient Air Quality Standard for Lead". This procedure has been reviewed by the FHWA and the MPCA staffs.

Worst case receptor locations have been analyzed for existing conditions (1978) and for each project alternative in 1985. Subsequent years were not assessed due to the sharp drop in lead concentration anticipated with reduced usage of leaded gasolines. The analysis takes into account major crossroads as well as this proposed project. A background lead level of 0.008 mg/m³ is assumed.

For the 1978 analysis, three receptors were selected for study: Receptor 1, (rated 200 feet west of Interstate 35W and 200 feet north of Trunk Highway 65 and 200 feet south of Trunk Highway 10; and Receptor 3, located 200 feet east of Trunk Highway 47 and 200 feet north of Trunk Highway 10. Receptor 3 was also used for the No-Build and upgraded 1985 analysis. In addition, Receptor 4, 200 feet west of Interstate 350 and 200 feet south of Trunk Highway 10; and Receptor 5 200 feet west of Trunk Highway 65 and 200 feet north of Trunk Highway 10 were assessed. Receptors for the relocated alternate were: Receptor 6, 200 feet north of Old Highway 10 and 200 feet east of Interstate 35W; Receptor 7, 200 feet west of Trunk Highway 65 and 200 feet south of Old Highway 10; receptor 3; receptor 8, 200 feet west of Interstate 35W and 200 feet south of New Highway 10; Receptor 9, 200 feet west of Trunk Highway 65 and 200 feet north of New Highway 10; and Receptor 10, 200 feet west of Trunk Highway 47 and 200 feet south of New Highway 10.

Findings

Findings are summarized below. No violations of the lead standard are indicated for the project. The highest estimated concentration in 1985 is 0.2 micrograms per cubic meter. The present highest concentration is estimated at 1.4 micrograms per cubic meter.

AMBIENT LEAD CONCENTRATIONS *(mg/m³)

Receptor	1978 Existing Condition	1985 No Build	1985 Upgraded	1985 Relocated
1	1.4			
2	1.4			
3	1.3	0.2	0.2	0.1
4		0.2	0.2	
5		0.2	0.2	
6				0.2
7				0.1
8				0.2
9				0.2
10				0.2

* National ambient standard is 1.5 micrograms per cubic meter (mg/m³) averaged over a calendar quarter.

NOISE

New expressways typically represent major potential noise sources in urban and suburban areas. The proposed alternatives for the improvement of TH 10 involve the construction (or reconstruction) of a highway section with full access control and, thus constitute a type IA project according to Volume 7, Chapter 7, Section 3 of the Federal Aid Highway Program Manual (FHPM 7-7-3). In accordance with the requirements of FHPM 7-7-3, the probable noise impacts of the alternatives under consideration have been analyzed and a separate "Preliminary Noise Analysis Report" has been prepared. The "Preliminary Noise Analysis Report" has been submitted to the USEPA and the MPCA for review. The comments received from these agencies are found in Section 10, Coordination. Responses to the comments are also presented in Section 10 and, where appropriate, included in this portion of the EIS. Also copies of the "Preliminary Noise Analysis Report" have been distributed to the local units of government for information. Subsequent to the selection of a preferred alternative and initiation of preliminary roadway design, a "Final Noise Analysis Report" will be prepared.

The following information represents a summary description of the existing and projected noise conditions, the probable noise impacts as well as feasible noise abatement measures. A more detailed explanation of this information can be found in the "Preliminary Noise Analysis Report."

Primary factors involved in identifying potential noise impacts of a highway include location of susceptible receptors (or listeners), existing (ambient) noise levels (from all sources), noise levels which are acceptable to the listener (noise standards) and anticipated increase (or decreases) in noise levels attributable to the projected roadway traffic.

Susceptible Receptors The primary noise susceptible land uses along the existing and Relocated TH 10 corridors include multi and single-family residential, educational facilities (high school), recreational land (playfields), churches and a library. Other less susceptible uses include vacant/open land, light industrial uses (warehouses, truck terminals, offices), the Anoka County Airport facilities, and commercial uses. In a field inspection of the two corridors, 38 sites (receptors) were selected for detailed noise analyses. These sites were chosen as being representative of noise conditions in a given area

of relatively homogeneous land use. The chosen receptor location was normally the structure or activity center nearest the roadway. The noise susceptible homogeneous land use areas and the approximate receptor locations are shown in Figure 21.

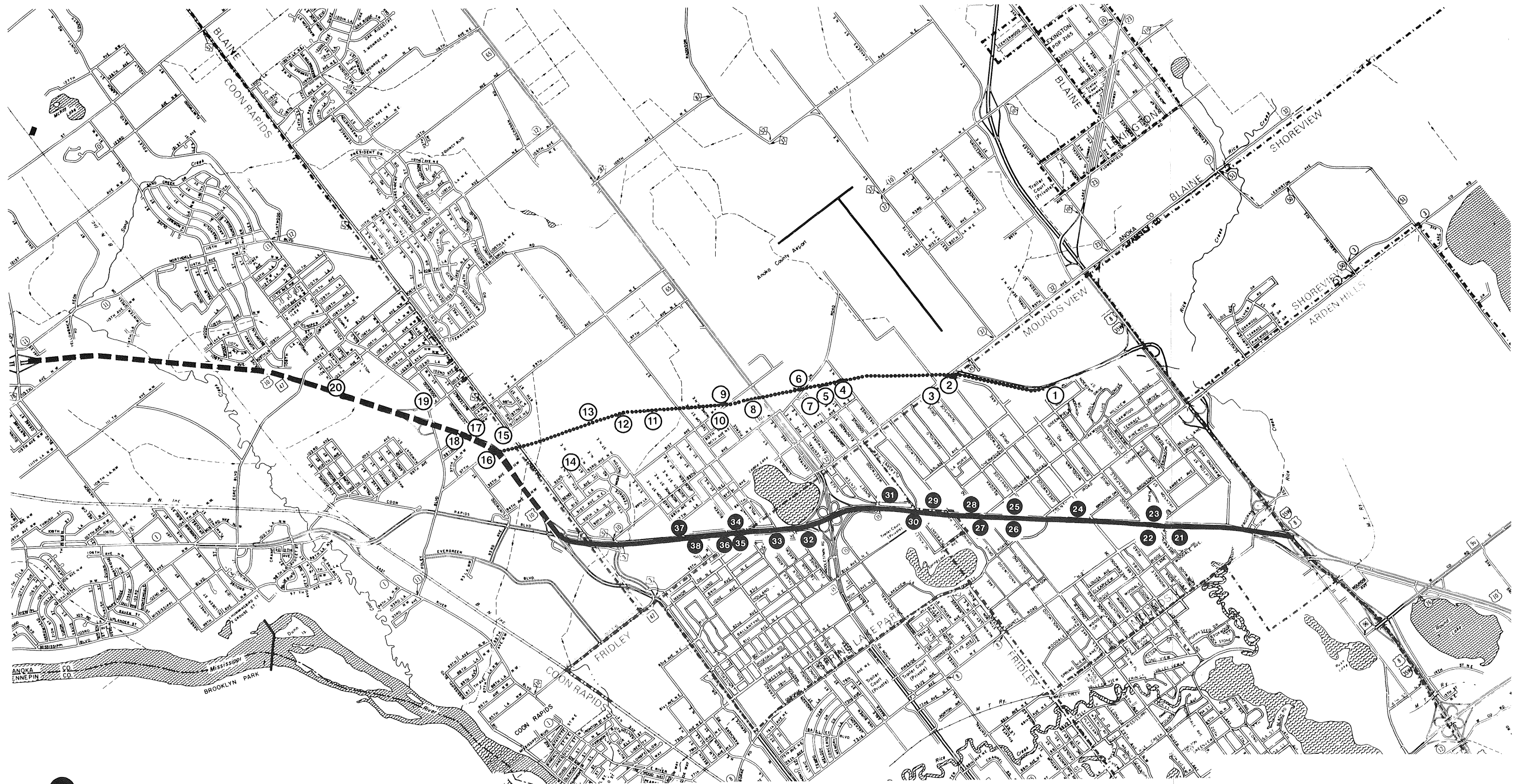
The noise regulations applicable to the proposed project are those established in FHPM 7-7-3, and the State of Minnesota in its Noise Pollution Control Regulations. Tables 17 and 18 describe the permitted noise levels under these regulations.

Existing Noise Levels

The existing noise levels at the receptors were determined by monitoring and/or using a highway noise prediction model. Noise monitoring was conducted at nineteen of the receptors on average weekdays between 9 A.M. and 3 P.M. Modeling of existing highway noise levels was performed for all but nine of the receptor sites. The nine sites excluded from this modeling were considered too remote from any existing major roadway (and thus, could not be satisfactorily estimated by a highway noise prediction method).

The highway noise prediction model used was the procedure described in National Cooperative Highway Research Program Report 174 (NCHRP Report 174) "Highway Noise - A Design Guide for Prediction and Control." This procedure which has been computerized, represents a revision of the previous procedures under NCHRP Reports 117 and 144. The input parameters for this revised modeling procedure include traffic volumes, traffic speeds, and the physical characteristics of the roadway and the surrounding area. The traffic volumes used in estimating existing highway noise levels were taken from traffic flow maps issued by the Minnesota Department of Transportation and by Ramsey County. The specific traffic conditions examined for existing conditions were the estimated 1977 Design Hourly Volumes of autos⁷ and trucks and the corresponding operating speeds.⁷ Predictions under these traffic

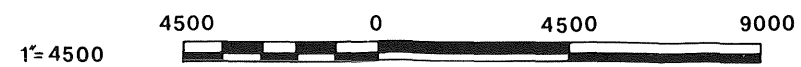
⁷ According to FHPM 7-7-3 for automobile traffic the lesser of the Design Hourly Volume or the maximum volume which can be handled under traffic level of service C conditions is to be used for predicting noise levels. For truck traffic the use of the Design Hourly Volume is recommended. For the proposed project the Design Hourly Volumes of automobiles is less than the roadway capacity at traffic level of service C conditions and therefore was used in this analysis.



-  UPGRADED T.H.10
-  ALTERNATIVE RECEPTORS
-  RELOCATED T.H.10
-  ALTERNATIVE RECEPTORS



(Approximate Scale)



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FIGURE 21
NOISE RECEPTOR
LOCATIONS

TABLE 17
DESIGN NOISE LEVEL/ACTIVITY RELATIONSHIPS--FHWA⁽¹⁾

Activity Category	Design Noise Level - L ₁₀	Description of Activity Category
A	60 dBA (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 dBA (exterior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, picnic areas, recreation areas, playgrounds, active sports areas and parks.
C	75 dBA (exterior)	Developed lands, properties or activities not included in categories A and B above.
D	n/a	Undeveloped lands.
E	55 dBA (interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals and auditoriums.

(1) FHPM 7-7-3, Figure 3-1

TABLE 18
NOISE LEVEL STANDARDS--MINNESOTA POLLUTION CONTROL AGENCY⁽¹⁾

Category	General Land Use Types	Daytime Noise Level	Nighttime Noise Level (10 PM to 7 AM)
NAC-1	Residential & Institutional	L ₁₀ of 65 dBA L ₅₀ of 60 dBA	L ₁₀ of 55 dBA L ₅₀ of 50 dBA
NAC-2	Commercial & Recreational	L ₁₀ of 70 dBA L ₅₀ of 65 dBA	L ₁₀ of 70 dBA L ₅₀ of 65 dBA
NAC-3	Industrial	L ₁₀ of 80 dBA L ₅₀ of 75 dBA	L ₁₀ of 80 dBA L ₅₀ of 75 dBA

⁽¹⁾ NPC-2 - Noise Standards; Adopted September 17, 1974.

conditions are anticipated to represent the existing noisiest hour. Table 19 presents the existing noise levels at the receptors.

Projected Noise Levels

The future (year 2000) noise levels at each of the receptors was predicted for the Relocated TH 10, Upgraded TH 10 and No-Build Alternatives using the previously described highway noise prediction model. Since detailed design/location plans have not been prepared for the alternatives being considered, the prediction of future noise levels was made assuming probable "worst case" conditions. Except for specific grade separated intersections, it was assumed the relocated or upgraded TH 10 would be at grade. For each alternative the roadway was assumed to be centered within the available right-of-way. The traffic conditions used are the anticipated year 2000 Design Hourly Volumes of autos and trucks (being less than Level of Service C capacity) and the corresponding average operating speeds. The traffic volumes were obtained from a computer analysis by the MnDOT Metropolitan Planning Section. The resultant year 2000 noise levels shown in Table 19 are considered to be the probable noisiest conditions under each alternative.

Probable Impacts Of Alternatives

The probable impact of each alternative was analyzed by comparing the year 2000 noise levels to the FHWA Design Noise Levels, the State of Minnesota Noise Level Standards (NPC-2) and the existing noise levels. The following describes the noise impacts of each alternative assuming special noise abatement measures are not provided.

Relocated TH 10. As anticipated, the introduction of traffic into the new TH 10 corridor will result in increased noise levels and some noise impacts. Under unshielded conditions, areas within 900 feet of the Relocated TH 10 centerline would experience peak hour L₁₀ noise levels in excess of 65 dBA and areas within 300 feet would experience peak hour L₁₀ noise levels in excess of 70 dBA. The diversion of traffic from existing arterial roadways to the relocated TH 10 will result in reduced noise levels on major paralleling routes. The year 2000 noise levels along existing TH 10 (east of University) would be below existing levels as a result of this alternative.

Upgraded TH 10. This alternative will result in increased noise levels along the existing TH 10 corridor. Under unshielded conditions, areas within approximately 300 feet of the roadway centerline would experience

peak hour L₁₀ noise levels in excess of 65 dBA and areas within 200 feet would experience levels in excess of 70 dBA.

No-Build Alternative. With this alternative traffic is still anticipated to increase along the existing TH 10. Thus, noise levels will also increase. The noise levels associated with this alternative would be almost identical to those for the Upgraded TH 10 alternative.

Measures to
Minimize Harm

The analysis of the three alternatives indicated noise levels in excess of both the MPCA Noise Level Standards and FHWA Design Noise Levels would occur at many receptors. Therefore, noise abatement measures will be provided. Typical methods for abating exterior highway noise include traffic management, elevation, or depression of the highway, noise barriers and land use controls. Modification of the receptor through soundproofing and air-conditioning is another method, although it will not affect exterior levels. Considered an extraordinary measure, it is used only when impacts are severe and when other methods are physically infeasible or economically unreasonable. These conditions are unlikely.

Analysis of the alternative abatement measures indicated that noise barriers are the most feasible for the Relocated TH 10 project. The projected noise levels with noise barriers are indicated in Table 19. Typically reductions of up to 15 dBA can be achieved by barriers. Except where local access to properties would require openings in barriers, (receptors 2,3,7 and 15) both the FHWA Design Noise Levels and the MPCA daytime Noise Level Standards can be achieved. There remains, however, some uncertainty as to whether the MPCA nighttime Noise Level Standards can be achieved even with typical noise abatement measures.

Much of the land adjacent to the project corridor is presently vacant and thus, no activities are impacted. However, these areas will undoubtedly develop. To assure that additional impacts from post-construction development are avoided requires the proper consideration of noise in the local planning and zoning of the area. The noise reports will assist the local municipalities in this effort by identifying future noise levels and land use/activities which are compatible with varying noise levels. This information can be used to prepare plans which place the most susceptible uses away from the highway and to utilize open space, structures or other less susceptible land uses as buffers or physical barriers.

TABLE 19
EXISTING AND FUTURE EXTERIOR NOISE LEVELS (DAYTIME)

Noise Susceptible Area/ Receptor Number	Predominant Land Use	Number of Structures or Activity Centers in Area	Assumed Receptor Location (Distances are from Roadway Centerline)	Applicable (3) FHWA L ₁₀ Design Noise Level	Applicable Daytime MPCA L ₁₀ Noise Level Standard		Existing L ₁₀ Noise Level in dBA		Future L ₁₀ Traffic Noise Level in dBA (Year 2000 - Predicted)													
									Relocated TH 10 Alternative				Upgraded TH 10 Alternative				No-Build Alternative					
									Without Noise Abatement		With Noise Abatement		Without Noise Abatement		With Noise Abatement (4)		Without Noise Abatement		With Noise Abatement			
									L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀	Type	L ₁₀	L ₅₀	L ₁₀	L ₅₀	Type
1	Residential	8 SF, (1) 2 MF (2) 19 mobile homes	150 ft. E of Edgewood Dr. 200 ft. S of Relocated TH 10	70	65	60	57	47	60	53	70	65	B (5)	65	60	61	59	N (5)	61	59	61	59
2	Residential	10 SF	40 ft. S of Co. Rd. J 40 ft. W of Eastwood Dr. 230 ft. S of Relocated TH 10	70	65	60	69	61	74	68	69	64	B	(6)	(6)	77	71	N	77	71	77	71
3	Residential	4 SF	50 ft. S of Co. Rd. J 90 ft. E of Red Oak Dr. 760 ft. S of Relocated TH 10	70	65	60	69	57	73	63	71	61	B	(6)	(6)	75	69	N	75	69	75	69
4	Residential	4 SF	50 ft. W of Hastings Av. 120 ft. S of Relocated TH 10	70	65	60	58	47	-(7)	-	76	71	B	65	60	-	-	N	-	-	-	-
5	Residential	6 SF	50 ft. W of Goodhue Rd. 370 ft. S of Relocated TH 10	70	65	60	50	45	-	-	69	65	B	65	60	-	-	N	-	-	-	-
6	Industrial	2 buildings	180 ft. N of Radisson Rd. 180 ft. N of Relocated TH 10	75	80	75	55	47	-	-	71	68	N	71	68	-	-	N	-	-	-	-
7	Residential	5 SF	250 ft. E of TH 65 850 ft. S of Relocated TH 10	70	65	60	61	54	68	65	70	65	B	(6)	(6)	70	66	N	70	66	70	66
8	Residential	3 SF 1 commercial building	210 ft. N of 89th Av. NE 620 ft. W of TH 65 550 ft. S of Relocated TH 10	70	65	60	56	52	62	59	68	65	B	65	60	64	60	N	64	60	64	60
9	Recreational	Ballfields	1400 ft. W of TH 65 360 ft. NE of Relocated TH 10	70	70	65	54	50	-	-	68	64	B	65	64	-	-	N	-	-	-	-
10	Residential	20 SF	40 ft. W of Pierce St. 200 ft. SW of Relocated TH 10	70	65	60	49	43	-	-	73	68	B	65	60	-	-	N	-	-	-	-
11	Recreational	Ballfield	275 ft. S of Relocated TH 10	70	70	65	43	40	-	-	71	67	B	65	65	-	-	N	-	-	-	-
12	Institutional	Westwood Jr. High School	175 ft. S of Relocated TH 10	70	65	60	45	41	-	-	73	69	B	65	60	-	-	N	-	-	-	-
13	Vacant	-	1060 ft. N of 83rd Av. NE 160 ft. N of Relocated TH 10	NA	NA (8)	NA	45	42	-	-	74	68	N	74	68	-	-	N	-	-	-	-
14	Residential	9 SF	220 ft. S of 94th Av. NE 460 ft. S of Relocated TH 10	70	65	60	52	48	-	-	67	63	B	65	60	-	-	N	-	-	-	-
15	Residential	2 MF, 4 SF, 1 church	50 ft. N of 97th Av. NW 360 ft. W of University Av. 450 ft. E of Relocated TH 10	70	65	60	56	53	61	54	69	60	B	(6)	60	64	60	B	64	60	64	59
16	Residential	6 SF	40 ft. S of 97th Av. NW 270 ft. W of TH 47 260 ft. W of Relocated TH 10	70	65	60	69	64	69	63	69	61	B	65	60	71	65	B	65	60	71	65
17	Residential	8 SF 1 church	30 ft. E of Cottonwood Dr. 260 ft. S of 99th Av. NW 250 ft. NE of TH 47/TH 10	70	65	60	64	59	63	58	73	68	B	65	60	65	61	B	65	60	65	61

(1) SF = Single Family
(2) MF = Multi-family
(3) L₁₀ = Noise level exceeded 10 percent of the time during the anticipated noisiest hour.
(4) Detailed barrier design has not been performed and therefore the levels shown with abatement are the maximum acceptable. Actual noise levels will be equal to or less than those indicated with abatement.
(5) B = Barrier
(6) N = None
(7) More detailed analysis is required to determine if it is feasible to achieve the MPCA Standards.
(8) - Traffic noise levels could not be predicted since no major highway is located in the site vicinity.
(8) NA = Not Applicable

TABLE 19 (Continued)
EXISTING AND FUTURE EXTERIOR NOISE LEVELS (DAYTIME)

Noise Susceptible Area/ Receptor Number	Predominant Land Use	Number of Structures or Activity Centers in Area	Assumed Receptor Location (Distances are from Roadway Centerline)	Applicable FHWA L ₁₀ Design Noise Level ⁽³⁾	Applicable Daytime MPCA L ₁₀ Noise Level Standard		Existing L ₁₀ Noise Level in dBA		Future L ₁₀ Traffic Noise Level in dBA (Year 2000 - Predicted)													
					L ₁₀	L ₅₀ ⁽³⁾	L ₁₀	L ₅₀	Relocated TH 10 Alternative		Future L ₁₀ Traffic Noise Level in dBA (Year 2000 - Predicted)				Future L ₁₀ Traffic Noise Level in dBA (Year 2000 - Predicted)				No-Build Alternative			
									Monitored	Predicted	Without Noise Abatement		With Noise Abatement		Without Noise Abatement		With Noise Abatement					
					L ₁₀	L ₅₀ ⁽³⁾	L ₁₀	L ₅₀	L ₁₀	L ₅₀	L ₁₀	L ₅₀	Type	L ₁₀	L ₅₀	L ₁₀	L ₅₀	Type	L ₁₀	L ₅₀	L ₁₀	L ₅₀
18	Residential	7 SF	140 ft. N of 99th Av. NW 160 ft. SW of TH 47/TH 10	70	65	60	71	65	72	66	75	72	B	65	60	74	71	B	65	60	74	70
19	Residential	12 SF	140 ft. NW of Foley Blvd. 100 ft. N of Westbound Ramp 550 ft. NE of TH 47/TH 10	70	65	60	66	58	68	60	66	63	B	65	60	66	63	B	65	60	71	64
20	Residential	17 SF	40 ft. E of Kumquat St. 160 ft. S of 105th Lane 310 ft. NE of TH 47/TH 10	70	65	60	62	57	64	60	70	66	B	65	60	70	66	B	65	60	67	63
21	Residential	16 SF	370 ft. S of Existing TH 10	70	65	60	59	50	62	56	58	53	N	58	53	63	60	B	63	60	63	59
22	Residential	6 SF	480 ft. S of Existing TH 10	70	65	60	58	50	61	54	57	52	N	57	52	61	58	B	61	58	62	57
23	Residential	8 SF	160 ft. N of Existing TH 10	70	65	60	68	60	71	64	65	61	N	65	61	71	66	B	65	60	72	66
24	Commercial	1 building	250 ft. N of Existing TH 10	75	70	65	64	57	66	61	62	56	N	62	56	67	63	B	67	63	67	63
25	Commercial	4 buildings	120 ft. N of Existing TH 10	75	65	60	70	62	70	64	65	58	N	65	58	71	66	B	65	60	71	66
26	Residential	3 SF	160 ft. S of Existing TH 10	70	65	60	64	57	70	64	65	58	N	65	58	NA ⁽⁸⁾	NA	NA	NA	NA	71	66
27	Residential	12 SF	140 ft. N of Existing TH 10	70	65	60	67	59	71	65	68	62	N	68	62	72	67	B	65	60	71	67
28	Residential	12 SF	280 ft. S of Existing TH 10	70	65	60	57	53	62	58	60	55	N	60	55	64	60	B	64	60	63	59
29	Residential	9 SF	330 ft. N of Existing TH 10	70	65	60	56	49	60	56	58	53	N	58	53	62	58	B	62	58	61	57
30	Residential	30 mobile homes	180 ft. S of Existing TH 10	70	65	60	66	60	69	64	66	60	N	66	60	71	66	B	65	60	70	65
31	Residential	6 SF 17 mobile homes	310 ft. N of Existing TH 10	70	65	60	65	56	69	60	62	57	N	62	57	67	64	B	65	60	66	62
32	Residential	1 church 2 SF	190 ft. S of Existing TH 10		65	60	65	55	69	62	65	59	N	65	59	70	66	B	65	60	70	66
33	Residential	4 SF	330 ft. S of Existing TH 10	70	65	60	56	52	67	56	57	52	N	57	52	61	58	B	61	58	61	57
34	Residential	7 SF, 1 library 1 church, 4 commercial	170 ft. N of Existing TH 10	70	65	60	66	61	69	64	66	60	N	66	60	71	67	B	65	60	72	65
35	Residential	10 SF	270 ft. S of Existing TH 10	70	65	60	63	58	66	62	65	59	N	65	59	69	65	B	65	60	69	64
36	Commercial	6 buildings	120 ft. S of Existing TH 10	75	70	65	68	59	71	65	69	63	N	69	63	74	70	B	70	65	74	68
37	Residential	3 SF	420 ft. N of Existing TH 10	70	65	60	59	53	57	54	56	51	N	56	51	60	57	B	60	57	60	55
38	Residential	10 SF	220 ft. S of existing TH 10	70	65	60	65	57	68	63	65	61	N	65	61	70	66	B	65	60	70	65

(1) SF = Single Family
(2) MF = Multi-family
(3) L₁₀ = Noise level exceeded 10 percent of the time during the anticipated noisiest hour.
(4) Detailed barrier design has not been performed and therefore the levels shown with abatement are the maximum acceptable. Actual noise levels will be equal to or less than those indicated with abatement.
(5) B = Barrier
(6) N = None
(7) More detailed analysis is required to determine if it is feasible to achieve the MPCA Standards.
(8) - Traffic noise levels could not be predicted since no major highway is located in the site vicinity.
(8) NA = Not Applicable

According to FHWA Policy (and similar pending MnDOT policy), noise abatement measures will not be provided for lands which are undeveloped on the date of public knowledge of the proposed highway project except where (1) they have been planned, designed, and programmed before the highway studies (and have been only temporarily delayed) or (2) where the development is planned, designed, and programmed during the highway project planning and design; there is a high probability of its construction and the developer has considered the noise impacts to the extent reasonable and practicable. At present no lands meeting either of these two criteria have been identified.

Coordination with Local Officials

The "Preliminary Noise Analysis Report" will be furnished to federal, state, regional and local officials as well as made available to the general public for inspection. Comments received on the Preliminary Noise Analysis Report as well as the draft EIS will be reviewed and where desirable, incorporated into the preliminary design plans for the selected alternative and into the final EIS. Public input (i.e. citizens and municipalities) will be used in the development of the noise abatement plans. The comments will provide input into the "Final Noise Analysis Report" which will also be furnished to local municipalities having jurisdiction along the selected alignment.

MnDOT 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. Additional copies are available upon request.

Proposed plats for land adjacent to all Minnesota State Highways are submitted to the department for review prior to plat approval. When a 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.

Summary

Preliminary analysis indicates that (with noise abatement measures) achievement of the MPCA daytime noise standards is feasible for most locations along either the Relocated TH 10 or Upgraded TH 10 alignment. The No Build Alternative results in levels exceeding the MPCA daytime standards for most locations along the existing TH 10 alignment. Achievement of the MPCA nighttime noise standards

may be difficult (even with noise abatement) for most receptors along the alignments of either the Relocated TH 10 or Upgraded TH 10 alternative. Most receptors along the existing TH 10 alignment will experience nighttime noise levels in excess of the State standards for the No Build Alternative. The "Preliminary Noise Analysis Report" contains more complete information and is available upon request.

CONSTRUCTION

Impacts

The construction of the proposed action would have a number of impacts associated with it. Most of these impacts would be temporary in nature and would terminate with the completion of the facility. The impacts would be temporary air, noise and water pollution, erosion during construction, traffic management during construction including detours and bypasses, mixing plant operations and borrow pit areas outside the right-of-way.

Proposed Mitigation Air, Noise, Water Pollution and Erosion Controls

The MnDOT Standard Specifications for Highway Construction provides controls over the contractor's construction operations. This document can be augmented by special provisions to the contract to provide additional controls relating to the prevention of air, noise and water pollution and erosion control.

Air and noise pollution by construction equipment will be subject to the standards established by the Minnesota Pollution Control Agency, and applicable federal agencies.

Water pollution and erosion will be controlled by monitoring the contractor's progress and limiting the amount of surface area of erodible earth exposed by his operations. Examples of these operations are cleaning out grubbing, excavation, borrow and embankment, grading, paving, and revegetation work. Once the side slopes are shaped, immediate revegetation of these slopes will commence by sodding, seeding or ground cover and a mulch placed to limit erosion and thus, water pollution.

Some temporary measures may also be used for erosion control such as slope drains, dikes, sediment basins, and temporary quick-growing grasses which will provide temporary cover, but will not compete with permanent grasses later.

During construction, polluting materials such as gasoline, oil and hydraulic fluids will be stored in areas which will not allow spills to reach streams or storm water collection systems.

Traffic
Management

Construction of the proposed action will cause some disruption to the local traffic patterns. Obviously, the no-build alternative will not have a traffic management impact.

The Relocated TH 10 alternative will have a traffic management advantage as the only significant area of impact would be where TH 10 junctions with TH 47. Otherwise, the construction of the new facility would be assisted by the fact that construction traffic can use the existing TH 10.

The upgrading of existing TH 10 alternative would have to provide either an alternate route for traffic via detours or a bypass during construction or maintain traffic under construction conditions. This alternative would obviously require a traffic management plan which would be incorporated into the contract special provisions.

Mixing Plant
Operations

Any mixing plants which would be required for construction materials would be required to meet local, state and federal pollution requirements. Since this is a metropolitan area project, it is likely that existing plants in the area would supply these materials and these plants require a state certification.

Borrow Pit
Treatment

The construction of the proposed action may require fill materials from a site outside of the construction limits (a borrow pit). Should a borrow pit be used, and once it is no longer used, the site shall be restored including shaping, replacement of topsoil and revegetation and all disturbed areas.

SECONDARY IMPACTS

The proposed action will have secondary effects on the area beyond the immediate corridor. With the improved facility the travel through the study area will be safer and faster. However, with the increase in access control there will be some induced alterations in existing conditions which will result in secondary impacts.

Induced Growth

Development pressure on those areas near the improved facility would increase. This would probably first occur near the interchanges and eventually reach throughout the study area as well as those areas adjacent to the study area. This induced growth may affect the land uses in this area. Thus, the initiation of proper land use controls will be necessary to control this pressure. The study area communities and the Metropolitan Council are prepared to control the growth the proposed action would induce. The impacts that would result from induced growth would be similar to those that construction of the proposed action would cause and are addressed in this Draft Environmental Impact Statement. However, not building the proposed action will not eliminate the eventual impacts of development. The major affect of the proposed action would be to accelerate when this development would occur.

Impacts to Local Agencies Street and Highway Systems

The influence of the construction of the proposed action as local city and county street systems is also a Secondary Impact. Since the construction alternatives of the proposed action deal with controlled access along the corridor, access to the proposed action will be limited. Therefore, there will be some adjustment in local traffic patterns and circulation which will direct vehicles to the interchanges or access points. This issue of traffic circulation as it relates to the proposed action will be dealt with as each of the cities and counties which the corridor passes through, prepare their Comprehensive Plans (or updates) as required by Minnesota State Law in the Metropolitan Land Planning Act. This act was addressed in Section IV, Land Use Planning, of this Draft Environmental Impact Statement.

Not constructing the proposed action would place an increased traffic burden on the existing Trunk Highway 10 facility. As the No-Build Alternative becomes more congested it will result in reduced assessibility and a loss of service to the area which will also require consideration in the future planning of the area communities and counties.

SECTION VII
PROBABLE ADVERSE IMPACTS WHICH CANNOT BE AVOIDED.

After the incorporation of mitigating measures during the design study for the proposed action, a number of impacts will remain. The purpose of this section of the DRAFT EIS is to state these impacts which are determined to be partially or totally unavoidable after efforts at mitigation have occurred.

RELOCATION

The social impacts of relocation, such as disruption of family life, will remain even though property owners have been reimbursed financially for their losses. Some unquantifiable economic impacts will also remain for owners of commercial property due to the disruption of their plans and priorities.

REDUCTION OF
TAX BASE

The proposed action will mean that land used will be permanently removed from the tax roles of local municipalities.

TERRESTRIAL
VEGETATION AND
WILDLIFE

From 80 to 180 acres of existing vegetation will be removed. As wildlife habitat, the existing vegetation varies in quality from low to very high. Because replacement vegetation will, at best, be of an intermediate value to wildlife, there will be an unavoidable reduction in wildlife populations in the local area.

AESTHETICS

The proposed action will remain a visual intrusion. Post construction landscaping will not fully mitigate the loss of existing natural features, vegetation and wildlife.

NOISE

There will be an unavoidable increase in noise levels due to the proposed action. Without very extensive mitigating measures, noise levels will, in some instances, exceed State and Federal Standards.

AIR QUALITY

No State or Federal standards will be exceeded, even without mitigation.

WATER QUALITY

Salt will be discharged to receiving waters varying in quality from low to high. A shift in the composition of aquatic vegetation to more salt tolerant species will occur in the higher quality receiving waters.

**EXPENDITURE OF
PUBLIC FUNDS**

Implementation of the proposal will require an expenditure of at least 13.4 million dollars of public funds that theoretically could be used for other purposes.

**CONSTRUCTION
DISRUPTIONS**

During the estimated three-year construction period there will be unavoidable disruption of existing traffic patterns resulting in delays and detouring of traffic along with dust and noise due to construction.

SECTION VIII

SHORT-TERM USES VS. LONG-TERM PRODUCTIVITY

This section considers the extent to which the immediate effects of the proposed action enhance or foreclose options for environmental gains at some future time.

LAND USE

The major immediate effects are related to the use of land. Use of the land for a highway facility will reduce or eliminate the potential for other land uses which either exist now or could exist in the future. Existing land uses include residential and commercial development which will need to be relocated, wildlife habitat which will be reduced on a permanent basis and farm lands which will no longer produce food and fiber. The gains or benefits attained are based on the overall needs for the facility which would be satisfied by the proposed action. The needs, as identified in the Draft EIS, have been determined from the regional and local objectives for orderly growth in an urban area. The proposal, therefore, is to "trade off" the present uses for a use which is considered more supportive of orderly growth and, as a result, more productive over the long term.

FINANCIAL RESOURCES

Major short-term financial commitments are necessary due to the proposed action. Directly, acquisition, relocation and construction costs will be paid from public funds. Indirectly, the tax base of the local communities will be reduced. The trade off here is the anticipated long-term gains resulting from lower user costs (reduced travel time and operating expense), lower highway maintenance costs, lower costs attributable to traffic accidents, and indirect savings because of more orderly development patterns.

SECTION IX
IRREVERSIBLE AND IRRETRIEVABLE COMMITMENTS OF RESOURCES

LAND	All land necessary to implement the proposed action, including right-of-way for travel lanes and interchanges will be irreversibly committed.
DISPLACES CULTURAL RESOURCES	All residences, businesses, utilities and other public facilities that are required to be relocated are considered to be irreversibly and irretrievably committed.
NATURAL RESOURCES	The proposed action will irretrievably commit a minimum of 85% of the existing trees, forage areas and animal habitat, located within the proposed right-of-way.
MANPOWER AND MATERIALS	The manpower, fuel and construction materials used in the design, construction and maintenance of the facility, will be irretrievable.
FUNDS	Funds to design, construct and maintain the freeway will be committed.

SECTION X COORDINATION

INTRODUCTION

This section of the Draft EIS contains initial correspondence and coordination with various agencies who will be requested to comment on the Draft EIS. The comments of these agencies will continue to be considered during the planning and design phases of this proposed action. Many of the comments from the following correspondence were addressed in preceding sections of this Draft Environmental Impact Statement. However, for those items which were not responses follow on attached sheets following the relative correspondence.



United States Department of the Interior

FISH AND WILDLIFE SERVICE

IN REPLY REFER TO:

Mpls. Field Office (Ecological Services)
Federal Bldg., Fort Snelling, Room 440
Twin Cities, Minnesota 55111

MFO

March 23, 1977

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

Dear Mr. Eilts:

Thank you for the Project Development Report for the proposed new Trunk Highway 10 in Anoka and Ramsey Counties, Minnesota, S.P. 6243-01 and S.P. 0214-01. This project was examined for its conformance with the National Environmental Policy Act of 1969 (P.L. 91-190, 83 Stat. 852), and Section 4(f) of the Department of Transportation Act (P.L. 89-670, 80 Stat. 931). Our review included a field inspection of the proposed corridor with DOT representatives on March 15, 1977.

The proposed action would involve the construction of a new major highway from Egret Boulevard in Coon Rapids to Interstate 35W in Mounds View. The proposed new alignment, with its 300-foot wide corridor from University Avenue to Anoka County Road J, would traverse a predominantly undeveloped area containing various Types II, III and VI wetlands (U.S. Fish and Wildlife Service Circular 39). During the field inspection, a number of possible slight alignment changes were discussed with the project manager to avoid or minimize encroachment into as many of these wetland areas as possible. It appears that the two Type III wetlands and most of the Type II wetlands can be avoided.

The wildlife areas of major concern are the two Type VI shrub swamps traversed by the proposed corridor. Both of these areas provide excellent habitat and winter cover for deer, pheasants and other wildlife species in this area. However, since the proposed corridor would pass through the extreme southern edge of these shrub swamps and are near residential areas, it appears to be the most environmentally sound route available.

Based on our March 15, 1977, field review, the U.S. Fish and Wildlife Service offers the following recommendations to minimize project impacts on fish and wildlife resources:

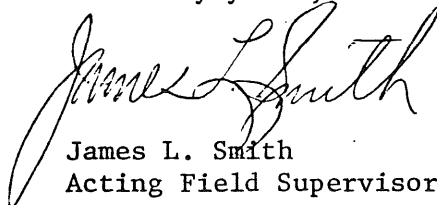


1. Shift the alignments slightly to the north to avoid the Type III wetland southeast of Raddison Road.
2. Shift the alignment slightly to the south to avoid the larger Type II wetland just east of T.H. 65.
3. Avoid encroachment into Aquator Park.
4. Avoid encroachment into the Type III wetland just east of University Avenue. (It appears that the proposed corridor would not affect this wetland.)
5. Stay as far south as possible through the Type VI shrub swamp just east of Polk Street and the Type VI shrub swamp east of University Avenue.
6. Avoid encroachment into Palm Olive Park south of Egret Boulevard.
7. Construct an interchange at County Road J rather than at the proposed Anoka County Airport Road. We also recommend that an interchange not be constructed at Polk Street. In our judgment, an interchange at Polk Street is not necessary. It would also increase accessibility, development and the potential loss of adjacent wetlands and other wildlife habitat in this area.

We understand that the draft Environmental Impact Statement is being prepared and should be completed sometime this fall. We suggest that these recommendations be included and properly addressed in the draft EIS. We also suggest that other alternative routes (such as along existing T.H. 10) be adequately considered and discussed in the draft.

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

Sincerely yours,


James L. Smith
Acting Field Supervisor

WM Crawford
C.P. Kachelmyer
R. Borson - L. Hill -
A H Hultine
B.E. McCarty



STATE OF
MINNESOTA
DEPARTMENT OF NATURAL RESOURCES

CENTENNIAL OFFICE BUILDING • ST. PAUL, MINNESOTA • 55155

March 29, 1977

DNR INFORMATION
(612) 296-6157

Leonard G. Eilts
Design Engineer
Minnesota DOT
Transportation Building
St. Paul, MN 55155

RE: 330, PDR FOR SP 0214-01 and
6243-01, TH 10 in COON RAPIDS,
BLAINE, MOUNDSVIEW

Dear Mr. Eilts:

The Department of Natural Resources has reviewed the above referenced Project Development Report and has several concerns regarding the proposal.

Our primary concern is that this project represents a proliferation of transportation corridors in the area, the new roadway being less than a mile from the existing four-lane roadway. It would seem prudent to give strong consideration to upgrading the present roadway rather than to establish another corridor so nearby. Proliferation of corridors is not only poor land use generally, but is particularly detrimental to natural resources and contributes to often-undesirable associated developments.

We are particularly concerned with this project because it will affect nearly 300 acres of wetlands and will probably destroy directly at least 15 to 20 acres of wetlands. A breakdown of wetland areas in the corridor area is as follows:

Type I - II	1 area; 14 acres
Type II - III	1 area; 37 acres
Type III	1 area; 16 acres
Type III - IV	2 areas; 5 and 14 acres
Type VI	3 areas; 9, 100 and 108 acres

In addition, two areas (one east of TH 65 and one at Egret street) were not typed (see attached map).

All these areas provide good wildlife habitat except the Type I - II which is fair. Wildlife species expected to be present include deer, pheasant, waterfowl, rabbit, raccoon, fox, songbirds, hawks, owls and various small mammals. Wildlife habitat such as provided by these areas is being lost throughout the metropolitan area to all kinds of development, including highways. While not all of these wetlands would necessarily be preserved if the highway were not built, some hopefully would be retained as open space in residential areas.

PDR 0214-01 and 6243-01
March 29, 1977
page 2

We feel that the two Type III - IV wetlands just west of the Anoka County Airport should be preserved, and that mitigation should be provided for the other wetlands lost.

The two stream crossings, Pleasure Creek and Spring Brook (County Ditch 17), are Type VI shrub swamps which provide excellent habitat for the species of wildlife previously mentioned. The streams themselves have been previously ditched and appear to provide habitat mostly for minnows and serve as possible avenues for norther pike spawning runs.

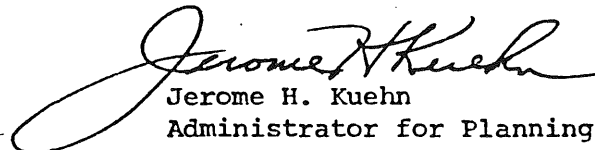
Efforts should be made to minimize runoff containing nutrients and pollutants which will adversely effect other adjacent wetlands.

The Draft EIS should thoroughly explore mitigative measures and alternative alignments as well as the impact on existing wetlands.

We realize that this project is part of the proposed Northtown Corridor, but it would appear that this portion of the project is not an indispensable part of the overall project. An upgraded TH 10 in the present location could tie into the remaining portion of the Northtown Corridor and serve virtually the same purpose.

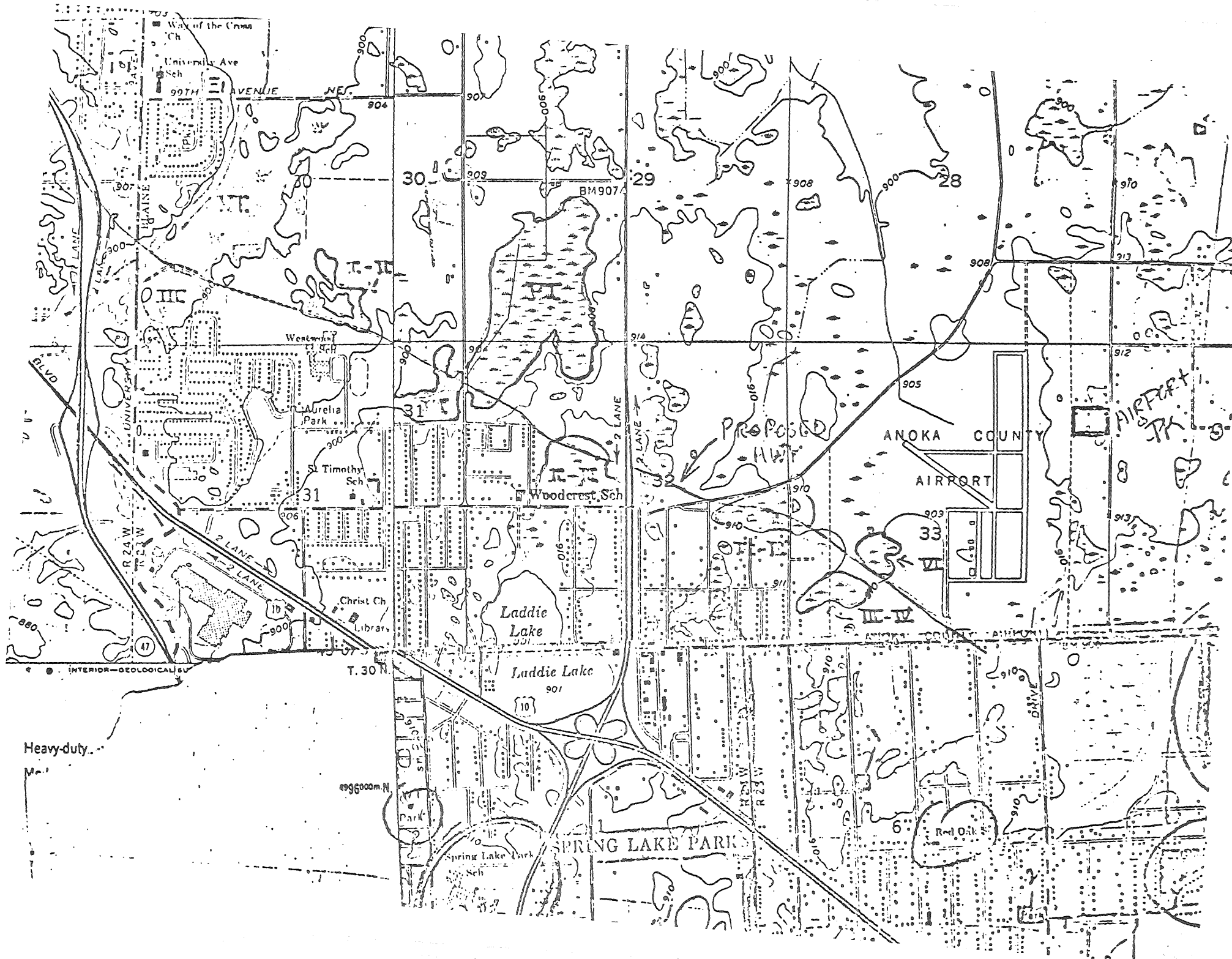
We hope that these comments will be helpful in the planning of this project and in the development of the environmental impact statement.

Sincerely,


Jerome H. Kuehn
Administrator for Planning

JHK: da

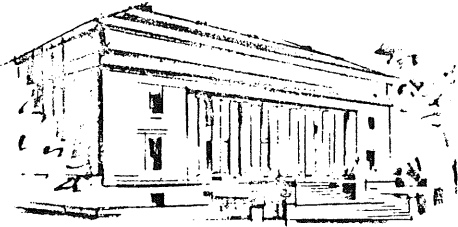
cc: Richard Myshak
Don Carlson
Larry Seymour
Oliver Jarvenpa
Milt Krona
L.A. Korth
L.G. Eilts
W.M. Crawford
R. Borson-L. Hill
R.M. Hill
A.H. Multine
Public Hearing File
File



Heavy-duty...

M...

5000m N



MINNESOTA HISTORICAL SOCIETY

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

14 June 1977

Mr. C.P. Kachelmyer
Preliminary Design Engineer
Room 612E
Highway Building
St. Paul, Minnesota 55155

Dear Mr. Kachelmyer:

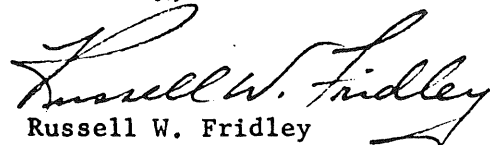
RE: S.P. 0214-01 (T.H. 10)
From I-35 in Mounds View
To Egret Blvd. in Coon Rapids
Ramsey and Anoka Counties

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 known sites of historic, architectural, cultural, or archaeological significance within the proposed project area. However, there is reason to believe that such sites may exist in the area. To determine their existence, their eligibility to the National Register, and the possible effect on them from your proposed activity, the project area will be surveyed in the coming field season. The survey will be conducted under the Trunk Highway Archaeology Program of the Minnesota Historical Society.

Thank you for your continued close attention to historic and prehistoric values in your planning process.

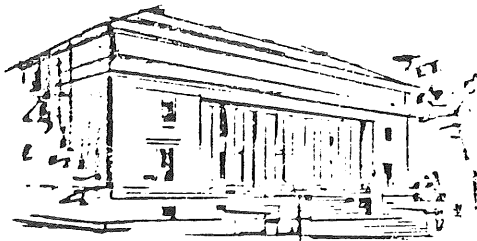
Sincerely,


Russell W. Fridley

State Historic Preservation Officer

RWF/fr

MN/DOT → 330



Recommend FHWA concurrence *JD*

Date *11/24/78*

MINNESOTA HISTORICAL SOCIETY

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

November 15, 1978

COPIES:

- D.H. Differt-R. McAtee
- W.M. Crawford-D. Brown
- J.S. Katz
- R.D. Borson ✓
- A.H. Hultine-H. Legler
- D.A. Haukebo
- R.A. Elasky
- C.P. Kachelmyer
- File

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

Dear Mr. Kachelmyer:

Min Proj F031-1()
 RE: SP 0214-01 (TH 10)
 From I-35W in Mounds View
 to Egret Blvd. in Coon Rapids
 Ramsey & Anoka Counties, Minnesota

MHS Referral File Number D428

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
 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.

James E. St. John
 District Engineer

For E. Dean Carlson
 Division Administrator

11/24/78
 Date



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

MAY 5 1978

Detention
Shroud

REPLY TO
ATTENTION OF:
NCSCO-GR(SF 77-110)

3 MAY 1978

Mr. Frederick Behrens
U.S. Department of Transportation
Federal Highway Administration
Suite 490, Metro Square Building
St. Paul, Minnesota 55101

Dear Mr. Behrens:

Thank you for your 10 March 1978 letter forwarding preliminary copies of the Draft Environmental Impact Statement (DEIS) for the proposed New Trunk Highway 10 in Anoka County.

Following are our comments concerning this DEIS.

1. Pages 83-86 - Wetland impacts for all alternatives should be summarized in a table. This table should list the number of acres of each type of wetland that would be filled for each alternative.
2. Pages 83-86 - Figure 11 should identify the wetlands that are subject to Corps of Engineers requirements to obtain permits for fill.
3. Page 122 - Other possible impacts of using salt as a highway de-icing compound should be considered, including possible adverse impacts to utility structures, to public health via the water supply, and to vehicles.

Sincerely,

Ben Wozniak

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

UNITED STATES DEPARTMENT OF AGRICULTURE

SOIL CONSERVATION SERVICE

Noon Building - 524 East Main Street
Anoka, Minnesota 55303

May 19, 1978

Mr. Daniel J. Lutenegger
Barton-Aschman Associates, Inc.
1610 South Sixth Street
Minneapolis, Minnesota 55404

Dear Mr. Lutenegger:

I have reviewed the anticipated right-of-way requirements for T. H. 10 with regard to any prime or unique farmlands in Anoka County.

The area delineated on the photograph is highly urbanized. There is very little agricultural activity in the anticipated right-of-way.

My findings are as follows:

1. There is no prime agricultural land in the area.
2. There are approximately 100 to 120 acres of "unique" farmland actively being farmed at this time. The crops are sod and vegetables, which are high intensity and value crops. This area is north of 99th Avenue and south of Territorial Road, adjacent to Pleasure Creek. The land is in Sections 19 and 30.

The soils are primarily Millerville mucky peat and some Markey muck. Millerville consists of nearly level, very poorly drained soils formed in organic soil material and lininic material. Markey muck consists of nearly level, very poorly drained soils formed in organic soil material overlying sands.

This farmland is approximately $\frac{1}{2}$ mile north of the proposed relocated T. H. 10.

3. There are approximately 200 acres of general type farming on other areas in the proposed right-of-way. This is on primarily Zimmerman fine sand soils. These are excessively drained soils



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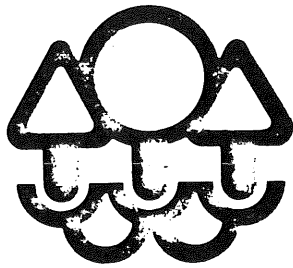
formed in outwash sands. Such soils are poorly suited to corn and soybeans and moderately well suited to alfalfa due to droughtiness and low organic matter content.

I hope the information provided is useful. If I can be of further assistance, please contact me.

Sincerely,

A handwritten signature in dark ink, appearing to read "Bill Vidrine", is written over the typed name.

Bill Vidrine
District Conservationist



Minnesota Pollution Control Agency

(612) 296-7301

May 30, 1978

Mr. Jim Harrington
Commissioner
Minnesota Department of Transportation
Transportation Building
John Ireland Boulevard
St. Paul, MN 55155

Attention Jim Halvorson

Dear Mr. Harrington:

Subject: 702
S.P. 0214-01
New Trunk Highway 10
Air Quality Report

The staff of the Division of Air Quality has reviewed the Air Quality Report on New Trunk Highway 10 and finds the level of detail and methodology appropriate for the project. The analysis is sufficient to indicate that neither upgrading existing TH 10 nor relocating a new TH 10 will cause violations of Minnesota ambient carbon monoxide standards for the nine receptors analyzed. The corridorwide additions of CO, HC, and NO_x are less from Upgraded TH 10 than from Relocated TH 10.

The project is not inconsistent with the transportation control plan of the 1973 State Implementation Plan because the SIP addressed control strategies for the Minneapolis CBD. Recently, the entire Metropolitan Area has been designated 'nonattainment' for particulates, sulfur dioxide, photochemical oxidants (which HC and NO_x contribute to), and carbon monoxide. The Metropolitan Council, with the assistance of this Agency, is revising the transportation control plan of the State Implementation Plan to reduce carbon monoxide and hydrocarbon emissions from transportation sources. At this time, however, it does not appear that there will be control strategies that will specifically involve the new TH 10 project.

Mr. Jim Harrington
Page 2

The staff has the following additional comments:

1. A receptor near the intersection of TH 10 and Co. Rd. H should be analyzed. This appears to be a critical receptor with traffic congestion occurring during afternoon rush hour and a gas station and fast food restaurants, places where people are likely to be. 1
2. The total burden analysis for CO, HC, and NO_x should be done for the entire seven-county area as well as for the corridor. This was done in the recent Osseo Bypass Air Quality Report.
3. The total burden analysis should include a current base year.
4. The report should be forwarded to the Metropolitan Council, Environmental Planning, for their comments, in light of the Council's recent designation by Governor Perpich as lead agency for transportation related air quality planning.

Thank you for the opportunity to comment on the project. Please contact Brad Beckham at 296-7265 if there are any questions.

Sincerely,



Sandra S. Gardebring
Executive Director

SSG/JS/rg

cc Loren Hill, Golden Valley Dist., Mn/DOT
Jim Shrouds, FHWA
James Book, Barton Aschman Associates, Inc.
Lynne Takemoto, Metropolitan Council

Response to MPCA Letter

1. A receptor near the intersection of TH 10 and County Road H was considered. However, since the traffic volumes are the same as at the signaled intersection of County Road H-2 and TH 10 which is east of the County Road H and TH 10 intersection, it was determined that the readings would be similar for all alternates. This receptor at County Road H-2 and TH 10, labeled Receptor 9, on Figure 20 of this Draft Environmental Impact Statement, also indicates that the readings are well within the standards. Thus the additional receptor analysis is not required.

JUN 30 1978¹⁹⁷⁸

Mr. Harry A. Reed
Deputy Commissioner
Bureau of Policy and Planning
Minnesota Department of Transportation
Transportation Building
St. Paul, Minnesota 55155

Dear Mr. Reed:

I am providing below the U.S. Environmental Protection Agency's comments on the Air Quality Report and the Preliminary Noise Analysis Report for New Trunk Highway 10, Anoka and Ramsey Counties, Minnesota, which were forwarded to us on March 27, and May 12, 1978, respectively.

Air Quality Report

The area where the proposed New Trunk Highway 10 is located has been classified as non-attainment for oxidants. Hydrocarbon emissions are essential to the formation of oxidants. The use of New Trunk Highway 10 will cause an increase in total hydrocarbon emissions. The recent Clean Air Act Amendments require the achievement of clean air by 1982 with a possible extension to 1987, and the increase in hydrocarbons may jeopardize the attainment of this goal. In order for us to assess the severity of the increase, we request that in addition to the total pollutant burden analysis for the year 1990, total pollutant burden analysis be provided for the year of anticipated completion, and five years after completion.

Noise Analysis Report

We need to have additional information in order to assess adequately which route will have the greatest impacts upon the people in the community. Table 3 includes information on the present noise levels, which are tabulated as either ambient (measured) or predicted. Some of the receptor points have ambient levels, others have predicted levels, and others both. In order to provide a basis for comparison, all the receptor sites should use the same method to establish present noise levels.

The noise report indicates noise levels at several receptor sites will increase regardless of which alternative is selected. When noise predictions are made, we recommend that future noise levels at the receptor sites be estimated for all alternatives.

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The last paragraph on page 16 continuing to page 17 indicates receptor locations whose noise levels are influenced by the existing road network. The inclusion of this information in this section gives the impression that the noise levels at these receptor sites will be more severely impacted by the new location alternative. Increased noise levels will not necessarily occur only if the new location route is selected, since five of the seven receptor sites are common to all three alternatives.

The noise analysis report gave the impression that noise barriers will be included as part of the project. When the Draft Environmental Impact Statement (EIS) is prepared, it should be stated definitely whether or not barriers will be included. The discussion of the cost of a depressed roadway on a new location should be included.

One method to reduce noise levels was to restrict truck traffic. This alternative was eliminated due to increase costs to truck users. This alternative should be investigated further, especially for a nighttime restriction. The number of trucks which presently use or would use the facility during a 24 hour period and from 10 p.m. to 7 a.m. should be determined.

We appreciate the opportunity to review these two reports. If you or your staff have any questions in regard to our comments, please contact Mr. William D. Franz at 312/353-2307.

Sincerely,

Susan P. Walker, Chief
Environmental Impact Review Staff
Office of Federal Activities

cc: Carl Nash, Air Programs
Horst Witschonke, Noise Programs
Jim Shrouds, FHWA, St. Paul, Minn.
Sandra Gardebring, Exec. Dir., MPCA
Jim Halvorson, Minn. DOT
FRANZ/dh

Response to EPA Letter

1. U.S. EPA comments regarding the Air Quality Report for New Trunk Highway 10 cite a concern that "use of New Trunk Highway 10 will cause an increase in total hydrocarbon emissions." To facilitate an assessment of the impact of such increased hydrocarbon emissions, the agency requested that a total burden analysis be done for the year of project completion, five years after completion, and for 1990.
2. In the Air Quality Section, this Draft EIS included both a project burden analysis for 1990 and comparative regional burden analyses for 1977 and for the three Trunk Highway 10 alternatives in 1987. An important difference in this analysis from the initial Air Quality Report was use of U.S. EPA's revised mobile vehicle emission factors. Using these new factors, the Draft EIS differs from the Air Quality Report by showing that either the Relocated or Upgraded Alternatives would result in less hydrocarbon emissions than the No-Build Alternative. Thus, these findings differ radically from those of the report reviewed by the U.S. EPA.
3. Existing ambient levels will be provided for all receptor locations in revised PNAR. Existing traffic noise levels cannot be predicted accurately for Receptors 4, 5, 6, 9, 10, 11, 12, 13, and 14, since there are presently no major roadways in their vicinity. Ambient levels are the only means for establishing existing noise levels at these nine receptors.
4. Future traffic noise levels are indicated for all alternatives discussed for each receptor.
5. Any impression that the receptors are more severely impacted is unintentional. The sentence is describing existing noise levels, not future. However, as it may be misleading, the sentence will be deleted in the revised PNAR.
6. Draft EIS states that barriers will be included.
7. Estimate of construction cost of a depressed roadway will be provided in the revised PNAR.
8. Sufficient data on the number of trucks that would use the proposed facility between 10:00 P.M. and 7:00 A.M. is not available. The prohibition of truck traffic was eliminated from consideration as a noise abatement measure for several reasons: (1) such a prohibition would only cause trucks to use other parallel routes which may, or may not, be designed for trucks. The noise impacts would only be transferred to other locations where provision of noise barriers would not occur, (2) difficulty of enforcement, especially since such an action is inconsistent with the function of the proposed improvement, and (3) impact on truck user's costs. Discussion of this analysis will be expanded in the PNAR.

APPENDIX A

FUNCTIONAL CLASSIFICATION SYSTEM CHARACTERISTICS FOR ROADWAYS ¹

	Principal Arterial	Intermediate Arterial	Minor Arterial	Collector	Local
Spacing	3-6 miles depending on trip density, transit, minor arterial spacing, & location of existing facilities.	1-3 miles depending on spacing of principal arterials and minor arterials, transit, trip density, and location of existing facilities.	0.5-2.0 miles.	0.25-1.0 miles.	1 block
Location	In natural community separations defining development and not separating it.	In natural community separations defining developments and not separating it.	On edges of development and neighborhoods.	On edges or within neighborhoods.	Within neighborhoods and other homogeneous land use areas.
Land Access	None.	Major traffic generators.	Limited direct land access.	Some limitation on direct land access.	Direct access.
Urban	None.	Freestanding Growth Centers and Rural Town Centers.	Commercial, industrial, and high-density residential uses. No access to single family use.	Access to agricultural uses with limits on low-density residential.	Direct land access.
Rural					
Intersection Characteristics	Grade separated (urban) or high capacity controlled at grade intersections (rural).	Grade separated or high-capacity controlled at-grade intersections.	Traffic signals and cross street stops.	4-way stops and some traffic signals. Loop street stops.	As required.
Parking	None.	None.	Restricted as necessary.	Restricted as necessary.	Unrestricted.
Large trucks	No restriction.	No restriction.	Restricted as necessary.	Restricted as necessary.	Permitted as necessary.
Management tools	Ramp metering, traffic signal timing, no land access, preferential treatment for transit, interchange spacing.	Ramp metering, traffic signal timing, staging of reconstruction, land access spacing.	Traffic signal timing, land access spacing, preferential treatment for transit.	Continuity, number of lanes, traffic signal timing, land access.	Stop signs, cul-de-sacs, diverters.
System Mileage	Suggested federal upper limits for principal arterials and intermediate arterials combined: Urban 10 per cent Rural 4 per cent		Suggested federal limitations for principal arterials, intermediate arterials, and minor arterials combined: Urban 15-25%, Rural 6-12%	Suggested federal limitations: Urban 5-10%, Rural 20-35%	Suggested federal limitations: Urban 65-80%, Rural 63-75%
Per cent of Travel (VMT)	Suggested federal limitations for principal arterials and intermediate arterials combined: 40-65 per cent		Suggested federal limitations for principal arterials, intermediate arterials, and minor arterials combined: 65-80%	Suggested limitations: 5-10%	Suggested federal limitations: 10-30%
Vehicles carried	Urban 20,000-100,000 Rural 5,000-50,000		5,000-30,000 1,000-10,000	1,000-15,000 250-2,500	1,000 1,000
Posted speed limit	Urban 45-55 Rural Legal limit		35-45 Legal limit	30-40 35-45	Maximum 30 Maximum 30
Right-of-way	300'	100'-300'	66'-150'	66'-100'	50'-80'
Transit Accommodations	Priority to high occupancy vehicles and transit in peak periods.	Preferential treatment where needed; bus stops separated from through traffic lanes.	Preferential treatment where needed in activity centers; bus pullouts where required based on percentage and traffic volumes.	Pavement, intersections, and bus stops designed for use by regular transit buses.	Normally used as regional bus routes only in non-residential areas; used as required for specialized transit service with smaller vehicles in residential areas.

¹Metropolitan Council Transportation Development Guide adopted January 8, 1976, Table 13, p. 56 T/7/76.