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**U.S. 27 From Lansing to Ithaca
Clinton and Gratiot Counties, Michigan
and St. Johns Business Route**

ADMINISTRATIVE ACTION

FINAL ENVIRONMENTAL IMPACT STATEMENT AND SECTION 4(f) STATEMENT

**U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
and
MICHIGAN DEPARTMENT OF TRANSPORTATION**



FHWA-MICH-EIS-77-02-F
Federal Highway Administration
Region 5

U.S. 27 FROM LANSING TO ITHACA
CLINTON AND GRATIOT COUNTIES, MICHIGAN .

AND

ST. JOHNS BUSINESS ROUTE
CLINTON COUNTY, MICHIGAN

FINAL
ENVIRONMENTAL IMPACT STATEMENT
AND
SECTION 4(f) STATEMENT
SUBMITTED PURSUANT TO 42 U.S.C. 4332 (2)(c)
AND 49 U.S.C. 303
BY THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
AND
MICHIGAN DEPARTMENT OF TRANSPORTATION

Cooperating Agencies
U.S. Army Corps of Engineers

Date of Approval Director, Office of Planning & Program Development

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This project begins at the future I-69/US-127 interchange in Clinton County, and ends at present US-27 freeway southeast of Ithaca in Gratiot County. The facility is to be on new alignment from Clark Road northward to a bypass of St. Johns. This segment is identified in the Draft Statement as Alternative E/F as modified. The bypass ends at Kinley Road north of St. Johns, from where the project will follow present US-27 to Ithaca. The Draft Statement identifies that segment as Alternative G (North). The proposed St. Johns Business Route is along Alternative D (Price Road), as discussed in the Supplement to the EIS, dated September 5, 1979.

PREFACE

This Environmental Statement

This document presents the Final Environmental Impact Statement and Section 4(f) Statement for the proposed US-27 freeway from I-69 north of Lansing in Clinton County, to south of Ithaca, where US-27 begins as a limited access highway in Gratiot County. It also includes similar information for the St. Johns Business Route. The presentation follows the guidelines for processing of Final Environmental Impact Statements per paragraph 1503.4 of CEQ regulations (40CFR 1500 et seq.). The Modified EIS Format is used. The Modified Format, applies only to Final EIS's. The purpose of the Modified Format is to "reduce paperwork" and "delays", in those situations where alternatives have been adequately developed and impacts adequately discussed in one or more draft documents. The analysis in the draft documents for US-27 adequately identified and quantified the environmental impacts of all reasonable alternatives. The Federal Highway Administration approved the use of this format for the Final US-27 EIS in view of the extensive coverage given the environmental issues in the Draft EIS and special-area studies that have been circulated and in view of the minor comments received from review of the draft documents. Rather than repeat or re-write the body of the Draft EIS and Supplements in order to add updated information as might apply to the Final report, this Modified Format Final EIS incorporates essential material pertaining to the selection of the proposed alignment and mitigation. The reader is asked to refer back to the Draft reports for background material.

This Final EIS/Section 4(f) Statement has been prepared on the basis of the following documents, each of which were circulated for public and agency review:

Draft Environmental Impact Statement dated March 9, 1977. This original draft statement was prepared for the proposed improvement of US-27 from Lansing to Ithaca, in Clinton and Gratiot Counties. The alternatives discussed in this report were presented at public hearings held in Ithaca on June 1, 1977, and in St. Johns on June 2, 1977.

Supplement to Section IV of the Draft EIS dated April 4, 1978. Based on concerns and desires expressed at the public hearings held in June, 1977, this Supplement presented a comparison of alternate alignments on new location between approximately M-21 and Gratiot roads, Greenbush Township. The alternatives discussed in this report were presented at a public hearing held in St. Johns June 1, 1978.

St. Johns Business Route Supplement to the Draft EIS dated September 5, 1979. This Supplement was prepared to address various alternatives for a business route access and the possible location of an additional interchange south of St. Johns. A public hearing on this Supplement was held October 16, 1979.

Preliminary Section 4(f) Statement Supplement to Draft EIS dated August 31, 1981. This Supplement addressed the proposed US-27 improvement in the vicinity of the Maple River State Game Area.

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
PREFACE	ii
SUMMARY	v
I. ERRATUM	
1. Draft Alignment EIS dated March 9, 1977	I-1
2. Supplement to Section IV of the Draft EIS dated April 4, 1978	I-5
3. St. Johns Business Route Supplement to the Draft EIS dated September 5, 1979	I-7
4. Preliminary Section 4(f) Maple River State Game Area Supplement dated August 31, 1981	I-7
II. PROPOSED PROJECT	
1. Proposed Alignment	II-1
2. Prime Farmlands and Public Act 116	II-15
3. Vegetation and Wildlife	II-20
4. Wetlands/Floodplains	II-21
5. Historic and Archaeological Sites	II-35
6. Relocation Plan	II-35
III. SECTION 4(f) STATEMENT	
1. Introduction	III-1
2. Description and Need for Project	III-1
3. Location and Type of Facility	III-6
4. Description of Section 4(f) Lands	III-8
5. Alternative Analysis and Environmental Consequences.	III-11
6. Alignment Alternatives and Environmental Consequences in Vicinity of Maple River State Game Area	III-15
7. Section 6(f) Lands	III-20
8. Mitigation Measures to Minimize Harm	III-22
9. Permits	III-24
10. Coordination	III-24
ATTACHMENTS TO SECTION 4(f) STATEMENT	
A. Department of Natural Resources Correspondence (1975)	III-25
B. Department of Natural Resources Correspondence (1976)	III-28
C. Maple River State Game Area Substitution	III-32
D. Department of the Interior Correspondence (1978)	III-44
E. Comments, Responses and Letters on the Preliminary Section 4(f) Statement	III-47

TABLE OF CONTENTS (Continued)

<u>Section</u>	<u>Page</u>
IV. ALTERNATIVES	
1. Alternatives Considered	IV-1
2. St. Johns Business Route Alternatives	IV-13
V. MITIGATION	V-1
VI. SUMMARY AND EVALUATION OF AGENCY AND INDIVIDUAL ENVIRONMENTAL COMMENTS	VI-1
1. Comments/Responses on Draft EIS	VI-1
2. Comments/Responses on Supplement to Section IV of the Draft EIS	VI-13
3. Comments/Responses on St. Johns Business Route Supplement to the Draft EIS	VI-16
4. Comments/Responses on the Preliminary Section 4(f) Statement Supplement to the Draft EIS	VI-20
APPENDIX A - Letter from DNR on Timber and Wildlife Impacts Report	A-1
APPENDIX B - Wetland Finding	B-1

SUMMARY

Administrative Action

- | | |
|--------------------------------------------------|---------------------------------------------------------------------------------------------|
| <input type="checkbox"/> Draft | <input checked="" type="checkbox"/> Final |
| <input type="checkbox"/> Environmental Statement | <input checked="" type="checkbox"/> Combination of Environmental/
Section 4(f) Statement |

Description of Proposed Project

The Michigan Department of Transportation (MDOT) proposes to construct a four-lane freeway beginning at I-69 north of Lansing and extending northward to the south side of Ithaca where US-27 begins as a rural limited access highway. The project length is approximately 33 miles.

Reasons for Selection of the Preferred Alternate

The following is a summary explaining the basis for selection of the preferred alignment of US-27, Lansing to Ithaca. This is described in more detail in Sections II, III, and IV of this Final EIS.

As described on Pages III-17 to III-20, four alternate freeway corridors were considered and evaluated. It was determined Corridor C would best serve the needs for improved transportation service, safety and increased capacity for this inter-regional route. Corridor C also requires less use of the Maple River State Game Area lands and best satisfies agency and citizen concerns.

The preferred alignment within Corridor C is described on Pages II-1 to II-14, and IV-4 to IV-17. The preferred alignment south of St. Johns (E/F Modified) compares favorably with the other freeway alignments considered in terms of safety, transportation service volume-capacity relationships, vehicle operating costs and implementing costs. With its more direct routing it has a higher degree of energy conservation than the other alternates. In this segment the preferred alignment has less effect on farming operations than Alignment B, but it has greater impact than Alignment G. It displaces less residential units than alignments G and G/Crossover, but more than Alignment B. Environmental impacts and impacts to commercial establishments and local tax base will be less than Alignment G and similar to Alignment B.

The preferred alignment north of St. Johns (Alternate G) was selected because it requires less agricultural acreage and is shorter than the Alternate F-1, F-3 or F-5 alignments, and utilizes existing US-27 right-of-way to the greatest extent. Since it is located either immediately east or west of the existing US-27 it will require the greatest number of residential relocations than the other alternates considered. Approximately the same number of commercial establishments and farm buildings will be affected between all of the alternates considered in this segment. The preferred Alternate G will also have the least affect on floodplains, woodlots and wetlands than the other alternates.

Of the four alternate alignments evaluated for the St. Johns business route, Alternate D was selected since it best satisfies the concerns of Federal, State and local agencies and citizens.

Summary of Environmental Impact and Adverse Environmental Effects

Positive:

- a. Provide a facility that will assist in moving people and goods through the area with greater efficiency and ease;
- b. Improve the area's attractiveness for new types of economic development;
- c. Create additional opportunities for orderly development;
- d. Reduction in accident rates and costs and vehicle operating cost;
- e. Saving of energy;
- f. Eliminate safety hazards;
- g. Reduction in air and noise pollution; and
- h. Separate facilities for thru and local traffic, with improved utility to both types of users.

Negative:

- a. Disruption of woodlots which would affect wildlife habitat and aesthetic resources;
- b. Minor affect to water quality because of the added amount of chemicals entering the streams;
- c. Potential to increase siltation of surface waters;
- d. Disruption of existing agricultural practices by requiring the appropriation of several hundred acres of prime agricultural soils for a single purpose use right-of-way;
- e. Disruption of residential and commercial properties, thereby impacting the living and communication patterns of the local people; and
- f. Disturb land ownership patterns.

Alternatives Considered

- a. Do Nothing
- b. No Build
- c. Freeway Alternatives
- d. Other Modes

Federal, State and Local Agencies and Offices from which Comments were Requested and/or Received

Draft Environmental Impact Statement

<u>Agency</u>	<u>Comments Requested</u>	<u>Comments Received</u>
A. Federal		
Council on Environmental Quality (CEQ)	X	
Department of Transportation		
Assistant Secretary for Environmental and Urban Systems	X	
Federal Aviation Administration	X	
Department of Housing and Urban Development-Area Director	X	
Department of the Interior	X	X
U.S. Army Corps of Engineers - Detroit District	X	
Department of Agriculture	X	X
Soil Conservation Service-State Conservationist	X	X
Environmental Protection Agency Administration Region V	X	X
Department of Health, Education, and Welfare	X	
Economic Development Administration	X	
Environmental Health Service	X	
Department of Commerce-Environmental Affairs	X	
B. State		
Department of Agriculture	X	X
Department of Commerce	X	X
Department of Education	X	
Department of Natural Resources	X	X
Department of Public Health	X	
Department of State, Michigan History Division	X	X
Department of Treasury	X	
Department of Management and Budget	X	
Michigan Environmental Review Board	X	X
Interdepartmental Environmental Review Committee (INTERCOM)	X	X
	<u>Comments Requested</u>	<u>Comments Received</u>
C. Regional		
Tri-County Regional Planning Commission	X	
East Central Michigan Planning and Development Commission	X	X
Grand River Watershed Council	X	
Michigan United Conservation Clubs	X	X
Michigan Student Environmental Confederation	X	X
Sierra Club-Central Michigan	X	

D. Local

Clinton County Board of County Commissioners	X	X
Clinton County Road Commission	X	X
Clinton County Planning Commission	X	X
Gratiot County Board of County Commissioners	X	X
Gratiot County Road Commission	X	X
Gratiot County Planning Commission	X	X
St. Johns City Council	X	X
St. Johns Planning Commission	X	X
League of Women Voters-Gratiot County	X	
Lansing Planning Department	X	
East Lansing Planning Department	X	X
Bingham Township Board	X	X
DeWitt City Council	X	X
DeWitt Township Board	X	X
Greenbush Township Board	X	X
North Star Township Board	X	
Olive Township Board	X	
Washington Township Board	X	X
Plus numerous private businesses, individuals, and churches.		

Supplement to Section IV of the Draft EIS.

Comments were received from the following agencies or groups on the
Supplement to Section IV of the Draft EIS, dated April 4, 1978:

U.S. Department of the Interior
U.S. Forest Service
U.S. Soil Conservation Service
Michigan Environmental Review Board (MERB)
Bingham Township Board
East Lansing City Planning Department
St. Johns City Council
St. Johns Public Schools
Washington Township Board
Clinton County Planning Commission
Clinton County Board of Commissioners
Clinton County Road Commission
Plus Private Individuals and Business Owners

St. Johns Business Route Supplement to Draft EIS

Comments were received from the following agencies or groups on the
St. Johns Business Route Supplement to the Draft EIS dated September 5,
1979:

U.S. Environmental Protection Agency, Region V
U.S. Forest Service, Northeast Area Office
Michigan Department of Natural Resources
Michigan Environmental Review Board (MERB)
Michigan Interdepartmental Environmental Review Committee (INTERCOM)
Tri-County Bicycle Association

Clinton County Board of Commissioners
Clinton County Road Commission
Bingham Township Clerk
City of St. Johns
Plus Numerous Business Owners and Private Individuals

Preliminary Section 4(f) Statement

Comments were received from the following agencies on the Preliminary 4(f) Statement dated August 31, 1981, which was circulated as a Supplement to the Draft EIS:

U.S. Army Corps of Engineers
U.S. Soil Conservation Service
U.S. Environmental Protection Agency, Region V
U.S. Department of the Interior, Office of the Secretary
Michigan Department of Natural Resources
Gratiot County Road Commission
Plus Individuals

Permits

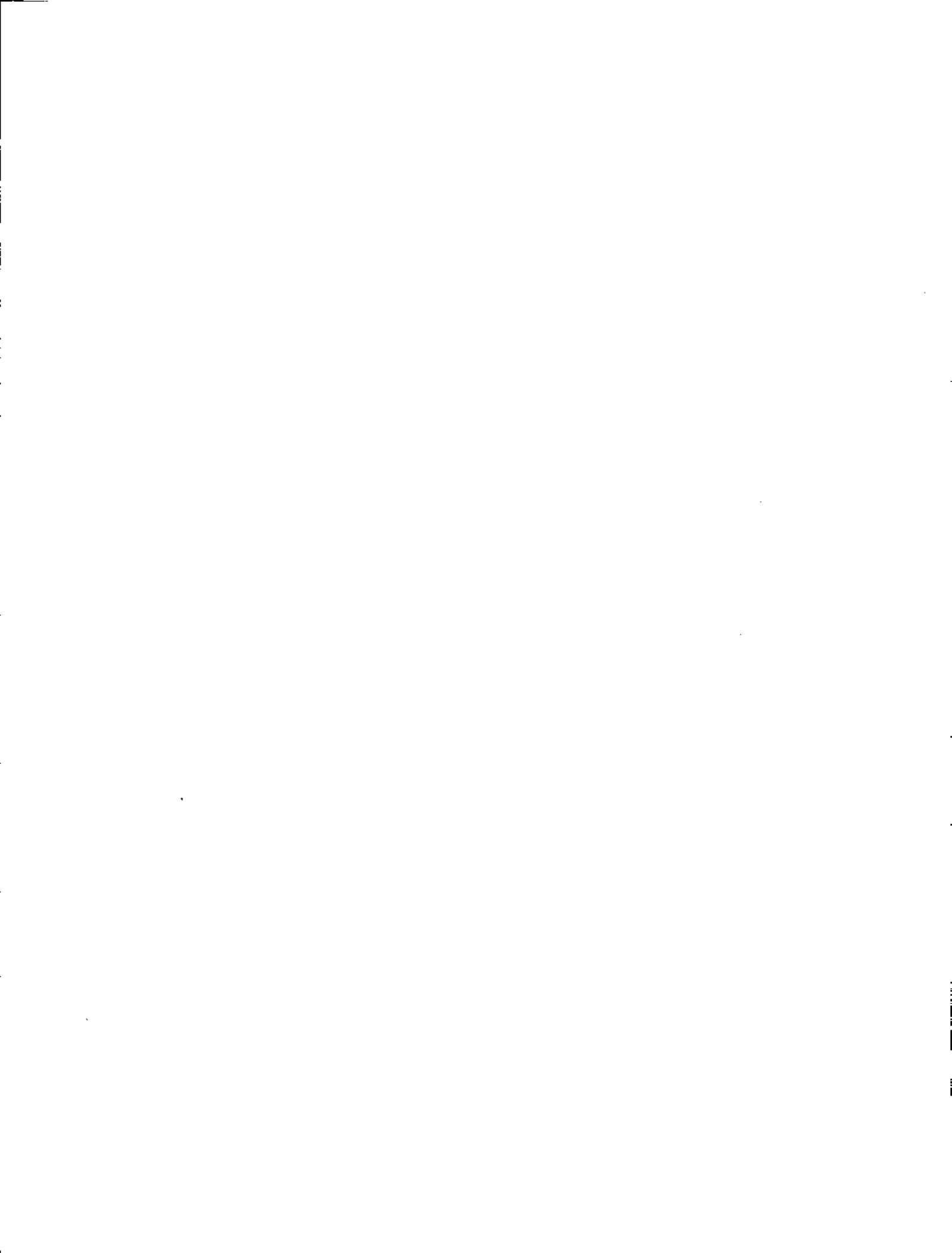
It is expected that the following permits will be required prior to construction of this project:

A. U.S. Army Corps of Engineers:

1. Federal Water Pollution Control Act, Section 401 (a) (1).
2. Federal Water Pollution Control Act, Section 404.

B. Michigan Department of Natural Resources:

1. The Michigan Department of Transportation is self regulated with regard to Michigan Public Act 347, Soil Erosion and Sedimentation Control Act.
2. Michigan Public Act 346, Inland Lakes and Streams Act.



PART I

ERRATUM



I. E R R A T U M

1. Draft Environmental Impact Statement

Corrections and/or additions noted on succeeding pages should be made to the appropriate pages of the Draft Alignment Environmental Impact Statement--US-27 from Lansing to Ithaca, Clinton and Gratiot Counties, Michigan, dated March 9, 1977.

<u>Page</u>	<u>Paragraph</u>	<u>Line</u>	<u>Corrections</u>
XIX	Under Item B		Delete: 3. Federal Act 245 National Pollution Discharge Elimination System
28	5th	1st	Change: Figure 20 To: Figure 19
31	4th	1st	Change: 157 cubic feet To: 173 cubic feet
		3rd	Change: for the period 1944-1966 To: through the 1975 Water year.
31	4th	7th,8th	Change: The Looking Glass River is not used fr withdrawal uses except to maintain the level of Lake Geneva, an artificial lake near DeWitt. To: The Looking Glass River is not used for withdrawal uses. Add (following preceding): Injunction against use of the river water was granted in 1977 to citizens who were concerned about the depletion of flow on the Looking Glass. River water had formerly been diverted to maintain the water level of Lake Geneva, an artificial lake near DeWitt. Lake Geneva now has two deep-well pumping stations for source of water.

<u>Page</u>	<u>Paragraph</u>	<u>Line</u>		<u>Corrections</u>
39	2nd	8th	Delete:	Carpinus betulus
41	2nd	1st	Change	The location of relative specie abundance occur in many areas of the Maple River (Table 10)
			To:	Many areas of the Maple River have been sampled to determine the relative species abundance of fish (Table 10).
102	2nd	6th	Change:	8.6 acres of church owned land.
			To:	23.6 acres of public and/or quasi-public land.
		9th	Change:	6.5 acres of church owned land.
			To:	8.6 acres of public and/or quasi-public land.
	3rd	13th	Change:	2.5 acres of church owned land.
			To:	18.6 or 3.6 acres of public and/or quasi-public land.
105	7th	5th	Add:	Sentence after 292. Most of these residences are within the proposed ROW and will be acquired.
		6th	Change:	65 dBA
			To:	60dBA
	8th	6th	Change:	Delete last sentence.
			Add:	The receptor locations were chosen closer to the nearest edge of roadway surface of the freeway, or the crossroad, than a permanent receptor, such as a House would be located. The distances are noted on Table 32.
108	Table 32		Add Foot-note C:	One-hour carbon monoxide concentrations are based upon 2700 vehicles/hour, and eight-hour concentrations upon 1800 vehicles/hour.

<u>Page</u>	<u>Paragraph</u>	<u>Line</u>	<u>Corrections</u>
122	1st	5th	Add: After 25. The residences are within the proposed ROW and will be acquired by the Department.
122	2nd	9th	Add: Sentence after "receptor such as a house would be located". These distances are noted in Table 41.
141	Add Foot-note C		One-hour carbon monoxide concentrations are based on 2500 vehicles/hour, and eight-hour on 1700 vehicles/hour.
149	5th	6th	Change: 1.0 acre of church owned land. To: 11.3 acres of public and/or quasi-public land.
150	Table 55		Change: 5.5 To: 10.3 Change: 6.5 To: 11.2
151	5th	5th	Add: Sentence: After "to be 30." The structures are within the ROW and will be acquired by the Department.
	6th	6th	Change: These receptor locations would be located. To: The receptor locations were chosen closer to nearest edge of roadway surface of the freeway or crossroad than a permanent receptor, such as a house would be located. These locations are noted in Table 57.
154	Add Foot-note C		One-hour carbon monoxide concentrations are based on 2400 vehicles/hour, and eight hour on 1600 vehicles/hour.

<u>Page</u>	<u>Paragraph</u>	<u>Line</u>	<u>Corrections</u>
170	4th	9th	Change: "viability for wildlife." To: "utility to wildlife." Add: If the utility of these woodlots to wildlife is lost, generally a concomitant reduction in wildlife densities can be expected.
174	1st	4th	Change: These areas normally provide habitats, forages, and cover. To: These areas constitute wildlife habitat.
181	Insert the following paragraph after 4th paragraph:		
			The Michigan State Historic Preservation Officer, after more than two years of archaeological investigation and a staff assessment of the historic resources along the preferred alignment, has determined that this project will have no effect on any cultural resources either eligible for or listed on the National Register of Historic Places.
190	2nd		Insert after the 2nd paragraph the following: Control of highway-generated noise must be considered within three separate zones: (1) the source (motor vehicle); (2) path of the sound; and (3) the receptor. Motor vehicle noise originates from areas within and around the vehicle. The major areas include the engine, transmission, and tire/roadway interaction. The Noise Control Act of 1972 requires standards to be established for newly manufactured products, including trucks and motor vehicles. Tire/roadway interaction is an area of source noise that can be influenced by the Highway Design Engineer, through proper pavement design. Unfortunately, the physics

<u>Page</u>	<u>Paragraph</u>	<u>Line</u>	<u>Corrections</u>
190	2nd		of the tire/roadway noise mechanism is not completely understood at present and more research is required to determine the optimum tread design which can provide maximum safety with least noise generation.
requires (Contd.)			Noise control along the path requires reduction of noise levels within the space contained between the source and the receptor. Structure of the land and its use within the area control the influence of the Highway Engineer and Planners. Roadway design techniques employed specifically to reduce noise levels may be implemented in the case of established land use. If excessive noise is still experienced, noise alternation devices or other methods to reduce the noise to acceptable design noise levels will have to be constructed, if feasible. In the case of undeveloped lands, proper geometric design combined with appropriate land use control, would assure compliance with the design noise standards.
			There are situations in which acceptable exterior noise levels produce excessive interior noise at receptors. In these cases, corrective measures, including sound-proofing and installation of airconditioning systems, would be necessary to reduce the noise levels to prescribed limits.

Supplement to Section IV of the Draft Alignment Environmental Impact Statement

Corrections and/or additions noted on succeeding pages should be made to the appropriate pages of the Supplement to Section IV of the Draft Alignment EIS, dated April 4, 1978.

<u>Page</u>	<u>Paragraph</u>	<u>Line</u>	<u>Corrections</u>
S-7	7th	5th	Change: Alignment F-1 could have an impact on two woodlots.

<u>Page</u>	<u>Paragraph</u>	<u>Line</u>	<u>Corrections</u>
			To: Alignment F-1, north of M-21, affects 7 woodlots, two woodlots have a high timber value and five have a medium wildlife value.
S-16	4th	3rd,4th	Change: Details of wildlife and timber values are listed in Appendix G of the Draft Alignment EIS. Alignment F-3 could have an impact on six woodlots.
			To: Details of wildlife and timber values are listed in Appendix G of Draft EIS. Alignment F-3 will have an impact on 10 woodlots. Four of the woodlots have a high value for both timber and wildlife.
S-22	5th	3rd,4th	Change: Details of wildlife and timber values are listed on Appendix G of the Draft Alignment EIS. Alignment F-5 could have an impact on five woodlots.
			To: Details of wildlife and timber values are listed in Appendix S-B. Alignment F-5 will have an impact on 11 woodlots. Four of the woodlots have high timber values and five have high value for wildlife.

3. Supplement to Draft Alignment Environmental Impact Statement - St. Johns Business Route

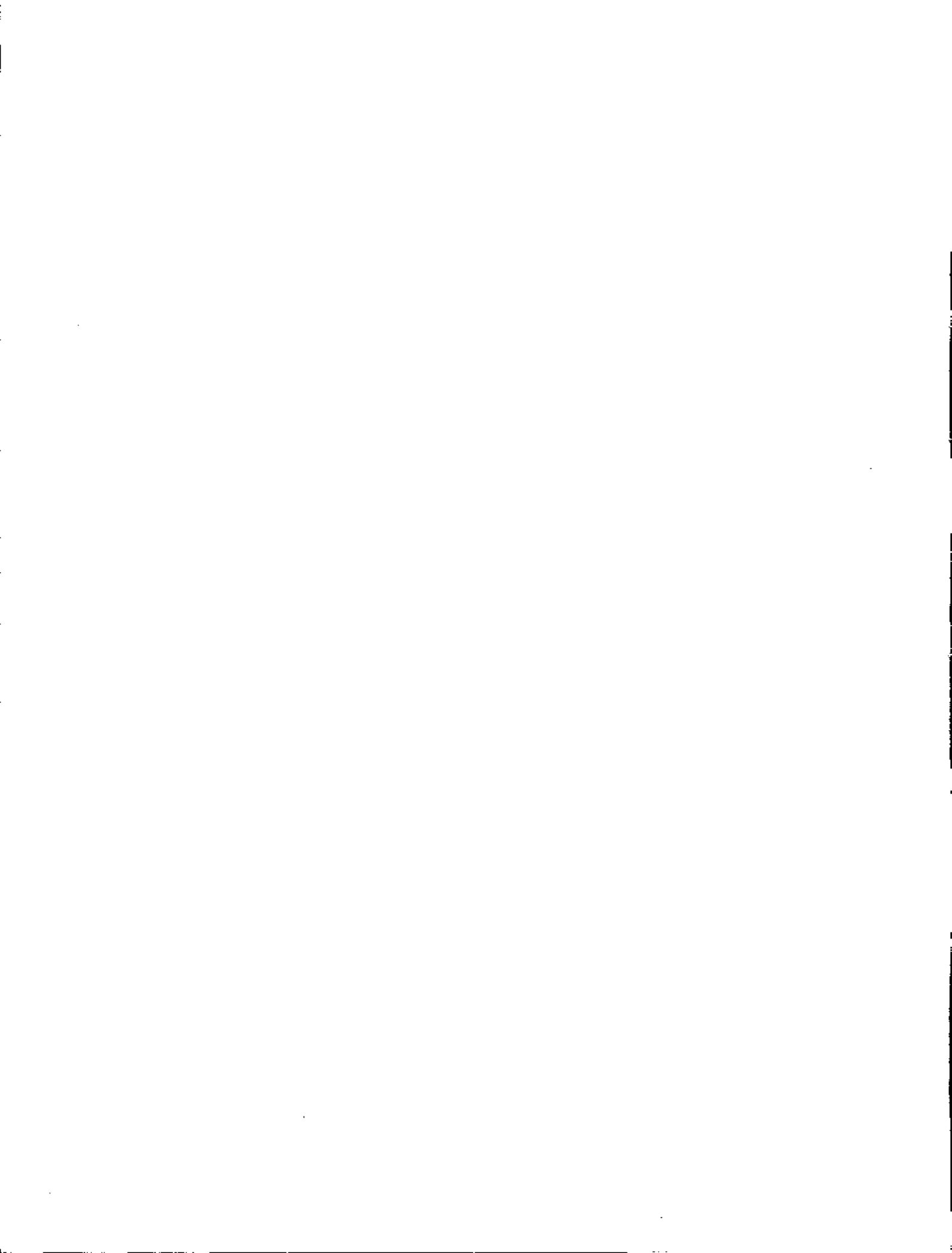
Corrections and/or additions noted on this page should be made to the appropriate pages of the St. Johns Business Route Supplement to the Draft Alignment EIS, dated September 5, 1979.

<u>Page</u>	<u>Paragraph</u>	<u>Line</u>	<u>Corrections</u>
41	7th	Delete: Add:	<u>entire paragraph.</u> Since practical and economic methods of removing de-icing salt (NaCl) from runoff have not been developed to date, the highway runoff will be directed through R.O.W. drainage ditches which will allow an opportunity for the salt to infiltrate the soil before flowing to an appropriate watercourse. In addition, the Department will line the drainage ditches with vegetative cover to aid intrapping out the salt before it enters the water course.

4. Preliminary Section 4(f) Statement Supplement to the Draft Environmental Impact Statement.

Corrections and/or additions noted below should be made to the appropriate pages of the Preliminary Section 4(f) Maple River State Game Area Supplement to the Draft Alignment EIS, dated August 31, 1981.

<u>Page</u>	<u>Paragraph</u>	<u>Line</u>	<u>Corrections</u>
25	4	Item 1	The Section 401 permit referred to on this page would have to be obtained from the State of Michigan rather than from the Corps of Engineers, as stated.



PART II
PROPOSED PROJECT



II. PROPOSED PROJECT

The project begins at Clark Road within the future I-69/US-127 interchange in DeWitt Township, Clinton County, and ends at present US-27 freeway southeast of Ithaca in North Star Township, Gratiot County (Figures 1 and 2). The facility is to be on new alignment from Clark Road northward to a bypass of St. Johns. This segment is identified in the Draft Statement as Alternative E/F as modified. The bypass ends at Kinley Road north of St. Johns, from where the project will follow present US-27 to Ithaca. The Draft Statement identifies that segment as Alternative G (North). The proposed St. Johns Business Route is along Alternative D (Price Road), as discussed in the Supplement to the EIS, dated September 5, 1979.

1. Proposed Alignment

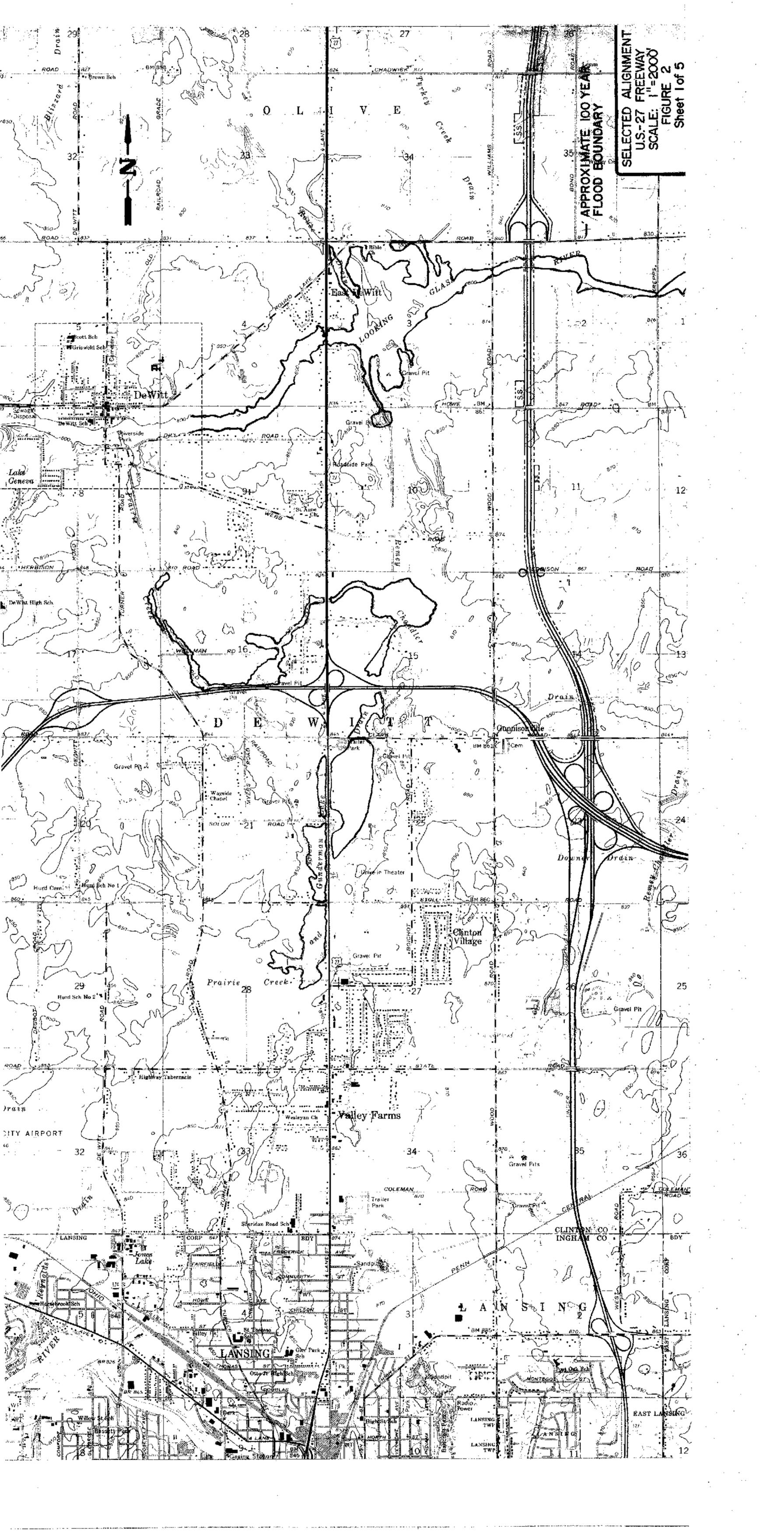
US-27 from Clark Road to Kinley Road Interchange

From the US-127/I-69 interchange, US-27 freeway proceeds north-north-westerly to just south of Herbison Road. Turning northward, the east right-of-way (ROW) line would coincide with the quarter section line. From Herbison Road north to near Chadwick Road, the proposed US-27 freeway would continue on the west side of the quarter section line, crossing the Looking Glass River on twin structures just south of Round Lake Road. The westerly position for this segment of the freeway was chosen to avoid encroachment upon a large dairy farm to the east where retirement of lands could have reduced the lands below the acreage required for the established operation. Such a reduction then could have had a significant adverse effect upon the entire tract since herd, pasture and facilities are now in a suitable balance.

Proper development of a proposed rest area for southbound traffic between Alward and Green Roads requires that the freeway be situated east of the quarter section line in that area. This location of the freeway permits an optimized siting of the rest area on a vantage point in an area where few such sites exist. The transition of the freeway from the west to the east side of the quarter section line occurs at Chadwick Road. To avoid a muck area between Chadwick and Alward Roads, it is proposed that US-27 swing approximately 400 feet easterly on a 1 degree curve for approximately one mile.

Between Green and Price Roads, the alignment of the proposed freeway transitions from east of the quarter section line back to the west side. The locations for this transition produces least effect upon land parcelling and permits the advantageous placement of the Price Road interchange on a tangent of Price Road west of the reverse curves in that facility.

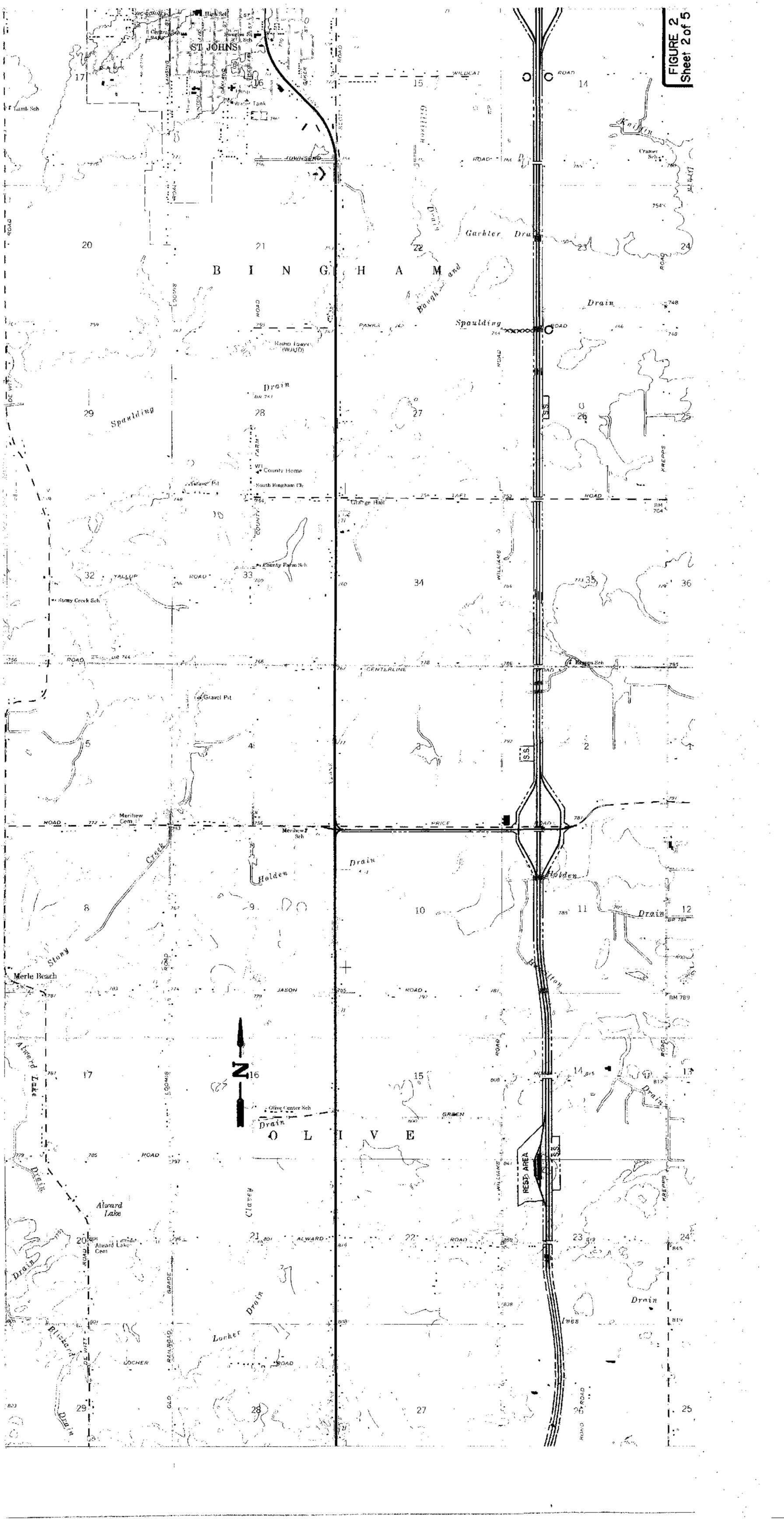
Between Jason and Price Roads, Williams Road will be closed. This closure severs a 260 acre tract of farm land belonging to Mr. John Marek. The tract will be divided into two parcels: 33 and 220 acres to the left and right of the ROW respectively. Access to the 220 acre parcel including a farm house, nine barns, -- and nine farm sheds will be eliminated. During final design, the Department will coordinate with Mr. Marek to determine the most feasible and equitable solution.



SELECTED ALIGNMENT
U.S.-27 FREEWAY
SCALE: 1"=2000'
FIGURE 2
Sheet 1 of 5

APPROXIMATE 100 YEAR
FLOOD BOUNDARY





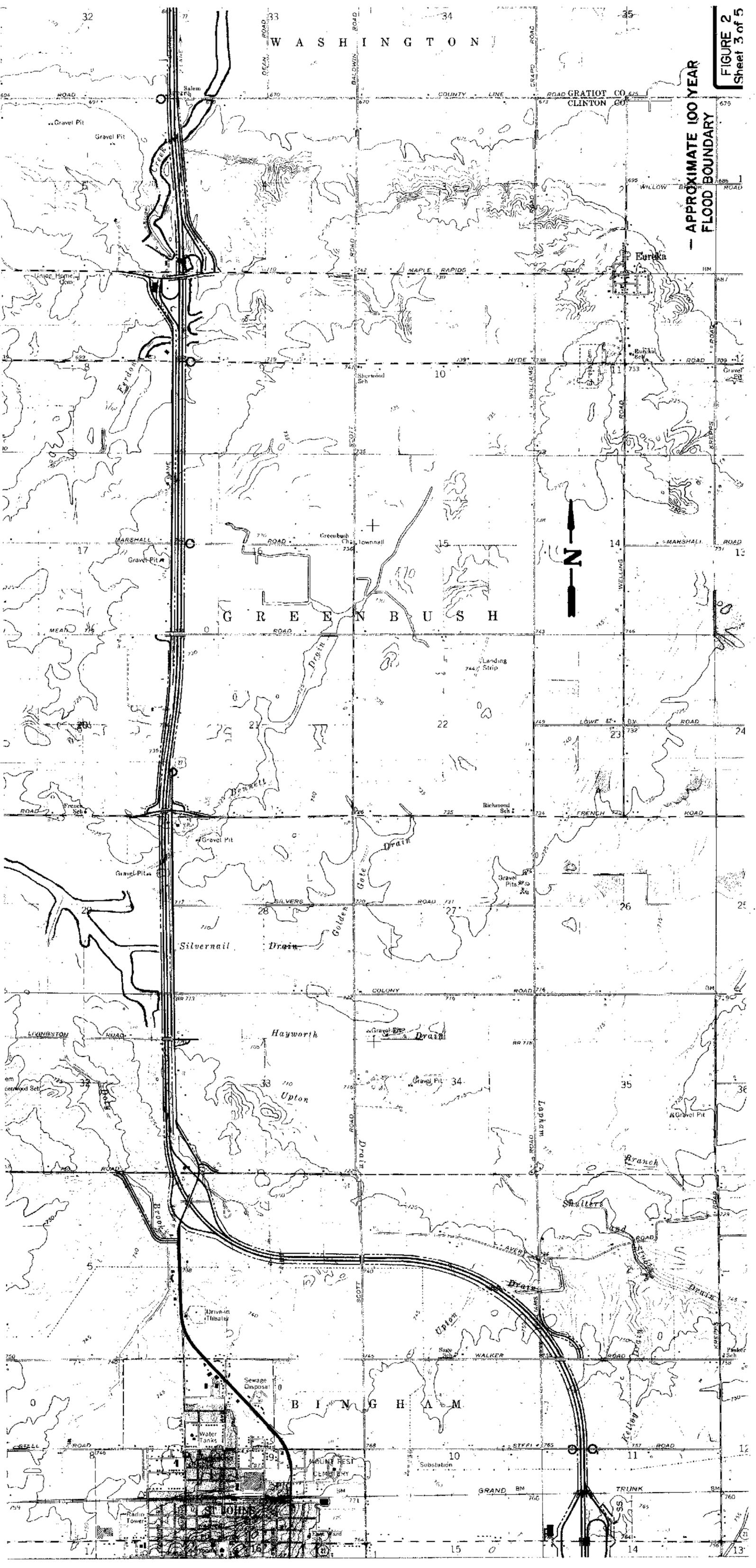
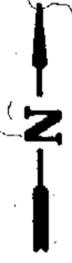


FIGURE 2
Sheet 3 of 5

— APPROXIMATE 100 YEAR
FLOOD BOUNDARY



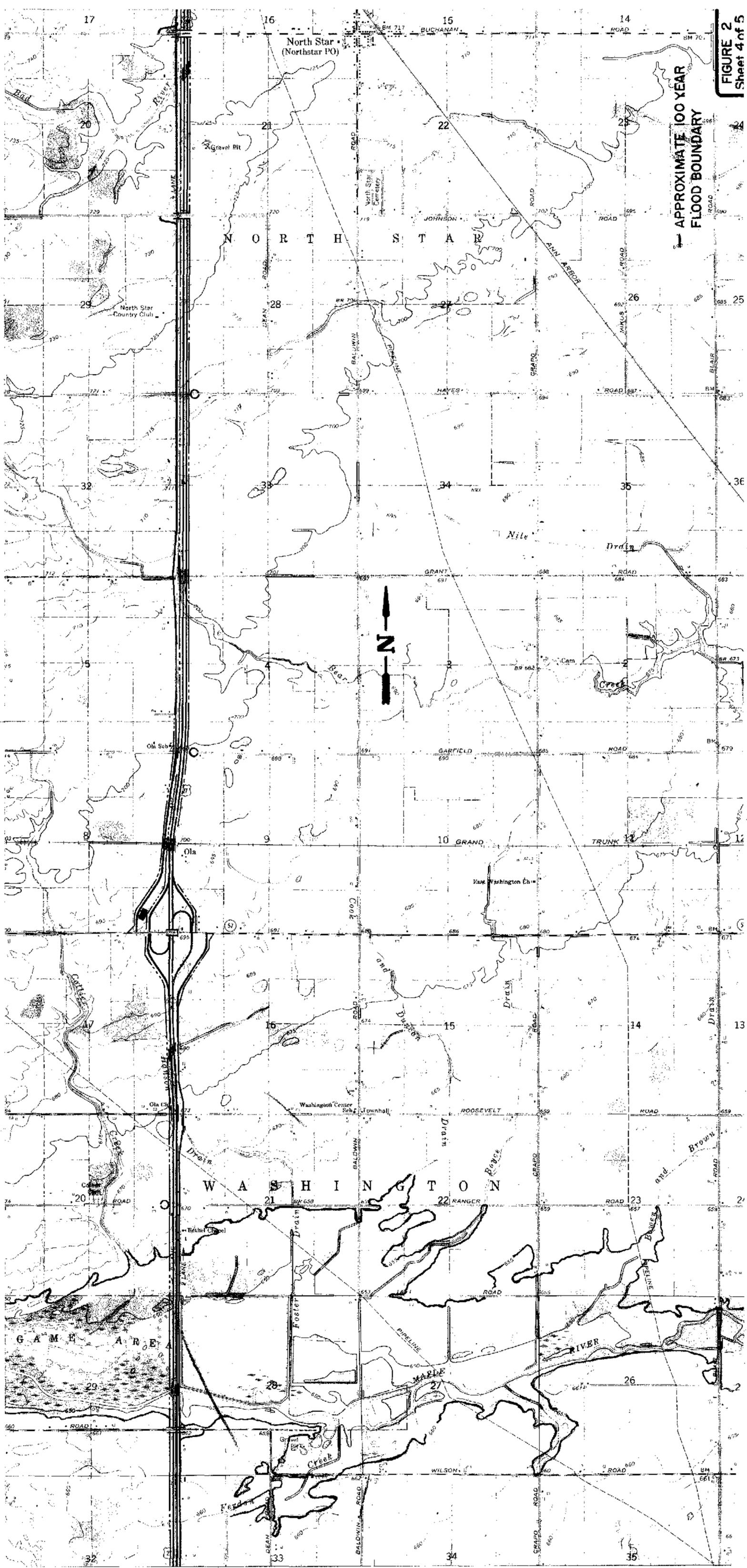
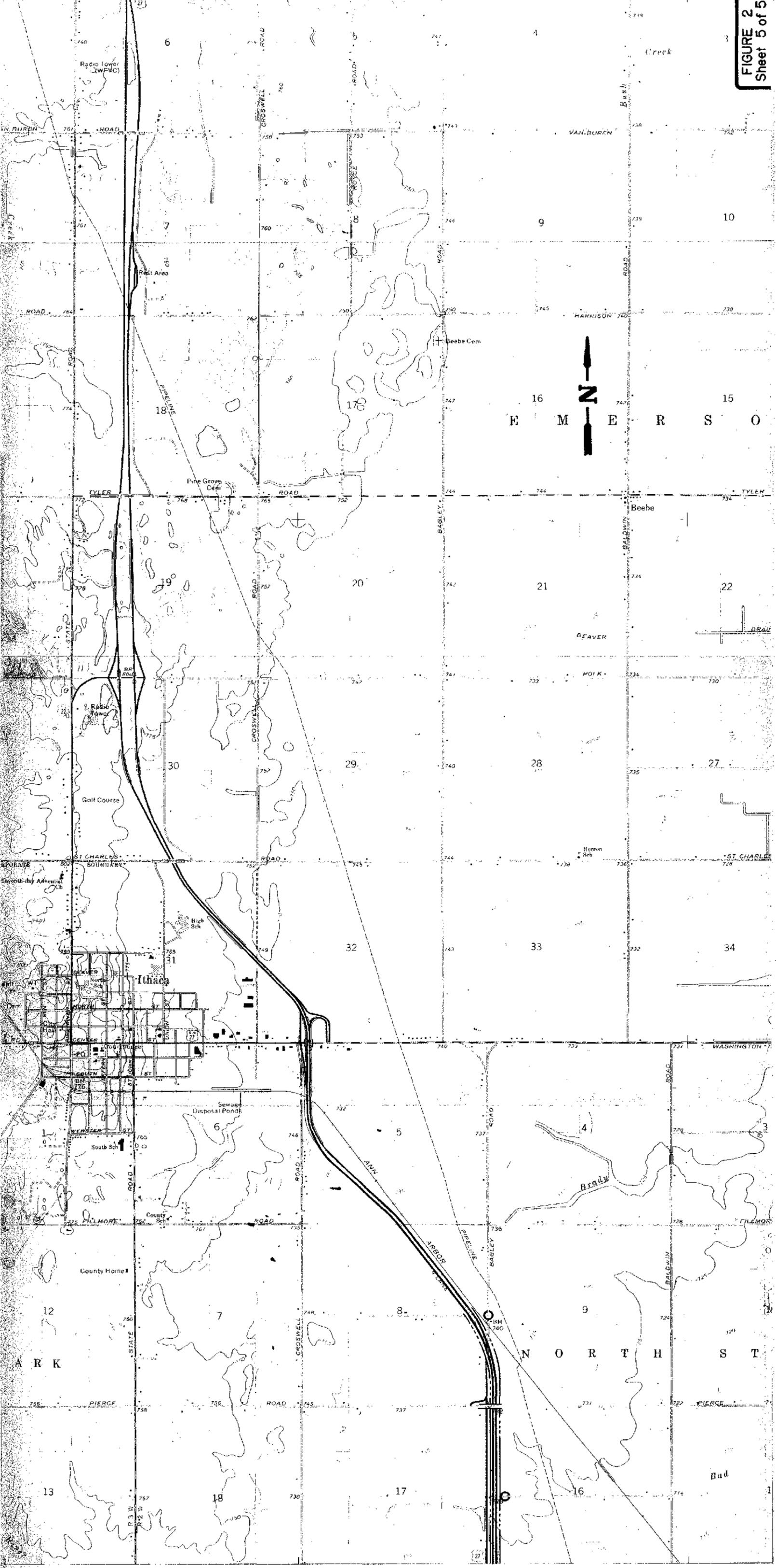
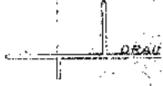


FIGURE 2
Sheet 4 of 5



EMERSON



ORIGIN

In general, from Price Road northward to Steel Road, a location west of the quarter section line minimizes the affects upon valuable wood lots and offers the least negative effect on land parcels. This position minimizes the number of acquisitions since ROW lines and property lines coincide. Additionally, more vacant land is encountered and environmentally valuable wood lots in Bingham Township are avoided.

Between Centerline and Taft Roads, the alignment divides a 175 acre tract of land owned by Mr. Roxie Cramer into two parcels of land approximately 45 and 118 acres. Williams Road will provide access to the 45 acre tract including the single family farm dwelling and associated farm buildings. Access to the 118 acre tract will be from Centerline Road. This severance could have an adverse economic impact upon Mr. Cramer's operations. During final design, the Department will work with Mr. Cramer to seek an acceptable solution.

Just north of Steel Road, the facility turns westward. In the turn, curvature has been reduced to allow an adjoining easterly connection between Williams Road and Walker Road. This connection intersects Walker Road east of the Walker Road bridge. The reversed curve layout avoids farm buildings along Williams Road and Walker Road.

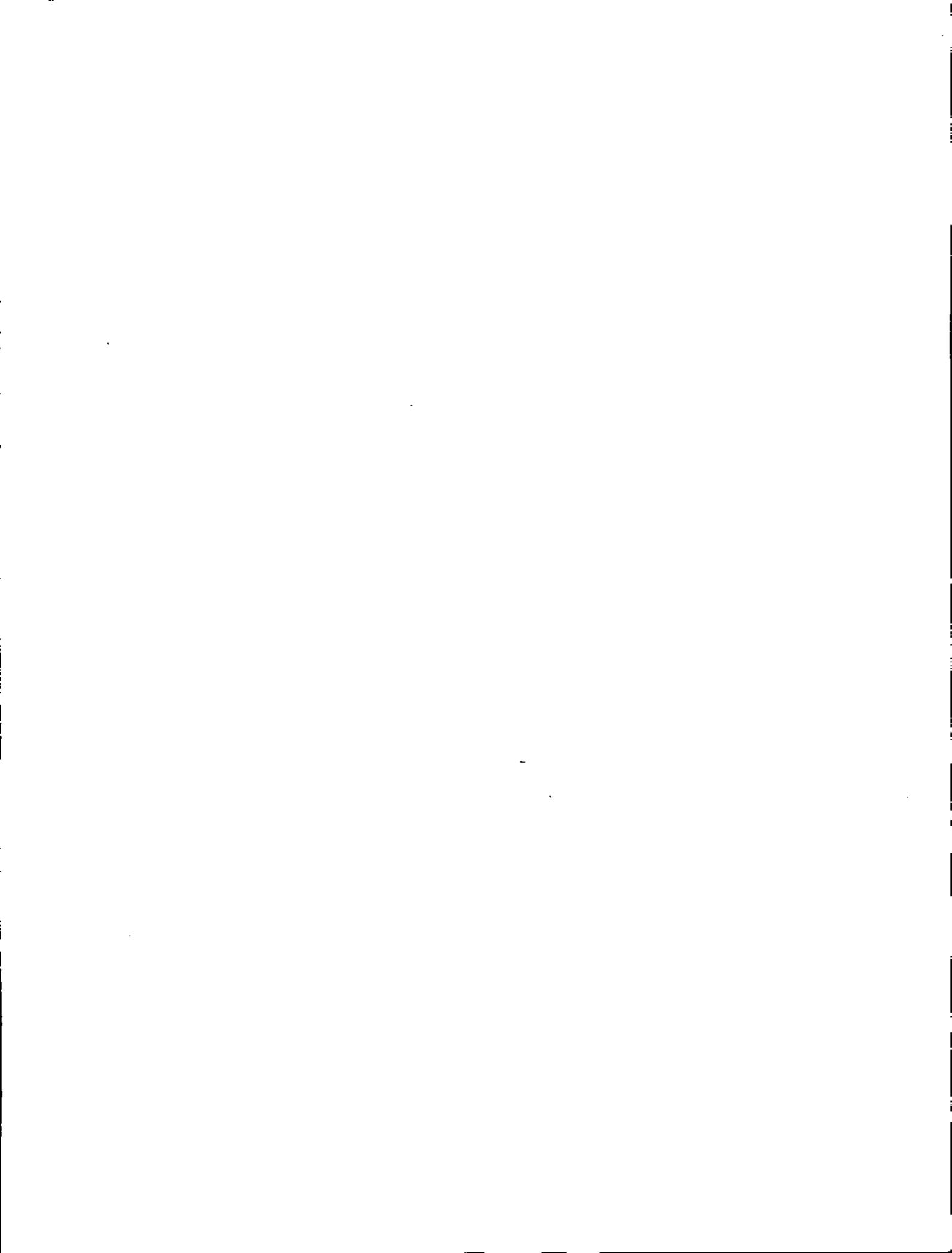
The proposed facility is situated south of Avery Road with the freeway right-of-way immediately north of Consumers Power Company transmission line right-of-way along the half-section line between Walker and Kinley Roads. It should be noted that this westward curve does require an encroachment upon transmission lines at the cornering in the lines north of the St. Johns sub-station. Such encroachment may be acceptable. However, field surveys must identify the extent of encroachment and attempt a possible northward shift of the freeway to avoid the transmission lines.

The freeway then curves northward to a location west of existing US-27 beyond Kinley Road.

Car pool lots are proposed at the Price Road interchange in the northwest quadrant and at the M-21 interchange off M-21 in the northwest quadrant.

Interchanges - Interchange facilities are planned for the following locations: Round Lake Road; Price Road; M-21; and Kinley Road. Within the limits of the interchange, crossroads will be widened to provide for turning lanes.

The proposed interchange at Round Lake Road would serve the City of DeWitt. A half-cloverleaf design is proposed with the loop in the northeast and northwest quadrants with Round Lake Road crossing over the freeway. This design would minimize possible floodplain and/or wetlands involvement along the Looking Glass River since it would avoid the crossing of the river by the southern ramps of a diamond interchange. As an alternative, an expanded diamond design with possible future loops was considered with ramp crossings of the Looking Glass Rier. This design is not recommended since it would also necessitate two additional river crossings by ramps and additional intrusion into the floodplain/wetlands along the river.



The proposed interchange at Price Road, an expanded diamond, principally serves the traffic oriented to Sleeply Hollow State Park to the east of the study corridor; it would also serve traffic oriented to the south side of St. Johns. Future loops could be provided in the northeast and southwest quadrants.

The proposed interchange at M-21 would serve the City of St. Johns to the west. The diamond design proposes that the freeway overpass both M-21 and the G.T.W. Rialroad, 1,400 feet to the north. Future loop ramps could be provided in the northeast and southwest quadrants.

A modified diamond interchange is proposed at Kinley Road with Kinley Road crossing over the freeway. This interchange will serve St. Johns from the north. Loop ramp spacing is provided in the northwest and southeast quadrants to provide access between St. Johns and the freeway.

Grade Separations Without Ramps - Grade separations without ramps are planned at the following locations:

Clark Road	CenterLine Road
Howe Road	Taft Road
Chadwick Road	Townsend Road
Alward Road	Walker Road
Green Road	Scott Road

Closings of County Roads - It is planned that the following County Roads will be severed by the Freeway; no bridge is to be provided:

Herbison Road	Wildcat Road
Williams Road	Steel Road
Parks Road	

Williams Road will be severed twice, once north of Jason Road, and the second between Walker and Avery Roads. In the latter instance, it is proposed that Williams Road be reconnected from Williams Road north of the freeway to Walker Road at a point east of the Walker Road overpass over the freeway.

Impacts

Preferred Alternative (E/F Modified) - begins at the proposed I-69/US-127 interchange and continues in a north-northwesterly direction between Williams and Krepps Road to Kinley Road. It is estimated that 75 acres of the total ROW acreage is residential and approximately 800 acres is agricultural land, most of which is presently farmed. Five farms of 100 acres or more will be divided into two parcels. Two (2) of these five are more than two hundred (200) acres. The degree of impact from severance depends upon the amount of land acquired and size and type of farming operation (i.e. cash crop, dairy, feed-lot, etc.) Economically, the impact would be greater on a larger operation, because of the size and type of equipment required to perform the operations as well as the land required to continue a profitable operation. The preferred alternative severs eleven farms under the Act 116 program and impacts another eight.

The preferred alternative has approximately 4 miles of roadway traversing the landscape at skew angles. This will result in 6 farming operations (varying in size from 80 to 160 acres) being split into irregular shaped parcels of land that constrain agricultural production. These parcels of land vary in size from 10 to 120 acres.

The preferred alternative would require the relocation of approximately 26 residential structures or approximately 86 percent less than Alignment G and 71 percent less than Alignment G with E/F Crossover.

Acreage for ROW will be required from 23 woodlots. Fifteen of these have high wildlife values. The fifteen range in size from 10 to 80 acres. Five woodlots have a high value for timber, the largest of which is 80 acres and the smallest is 10 acres. It is estimated that 8 acres of the Looking Glass River Floodplain will be crossed by this alignment.

Approximately 58 structures will be within the 60-70 dBA noise level. This compares favorably with Alternative B and approximately 67 and 51 percent less than the Alignment G Alternatives.

Estimated cost for this Alternative is \$44 million. Right-of-way accounts for approximately 7 percent of the total cost. This compares to 27 and 17 percent for Alternative G and Alternative G with Crossover.

St. Johns Business Route

The proposed alternative (Alternative D - Price Road) - begins with the Kinley Road interchange, north of St. Johns, then proceeds south along existing US-27 through the City of St. Johns to Price Road, approximately 4 miles south of the Southern City limits. Then the route turns eastward along Price Road terminating with the interchange of Price Road with the US-27 freeway, a distance of approximately 1.5 miles. Only the 1.5 mile segment is the subject of this discussion. (See Figure 2 - Sheet 2).

At present, Price Road consists of two 10-foot paved lanes centered in a 66-foot ROW. Improvements for the preferred alternative begin at existing US-27. A simple connection is planned embodying a left turn lane from southbound US-27 and a right turn lane flare from westbound on Price Road to northbound existing US-27.

The preferred alternative then proceeds eastward along Price Road to an interchange planned with the proposed US-27 freeway. Two 12-foot lanes with 10-foot paved shoulders will be centered in a 150-foot ROW. The existing 66-foot ROW is to be widened to the south, holding the existing Northern ROW line. The ROW is widened to the south to minimize relocation and acquisition of structures. The existing roadway is to be removed.

Alternative D will require the displacement of 3 residential units and 3 farm buildings and will require approximately 12 acres of productive farmland to increase the 66 foot right-of-way to 150 foot. This alternative will cost approximately \$1.8 million.

US-27 From Kinley Road North to End of Project

This segment of the proposed freeway follows existing US-27. One of the roadways of existing US-27 would be used as a two-way frontage road; the other roadway would be obliterated. It is proposed that the freeway be on the west side of existing US-27 between Kinley Road and a point just south of Mead Road, on the east side between Mead and a point just north of Maple Rapids Road, on the west side between that point and a point just south of the G.T.W. Railroad north of M-57, and on the east side from that point to Pierce Road, and thence to the end of the Project. These shifts of the proposed freeway are proposed in order to minimize the necessary displacements of structures and impacts on sensitive areas, and to preserve access to adjoining property. The reasons for these transitions from one side to the other of the existing US-27 are discussed in greater detail later in this section. For those segments on the west side of existing US-27, the northbound two lanes of existing US-27 would function as a two-way frontage road; where the freeway centerline is to be on the east side, the two southbound lanes of existing US-27 would become the frontage road.

Service Provided by Frontage Road - The frontage road will provide access to property, continuity for traffic using roads closed by the freeway, and access to roads crossing the freeway without ramps.

From Kinley Road to a point approximately 1,200 feet north of French Road, the northbound lanes of existing US-27 will serve as a two-way frontage road. Connections are provided to the freeway at the Kinley Road interchange. Other access to the west side of the freeway is provided at Livingston Road and at French Road. Access to the freeway and to the west side of the freeway for Colony and Silvers Road traffic is provided via the frontage road.

Frontage road service is provided on the west side of the freeway by the existing southbound lanes of US-27 between French Road and the Maple Rapids Road interchange. Between these two points, cross-freeway access is provided only at Mead Road. Crossroads closed by the freeway for which the frontage road provides continuity are Marshall and Hyde Roads.

Between the Maple Rapids Road and M-57 interchanges, the northbound lanes of existing US-27 serve as the frontage road, providing freeway access to property, including the cider mill, east of the proposed freeway. Traffic on Gratiot and Ranger Roads is provided continuity by the frontage road.

From the M-57 interchange north to the end of the project, the southbound lanes of existing US-27 serve as frontage road on the west side of the proposed freeway. Connections are provided to Grant, Johnson, Buchanan, and Pierce Roads, which provide access to the east side of the freeway. Continuity of traffic on Garfield, Hayes, and Roggy Roads, which are to be closed by the freeway, is provided by the frontage road.

Explanation of Positioning of US-27 Freeway Relative To Existing US-27 - North of the Kinley Road interchange, the freeway was positioned on the west side of existing US-27 to lessen the impact on houses in the vicinity, there being fewer houses to impact on the west side than on the east side of the facility. This westerly positioning was reinforced farther north because of a problem with a drainage field. East of the present US-27 between Colony Road and Silvers Road an extensive drainage system exists parallel to US-27. The decision to build westerly, avoids conflict with this system. In addition, farther north the westerly location avoids conflict with Coleman's Hotel which is located east of the eastern right-of-way immediately south of French Road.

It will be shown later that an easterly location is more desirable in the Maple Rapids Road area. The choice of location of transition from the west to east side of existing US-27 rested largely on the effects of displacements north of French Road. The transition has been located between French and Mead Roads since current development is less involved in the transition as compared with any other location north of French Road.

From Mead Road northward, the easterly location is justified chiefly because it impinges less on existing development which is largely on the west side of existing US-27. Further support of the easterly choice is evident in that the commercial development west of US-27 at Hyde Road is avoided. Additional support is evidenced by avoidance of the Clinton County Country Club situated in the northwest quadrant of Maple Rapids Road and US-27. The Country Club recreational areas, extending for 2,000 feet northward from Maple Rapids Road along the west side of present US-27 have been avoided by the easterly location of the freeway.

A westerly location for the freeway north of (Gratiot Road will be shown later to be more desirable. The location of the transition from the east side to the west side of the existing US-27 was decided on the basis of the Country Club northern boundary on the west and the location of the cider mill just north on the east. Crossing present US-27 between the two locations causes the least impact to both of these properties.

The freeway has a westerly position between Gratiot Road and a point just north of the G.T.W. Railroad north of M-57. This westerly choice was based on a number of considerations. The first of these was the avoidance of the Salem United Methodist Church in the northeast quadrant of the Gratiot Road US-27 intersection. A second was the desirability to avoid the more dense current development east of US-27 to Wilson Road. A third concern was the Maple River State Game Area, administered by the Wildlife Division of the Michigan Department of Natural Resources. Negotiations with the Wildlife Division has resulted in a recommendation for crossing the Maple River downstream of existing US-27, i.e., to the west. Avoidance of the wildlife pond to the east of existing US-27 was considered vital. (See Final Section 4 (f) Statement). A fourth consideration that pointed to the westerly location of the freeway in this area is the avoidance of the Bethel Mennonite Church on the east side of US-27 south of Ranger Road.

An easterly location for the freeway north of Garfield Road was decided for the remainder of the project to Pierce Road since substantially fewer structures would be required by this positioning. The transition between the G.T.W. Railway and Garfield Road was chosen since this position for the crossing would result in the least impact on structures.

The freeway design for the junction with the existing US-27 freeway south of Ithaca results in the abandonment of the southbound lanes of existing US-27 north of Pierce Road. This, in turn, results in the loss of access for the cluster of homes west of the freeway between Stations 2435 and 2441. One solution may be to acquire extra right-of-way to provide the access. However, this might well require acquisition of the property to which access is to be provided. Therefore, the decision on providing access to these four houses will be reserved until the time of right-of-way negotiation.

Interchanges - Grade separations with ramps are proposed at the following locations:

Maple Rapids Road	M-57
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Car pool lots of 100 vehicle capacity are proposed at both of these interchanges. The interchange at Maple Rapids is proposed as a partial cloverleaf with the loops in the northeast and southwest quadrants. The crossroad would cross the freeway on an overpass which would be offset southward a sufficient distance that the high fill will not encroach on the golf course in the northwest quadrant and so that the golf course driveway may be connected to the realigned Maple Rapids Road. Frontage roads are included in the interchange design to connect the north-south frontage roads to Maple Rapids Road.

At M-57 a partial cloverleaf interchange with loops in the northeast and southwest quadrants is proposed with M-57 carried over the freeway on structure. A "freeway over" crossing of the G.T.W. Railroad 2,600 feet north of M-57 is proposed. Frontage road connections outside of the freeway ramps are included in the intersection design, with the western connection west of the freeway crossing the railroad.

Grade Separations Without Ramps - Grade separations without ramps are proposed at the following crossroads:

Livingston Road/Colony Road	Grant Road
French Road	Johnson Road
Mead Road	Buchanan Road
Wilson Road	Pierce Road
Roosevelt Road	

Generally, the crossroad is to cross over the freeway on structure, although at Roosevelt and Grant Roads the effect of elevating these roads could be the displacement of existing structures clustered near existing US-27. These significant effects were avoided by leaving

these roads at grade and carrying the freeway over. At Roosevelt Road, on the east side of the freeway, retaining walls are provided north and south of the crossroad to project the frontage road from the freeway embankment. At Grant Road, comparable retaining walls are provided on the west side of the freeway. At Livingston/Colony, French, Wilson, Johnson, Buchanan, and Pierce Roads, the crossroad also bridges the north-south frontage road. Access between the frontage road and crossroad is provided by a suitable connector on one side of the freeway. At French Road where the freeway is to transition to the east side of existing US-27, it is proposed that frontage road connectors be provided on both sides of the freeway.

Impacts

Alternative G (north of Kinley Road interchange) the preferred - is located adjacent to the existing highway from Kinley Road interchange to just south of Ithaca. Right-of-way requirements for the 16.2 miles of roadway and two interchanges would be approximately 720 acres. Through the use of about one-half of the existing right-of-way for the freeway, new land required is lowered to approximately 480 acres. This amounts to a savings of about 240 acres of prime agricultural land. Approximately 90 acres of new land is presently being used for residential purposes. The other 390 acres is being used for agricultural or vacant purposes. This alternative will impact 21 farms under the Act 116 program.

Approximately 60 residential and 4 commercial structures will be required to relocate. This alternative will also require the relocation of a church.

Woodlots in the area of this alignment have had their timber and wildlife resources diminished through the effect of the existing highway. This alternative will not have an impact upon additional woodlots in the area.

The preferred Alternative will require approximately 10.3 acres from the Maple River State Game Area. The replacement package has been prepared and is included with the Final Section 4 (f) Statement, a part of this total submission.

Coleman's Hotel, a historical site, is located at the southeast corner of US-27 and French Road. In order not to affect the structure or the surroundings, treatment proposed for the freeway and French Road intersection include: (1) relocating that part of French Road approximately 80 feet to the north, leaving the present northbound lanes of US-27 as a service road, and constructing a crossroad structure that spans both the freeway and service road; and (2) angling the freeway to the west a sufficient distance that an embankment will not affect the aesthetic value of the structure. Located across the highway on the southwest corner is the Salt Box House, a structure of local interest. After talking with the owner and the Michigan History Division and Historic Preservation Office, an agreement has been reached to relocate the structure to the west of the present location on their own property. The setting will be enhanced through the use of landscaping. If there are any changes in the design of the French Road Intersection which would change the stated situation of the Coleman Hotel or the Salt Box House, then History Division must be re-coordinated with.

Approximately 74 structures will be within the 60 - 70 dBA noise level.

Estimated cost of the preferred alternative is \$48 million. ROW accounts for 14 percent of total cost with the remaining 86 percent being devoted to Engineering and Construction.

Alignment Alternatives

A further discussion on the Alternatives Considered and their impacts can be found in Part IV.

2. Prime Farmlands and Public Act 116

Throughout the project area there is heavy enrollment in P.A. 116, the Farmland, and Open Space Preservation Act. This 1974 state law provides tax credits for farmland owners who agree not to develop their land or sell it for development for at least 10 years. Landowners receive a state income tax credit for property taxes paid that exceed 7% of their household income. They are also exempt from special assessments for projects (e.g. sewers) if they do not use the services.

The Michigan Department of Natural Resources oversees the program and maintains a computer file that lists enrolled parcels. Exhibits 3A and 3b indicates those parcels enrolled in the program at the time of this report. Due to the large volume of applications received and personnel cutbacks there is a backlog of data not entered. Consequently, the data base is usually about a year behind actual enrollment.

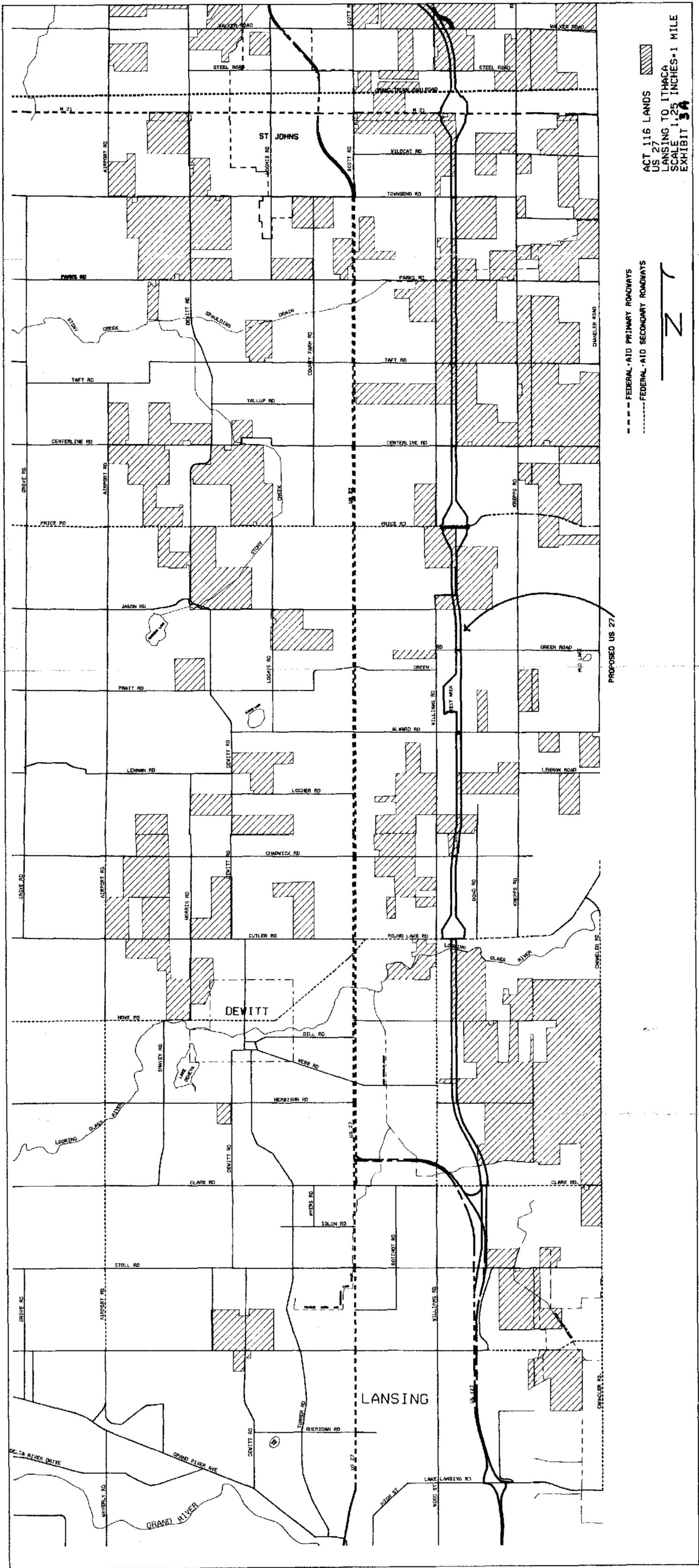
There is a public interest clause in the Act which states that a development rights agreement may be relinquished by the state prior to a termination date if the state determines that the development of the land is in the public interest and in agreement with the landowner. There is an attorney general's interpretation of this clause but there has not yet been a true test case. The Act 116 conflicts are a significant agricultural issue on this project.

Exhibit 4 shows the prime and unique farm lands within the study area. Prime farmlands have the best combination of physical and chemical characteristics for producing food, feed, forage, fiber and oilseed crops and is available for these uses (excluding urban built-up land or water). It has the soil quality, growing season and moisture supply needed to economically produce sustained high yields when managed well. These soils produce well with minimum inputs of energy or money and results in the least damage to the environment.

Unique farmland is land other than prime used for production of specific high value food and fiber crops. The unique farmlands delineated on Exhibit 4 are primarily growing spearmint or peppermint.

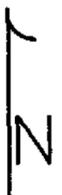
The proposed alignment will require approximately 1400 acres of additional new right-of-way. Of this amount approximately 1300 acres qualify as prime farmland according to the Important Farmlands Maps for Clinton and Gratiot Counties. Approximately 30 acres of unique farmlands (specialty crops on land other than prime) will also be required.

Of the total amount of new right-of-way 1000 acres are active farmlands while an additional 100 acres are potential farmland (upland herbaceous rangeland) which could be brought into agricultural production with minimal effort and cost.



ACT 116 LANDS 
 US 27
 LANSING TO ITHACA
 SCALE 1:25 INCHES=1 MILE
 EXHIBIT 3A

--- FEDERAL-AID PRIMARY ROADWAYS
 - - - - - FEDERAL-AID SECONDARY ROADWAYS



PROPOSED US 27

LANSING

DEVITT

ST JOHNS

DELTA RIVER DRIVE

GRAND RIVER

LOOKING GLASS RIVER

GLASS RIVER

LAKE LANSING RD

AUDUBON ST

WATER ST

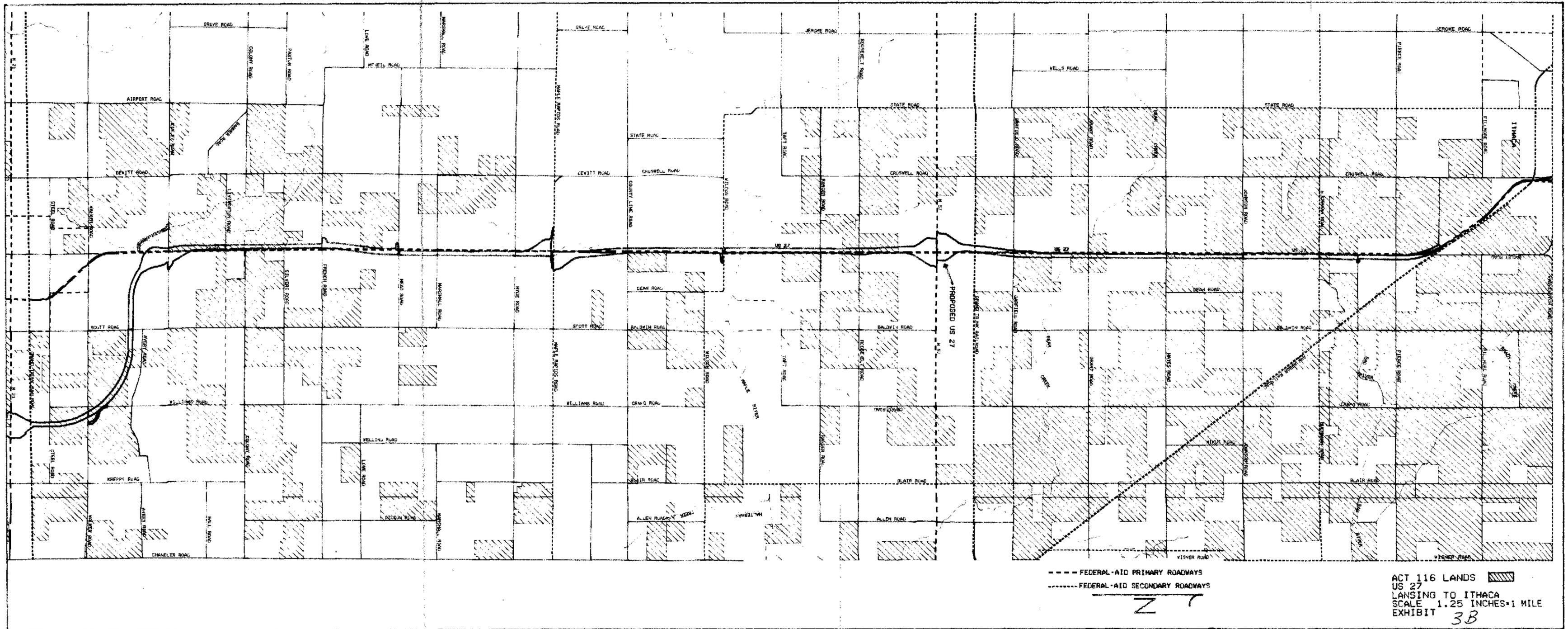
SHERIDAN RD

TURNER RD

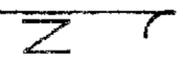
US 27

US 122

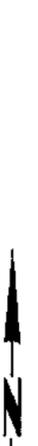
US 27



--- FEDERAL-AID PRIMARY ROADWAYS
 FEDERAL-AID SECONDARY ROADWAYS



ACT 116 LANDS [hatched symbol]
 US 27
 LANSING TO ITHACA
 SCALE 1.25 INCHES=1 MILE
 EXHIBIT 3B



ST. JOHNS

WILLIAMS RD

ROUN. LA

GREEN

SHICE RD

CENTRAL AVE RD

PACT RD

WILBUR RD

STED RD

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EAST DEWITT

W. RD

ROCKST. RD

WILLIAMS RD

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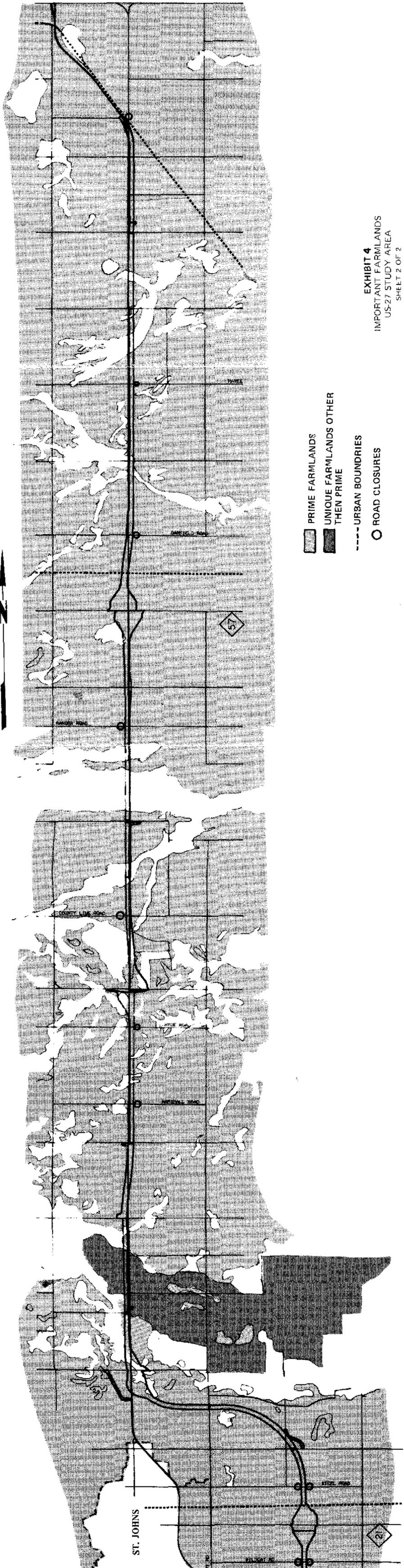
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- PRIME FARMLANDS
- UNIQUE FARMLANDS OTHER THAN PRIME
- URBAN BOUNDARIES
- ROAD CLOSURES

EXHIBIT 4
 IMPORTANT FARMLANDS
 US-27 STUDY AREA
 SHEET 2 OF 2

3. Vegetation and Wildlife

Several additional investigations were conducted in the areas of vegetation and wildlife, as follows:

Forestry and Woodlots Evaluation

The letter of May 30, 1978 from the Area Forester, DNR (Appendix A), is supplemental information to cover the alternates from the St. Johns area north. It is a finalization of the Timber and Wildlife Impacts Report, which is Appendix G of the Draft Alignment EIS.

Because the proposed alignment adheres to the existing US-27 paved surfaces beginning one mile north of St. Johns, impacts to the woodlots so mentioned in this latter report/letter, are held to a minimum.

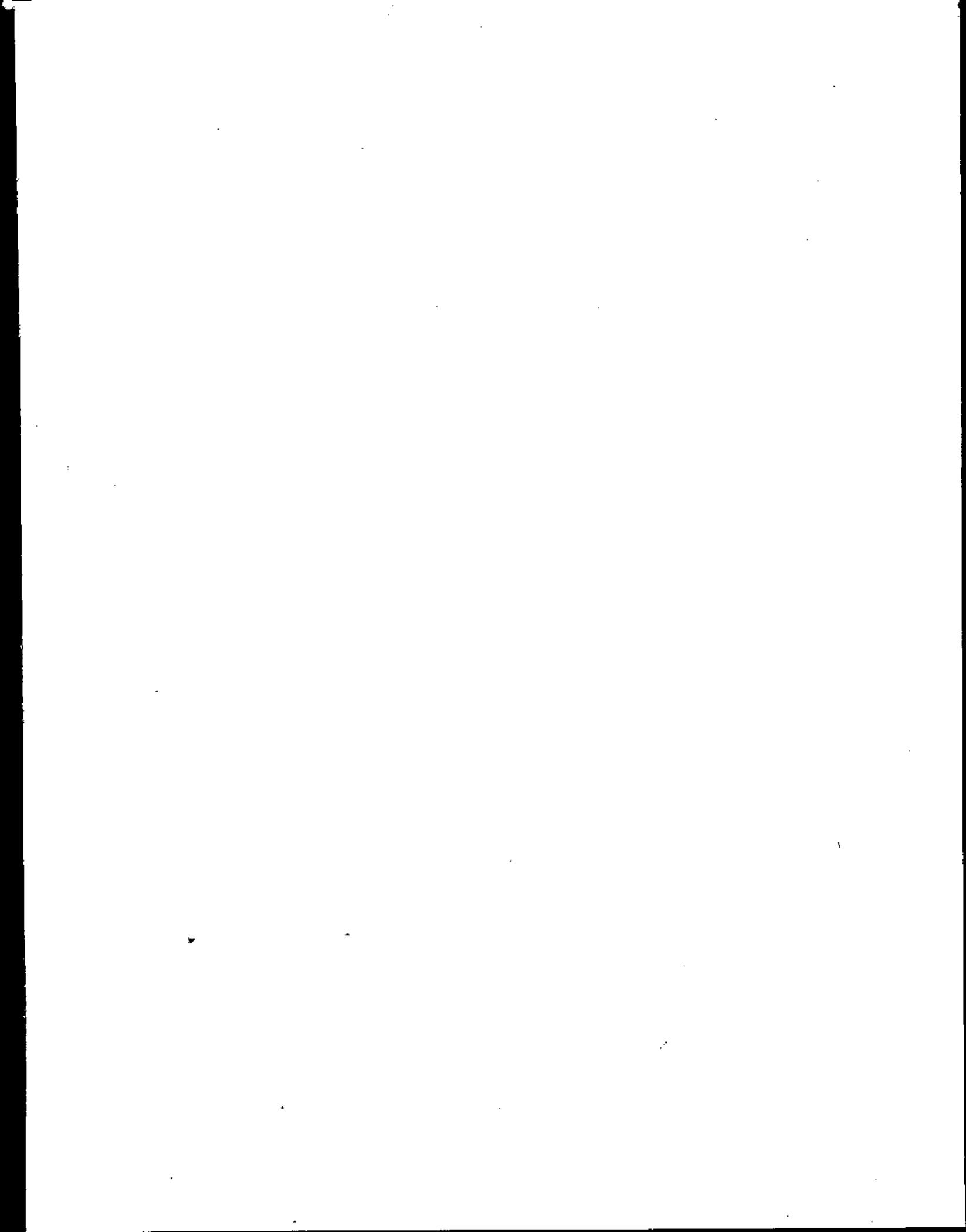
South of St. Johns, the proposed alignment causes moderate impacts to woodlots and upland wildlife species using these habitats during any phase of the animal's life cycle.

Endangered Species

Review of the U.S. Fish and Wildlife Service's Endangered Species-Great Lakes Region, "Red Book", which lists Federal Endangered Species in the region, and consultation with the Endangered Species Program Coordinator of the Michigan DNR, revealed that this project will have no significant adverse effects to the continued existence or propagation of any protected species. Although this project does not lie in the distribution range of the Indiana bat (Myotis sodalis), the DNR felt that suitable habitat existed along the Maple and Looking Glass Rivers for this species. Therefore, MDOT contracted a Mammalogist to evaluate the two suspected sites at the proposed crossings of the Looking Glass and Maple Rivers. Field work conducted in late July and early August, 1982, included mist-net capture sampling. Results were negative at both sites. Based on the results of this study no involvement with this bat is expected to occur with the proposed project.

Investigation was also made to determine the likely effect this project would have on plants or animals on either Michigan or Federal Lists of Endangered/Threatened Species. Several species have been reported from the Maple River State Game Area. These are the peregrine falcon (Falco Peregrinus) which is on both Federal and State endangered lists, the bald eagle (Haliaeetus leucocephalus) which is on the Federal and State threatened lists, the double-crested cormorant (Phalacrocorax auritus) which is on the State endangered list; and the Cooper's hawk (Accipiter cooperii), marsh hawk (Circus cyaneus), osprey (Pandion haliaetus), and bog lemming (Synaetons cooperi), which are all on the state list of threatened species.

Although there are no records of sightings, the DNR believes there exists suitable habitat in the Maple and Looking Glass Rivers for several species of mussels, which are on the State threatened list. This project will have no effect on these mussels. Also the barn owl (Tyto alba), on the State endangered list, favors old but actively-used farm buildings with waste grain available to support a healthy rodent population. The alignment strikes several buildings that could be considered potential habitat.



The Department also contracted a Botanist to evaluate the involment with endangered and/or threatened species of plant life. Surveys conducted in 1982 during the mid and late-season flowering periods are reflected in a "negative" finding for endangered plants. No threatened plants were located at any of the 31 survey sites; however, a recommendation was made for additional field study during the early blooming period on 14 sites encountered by the proposed alignment. This survey was conducted by the MDOT in spring of 1983, and no threatened plants were located along the alignment. Protection will be assured as necessary by the permit process, as administered by the DNR, which will be invoked if threatened populations are thus identified. The likelihood of impact to endangered or threatened plant life is considered very small at this time.

Based on coordination with the Endangered Species Program Coordinator of the DNR and consultation with local DNR wildlife habitat biologists and a review of the U.S. Fish and Wildlife Services "Red Book", no significant adverse effects to the continued existence or propogation of any threatened or endangered plant or wildlife species will occur as a result of this project.

4. Wetland/Floodplains

Vegetation in the project wetlands reflects the area's geographic location near the southern limits of the northern hardwoods biome. Many tree species, more common to the central hardwoods biome, persist in forested wetlands along the Grand River tributaries - the Maple and Looking Glass. The area wetlands, thus, have a role in maintaining plant diversity, as well as wildlife habitats.

Table 1 presents the seven distinct types of wetlands that are evident along the project.

Wooded wetlands, shrubby and treed, are most common. Open water marsh is scarce, particularly in palustrine (inland) sites, and true deep-water marsh is restricted largely to the Maple River Waterfowl Production Unit.

Wetland habitat in and along the numerous agricultural drains cannot be ignored for wildlife and fishery value. Most drain beds, whether cut in muck or alluvial stream courses, have been invaded by emergent or submergent vegetation, and have grasses, trees or shrubby tangles along their side-slopes. Furbearers and waterfowl often use these areas especially where watered year-round.

Impact Analysis

Beginning at the US-27/I-69 Interchange, the following sites are specifically encountered: (Exhibit 5).

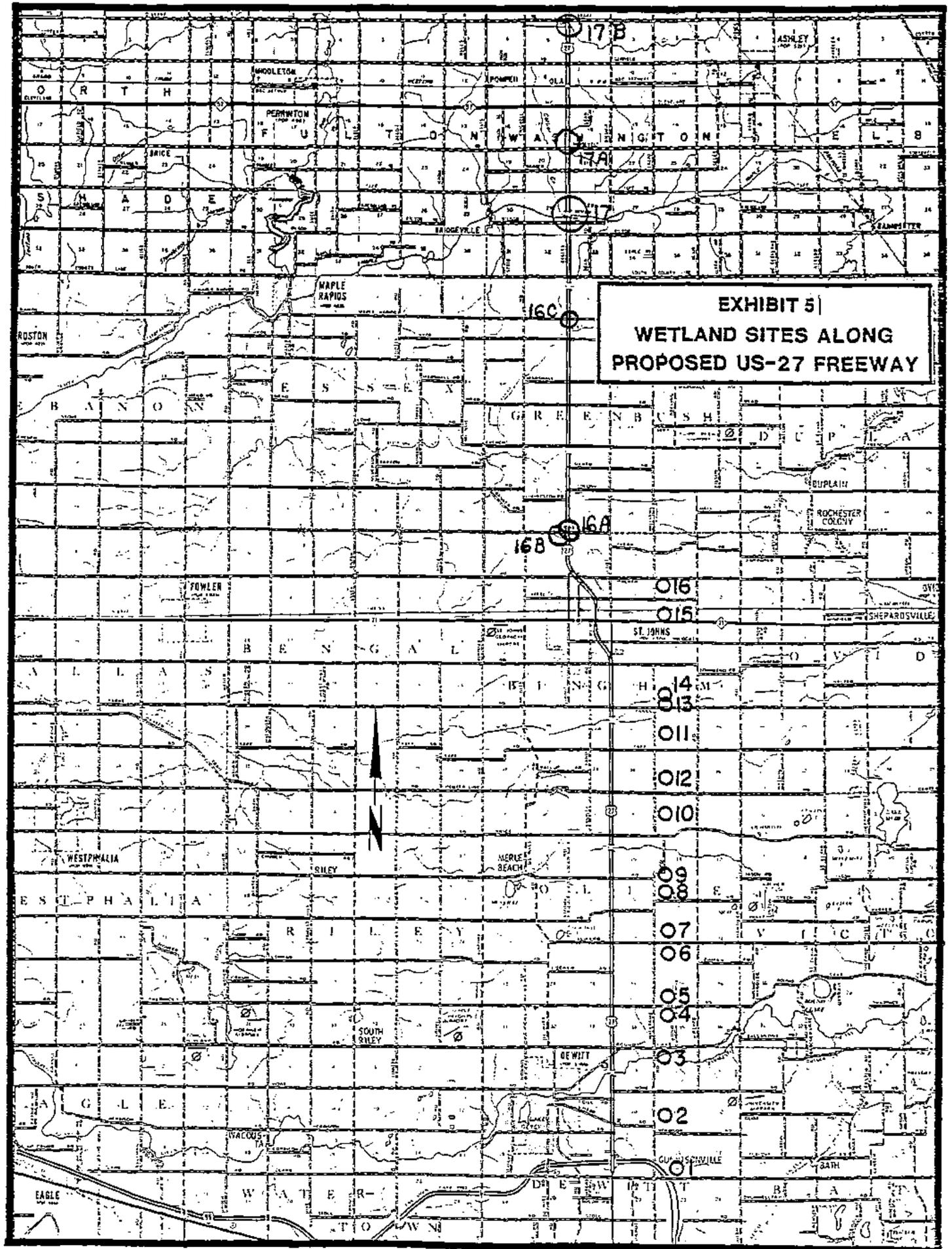
Site # 1 Remey-Chandler Drain

Remey-Chandler Drain is crossed 1/4 mile north of Clark Road. The drain has been recently "improved" and retains little habitat value. The drain carries large volumes of water during flood times. It will be important to provide adequate opening with extra margin for high years. Assuming this precaution, there will be adequate passage for fish and wildlife as well.

Table 1

Wetland Types, US-27 Project Area by Various Classification Systems

<u>Michigan Land Use/Cover Classification</u>	<u>U.S. Fish & Wildlife Service Classification</u>	<u>Common Or Local Name</u>	<u>Representative Species</u>	<u>Example Site or Area #</u>
623 (Shallow Marsh)	Palustrine or Riverine: emergent vascular, persistent and perennial	Marsh	Wide variety of evergent herbaceous plants: cattails, arrowhead, pond lilly, arum; duckweed, moss, algae	2
624 (Deep Marsh)	Riverine: aquatic bed vascular, perennial smartweed, widgeon grass, riverweed, ditch grass, milfoil, cattail	Marsh	Many species of submergent and emergent hydrophytes: pickerelweed, pondweeds,	17 east of US-27
621 (Meadow Marshland)	Palustrine: emergent vascular, persistent	Wet meadow, Fen	Reed canary grass (very common), also blue-joint, sedges, rushes, cattails loosestrife	15; along Marsh swamp drain or floodplain edges
51 (Streams, Waterways)	Riverine: Intermittant and Perennial, upper and lower; unconsolidated shores, aquatic bed, or emergent.	Stream, River, Drain	Lombardy poplar (common along ag drains) willows, canada plum, box elder (very common on dikes and drainbanks); sedges, rushes, cattails	1, 7, 9, 12- 14, 16
521 (Ponds)	Lacustrine: Limnetic and Littoral; unconsolidated bottom, aquatic bed, and emergent	Gravel Pits Ponds	Littoral zone similar to shallow marsh Limnetic zone similar to oligotrophic lakes	Several near corridor
* 413 (Lowland Hardwoods)	Palustrine: Forested, broadleafed deciduous	Swamp Woods, Hollow, Floodplain	Red maple (very common) silver maple, white ash, black ash, black willow, aspens, birches, cottonwood, sycamore, swamp white oak, black gum	3, 4, 5, 15
612 (Shrub Swamp)	Palustrine: Scrub-shrub broadleafed deciduous	Swale, pothole, run	Red-osier dogwood, gray dogwood box elder, buttonbush, shrub willows, viburnums, honeysuckles, huckleberry, elder	6, 10



**EXHIBIT 5 |
WETLAND SITES ALONG
PROPOSED US-27 FREEWAY**

Site #2 Open-Marsh Pothole (N. 1/2 of SW 1/4 Sec. 11, DeWitt Township).

The alignment removes three-acres of this five-acre shallow marsh. An additional five-acres of connected lowland, hardwood timber will be left undisturbed. Also left in undisturbed condition is a separate two-acre shrub swamp 50 feet west of the ROW.

Site #3 Looking Glass River (Crossed 600 feet south of Round Lake Road, NW 1/4 of Sec. 2, DeWitt Township).

The river supports a warmwater fishery of small-mouth bass, northern pike, panfish, and suckers.

Adjacent to the river on both sides at point of crossing is a 300' wide floodplain of silver maple and other lowland backwoods. The land is farmed close to the edge of the 25-year floodplain. The remaining vegetation is important to many species of upland and lowland wildlife. The river edge is used not only by aquatic and semi-aquatic furbearers, waterfowl, and wading birds, but also by deer and resident small game which tend to concentrate along this natural pathway, especially in winter and migratory periods.

As discussed later in the Floodplain Section of this report, the Looking Glass has a regionally-significant flooding tendency.

Four to five acres of floodplain and lowland habitat will be directly impacted by the project. Impact to wildlife will be serious because of the blockage of movements parallel to the river. Bridge design will be carefully studied to provide adequate setback for environmental purposes, and to control the quantity of fill in the floodplain. This will minimize flood hazard, and allow fisherman and animal passage along the shores during normal water-level periods.

Site #4 Turkey Creek Drain

The alignment runs adjacent to an unnamed, southwesterly flowing intermittent branch of Turkey Creek Drain, from a point 1/4 mile south of Chadwick Road north to where the unnamed drain crosses under Chadwick Road, in the NW 1/4 of Sec. 35, Olive Township. In this 1/4 mile section south of Chadwick Road, the alignment parallels the drain. Rechannelization is necessary. Of the 40 acres of woods adjacent to the drain, the alignment will destroy 15 acres of lowland hardwoods and 5 acres of upland hardwoods.

Site #5 Wooded Hollow

On the north side of Chadwick Road, the alignment crosses through the heart of a 10 acre low wooded hollow that is the origin of aforementioned drain (Site #4). Five acres of lowland hardwoods and an added five acres of surrounding mixed mesic woods, will be destroyed. Potential exists here for backing-up water if drainage is not reprovided flowing south beneath Chadwick Road (which will be raised up on a fill over the freeway).

Cross-drainage beneath the two roadway fills, flowing southwesterly, will be necessary to accommodate the movement of water that now occurs naturally through the hollow. Obstructing flow at this point would kill trees in the remaining 10 acres of upland and lowland woods. This impact can be avoided.

Site # 6 Scrub Shrub and Lowland Forested Wetland and Ives Drain (NE 1/4 of Section 26 and SW 1/4 of Section 23, Olive Township).

South of Alward Road, Ives Drain and the west side of a large mixed woods are crossed. The alignment crosses the woods along the higher west side, removing approximately 15 acres of upland woods and 4 acres of forested wetland. Also, approximately 12-1/2 acres of the scrub shrub wetland, located 1/2 mile south of Alward Road, will be destroyed. Ives drain, an intermittent drain, will be crossed with no drainage problems anticipated.

Site #7 Hamilton Drain, #1 Branch (NW 1/4 Sec. 23, Olive Township)

A quarter-mile north of Alward Road, an intermittent flow of upper Hamilton Drain is crossed. The crossing occurs on a trough between two low hills and should present little problem.

A roadside rest area is proposed on the north of this crossing site to serve the southbound lanes. The drain fans out on either side of the freeway into wide wetlands. Although the landscape architects will seek the most eye-appealing design along this 1/2 mile length to enhance the rest area site, there will be an unavoidable severance of productive upland and lowland wildlife habitats. Nonetheless, the alignment follows the most advantageous terrain between the high and low ground, and avoids the 100-acre low woods to the east except for approximately 4 acres of lowland hardwoods at its westernmost extension (in the south 1/2 Sec. 14/N 1/2 Sec. 23). (Note: There will be a loss of at least 20-acres of oak upland and mixed mesic woods here, in avoidance of the wetland to the east).

Site #8 Hamilton Drain, #2 Branch (NW 1/4 Sec. 14, Olive Township).

On the north side of Green Road, the alignment strikes a "run" which flows into Hamilton Drain 1/8 mile further east. The run will be channelized to flow along the east ROW ditch. About 4.5-acres of button-bush-willow shrub swamp and low woods dominated by red maples, will be extinguished. This type of area is a natural pathway for wildlife. Also, the branch drains low areas on both sides of Green Road. Fill for US-27 will not cause water back-up because cross-permeability will be designed to avoid this.

Site #9 Hamilton Drain (Sec. 11/14 Line, Olive Township)

The main Hamilton Drain will be crossed about 1/4 mile south of the present Williams Road crossing of the drain. No drainage problems are anticipated, but there will be a loss of about 1-1/2 acres of wildlife habitat along the drain. Approximately 3/4 mile north of this crossing, Hamilton Drain flows into Holden Drain, which is a large drain maintained to prevent flooding.

Site #10 Dogwood Swale (West-Center of Sec. 2, Olive Township)

A semi-permanently-flooded 25-acre scrub shrub wetland is crossed on its west end. This swamp is in a half-mile long basin with an intermittent outlet connecting westerly through a string of other, similar wetlands. The wetland is a surface expression of the water table and remains wet despite drainage. Gray and red-ozier dogwood shrubs are the dominant vegetation.

Crossing takes place near the wetland outlet between the main body of the wetland and a five-acre mature oak-hickory woods on the southeast-sloping ridge adjacent to the northwest edge of the wetland. Although the wetland tapers at the crossing, thus providing an optimal crossing vantage, potential for impacts exists.

It is recommended that the ROW width, depth of fill, and ridge cut be studied to minimize destruction to the woodlot in the west and the wetland on the east. Any time an alignment crosses between valuable habitat types, there will be unavoidable blockage of animal migration. However, the physical destruction of the sites can be reduced in this instance if ROW width is held to a minimum, slopes are pulled in, and grade is adapted to the site. Cross-drainage is crucial.

Site #11 Woodlot and South Branch of Spaulding Drain

A 10-acre moist woods (second-growth hardwoods) is traversed along its west edge, at the center of Sec. 26, Bingham Township. On the same edge is a small branch of Spaulding Drain. The plans show the drain on the east ROW edge within the ROW.

With care in construction, it is possible to avoid disturbance of the drain and woods edge. Preservation of foliage along the drain will be a roadside management "plus". However, the close dimensions require attention in design and construction.

Sites #12, #13, #14 Other Drains (Sec. 35, Sec. 23 Bingham Township)

Spaulding and Gachter Drains are crossed at three sites in these sections. There are no environmental problems provided adequate culverts are set.

Site #15 Mixed Wet-Mesic Woods

Between M-21 and the Grand Trunk R.R. the alignment's M-21 interchange ramps take out most of the west half of a 40-acre woods and will destroy approximately 15-1/2 acres of lowland hardwoods. The woods is a mature mixed stand with high species diversity. The west part of the woods is the wettest and includes a shallow drain on the west edge. Some of the water may be due to back-up of drainage along the railroad tracks, which have been in place many years. However, the woods is healthy. It will

not be possible to preserve much timber inside the ramp-loop because of high fills. But the remaining (east) half of woods is on higher ground; thus, should not experience die-off as a result of roadway construction.

Site #16 Basin Feeding Intermittent Branch of Shulters and Stubbs Drain (NW 1/4 Sec. 11 Bingham Township)

A 12-acre upland basin that functions as a runoff-gathering feeder to Shulters and Stubbs Drain, is crossed on its upper (west) extremity. The alignment turns west at this point to gain an approach angle to tie into existing US-27. Only two-acres of the basin and a 300-foot length of feeder are hit. Part of the length of drain can be maintained at natural grade where it flows at right angles across the median.

Highway runoff will be added to the "natural" runoff with no adverse effect.

Site #16 A Upton Drain and Feeder Drain

Upton Drain is crossed in Section 3, west of Williams Road, and a feeder to this drain is crossed in Section 4 and 33 east of the Kinley Road US-27 intersection. Both Drains are intermittent and originate within a mile upstream of the proposed freeway crossing. It will be necessary to relocate a portion of the feeder drain which flows through the proposed US-27/Kinley Road interchange area. No significant impacts will occur at these crossing sites.

Site #16 B Doty Brook

This drain crosses Kinley Road approximately 1/4 mile west of the US-27/Kinley Road intersection. The stream is about 4 foot wide in a valley 10 foot high and 25 foot across at the top. Very few small trees line the top of this drain. With the construction of the proposed US-27 interchange it will be necessary to realign Kinley Road to tie back in with existing US-27. This realignment will occur in Section 5 and will result in crossing this drain and a small feeder drain, with a minor amount of rechannelization necessary. No significant impacts will occur at these crossing sites.

Site #16 C Ferdon Creek

This drain is crossed in Sections 4 and 9 of Greenbush Township, in the vicinity of the proposed US-27/Maple Rapids Road interchange area. Much of this drain is approximately 6 foot wide and flows through a narrow wooded valley which is 50 to 150 foot wide. The interchange configuration and the location of the proposed freeway will result in the relocation of several hundred feet of this drain. There will be some loss of floodplain area at this location, however during design of this interchange, the appropriate drainage studies will be conducted to assure that the rechannelized drain will adequately carry the necessary volumes of water to avoid any potential problems. No significant impacts will occur at this location.

Site #17 Maple River State Game Area Waterfowl Production Unit WPU

The largest single involvement of wetland occurs at the Maple River State Game Area. There will be 10.3 acres of floodplain removed just west of the existing roadway. For the following reasons supported by our investigation, take of this 10.3 acres of wetland does not constitute a significant unavoidable impact:

- 1) The wetland types involved in the loss are seasonally flooded emergent and woods. Although wood duck nest boxes are installed at scattered locations, this portion of wetland is not within the more intensive-managed Waterfowl Production Unit on the east side of US-27. In selecting the west side of US-27 for expansion, the project averts relocation of the water-control weirs maintain by the DNR. Thus, the 225-acre Waterfowl Production Unit (WPU) will remain intact, with no disruption to water level controls, or loss of area.
- 2) Coordination with both the DNR and U.S. Fish and Wildlife Service has taken place with regards to the Maple River WPU of the propose project by the consultants. Mitigation will be worked out so that all concerned agents are satisfied.
- 3) The Replacement Package approved by the Federal Highway Administration on February 9, 1979, consists of purchasing a 16-acre parcel, the Robert and Flo Williams tract north of the Maple River, immediately west of the 10.3 acres to be taken. There will be a definite loss of natural floodplain habitat; however, it is expected the DNR can compensate for all loss in productivity by directing intensive management to the replacement tract and to other areas of the 3700-acre Maple River State Game Area. DNR Wildlife Division has plans for creating a new flooding on the west of US-27, similar in design and function to the WPU on the east of US-27. To accommodate impounding, the MDOT will design the new US-27 embankment fill to withstand floodwater to required levels and pressures. Improved user access to the eastern WPU parcel has been proposed in the Replacement Package. The Replacement Package also stipulates additional inter-agency coordination as the project design proceeds.
- 4) The existing WPU was made possible by foresight in design of existing US-27. It is appropriate and in a similar vein of cooperation between MDOT and DNR, that improved US-27 facilitate an expanded WPU. In conclusion, the opportunity for positive effects at this site counterbalance the negative impacts of land take and temporary construction disturbance to the Maple River floodplain.

Site #17 A Foster and Henson County Drain

North of Roosevelt Road in Sections 16 and 17 of Washington Township the proposed alignment crosses this drain. This is currently a channelized relatively straight drainage ditch. The water level is 5 to 6 feet wide, in a small valley about 8 foot high and 25 foot across at the top. There are a very few small trees along the slopes. Adjacent land use is farmland. The prosposed roadway will require approximately 2500 feet of this drain be rechannelized. No significant impacts will occur at this crossing site.

Site #17 B Bear Creek

South of Grant Road in Sections 4 and 5 of Washington Township the proposed alignment crosses this creek, which in this area is a channelized drain. East of existing US-27 this drain is about 5 to 6 feet wide and is lined by a narrow band of small trees. Farmland comes up to within 20 feet of this drain on the east side. The proposed roadway will require approximately 1000 feet of this drain to be rechannelized. No significant impacts will occur at this crossing site.

Site #17 C North Branch Bad River

This river is crossed south of Buchanan Road, immediately east of existing US-27. This river has undergone a significant amount of straightening and cleaning over the years and is similar in appearance and function to the numerous county drains in the area. This drain is 8 to 10 foot wide and flows through a narrow 6 foot high stream valley. The sides and top of this small valley is tree/shrub lined, with small elm dominating. Adjacent land use is farmland, which comes very near to the top of slope. No significant impacts will occur at this crossing site.

Alongside Existing US-27, From 1 Mile North of St. Johns to North Terminus

The purpose of the alignment traversing along the existing ROW is to avoid farmland and natural areas. Thirteen designated drains or creeks are intercepted, however. In addition, at least one-mile of continuous muck is traversed two-miles north of St. Johns. Most of the drains or creeks have smaller associated pockets of organic soil. Organic deposits will have to be removed in construction within the 150 feet of new ROW.

All the above drains and streams are on the preliminary plan sheets. Final design will have all muck areas further located by soil soundings and test borings. No significant removal or interference with wetlands is anticipated along this half of the project. If unusually deep pockets of muck are contacted during construction, the effects of surcharge will be confined to relatively small areas of wetland.

Wetland Summary

Acres of wetland destroyed at each site and the dominant wetland type affected at each site appear in Table 2.

Takes are summarized by cover type in Table 3. The total wetland area lost to construction is 82.8 acres. Over half the wetland take is of the lowland hardwoods type.

A wetland finding for this project can be found in Appendix B.

Resident and migratory wildlife of a non-threatened variety will be adversely affected where smaller wetlands are crossed. Loss of wetland habitat is compounded where the alignment intercepts both wetlands and their adjacent uplands. Upland interfaces are usually travel, nesting and feeding areas related to wildlife usage. This effect will not occur at the Maple River WPU, but will occur at each of the other 15 sites.

TABLE 2

Acreage Takes, By Site

Wetland Site #	1	2	3	4	5	6	7	8	9	10	15	11,12,13,14,16 16 A-D, 17 A-C	17
Acres Taken	-	3.0	5.0	15.0	5.0	12.5 4.0	4.0	4.5	1.5	2.5	15.5		10.3
Dominant Type*	51	623	413	413	413	612 413	413	623	413	612	413	51	623

* Michigan Land-Use/Cover Classification Code

TABLE 3

Acreage Takes, by Cover Type

<u>Wetland Type</u>	<u>Acres Taken Total Project Length</u>
413	50.0
51	-
623	17.8
<u>612</u>	<u>15.0</u>
	82.8 Total Wetland Take

Floodplain Involvements

Depicted at Figure 2 are the approximate boundaries of those flood-prone areas identified by the U.S. Department of Interior, Geological Survey Division, and the U.S. Army Corps of Engineers. These flood-prone areas indicate that there is, on the average, about 1 chance in 100 that the designated areas will be inundated in any year.

Looking Glass River

The Looking Glass River has a history of flooding along most of its length. Therefore, it is important, under rules of the standing Executive Order on Floodplains Protection, that the proposed project not interfere with flood passage; nor contribute to flooding tendency in any significant manner.

From the mouth of the Remy-Chandler Drain upstream, the Looking Glass River drains 190 square miles of land area. The Remy-Chandler, also crossed by the alignment, itself drains 26 square miles. Detailed predictions of discharge rates and flood levels have been produced by the Michigan Water Resources Commission, Tri-County Regional Planning Commission, and the U.S. Army Corps of Engineers in their joint document Floodplain Information: Looking Glass River, 1969.

At the Wood Street Bridge, 1/4 mile downstream from the proposed crossing, the streambed elevation is 793'. During the 1947 flood, water crested at 802.0', 3.2' below maximum clearance of the Wood Street Bridge. The 1947 flood is considered similar to the 25-year flood. The 50-year flood peak is 804.2'. The Intermediate Regional Flood (100-year frequency) is predicted to peak 2.0' to 3.6' higher than the 1947 flood, or at maximum of 805.6'. The Standard Project Flood, defined as the largest flood that can be expected, would reach a peak of 809.5'.

At the Looking Glass River crossing, the freeway lanes intercept the floodplain at points where it was recorded to be 400' to 500' wide at the height of the 1947 flood. The same terrain would be flooded for a width of 650' to 750' during the Intermediate Regional Flood. At Standard Project Flood, the flooded area would be 750' to 1050' wide. On account of steeper floodplain slopes to high ground, flooding widths are significantly more narrow than in the zones immediately upstream and downstream.

The alignment crosses the Looking Glass floodplain at right angles. Fill and, consequently, obstruction of natural flow are held to a minimum by a right-angled approach. However, any amount of fill in the floodplain will have some effect on raising flood potential. An additional consideration then becomes important: to allow adequate water passage. This will be carefully studied in design. The costs and advantages of lengthened bridge work will be studied, in detail, to arrive at a minimum basal area of fill for the approach roads and abutments, consistent with engineering and costs. With these considerations, it is not expected that the proposed project will significantly encroach on the Looking Glass floodplain.

Maple River

The Maple River has a history of recurrent flooding. Special water management projects have been constructed by local, State, and Federal

agencies at, and immediately upstream of, US-27. These projects capitalize on the annual floods by diverting water to create duck habitat. Water-carrying capacity in the main river channel has been increased to speed drainage off farmlands. Downstream flooding is controlled by containment of water inside the diked waterfowl marsh. New water management projects are currently under study.

Extensive hydrological data for the entire length of the Maple River from existing US-27 upstream, has been developed by the U.S. Soil Conservation Service in preparation of plans for a P.A. 55 Federal-aid watershed project. That project, which would involve extensive re-engineering of the Maple channel, has been cancelled. However, the Inter-County Drain Commission has contracted a study on a smaller-scale project using the hydrological data developed by the Soil Conservation Service. The Soil Conservation Service data is also the primary source for this floodplain evaluation.

Contacts for obtaining the hydrologic studies and ongoing watershed plans are:

Mr. Bud Belcher
U. S. Soil Conservation Service
Manly Miles Building
1405 S. Harrison Road
East Lansing, Michigan 48823
Phone: (517) 337-6681

Mr. Harry Miken, Administrator
Michigan Inter-County Drains
5th Floor, Lewis Cass Building
Lansing, Michigan 48909
Phone: (517) 373-1093

The Wildlife Division, Michigan DNR has long-range plans for expanding their Waterfowl Production Unit (WPU), which is the water-regulated marsh adjacent to the upstream (east) side of existing US-27. Their new unit would be along the west side of the new US-27 freeway. Wildlife Division personnel expressed an interest in coordination with the design consultant for the proposed US-27 project. Contact:

Mr. Marv Cooley
Southern Game Lands Unit
Wildlife Division
Department of Natural Resources
P. O. Box 30028
Lansing, Michigan 48909
Phone: (517) 373-1263

Under present or base conditions, meaning without any additional water management projects, discharge at the 25-year flood is 5500 feet/second measured at the US-27 bridge. Assuming construction of the previously-planned 556 water project by the SCS, the 25-year discharge at the same site would have been 6240 feet/second. The increase results from greater discharge facilitated by main and side channel work. However, the replacement project now under study as a substitute for the 556 project would probably result in a 25-year peak discharge less than 6240 feet/second, but greater than 5500 feet/second. By contrast, the original unimproved river channel only had a capacity of 60 feet/ second.

Water surface height at the 25-year peak is 655.1 feet measured at the existing US-27 embankment. Height at the 100-year interval is 656.5 feet. For comparison, the 10-year flood peak is 654.6 feet, a difference of only 1.9 from the 100-year elevation. Future water projects will recognize the limiting factors which are the heights of existing US-27 and dikes.

Based on analysis of the available information and consultation with the Soil Conservation Service, the Department finds that effect of the proposed US-27 project, in terms of floodplain encroachment and flood hazard, are not significant. This is because the taking of 10 acres of bottomland will not significantly intrude on flood capacity. Displacement of 10 acres is very insignificant considering the broad natural floodplains of the 3700 acre State Game Area along both sides of the Maple River, and the 305.4 square miles area drained by the river upstream of the proposed project. On the other hand, if the US-27 road fill is integrated into plans of the DNR and/or Inter-County Drains, as intended, the proposed project will augment flood protection. Actual success in this regard depends on construction of a levee, dike and pump system, by outside agencies, to create an impounded area.

During final design, the Department's Drainage Design Unit will be in close contact with water-management agencies, and will perform a specific hydrologic study of each river crossing to assure adequate passage of the 100-year flood volume. Thus, the US-27 freeway will not present a flood hazard, and may actually decrease flooding on the Maple River if the preceding auxiliary projects are implemented as planned.

Drains

The proposed US-27 freeway crosses numerous drains. The more important ones are discussed in more detail in the preceding wetlands section. (Also refer to page 133 of Draft EIS). These drains are very similar in nature and function and reflect the nearly level to rolling land surface of Clinton and Gratiot Counties. The following items describe the range of characteristics and impacts which are applicable to the areas drainage courses.

- a.) The drainage areas for these drains are all relatively small. They vary from a few acres to a few square miles. Most are intermittent. They are maintained to prevent flooding of adjacent farmland, and the amount of water that each drain carries is reflected in its size and how cleaned out the drain is kept. Many of the larger and more important drains are cleaned periodically and they are generally straight, with either a narrow weedy or tree lined fringe. These drains are characteristically farmed as close to the top of the valley slope as possible.

The primary impacts resulting from crossing these drains is related to the physical destruction of a narrow band of wildlife habitat that exists within the valley cross section. The most obvious example of loss of wildlife habitat will occur at the proposed crossing of Ferdon Creek, in the vicinity of Maple

Rapids Road, immediately east of the existing alignment. Due to an interchange at this location several hundred feet of a 50 to 150 foot wide wooded valley will be destroyed. It will be necessary to relocate this drain outside the proposed toe-of-slope. There will be some loss of floodplain area at this location, however during design of the interchange the appropriate hydraulic studies will be conducted to assure that the rechannelized drain will have an effective hydraulic capacity equal to or greater than the existing structure and with no increase in backwater.

- b.) The proposed project will not increase the existing flooding characteristics of any of these drains. These drainage ways are well defined and will require a culvert to pass the flow. All culverts will be designed to pass the 100 year flood. It should be noted that in addition to the Maple River and Looking Glass River there are two other pronounced drainage ways that cross US-27 in the project area. These are associated with Stony Creek, located south of St. Johns, between Parks and Taft Roads, and with Hayworth Creek, north of St. Johns between French and Kinley Roads. Although US-27 does not cross these streams, it does cross a number of county drains that flow into them. Recently developed "Flood-Prone Area Maps" published by the U.S. Department of Interior, Geological Survey Division indicate that the county drains that flow into these streams are maintained to prevent flooding of adjacent farmland, and are able to handle the 100 year flood.
- c.) This project will not support further development in the floodplain. Most of these drains have no associated floodplain since the floodwaters are confined within the drain itself. The remaining drains have only narrow floodplain areas that are farmed to the maximum extent possible.
- d.) During design, south of St. Johns, where the freeway is on a new location, hydraulic studies will be conducted to assure that all drain crossings will pass the 100 year flow. North of St. Johns, along existing US-27, all structures will have an effective hydraulic capacity equal to or greater than the existing adjacent structures, and backwater will not be increased. Appropriate erosion control measures will be applied at all drain crossings to reduce the amount of sedimentation entering these drains.

Based on the above evaluation of drainage crossings, there will be no significant adverse impacts on natural and beneficial flood plain values; there will be no significant change in flood risks; and there will be no significant increase in potential for interruption or termination of emergency service or emergency evacuation routes; therefore, it has been determined that this project will not result in any significant encroachments.

Permits

Permits for filling, draining, or altering certain wetlands along the proposed project area will be required. The U.S. Army Corps (USCE) of Engineers requires a permit under authority of Sec. 404 of the Clean Water Act for all wetlands contiguous to the Looking Glass and Maple Rivers. The Michigan Department of Natural Resources (MDNR) requires a permit under Act 203, PA of 1979 for all wetlands contiguous to a Lake or stream. The MDNR can expand jurisdiction to include non-contiguous wetlands in Clinton and Gratiot Counties if the agency declares, by virtue of field inventory and analysis, the wetland to be important for environmental reasons. Permits will also be required for all stream and county drain crossings. The USCE requires a permit under authority of Sec. 10 of the Rivers and Harbors Act of 1899 for any construction fill or alteration of navigable waters, which includes the Looking Glass and the Maple Rivers. The MDNR requires a permit under Act 346, P.A. of 1971 for any construction, fill or alteration of an inland lake or stream, which includes all the intermittent county drains, as well as the Looking Glass and Maple Rivers. Last, a permit will be required from the MDNR for fill being placed within the floodplain of the Looking Glass and Maple Rivers. All the permits required can be obtained by applying to the MDNR, Land Resource Programs Division. The USCE and MDNR have a joint permit process for project review.

5. Historic and Archaeological Sites

The many alternates and permutations that were studied during the development of the proposed alignment prompted the Department to consult the professional staff of the Michigan History Division at several stages to assess potential involvements with known or suspected sites. The project was granted clearance for Historical/Archaeological purposes, based on the preliminary design in a letter of October 27, 1982 (next page). That was preceded by earlier clearance for the basic alignment in a letter of February 26, 1981 (following page).

The Department contracted a team of Archaeologists to evaluate the entire length of the proposed project. The Phase II (final) level of their investigations are recorded in a detailed, 125 page report presented to the Michigan History Division on November 9, 1980, in which no significant impacts were identified. However, several sites near the proposed alignment were cited, and will be monitored during and through the construction process to prevent inadvertent disturbance related to the proposed project, from borrow or fill procurement or disposal. Also, any shifts in alignment that might be required in final design will be cleared with the History Division if they appear to threaten known sites. No significant cultural or archaeological resources either eligible for or listed on the National Register of Historic Places will be affected by the proposed project.

6. Relocation Plan

The Department has prepared a Relocation Plan. The plan is based on detailed right-of-way estimations and a comprehensive search of the real estate market. It is concluded that the proposed project will not create a housing or property shortage, and that ample replacement properties are available in the immediate area. The Right-of-Way Division will work with affected land-owners to maintain equitable treatment.

MICHIGAN DEPARTMENT OF STATE

RICHARD H. AUSTIN

SECRETARY OF STATE



LANSING

MICHIGAN 48918

MICHIGAN HISTORY DIVISION

ADMINISTRATION, PUBLICATIONS
RESEARCH, AND HISTORIC SITES
208 N. Capitol Avenue
517-373-0510

STATE ARCHIVES
3405 N. Logan Street
517-373-0512

STATE MUSEUM
208 N. Capitol Avenue
517-373-0515

October 27, 1982

Re: ER-2207
US-27, Lansing to Ithaca
Clinton and Gratiot Counties

Mr. Paul McAllister
Environmental Liaison Section
Transportation Planning Services Division
Department of Transportation
P. O. Box 30050
Lansing, Michigan 48909

Dear Mr. McAllister

At the request of Andrew J. Zeigler, we have reconsidered our extensive file on this project and have determined that the project will have no effect on any cultural resources meeting the National Register criteria. We do note, however, that the Coleman Hotel is located adjacent to the project at the intersection of US-27 and French Road. We believe this structure does meet the National Register criteria and will want another opportunity to review this project if any changes in the plans for the French Road Section of the project are made.

Any questions in regard to this letter should be directed to John R. Halsey, State Archaeologist or Robert O. Christensen, Regional Preservation Coordinator at this address or (517) 373-0510.

Sincerely,

Martha M. Bigelow
Director, Michigan History Division
and
State Historic Preservation Officer

A handwritten signature in cursive script that reads "Kathryn B. Eckert".

By: Kathryn B. Eckert
Deputy State Historic Preservation Officer

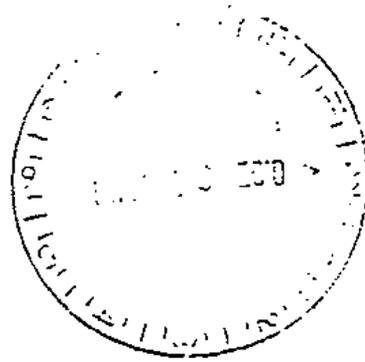
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MICHIGAN DEPARTMENT OF STATE
RICHARD H. AUSTIN SECRETARY OF STATE



LANSING
MICHIGAN 48918

February 26, 1981



MICHIGAN HISTORY DIVISION
ADMINISTRATION, ARCHIVES,
HISTORIC SITES, AND PUBLIC AFFAIRS
3423 N. Logan Street
517-373-0510
STATE MUSEUM
505 N. Washington Avenue
517-373-0515

Mr. David A. Merchant
Division Administrator
U. S. Department of Transportation
Federal Highway Administration
Region 5, P. O. Box 10147
Lansing, Michigan

Re: ER-2207
FHWA-MI-EIS-77-02

Dear Mr. Merchant:

After more than two years of archaeological investigation and a staff assessment of the historic resources along the proposed route of US-27 from Lansing to Ithaca, Ingham, Clinton and Gratiot Counties, Michigan, our staff has determined that this project will have no effect on any cultural resources either eligible for or listed on the National Register of Historic Places.

If you have any questions, please contact Donald E. Weston, Environmental Review Coordinator for the Michigan History Division at 373-0510.

Thank you for your cooperation.

Sincerely,

Martha M. Bigelow
Director, Michigan History Division
and
State Historic Preservation Officer

MMB:tj

DATE	MAR	6	1981
<input checked="" type="checkbox"/>	Div Eng	<input type="checkbox"/>	Plan & R
<input type="checkbox"/>	Asst D/E	<input type="checkbox"/>	Bridge
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<input type="checkbox"/>	Asst Mgr	<input type="checkbox"/>	Records
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<input type="checkbox"/>	Dir C	<input type="checkbox"/>	
<input type="checkbox"/>	RJW	<input type="checkbox"/>	
<input type="checkbox"/>	Safety	<input type="checkbox"/>	

11-37

This Relocation Plan illustrates and discusses, in a conceptual stage format the right-of-way (ROW) requirements for the Proposed US-27 Freeway and the availability of replacement properties in the area. The study involves properties in the Townships of DeWitt, Olive, Bingham and Greenbush - Clinton County, and Washington and North Star - Gratiot County.

The analysis of potentially affected parcels for the Relocation Plan includes a very liberal interpretation of preliminary right-of-way requirements. If there was a question of whether a structure and/or parcel of land was impacted by the proposed alignment, it was included in the ROW estimates with the understanding that upon completion of final ROW needs a more definitive and exact parcel analysis would be prepared.

The ROW limits as illustrated on the functional plans are preliminary in nature, and could be shifted and/or expanded during the final design phase. Unless there is a major shift in the alignment, which in all probability will not occur, each parcel of land noted is affected by the ROW requirements. The relative number of households, business and/or churches, affected by the freeway will probably not vary a great degree as the design is finalized.

The ROW cost estimates were made for each of the proposed freeway alignments during the summer of 1976. The ROW cost estimates have been adjusted to reflect the approved alignment based upon comparables provided during the earlier study.

The Proposed US-27 Freeway Analysis is divided into eleven segments and the St. Johns Business Route into one segment. As shown in Table 4, there are a total of 215 parcels impacted. The parcels affected include 37 percent residential, 8 percent commercial and 59 percent agricultural. The segment which has the largest impact is Number 5. That segment also impacts the largest agricultural area followed very closely by Segments 2, 11, and 3.

Segment 5 impacts approximately 43 percent of the total residential parcels and 50 percent of the commercial properties.

Approximately one-third of the residential structures to be acquired are within segment 5. Segment 5 also has the greatest impact upon commercial and farm structures.

Segment 5 also has the highest estimated ROW cost, followed by Segments 11, 2, 10 and 1. Segment 5 is located primarily in Greenbush Township.

Segments 1, 2, 3, and 4 have a length of approximately 3.4, 4.9, 5.1, and 3.4 miles respectively and are located in DeWitt, Olive and Bingham Townships. They are located in an area that is predominately agriculture. A few forty acre tracts have been subdivided into 10 acre tracts for residential purposes. Segments 5 and 6 have a length of approximately 5.7 and 0.8 miles and are located in Bingham and Greenbush Townships. The segments, for the most part, are adjacent to existing US-27. Either side of the segments, high - yield agricultural land is present. Because of the decision to utilize the existing alignment as much as possible, the relocations are higher than Segment 1 through 4.

TABLE 4

SEGMENT ANALYSIS OF ROW ACQUISITION IMPACT
 PROPOSED US-27 FREEWAY
 LANSING TO ITHACA, MICHIGAN

SEGMENT	PARCELS				STRUCTURES				ESTIMATED COST
	Total	Res.	Com.	Farm	Total	Res.	Com.	Farm	
1. North of I-69/US-127/US-27 interchange to and including Round Lake Road interchange	24	9	-	15	14	5	-	9	\$ 558,360
2. From Segment 1 to and including Price Road interchange	28	9	-	19	21	14	-	7	595,570
3. From Segment 2 to an including M-21 interchange	25	6	1	18	16	8	1	7	440,756
4. From Segment 3 to just south of Kinley Road interchange	13	2	-	11	4	2	-	2	141,360
5. From Segment 4 including Kinley Road interchange to and including Maple Rapids Road interchange	58	34	4	20	52	33	4	15	1,585,184
6. From Segment 5 to Clinton/Gratiot County line	4	1	-	3	6	3	-	3	125,000
7. From Segment 6 to Wilson Road	7	2	-	5	10	5	1	4	301,000
8. From Segment 7 to Ranger Road	8	2	-	6	3	2	-	1	61,160
9. From Segment 8 to just south of M-57 interchange	3	1	-	2	1	1	-	-	62,400
10. From Segment 9 including M-57 interchange to Garfield Road	16	5	2	9	22	7	2	13	568,400
11. From Segment 10 to end of Project (Approximately 0.2 miles north of Pierce Road)	29	9	1	19	28	14	1	13	691,700
TOTAL	215	80	8	127	177	94	9	74	\$5,130,890

TABLE 5
 ST. JOHNS BUSINESS ROUTE ROW ACQUISITION ANALYSIS
 PROPOSED US-27 FREEWAY
 LANSING TO ITHACA, MICHIGAN

SEGMENT	PARCELS				STRUCTURES				ESTIMATED COST
	Total	Res.	Com.	Farm	Total	Res.	Com.	Farm	
From west of Price Road interchange to existing US-27	5	1	-	4	7	3	-	4	\$ 81,700

Source: Wilbur Smith and Associates and Charles R. Green

Segments 7, 8, 9, 10, and 11 are approximately 1.2, 1.3, 1.2, 1.3, and 5.6 miles in length. These segments are located in Washington and North Star Townships in Gratiot County and include all or part of the existing US-27 ROW. The area is predominately agricultural with 3 commercial properties along the route.

Two church properties are impacted in Washington and North Star Townships. In each case, the buildings and land must be acquired for ROW purposes.

The St. Johns Business Route is included as one segment (Table 5). It will impact five parcels of land, four of which are agricultural properties. Three residences and four farm buildings will be impacted. Since the proposed route will not be a limited access highway, the parcels will have direct access to it and as such, the structure could probably be relocated on the same property.

Research to gather data on the real estate market in Clinton and Gratiot Counties was conducted during 1976 and updated in 1979, including information available during an average week. Research consisted of contacting real estate agents, tax offices, local newspapers, and canvassing the area for sales and rentals in the Tri-County area. The Northern Quadrant of the Lansing Real Estate Market Area includes several farming facilities, prime uncultivated agricultural land and new and expanding subdivisions. The data gathered during the research effort was interpreted and incorporated in Tables 6 through 9.

The inventory revealed several multi-family developments being built or planned in the area. Most of the units are programmed for DeWitt and Bingham Townships.

Records indicate that building permits and dollar values of building activity were on the increase in 1979. However, in 1980, they are on a decline due primarily to the high cost of borrowing money. It is anticipated, regardless of the present market conditions, that the single family structure, commercial structures, farms and building lots required for relocation will be available for relocation during the normal acquisition periods prior to construction.

The adverse impacts of displacements resulting from the proposed US-27 Freeway will be minimized by the provisions set forth by the Michigan Legislature in Act 295, Public Acts of 1966 (as amended); Act 352, Public Acts of 1925 (as amended); and Act 149, Public Acts of 1911 (as amended). Relocation guidelines and assistance is provided in the Federal Highway Procedure Manuals (FHPM) 7-5-1, 2, 3, 4, and 5.

The Uniform Relocation Assistance and Real Property Acquisition Act of 1970 provides for just compensation for taking of real property.

TABLE 6

AVAILABLE MULTI-FAMILY UNITS FOR RENT OR PURCHASE

<u>Type of Unit</u>	<u>Less than \$100/mo</u>	<u>\$200-200/mo.</u>	<u>\$200 and up/mo.</u>
1 Bedroom	1	19	0
2 Bedroom	0	33	17
3 Bedroom	0	2	38

Source: Wilbur Smith and Associates

TABLE 7

UNIMPROVED LOTS* FOR SALE

<u>SCHOOL DISTRICT</u>	<u>Less than \$1000</u>	<u>\$1000 - 2000</u>	<u>\$2000 - 5000</u>	<u>\$5000 - 7500</u>	<u>\$7500 Up</u>
DeWitt	1	1	7	5	8
Lansing	1	1	2	1	1
Bath	1	1	1	3	6
St. Johns	1	1	1	2	3
Laingsburg	2	2	19	4	9

* The lots shown are 1 acre or less and are those lots within that part of the school district considered appropriately close enough for relocation purposes.

Source: Wilbur Smith and Associates

TABLE 8

AVAILABLE PARCELS OF VACANT LAND*

<u>SCHOOL DISTRICT</u>	<u>Acres Per Parcel</u>				
	<u>1-10</u>	<u>10-20</u>	<u>20-40</u>	<u>40-6</u>	<u>60 up</u>
DeWitt	7	5	2	1	1
Lansing	1	0	0	0	1
Bath	5	15	4	2	0
St. Johns	4	6	2	6	1
Laingsburg	8	4	1	2	0

* The parcels shown are greater than 1 acre and are those parcels within that part of the school district considered appropriate close enough for relocation purposes.

Source: Wilbur Smith and Associates

TABLE 9

AVAILABLE FARMS*

<u>Acres Per Farm</u>	<u>Number of Farms</u>	<u>Price Range of Farms</u>
0-20	8	\$35,000 - \$61,000
20-100	12	\$35,000 - \$95,000
100 up	5	\$99,000 - \$235,000

* Farms have a minimum of 1 house and 1 barn.

Source: Wilbur Smith and Associates

A displaced farm operator may receive substantially the same benefits, including "in lieu of" payment, as provided for business owners when personal property must be moved or the operator is affected to such an extent as to eliminate the continuance of a farming operation on the remaining acreage available. Moving allowance is not paid for items covered under real estate compensation.

If the farm residential improvement is owner-occupied, the owner is entitled to moving costs and replacement housing. If tenant-occupied, the tenant is entitled to the same benefits as allowed any other displaced tenant.

Updated relocation information, dated July 27, 1983, prepared by the Michigan Department of Transportation's Right of Way Division is included on the following two pages.



OFFICE MEMORANDUM

DATE: July 27, 1983

TO: FILE

FROM: John H. Hogan, Assistant
Relocation Supervisor

SUBJECT: ACA - C.S. 19033 and 29017 - Job 05664
US-27 - Lansing to Ithaca

Discussions were held with the FHWA regarding their review comments made on various subjects in the project Relocation Plan. The following statements are in reply to the review comments in accordance with the discussions held.

From local government sources and on site analysis of displacements on the preferred alignment, it was determined that there will not be any minorities displaced or affected by the project nor are there any minority areas bypassed or segregated from contiguous areas.

Inspection of all 94 residential displacement units and information from local officials has shown that all residential displacement units are single family, owner-occupied house units except two or three of the houses which contain two units each with a maximum of six tenants.

Since the displacements are single and two family house units, it is intended to utilize current available sale and rental housing units of the same type to provide for the displacees rather than the available alternate replacement sites and multifamily units shown in the Relocation Plan.

The project traverses through five townships, in parts of two different counties. The private real estate market for available residential sale and rental properties, in the general area of the project, lists in excess of 850 available houses. Economic and other factors that discourage buyers in the market have kept demand down and supply up over an extended period. Many of the availables are comparable, decent, safe and sanitary replacements suitable to the displacees. Based on availability, the supply of housing from the private market is well over what is sufficient to provide for any and all displacees allowing a normal relocation period.

July 27, 1983

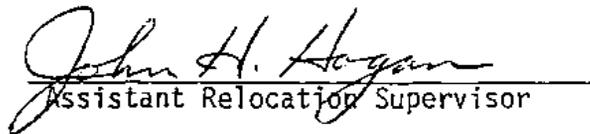
Even though the number of businesses (nine) to be displaced is small, there is a possible adverse effect on the communities from the displacement of these businesses. Most of these businesses, although not necessarily vital to the area communities individually, they do provide the area residents convenient services with some employment and in turn a contribution is afforded to the communities economies. The service and tax contributions to the local communities of these businesses is not, however, substantial enough to cause any real harm according to discussions with local officials. To minimize any adverse affect of displacement, special assistance will be offered to all business relocatees in qualifying and obtaining suitable and adequate replacement sites within the area communities.

There appears to be only one special problem for one of the businesses, an auto salvage business. It may be difficult to locate a site and obtain zoning since this type of operation is zoned out in most locations. Assistance will be provided to this business and all of the others for relocating in the same areas and obtaining needed zoning, incentive packaging, any other available aids and cooperation from the local community officials.

All of the proposed business displacees, as is usually the case, will probably remain in business by rebuilding on their remaining property if they can or they will acquire replacement properties which are nearby or in other parts of the community. All of the businesses are provided relocation payments. Relocation assistance and services for any and all relocation problems that may occur or may be part of their makeup, will be provided.

When appropriate, in accordance with applicable regulations, the Department is providing every reasonable effort to inform individuals and businesses of the impact, if any, of the project on their property. Every effort is also provided, through assistance, to lessen any relocation impact when it occurs.

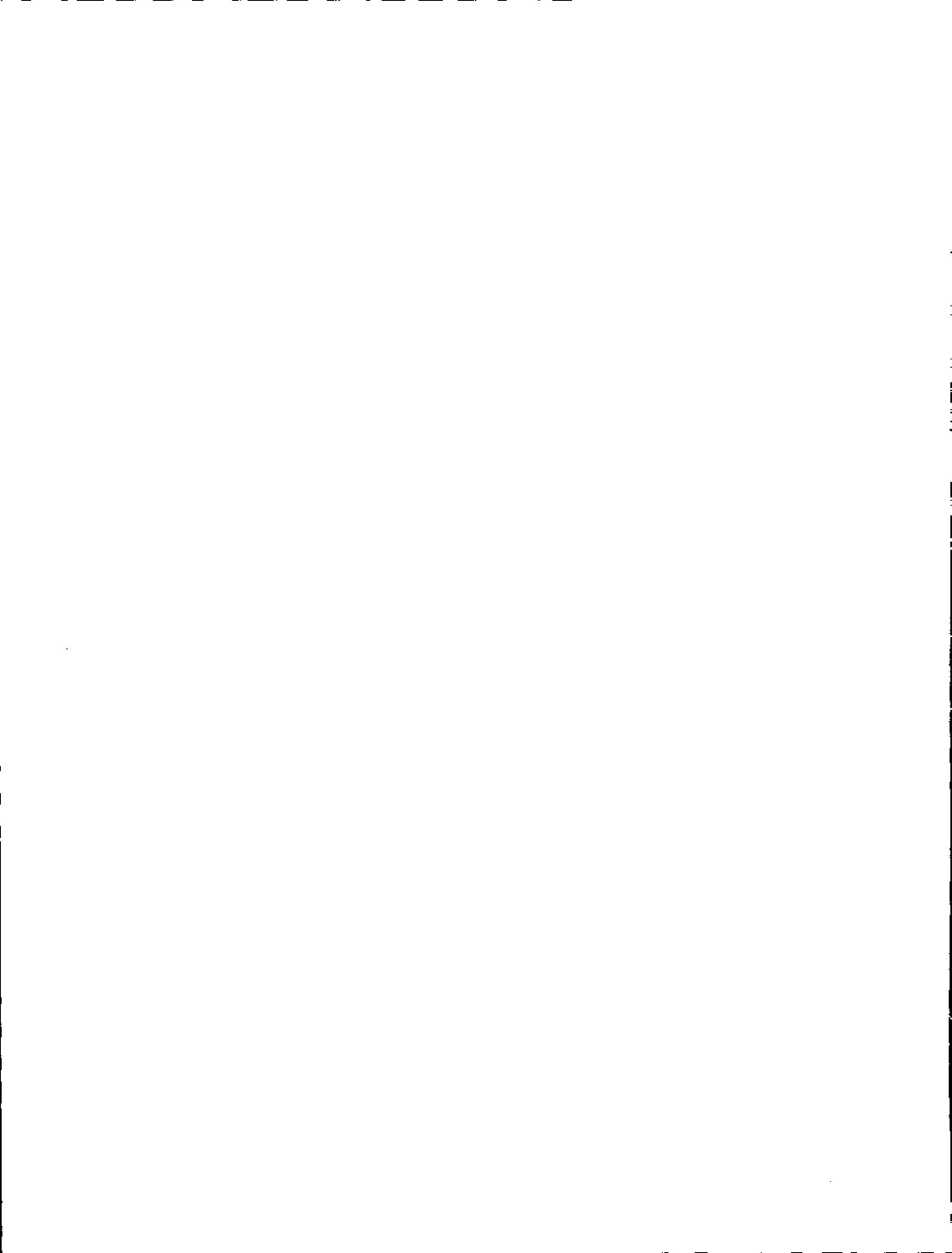
The terms, "relocated into another facility" and "moved to another facility" as used on page six of the Relocation Plan, will be deleted along with the sentences that incorporate these terms.


Assistant Relocation Supervisor

JHH:cd

PART III

SECTION 4(f) STATEMENT



III. SECTION 4(f) INVOLVEMENT

Introduction

This Section 4(f) Statement addresses the proposed improvement of US-27 in the vicinity of the Maple River State Game Area. The preliminary document was circulated as a supplement to the Draft Environmental Impact Statement FHWA-MI-EIS-77-02-D dated March, 1977, on August 31, 1981.

Since the Maple River State Game Area is a publicly-owned wildlife refuge and recreation area, and the proposed alternative will use land from that area, which was developed with Pittman-Robertson Act funds, the provisions of Section 4(f) of the DOT Act must be satisfied. Land and Water Conservation Act funds have also been used by the Department of Natural Resources to develop the State Game Area. Provisions of Section 6(f) requires such acres be functionally replaced. Accordingly, the Preliminary Section 4(f) Statement was prepared and circulated to appropriate agencies for review and comment.

No other Section 4(f) involvements have been identified for the proposed alternative under consideration.

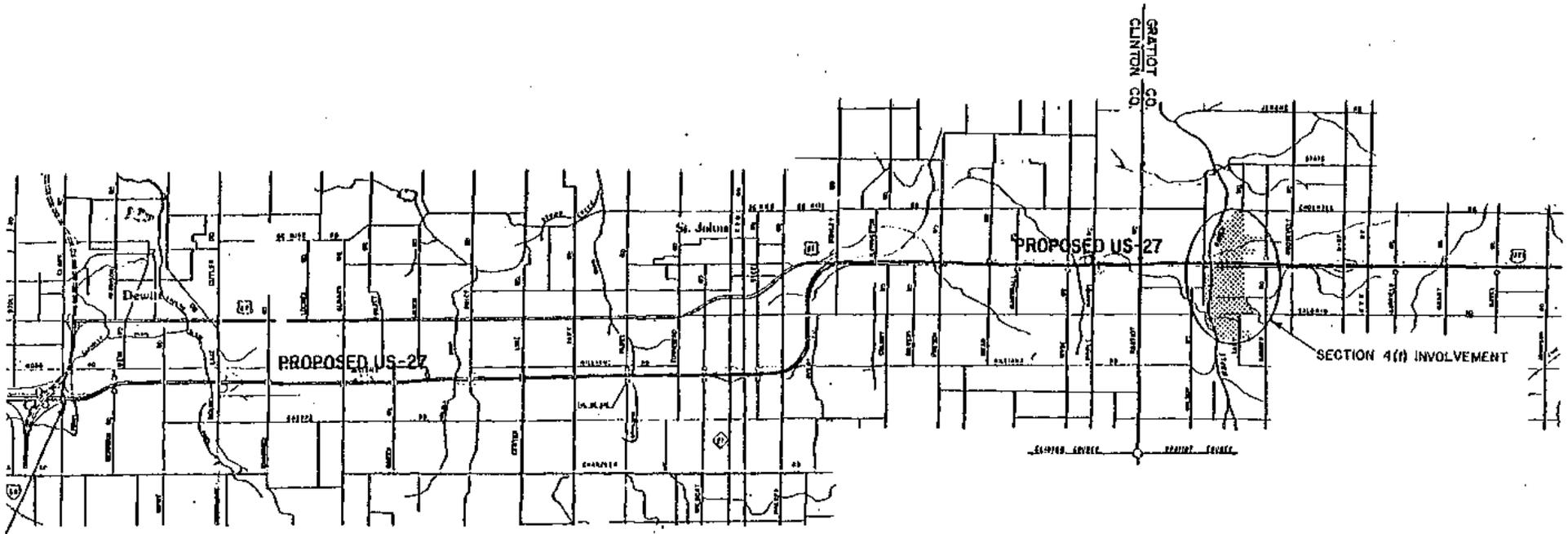
DESCRIPTION AND NEED FOR THE PROJECT

The Michigan Department of Transportation proposes to construct a four-lane rural freeway beginning with the proposed I-69/US-127 interchange, northeast of Lansing, and extending northward to approximately 0.2 mile north of Pierce Road, where existing US-27 begins (Exhibit 6). The project length is approximately 33.6 miles.

The proposed freeway alignment proceeds along a line approximately one-half mile east of Wood Street for about one-half mile, then curves northward to a line approximately one-quarter mile east of Williams Road. From this point, the proposed freeway proceeds along the latter line to north of Steel Road. The freeway then follows a line approximately one-half mile north of Walker Road to interchange with existing US-27 at Kinley Road in a northwest direction.

From Kinley Road interchange, it continues northward to Mead Road and is located adjacent to and along the west side of existing US-27. The existing northbound lanes will serve as a service road in this area. In the vicinity of Mead Road, the freeway transitions to the east side of existing US-27 and follows adjacent to US-27 to the Maple Rapids Road interchange, with the existing southbound lanes acting as the service road.

North of the Maple Rapids interchange, the freeway transitions to the west side of existing US-27 and proceeds northward adjacent to the west side up to the M-57 interchange, with the existing northbound lanes of US-27 being used as the service road. North of the M-57 interchange, the freeway traverses to the east side of existing US-27 and proceeds northward adjacent to the east side of the existing highway to the project termination point north of Pierce Road. In this segment, the existing US-27 southbound lanes serve as the service road.



-BEGINNING OF PROJECT

PREFERRED ALIGNMENT

U.S. 27 FREEWAY

 MAPLE RIVER STATE GAME AREA

EXHIBIT 6

The proposed (Alternate G) alignment north of Maple Rapids Road is shown in (Exhibit 7). The Maple River State Game Area is north of this location. A typical cross-section for the proposed freeway, where it will cross the Game Area, is shown in (Exhibit 8). Two options are indicated. The proposed Option 2 is a freeway with service road.

Details concerning the need for the project are addressed in Part I and II of the Draft Environmental Impact Statement previously circulated. A summary of that information is included in the following paragraphs:

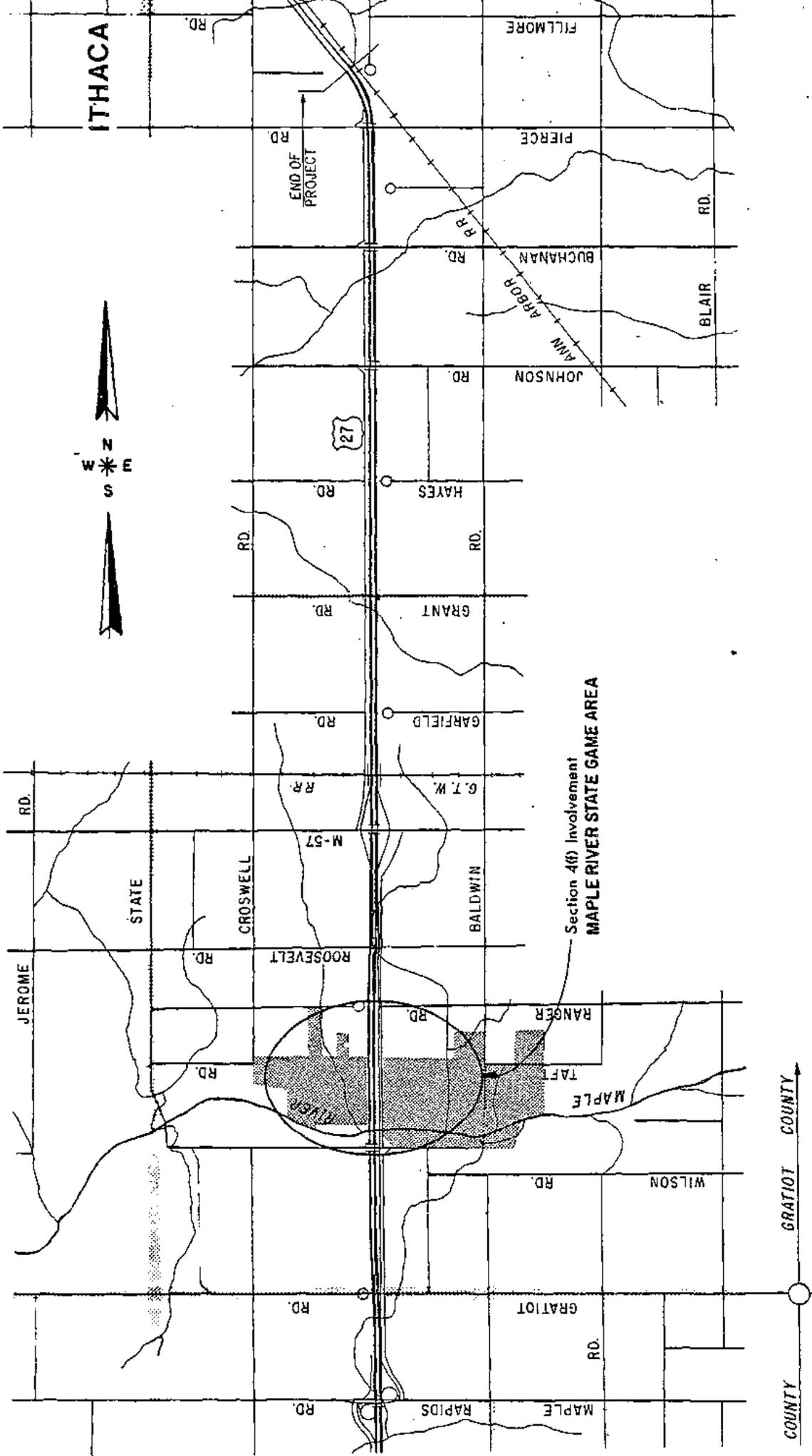
The Michigan State Legislature has designated certain highways within the State to be improved under a special apportionment of the general highway fund. (1), (2) The primary function of these highways is to provide better service for the residents of the State and to promote tourism. US-27, from the Indiana State Line to its junction with I-75 near Grayling, is one of the designated highways, and a considerable portion has already been improved through this program.

In line with the importance of recreation in Michigan, US-27 has experienced steadily increasing travel demands as a thoroughfare to the northern part of the State. Just north of St. Johns, average daily traffic volumes have more than doubled--from 6,100 vehicles per day in 1955, to 13,657 per day in 1980. Near DeWitt, where US-27 serves an area of rapidly growing population, average daily traffic volumes have more than doubled--from 8,000 vehicles per day in 1953, to 19,200 vehicles per day in 1980. Weekend traffic volumes are from 50 to 90 percent greater than the daily average. Extensive delays are in evidence at several locations during peak travel periods. Minor county roads experience a parallel increase in weekend traffic as drivers often seek alternative routes to US-27. Traffic projections indicate another doubling of volumes by 2005.

During the period of growing traffic demand, US-27 has been widened and improved. In 1948, it was widened to fourlanes between Lansing and St. Johns, and in 1957, between St. Johns and Ithaca. A new controlled access facility for US-27 north of Ithaca was completed in 1961.

In the late 1960s, it became evident that additional improvements to US-27 between Lansing and Ithaca were necessary. Motorists traveling during peak periods were subjected to extensive delays at several locations. Future projections by the Tri-County Regional Planning Commission and the Michigan Department of Transportation indicated another doubling of volumes by 2005.

-
- (1) Act 51, Public Acts of 1951, as amended, commonly referred to as the Basic Highway Act.
 - (2) Act 327, Public Acts of 1972, as amended.

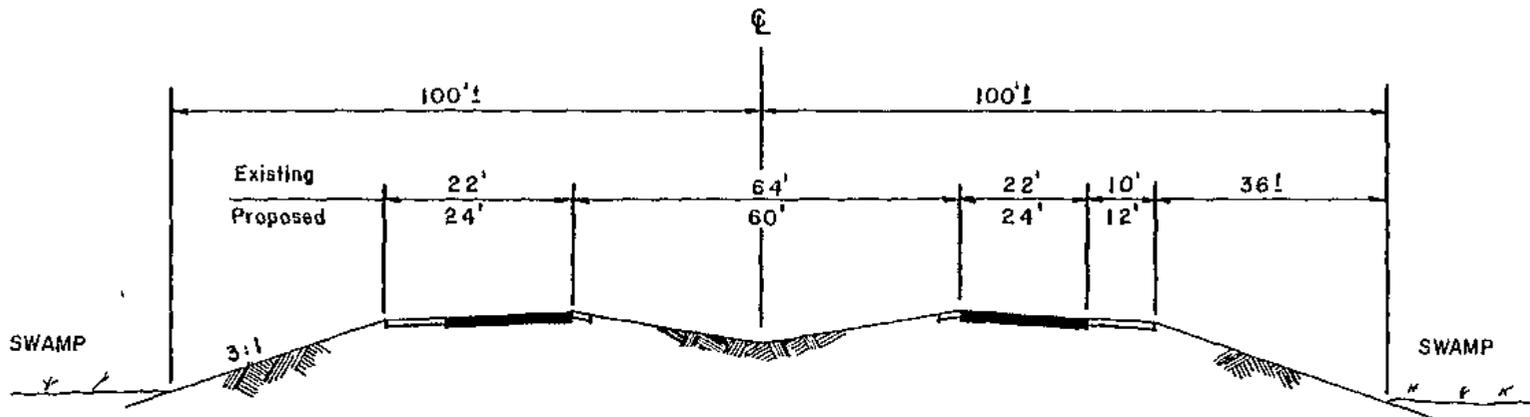


PREFERRED ALIGNMENT

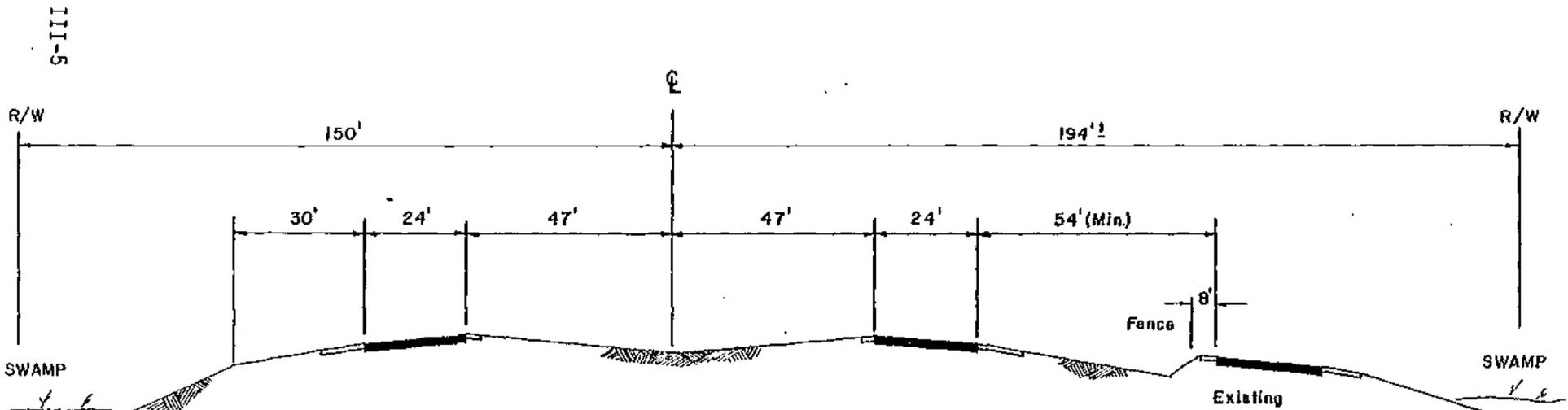
U.S. 27 FREEWAY

EXHIBIT 7
Wilbur Smith and Associates

Section 4(f) Involvement
MAPLE RIVER STATE GAME AREA



OPTION 1
 (Utilize Existing Causway - No Service Road)



OPTION 2 (PREFERRED ALTERNATIVE)
 (Widen Existing Causway - Retain Service Road)

PREFERRED ALIGNMENT

With the exception of a section in St. Johns, US-27 is a four-lane divided highway with free access between Clark Road in DeWitt Township and Pierce Road in North Star Township, the right-of-way (ROW) varies from 66 feet in St. Johns, to 270 feet near the Maple River. The wider ROW, which occurs north of St. Johns, averages 200 feet. The median widths vary from 15 feet in the east DeWitt area to 117 feet near the Maple River.

Capacity of the present highway has been exceeded between US-127/US-27 interchange and Price Road, and in St. Johns by 17 and 7 percent respectively. Traffic volumes on the section between Price Road and St. Johns is approximately 10 percent less than capacity. North of St. Johns, the volume/capacity ratio is less than unity. These ratios are based on average traffic flow and do not represent the peaking conditions which occur on weekends and holidays.

Comparison of accident data for 1966, 1970, and 1975 shows that the rural sections in Clinton County had more accidents in 1975, than the other two years. However, corresponding increases in annual traffic volumes have kept the accident rates nearly constant. The section in St. Johns has experienced an increased accident rate from 632 per 100 million vehicle miles in 1966 to 738 in 1975.

The 1975 average accident rate in this area of Michigan for a rural, divided, free-access highway was 226.2 accidents per 100 million vehicle miles.

The southernmost section of US-27 (US-127/US-27 interchange and Round Lake Road) exceeds this rate by 27 percent. The other rural sections are approaching the average. The urban section of St. Johns had an accident rate of 738 at the same time. This is approximately 9 percent less than the area's average of 776.

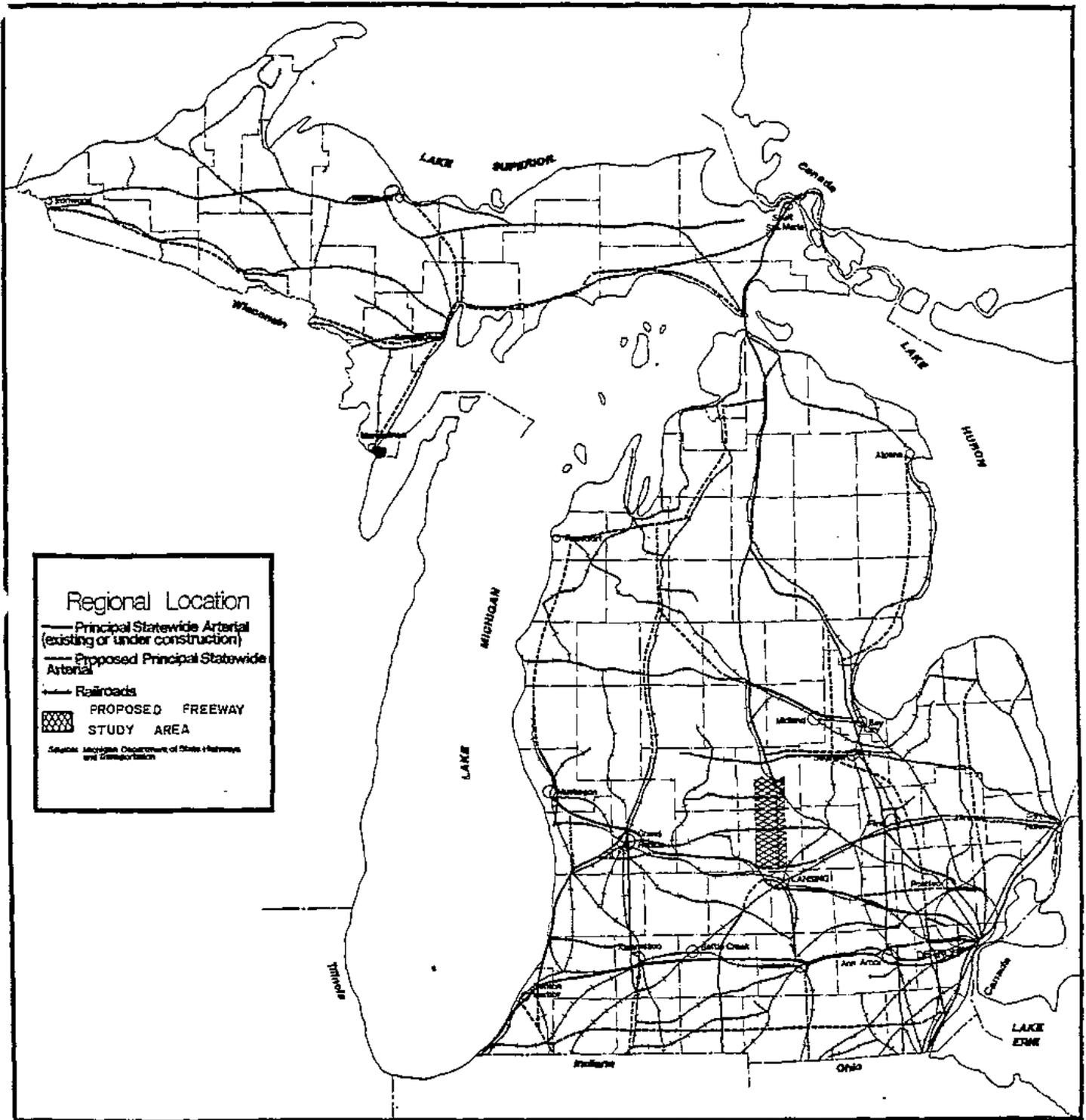
The regional accident rate for controlled-access, rural, divided highways (118 accidents per 100 million vehicle miles) is substantially less than most of the rural section of US-27. This indicates a potential for significant improvement in highway safety should the alternative for developing a freeway be implemented.

LOCATION AND TYPE OF FACILITY

The US-27 study area lies in south-central Michigan, north of all major east-west interstate routes. Exhibit 9 shows the study area in relation to statewide arterials in the State of Michigan.

Interstate 94, the major east-west link between Detroit and Chicago, lies 40 miles to the south of the study area. Interstate 96, connecting Detroit, Lansing, and Grand Rapids, is directly connected to US-27 on the west side of Lansing and via US-127 on the east side of Lansing.

Principal interstate routes in Michigan are I-94, I-96, I-196, I-69, and I-75. The major north-south routes in the State are I-69, I-75, US-131, US-127, and US-27. With the recent commitments to complete I-69 between



Charlotte and Perry, the free-access portion of US-27 between US-127 and Ithaca will be one of the last sections of a north-south highway through central Michigan not designed to freeway standards.

The proposed action will be a rural freeway facility consistent with the design policies of the Michigan Department of Transportation. The project begins at the intersection with I-69/US-127 north of Lansing and extends in a northerly direction to where US-27 begins as a limited-access facility south of Ithaca.

Specifically, the 200 square mile study area incorporates the townships of DeWitt, Bingham, Greenbush, and Olive in Clinton County. The townships in Gratiot County include North Star and Washington.

DESCRIPTION OF SECTION 4 (f) LANDS

North of Maple Rapids Road interchange, the proposed alignment for US-27 is located to the west and adjacent to existing US-27 to the M-57 interchange, a distance of approximately five (5) miles (Exhibit 7). About halfway between the two interchanges, the facility crosses the Maple River and Maple River State Game Area.

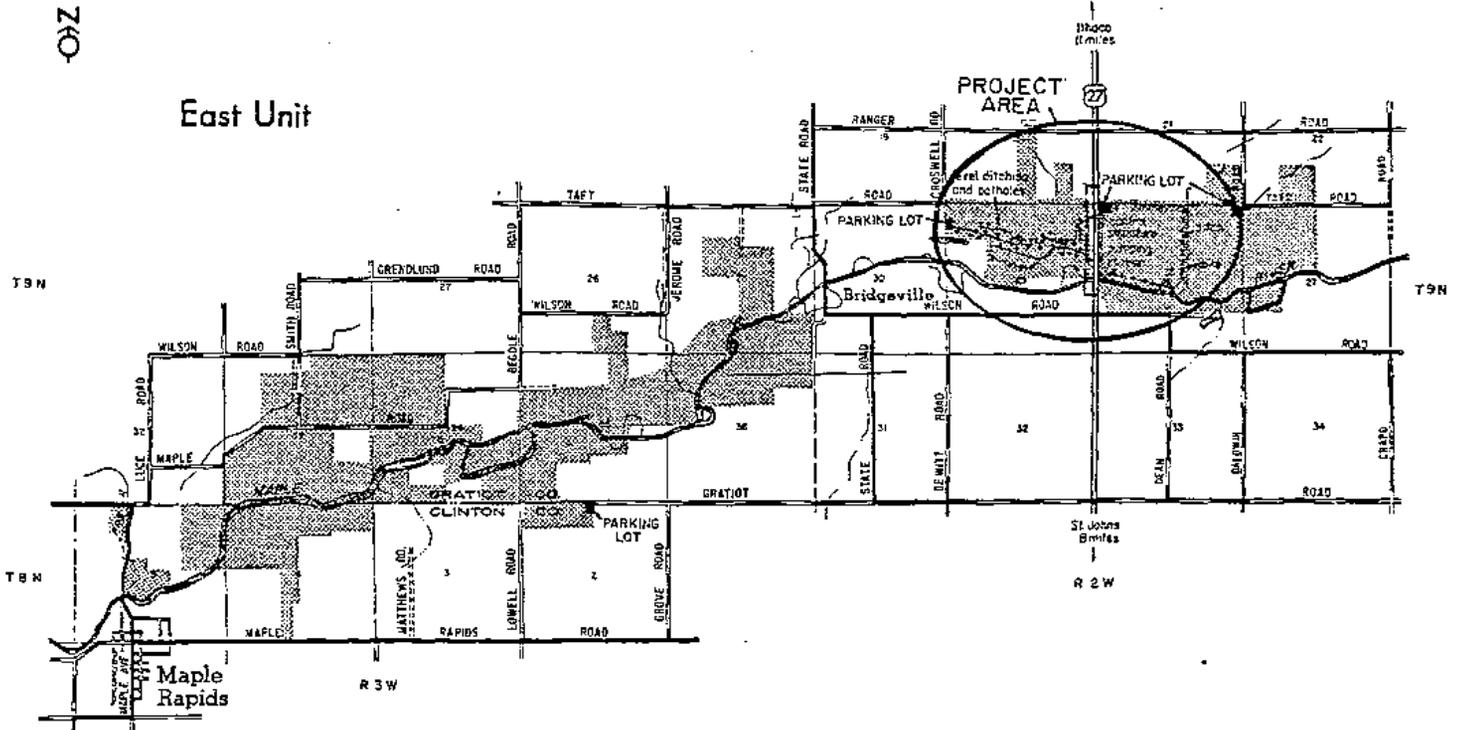
The Maple River State Game Area begins with the Maple River and continues northward for about one-half mile. The game area extends west of US-27 about 14 miles and east of US-27 for about two (2) miles. To the west, the game area incorporates an area of several square miles and to the east about one and one-half square miles. The game area is owned and managed by the Michigan Department of Natural Resources. The area affected by the proposed freeway is located in Section 29, Washington Township (T9N-R2W), Gratiot County (Exhibit 10). The project will require approximately 10.3 acres of land from the west unit of the game area. The acreage to be acquired is within a strip that measures 170' x 2,640' and is adjacent and parallel to the ROW line of the existing US-27 southbound lanes (Exhibit 11).

The Maple River State Game Area, which traverses Washington, Fulton, and Essex Townships, incorporates approximately 6,000 acres of recreational land along the Maple River. This facility, which proposes to add an additional 2,000 acres over the next several years, offers fishing and hunting. Initially, the Soil Conservation Service, in cooperation with the Michigan Department of Natural Resources, developed plans for the Upper Maple River Watershed Project, which could have added additional acreage to the Maple River State Game Area to the east of existing US-27. However, due to a court decision, the project has been cancelled.

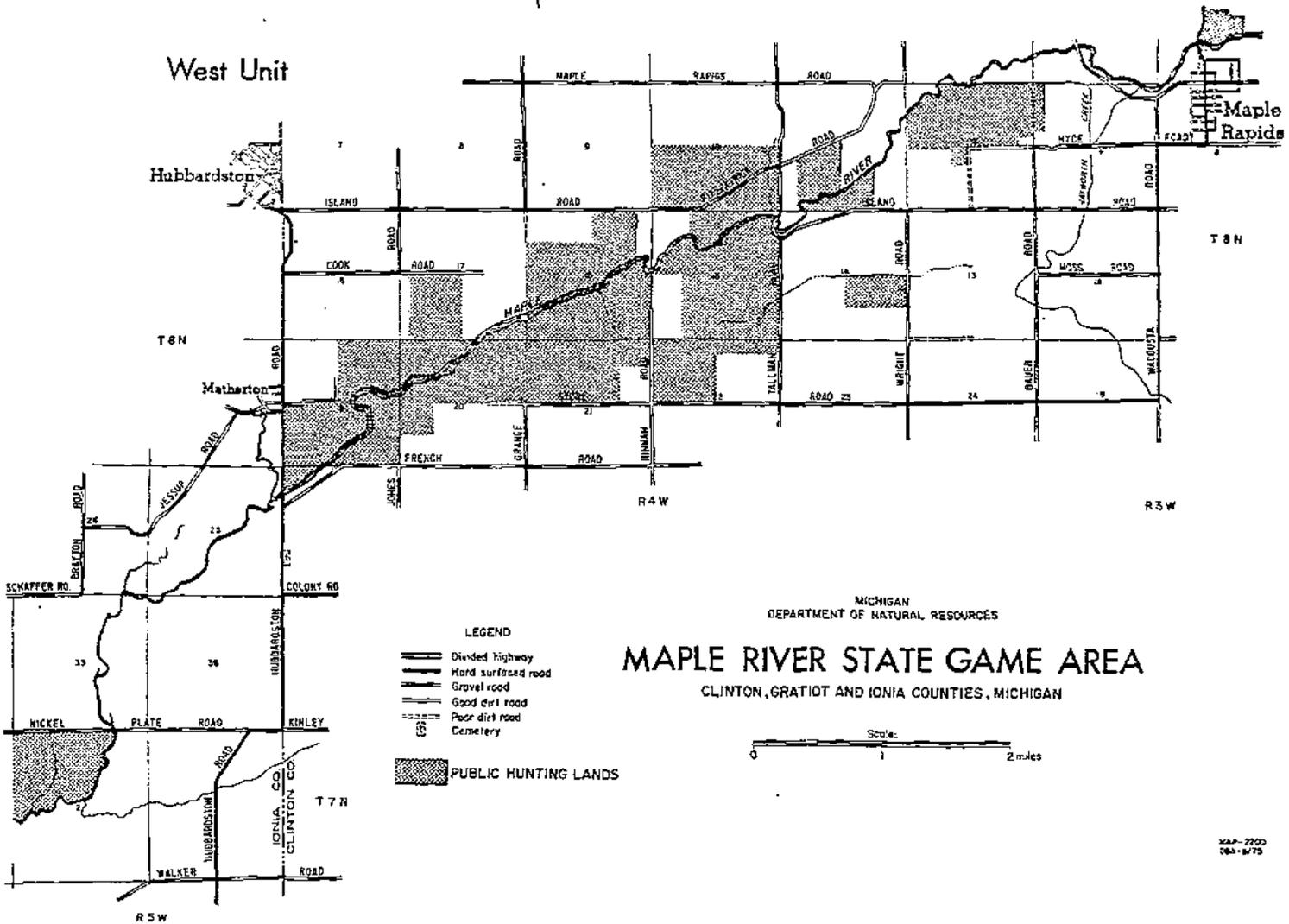
The Maple River State Game Area is a recreational facility that is used for hunting waterfowl (duck), deer, trapping of muskrat, and fishing. There are approximately 200 and 900 persons per year using the affected area for waterfowl hunting and fishing respectively. On an average, there are 3.5 persons per day using the affected area for duck hunting during the 50 day season in fall. During the months of May, June, and September through November, an average of 6.5 persons per day visit the affected area for fishing respectively.

012

East Unit



West Unit



- LEGEND**
- Divided highway
 - Hard surfaced road
 - Gravel road
 - Good dirt road
 - Poor dirt road
 - Cemetery
 - PUBLIC HUNTING LANDS

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

MAPLE RIVER STATE GAME AREA

CLINTON, GRATIOT AND IONIA COUNTIES, MICHIGAN



MAP-2800 5-8-75



**PREFERRED U.S. 27 FREEWAY ALIGNMENT
MAPLE RIVER STATE GAME AREA**

Wilbur Smith and Associates

EXHIBIT 11

The area to the west of the affected acreage is used for the same type of recreation. The area does not offer other types of facilities (i.e. organized sports, etc.). It contains approximately 310 acres.

The Maple River State Game Area is within the Maple River flood plain. It is also considered a wetland which is prevalent throughout the entire game and flood plain area. Because traffic volumes are projected to increase from 13,400 in 1975 to 26,300 in 2005, an increase in pollution will occur whether or not the proposed freeway is constructed. Air and noise standards will not be exceeded because emission standards promulgated by the Environmental Protection Agency and the Michigan Department of Natural Resources, as well as the trend to smaller vehicles, will assist in reducing air and noise pollution in the area.

ALTERNATIVES ANALYSIS AND ENVIRONMENTAL CONSEQUENCES

Section IV and the Appendix of the Draft EIS and Supplements 1 and 2 addressed the impacts of the various alternatives considered for the proposed improvement of US-27 from Lansing to Ithaca. In all cases, the segment from Kinley Road, north of St. Johns, North to Ithaca (Alignment G) proposed a location substantially following the existing US-27 corridor and alignment.

A summary of impacts for the Do Nothing, No Build and Freeway alternatives were addressed in the Draft EIS for this segment of Alternate G follows. Alternative modes were discarded as a practical alternative, as it would not serve the needs for traffic service demanded in the entire corridor for the present or in the foreseeable future.

DO NOTHING - A course of action always available is that of Do Nothing to substantially improve US-27. This does not preclude normal maintenance or minor traffic and safety improvements, such as signals and signing. In fact, it is possible that improvement of this nature will be necessary along the existing route in St. Johns and near DeWitt long before comprehensive improvements can be implemented. These short-term improvements will not increase the capacity of the highway.

The projected 2005 average daily traffic volumes are approximately 100 percent greater than those at present. As a result, accidents are also expected to double by 2005. Since the projected volumes are beyond the capacity of the existing highway, motorists will seek an alternative route on county roads. Local citizens residing on, or near these secondary routes, will be exposed to higher levels of noise, congestion and hazard. Additionally, the generally poor quality of transportation service will have an adverse, social and economic effect over extensive portions of Clinton and Gratiot Counties.

The ecological systems would not be substantially altered from their present state if the Do Nothing alternative is chosen. This approach would avoid the displacement of agricultural lands and residences. However, due to increased traffic volumes on US-27, noise levels will continue to increase, and a higher concentration of air pollutants will occur, especially at major crossroads.

NO BUILD - The No Build or Low Capital Investment course of action could include improvements to several segments of the existing route in order to provide vehicle capacity in those areas already experiencing traffic delays and safety problems. These improvements would now, however, provide full control of access between the US-127/US-27 interchange and Pierce Road (south of Ithaca), the termination point.

In the DeWitt-East DeWitt area, this alternative proposed a six (6) lane roadway with a 60-foot raised median within the existing right-of-way between the US-127/US-27/I-69 interchange and a point north of Chadwick Road in Olive Township. The typical cross-section for this part of the alternative included dual three-lane roadways separated by a raised median. All left hand turns were confined to sheltered fish hook crossovers placed back-to-back at appropriate locations along this route. The cross-sections did not limit access to the facility from adjacent properties.

Additionally, in the Corridor Phase, a bypass of St. Johns was studied which provided a facility to the east side skirting the developed area. During the detailed analysis of the Alignment Phase, close scrutiny of this approach resulted in a design modification for a boulevard facility of relatively high vehicle capacity and included concepts more closely aligned with driving conditions generally experienced along the existing free-access route between Lansing and Ithaca.

The rural boulevard design was developed for the approximately six (6) mile bypass, consisting of two 24-foot roadways separated by a 94-foot median. The east-west crossroads could have intersected the by-pass at-grade. Driveways from land adjacent to the by-pass, however, would not have been permitted; rather, their access would be by the east-west crossroads.

Such a solution for the St. Johns Area would provide a roadway facility, similar in most respects to improvements which were planned for the DeWitt area. In this manner, the motorist would experience somewhat similar driving conditions throughout all segments of roadway in the existing US-27 Corridor. The concept of avoiding major changes in design of adjacent segments of existing roadway significantly improves the overall safety of the facility. It encourages a constant, safe driving speed which allows one to safely react to possible emergencies that could arise along the route.

Through the same analysis, the interchange proposed for US-27 and M-46 would be eliminated in favor of an improved at-grade intersection incorporating both right and left turning lanes. Analysis of the existing conflicts at these locations concluded that such improvements could increase capacity of the intersection to handle additional vehicles. Movement of vehicles would need to be controlled through the use of signals and signing.

Grade separations would be provided at each of the two railroad crossings encountered with the No Build proposal. The St. Johns Bypass would overpass the railroad just north of M-21, and existing US-27 would be reconstructed to overpass the railroad north of M-57.

Effects on the natural systems with the No Build Alternative would be minimal. Any bypass at St. Johns, however, would effect several farms by cutting across them diagonally.

With the No Build Alternative, lack of access control and at-grade intersections along the remainder of the route would continue to cause problems of safety and inconvenience for traffic entering from crossroads and driveways. Inevitably, this option would only provide an intermediate solution and not satisfy the needs for future traffic service in the entire corridor from Lansing to Ithaca. Noise and air pollution would continue to rise as a result of increased traffic volumes, but air standards would remain satisfactory.

ALTERNATE G KINLEY ROAD TO NORTH OF PIERCE ROAD

Alternate G, the proposed, is located adjacent to existing US-27 over most of its length, between Kinley Road and the northern terminus, Ithaca. This includes the area of the Maple River State Game Area (Exhibit 7). New right-of-way requirements, however, are reduced from the standard 300 feet width by the utilization of approximately one-half of the existing right-of-way.

Beginning at Kinley Road and proceeding north, the proposed freeway is situated to the west of existing US-27, thus creating a service road out of the present northbound lanes. The freeway proceeds northward parallel to existing roadways. It passes over Livingston Road with the crossroad having access to the east service road.

North of Livingston Road, the proposed freeway continues on the west to a point where French Road passes over the freeway, with the existing northbound roadway serving as a service road. Then turning diagonally to the east and crossing the existing roadway, the freeway passes under Mead Road and proceeds northward to the Maple Rapids Road Interchange, with the existing southbound roadway acting as the service road.

North of the Maple Rapids Road Interchange and through the Maple River State Game Area, the proposed freeway is located to the west side of the existing roadway and continues northward, passing under Wilson Road before crossing the Maple River on the downstream side of the existing causeway. The present northbound lane would continue to serve as a service road.

After consultation and coordination with the Department of Natural Resources during the corridor phase, it was decided to cross the Maple River, including the Maple River State Game Area on the downstream side (west side of US-27). The basis for this decision included: 1) The Department of Natural Resources preferred that the man-made and controlled flooded area on the east side not be disturbed or impacted with a roadway. Flooding of the facility is controlled via pumping water from the river into the area; 2) The Department of Natural Resources has plans to construct a similar type facility on the downstream side, which could be created in cooperation with the Department of Transportation during the designing of the proposed southbound roadway; 3) Crossing on the downstream side would eliminate the requirement to acquire and displace three churches within this five mile section; and 4) Avoiding taking a DNR parking lot and cutting off access to the east area.

Therefore, the proposed location for the freeway facility to cross the Maple River was deliberately moved to the downstream side of existing US-27. This avoided the flooded area and relocation of three churches.

North of the river, the proposed freeway continues northward, passing under Roosevelt Road and interchanging with M-57. Twin bridges carry the freeway over the Grand Trunk Western Railroad and short access roads north of the M-57 interchange. The freeway continues along the east side of the present roadway, passing under Grant, Johnson, Buchanan and Pierce Roads and terminating approximately 0.2 miles north of Pierce Road. The present southbound lanes would continue to serve as a service road.

It is estimated that 10.3 acres of the Maple River flood plain will be altered by filling along the existing causeway to provide for a freeway and service road. No significant change in the existing floodplain encroachment should result from the proposed construction. Access to the area would remain substantially the same. Winter salting operations could have an effect upon the water quality in the drainage basins of the area due to the additional highway surface to be treated. This alternate runs parallel to the St. Johns Big Ditch Drain north of St. Johns, and should have an insignificant impact on the drainage system in the area.

Impacts upon woodlots will be minimal, as the present roadway has already impacted them.

No school structures or other educational facilities will be affected by this alignment. Nor will there be an intrusion on lands dedicated or planned for future educational expansion.

The pattern of noise contours will change slightly because of the redistribution of traffic along the roadway. Air pollution is not a problem today, nor is it expected to become one.

ALIGNMENT ALTERNATIVES AND ENVIRONMENTAL CONSEQUENCES IN VICINITY OF
MAPLE RIVER STATE GAME AREA

Two design options were considered for the crossing of this area:

OPTION I

Description - North of the Maple Rapids Road interchange, the freeway is located west and adjacent to existing US-27. The freeway would continue this alignment for approximately one mile, then curve slightly north-eastward to coincide with existing US-27, crossing the Maple River on the existing causeway. Then, it would curve northwestward following the proposed alignment on the west side and adjacent to existing US-27, with the existing northbound lanes being the service road from Ranger Road to M-57. Typical Section is shown in Exhibit 8.

Positive Impacts - Other than the existing right-of-way for US-27 crossing the Maple River State Game Area, no additional acreage will be required. Construction cost will be less due to limited renovation of existing causeway and structures.

The Maple River flood plain and associated wetlands habitat would not be affected by Option I, as the freeway alignment would utilize the existing causeway where it crosses the Maple River.

Negative Impacts - This option will cut-off access to the parking area for the game area from the south. It does not provide residents nor traffic with a continuous service road for local access. It inflicts adverse distance upon the residents as the next crossing of the Maple River is either three miles east or two miles west of the existing crossing.

Likewise, members of the Salem United Methodist Church (Gratiot Road at US-27) and the Bethel Mennonite Church (north of Maple River and east of US-27) will have to travel an extra distance because of a non-continuing service road. Their memberships are from the entire area rather than being concentrated north of the Maple River.

OPTION 2 (Proposed)

Description - North of the Maple Rapids Road interchange, the proposed freeway is located west of and adjacent to existing US-27. The existing northbound roadway will become the service road. The proposed freeway continues northward along this alignment to the M-57 interchange, a distance of five miles. Under this option, the freeway roadways would be of new construction.

In crossing the Maple River and Maple River State Game Area, this option will require expanding the existing right-of-way to the west 170 feet. In so doing, it will require an area from the Maple River State Game Area of approximately 170 feet wide x 2640 feet in length, or 10.3 acres. The affected area is delineated on Exhibit 11. Typical cross-section for this option is shown on Exhibit 8. The lands adjacent to the proposed improvement would remain under the control of the Michigan Department of Natural Resources through the State Game Area, and the proposed highway is consistent with development plans for the area.

Positive Impacts - Option 2 will provide a continuous service road for the local residents. In addition, it will provide direct access to the Maple River State Game Area, as well as the parking area north of the Maple River, and on the east side of existing US-27.

The Department of Natural Resources favors this option over Option 1 (Attachments A and B). Excerpts from the correspondence supporting this option are as follows:

"We favor the option of using the existing US-27 corridor as the location of the new highway across the game area. We suggest that the existing northbound lanes be used as a service road. This would provide the public with good access to that portion of our game area lying east of the present highway."

"The construction of new southbound lanes just west of the present road grade would have only a minimal impact on the game area."

"The Wildlife Division will be developing a wildlife flooding just west of the existing highway. If the present corridor is selected for the new highway and new southbound lanes are constructed just west of the present roadway, highway design plans should incorporate provisions for a low head of water against the new road grade."

"There is a 200 acre managed water level marsh lying just east of the present highway. There are three large culverts under the present road grade that are within our managed unit. We have installed water level control structures at the eastern end of these tubes, so we can maintain water levels in the 200 acre marsh. If the present highway corridor is selected and new southbound lanes are constructed west of the present highway, we request that the extension of the culverts be designed and constructed to be used as stoplog water level control structures."

Negative Impact - Option 2 will require the use of approximately 10.3 acres from the Maple River State Game Area which is subject to provisions of Section 4 (f) of the DOT Act. In addition, Pittman-Robertson Funds have been used to develop the Maple River State Game Area. The part for the proposed right-of-way was included in the Federal Funds used for development and would require replacement.

It is estimated that 10.3 acres of the Maple River flood plain and associated wetlands will be affected by Option 2 by land fill for the construction of the new southbound lanes. This will be a permanent loss; however, it is an area already disturbed by the existing road and causeway.

To minimize these negative impacts, it is planned to replace the 10.3 acres affected with a parcel of land (presently privately owned) lying adjacent to the Maple River and abutting the Maple River State Game Area (Exhibit 11). The replacement land is approximately 16.1 acres in size and of equal utility and value.

OTHER OPTIONS

During the Corridor Analysis Phase, four general corridors were identified and evaluated within, which the proposed freeway could be located (Exhibit 12). Each of the corridors had a crossing of the Maple River. The following is a brief description of the corridors and associated impact upon the Maple River State Game Area:

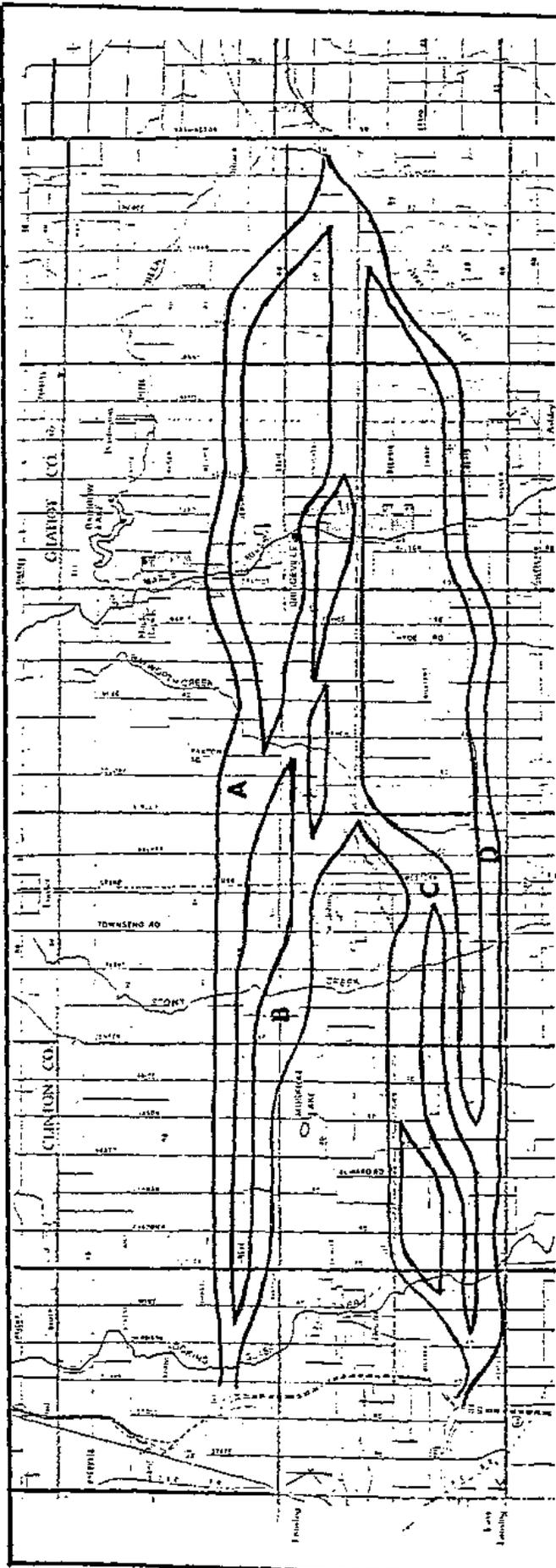
Corridor A - would cross the Maple River between Begole Road and Jerome Road in Gratiot County approximately 4 miles west of existing US-27. An alignment within this corridor would require approximately 50 acres from the Maple River State Game Area. In addition, a crossing in this area could require the acquisition of the boat launching site.

Corridor B - would cross the Maple River between State Road and Crosswell Road about 2 miles west of existing US-27 in the vicinity of Bridgeville. An alignment within this corridor would require approximately 25 acres from the Maple River State Game Area.

Corridor C - would cross the Maple River in the immediate vicinity of the existing US-27 crossing. An alignment within this corridor could require up to 15 acres from the Maple River State Game Area.

However, by designing the crossing to include as much of the existing crossing as possible, the impact upon the Maple River State Game Area could be decreased to approximately 10 acres.

Corridor D - would cross the Maple River between Crapo Road and Blair Road about 3 miles east of existing US-27. The Maple River State Game Area extends only 1.5 miles to the east of existing US-27. Therefore, an alignment within this corridor would not have an impact upon it. Initially, this alignment could have had a direct impact upon the proposed Soil Conservation Service Flood Control Project, due to causeway-type of construction. However, due to a recent court decision, the project has been withdrawn.



Maple River State Game Area

Corridor Alternatives
 US 27 Corridor and Route Location Study

Maple River State Game Area
 1981

In addition, this alternative does not comply with local plans and desires. It did not provide the level of service and access to the City of St. Johns as did Corridor B or C.

A through D provided sufficient capacity for existing and projected needs. The number of accidents would be reduced by about 30 percent. Through traffic would no longer seek alternate routes, such as county roads during peak periods of traffic flows.

Both the A and D Corridor have been found to be substantially less desirable than the other comprehensive alternatives. While impacts and costs are comparable to the B and C Corridors, their displacement several miles to the west or east of St. Johns makes access to the city very inconvenient. Corridor A crossing of the Maple River bisects the largest continuous portion of the State Game Area, while the D crossing constrains the development of new land for the game area. Neither of these corridors had significant support among State and local governmental agencies.

North of St. Johns, use of the existing US-27 alignment to the maximum extent practical was found to be the most effective as the highway is less intensely developed and the existing right-of-way less restrictive.

Following the above line of reasoning, the alignments within Corridors B and C, which utilizes existing right-of-way were the most viable solutions. Each of them provides the desired degree of service to St. Johns and makes optimum use of the total 33.6 mile distance on new alignment. This concept of partial relocation is in conformance with the expressed positions of several State and local agencies.

Both Corridors B and C provide the desirable degree of service to St. Johns and make optimum use of the present highway north of the city. With either of these corridors, no more than one-half of the total 31 mile distance is on new alignment. Local governments, as well as the regional planning agency, have expressed support for either one or the other, although preferences have been almost equally divided.

Transportation service provided by Corridor C is substantially better than that provided by Corridor B. Using the criteria of average daily savings in vehicle operation (by 1995), the eastern alternatives produce approximately 50 percent more hours saved. The direct connection with the US-127 freeway is a major factor in the improved system efficiency. This freeway connection provides convenient access to a substantial number of major generators in the Lansing area, such as the downtown district, the Capital Complex, and the Oldsmobile Assembly Plant (via I-496).

Corridor C provides better service to both local and long distance trips. An analysis of trip patterns, obtained from the Capital Area Transportation Study, showed that slightly more than two-thirds of all southbound vehicles using US-27 and terminating in the Lansing/East Lansing urban area had destinations east of Logan Street. Most "through" trips (not originating or terminating in the Lansing area) are oriented towards either the Jackson or Detroit region and would save about 6 miles with the eastern alternatives.

Other transportation benefits of Corridor C, not provided by Corridor B, include convenient access to Sleepy Hollow State Park in eastern Clinton County, a greater diversion of traffic from existing US-27 south of St. Johns, and more consistency with the freeway grid pattern already established in the Lansing region. Corridor C avoided adverse traffic impacts to several arterials in the western section of Lansing, such as North Grand River Avenue, Waverly Road, and Logan Street.

The above analysis and evaluation of Corridor A, B, C, and D was provided in the Draft Corridor Environmental Assessment (May, 1975) and subject to the public hearing in July, 1975. In summary, Corridors A, B, and C would have an impact upon land that is presently within the boundaries of the Maple River State Game Area, or is planned to be within the facility.

In November, 1975, the Michigan Transportation Commission (then, State Highway Commission) and the Federal Highway Administration concurred that alternate alignments should be developed generally within Corridor C; south of St. Johns the general corridor is divided into two parts (I and II), while north of St. Johns, there is only one corridor which incorporates the existing US-27 alignment (Exhibit 13).

The Department of Natural Resources concurred with the location for the proposed freeway alignment north of St. Johns, as approved by the Michigan Transportation Commission (Attachments A and B). Pertinent sections of the above correspondence are as follows:

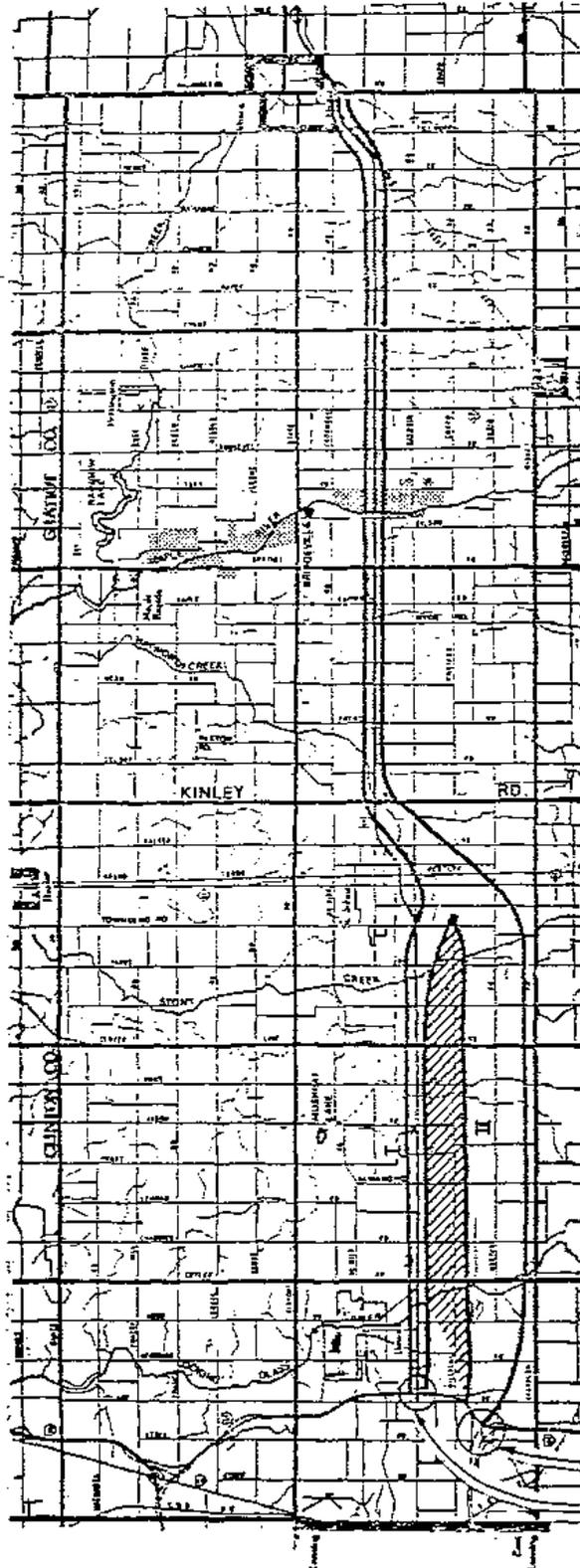
"We see no major impact on our wildlife management objectives by constructing new southbound lanes west of the present US-27 roadway. This proposal will have the least impact of any of the alternative proposals."

"If highway construction utilizes these lands, it will be necessary to 'replace them'. Federal regulations require this mitigation. We would recommend that they be replaced by your acquisition of appropriate parcels within the Maple River State Game Area. As you may know, we are currently attempting to acquire land in the area as part of the wildlife management flood control project."

This solution also has the endorsement of the Gratiot Board of County Commissioners, Gratiot County Road Commission, and the Gratiot County Planning Commission.

Section 6(f) Lands

Pittman-Robertson Federal-aid Wildlife Restoration funds have been used to develop the State Game Area, to include the affected acreage. Grants involving Land and Water Conservation Act funds have been applied in acquisition of land for part of the game area. Therefore, the proposed mitigation has been developed to satisfy the provisions of both 4(f) and 6(f) requirements. (See Attachment D, comments of the U.S. Bureau of Outdoor Recreation, U.S. Department of the Interior).



Proposed I-69/U.S.127
Interchange
U.S. 127/U.S.27
Interchange



Corridors
 Routes may cross this area
 Maple River State Game Area



ALIGNMENT STUDY AREA

MITIGATION MEASURES TO MINIMIZE HARM

The Department of Natural Resources has stated that Option 2 would have only minimal impact upon the game area. However, the loss of this habitat must be mitigated (Attachment B). Pertinent excerpts from Attachment B follow:

"The construction of new southbound lanes just west of the present road grade would have only a minimal impact on the game area. The loss of this habitat must be mitigated because Federal Pittman-Robertson funds were used to purchase those lands that would be used for new road grade.

There is a privately owned parcel lying just west of US-27 that we need for future management and development of the area. We have long-range plans to develop a managed water level marsh for those lands within our proposed flooding. We would request that these lands be purchased to mitigate the loss of state owned wetlands, if the present Corridor is selected for the new highway. This parcel is owned by I. M. Williams and is that fractional portion of the N1/2 of SE1/4, Sec. 29, T9N, R2W lying north of the Maple River. Mr. Williams owns the entire N1/2 of SE1/4 of Sec. 29 being 76.5 acres, but we only need that portion lying north of the Maple River."

The approximate 10.3 acres of right-of-way required from the Maple River State Game Area must be replaced. The Department of Natural Resources, who manages and owns the subject acreage, as well as the State Game Area, has requested and the Department of Transportation has agreed to replace the 10.3 acres with a parcel of land north of the Maple River, not presently a part of the Game Area. The parcel of land for replacement is described as follows and outlined on Exhibit 11.

The parcel of land is owned by Robert and Flos Williams and is that fractional portion of the N1/4 of SE1/4, Sec. 29, T9N, R2W, lying north of the Maple River in Washington Township--Gratiot County. The Williams' own the entire N1/2 of SE1/4, Section 29 being 76.5 acres, but the Department of Natural Resources only need that portion lying north of the Maple River or approximately 16 acres.

In addition to the replacement package, the Department of Natural Resources requested and the Department of Transportation has agreed to design the highway facility to include certain flood control measures to form a water marsh area to the west similar to the one on the east side of existing US-27. This request is included in the Department of Natural Resources' letter of June 24, 1976, (Attachment B) of which excerpts follow:

"As stated previously, the Wildlife Division will be developing a wildlife flooding just west of the existing highway. If the present corridor is selected for the present roadway, highway design plans should incorporate provisions for a low head of water against the new road grade. At the time roadway designs are made by the Highway Department, they should contact us and our Engineering Division so the grade can be properly designed to withstand a low head of water and be protected from erosion.

There is a 200 acre managed water level marsh lying just east of the present highway. There are three large culverts under the present road grade that are within our managed unit. We have installed water level control structures at the eastern end of these tubes so we can maintain water levels in the 200 acre marsh. If the present highway alignment is selected and new southbound lanes are constructed west of the present highway, we request that the extension of the culverts be designed and constructed to be used as stop-log water level control structures. Our Engineering Division can provide the technical assistance on what we would need."

The Replacement Package (Attachment C) - has been prepared by the Michigan Department of Transportation and submitted to the Federal Highway Administration for approval on February 9, 1979. It was approved in principle on March 7, 1979.

In planning the freeway, the embankment for the southbound lanes will be designed to act as a low water head for ponding on the west side of the freeway, similar to the one on the east side of existing US-27. The retention area could then be used for waterfowl and other types of animal and plant life. The causeway embankment would also include culverts allowing water to flow from the east side to the west side.

Option 2 will provide the sportsman access to both sides of Maple River State Game Area via Wilson Road. The parking area on the east side of the freeway would also be accessible to the sportsman under this scheme, whereas Option 1 would not provide either one without adverse distance.

During the design phase of the project, the Department's design engineer will coordinate with representatives of the Department of Natural Resources to ascertain their suggestions for the mitigation measures. Such measures will include standard erosion and sedimentation controls during construction and those which may be required for permits from the Department of Natural Resources and U.S. Army Corps of Engineers.

PERMITS

The following permits will be required and requested prior to construction of the US-27 freeway:

A. U.S. Army Corps of Engineers

1. Federal Water Pollution Control Act, Section 401 (a) (1)
2. Federal Water Pollution Control Act, Section 404

B. Michigan Department of Natural Resources

1. The Michigan Department of State Highway and Transportation is self-regulated with regard to Michigan Public Act 347, Soil Erosion and Sedimentation Control Act.
2. Michigan Public Act 346, Inland Lakes and Streams Act.
3. Federal Act 245, National Pollution Discharge Elimination System.

COORDINATION

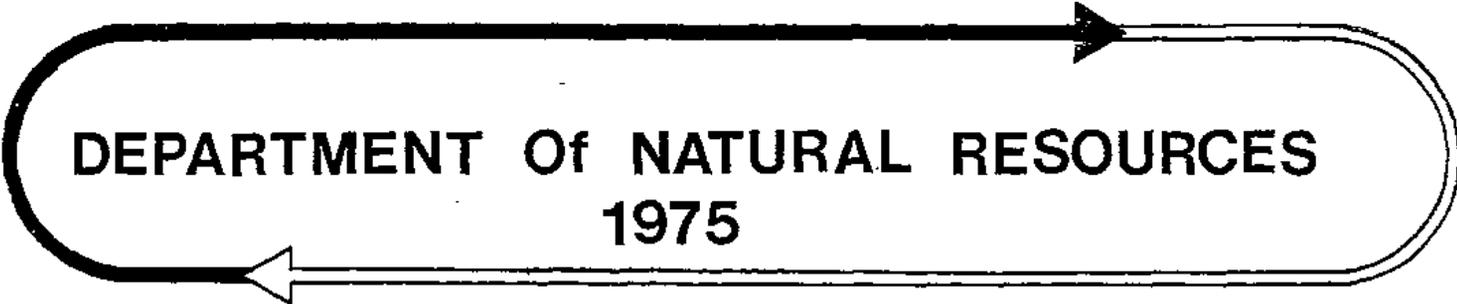
Project coordination was effectuated beginning in 1975, with the Department of Natural Resources (Attachment A, B, and C). In addition, the Bureau of Outdoor Recreation, and Fish and Wildlife of the Department of the Interior reviewed the project and made a physical inspection of the area in 1977. A copy of this correspondence dated January 9, 1978, has been included as Attachment D. Also, comments received on the Preliminary Section 4 (f) Statement has been included as Attachment E.

CONCLUDING STATEMENT

Based upon the previously discussed considerations, it is determined that there is no feasible and prudent alternative to the use of land from the Maple River State Game Area, and the proposed action includes all possible planning to minimize harm to this property resulting from such use.

ATTACHMENT A

TO SECTION 4(f) STATEMENT



DEPARTMENT Of NATURAL RESOURCES
1975

STATE OF MICHIGAN



NATURAL RESOURCES COMMISSION

CARL T. JOHNSON
E. M. LAITALA
DEAN BRIDGEON
HILARY F. SNELL
HARRY H. WHITELEY
JOAN L. WOLFE
CHARLES G. YOUNGLOVE

WILLIAM G. MILLIKEN, Governor

DEPARTMENT OF NATURAL RESOURCES

STEVENS T. MASON BUILDING, LANSING, MICHIGAN 48928
HOWARD A. TANNER, Director

October 20, 1975

Mr. John P. Woodford, Director
Department of State Highways and
Transportation
State Highways Building
Lansing, Michigan 48904

Dear John:

I have discussed with my staff your letter regarding the US-27 highway corridor through the Maple River State Game Area in Gratiot County. Following are the answers to the questions you asked regarding the Maple River area.

1. Those state-owned lands lying immediately west of the present US-27 as shown as follows, including their date of purchase by the state.

SE $\frac{1}{2}$ of NE $\frac{1}{4}$, Sec. 29, T 9 N, R 2 W, purchased May 13, 1952;
SE $\frac{1}{2}$ of NE $\frac{1}{4}$ of NE $\frac{1}{4}$, Sec. 29, T 9 N, R 2 W, purchased
April 29, 1969; NE $\frac{1}{2}$ of NE $\frac{1}{4}$ of NE $\frac{1}{4}$, Sec. 29, T 9 N, R 2 W
purchased December 4, 1962.

All these lands were purchased with state fish and game funds and federal Pittman-Robertson funds at the rate of 25 percent state funds and 75 percent federal funds. The Pittman-Robertson program is authorized under 50 stat. 917, as amended (16 U.S.C. 669-669-b, 669-c-669); Act passed September 2, 1937. State authorization is provided under Act 281, P. A. of 1939 (M.S.A. 13.1205).

2. The Maple River State Game Area is under the administrative jurisdiction of the Wildlife Division. It is being managed for both wetlands and upland wildlife species. Because much of the game area, including the area just east of the present US-27 corridor, is in the floodplain of the Maple River, waterfowl and wetlands furbearers are a major management objective.



R1026 1/75

There are no hunter use restrictions on most of the game area. On the 200+ acre unit just east of highway US-27 waterfowl hunting is regulated from the opening day of the duck season through the first weekend. During that period use of that parcel is restricted to hunting only by reservation and we limit the number of reservations issued.

Throughout the year the use of off-road recreational vehicles is prohibited except on designated roads.

All other hunting, hiking, bird watching, nature walking, skiing, canoeing and berry picking have no restrictions.

- 3. We see no major impact on our wildlife management objectives by constructing new southbound lanes west of the present US-27 roadway. This proposal will have the least impact of any of the alternative proposals.

If highway construction utilizes these lands, it will be necessary to "replace" them. Federal regulations require this mitigation. We would recommend that they be replaced by your acquisition of appropriate parcels within the Maple River State Game Area. As you may know, we are currently attempting to acquire land in the area as part of the wildlife management flood control project.

If you have additional questions, please feel free to contact me or my staff.

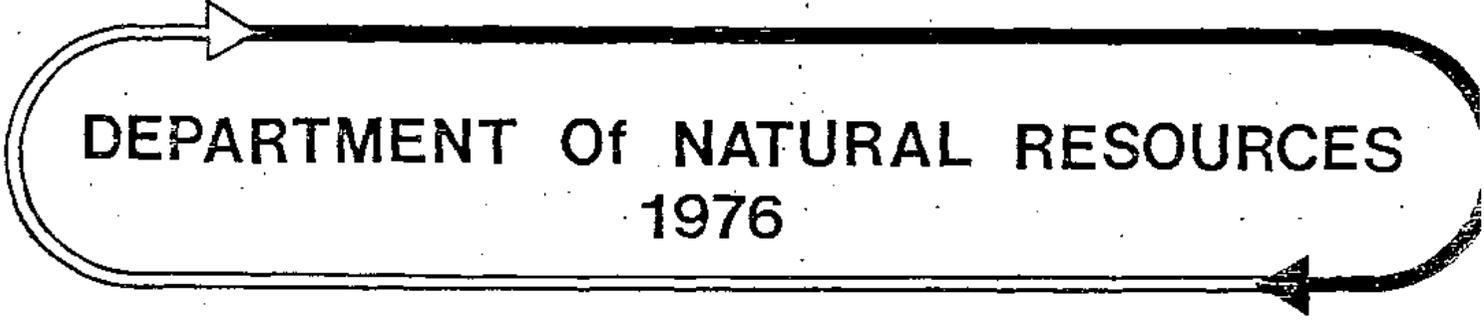
Sincerely,

Howard A. Tanner
Director

<input checked="" type="checkbox"/>	SPYDERMAN	RECEIVED OCT 31 1975 Bureau of Transpor-tation Planning	<input checked="" type="checkbox"/>	SCAMS
<input checked="" type="checkbox"/>	CARROLL		<input checked="" type="checkbox"/>	OLTMAN
<input checked="" type="checkbox"/>	QUICKWORTH		<input checked="" type="checkbox"/>	BUSHNELL
<input type="checkbox"/>	L. H. ...		<input type="checkbox"/>	BRIGLIAM
<input type="checkbox"/>	VENTURINO		<input type="checkbox"/>	TILLY
<input type="checkbox"/>	FILE		<input type="checkbox"/>	

ATTACHMENT B

TO SECTION 4(f) STATEMENT



DEPARTMENT of NATURAL RESOURCES
1976

STATE OF MICHIGAN



NATURAL RESOURCES COMMISSION

CARL T. JOHNSON
E. M. LAITALA
DEAN PRIDGEON
HILARY F. SNELL
HARRY H. WHITELEY
JOAN L. WOLFE
CHARLES G. YOUNGLOVE

WILLIAM G. MILLIKEN, Governor

DEPARTMENT OF NATURAL RESOURCES

STEVENS T. MASON BUILDING, LANSING, MICHIGAN 48926
HOWARD A. TANNER, Director

June 24, 1976

Smith Wilbur and Associates
Consulting Engineers and Planners
3401 E. Michigan
Lansing, Michigan 48912

Gentlemen:

The Wildlife Division of the Michigan Department of Natural Resources would like to offer additional comments on the proposed upgrading of Highway US-27 between Lansing and Ithaca (to interstate standards). The present US-27 and the proposed relocation cross the Maple River State Game Area administered by the Wildlife Division of the Michigan Department of Natural Resources.

We favor the option of using the existing US-27 corridor as the location of the new highway across the game area. We suggest that the existing northbound lanes be used as a service road. This would provide the public with good access to that portion of our game area lying east of the present highway.

The construction of new southbound lanes just west of the present road grade would have only a minimal impact on the game area. The loss of this habitat must be mitigated because federal Pittman-Robertson funds were used to purchase those lands that would be used for the new road grade.

There is a privately owned parcel lying just west of US-27 that we need for future management and development of the area. We have long range plans to develop a managed water level marsh for those lands lying west of the highway. There is one parcel of private lands within our proposed flooding. We would request that these lands be purchased to mitigate the loss of state-owned wetlands, if the present corridor is selected for the new highway. This parcel is owned by I. M. Williams and is that fractional portion of the $N\frac{1}{2}$ of $SE\frac{1}{4}$, Sec. 29, T 9 N, R 2 W lying north of the Maple River. Mr. Williams owns the entire $N\frac{1}{2}$ of $SE\frac{1}{4}$ of Sec. 29 being 76.5 acres, but we only need that portion lying north of the Maple River.



As stated previously, the Wildlife Division will be developing a wildlife flooding just west of the existing highway. If the present corridor is selected for the new highway and new southbound lanes are constructed just west of the present roadway, highway design plans should incorporate provisions for a low head of water against the new road grade. At the time any roadway designs are made by the Highway Department, they should contact us and our Engineering Division so the grade can be properly designed to withstand a low head of water and be protected from erosion.

There is a 200-acre managed water level marsh lying just east of the present highway. There are three large culverts under the present road grade that are within our managed unit. We have installed water level control structures at the eastern end of these tubes so we can maintain water levels in the 200-acre marsh. If the present highway corridor is selected and new southbound lanes are constructed west of the present highway, we request that the extension of the culverts be designed and constructed to be used as stop-log water level control structures. Our Engineering Division can provide the technical assistance on what we would need.

Thank you for providing us the opportunity to comment on the new US-27 highway relocation project. If you have any additional questions, please contact our office.

Sincerely yours,

WILDLIFE DIVISION

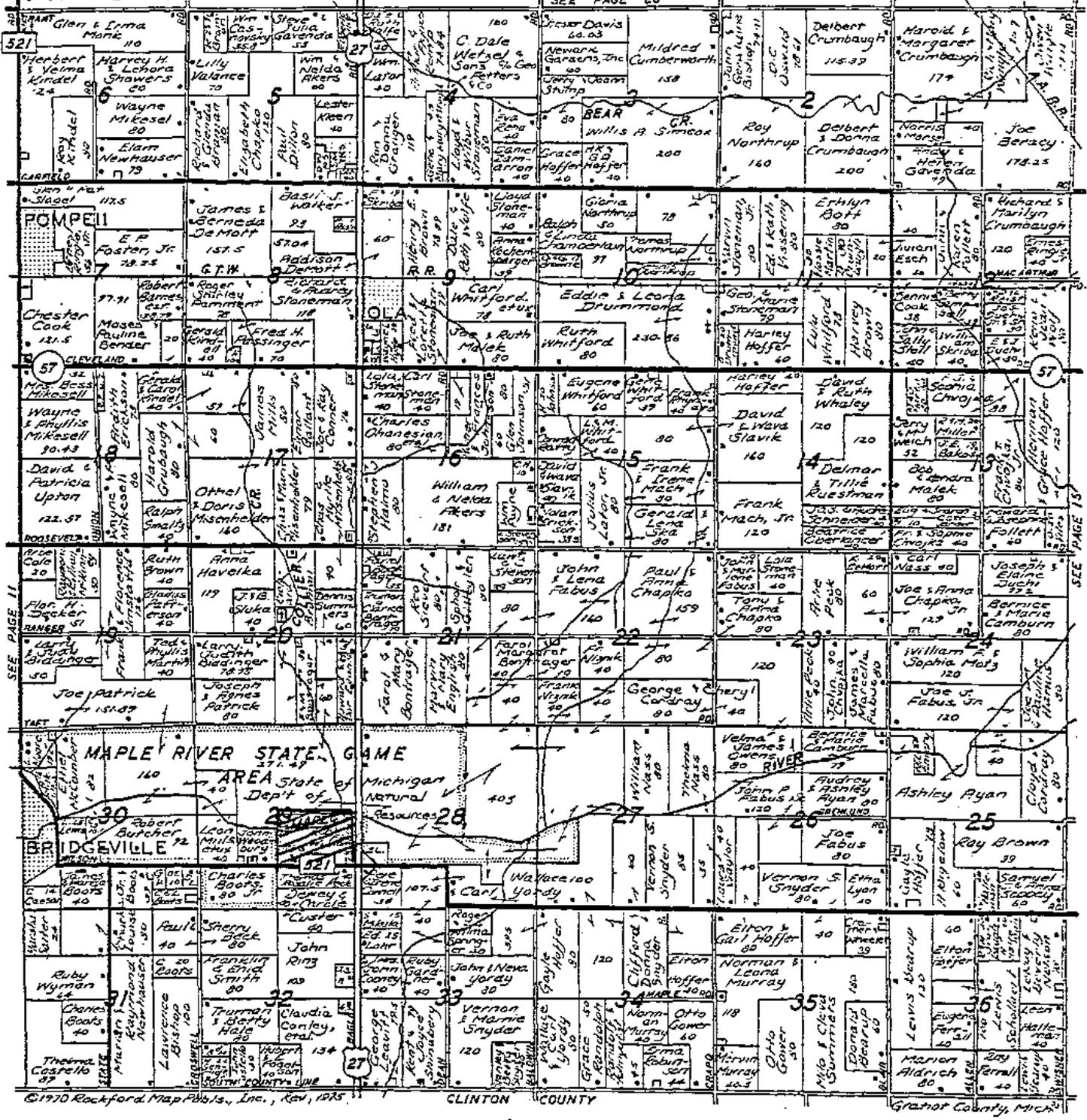
L.A. Davenport

L. A. Davenport
Senior Wildlife Executive

EJM/LAD:sp

cc: M. Johnson
E. Tucker

SEE PAGE 20



©1970 Rockford Map Plots, Inc., Rev. 1975

CLINTON COUNTY

Grafton County, Mich.

ZEPHYR OIL COMPANY

1883 EAST GARFIELD ROAD - ASHLEY 1 - MICHIGAN

Headquarters for Home Heating Oil
Lee Passenger - Truck - Tractor Tires
Diesel Fuel - Gasoline - Motor Oil - Grease

AGENT
Ernest Rozen
875-3490



AGENT
Dick Braman
838-2249

LODEWYK, NESEN & MC KIM, INC. INSURANCE

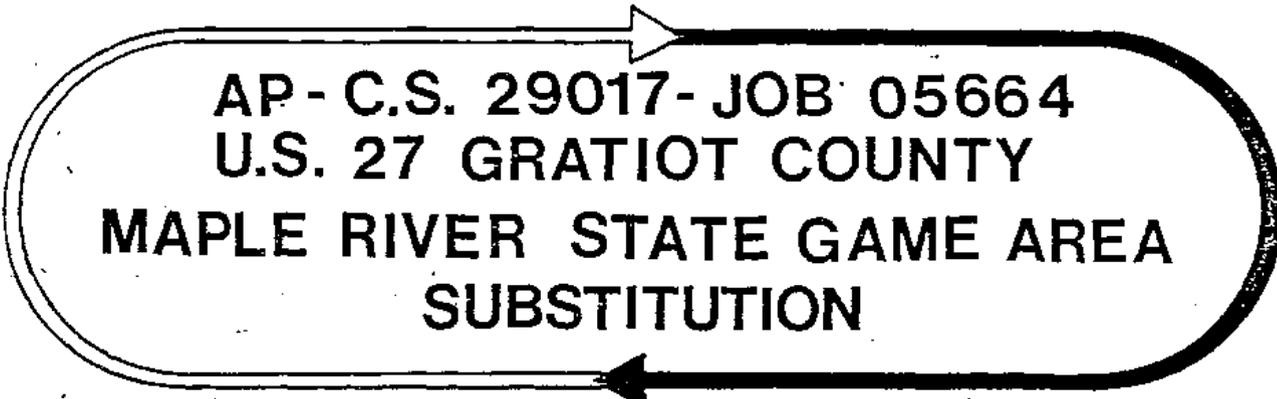
408 Woodworth
Alma "Scotland" U.S.A.

121 North Mill Street - St. Louis
"Middle of the Mitten"

OVER 37 YEARS OF SERVICE

ATTACHMENT C

TO SECTION 4(f) STATEMENT



AP - C.S. 29017- JOB 05664
U.S. 27 GRATIOT COUNTY
MAPLE RIVER STATE GAME AREA
SUBSTITUTION



U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION
REGION 5
Lansing, Michigan
48901

March 7, 1979

IN REPLY REFER TO:

AP - C.S 29017 - Job 05654
US-27 Gratiot County, Maple
River State Game Area Substitution

Mr. John P. Woodford, Director
Michigan Department of Transportation
Lansing, Michigan

MAR 8 1979

Dear Mr. Woodford:

Please refer to Mr. Uray's February 9, 1979 letter on the above subject.

We approve the use of the principle of substitution in the acquisition of wildlife land needed for the construction of US-27 in Gratiot County.

Under our 6(f) requirement, we need a statement from the DNR that the replacement parcel will be of equal size, utility and value as the acquired property. The DNR alludes to this in their letter, but an explicit statement to this effect needs to be included in the replacement package.

Sincerely yours,

David A. Merchant
David A. Merchant
Division Administrator

COPIES

M. CLYDE

W. McCREERY

J. C. BROWN

D. RUSH

ACTION



WILLIAM G. MILLIKEN, GOVERNOR
DEPARTMENT OF TRANSPORTATION

TRANSPORTATION BUILDING, 425 WEST OTTAWA PHONE 517-373-2090
POST OFFICE BOX 30050, LANSING, MICHIGAN 48909

JOHN P. WOODFORD, DIRECTOR

February 9, 1979

Mr. David A. Merchant
Division Administrator
Federal Highway Administration
Lansing, Michigan

Dear Mr. Merchant:

AP - C.S. 29017 - Job 05664 US-27 Gratiot Co.
Maple River State Game Area Substitution

Attached is the preliminary documentation required to support the Department of Natural Resources request for approval to use the principle of substitution in the acquisition of wildlife land needed for the construction of US-27 in Gratiot County.

This request is being made in compliance with FHPM (volume 7, chapter 2, section 2, subsection 1).

Sincerely,

Charles Uray, Jr.
CHIEF DEPUTY DIRECTOR

attachments

R/W-JCB:DF:tw

cc: C. Uray
M. Clyde



MAPLE RIVER STATE GAME AREA

Subject property is located in Gratiot County, Michigan adjacent to the Maple River and is owned by the Department of Natural Resources. It consists of approximately 6,656 acres mostly adjacent to the Maple River and runs a total length of 15 miles east and west of existing US-27.

The proposed right of way will require 10.3 acres of the Maple River State Game Area. The proposed taking is on the west side of and adjacent to US-27. The size of the proposed taking is 170'x2,640' and is in the floodplain of the Maple River.

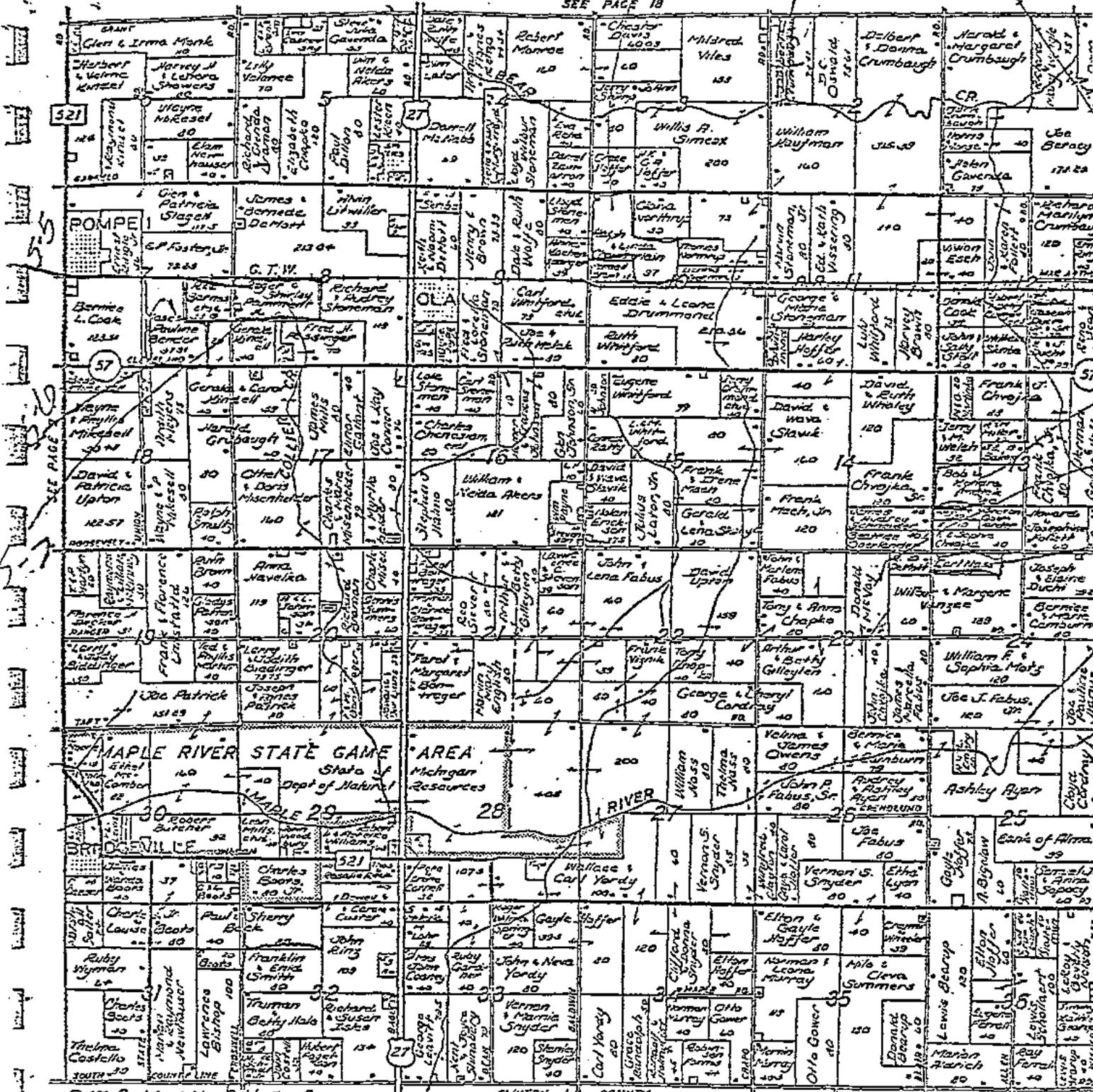
The Department of Natural Resources has requested replacement of the lands within the proposed right of way and has submitted a proposal for said replacement. (see attached letter of June 24, 1976). The size of the replacement land is approximately 16.12 acres and lies in the floodplain of the Maple River on the north side.

We hereby recommend the approval of the proposal of the Department of Natural Resources, that we acquire the 16.12 acres as shown on the attached sketch as substitute land for the Department of Natural Resources property within the proposed right of way.

For your consideration we include the following attachments:

1. Area map
2. Proposal by Department of Natural Resources
3. Sketch of proposed replacement lands (Exhibit 11)
4. Sketch of proposed right of way
5. Estimated value of proposed right of way
6. Estimated value of substitute lands
7. Summary of estimated costs
8. Conclusion

SEE PAGE 18



S-4

STATE OF MICHIGAN



WILLIAM G. MILLIKEN, Governor

DEPARTMENT OF NATURAL RESOURCES

STEVENS T. MASON BUILDING, LANSING, MICHIGAN 48928

HOWARD A. TANNER, Director

NATURAL RESOURCES COMMISSION

CARL T. JOHNSON
E. M. LAITALA
DEAN PROGEON
HILARY F. SNIEL
HARRY H. WHITELEY
JOAN L. WOLFE
CHARLES G. YOUNGLOVE

June 24, 1976

Smith Wilbur and Associates
Consulting Engineers and Planners
3401 E. Michigan
Lansing, Michigan 48912

Gentlemen:

The Wildlife Division of the Michigan Department of Natural Resources would like to offer additional comments on the proposed upgrading of Highway US-27 between Lansing and Ithaca (to interstate standards). The present US-27 and the proposed relocation cross the Maple River State Game Area administered by the Wildlife Division of the Michigan Department of Natural Resources.

We favor the option of using the existing US-27 corridor as the location of the new highway across the game area. We suggest that the existing northbound lanes be used as a service road. This would provide the public with good access to that portion of our game area lying east of the present highway.

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Thank you for providing us the opportunity to comment on the new US-27 highway relocation project. If you have any additional questions, please contact our office.

Sincerely yours,

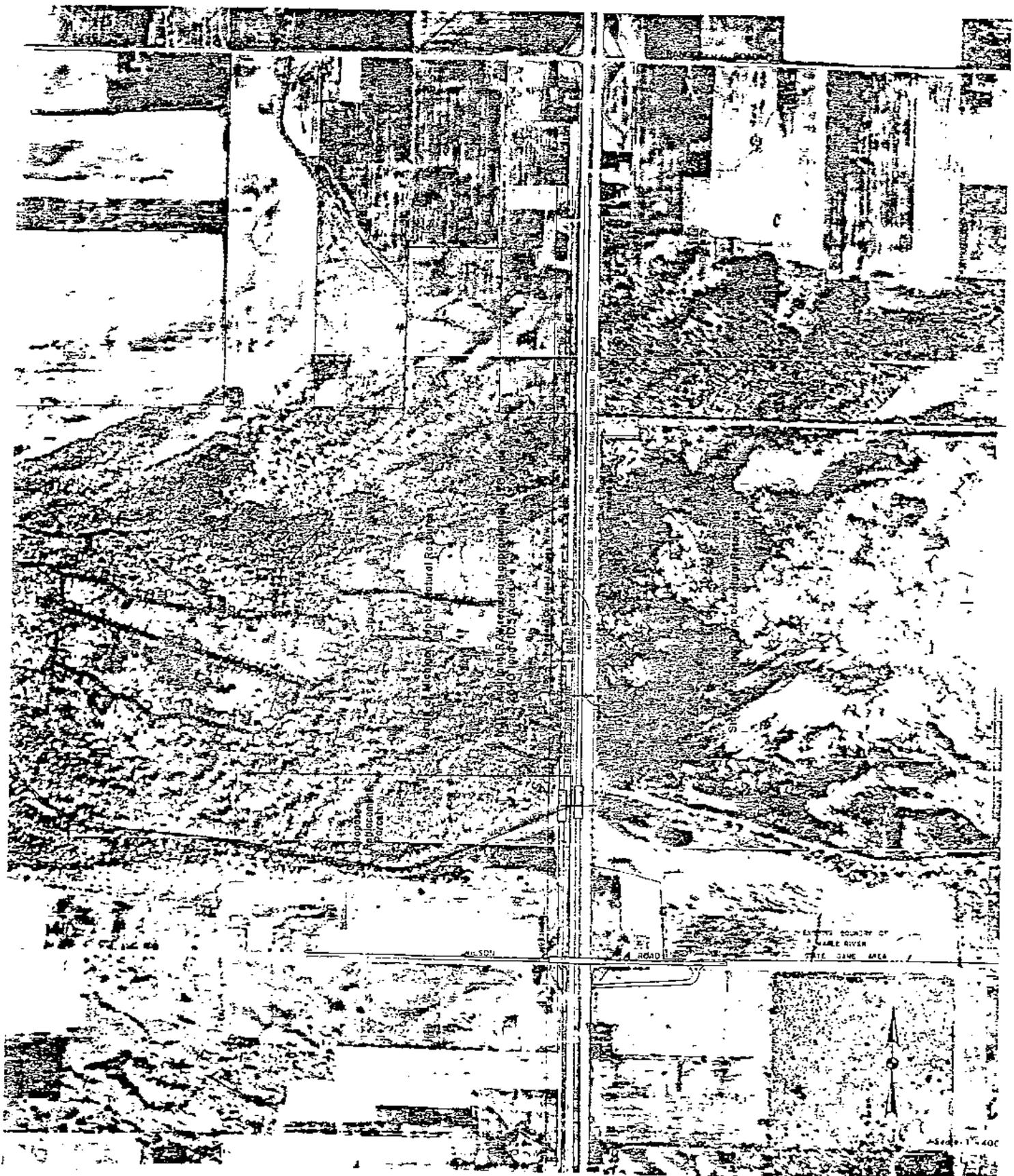
WILDLIFE DIVISION

L.A. Davenport

L. A. Davenport
Senior Wildlife Executive

EJM/LAD:sp

cc: M. Johnson
E. Tucker



**PREFERRED U.S. 27 FREEWAY ALIGNMENT
MAPLE RIVER STATE GAME AREA**

Wilbur Smith and Associates

ESTIMATED VALUE OF PROPOSED RIGHT OF WAY

10.3 acres @ \$400.00 Vacant Land	\$4,100.00
Contingencies	\$1,000.00
TOTAL RIGHT OF WAY COSTS	<u>\$5,100.00</u>

ESTIMATED VALUE OF SUBSTITUTE LANDS

16.12 acres @ \$300.00	\$4,800.00
Vacant Land Landlocked By River	
Contingencies	\$1,200.00
Total Cost of Replacement Lands	\$6,000.00

A summary of estimates or actual costs should be prepared to show applicable cost items. A suggested format is as follows:

<u>Cost Items</u>	<u>Acquisition Based on Market Value Concept</u>	<u>Cost to Acquire Substitute Property</u>	
Land	\$ 4,100.00	4,800.00	
Buildings			
Facilities			
Damages			
Moving Costs			
Replacement Housing			
Other Items	1,000.00	1,200.00	\$6,000.00
Contingencies			
Total	\$ 5,100.00		
		<u>Cost to Cure or Functionally Replace</u>	
Buildings		\$	
Facilities			
Other Items			(+) _____
		<u>Nonparticipating Items (Betterments)</u>	
(Identify Items)		\$	
			(-) _____
Total			\$6,000.00

CONCLUSION

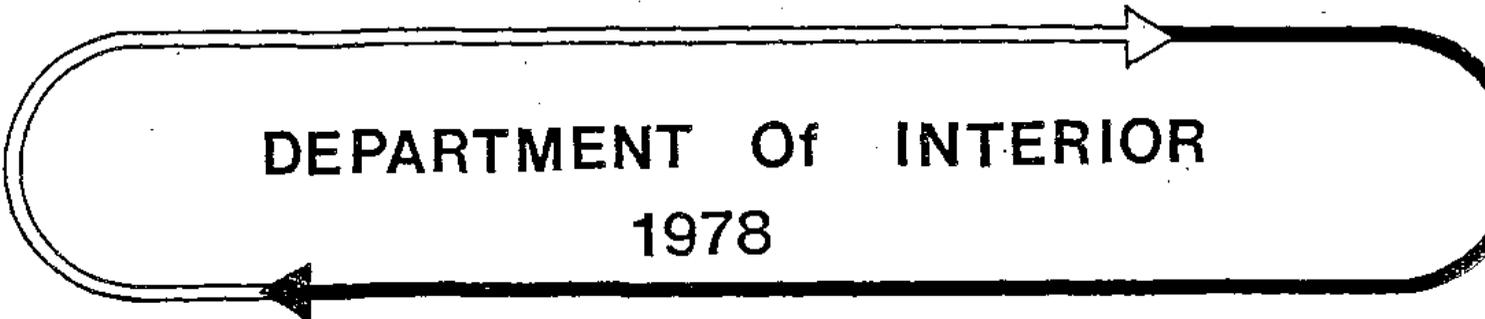
A search of the market in the area reveals that low land of this type to be selling for \$300-400 per acre. \$400 per acre was used for the lands within the proposed right of way and since the replacement is landlocked by the Maple River the low range of \$300.00 per acre was used. This information was verified by local realtors and county records.

Since the lands within the proposed right of way were purchased with Pittman-Robertson funds the replacement site must be of equal size, utility and value. The final value to be determined following mutual review and certification of acceptable appraisals by both parties of interest. The actual difference to be paid to the Michigan Department of Transportation.

After considering all known factors, we feel this to be a minimum substitution without creating a benefit for the Department of Natural Resources.

ATTACHMENT D

TO SECTION 4(f) STATEMENT



DEPARTMENT OF INTERIOR
1978



United States Department of the Interior

BUREAU OF OUTDOOR RECREATION

LAKE CENTRAL REGION

FEDERAL BUILDING

ANN ARBOR, MICHIGAN 48107

IN REPLY REFER TO:

M2253 EC Michigan

XG26-Michigan

January 9, 1978

Mr. Jan Raad
Environmental Community
Factors Division
Department of State Highways
and Transportation
P.O. Box 30050
Lansing, Michigan 48909

Dear Mr. Raad:

We appreciated the opportunity for Bob Franz of this office to join with you, Bill Hartwig, and Bob Henry of the Department of State Highways and Transportation; L.A. Davenport of the Department of Natural Resources; and Sharon Dugal of the U.S. Fish and Wildlife Service, on November 22 to review currently considered alternatives for the upgrading of U.S. 27 from Lansing to Ithaca.

The primary area of concern regarding this highway improvement is the crossing of Maple River within the Maple River State Game Area. Through the Land and Water Conservation Fund (LAWCON) (Project 26-00361) we have assisted the State in acquiring land for this area.

We understand that one alternate would use the existing northbound lanes and causeway/bridge for local access. The area of the existing southbound lanes would be used to create new northbound lanes. To the immediate west of the existing highway would be created a causeway/bridge which would provide the new southbound lanes. The approximate 200-foot-wide strip of right-of-way required to construct the new southbound lanes across the flood plain would constitute a Section 4(f) conflict as well as conflict with Section 6(f) of LAWCON. By selecting this alternative, public access would be maintained to the State game area parking lot north of the river on the east side of the existing highway. We understand the existing highway fill contains a water control structure for wildlife management purposes within the State game area east of the highway and north of the river. We also understand the Michigan Department of Natural Resources desires the construction of a new and improved water control structure which could be installed in the new fill, and therefore they favor this highway project alternative.

The other alternate would consist of narrowing the median design of the existing four-lane unrestricted access highway north and south of the river so as to use the existing bridge and causeway exclusively for the freeway. While this would eliminate the Section 4(f) - Section 6(f) conflict, it would greatly complicate the construction of the improved water control structure for waterfowl management desired by the Department of Natural Resources. The existing local access to the wildlife area parking lot would also be eliminated.

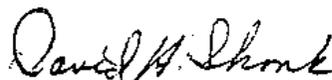
We do not foster projects which create Section 6(f) conflict. However, based on current information on the project alternatives, including the desires of the Michigan Department of Natural Resources, we would not expect to oppose the proposed conversion of this Section 6(f) property provided the provisions of Section 4(f) and Section 6(f) are satisfied.

With regard to the two alternatives considered for the Maple Rapids Road interchange, we favor alternate MR 2 which would not require the taking of land from the Clinton County Country Club.

In an unrelated matter you requested advice as to whether the realignment of a portion of M-107 within Porcupine Mountains Wilderness State Park would constitute a Section 6(f) conflict. It is unusual for a Federal Aid highway to terminate within a State park. The realignment would be undertaken to eliminate an erosion problem caused by the present location of a portion of the highway adjacent to Lake Superior.

On January 24, 1974, this Bureau approved LAWCON Project 26 - 00489 for the purpose of developing a variety of facilities within the State park. Included as part of the project was the realignment of that segment of M-107 located within the park. Because the realignment of this portion of M-107 is part of the approved project, we would not consider the highway project to constitute a Section 6(f) conflict provided the design of realignment is in accordance with the approved LAWCON project.

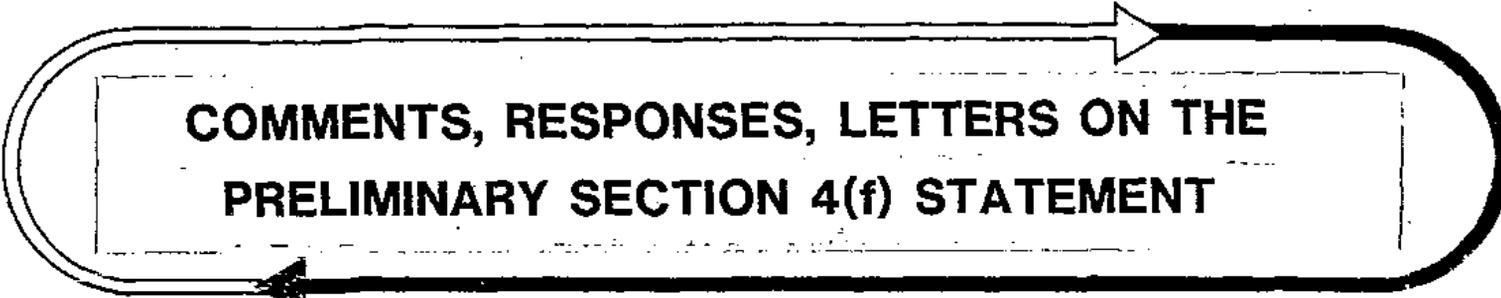
Sincerely yours,



David H. Shonk
Assistant Regional Director

ATTACHMENT E

TO SECTION 4(f) STATEMENT



**COMMENTS, RESPONSES, LETTERS ON THE
PRELIMINARY SECTION 4(f) STATEMENT**

Comments on the Preliminary Section 4 (f) Statement dated August 31, 1981, are summarized in this Section with responses as appropriate. The actual letters received are included at the end of this Section.

U.S. Army Corps of Engineers

Comment: The Section 401 permit referred to on page 25 would have to be obtained from the State of Michigan rather than from the Corps as stated.

Response: This change has been indicated in the Erratum Section of this Final EIS.

Comment: No Corps projects or on-going studies are located within the project area.

Response: Your comment is noted.

U.S. Soil Conservation Service

Comment: We do not have any comments on this supplement to the Draft EIS.

U.S. Department of the Interior, Office of the Secretary

Comment: The Maple River State Game Area was partially acquired with financial assistance made available under the Land and Water Conservation Fund Act. Section 6 (f) provides that any conversion of these lands to other uses must be approved by the Secretary and be replaced with lands of at least equal fair market value and reasonably equivalent usefulness and location. It appears that all conditions necessary for a favorable Section 6 (f) consideration exist. To initiate the Section 6 (f) process, you should contact the State Liaison Officer responsible for administration of the Land and Water Conservation Fund Program in Michigan.

Response: The State Liaison Office responsible for administration of the Land and Water Conservation Fund Program in Michigan will be contacted.

Comment: The Fish and Wildlife Service advises tentatively that it would have no objections to dredge and fill activity associated with the presently preferred Alternate G. When appropriate site-specific information is available, we will be pleased to coordinate with you to preclude delay and to ensure that any permit stipulations or conditions are understood and included in the Final Statement.

Response: Specific design information is not available at this time regarding dredge and fill activity. However, when appropriate site-specific information becomes available, we will coordinate this information with you. Because of the minor amount of wetland involvement, no problems associated with dredge or fill activities are anticipated.

Comment: With provision of the mitigation measures mentioned and with the continued close coordination with the Michigan DNR, the Department of the Interior would not object to Section 4 (f) approval of this project.

Response: Your comment is noted.

U.S. Environmental Protection Agency, Region V

Comment: Based on a commitment to the mitigation package described in the Draft Supplement, we have no objections to the implementation of the US-27 improvement project in the vicinity of the Maple River State Game Area.

Response: Your comment is noted.

Michigan Department of Natural Resources

Comment: Runoff areas should be designed to minimize direct discharge to surface waters.

Response: Intercepted water will be outletted into an available roadside ditch or watercourse. Siltation of such watercourses will be controlled by the placement of porous material beneath the pipe to filter out fine material.

Comment: We are very interested in an up-to-date projection of need, as well as assurances that the route is proposed to impact the fewest possible number of acres of Public Act 116 lands.

Response: Refer to the Section entitled "Prime Farmlands and Public Act 116.

Gratiot County Road Commission

Comment: We are in agreement with your facts and findings.



DEPARTMENT OF THE ARMY

DETROIT DISTRICT, CORPS OF ENGINEERS
BOX 1027
DETROIT, MICHIGAN 48231

REPLY TO
ATTENTION OF

02 NOV 1981

NCEPD-EA

Mr. Jack E. Morgan, Manager
Public Involvement Section
Michigan Department of Transportation
P.O. Box 30050
Lansing, MI 48909

Dear Mr. Morgan:

Thank you for the opportunity to review the Supplement to Draft, Alignment Environmental Statement for US-27 from Lansing to Ithaca, Clinton and Gratiot Counties, Michigan.

As indicated on page 25 of the Statement, a Corps permit would be required for those portions of the project which fall under jurisdiction of Section 404 of the Clean Water Act. The Section 401 permit referred to on the same page would have to be obtained from the State of Michigan rather than from the Corps as stated.

No Corps projects or ongoing studies are located within the project area. The US-27 road project from Lansing to Ithaca as proposed would not impact any Corps programs.

Sincerely,

C. ARGIROFF, P.E.
Chief, Planning Division



United States
Department of
Agriculture

Soil
Conservation
Service

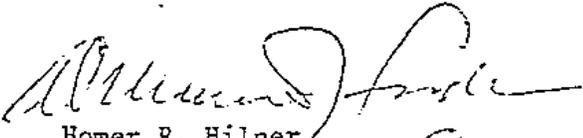
1405 South Harrison Road, Room 101
East Lansing, Michigan
48823

October 23, 1981

David A. Merchant, Division Administrator
Federal Highway Administration
P.O. Box 10147
315 West Allegan St.
Lansing, MI 48901

We have reviewed the Preliminary Section for 4 (f) statement, Maple River State Game Area, U.S.-27 from Lansing to Ithaca, Clinton and Gratiot Counties, Michigan. We do not have any comments on this supplement to the draft environmental statement.

Sincerely,


Homer R. Hilner
State Conservationist

HRH:rpc:kp 1906B



The Soil Conservation Service
is an agency of the
Department of Agriculture

III-51



United States Department of the Interior

OFFICE OF THE SECRETARY
WASHINGTON, D.C. 20240

NOV 24 1981

In Reply Refer To:
ER 81/2060

Mr. David A. Merchant
Division Administrator
Federal Highway Administration
P.O. Box 10147
Lansing, Michigan 48901

A		I		RECEIVED DEC - 1 1981 Bureau of Transportation Planning	A		I	
<input checked="" type="checkbox"/>	CRYDERMAN	<input checked="" type="checkbox"/>	VENTURINO					
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<input type="checkbox"/>	GAVIN	<input checked="" type="checkbox"/>	CHRISTENSEN					
<input type="checkbox"/>	KARBER	<input checked="" type="checkbox"/>	JEFF					
<input type="checkbox"/>	LANUM	<input type="checkbox"/>						
<input type="checkbox"/>	LOWE	<input type="checkbox"/>	HES					

Dear Mr. Merchant:

This is in response to the request for the Department of the Interior's comments on the preliminary Section 4(f) statement for US-27 (Lansing to Ithaca), Clinton and Gratiot Counties, Michigan.

SECTION 4(f) STATEMENT COMMENTS

Based on the information provided in the preliminary Section 4(f) statement, we would concur with the preferred alternative C, option 2, as feasible and prudent. Approximately 10.3 acres of Maple River floodplain and wetlands would be required for this project. The existing roadway would continue in use as a service road allowing public access to the game area and parking lot located on the east side of US-27. The Michigan Department of Natural Resources expressed preference for this alignment in that good public access to the game area would continue and that conflict with the water control structure to the east of the river crossing would be avoided.

Also, we would concur that all possible planning to minimize harm has been accomplished if the following mitigation measures, as recommended by the Michigan Department of Natural Resources, are provided:

1. Highway design plans would incorporate provision for a low head of water against the new road grade.
2. The extension of culverts, mentioned on page 17, be designed and constructed to be used as stoplog water control structures.
3. The 10.3 acres affected are replaced with 15.1 acres which should be of at least equal utility and value. Such replacement must be in accordance with the requirements of Section 6(f) of the Land and Water Conservation Fund Act.

This document is not for sale with State funds

SECTION 6(f) COMMENTS

The Maple River State Game Area was partially acquired with financial assistance made available under the Land and Water Conservation Fund (LWCF) Act. Any recreation areas so assisted fall under the protection of Section 6(f) of the Act. Section 6(f) provides that any conversion of LWCF assisted lands to other uses be approved by the Secretary and be replaced with lands of at least equal fair market value and reasonably equivalent usefulness and location. It appears from the Section 4(f) statement that all conditions necessary for a favorable Section 6(f) consideration exist. To initiate the Section 6(f) process, you should contact the State Liaison Officer who is responsible for administration of the Land and Water Conservation Fund program in the State of Michigan. He is Mr. C. J. Scherschligt, Deputy Director, Michigan Department of Natural Resources, P.O. Box 30028, Lansing, Michigan 48909 (phone: FTS 8-253-2682, commercial (517) 373-2682).

FISH AND WILDLIFE COORDINATION ACT COMMENTS

The Fish and Wildlife Service advises that the proposed 16.1 acres of replacement land would satisfy the requirements of the Pittman-Robertson Act.

In our January 2, 1980, response on the draft supplemental environmental impact statement, we objected to the issuance of Section 10/404 Corps of Engineers' permit for Alternate B. The Fish and Wildlife Service advises tentatively that it would have no objections to dredge and fill activity associated with the presently preferred Alternate G. When appropriate site-specific information is available, the Fish and Wildlife Service will be pleased to coordinate with you to preclude delay and to insure that any permit stipulations or conditions are understood and included in the final statement.

Accordingly, the preceding comments do not preclude additional and separate evaluation and comment by the Service pursuant to the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661, et seq.) when it comments on permit applications. In review of the applications, Fish and Wildlife may concur, with or without stipulations, or object to the proposed work depending on information available at that time.

SUMMARY COMMENTS

With provision of the mitigation measures mentioned above and with the continued close coordination with the Michigan Department of Natural Resources, the Department of the Interior would not object to Section 4(f) approval of this project.

This document filed for with State funds

Mr. David A. Merchant

3

For assistance concerning the resolution of the Section 6(f) requirements, please contact the Chief, Ann Arbor Office, Midwest Region, National Park Service, Federal Building, Ann Arbor, Michigan 48107 (phone: FTS 8-378-2099, commercial (402) 221-3434). For resolution of the fish and wildlife matters, please contact the Area Manager, Fish and Wildlife Service, East Lansing Area Office, Manly Miles Building, Room 202, 1405 South Harrison Road, East Lansing, Michigan 48823 (phone: FTS 8-374-6608, commercial (517) 337-6614).

We appreciate the opportunity to provide these comments.

Sincerely,

(sgd) Bruce Blanchard

Bruce Blanchard, Director
Environmental Project Review

cc: Mr. John P. Woodford
Director
Michigan Department of Transportation
State Highways Building
Lansing, Michigan 48904

J. F. Cyderman
Gene Carls

This document paid for with State funds



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

REPLY TO ATTENTION OF:

Mr. Jack Morgan, Manager
Public Involvement Section
Michigan Department of Transportation
P.O. Box 30050
Lansing, Michigan 48909

22 OCT 1981

RE: DS-FHW-F40033-MI
(81125)

Dear Mr. Morgan:

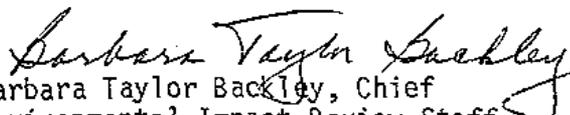
We have completed our review of the Preliminary Section 4(f) Statement, Supplement to the Draft Environmental Impact Statement (EIS) on Reconstruction of U.S. 27 from Lansing to Ithaca. The Supplement addressed the impacts of the proposed improvement of U.S. 27 in the vicinity of the Maple River State Game Area.

The preferred alternative will require use of approximately 10.3 acres of the Maple River flood plain and associated wetlands; however, this is an area already disturbed by the existing road and causeway. The 10.3 affected acres will be replaced with a 16 acre parcel of land of equal utility and value, lying adjacent to the Maple River and abutting the Maple River State Game Area. In addition, as requested by the Department of Natural Resources, the highway facility will incorporate flood control measures designed to form a water marsh area to the west.

Based on a commitment to the mitigation package described in the Draft Supplement, we have no objections to the implementation of the U.S. 27 improvement project in the vicinity of the Maple River State Game Area. We find the statement adequately assesses the environmental impacts of the preferred plan and its alternatives. We are, therefore, classifying the EIS as LO-1, which means we lack objections to the environmental impacts of the preferred alternative and the statement adequately assesses the impacts.

In accordance with our responsibility under Section 309 of the Clean Air Act to inform the public of our views on proposed Federal actions, the classification of this project will be published in the Federal Register. If you have any questions regarding our review, please contact Arlene Kaganove of my staff at 312/886-6686.

Sincerely yours,


Barbara Taylor Backley, Chief
Environmental Impact Review Staff
Office of Environmental Review

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

INTEROFFICE COMMUNICATION

November 16, 1981

TO: Jan Raad, Department of Transportation

FROM: Donald Inman, Environmental Enforcement

SUBJECT: U.S. 27, Lansing to Ithaca
Clinton and Gratiot Counties

Original here for Donald Inman

The Department of Natural Resources has reviewed the preliminary Section 4(f) supplement for the section of U.S. 27 from Lansing to Ithaca. Although initial planning on this segment began many years ago, the project is only now being proposed for development.

Within the last few years, at least two Michigan laws have been enacted which may impact on the proposal: the Wetlands Act (PA 203, 1980) and the Farmland and Open Space Act (PA 116, 1974). Review will be necessary under both the Wetlands Act and the Inland Lakes and Streams Act (PA 346, 1972). Runoff areas should be designed to minimize direct discharge to surface waters.

As you know, thousands of acres in the study area have been enrolled in the PA 116 program. It will be impossible to complete this segment without impacting some of these lands. We are very interested in an up-to-date projection of need as well as assurances that the route is proposed to impact the fewest possible number of acres of PA 116 lands. Prior to this information being available it will be difficult for the DNR to consider the statutory obligations of Act 116.

DLI:VP:sct

cc: Bastian

M. Johnson

J. Wuycheck

T. Doyle

Stebbins

BOARD OF
COUNTY ROAD COMMISSIONERS
OF GRATIOT COUNTY
ITHACA, MICHIGAN 48847
(517) 875-3811

November 30, 1981

Mr. Jack E. Morgan, Manager
Public Involvement Section
Michigan Department of Transportation
P. O. Box 30050
Lansing, Michigan 48909

RE: MAPLE RIVER STATE GAME AREA PRELIMINARY SECTION 4 (f)
STATEMENT

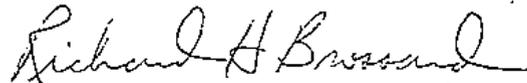
Dear Mr. Morgan:

This Commission has reviewed the referenced document.

Basically, we are in agreement with your facts and findings.
Our desires and expectations as far as service drive access
and limiting new miles of roads are met.

Sincerely,

GRATIOT COUNTY ROAD COMMISSION



Richard H. Brossard, P. E.
Engineer-Manager

RHB:ek





PART IV
ALTERNATIVES

IV. ALTERNATIVES AND IMPACTS

1. Alternatives Considered

This section contains a synopsis of the various alternatives considered in planning the improvement of US-27. Impacts of the serious freeway alternates are compared on a segment basis. It is noted that the "preferred alignment", as discussed in comparison with other alignments, was selected with slight modification for the "proposed project" described in the preceding Part II of this report.

Alternatives considered in the analysis includes the Do Nothing, No Build, Other Freeway Alternatives (Exhibit 14), and Alternative Modes of Transportation .

Do Nothing - This Alternative would restrict improvements on US-27 to keeping the existing facility in its present condition. This does not preclude normal maintenance or minor traffic and safety improvements, such as signals and signing.

No Build - This Alternative proposes low capital intensive improvements. It includes the following: widening in the DeWitt area, an eastern bypass of St. Johns, and an overpass of the railroads.

Other Freeway Alternatives - With the possible exception of an introduction of other transportation modes to the US-27 Corridor, a modern standard roadway is the only type of improvement that has the capacity to provide projected vehicle trips with a reasonable level of service and safety. The practical Alternative Alignments reviewed in the Draft Environmental Impact Statement and at the Public Hearings are summarized in the succeeding paragraphs.

Alternate G - from US-127/US-27 interchange, this alternate follows immediately adjacent to existing US-27 over much of its length from the outer fringes of Lansing to north of St. Johns. An eastern bypass directs this alternative to the east of St. Johns. An option to the beginning (south) point, Alternate G consists of a segment of the preferred from the proposed I-69/US-127 interchange to Howe Road, crossing on a diagonal northwesterly to Alternate G in the vicinity of Chadwick Road.

Alternate B - follows a route northward between Krepps and Chandler Roads approximately parallel with the preferred. This alignment also turns west to Alignment G in the vicinity of Kinley Road.

Alternate Modes

The locational nature of US Route 27 in the statewide trunkline system is not conducive to alternative modes such as bus or rail instead of automobile and truck. On peak summer weekends, as much



PRACTICAL ALIGNMENT ALTERNATIVES

Wilbur Smith and Associates

LEGEND
 — PRACTICAL ALTERNATIVES
 — SELECTED ALTERNATIVES
 ○ INTERCHANGE LOCATIONS



EXHIBIT 14

as 88 percent of the traffic on US-27 is inter-regional. The predominant portion of this is recreation-oriented, with origin-destination throughout Michigan and in neighboring states to the south. Public transportation, with existing technology, is neither efficient nor effective in serving this type of trip.

In response to the "gasoline shortage" of 1974, the Michigan Department of State Highways and Transportation developed a subsidized bus program from eight cities, including Lansing, in southern Michigan to 11 winter vacation areas of the northern end of the Lower Peninsula. Operating on weekends only between February 1 and March 15, 1974, a total of 688 passengers used the service. A survey of the riders indicated that 84 percent would use this service again during the summer. Less than half of the riders were skiers or other winter sport participants. Given the short time for development and notification, this express bus service did illustrate the feasibility of a low cost, convenient alternative to the automobile.

Public interest in express bus service to Lansing was probed during a home interview survey. Although 67 percent indicated no interest in using such a service, 70 percent thought that bus service would be beneficial to the area.

It is conceivable that a bus-type commuter service could eventually be implemented between St. Johns, DeWitt and Lansing. This service, utilizing convenient schedules and routes, could be effective in providing an alternative means of transportation in southern Clinton County.

Another type of group transportation is car pooling. There is evidence that this is being accomplished on an informal basis at the Washington Street interchange in Ithaca, at M-57 and in St. Johns. To encourage this type of transportation, the Michigan Department of Transportation has developed a program to construct and maintain parking lots at key interchanges and major road intersections throughout the State.

In addition, the State has developed a van pool program to encourage conservation of energy. This program utilizes computerized match-up and State-maintained parking areas.

In summary, the concept of multi-modal transportation service has been incorporated in the design of all freeway alternatives. The four-lane freeway includes a median of sufficient width to safely add an extra lane in each direction for exclusive bus travel or other use as necessary. The park-and-ride concept has been anticipated and could be accommodated at each interchange in order to encourage car pooling and bus usage. Energy conservation is also achieved by roadway design to encourage constant vehicle speeds. This is accomplished by including very gradual inclines and long, sweeping curves, as well as by eliminating the conflict with vehicles crossing or entering the traffic area.

SUPPLEMENTAL STUDY AREA ALIGNMENT ALTERNATIVES

In recognition of the local desire in Greenbush Township and because of a possible Section 4(f) requirement, (Coleman's Hotel and Salt Box House at the corner of US-27 and French Road), alternative alignments on new locations were compared with the preferred solution from M-21 to the Gratiot County Line. (Exhibit 15). The alternatives developed for this special study area were presented in the Supplement to Section IV of the Draft EIS (April 4, 1978). That document, which is available for redistribution, includes the results of citizens and agencies inputs regarding this special study area.

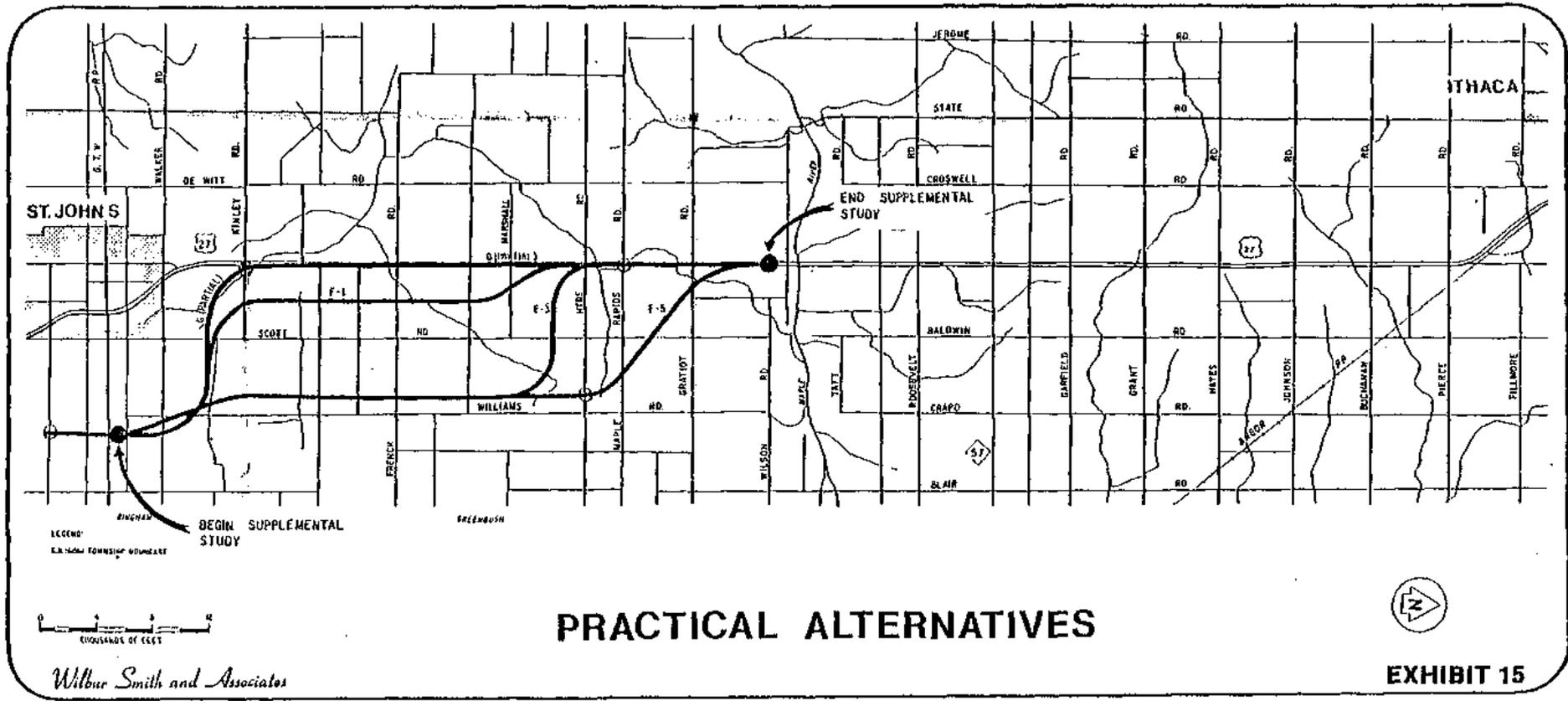
In developing alternatives for the Supplemental Study, the Do Nothing and No Build Alternatives and Alternative Modes, as defined and discussed in the Draft Alignment Environmental Impact Statement (March 9, 1977) and the Public Hearing (June, 1977) are not reiterated.

Initially, several alignment alternatives were developed without regard to physical or environmental constraints. From these schemes evolved a series of practical alignment alternatives for detailed analysis and comparison of technical, social, and natural systems impacts (Alignments G (Partial), F-1, F-3, and F-5). Cost estimates for the Practical Alternatives were developed based on right-of-way acquisition, relocation and roadway construction.

The G (Partial) Alignment--modifies Alternative G (Kinley Road to north of Pierce Road) discussed in the Draft Alignment Environmental Impact Statement dated March 9, 1977 and presented at the Public Hearing in June, 1977. The latter has been modified for a comparative analysis of each of the freeway alternatives. Changes to the original alternative include: (a) beginning the alignment 0.3 mile north of 21 rather than at Kinley Road; (b) redesigning and simplifying the Kinley Road interchange; (c) terminating the alignment approximately 0.7 mile north of the Gratiot County line rather than 0.2 mile north of Pierce Road; and (d) incorporating the relocation and design changes for the French Road area and Maple Rapids Road area.

Alternative F-1 - coincides with G (Partial) at M-21 and follows it to a westward crossing of Scott Road and then curves northward to Kinley Road. The alignment extends northward along the half-section, one-half mile east of present US-27. Between Marshall and Hyde Roads, F-1 curves northwestward and then northward along the east side of existing US-27 south to Maple Rapids Road. North of Maple Rapids Road, F-1 crosses to the west side of existing US-27 and continues northward to a crossing of the Maple River.

Alternative F-3 - begins one-quarter mile east of Williams Road. F-3 extends northward overpassing the Grand Trunk Railroad and continues northward to Steel Road. It proceeds in a northwestward direction to a point just south of Avery Road, where the alignment curves northward. The alignment then follows a line one-quarter mile west of Williams Road.



F-3 proceeds northward, then curves to the west, along the half-section between Marshall Road and Hyde Road. Then curves northwesterly to an alignment along the east side of existing US-27 to Hyde Road. F-3 extends northward alongside existing US-27 to an interchange at Maple Rapids Road.

Alternative F-5 - coincides with F-3 from M-21 to Mead Road. North of Mead Road, F-5 continues northward approximately one-quarter mile west of Williams Road to a crossing of Hyde Road. F-5 then curves northwestward to Maple Rapids Road. At Gratiot Road, F-5 curves northward and follows along the west side of existing US-27.

Impact Analysis - Based on an analysis of each alternative, there are a number of key impacts that serve as the basis for developing an improvement for US-27 between Lansing and Ithaca. Comments received from Governmental Agencies, Organizations and individual citizens have been incorporated into the evaluation process.

Do Nothing Alternative - This approach has been found to be the least acceptable. While there are obvious advantages in the avoidance of negative impacts, the case against this approach has been well established. In addition, it has been rejected by all responding agencies and citizens. The continuation of hazardous and congested conditions is not in the best State, Regional or local interest.

No Build Alternative - The principal advantages include lower capital cost, the reduction in primary impact, and land requirements, and improved traffic operations in the vicinity of DeWitt and St. Johns. While the overall capacity of the route is improved in the short run, traffic projections indicate that problems will arise in the future. Many intersections along the route experience significant delays for vehicles entering and exiting the traffic stream. Careful analysis of these conditions, combined with anticipated levels of traffic in future years, indicate difficult problems are likely to arise at most intersections. Since access to US-27 is not restricted under this alternative, additional roadside development and worsening traffic problems can be expected.

Alternative Modes - Because of the nature and extent of existing traffic, a significant reduction in automobile traffic through the use of alternative modes is not regarded as a feasible solution.

Freeway Alternatives - Comprehensive highway improvements, Alignment G, E/F (Modified) and B, provide sufficient capacity for existing and projected needs. The number of accidents would be reduced by approximately 50 percent. Through traffic will no longer seek alternate routes, such as county roads, during periods of peak traffic flow.

The study area has two different and distinct segments for developing and analyzing the impacts of the proposed facility. The southern segment includes the area between proposed I-69/US-127 interchange and Kinley Road interchange (Alignment G, E/F (Modified) and B). The northern segment begins at Kinley Road interchange and continues north to just south of Ithaca. The northern segment is common to each of the southern alternatives.

Southern Segment (South of Kinley Road).

Alternative G (South of Kinley Road) - is located adjacent to the existing US-27 route over much of its length between Lansing and Kinley Road, with a bypass of St. Johns to the east. Approximately 160 acres of the total ROW is residential and 600 acres agricultural or open space land. The easterly bypass of St. Johns (Bingham Township) affects land that is presently farmed and not directly affected by existing US-27. The bypass would also sever four (4) farms of 100 acres or more in Bingham Township into smaller parcels of land. The alternative would impact one farm entered into the Act 116 program.

Alignment G would require the relocation of an estimated 146 residential structures of which 51 percent are in DeWitt Township. The remaining 49 percent is divided between Olive and Bingham Townships (19 and 30 percent, respectively). An estimated 25 commercial establishments will be relocated of which 84 percent is in DeWitt Township. Acquisition of residential and commercial structures will have a greater impact upon the tax base of DeWitt Township than either Olive or Bingham Townships.

Alignment G has approximately three miles of roadway traversing the landscape at skew angles. This will result in five farming operations, varying in size from 33 to 150 acres, being split into irregular shaped parcels of land that constrain agricultural production. These irregular shaped parcels of land vary in size from 8 to 140 acres.

This alternative will require parts of four woodlots in Bingham Township. These four, although important, do not have a high wildlife or timber value. Implementing this alternative would require crossing approximately four (4) acres of the Looking Glass River floodplain. It is estimated that 100 percent more structures will be within the 60 and 70 dBA noise level than other alternatives.

Estimated cost of this alternative is \$47 million. Right-of-way acquisition accounts for 27 percent and Engineering and Construction makes up the other 73 percent.

Alternative G (with crossover) begins at the proposed I-69/US-27 interchange and continues in a north-northwesterly direction joining the above alternative in the vicinity of Chadwick Road (Olive Township), then continuing adjacent to the existing US-27 to Kinley Road bypassing St. Johns on the east side. Since this alternative does not follow the existing corridor between the US-127/US-27 interchange and Chadwick Road, it requires the acquisition of approximately 29 percent more ROW than Alternative G. Approximately 140 acres of the total ROW is residential and over 800 acres is classified as agricultural and open space land. Approximately 300 acres is farmland that has not previously been affected by the highway crossover on the south end and the bypass of St. Johns would separate five farming operations, of 100 acres or more, into smaller parcels of land. This alternative severs three farms entered in the Act 116 program.

This modification of Alignment G has approximately seven miles of roadway traversing the landscape at skew angles. This will result in eight farming operations (varying in size from 33 to 150 acres) being split into irregularly shaped parcels of land that constrain agricultural production. These parcels of land vary in size from seven to 134 acres.

This alignment variation would require the relocation of 6 residential structures. This is approximately 50 percent less than Alignment G. Fifty percent of the relocations are in Olive Township, 38 percent in Bingham Township, and 12 percent in DeWitt Township. Commercial relocations are about one-fourth of those for Alignment G, with the majority being in Bingham Township.

Parts of eight woodlots will be required to implement this alternative. Four of the eight have high wildlife values, one of which is 160 acres. Two of the woodlots have high timber values and range in size from 10 to 46 acres. Approximately 13 acres of the Looking Glass River flood plain will be crossed by the alternative.

It is estimated 53 structures will be within the 60-70 dBA level. This is about 50 percent less than the previous alternative.

This alternative is estimated to cost \$47 million. Right-of-way acquisition amounts to 17 percent and engineering and construction accounts for the other 83 percent.

Alternative B - begins at the proposed I-69/US-127 interchange and continues in a north-northeasterly and northwesterly direction between Krepps and Chandler Roads to Kinley Road. Approximately 60 acres of the total right-of-way requirements is devoted to residential use. The remaining 940 acres is agricultural and vacant land, most of which is presently farmed. Seven (7) farms of 100 acres or more will be divided into smaller segments. Three of these seven are greater than 200 acres. The degree of impact from severance depends on the amount and type of farming operation. Economically, the effect would be greater on the larger farm because of the size, amount and type of equipment needed to perform the operation, as well as the land required for a profitable operation. This alternative will sever 10 farms under the Act 116 program and impact another 15.

Alternative B has approximately six (6) miles of roadway traversing the landscape at skew angles. This will result in four farming operations (varying in size from 37 to 320 acres) being split into irregular shaped parcels of land that constrain agricultural production. These land splits range in size from 8 to 240 acres.

Alternative B will require the relocation of approximately 15 residential structures, or 89 percent less than Alignment G, 78 percent less than Alignment G, with crossover, and about the same as the preferred alternative.

Right-of-way acreage will require land from 25 woodlots. Of these, 12 have a high value rating for wildlife and six for timber. These woodlots range in size from 16 to 117 acres. The 117 acre woodlot is within the Looking Glass River flood plain. It is estimated that 94 acres of the Looking Glass River flood plain will be acquired for this alternative. In addition, 31 acres of wetlands will be required for this alternative.

Approximately 35 structures will be within the 60-70 dBA noise level. This compares favorable with the preferred alternative, but approximately 75 and 55 percent less than the Alignment G and Alignment G with crossover, respectively.

Total cost of Alternative B is \$45 million. Right-of-way acquisition accounts for approximately six percent with engineering and construction cost making up the remaining 94 percent. This compares to 27 and 17 percent (right-of-way) for Alternative G alignments and seven percent for the preferred alternative.

Northern Segment (North of Kinley Road)

Alignment G (Partial) - Approximately 18 percent of the ROW acreage is presently residential, three percent commercial and 79 percent agricultural and/or vacant land. The alternative has approximately three miles of roadway traversing the landscape on a diagonal. This alignment will divide a farming operation of more than 300 acres into two parcels. In addition, this alignment will be an inconvenience to the farmers who farm both sides of existing US-27. The adverse distance would have detrimental effect upon their operations. However, the existing conflict between farm vehicles and through traffic will be eliminated, resulting in a savings of time and energy for the farmer, as well as the other travelers.

G (Partial) will require the relocation of approximately 3 residential structures and 22 farm buildings. This is approximately 17 percent, 21 percent, and 36 percent greater than F-1, F3 and F-5 respectively.

Woodlots in the area of this alignment have had both the timber and wildlife resources diminished through the effect of the existing highway. This alignment will have an impact on one additional woodlot. Approximately 24 acres of flood plain will be affected by this alignment.

Approximately 30 structures will be within the 60-70 dBA noise contour range. This is 10 percent, 30 percent and 50 percent greater than F-1, F-3, and F-5 respectively.

Of all the alternatives, G (Partial) utilizes existing US-27 to the greatest extent.

User advantages will be lowest for G (Partial) since the level of traffic service on existing US-27 will be less than for any other alternative. It is also rational to expect the potential for safe operations will decrease since the density of vehicles will be greater on the two-lane than on a four-lane. It is logical and proven by statistical studies that a four-lane divided roadway is much safer than a two-lane roadway.

Estimated cost for this alignment is \$27.9 million. This is approximately 21 percent and 23 percent greater than F-1, F-3 and F-5. ROW cost accounts for 8 percent of the total. The ROW cost is approximately 35 percent, 45 percent and 60 percent greater than F-1, F-5 and F-3 respectively.

Approximately 14 percent of the right-of-way (ROW) acreage is presently residential, one percent commercial and 85 percent agricultural and/or vacant land.

F-1 has approximately three miles of roadway traversing the landscape on a diagonal. Six farming operations greater than 100 acres, but less than 300 acres and one greater than 300 acres will be divided into two parcels.

F-1 will require the relocation of approximately 25 residential structures, one commercial structure and 21 farm buildings. This compares favorably with F-3, but 24 percent greater than F-5 and 17 percent less than G (Partial).

Acreage for ROW will be required from two woodlots. In addition approximately 40 acres of floodplains will be affected by this alignment.

Approximately 27 residential structures will be within the 60 to 70 dBA noise contour range. This is 22 percent and 44 percent greater than F-3 and F-5 respectively, but 10 percent less than G (Partial).

Disadvantages from F-1 implementation are recognizable over the 3.5 mile segment of US-27 where two of the present four-lanes would be removed. Reduction in local travel service is expected, along with reduced safety, as a result of the laneage reductions.

Estimated cost for this alignment is \$22.9 million. ROW accounts for approximately 5 percent of the total cost. The estimated cost is comparable to F-5 but approximately 11 percent and 21 percent less than F-3 and G (Partial) respectively.

Alternate F-3 - Approximately 10 percent of the ROW acreage is presently residential, one percent commercial and 89 percent agricultural and/or vacant land. F-3 has approximately 3.5 miles of roadway traversing the landscape on a diagonal. Three farming operations greater than 100 acres but less than 300 acres and one greater than 300 acres will be divided into two parcels.

F-3 will require the relocation of approximately 23 residential structures, one commercial structure and 21 farm buildings. This is comparable with F-1, but 20 percent greater than F-5 and 21 percent less than alignment G (Partial).

Acreage for ROW will be required from 6 woodlots. Four of these woodlots have a high wildlife value. In addition 54 acres of flood-plain will be affected by this alignment.

Approximately 21 residential structures will be within the 60 to 70 dBA noise contour range. This is 28 percent less than F-1, 42 percent less than G (Partial), and 28 percent greater than F-5.

Traffic service will be lower when two-lanes are retired. As well, it is rational to expect a decrease in the potential for safety that would be possible from a four-lane operation with a low density of vehicles.

Estimated cost for this alignment is \$25.6 million. This is approximately 11 percent greater than F-1 and F-5, but 8 percent less than G (Partial). ROW cost accounts for four percent of the total cost. This is comparable with F-1 and F-5, but less than G (Partial).

Alignment F-5 - Approximately 8 percent of the ROW acreage is presently residential, and 92 percent agricultural and/or vacant land. F-5 has approximately 4.5 miles of roadway traversing the landscape on a diagonal. Four farming operations greater than 100 acres, but less than 300 acres and one greater than 300 acres will be divided into two parcels.

F-5 will require the relocation of approximately 18 residential structures and 18 farm buildings. This is approximately 2 percent, 20 percent and 36 percent less than F-1, F-3 and G (Partial) respectively.

Acreage for ROW will be required from five woodlots. Four of these woodlots have a high wildlife value. In addition, 54 acres of flood plain will be affected by this alignment.

Approximately 15 residential structures will be within the 60 to 70 dBA noise contour range. This is 44 percent, 28 percent and 50 percent less than F-1, F-3 and G (Partial) respectively.

Disadvantages due to reduction of US-27 from four-lanes to two-lanes will not occur from implementation of F-5.

Estimated cost for this alignment is \$22.6 million. This is approximately 11 percent less than F-3, approximately equal to F-1 and 26 percent less than G (Partial). ROW costs account for three percent of the total costs. This is comparable with F-1 and F-3, but less than G (Partial).

Summary

The most viable solution between the proposed I-69/US-127 interchange and Kinley Road interchange appears to be Alternate E/F (Modified). It compares favorably with the other freeway alternatives in terms of safety, transportation service, volume-capacity relationship, vehicle operating costs and implementation costs. The preferred alternative, due to the more direct routing, has a higher degree of energy conservation than the other freeway alternatives.

Although the preferred alternative has greater impact upon farming operations than Alignment G, it has less effect than Alignment B. It displaces approximately 75 percent and 55 percent less residential units than Alignment G and Alignment G/Crossover, respectively. However, it displaces approximately 16 percent more than Alignment B. Impact on commercial establishments will be approximately 90 percent less than Alignment G and the same as Alignment B. In terms of the environmental impacts, the preferred has about the same effect as Alignment B, but less than Alignment G. The tax base is effected less by Alignment E/F and B than Alignment G.

A vast majority of the local Units of Government and Citizens have supported the preferred alternative. However, the State Departments of Agriculture and Natural Resources supported Alignment G with lesser right-of-way requirements.

From Kinley Road north to end of project, the preferred alternative is Alternative G. The preferred requires less agriculture acreage than Alternative F-1, F-3 or F-5. The preferred has less mileage on the diagonal than F-1, F-3 or F-5.

G (Partial) will affect about one-half the number of parcels under the Act 116 program than F-1, but about the same as F-3 and F-5. It affects a greater number of smaller parcels, whereas, all of the alternatives have equal impact on large parcels.

The preferred, because it requires ROW from one side or the other of existing US-27, will have the largest number of residential relocations; while F-5 will have the least number. F-1 and F-3 are about equal in their relocations. Relocation of commercial establishments and farm buildings are approximately the same in each of the alternatives.

Alternatives F-3 and F-5 will require acreage from four woodlots of high wildlife value; while G (Partial) will impact one woodlot not of high wildlife value.

Impact upon the flood plain is the same for F-3 and F-5; while the preferred has the least impact.

The noise contours will change slightly because of the redistribution of traffic along the roadway. Air pollution will not be a problem.

One structure (Salt Box House) of architectural significance will be relocated by the preferred alternative. The other alignments will not have an impact upon known historical or archaeological sites.

Cost of implementing the preferred will be approximately \$28 million, whereas F-1 and F-5 will cost about \$23 million. F-3 will cost approximately \$26 million. ROW cost for G (Partial) is estimated to be highest; while F-5 would be the least. F-3 and F-1 are about equal.

Of all the alternatives, the preferred alternative utilizes existing US-27 to the greatest extent. F-5 is unique in that all of existing US-27 in the study area will remain as four-lanes because it does not use any of existing US-27. F-1 and F-3 will have approximately the same impact upon existing US-27.

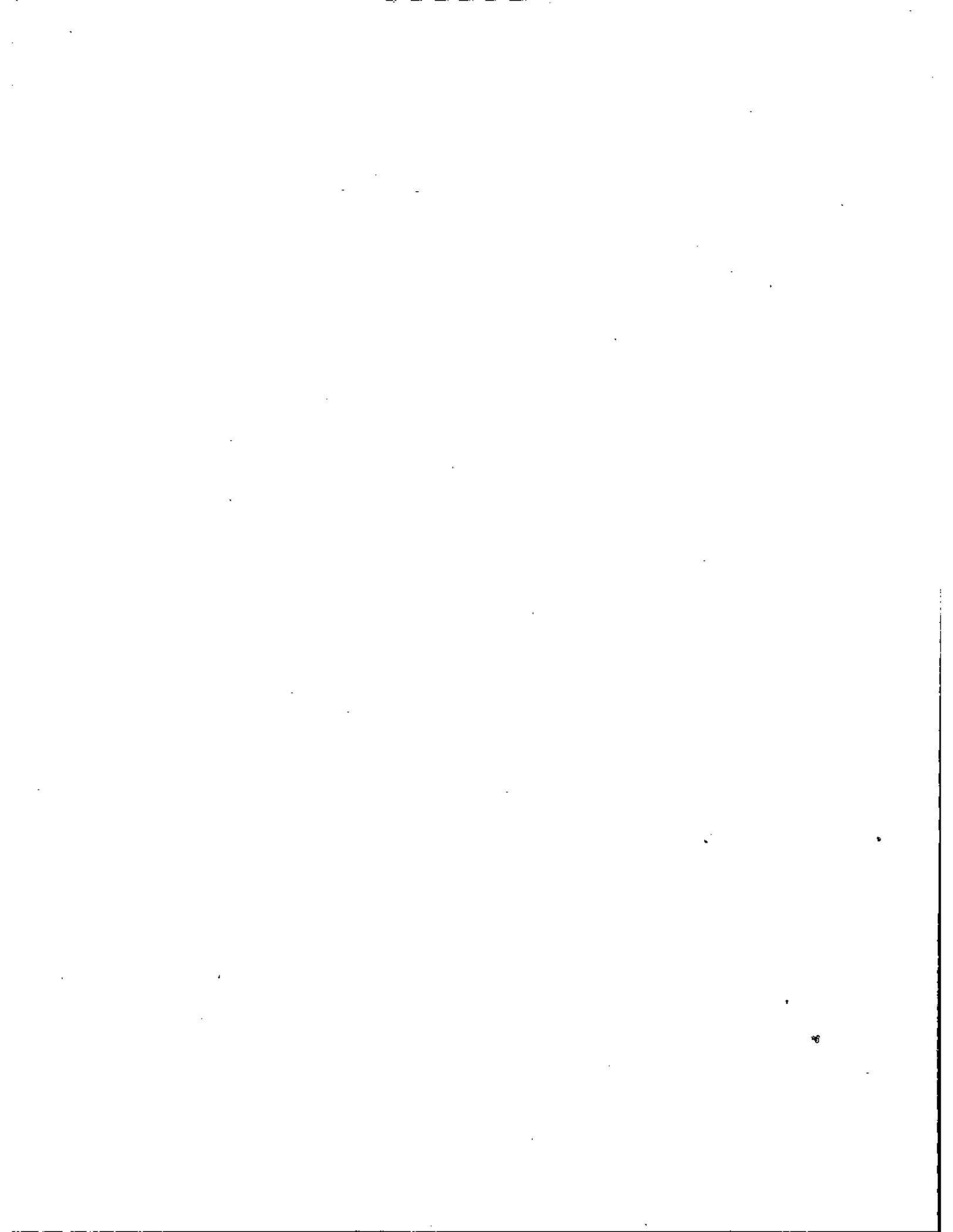
Level of service to local users will be somewhat lower with the preferred alternative, since the laneage on existing US-27 will be less than for the other alignments. Conversely, reduction of US-27 from four-lanes to two-lanes will not occur for F-5. F-1 and F-3 will have about the same user advantages.

2. St. Johns Business Route Alternatives

In addition to Alternative D (Price Road), other alternatives considered include A (M-21), B (Taft Road) and C (Parks Road). Similar to the proposed alternative, each of these alternatives have as their point of beginning, the Kinley Road Interchange (Exhibit 16). From the point of beginning, each alternative proceeds south along existing US-27 to the particular east-west roadway, i.e. Alternative A (M-21), thence east along the roadway to an interchange with the proposed US-27 freeway, point of termination. The analysis of each alternative begins at the intersection of the particular alignment with existing US-27 and there continues eastward to the termination point. The segment of existing US-27 from Kinley Road Interchange to the intersection with the particular east-west roadway is not included in the analysis because the alignment remains the same with no additional ROW being required. In addition, only normal maintenance and repair work will be accomplished for the existing facility.

As an integral part of the proposed US-27 freeway, interchanges are planned with M-21 (Alternative A) and the preferred alternative (Price Road, Alternative D). Either Parks Road (Alternative B) or Taft Road (Alternative C) will require an additional expanded diamond interchange. The intersections of either Alternative B, C, or D, with existing US-27, will be a simple connection with a left-turn lane from US-27 southbound and a right-turn from westbound Business Route to northbound existing US-27.

It is estimated that each of the Alternatives B, C and D will have about the same daily traffic 4,000 to 6,000 vehicles per day. As Alternative A is a State Trunkline, the number of vehicles per day will be about double (11,000) the other alternatives. In either case, the increased traffic can be handled without impairing travel habits of the local residents.



Impacts of Alternatives

Alternative B (Parks Road) will have the greatest impact upon the eco-system. The Spaulding Drain, which is adjacent to Parks Road, will have to be relocated outside of the proposed right-of-way, for a distance of approximately 3800 feet. Approximately 36 acres of muck land will be retired from agricultural production by Alternative B. The muck land is highly productive and has been classified as unique by the Michigan Department of Agriculture. In addition, approximately 3.5 acres of closely spaced trees, used for wind breaks, will be retired.

Alternative B could have an impact upon the Stony Creek flood plain and wetland area, through the Spaulding Drain relocation. This alternative could raise the level of floodwater upstream and, thus, enlarge the area of land flooded. The net result could be an alteration of the downstream flood plain.

Alternatives A, C and D have little, if any, impact upon the natural system.

Alternative A would be constructed within a 94-foot ROW west of Scott Road and 100-foot ROW east of Scott Road. East of Scott Road, no additional ROW will be required. However, west of Scott Road, an additional 26 feet will be required.

Right-of-way requirements for Alternatives B, C or D are 150 feet, excluding the interchanges. This has the net effect of requiring an additional 84 feet or approximately 12 acres, adjacent to the existing 66-foot ROW. The proposed interchange for Alternatives B or C will require an additional 180 acres. Alternative B or C will retire approximately 100 and 92 acres of productive farmland, respectively. Alternative D will retire approximately 12 acres. The major difference between the first two and the latter is that the interchange of Alternatives B or C with the proposed US-27 freeway is not a part of the planned freeway and, therefore, has been considered a part of the Business Route Analysis. These interchanges for Alternatives A and D are planned as an integral part of the proposed freeway, regardless of whether or not a Business Route is considered.

Along Alternative A, west of Scott Road, two additional acres will be required for the 26-foot increase in ROW. However, due to parcel size and zoning requirements, approximately 25 parcels of land will probably be acquired.

Alternative A, because of the urban setting, will require acquisition of 17 residential structures and 9 business establishments. This alternative is by far the most disruptive in terms of relocation, as compared to the other alternatives.

Alternatives B or D will require displacement of three residential units and three farm buildings each. Because of the proposed interchange, Alternative C will displace approximately 10 residential structures and 13 farm buildings.

In terms of benefits to the highway-oriented business activities on the south end of the city, the tax revenue for St. Johns, either Alternatives B, C or D, is acceptable.

Alternative A will generate less tax revenue for St. Johns from the business activities located along US-27 on the south end of the city than either Alternatives B, C or D. This is because the latter activities, in all probability, will not see a substantial increase in their patronage due to the adverse distance one must travel for the service.

To the local jurisdiction and, particularly, the County Road Commission Alternative D would be the most beneficial; whereas Alternative A would be the least beneficial. That is because with Alternative D approximately 7 miles of existing US-27 could be retained as trunkline, compared to two miles with Alternative A, if there is a turnback when the freeway is completed and opened. Alternative B and C fall between the other two and their impacts would be approximately equal.

In discussing the cost for each alternative, there are three separate and distinct situations. First, with Alternatives A and D, the interchanges are an integral part of the proposed US-27 freeway project and, as such, have not been included in this cost analysis. Second, converse to the above, the interchange for either Alternatives B or C have been incorporated into the cost analysis because either one would be in addition to those planned for the proposed freeway. Thirdly, it should be noted that the ROW requirements for Alternative A are generally 100 feet; whereas the ROW for the other three alternatives is 150 feet. This is because Alternative A has been designed as an urban section with curbs and gutters; whereas the other three alternatives have been designed as a rural section with the runoff being channeled into drainage ditches along the roadway. The preferred alternative has a cost of \$1.8 million. Cost of Alternatives A, B and C are \$2.9, \$4.3 and \$3.5 million, respectively.

From the ROW analysis, Alternative A naturally would be the most expensive because of the urban setting. Alternative C is the most expensive of the other three alternatives because of the displacements. Alternatives B or D have approximate equal ROW costs.

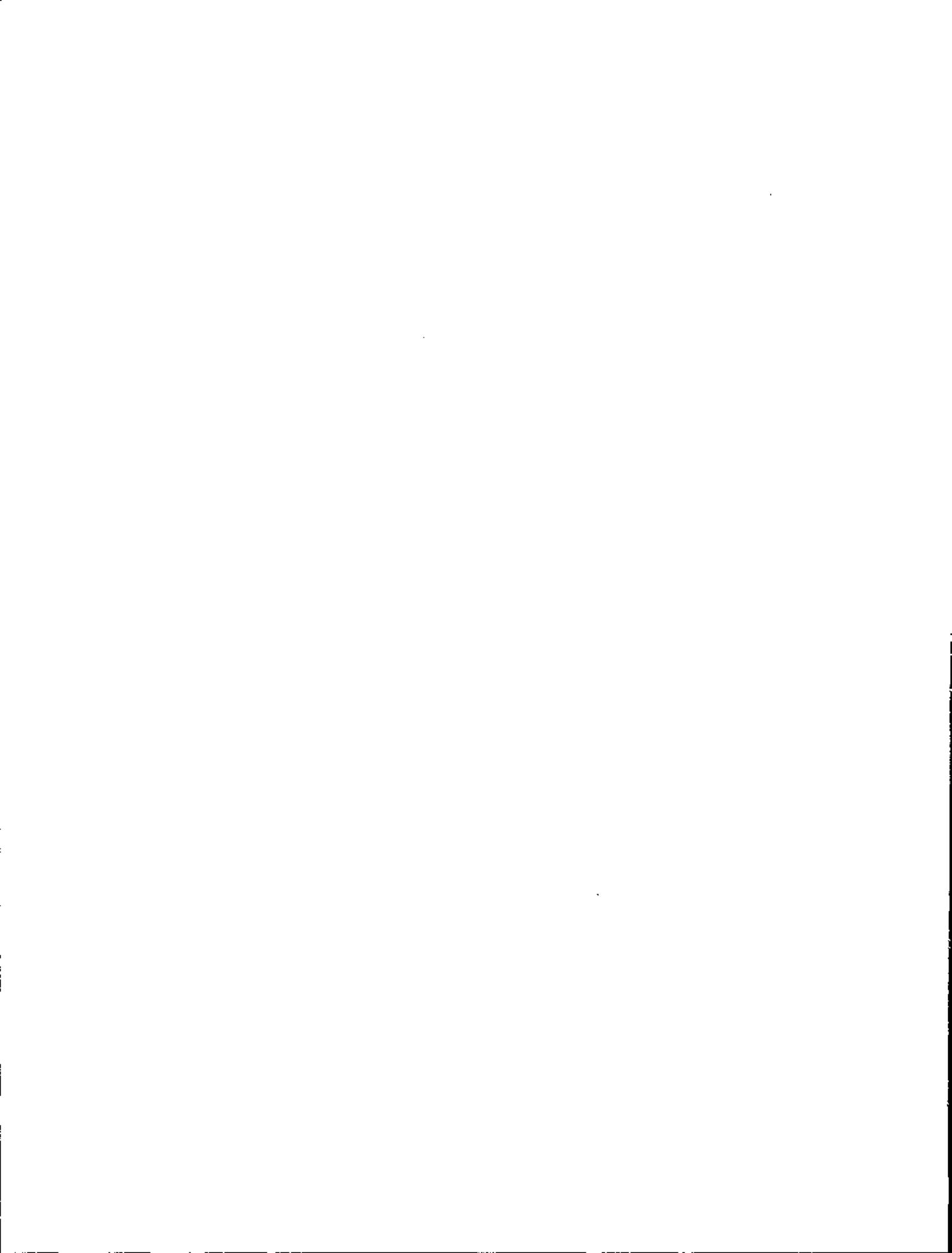
Construction and engineering costs of Alternative B are 25 percent greater than Alternative C because of the muck land and drain relocation. Alternative C has a 75 percent greater cost than either A or D because of the additional interchanges. Construction costs for Alternatives A or D are approximately equal.

Alternative B has a total cost that is 26 percent, 52 percent and 139 percent greater than Alternatives C, A and D, respectively. Alternative C has a total cost that is 89 percent and 21 percent greater than Alternatives D or A. Alternative A has a 56 percent greater total cost than Alternative D.

Summary

The basis for selecting Alternative D as the preferred alternative includes:

- (a) It minimizes the opportunity for urbanization commonly referred to as urban sprawl, in the predominately rural area of high productive farmland in Bingham Township;
- (b) It does not impact the Stony Creek flood plain and wetlands;
- (c) It does not retire acreage of muck land classified as unique soils;
- (d) It does not impact tree-formed wind-rows, which protect the unique and high productive soils in the area;
- (e) It requires less prime agricultural land;
- (f) It has the least construction, engineering and right-of-way cost;
- (g) It minimizes the financial impact of the eventual turnback of existing US-27 upon Clinton County and City of St. Johns; and
- (h) It has the endorsement of MERB, U.S. Department of Agriculture, U.S. Department of the Interior, Department of Natural Resources, Clinton County Road Commission, Bingham Township, and several affected citizens.



PART V

MITIGATION

V. PLANNING AND MEASURES TO MINIMIZE ADVERSE IMPACTS (MITIGATION)

The unavoidable impacts of a highway improvement on various components of the human and natural environments can often be substantially mitigated. Selection of an alignment which avoids areas most sensitive to highway induced changes will minimize adverse impacts. Disruption of established land use patterns and future land use potential is minimized through planning and coordination with local officials.

The implied goal of mitigative measures and procedures is to preserve the integrity of existing neighborhoods and land use, while inducing certain highway changes for the betterment of transportation. With the realization that some adverse impacts are unavoidable, the Department will generate the optimum level of mitigation necessary to protect the social, economic, and ecological relationships which have been and will be identified throughout the planning, design, and construction processes.

Mitigation by avoidance has been an important part of the proposed project throughout planning and location development. The main criteria used to define alignment-based mitigation decisions was avoidance of impact to farm operations and/or minimization of severing of property ownership. These criteria led to the preferred alignment following along the 1/4 section line to just north of St. Johns. Additional environmental-related refinements have been applied in this section of new alignment, which cause the highway to alternate from the east to west sides of the 1/4 line and back. These transitions, described in the opening paragraphs of Part II; Section 1, Preferred Alternate, enable the alignment to: avoid encroachment on a large dairy farm between Herbison and Chadwick Roads; provide a scenic and environmentally appealing site for the new proposed roadside rest area between Alward and Green Roads; reduce land parcelling between Green and Price Roads; and avoid valuable woodlots between Price and Steel Roads. Use of a tightened reverse curve at the westerly deviation to tie in with the existing alignment north of St. Johns, avoids farm buildings along Williams and Walker Roads. Selection of a tie-in point only one mile north of St. Johns is to maximize use of the existing US-27 roadbed and to protect farmlands. At the southern terminus, the interchange with I-69 has been designed not only to provide ease and efficiency of traffic motions but also to minimize land take and property segmentation.

The interchange at Round Lake Road was changed from a diamond interchange to a B loop to eliminate ramps across the Looking Glass River. The width of new right-of-way was held to 300 feet to minimize right-of-way take and to avoid farm buildings. This is the minimum width for a freeway of this type.

Preference in alignment decisions is to minimize impacts to the agricultural land base. This preference is derived from response at the public hearing and the many informal meetings held throughout the study process as documented in the Draft and Final EIS. As shown, however, there has been direct consideration given to woodlots and scenic or environmental areas in a number of cases.

The location of the preferred alignment also minimizes adverse effects upon important wetlands. Selection of the most appropriate crossing sites of the Looking Glass and Maple Rivers was an integral determinant of routing. The avoidance of several managed woodlots also facilitated the minimization of impact to inter-connected wetlands in several cases. In general, however, the relatively low acreage of involvements with the smaller inland wetlands is related to low abundance of these types rather than specific avoidance. This factor heightens the importance of applying special cross-drainage mitigation design to affected wetlands. This will be incorporated into final design plans as described in the remaining parts of this Mitigation Section.

This Department, through the route location, design, environmental, and construction processes, will take the necessary precautions to protect as many social and environmental systems as possible. Construction mitigation measures included in this report are those currently contained in the manual, Michigan Standard Specifications for Highway Construction. Additional special mitigation procedures will be developed later for situations unique to the project when specific Preliminary Design Plans are being prepared.

This environmental statement states the parameters that MDOT will work within, without the benefit of actual detailed design plans. Design plans will be reviewed prior to contract letting, by the Environmental Engineering Section to recommend environmental protection items to Design. This Section also reviews active construction sites to determine with others if additional or changed protection is required and to insure that the mitigation measures as promised are indeed fulfilled. This group within MDOT has been created especially for this review purpose. This Mitigation discussion states the parameters, but Design and Construction Divisions with the assistance of this Section will later provide the specific measures for addressing the concerns.

A. Control of Urban Sprawl

Control of the negative effects of urban sprawl is primarily the responsibility of local units of government. While land use regulation to determine the extent and type of urban development is beyond the statutory authority of the Michigan Department of Transportation, private development may be influenced through the provision of access at interchanges or access limitation.

B. Litter

The impact of increased litter is in degree only. Litter, unfortunately, is a by-product of our socio-culture. Until a change in our thinking and attitude takes place, i.e., to acute environmental awareness, not much can be done about litter other than periodic clean-up activities.

C. Minimization of Relocation Impacts Resulting from Right-of-Way Acquisition

The actions of the Michigan Department of Transportation to minimize relocation impacts resulting from acquisition of private property

will be in compliance with Act 31 of Michigan P.A. of 1970, Act 227 of Michigan P.A. of 1972, the Uniform Relocation Assistance and Land Acquisition Policies Act of 1970, Public Law 91-646 (date: 1-2-71), and any other current federal laws and Federal Highway Administration directives. The following definitions apply:

1. Fair Market Value - All land and improvements within the right-of-way will be acquired at fair market value. This value will be established by qualified fee or staff appraisers.
2. Relocation Advisory Assistance - Persons being relocated will be given information on available safe, decent, sanitary, and adequate housing. This housing must be within the relocatee's means.
3. Moving Allowances - Pays the cost of moving personal property, plus a dislocation payment.
4. Supplemental Payments to Owners or Renters - Provides funds to assure that all eligible occupants are relocated in safe, decent, sanitary, and adequate housing within their means.
5. Incidental Transfer Expense - Provides payment for such items as increased interest, title search, recording fees, and closing costs.

A summary of the Relocation Advisory Program adhered to by the Michigan Department of Transportation (MDOT) may be obtained by writing the Right-of-Way Division, MDOT, P.O. Box 30050, Lansing, MI 48909.

D. Loss of Taxable Property

The economic effect of loss of taxable property for local units of government will be substantially mitigated by increased land values over time, caused in part by the improved transportation facility. This tax loss can be minimized further through the buying of right-of-way properties over a period of two or three years. In this way, the local governmental units will experience only a gradual decrease in tax base.

E. Groundwater Quality

Sealing water wells and sewer lines for the protection of groundwater quality is ensured by Departmental and Michigan Department of Public Health specifications imposed on the contractor. The contractor is also referred to the local Health Department for assistance when special conditions such as flowing wells or wells with a high artesian head are encountered.

F. Alteration of Existing Groundwater Hydrologic Systems

1. If extremely high groundwater tables are encountered on sections of cut areas, special treatment will be utilized to raise the road grade to minimize the adverse effect of alteration of groundwater conditions.

2. Bank drains will be placed in cut slopes or behind the slope stake line of cuts for the purpose of intercepting and preventing seepage and sloughing of the slope. They are designed primarily to control groundwater, not the infiltration of surface water.
3. Edge drains will be utilized to lower a high groundwater table, or to drain a granular subbase. Additionally, edge drains are used to intercept horizontal seepage, or eliminate critical drainage conditions. Stone baskets will be included to maintain and reroute the flow of springs if they are encountered below the roadway.
4. Intercepted water will be outletted into an available roadside ditch or watercourse. Siltation of such watercourses will be controlled by the placement of material around the pipe to filter out fine material from the water.

G. Disposal of Solid Wastes

Solid wastes generated by removal of structures, trees, etc., must be disposed of in accordance with the provisions and regulations of the Michigan Department of Natural Resources governing disposal of solid waste.

H. Continuance of Public Utility Service

Water, gas, telephone, and electrical transmission lines crossed by the project will require relocation. Where this is the case, coordination between the Department and the affected utility company regarding the relocation or adjustment of the line will occur prior to actual construction. These efforts are undertaken to ensure non-disrupted service to customers.

I. Maintaining Traffic

Disruption of traffic utilizing existing roads in the construction area will be minimized. There may be temporary inconveniences to the local motoring public. Control of all construction related inconveniences is not possible. Motorist safety will be ensured by clearly indicating altered traffic patterns, construction areas, etc.. The exact methods to accomplish this will be determined during the Design Stage of the project.

J. Soil Erosion and Sedimentation Control

Temporary or permanent erosion and sedimentation control measures will be used by the Department. The potential for accelerated erosion caused by construction will be controlled before sediment and debris leaves the right-of-way or enters the watercourses. The Department has on file with the Michigan Water Resources Commission an "acceptable operating erosion and sediment control program", which complies with Michigan Act 347, Soil Erosion and Sedimentation Control Act of 1972. The Commission feels that the program provides effective soil erosion and sedimentation control.

The basic soil erosion and sedimentation control program contains the following procedures:

1. Standard and supplemental specifications for highway construction.
2. Special provisions and details of construction procedures to be used as applicable.
3. A key sheet and a sample plan, which are reference sheets showing a synthesis and application of erosion and sedimentation control practices.
4. Road design notes which give instruction and changes in procedures and criteria for design.
5. Construction circular letters distributed to construction supervisory personnel which aid in the statewide application of a specification or directive.
6. Federal Highway Administration directives containing federal guidelines that must be observed.
7. Flow charts indicating where erosion and sedimentation measures are handled intradepartmentally.

Copies of the soil erosion and sedimentation program are on file and may be reviewed at the following agencies:

1. Michigan Department of Transportation
Public Involvement Section
Lansing, Michigan
2. Environmental Protection Agency
Region V Office
Chicago, Illinois
3. U.S. Department of Interior
Office of Environmental Programs
Washington, D. C.
4. U.S. Department of Agriculture
Soil Conservation Service
East Lansing, Michigan
5. Michigan Department of Natural Resources
Water Resources Commission
Lansing, Michigan

K. Control of Water Pollution

The contractor will conduct his work in a manner such that all soil, fuels, oils, bituminous materials, chemicals, and other harmful materials, resulting from the construction of the project, are confined within the project right-of-way limits and prevented from entering watercourses, rivers, lakes, or reservoirs.

L. Stream Crossings

Crossings of the Looking Glass River, Stony Creek, Hayworth Creek, Maple River and the Remy-Candler Drain and numerous wetlands will require construction permits under Section 401 and 404 of the Federal Water Pollution Control Act of 1972, Act 346 of the 1972 Michigan Inland Lakes and Streams Act, and Act 203 of the Goemaere-Anderson Wetland Protection Act of 1980.

Section 401 requires the certification from the State's water quality agency, the Michigan Water Resources Commission, that the discharge of dredged or fill material complies with the applicable provisions of Sections 301, 302, 303, and 307 of P.L. 92-500.

Section 404 requires the Secretary of the Army, acting through the Corps of Engineers, to regulate the discharge of dredged or fill materials in all waters of the United States. The purpose of this program is to insure that the chemical/biological integrity of these waters are protected from the discharges of dredged fill materials that could permanently destroy or alter the character of these valuable resources.

Act 346 and Act 203 are administered by the Michigan Department of Natural Resources. These permits are required to discharge dredge or fill material into an Inland Lake or stream or a wetland.

M. Construction

1. Control of Air Pollution

The contractor will comply with all federal, state, and local laws and regulations governing the control of air pollution.

2. Dust Control

During the construction of any project, adequate dust control measures will be maintained so as not to cause detriment to the safety, health, welfare, or comfort of any person or cause damage to property or business.

3. Bituminous and Concrete Plants

All bituminous and portland cement concrete proportioning plants will meet the requirements of the rules of the Michigan Air Pollution Control Commission.

N. Special Concerns to be Addressed During Design and Construction

The recommended alternate was field reviewed in October 1982 to determine whether special mitigation measures were warranted and could be incorporated into project design plans. The following areas will receive particular attention during design of the roadway.

1. Streams

- a. The Looking Glass River is crossed at a right angle 600 feet south of Round Lake Road. Within the project area, the river averages 30-35 feet in width and has tree stands of limited depth adjacent to it. The river is an excellent small-mouth bass stream. A bridge will be constructed and designed to provide for fisherman passage under the structure. The right angle crossing will minimize the amount of fill placed in the river's floodplain.
- b. The recommended alternate will cross tributaries to Stony Creek and Hayworth Creek. The water quality of these two drains is poor. In the project area, Hayworth Creek handles sewage effluent treated at St. Johns and Fowler. During construction of the roadway, the primary concern at these two crossing sites will be the control of sedimentation in areas downstream of the crossings.
- c. The existing US-27 corridor will be utilized as the location of the new roadway across the Maple River and the adjacent Maple River State Game Area. The existing US-27 northbound lane will be used as a service road to the game area. This will provide the public with good access to that portion of the game area lying east of the present highway.

New southbound lanes will be constructed just west of the present road and will require 10.3 acres of the game area located in the Maple River floodplain. The Department of Natural Resources has requested replacement of the lands within the proposed right-of-way and has submitted a proposal to MDOT for its replacement. This replacement package has been approved by the Federal Highway Administration and consists of purchasing a 16-acre privately owned parcel immediately west of the 10.3 acres to be taken. It is expected the DNR can compensate for all loss in productivity by directing intensive management to the replacement tract and to other areas of the 3700-acre Maple River State Game Area.

- d. The DNR Wildlife Division has plans for creating a new flooding on the west side of US-27, similar in design and function of the flooding on the east side of US-27. To accommodate impounding, MDOT will design the new US-27 southbound embankment fill to withstand floodwater levels and pressures. This will be coordinated with the DNR Engineering Division.

Construction of the new southbound lanes will require the extension of three large culverts under the present road grade within the game area. These culverts maintain water levels in the game area east of US-27. The extension of these culverts will be coordinated with the DNR Engineering Division.

2. Wetlands

In general, the project interferes with a relatively limited acreage of wetlands, considering the length of new roadway on new alignment and the varied terrain encountered. Approximately 82.8 acres of wetlands are lost to construction. The following mitigation features will be incorporated into design plans in areas that traverse wetlands.

The Department will study the wetlands crossed by the project and determine the average yearly low water table to enable the placement of equalizer culverts at the proper elevation. Where equalizer culverts are used they will be placed opposite each other beneath both roadways at an elevation corresponding to the average yearly low water table and at a frequency to maintain flow across a broader part of the wetland. This will insure that the water table elevation on the upstream side of the roadway will not increase. Collector ditches at the toe of slope through the wetland will be constructed with the ditch bottom corresponding to the above described elevation. The culverts will be of such a size that they will not act hydraulically under a head. The water as it flows through the culvert will have a free water surface under all flow conditions.

The use of wetlands for peat disposal will be considered on a case by case basis. This will be adequately documented and reviewed prior to applying for Section 404 permits or 203 permits.

In areas where earth is excavated for use on freeway construction (borrow areas), it may be possible to create wetlands. While borrow is usually a contractor furnished item, MDOT will investigate potential borrow sources which may become available on State owned, landlocked or excess property purchased by the Department. If any areas are adaptable to creation of wetlands and are economical to use, they will be designated for use by the contractor. In keeping with current Department policy, borrow is usually a contractor furnished item unless: (1) the closest source of borrow is on State owned land, or (2) suitable borrow is available on excess property.

3. Scenic Strip/Environmental Mitigation

As a means for the long-term protection of aesthetic and natural values, MDOT proposes to purchase and maintain in perpetuity upland-lowland woods adjacent to MDOT right-of-way. As depicted on Figure 2 (sheets 1-3), there are 8 Scenic Strips, totaling approximately 52 acres, that are being proposed for purchase. They range in size from three acres to 13 acres. It is intended that this acquisition serves a dual function as:

- a Scenic Lands - These areas will preserve and enhance the scenic beauty of the proposed US-27 facility, which on peak summer weekends has as much as 88 percent of its traffic

being inter-regional. The predominant portion of this is recreation-oriented, with origins and destinations at points throughout Michigan and in neighboring states to the south. Therefore, since the proposed freeway traverses primarily agricultural and open lands (except for a very few scattered wooded areas), the preservation of valuable adjacent scenic lands is considered important.

- b. Environmental Mitigation - This project destroys approximately 82.8 acres of wetlands, which are primarily lowland hardwoods. Approximately 10.3 acres of these wetlands are part of the Maple River State Game Area and are being replaced with 16 acres, as described in the Section 4 (f) Statement. As further mitigation to the loss of the remainder of the wetland acreage, it is proposed to purchase these scenic strip areas, totaling approximately 52 acres (including 15 acres lowland hardwoods and 37 acres of upland hardwoods). Also, the Department will later review all wetland and wooded property "remainders" for possible permanent retention. "Remainders" represent properties that the Department does not need, but purchases them because their size or location makes them useless to the landowner.

To protect the trees in the scenic strips during construction the following measures will be enforced:

- a. The scenic strip will be off limits to all construction equipment.
- b. No clearing of trees will occur in the scenic strip. Selective tree removal may be conducted under the direction of Department foresters only where safety or development of a healthy vegetation "edge" is required.
- c. No muck disposal will occur within the scenic strip.

4. Ground Cover and Trees

Existing natural vegetation cover will be retained whenever and wherever possible. This includes, individual trees and wooded/shrub fence rows at the right-of-way line. This will aid in the minimization of detrimental aesthetic effects of the highway by providing a more pleasant view to the motorist and to adjacent land users, and in some cases by shielding adjacent land use from the highway. Additionally, retention of the maximum amount of vegetation consistent with current design standards will aid in protection of the wildlife habitat associated with wooded fence rows.

After surveys have been conducted and early in the design phase of the project (before final design plans are developed), the Roadside Development Section and the Environmental Liaison Section will be contacted, and will participate in identifying those specific trees and fence rows that should be preserved. In addition, for locations where removal of wood-

side trees will occur, particularly mature trees between the road and existing residences or rows of trees separating the roadway from other adjacent sensitive land uses, replacement with suitable tree species will be considered by the MDOT Roadside Development Section.

The final plans will incorporate planting recommendations to help mitigate aesthetic and functional values lost due to tree removal as appropriate with adjacent land use.

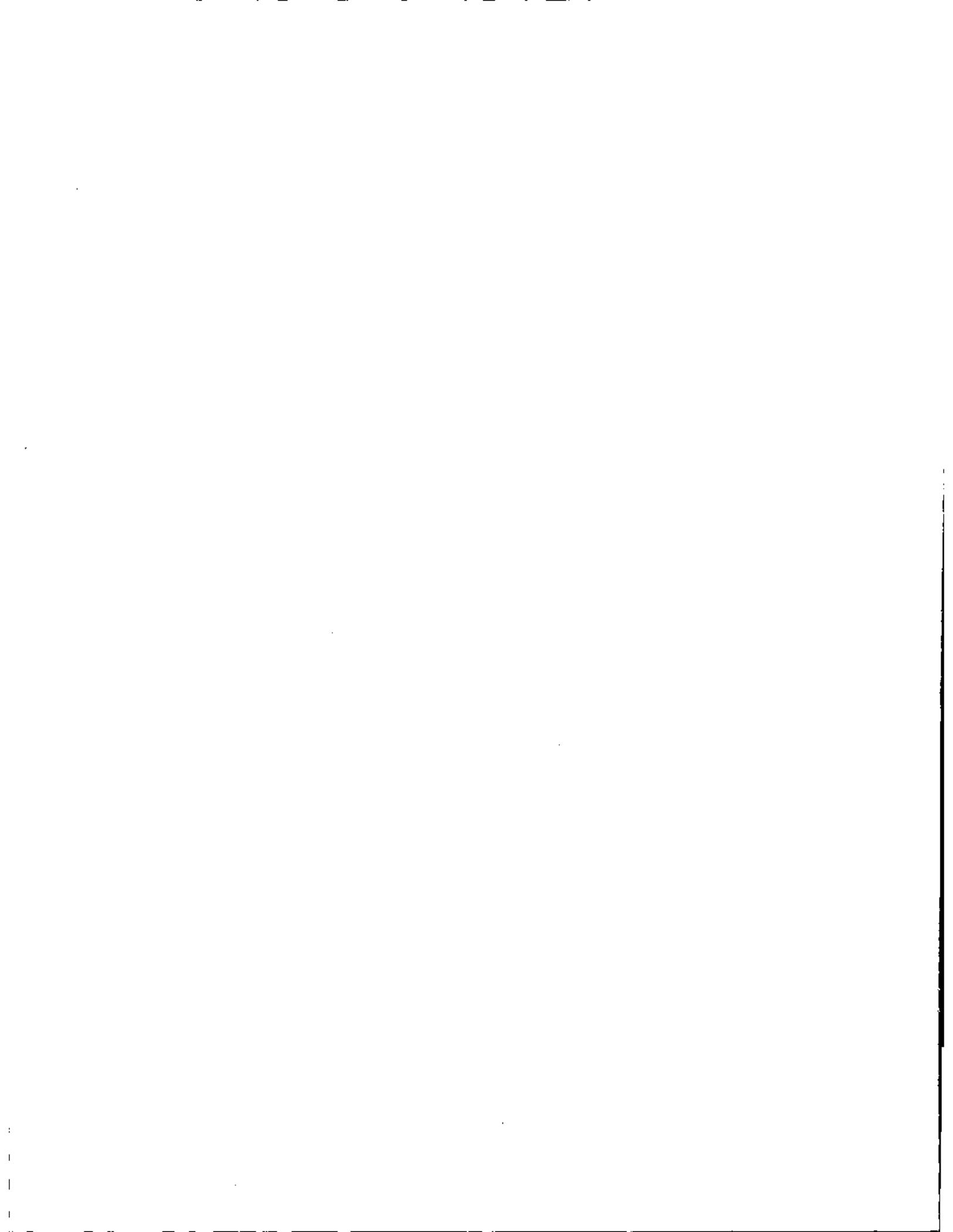
0. Additional Mitigation or Modifications

1. Coleman's Hotel- a historic site, is located at the southeast corner of US-27 and French Road. In order not to affect the structure or the surroundings, treatment proposed for the freeway and French Road intersection include: (1) relocating that part of French Road approximately 80 feet to the north, leaving the present northbound lanes of US-27 as a service road, and constructing a crossroad structure that spans both the freeway and service road; and (2) angling the freeway to the west a sufficient distance that an embankment will not affect the aesthetic value of the structure.
2. Salt Box House- a structure of local interest, is located at the southwest corner of US-27 and French Road. After talking with the owner and the Michigan History Division, an agreement has been reached to relocate the structure to the west of the present location on their own property. The setting will be enhanced through the use of landscaping.
3. The Lerg Dairy Farm, which will be significantly impacted by the interchange at Round Lake Road, has requested a two-year advance notice before construction activity affects their farm operation.
4. Right-of-Way requirements will be reduced to 300 feet (minimum) where possible. Since the loss of prime agricultural land was one of the principal factors used in evaluating the alternatives, the Department will reduce the r.o.w. width to 300 feet where possible.
5. This mitigation section has been prepared with the best information available at this stage of alternate selection, and with the cooperation and review of the entire Department through Division representatives on the project's Task Group. Where areas of potential impact were identified during the environmental study, further in-depth design studies were conducted to either remove, reduce, or mitigate that concern.

Some changes in these early items may be required after the proposed alternate is surveyed and marked on the ground; when actual road and bridge design is begun; or in-depth soils borings are made and analyzed. The intent of these

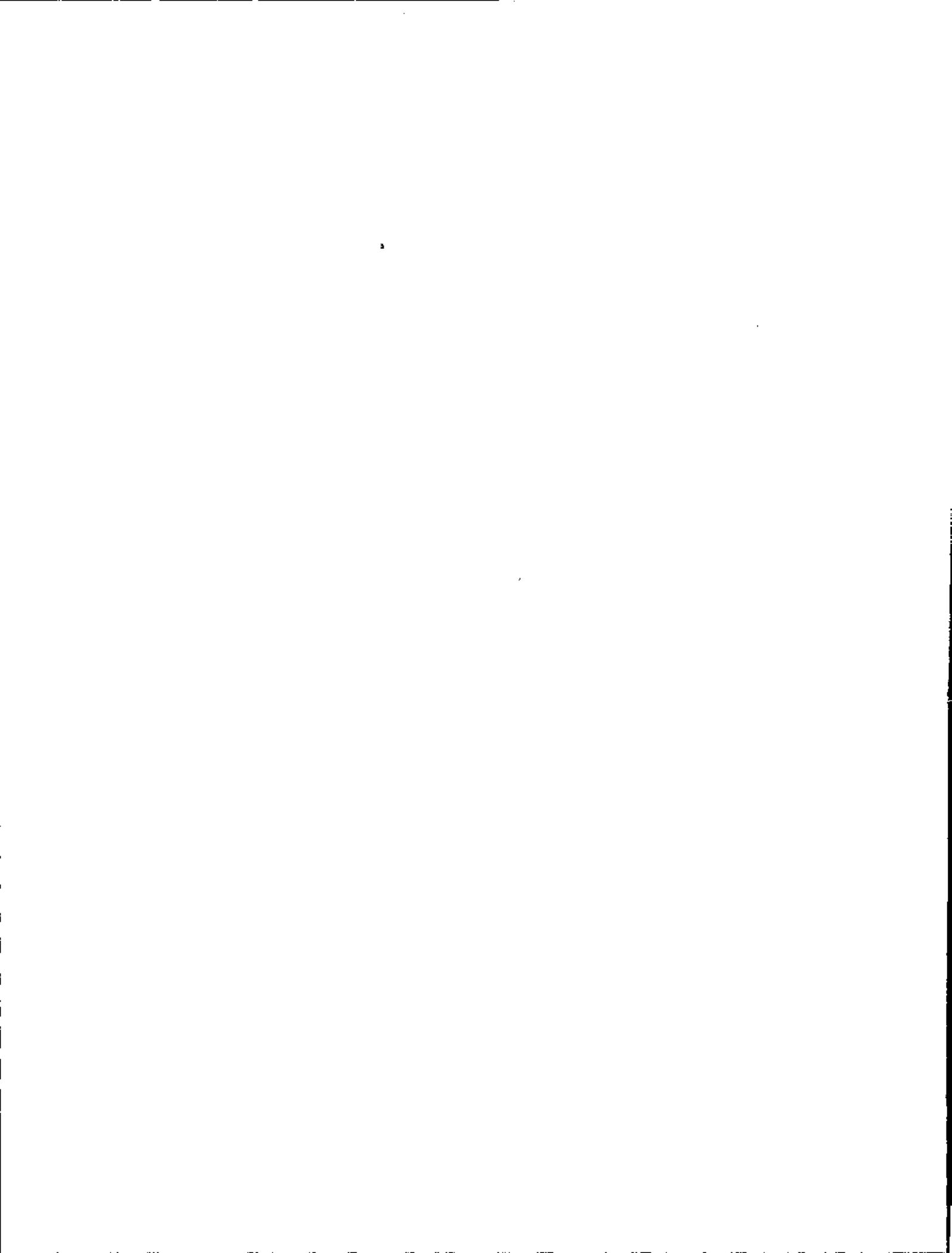
early mitigation items will be complied with to the best extent possible. Where changes are necessary, they will have been reviewed, designed, and confirmed in the field before construction permits (if required) are applied for or the project is constructed. Changes may also be necessary during the construction phase and will reflect early mitigation intent.

The preceding mitigation items are stated to be the best available with the present information and concerns expressed through December 1983.



PART VI

SUMMARY AND EVALUATION OF AGENCY AND INDIVIDUAL COMMENTS



VI. SUMMARY & EVALUATION OF AGENCY AND INDIVIDUAL ENVIRONMENTAL COMMENTS

Comments from Federal, State, Regional, and Local Agencies and/or Groups as well as individual citizen concerns are summarized in this Section with responses as appropriate. Copies of the correspondence and public hearing transcript are available for review at the Bureau of Transportation Planning, Michigan Department of Transportation, Lansing, Michigan.

Section 1 - Draft Environmental Impact Statement

A. Federal Agency Comments

U.S. Department of Agriculture - Soil Conservation Service

Comment: Any Alternative other than "Do-Nothing" will cause a loss of valuable food producing agricultural land. If it is determined that the need for highway improvement is so critical as to justify the permanent loss of this irreplaceable resource, then we would urge that, if at all possible, the Alternative causing least loss of prime land be chosen.

Response: Loss of prime agricultural land was one of the principal factors used in evaluating the alternatives. In recognition of this concern, the Department agreed to reduce the right-of-way requirements from 418 feet to approximately 300 feet (Minimum) for development of the freeway on a new alignment. The freeway is on a new alignment from the southern terminus to north of St. Johns. From this point to the northern terminus, the freeway uses as much of existing US-27 right-of way as possible.

Comment: The watershed plan of the East Upper Maple River calls for Bear Creek to be deepened and widened from the point where it crosses US-27 just south of Grant Road, east and south of its junction with the Maple River. If the highway is built, care should be taken to design the bridge or culvert for Bear Creek low enough to insure landowners west of US-27 of an adequate drainage outlet into the improved Bear Creek.

Response: The highway designers will coordinate the design of the crossing of Bear Creek with your office.

Comment: The proposed highway would make recreation areas planned as a part of the watershed project less accessible to the public.

Response: Interchanges are planned with Maple Rapids Road and M-57. Also, the existing northbound lanes of US-27 will serve as a service road through the impoundment. With these two features of road design, there will be better access to the Maple River State Game Area than at present.

Comment: In the area of US-27/M-57 interchange, we are aware of county drain tiles in the areas which serve as an outlet for farm tile systems.

Response: The Gratiot County Drain Commissioner was afforded an opportunity to review the junctional plans for the freeway. He elected not to offer early comments but requested consultation during design of the facility. The Department will coordinate with him during the design phase, and all intercepted drain fields will be provided relocated outlets and connections to operate properly.

Comment: We note that an overpass is planned for Roosevelt Road. Because of the county drain in that area and tiled drainage system and outlets, we believe that fewer adverse impacts would result if this overpass could be eliminated and placed one-half mile south of Ranger Road.

Response: Roosevelt Road was selected for the overpass because it is on the Gratiot County Primary Road system and Ranger Road is not. This was reviewed with the Gratiot County Road Commission and it is their desire to keep the overpass as planned.

Comment: We know that specific sites for borrow pits have not been selected. We urge that when sites are selected, efforts be made to place borrow sites in areas where soils are less suited to agriculture.

Response: The Department does not control borrow sites selection; the contractor negotiates with private landowners in procuring borrow. In select cases, the Department will make landlocked properties available to the contractor. These are not farmable sites in most cases, due to access cutoff.

U.S. Department of the Interior

Comment: We find the statement to be generally inadequate in its discussion of existing and projected recreational use of the Maple River State Game Area.

Response: The discussion pertaining to the Maple River State Game Area can be found in the Final Section 4(f) Statement. Mitigation and impact analyses are based on coordination and commitments involving the managing agency, cooperating agencies, and private landowners.

Comment: The selection of an alternative which results in the taking of lands from the Maple River State Game Area would also be subject to the provisions of Section 6(f) of the LWCF Act.

- Response: The Section 4(f) Statement addresses this issue in detail.
- Comment: The statement should discuss the occurrence of any Federal or State listed endangered species within the project area.
- Response: Section 3 of Part II includes discussions of endangered species of animals and plants, based on detailed investigations and field searches.
- Comment: We note that this project involves floodplain filling for bridge crossing and ask that the highway design engineers and the Environmental Liaison Unit carefully evaluate the potential impacts on the rivers and their associated floodplains.
- Response: The highway designers will coordinate with the Environmental Liaison Unit during the design phase of the project. Early findings which have been conducted at the location phase are contained in Part II-4. No adverse effect to flood potential is associated with the project.
- Comment: We are concerned about the proposed Round Lake Road Interchange and its effects on the Looking Glass River.
- Response: The Round Lake Road Interchange has been redesigned and shifted to the north side of Round Lake Road. This removes the ramps from the floodplain. However, the main roadways must still cross the river at the designated crossing.
- Comment: Based on information contained in the draft statement, it would appear that construction of the facility within existing right-of-way may be a feasible and prudent alternative to taking Section 4(f) lands from the Maple River.
- Response: This discussion is amplified in the Section 4(f) Statement. It is considered more desirable from the standpoint of all involved parties to use the existing northbound roadway as a service drive to the recreation area, local churches, and for heavy farm equipment that must also cross the river.
- Comment: If the alternative selected involves taking of lands from the Maple River State Game Area, a separate 4(f) document outlining the proposed 4(f), 6(f), and Pittman-Robertson Land exchanges with the Michigan DNR should be prepared.
- Response: The Section 4(f) Statement, Part III of this report, includes a description of the agreed-upon replacement parcel.

- Comment: We note that Figure 24 shows several recreational and open space areas, as well as undefined public and quasi-public lands that may be affected by one or more of the alternatives.
- Response: The preferred alternative requires land from the Maple River Game Area (subject of the Section 4(f) Statement). It also requires the acquisition of a Baptist Church in the northwest quadrant of Roosevelt Road and existing US-27.
- Comment: Page 101 mentions that Alignment G will force the relocation of the Walter Keyes Trainable School on US-27.
- Response: Alignment G was not selected as the preferred alternative for this segment; consequently, the Walter Keyes Trainable School is not impacted.
- Comment: The statement indicates that several historical and archaeological sites may be impacted by the project.
- Response: As stated in Section 5 of Part II of this report, the proposed project will not have an affect upon any cultural resources either eligible or listed in the National Register of Historical Places.
- Comment: Page 53 describes the recreational setting of the project area. Because the Maple River State Game Area could be affected by the proposal, a more detailed description of recreational use is warranted.
- Response: See Section 4(f) Statement.
- Comment: Information on lands displaced by "G" Alignments presented in Table 30, page 104, appears to be inconsistent with narrative on page 102.
- Response: This inconsistency has been corrected. (See Errata Section).
- Comment: Section IV, Impact Analysis, does not contain a specific discussion on impacts of the proposal on existing and future recreational use of the project area.
- Response: See Section 4(f) Statement.
- Comment: Under Item 8 on page XIX, item 3 referencing the National Pollution Discharge Elimination System as Federal Act 245 should be checked.
- Response: It has been checked and deleted.
- Comment: The floodplains of all water courses are not shown on Figure 20 as indicated on page 28.

Response: The text has been changed to reflect Figure 19 (Errata Section).

Comment: In the second paragraph on page 39, we question whether Carpinus behulus, European hornbeam, should be included with the Maples.

Response: See Errata Section.

Comment: On page 31, the statement is made that the Looking Glass River has an average flow of 157 cubic feet per second based on the period 1944 to 1966.

Response: The statement has been corrected to reflect current data (Errata Section).

Comment: The first sentence of the second paragraph on page 41 would be more accurate if rewritten as follows: "many areas of the Maple River have been sampled to determine the relative species abundance of fish."

Response: The text has been changed (Errata Section).

Comment: The second paragraph on page 115 states that the right-of-way for the main roadway and ramps will affect 19 acres of the Looking Glass River floodplain for alternative E/F.

Response: Redesign of the interchange includes placing the ramps on the north side of Round Lake Road rather than on the south side. Thus, a maximum of 4-5 acres will be required from the floodplain.

Comment: The third paragraph on page 115 should enumerate the acreage of scattered wetlands which will be affected by Alignment E/F.

Response: See Part II of this submittal.

Comment: On page 133 of the Draft EIS, the statement should note whether the perpendicular crossing of the drains will require channel alterations.

Response: See Errata Section.

Comment: The last sentence of second paragraph on page 170 should be changed to read, ". . . the woodlot loses its utility to wildlife." Also add the following sentence. "If the utility of these woodlots to wildlife is lost, generally a concomitant reduction in wildlife densities can be expected."

Response: See Errata Section.

Comment: On page 171, the third paragraph should describe the Soil Conservation Service project which proposed to flood the area east of US-27.

Response: That project has been permanently cancelled and smaller-scale projects are planned instead. The design of the new US-27 road embankments will be compatible with the watershed and wildlife improvement projects now being planned by SCS, DNR, and the Michigan Inter-County Drains Commission.

Comment: The last sentence or the first paragraph on page 174 should be changed to read "..... areas constitute wildlife habitat."

Response: See Errata Section.

Comment: On page 182, regarding the purchase of lands to mitigate the loss of state game acreage, it should be noted that the purchase of an equal number of acres is not the only criteria for replacement.

Response: See Section 4(f) Statement. The entire mitigation package has been coordinated to the satisfaction of all involved agencies.

Comment: We suggest that you include a statement that the National Register of Historic Places has been consulted and that no eligible or listed historic properties are in the area of the project.

Response: See Section 5, Part II, of this submittal.

U.S. Environmental Protection Agency

Comment: It is unclear what traffic information was used in this carbon monoxide analysis. It is also unclear what locations were actually utilized as receptor locations.

Response: See Errata Section.

Comment: The Final EIS should note the potential hydrocarbon problem downwind from the area.

Response: See Errata Section.

Comment: We found information presented in the noise analysis to be confusing.

Response: See Errata Section.

Comment: Mitigation measures that could reduce noise impacts other than noise barriers should be noted and their effectiveness discussed.

Response: See Errata Section.

Comment: An attempt to estimate the acreage of wetland involved in the area adjacent to the Maple River.

Response: See Part III of this submittal.

Comment: The alternative design to the Northern segment of Alternative G which would use the existing bridges and causeway to cross the Maple River should be thoroughly considered and assessed with regard to minimization of wetland and floodplain impact.

Response: See Section 4(f) Statement.

B. State Agency Comments

State Senator Richard J. Allen

Comment: I am very interested in meeting with your associates (planning consultants) and discussing the report.

Response: A separate meeting (briefing) was given to Senator Allen.

Michigan Department of Natural Resources

Comment: The environmental impact statement is generally well written and provides good comparison of alternates. We appreciate the past opportunities for input and coordination.

Comment: The only prudent, feasible alternatives are "No-Build" and G/G-1.

Response: Disadvantages of the No-Build are documented by planning studies and in the Draft EIS. The Proposed Project does incorporate Alternate G on the segment north of St. Johns, in deference to resource concerns.

Comment: Consideration should be given to less than "standard" 300-foot right-of-way for Alternate G.

Response: For the north segment which corresponds to Alternate G, the new freeway will require a minimum of 150' of new ROW in addition to the 200' of existing US-27 ROW. This includes a minimum of 66' allowed for the retained lanes of old US-27 which must serve as a service road adjacent to the new limited-access roadways. Thus, the cross-section for this segment of new freeway is slightly less than 300'.

Comment: We reiterate our desire to minimize the impact to the Maple River State Game Area to keep any new crossings to the immediate west of the existing and to allow for water level control structures.

Response: The proposed crossing at the Maple River State Game Area incorporates all the above provisions. Coordination will be maintained with the DNR through the final design and construction phases to assure the integration of design details with these commitments.

Michigan Department of Commerce

Comment: Because of the apparent great concern over the routing of this highway on the part of the local citizens, it would appear that the interactions the agency has had with the public lacks the detailed description afforded on the subjects.

Response: The Township local public information workshops were held for the citizens of that Township. It is from these workshops that the design standards were changed to reflect a minimum ROW of 300' for the segment of freeway on the new alignment and reduction of the proposed ROW in the segment of freeway north of St. Johns which incorporates the old alignment. Many smaller adjustments were studied and applied where feasible, in response to public input.

Michigan Student Environmental Confederation, Inc.

Comment: A revising of traffic volume needs to be undertaken to reflect a whole series of changing factors not properly dealt with.

Response: Traffic volumes for year 2000 have been revised to reflect within reason the current status. It should be noted that while traffic volume had a downward trend during the oil crises in 1973 and 1974, they had returned to pre-crisis by 1978.

Comment: As presented, the air quality analysis draft EIS on US-27 is totally defective and outdated.

Response: Refer to Errata Section.

Michigan United Conservation Clubs

Comment: How much agricultural land will be permanently committed to a highway?

Response: The preferred alternative will require the acquisition of 1,420 acres. Of the total acreage, 1,283 acres is agricultural land of which 74 percent is considered prime agricultural land.

Comment: There is no discussion of design alternatives which would potentially minimize environmental and agricultural impacts, as well as relocations and total project costs.

Response: The Department of Transportation, because of concerns expressed by the citizens pertaining to preservation of agricultural land, has lowered the minimum freeway ROW from 418 feet to 300 feet for this project. Use of this minimum standard is also based upon the type of terrain in the area and the ROW to which the proposed freeway joins to the north and south.

Comment: The discussion of the crossing of the Maple River State Game Area is inadequate.

Response: Refer to the Section 4(f) Statement.

C. Local Agency and Association Comments

East Michigan Planning and Development Region

Comment: This project does not conflict with existing goals of the ECMPDR. Upgrading US-27 to freeway standards will benefit citizens of the region by providing greater efficiency and safety of movement.

Board of Road Commissioners, Gratiot County

Comment: The proposal calls for roads which dead end to avoid landlocking properties (i.e., Hayes Road on the east side of US-27). This concerns us because dead-end roads present maintenance problems and can confuse local emergency service personnel.

Response: Traffic on Hayes Road does not warrant investment in a grade separation. With grade separations at Johnson Road to the north and Grant Road to the south, cross traffic is accommodated. A 60' minimum radius turn-around is to be built at the terminated segment of Hayes Road, also at any other county roads so terminated by the new freeway. The addition of a "Dead End" sign would avert confusion.

Comment: Questions about the need for an interchange at Buchanan Road have evolved.

Response: Instead of an interchange, an overpass structure is now planned at Buchanan Road along with a connection to the service road on the west side of new US-27. If need for a interchange develops due to increased use of the Township Park, interchange spacing standards would allow for one to be added at a later date. It is not added now as a detriment to urban sprawl.

Comment: We have a policy requiring proper drainage, base, and bituminous surfacing before accepting jurisdiction of new roads.

Response: The Department also has a similar policy of improving turn back lengths of roadway, to the appropriate standards, based on that road's function within the hierarchy of the local unit's system.

Comment: Utilization of the existing alignment (for the segment of new freeway which is in Gratiot County) is acceptable.

Board of Commissioners, Clinton County

Comment: We petition the State Highway Commission to retain existing US-27 as part of the State Trunkline System for as long as "turn back" cannot be accomplished with fair and adequate compensation for the operation and maintenance of existing US-27.

Response: Counties are apportioned their "share" of gasoline tax revenues according to a formula that considers lengths of road. However, the Department of Transportation has no authority to require a local unit of government to assume jurisdiction and may to to an arbitration panel for resolution.

Farm Bureau, Clinton County

Comment: We recommend the highway commission use a new corridor for a freeway instead of the present US-27 corridor.

- It would cost less money, displace fewer people, destroy fewer buildings, move fewer utilities
- Good highway would not be destroyed
- No more prime agricultural land would be lost by building on a new corridor than by widening on the present one and building service roads.
- The state would then have not only a freeway but also a good four-lane highway to handle traffic situations and local traffic would still have its main artery instead of a downgraded service road which would be more hazardous for agricultural use.

Response: The proposed project represents a compromise that incorporates a new corridor south and east of St. Johns, where development is greatest along existing US-27 and the I-69/US-127 interchange favors the new alignment

location for maximum travel efficiency. The entire four lanes of existing US-27 will remain between St. Johns and Lansing and for one mile north of St. Johns.

Use of the existing ROW for the northern segment reduces by nearly 50% the new land requirement. While displacements are greater, development is less intensive along this length than between St. Johns and Lansing. Although only two lanes of old US-27 are retained for a service road, that service road will accommodate farm machinery.

City Council of DeWitt

Comment: The City of DeWitt accepts the Transportation Committee's recommendation as approved by the Clinton County Planning Commission to endorse the following US-27 alignment: Alternative E/F from US-27 to the St. Johns area and Alternative E/F extended north through Bingham and Greenbush Townships tying back into existing US-27 in the area of Maple Rapids Road.

Township Board, Bingham Township (Clinton County)

Comment: In considering E route, the proposed highway would be 1/2 mile longer and would take fewer but newer homes, where the F route is in a straight line with the now proposed highway coming from the south and would take more homes but of less value money wise; also less woodlots would be taken on the F route. Therefore, it is the Bingham Township Board's recommendation that the F route be the more favorable.

Township Board, DeWitt Township (Clinton County)

Comment: The DeWitt Township Board voted to concur with the County Transportation Committee, the Clinton County Planning Commission, and the Clinton County Board of Commissioners in recommending to Wilbur Smith and Associates the E/F route for the proposed US-27 extension through DeWitt Township.

Planning Commission, DeWitt Township

Comment: The DeWitt Township Planning Commission, at their regular meeting on July 5, 1977, voted unanimously to support Alternate G.

Township Board, Greenbush Township (Clinton County)

Comment: We feel a continuation of the E/F corridor north of St. Johns to tie in with US-27 at the vicinity of Maple Rapids Road is a better route. The present choice of corridors (the proposed alignment) is not acceptable from a local standpoint in terms of cost, relocations, curtailment of the Township's only primary north and south route, and added load of road maintenance cost to the local unit.

Board of Trustees, Bethel Mennonite Church

Comment: We appreciate your consideration in locating the US-27 freeway to the west of the present northbound lanes so that the church and parsonage will not have to be moved.

Comment: We also feel it is very necessary to have a service road across the Maple River since approximately 70% of our members live south of the church.

Response: The proposed alignment (Sub-option 2) as described in the 4(f) Statement includes the service road described.

Public Hearing Comments

Comment: A direct and immediate impact of a highway is the amount of taxable land it replaces.

Response: The preferred alternative will have an estimated tax loss of \$87,528 annually based upon the 1977 tax base. This loss is divided as follows:

Clinton County	\$ 9,120
Gratiot County	2,926
School District	\$73,056
Townships	2,226

Comment: We do not feel that the Environmental Impact Statement makes an effort at minimizing ROW.

Response: See other responses in this section.

General

Comment: A vast majority of the comments received during the public hearing and review process were in support of a particular alternative. Their preference was dependent upon how they would be impacted individually.

Response: The preference stated including the concerns were a part of the evaluation process in development of the preferred alignment.

Section 2 - Supplement to Section IV of Draft Alignment Environmental Impact Statement

A. Federal Agency Comments

U.S. Department of Interior

Comment: We note the possibility that two "potential" archaeological sites may be impacted by Alternatives F-1, F-2, and F-3 and that three sites may be impacted by Alternative G (partial).

Response: The preferred alternative does not impact any Historical or archaeological sites.

Comment: The Supplement should contain a description of the woodlots or riparian vegetation which are extremely important to wildlife resources because intensive farming has already significantly reduced the habitat base.

Response: Timber and wildlife evaluation of woodlots affected by the Alternatives are referenced in the Errata Section and Appendix A. The proposed alternative does not have a significant impact on any woodlots in the area.

Comment: Impacts on drains are not fully evaluated.

Response: Refer to discussion of the proposed alternative (Part II).

Comment: The draft supplement does not evidence adequate identification of cultural resources in the planning of the proposed project.

Response: The State Historic Preservation Officer in a letter dated February 26, 1981, stated that the project will have no effect on any cultural resources either eligible for or listed on the National Register of Historic Places.

U.S. Department of Agriculture, Soil Conservation Service

Comment: We believe Alternative G (partial) would have the least adverse impact on prime and unique farmlands. It appears to us that Alternative F-1 would have the greatest adverse impact on prime and unique farmland. This is primarily because of the muck soils which would be destroyed.

B. State Agency Comments

Michigan Environmental Review Board (MERB)

Comment: We are now reporting on the overall Draft Alignment EIS and the Supplement (1978) dealing with the St. Johns-Maple River issues.

Comment: Exhaustive data on innumerable points are covered in the two volumes. The points of view expressed by the public reflect a wide range of interests - farmers, businesses, governments, organizations, etc.

Comment: The Committee has met with the Department and its Consultant. We note that several points made in our 1975 (corridor selection phase) review are reflected in the current alignment proposals.

Comment: We recognize that conditions warrant freeway levels of design, hence Do Nothing and No Build are rejected.

Comment: Our conclusion is that the Alignment G (south of St. Johns) and G partial (north of St. Johns) meet significant considerations best.

Comment: Conditions could conceivably mandate an easterly alignment in part of the area south of St. Johns.

Comment: We find the EIS adequate.

C. Local Agency and Association Comments

St. Johns Public Schools

Comment: Alignments F-5 or F-3 are best from the school's point of view.

City of St. Johns

Comment: The City Commission does hereby recommend to the Department and Wilbur Smith & Associates that the F-3 alignment be utilized.

Board of Commissioners, Clinton County

Comment: The Commission voted to support the F-3 alignment.

Planning Commission, Clinton County

Comment: The Commission ranked Alternate G highest compared to F-1, F-3, and F-5.

Concerned Citizens and Businessmen of Clinton County

Presented a statement in support of "Route G" accompanied by 1200 signatures.

Road Commissioners, Clinton County

Comment: This letter is addressed to the routing of US-27 north from M-21. The Commission desires to go on record as favoring the F-3 routing with an interchange at Price Road and one at Maple Rapids Road. Such a routing would cause the least disruption, would allow for the use of a large portion of existing US-27 as a business route, and would furnish ample ingress and exit facilities to the freeway for the County.

Township Board, Washington Township (Gratiot County)

Comment: The Township Board, having met and discussed the route of the new US-27 Highway, have voted and the majority of the board voted not to use the existing highway as the route but to build a completely new highway.

Township Board, Greenbush Township

Comment: It was moved that we support F-5 alternate as first choice, F-3 as second choice, F-1 as third choice, and G-partial as fourth choice as proposed route of US-27.

City of St. Johns

Comment: The City Commission does hereby recommend that the F-3 alignment be utilized.

D. Public Hearing

Comment: The degree and type of public participation is of a concern.

Response: The project staff held public information workshops (three each) in Bingham and Greenbush Townships, and in Olive Township, Dewitt Township, St. Johns and Ithaca to discuss the proposed alternatives and seek their concerns. Their concerns were noted and evaluated after each workshop. In addition, the staff met with the Clinton County Planning Commission, Clinton County Road Commission, St. Johns Chamber of Commerce, St. Johns Planning Commission, St. Johns City Council, Clinton County Board of Commissioners, Gratiot County Road Commission and Gratiot County Commissioners, and held a prehearing workshop. Participation by citizens affected was extremely good.

Comment: There is concern about ROW required for the proposed freeway.

Response: Refer to comments pertaining to Draft Environmental Impact Statement.

Comment: Another issue I believe deserves some comment is the one on turn-back.

Response: After the freeway is constructed and opened to traffic, an analysis of that section of existing US-27 between Lansing and St. Johns will be made to determine whether the state should retain or turn it back to the county.

Comment: Concern about the manner in which the St. Johns Business Route was handled.

Response: St. Johns Business Route is the subject of a complete study and analysis. See the Supplement to the Draft EIS (April 5, 1979), also updates in Part II and IV of this Final EIS.

Section 3 - St. Johns Business Route Supplement to Draft Alignment Environmental Impact Statement

A. U.S. Department of Interior

Comment: The document states that "wildlife could be threatened by the removal of both productive and non-productive agricultural land" for any of the proposed alternatives. More specific information should be contained in this section listing affected wildlife by species.

Response: This statement refers to the fact that the loss of land due to highway construction will affect local wildlife populations through the loss of habitat. However, there will be no significant effect to any wildlife species. It is beyond the scope of this document to specifically analyze the effects on each individual species.

Comment: Deicing salts are planned to be directed into a curb and gutter drainage system and sent directly into nearby water courses. This is not an acceptable method of salt removal because of potential impacts on water quality in the project area.

Response: Refer to Erratum Section.

Comment: In conclusion, the final statement should indicate the State Historic Preservation Officer concurs with the survey work project.

Response: See the letters from the History Division, Michigan Department of State, Section 5, Part II of this Final EIS.

B. U.S. Environmental Protection Agency

Comment: Based on the information provided in the supplemental EIS, we have environmental concerns about the proposed action because of both primary and secondary impacts upon prime agricultural land.

Response: Each of the alternatives were evaluated as to their effect on agricultural land, displacement, access to St. Johns, construction and engineering cost, environmental systems, citizens' concerns and conformance with community goals, objectives, and plans. The impacts upon operating farm units were given primary attention in the selection of a preferred alternate and in mitigation development. That is why the Business Route uses interchanges planned for US-27, rather than build new ones.

C. Public Hearing

Comment: The way the report is written, I feel is rather biased in that the cost of various alternatives, for instance, the Parks Road Alternative, which we support, which I support, is something over \$4 million as opposed to the \$1.8 million of Price Road. However, it doesn't mention that this does not take into consideration the interchange.

Response: Refer to Draft Supplement, page 14 - first paragraph states "as an integral part of the proposed US-27 freeway, interchanges are planned with M-21 (Alternative A) and Price Road (Alternative D). If either Parks Road (Alternative B) or Taft Road (Alternative C) had been selected as the Business Route, an additional expanded diamond interchange would have been proposed. Also refer to page 26 and 30 which discusses the cost of each alternative.

City of St. Johns

Comment: The St. Johns City Commission does hereby recommend that an easy-on, easy-off interchange be constructed at Parks Road and Maple Rapids Road.

Response: The Department constructs a full-diamond or clover-leaf interchange as required to satisfy design standards and traffic on today's modern freeways. Parks Road was rejected as an interchange site because it is a low-volume, non-primary road. A full interchange is planned at Maple Rapids Road. They are all "easy-on", "easy-off".

Comment: The St. Johns City Commission does hereby recommend that the entire four lanes of existing US-27, between Parks Road and Maple Rapids Road be designated as a Business Route and appropriately signed.

Response: The four lanes of old US-27 will remain in place to serve business and city access from the Kinley Road interchange (one mile north of the city limits) south through St. Johns. Interchanges at Price Road and M-21 will connect the central and strip-developed business

districts to the freeway and will also serve county and regional cross traffic on those county-primary and state-arterial routes.

Board of Road Commissioners, Clinton County

Comment: The Board has no quarrel with the proposed exits at Maple Rapids Road and at M-21. Its chief concern is with the exit south of St. Johns. It is the considered opinion of the Board that the exit proposed at Price Road should be the only one considered for the city of St. Johns.

The reasons for this stand are threefold. First and foremost is the cost. Another exit between Price Road and the City would drive construction costs up sharply and would not really benefit the City enough to make it cost effective. For a city no larger than St. Johns, exits at Price Road and again at M-21 are more than ample. Finally, unless additional funding of road maintenance is provided (by the State), the financial burden of maintaining old US-27 can only result in a lowered standard of maintenance for the entire Clinton County road system.

Board of Commissioners, Clinton County

Comment: The Physical Resources Committee is evenly split between Parks and Price Road Interchange alternatives and thus offers no recommendation.

Tri-County Bicycle Association, Bicycle League of Michigan

Comment: BLB is dedicated to the cooperative usage of public roads and the provision of adequate roadway width for all modes of travel. We hope our enclosed comments will help prevent the construction of a "bicycle bottleneck" in St. Johns.

Response: The Department has reviewed the list of specifications preferred by your group. The Department maintains a Non-Motorized Transportation Unit within the Bureau of Transportation Planning. This unit will review design plans with intention of encouraging connector-road design features compatible with non-motorized traffic in the St. Johns area. Specific improvements to Price Road include lane widening, paved shoulders, and flaring of intersection dimensions between the US-27 freeway and the City of St. Johns. These improvements will assist non-motorized and slower traffic. As your group is aware, non-motorized traffic is prohibited on the freeway for reasons of safety.

Township Clerk, Bingham Township (Clinton County)

Comment: It is our feeling that Price Road, M-21, and the Kinley Road interchange will provide the necessary business route into the City of St. Johns.

U.S. Forest Service

Comment: Alternate A would improve a through east-west route and would probably be the most effective choice from economic and environmental standpoints.

U.S. Environmental Protection Agency

Comment: The selection of Alternative B, C, or D, in addition to requiring 12-92 acres of prime agricultural land for right-of-way, will allow highway-induced development to irreversibly convert additional acreage to urban sprawl. Selection of Alternative A, which would involve no new land commitments and would not induce additional development, would resolve our concerns over removal of prime agricultural lands from production.

Response: Alternative A would not serve the planned commercial and growth area of St. Johns which is to the south of the City.

State Senator Richard J. Allen

Comment: The process by which the Highway Department attempts to achieve a local consensus on State Highway projects is currently being questioned within my district. The City of St. Johns has recently contacted me regarding the business route through St. Johns on 27 North.

Response: The layout of alternatives, selection of serious alternatives, and analysis of environmental, social and economic factors which led to the final decisions on the US-27 freeway as proposed, have all proceeded with direct local input. To summarize; Corridor Public Hearings were held in July, 1975. Pre-Study meetings for the alignment phase were held in December, 1975. A total of 15 Township Workshops were held in January, March and June, 1976. Pre-Hearing Workshops were held in May, 1977, a total of five. Public Hearings on the Draft EIS were held in Ithaca on June 1, 1977, and in St. Johns on June 2, 1977. A public hearing on the St. Johns Business Route was held in October, 1979, in St. Johns. It must be recognized that a State Arterial Freeway is not only of local, but statewide and inter-regional concern. The planners, engineers and other specialists of the Department are governed by a myriad of factors. In addition to the requirement to solicit local desires and preferences, are numerous

state and federal standards covering safety, design consistency, environmental quality, project authorization, and classification. In recent years, the issue of project costs has become crucial. The record established on proposed US-27 Lansing-to-Ithaca, evidences an effective balance of many concerns and interests, under the auspices of public officials held responsible for transportation.

Michigan Department of Natural Resources

Comment: The preferred alternative for the trunkline facility is D, Price Road. This alternative impacts the least amount of prime agricultural land, it requires the relocation of the fewest number of households and businesses, and it is the least costly alternative. Further, the planned interchange there fits a need for access fo the Sleepy Hollow State Park.

Alternative B is undesirable due to the heavy impact on a wetland area and need to relocate Spaulding Drain. Alternatives A and C require the relocation of a large number of residences and businesses. Either B or C would involve an additional interchange, which would take 80 acres of ag land. There may be land enrolled under the Farmland and Open Space Preservatin Act (Act 116, P.A. 1974 as amended) that would be directly affected by the routes.

Michigan Interdepartmental Environmental Review Committee (INTERCOM)

Comment: It was motioned to declare the St. Johns Business Route Supplement to the Draft EIS adequate, to identify Alternative D (Price Road) as the preferred route and to note that the taking of agricultural lands is in conflict with state policy of preservation; that conflict exists between local business interests and agricultural interests; and there is an apparent lack of economic justification for alternatives B & C. Motion carried.

Michigan Environmental Review Board (MERB)

Comment: A discussion ensued regarding the need to upgrade Price Road during which it was reported that Price Road was a county primary road and the state would upgrade the road between the new freeway and Old US-27 if alternate D was selected. The associated plan to upgrade M-21 to St. Johns was also discussed. It was moved to accept the St. Johns Business Route Supplement to the EIS as adequate, and to support the preferred Alternate D.

Section 4 - Preliminary Section 4(f) Statement Supplement to the Draft EIS

For a summary of comments refer to Attachment E of the final Section 4(f) Statement, which is contained in this Final EIS.

APPENDIX A

**LETTER FROM DNR ON
TIMBER AND WILDLIFE
IMPACTS REPORT**



STATE OF MICHIGAN



NATURAL RESOURCES COMMISSION

CARL T. JOHNSON
E. M. LAITALA
DEAN FRIDGEON
MILARY F. SNELL
HARRY H. WINTLEY
JOAN L. WOLFE
CHARLES G. YOUNGLOVE

WILLIAM G. MILLIKEN, Governor

DEPARTMENT OF NATURAL RESOURCES

HOWARD A. TANNER, Director

POSE LAKE FIELD OFFICE
2562 E. Stoll Rd., East Lansing, MI 48823

May 30, 1978

TO: Wilbur Smith & Associates
3401 E. Saginaw, Suite 212
Lansing, MI 48911

FROM: Fred G. Wuerthele, Area Forester

SUBJECT: Timber and Wildlife Values on Proposed Routes G, F1, F3, F5

Due to their relative scarcity in good agricultural lands, all woodlots in Clinton County are important for wildlife, providing habitat for many species of animals. The woodlots in the northern part of Greenbush Township provide an area for deer to have protection during the winter as well as additional spring, summer and fall habitat. A woodlot is even of greater value if it has a wetland or river associated with it. Furthermore, a large woodlot generally has a higher wildlife value than a small one, since it can provide more of the elements required for many wildlife species. A highway close to or through a woodlot lowers the wildlife value by destroying habitat and restricting wildlife movements. Because deer concentrate during the winter along the F-3 and F-5 routes, car-deer accidents will probably show an increase if either of those routes are chosen.

The wildlife values referred to in this letter of high, medium, and low are all relatively high because all the woodlots are important for wildlife. The definition of high, medium, and low values for timber is as follows:

High value -- high productivity for timber production with a good stocking presently in the woodlot. A good soil type for timber production and growth. These woodlots would be favored for intensive forest management.

Medium value -- good productivity in portions of the woodlot but includes a lot of poor soil types and/or poor quality stocking and species. The small size of some of the numbered woodlots with good soils reduced the woodlots to this class.

Low value -- normally wet soil conditions and normally it is not economical to practice intensive forest management on these woodlots.

Alternative F-1 north of M-21 affects the following woodlots (see attached map): 41, 42, 45, 46, 50, 53 & 54. The timber values for these woodlots are two high, four medium, and one low value woodlots. The wildlife values are five medium and two high value woodlots. The high timber value woodlots are as follows: 50 and 53. The seven wooded areas cover approximately 151.6 acres.

Following is a brief description of the two high value woodlots:

Woodlot #50 -- The highway right-of-way goes through the center of the woodlot. The approximate length of the R.O.W. in the woodlot is 20 chains. With an approximate R.O.W. width of five chains, 10 acres of this 55 acre woodlot will be in the R.O.W. In addition, the minimum width of disturbance to the remaining woodlot is one chain or an additional four acres will be affected. The soil types are Selfridge loamy sand, Oakville fine sand, and Grandby loamy sand. The stand is all aged with hard maple, beech, the predominate species with red oak and hickory in the stand.

Woodlot #53 -- The highway right-of-way as proposed will be between the three woodlots that I have combined as this number. The two west woodlots are good with a mixture of hard maple and beech with some oak. The east woodlot is more brush and thornapple. The alignment would be critical as to the impact on these woodlots.

Alternative F-3 north of M-21 affects the following woodlots (see attached map): 41, 42, 46, 48, 49, 51, 52, 57, 56 & 55. The timber values for these woodlots are four high, six medium, and no low value woodlots. The wildlife values are four high, six medium and no low value woodlots. The high timber value woodlots are as follows: 52, 55, 56 & 57. The ten woodlots affected by F-3 cover approximately 294 acres.

Following is a brief summary of the high value woodlots affected by proposed route F-3:

Woodlot #52 -- The highway R.O.W. looks like it would remove most of this woodlot. The predominate soil type is Boyer. There is hard maple sawtimber over good regeneration.

Woodlot #55 -- The highway R.O.W. angles through the southwestern part of this woodlot for approximately 20 chains, so the R.O.W. will remove about 10 acres of woods and affect another 4 acres out of the 89 acres of woods. The stand varies from solid hickory to hard maple and beech to ash. The stand also contains aspen, ironwood, butternut, black walnut, basswood and thornapple. Stand varies from pole-timber and saplings to scattered sawtimber over pole-timber. The soils vary from Corunna sandy loam and Metamora sandy loam to Brookston loam.

Woodlot #56 -- The highway R.O.W. angles through this woodlot and will destroy most of it. It would no longer be classed as a woodlot. The predominate soil type is Conover loam. There is mixed hardwoods in this woodlot.

Woodlot #57 -- The highway R.O.W. angles through this woodlot for a distance of 30 chains so the R.O.W. will remove 15 acres and affect another 6 acres directly. There is a power line R.O.W. on the east side of the proposed highway R.O.W. and the two R.O.W.'s will affect another 10 to 15 acres of this woods. Sixty acres of this woodlot is in the American Tree Farm System which means it is dedicated to continuous production of forest products. Timber was harvested selectively from this sixty acres in 1967 and 1977 and another harvest should be made between 1987 and 1990. This woodlot is presently under a Long Term Agreement under the Forestry Incentive Program administered through the Agriculture Stabilization and Conservation Service (A.S.C.S.). This woodlot is predominately mixed red and white oak, soft maple, black walnut, and ash. It would be a shame to cut up this woodlot with a highway.

Alternative F-5 north of M-21 affects the following woodlots (see attached map): 41, 42, 46, 48, 49, 51, 52, 57, 58, 59 & 60. The timber value for these woodlots are four high, six medium and one low. The wildlife values are five high, six medium and no lows. The high timber value woodlots are as follows: 52, 57, 58 & 60. The eleven woodlots cover approximately 392 acres.

The high timber value woodlots 52 and 57 have been explained previously in the F-3 description.

Woodlot #58 -- The highway R.O.W. will include the western edge of this woodlot. The predominate soil types are Owosso and Gilford. This is an all aged stand with good wildlife cover.

Woodlot #60 -- The highway R.O.W. angles through the east side of this woodlot for a distance of 25 chains. The R.O.W. will affect about 16 acres of this woodlot. The soil types are Metamora sandy loam, Spinks loamy sand, and Pewamo loam. The stand is predominately pole timber hickory, red oak, ash, soft maple, beech, ironwood with some planted pines (5-10" d.b.h.) on the east side.

Woodlot #59 -- This is not a high timber priority woodlot and the proposed highway R.O.W. goes west of it but I think it is worthy of mentioning anyway. This 139 acre woodlot sits mainly on muck soils but provides excellent deer and other wildlife habitat. This woodlot provides winter protection for deer now and it seems likely that it will not be cleared for farmland in the foreseeable future. F-5 would affect the use of this woodlot by wildlife.

Due to time limitations, I did not discuss the medium and low timber value woodlots, however, these woodlots are also important to the local timber industry which utilizes the timber for their sawmills. These woodlots also provide habitat for many species of game and nongame wildlife that are in Clinton County.

Proposed routes F-3 and F-5 would impact the greatest on the existing woodlots and would be the least desirable selection. The high tension power line R.O.W. would parallel portions of these corridors which would compound the effects on these woodlots.

Comments were also not directed to the Route G. since this would have minimum affect on any wooded area. I hope that the above comments will be given consideration in the route selection.

Following is a summary of the timber and wildlife values on the seventeen woodlots as rated by Area Forester Fred G. Wuerthele and reviewed by Wildlife Habitat Biologist Wayne Bronner:

TIMBER AND WILDLIFE VALUES

<u>Woodlots</u>	<u>Location</u>	<u>Acres</u>
#41	Bingham Twp., Sec. 11, SE $\frac{1}{2}$ of SW $\frac{1}{4}$ Timber - medium, wildlife - medium	35
#42	Bingham Twp., Sec. 11, E $\frac{1}{2}$ NW $\frac{1}{4}$ Timber - medium, wildlife - medium	8
#45	Bingham Twp., Sec. 3, NW $\frac{1}{4}$ of SW $\frac{1}{4}$ Timber - medium, wildlife - medium	12
#46	Bingham Twp., Sec. 3, NE $\frac{1}{2}$ of SE $\frac{1}{4}$ Timber - medium, wildlife - medium	24

The four woodlots listed above are the same as summarized in my letter dated July 2, 1976 regarding the US-27 Proposed Routes, primarily south of M-21 in Clinton County

#48	Bingham Twp., Sec. 3, NE $\frac{1}{2}$ of NE $\frac{1}{4}$ & Greenbush Twp., Sec. 34, SE $\frac{1}{4}$ of SE $\frac{1}{4}$ Timber - medium, wildlife - medium	19.5 15.5
#49	Greenbush Twp., Sec. 34, NW $\frac{1}{4}$ of SE $\frac{1}{4}$ Timber - medium, wildlife - medium	10.5
#50	Greenbush Twp., Sec. 33 Timber - high, wildlife - high	55
#51	Greenbush Twp., Sec. 27, NE $\frac{1}{2}$ of SE $\frac{1}{4}$ Timber - medium, wildlife - medium	7
#52	Greenbush Twp., Sec. 27, SW $\frac{1}{4}$ of NE $\frac{1}{4}$ Timber - high, wildlife - high	5
#53	Greenbush Twp., Sec. 21, SW $\frac{1}{4}$ of NE $\frac{1}{4}$, SE $\frac{1}{2}$ of NW $\frac{1}{4}$, NE $\frac{1}{4}$ of SW $\frac{1}{4}$ Timber - high, wildlife - high	27.5
#54	Greenbush Twp., Sec. 16, NE $\frac{1}{2}$ of SW $\frac{1}{4}$ Timber - low, wildlife - medium	4
#55	Greenbush Twp., Sec. 16, NE $\frac{1}{2}$ of NW $\frac{1}{4}$ & NW $\frac{1}{4}$ of NE $\frac{1}{4}$ and Sec. 9, S $\frac{1}{2}$ of S $\frac{1}{2}$ Timber - high, wildlife - high	47.5 41.5

#56	Greenbush Twp., Sec. 15, SW $\frac{1}{2}$ of NW $\frac{1}{2}$ Timber - high, wildlife - high	5
#57	Greenbush Twp., Sec. 15, SE $\frac{1}{2}$ (ex. SE $\frac{1}{2}$ of SE $\frac{1}{2}$) Timber - high, wildlife - high	75.5
#58	Greenbush Twp., Sec. 10, SE $\frac{1}{2}$ of SE $\frac{1}{2}$ Timber - high, wildlife - high	8.5
#59	Greenbush Twp., Center of Section Timber - low, wildlife - high	139
#60	Greenbush Twp., SW $\frac{1}{2}$ of NE $\frac{1}{2}$, NW $\frac{1}{2}$ of SE $\frac{1}{2}$, NE $\frac{1}{2}$ of SW $\frac{1}{2}$ Timber - high, wildlife - high	55

SUMMARY

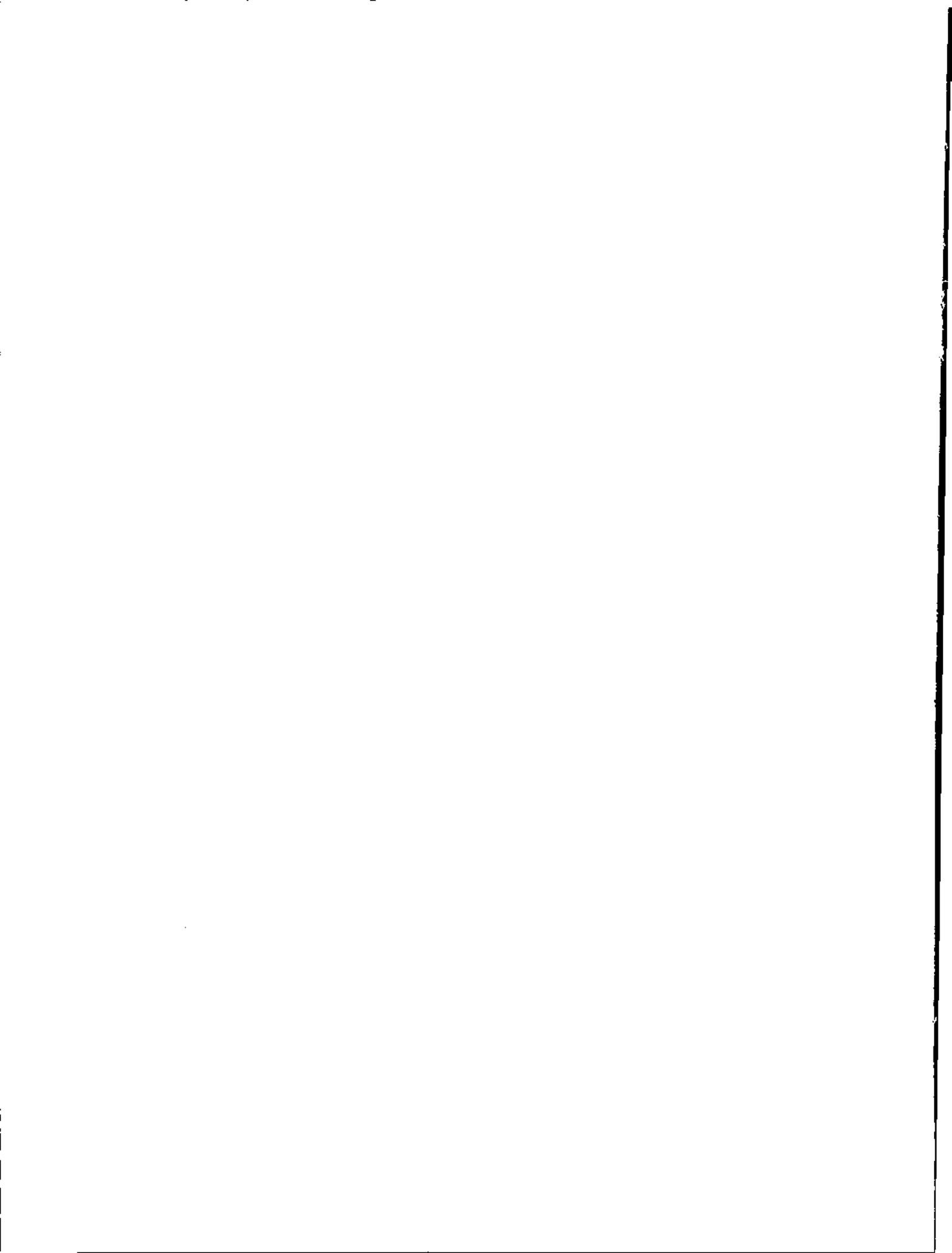
<u>Location</u>	<u>Low</u>	<u>Medium</u>	<u>High</u>
Bingham Township			
Timber	0	5	0
Wildlife	0	5	0
Greenbush Township			
Timber	2	2	8
Wildlife	0	3	9
TOTALS:			
Timber	2	7	8
Wildlife	0	8	9

FGH/eww

cc: District Wildlife
Area Forester
Don Inman, Environmental Review
Paul Flink
Ed Tucker
Forestry Division
Wildlife Division

APPENDIX B

WETLAND FINDING



Department of Transportation, Federal Highway Administration
US-27 Freeway from I-69 North of Lansing to Ithaca
E011990 - Wetland Finding - FHWA-MICH-EIS-77-02-F

This statement sets forth the basis for a finding that there are no practical alternatives to construction in wetlands along the proposed route and that all practical measures to minimize harm to the wetlands will be taken. This finding is in accordance with the requirements of E011990 dated May 24, 1977.

Description of Project

The preferred alternative consists of constructing a four-lane freeway on new location from I-69, north of Lansing with a bypass of St. Johns to the existing location of US-27 north of Kinley Road, approximately 16 miles in length. From this point, northerly, the preferred alternative follows the location of existing US-27 for approximately 16 more miles to join with the existing US-27 freeway south of Ithaca. The preferred alternative is identified as Alternative E/F modified for the segment from Clark to Kinley Road, and Alternate G (north) for the segment from Kinley Road to Ithaca in the draft EIS (Exhibit 6).

Description of Wetlands Affected

A description of the wetlands affected by the preferred alternative is contained in Part II of this final EIS. The types and areas of wetlands affected are identified in Tables 1 and 2 and summarized in Table 3. Over half of the sites affected are of the lowland, hardwood type. Twenty-one of the twenty-nine sites affected involve the crossing of small potholes, streams, or county drains and their associated wetland areas ranging from 0.5 to 3 acres. The taking of these wetlands is unavoidable; however, the location of the preferred alternative and use of proper design and construction techniques are proposed to minimize or avoid harm to adjoining wetlands, wood lots, or farmland areas.

The nine more significant wetland sites affected by the preferred alternative are located at the Looking Glass River (Site 3), Turkey Creek Drain (Site 4), Wooded Hollow (Site 5), Shrub Wetland (Site 6), Hamilton Drain (Site 8), Dogwood Swale (Site 10), Mixed Wet-Mesic Woods (Site 15), the Maple River State Game Area (Site 17), and Ferdon Creek (Site 16 C). A description of these sites, the effects of the preferred alternative, and proposed measures to minimize harm to those nine areas follow (Exhibit 5):

Site #3 Looking Glass River (Crossed 600 feet south of Round Lake Road, NW 1/4 of Sec. 2, DeWitt Township).

The 300' wide strip of lowland hardwoods adjacent to the river is valuable wildlife habitat. The river supports a warm-water fishery of small-mouth bass, northern pike, and panfish.

Of significant regional importance is the known flooding tendency of the Looking Glass. (See Floodplains write-up in this EIS). The direct "zone of impact" at the crossing is five-acres of

wooded floodplain. Bridge design will be the critical issue here to minimize impacts to wildlife, aquatic habitat, and flood hazard. Impacts to wildlife and flood hazard potential are increased in proportion to the degree of fill in the floodplain. With adequate bridge opening, impact can be controlled to the immediate five-acres.

Site #4 Turkey Creek Drain

The alignment runs adjacent to an unnamed, southwesterly flowing intermittent branch of Turkey Creek Drain, from a point 1/4 mile south of Chadwick Road north to where the unnamed drain crosses under Chadwick Road, in the NW 1/4 of Sec. 35, Olive Township. In this 1/4 mile section south of Chadwick Road, the alignment parallels the drain. Rechannelization is necessary. The alignment will destroy 15 acres of lowland woods and 5 acres of upland hardwoods of the 40-acre woods adjacent to the drain.

Site #5 Wooded Hollow

On the north side of Chadwick Road, the alignment crosses through the heart of a 10-acre low wooded hollow that is the origin of aforementioned drain (Site #4). Five-acres of lowland hardwoods and an added five-acres of surrounding mixed mesic woods, will be destroyed. Potential exists here for backing-up water if drainage is not reprovided flowing south beneath Chadwick Road (which will be raised up on a fill over the freeway).

Cross-drainage beneath the two roadway fills, flowing southwesterly, will be necessary to accommodate the movement of water that now occurs naturally through the hollow. Obstructing flow at this point would kill trees in the remaining 10-acres of upland and lowland woods. This impact can be avoided.

Site #6 Scrub Shrub and Lowland Forested Wetland and Ives Drain (N.E. 1/4 of Section 26 and S.W. 1/4 of Section 23, Olive Township).

South of Alward Road, Ives Drain and the west side of a large mixed woods are crossed. The alignment crosses the woods along the higher west side, removing approximately 15 acres of upland woods and 4 acres of forested wetland. Also, approximately 12-1/2 acres of the scrub shrub wetland, located 1/2 mile south of Alward Road will be destroyed. Ives Drain, an intermittent drain, will be crossed with no drainage problems anticipated.

Site #8 Hamilton Drain, #2 Branch (NW 1/4 Sec. 14, Olive Township)

On the north side of Green Road, the alignment strikes a "run" which flows into Hamilton Drain 1/8 mile further east. The run will be channelized to flow along the east ROW ditch. About 4-1/2 acres of buttonbush-willow shrub swamp and low woods dominated by red maples, will be extinguished. This type of area is a natural pathway for wildlife. Also, the branch drains low areas on both sides of Green Road. Fill for US-27 will not cause water back-up because cross-permeability will be designed to avoid this.

Site #10 Dogwood Swale (West-Center of Sec. 2, Olive Township)

A semi-permanently flooded 25-acre scrub shrub wetland is crossed on its west end. This swamp is in a half-mile long basin with an intermittent outlet connecting westerly through a string of other, similar wetlands. The wetland is a surface expression of the water table and remains wet despite drainage. Gray and redozier dogwood shrubs are the dominant vegetation.

Crossing takes place near the wetland outlet between the main body of the wetland and a five-acre mature oak-hickory woods on the south-east-sloping ridge adjacent to the northwest edge of the wetland. Although the wetland tapers at the crossing, thus providing an optimal crossing vantage, potential for impacts exists.

It is recommended that the ROW width, depth of fill, and ridge cut be studied to minimize destruction to the woodlot on the west and the wetland on the east. Any time an alignment crosses between valuable habitat types, there will be unavoidable blockage of animal migration. However, the physical destruction of the sites can be reduced in this instance if ROW width is held to a minimum, slopes are pulled in, and grade is adapted to the site. Cross-drainage is crucial.

Site #15 Mixed Wet-Mesic Woods

Between M-21 and the Grand Trunk Railroad, the alignment's M-21 interchange ramps take out most of the west half of a 40-acre woods and will destroy approximately 15 acres of lowland hardwoods. The woods are a mature mixed stand with high species diversity. The west part of the woods is the wettest and includes a shallow drain on the west. Some of the water may be due to back-up of drainage along the railroad tracks, which have been in place many years. However, the woods are healthy. It will not be possible to preserve much timber inside the ramp-loop because of high fills. But the remaining (east) half of woods is on higher ground; thus, should not experience die-off as a result of roadway construction.

Site #16 C Ferdon Creek

This drain is crossed in Sections 4 and 9 of Greenbush Township, in the vicinity of the proposed US-27/Maple Rapids Road interchange area. Much of this drain is approximately 6 foot wide and flows through a narrow wooded valley which is 50-150 foot wide. Proposed US-27 will result in several hundred feet of this drain being relocated. There will be a minor loss of floodplain area at this location. However, during interchange design, the appropriate drainage studies will be conducted to assure that the rechannelized drain will adequately carry the necessary volume of water to avoid potential problems. No significant impacts will occur at this location.

Site #17 Maple River Game Area Waterfowl Production Unit (PU)

The largest single involvement of wetland occurs at the Maple River State Game Area. There will be 10.3 acres of floodplain removed just west of the existing roadway. For the following reasons supported by our investigation, take of this 10.3 acres of wetland does not constitute a significant unavoidable impact:

- 1) The wetland type involved in the loss are seasonally flooded emergent and lowland hardwoods. Although wood duck nest boxes are installed at scattered locations, this portion of wetland is not within the more intensive-managed Waterfowl Production Unit on the east side of US-27. In selecting the west side of US-27 for expansion, the project averts relocation of the water-control weirs maintained by the DNR. Thus, the 225-acre Waterfowl Production Unit (WPU) will remain intact, with no disruption to water level controls, or loss of area.
- 2) Coordination with both the DNR and U. S. Fish and Wildlife Service has taken place with regards to the Maple River WPU of the proposed project by the consultants. Mitigation will be worked out so that all concerned agents are satisfied.
- 3) The Replacement Package approved by the Federal Highway Administration on February 9, 1979, consists of purchasing a 16-acre parcel, the Robert and Flo Williams tract north of the Maple River, immediately west of the 10.3 acres to be taken. There will be a definite loss of natural floodplain habitat; however, it is expected the DNR can compensate for all loss in productivity by directing intensive management to the replacement tract and to other areas of the 3,700 acre Maple River State Game Area. DNR Wildlife Division has plans for creating a new flooding on the west of US-27, similar in design and function to the WPU on the east of US-27. To accommodate impounding, the MDOT will design the new US-27 embankment fill to withstand floodwater to required levels and pressures. Continued user access to the eastern WPU parcel has been proposed in the Replacement Package. The Replacement Package also stipulates additional inter-agency coordination as the project design proceeds.
- 4) The existing WPU was made possible by foresight in design of existing US-27. It is appropriate and in a similar vein of cooperation between MDOT and DNR, that improved US-27 facilitate an expanded WPU. In conclusion, the opportunity for positive effects at this site counterbalance the negative impacts of land take and temporary construction disturbance to the Maple River floodplain.

Alternatives Considered

The following alternatives to the recommended course of action were considered:

1. Do Nothing
2. No Build
3. Freeway Alternatives
4. Other Modes

The impacts of the various alternatives are discussed in Part IV of this Final EIS.

The do-nothing alternative was rejected based on the following disadvantages.

This alternative would restrict improvements on US-27 to keeping the existing facility in its present condition.

The existing road system was not designed to accommodate all of the traffic that is now being carried on it. Accidents will continue to remain high, due to the narrow median, heavy traffic volumes and no access control.

The No Build alternative was rejected for basically the same reasons as the do-nothing alternative.

The Other Modes alternative was rejected because the locational nature of US-27 in the statewide trunkline system is not conducive to alternate modes such as bus or rail instead of automobile or truck. The predominate portion of this route is recreation oriented, with origin destination throughout Michigan and in neighboring states to the south. Public transportation, with existing technology, is neither efficient nor effective in servicing this type of trip.

The major controversy on this project is which of the freeway alternatives would have the least impact on the taking of prime farmland, the splitting of major farm operations, taking of residential property, and taking of the Maple River State Game Area.

A draft EIS presenting alternative alignments within the corridor was approved by FHWA on March 9, 1977 (Exhibit 14, Final EIS).

A Supplement to the draft EIS for the US-27 Business Route into St. Johns was approved by FHWA on September 5, 1979 (Exhibit 16, Final EIS).

A Supplemental 4(f) Statement to the EIS was circulated for comment by FHWA on August 31, 1981.

A design public hearing was held June 12, 1977.

An additional alignment public hearing was proposed in November of 1980, but since there were no requests received, a formal public hearing was not held.

One of the major determinations for selection of the recommended alignment was to minimize the use of Section 4(f) lands, minimize the adverse affect on wetlands, which are primarily along adjacent drains and streams, and to minimize taking of prime farmland and of splitting major farm operations.

A comparison of the 16-mile segment on new location from I-69 to US-27 north of St. Johns (Kinley Road), regarding wetland takings is as follows:

	<u>No. of Wetlands</u>	<u>Total Acreage</u>
Recommended Alt., E-F	16	72.5
Alternate G	3	34
Alternate B	2	125
Alternate G (Crossover)	4	14

Alternate G follows old US-27 from I-69 north to Parks Roads where it relocates to the east to bypass St. Johns. This alternate takes a limited number of acres of wetland, most in the vicinity of Parks Road. However, this alternate takes the front off of many farm operations including residences and out buildings. Also, this alternate was not an accepted alternate by the local people.

The same reason applied to the G (crossover) alternative, for not being acceptable to the local people.

Alternate B would acquire 31 acres of wetlands and 94 acres of floodplain primarily along the Looking Glass River.

As shown in Part II, Table 2 and 3, the preferred alternative would displace a total of 82.8 acres of wetland over its entire 32 mile length that consists of 50.0 acres of lowland hardwoods; 17.8 acres of shallow marsh and 15.0 acres of shrub swamp.

Measures to Minimize Harm

The following measures will be taken to minimize impacts to areas of special concern.

1. The use of wetlands for peat disposal will be discouraged. Any use will be adequately documented and reviewed prior to applying for Section 404 permits or 203 permits.
2. The following mitigation features will be incorporated into final design plans in all areas where the highway transerses wetlands. MDOT will determine the average yearly low water table to enable the placement of cross culverts at the proper elevation. Where equalizer culverts are used, they will be placed opposite each other under both roadways. These equalizer culverts will be placed at an elevation corresponding to the average yearly low water table to maintain flow across the broader part of wetland so as not to increase the water table elevation on the upstream side of the roadway. The water as it flows through the culvert will have a free water surface under all flow conditions.
3. In areas where earth is excavated for use in freeway construction (borrow areas), it may be possible to create wetlands. While borrow is usually a contractor furnished item, MDOT will investigate potential borrow sources which may become available on State owned, landlocked or excess property purchased by the Department.

If any areas are adaptable to creation of wetlands, they will be designated for use by the contractor. In keeping with current Department policy borrow is usually a contractor furnished item unless: (1) the closest source of borrow is on State owned land, or (2) suitable borrow is available on excess property).

4. The mitigation to the taking of 4(f) lands consisting of 10.3 acres of wetlands adjacent to the west of US-27 at the crossing of the Maple River State Game Area will be by replacing this taking with approximately 16 acres of adjacent property owned by Robert and Flo Williams. This replacement package (See Part III, Attachment C) was approved in concept by FHWA on March 7, 1979.

For mitigation measures to minimize harm to the taking of the 10.3 acres from the Maple River State Game Area, see Part III, Section entitled "Mitigation Measures to Minimize Harm."

In addition to the replacement package, the Michigan Department of Natural Resources has also requested that the new proposed roadway design, north of the crossing of the Maple River, include certain flood control measures to form a water muck area to the west, similar to the one on the east side of existing US-27. MDOOT and FHWA have agreed to include the requested design features into the final design of the project.

Coordination and Public Involvement

Coordination with other Federal and State agencies and public involvement have been discussed above. The Environmental Protection Agency, U. S. Department of Fish and Wildlife Service, and the Michigan Department of Natural Resources have been coordinated with for this input throughout the development of the project. The project has been discussed with the three agencies by letters, phone conversations, and meetings. Actual field inspections of the alternatives have also been conducted with all three agencies represented.

The preferred mitigation measures were developed with close cooperation with the three agencies.

Public and agency comments and public hearing comments with responses are included in Part III, Attachment E, and Part VI of this Final EIS.

Conclusion

Based upon the above considerations, we have determined that there is no practical alternative to the proposed new construction in wetlands, and that the proposed action includes all practical measures to minimize harm to the wetlands which may result from such use.





