

Boardman River Crossing Mobility Study

Grand Traverse County, Michigan



Final Environmental Impact Statement and Section 4(f) / 6(f) Evaluation

Volume II
(Appendices A through E)

prepared by the
Grand Traverse County Road Commission

in cooperation with the
Michigan Department of Transportation
and Federal Highway Administration

February 2001

Reference
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VOLUME II (Appendices A through E)

**Appendix A
PRELIMINARY PLANS FOR THE RECOMMENDED ALTERNATIVE**

**Appendix B
ADDITIONAL INFORMATION ON ENVIRONMENTAL ANALYSES**

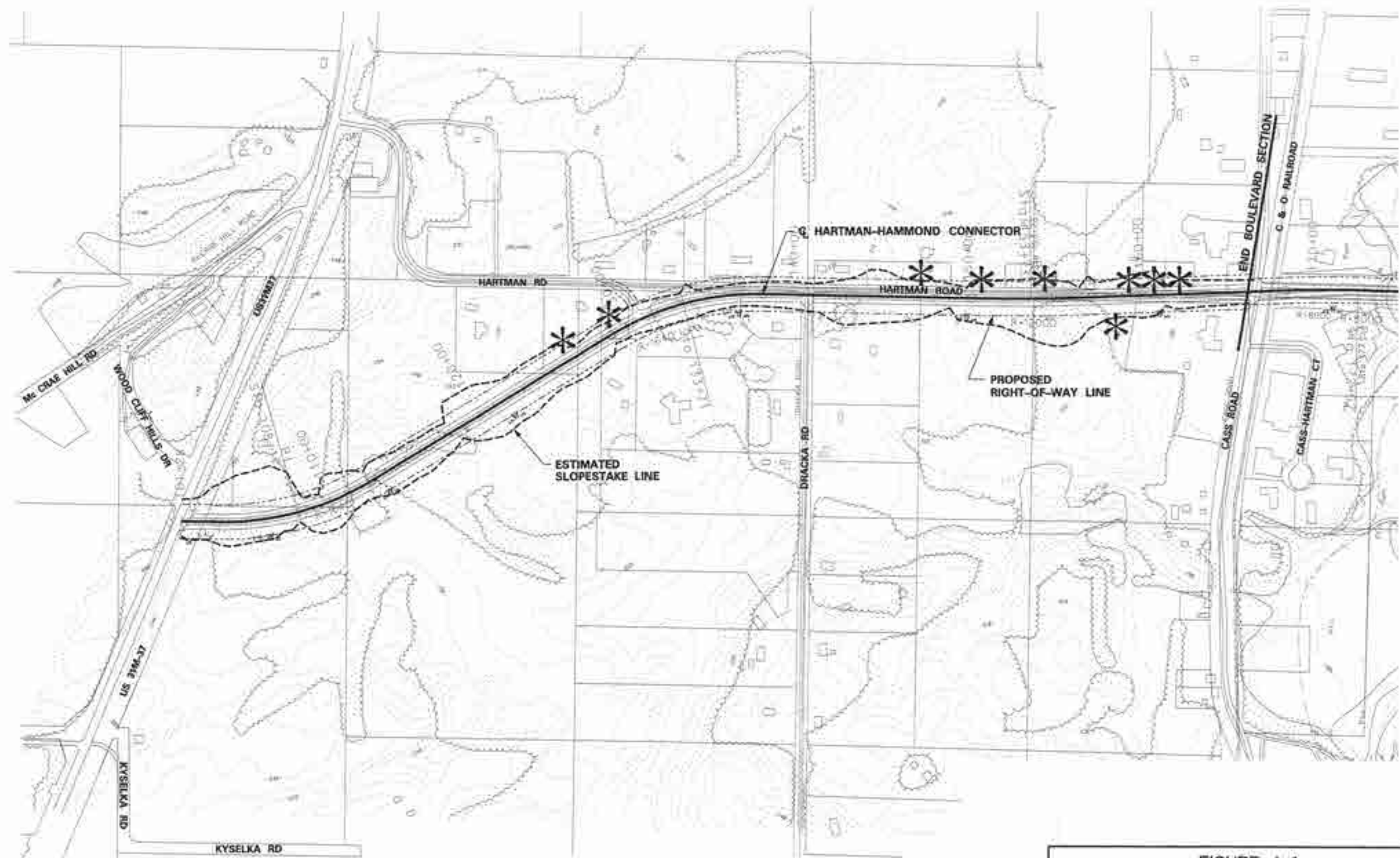
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AGENCY COORDINATION**

**Appendix D
SECTION 106 COORDINATION**

**Appendix E
ADDITIONAL MDOT CORRESPONDENCE**

APPENDIX A

**PRELIMINARY PLANS FOR THE
RECOMMENDED ALTERNATIVE**



* POTENTIAL DISPLACEMENT



FIGURE A-1
RECOMMENDED ALTERNATIVE
HARTMAN-HAMMOND CONNECTOR (BOULEVARD)
BOARDMAN RIVER CROSSING MOBILITY STUDY
GRAND TRAVERSE COUNTY, MICHIGAN

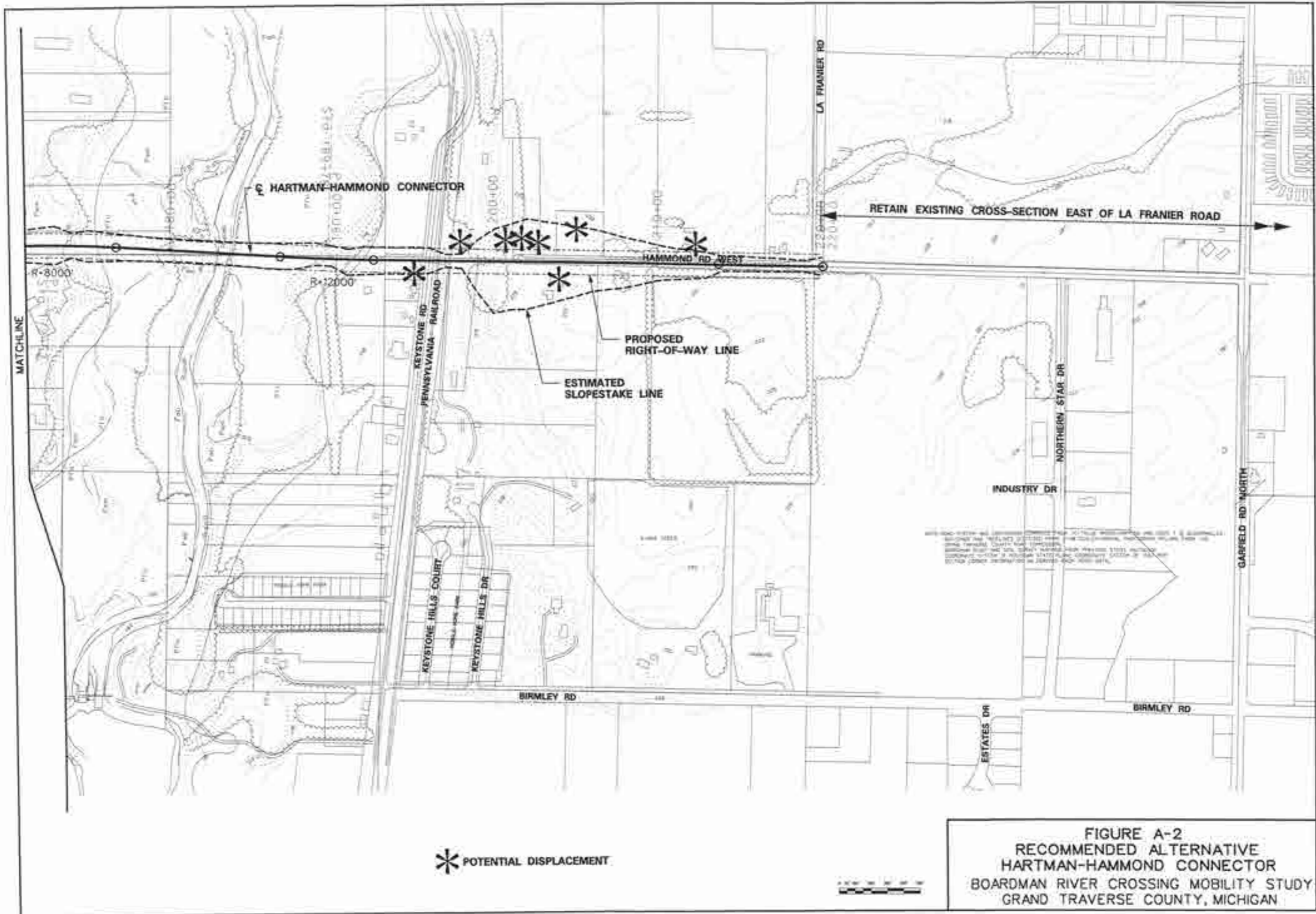
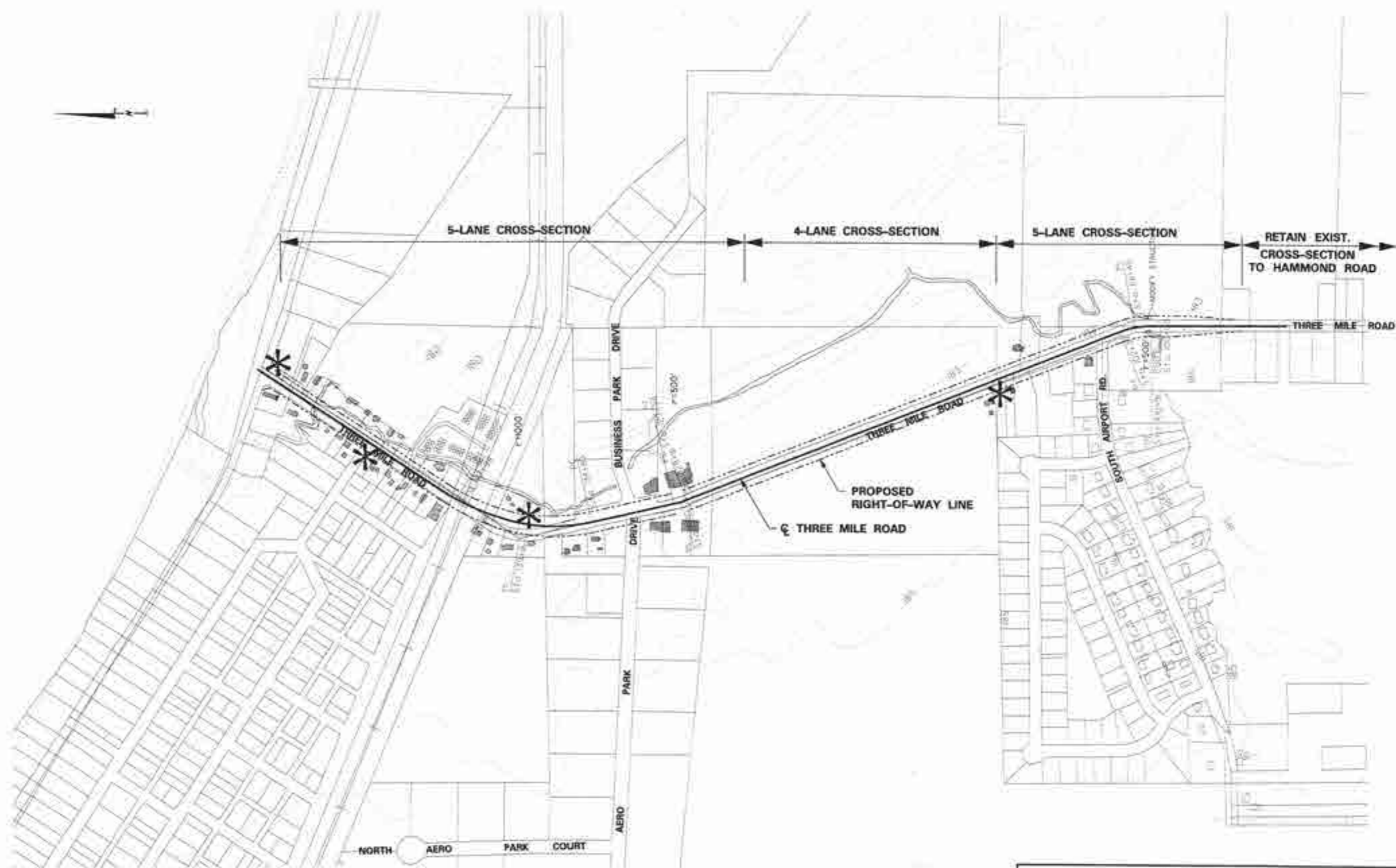


FIGURE A-2
 RECOMMENDED ALTERNATIVE
 HARTMAN-HAMMOND CONNECTOR
 BOARDMAN RIVER CROSSING MOBILITY STUDY
 GRAND TRAVERSE COUNTY, MICHIGAN



* POTENTIAL DISPLACEMENT

FIGURE A-3
 RECOMMENDED ALTERNATIVE
 THREE MILE ROAD WIDENING
 BOARDMAN RIVER CROSSING MOBILITY STUDY
 GRAND TRAVERSE COUNTY, MICHIGAN

APPENDIX B

**ADDITIONAL INFORMATION ON
ENVIRONMENTAL ANALYSES**

Appendix B

ADDITIONAL INFORMATION ON ENVIRONMENTAL ANALYSES

Number

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APPENDIX B-1

AD-1006 FORM AND CORRESPONDENCE

FARMLAND CONVERSION IMPACT RATING

PART I (To be completed by Federal Agency)		Date Of Land Conversion Request 6 May 1999	
Issues Of Project Boardman River Crossing Mobility Study		Federal Agency Involved FHWA	
Proposed Land Use County Roadway		County And State Grand Traverse County, MI	
PART II (To be completed by SCS)		Date Of Assessment 5-7-99	
Does the site contain stream channels, ponds, wetlands, or other natural resources?		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
If so, are the resources of sufficient importance to require special protection?		Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>
Number of Acres of Wetlands, Ponds, or Other Natural Resources		N/A	160
Number of Farms in the Area		266	100
Number of Farms to be Converted		84	31.6
Date of Land Conversion Requested by SCS		5-10-99	
PART III (To be completed by Federal Agency)		Alternative Site Rating	
Hartman-Hammond Alternative		5-Land	5-Land
A. Total Acres To Be Converted Directly	2.8	5.3	
B. Total Acres To Be Converted Indirectly	1.9	1.9	
C. Total Acres In Site	5.7	7.2	
PART IV (To be completed by SCS) - Land Evaluation Information			
A. Total Acres Prime And Unique Farmland	0	0	
B. Total Acres Statewide And Local Important Farmland	146	172	
C. Percentage Of Farmland In County Of Local Govt. Unit To Be Converted	201	201	
D. Percentage Of Farmland To Given Jurisdiction With Same Or Higher Relative Value	86%	85%	
PART V (To be completed by SCS) - Land Evaluation Criterion			
Relative Value Of Farmland To Be Converted (Scale of 0 to 100 Points)	43.5	48.7	
PART VI (To be completed by Federal Agency)		Maximum Points	
Site Assessment Criteria (These criteria are explained in 7 CFR 658.50)			
1. Area In Nonurban Use	15	11	11
2. Perimeter In Nonurban Use	10	6	6
3. Percent Of Site Being Farmed	10	0	0
4. Protection Provided By State And Local Government	20	20	20
5. Distance From Urban Builtup Area	NA	NA	NA
6. Distance To Urban Support Service	NA	NA	NA
7. Size Of Present Farm Unit Compared To Average	10	5	5
8. Creation Of Nonfarmable Farmland	25	0	0
9. Availability Of Farm Support Services	5	5	5
10. On-Farm Investments	20	20	20
11. Effects Of Conversion On Farm Support Services	25	0	0
12. Compatibility With Existing Agricultural Use	10	10	10
TOTAL SITE ASSESSMENT POINTS	160	77	77
PART VII (To be completed by Federal Agency)			
Relative Value Of Farmland (From Part V)	100	43.5	48.7
Total Site Assessment (From Part VI above or a local site assessment)	160	77	77
TOTAL POINTS (Total of above 2 lines)	260	120.5	125.7
Site Selected:	Date Of Selection:	Was A Local Site Assessment Used?	
Reason For Selection:		Yes <input type="checkbox"/> No <input type="checkbox"/>	



United States
Department of Agriculture

NATURAL
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10-24-96

Andrea Kline, JJR
110 Miller
Ann Arbor, Michigan 48104-1399

Re: Cass Road Bridge LESA Form AD-1006
JJR No. 17691.00

Dear Ms. Kline

This follow-up letter is in response to your inquiry about using the Important Farmlands Map of Grand Traverse County on the above LESA appraisal.

Unless a local unit of government has adopted their own Land Evaluation System Assessment criteria, NRCS typically uses the adopted State System adjusted for the map units of each county. The Important Farmland maps in question here were developed using Prime Farmland mapping units and the Red Tart Cherry Site Inventory for the unique farmland part.

Although the Important Farmlands map was never adopted officially as a Unique Farmland source for FPPA purposes, in my opinion, the mapping units identified near Hartman road on the Important Farmlands map do meet the Unique Farmland definition in FPPA for LESA.

I have adjusted part IV A and B on the attached AD-1006 accordingly for alternative sites A and C.

If you have further questions or concerns feel free to call again.

Bruce Knapp, Resource Soil Scientist

cc: Bernie Huetter, Marquette
Lynn Sampson, East Lansing

The Natural Resources Conservation Service

APPENDIX B-2

DETAILED NOISE ANALYSIS RESULTS

Appendix B-3
RECOMMENDED ALTERNATIVE (HARTMAN-HAMMOND ROAD CONNECTOR WITH THREE MILE ROAD ALTERNATIVE)
ESTIMATED EXISTING AND PROJECTED NOISE LEVELS (L₅₀ in dBA)

Site No.	FHWA Activity Category	Land Use	Existing Conditions			No-Build Alternative				Recommended Alternative				
			1997 Level	Exceeds 67/72	Approaching 67/72	2015 Level	Change vs. 1997	Exceeds 67/72	Approaching 67/72	+ 10 dBA	2015 Level	Change vs. 1997	Exceeds 67/72	Approaching 67/72
Hartman-Hammond Connector														
1	B	Residential	58.5			62.0	3.5				65.3	6.8		
2	B	Residential	52.7			55.5	2.8				55.6	12.0		X
3	B	Residential	62.3			66.0	3.7			X	65.1	2.6		
4	B	Retirement Home	51.6			54.6	3.0				60.0	0.3		
5	B	Residential	59.3			62.9	3.6				65.6	6.3		
6	B	Residential	57.3			60.7	3.4				66.7	9.4		X
7	B	Residential	59.3			63.0	3.7				65.4	7.1		X
8	B	Residential	61.2			64.9	3.7				68.1	6.9	X	
9	B	Bed and Breakfast	55.8			59.2	3.4				64.4	8.6		
10	B	Residential	58.1			61.8	3.8				66.3	8.2		X
11	B	School	58.6			62.4	3.8				65.6	7.0		
12	B	Church	60.9			64.7	3.8				68.0	7.1	X	
13	C	Industrial	54.6			58.4	3.8				67.1	12.5		X
14	C	Industrial	51.7			55.4	3.7				66.3	16.6		X
15	B	Residential	53.9			57.7	3.8				66.6	12.7		X
16	B	Residential	61.5			65.7	3.9				67.3	5.7	X	
17	B	Residential	64.0			67.9	3.9	X			70.1	6.1	X	
18	B	School	59.8			63.6	3.8				64.9	5.1		
19	B	Residential	62.4			66.2	3.8			X	69.1	6.7	X	
20	B	Residential	58.5			61.7	3.2				69.4	10.9	X	
21	B	Education Reserve	48.0			52.5	3.6				55.0	6.1		X
Three Mile Road														
156	B	Residential	62.3			62.9	0.6				63.0	0.7		
156	B	Residential	64.4			65.1	0.7				64.6	0.2		
157	B	Residential	65.6			66.3	0.7			X	66.3	0.7		X
158	B	Residential	65.9			66.6	0.7			X	66.7	0.8		X
159	B	Residential	65.2			65.9	0.7				65.9	0.7		
160	C	Commercial/Office	64.0			64.8	0.8				64.8	0.8		
161	C	Commercial	66.5			67.2	0.7				67.3	0.8		
162	B	School	62.8			63.6	0.8				63.6	0.8		
163	C	Commercial/Office	65.4			66.2	0.8				66.2	0.8		
164	B	Residential	65.8			66.5	0.7			X	66.8	0.8		X
165	B	Residential	65.5			66.2	0.7			X	66.3	0.8		X
166	B	Residential	64.9			65.6	0.7				65.8	0.7		
167	B	Residential	66.8		X	67.5	0.7	X			67.5	0.7	X	
168	B	Residential	65.6			66.2	0.6			X	66.2	0.6		X
169	B	Residential	66.7		X	67.3	0.6	X			67.3	0.6	X	
170	B	Residential	69.1	X		69.6	0.5	X			69.6	0.5	X	
171	B	Residential	62.5			63.2	0.7				63.2	0.7		
172	B	Residential	66.4		X	67.1	0.7	X			67.1	0.7	X	
173	C	Fire Department	66.3			66.7	0.4				66.8	0.5		
174	B	Residential	66.4		X	67.0	0.6	X			67.1	0.7	X	
175	B	Residential	67.0	X		67.7	0.7	X			67.8	0.8	X	
176	B	Residential	67.4	X		68.1	0.7	X			68.2	0.8	X	
177	B	Residential	63.1			63.9	0.8				63.9	0.8		
178	B	Residential	65.3			66.1	0.8			X	66.1	0.8		X
179	C	Commercial	61.3			62.0	0.7				62.0	0.7		
180	B	Residential	68.0	X		68.6	0.6	X			68.7	0.7	X	
181	B	Residential	67.3	X		68.0	0.7	X			68.1	0.8	X	
182	B	Residential	65.5			66.2	0.7			X	66.3	0.8		X
183	B	Residential	67.3	X		68.4	1.1	X			68.6	1.3	X	
184	B	Residential	65.4			66.2	0.8			X	66.2	0.8		X
185	B	Residential	64.7			65.5	0.8				65.5	0.8		
186	C	Commercial	66.9			67.7	0.8				67.7	0.8		
187	C	Commercial	67.1			68.0	0.9				68.0	0.9		
188	C	Commercial	63.8			64.6	0.8				64.6	0.8		
189	B	Residential	64.5			65.3	0.8				65.3	0.8		
190	B	Residential	66.4		X	67.2	0.8	X			67.2	0.8	X	
191	C	Commercial	65.5			66.4	0.9				66.4	0.9		

APPENDIX B-3

ESTIMATION OF SURFACE WATER POLLUTANT LOADING RESULTS

Appendix B-3

ESTIMATION OF SURFACE WATER POLLUTANT LOADING RESULTS

Various methods of predicting pollutant loading from storm water runoff from roads are available. Generally, there are three analysis/predictive approaches that are widely recognized and used. Each approach has its own particular advantages and disadvantages. These methods can be grouped into the following categories:

- **Regression Methods:** Provides relatively simple and quick means for estimating runoff quantity and quality. These methods require specific causative mechanisms such as rainfall characteristics, traffic counts, and runoff coefficients. Regression methods are difficult to apply beyond the original data set for which they were derived. Based on a 1988 review by Federal Highway Administration (FHWA) of six regression analyses for the same highway site, "the predictive regression equations were not very accurate when compared to the actual runoff loads."
- **Simulation Models:** Simulation models require detailed calibration and verification data requirements which are very time dependent and costly. The models are the most versatile in terms of assessing the effectiveness of control options and runoff changes due to design changes; however, they are very weak for predictions of absolute values of concentrations and loads without adequate, site-specific water quality data for calibration and verification.
- **Statistical Methods:** Provides a relatively simple and quick means for estimating pollutant loading. This method requires statistical probabilities of rainfall characteristics (readily available) and known mean concentrations of pollutants in runoff. The method makes statistical approximations in order to obtain an analytical solution.

The preferred approach for predicting pollutant discharges from the Recommended Alternative is the statistical method. The success of this approach for urban runoff application in the U.S. Environmental Protection Agency's (EPA's) Nationwide Urban Runoff Program (NURP) (U.S. EPA, 1983) and its widespread use in road projects encouraged this selection. The method is appropriate for planning or screening analysis, can be used for comparison purposes of other related projects, and provides a means of evaluating the inherent variability of the storm water process. The statistical method requires rainfall statistics and known mean concentrations of pollutants in runoff. The method makes approximations, yet tests the results using standard statistical analysis. The basis of analysis recognizes that data sets of rainfall runoff flows and pollutant concentrations may have significant variability. However, precipitation characteristics and Event Mean Concentrations of pollutants in runoff from any site are easily approximated by a lognormal probability distribution.

To estimate the loading of various pollutants, a statistical approach computerized by the FHWA, Publication No. FHWA-RD-88-006 (April 1990), was utilized. The program was designed to estimate storm water runoff pollutants directly entering into receiving waters from roads. Pollutant concentrations were reported as Event Mean Concentrations which represent the average pollutant concentration present in the total volume of runoff from a storm event.

The program evaluates specific site characteristics relative to the drainage area, rainfall characteristics, and surrounding land use, and then applies an Event Mean Concentration for each pollutant evaluated.

Conservative assumptions were made throughout the analysis to approximate a realistic worst-case scenario.

Rainfall characteristics for this analysis were determined based on statistical analysis of long-term rain event data for Northern Michigan. Analysis for volume, intensity, duration, and interval were performed utilizing the Synoptic Rainfall Data Analysis Program (SYNOP) developed for the U.S. EPA. These data are presented in the program run and did not have to be generated. Storm size has been shown to have no significant influence on pollutant concentration in runoff. However, the average interval between storms and average intensity is most significant. All storms were evaluated on an average basis; each storm contributed its proportion of pollutant loading to the system.

Surrounding land use was reflected in terms of acres of pervious and impervious surface and applying a mean runoff coefficient to the mean value for volume and intensity. The total watershed area (or subwatershed area) of four tributaries crossed by the Recommended Alternative was calculated: Tributary 2 (Jack's Creek), Tributary 3 (Unnamed Tributary to Boardman River); Tributary 4 (Unnamed Tributary to Boardman River); and Mitchell Creek. Mean runoff coefficients were calculated on this relationship.

Pollutant mass loading was calculated for ten contaminants widely recognized as those that may exist in concentrations which can be a significant contributor to water quality degradation. These are the same contaminants that are routinely evaluated by professionals in storm water management and in national studies by the U.S. EPA and the FHWA. The contaminants evaluated included: total suspended solid; nitrate/nitrite; total Kjeldahl nitrogen; total phosphorus; chemical oxygen demand; lead; copper; zinc; and, oil and grease.

Mean Annual Loading (lbs./yr.) was calculated for each contaminant and each watershed (or subwatershed) impacted by construction of the Recommended Alternative. The calculated mass loading was reduced by the proposed treatment of the storm water through open swales and detention basins. Mass Loading was back calculated to Event Mean Concentrations (mg/l) for direct discharge to the receiving water and total in-stream concentration by factoring the stream's base flow. These concentrations were then compared with State of Michigan and U.S. EPA water quality standards, when available, for the protection of aquatic life.

The tables on the following pages illustrate the data included in the analysis and the results of the estimation of pollutant loading for each of the four tributaries crossed using the statistical method of analysis. A discussion of the impacts follows.

Tributary 2 (Jack's Creek)

Nitrate and nitrite will be discharged at 9.0 pounds per year at a mean concentration of 0.13 mg/l. In-stream concentration will be 0.03 mg/l. The U.S. EPA water quality standard is 10 mg/l, far higher than the predicted concentration.

Total Kjeldahl nitrogen will be 20.6 pounds per year at a mean concentration of 0.29 mg/l. In-stream concentration will be 0.075 mg/l. There are no state or federal standards for total Kjeldahl nitrogen; however, the concentration is low relative to levels routinely found in lakes and streams.

Boardman River Crossing Mobility Study

Surface Water Quality Analysis Jack's Creek

Contaminant Analyzed	EMC mg/l	Mean Loading lbs/yr	200 Ft. Swale Treatment % Reduction*	Post-Treatment Loading lbs/yr	Detention Treatment % Reduction	Mass Loading lbs/yr	Storm Discharge mg/l	Stream Concentration mg/l	EPA Standard mg/l
Total Suspended Solids	41	2921	83	496.8	90	49.7	0.697	0.181	500.000
NO3 + NO2	0.46	32.7	40	19.6	54	9.0	0.127	0.033	10.000
Total Kjeldahl Nitrogen	0.87	61.9	48	32.2	36	20.6	0.289	0.075	NA
Total Phosphorus	0.16	11.4	30	8.0	54	3.7	0.052	0.013	1.000
TOC	8	570	28	410.4	54	188.8	2.650	0.689	NA
COD	49	3491	20	2792.8	54	1284.7	18.032	4.688	NA
Lead	0.08	5.7	67	1.9	81	0.4	0.005	0.001	0.223
Copper	0.022	1.57	46	0.8	72	0.2	0.003	0.001	0.037
Zinc	0.08	5.7	63	2.1	54	1.0	0.014	0.004	0.618
Oil & Grease	5	356.2	75	89.1	86	12.5	0.175	0.045	NA

NA - Standards are descriptive in nature and cannot be depicted in a specific unit of measure

Surface Water Quality Analysis Tributary 3

Contaminant Analyzed	EMC mg/l	Mean Loading lbs/yr	Swale Treatment % Reduction	Post-Treatment Loading lbs/yr	Detention Treatment % Reduction	Mass Loading lbs/yr	Storm Discharge mg/l	Stream Concentration mg/l	EPA Standard mg/l
Total Suspended Solids	41	2001	83	340.2	90	34.0	0.697	0.404	500.000
NO3 + NO2	0.46	22.5	40	13.5	54	6.2	0.127	0.074	10.000
Total Kjeldahl Nitrogen	0.87	42.6	48	22.2	36	14.2	0.290	0.168	NA
Total Phosphorus	0.16	7.8	30	5.5	54	2.5	0.051	0.030	1.000
TOC	8	390.5	28	281.2	54	129.3	2.650	1.537	NA
COD	49	2391	20	1912.8	54	879.9	18.028	10.456	NA
Lead	0.08	3.9	67	1.3	81	0.2	0.005	0.003	0.223
Copper	0.022	1.07	46	0.6	72	0.2	0.003	0.002	0.037
Zinc	0.08	3.9	63	1.4	54	0.7	0.014	0.008	0.618
Oil & Grease	5	244	75	61.0	86	8.5	0.175	0.101	NA

* - Design of Stormwater Filtering System (Center for Watershed Protection, December 1996)

NA - Standards are descriptive in nature and cannot be depicted in a specific unit of measure

Boardman River Crossing Mobility Study

Surface Water Quality Analysis Tributary 4

Contaminant Analyzed	EMC mg/l	Mean Loading lbs/yr	Swale Treatment % Reduction	Post-Treatment Loading lbs/yr	Detention Treatment % Reduction	Mass Loading lbs/yr	Storm Discharge mg/l	Stream Concentration mg/l	EPA Standard mg/l
Total Suspended Solids	41	1092	83	185.8	90	18.6	0.697	0.362	500.000
NO3 + NO2	0.46	12.25	40	7.4	54	3.4	0.127	0.066	10.000
Total Kjeldahl Nitrogen	0.87	42.6	48	22.2	36	14.2	0.532	0.277	NA
Total Phosphorus	0.16	4.26	30	3.0	54	1.4	0.052	0.027	1.000
TOC	8	213	28	153.4	54	70.5	2.649	1.377	NA
COD	49	1309	20	1047.2	54	481.7	18.086	9.405	NA
Lead	0.08	2.13	67	0.7	81	0.1	0.005	0.003	0.223
Copper	0.022	0.59	46	0.3	72	0.1	0.003	0.002	0.037
Zinc	0.08	2.13	63	0.8	54	0.4	0.014	0.007	0.618
Oil & Grease	5	133.2	75	33.3	86	4.7	0.175	0.091	NA

NA - Standards are descriptive in nature and cannot be depicted in a specific unit of measure

Surface Water Quality Analysis Mitchell Creek

Contaminant Analyzed	EMC mg/l	Mean Loading lbs/yr	Swale Treatment % Reduction	Post-Treatment Loading lbs/yr	Detention Treatment % Reduction	Mass Loading lbs/yr	Storm Discharge mg/l	Stream Concentration mg/l	EPA Standard mg/l
Total Suspended Solids	41	2725.8	83	463.4	90	46.3	0.697	0.012	500.000
NO3 + NO2	0.46	30.6	40	18.4	54	8.4	0.127	0.002	10.000
Total Kjeldahl Nitrogen	0.87	58	48	30.2	36	19.3	0.290	0.005	NA
Total Phosphorus	0.16	10.63	30	7.4	54	3.4	0.051	0.001	1.000
TOC	8	531.9	28	383.0	54	176.2	2.650	0.047	NA
COD	49	3257.7	20	2606.2	54	1198.8	18.032	0.317	NA
Lead	0.08	5.31	67	1.8	81	0.3	0.005	0.000	0.223
Copper	0.022	1.46	46	0.8	72	0.2	0.003	0.000	0.037
Zinc	0.08	5.31	63	2.0	54	0.9	0.014	0.000	0.618
Oil & Grease	5	332.7	75	83.2	86	11.6	0.175	0.003	NA

NA - Standards are descriptive in nature and cannot be depicted in a specific unit of measure

Total phosphorus will be 3.7 pounds per year at a mean concentration of 0.05 mg/l. In-stream concentration will be 0.014 mg/l. The U.S. EPA and Michigan water quality standard is 1.0 mg/l.

Lead discharge will be 0.4 pounds per year at a mean concentration of 0.006 mg/l. In-stream concentration will be 0.001 mg/l. The U.S. EPA Acute Toxicity Level for lead is 0.223 mg/l, and the Threshold Effect Level is 0.950 mg/l.

Copper discharge will be 0.2 pounds per year at a mean concentration of 0.003 mg/l. In-stream concentration will be 0.001 mg/l, far below the U.S. EPA Acute Toxicity Level for copper of 0.037 mg/l and the Threshold Effect Level of 0.09 mg/l.

Zinc discharge will be 1.0 pounds per year at a mean concentration of 0.014 mg/l. In-stream concentration will be 0.004 mg/l. The U.S. EPA Acute Toxicity Level for zinc is 0.618 mg/l and the Threshold Effect Level is 1.3 mg/l, much higher than the calculated mean concentration.

Oil and grease discharge will be 12.5 pounds per year at a mean concentration of 0.18 mg/l. In-stream concentration of oil and grease will be 0.046 mg/l. The state and federal standards state that surface waters are to be free from floating oils. Floating oils will be effectively captured in the swales and detention basins and will not be evident in the receiving waters during normal operations.

The Chemical Oxygen Demand will discharge 1265 pounds per year at a mean concentration of 17.7 mg/l. In-stream concentration will be 4.6 mg/l. The dissolve oxygen concentration of cold water streams typically falls within the range of 6 to 8.5 mg/l. A minor depression of the dissolved oxygen level in the stream may be realized for a short duration. The turbulent flow of Jack's Creek over cobble and gravel will replace the oxygen debt over a short period of time, typically less than 24 hours for a mean storm event.

Tributary 3 (Unnamed Tributary)

Nitrate and nitrite will be discharged at 6.2 pounds per year at a mean concentration of 0.13 mg/l. In-stream concentration will be 0.07 mg/l. The U.S. EPA water quality standard is 10 mg/l, far higher than the predicted concentration.

Total Kjeldahl nitrogen will be 14.2 pounds per year at a mean concentration of 0.29 mg/l. In-stream concentration will be 0.17 mg/l. There are no state or federal standards for total Kjeldahl nitrogen; however, the concentration is low relative to levels routinely found in lakes and streams.

Total phosphorus will be 2.5 pound per year at a mean concentration of 0.051 mg/l. In-stream concentration will be 0.03 mg/l. The U.S. EPA and Michigan water quality standard is 1.0 mg/l.

Lead discharge will be 0.2 pounds per year at a mean concentration of 0.004 mg/l. In-stream concentration will be 0.002 mg/l. These data fall well below the U.S. EPA Acute Toxicity Level for lead of 0.223 mg/l and the Threshold Effect Level of 0.950 mg/l.

Copper discharge will be 0.2 pounds per year at a mean concentration of 0.004 mg/l. In-stream concentration will be 0.002 mg/l. The U.S. EPA Acute Toxicity Level for copper is 0.037 mg/l, and the Threshold Effect Level is 0.09 mg/l.

Zinc discharge will be 0.7 pounds per year at a mean concentration of 0.014 mg/l. In-stream concentration will be 0.008mg/l, far below the U.S. EPA Acute Toxicity Level for zinc of 0.618 mg/l and the Threshold Effect Level of 1.3 mg/l.

Oil and grease discharge will be 8.5 pounds per year at a mean concentration of 0.174 mg/l. In-stream concentration for oil and grease will be 0.10 mg/l. State and federal standards state that surface waters are to be free from floating oils. Floating oils will be effectively captured in the swales and detention basins and will not be evident in the receiving waters during normal operations.

The Chemical Oxygen Demand will discharge 879.9 pounds per year at a mean concentration of 18.0 mg/l. In-stream concentration will be 10.5 mg/l. The dissolve oxygen concentration of cold water streams typically falls within the range of 6 to 8.5 mg/l. A depression of the dissolved oxygen level in the stream may be realized for a short duration after a wet weather event. The continuous flow of Tributary 3 will replace the oxygen debt over a short period of time, typically less than 24 hours after a storm event. The aquatic resources of the tributary are of marginal quality supporting mostly tolerant aquatic species that are capable of tolerating this short duration oxygen depression.

Tributary 4 (Unnamed Tributary)

Nitrate and nitrite will be discharged at 3.4 pounds per year at a mean concentration of 0.13 mg/l. In-stream concentration will be 0.07 mg/l. The U.S. EPA water quality standard is 10 mg/l, far higher than the predicted concentration.

Total Kjeldahl nitrogen will be 14.2 pounds per year at a mean concentration of 0.53 mg/l. In-stream concentration will be 0.28 mg/l. There are no state or federal standards for total Kjeldahl nitrogen; however, the concentration is low relative to levels routinely found in lakes and streams.

Total phosphorus will be 1.4 pounds per year at a mean concentration of 0.053 mg/l. In-stream concentration will be 0.03 mg/l. The U.S. EPA and Michigan water quality standard is 1.0 mg/l.

Lead discharge will be 0.1 pounds per year at a mean concentration of 0.004 mg/l. In-stream concentration will be 0.002 mg/l. These data fall well below the U.S. EPA Acute Toxicity Level for lead of 0.223 mg/l and the Threshold Effect Level of 0.950 mg/l.

Copper discharge will be 0.1 pounds per year at a mean concentration of 0.004 mg/l. In-stream concentration will be 0.002 mg/l. The U.S. EPA Acute Toxicity Level for copper is 0.037 mg/l, and the Threshold Effect Level is 0.09 mg/l.

Zinc discharge will be 0.4 pounds per year at a mean concentration of 0.015 mg/l. In-stream concentration will be 0.008 mg/l. The U.S. EPA Acute Toxicity Level for zinc is 0.618 mg/l, and the Threshold Effect Level is 1.3 mg/l.

Oil and grease discharge will be 4.7 pounds per year at a mean concentration of 0.17 mg/l. In-stream concentration for oil and grease will be 0.09 mg/l. State and federal standards state that surface waters are to be free from floating oils. Floating oils will be effectively captured in the swales and detention basins and will not be evident in the receiving waters during normal operations.

The Chemical Oxygen Demand will discharge 481.7 pounds per year at a mean concentration of 18.0 mg/l. In-stream concentration will be 9.4 mg/l. The dissolve oxygen concentration of cold water streams typically falls within the range of 6 to 8.5 mg/l. A depression of the dissolved oxygen level in the stream may be realized for a short duration after a wet weather event. The continuous flow of Tributary 4 will replace the oxygen debt over a short period of time, typically less than 24 hours after a mean storm event. The aquatic resources of this tributary are of marginal quality supporting mostly tolerant aquatic species capable of tolerating this short-term oxygen depression.

Mitchell Creek

Nitrate and nitrite will be discharged at 8.4 pounds per year at a mean concentration of 0.13 mg/l. In-stream concentration will be 0.002 mg/l. The U.S. EPA water quality standard is 10 mg/l, far higher than the predicted concentration.

Total Kjeldahl nitrogen will be 19.3 pounds per year at a mean concentration of 0.29 mg/l. In-stream concentration will be 0.005 mg/l. There are no state or federal standards for total Kjeldahl nitrogen; however, the concentration is low relative to levels routinely found in lakes and streams.

Total phosphorus will be 3.4 pounds per year at a mean concentration of 0.051 mg/l. In-stream concentration will be 0.0009 mg/l, far below the U.S. EPA and Michigan water quality standard of 1.0 mg/l.

Lead discharge will be 0.3 pounds per year at a mean concentration of 0.005 mg/l. In-stream concentration will be 0.0001 mg/l. These data fall well below the U.S. EPA Acute Toxicity Level for lead of 0.223 mg/l and the Threshold Effect Level of 0.950 mg/l.

Copper discharge will be 0.2 pounds per year at a mean concentration of 0.003 mg/l. In-stream concentration will be 0.0001 mg/l. The U.S. EPA Acute Toxicity Level for copper is 0.037 mg/l, and the Threshold Effect Level is 0.09 mg/l.

Zinc discharge will be 0.9 pounds per year at a mean concentration of 0.014 mg/l. In-stream concentration will be 0.0002 mg/l. The U.S. EPA Acute Toxicity Level for zinc is 0.618 mg/l, and the Threshold Effect Level is 1.3 mg/l.

Oil and grease discharge will be 11.6 pounds per year at a mean concentration of 0.174 mg/l. In-stream concentration for oil and grease will be 0.003 mg/l. State and federal standards state that surface waters are to be free from floating oils. Floating oils will be effectively captured in the swales and detention basins and will not be evident in the receiving waters during normal operations.

The Chemical Oxygen Demand will discharge 1199 pounds per year at a mean concentration of 18.0 mg/l. In-stream concentration will be 0.32 mg/l. The dissolve oxygen concentration of cold water streams typically falls within the range of 6 to 8.5 mg/l. This is a rather insignificant loading to the stream that will have no impact on dissolved oxygen.

APPENDIX B-4

CONCEPTUAL WETLAND MITIGATION PLAN/WETLAND FINDING

Appendix B-4 CONCEPTUAL WETLAND MITIGATION PLAN

The Recommended Alternative will directly impact a total of 2.0 hectares (4.9 acres) of existing forested, scrub-shrub, and emergent wetland. Practically all of this wetland impact will occur in the Boardman River Watershed, and primarily within the Boardman River valley. Of the total wetland area directly affected, 23 square meters or 0.004 hectare (250 square feet or 0.01 acre) of wetland will be displaced in the Mitchell Creek Watershed along the edge of Mitchell Creek. This impact will result from extending the length of an existing culvert to widen Three Mile Road, located approximately 198 meters (650 feet) south of South Airport Road.

A permit from the Michigan Department of Environmental Quality (MDEQ) will be required to disturb wetlands for this project. The Natural Resources and Environmental Protection Act (Act 451 of 1994) Part 303 - Wetland Protection stipulates that a permit is needed to place fill material in a wetland; remove soil or minerals from a wetland; construct, operate, or maintain any use or development in a wetland; or drain surface water from a wetland. During the permit process, the permit applicant must demonstrate that the proposed wetland impact is in the public interest and that no feasible and prudent alternative exists. Assuming that these requirements are met, the MDEQ is likely to require the applicant to identify measures to mitigate the wetland impact. Such measures include avoiding wetland impacts wherever possible, minimizing adverse impacts from construction and operation, and creating new wetlands to compensate for unavoidable wetland losses.

Wetland Mitigation Type and Quantity

It is expected that the federal and state regulatory agencies will require a mitigation ratio of 1.5:1 for emergent and scrub-shrub wetlands and 2:1 for forested wetlands directly impacted by the project. Table B-1 indicates the type and amount of wetland potentially impacted by the Recommended Alternative and the wetland mitigation types and quantities proposed.

**Table B-1
Wetland Impacts and Mitigation Proposed**

Wetland Type	Impacts hectares* (acres)	Mitigation Proposed hectares* (acres)
Forested	1.7 (4.3)	3.5 (8.6)
Scrub-Shrub	0.2 (0.6)	0.4 (0.9)
Emergent	0.004 (0.01)	0.006 (0.02)
TOTAL	2.0 (4.9)	3.8 (9.5)

* Hectares rounded to the nearest tenth except for emergent.

Wetland Mitigation Site Selection and Availability

Wetland mitigation is usually in the form of restoring wetlands in areas that were previously drained for agriculture or in creating new wetlands in existing upland areas that have a readily-accessible source of

surface water or groundwater. The proposed mitigation for the Recommended Alternative will involve creating new wetlands in existing upland areas.

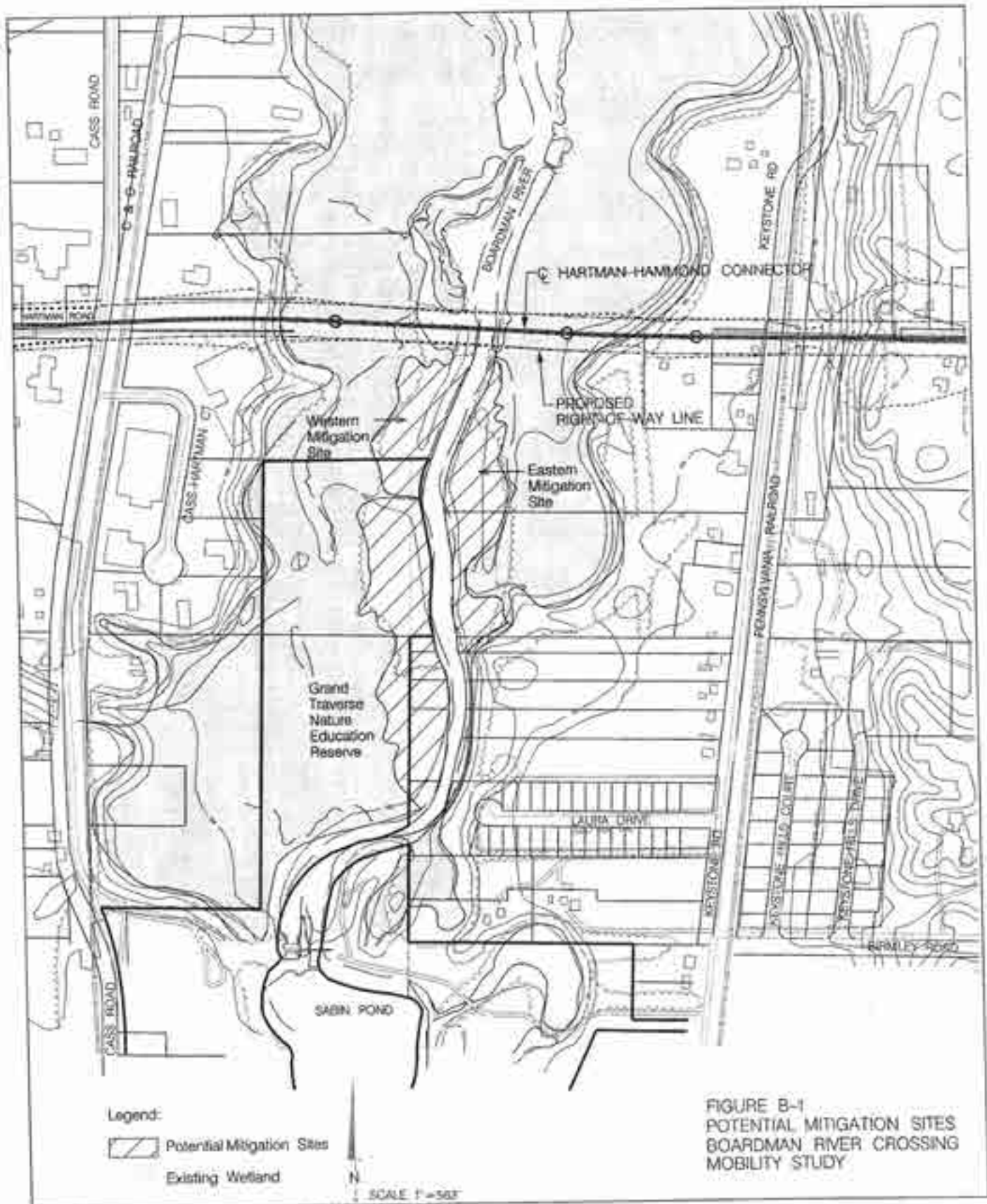
Two potential wetland mitigation sites have been identified in the Boardman River valley immediately upstream from the proposed Hartman-Hammond Connector bridge (as shown in Figure B-1). Both of these upland sites have been cleared and farmed in the past. The site west of the river includes portions of eight parcels of land. The largest parcel is part of the Grand Traverse Nature Education Reserve, managed by the Grand Traverse County Parks and Recreation Department. The western site could potentially accommodate the entire 3.8 hectares (9.5 acres) of wetland mitigation. The eastern site encompasses portions of two parcels and could potentially accommodate approximately 1.3 hectares (3.1 acres) of wetland mitigation. Berms, consisting of river dredge spoils, parallel the river in this area and separate the potential wetland construction zones from the river's edge. These potential mitigation sites offer the following advantages for wetland mitigation:

- both sites are located in the same watershed as the majority of wetlands to be impacted (i.e., the Boardman River Watershed);
- both sites are adjacent to most of the wetlands that will be impacted (i.e., in the Boardman River valley);
- the size of the western site is likely to allow all of the wetland mitigation requirements of the project to be consolidated in a single location; however, the nearby eastern site could be used if future mitigation site analysis determines that a portion of the western site is unavailable or unsuitable for mitigation construction; and
- wetland mitigation at these sites is compatible with adjacent land uses. Wetland mitigation will enhance the variety of wildlife habitats within the Boardman River valley and provide opportunities for environmental education to complement existing activities in the Grand Traverse Nature Education Reserve. The steep forested slopes next to the mitigation areas provide a good buffer from development above the valley, including the industrial park on Cass Road.

During field review, no threatened or endangered species or associated habitat were identified at the sites being considered for wetland mitigation. Review of the Michigan Natural Features Inventory database indicates that there are no known occurrences of threatened or endangered species in the project area. Similarly, no land in the project area is enrolled under Part 361, Farmland and Open Space Preservation, of the Natural Resources and Environment Protection Act.

It is unlikely that there are any cultural resources located at these sites. However, no cultural resources surveys have been conducted in this area. Coordination with the State Historic Preservation Office will be conducted to determine if surveys of this area are required.

A preliminary review of the wetland mitigation site on the western side of the river was conducted by U.S. Environmental Protection Agency (EPA) and MDEQ representatives during the Section 404 Agency Concurrence field review meetings held on May 20, 1998 and September 24, 1999. The field meetings concluded that this area is generally acceptable to the U.S. EPA and the MDEQ; however, groundwater monitoring and wetland delineation within the site was recommended to determine the



presence of any small areas of existing wetland. A minimum 15-meter (50-foot) buffer will be required between the proposed road right-of-way and the wetland mitigation area.

As noted above, the potential wetland mitigation site on the western side of the river is partially located within the recently expanded Grand Traverse Nature Education Reserve and along the planned Boardman Riverwalk trail. The Grand Traverse County Road Commission (GTCRC) has had preliminary discussions with the Grand Traverse County Parks and Recreation Department about using this site for wetland mitigation; the Parks and Recreation Department Director has expressed a willingness to continue discussions for accommodating wetland mitigation on their property. Wetland creation in this area provides an opportunity to enhance the Reserve with additional wetland resources and the proposed trail will be integrated into the wetland mitigation design. The GTCRC will need to acquire other property within the valley to complete the wetland mitigation. Official negotiations with the various owners of privately held parcels potentially affected by the wetland mitigation have not occurred to date. The GTCRC has expressed an interest in donating any property it acquires for wetland mitigation to the Grand Traverse Nature Education Reserve after all of the wetland permit conditions have been met.

Conceptual Wetland Mitigation Design

Assuming that the mitigation sites are available, wetland conditions will be created through soil excavation, which will trap surface water and allow greater contact with the existing water table. The wetland mitigation area will be designed to provide in-kind replacement of habitats that will be impacted by the project (Figures B-2 and B-3). Grading within the mitigation area will create saturated soils and seasonally-flooded conditions and replicate the mound and pool topography typical of forested wetlands. Wetland topsoil displaced during road construction could be placed in the wetland mitigation areas to provide additional organic material and a wetland plant seed source. At a minimum, the wetland mitigation site(s) will be designed so that slopes within the wetland will not exceed 10:1, and water depths will not exceed 0.6 meters (2 feet) in accordance with U.S. Fish and Wildlife Service (FWS) requirements provided in their review of the Draft Environmental Impact Statement (Draft EIS) (see Section 7 of the Final EIS).

The existing spoil piles between the river and proposed wetland mitigation zones are likely to be lowered to provide a more natural transition between the river and former floodplain. A hiking trail is proposed to be located on the re-graded spoils to provide pedestrian access to the wetland mitigation area and expand upon the trails in the Grand Traverse Nature Education Reserve.

Wetland mitigation will be done in advance of, or at a minimum concurrent with, project construction to the extent practicable. Actions that are considered to be part of the wetland mitigation implementation process include conducting negotiations to acquire property or rights to develop property for wetland mitigation, performing topographic surveys, and conducting on-site activities such as surveying wetland boundaries and obtaining soil borings, and preparing hydrologic studies.

Monitoring Wetland Mitigation

A plan to monitor the development of the wetland mitigation area will be prepared in accordance with agency requirements. The frequency and duration of monitoring will be determined during the MDEQ permit process. The U.S. FWS has indicated in its review comments that the monitoring period will be

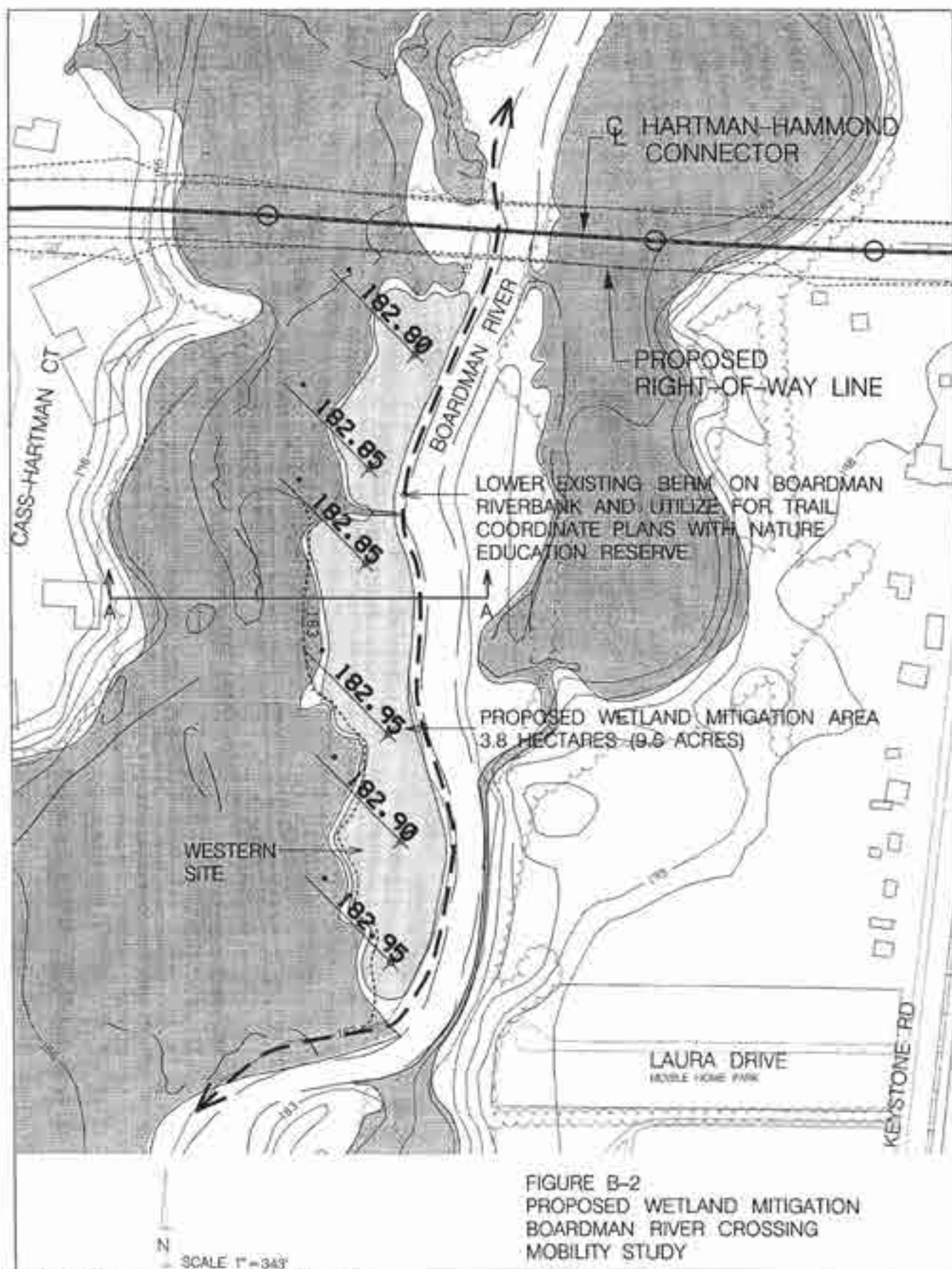


FIGURE B-2
 PROPOSED WETLAND MITIGATION
 BOARDMAN RIVER CROSSING
 MOBILITY STUDY

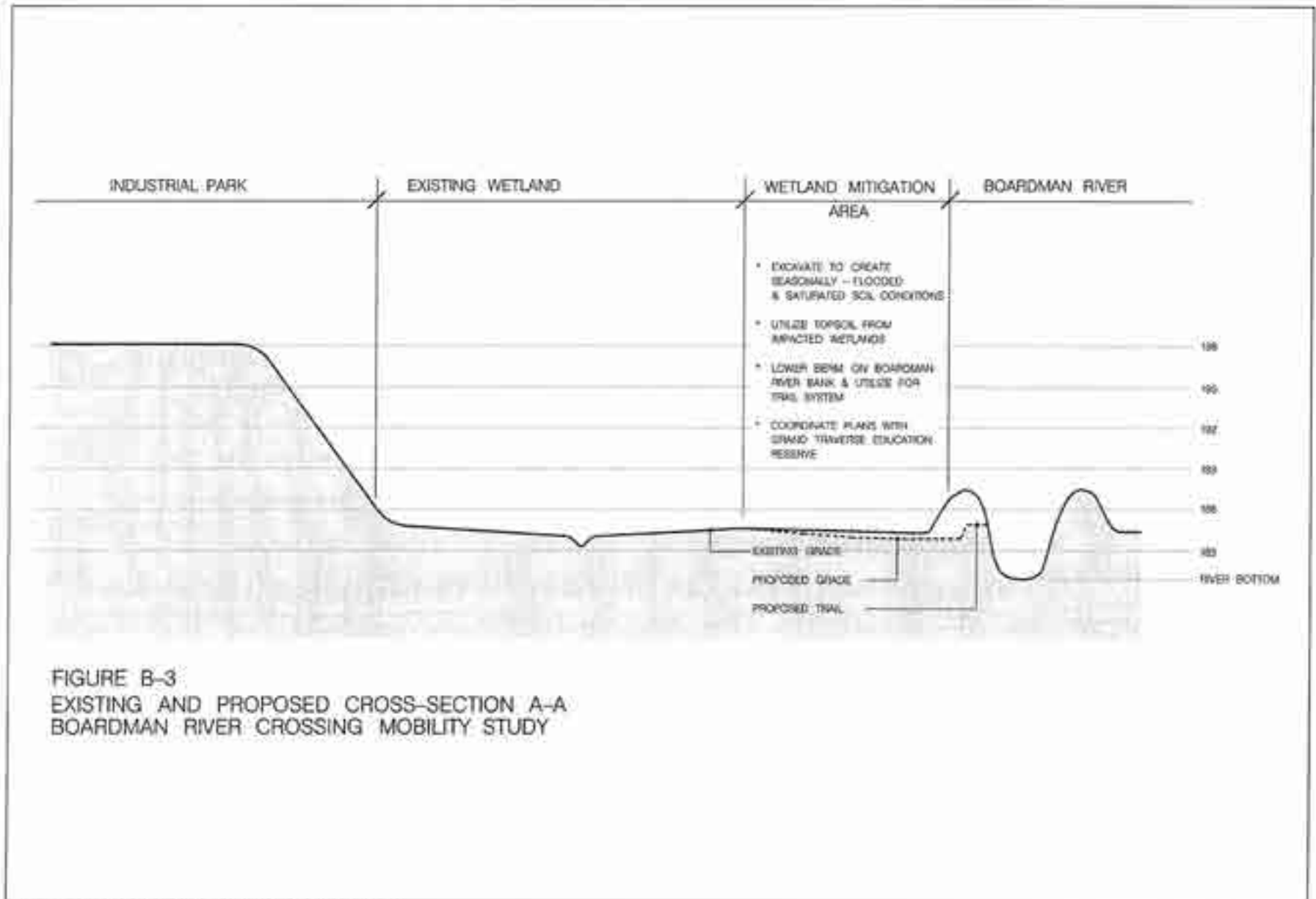


FIGURE B-3
EXISTING AND PROPOSED CROSS-SECTION A-A
BOARDMAN RIVER CROSSING MOBILITY STUDY

six years for emergent wetlands and ten years for forested wetlands. The monitoring plan will include measurable performance criteria that can be used to evaluate the success of the wetland mitigation effort. Examples of measurable criteria include hydrology, vegetation density and diversity, and predominance of hydrophytic vegetation (i.e., obligate, facultative wetland, and facultative species). Performance criteria will be developed and reviewed by appropriate regulatory agencies as part of the permit process. The final wetland mitigation design and construction plan preparation will influence the selection of criteria. Annual reports will be prepared to summarize the results of the wetland monitoring effort and submitted for agency review until permit conditions are met. The procedures that may be used to monitor the wetland mitigation area are described in more detail below.

- **Hydrology:** Groundwater monitoring wells will be installed at the mitigation site(s). Readings will be taken from these wells in spring and fall to document the hydrological regime.
- **Vegetation:** Vegetation monitoring will consist of establishing permanent representative transects and recording vegetation in square meter plots located at regular 15-meter (50-foot) intervals along the transects. It is expected that a single vegetation sampling event will occur in mid- to late summer each year. Parameters that will be recorded include total percent coverage of plants, relative frequency of each species, average water depth, and wetland indicator designation for each species (i.e., obligate, facultative wetland, and facultative species). Average percent coverage and average wetland indicator designation will be compared to the success criteria. Each plot will be photographed from the same position during each year to provide a photographic record of the wetland's development.
- **Wildlife:** Wildlife use will be assessed using both direct and indirect observations. Species encountered, quantity, and activity observed will be recorded during each field review.

The monitoring plan will include measures to correct or improve biological productivity in the event that the mitigation wetland is not developing as anticipated. Corrective measures may include supplemental seeding and planting, re-grading and vegetation management. The monitoring plan will also include measures to control the establishment of exotic and invasive species such as purple loosestrife, common buckthorn, and reed canary grass. Control measures will include establishing a dense cover of vegetation as soon as possible after construction is complete, hand weeding, and application of herbicides that have been approved for use in wetland environments. The wetland mitigation area will be protected in perpetuity through a conservation easement that will be recorded as a deed restriction as soon as possible after the mitigation site(s) have been secured.

The Wetland Finding prepared in accordance with Executive Order 11990 for this project is attached.

DEPARTMENT OF TRANSPORTATION
Federal Highway Administration
E.O. 11990 - Wetland Finding
FHWA-MI-EIS 99-01-F

This statement sets forth the basis for a finding that there is no practical alternative for construction in wetlands for the proposed Hartman-Hammond Road Connector and the widening of Three Mile Road, Grand Traverse County, Michigan; and that all practical measures to minimize harm to the wetland will be taken. This finding is made in accordance with Executive Order 11990, on the Protection of Wetlands, dated May 24, 1977.

DESCRIPTION OF PROJECT

As described in EIS 99-01-F, the recommended alternative for the proposed project consists of a new Boardman River crossing, a new roadway connecting Hartman Road to U.S. 31/M-37, and widening of segments of Hartman Road, Hammond Road, and Three Mile Road. This alternative will replace the transportation service provided by the existing Cass Road Bridge and will improve east-west mobility in the project area.

DESCRIPTION OF WETLANDS AFFECTED

Affected wetlands consist of 2.0 hectares (4.9 acres) which includes 1.7 hectares (4.3 acres) of forested, 0.2 hectares (0.6 acres) of scrub-shrub and 0.004 hectares (0.01 acres) of emergent wetlands. The majority of wetlands that will be impacted are located in the Boardman River Watershed, and primarily within the Boardman River valley. Of the total wetland area directly affected, 0.004 hectare (0.01 acre) of emergent wetland will be displaced in the Mitchell Creek Watershed along the edge of Mitchell Creek. The affected wetlands provide important wetland functions including water quality benefits, wildlife habitat, and groundwater discharge. The 2.0 hectares (4.9 acres) of impacted wetland will be unavoidably impacted by the proposed project.

MEASURES TO MINIMIZE HARM

As indicated above, the recommended alternative impacts a total of 2.0 hectares (4.9 acres) of wetland in the Boardman River watershed and the Mitchell Creek Watershed. Wetland mitigation will consist of the creation of 3.8 hectares (9.5 acres) of wetlands which will include 3.5 hectares (8.6 acres) of forested, 0.4 hectare (0.9 acres) of scrub-shrub, and 0.006 hectare (0.02 acres) of emergent wetlands.

Two wetland mitigation sites have been identified in the Boardman River valley immediately upstream from the proposed Hartman-Hammond Bridge. Both of these upland sites have been cleared and farmed in the past. The site west of the river includes portions of eight parcels of land. The largest parcel is part of the Grand Traverse Nature Education Reserve. This western site could potentially accommodate the entire 3.8 hectares (9.5 acres) of wetland mitigation; while the eastern site located on the east side of the river could potentially accommodate approximately 1.3 hectares (3.1 acres) of wetlands for mitigation.

Both of these sites are located in the same watershed as the majority of wetlands to be impacted. The sites are also compatible with adjacent land uses. Wetland mitigation on these two sites will enhance the variety of wildlife habitats within the Boardman River valley and provide additional educational opportunities in the Grand Traverse Nature Education Reserve. The wetland site(s) will be designed for the creation of forest, scrub-shrub and emergent wetland.

COORDINATION AND PUBLIC INVOLVEMENT

This project has been coordinated with representatives of the Michigan Department of Environmental Quality, the U.S. Fish and Wildlife Service, U.S. Environmental Protection Agency, and the U.S. Army Corp of Engineers. A public hearing was held for the draft environmental impact statement on June 28, 1999. A wetland permit will be submitted after a Record of Decision has been issued.

CONCLUSION

Based on the above considerations, it is determined that there is no practical alternative to the proposed new construction in the wetlands and that the proposed action includes all practical measures to minimize harm to wetlands which may result from such use.

APPENDIX B-5

CONCEPTUAL RELOCATION PLAN

Appendix B-5

CONCEPTUAL RELOCATION PLAN

General Area and Project Information

The proposed project consists of roadway improvements intended to replace the existing Cass Road Bridge and to improve east-west mobility across the Boardman River in Grand Traverse County. The project area is bounded by U.S. Route 31/M-72 on the north; Five Mile Road on the east; Beimer Road on the south; and U.S. Route 31/M-37 on the west.

There are two alternatives discussed in this document: the No-Build Alternative and the Recommended Alternative. The Recommended Alternative includes construction of the Hartman-Hammond Road Connector with a four-lane cross section between U.S. Route 31/M-37 and LaFranier Road and the widening of Three Mile Road to four/five lanes between South Airport Road and U.S. Route 31/M-72. The No-Build Alternative includes no action for improvements and routine maintenance. There would be no displacements with the No-Build Alternative.

Hartman Hammond Connector (with four-lane boulevard cross section)

Potential Displacements: 17 residential and 1 business

Along the Hartman-Hammond Connector, 17 residences will be displaced. One of these residences includes a home-based business called Greiger's Archery, Crafts and Ceramics.

Three Mile Road Widening

Potential Displacements: 3 residential and 1 business

Three residences will be displaced along Three Mile Road. Great Lakes Submarine located near the southeast corner of the Three Mile Road and U.S. Route 31/M-72 intersection will also be displaced.

Displacement Effects/Analysis

An analysis of project area information, along with visual observation and contact with local officials, indicates that the residential displacements will include a small percentage of minorities and senior citizens. Most of the displacees will be in the middle income bracket.

There will be very little disruptive effect to the community due to separation of residences from community facilities or neighborhoods. It appears that parking loss can be replaced on nearby underutilized land.

Availability of Residential and Commercial Property

A. Residential. A review of the housing market in Garfield Township and the adjacent Blair Township indicated sufficient replacement homes available on the market. This data, coupled with an adequate relocation time of between 18 and 24 months, should assure an efficient and complete relocation of all displacees.

B. Commercial. The Recommended Alternative will displace several business signs of varying size and type; frontage landscaping will also be impacted. All displaced businesses and residences will be provided with relocation assistance and services. In the event that business owners may wish to locate in another area, there appears to be an ample supply of commercial property.

C. Assurances. All eligible businesses and residents located on the project will be provided with relocation and assistance services in accordance with the Michigan Department of Transportation's Relocation Assistance Program. The program is realistic and will provide orderly, timely and efficient relocation of the displacees on this project.

Prepared by:
Date: 12/5/00

Anthony S. Pakeltis
Anthony S. Pakeltis, AICP
Transportation Planner

Approved by:
Date: 11/30/00

Michael K. Dillenbeck
Michael K. Dillenbeck, P.E. - Manager
Grand Traverse County Road Commission

Approved by:
Date: 12/14/00

Mary Benko
Mary Benko - Acquisitions - Relocation Specialist
Michigan Department of Transportation

AGENCY COORDINATION

Appendix C

AGENCY COORDINATION

Number

- C-1 Federal Agencies
 - C-1A Federal Energy Regulatory Commission
 - C-1B National Geodetic Survey
 - C-1C U.S. Army, Detroit District, Corps of Engineers
 - C-1D U.S. Department of Agriculture, Forest Service
 - C-1E U.S. Department of Health and Human Services, Public Health Service
 - C-1F U.S. Department of the Interior, Fish and Wildlife Service
 - C-1G U.S. Department of Transportation, Federal Aviation Administration
 - C-1H U.S. Environmental Protection Agency

- C-2 State Agencies
 - C-2A Michigan Department of Agriculture
 - C-2B Michigan Departments of Environmental Quality and Natural Resources
 - C-2C State Historic Preservation Office

- C-3 Additional Agencies
 - C-3A Acme Township
 - C-3B City of Traverse City
 - C-3C Grand Traverse County Parks and Recreation Department
 - C-3D Michigan United Conservation Clubs

APPENDIX C-1

FEDERAL AGENCIES



FEDERAL ENERGY REGULATORY COMMISSION

CHICAGO REGIONAL OFFICE
230 SOUTH DEARBORN STREET, ROOM 3130
CHICAGO, ILLINOIS 60604

In reply refer to:
D2SI-OHL-CRO
Project Nos. 2979 and 2980
NATDAM Nos. MI00512 and
MI00513

September 16, 1996

Mr. Mark Peterson
De Leuw, Cather & Co.
525 West Monroe, 10th Floor
Chicago, IL 60661

Dear Mr. Peterson,

I am responding to your September 9, 1996 FAX to Ms. Peggy Ann Jaramillo of my staff. The FAX was regarding the construction of the Hartman/Hammond Road bridge over the Boardman River between the Boardman Project No. 2979 and Sabin Project No. 2980 dams.

You indicated in your FAX that you would like to know the extent of FERC involvement in the project. Both the Boardman and Sabin projects have a license exemption. As such, we will not be involved in the review of plans and specifications. Since the bridge will affect the hydraulic routings in the vicinity of both dams, we would appreciate a brief sketch of the bridge including elevations and dimensions for our files.

Regarding the hydraulic affects, the Boardman project currently can pass 9,070 cfs. The project inflow design flood is the Probable Maximum Flood (PMF) which means that we will require the dam owner to make the necessary modifications to pass this flooding event. We are currently reviewing the results of two PMF studies which estimate the PMF as between 10,000 cfs and 13,400 cfs. Therefore, consideration should be given in your design, if appropriate, to the possibility of the dam being modified in the near future to pass the PMF.

If we can be of further assistance, please call me.

Sincerely,

A handwritten signature in cursive script, reading "Ronald A. Lesniak".

Ronald A. Lesniak, P.E.
Regional Director

cc: Roger Strouse
Traverse City Light and Power

MEMORANDUM FOR: Susan B. Fruchter
Acting NEPA Coordinator

FROM: Charles W. Challstrom
Acting Director, National Geodetic Survey

SUBJECT: DEIS-9907-05- Boardman River Crossing Mobility Study Grand
Traverse County, Michigan

The subject statement has been reviewed within the areas of the National Geodetic Survey's (NGS) responsibility and expertise and in terms of the impact of the proposed actions on NGS activities and projects.

All available geodetic control information about horizontal and vertical geodetic control monuments in the subject area is contained on the NGS home page at the following Internet World Wide Web address: <http://www.ngs.noaa.gov>. After entering the NGS home page, please access the topic "Products and Services" and then access the menu item "Data Sheet." This menu item will allow you to directly access geodetic control monument information from the NGS data base for the subject area project. This information should be reviewed for identifying the location and designation of any geodetic control monuments that may be affected by the proposed project.

If there are any planned activities which will disturb or destroy these monuments, NGS requires not less than 90 days' notification in advance of such activities in order to plan for their relocation. NGS recommends that funding for this project includes the cost of any relocation(s) required.

For further information about these monuments, please contact Rick Yorczyk; SSMC3, NOAA, N/NGS; 1315 East West Highway; Silver Spring, Maryland 20910; telephone: 301-713-3230 x142; fax: 301-713-4175.

DEPARTMENT OF THE ARMY
DETROIT DISTRICT, CORPS OF ENGINEERS
BOX 1027
DETROIT, MICHIGAN 48231-1027

July 14, 1998

IN REPLY REFER TO:

Construction-Operations Division
Regulatory Branch
File No. 98-228-001-0A

James A. Kirschensteiner
Environmental Programs & Field Operation
Region 5, Michigan Division
Federal Highway Administration
315 West Allegan Street, Room 207
Lansing, Michigan 48933

Dear Mr. Kirschensteiner:

Reference the proposed replacement of the Cass Road Bridge across the Boardman River located south of Traverse City, T:7N, R11W, Section 34, Grand Traverse County, Michigan. In addition, reference your letter dated June 17, 1998 requesting Corps of Engineer's (COE) concurrence on the first concurrence point: Purpose and Need.

As a result of the transfer of a portion of the COE's regulatory responsibilities to the Michigan Department of Environmental Quality (MDEQ), the proposed crossing of the Boardman River is no longer within COE jurisdiction. However, the COE does provide comments to proposed MDEQ permits.

The purpose of the proposed study is to address future east-west mobility needs across the Boardman River and to correct existing transportation deficiencies resulting from the Cass Road Bridge. This bridge currently accommodates only one lane of travel. From information supplied from JJR Incorporated (Conference Report dated May 28, 1998 regarding a Section 404 Concurrence Meeting in Traverse City on May 20, 1998), six (6) alternatives are being considered. The alternatives include:

1. No build. Utilize a mix of traffic management alternatives.
2. Widen Beitner and Keystone Roads, including a widened Beitner Bridge.
3. Connect a realigned Hartman Road to the existing Hammond Road, including construction of a new bridge.

4. Widen the Cass Road Bridge with a mix of traffic management alternatives.

5. Build a Traverse City Cross-Town route.

6. Construct a boulevard along the eastern portion of South Airport Road.

Pursuant to the March 1994 Concurrent NEPA/404 Processes for Transportation Projects, the COE agrees to the first concurrence point, that of Purpose and Need for the study to address future east-west mobility needs across the Boardman River and to correct existing transportation deficiencies resulting from the Cass Road Bridge. The COE's concurrence only indicates that the information developed to date is adequate to proceed to the next planning stage: Alternatives to be Carried Forward for Detailed Study. COE concurrence does not imply immediate concurrence with project goals, most notably Goal No. 4. "Existing quality of life in Traverse City area" is not defined nor is the COE familiar with the recommendations provided by the Grand Traverse Bay Region Development Guidebook. COE concurrence does not indicate that the proposed project should be built, or that implementation of the "No Build" option is precluded. Also, our comments do not preclude separate evaluation and comments when reviewing any forthcoming NEPA statement and permit applications.

Thank you for the opportunity to provide our comments. Should you have any questions, please contact William T. Kendall, Project Manager, at the above address or telephone (313) 226-7718. Please refer to File Number 98-228-001-0A.

Sincerely,

ORIGINAL SIGNED BY

Gary R. Mannesto
Chief, Regulatory Branch
Construction-Operations Division

Copy Furnished

L. Noblet, MDOT ✓
J. Arevalo, MDEQ - Gaylord

DEPARTMENT OF THE ARMY
DETROIT DISTRICT, CORPS OF ENGINEERS
BOX 1027
DETROIT, MICHIGAN 48231-1027

August 23, 1999

IN REPLY REFER TO

Construction-Operations Division
Regulatory Branch
File No. 98-228-001-0

James A. Kirschensteiner
Environmental Programs & Field Operation
Federal Highway Administration
Region 5, Michigan Division
315 W Allegan St Rm 211
Lansing, Michigan 48933

Dear Mr. Kirschensteiner:

Reference the Draft Environmental Impact Statement (DEIS) for the Boardman River Crossing Mobility Study, Grand Traverse County, Michigan dated May, 1999. You have requested comments to the DEIS and concurrence regarding the second NEPA/Section 404 concurrence point "Alternatives Carried Forward".

The primary purpose of the project is to replace transportation service provided by the structurally deficient Cass Road bridge over the Boardman River, located south of Traverse City. The project should also improve east-west traffic patterns. The DEIS discusses numerous alternatives that were reviewed and rejected because they didn't meet stated objectives. Four alternatives were subsequently examined in more detail. The alternatives are:

No-Build Alternative
Transportation System Management (TSM) Alternative
South Airport Road Widening with Three Mile Road Widening
and Four Mile Road Reconstruction
Hartman-Hammond Connector with Three Mile Road Widening and
Four Mile Road Reconstruction

A recommended alternative was not identified in the DEIS.

The Corps of Engineers (COE) has the following comments:

1. The DEIS indicates that the No-Build and the TSM Alternatives would not affect wetlands. The South Airport Road Widening Alternative could potentially affect 0.2 acre of riverine wetland while the Hartman-Hammond Connector Alternative could potentially affect 4.2 acres of forested wetland and 0.6

acre of scrub-shrub wetland. Should a Build Alternative be chosen, it appears that the South Airport Road Alternative is the least damaging regarding wetland impacts. Mitigation will be required for adverse impacts to wetlands. Also from the DEIS, it appears that the South Airport Road Alternative involves less adverse impacts to high quality surface waters and aquatic resources.

2. The COE is concerned about cumulative impacts should the Hartman-Hammond Connector be built. This corridor is less developed than the South Airport Road corridor. The proposed Hartman-Hammond Connector will cross more wetlands, leaving fragmented wetlands along the roadway ripe for requests for development. Requests for roadside development is inevitable and these cumulative impacts to wetlands, waters, and aquatic resources need to be addressed further in the Final EIS.

3. Appendix B-4 of the DEIS provides a "Potential Wetland Mitigation" plan. The plan needs more detail. The plan must specify what wetland functions and values are to be replaced and/or created and how this will be accomplished and monitored. Success criteria must be specified. The mitigation areas must be preserved in perpetuity through an enforceable conservation easement and/or deed restriction.

4. Please be aware that any construction or improvements to Three or Four Mile Roads near Lake Michigan may require a permit from the COE. We remind you that the discharge of fill material in waters of the U.S., including wetlands, or other work waterward of the Ordinary High Water Mark (OHWM) will require authorization from our office. The OHWM for Lake Michigan is 581.5' International Great Lakes Datum referenced 1985 (IGLD-1985). The COE also has jurisdiction over wetlands that lie adjacent to waters of the U.S., regardless of elevation. Wetlands within COE jurisdiction do lie south of US-31/M-72. The Traverse Area Recreational Trail (TART) referenced in the DEIS required a permit from the COE (COE Permit 89-056-060-2).

The COE concurs with the selection of alternatives carried forward for detailed analysis. This concurrence only indicates that the information developed to date is adequate enough to proceed to the next planning stage. This concurrence does not indicate that the COE believes that a Build Alternative should be selected or that the No-Build or TSM Alternative options are precluded. Also, our comments do not preclude separate evaluation and comments when reviewing any forthcoming NEPA statement and permit applications.

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Thank you for the opportunity to provide our comments.
Should you have any questions, please contact William T. Kendall
at the above address or telephone (313) 226-7718. Please refer
to File Number 98-228-001-0.

Sincerely,

ORIGINAL SIGNED BY

Gary R. Mannesto
Chief, Regulatory Branch
Construction-Operations Division

Copy furnished

M. Dillenbeck, Grand Traverse Co. Road Commission ✓
L. Noblet, MDOT
D. Domke, MDEQ



United States
Department of
Agriculture

Forest
Service

Washington
Office

14th & Independence SW
P. O. Box 96090
Washington, DC 20090-6090

File Code: 1920-1

Date: JUL 8 1999

Mr. Ronald S. Kinney
Environmental Section
Transportation Building
425 West Ottawa
Lansing, Michigan 48909

Dear Mr. Kinney:

Thank you for your May 28, 1999, letter to Secretary Glickman regarding the review of the Boardman River Crossing Mobility Study Draft Environmental Impact Statement. Your letter was forwarded to the Forest Service for response.

We do not have any comments at this time. The Natural Resources Conservation Service will forward the information to their local office for comment.

Thank you for the opportunity to comment on this project.

Sincerely,

William T. Sexton
CHRISTOPHER RISBRUDT
Director of Ecosystem Management
Coordination

Dep.





Centers for Disease Control
and Prevention (CDC)
Atlanta GA 30341-3724

July 30, 1999

Mr. James A. Kirschensteiner
Programs and Operations Engineer
Federal Highway Administration
315 W. Allegan Street, Room 211
Lansing, MI 48933

Dear Mr. Kirschensteiner:

We have completed our review of the Draft Environmental Impact Statement (DEIS) for Boardman River Crossing Mobility Study, Grand Traverse County, Michigan. We are responding on behalf of the U.S. Public Health Service, Department of Health and Human Services.

Generally, we believe this DEIS addresses our potential concerns, and we have no specific comments to offer at this time. Thank you for the opportunity to review and comment on this DEIS. Please send us a copy of the Final DEIS, and any future environmental impact statements which may indicate potential public health impact and are developed under the National Environmental Policy Act (NEPA).

Sincerely,

Kenneth W. Holt, MSEH
Chemical Demilitarization Branch (F16)
Emergency & Environmental Health Services Division
National Center for Environmental Health



BY REPLY REFER TO:

United States Department of the Interior

FISH AND WILDLIFE SERVICE

East Lansing Field Office (ES)
1405 South Harrison Road, Room 502
East Lansing, Michigan 48823

July 26, 1995

**PARSONS
DeLEUW** Chicago

JUL 31 1995

**RECEIVED
CIVIL DEPARTMENT**

Robert F. Hull
De Leuw, Cather & Company
525 West Monroe Street
Chicago, Illinois 60661-3629

Re: Cass Road Bridge Replacement, Garfield Twp., Grand Traverse County, MI

Dear Mr. Hull:

This letter is in response to your request of June 28, 1995, for information on listed and proposed endangered and threatened species and critical habitat which may be present within the area of the proposed project site. Your request and this response are made pursuant to Section 7(c) of the Endangered Species Act of 1973 (the Act), as amended.

Based on information presently available to the Fish and Wildlife Service, there are no listed or proposed species occurring within the area of the subject project. This presently precludes the need for further action on this project as required under Section 7 of the Act.

The Service advises, however, that should a species become officially listed or proposed before completion of this project, the Federal action agency for the work would be required to reevaluate its responsibilities under the Act. Further, should new information become available that indicates listed or proposed species may be present and/or affected, consultation should be initiated with the Service.

Since threatened and endangered species data is continually updated, new information pertaining to this project may become available which may modify these recommendations. Therefore, the Fish and Wildlife Service recommends your agency annually request updates to this list.

We appreciate your concern for endangered species and look forward to continued coordination with your agency. Any questions can be directed to Tom Eitniewski of this office at (517) 337-6650.

Sincerely,

Charles M. Wooley
Field Supervisor

cc: MDNR, Wildlife Division, Lansing, MI (Attn: Tom Weise)



IN REPLY REFER TO

United States Department of the Interior

FISH AND WILDLIFE SERVICE

East Lansing Field Office (ES)
2651 Coolidge Road
East Lansing, Michigan 48823

April 6, 1998

Gary Crawford
JJR Inc.
110 Miller
Ann Arbor, MI 48104

Re: Endangered Species List Request, Proposed Bridge Construction and Road Realignment,
Grand Traverse County, Michigan

Dear Mr. Crawford:

This letter is in response to your request of March 30, 1998 for information on listed and proposed endangered and threatened species and critical habitat which may be present within the area of the proposed project site. Your request and this response are made pursuant to Section 7(c) of the Endangered Species Act of 1973 (the Act), as amended.

Based on information presently available to the Fish and Wildlife Service, there are no listed or proposed species occurring within the area of the subject project. This presently precludes the need for further action on this project as required under Section 7 of the Act.

The Service advises, however, that should a species become officially listed or proposed before completion of this project, the Federal action agency for the work would be required to reevaluate its responsibilities under the Act. Further, should new information become available that indicates listed or proposed species may be present and/or affected, consultation should be initiated with the Service.

Since threatened and endangered species data is continually updated, new information pertaining to this project may become available which may modify these recommendations. Therefore, the Fish and Wildlife Service recommends your agency annually request updates to this list.

We appreciate your concern for endangered species and look forward to continued coordination with your agency. Any questions can be directed to Tom Eitniew of this office at (517) 351-6283.

Sincerely,


for Charles M. Wooley
Field Supervisor

cc: Michigan Department of Natural Resources, Wildlife Division, Lansing, MI
(Attn: Tom Weise)



IN REPLY REFER TO:

United States Department of the Interior

FISH AND WILDLIFE SERVICE

East Lansing Field Office (E5)
2651 Coolidge Road
East Lansing, Michigan 48823

August 28, 1998

Mr. James Kirschensteiner
Program and Environmental Engineer
Federal Highway Administration
315 West Allegan Street, Room 211
Lansing, Michigan 48933

Re: Request for Concurrence on the Revised Purpose and Need Statement for the Proposed Replacement of the Cass Road Bridge Across Boardman River, Traverse City, Grand Traverse County, Michigan

Dear Mr. Kirschensteiner:

The U.S. Fish and Wildlife Service (Service) has reviewed the subject document and offers the following comments relative to potential impacts of the project on fish, wildlife, and wetland resources.

These comments have been prepared under the authority of the Fish and Wildlife Coordination Act (48 Stat. 401, as amended; 16 U.S.C. 661 et. seq.) and are consistent with the U.S. Fish and Wildlife Service Mitigation Policy (46 FR 7645) and the National Environmental Policy Act (NEPA) of 1969 (P.L. 92-190; 83 Stat. 852-856) as amended. These comments do not represent the views of the U.S. Department of the Interior on any forthcoming environmental statement.

The purpose of the proposed project is to replace the transportation service that was provided by the now structurally deficient and functionally obsolete Cass road bridge over the Boardman River. The current bridge precludes large vehicles such as school buses, fire trucks and fuel delivery vehicles from crossing the bridge. The proposed project would also address east-west surface transportation flow constriction problems in the Traverse City area.

Pursuant to the March 1994 Federal Highway Administration NEPA/Section 404 Merger process, the Service agrees to the first concurrence point, that of Purpose and Need for the proposed project. The Service's concurrence only indicates that the information developed to date is adequate enough to proceed to the next planning stage: Alternatives to be Carried Forward for Detailed Study. It does not indicate that the proposed project ought to be built, or that implementation of the "No Build" alternative is precluded. Also, our comments do not preclude separate evaluation and comments when reviewing any forthcoming NEPA document and permit applications.

The opportunity to provide these comments is appreciated. Any questions can be directed to Mark Hodgkins of this office at (517) 351-6289.

Sincerely,

Mark Hodgkins

for: Charles M. Wooley
Field Supervisor

cc: Michigan Department of Transportation, Environmental Section, Lansing, MI
(Attn: Ron Kinney)
U.S. Environmental Protection Agency (B-19J), Chicago, IL
(Attn: Mike Mac Mullen)
U.S. Army Corps of Engineers, Detroit District (Attn: Gary Mannesto)

RECEIVED

ER-99/496

Mr. James J. Steele
Division Administrator
Federal Highway Administration
315 West Allegan Street, Room 211
Lansing, Michigan 48933

Dear Mr. Steele:

As requested in your letter of June 2, the U.S. Department of the Interior (Department) has reviewed the May 1999 Draft Environmental Impact Statement (DEIS) and section 4(f)/6(f) Evaluation for the Boardman River Crossing Mobility Study, Grand Traverse County, Michigan. We offer the following comments and recommendations for your consideration.

SECTION 4(f) COMMENTS

Both the South Airport Road Widening Alternative and the Three Mile Road Widening/Four Mile Road Reconstruction Alternatives would impact section 4(f) resources. However, the Hartman-Hammond Connector Alternative does not affect section 4(f) resources. Since a feasible and prudent alternative has been presented that avoids impacting section 4(f) resources, we cannot concur with the first proviso of section 4(f).

Page 6-1 of the section 4(f) evaluation states that no properties protected under section 6(f) of the Land and Water Conservation Act are within the alternative project corridors. This is incorrect. The Grand Traverse Nature Education Reserve has been funded, in part, with matching grants from the Land and Water Conservation Fund. We do agree that no proposed alternative would have an adverse effect on this facility.

ENVIRONMENTAL IMPACT STATEMENT COMMENTS

General Comments

The draft environmental impact statement (DEIS) is deficient in not including a comprehensive wetland habitat mitigation plan in sufficient detail describing how adverse wetland impacts associated with build alternatives would be offset. We recommend that the final environmental impact statement (FEIS) contain a comprehensive wetland habitat mitigation plan that addresses these concerns. Although the DEIS contains some components of a conceptual mitigation plan necessary for our review, additional elements are needed.

Specific Comments

Project Description

The DEIS states that the purpose and need of the proposed project is to replace the transportation service that was provided by the now structurally

deficient and functionally obsolete Cass Road Bridge over the Boardman River. Four alternatives are evaluated in detail:

- o No-build alternative
- o Transportation System Management Alternative
- o South Airport Road Widening with Three Mile Road
- o Hartman-Hammond Connector with Three Mile Road

The DEIS indicates that the No-Build Alternative and the Transportation System Management Alternative would not impact wetland habitats. South Airport Road Widening with Three Mile Road Widening Alternative would impact 0.1 ha (0.2 ac) of riverine wetland habitat. The Hartman-Hammond Connector with Three Mile Road Widening Alternative would impact 1.7 ha (4.2 ac) of forested wetland habitat and 0.2 ha (0.6 ac) of shrub-scrub wetland habitat.

Preferred Alternative

A recommended alternative has not been identified in the DEIS. The Fish and Wildlife Service (FWS) has advised the Department that of the two build alternatives selected for detailed evaluation in the DEIS, the South Airport Road Widening Alternative is environmentally preferable from a fish and wildlife resource standpoint as it would have substantially less overall impact to wetlands, streams, and groundwater recharge areas than the Hartman-Hammond Connector Alternative. However, the FWS has also indicated that if a build alternative is implemented, the FWS would not be opposed to selection of the Hartman-Hammond Connector Alternative, if required to meet other planning objectives, provided that a suitable compensatory mitigation plan is developed to offset all unavoidable project impacts to wetlands and other aquatic resources.

Wetland Compensatory Mitigation Plan

Appendix B-4 of the DEIS provides a discussion of potential wetland compensatory mitigation. While the information provided is good, it would benefit from more detail. In order to expedite project planning, we recommend that a more comprehensive wetland habitat mitigation plan be developed and included in the FEIS. In addition to the mitigation elements described in the DEIS, the plan should include, but not be limited to, the following elements:

- o More detail in the identification and characterization of wetland habitat that would be impacted by the proposed action, particularly the functions, values, and soil types of the wetlands.
- o A commitment that wetland habitat mitigation would be located within the watershed of impact and in-kind, to the extent practicable. Out-of-kind mitigation would be acceptable if designed to replace ecologically important habitat types that have been lost from the area at disproportionately high rates.
- o A commitment that wetland mitigation would not be fragmented but rather consolidated into a few plots.
- o A commitment to utilize prior converted historical wetland areas or land with a water table near the surface to the maximum extent possible.

- o A commitment to ensure that wetland mitigation sites are compatible with adjacent land uses.
- o A commitment that mitigation site plans include a 30 m (50 ft) buffer zone for boundaries not adjacent to existing wetlands.
- o A commitment that created wetlands have slopes of no more than 1 on 10 with water depths not to exceed 0.6 m (2 ft).
- o A plan to control the establishment of undesirable exotic and invasive plant species such as purple loosestrife (*Lythrum salicaria*), common buckthorn (*Rhamnus cathartica*), and reed grass (*Phragmites australis*).
- o A plan, with performance criteria, to monitor the progress and verify success of the wetland habitat mitigation following construction for a period of six years for emergent and scrub/shrub wetlands and ten years for forested wetlands. The plan would include a monitoring protocol and a timetable for the habitat monitoring that includes the time of year and the frequency of sampling. Annual monitoring reports would be submitted to the (FWS) and the Michigan Department of Environmental Quality (MDEQ). Termination of monitoring after the 6 year/10 year period would be contingent upon MDEQ and FWS concurrence that the wetland mitigation site exhibits a strong likelihood of successful replacement of the impacted wetland habitat's functions and values.
- o A plan to implement appropriate measures for correcting or improving the biological productivity of the wetland mitigation habitats in the event that performance criteria are not met, for the duration of the monitoring period. This would include planting desirable hydrophytic vegetation, controlling exotic and invasive plant species, and implementing other measures, as necessary, to achieve successful mitigation.
- o A commitment to protect, in perpetuity, the wetland habitat mitigation area(s) by a full conservation easement recorded as a deed restriction and to execute the conservation easement(s) as soon as possible after mitigation sites are secured.
- o A commitment that mitigation be carried out in advance of project construction to the extent practicable.
- o A commitment that a revised conceptual wetland mitigation plan would be made available for review and comment by the FWS and other interested parties at least 45 days before the preparation of the Final EIS is to be completed.

NEPA/SECTION 404 MERGING COMMENTS

In a letter of June 2, the Federal Highway Administration asked the FWS for concurrence on the second concurrence point, that of "alternatives carried forward for more study," pursuant to the March 1994 Federal Highway Administration NEPA/section 404 Merging Process. The FWS concurs with the selection of the alternatives carried forward for detailed analysis but notes that this concurrence only indicates that the information developed to date is adequate enough to proceed to the next planning stage. It does not indicate

FWS believes that a build alternative should be selected for construction or that implementation of the "No Build" option is precluded.

Although there is some evidence of discussion of alternatives in the spring of 1998, we are not aware of any official request for the FWS concurrence prior to the June 2 letter. Requesting concurrence on this second point after the DEIS has been published seems to be us to be much too late in the planning process. Such a request should have been provided in time for the response to be considered and any necessary changes made prior to the completion of the DEIS.

ENDANGERED SPECIES ACT COMMENTS

The FWS has determined that there are presently no records of Federally listed threatened, endangered, proposed, or candidate species in the project area. However, the absence of records for any Federally listed species does not rule out the presence of such species. If the project is modified or new information about the project becomes available that indicates listed or proposed species may be present and/or affected, consultation with the FWS should be reinitiated.

If any species in the project area or affected by the project is federally listed or proposed during the action, the Federal Highway Administration should initiate consultation with the FWS to fulfill its responsibilities under the Endangered Species Act. Since threatened and endangered species data is continually updated, the FWS suggests you request an updated Federal list of the species occurring in the project area every six months during the remaining planning and building period pursuant to section 7(c) of the ESA (CFR § 402.12(c)).

FISH AND WILDLIFE COORDINATION ACT COMMENTS

The DEIS indicates that wetland disturbance associated with the build alternatives may require permits from MDEQ and the U.S. Army Corps of Engineers. The FWS has review responsibilities for any such permits, and our comments do not preclude separate evaluation and comments by the FWS when reviewing any forthcoming permit applications. The FWS may concur, with or without stipulations, or recommend denial depending on effects. The FWS advises it would likely not oppose issuance of required permits provided that impacts to wetlands are avoided to the maximum extent practicable and that adequate mitigative measures for losses of fish and wildlife habitat (including appropriate monitoring and remediation plans) have been incorporated into the project's final plans and specifications. The FWS welcomes the opportunity to review further refinements of the draft conceptual wetland mitigation plans.

SUMMARY COMMENTS

The subject document includes a conceptual wetland habitat mitigation plan. This plan would benefit from more detail and should be included in the FEIS, after opportunity for review and comment by interested agencies. The FWS concurs with the second NEPA/section 404 concurrence point, that of "alternatives carried forward for further review."

At this time, we are unable to concur with the first proviso of section 4(f) because the DEIS includes a feasible and prudent alternative that does not affect section 4(f) resources.

The Department has a continuing interest in working with the Federal Highway Administration and the Michigan Department of Transportation to ensure that impacts to resources of concern to the Department are adequately addressed. For continued coordination on fish and wildlife issues, please contact the Field Supervisor, U.S. Fish and Wildlife Service, 2651 Coolidge Road, East Lansing, Michigan 48823-6316, telephone 517-381-2555. For coordination on matters related to the section 4(f) evaluation, contact the Senior Environmental Protection Specialist, National Park Service, 700 Rayovac Drive, Suite 100, Madison, Wisconsin 53711, telephone 608-264-5257.

We appreciate the opportunity to provide these comments.

Sincerely,

Willie R. Taylor
Director, Office of the
Environmental
Policy and Compliance

RECEIVED
JUN 1 1988

cc:
Mr. Michael K. Dillenbeck, Manager
Grand Traverse County Road Commission
3949 Silver Lake Road
Traverse City, MI 49684

Mr. Ronald S. Kinney, Manager
Environmental Section
Project Planning Division
Michigan Department of Transportation
P.O. Box 30050
Lansing, MI 48909



IN REPLY REFER TO:

United States Department of the Interior

FISH AND WILDLIFE SERVICE

East Lansing Field Office (ES)
2651 Coolidge Road, Suite 101
East Lansing, Michigan 48823-6316

June 6, 2000

Trish Beckjord
SmithGroup JJR
110 Miller Avenue
Ann Arbor, MI 48104

Re: Endangered Species List Request, Proposed Bridge Construction and Three Mile Road Widening Project, JJR #23202.00, Grand Traverse County, Michigan

Dear Ms. Beckjord:

Thank you for your May 31, 2000 request for information on endangered, threatened, proposed, or candidate species and critical habitat which may be present within the proposed action area. Your request and this response are made pursuant to Section 7 of the Endangered Species Act of 1973 (the Act), as amended, (87 Stat. 884, 16 U.S.C. 1531 et seq.).

Based on information presently available, there are no endangered, threatened, proposed, or candidate species, or critical habitat occurring within the proposed action area. This presently precludes the need for further action on this project as required under Section 7 of the Act.

We advise, however, that should a species become officially listed or proposed before completion of this project, the Federal action agency for the work would be required to reevaluate its responsibilities under the Act. Further, should new information become available that indicates listed or proposed species may be present and/or affected, consultation should be initiated with the us.

Since threatened and endangered species data is continually updated, new information pertaining to this action may become available which may modify these recommendations. Therefore, we recommend your agency annually request updates to this list.

We appreciate the opportunity to provide these comments. Please refer any questions directly to Tom Eitnjar of this office at (517) 351-6283 or the above address.

Sincerely,

for Craig A. Czarnecki
Field Supervisor

cc: Michigan Department of Natural Resources, Wildlife Division, Lansing, MI
(Attn: Lori Sargent)



U.S. Department
of Transportation
Federal Aviation
Administration

Airports District Office
Willow Run Airport, East
8820 Beck Road
Belleville, MI 48111

June 8, 1999

Mr. Ronald S. Kinney
Michigan Department of Transportation
425 West Ottawa
Post Office Box 30050
Lansing, Michigan 48909

Dear Mr. Kinney:

Cherry Capital Airport
Traverse City, Michigan


Reference your letter dated May 28, 1999, transmitting the Draft Environmental Impact Statement (DEIS) for the proposed improvement of east-west mobility across the Boardman River in Grand Traverse County, Michigan.

Such that FAA can comment on impacts to aeronautical activity at the subject airport, we will need the following information for the proposed alternative.

1. Maximum elevation (above ground elevation and above mean sea level) of the highest structure (light standard, bridge, etc.).
2. Distance of "1" to the nearest runway.
3. Sketch showing "1" and "2"

Your cooperation is greatly appreciated.

Sincerely,


Jon B. Gilbert
Airport Engineer



JAMES A. BURKHOLDER
Chairman

ROGER L. THOMPSON
Vice-Chairman

WALTER "JAY" HOOPER
Commissioner

MICHAEL K. DILLENBECK, P.E.
Manager

HAROLD D. SHEFFER
Superintendent

MARK G. LEWIS, P.E.
County Highway Engineer

HAROLD D. KELLY
Financial Director

DEBRA J.M. HUNT
Clerk

"OUR MISSION IS TO UPGRADE AND MAINTAIN A SAFE AND EFFICIENT ROAD SYSTEM"

December 16, 1999

Jon B. Gilbert, Airport Engineer
USDOT - Airports District Office
Willow Run Airport, East
8829 Beck Road
Belleville MI 48111

**RE: CHERRY CAPITAL AIRPORT
TRAVERSE CITY, MICHIGAN**

Dear Mr. Gilbert:

Your letter dated June 8, 1999 regarding the Boardman River Crossing Mobility Study was forwarded to the Grand Traverse County Road Commission for reply. In the letter you requested the following information:

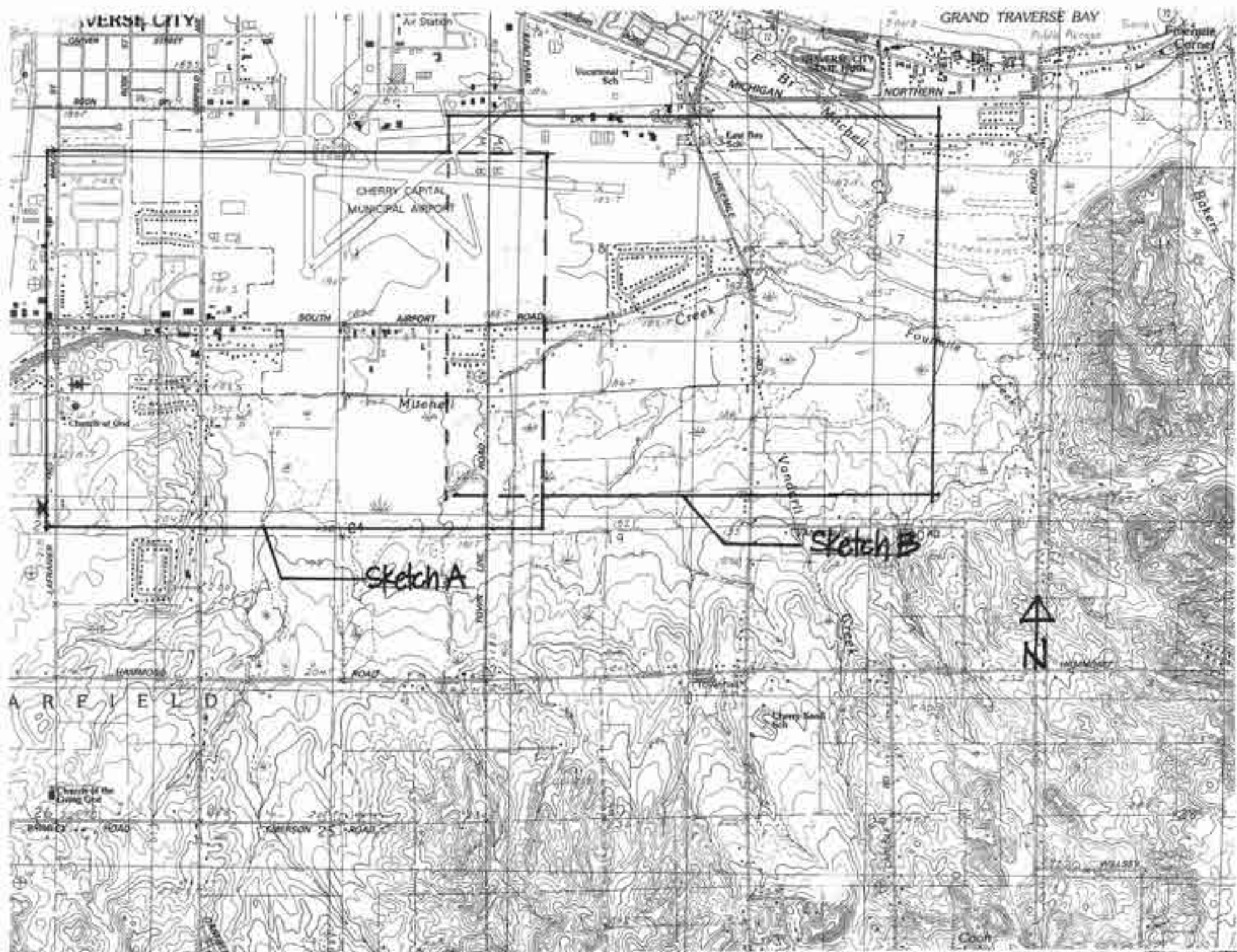
1. Maximum elevation (above-ground elevation and above mean sea level) of the highest structure (light standard, bridge, etc.)
2. Distance of (1) to the nearest runway
3. Sketch showing (1) and (2)

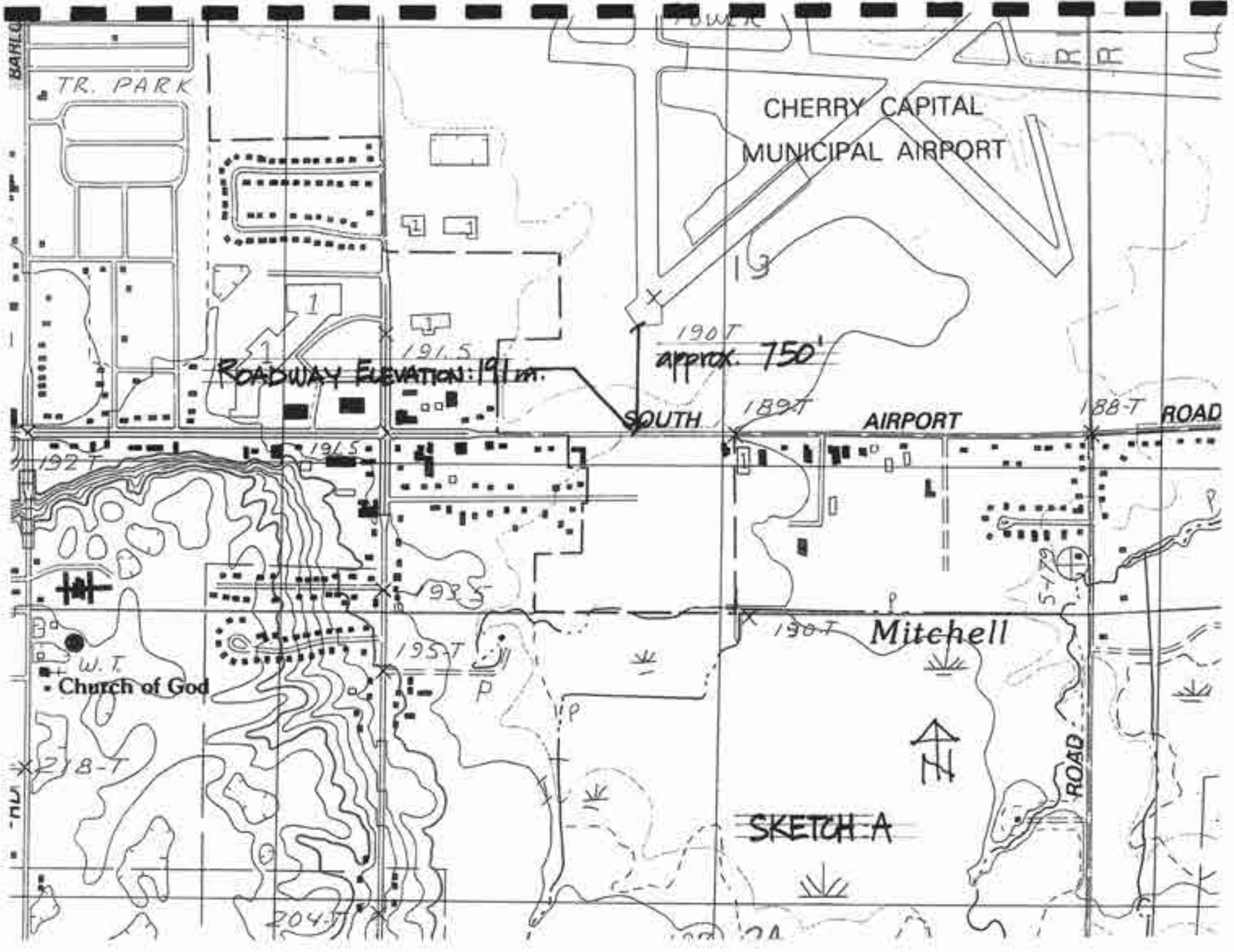
The attached figures provide the information you requested along South Airport Road and Three Mile Road in the project area. Neither of these roadways currently have roadway lighting through the identified areas. Provision of lighting is not part of this project. The approximate proposed roadway elevation is provided at the points identified.

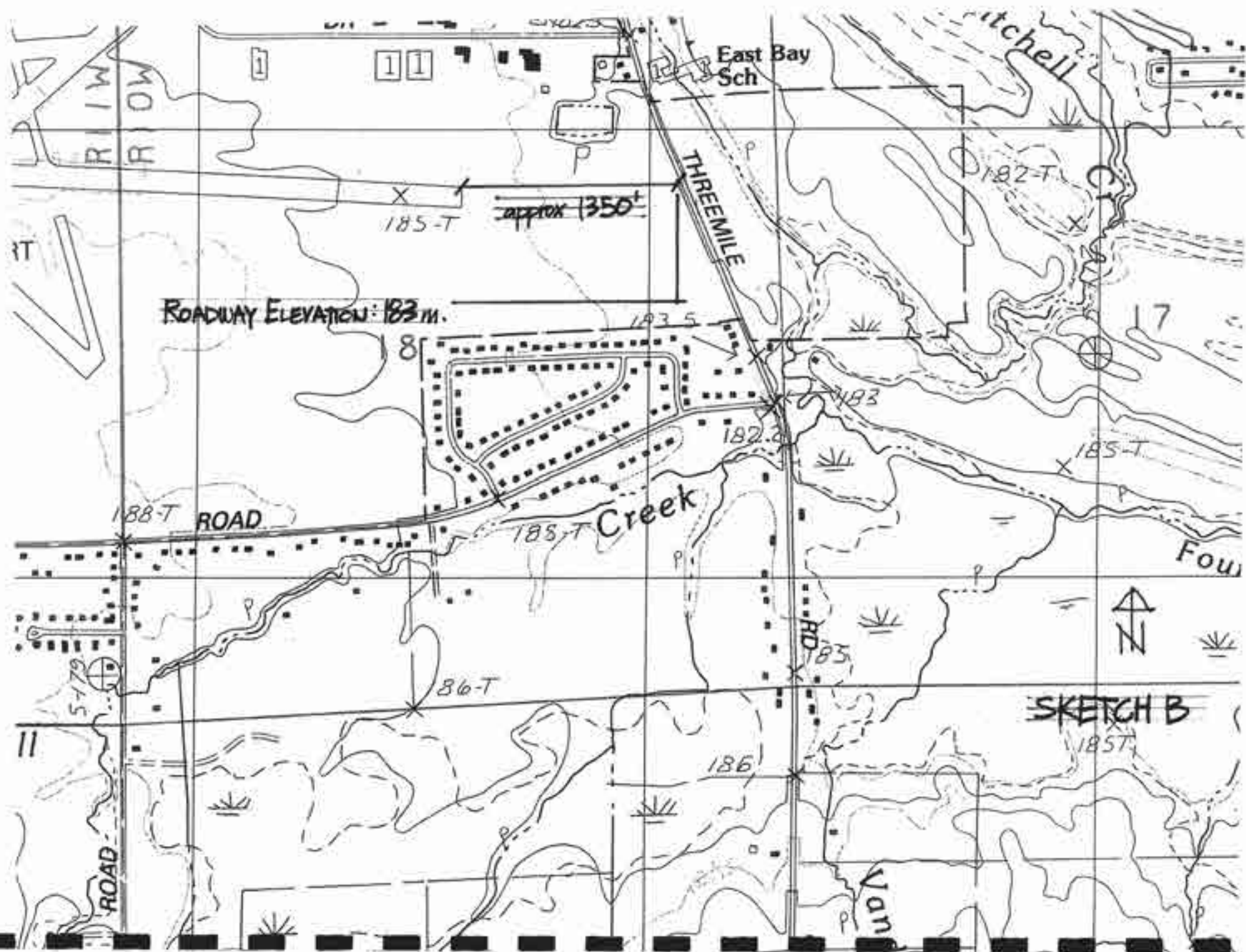
If you have questions or require additional information, please call me at (231) 922-4848, extension 201.

Sincerely yours,

Michael K. Dillenbeck
Manager









UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

MAY 04 1999

Mr. James Kirchensteiner
Program Engineer
Federal Highway Administration
Post Office Box # 10147
Lansing, Michigan 48901

REPLY TO THE ATTENTION OF

B-19J

Dear Mr. Kirchensteiner:

This will confirm the substance of previous discussions between our agencies regarding the Boardman River Bridges Transportation Improvement Project in Grand Traverse County, Michigan.

We have reviewed the project's Purpose and Need documentation which is dated August 20, 1998. Based upon our review of this material, it appears clear that a replacement for the existing Cass Road Bridge must be provided in the near future. The existing structure is unsound and provides for only a one way traffic flow. It also appears that this bridge cannot be sufficiently upgraded to meet existing and projected traffic volumes. In addition, the area's other bridges are also at or near capacity. Safe and efficient east-west travel across the Boardman River is becoming increasingly problematic throughout the project area.

Based upon the information provided to us for review, we hereby concur with the Project's Purpose and Need Statement.

If you have any questions, please do not hesitate to call me. I can be reached by phone at 312/353-5794, and my E-mail address is kamke.sherry@epa.gov.

Sincerely yours

A handwritten signature in cursive script that reads "Sherry A. Kamke".

Sherry Kamke, Acting Manager
Environmental Review Group
Office of Strategic Environmental Analysis



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF:

AUG 10 1999

B-19J

RECEIVED

Mr. James A. Kirschensteiner, PE
Federal Highway Administration
315 West Allegan
Room 207
Lansing, Michigan 48933

Dear Mr. Kirschensteiner:

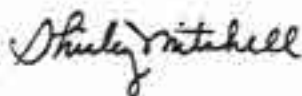
In accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, the United States Environmental Protection Agency (U.S. EPA) Region 5 has reviewed the Boardman River Crossing Mobility Study Draft Environmental Impact Statement (DEIS) and Section 4(f)/6(f) Evaluation. The evaluation includes alternatives for crossing the Boardman River in Grand Traverse County, Michigan. We have received your request that we provide concurrence and comments regarding the second NEPA/Section 404 concurrence point "Alternatives Carried Forward" along with our comments on the DEIS for this project.

The primary purpose of the project is to replace the transportation service that has been provided by the now structurally deficient and functionally obsolete Cass Road bridge. The existing bridge over the Boardman River is only one lane wide and is posted at 10 tons which prevents larger vehicles from crossing at the Cass Road bridge. The project should also improve east-west surface traffic patterns if a build alternative is implemented. We provided concurrence on the purpose and need for the project in a letter dated May 4, 1999.

The DEIS evaluates a No Build alternative, a Transportation System Management (TSM) alternative, a South Airport Road Widening with Three Mile Road alternative and a Hartman-Hammond Connector with Three Mile Road alternative. Based on our review of the information provided in the DEIS for this project, we have rated the present DEIS as EO-2. The "EO" means that we have environmental objections with the proposed action, and the "2" means that additional information needs to be provided in the Final Environmental Impact Statement (FEIS) to alleviate these environmental objections. The U.S. EPA identified issues in the area of the characterization of the No Action alternative; alternatives analysis; wetland impacts; water quality and aquatic resource impacts; and secondary and cumulative impacts. Our detailed comments are attached to this letter.

Due to the issues that we have with the characterization of the No Action alternative and the Alternative Analysis we cannot provide our concurrence on the Alternatives Brought Forward at this time. We would be interested in meeting with you to discuss these issues in further detail. It is our hope that we can explain these in more detail so that you can respond to them in subsequent NEPA documentation. We anticipate that we can give our concurrence on Alternatives Brought Forward once these two issues are resolved. If you have any questions about our NEPA/404 concurrence decision or if you would like to discuss our review of the DEIS, please contact Sherry Kamke of my staff at (312) 353-5794.

Sincerely,



for Jerri-Anne Garl, Director
Office of Strategic Environmental Analysis

cc: Mr. Micheal K. Dillenbeck
Manager, Grand Traverse County Road Commission
3949 Silver Lake Road
Traverse City, Michigan 49684

Ms. Lori Noblet
Michigan Department of Transportation
425 West Ottawa Street
Lansing, Michigan 48933

Gerald W. Fulcher Jr., P.E., Chief
Michigan Department of Environmental Quality
Transportation and Flood Hazard Management Unit
Land and Water Management Division
P.O. Box 30458
Lansing, Michigan 48909-7958

Gary R. Mannesto, Chief
U.S. Army Corp of Engineers
Regulatory Branch
Construction-Operations Division
Box 1027
Detroit, Michigan 48231-1027

Craig A. Czarnecki, Field Supervisor
U.S. Fish and Wildlife Service
East Lansing Field Office
2651 Coolidge Road
East Lansing, Michigan 48823

**Detailed Comments on the Boardman River Crossing Mobility Study
Draft Environmental Impact Statement (DEIS) and Section 4(f)/6(f) Evaluation
Grand Traverse County, Michigan**

Characterization of the No Action Alternative -

A Boardman River crossing at Hartman-Hammond Road is included in the area's long-term land use plan (the Traverse City Area Transportation and Land Use Study). It is not clear from the DEIS, however, what effect this fact has had on the land use and population projections for the area. If, for example, a substantial amount of development has already been directed to occur along the Hartman-Hammond corridor in anticipation of a future bridge crossing in that location, or if the area's population and land use projections have been developed on the specific assumption that a bridge crossing at Hartman-Hammond would in fact be provided, the No-Action alternative described in the DEIS may not be a satisfactory representation of the project's baseline condition. In other words, the area's current development patterns, and/or the area's projections for future land use and development may have been developed on the assumption that a crossing at Hartman-Hammond would be constructed. If so, the No-Build as described in the DEIS would not provide a good reference point from which to estimate a new river crossing's likely scope and significance of secondary/cumulative impacts. This issue requires further clarification in subsequent NEPA documentation.

Alternatives Analysis -

One of the objectives that was used to determine if an alternative met the purpose and need for the project was that the alternative must improve levels-of-service on the Boardman River crossings adjacent to the Cass Road Bridge, while improving or maintaining levels-of-service on the other crossings, as compared to 2015 No-Build conditions. Based on this criterion, several of the alternatives that were dismissed showed partial improvements. It was not discussed in the DEIS if the project proponents attempted to further modify these alternatives and come up with other possible alternatives. For example, Smart Roads provided a multiple improvement approach to solving the east-west capacity issue across the Boardman River. That alternative does provide for a level-of-service improvement on adjacent bridges but it involves 4(f) impacts that must be avoided if other prudent and feasible alternatives exist. It is unclear if this alternative could have been modified to include different components or if the alternative could otherwise be optimized. Likewise, the DEIS did not show how Travel Demand Management Alternatives (TDMs) such as the Village Center and Urban Growth Boundary alternatives could be combined with other build alternatives to provide an overall alternative that meets the project's purpose and need. The development of alternatives should be an iterative process to ensure that all feasible alternatives are identified and evaluated. The DEIS should describe how project alternatives were modified and optimized before they were ultimately dropped.

Wetland Impacts-

The South Airport Road Widening and Three Mile Road Widening Alternative would impact 0.2 acres of riverine wetland habitat while the Hartman-Hammond Connector with Three Mile

Road Widening Alternative would impact 4.8 acres of wetland habitat. The direct wetland impacts resulting from the South Airport are less than the Hartman-Hammond Connector alternative. Additionally, the secondary and cumulative impacts to wetlands are likely to be less for the Airport Road alternative because of the built nature of the existing environment in that corridor. Wetland resources are important in this area because they provide water quality protection for tributaries of the Boardman River and they provide an important wildlife corridor within the river valley.

The Section 404(b)(1) Guidelines require that impacts to wetlands be avoided, minimized and mitigated to that maximum amount practicable. From this perspective, the South Airport Road Widening and Three Mile Road Widening Alternative is the environmentally preferred alternative. Furthermore, this alternative has not been demonstrated to be impracticable. Based on the information presented in the DEIS, it would have less overall impact to wetlands, groundwater recharge areas and to the Boardman and Mitchell creek watersheds. The resources in these watersheds are substantial. An appropriate mitigation plan will be required for unavoidable impacts to these resources.

Water Quality and Aquatic Resource Impacts -

The DEIS states that direct surface water quality impacts will occur due to temporary increases in turbidity and downstream sedimentation resulting from fill and erosion of exposed soils during construction activities and from enclosing or moving certain portions of various tributaries within the watershed. The DEIS did not discuss in detail the impacts that ongoing use of the build alternatives would have on surface water quality. In Section 5.10.1 of the DEIS, there is a general statement about the quantity of pollutants such as oils, greases and road salt leading to degradation in surface water quality and aquatic resources. Imperviousness is cited as contributing to degradation of Mitchell Creek's aquatic resources. However, the DEIS did not discuss the impact that stormwater runoff such as that described above would have on these already degraded aquatic resources in the Mitchell Creek and Boardman River watersheds. An analysis of what the incremental change due to project implementation will be to these watersheds both in terms of surface water quality and aquatic resource impacts, should be included in the Environmental Impact Statement. On a related point, a statement that a bridge constructed at the existing Three Mile Road crossing of the East Branch of Mitchell Creek will ultimately improve stream conditions for migratory fish species was not substantiated in the DEIS.

Secondary and Cumulative Impacts -

The DEIS states that secondary and cumulative impacts will occur to the existing natural environment in proportion to the growth and development of the Traverse City area. Secondary and cumulative impacts that will occur as a result of the South Airport Widening Alternative are expected to be relatively minor and the overall socioeconomic secondary and cumulative impacts are more likely to be positive. Whereas, because of the more rural character of the Boardman River valley and the natural resources there, the level of probable secondary and cumulative impacts likely to occur due to the Hartman-Hammond Connector alternative is greater.

The DEIS does a commendable job of reporting on the surface water quality characteristics of the Boardman River and Mitchell Creek watersheds. According to the DEIS, many of the tributaries in the project area exhibit good to excellent surface water quality and some have important components that aid in maintaining cool temperatures in stream which are important to the type of fisheries that exist in the area. The DEIS does discuss what typical construction activities do to streams and watersheds but the DEIS does not go further and describe what the likely impacts would be to the Boardman River and Mitchell Creek watersheds and how those impacts will be mitigated.

Page 4-12 of the DEIS states that approximately 9 percent of the Mitchell Creek watershed is covered by impervious surfaces such as buildings, roads and parking lots. These surfaces prevent the infiltration of surface water into soils and groundwater. At a level of 10 percent imperviousness, the streams begin to exhibit noticeable degradation of water quality and aquatic habitat due to increased surface water runoff and decreased groundwater input. The DEIS should evaluate how secondary and cumulative impacts will affect water quality and aquatic habitat if a build alternative was implemented. A determination of the severity of secondary and cumulative impacts associated with any build alternative and the associated effect it would have on water quality in the Mitchell Creek and Boardman River watersheds should be considered in subsequent planning efforts and the results should be documented in the Environmental Impact Statement.

There has been a history of losses of wetlands in the Boardman River, including the dredging that occurred on the east side of the Boardman River to improve hydraulics downstream of the dam. These wetland losses have a pronounced cumulative effect on the surface water quality and other aquatic resources in the area. The relationship between wetlands losses, aquatic resources such as fisheries, groundwater recharge and discharge areas, and drinking water should be more clearly stated in the DEIS. This will provide the proper background for accurately determining this project's impacts to those same resources if a build alternative is implemented.

Additional impacts to the Mitchell Creek Watershed have occurred due to sedimentation, selective removal of streambank vegetation and improper installation of culverts. The cumulative impact of these previous actions and implementation of this project must be part of the cumulative impact evaluation in the forthcoming NEPA documentation.

A mitigation plan for this project should be targeted at these issues. We recommend that a watershed specific plan addressing the issues discussed in this section be developed as part of project implementation.

DE LEUW, CATHER & COMPANY

A UNIT OF PARSONS TRANSPORTATION GROUP INC.

525 West Monroe Street • Chicago, Illinois 60661-3629 • (312) 930-5100 • Fax: (312) 930-0018

MEMORANDUM

DATE: September 22, 1999

TO: Ms. Sherry Kamke

LOCATION: U.S. EPA

PHONE: 312/353-5794

FROM: Tony Pakettis ^{TP}

LOCATION: DCCO-Chicago

PHONE: 312/930-5268

SUBJECT: Boardman River Crossing Mobility Study DEIS
Draft Response Letter to U.S. EPA Comments

The draft letter responding to the U.S. EPA comments on the Boardman River Crossing Mobility Study is attached for your review and comment. As noted, it is still in draft form, and we may be making minor modifications and enhancements to the Wetland Impacts and Secondary and Cumulative Impacts responses. When finalized, the Michigan Department of Transportation will formally send the letter to the U.S. EPA.

If you have any questions regarding this transmittal, please call me.

Attachment:

cc: M. Dillenbeck, GTCRC
J. Kirschensteiner, FHWA
M. Dionise, MDOT
L. Noblet, MDOT
J. Hinkle, DCCO
K. Gallagher, JJR

September 16, 1999

Ms. Jerri-Anne Garl
Director
Office of Strategic Environmental Analysis
U.S. Environmental Protection Agency
77 West Jackson Boulevard
Chicago, Illinois 60604

Dear Ms. Garl:

Thank you for providing written comments to the Boardman River Crossing Mobility Study Draft Environmental Impact Statement (DEIS) (Grand Traverse County Road Commission, Michigan, May 1999). Your letter, received on August 10th, 1999, identified five issues requiring additional information and/or clarification, including: 1) Characterization of the "No Action" Alternative (named the No-Build Alternative in the DEIS); 2) Alternative Analysis; 3) Wetland Impacts; 4) Water Quality and Aquatic Resources Impacts; and, 5) Secondary and Cumulative Impacts. A brief summary of these issues is provided below as a reference for the responses that follow.

Characterization of the No Action Alternative:

A clarification was requested regarding land use and population projections for the "No Action" Alternative and whether the baseline populations and development patterns were based on a true no-build situation. Specifically, the United States Environmental Protection Agency (EPA) was concerned that local planning documents illustrated a Hartman-Hammond connector bridge that may have inappropriately influenced future population projections and land use development patterns considered for the No-Build Alternative.

Alternatives Analysis:

The methods used to analyze the alternatives were questioned, specifically regarding why certain alternatives were not further modified or combined with other alternatives to attempt to meet the goals and objectives of the study. It was noted that a description of how the project alternatives were modified and optimized before they were ultimately dropped is needed.

Wetland Impacts:

It was stated that the South Airport Road Widening Alternative has fewer wetland impacts than the Hartman-Hammond Connector Alternative and that the South Airport Road Widening Alternative has not been demonstrated to be impracticable.

Water Quality and Aquatic Resources Impacts:

A more detailed discussion of surface water quality impacts and the impacts of storm water runoff "on these already degraded aquatic resources in the Mitchell Creek and Boardman River watersheds," as a result of the build alternatives, is needed.

Secondary and Cumulative Impacts:

Secondary and cumulative impacts to wetlands, water quality, and aquatic resources within the Mitchell Creek and Boardman River watersheds if a build alternative were to be implemented, were a concern and need further discussion. It was also stated that the relationship between wetland losses, aquatic resources, groundwater recharge and

discharge areas, and drinking water should be further clarified. Additionally, the sedimentation impacts in the Mitchell Creek watershed from the preferred build alternatives should be addressed. Finally, it was noted that a mitigation plan for wetland impacts by watershed, incorporating impacts to aquatic resources and water quality, was also needed.

The EPA did not give concurrence on the alternatives carried forward for detailed analysis in the DEIS.

The following statements are provided in response to the above listed EPA statements and requests:

Characterization of the No Action Alternative:

A Hartman-Hammond bridge connection is illustrated on diagrams included within a number of published planning documents such as the Garfield Township's Comprehensive Land Use Plan (see Figure 4.3-5 of the DEIS), the East Bay and Garfield Townships Combined Future Land Use Map (Figure 4.3-4), and Garfield Township's Hammond/Three Mile Area Study and the Miller Creek Area Study (referenced on page 5-32 in the DEIS). The question of whether the inclusion of the Hartman-Hammond bridge in future land use plans has influenced the townships' respective planning processes and consequently, influenced the characterization of the No-Build (or "No Action") Alternative was raised with East Bay and Garfield Townships' planners.

According to the respective planners for East Bay and Garfield Townships (Harsch, 1999; Orttenger, 1999), the Comprehensive Land Use plans and zoning policies for each township were developed independently of the proposed bridge connection between Hartman and Hammond roads. The following points were given in support of this conclusion:

East Bay Township

- Hammond Road has historically functioned as a major east-west traffic corridor through the township because it connects with several existing roads that provide access to Garfield Township, as well as US-31;
- Hammond and Three Mile Roads have been identified as the preferred commercial-industrial corridor for a number of years as shown in the Comprehensive Land Use Plan; and
- The Three Mile Road-Hammond Road intersection was identified in the Comprehensive Land Use Plan as a proposed Village Center. The township intends to implement this plan independently of a possible bridge connection.

Charter Township of Garfield

- Private property within the township currently has sufficient road access to support development independent of the proposed bridge connection;
- Development activity in the township is occurring south of Hammond Road and has not been slowed by the lack of connection between Hartman and Hammond roads; and
- The bridge is included in planning documents solely to show continuity in east-west traffic flow patterns as would occur based on a standard rectilinear grid system.

Appendix C
Pg. 45

Based on this information, the potential bridge connection between Hartman and Hammond roads across the Boardman River valley has not been influential in planning the existing or projected growth patterns for either township, and the No-Build Alternative serves as an appropriate base line from which to assess potential impacts of the remaining alternatives.

Alternatives Analysis:

The development of alternatives conducted for this project was an iterative process. Project elements from different ideas, concepts, and alternatives developed by the project team and the Citizens Advisory Committee were combined and documented in the DEIS either in Section 3.1, Alternatives Considered, or Section 3.3, Alternatives Considered and Dismissed. All build alternatives include, to the extent reasonable, elements of the TSM and TDM alternatives. However, it was not reasonable to combine the Village Centers or Urban Growth Boundary alternatives with build alternatives, because these are projects outside of the Grand Traverse County Road Commission's jurisdiction. The Smart Roads Alternative combines elements of the Two-Lane Cass Road Bridge Alternative and the Beltner Road/Keystone Road Improvements Alternative and includes additional roadway, TSM, and transit improvements. It too was modified and enhanced as the travel demand forecasting was being conducted. For example, the initial Smart Roads proposal did not recommend that Beltner/Keystone Road be widened to four lanes. It was subsequently modified to include this improvement, so that some improvement in level-of-service would result. Regardless of alternative evaluated, no major level-of-service improvements were projected unless a new river crossing was introduced. We can discuss further how this can be formally documented in the Final EIS.

Wetland Impacts:

The impacts to wetlands for the Hartman-Hammond Connector Alternative exceed impacts of the South Airport Alternative. However, the South Airport Alternative has a far greater impact on socio-economic considerations including residential and business displacements.

The site identified for wetland construction as mitigation for impacts associated with the Hartman-Hammond Connector Alternative is located adjacent to the primary area of impact and is ideally situated with regards to topography, soils, anticipated hydrology and other adjacent land uses.

Water Quality and Aquatic Resources Impacts:

A variety of factors will be considered in the selection of a Preferred Alternative. The selection process will be documented in a Final EIS (FEIS).

There would be minimal difference in water quality and aquatic resource impacts between the two Build Alternatives. Although the Boardman River is noted for its high water quality and aquatic resources, that impression is formulated from the upper reaches of the river outside of the project area. The Boardman River flows through a series of four impoundments, three within the project area. Brown Bridge Pond, Keystone Pond and Sabin Pond lie upstream of the proposed Hartman-Hammond Connector Alternative and Boardman Lake downstream. These impoundments effectively act as heat sinks increasing summer water temperatures consistently exceeding the limit for a high quality stream. Coldwater fish begin to experience stress at temperatures greater than 67° F. A Michigan Department of Natural Resources (MDNR) electroshocking survey for fish completed on this reach of the Boardman in June 1986 resulted in only two brown trout and five northern pike from South Airport.

Road to Sabin Dam. "In general, this stretch of the river is very unproductive for resident fish" (Hay, personal communication, August 22, 1991). The warming of the river has resulted in a MDNR Designation as a Second Quality Stream for Trout and Anadromous Fish for the river and Top Warmwater Mainstream for the impoundments.

The construction of a bridge at Three Mile Road crossing the East Branch of Mitchell Creek will ultimately improve stream conditions for migratory fish species because the existing culvert will be removed and the stream's substrate will be restored in this location. The bridge will facilitate fish migration by eliminating impairments associated with culverts such as reduced light and increased velocities.

Secondary and Cumulative Impacts:

The long-term impacts on water quality by a preferred build alternative will be addressed in the FEIS. The analysis will utilize imperviousness data generated by the Northwest Regional Council of Governments and the U.S. Department of Transportation "Pollutant Loadings and Impacts From Stormwater Runoff: Volume I: Design Procedure Model" (FHWA-RD-006: Eugene Driscoll, 1990). This model has been developed to estimate potential impacts to water quality of a stream or lake that directly receives highway runoff and provides a basis for deciding whether or not projected changes in water quality are likely to create problems. The model results will then provide a basis from which a storm water management plan may be developed.

The storm water management plan will discuss appropriate Best Management Practices (BMPs) that will be designed to address treatment of storm water runoff from the facility. The Rouge River Wet Weather Demonstration Project (EPA Grant #X995743-01 through 03, and #C995743-01), Wayne County, Michigan has been evaluating demonstration projects of many different BMPs with encouraging results. Based on the results of these demonstration projects and local efforts for water quality protection, appropriate BMPs will be integrated into the design and maintenance of the Preferred Alternative. Examples may include the use of vegetated swales, dry-extended detention basins, created wetland basins, sediment forebays, and capture and transport of bridge runoff to a treatment basin.

Local township and/or city storm water management planning programming will be identified regarding future development within the contributing watershed of the project area identifying BMPs required for the protection of water quality. The results of the Pollutant Loadings model and a storm water management plan for highway runoff will be defined in the FEIS.

Information developed will be incorporated into the wetland mitigation plan as appropriate, addressing both surface water quality impacts and impacts to aquatic resources, which will be presented in the FEIS.

Reference to the relationship of 10 percent imperviousness to degradation potential of stream systems (see EPA letter page 3, paragraph 2) is based on standard engineering practices generally employed within the watershed. Construction activities will have the potential to increase sedimentation in the Boardman River and tributaries. This impairment is very evident in this reach of the Boardman River, where 85 percent of the stream bottomland has a heavy sand bedload, particularly at the location of the proposed Hartman-Hammond bridge. Sand bedloads cover viable fish habitat and associated food supplies (benthic organisms) for fish. However, the river velocity as it flows under South Airport Road increases as the river is constricted. The increase in velocity and flows increases dissolved oxygen, reduces the sand bedload and provides

a substrate composition of cobble and gravel interbedded with sand. This habitat at the alternative South Airport Road crossing supports a more diverse aquatic macroinvertebrate and fishery resource. In addition, the Boardman River discharges into the Boardman Lake approximately 200 meters north of the South Airport Road crossing. Lake resident fish likely utilize the reach of Boardman River along South Airport Road for nursery and feeding habitat.

The above information is being provided in response to the concerns and issues raised by the U.S. Environmental Protection Agency regarding the DEIS and the alternatives carried forward. If you have any questions or would like additional clarification about the issues discussed in this letter, please contact me at _____, at your convenience.

Sincerely,

JJR

JJR Incorporated
110 Miller Avenue
Ann Arbor, Michigan 48104
Q734-662-4457
E734-662-7520

CONFERENCE REPORT

project name: Boardman River Crossing Mobility Study
project number: 23202.00
date: 24 September 1999
issue date: 12 November 1999
participants: See attached list.

Introduction/Project Status

After the meeting participants introduced themselves, two videos were shown to familiarize the participants with the project history. The videos were prepared in 1995 after the public hearing for the Draft Environmental Assessment and in 1999 after the Draft Environmental Impact Statement was prepared. The videos summarize the issues associated with the project including the deteriorating condition of the existing Cass Road bridge, present and anticipated future traffic congestion in Traverse City, location of a proposed new crossing of Boardman River valley, and growth management issues.

A public hearing on the DEIS was held June 1999 and a draft response to public comments is currently being reviewed by the project team.

M. Dillenbeck commented that the general feeling of the community is that the project has been studied for long enough and it is time to make a decision regarding the future of the project. He distributed a handout outlining commitments that the Road Commission Board is prepared to make if one of the Build Alternatives is implemented (attached).

D. Domke asked if expansion of Carpenter Industries on the south side of the Hartman-Hammond connector will impact the project. M. Dillenbeck stated that the expansion will not encroach onto the right-of-way proposed for the connector. Discussions are underway with the current property owner regarding donation of the portion of the property in the Boardman River valley to the Grand Traverse Nature Education Reserve.

Alternatives

J. Hinkle stated that a number of alternatives were studied from a traffic perspective to determine if they fulfilled the Purpose and Need for the project and the project goals. Community input was sought during the development of the Purpose and Need statement and project goals and agency concurrence on the Purpose and Need for the project has been obtained. Alternatives which did not address the Purpose and Need and project goals were not carried forward for further study.


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Alternatives that were discussed in more detail by the group included the "Smart Roads" alternative, a "Combined Travel Demand Management/Village Center/Urban Growth Boundary" alternative and the No-Build alternative. A summary of the discussion of each of these alternatives follows.

Smart Roads Alternative: The Smart Roads alternative consists of the following components: 1) replace Cass Road bridge at its current location, 2) expand Beitner and Keystone Roads, and 3) provide a connection between Keystone and Hammond Road. The study team identified a number of issues that made this alternative unfeasible including: 1) Section 4(f) impacts to the Nature Education Reserve on both sides of Cass Road, 2) impacts to wetlands on both sides of Cass Road, 3) engineering issues associated with rebuilding the bridge on the embankment at Cass Road, and 4) impacts to the existing canoe landing and Nature Education Reserve associated with widening Beitner/Keystone Roads.

Alternatives that result in impacts to resources identified under Section 4(f) are typically rejected if alternatives exist that do not impact 4(f) resources. J. Kirchensteiner stated that actions within the existing Cass Road right-of-way would not be considered Section 4(f) impacts, however, it is likely that engineering and construction methods needed to address the structural issues associated with construction of a new road and bridge on the dam would result in impacts to the Nature Education Reserve outside the existing right-of-way. M. Dionise stated that the existing sharp curve on the west side of the dam would need to be redesigned to accommodate proposed design speeds and realigning the curve would also result in impacts beyond the existing right-of-way limits. D. Domke noted that the MDEQ would not support an alternative at Cass Road that would result in impacts to wetlands, specifically the high-quality wetlands immediately north of Cass Road. Expanding Beitner/Keystone Roads may also have adverse 4(f) impacts to the Nature Education Reserve and the canoe landing at the Beitner Road crossing of the Boardman River. It was also noted that the Smart Roads proposal addressed north-south traffic movement, not east-west, and extended road improvements further south of Traverse City than the two Build Alternatives evaluated in the DEIS.

It was noted that while there are no Section 4(f) issues associated with the Hartman-Hammond Connector, there are 4(f) impacts at Three-Mile Road which would occur if either one of the Build Alternatives were implemented.

Combined Travel Demand Management (TDM)/Village Center/Urban Growth Boundary: This alternative was developed and evaluated in a paper by Matt Goike, a former intern at TC-TALUS, to fulfill coursework requirements. M. Skeels stated that the ideas presented in the paper, which evaluates a combination of TDM measures, village centers and urban growth boundaries, has not been adopted by any local units of government, specifically those responsible for land use or transportation. Some of the assumptions on which that paper is based, for example the assumption that 75 percent of future growth will be located within a Traverse City urban growth boundary, and the configuration of future village centers and urban growth boundaries, are arbitrary and not based on existing adopted land use plans. The conclusions of the study are that the alternatives studied in the paper do not result in significant differences in projected traffic volumes, increase the number of miles traveled, or increase the number of roads with reduced levels of service.

It was noted that Traverse City currently does not have a fixed-route public transportation system but one is anticipated in the future. J. Hinkle stated that public transportation typically results in a 1 percent reduction in traffic.

No-Build Alternative:

S. Kamke stated that it may be difficult to characterize the No-Build Alternative since one might argue that development is being directed to the Hartman-Hammond corridor in response to township master plans that incorporate the Boardman River crossing at the Hartman-Hammond location. G. Harsch stated that population growth is occurring in the region and developers are looking for vacant land to accommodate future growth. A large proportion of the vacant land available for development in the Traverse City area is located south of town in Garfield and East Bay Townships. The Garfield and East Bay Township master plans have identified the Hartman-Hammond corridor as a location for planned developments, including various levels of density in residential development. Light industrial land use has been planned along Hammond Road for a number of years. Development in the corridor has occurred in the past without the Hartman-Hammond Connector and the high number of project proposals currently under consideration by local planning departments indicates that it will continue in the future in response to growth pressures in the Traverse City area.

Secondary Impacts

S. Kamke asked if the Hartman-Hammond Connector with Three-Mile Road Widening Alternative would be a by-pass. Project representatives stated that the road will not be signed as a by-pass but may be used by locals for that purpose. A Regional Corridor Study was conducted in the mid-90's to identify potential locations for a regional by-pass. The Boardman River Mobility study is designed to address local traffic movement.

Secondary resource impacts expected to occur if one of the build alternatives were implemented were discussed with an emphasis on the Hartman-Hammond Connector. G. Harsh reiterated the reasons why growth in the area is expected to occur regardless of whether any action is taken as a result of the Boardman River Crossing Mobility Study. He also stated that the townships and local conservation groups are very active in resource protection. A master plan has been prepared to illustrate where development could occur in the Hartman-Hammond corridor. Locations of known sensitive natural resources, including wetlands, were mapped and development was located in areas that would avoid direct impacts to these resources. MDEQ representatives stated that projects proposing wetland alterations would require a permit and the applicant would need to demonstrate that the proposed project is the most prudent and feasible alternative to develop the site and the proposed wetland impacts are unavoidable. Therefore, it is not expected that secondary impacts from constructing one of the Build Alternatives would be significantly different from secondary impacts that would be expected if growth were to occur if no action were taken.

Wetland Mitigation

S. Kamke inquired if other wetland mitigation sites had been identified that might provide more benefits to the community than the site identified in the DEIS. A. Kline stated that the proposed wetland mitigation site is in the Boardman River valley close to the site of wetland impacts from either of the Build Alternatives. Furthermore, the site provides the opportunity to restore areas that have historically been wetlands and incorporate the mitigation wetland into the existing wetland complex adjacent to the Boardman River. The Grand Traverse County Road commission has committed to donating the wetland mitigation site to the Nature Education Reserve which will expand the Reserve and provide a public recreation and interpretive resource within the Boardman River valley. After the meeting, J. Kirchensteiner recommended that, if the current owner of the wetland mitigation site donates the property to the Nature Education Reserve, the deed should include language stating that the site will be used for wetland mitigation.

M. Hodgkins stated that the USFWS would like to see the wetland mitigation commitments identified in their 27 July letter incorporated into the FEIS.

Field Review

The participants then conducted a tour of the project area. The group walked to the location of the Hartman-Hammond Connector crossing of the Boardman River and proposed wetland mitigation site, and reviewed the Mitchell Creek crossing at Three-Mile Road at the north end of the corridor. Windshield surveys were conducted of 1) the proposed intersection of US 31 and Hartman Road, 2) Hartman Road, 3) Cass Road bridge, 4) Beitner Road bridge, 5) proposed intersection of Hartman-Hammond Connector with Keystone Road, 6) Hammond Road and 7) South Airport Road.

Conclusion

S. Kamke stated that she would like to review a formal response to the issues raised in the EPA's letter before the EPA makes a final decision regarding concurrence with the alternatives carried forward for further study. She requested additional information about 1) traffic and population projections (i.e. why state population projections differ from local projections), 2) the process used to reject the Smart Road alternatives, and 3) clarification regarding Section 4(f) issues. In regards to Section 4(f), S. Kamke specifically requested that the FEIS address why some Section 4(f) issues prevents an alternative from being carried forward as feasible (e.g., widening of Cass Road bridge), while others are considered minor and do not result in a fatal flaw decision. The responses to the EPA comments should be incorporated into the FEIS, most likely in the Alternatives and Existing Conditions sections and in the Response to Public Comment section.

MDEQ representatives requested that additional information be provided in the FEIS to demonstrate why improving Beitner Road Bridge does not meet the purpose and need of the project.

Boardman River Crossing Mobility Study
JJR No. 23202.00
24 September 1999
Page 5

M. Hodgkins stated that the proposed wetland mitigation site appears to be a feasible and appropriate location should one of the Build Alternatives be implemented. He repeated that the wetland mitigation commitments identified in the USFWS 27 July letter should be incorporated in the FEIS.

A Memorandum of Agreement from the State Historic Preservation Office regarding the project should be included in the FEIS.

All of the comments received during the public comment period should be addressed in the FEIS.

Our summarization of this Conference Report is transcribed as above. Please notify the writer within five (5) business days of this transcription of any disagreement as the foregoing becomes part of the project record and is the basis upon which we will proceed.

Respectfully submitted,

JJR Incorporated



Andrea L. Kline
Senior Associate

cc: Participants
T. Pakellis (DeLeuw Cather & Company)
D. Denison, K. Gallagher (JJR)

P:23202/projmtg19-24agencymtg1999

Sept 24, 1999 Agency Review Meeting
Boardman River Mobility Study

name	agency
DUKE DOMKE	MDEQ
Mark Lewis	G.T.C.R.C.
MATT SKEELS	TC-TALUS
Bob Hammond	Gouldie - FRASER
Lori Noblet	MDOT
Kari Settle	MDOT
MARK DIONISE	MDOT / LOCAL AGENCY PROJ
Sherry Kamke	U.S. EPA Region 5
Jelly Fulcher	MDEQ - Lansing
MARK HODGKINS	U.S.F.W.S. -(ELAN)
Andrew Kline	JR
GERRY HANSETH	GARFIELD Twp.
Jim Kirschensteiner	FHWA
PAUL WISNEY	MDOT - Design
Jara J Hinkle	DeLeuw, Cather & Co.
Pete Bruski	G.T.C. Drain Comm & Soil Eros.

**COMMUNITY COMMITMENTS
FROM THE BOARD OF COUNTY ROAD COMMISSIONERS
OF GRAND TRAVERSE COUNTY**

The Road Commission has received the vision from the community to seek support from the adjacent landowners and funding for the following improvement items for South Airport Road:

1. *Enhance the landscape along South Airport Road.*
2. *Enhance the signage along South Airport Road.*
3. *Enhance the availability of pedestrian crossings along South Airport Road.*
4. *Promote driveway consolidation along South Airport Road.*
5. *Continue the traffic signal enhancement along South Airport Road as new technology emerges.*

If the community supports one of the two Mobility Study's "build" alternatives, either the widening five (5) miles of South Airport Road or the connection of one (1) mile of new road between Hartman-Hammond Roads, the Board of County Road Commissioners will go the *extra* mile to encourage and support the following goals.

1. *Seek funding to construct public paths along the Boardman River, including crossing South Airport Road.*
2. *Seek funding to develop bike paths along the build route selected.*
3. *Host public meetings to review the design of any bridge and/or stream crossing and other road enhancements prior to taking construction bids.*

Additionally, if the Hartman-Hammond Alternative is selected,

4. *Donate excess right-of-way in the Boardman River Valley to the Nature Education Reserve County Park.*
5. *Work with the Nature Education Reserve and area schools to establish educational opportunities for students to learn about wetland mitigation methods.*
6. *Encourage a corridor plan in East Bay and Garfield Townships to require enhancements by developers that seek to change the existing zoning or master plan use to keep the route with an appearance that reflects our community's values.*
7. *Encourage the development of a residential community to relocate houses for current landowners that desire to stay in the vicinity of Hartman Road.*
8. *Purchase the access rights to eliminate the possibility of future driveways on the one mile of new road connecting Hartman Road to Hammond Road.* Boardman Valley



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

OCT 18 1999

REPLY TO THE ATTENTION OF
B-19J

Mr. James A. Kirschensteiner, PE
Federal Highway Administration
315 West Allegan
Room 207
Lansing, Michigan 48933

Dear Mr. Kirschensteiner:

This letter is a follow-up letter to the August 10, 1999 comment letter on the Draft Environmental Impact Statement (DEIS) for the Boardman River Crossing Mobility Study in Traverse County, Michigan. After the National Environmental Policy Act (NEPA)/404 Resource Agency meeting on September 24, 1999, the U.S. Environmental Protection Agency (U.S. EPA) was asked to convey in writing what was verbally articulated. As you may recall, Sherry Kamke of my staff expressed concerns with the characterization of the No Build Scenario and with the Alternatives Analysis. She also indicated that U.S. EPA would be interested in reviewing the response to comments from other parties. In particular, Ms. Kamke mentioned that she had reviewed comments from the Michigan Land Use Institute and she believed the comments were credible and deserving of a response. We have summarized the concerns that we articulated in the resource agency meeting in the attachment. We have limited these comments to those that would be necessary or beneficial to provide to us in order that U.S. EPA can provide concurrence on the second NEPA/Section 404 concurrence point "Alternatives Carried Forward."

We anticipate that we can give our concurrence on Alternatives Brought Forward once these issues are resolved and a commitment is made to include corresponding information in the FEIS. If you have any questions or if you would like to discuss our review of the DEIS, please contact Sherry Kamke of my staff at (312) 353-5794.

Sincerely,

for Shirley Mitchell, Deputy Director
Office of Strategic Environmental Analysis

cc: ✓ Ms. Lori Noblet
Michigan Department of Transportation
425 West Ottawa Street
Lansing, Michigan 48933

Detailed Comments on the Boardman River Crossing Mobility Study Alternatives Brought Forward Concurrence Point

As you already know, the U.S. EPA provided concurrence on the purpose and need for the project in a letter dated May 4, 1999. At that time, the stated purpose for the project was to replace the transportation service that has been provided by the now structurally deficient and functionally obsolete Cass Road bridge. The existing bridge over the Boardman River is only one lane wide and is posted at 10 tons which prevents larger vehicles from crossing at the Cass Road bridge. The project should also improve east-west surface traffic patterns if a build alternative is implemented.

Characterization of the No Action Alternative -

More work is needed on discussing the projections of population and employment into the future. More should be said about why the Traverse City Area Transportation and Land Use Study (TC-TALUS) population projections are different from the state Demographer. Some discussion about where the growth is expected should be included in the documentation for this project.

If a substantial amount of development has already been directed to occur along the Hartman-Hammond corridor, the question that should be answered in the FEIS is "what is the extent/type of development along this corridor at the present time?" This information will be needed to compare to the extent/type of development that will occur with the implementation of a build alternative.

More documentation should be included on what restrictions on development are in place along the Hartman-Hammond corridor and elsewhere in the study area. In Garfield Township, there appears to be substantial restrictions on development due to zoning, conservation easements, and other wetland protection mechanisms. These restrictions should be documented as part of the No Build (existing) scenario.

Statements were made in the resource agency meeting that development in Garfield Township has not been slowed by the lack of a connection between Hartman and Hammond roads. This statement can be supported by projecting what land use would look like both with and without a crossing at Hartman/Hammond. More evaluation is needed to show the difference in land use patterns if there is no crossing at Hartman/Hammond (such as the scenario today) and what changes would occur in the study area (and the Hartman/Hammond corridor in particular) with a crossing at Hartman/Hammond.

Alternatives Analysis -

The DEIS did not show how Travel Demand Management Alternatives (TDMs) such as the Village Center and Urban Growth Boundary alternatives could be combined with other build alternatives to provide an overall alternative that meets the project's purpose and need. An

analysis should be made on the effectiveness of TDM measures as a stand alone measure and in combination with other build alternatives. The documentation should show what effect TDMs and transit system have on traffic projections. Statements were made in the resource agency meeting that these combinations of alternatives is not something that can be evaluated because the TDM alternatives are outside of the Grand Traverse County Road Commission's jurisdiction. NEPA regulations found at 40 CFR Section 1502.14 require that an EIS include all reasonable alternatives not within the jurisdiction of the lead agency.

More work needs to be done on documenting the types of 4(f) impacts associated with build alternatives. More documentation on what 4(f) impacts are show stoppers and which ones can be mitigated (some discussion of Cass Road bridge expansion as not plausible because it requires acquiring additional ROW) is necessary.

An evaluation of the change in land use associated with each build alternative should be conducted and documented.

In addition to these comments, we recommend that you address the following comments from the Michigan Land Use Institute:

Page 4 - Purpose and Need unreasonably narrow

The project in substance seeks to move traffic from the intersection of M-37 and US-31 to Hammond Road, tying into Three Mile Road or Four Mile Road, and back to U.S. 31 northeast of Traverse City

[From EPA's perspective it appears that the DEIS does indeed zero in on this much more specific purpose and need as opposed to the "improve east-west surface traffic patterns if a build alternative is implemented" that EPA provided concurrence on].

Page 4 - Deficient Cass Road Bridge wrongly linked to regional east-west congestion

The deficient Cass Road Bridge and the projected congestion on some of the other east-west crossings in the Grand Traverse region, in fact, have no relation . . . The table shows that closing the Cass Road Bridge without any other new construction or rebuilding the Cass Road Bridge to its original two-lane structure would result in exactly the same projected volume of traffic on two of the river crossings being studied (Grandview Parkway/U.S. Route 31 and Eight Street). Meanwhile, traffic volume on the Beitner Road crossing decreases slightly after the Cass Road Bridge is closed . . . We recommend that the FEIS address this issue.

Page 6 - Population/land use projections, first paragraph

In summary the comment says that the FEIS must evaluate the change in land use cause by various road alternatives (see EPA's comment on this). We recommend that the FEIS do this.

Page 6 - Conflicting population projections, second and third paragraph

In summary the comment says that the State Demographer and TC-TALUS use different population projections. We recommend that more information be included in the Purpose and Need section to support why this was done, how often it is done and where the growth is expected to occur.

Page 7 - Inconsistent population analysis in DEIS

In summary the comment says that the geographic area that is said to reach a population of 124,000 is sometimes described as the TC-TALUS study area (a portion of Grand Traverse County and portion of Leelanau County) and in other places in the DEIS referred to as Grand Traverse county's population. We recommend the FEIS correct any inconsistencies in this. If errors are found, an assessment should be made as to how this affects traffic forecasting. This information should be included in the FEIS.

Page 11 - Hartman-Hammond Connector would operate at LOS "D" (last paragraph)

In summary the comment says that a Hartman-Hammond Connector with Three Mile Road alternative would immediately operate at a LOS that would be found to be unacceptable. The expected result of this is that some other bridge in the crossing area will have to undergo an expansion in capacity. This raises the question of whether or not the Hartman-Hammond Connector alone is an adequate response to address the area's future traffic congestion problems. We recommend that additional documentation should address this issue. How does a Hartman-Hammond Road connection affect the need for other projects that the County Road Commission has committed to in its plans (such as widening Beitner, and widening Keystone and repairing Cass Road Bridge)? In other words, under what circumstances would these projects be done anyway? A discussion of how does this EIS relate to a Traverse City bypass would also be useful.

Pages 12 and 13 - Faulty traffic modeling

In summary the comment suggests that the very basis for the project, the traffic modeling, has flaws and that TC-TALUS has not evaluated the significance of the "flaws" or remedied any of them. We strongly recommend that additional work be done here. Assumptions that are made should be supported as much as possible and weaknesses in the model should be acknowledged and evaluated for significance. This information needs to be included in the FEIS.



U.S. Department
of Transportation

Federal Highway
Administration

Region 5
Michigan Division

315 West Allegan Street, Room 207
Lansing, Michigan 48933

January 5, 2000

Ms. Shirley Mitchell, Deputy Director
Office of Strategic Environmental Analysis
U.S. Environmental Protection Agency
Environmental Review Branch (B-19J)
77 W. Jackson Street
Chicago, IL 60604-3590

Dear Ms. Mitchell:

Environmental Impact Statement
Boardman River Crossing Mobility Study
Grand Traverse County, Michigan
Additional Information

Reference is made to your letter of October 18, 1999, which requested additional information on certain issues discussed in the draft EIS for the proposed Boardman River Crossing Mobility Study in Grand Traverse County, Michigan. Ms. Sherry Kamke of your staff requested that additional information on certain topics be provided. Enclosed is the additional information requested.

During the study of this proposed project, it has often been referred to as a "bypass," however, it will not function as a bypass of the Traverse City area for US-31, the main route through Traverse City. The Michigan Department of Transportation has no intention of signing any of the proposed alternatives studied in the DEIS as US-31. The proposed project, once completed, will, however, likely be used by local residents to navigate around the congestion on the existing US-31 through Travers City much as any other favorite short cut route known to local residents is used in any other community. In this sense, it may pull some local traffic from existing US-31. The proposed project will address and improve the existing east-west mobility problems crossing the Boardman River. It is unlikely that the proposed project will cause development patterns to occur which are inconsistent with the County and Township adopted land use plans.

The EPA withheld its concurrence in the second concurrence point "Alternatives Carried Forward" in the NEPA/Section 404 merger process until such time as these additional concerns were addressed. We trust the information enclosed adequately addresses those issues. Consequently, we are asking the EPA for concurrence in the second concurrence point "Alternatives Carried Forward."

Should you have any additional concerns, please feel free to contact me.

Sincerely,



James A. Kirschensteiner
Environmental & Field Operations Engineer

For: James J. Steele
Division Administrator

Enclosure

cc: Lori Noblet, MDOT, Environmental Section
Kari Settle, MDOT, Transportation Planning
Mark Dionise, MDOT, Local Agency Programs
Mike Dillenbeck, Grand Traverse County Road Commission

Characterization of the No Action Alternative:

Population Projections. After comments were received regarding the population projections reported in the Draft Environmental Impact Statement (DEIS), they were re-examined, and inconsistencies and errors were found in the reporting of population forecasts in the document. The 2015 population projection for the Traverse City Transportation and Land Use Study (TC-TALUS) study area, corresponding to the travel demand forecasts reported in the document, is 109,781. This is described by TC-TALUS as their medium growth forecast and should have been the forecast reported in the DEIS. The DEIS reported 124,000 as the TC-TALUS study area population forecast in Section 2 and as the Grand Traverse County population forecast in Section 4. The 124,000 represents the high growth population forecast for the TC-TALUS study area. The high growth forecast (124,000) was not part of the socio-economic forecasts used to generate the travel demand modeling results that are reported in the DEIS. The travel demand forecasts reported in the DEIS represent the projected traffic conditions corresponding to the medium growth population forecast (109,781) for the TC-TALUS study area.

We regret that the DEIS contained these errors and will ensure that any of the errors regarding this information are corrected and any inconsistencies are clarified in the Final Environmental Impact Statement (FEIS). In the FEIS, the 2015 medium growth population forecast for the TC-TALUS study area will be reported.

Another issue raised regarding the TC-TALUS forecasts is that they are too high. The 2015 socio-economic forecasts for the TC-TALUS study area were developed prior to the start of this project. TC-TALUS projects a population increase from ~~61,929~~ ^{61,881} to 109,781 between 1990 and 2015 in their study area. This equates to an average annual increase of 2.3 percent. Conversely, the Michigan State Demographer projects population to increase from 64,273 in 1990 to 93,500 in 2015 in Grand Traverse County. This equates to an average annual increase of 1.5 percent. (Please note that the TC-TALUS study area does not encompass all of Grand Traverse County and encompasses a portion of Leelanau County.) When the TC-TALUS forecasts were originally called into question, they did an independent evaluation to help determine the validity of their projections. To do so, they analyzed 1995 mid-decade census data. The mid-decade census estimates Grand Traverse County population to be ~~72,100~~ ^{72,016}. This is conceded by some township clerks to be low due to the fact that persons are not required by law to respond. The State Demographer mid-decade population estimate is 70,764. Additionally, TC-TALUS developed an estimate of 1995 population in Grand Traverse County by analyzing new residential building permits approved. The results of this analysis estimated the 1995 population at 73,781. The State Demographer's estimates indicate that population in Grand Traverse County grew 1.9 percent per year between 1990 and 1995. Then from 1995 to 2015, the State Demographer projects the average annual growth between 1995 and 2015 to be 1.4 percent. Yet, based on the mid-decade census, population in Grand Traverse County grew on average at a rate of ~~2.2~~ percent per year. Based on the TC-TALUS estimate, population grew 2.8 percent per year in Grand Traverse County and at 2.2 percent per year in their study area. ^{2.3}

Regardless of the methods used to forecast population, there will always be a level of uncertainty associated with the results. However, based on the data provided by TC-TALUS, we conclude that their forecasts are, at a minimum, as reasonable as the Michigan State Demographer and appropriate for use as part of this project.

TC-TALUS has provided additional background information regarding the development of the population and socio-economic forecasts, and it is provided as an attachment to this letter.

Projected Land Use Scenarios. This project is much smaller in size and scope than other projects in the country where the development of different land use scenarios for various build alternatives is now considered warranted. To illustrate this, consider the following "build" elements of the Hartman-Hammond Connector with Three Mile Road Widening Alternative:

- Widening (addition of one through lane in each direction) of 1.9 miles of existing roadways along Hartman Road, Hammond Road, and Three Mile Road;
- 1.4 miles of new alignment consisting of the realignment of Hartman Road at the west end of the project and the connection of Hartman and Hammond roads, including the proposed bridge across the Boardman River;
- The proposed bridge included as part of the Hartman-Hammond Connector is located approximately 1.3 miles north of the existing Cass Road Bridge, closer to Traverse City, and is proposed as a replacement to the structurally deficient Cass Road Bridge; and
- The proposed bridge is consistent with the existing transportation network and local long-range plans.

The widening of Beitner and Keystone Roads as an alternative to constructing the Hartman-Hammond Connector has been suggested by some as a way to stop urban sprawl. Looking at the two alternatives, it seems more likely that improvements to Beitner and Keystone Roads could promote sprawl, particularly if strict access control measures were not enforced. The Beitner Road and Keystone Road improvements considered consist of widening approximately five miles of roadway from two to four lanes. This project would extend south through Garfield Township and into Blair Township and is more likely to promote development away from the urbanized area of Traverse City than the Hartman-Hammond Connector.

The Garfield Township Planning Department does not believe there is a relationship between the potential for urban sprawl and the Hartman-Hammond Connector, since it connects two existing east-west roadways that presently terminate approximately one-half mile apart. This alternative is not a bypass or a beltline. Township planning officials believe that land use development in the area will be the same with or without the Hartman-Hammond Connector. The overall attractiveness of the Traverse City area to development and the limited amount of available developable land in the Township are the primary reasons they cite why this will occur. To further illustrate this point, a series of figures developed by the Garfield Township Planning Department are attached. These figures highlight the Hartman-Hammond area and provide a comparison between the developed and undeveloped land adjacent to Hartman and Hammond Roads. As illustrated in these figures, a substantial amount of the land in this area is currently developed or protected public land. An additional figure that summarizes the Garfield Township Comprehensive Land Use Plan is also provided to show planned land uses in the Township.

Additional information regarding Garfield Township's planning approach and the limited amount of developable land in the area has been provided by Gerry Harsch, Garfield Township Planning Director, and is provided as an attachment to this letter. The Garfield Township Zoning Ordinance includes several restrictions on development, covering stormwater detention, service drives, and the protection of water quality. Additionally, Grand Traverse County has a Soil Erosion and Storm Water Runoff Ordinance. Information on these restrictions on development is also attached.

Based on further review of the information available regarding future land use, the project team concludes that land in the area will develop similarly under either the No Build Alternative or the Build Alternatives carried forward in the DEIS. Any differences in future land use would be too minor to predict accurately. And if carried through the travel demand forecasting procedures, the differences in assignment results would be negligible.

Additionally, based on research conducted on the subject, the relationship between road development and decentralization of other land uses varies by project type and community characteristics. The unique land features as described in the attached information provided by the Garfield Township Planning Director, combined with the attractiveness of Traverse City area as a place to work and live, are believed to have greater influence on future development patterns in the project area than the realignment of Hartman Road and its connection to Hammond Road via a new bridge across the Boardman River.

Therefore, for this project, we do not think it is necessary to modify the land use scenario to reflect the, at most, minor differences in how land will be developed in this area. We support Garfield Township's opinion on future land use and the continued use of the TC-TALUS socio-economic forecasts developed for their study area.

Alternatives Analysis:

TDM Alternatives. Travel demand forecasting results for the TDM alternatives presented in the DEIS indicate that there are limited improvements to levels-of-service on the east-west Boardman River crossings. Under the Village Center Alternative, compared to the No-Build Alternative, average annual daily traffic (AADT) on the Eighth Street crossing would be 1,500 vehicles lower, resulting in an LOS improvement from E to D. However, on Beitner Road, AADT is projected to increase 8,500 vehicles per day resulting in a level-of-service degradation from E to F. For the Growth Boundary Alternative, an additional 4,000 vehicles per day (compared to the No Build) are projected on the Grandview Parkway/U.S. Route 31 river crossing, resulting in the level-of-service degrading to an F. On Beitner Road, 2,500 fewer vehicles per day are projected, with the level-of-service improving from E to C.

Additional analysis of the TDM alternatives as stand alone measures indicates that the number of deficient lane miles of road in the TC-TALUS network would increase under both of these alternatives. Therefore, it can be concluded that combining these TDM alternatives with build alternatives will result in a system where the number of deficient lane miles in the network is greater than if the build alternative was implemented alone. TC-TALUS has conducted additional analysis of the TDM alternatives by modeling them with the South Airport Road, Hartman-Hammond Connector, and Smart Roads alternatives. The results are provided in an attachment to this letter and confirm that there is no benefit to combining these build alternatives with these TDM measures. In general when these build alternatives are combined with the TDM alternatives, the projected levels-of-service degrade on South Airport Road and improve on either Beitner Road (for the South Airport Road and Hartman-Hammond Connector Alternatives) or the Cass Road Bridge (for the Smart Roads Alternative).

The TDM alternatives evaluated in the DEIS are quite progressive in nature. However, they have been tested to have limited, and in some ways, negative impacts on the overall transportation network. This, coupled with the fact that the likelihood of implementation is limited, led to the dismissal of these alternatives.

Transit Improvements. Additional evaluation on the effect of transit improvements was also conducted. Transit was originally addressed in the *Cass Road Bridge Replacement on the Hartman/Hammond Road Alignment Environmental Assessment*. At that time, it was concluded that transit improvements have only limited potential to reduce the number of vehicles operating on area roadways. After the U.S. EPA requested additional information on transit improvement impacts, the issue was reinvestigated. TC-TALUS interviewed an official with the Bay Area Transit Authority (BATA) to gather information regarding four fixed bus routes that BATA is planning to implement.

Currently, existing ridership on BATA is 320,000 rides per year. This equates to the elimination of approximately 770 vehicle trips per day, assuming vehicle occupancy of 1.6 persons per vehicle. BATA estimates that half of its current ridership will switch from the current demand response system to the fixed route service. They also estimate that overall ridership could increase by approximately 140,000 rides per day. This increase equates to less than 350 vehicle trips removed from area roadways per day, indicating the limited potential for transit improvements to improve traffic congestion in Grand Traverse County.

The Grand Traverse County Road Commission does not discourage improvements to transit service, but does not view them as a viable solution to the problems addressed by the Boardman River Crossing Mobility Study. As documented in the DEIS, the levels-of-service on the east-west Boardman River crossings are projected to be either E or F unless a new crossing is constructed or capacity improvements to existing crossings are made. Regardless of the magnitude of transit system enhancements alone, the number of east-west river crossings in the Traverse City area will remain fixed. An enhanced transit system does not have the potential to remove enough vehicles from area roadways to positively impact congestion on these crossings.

Section 4(f) Impacts. Mike Dillenbeck, manager of the Grand Traverse County Road Commission, has researched the existing right-of-way across the Cass Road Bridge, which is located within the Grand Traverse Nature Education Reserve. He documents the existing Cass Road Bridge right-of-way to be no more than 20 feet wide. At a minimum, an additional 26 feet of right-of-way would have to be acquired from the Nature Education Reserve to accommodate a new two-lane bridge along the existing alignment. This will result in a 4(f) impact to the property.

The Grand Traverse County Parks and Recreational Commission has indicated their preference to close the existing Cass Road Bridge to through-motorized traffic. In fact, earlier in the study process, they had supported a new alignment that went through the Reserve over the replacement of the Cass Road Bridge at its current location.

When screening alternatives, it was deemed appropriate to avoid this 4(f) impact to the Nature Reserve if possible. Typically when evaluating Section 4(f) impacts of various alternatives, impacts that "cut" through the middle of a 4(f) property are considered more severe than impacts that "clip" or "shave" the edge of a property because the former are usually more disruptive to the resource and more difficult to mitigate. This rationale clearly applies to this project.

Section 4(f) impacts were identified for the build alternatives carried forward in the DEIS. However, they are considered minor compared to the 4(f) impact associated with replacement of the Cass Road Bridge because these alternatives result in minor modifications at the edges of the affected properties, and the impacts can be mitigated. One of the build alternatives, the Hartman-Hammond Connector, has been determined to be both prudent and feasible. Therefore, it was concluded that alternatives

consisting of the replacement of the Cass Road Bridge should be dismissed since a prudent and feasible alternative exists.

Continuing the evaluation of 4(f) impacts for this project, the identified 4(f) impacts along Three Mile Road are common to both of the build alternatives carried forward in the DEIS. The only feasible alternatives identified to widening Three Mile Road were widening either Four or Five Mile Roads. Improvements to these roads were determined to not be prudent, as documented in the DEIS, primarily because of the significant wetland impacts that would result. In addition to the 4(f) impacts associated with the Three Mile Road improvements, the South Airport Road Alternative impacts one Section 4(f) property — Medalie Park — and the Hartman-Hammond Alternative impacts no Section 4(f) property.

The Grand Traverse County Road Commission has also investigated potential 4(f) impacts along Beitner Road since some of the other alternatives considered, but ultimately dismissed, in the DEIS included improvements to Beitner Road. Like the Cass Road Bridge, the Boardman River crossing along Beitner Road is located within the Grand Traverse Nature Education Reserve. The existing right-of-way along Beitner Road is 100 feet wide. This could accommodate a four-lane, non-boulevard, cross-section. However, this improvement would require the removal of driveway access, resulting in a 4(f) impact to the Nature Reserve. As with the potential 4(f) impacts identified along Three Mile and South Airport Roads, this impact is considered minor and could be mitigated.

Additional documentation prepared by the Grand Traverse County Road Commission regarding potential Section 4(f) impacts to the Grand Traverse Nature Reserve is provided as an attachment to this letter.

Response to Identified Comments from the Michigan Land Institute:

Purpose and Need Unreasonably Narrow. We have received concurrence on the Project Purpose and Need from the appropriate resource agencies and do not believe any information has been brought forward to justify modifying it from its current form. The build alternatives consist of various options of improving or replacing the structurally deficient Cass Road Bridge. It is unrealistic to think this project could resolve all of the constriction problems associated with the east-west surface transportation system in the Traverse City area. In Table 2.1-2 of the DEIS, the projected 2015 traffic volumes on the east-west river crossings is reported for the No-Build Alternative. This table shows that in the future, approximately 120,000 vehicles per day will traverse these crossings. The crossing projected to carry the greatest volume of traffic is South Airport Road. It seems reasonable to conclude that improving the level-of-service on this crossing to an acceptable level, LOS D or better, improves east-west transportation flow.

Deficient Cass Road Bridge Wrongly Linked to Regional East-West Congestion. Investment in the Cass Road Bridge will be required to maintain it as operable. Since a large investment would be necessary to keep the bridge open, it was deemed prudent to evaluate bridge replacement alternatives in additional locations other than along the existing alignment where this investment could be more effective in the overall transportation network. Travel demand modeling results for all of the build alternatives, except for the Cross-Town Alternative, indicate that they have limited potential to divert traffic from Grandview Parkway/U.S. Route 31 and Eighth Street. However, these results also show that with the closure of the Cass Road Bridge, traffic is diverted to the crossing projected to handle the greatest volume of traffic and operate at the worst level-of-service in the future — the South Airport Road crossing. Diverting traffic to this crossing will exacerbate the congestion problems projected for this roadway.

Population/Land Use Projections. See earlier discussion.

Conflicting Population Projections. See earlier discussion.

Inconsistent Population Analysis in DEIS. See earlier discussion.

Hartman-Hammond Connector Would Operate at Level-of-Service D. The DEIS does not state that the Hartman-Hammond Connector will operate at an unacceptable level, but rather at level-of-service D, which is typically considered acceptable. Also, this projected level-of-service corresponds to year 2015 traffic, not the first year of operation or "immediately." Based on the information available today, the Hartman-Hammond Connector Alternative meets the project purpose and need and will operate at an acceptable level-of-service. Based on the current plans for the area, we have no reason to believe this will change. However, it should be noted that planning of any kind, including transportation planning, is an ongoing process and, as such, should continually be re-evaluated. It is possible that the need for additional transportation improvements in the area could arise, including the widening of Beitner and Keystone Roads. It is also very unlikely that the Cass Road bridge will be replaced if the Hartman-Hammond Connector is constructed.

The Boardman River Crossing Mobility Study has always been considered a separate project from the U.S. Route 31 Regional Corridor Study. The Regional Corridor Study is a bypass study that evaluates numerous miles of new alignment in an attempt to address regional mobility. That study has progressed to a point where three alternative corridors have been identified. In contrast, the Hartman-Hammond Connector Alternative is not considered a bypass and does not address regional transportation as a bypass would. The Hartman-Hammond Connector could, to some extent, act as a bypass as travelers attempt to avoid the congestion projected for the northerly Boardman River crossings in the area. At this time, no determination has been made regarding whether or not the Regional Corridor Study will proceed further. MDOT has indicated that if one of the alternatives evaluated in the Boardman River Crossing Mobility Study is constructed, they will evaluate the effect that alternative has on travel patterns and then determine how to proceed with the Regional Corridor Study.

Traffic Modeling. The procedures used by TC-TALUS, including the trip generation process, are still typical of what many MPOs are using elsewhere in the State of Michigan, as well as throughout the country. The TC-TALUS modeling has proven to be a valuable tool in evaluating transportation projects in the area, and we believe the results are reasonable for use on the Boardman River Crossing Mobility Study.

Some discussion was raised regarding the TC-TALUS modeling, stemming from a research paper that a graduate student prepared. The report was developed independently without coordination with TC-TALUS or the Michigan Department of Transportation. It should be noted that the paper expresses only the findings of the writer, and there is little data or research provided to support his positions.

One of the concerns raised in the research paper related to the trip generation process and how it impacted the evaluation of the Village Center and Urban Growth Boundary TDM alternatives only. The issue raised in the paper is that the model generates too many trips under these scenarios. However, subsequent analysis shows that reducing vehicle trips by 20 percent under the Village Center Alternative still results in an increase in deficient lane miles in the network compared to the No Build Alternative. For the Growth Boundary Alternative, a 10 percent reduction in trips is required for the number of deficient lane miles to decrease when compared to the No-Build Alternative. As TC-

TALUS explains, these results are predictable considering the travel demand forecasting process and the underlying assumptions in the TDM alternatives. TC-TALUS does not believe that any additional evaluation is warranted. We conclude that these alternatives, while they may be attractive for other reasons, are clearly not effective at reducing congestion on the Traverse City regional network.

TC-TALUS 2015 SOCIO-ECONOMIC FORECASTS

TC-TALUS 2015 Socioeconomic Forecasts

The basic issue raised regarding the TC-TALUS forecasts is that they are high compared to the State Demographers forecasts for the same time period.

The purpose of TC-TALUS socioeconomic forecasts is to approximate what future traffic levels will be and to enable various future transportation solutions to be tested using a traffic model. Without socioeconomic projections, the scenarios would be limited to the present day. Because transportation planning is long term in nature, it is very desirable to model future scenarios.

The traffic model and socioeconomic forecasts were used as tools in the development of the 1994 TC-TALUS Long Range Transportation and Land Use Plan. In developing the traffic model for the Traverse City area, TC-TALUS faced a challenge in developing the necessary future projections: the State Demographer typically projects only population into the future. Since the traffic model does not use population as a factor in its calculations, TC-TALUS decided to develop their own forecasts of the variables necessary for the model to run its future scenarios. The factors that the model uses in calculations are, number of households, amount of total employment and retail employment. The number of registered vehicles was collected for the TC-TALUS model but is not used due to the data producing high traffic projections.

Since population is closely related to the number of households and is regularly collected in the decennial census of population, historical population data by political unit (Township and City) were trend forecasted into the future by the Northwest Michigan Council of Governments and TC-TALUS. The amount of total employment and retail employment were determined through the Electronic Yellow Pages and verified by phone where necessary. Once a future population per Township or City was arrived at, the local unit of governments' planner distributed the anticipated growth throughout the Township or City based on their knowledge of their unit of government. Initially, high, medium and low growth population forecasts were completed, but due to the number of scenarios to be modeled, it was determined to use only the medium growth scenario for modeling purposes. The final forecasts were completed in 1993. The growth in households and employment was predicted to closely follow the growth in population. The TC-TALUS high growth population projection was 123,530 which was reported in the DEIS. The data used for modeling purposes is from the medium growth forecast (medium growth population forecast is 109,781). Again, population itself is not a variable in traffic modeling.

The issue of inconsistent geographic areas between the State Demographer and TC-TALUS cannot be resolved. The State Demographer completes forecasts on a county basis and the TC-TALUS study area is defined as the urban portions of Grand Traverse and Leelanau Counties and those areas expected to become urbanized in the next 20 years. The political jurisdictions included in the TC-TALUS study area are the City of Traverse City, and the Townships of Acme, Blair, East Bay, Elmwood (Leelanau County), Garfield, Green Lake, Long Lake, Peninsula and Whitewater. The DEIS incorrectly states "The TC-TALUS long - range population estimates project almost a doubling of the county's population . . .," on page 4-55. The TC-TALUS forecasts are for the TC-TALUS study area as described earlier.

Mid-decade censuses' (attachment 1) are conducted by Townships to document increases in population which could qualify them for increased state revenue sharing. Some Township Clerks indicated that the mid-decade census numbers were low because some persons refused to answer the questionnaires. Persons are required by law to respond the Federal decennial census, but are not required by law to respond to the mid-decade census.

TC-TALUS Staff researched Grand Traverse County residential building permit data (attachment 2) between 1990 and 1995. The research shows that ~~3,503~~^{3,803} new residential permits were issued during the years 1990 through 1995. This figure does not include permits issued in Green Lake Township and apartment permits issued by the Grand Traverse County Construction Code Office. Using a conservative figure of 2.5 persons per household, an estimate of the new residents in Grand Traverse County is 9,508. This figure combined with the 1990 Census figure of 64,273 yields an estimated 1995 population of 73,781. This is approximately 4 percent higher than the State Demographer's estimate of 70,764.

In June and August of 1998, the TC-TALUS Board of Directors examined the issue of the conflicting population projections. On August 20, 1998, the TC-TALUS Board of Directors voted not to revise the socioeconomic forecasts until the year 2000 census of population data is available (meeting minutes attachment 3). The Board felt that the TC-TALUS socioeconomic forecasts were sufficiently accurate at this point in time.

One significant factor not taken into account in the socioeconomic data is the tourist season. The model is designed to predict travel demand on an average day of the year. The socioeconomic data does not include the approximately 5000 hotel/motel rooms available through members of the Traverse City Convention and Visitors Bureau and associated traffic impacts.

Attachment 1 details the three forecasts mentioned above as well as the Woods & Poole forecasts used in the preparation of the Grand Traverse County Master Plan. The Woods & Poole company produces comprehensive economic and demographic data projections for every county in the nation. The consultants for the Grand Traverse County Master Plan used the Woods and Poole data because it was readily available, inexpensive and it contained the data they needed for their analyses.

Also attached, please find other information supporting the TC-TALUS position that the socioeconomic forecasts developed for our Long Range Transportation and Land Use Plans are accurate at this point in time.

Area Name	1990 Census	1995 DMB ¹ est.	1995 mid-decade census	2015 DMB ¹ projection	2015 TC-TALUS forecast	2015 Woods & Poole
Grand Traverse County	64,273	70,764	72,016 ³	93,500		107,730
TC-TALUS Study Area	61,881	67,740	69,104 ³	-----	109,781	-----
Acme Twp	3,447	3,910	-----	-----	6,204	-----
Blair Twp	5,249	5,952	5,720	-----	12,793	-----
East Bay Twp	8,307	9,414	9,705	-----	16,005	-----
Fife Lake Village	394	439	-----	-----	-----	-----
Fife Lake Twp (balance)	950	993	-----	-----	-----	-----
Garfield Twp	10,516	11,974	11,838	-----	21,502	-----
Grant Twp	745	845	-----	-----	-----	-----
Green Lake Twp	3,677	4,155	4,492	-----	7,924	-----
Long Lake Twp	5,977	6,779	7,390	-----	13,115	-----
Mayfield Twp	967	1,093	-----	-----	-----	-----
Kingsley Village	738	831	1,121	-----	-----	-----
Paradise Twp (balance)	1,770	2,006	2,097 (1996)	-----	-----	-----
Peninsula Twp	4,340	4,923	-----	-----	6,310	-----
Traverse City (pt.)	15,116	15,091	-----	-----	17,561	-----
Union Twp	255	289	-----	-----	-----	-----
Whitewater Twp	1,825	2,070	-----	-----	2,528	-----
Elmwood Twp (Leelanau County)	3,427	3,472	3,965 (1997)	-----	5,839	-----

¹ = DMB Department of Management and Budget (Michigan State Demographer)

³ = This number calculated by substituting the mid-decade census number for projected number, where available, otherwise the projected number is used.

Total *
Grand Traverse County
Residential Structure Permits
1990-1995

Year	Year Total dwelling units
1990	598
1991	557
1992	582
1993	636
1994	688
1995	742
TOTAL	3803

*= Total does not include new residential permits for Green Lake Township or apartment permits from the Grand Traverse County Construction Code office.

Grand Traverse County Construction Code Department¹
Residential Structure Permits
1990-1995

Year	New Residential ²	Mobile Homes	Year Total dwelling units
1990	358	91	449
1991	267	109	376
1992	301	123	424
1993	331	150	481
1994	347	135	482
1995	329	153	482
TOTAL	1933	761	2694

¹ = Grand Traverse County Construction Code Department does not issue residential permits for the City of Traverse City, Garfield Township or Green Lake Township

² = New Residential includes only single family homes and duplexes; **apartment buildings are listed with New Commercial and cannot be identified.**

Garfield Township
Residential Structure Permits
1990-1995

Year	Single Family and Duplex	Apartments and Multi-Family	Mobile Homes	Year Total dwelling units
1990	76	52	11	139
1991	75	68	28	171
1992	82	10	59	151
1993	78	8	52	138
1994	76	21	87	184
1995	100	40	103	243
TOTAL	487 units	199 units	340 units	1026

City of Traverse City
Residential Structure Permits
1990-1995

Year	Single Family	Duplex (2 family)	5+ dwelling units apartments	Year Total dwelling units
1990*	10	--	--	10
1991*	10	--	--	10
1992	7	0	0	7
1993	17	0	0	17
1994	12	0	2	22
1995	4	4	1	17
TOTAL	60 units	4 (8 units)	3 (15 units)	83

* 1990 and 1991 residential permits not available from Traverse City, Building Department staff indicated that 1990 and 1991 were average years, therefore 1992-1995 numbers were averaged and used for 1990 and 1991.

Minutes of the August 20, 1998
TC-TALUS
Board of Directors Meeting
Garfield Township Hall

Members Present:

Russ Soyering, Traverse City
Joe Bartko, East Bay Township
Vern Oxender, Chamber of Commerce
Harold McManus, Peninsula Township
Sam Mitchell, Citizen-at-Large
Jim Lagowski, Whitewater Township
Carol Hoffman, Long Lake Township
Judy McManus, Garfield Charter Township
Derith Smith, Elmwood Charter Township
Mike Dillenbeck, Grand Traverse County Road Commission
Joe Gallagher, NWMCOG
Renee Farnum, MDOT-Planning
Jeff Nagel, NRAC
Norm Kline, Grand Traverse County Planning Commission

Members Absent:

Grand Traverse County (Excused)
Citizen Walters (Excused)
Leelanau County Road Commission (Excused)
Acme Township
MDOT-TCTSC

In Attendance:

Matt Skeels
Gerry Harsch
Ann Rogers
Bill Swanson
Sally Hanley

Chairman Oxender called the meeting to order at 1:05pm. A quorum was present.

Motion by Mr. Bartko to approve the agenda as presented, Mr. Lagowski supported, Motion carried.

Motion by Ms. Hoffman to approve the minutes of the June 18, 1998, Ms. Smith supported, Motion carried.

Mr. Skeels gave the staff report. Considerable staff time has been spent on the Michiagn 3C conference as well as traffic modeling in support of the Cass Road Bridge and Boardman Lake Avenue projects. Budget amendments will be necessary next month.

Mr. Skeels introduced Joe Gallagher to the Board, Mr. Gallagher presented a letter from Alton Shipstead, Director of the Northwest Michigan Council of Governments stating that Mr. Gallagher

August 20, 1998 - Page 2

will be their designated representative and Mr. Jim Lively will be the alternate.

Mr. Skeels gave a verbal update on the Railroad Environmental Assessment. After some delay, the surveyors are on the job and should have the preliminary alignments marked soon. The archaeological/historical site survey will then be completed. With the delays associated with the contract for archaeological/historical and surveyors, the study is behind schedule 2-3 months. This would put the potential public hearing date during the holidays. Therefore the consultant is recommending that the public hearing date be pushed back until January.

Mr. Skeels discussed the letter from Mr. Fulton concerning our socio-economic forecasts. Although Mr. Fulton was unwilling to revise his forecasts higher in response to the information sent to him, Mr. Skeels feels that the TC-TALUS forecasts should not be changed.

Mr. Harsch stated that the Technical Committee had passed a motion recommending the Board not change the TC-TALUS socio-economic forecasts.

Motion by Mr. Dillenbeck to not revise the TC-TALUS socio-economic forecasts until the year 2000 census data is available, Mr. Lagowski supported, Motion carried

Mr. Harsch reported on the August meeting of the Technical Committee.

The Board reviewed the draft Unified Work Program (UWP). The City of Traverse City has requested assistance in obtaining MDOT grant funding for a transportation plan for the City. This item has been included with the Master Plan line item of the draft UWP.

Mr. Skeels presented the revised MDOT contract for consideration. Mr. LaBelle's review of the contract was discussed.

Motion by Mr. Lagowski to approve the amended contract #97-0694/A2 with the Michigan Department of Transportation and authorize Mr. Vern Oxender, Chairman as signatory, further moved that a transmittal letter be attached to the contract stating the Board opinion that the amended Unified Work Program attached to the contract should be labeled "Revised Exhibit A", Ms. Smith supported, Motion carried.

The Board reviewed the draft proposed amendments to the TC-TALUS Bylaws. Some corrections were requested, and the Board agreed to put this item on the September agenda for consideration.

The Board reviewed the draft Unified Work Program. Board members requested that other sources of revenue be investigated such as Green Lake and Blair Townships, Leelanau County and Benzie County and requesting increases from the Grand Traverse County Road Commission and Grand Traverse County.

Motion by Mr. Mitchell to approve the Bills Payable in the amount of \$12,964.05, Mr. Lagowski supported, Motion carried.

The meeting adjourned at 2:30pm.

Minutes of the June 18, 1998
TC-TALUS
Board of Directors Meeting
Garfield Township Hall

Members Present:

Russ Soyring, Traverse City
Joe Bartko, East Bay Township
Vern Oxender, Chamber of Commerce
Dan Walters, Citizen-at-Large
Harold McManus, Peninsula Township
Jim Johnson, Leelanau County Road Commission
Sam Mitchell, Citizen-at-Large
Jim Lagowski, Whitewater Township
Carol Hoffman, Long Lake Township
Kay Jacobs, Garfield Charter Township
Derith Smith, Elmwood Charter Township
Mike Dillenbeck, Grand Traverse County Road Commission
Jim Lively, NWMCOG

Members Absent:

Grand Traverse County
MDOT-Planning (Excused)
GT County Planning
Acme Township
MDOT-TCTSC
NRAC

In Attendance:

Matt Skeels
Gerry Harsch

Chairman Oxender called meeting to order at 3:10pm. A quorum was present.

Motion by Mr. Bartko to approve the agenda as presented, Mr. Johnson supported, Motion carried.

Mr. Johnson to approve the minutes of the March 19, 1998 as amended to correct a spelling error, Mr. Lagowski supported, Motion carried.

Mr. Skeels gave the staff report. The majority of staff time has been devoted preparing the Equal Employment Opportunity submittal and researching the socio-economic forecasts done by TC-TALUS, MDOT and the State Demographer.

June 18, 1998 - Page 2

Mr. Mitchell questioned where the designated bike path is on M-22 from M-72W to Cherry Bend Road. Ms. Smith answered that the designated bike path is on the water (east) side of M-22.

Mr. Dillenbeck stated that he felt the non-motorized path discussion should be kept on the TC-TALUS agenda.

Mr. Skeels updated the Board on the progress of the Railroad Environmental Assessment. Because of the delay in signing the contract amendment to conduct archaeological studies, the progress has been slow the last few months.

Motion by Ms. Jacobs to approve the \$3,000.00 contract amendment dated May 8, 1998 for archaeological studies in the Railroad environmental assessment area, Mr. Lagowski supported Motion carried, (12 yeas, 1 nay).

Motion by Mr. Mitchell to financially participate in the New Designs for Growth Corridor study in the amount of \$3,000.00, with the check and budget amendment to be approved at the next Board meeting, Mr. Lagowski supported, Motion carried.

Mr. Harsch reported on the activities of the Technical committee. The survey committee has had difficulty finding a meeting time where everyone can get together to consolidate the survey as directed by the Board.

Mr. Skeels reviewed the proposed budget amendments, which have been reviewed by MDOT staff.

Motion by Mr. Dillenbeck to approve the budget amendments which are attached to these minutes, Ms. Jacobs supported, Motion carried.

Mr. Skeels discussed the accountant's request for increased fees associated with the Railroad Environmental Assessment.

Motion by Mr. Dillenbeck to approve the increase in accounting fees from \$85.00 per month to \$150.00 per month for the duration of the Railroad Environmental Assessment, Mr. Lagowski supported, Motion carried.

Mr. Skeels briefed the Board on the draft Equal Employment Opportunity policy. This is a requirement of MDOT and even though TC-TALUS has no employees in reality, it is still necessary.

Motion by Mr. Lagowski to approve the following policy on Equal Employment Opportunity:

It is the policy of the Traverse City Area Transportation And Land Use Study to assure

June 18, 1998 - Page 3

that applicants are employed, and that employees are treated during employment, without regard to their race, religion, color, gender, national origin, or age. Such action shall include: employment, upgrading, demotion, or transfer; recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship, pre-apprenticeship, and/or on-the-job training.

and approve the Title VI compliance data report for submittal to MDOT as prepared by staff, Mr. McManus supported, Motion carried.

Mr. Skeels discussed the socioeconomic forecasts prepared by TC-TALUS which are higher than the projections done by the State Demographer.

Motion by Ms. Hoffman to table the issue of socioeconomic forecasts until the next meeting, pending a report from an independent demographer, Mr. McManus supported, Motion carried.

Motion by Mr. Bartko to approve the June Bills Payable in the amount of \$24,863.27, and Railroad Fund Bills Payable in the amount of \$2,825.01, Mr. Lagowski supported, Motion carried.

Mr. Lively reported on the Regional Transportation Providers Forum, and the NWMCOG's hiring of a transportation coordinator to assist with future forums and other duties.

Mr. Oxender asked for volunteers to serve on a committee to look into changes in the TC-TALUS meeting structure including, date, time, location etc. Ms. Jacobs, Mr. Lagowski, Ms. Smith and Mr. Walters volunteered.

The Board agreed by consensus to cancel the July Board meeting unless significant items arise which need Board action. Also, the Board agreed to change the time of the August meeting to 1:00pm.

Motion by Mr. Bartko to approve the May Bills Payable in the amount of \$1,844.36, and Railroad Fund Bills Payable in the amount of \$10,696.78, Mr. Walters supported, Motion carried.

Motion by Ms. Hoffman to authorize the Executive Board to approve the July Bills Payable if they are within Budget, Mr. Lagowski supported, Motion carried.

The meeting adjourned at 4:25pm



THE UNIVERSITY OF MICHIGAN
INSTITUTE OF LABOR AND INDUSTRIAL RELATIONS

VICTOR VAUGHAN BUILDING
1111 EAST CATHERINE STREET
ANN ARBOR, MICHIGAN 48109-2054
(313) 763-3116 FAX: (313) 763-0913

July 15, 1998

Mr. Matt Skeels
TC Talus
400 Boardman Avenue
Traverse City MI 49684

Dear Matt:

Please excuse the delay in my getting back to you, but we did want to complete the revisions to our forecasts for Grand Traverse County before responding. The State will be providing these forecasts to you after they have completed processing them.

Our revised population forecasts for Grand Traverse are not much changed in total from our preliminary forecasts; our employment numbers are a little higher. On this basis, our best estimate of population growth for the county remains lower than yours.

A few other considerations should be taken into account, though. First, your region of interest does not encompass all of Grand Traverse and Leelanau counties. Your region grew more rapidly over the 1990s than the two counties as a whole, and I have no reason to believe this won't continue. Since this region does include a large part of the total counties' population, though, we would not expect it to far outstrip the growth we have forecast for the counties.

We agree with you that the Traverse City area is becoming an attractive area in which to retire. The trends are already showing up in the data, and we attempted to take account of them. I believe you are assuming a greater acceleration in the trend than we are willing to assume at this time. That is not to say we are right, just that we have a different judgment at this time.

Part of the problem in planning for communities with a higher proportion of retirees and part-time residents is that the population fluctuates so much over the course of the year. It is possible, even likely, that point-in-time population projections don't accurately reflect the demands on infrastructure in the community, but instead understate these demands because they don't reflect peak-load problems. None of our work addresses this issue.

Long-term forecasts can have large margins of error because it is difficult to fully anticipate all of the possible intervening factors. Our forecasts remain lower than yours, but ultimately you have to decide how much weight to attribute to that, given the difficulty of the task for both of us.

If we can be helpful to you, please let me know and we will be happy to work with you in any way we can. Best of luck.

Sincerely,

George Fulton
Senior Research Scientist
Director, Labor Market Research

Student influx means money

9/28/99

T.C.
Record-
cycle

P9 1A

■ Higher student count than projected could net nearly \$500,000 for TC

By MARJORY RAYMER
Record-Eagle staff writer

TRAVERSE CITY — For the second year in a row, increased enrollment at Traverse City Area Public Schools could mean a nearly \$500,000 windfall for the district.

The district's fall enrollment figures show 86 more students than projected. With state funding levels set at \$5,696 per student, the district could bring in more than \$489,000 it was not expecting.

"We are certainly pleased and hope to see the trend continue in the future," said Chris Davis, executive director of human resources for the district.

There are still several unknowns in the figures, so school officials aren't counting on the money yet.

Student counts still must be audited by the state for accuracy. And not all students are necessarily full-time students, so their funding level is prorated according to how many hours they spend in school.

The state also uses a "blended" count formula for doling out funding. It combines the enrollment figures at the beginning of the school year with those at the end of the year — which are generally lower.

Still, the extra students are an unexpected perk and probably will pay off for the district, although exactly how much is yet to be determined.

"We are thrilled," Davis said. The district had a projected enrollment of 11,064. The counts taken last week indicate enrollment is closer to 11,150.

The district is uncertain where all of the additional students came from. One big increase seems to have been from students outside the district who opt to go to Traverse City instead of their hometown schools.

There are 109 such students, which Davis terms a "high" number. In 1996, for example, the district had half as many students electing to go to Traverse City from outside the district.

CHAPTER 2 - A PROFILE OF THE COUNTY

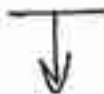
Grand Traverse County, Michigan is located in the scenic northwest corner of lower Michigan. The County is blessed with a bountiful resource base and striking beauty. The area is characterized by rolling hills and forested uplands as well as broad wetlands areas. The soils of the area reflect typical glacial formations and the climate is heavily influenced by the proximity of Lake Michigan with rainfall averaging 37 inches per year and snowfall averaging 120 inches per year.

The varying terrain offers many expansive views of the bay, forests, farmlands and orchards creating a sense of peace and closeness to nature...

Fresh water is abundant for domestic and recreation uses in such proportions that it seems inexhaustible. This perception is reinforced by the fact there are over 150 inland lakes within the County's 464 square-mile area. The gentle westerly winds which seem to always be present but not overbearing help to maintain local air quality. The varying terrain offers many expansive views of the bay, forests, farmlands and orchards creating a sense of peace and closeness to nature seldom found elsewhere in the state.

There is a recognition of the importance of the County's open lands. Tourism is the key industry in the County and agriculture follows close behind. Both of these require large amounts of open lands for orchards, for crops, for recreation and simply for scenic views. The emerging pattern of sprawl is seen as a threat to these essential industries, as well as to the quality of life for residents.

The following paragraphs provide a summary of some key indicators of trends in the County.



Population. The population in the 13-county region* grew by 9.3% to 294,000 from 1987 to 1992. The state average was 2.5% during the same time period. By comparison, Grand Traverse County grew at more than twice the rate of the state as a whole. Between 1990 and 1994, the County grew by about 5.4%, increasing from 64,273 to 67,750 persons, or at an average annual rate of 1.35% during each of the four years. Perhaps most telling is the fact

* The 13-county region includes Antrim, Benzie, Charlevoix, Cheboygan, Crawford, Emmet, Grand Traverse, Kalkaska, Leelanau, Manistee, Missaukee, Otsego and Wexford Counties.

...from 1970 to 1992,
the County ranked ninth
in the state on the basis
of the rate of its
population growth....
from 1992 to 2000, it
will rank second.



that from 1970 to 1992, the County ranked ninth in the state on the basis of the rate of its population growth. According to Woods & Poole projections, from 1992 to 2000, it will rank second (Woods & Poole Economics, 1994).

Projecting the current population growth rate of 2.77% annually as estimated by Woods & Poole on the 1994 County population of 67,750 (as estimated by NWMCOG), it is clear that the County must be prepared to house an average of nearly 2,300 additional persons each year. The Michigan Department of Management and budget forecasts an even greater rate of growth of about 2,600 persons per year. In addition, since the size of the typical household has been declining from 3.26 persons in 1969 to 2.6 persons today and to a projected level of 2.53 by the year 2020, it is possible to forecast an imputed housing demand that increases at a rate greater than the growth rate of the population.

Valuation. Another measure of growth is reflected in the valuation of property in individual jurisdictions. Among the most rapidly growing communities, by this standard, are East Bay, Peninsula and Garfield Townships. Overall, SEV in the County grew from about \$1.2 billion in 1990 to nearly \$1.66 billion by 1994, an average annual rate of growth of about 8.3%. The growth in valuation reflects new development and investment, much of which is occurring in Garfield, Peninsula and East Bay. As of 1994, the City of Traverse City still showed the greatest SEV of all jurisdictions, at \$342 million. But Garfield Charter Township, Peninsula, East Bay, Long Lake, and Acme Township are growing much more rapidly, and together they represent nearly 60% of total SEV in the County. In short, the economic power in the County is shifting from the central City to those jurisdictions which ring the City (County Equalization Department).

Employment. Grand Traverse County, and the surrounding counties of Benzie, Kalkaska, and Leelanau, are enjoying employment growth associated with general economic expansion. The Michigan Employment Security Commission reports that unemployment in the three counties dipped to 4.7% in October, 1994, from 6.0% a year earlier. According to Dan Lopez, economic analyst at the Traverse City office of MESC, a healthy manufacturing sector, driven in part by a boom in auto sales, and strong increases in tourism are the primary forces behind the economic health of the County. These two factors, along with continued population gains, have resulted in higher retail sales and

CHAPTER 6 - HOUSING AND COMMUNITIES

Overview

Two primary issues facing Grand Traverse County in the next twenty-five years will be the companion problems of housing affordability and the economic integration of the County's population. Housing supply is not expected to be a concern, although there may be periodic housing shortages in some areas of the County, or in some components of the market place. For example, housing planners point out that affordable land and housing with good proximity to jobs is already a problem in the County which is likely to worsen as growth moves farther from the core and as prices continue to climb. Nevertheless, even if a fairly aggressive growth management approach were adopted with regard to land use planning, there would likely still be significantly more land suitable for residential development than there will be demand for housing, at least for the foreseeable future. The primary problem will be in the distribution of affordable housing in relationship to centers of employment.

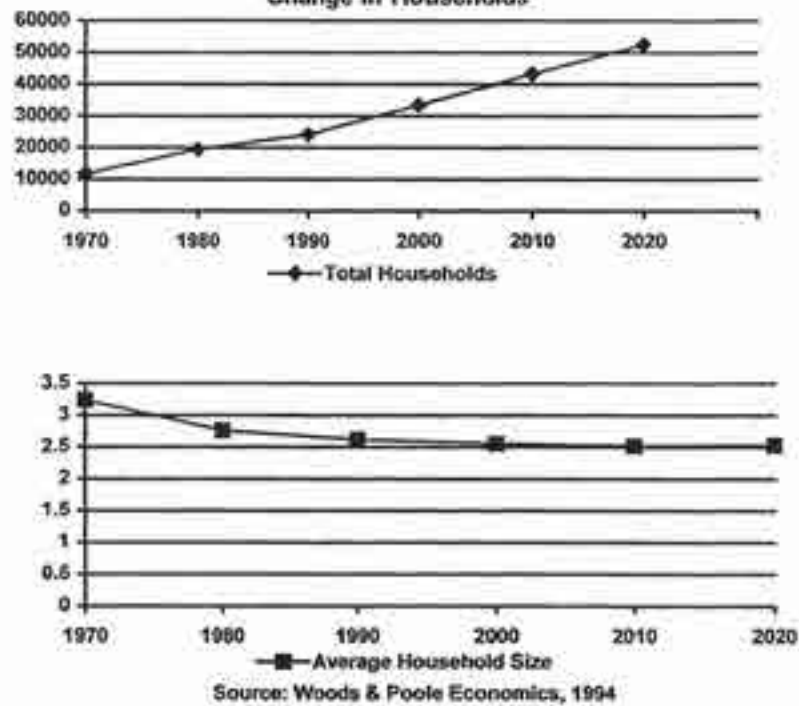
The primary problem will be in the distribution of affordable housing in relationship to centers of employment.

The sheer rate of growth that the County is experiencing will certainly create a series of challenges for local government as well as for the institutions that serve the community. With about 30,000 new households expected to form between now and 2020, the impact on the community's schools, churches, medical institutions, parks and recreation facilities and the overall culture of Grand Traverse County cannot be over-stated. In this section of the Plan, attention is given to the probable direction the community will take with regard to housing needs and some alternative approaches to address the negative impacts of growth.

In the 1970s, about 7,700 new households were formed in Grand Traverse County, for an annual rate of growth of about 6.6%. In the 80s, an additional 4,700 households were formed, for an annual growth rate of 2.4%. By 1990 the total number of households in the County had reached nearly 24,000 and projections for the balance of the decade show accelerated growth of about 3.8% annually with total households expected to reach more than 33,000 by the year 2000. Looking further into the future, the County is expected to reach over 43,000 households by 2010 with over 52,000 expected by 2020, for an overall annual growth rate of slightly under 4% for the period from 1990 to 2020. (Woods & Poole, 1994.)

This rate of growth is slightly greater than that for the overall population, as household size is expected to continue its current rate of decline. Figure 8 below compares the rate of growth of the number of households with the slight decline in the size of the average household, over the same period. Thus, the rate of increase in the number of new households is magnified to some extent by the tendency toward fewer persons per household.

Figure 8.
Change in Households



The fastest growing segment of the Grand Traverse housing market is the single family home intended for middle-upper and upper income families, many of which are migrating into the County. This influx of new families is indicated by the fact that net immigration accounts for over 50% of the population increase in the County (NWMCOG, 1994). Coupled with relatively low land prices and competitive construction costs, these buyers are driving the upper ranges of the market place. Of course, "natives" are moving up as well, attracted by the same relative economies and the amenities of newer homes.

TDM ALTERNATIVE

TDM Alternative

Three separate and distinct modeling efforts have taken place which have been discussed in the DEIS process, the following is a description of each.

1. Matt Goike's research paper (various TDM alternatives)

The modeling completed by Mr. Matt Goike in support of his research paper. Mr. Goike was hired as a summer intern by TC-TALUS in 1992. Upon his departure to begin Graduate Studies at Michigan State University, Mr. Goike was hired as an intern by the Michigan Department of Transportation. As part of his Graduate program, Mr. Goike researched and wrote a paper for a civil engineering course through MSU. This paper analyzed the TRANPLAN traffic model and tested its application to VC and UGB type development in the Traverse City area. The modeling done for this paper is exclusively TDM in nature. The findings and opinions of the paper are Mr. Goike's alone, neither the Michigan Department of Transportation nor TC-TALUS provided funding for the paper or had any approval or review capacity over it.

The findings of Mr. Goike's paper presented in the Deficient Lane Miles chart (attachment 1) show both the Urban Growth Boundary (UGB) and Village Center (VC) alternatives increase the number of deficient miles of road. (A road is considered deficient when the volume of traffic is greater than its capacity.) Conversely, the UGB alternative modeled with 10% and 20% trip reductions showed a decrease in deficient miles, although the method of actually realizing any trip reduction is not clear. The UGB alternative does show some positive benefits in the Vehicle Hours of Travel (VHT) and Vehicle Miles of Travel (VMT) (charts 1 / 2 and 1 / 3). The VC alternatives perform poorly compared to the 2015 base in VHT and VMT charts.

In general, the results presented in the chart (attachment 1) are predictable. Traffic modeling is a four-step process, Trip Generation, Trip Distribution, Mode Split and Traffic Assignment. The Trip Distribution process is based on Newton's Law of Gravity, whereby an object's ability to attract other objects is directly proportional to its relative size or mass. In the UGB alternative, the tremendous amount of growth forced into the area in and around Traverse City causes most trips to occur very near the urban area. This has the effect of making many roads become over capacity (deficient) while at the same time reducing VHT and VMT by making many trip lengths shorter. On the other hand, the VC alternative concentrates growth in small areas well outside the traditional urban core of Traverse City. Because of the relative size of the Traverse City urban area, it still attracts many trips from the VC's and causes the roads between the urban core and the VC to become deficient. Similarly, VHT and VMT both increase as people drive further between the urban core and the VC.

2. TC-TALUS Long Range Plan modeling

The modeling completed in support of the 1994 TC-TALUS Long Range Transportation and Land Use Plan was done by MDOT and utilized what at the time was the most recent data available (1994). The 1994 data includes the road network as it existed in 1994 and socioeconomic data prorated from 1990 to 1994. This modeling included both TDM measures and traditional capacity improvements, the results are shown on attachment 2. Most telling is the chart 2 / 1, this shows the best (as measured by percent reduction in deficient miles of road) single alternative versus 2015 no build (base) was the Growth Boundary with alternative #1 road improvements. The road improvements included in alternative #1 are, construction of the Hartman-Hammond Road connection, widening of US-31, M-37 from Chum's Corners to South Airport Road, widening of Garfield Road between US-31 and 8th Street and the widening of US-31 between Grandview Parkway and Garfield and Fair Street to 8th Street. Conversely, the worst alternatives tested were the Growth Boundary with no road improvements and the Village Center with no road improvements.

3. Modeling for the DEIS

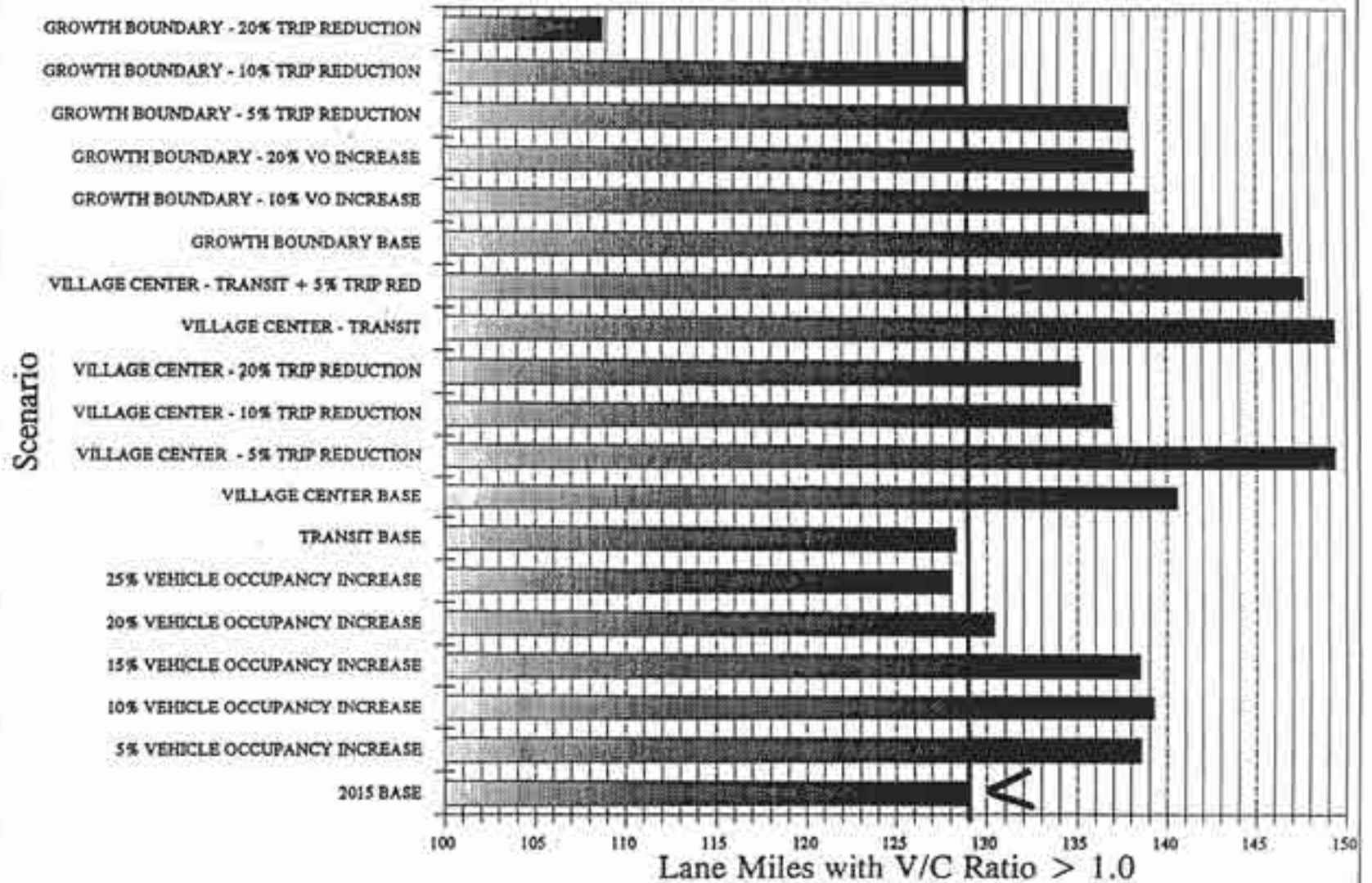
Traffic modeling in support of the DEIS, which was completed by TC-TALUS staff, with assistance from MDOT, Deleuw-Cather and the Coalition for Sensible Growth. These models used a road network as it existed in 1997 and socioeconomic data prorated from 1990 to 1997, and included both TDM/TSM and traditional capacity improvements.

The TDM alternatives tested in the DEIS were VC and Urban Growth Boundary UGB. The VC's are described as traditional small villages that would increase the potential for alternative transportation. Seven VC's were simulated in the traffic model. The VC's were arbitrarily located near existing concentrations of population or development. The UGB arbitrarily defined a limit of urban expansion and moved 75% of the projected future growth from outside the boundary to inside the boundary.

In response to comments asking for TDM alternatives to be tested with other build alternatives the model has been run with the 1994 VC and UGB socioeconomic data and three build alternatives from the DEIS modeling. The traffic model results of these combinations are presented in attachment 3.

Both the VC and UGB are concepts and were examined on a test basis as part of Mr. Goike's paper, the TC-TALUS Long Range Plan and DEIS processes. The local government agencies responsible for the implementation of the VC or UGB concepts were neither consulted nor did they concur with details such as size, location or contents of the UGB or VC's. Enabling legislation for UGB's does not currently exist in the State of Michigan and few local zoning ordinances make provisions for VC's.

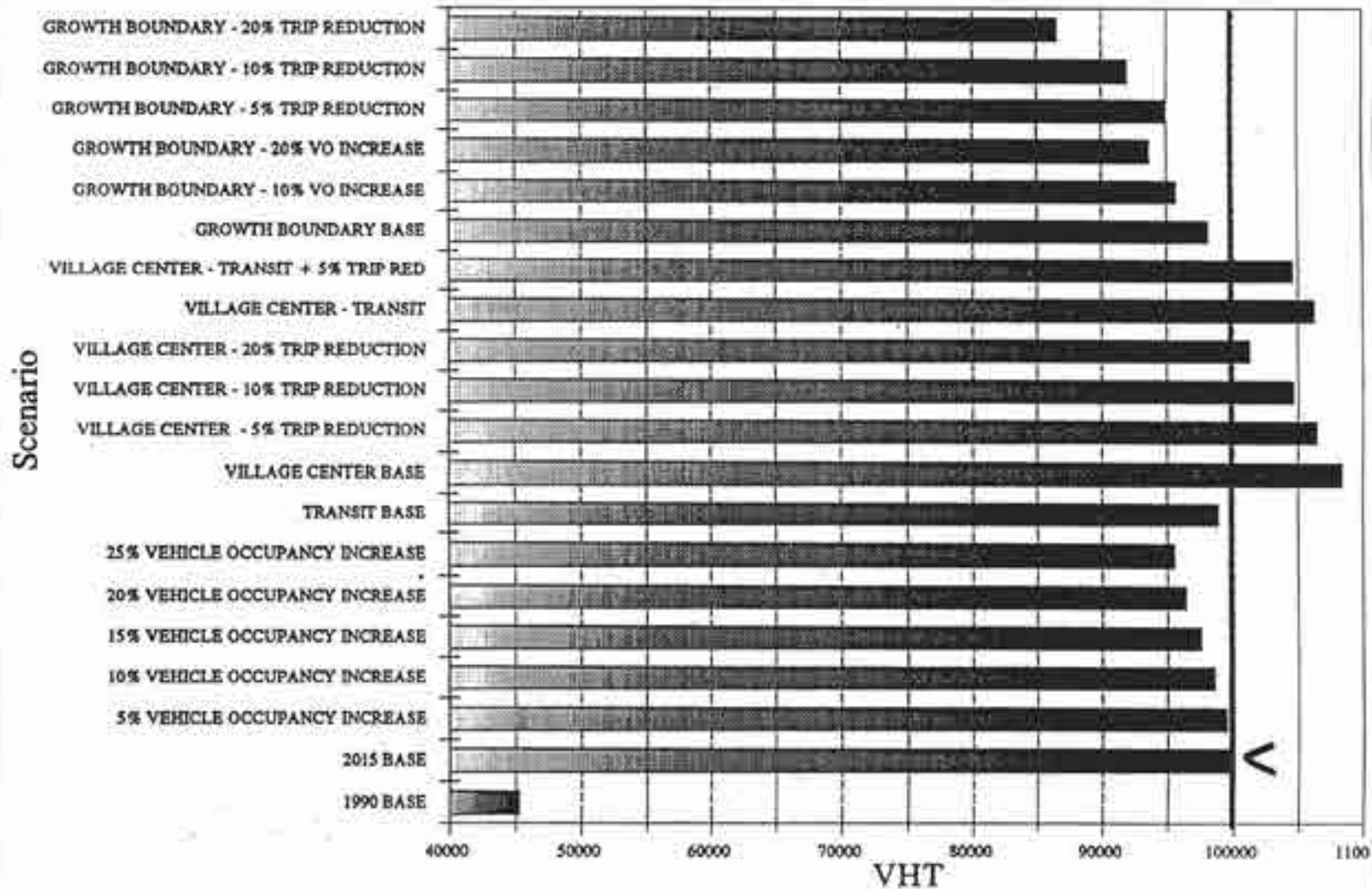
Deficient Lane Miles TC-TALUS Study Area



ATTACHED 1/1

Vehicle Hours Traveled

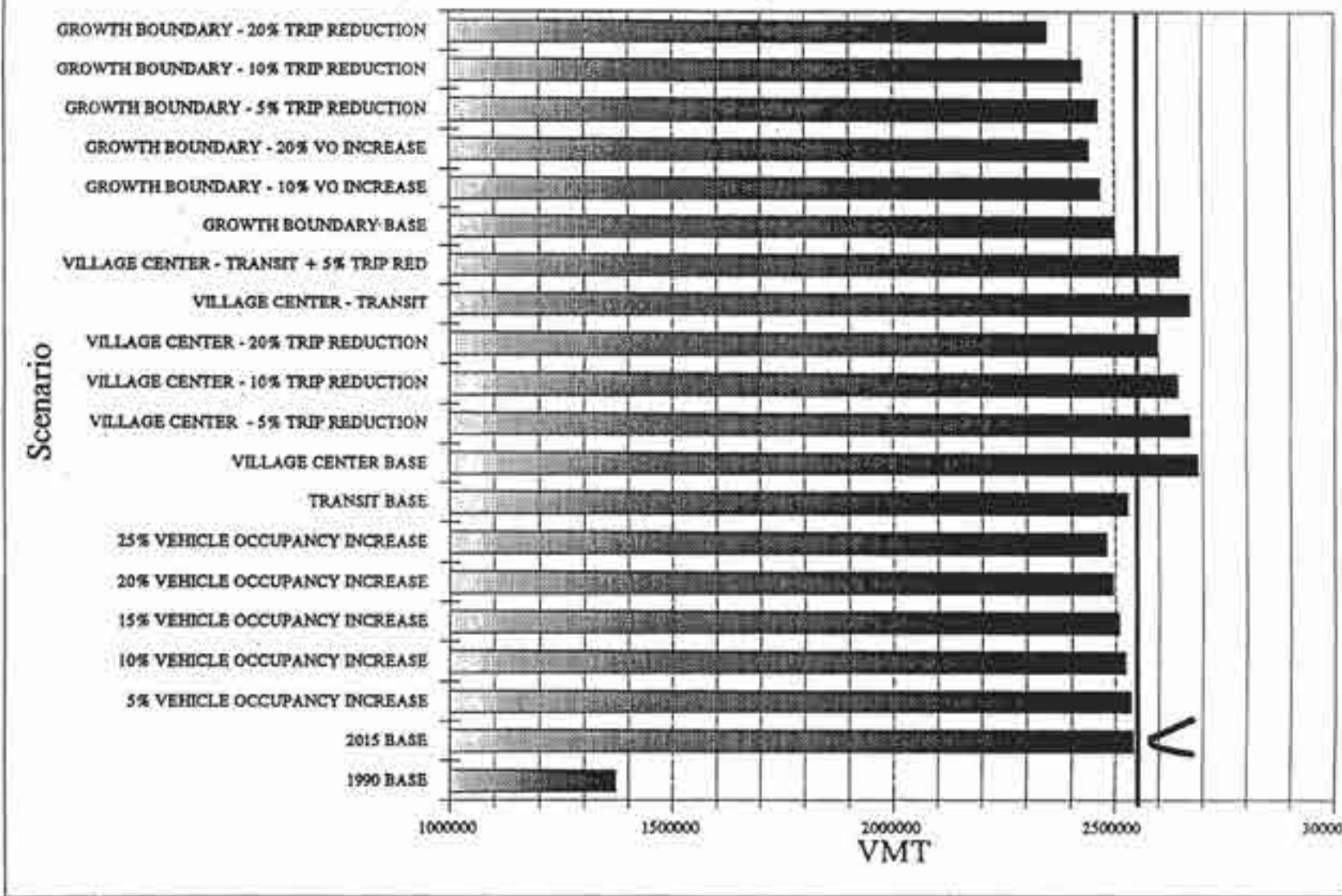
TC-TALUS Study Area



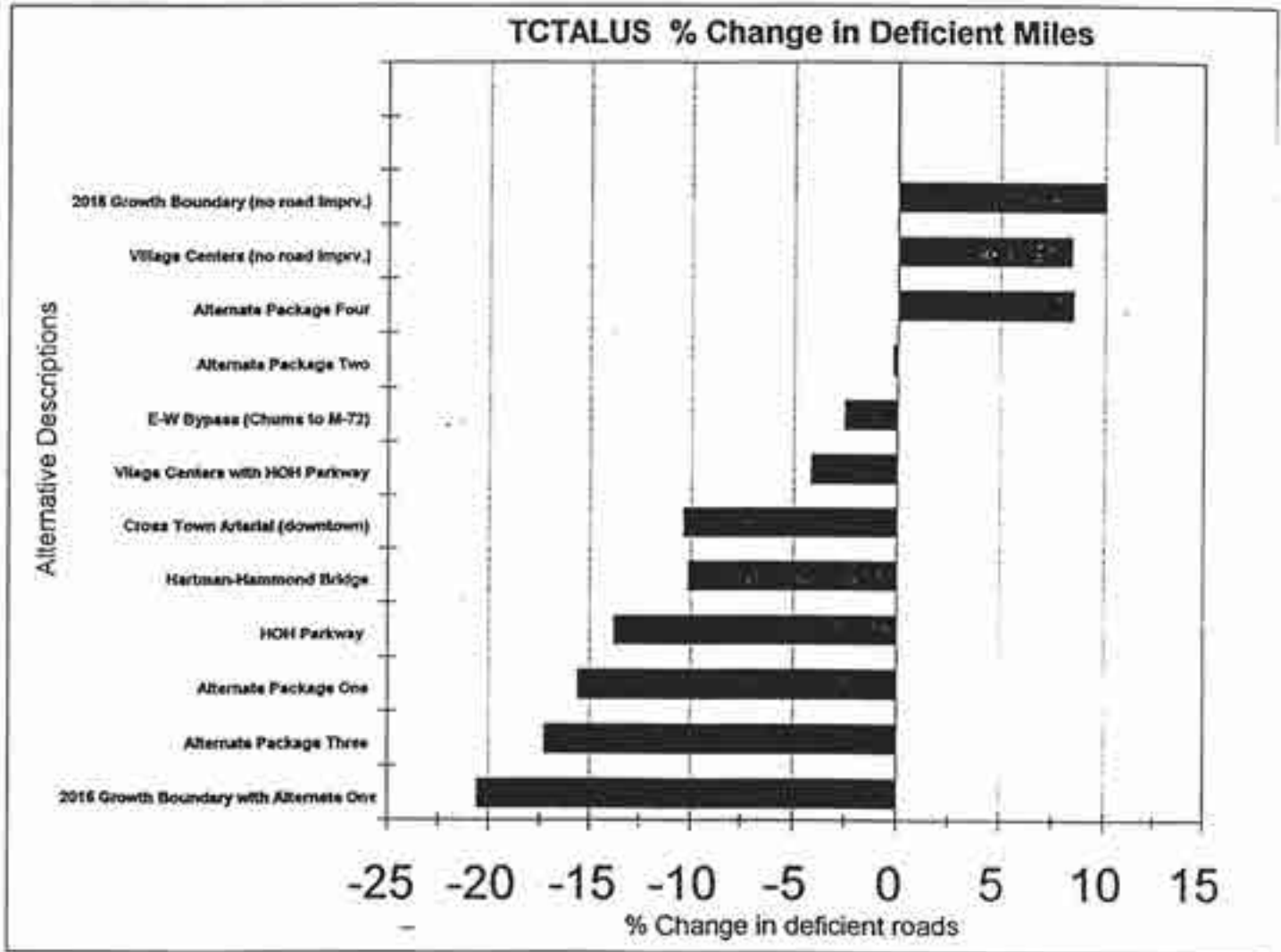
ATTACHMENT 1/2

Vehicle Miles Traveled

TC-TALUS Study Area



MTT NCL/MS/04/01 1/1/05



Versus 2015 Base (no road improvements)

TCTALUS ALTERNATIVE MODEL RUNS

1) EXISTING SYSTEM COMPARISON

- 1990 Socio-economic data with no-build
- 2015 Socio-economic data with no-build

2) HARTMAN-HAMMOND BRIDGE CONNECTOR

- Widen Hartman (2 to 4 lanes) and construct a four lane bridge
- Widen Hammond (4 lanes)

3) BYPASS

- Build a 4 lane Bypass from Chum's comers to M-72

4) ALTERNATIVE ONE - Large scale widening projects. Major Capacity Increases.

- Widen East Front Street (4 to 5 lanes)
Grandview Parkway to Garfield - Fair to 8th
- Widen Garfield (2 to 4 lanes)
North of 8th to US-31
- Widen US-31, M-37 (2 to 5 lanes)
Chum's Corners to South Airport
- Construct Hartman-Hammond connection (4 lanes) and
Widen Hartman (4 lanes)
Widen Hammond (4 lanes) to 3 mile

5) ALTERNATIVE TWO - Smaller scale widening projects. Two extensions on outskirts of study area.

- Widen Peninsula Drive (2 to 3 or 4 lanes)
US-31 to North City Limits
- Widen Keystone (2 to 4 lanes) & reroute US-31/M-37 traffic on Keystone
- Construct South Airport (4 lanes)
Three mile to five mile
- Construct Bugai Road Extension (2 lanes)
Bugai to 641
- Widen South Airport (2 to 4 lanes)
Garfield to Three Mile

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Bugai to 641
- Widen South Airport (2 to 4 lanes)
Garfield to Three Mile

6) ALTERNATIVE THREE - Major East-West Improvement downtown. Smaller scale widenings.
- One 2 lane bypass extension west of downtown.

- Construct / Widen "Cross Town Arterial"
Construct Parsons (4 lanes)
14th to Cass to 8th (4 lanes) Garfield to Woodmere
- Widen West Silver Lake (2 to 4 lanes)
Barnes to Secor
- Widen Three Mile (2 to 5 lanes)
US-31 to South Airport
- Construct Hartman (2 lanes)
US-31 to Gray road

7) ALTERNATIVE FOUR - Restricted downtown access with small improvements and extensions.

- Construct Cass Street alternate (4 lanes)
South City limits to 8th Street
- Reduce Grandview Parkway (5 to 2 lanes)
Through Traverse City
- Construct Cedar Run (2 lanes)
North Long Lake to 11th Street
- Widen M-22 (2 to 5 lanes)
M-72 to Cherry Bend

8) CROSS TOWN ARTERIAL

- East West Arterial in downtown Traverse City
14th to a new extension west of Boardman Lake to Parsons to Airport Access.
(All 4 lanes, 35 M.P.H.)



9) HOH Parkway

- A 4 lane parkway starting north of M-72 in Leelanau County, moving southeast to Hartman, east past Four Mile, then north past M-72 in Acme Township.
This parkway is a recommendation of HOH Associates Inc.
Precise alignment has not been determined.

**Boardman River selected screen line volumes
(Existing and Projected 2015 daily traffic)**

River Crossing	Village Cntr. w / South Airport (1997 model)	Village Cntr. w / Hartman-Hammond (1997 model)	Growth Bdy. w / South Airport (1997 model)	Growth Bdy. w / Hartman-Hammond (1997 model)	2015 South Airport (6 lane) and Beitner (4 lane)** (1997 model)	Village Cntr. w/ HOH Parkway concept* (1994 model)	Growth Bdy. w / Alternative #1 * (1994 model)	Village Center w/Smartroads	Growth Boundary w/Smartroads
Grandview/ US-31	40,500 (E)	40,000 (E)	36,500 (E)	36,500 (E)	38,000 (E)	34,000 (D)	39,000 (E)	40,000 (E)	38,000 (E)
Eighth St.	26,500 (E)	25,500 (E)	27,000 (E)	27,000 (E)	25,000 (E)	20,000 (D)	24,000 (D)	25,000 (E)	24,000 (D)
South Airport	53,500 (F)	30,000 (D)	54,000 (F)	33,500 (D)	47,500 (D)	28,000 (D)	34,000 (D)	42,500 (F)	46,000 (F)
Hartman-Hammond	-----	31,500 (E)	-----	30,500 (D)	-----	20,000 (C)	21,500 (C)	-----	-----
Beitner	6,000 (C)	2,000 (A)	8,000 (D)	2,000 (A)	9,500 (B)	16,500 (F)	6,000 (C)	10,500 (B)	9,500 (B)
Cass Road Bridge	-----	-----	-----	-----	-----	4,500 (D)	3,500 (C)	9,000 (D)	7,000 (C)

* = These model runs done in support of the 1994 TC-TALUS Long Range Plan, results are as run by the Michigan Department of Transportation on an older version of the modeling software using a 1994 calibrated network, versus a 1997 calibrated network for the other model runs reported in the DEIS.

**= This model run requested by the MDEQ at the Agency Review meeting on September 24, 1999.

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November 17, 1999

TRANSIT INVESTIGATION

Conversation with Joe DeKonig on 10/6/99.

He indicated that four fixed route runs are being planned in Grand Traverse County. The **Southeast Run** would begin around Garfield/Heidbreder industrial park or Oak Terrace Apartments and run down Garfield Avenue to downtown Traverse City. The **Southwest Run** would begin at the GT Mall or GT Crossings and continue down US-31 to downtown. The **West Run** would begin at the West Senior High School and go through the Royal Drive area, Munson Hospital/Commons/Pavilions through the Central Neighborhood to downtown. The **East Run** would begin at Tom's East Bay run through Avenues B,C,D/Indian Trails area to the Old Community hospital and NMC to downtown.

He expects that about half of BATA's existing ridership (160,000 rides per year) would go to the fixed route service, and eventually as "choice" riders are attracted, that number will rise to 200,000 to 300,000 rides per year. The 160,000 rides are not new rides, rather existing rides that would switch from the current demand response system to the fixed route system.

If additional money were made available, additional buses would be purchased to decrease the headways. The headways then would go from 20 minute peak / 30 minute non-peak to 10-15 minute peak / 20 minute non-peak.

The following table is my analysis of the data from Joe DeKonig. In my opinion the establishment of fixed route service shows a very limited impact to the transportation system in Grand Traverse County.

BATA estimated number of rides per year on fixed routes	Divided by 260 work days per year	Rides per day	Divided by 1.6 persons per vehicle *	Number of vehicles not on road per day
160,000	/ 260	615	/ 1.6	384
200,000	/ 260	769	/ 1.6	481
250,000	/ 260	962	/ 1.6	601
300,000	/ 260	1154	/ 1.6	721

*= data from 1990 Nationwide Personal Transportation Survey

From 1977 to 1990 the average vehicle occupancy, calculated as person miles per vehicle mile, declined steadily for commuting and shopping. Several factors contributed to the general decline in vehicle occupancy, including the increased number of vehicles per household and the decrease in average household size.

TABLE 8

**Average Vehicle Occupancy for Selected Trip Purposes
1977, 1983, and 1990 NPTS
(person miles per vehicle mile)**

Trip Purpose	1977	1983	1990	Percent Change	
				77-90 ¹	77-90 ²
Home to work	1.3	1.3	1.1	-1.3	-15
Shopping	2.1	1.8	1.7	-1.6	-19
Other family or personal business	2.0	1.8	1.8	-0.8	-10
Social and recreation	2.4	2.1	2.1	-1.0	-13
All Purposes³	1.9	1.7	1.6	-1.3	-16

Data source: Travel Day data.

¹ Compounded annual rate of percentage change.

² Percentage change rate.

³ Includes other purposes not shown above, such as trips to school, church, doctor, dentist, and work-related business trips.

SECTION 4(f) IMPACTS TO NATURE RESERVE

DRAFT



JAMES A. BURKHOLDER
Chairman

ROGER L. THOMPSON
Vice-Chairman

WALTER "JAY" HOOPER
Commissioner

MICHAEL K. DILLENBECK, P.E.
Manager

HAROLD D. SHEFFER
Superintendent

MARK G. LEWIS, P.E.
County Highway Engineer

HAROLD D. KELLY
Financial Director

DEBRA J.M. HUNT
Clerk

"OUR MISSION IS TO UPGRADE AND MAINTAIN A SAFE AND EFFICIENT ROAD SYSTEM"

MEMO

TO: *Sherry Kamke*

FROM: *Micheal K. Dillenbeck, Manager*

DATE: *November 17, 1999*

SUBJECT: **RESPONSES TO US-EPA REQUEST FOR ADDITIONAL INFORMATION**

The Grand Traverse County Road Commission would like to offer the following information in addition to that which is contained in the Boardman River Crossing Mobility Study DEIS of May 1999.

EXISTING CASS ROAD BRIDGE AND BEITNER ROAD 4(F) IMPACTS

Summary

The DEIS Section 3.2 - Evaluation of Alternatives, Subsection 3.2.4 - "Build Alternatives," Page 3-20 and 3-21 explain the ability of these alternatives to handle the vehicle traffic. The SmartRoads Alternative is also discussed in Subsection 3.2.4 and refers to information included in detail in Section 6, Section 4(f)/6(f) Evaluation. Section 6.4 of Section 4(f)/6(f) Resources, Page 6-4 and 6-7 and Figure 6.4-1 describe the Grand Traverse Nature Education Reserve. It is clear in the Study that land within the Nature Education Reserve are public recreational and educational properties and, as such, are properly classified as 4(f) Impacts. The enclosed map shows the most current boundaries of the Nature Education Reserve which includes property commencing about 600 feet south of the proposed Hartman-Hammond Alternative Alignment and continues to about 400 feet south of Beitner Road. It could be noted in the Final EIS that the Beitner/Keystone Road Improvements Alternative and the SmartRoads Alternative would require widening the Beitner Road crossing of the Boardman River to accommodate the proposed four-lane boulevard. The Road Commission does have 100 feet of right-of-way on Beitner Road through the Nature Education Reserve. Figure 5-2 to 5-4 on Pages 5-5, 5-6 and 5-7 show the standard road cross sections for moving the amounts of traffic projected. By combining these typical road cross sections, it is apparent that a four-lane boulevard with an 18 foot center median will require 180 feet of right-of-way. The four-lane bridge without a center median requires 70 feet to the outsides of the parapet (guardrail). The Keystone/Beitner and SmartRoads Alternatives can be physically built within the existing road right of way but the driveways to the parks on the North and South side of the road will not have adequate sight distance and will require relocation or additional right of way from the parkland to provide sight distance.

DRAFT

The two-lane Cass Road Bridge, the four-lane Cass Road Bridge Build Alternatives and the Smart Road Alternative each require the reconstruction of the road sitting on top of the existing hydroelectric dam. The Cass Road crossing of the Boardman River is a public highway, which is subsequent to the last construction of the Boardman Hydroelectric Dam. The Road Commission accepted county road jurisdiction of Cass Road from Garfield Township in March 23, 1932. Although all the details of the Cass Road relocation when the dam was rebuilt in the 1930's are not known to exist, it is known from the records available that the Road Commission has had jurisdiction over the roadway surface on top of the dam, but only to the extent of the actual appurtenances used for vehicle travel or 20 feet according to the plans for the dam. The current and prior owners of the property continue to operate the hydroelectric dam including the mechanical equipment required for the dam operation immediately adjacent to the backside of the bridge railings. Other than snow removal and storm water runoff, the Road Commission has not exercised any jurisdiction beyond the confines of the outside of the bridge railings or below the existing concrete bridge deck. Figure 5-4 on Page 5-7 of the DEIS shows a four-lane bridge structure will be 70 feet wide and a two-lane structure can be 24 feet less or 46 feet wide. Therefore, if the Road Commission were to propose widening the structure beyond the existing bridge railings, they would need to acquire additional right-of-ways from the Grand Traverse County Parks and Recreation Department to build even a two-lane structure to a current national design standards. The widening of the existing one-lane bridge to two lanes and/or four lanes has an impact on the recreational and educational properties of the Grand Traverse County Nature Education Reserve because any widening would be outside the existing county road right-of-way and jurisdiction.

It also should be noted that in the Environmental Assessment completed in 1997 it was determined that the Nature Education Reserve Committee of the Grand Traverse County Parks and Recreational Commission supported closing the bridge to thru-motorized traffic. It is their master plan that the Nature Education Reserve become protected from motor vehicle traffic as funding and resources are available to relocate the public boat ramp and the existing Cass Road to outside the boundaries of the Nature Education Reserve.

History of Cass Road over Boardman Dam No.3

The first record of Cass Road in the records of the Grand Traverse County Road Commission is the resolution of taking township roads into the county road system which occurred on March 23, 1932. The road was described as the "Mile on north and south 1-4 line section 27 " and "East 1-2 mile between sections 27 and 34" T27N-R11W, Garfield Township. The road commission also has a copy of the certification map of the Garfield Township road system of 46.6 miles as of January 1, 1931. This map clearly shows the east-west portion of the road west of Keystone Road at a different alignment than exists today with the road originally curving north and back south before turning north along the north-south quarterline. The next item that appears in the Board minutes is the following action "Moved and seconded that a letter be sent to Michigan Public Service Co. relieving them of responsibility in event of washout of dam, in return for right-of-way released. Carried." which is contained in the December 27, 1933 minutes. An easement was granted to the County of Grand Traverse on April 26, 1934 for right of way over a strip of land 66 feet wide beginning at a point N 74deg. 30min. W 125 feet from the intersection of the center lines of the concrete bridge of the Michigan Public Service Company Boardman River No. 3 Hydro Plant (which is the location of the existing Cass Road Bridge) and the

DRAFT

right of way continues to the Northwest to the North line of Section 34, Garfield Township. All records after the 1940's of the road commission only show the road on the granted right of way where it exists today.

Records of Grand Traverse County that purchased the properties from Consumer Power Company in 1968 and subsequently leased the power plant to Traverse City Light and Power in 1980 contain a dam site plan of Boardman River No. 3. That dam site plan shows a highway and bridge that is Northwest of the existing bridge similar to the 1931 township map. It is also clear from the 2-16-31 dam site plan that the easement granted in 1934 to the road commission is over the location of the former drainage cut, old spillway and old penstocks of the 1892 original dam. The first known aerial photos of the county were taken in 1938 and they show the road in its current location. The road commission had a title search made of the recorded documents from the original land grant of 1856 to 1950 and found no additional conveyances to or from Garfield Township, Grand Traverse County or road commission for the subject parcels of land. There are no abandonments records of the former road in the road commission's records or register of deeds. The Clerk for Garfield Township states that there are no records at the township offices through the 1930's that deal with township roads.

Therefore, it is the road commission's findings that Cass Road East of the dedicated easement of 1934 is a user road right of way or it exists to the width that the road commission has used and maintained. It is apparent from the records available that the road commission (or possibly the township) agreed to the new dam construction and allowed the original road to be removed for the new dam's construction. There appears to be a road in the 1938 photo that is 800 feet North of the existing dam which would match closely with the township's map and description that the original road was along the section line between Sections 27 and 34. The road shown on the proposed dam site plan may be a proposed road which actually was relocated to the granted easement. Regardless of where the original road was located, the road commission is only in position to claim the road bed and right of way actually used since 1934 East of the granted easement.

The dam drawings show the road surface to be 18 feet in width and the railing extended another foot outside the surface or a total of 20 feet in width at the existing bridge location. East of the bridge the road commission claims a 66 foot of right of way based on the use of the surrounding land. It would not be possible to claim more than 20 feet right of way on the dam structure as there are stairways and gate controls immediately adjacent to the railings which support the road commission's findings that public road purposes have been historically limited to 20 feet.

History of Beitner Road Crossing the Boardman River

The Grand Traverse County Road Commission relocated Beitner Road from the South line of Section 3, T26N, R11W Blair Township in 1980 to the existing location that crosses the river in a Northeasterly direction about a 1000 feet North of the South section line. The road commission purchased several parcels of land at the stream crossing and an easement from the City of Traverse City to construct this roadway on the current location. After completing the road construction, the Road Commission donated the excess land outside the 100 feet right of way to the County of Grand Traverse for their park system. The County of Grand Traverse has acquired additional park property on the South side of the road and has built a parking lot for access to the Boardman River.

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The Road Commission has a recorded 100 foot right of way available for road purposes at the Beitner Road crossing of the Boardman River. It could be physically possible to build a four lane road within the right of way without using the adjacent park land assuming the road is not built as a boulevard. Figure 5-4 of the DEIS shows a bridge section of 70 feet wide and figure 5-3 shows a multilane section requiring 150 feet of right-of-way which could be built in 100 feet with no ditches and enclosed drainage. The impact of building this type of road section within the park land will be the removal of driveway access because of the lack of sight distance to enter the road or the acquisition of parkland to provide adequate sight distance.

Grand Traverse County Nature Education Reserve

The Grand Traverse Nature Education Reserve which consisted of 55 acres of City owned land and 310 acres of County owned land was officially dedicated as such on July 4, 1976. The County of Grand Traverse stated the purpose for acquiring the properties from Consumer Power Company was to hold and preserve for park and recreational purposes for all of the people of Grand Traverse County and their future generations in their Resolution No. 25 of November 13, 1968. The City of Traverse City passed a resolution in 1976 agreeing "to the use and development of the Keystone Dam property in conjunction with the County owned Boardman River property for a Nature Education Reserve." The City of Traverse City reserved the rights to use portions of their land for tree nursery, to mine and produce minerals and other uses. The County of Grand Traverse has acquired additional park properties along the Boardman River and continues to seek opportunities to enhance the quality of the Reserve.

The Parks and Recreation Department Director, Tim Schreiner, wrote a response on October 29, 1996 to our questions about the intended future use of the Reserve and how Cass Road that would best fit the Parks and Recreation Commission's master plan. The letter clearly states their support for removing Cass Road from the existing road alignment and to replace the road North of the Reserve. An earlier resolution from the Parks and Recreation Commission of January 25, 1995 granted the road commission approval to consider using part of the Reserves for a Hartman-Hammond alternative giving their preference that the replacement bridge be located as far north of the Sabin Dam as possible. That study alternative of crossing the Reserve was not carried forward in the Environmental Assessment due to new industrial development outside the Reserve.

(132)

N.E. COR. 1000



N.E. 1/4
 Section 34, T.27 N., R. 11
 GARFIELD TOWNSHIP
 GRAND TRAVERSE COUNTY, MICHIG.

28 05 034

(179)

State Copy

To the Grand Traverse County Road Commission

This is to certify that the map of Garfield Township herewith submitted shows correctly to the best of our knowledge and belief the township roads of this township as of January 1, 1931 that will be taken over in the next five year period commencing April 1, 1932 by the County Road Commission in accordance with Act #130 of the Public Acts of 1931. The portion of town line roads belonging to this township are correctly noted. Any streets or alleys in recorded or unrecorded plats, incorporated or unincorporated villages unless laid out or regarded as a township highway prior to the recording or establishing of the plats are not included on this map. The mileage of roads in this township including only those marked as of January 1, 1931 is 44⁵/₈ Miles.

Hb. 6 OK

Signed

J. H. Harris
Supervisor

Robert Barney
Justice of Peace

Geo. H. H. H.
Justice of Peace

Clark M. Bull
Clerk



GARFIELD TOWNSHIP

NOTICE OF TAKING TOWNSHIP ROADS INTO COUNTY ROAD SYSTEM UNDER THE PROVISIONS OF
CHAPTER IV OF ACT 283, PUBLIC ACTS OF 1909 AS AMENDED.

March 23, 1932

March 22, 1933

July 25, 1940

GARFIELD TOWNSHIP
T 27 N—R 11 W

- Mile between sections 5 and 8.
- Diagonal road beginning at west 1-4 corner of section 18, thence north easterly across section 18.
- West 1-2 mile between sections 19 and 20.
- Mile on north and south 1-4 line section 15.
- Mile on north and south 1-4 line section 22.
- Mile on north and south 1-4 line section 27.
- East 1-2 mile between sections 27 and 34.
- Diagonal road beginning at south 1-4 corner of section 34, thence north easterly across section 34.
- Mile between sections 35 and 36.
- Mile between sections 34 and 25.

GARFIELD TOWNSHIP
T 27 N—R 11 W

- Mile between sections 8 and 7.
- South 1/4 mile on west side of section 6.
- Mile between sections 17 and 18.
- Mile between sections 19 and 20.
- Mile between sections 29 and 30.
- Mile between sections 31 and 32.
- North 1/4 mile on north and south 1/4 line of section 14.
- Road beginning 1/4 mile north of south 1/4 corner section 14, thence southerly 2.8 miles.
- Mile on east and west 1/4 line section 30.

- Garfield Township, T-27-N, R-11-W
- South 1/4 mile between sections 21 and 22.
 - Mile along south line of Section 36.
 - Mile along south line of Section 34.



Beginning at 1-4 Corner West Line Sec. 23 thence Easterly 0.6 mile.

Mile East and West 1-4 Line Sec. 20

West 0.2 mile South 1-4 Line Sec. 20

West 0.2 mile East and West 1-4 Line Sec. 21

Mile South Line Sec. 22

West 1-2 mile South Line Sec. 23

North 1-2 mile between Sec. 31 and Sec. 31

Beginning at 1-4 Corner North Line Sec. 31 thence Southwesterly 0.7 mile.

Beginning at 1-4 Corner South Line Sec. 35 thence Northwesterly 1.5 miles.

East 0.4 mile South Line Sec. 34

Minutes of Regular Meeting of the Grand Traverse County Road Commission
held in the office of the County Clerk on Wednesday December 27, 1933.

Meeting called to order by the Chairman Finley M. Hammond.

Upon Roll Call the following members responded:

F. M. Hammond

Albert Carlisle

Duncan Morrison

Moved and seconded that the Compensation Insurance for the year 1934 be
given to the Hastings-Santo Insurance Agency. Carried.

Moved and seconded that the Claim of Bundy's Brief Service for their
error in billing gasoline be allowed if found to be correct. Carried.

Moved and seconded that the Secretary send wire to State CWA Committee
suggesting that Armco Culverts be used in CWA work in this County. Carried.

Moved and seconded that the Rennie Oil Company be given order for 10,000
gallons of gasoline. Carried.

Upon motion duly seconded the petition of tax payers of Blair Township
was received and placed on file.

Moved and seconded that a letter be sent to Michigan Public Service Co.
relieving them of responsibility in event of washout of dam, in return
for right-of-way released. Carried.

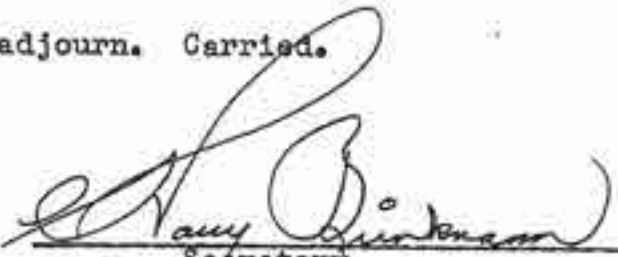
Upon motion duly seconded the following bills and payroll were ordered paid:

Payroll No. 1320	724.44
T. H. Wagner	18.00
Willis Ramsay	102.75
Century Tool and Metal Co.	4.06
W. J. R. Service Station	5.40
Sinclair Refining Co.	47.03
McGough's	3.81
Walters & Hemming	2.00
Traverse City Lumber Co.	5.16
Traverse City Iron Works	10.10
Northern Auto Parts Co.	57.09
Wiesler's Drug Store	1.30
Rowe Mfg. Co.	572.00
Contractors Machinery Co.	288.90
Queen City Implement Co.	6.60
Auto Trim Shop	4.35
Michigan Bell Tele Co.	16.60

Dec. 27, 1933.

Geo. L. Nesbitt	5.30
Used Furniture Exchange	5.00
Walter O. Dow	32.10
Albert Carlisle	25.05
Hastings-Santo Insurance Agency	149.87
Duncan Morrison	19.35
F. M. Hammond	10.90

Moved and seconded that the Board adjourn. Carried.



 Secretary

GASOLINE BIDS

	<u>70 Octane</u>	<u>Regular</u>
National Refining Co.	.09467	.08592
Naph-Sol Refining Co.	None	.082
Standard Oil Company	.088	.0805
Mac's Service Station	.09215	.08215
Waddell Bros.	.091	None
Rennis Oil Company	.086	.086

DEED OF RIGHT-OF-WAY

This indenture made this 26th day of April in the year of our Lord one thousand nine hundred and thirty-four.

Between Michigan Public Service Company of the City of Holland, County of Ottawa, State of Michigan, a corporation organized and existing under and by virtue of the laws of the State of Michigan, party of the first part, and the County of Grand Traverse, one of the Counties of the State of Michigan, party of the second part,

Witnesseth, that the said party of the first part, for and in consideration of the sum of One Dollar, to it in hand paid by the said party of the second part, the receipt whereof is hereby confessed and acknowledged, and of other valuable considerations and subject to the conditions herein contained, does by these presents grant, bargain, sell, remise, release, alien and confirm unto the said party of the second part, and its successors and assigns, a right-of-way for highway purposes over the following described tract or parcel of land, more particularly described as follows:

A strip of land 66 feet wide along a centerline which is described as follows: Point of beginning taken as a point N74°30' W 123.0 feet from the intersection of the center lines of the concrete bridge of the Michigan Public Service Company Boardman River No. 3 Hydro Plant; (said intersection being 905.4 feet south and 1270.4 feet west of the northeast corner of Section 34, Township 27 North, Range 11 East). From said point of beginning, thence N74°30' W 276.4 feet; thence along a 11° curve to the right 571.2 feet; thence N0°40' W 264.0 feet to the north section line of said Section 34, Garfield Township, Grand Traverse County, Michigan, and permission is also hereby granted to use enough added width of right-of-way in those places necessary to construct and maintain a highway according to plans and profile certified to by both parties hereto and on file with the Board of County Road Commissioners of the said County of Grand Traverse, and in the office of the said party of the first part.

Together with all and singular the hereditaments and appurtenances thereunto belonging or in anywise appertaining: To Have and to Hold the said premises for highway purposes, as herein described, with the appurtenances, unto the said party of the second part, and to its successors and assigns so long as said premises are used for highway purposes.

As a part consideration for this conveyance said party of the first part, its successors and assigns, is released from any and all claims to damages in any way arising from or incident to the opening and maintaining of such road across said premises, and from any damage to said road caused by flood or failure of the dam now owned and maintained by said first party.

As a further consideration for this conveyance said second party shall construct and maintain a culvert to drain all seepage from the dam and natural drainage in such a way that it does not interfere with the operation of the present or a similar weir.

As a further consideration for this conveyance the lands hereby conveyed shall be used only for highway or road purposes and in case they shall cease to be used for such purposes the title to the above described premises shall revert to said party of the first part, its successors or assigns.

IN WITNESS WHEREOF, the said Michigan Public Service Company has caused these presents to be signed in its name, by its President and sealed with its corporate seal, the day and year first above written.

MICHIGAN PUBLIC SERVICE COMPANY

By *R. C. Hutchinson*
Its President

Signed, Sealed and Delivered
in presence of:

Martha Busser
Edw. Reed

(SEAL)

STATE OF MICHIGAN }
 } SS
COUNTY OF OTTAWA }

On this 26th day of April, in the year of our Lord one thousand nine hundred and thirty-four, before me, a Notary Public in and for said county, appeared M.C. Blankhorn to me personally known, who, being by me duly sworn, did say that he is the President of the Michigan Public Service Company, the corporation named in and which executed the within instrument, and that the seal affixed to said instrument is the corporate seal of said corporation, and that said instrument was signed and sealed in behalf of said corporation, by authority of its board of directors; and said M.C. Blankhorn acknowledged said instrument to be the free act and deed of said corporation.

La Verne Essanburgh
Notary Public, Ottawa County, Mich.
My Commission expires Oct. 13 - 1937

RESOLUTION

WHEREAS, the County of Grand Traverse has requested of the Michigan Public Service Company, the use, for highway purposes, of a strip of land 66 feet wide and approximately 1712 feet long, in Garfield Township, and

WHEREAS, the said Michigan Public Service Company has seen fit to offer and give to Grand Traverse County a Deed of Right-of-way covering said strip of land desired by the County, in which Deed of Right-of-Way the land so desired by the County is more specifically described as follows:

A strip of land 66 feet wide along a centerline which is described as follows: Point of beginning taken as a point N74°30' W 125.0 feet from the intersection of the center lines of the concrete bridge of the Michigan Public Service Company Boardman River No. 3 Hydro Plant; (said intersection being 905.4 feet south and 1270.4 feet west of the northeast corner of Section 34, Township 27 North, Range 11 West). From said point of beginning, thence N74°30' W 776.4 feet; thence along a 11° curve to the right 671.2 feet; thence N0°40' W 264.0 feet to the north section line of said Section 34, Garfield Township, Grand Traverse County, Michigan.

NOW THEREFORE, be it resolved that the County of Grand Traverse of the State of Michigan, hereby accepts said Deed of Right of Way and all of the provisions of said Deed of Right of Way, and be it further resolved that a certified copy of this resolution be attached to and filed with said Deed of Right of Way in the office of the Register of Deeds of the County of Grand Traverse.

BOARD OF SUPERVISORS
OF COUNTY OF GRAND TRAVERSE

ATTEST: [Signature] BY [Signature]
County Clerk CHAIRMAN.

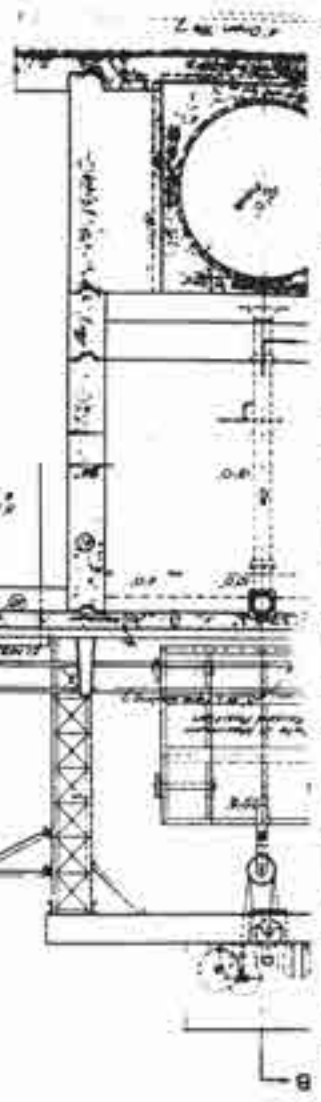
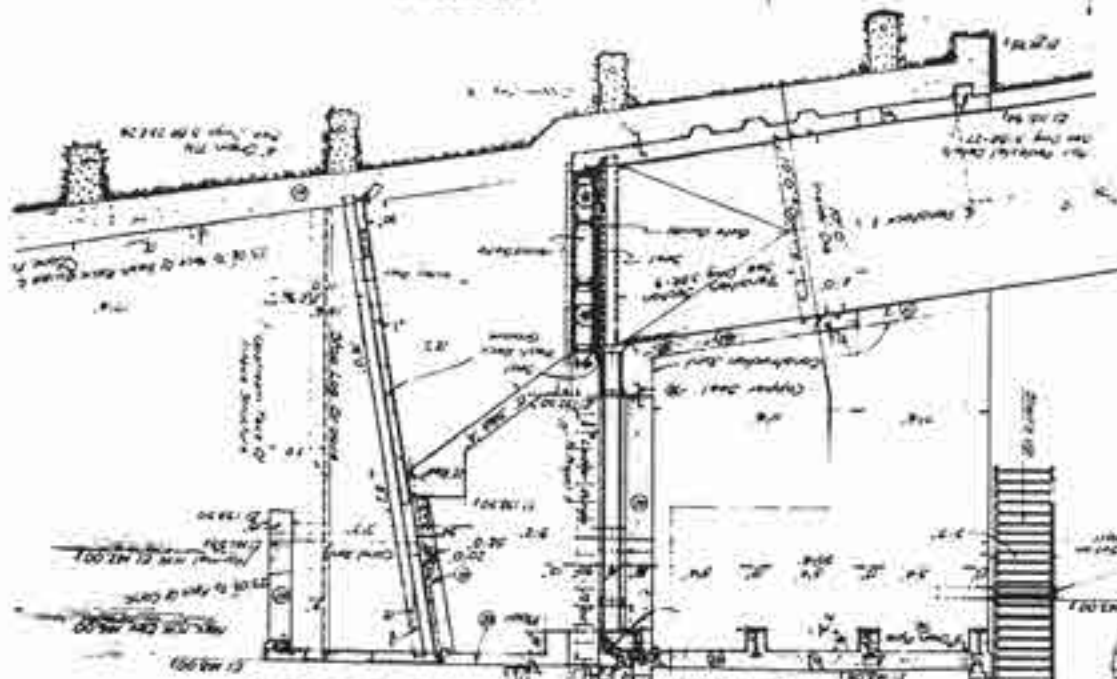
I, [Signature], do hereby certify that I am County Clerk of the County of Grand Traverse, State of Michigan, and as such County Clerk do hereby certify that the above is a true and correct copy of a resolution, as the same appears upon the records of the Board of Supervisors of Grand Traverse County, duly adopted by said Board of Supervisors at a meeting held on the 28th day of June, 1934.

In witness whereof I have hereunto set my hand and seal this 28th day of June, 1934.

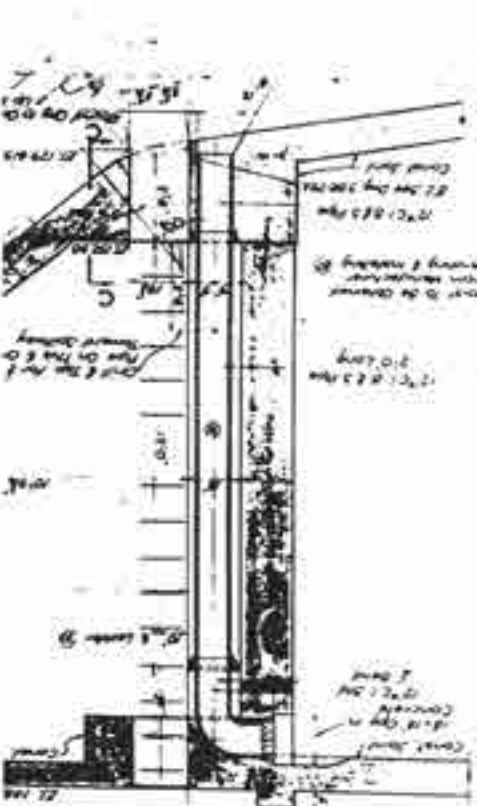
[Signature]
County Clerk

- CONCRETE FINISHES
- 1.00 17. FINISH CONCRETE
 - 1.00 16. CONCRETE FINISH
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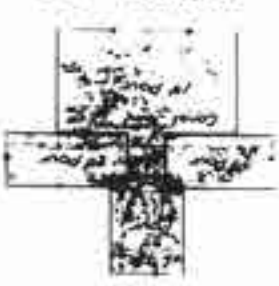
SECTION B-B



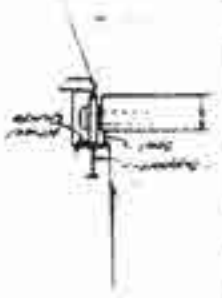
SECTION THRU

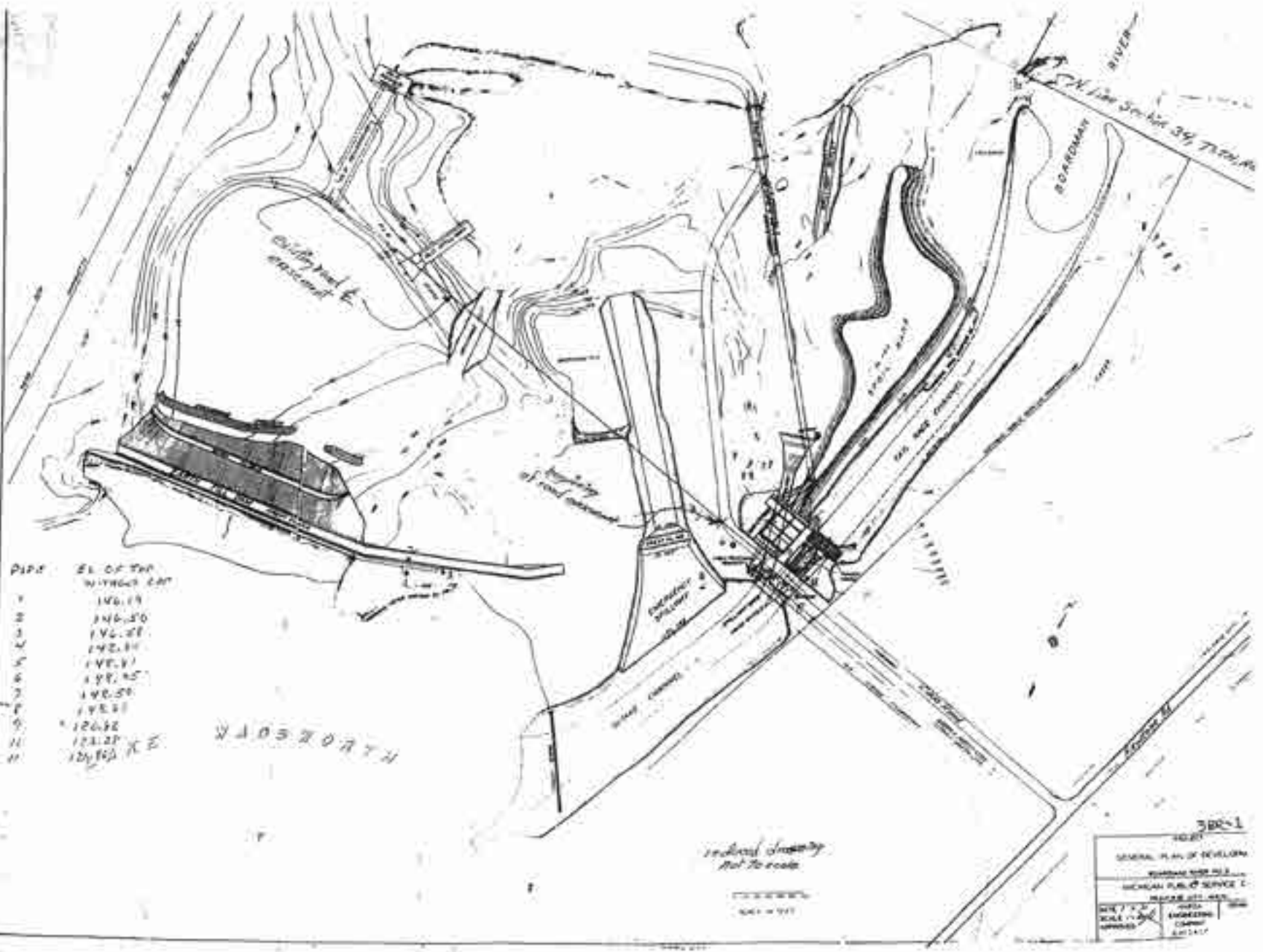


SECTION C-C



YES SHOW

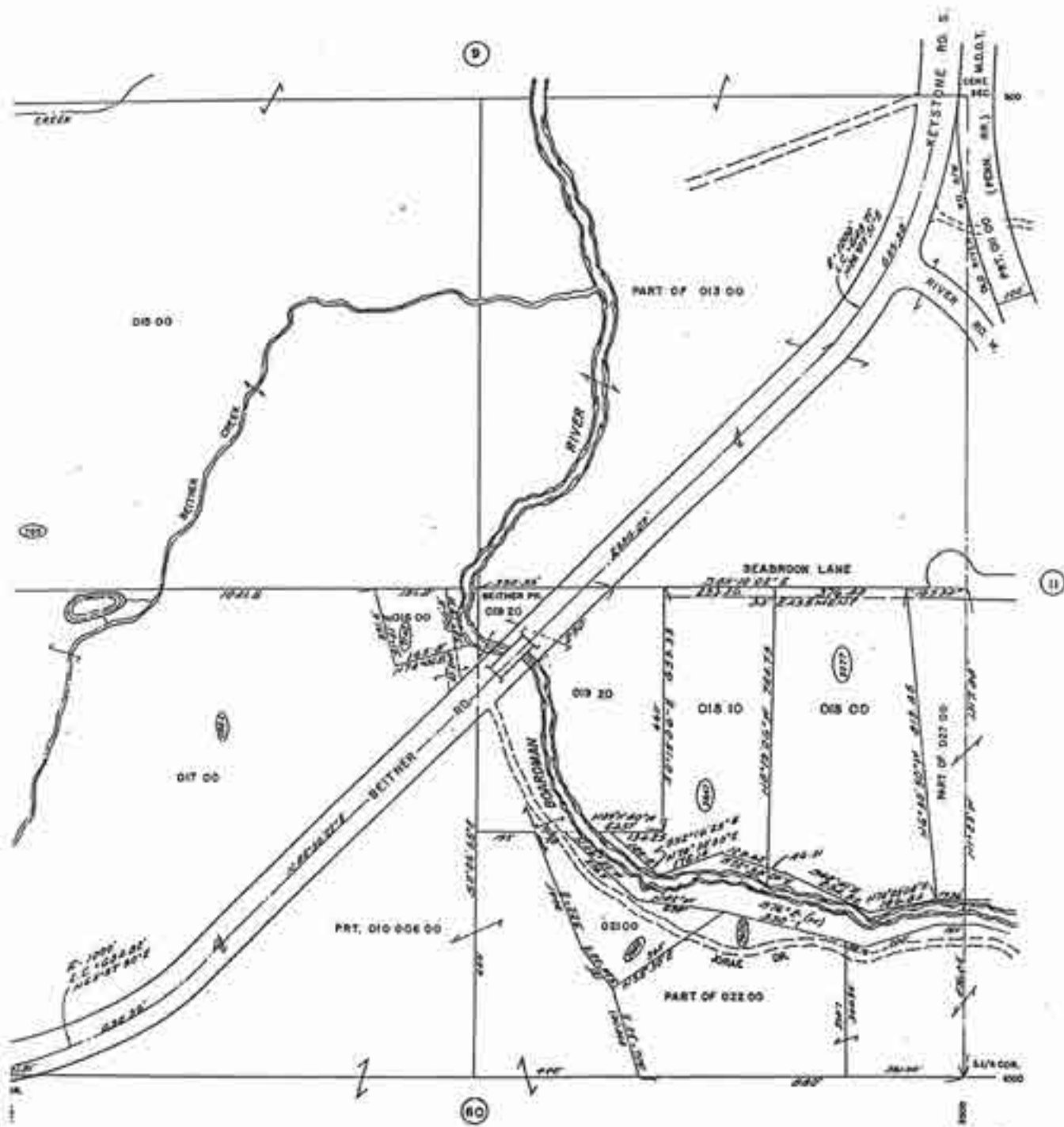




PIPE	EL. OF TOP WITHOUT CAP
1	146.19
2	146.50
3	146.28
4	142.31
5	148.11
6	148.45
7	148.58
8	148.31
9	126.32
10	121.27
11	124.60

Section shown
 Not to scale

SHEET
 500-1
 GENERAL PLAN OF DEVELOPMENT
 BOARDMAN TOWN
 MICHIGAN PUBLIC SERVICE CO.
 ENGINEERING
 COMPANY
 1917



SCALE 1" = 400'

SW 1/4
 Section 3, T. 26 N., R. 11 W.
 BLAIR TOWNSHIP
 GRAND TRAVERSE COUNTY, MICHIGAN

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ROGER &
JANIS
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Hiram
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CITY OF
TRAVERSE CITY

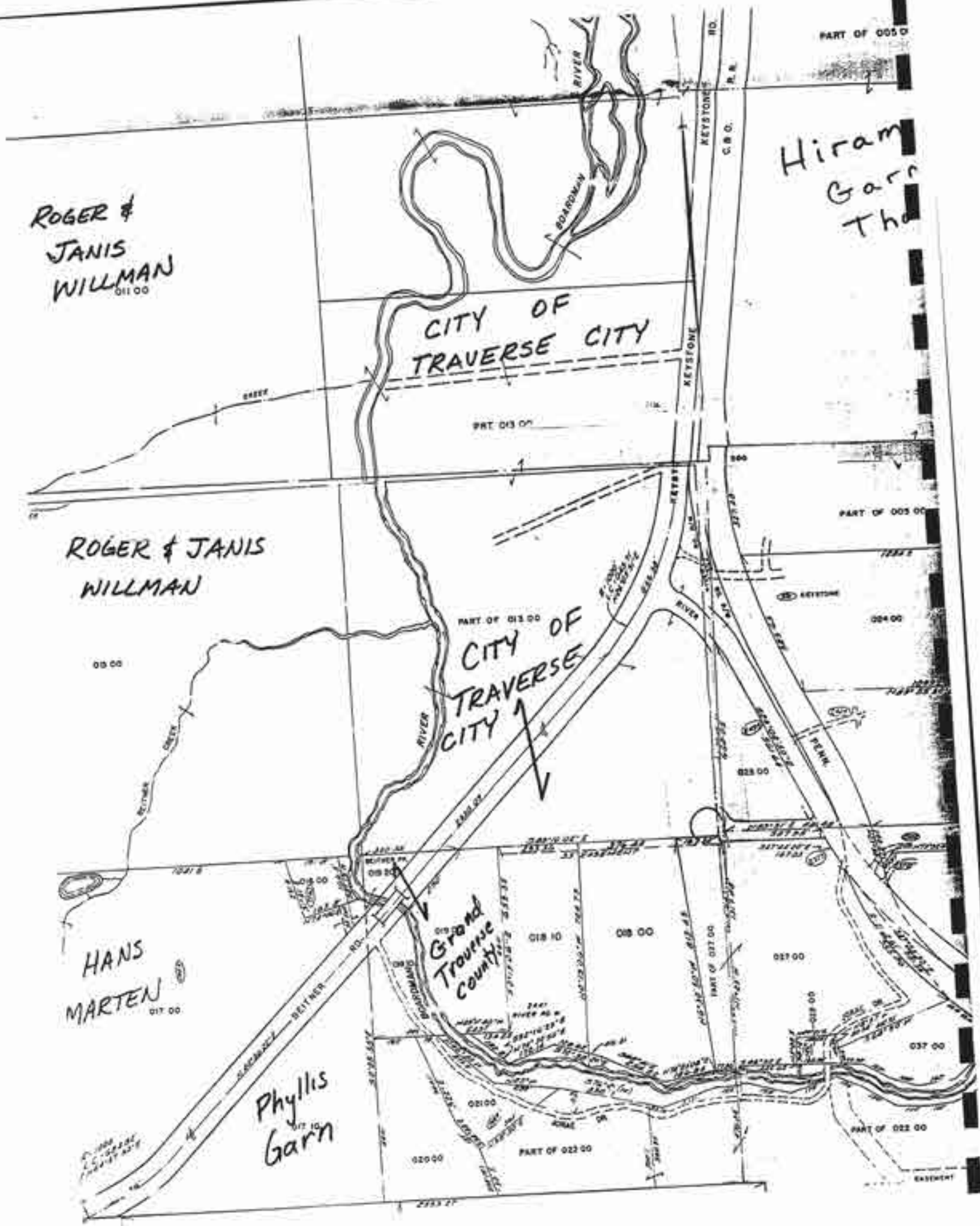
ROGER & JANIS
WILLMAN

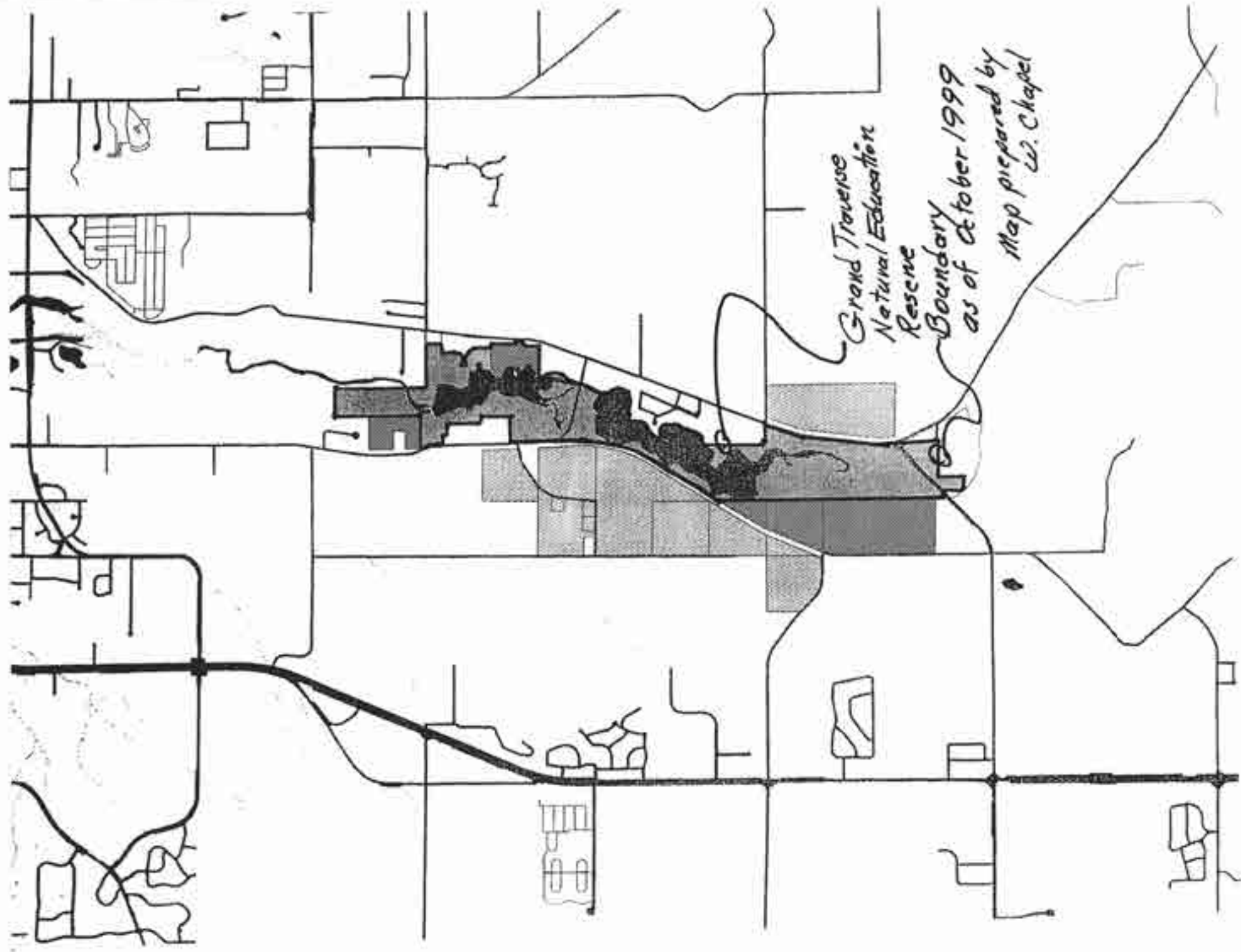
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TRAVERSE
CITY

HANS
MARTEN
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Phyllis
Garn
017 10

Grand
Traverse
County





Grand Traverse
Natural Education
Reserve
Boundary
as of October 1999

Map prepared by
W. Chapel



GRAND TRAVERSE NATURAL EDUCATION RESERVE

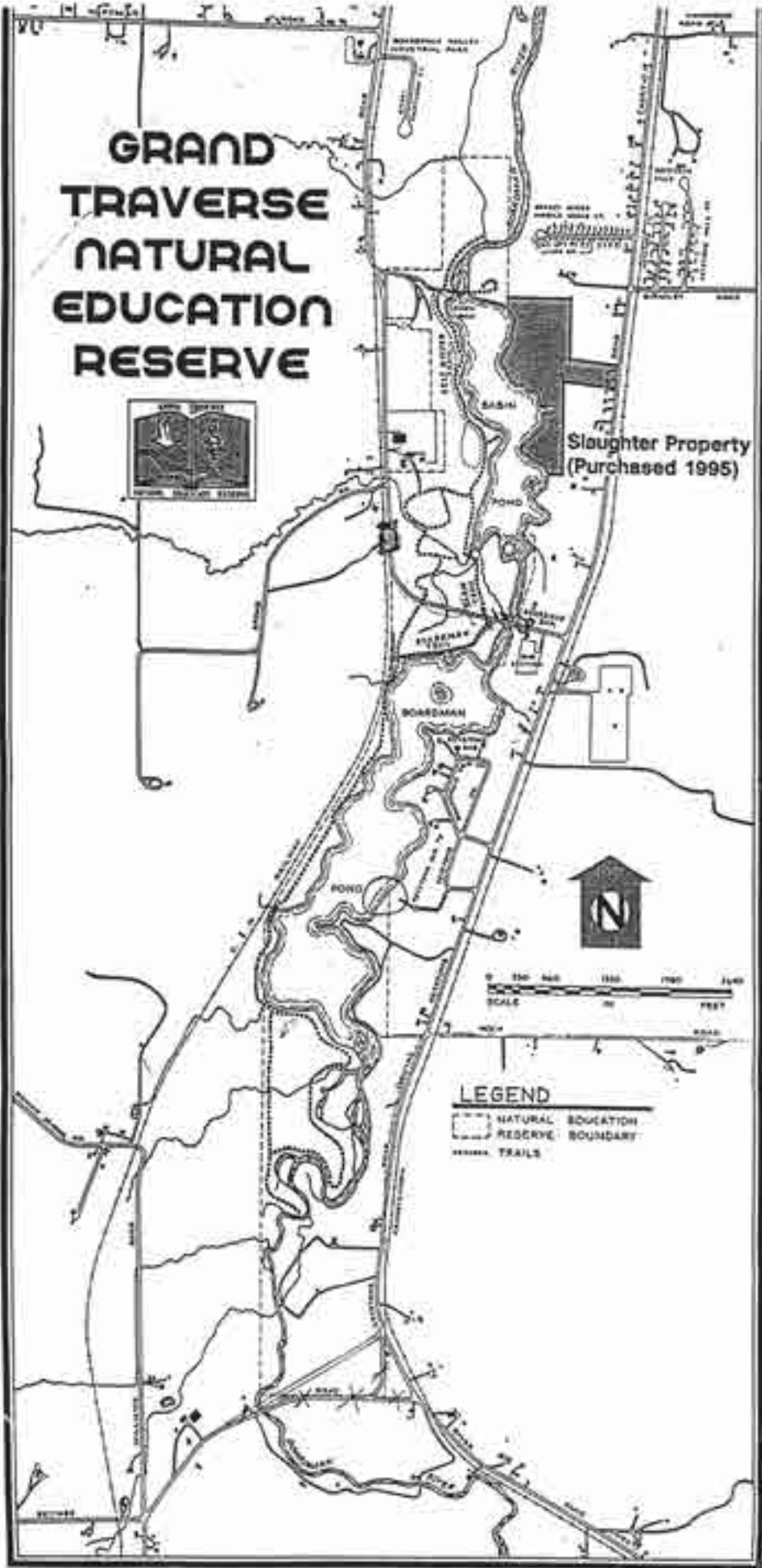


Slaughter Property
(Purchased 1995)

0 250 500 1000 1750 2500
SCALE FEET

LEGEND

- NATURAL EDUCATION RESERVE BOUNDARY
- TRAILS





**GRAND TRAVERSE COUNTY
PARKS & RECREATION DEPARTMENT**

1125 W. CIVIC CENTER DRIVE • TRAVERSE CITY, MI 49684-2064
Civic Center (616) 922-4818 • Twin Lakes (616) 922-4816
Civic Center Pool (616) 922-4814
FAX (616) 922-2064

Mr. Mike Dillenbeck
Grand Traverse County Road Commission
3949 West Silver Lake Road
Traverse City, MI 49684

NOV 4 1996

October 29, 1996

Mr. Dillenbeck,

On behalf of the Grand Traverse County Parks and Recreation Commission let me say thank you for your informative presentation this morning. It has been some time since the Commission has been updated as to the status of the proposed Cass Road Bridge project. It was especially nice to see that the most desired crossing site is North of the Grand Traverse County Nature Education Reserve. With the facts as presented to us this morning, I am happy to report that the Grand Traverse County Parks and Recreation Commission voted unanimously to support the proposed Cass Road Bridge crossing to be placed on the recommended alternative route as designed by the Road Commission's consulting firm. It is the Parks and Recreation Commission's consensus that this location will least disturb our Nature Education Reserve and that the Reserve may benefit from the new bridge removing the current traffic flow from the heart of the Reserve.

In response to the other questions asked of the Parks and Recreation Department, I offer these answers:

1) To the question of: Will the existing bridge (top of dam) be open to vehicle traffic?

The bridge will be closed to public vehicle traffic, but will be open (via opening a locked gate) to maintenance vehicles from the Parks and Recreation Department and Traverse City Light and Power.

2) To the question of: Will the existing bridge (top of dam) be open to pedestrian traffic only?

The bridge will be open to pedestrian traffic, and only those vehicles as listed above.



100% recycled paper.

3) To the question of: How will its closure impact the park use?

The rerouting of traffic over the Boardman river via this new bridge will enhance the Nature Education Reserve due to its elimination of vehicle traffic moving through the heart of the Reserve. This includes our closing of the existing boat ramp on the West side of the Bridge and the modification of the existing Cass Road to make a narrow service road of recycled road materials. There will be new opportunities to develop vegetated areas and walking trail access with the removal of the public roadway and bridge vehicle traffic.

4) To the question of: Where will reserve visitors park in relation to the bridge?

Parking will be located approximately 100 feet East of the existing bridge and 200 feet South of the first private driveway (Jack Robbins) Northwest of the bridge.

5) To the question of: Will they cross the bridge?

The bridge will be open to pedestrian traffic, so they may cross the bridge in this fashion if they so desire.

6) To the question of: How does the closing of the bridge impact the Park/Reserve master plan? and How does the proposed Hartman/Hammond extension project impact the Park/Reserve master plan?

The master plan for the Reserve is currently being developed and is expected to be completed in the near future. At this point in time, it is felt that closing this bridge will enhance the facility due to the elimination of traffic through the Reserve, and this will be shown as the master plan as it is developed. Any future expansion of the Reserve will be compatible with the proposed bridge as long as there is room for wild life and pedestrian passage under the new bridge structure.

I hope that these answers fulfill the needs of the Road Commission in its development plan for the new bridge project. If I can be of further assistance, please contact me at the Civic Center.

Sincerely yours,



Tim Schreiner, Director
Grand Traverse County Parks and Recreation



**GRAND TRAVERSE COUNTY
PARKS & RECREATION DEPARTMENT**

1125 W. CIVIC CENTER DRIVE • TRAVERSE CITY, MI 49684-2964
Civic Center (616) 922-4818 • Twin Lakes (616) 922-4816
Civic Center Pool (616) 922-4814
FAX (616) 922-2064

WHEREAS; The Grand Traverse County Parks and Recreation Department and the Grand Traverse County Natural Education Reserve Advisory Committee have met with the Grand Traverse County Road Commission to review the status of the Cass Road Bridge Replacement Project; and

WHEREAS; The existing Cass Road bridge is structurally deficient and will require replacement in the near future; and

WHEREAS; Reconstructing the Cass Road Bridge in its current location is not prudent or feasible due to engineering and environmental constraints including adverse impacts to existing Natural Education Reserve facilities in the area near the existing Cass Road Bridge; and

WHEREAS; The Grand Traverse County Road Commission had identified three alternative bridge locations north of the Natural Education Reserve; and

WHEREAS; The Road Commission's Preferred Alternative, F-2, (refer to attached map) is no longer considered prudent due to Carpenter Enterprises' plans for expanding to the south of their current facility in the Cass-Hartmen Industrial Park; and

WHEREAS; Alternatives A and C have the following disadvantages when compared to Alternative F-2:

1) close proximity to the Sabin Elementary School and the Bible Baptist Church raising concerns about noise and safety; 2) greater impacts to wetlands; 3) grade-separated intersection at Keystone Road; 4) deep cuts in the hillside east of Keystone to create a safe grade transition to Hammond Road; and 5) greater impacts to residences on Hartman and Hammond Roads; and

WHEREAS; The Road Commission had identified the need to evaluate alternative bridge locations between the current northern boundary of the Natural Education Reserve and the Sabin Dam; and

WHEREAS; The Advisory Committee has expressed a preference for replacement bridge locations as far north of the Sabin Dam as possible.

NOW, THEREFORE, BE IT RESOLVED BY THIS PARKS AND RECREATION COMMISSION, THAT, We acknowledge the need for the Grand Traverse County Road Commission to evaluate alternative bridge locations within the current boundaries of the Grand Traverse County Natural Education Reserve and will cooperate with the Road Commission to identify measures to mitigate the impacts of the proposed bridge should it be determined that a location within the Natural Education Reserve is the most prudent and feasible alternative for the replacement bridge.


Pete Correia, Chairperson

January 25, 1995



100% recycled paper

The City of Traverse City

Light and Power Department

GOVERNMENTAL CENTER
400 Boardman Avenue
Traverse City, Michigan
49684



October 29, 1996

Mr. Michael Dillenbeck
GRAND TRAVERSE COUNTY
ROAD COMMISSION
3949 Silver Lake Road
Traverse City, MI 49684

10/30/96

Dear Mike:

To confirm our understanding of the meeting of October 29, 1996, Light and Power is agreeable to the closing of Cass Road to general public traffic from a point roughly 100 feet east of the bridge to a point 200 feet south of Jack Robbins' driveway. It is further our understanding that vehicle traffic for Light and Power service vehicles will be maintained year round across the bridge so that we may adequately service the Boardman Dam Hydro facility. In addition, access will be available from the west for heavy service vehicles as needed. This west access may be reduced to roughly 10 feet in width and re-routed in order to improve the aesthetic appearances.

It is further our understanding that the access across the bridge and requirements for maintenance of the bridge continue to be handled by Grand Traverse County and/or the Road Commission.

Sincerely,

A handwritten signature in cursive script, appearing to read "Charles R. Fricke", is written above the typed name.

Charles R. Fricke
Executive Director
922-4470

CRF:er

pc: L/P File

RESOLUTION #25

WHEREAS, the Board of Supervisors has accepted the conveyance by Consumers Power Company of its Boardman Dam and Sabin Dam properties; and

WHEREAS, said properties include much scenic and beautiful lands basically in their natural state, it is clearly in the public interest that said properties be owned, held and used for the benefit of all of the people of Grand Traverse County and as a public trust to be preserved for future generations; now therefore be it

RESOLVED, by the Board of Supervisors of the County of Grand Traverse that the Boardman Dam and Sabin Dam properties conveyed by Consumers Power Company to the County of Grand Traverse shall be held and preserved by the County of Grand Traverse for park and recreational purposes for all of the people of Grand Traverse County and their future generations; and be it further

RESOLVED, that until such time as the Board may designate a formal agency to manage said property, the Grand Traverse County Road Commission shall have authority to maintain and administer said property; and be it further

RESOLVED, that this Board hereby commends Consumers Power Company for acting in the public interest in recognizing the need for this property to be kept and preserved for the use and benefit of all of the people of Grand Traverse County and for offering to convey said property to the County on such favorable terms and conditions; and be it further

RESOLVED, that the Clerk is hereby directed to transmit a copy of this Resolution to Mr. B. D. Hilty of Consumers Power Company.

Dated: November 13, 1968

THE BOARD OF SUPERVISORS FOR
THE COUNTY OF GRAND TRAVERSE

W. Raymond Carroll, Chairman

I, ANITA KUCERA, Clerk of the Board of Supervisors, hereby certify that the foregoing Resolution was introduced and adopted at a session of said Board convened in the City of Traverse City on November 13, 1968, by a unanimous vote of the members present.

Dated: November 13, 1968.

CITY OF TRAVERSE CITY

RESOLUTION

WHEREAS, the City of Traverse City is the owner of a certain parcel of real property, the full legal description of which is attached hereto and made a part hereof, which property is located adjacent to certain lands owned by the County of Grand Traverse dedicated to use as a Natural Education Reserve, said City property being commonly known as the Keystone Dam property, and

WHEREAS, said Keystone Dam property is similar to the County's Boardman River property in that it has features which are being rapidly changed or destroyed by development of watershed land throughout the area, and

WHEREAS, the Grand Traverse Education Reserve Advisory Commission has indicated a need for the use of this property in connection with its development of a Natural Education Reserve for use of the public as an educational study and recreational facility to be preserved and protected for the present as well as future generations, and

WHEREAS, the City recognizes that the use and development of the said City property in conjunction with the said County property will enhance the usefulness and value of each property in serving those educational and recreational purposes,

NOW, THEREFORE, BE IT RESOLVED that the City Commission of Traverse City hereby agrees to the use and development of the Keystone Dam property in conjunction with the County-owned Boardman River property for a Natural Education Reserve, to be developed and administered by the Grand Traverse Natural Education Reserve Advisory Commission as outlined in their plan of February 23, 1976 for the Traverse City Keystone Dam property, subject to the following terms and conditions:

1. The City of Traverse City retains ownership of said property.
2. The City Commission reserves for the City the right to make rules and regulations respecting the use of the land as a Natural Education Reserve, which regulations shall be calculated to preserve and enhance the natural character of the Keystone Dam property in keeping with its public use for that purpose.

3. The City Commission of Traverse City reserves the right to alter, maintain, repair, remove and relocate any or all of the improvements presently located on such land, provided that in so doing the City will take care to minimize any adverse effect on the natural character of the land.

4. The Grand Traverse Natural Education Advisory Commission will assist the City of Traverse City, upon request by the City, in the City's performance of the City's obligations and the City's exercise of the City's rights under this agreement.

5. The Grand Traverse Natural Education Reserve Advisory Commission shall have the right to place or erect any structure on the land only with the consent of the City Commission of the City of Traverse City.

6. Fishing, hunting, swimming and boating shall be permitted by rule so long as such uses shall not impair the use of the property in nature education.

7. The City of Traverse City reserves the approximate six (6) acres of land now used as a City tree nursery for growing of trees and plant materials and the right to expand said acreage at some future date after consultation with the Advisory Commission.

8. The Mayor of the City of Traverse City shall, with the approval of the City Commission, appoint two persons to serve on the Advisory Commission.

9. It is the intent of this resolution to permit the use of the said land for those uses outlined in the plan attached. However, the City reserves the right, after due notice to the Grand Traverse Natural Education Reserve Advisory Commission, to declare that said uses shall be terminated, and upon such declaration said uses shall be so terminated, provided, however, that, should the City so declare that such uses shall be so terminated or discontinued, the City shall compensate the Donor of any structures placed on said land for the value of such structures. The City recognizes, and in exercising this right shall consider, that the property may from time to time be scheduled for use by various persons and groups and that the exercise of this right of termination may affect third parties. The City will therefore exercise this right with a view to minimizing any inconvenience to the Commission in its operations.

10. The City reserves the right at all times to explore for, and/or mine and/or produce minerals on and from the land, and to use the property and the river for the production of energy.

11. The City reserves the right to continue such uses as presently exist or are carried on on the property.

CITY OF TRAVERSE CITY

By *Raymond L. Sutton*
Raymond L. Sutton, Mayor

By *F. A. McCall*
F. A. McCall, City Clerk



City of Traverse City • Michigan

49634

Commission - Manager Form of Government

KEYSTONE PROPERTY DESCRIPTION

The northeast quarter of the southwest quarter and the south half of the southeast quarter of the northwest quarter all in section three (3) town twenty-six (26) North of Range eleven (11) West.

The southwest quarter of the northwest quarter and the northeast quarter of the southwest quarter of Section three (3), town twenty-six (26), North Range eleven (11) West.

A Progressive City -- In the Heart of Michigan's Water Wonderland

FUTURE LAND USE

Charter Township of Garfield - Planning Department

Gerry Harsch of the Garfield Township Planning Department has provided the following information to describe future land use associated with the Boardman River Crossing Mobility Study.

Garfield Township, by way of its official's actions, has at least for the past thirty years, never promoted development.

Garfield Township, by way of its official's actions, has recognized that growth has been and is inevitable both because of the desirability of the Grand Traverse area as a place to live and the desire of land owners, professional land developers, and business interest to profitably sell and/or develop land in the Township.

Proactive planning is necessary to provide for smart growth.

Garfield Township's planning efforts since the early 1970s have been McHargen based, (see "Design With Nature", McHarg), that is have followed the principals of ecologically based planning rather than time based planning, (based on population projections). At the same time they have recognized and given weight to the residents' desired life styles, that is the reasons they chose to live in the greater Traverse City area. As a result, the Township's planning efforts have taken into consideration the natural features of the area, identifying sensitive lands and their limitations and also non-sensitive lands that are suited for a full variety of development choices with the objective of protecting the sensitive lands and allowing development to occur in the non-sensitive lands.

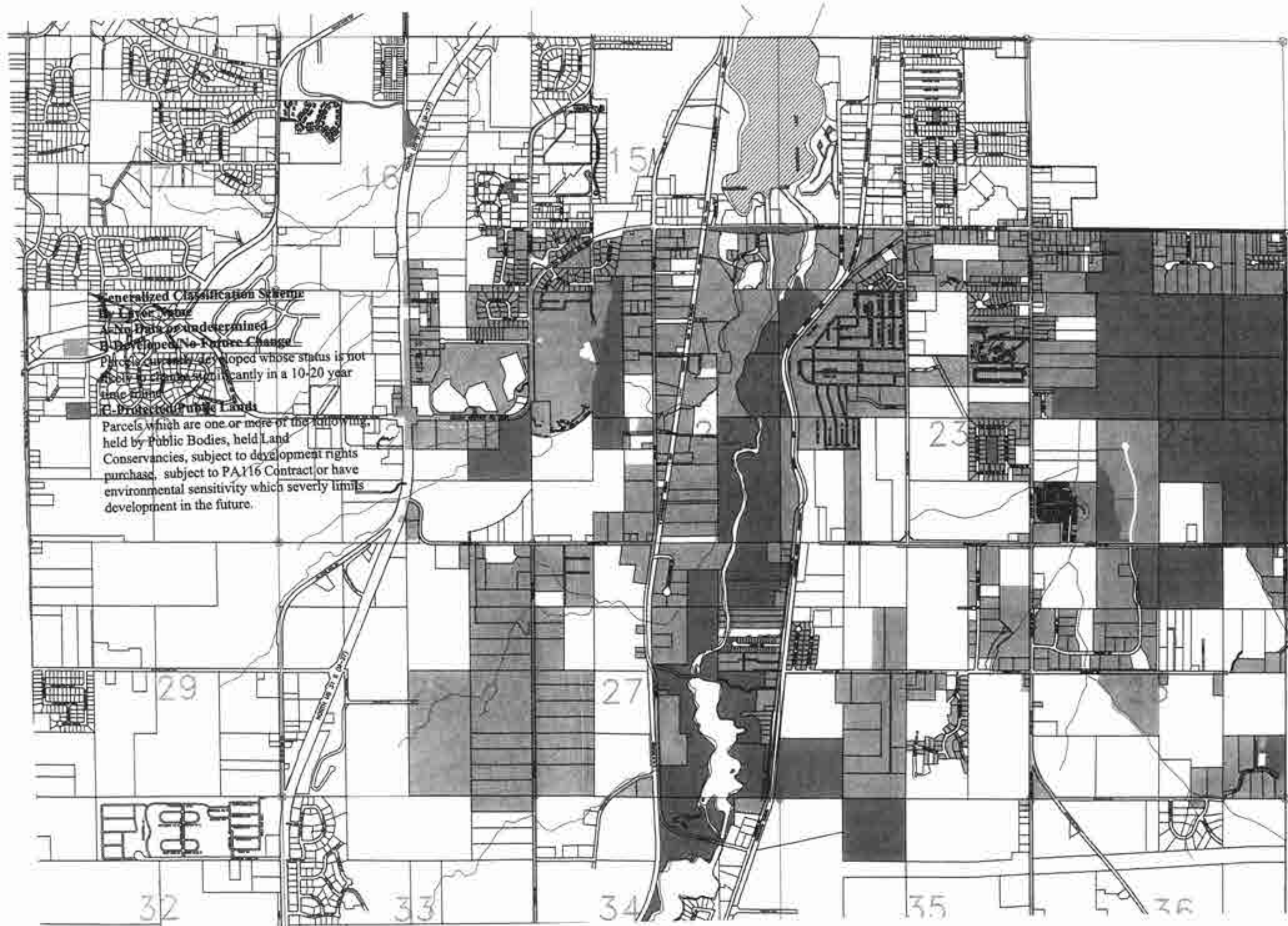
The plan has recognized that the city of Traverse City and its immediate environs are surrounded by a glacial moraine which rises from the glacial lake plain upon which the city is situated, approximately 300 feet in elevation, to an area of outwash plains and spillways which lie on an east-west axis across the central part of Grand Traverse County, Long, Silver, Duck, and Green Lakes and the Forrest Lakes and located within the outwash plain area.

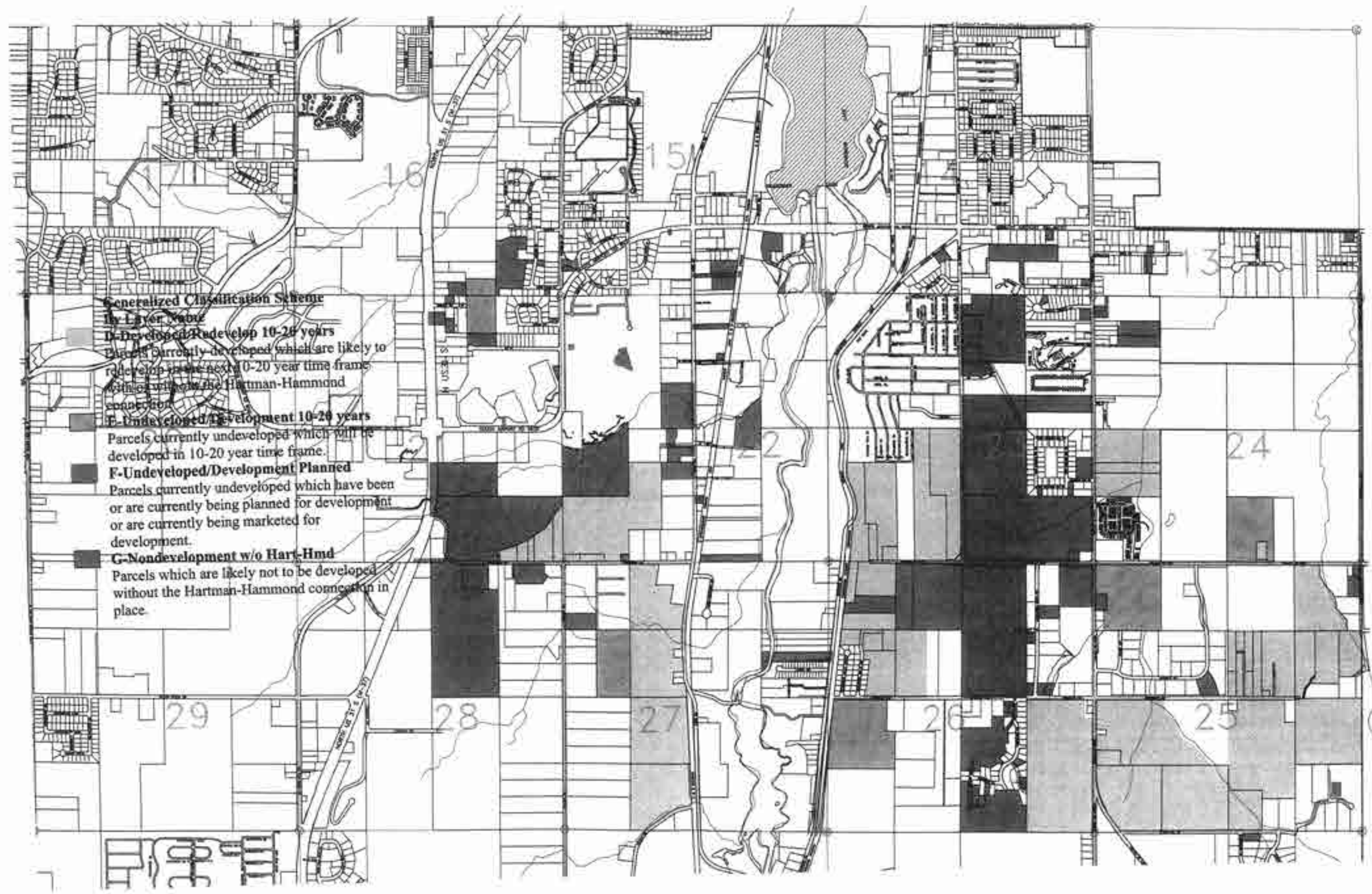
The north slope of the glacial moraine, which faces the city and gives the area much of its unique character, is a highly sensitive area having many springs, small streams, steep and easily erodible slopes, and wetlands, as well as gently rolling open fields which because of the areas microclimate, were particularly well suited to soft fruit production. Because of the sensitive nature of the north slope of the moraine it is not suited to intensive development. As a result, appropriately, intense development must occur on the glacial lake plain to the north or upon the outwash plains to the south.

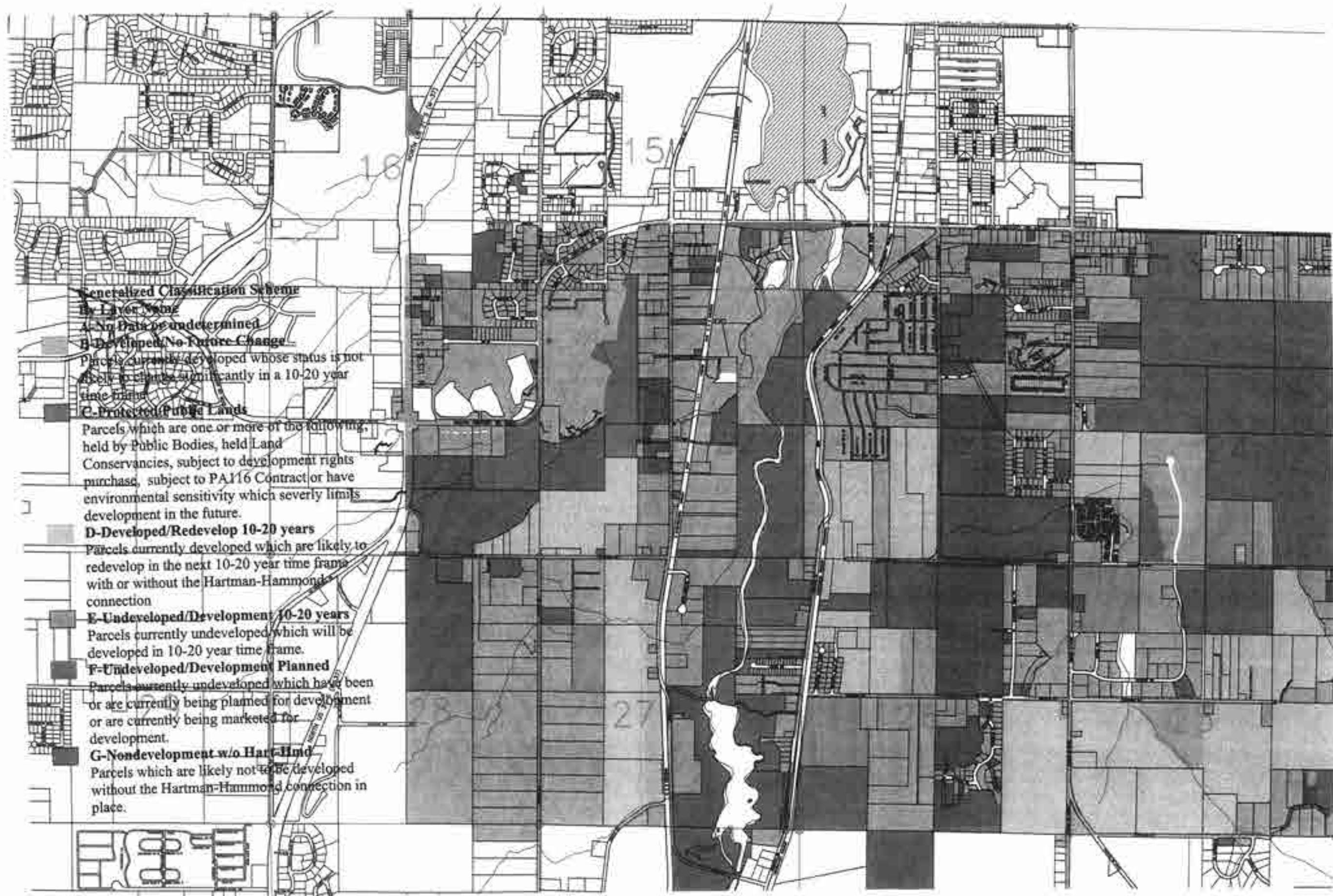
The existence of the north slope as a physiographic feature has severely limited the developable area within the immediate environs of the city of Traverse City. The result is, because of a scarcity of land suited for development, that all developable lands have or will be developed whether or not the Harman-Hammond road connection occurs. The connection has never been a determining factor as to what the future land uses should be. This was determined by the existence of suitably developable land, the character of existing development and the market driven demand for land for the entire variety of potential land uses. This help illustrate this, the attached figures show developed and undeveloped land in the Hartman-Hammond Corridor. (A figure that summarizes the Garfield Township Comprehensive Land Use Plan is also attached.)

A further consequence of the limited availability of suitably developable land, with close proximity to the city, is the viability of "legislative based land use zoning" to limit, guide and control land use. It

allows the local municipal jurisdictions to control their legislated land use zones and greatly diminishes the municipality's vulnerability with regard to loss of control. It is for this reason that the current decision makers for Garfield Township are secure in their assertions that Hartman and Hammond roads, once connected across the Boardman Valley, will not become a commercially lined corridor between U.S. Route 31 and LaFranier Road (another South Airport Road). The fact that the demand for residential land is equal to or greater to the demand for commercial land supports this belief.







Generalized Classification Scheme

By Layer Name

A- No Data or undetermined

Parcels currently developed whose status is not likely to change significantly in a 10-20 year time frame.

C- Protected Public Lands

Parcels which are one or more of the following, held by Public Bodies, held Land Conservancies, subject to development rights purchase, subject to PA16 Contract or have environmental sensitivity which severely limits development in the future.

D- Developed/Redevelop 10-20 years

Parcels currently developed which are likely to redevelop in the next 10-20 year time frame with or without the Hartman-Hammond connection

E- Undeveloped/Development 10-20 years

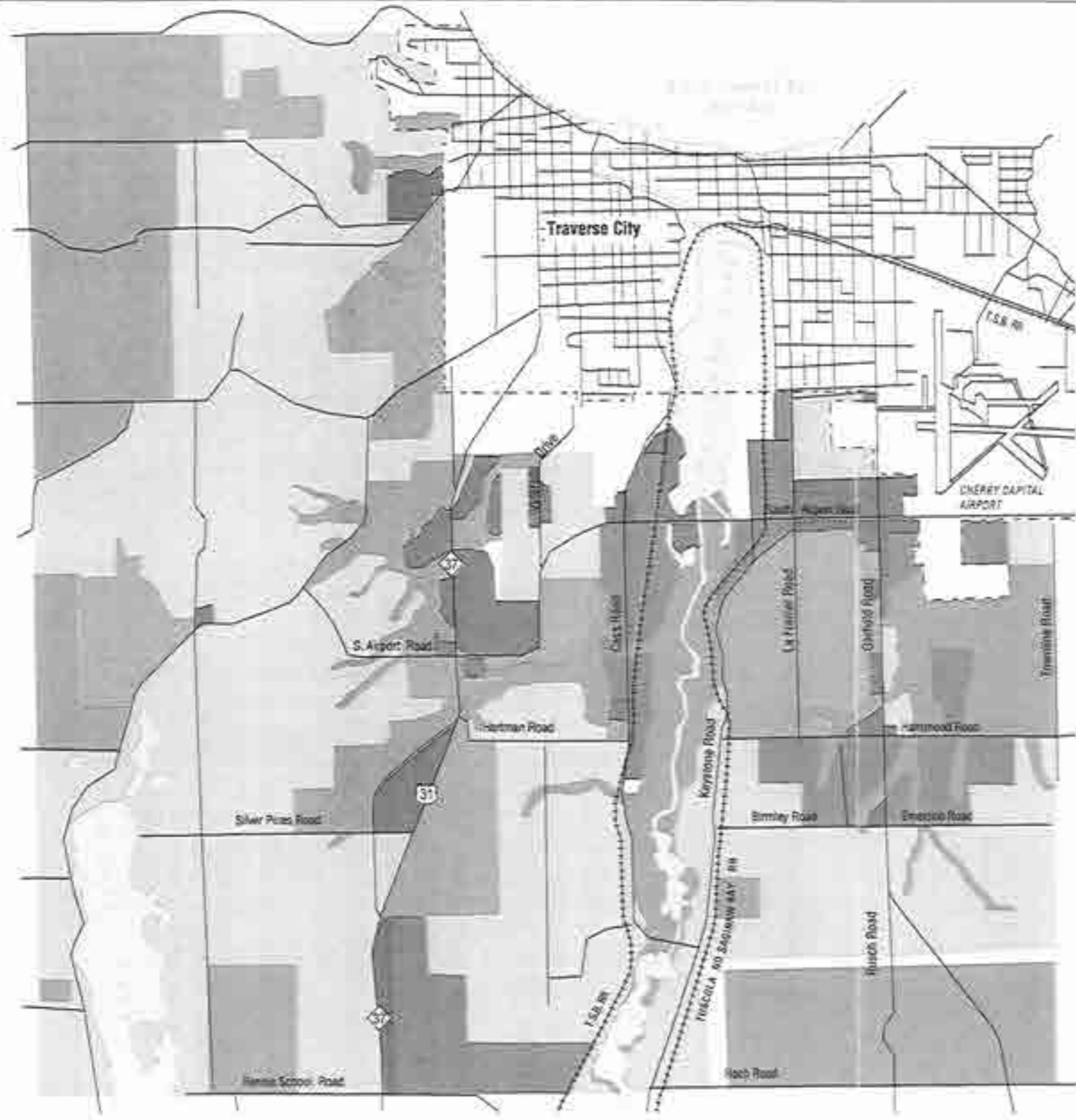
Parcels currently undeveloped which will be developed in 10-20 year time frame.






F- Undeveloped/Development Planned

Parcels currently undeveloped which have been or are currently being planned for development or are currently being marketed for development.

G- Nondevelopment w/o Hart-Ham

Parcels which are likely not to be developed without the Hartman-Hammond connection in place.



- LEGEND**
-  AGRICULTURAL, PARKS, WETLANDS, GREENWAY, PUBLIC AND SEMI-PUBLIC
 -  RESIDENTIAL
 -  PLANNED DEVELOPMENT
 -  COMMERCIAL
 -  INDUSTRIAL

RESTRICTIONS ON LAND USE DEVELOPMENT

required for the storage of usable farm machinery necessary for permitted agricultural uses and except as permitted in connection with a use otherwise authorized in the Commercial Districts.

Section 7.2.7 Stormwater Detention: When any land in the Township is developed or altered in any way which affects stormwater runoff, the owner shall develop and submit to the Zoning Administrator a plan for detaining any stormwater runoff onto adjacent properties including roads and other rights of way which shall result in the maximum amount of stormwater runoff not exceeding that which existed prior to the development or improvement of the property. Approval of such plan shall be required by the Zoning Administrator before a land use permit is issued. The Zoning Administrator shall approve the plan only if it meets the foregoing criteria. No contemplated development shall take place until such a plan is approved by the Zoning Administrator. No development shall take place excepting in conformity with an approved plan.

Section 7.2.8 Service Drives: All land in a parcel having a single tax code number or contiguous parcels owned by a single individual, or related individuals, or other entity or related entities, as of the effective date of this amendment, fronting on a state highway or county primary road shall be entitled to one (1) driveway or road access per parcel from said highway or road. Parcels when subsequently subdivided, either as metes and bounds described parcels, as a plat created in accord with P.C. 288 of 1967, as amended, or as a site condominium in accord with Act 59 of 1978, as amended, shall provide access by subdivision roads, other private or public roads or by service drives. Notwithstanding the requirements of the Garfield Township Subdivision Control Ordinance No. 19, the standards for service drives shall be as follows: (Amend. 156, Eff. 5-27-93)

- (1) Width: A minimum of twenty (20) feet with construction to Grand Traverse County Road Commission standards for base and thickness of asphalt.
- (2) A minimum of fifteen (15) feet snow storage/landscaping area must be reserved along both sides of the service drive with the edge of the service drive located a minimum of fifteen (15) feet from the major thoroughfare right-of-way.
- (3) All driveway radii shall be with concrete curbs.
- (4) The center line of service drives intersecting with a public or private road which in turn intersects a major thoroughfare shall be at least 150 feet from the nearest edge of the traveled portion of the major thoroughfare to provide for adequate stacking and maneuvering on the public or private road.
- (5) The service drive shall be a private road maintained by adjoining property owners or users who shall enter into and record an agreement for the joint maintenance of the service drive in a reasonably safe condition.
- (6) Landscaping along the service drive shall be in accordance with Section 7.13 of the Zoning

7.2.8

7.2.8

Ordinance. Installation and maintenance of landscaping shall be the responsibility of the developer or a property owners' association.

- (7) The Township Planning Commission shall review and approve all service drives to ensure consistency with the Township's Access Management Guidelines.

Section 7.5. Supplementary Shoreland Regulations:

Section 7.5.1 Intent and Purpose: It is the intent and purpose of this Ordinance to protect water quality and land resources related to lake, river and stream shorelines within Garfield Township and to enhance the future health, safety and welfare of Township residents.

Section 7.5.2 Easement to Water Front: In the event any land having water frontage is used for group easement or beach purposes for persons not dwelling on the land, then it shall have a minimum frontage on the water of not less than fifty (50) feet, measured at the water mark, and shall contain an additional five (5) feet for each family unit having easement or use privileges. Individual docks, boat hoists and related installations shall not exceed one unit per fifty (50) feet of shoreline, measured at the water mark. Group docking, hoist and other related facilities shall be subject to review and approval by the Zoning Board of Appeals.

Section 7.5.3 Filling and Grading Within 200 Feet of the Water Mark or Normal Stream Bank: The following rules shall apply to any filling, grading or any other earth movement within 200 feet of the water mark or normal stream bank of any lake, river, stream, or other body of water to prevent harmful erosion and related sedimentation:

- (1) The smallest amount of bare ground shall be exposed for a short a time as feasible.
- (2) Temporary ground cover such as mulch must be used as soon as possible and permanent cover such as sod be planted.
- (3) Diversions, silting basins, terraces and other methods must be used to trap any sediment.
- (4) Fill must be stabilized according to accepted engineering practices.

Section 7.5.4 Removal of Shore Cover: Regulation of tree cutting along the shoreline or normal stream bank of any water body in the Township is necessary to protect scenic beauty, control erosion, and reduce effluent and nutrient flow from the shoreland. These provisions shall not apply to the removal of dead, diseased or dying trees at the discretion of the landowner, or to silvicultural thinning upon recommendation of a forester. Tree cutting in a strip paralleling the shoreline and extending thirty-five (35) feet inland from all points along the water mark of the shoreline or normal stream bank shall be limited in accordance with the following provisions:

- (1) No more than 30% of the length of this strip shall be clear cut to the depth of the strip
- (2) Provided, further that cutting of this 30% shall not create a clear cut opening in this strip greater than thirty (30) feet wide for every one hundred (100) feet of shoreline or normal stream bank.

7.5.4

- (3) In the remaining 70% length of this strip cutting shall leave sufficient cover to screen cars, dwellings, accessory structures, except boathouses, as seen from the water, to preserve natural beauty and to control erosion.
- (4) Natural shrubbery, trees, or other vegetation shall be preserved as far as practicable, and where removed it shall be replaced with other vegetation that is equally effective in retarding run-off, preventing erosion and preserving natural beauty.
- (5) Paths - any paths, roads or passages within the strip shall be so constructed or surfaced as to be as effective in controlling erosion.
- (6) Cutting Plan - as an alternative to the above requirements a special cutting plan allowing greater cutting may be permitted by the Board of Appeals. In applying for such a permit the Board may require the lot owner to submit a sketch of the lot including the following information: location of all structures, location of parking, gradient of the land, existing vegetation, proposed cutting and proposed replanting. The Board may grant such a permit only if it finds that such special cutting plans:
 - (a) Will not cause undue erosion or destruction of scenic beauty, and
 - (b) Will provide substantial shielding from the water of dwellings, accessory structures and parking areas. The Board may condition such a permit upon a guarantee of tree planting by the lot owner. Such an agreement shall be enforceable in court
- (7) Commercial Forestry - from the inland edge of the thirty-five (35) foot strip to the outer limits of the shoreland the commercial harvesting of trees shall be allowed when accomplished under accepted forest management practices. The maintenance and improvement of water quality shall be emphasized in all timber harvesting operations.

Section 7.5.5 Setback from Lakes, Rivers and Streams: Notwithstanding any other provisions of this Ordinance and provided that compliance is had with the regulations contained in Article V, Section 7.6: (amen. ll/14/91).

- (1) Every commercial, industrial or multi-family residential building hereafter erected having frontage on any body of water, with the exception of Silver and Boardman Lakes and with the exception of on-site stormwater ponds and artificial water bodies created as a part of the site's landscape treatment shall be set back at least seventy-five (75) feet from the watermark or normal stream bank. Single family residential uses shall observe a setback of fifty (50) feet, provided however on lots of record, the Zoning Administrator may approve a lesser setback in the event the owner can demonstrate this is an unreasonable requirement and

7.5.5

provided further that such reduction will not result in a setback of less than twenty (20) feet. Along those sections of the Boardman River controlled under the Natural River Act, PA 231 of 1970, as amended, setbacks shall be as required by the Act.

- (2) Every building hereafter erected having frontage on Silver and Boardman Lakes shall set back at least fifty (50) feet from the water mark.
- (3) Stormwater retention or detention ponds, with the exception of customary release structures including pipe, swales and ditches shall be set back fifty (50) feet from a natural lake or normal stream bank.
- (4) Roads and access drives other than where they intersect lakes or streams and for such a distance as is required to cross a lake or stream shall be set back fifty (50) feet from a watermark or normal stream bank.

Section 7.5.6 Review by Michigan Water Resources Commission: If it is determined by the Zoning Administrator that any proposed structure may adversely affect, deteriorate or alter the shoreland resource, preliminary plans and specifications shall be transmitted to the staff of the Michigan Water Resources Commission for review and approval. If it is determined by the Water Resources Commission staff that such development would adversely affect public and private rights, impair the public trust or otherwise deteriorate the unique shoreland resource, such determination shall be considered sufficient justification for denying a building permit.

Section 7.5.7 Setback from Designated Wetlands: (am. 11/14/91) When an area meets the criteria to be designated a wetland under the provisions of Public Act 203 of 1979, as amended, no structure or parking lot shall be constructed within twenty-five (25) feet of such wetland unless it has first been approved by the Township Planning Commission upon a finding that the following wetland values will not be impaired by such construction.

- (1) Filtration of stormwater runoff
- (2) Storage of stormwater runoff
- (3) Productivity of plant and wildlife habitat
- (4) Erosion control
- (5) Significant ecological functions
- (6) Water quality maintenance
- (7) Other recognized wetland benefits

GRAND TRAVERSE COUNTY
SOIL EROSION AND STORMWATER RUNOFF CONTROL ORDINANCE

Effective Date: January 1, 1992

GRAND TRAVERSE COUNTY
SOIL EROSION AND STORMWATER RUNOFF CONTROL ORDINANCE

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**Grand Traverse County
Soil Erosion and Stormwater Runoff Control Ordinance**

adopted by resolution of the Board of County Commissioners in
accordance with provisions of Section 6(2) of the
Soil Erosion and Sedimentation Control Act of 1972
(Act 347, P.A. of 1972, as amended)

PREAMBLE

This Ordinance, adopted by resolution of the Grand Traverse County Board of Commissioners, sets forth the administrative procedures, standards, and enforcement remedies which shall be used by the Grand Traverse County Drain Commissioner in meeting the requirements of the Soil Erosion and Sedimentation Control Act of 1972 (Act 347, P.A. 1972, as amended), the Subdivision Control Act of 1967 (Act 288, P.A. 1967, as amended), the Michigan Drain Code (Act 40, P.A. 1956, as amended), and the Michigan Environmental Protection Act (Act 127 of 1990).

I. Purpose and Objectives

A. Purpose

The purpose of this Ordinance is to prevent the pollution, impairment, or destruction of a natural resource or the public trust in Grand Traverse County unless (1) there is no feasible and prudent alternative and (2) the activity is consistent with the promotion of the public health, safety, and welfare in light of the public's paramount concern for protection of its natural resources.

B. Objectives

Specific objectives include the following:

1. To prevent accelerated soil erosion and to control stormwater runoff resulting from earth changes proposed within Grand Traverse County, both during and after construction.
2. To assure that property owners control the volume and rate of stormwater runoff originating from their property so that surface water and groundwater quality is protected, soil erosion minimized, and flooding potential reduced.
3. To preserve and use the natural drainage system for receiving and conveying stormwater runoff and to minimize the need to construct enclosed, below-grade storm drain systems.

4. To preserve natural infiltration and the recharge of groundwater and to maintain subsurface flows which replenish lakes, streams and wetlands.
5. To restrict stormwater runoff entering and leaving development sites to non-erosive velocities by requiring temporary and permanent soil erosion control measures.
6. To assure that soil erosion control and stormwater runoff control systems are incorporated into site planning at an early stage in the planning and design process.
7. To prevent unnecessary stripping of vegetation and loss of soils, especially adjacent to lakes, streams, watercourses, and wetlands.
8. To prevent construction activity that may cause mass movement, slumping, or erosion of land surfaces.
9. To eliminate the need for costly maintenance and repairs to roads, embankments, ditches, streams, lakes, wetlands, and stormwater control facilities which are the result of inadequate soil erosion and stormwater runoff control.
10. To reduce long-term expenses and remedial projects which are caused by uncontrolled stormwater runoff and soil erosion.
11. To encourage the design and construction of stormwater control systems which serve multiple purposes, including but not limited to flood prevention, water quality protection, wildlife habitat preservation, education, recreation, and wetlands protection.
12. To reduce the detrimental impacts of stormwater flows on downstream communities.
13. To allow for off-site stormwater control facilities and measures if proposals meet the requirements of these regulations.
14. To assure that all stormwater control facilities will be properly designed, constructed, and maintained.
15. To provide for enforcement of this ordinance and penalties for violations.

II. Definitions

The following terms and phrases shall have the meaning given herein, unless the context otherwise requires:

- A. **Accelerated soil erosion** - The increased movement of soils that occurs as a result of human activities and development.
- B. **Appeals Board** - The Grand Traverse County Appeals Board.
- C. **Authorized public agency** - State, local or county agency designated pursuant to Section 11 of the Michigan Soil Erosion and Sedimentation Control Act (Act 347 of 1972, as amended) for the purpose of enforcing soil erosion control requirements with regard to earth changes undertaken by that agency.
- D. **Best management practice (BMP)** - Structural device, measure, facility, or activity which helps to achieve soil erosion and stormwater management control objectives at a designated site.
- E. **Board of County Commissioners** - Grand Traverse County Board of Commissioners.
- F. **Channel** - The portion of a natural stream which conveys normal flows of water, or a ditch or channel excavated for the flow of water.
- G. **Commercial use** - All land uses except for one-family and two-family detached dwellings and appurtenant structures. The use of property in connection with or for the purchase, sale, display, or exchange of goods, merchandise, or personal services, as well as the maintenance or operation of businesses or recreational or amusement enterprises.
- H. **Control Plan** - Soil Erosion and Stormwater Runoff Control Plan.
- I. **Conveyance facility** - A surface or subsurface structure or channel which transports stormwater runoff.
- J. **County drain** - Drains established and/or constructed pursuant to the Michigan Drain Code (Act 40 of 1956, as amended).
- K. **Depression storage** - The portion of precipitation trapped in depressions in the ground surface.
- L. **Design standard (or engineering design standard)** - A specification that prescribes the type of design, location, mode of construction, mode of operation, or other engineering detail for soil erosion or stormwater control facilities.

- M. **Design storm** - A rainfall event that has a specific statistical probability of occurring in any given year. For example, a 2-year design storm is a storm with a 50 percent chance of occurring during the year. Design storm figures are used to calculate the runoff volume and peak discharge rate through a detention or retention basin or other stormwater management facility.
- N. **Designated use** - The use of a stream segment assigned by the Michigan Water Resources Commission as part of the regulatory process of establishing water quality control standards. Uses may be public drinking water supply, irrigation, recreational use, fishing, or other categories, as established by the Water Resources Commission.
- O. **Detention basin** - A structure or facility, natural or artificial, which stores stormwater on a temporary basis and releases it at a controlled rate. A detention basin may drain completely after a storm event, or it may be a body of water with a fixed minimum and maximum water elevation between runoff events.
- P. **Discharge** - The rate of flow of water through an outlet structure at a given point and time, measured in cubic feet per second (cfs).
- Q. **Disturbed area** - An area of land subjected to erosion due to the removal of vegetative cover and/or earthmoving activities, including filling.
- R. **Drain Commissioner** - Grand Traverse County Drain Commissioner or the authorized representative of the Drain Commissioner.
- S. **Drainage** - The interception and removal of groundwater or surface water by natural or artificial means.
- T. **Drainage well** - A bed of stone or hole in the ground constructed for the purpose of trapping stormwater for infiltration into the ground.
- U. **Downstream** - Lands and waters which receive stormwater runoff and other surface water flows from a designated site. Downstream lands and waters are downgradient from the designated site.
- V. **Drainage system** - All facilities, channels, and areas which serve to convey, filter, store, and/or receive stormwater, either on a temporary or permanent basis.
- W. **Enforcing agency** - A public agency designated to enforce permit requirements of the Michigan Soil Erosion and Sedimentation Control Act of 1972 (Act 347 of 1972, as amended).

- X. **Earth change** - A human-made change in the natural cover or topography of land, including cut and fill activities, which may result in or contribute to soil erosion or sedimentation of the waters of the state. The term "earth change", as used in this Ordinance, shall not apply to the practice of plowing and tilling soil for the purpose of crop production.
- Y. **Environmentally-sensitive sites** - Any single-family or multiple-family residential site with one or more of the following characteristics:
1. Sites where driveways have been planned with a slope greater than 10 percent (10 feet horizontal to 1 foot vertical).
 2. Sites with heavy clay soils (commonly termed hardpan clay), and soils classified in hydrologic Group D in the Grand Traverse County Soil Survey, published by the Soil Conservation Service, U.S. Department of Agriculture.
 3. Sites which may cause sedimentation or flood onto adjacent land areas if earth changes occur.
 4. Sites located within 100 feet of a protected wetland.
 5. Other sites identified by local units of government as having a high potential for environmental degradation and flooding as a result of soil erosion or stormwater runoff on-site or off-site.
- Z. **Erosion** - See "soil erosion" definition.
- AA. **Excess runoff** - Surface runoff that cannot be accommodated satisfactorily by the natural or planned drainage systems.
- BB. **Extended detention basin** - Detention basin designed to provide substantial removal of suspended solids and particulates, typically achieved by holding stormwater for 24 hours or more.
- CC. **Fill material** - Soil, sand, gravel, clay, or any other non-polluting material which displaces soil or water or reduces water retention potential in a lake, pond, stream, or wetland.
- DD. **Flood** - An overflow of surface water onto lands not normally covered by water. Floods have these essential characteristics: the inundation of land is temporary and results from unusually heavy precipitation; and the land is inundated by overflow for a lake, pond, stream, and/or wetland, or is flooded by natural runoff.
- EE. **Floodplain** - The area of land adjoining a lake or stream which is inundated when the flow exceeds the capacity of the normal channel. For mapping purposes, floodplains are designated according to the frequency of the flood event, such as the 100-year floodplain or 500-year floodplain.

- FF. Grading** - Any stripping, clearing, stumping, excavating, filling, stockpiling, or any combination thereof, including the land in its excavated or filled condition.
- GG. Impervious area** - Impermeable surfaces, such as paved or gravel driveways, parking areas, or roads which prevent the infiltration of water into the soil.
- HH. Industrial use** - Any manufacturing, fabrication, assembly, printing, or improvement of articles or merchandise; warehousing, wholesaling, or storage of goods, vehicles, or materials; research and medical laboratories; mining and activities related to mineral extraction and processing; and other business enterprises not classified as commercial.
- II. Infiltration** - The downward movement or seepage of water from the surface to the subsoil and/or groundwater. The infiltration rate is expressed in terms of inches per hour.
- JJ. Infiltration facility** - A structure or area which allows stormwater runoff to gradually seep into the ground, e.g. french drains, seepage pits, infiltration basin, dry well, or perforated pipe.
- KK. Lake** - A permanent body of open water which is five acres or more in size.
- LL. Land use** - A use of land which may result in an earth change, including but not limited to subdivision, residential, commercial, industrial, recreational, agricultural practices, or other development, private and public highway, road and stream construction, and drainage construction.
- MM. Landscaping** - Mowing, seeding, sodding, and other landscaping activities which is not an earth change.
- NN. Maintenance agreement** - A binding agreement between the landowner and Grand Traverse County which sets forth the location and design of best management practices, as well as the terms and requirements for stormwater and erosion control facility maintenance recorded with the County Register of Deeds.
- OO. Material** - Soil, sand, gravel, clay, or any other organic or inorganic material which is not municipal refuse, as defined by Act 641 of 1978, as amended.
- PP. Non-erosive velocity** - A rate of flow of stormwater runoff, measured in feet per second, which does not erode soils. Non-erosive velocities vary for individual sites, taking into account topography, soil type, and runoff rates.

- QQ. Normal maintenance - Landscaping, repairs, road leveling, minor excavation or filling at a developed site, or other activities determined by the Drain Commissioner to be exempt from permit requirements, provided that such activities do not violate standards in this ordinance.
- RR. Off-site facility - Stormwater management or erosion control facility which is located partially or completely off of the development site.
- SS. Ordinary high water mark - The line between upland and bottomland which persists through successive changes in water levels, below which the presence and action of the water is so common or recurrent that the character of the land is marked distinctly from the upland and is apparent in the soil itself, the configuration of the surface of the soil and the vegetation. On an inland lake which has a level established by law, it means the high established level. Where water returns to its natural level as the result of the permanent removal or abandonment of a dam, it means the natural ordinary high water mark.
- TT. Outfall - The point where water flows out from a conduit, drain, or stream.
- UU. Outlet - A stream or facility receiving the flow from a basin, drain, or other stormwater management facility.
- VV. Peak rate of discharge (peak flow) - The maximum calculated rate of stormwater flow at a given point in a channel, watercourse, or conduit resulting from a predetermined frequency storm or flood, measured in cubic feet per second (cfs).
- WW. Permit - Soil erosion and stormwater runoff control permit.
- XX. Person - Any individual, firm, partnership, association, public or private corporation, company, organization or legal entity of any kind, including governmental agencies.
- YY. Pollution - Degradation of water quality, preventing the use of water for some specific purpose, caused by a natural or human-made substance.
- ZZ. Pond - A permanent or temporary body of open water which is more than one acre in size and less than five acres in size.
- AAA. Protected wetland - A wetland which meets one or more of the following criteria: (1) a wetland which is within 500 feet of a lake or stream, (2) a wetland which is five (5) or more acres in size, or (3) a wetland subject to regulation by a township, village, city, or county.

- BBB. Receiving body of water - Any lake, pond, stream, wetland, or groundwater into which stormwater runoff is directed.
- CCC. Regional detention basin - A basin to detain water flow from a number of development sites or a small watershed.
- DDD. Retention basin - A wet or dry stormwater holding area, either natural or manmade, which does not have an outlet to adjoining watercourses or wetlands other than an emergency spillway.
- EEE. Runoff - Stormwater runoff.
- FFF. Sediment - Mineral or organic solid particulate matter that has been removed from its site of origin by (a) soil erosion; (b) suspension in water; and/or (c) wind or water transport.
- GGG. Sedimentation - The process or action of depositing sediment.
- HHH. Site - Any tract, lot, or parcel of land or combination of tracts, lots or parcels of land proposed for development.
- III. Soil erosion - The wearing away of land by the action of wind, water, gravity or a combination thereof.
- JJJ. Soil erosion control facilities and measures - Any structure, facility, barrier, berm, vegetative cover, basin, or other measure which serves to control soil erosion in accordance with the purposes and standards of this Ordinance.
- Temporary measures - Installations designed to control soil erosion during construction or until soils in the contributing drainage area are stabilized.
- Permanent measures - Installations designed to control soil erosion after a project is completed.
- KKK. Soil erosion and stormwater runoff control plan - Maps and written information for a proposed land use or earth change which describe the way in which soil erosion and stormwater runoff will be controlled, during and after completion of construction.
- LLL. Soil erosion and stormwater runoff control permit - Signed, written statement issued under this Ordinance authorizing the applicant to engage in specified earth changes.
- MMM. Stop-work order - A notice issued by the Drain Commissioner to the permittee to require the permittee to cease grading or development activities.

- NNN. **Storage facility** - A basin, structure, or area, either natural or manmade, which is capable of holding stormwater for the purpose of reducing the rate of discharge from the site.
- OOO. **Storm drain** - A conduit, pipe, natural channel or human-made structure which serves to transport stormwater runoff.
- PPP. **Storm frequency** - The average period of time during which a storm of a given duration and intensity can be expected to be equaled or exceeded.
- QQQ. **Stormwater control facilities and measures** - Any facility, structure, channel, area, or vegetative cover, or measure which serves to control stormwater runoff in accordance with the purposes and standards of these regulations.
- RRR. **Stormwater runoff** - Waters from rains falling within a tributary drainage basin, flowing over the surface of the ground or collected in channels, watercourses, or conduits, measured in depth of inches.
- SSS. **Stream** - A river, stream, or creek which may or may not be serving as a drain which has definite banks, a bed, and visible evidence of a continued flow or continued occurrence of water.
- TTT. **Stream bank** - The usual boundaries, not the flood boundaries, of a stream channel.
- UUU. **Stripping** - Any activity which removes or significantly disturbs the vegetative surface cover, including clearing and grubbing operations.
- VVV. **Swale** - Low-lying grassed area with gradual slopes which transports stormwater, either on-site or off-site.
- WWW. **Vegetative cover** - Grasses, shrubs, trees, and other vegetation which hold and stabilize soils.
- XXX. **Water quality standards** - Minimum standards established by the Michigan Water Resources Commission for water quality protection.
- YYY. **Watercourse** - Any natural or human-made waterway, drainageway, drain, river, stream, diversion, ditch, gully, swale, or ravine having banks, a bed, and a definite direction or course, either continuously or intermittently flowing.
- ZZZ. **Watershed** - A land area, also known as a drainage area, which collects precipitation and contributes runoff to a receiving body of water or point along a watercourse.

AAAA. **Wetland** - Land characterized by the presence of water at a frequency and duration sufficient to support and that under normal circumstances does support wetland vegetation or aquatic life and is commonly referred to as a bog, swamp, or marsh. A wetland will contain a predominance, not just an occurrence, of wetland vegetation, aquatic life, or hydric soil.

BBBB. **Wetland vegetation** - Plants, including but not limited to trees, shrubs, and herbaceous plants, that exhibit adaptations to allow, under normal conditions, germination or propagation and to allow growth with at least their root systems in water or saturated hydric soil.

III. Permit Requirements

A. **Jurisdiction for Permit Administration**

1. The Drain Commissioner shall be the enforcing agency for regulated earth changes proposed within the boundaries of Grand Traverse County.
2. Earth changes carried out by the following government agencies as authorized public agencies shall be exempt from this ordinance:
 - a. Grand Traverse County Road Commission, except for the provisions of Section VI, Paragraph D.
 - b. Grand Traverse County Department of Public Works.
 - c. City of Traverse City as an authorized Public Agency.
 - d. State agencies designated as authorized public agencies under Section 11 of the Michigan Soil Erosion and Sedimentation Control Act (Act 347 of 1972, as amended), including but not limited to the Michigan Department of Transportation, the Michigan Department of Agriculture, the Michigan Department of Natural Resources, and the Department of Management and Budget.
 - e. Other local agencies that may be approved as local enforcing agencies under Section 7 of Act 347, as amended, or other county and local agencies that may be designated as authorized public agencies under Section 11 of Act 347, as amended.
3. An authorized public agency is exempt from this ordinance but shall notify the Drain Commissioner of any proposed earth change which is more extensive than normal maintenance.

4. Any City, Village or Charter Township can adopt their own ordinance on the subject matter described herein; and upon adoption will not be covered by this ordinance.
5. When earth changes are proposed on sites which are partially included in two or more counties, application review shall be the responsibility of the Michigan Department of Natural Resources.

B. Regulated Earth Changes

Earth changes requiring a soil erosion and stormwater runoff control permit from the Drain Commissioner include the following:

1. Earth changes connected with any of the following activities which disturb 1 or more acres of land, or are within 500 feet of a lake or stream, except for normal maintenance:
 - a. Transportation facilities, including public and private streets, access roads, highways, railroads, airports, common carrier pipelines, and mass transit facilities, except normal maintenance procedures such as earth or gravel road leveling and minor repairs or alterations to rights of way not affecting a lake or stream.
 - b. Mobile home park developments, multiple-family residential developments, and site preparation for a single-family residence.
 - c. Site condominium developments or condominiums as defined by Act 59 of 1978, as amended, Section 559.101 et seq. of the Michigan Compiled Laws.
 - d. Public buildings and service facilities, including but not limited to government buildings and facilities, schools, vehicle maintenance facilities, and salt storage facilities.
 - e. Recreational facilities, including but not limited to parks, golf courses, beaches above the ordinary high water mark, campgrounds or trails, including public or private facilities.
 - f. Utilities, including but not limited to underground pipelines or cables, except pole installation, service lines and other earth changes of a minor nature, and emergency repairs.

- g. Oil, gas, and mineral wells, except the installation of those wells under permit from the supervisor of wells and wherein the owner-operator is found by supervisor of wells to be in compliance with the conditions of the Soil Erosion and Sedimentation Control Act of 1972 (Act 347 of 1972). Access roads to well production sites shall be subject to permit requirements.
 - h. Non-agricultural water impoundments and waterway construction or improvements.
 - i. Logging activities including access roads, except the principal area where trees are being cut.
 - j. Mining activities including access roads, except the principal area where minerals are being removed.
 - k. Earth changes on agricultural lands, including road construction and building construction, but not including plowing and tilling of soil for the purpose of crop production.
- 2. Earth changes for environmentally-sensitive residential sites.
 - 3. Industrial or commercial use development sites, regardless of size, location, or environmental sensitivity.
 - 4. All subdivision developments as defined by section 102 of Act 288, P.A. 1967, as amended, regardless of size, location, or environmental sensitivity.

C. Identification of Environmentally-Sensitive Sites

- 1. Property owners are responsible for determining whether their sites are environmentally-sensitive as defined in this Ordinance.
- 2. Township, village, city, and/or county agencies shall be requested to provide assistance to property owners in identifying earth changes and environmentally-sensitive sites subject to review by the Drain Commissioner.

D. Permit Application Submittal

1. All applications for soil erosion and stormwater runoff control permits shall include one copy of the proposed soil erosion and stormwater runoff control plan unless more copies are requested by the Drain Commissioner. Copies of the permit application form shall be made available by the Grand Traverse County Drain Commissioner.
2. Permit applications shall be submitted to the Grand Traverse County Drain Commissioner.
3. Application for a permit shall be made prior to the start of any earth change including construction of access roads, driveways, tree and shrub removal, or grading. Permit approval shall be given prior to the initiation of any work activity. Any unauthorized work shall be considered a violation of these procedures regardless of any later actions taken toward compliance. Soil test borings, vegetative cutting for land surveys, percolation tests, and normal maintenance shall not be considered a start of work under these regulations.
4. The application review period begins upon receipt of a completed application.

E. Sequential Applications

1. On projects which are so large or complex that a plan encompassing all phases of the project cannot reasonably be prepared prior to initial ground-breaking, application for permit on successive major incremental earth change activities may be allowed. Requests for sequential applications shall be approved by the Drain Commissioner prior to submittal of a permit application.
2. Approval of sequential applications shall take place in two phases. First, the overall conceptual plan for the entire development shall be submitted for review and approval. Second, detailed plans for sections of the total project may be submitted for review and approval.
3. All permits processed and issued for phases of a project shall be clearly defined as to the nature and extent of work covered. Each phase of the project must be reviewed and permitted prior to construction.

F. Permit Approval or Disapproval

1. If the Drain Commissioner determines that the proposed soil erosion and stormwater runoff control plan complies with the standards in this Ordinance, a permit shall be issued specifying the work approved. If the proposed plan does not comply with these standards, the permit request shall be modified or denied.
2. Upon request, the Drain Commissioner shall furnish the applicant or other interested person with a statement in writing of the reasons for permit denial or approval.
3. If necessary, the Drain Commissioner may request additional information from the applicant.

G. Permit Expiration or Revocation

1. Permits shall terminate automatically if construction has not commenced within one year of the date of issuance. The permit holder may request a one year extension if there are valid reasons to support such an extension.
2. Any permit issued by the Drain Commissioner under this Ordinance may be revoked or suspended, after notice and an opportunity for a hearing, for any of the following causes:
 - a. A violation of a condition of the permit.
 - b. Obtaining a permit by misrepresentation or failure to fully disclose relevant facts in the application or soil erosion and stormwater runoff control plan.
 - c. A change in a condition that requires a temporary or permanent change in the activity.

H. Administrative Fee Schedule

1. Permit fees shall be directly related to the actual costs of administering the soil erosion control and stormwater management permit program of the Drain Commissioner, including site inspection costs and permit administration costs.
2. The fee schedule shall be proposed by the Drain Commissioner and approved by the County Board of Commissioners.

I. **Penalties for Initiating Earth Change Activities without a Permit**

Any earth change activities without a valid permit or in violation of a permit or permit conditions shall be considered a violation of this Ordinance and subject to fines and other penalties as provided in this Ordinance.

IV. **Issuance of Building Permits**

- A. A general law township, charter township, city, village or county agency which issues land use permits or building permits shall notify the Drain Commissioner upon receipt of an application involving an earth change subject to permit requirements under this Ordinance.
- B. A general law township, charter township, city, village or county agency shall not issue a land use permit or building permit for an earth change subject to permit requirements until a soil erosion and stormwater runoff control permit has been issued by the Drain Commissioner.
- C. The Drain Commissioner shall notify the general law township, charter township, city, village, county agency or other governmental agency with jurisdiction after a permit decision has been made.

V. **Other Permits and Approvals of Other Government Agencies**

- A. Approvals under this Ordinance shall not relieve a property owner of the need to obtain other permits or approvals from federal, state, county, and local agencies.
- B. If requirements of federal, state, county, and local officials vary, the most stringent requirements shall be followed.

VI. **Soil Erosion and Stormwater Runoff Control Plan**

A soil erosion and stormwater runoff control plan shall be prepared for any earth change subject to permit requirements. The plan shall be designed to effectively reduce accelerated soil erosion and sedimentation during construction and after construction is completed.

A. **Residential Development or Environmentally Sensitive Site Plans for Earth Changes**

A residential or environmentally sensitive site plan shall show the following:

1. Location of the site.
2. Site characteristics, such as location of lake, stream, wetlands or existing buildings.

3. Proposed earth change activity.
4. Erosion control measures proposed.

If there are severe development limitations in regards to the existing site characteristics, the Drain Commissioner may require that a residential or environmentally sensitive site plan be prepared by one of the following registered professionals: civil engineer, land surveyor, architect, and/or landscape architect.

B. Other Land Uses, Section III-B, Site Plans for Earth Changes

The submitted site plans shall show the following:

1. A map or maps at a scale of not more than 200 feet to the inch or as otherwise determined by the Drain Commissioner, including a legal description and site location sketch which includes the proximity of any proposed earth change to lakes or streams or both; predominant land features; and contour intervals or slope description.
2. A soils survey or written description of the soil types of the exposed land area contemplated for the earth change.
3. A description and the location of the physical limits of each proposed earth change.
4. Location of all lakes, streams, and protected wetlands partially or completely contained within the boundaries of the site or within 50 feet of the site boundary.
5. A description and the location of all existing and proposed on-site stormwater management facilities and measures.
6. The timing and sequence of each proposed earth change.
7. A description and the location of all proposed temporary soil erosion control facilities and measures.
8. A description and the location of all proposed permanent soil erosion control facilities and measures.
9. Stormwater runoff calculations.
10. A program for the continued maintenance of all permanent soil erosion and stormwater runoff control facilities and measures as listed in Section IX.

11. Other information which the Drain Commissioner requires to review the impact of the proposed earth change in relationship to the standards and requirements of this Ordinance.

C. **Subdivision Plat Site Plan**

Applicants for subdivision plat approval shall submit the same information as in Section VI B of this ordinance and may need to submit additional information including but not limited to the following: off-site watershed boundaries, existing and proposed easements, and proposed drainage system including water movement onto and out of the proposed plat.

D. **County Road Commission**

The Road Commission shall maintain its authorized public agency designation under Public Act 347 of 1972 by the Michigan Department of Natural Resources and shall annually review its operational procedures with the Soil and Water Conservation District and the County Drain Commissioner. A Summary Report of the past year's activities and any noted deficiencies shall be made and submitted to the Board of County Road Commissioners and Board of County Commissioners. Any of the three agencies may call for a review meeting with a seven (7) day notice if a deficiency is observed and not resolved in a reasonable method.

The Road Commission shall use its best effort to meet the goals and guidelines of the ordinances for stormwater runoff control on all new roads constructed on right-of-ways acquired after the adoption of this ordinance. Stormwater retention/detentions shall be compatible to the current highway safety guidelines, geometric design standards, structural requirements, maintenance practices, and general drain laws that govern natural surface water flow, concentration, location and/or velocity. When right-of-way is available on existing or improved county roads, the Road Commission will review the feasibility of providing stormwater runoff controls that are reasonable to be constructed and maintained at a nominal cost.

VII. **General Standards for Approval of Soil Erosion and Stormwater Control Plans**

1. The Drain Commissioner shall approve or disapprove soil erosion and stormwater runoff control permit applications and plans in accordance with published guidelines.

2. All earth changes subject to review under the requirements of this Ordinance shall be designed, constructed, and maintained to provide for the detention of flood waters and to protect water quality.
3. Measures required for soil erosion and stormwater runoff control shall take into consideration natural features, proximity of the site to lakes, streams, and protected wetlands, extent of impervious surfaces, potential for soil erosion and flooding, and the size of the site.
4. Stormwater conveyance, storage, and infiltration facilities shall be designed to provide for non-erosive velocities of stormwater runoff.
5. Alterations to natural drainage patterns shall not create downstream flooding or sedimentation.
6. When a proposed earth change is located in an area where a watershed plan has been approved by the County Board of Commissioners, the standards for stormwater detention and retention volumes, discharge rates, and stormwater facility locations specified in the approved Watershed Plan shall be deemed to meet the requirements of this Ordinance.

VIII. Off-Site Stormwater Control

A. Waiver Option

1. In lieu of on-site stormwater facilities and measures, the use of off-site stormwater facilities and measures, together with on-site soil erosion control, may be proposed. In such cases, the applicant shall request a waiver of the requirements for on-site stormwater runoff control. The waiver request shall be submitted to the Drain Commissioner with a permit application and a soil erosion and stormwater runoff control plan, including information specified in Section VI of this Ordinance. This waiver option does not allow for changes in requirements for on-site soil erosion control.

B. Shared Off-Site Stormwater Control Facilities

1. Off-site stormwater control areas may be shared between two or more property owners or developments, provided that maintenance agreements have been approved by the Drain Commissioner and easements have been obtained and recorded.

2. Stormwater management easements are required for all areas used for off-site stormwater control unless an exception has been granted by the Drain Commissioner. Easements shall be recorded with the Grand Traverse County Register of Deeds prior to approval of the final development plan by the Drain Commissioner.

C. Applicable Standards

1. General Standards specified in Section VII of this Ordinance shall be used in reviewing proposed soil erosion and stormwater runoff control plans for off-site stormwater facilities and measures.

IX. Maintenance

- A. All soil erosion and stormwater runoff control facilities and measures shall be maintained in accordance with permit conditions.
- B. The person(s) or organization(s) responsible for maintenance shall be designated in the Soil Erosion and Stormwater Runoff Control Plan or the permit application submitted to the Drain Commissioner. Options include:
 - a. The owner of the property.
 - b. Property owners association or other nonprofit organization, provided that provisions for financing necessary maintenance are included in deed restrictions or other contractual agreements.
 - c. Drain Commissioner, in accordance with provisions of the Michigan Drain Code (Public Act 40 of 1956, as amended).
- C. Maintenance agreements shall specify responsibilities for financing maintenance and emergency repairs, including but not limited to the procedures specified in Section XIII and XIV of this Ordinance.
- D. The Drain Commissioner will make the final decision of what maintenance option is appropriate in a given situation. Natural features, proximity of site to lakes, streams and protected wetlands, extent of impervious surfaces, size of the site and potential need for ongoing maintenance activities will be considered when making this decision.

X. Stormwater Management Easements

- A. Stormwater management easements shall be provided by the property owner if necessary for: (1) access for facility inspections and maintenance, or (2) preservation of stormwater runoff conveyance, infiltration, and detention

areas and facilities, including flood routes for the 100-year storm event. The purpose of the easement shall be specified in the maintenance agreement signed by the property owner.

- B. Stormwater management easements are required for all areas used for off-site stormwater control, unless a waiver is granted by the Drain Commissioner.
- C. Easements shall be recorded with the Grand Traverse County Register of Deeds prior to issuance of a permit by the Drain Commissioner.

XI. Compliance Assurances

A. Performance Guarantees

1. Applicants proposing subdivision plats, road construction projects, or other developments identified by the Drain Commissioner with a high potential for soil erosion shall be required to post a cash escrow, letter of credit, or other acceptable form of performance security in an amount determined by the Drain Commissioner.
2. Letters of credit, if used as a performance guarantee, shall extend for a minimum of one year with the option of renewal. Letters of credit will be returned to the applicant when the site is certified by the licensed professional who designed the site plan and the site is completely stabilized to meet requirements set forth by the Drain Commissioner.

B. Construction Certification by Registered Professional

For any sites that required a professional site plan, a certification letter shall be submitted after soil erosion and stormwater runoff control facilities have been installed to affirm that construction has been completed in accordance with the approved soil erosion and stormwater runoff control plan. This certification letter can be prepared by one of the following registered professionals: civil engineer, land surveyor, architect, and/or landscape architect unless it was specified by the Drain Commissioner that a civil engineer prepare a plan, it would need to be a civil engineer that approves the plan..

If there are changes during the course of construction, the Drain Commissioner may require final "as built" drawings for final approval of the site work.

C. Certificate of Compliance

Upon receipt and approval of the certification letter, the Drain Commissioner shall issue a certificate of compliance to the property owner.

XII. Inspections

- A. Authorized representatives of the Drain Commissioner may enter at reasonable times upon any property to conduct on-site inspections. Such inspections may take place before, during and after any earth change activity for which a permit has been issued.
- B. If upon inspection, existing site conditions are found not to be as stated in the permit or approved Soil Erosion and Stormwater Runoff Control Plan, the permit will be invalid. No earth disrupting work shall be undertaken, or continued, until revised plans have been submitted and a valid permit issued.
- C. Requests for revisions must be submitted to and approved by the Drain Commissioner in writing before being effective unless approved by the field inspector on the site. If approved, a revised site plan shall be submitted for review and approval.

XIII. Stop-Work Orders and Emergency Actions

- A. If necessary to assure compliance with the permit requirements, standards, and other provisions of this Ordinance, or to protect public health safety and welfare, the Drain Commissioner may issue a stop-work order for the purpose of preventing or minimizing accelerated soil erosion, stormwater runoff, or other conditions posing imminent and substantial danger to public health, safety, welfare, or natural resources.
- B. If necessary to protect public safety or water resources, including lakes, streams, protected wetlands, and other receiving bodies of water, the Drain Commissioner may initiate emergency action to abate imminent and substantial danger and risk, subject to Section XIV B of this Ordinance.
- C. Except as otherwise provided through maintenance agreements, the property owner may be held responsible for reimbursing Grand Traverse County for all costs incurred as a result of emergency action, including administrative costs, provided that a finding is made that the property owner violated provisions of this Ordinance, a permit, or an approved maintenance agreement, subject to Section XIV B of this Ordinance.
- D. The stop-work order, when issued, shall require all specified earth change activities to be stopped. A copy of the stop-work order shall immediately be submitted to other state and local agencies with regulatory jurisdiction.

- E. If the Drain Commissioner determines that soil erosion and sedimentation of the waters of this state has or will reasonably occur from a parcel of land in violation of this Ordinance, it may seek to enforce the ordinance by notifying the person who owns the land, by mail, with return receipt requested, of its determination. The notice shall contain a description of specific soil and sedimentation control measures which, if implemented by the property owner, would bring the owner into compliance.
- F. A person who owns land subject to this ordinance shall implement and maintain soil erosion and stormwater runoff control measures in conformance with this Ordinance within ten (10) days after the notice of violation has been given as specified in Section E above.

XIV. Enforcement Action

A. General Provisions

1. All earth changes in Grand Traverse County, including earth changes exempt from permit requirements, are subject to the enforcement provisions and penalties of this Ordinance.
2. A person who owns land on which an earth change has been made that may result in or contribute to soil erosion or sedimentation of the waters of the state shall implement and maintain soil erosion and sedimentation control measures that will effectively reduce soil erosion or sedimentation from the land on which the earth change has been made.
3. The Drain Commissioner shall notify the Michigan Department of Natural Resources of all violations of the Michigan Soil Erosion and Sedimentation Control Act (Act 347 of 1972, as amended), or rules, as well as violations of this ordinance, including violations attributable to an earth change created by an authorized public agency.
4. Each act of violation, and every day upon which any violation shall occur or continues to occur, shall constitute a separate offense.
5. A person who has not complied with this Ordinance and who, after notice, refuses to implement and maintain soil erosion control and stormwater runoff control measures and facilities in conformance with these regulations shall be subject to a fine of not more than \$500.00 or ninety (90) days in jail, or both, plus the cost of prosecution.

B. County Installation of Soil Erosion and Stormwater Runoff Control Measures

1. Soil erosion control or stormwater runoff control measures or facilities may be constructed or maintained by the Drain Commissioner and/or a hired consultant or contractor, at the property owner's expense, if the necessary provisions for the correction of a violation are not successfully implemented within ten (10) calendar days after the notice of violation is mailed.
2. The Drain Commissioner shall not expend more than \$500.00 for the cost of work, materials, or labor without prior notice to the property owner. If more than \$500.00 is to be expended under this section, the work shall not begin until at least twenty (20) days after the notice of violation has been mailed as described in Section XIII G of this Ordinance.
3. All expenses incurred by the Drain Commissioner to construct and maintain measures and facilities to bring the site into compliance shall be reimbursed by the property owner. The County shall have a lien for the expenses incurred. For single-family or multiple-family residential properties, the lien shall have priority over all liens and encumbrances filed or recorded after the date of such expenditure. For other types of property, the lien for such expenses shall be collected and treated in the same manner as provided for property tax liens under Act 206 of 1893.
4. A person who has not complied with Section XIV A.2. and who, after notice, refuses to implement and maintain soil erosion and stormwater runoff control measures in conformance with this ordinance shall be subject to a civil fine of not more than \$500.00. A fine collected under this section shall be paid to the Drain Commissioner or other enforcing agency responsible for the enforcement in the city, township, or village where the land is located.
5. A default in the payment of a civil fine or costs ordered under this Ordinance or an installment of the fine or costs may be remedied by any means authorized under the revised judicature act of 1961, Act No. 236 of the Public Acts of 1961, being sections 600.101 to 600.9947 of the Michigan Compiled Laws.

XV. Appeals

A. Right of Appeal

1. Any person aggrieved by the action or inaction of the Drain Commissioner related to this Ordinance may appeal

to the Grand Traverse County Soil Erosion Control Appeals Board.

2. The affected Township Zoning Board of Appeals will have jurisdiction to hear a variance of the setbacks suggested when a zoning variance is concurrently considered.

XVI. Severability

If any section, clause, provision or portion of this Ordinance is adjudged unconstitutional or invalid by a court of competent jurisdiction, the remainder of the Ordinance shall not be affected.

XVII. Effective Date

The ordinance shall take effect on January 1, 1992 and after publication according to statute.



Walter J. Hooper III, Chairperson
Grand Traverse County
Board of Commissioners

I, Virginia A. Watson, County Clerk of the County of Grand Traverse, hereby certify that the foregoing Ordinance # 16 was introduced and adopted at a regular session of the County Board of Commissioners on October 30, 1991. Voting in the affirmative were Commissioners Allen, Bertram, Edwards, Hooper, Strom and Underwood. Voting in the negative were Commissioners Buday, Griner, and Olds.



Virginia A. Watson
County Clerk

GRAND TRAVERSE COUNTY
SOIL EROSION AND STORMWATER RUNOFF CONTROL ORDINANCE
GUIDELINES

Amendments:

Section B, Item #7, Page 4, Amended 5/31/96

GRAND TRAVERSE COUNTY
SOIL EROSION AND STORMWATER RUNOFF CONTROL ORDINANCE
GUIDELINES

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GRAND TRAVERSE COUNTY
SOIL EROSION AND STORMWATER RUNOFF CONTROL ORDINANCE
GUIDELINES

PREAMBLE

These guidelines were developed to be used in conjunction with the Grand Traverse County Soil Erosion and Stormwater Runoff Control Ordinance. These guidelines may be updated from time to time to reflect new technology available to deal with soil erosion and stormwater runoff on sites within Grand Traverse County.

A. Soil Erosion Control - Temporary and Permanent

1. All earth changes shall be designed, constructed, and maintained in such a manner as to minimize the extent and duration of earth disruption.
2. Soil erosion control facilities shall be designed to remove sediment from stormwater before the stormwater leaves of the site of the earth change activity.
3. Vegetative stabilization or other soil erosion control measures shall be installed and maintained throughout the development process.
4. Earth changes associated with large developments shall be staged to keep the exposed areas of the soil as small as practicable. Critical areas exposed during construction shall be protected with temporary vegetation, mulching, filter fences, or other methods of stabilization.
5. Removal of natural vegetation and tree roots within fifty (50) feet of the ordinary high water mark of any lake or stream shall be discouraged unless approved for recreation uses regulated under Section III (B) of the ordinance. A lake or stream buffer area greater than fifty (50) feet may be required by the Drain Commissioner if necessary for soil erosion control purposes.
6. Removal of natural surface vegetation and tree roots within twenty-five (25) feet of the edge of any protected wetland shall be discouraged unless approved for recreation uses regulated under Section III (B) of the ordinance. A buffer area greater than twenty-five (25) feet may be required by the Drain Commissioner if necessary for soil erosion control purposes near a protected wetland.

7. Stormwater runoff control and soil erosion control measures shall be installed before grading, filling, or removal of vegetative cover is initiated.
8. Sediment basins, desilting basins, or silt traps are required as needed for all earth changes. Basins and traps shall be sized to entirely contain sediment-laden runoff.
9. Sediment basins shall be designed with an overflow spillway or other design features to minimize the potential for breaching during the 100-year major storm event.
10. All public utilities shall be installed in such a fashion that soil erosion and sedimentation is minimized.
11. Filter fences and other soil erosion control facilities installed at the perimeter of a development site shall be installed at least five (5) feet from the property boundary to allow for on-site maintenance.
12. If lakes, ponds, streams, or wetlands are located on or near the site, both temporary and permanent erosion control measures must be provided which intercept runoff and trap sediment before runoff reaches any water body.
13. Fill slope grades on the perimeter of the graded area adjacent to lakes, streams, wetlands, stormwater ponds, or adjoining properties shall not have a slope steeper than a 33 percent rise (3 foot horizontal to 1 foot vertical) unless approved by the Drain Commissioner.
14. When it is not possible to permanently stabilize a disturbed area after an earth change has been completed or when significant earth change activity ceases, temporary soil erosion control measures shall be installed and maintained.
15. Permanent erosion control measures for all slopes channels, ditches, or any disturbed land area shall be completed within fifteen (15) calendar days after final grading or the final earth change has been completed. All temporary soil erosion control measures shall be maintained until permanent soil erosion control measures are established.
16. Soil erosion control measures shall be maintained throughout the duration of the earth change, including the later stages of development. Maintenance activities include, but are not limited to removal of accumulated sediment, structural repairs, reseeding or

replacement of vegetative cover, and lawn mowing.

17. Grading of land or other earth changes shall not be permitted in any floodplain unless approved by the Michigan Department of Natural Resources as well as the Drain Commissioner.

B. Stormwater Runoff Control Facilities

1. On-site stormwater runoff control facilities which protect water quality and prevent flooding shall be required for all sites unless a proposal for off-site stormwater runoff control has been accepted. Stormwater runoff control facilities may include, but are not limited to detention basins, retention ponds, infiltration trenches, infiltration basins, wet basins, porous pavement with sediment diversion berms, grassed swales with check dams, filter strips, and other facilities.
2. Stormwater control facilities shall be planned and designed to reproduce the pre-development hydrology of the site to the maximum possible extent.
3. Infiltration trenches, perforated pipe, and infiltration basins shall be encouraged provided that (a) sediment is removed from stormwater runoff before runoff reaches the infiltration facility, and (b) adequate provisions for facility maintenance have been made.
4. Infiltration basins and infiltration trenches shall be lined with a vegetative cover designed to slow the flow of runoff and to trap pollutants. Sediment traps or sediment basins shall be provided for the purpose of collecting sediment before stormwater reaches the infiltration basin or trench. Infiltration facilities shall be designed to distribute stormwater runoff volume evenly over the floor of the basin or trench and to prevent ponding or standing water.
5. Drainage wells, commonly known as dry wells, shall be discouraged as a stormwater control method. If the use of stormwater retention or detention basins, either on-site or off-site, is not feasible, the installation of drainage wells may be allowed. All drainage wells must provide the following: (1) catch basins, sediment basins, silt traps, or vegetative filter strips to remove sediment from stormwater flowing to the drainage well; (2) an approved overflow system which will not discharge to watercourses, lakes, streams, ditches, drainage swales, or wetlands on or near the site; and

- (3) adequate provisions for maintenance.
6. Detention basins shall be designed as extended detention basins to detain runoff on the site for 24 hours or more to allow for maximum settling and removal of suspended solids and other pollutants. Vegetation shall be installed and maintained in the basin to help absorb pollutants.
 7. At a minimum, detention, retention, and infiltration basins shall have the storage capacity to hold the increase in runoff volume generated by the earth change. The required storage volume shall be calculated by comparing the volume of runoff of the undeveloped site during a 2-year 24-hour duration storm versus the volume of runoff from the developed site during a 25-year 24-hour duration storm. The Rational Method or the U.S.D.A. Soil Conservation Service method shall be used to determine runoff volumes. (Amended for clarification 5/31/96)
 8. The peak discharge from the site shall not exceed either of the following standards: (a) 0.2 cfs per acre; or (b) the calculated discharge rate for a 2-year frequency 24-hour duration storm event, based on a grassed, undeveloped condition. The peak discharge shall be calculated for both of these standards and the most restrictive discharge rate shall be used as the design standard for the site. The hydrologic methods recommended by the U.S.D.A. Soil Conservation Service shall be used to make peak discharge calculations.
 9. Stormwater runoff control basins designed for retention, detention, or infiltration shall be isolated from septic systems and water wells by fifty (50) feet or more. Variations in this required setback may be granted by the Grand Traverse County Health Department.
 10. A two-stage design for detention and retention basins shall be used on sites where parking lots and other impervious surfaces exceed five (5) acres in size, as well as for other sites identified by the Drain Commissioner or the Michigan Department of Natural Resources as requiring special protection for water quality purposes. In such cases, the upper (first-stage) detention area shall be designed as a shallow pool, wetland, or other biofiltration area with an impervious bottom. The lower (second-stage) detention area shall be designed as an infiltration basin or wet basin to optimize pollutant treatment capabilities.
 11. Whenever possible, a created wetland or other biofiltration area shall be incorporated into stormwater control facilities to help remove soluble

pollutants that cannot be removed by conventional settling. Sediment carried by runoff shall be allowed to settle out before runoff flows into the created wetland or other biofiltration area.

12. Retention and detention basins shall have an emergency overflow system. The overflow system shall be designed to accommodate flow from the 100-year storm event, or as otherwise required by the Michigan Department of Natural Resources.
13. Side slopes of any stormwater retention or detention basin shall be no greater than 3:1 (horizontal to vertical) so as to prevent soil erosion and allow for basin maintenance.
14. Stormwater basins with pools of water shall have one or more of the following safety features: safety ledges at the basin perimeter which are at least ten feet wide; (b) aquatic vegetation surrounding the basin which discourages wading; or (c) fencing to prevent unauthorized access to the basin.
15. If the stormwater control facilities cannot discharge to a stream, lake, or wetland without causing flooding or pollution on-site or downstream, then the basin shall be designed to hold or infiltrate stormwater runoff from two (2) back-to-back 100-year frequency storm events.
16. Stormwater detention basins shall not be located in wetlands unless approved by the Michigan Department of Natural Resources.
17. A 25-foot undeveloped buffer area shall be provided around the perimeter of all detention, retention, and infiltration basins which are 1/2 acre or more in size.
18. Stormwater detention basins which impound 5 acres or more and have a head of six feet or more shall meet dam construction permit requirements of the Michigan Water Resources Commission Act (Act 245 of 1929, as amended), as administered by the Michigan Department of Natural Resources.
19. Stormwater retention, detention, and infiltration basins shall be maintained by the property owner unless assurance of proper maintenance can be provided through a government agency program. Maintenance activities include but are not limited to removal of accumulated sediment, structural repairs, reseeding or replacement of vegetative cover, and lawn mowing.

C. Stormwater Conveyance Facilities and Receiving Waters

1. Unless otherwise approved, stormwater runoff shall be conveyed through swales, vegetated buffer strips, or other approved facilities so as to decrease runoff velocity, to remove pollutants, to allow suspended sediments to settle, and to encourage infiltration.
2. If storm sewers are determined to be necessary by the Drain Commissioner, the applicant shall design the drainage system to mitigate any harmful impact on water quality by using structural devices or other methods to prevent accelerated soil erosion and by locating discharges to maximize overland flow through grassed swales.
3. Drain spouts from roofs and sump pumps from basements shall be directed to on-site swales, detention basins, or other measures designed to slow the flow of stormwater runoff to non-erosive velocities.
4. No direct or indirect discharge of stormwater to receiving bodies of water, including lakes, streams, or wetlands shall be allowed unless sediment is trapped prior to discharge and stormwater flows are limited to non-erosive velocities.
5. Lakes and streams, together with their adjacent banks shall not be dredged, cleared of vegetation, deepened, widened, straightened, stabilized or otherwise altered without state or county permits. Approval from the Michigan Department of Natural Resources are required for proposed alterations of lakes and streams below the ordinary high water mark. Approval from the Drain Commissioner is required for proposed alterations of lakes and streams above the ordinary high water mark.
6. Construction of floor drains, storm drains, drainage wells, septic systems, or other conduits by which stormwater or washwater containing oil, grease, toxic chemicals, or other hazardous substances may reach groundwater shall be prohibited unless proposed systems meet the requirements of the Michigan Department of Natural Resources and the Grand Traverse County Health Department.

D. Engineering Design Guidelines for Facility Construction

1. Engineering design guidelines for soil erosion control and stormwater management facilities shall follow best management practices as identified by the Drain Commissioner, the Grand Traverse County Soil

Conservation Service, and/or the Michigan Department of Natural Resources.

2. Current soil conservation district standards and specifications or revisions thereof, as approved by the Drain Commissioner in consultation with the Grand Traverse County Soil and Water Conservation District, shall be followed.
3. The Michigan Department of Natural Resources (MDNR) "Urban Stormwater Best Management Practices Manual" will be used as a reference as well as other manuals, such as "Controlling Urban Runoff" by the Metropolitan Washington Council of Governments and "Designing Stormwater Quality Management Practices" by the University of Wisconsin, Madison.

E. Permit Approval or Disapproval

1. A decision on a permit application will normally be made within (3-10) working days of the time that a completed application and soil erosion and stormwater runoff control plan have been received. The Drain Commissioner shall determine whether the application and control plan submitted with the application provide sufficient information for review purposes. Review of permits may take longer if special engineering reviews are necessary, the development is of a large scale and extra time is necessary or if there is a backlog in the office because of a large amount of applications submitted at one time that necessitates a longer review period. This possibility will be discussed with the applicant at the time of submittal.

F. Other Permits and Approvals of Other Government Agencies

1. The Drain Commissioner may convene a meeting with state agency representatives to assure consistency with state laws and regulatory requirements.
2. Local ordinance provisions for natural rivers protection, wetlands protection, stormwater runoff control, and other natural resource protection and management topics shall be followed if they are more stringent than the standards in this Ordinance.
3. The Drain Commissioner may convene a meeting with local agency representatives to clarify regulatory requirements in relation to particular development sites or to resolve any conflicts between local and county regulatory requirements.

G. Other Land Uses, Section III-B of Ordinance
Site Plans for Earth Changes and Subdivision Plats

1. Various land uses within Section III-B of the ordinance will need to be prepared by one or more of the following licensed professionals: civil engineer, land surveyor, architect, and/or landscape architect. Typically a commercial/industrial site will fall into this category.
2. If the site plan is of a large or complex nature, the Drain Commissioner may request that it is prepared by a licensed civil engineer.
3. If the site plan is of a large or complex nature, the Drain Commissioner may request that the submitted site plan be reviewed by an engineer contracted by the Drain Commissioner. These costs incurred will be the responsibility of the applicant.
4. Property Owners may submit their own site plan for a development if it is of a minor nature as determined by the Drain Commissioner and they have gone through appropriate site plan training that will be offered by the Drain Commissioner's Office.

H. Subdivision Plats

1. Subdivision plats will be submitted for preliminary and final approval. Preliminary plat approval must be applied for prior to the meeting by the County Plat Review Committee. All concerns brought up at preliminary plat review must be taken care of prior to final plat signature by the Drain Commissioner.

I. Stop Work Orders and Emergency Actions

1. Violations of permit requirements will initially be brought to the attention of the individual in charge of on-site construction activities. Should efforts towards immediate compliance be unsuccessful, a stop-work order may be issued. Said order shall describe the specific alleged violation and the steps deemed necessary to bring the project back into compliance.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

REPLY TO THE ATTENTION OF

FEB 04 2000

B-19J

Mr. James A. Kirschensteiner, PE
Federal Highway Administration
315 West Allegan
Room 207
Lansing, Michigan 48933

Dear Mr. Kirschensteiner:

In accordance with our responsibilities under the National Environmental Policy Act (NEPA) and Section 309 of the Clean Air Act, the United States Environmental Protection Agency (U.S. EPA) Region 5 has reviewed the information submitted along with your January 5, 2000 cover letter. The Federal Highway Administration (FHWA) submitted the information to us to provide additional information to address issues that were discussed in the U.S. EPA's Draft Environmental Impact Statement (DEIS) comment letter issued on August 10, 1999 and subsequent letter on October 18, 1999. We are providing this letter as part of NEPA/Section 404 process under the concurrence point for "Alternatives Carried Forward".

The U.S. EPA provided concurrence with the purpose and need for the project in a letter dated May 4, 1999. As stated in that letter, we recognized that a replacement for the existing Cass Road Bridge must be provided for in the near future. We also recognized the importance of the replacement bridge in the safe and efficient flow of east-west travel in the Traverse City area.

The DEIS evaluated two build alternatives, the South Airport Road Widening and the Hartman-Hammond Connector alternatives. Both of these alternatives included the widening of Three Mile Road. U.S. EPA did not provide concurrence with the Alternatives Brought Forward because of the No Action alternative and Alternatives Evaluation issues that we expressed.

Since the U.S. EPA issued the August 10, 1999 letter, our original questions and concerns have been resolved by information that you sent to our Agency. The additional information that we received on the TDM alternative, Transit investigation, Section 4(f) Impacts to the Nature Preserve, TC-TALUS 2115 Socio-Economic Forecasts, excerpts from the Regional Corridor Study for US-31 and the Origin and Destination Survey for the Traverse City area satisfy our early questions and concerns with those areas. This information and analysis should be included in the Final Environmental Impact Statement (FEIS).


Based on the information provided since the August 10, 1999 letter, our Agency believes that the DEIS includes all feasible alternatives meeting the purpose and need of the project that merit detailed analysis. Therefore, we are providing our concurrence with the Alternatives Brought Forward.

We recommend that additional information be included in the FEIS to clarify how roadway improvements will actually function and operate once a build alternative is constructed. We suggest including more details in the FEIS to describe the operation of the roadway such as speed limit on the roads, number and type of access points, signage and other descriptive features. Existing land use information for the entire study area should also be included in the analysis. This map should be compared to maps depicting land use with a build alternative implemented. This information and analysis needs to be included in the FEIS.

We note that Michigan Department of Transportation (MDOT) has stated that it will determine whether there is a need to further analyze the recommendations from the Traverse City regional corridor study (the bypass study) after the Grand Traverse County Road Commission's project (this project) has been analyzed. Therefore, we are formally requesting a copy of any future NEPA documents from your Agency that may be issued that evaluate bypass corridors for this area.

If you have any questions about our NEPA/404 concurrence or if you would like to discuss our comments, please contact Sherry Kamke of my staff at (312) 353-5794.

Sincerely,


Shirley Mitchell, Deputy Director
Office of Strategic Environmental Analysis

cc: Mr. Michael K. Dillenbeck, Grand Traverse County Road Commission
Ms. Lori Noblet, Michigan Department of Transportation
Gerald W. Fulcher Jr., P.E., Michigan Department of Environmental Quality
Gary R. Mannoato, U.S. Army Corp of Engineers
Craig A. Czarnecki, U.S. Fish and Wildlife Service

APPENDIX C-2
STATE AGENCIES

STATE OF MICHIGAN



Commission of Agriculture

Douglas E. Darling
James E. Maitland
Shirley A. Skogman
Deanna Stamp
Jordan B. Tatter

JOHN ENGLER, Governor

DEPARTMENT OF AGRICULTURE

P.O. BOX 30017 • LANSING, MICHIGAN 48909

611 W. OTTAWA • LANSING, MICHIGAN 48933

DAN WYANT, Director

August 24, 2000

Reply to:
Farmland and Open Space
Department of Agriculture
P.O. Box 30449
Lansing, MI 48909-7949
(517) 373-3328

Ms. Trish Beckjord
SmithGroup JJR
110 Miller Avenue
Ann Arbor, MI 48104

Dear Ms. Beckjord:

Re: Roadway Improvements in Garfield Township, Grand Traverse County

We are in receipt of your letter of August 16, 2000, regarding the above.

Based on our review of the material that you have submitted and our database of Agreements, it appears that the proposed project will have no impact on the Farmland and Open Space Preservation Program.

Our database search revealed no Agreements in the sections that you referenced (21,22,23,26,27,28,33,34, and 35.)

If I can be of further assistance, please contact me at the number listed below.

Sincerely,

A handwritten signature in cursive script that reads "Jon Mayes".

Jon Mayes
Farmland & Open Space Preservation Unit
Environmental Stewardship Division
517-373-3328

JM:k

NATURAL RESOURCES
COMMISSION

JERRY C. BARTNIK
KEITH J. CHARTERS
LARRY DEVLYST
PAUL EISELE
JAMES P. HILL
DAVID HOLI
JOEY M. SPANO

STATE OF MICHIGAN



JOHN ENGLER, Governor

DEPARTMENT OF NATURAL RESOURCES

STEVEN T. MASON BUILDING, PO BOX 30028, LANSING MI 48909-7528

REPLY TO:
MID DISTRICT HEADQUARTERS
181 S. MT. TOM RD.
PO BOX 939
MIO MI 48647-0939

ROLAND HARMES, Director
August 22, 1995

Robert F. Hull
DeLeuw, Cather & Co. of Michigan
525 West Monroe Street
Chicago, IL 60661-3629

PARSONS
DeLEUW Chicago
AUG 25 1995
RECEIVED
CIVIL DEPARTMENT

RE: Cass Road Replacement Project

Dear Mr. Hull:

Per your memo of 8-11-95, please regard the following comments about the scoping document of June '95 on the above project. Of the listed alternatives, the Cass Road corridor is the preferred location based on the least negative impacts on the natural resources of the area while achieving transportation goals.

I will be participating in future reviews and cooperating with concerned parties as planning progresses. As such, I will be able to offer more concise opinions and help coordinate the permitting process as needed.

I am enclosing comments from Dan Pearson of the MDNR Natural Rivers Program per his request. Feel free to contact me at any time if you need further assistance.

Sincerely,

A handwritten signature in cursive script that reads "Duke Domke".

Duke Domke
Region II Transportation Specialist
Land and Water Management Division
517-826-3211

DD:ns

Enclosure

MICHIGAN DEPARTMENT OF NATURAL RESOURCES

INTEROFFICE COMMUNICATION

August 16, 1995

TO: Duke Domke, Region II Transportation Coordinator
Land and Water Management Division

FROM: Dan Pearson, Natural Rivers Program
Land and Water Management Division

SUBJECT: Cass Road Replacement, Grand Traverse County

Natural Rivers Program staff have reviewed the scoping document regarding the proposed replacement of the Cass Road crossing of the Boardman River and have the following comments.

Of all possible locations for a replacement bridge in the two study corridors, construction of a replacement at the site of the existing Cass Road bridge is the preferred alternative. Although located on a section of the Boardman River that is a designated Natural River under provisions of the Natural River Act, 1970 PA 231, the area is already disturbed due to the presence of the dam and associated road. Therefore, construction of a new crossing at that location would have the least impact on wetlands, aesthetics, the free-flowing condition of the river and other values associated with the river. We would, however, oppose any proposed new crossing within the Cass Road study corridor that is not in close proximity to the existing crossing.

We also oppose construction of a new crossing in the Hartman-Hammond Road corridor. Although this stretch of river is not a designated Natural River, the river corridor is in a more natural state than the existing Cass Road location and contains extensive wetland, aesthetic, floodplain, wildlife and fisheries values, all of which would be negatively affected by a new road crossing.

It appears that there are two separate study efforts by separate agencies dealing with virtually identical transportation issues. Grand Traverse County is evaluating replacement of the Cass Road bridge, and the Michigan Department of Transportation is evaluating a US-31 bypass of Traverse City. Both projects deal with the same travel corridors and essentially the same alternatives. We strongly suggest that the two agencies closely coordinate their projects, perhaps to the point of combining them into a single joint project, to avoid duplication of effort, time and expense.

cc: Dave Bastian, MDNR

Dan Pearson
RECEIVED

AUG 18 1995



DNR - DISTRICT 11 - M

STATE OF MICHIGAN



JOHN ENGLER, Governor

DEPARTMENT OF NATURAL RESOURCES

Stevens T. Mason Building, P.O. Box 30028, Lansing, MI 48909

ROLAND HARMES, Director

August 23, 1995

NATURAL RESOURCES
COMMISSION

JERRY C. BARTNIK
LARRY DEVLUYST
PAUL EISELE
JAMES P. HILL
DAVID HOLLI
JOEY M. SPANO
JORDAN B. TATTER

Mr. Gary Crawford
JJR
110 Miller
Ann Arbor, MI 48104-1339

Dear Mr. Crawford:

Your request for information was checked against known localities for special natural features recorded in the Michigan Natural Features Inventory (MNFI) database, which is part of the Natural Heritage Program, Wildlife Division. The MNFI is an ongoing, continuously updated information base, which is the only statewide, comprehensive source of existing data on Michigan's endangered, threatened, or otherwise significant plant and animal species, natural plant communities, and other natural features.

Records in the MNFI database indicate that a qualified observer has documented the presence of special natural features at a site. The absence of records in the database for a particular site may mean that the site has not been surveyed. Records are not always up-to-date, and may require verification. In some cases, the only way to obtain a definitive statement on the status of natural features is to have a competent biologist perform a complete field survey.

The presence of listed species does not necessarily preclude development but may require alterations in the development plan. An endangered species permit will be required from the Department of Natural Resources, Wildlife Division, if any listed species would be taken or harmed.

If the project is located on or adjacent to wetlands, inland lakes, or streams, additional permits may be required. Contact the Michigan Department of Natural Resources, Land and Water Management Division, P.O. Box 30028, Lansing, MI 48909 (517-373-1170).

The following is a summary of the results of the MNFI review of the site(s) in question:

There are no known occurrences of federal- or state-listed endangered, threatened, or otherwise significant species, natural plant communities, or natural features at the location(s) specified:
Proposed Bridge Replacement, Grand Traverse County, Cass Road Bridge over Boardman River,
T27N R11W Sections 21-23 and 26-28.

Thank you for your advance coordination in addressing the protection of Michigan's Natural Resource Heritage. If you have further questions, please call me at 517-373-1263.

Sincerely,

A handwritten signature in cursive script that reads "Lori G. Sargent".

Lori G. Sargent
Endangered Species Specialist
Wildlife Division

LGS:cjm

STATE OF MICHIGAN



JOHN ENGLER, Governor

DEPARTMENT OF NATURAL RESOURCES

STEVENS T. MASON BUILDING, PO BOX 30028, LANSING MI 48909-7528

K. L. COOL, Director

June 4, 1996

NATURAL RESOURCES
COMMISSION

JERRY C. BARTNIK
KEITH J. CHARTERS
LARRY DEVUYST
L. THORNTON EDWARDS, JR.
PAUL EISELE
DAVID HOLL
WILLIAM U. PARFET

REPLY TO:
FARMLAND & OPEN SPACE UNIT
REAL ESTATE DIVISION
PO BOX 30449
LANSING MI 48909-7549

Mr. Gary Crawford
JJR
110 Miller Road
Ann Arbor, Michigan 48104

Dear Mr. Crawford:

This is in response to your letter of May 10, 1996 in which you ask if there are any lands enrolled in farmland development rights agreements in Sections 21, 22, 23, 26, 27, 28, 33, 34 & 35 of Garfield Township, Grand Traverse County. I have reviewed our records and determined that there are no farmland agreements in these Sections of Garfield Township.

If you have any questions in this regard, please let me know.

Sincerely,

A handwritten signature in cursive script, appearing to read "Richard A. Harlow".

Richard A. Harlow, Unit Chief
Farmland & Open Space Preservation
Real Estate Division
517/373-3328

RAH:k

STATE OF MICHIGAN



JOHN ENGLER, Governor
DEPARTMENT OF ENVIRONMENTAL QUALITY

HOLLISTER BUILDING, PO BOX 30473, LANSING MI 48909-7973

RUSSELL J. HARDING, Director

September 10, 1996

REPLY TO:

District 7 Headquarters
P.O. Box 939
191 South Mt. Tom
Mio, Michigan 48847

Doug Denison
JJR, Inc.
110 Miller
Ann Arbor, MI 48104

Dear Mr. Denison:

Per our phone conversation of September 9, 1996, you brought to my attention a letter of preliminary review that I issued about which there may be some questions. This regards an early MDEQ/MDNR review of the Cass Bridge replacement project in Grand Traverse County.

Initial opinions to those plans by myself and Dan Pearson of the Natural Rivers Unit were that the existing crossing would be the preferred alternative, based on nothing more than those plans. Subsequent meetings and field reviews have provided new criteria and information upon which a different route would probably be preferred at this time.

Currently, a more direct route between Hartman and Hammond Roads appears to be the most feasible alternative from our perspective.

Please let me know if you need more specific information.

Sincerely,

A handwritten signature in cursive script that reads "Duke Domke".

Duke Domke
Transportation Specialist
Land and Water Management Division
517-826-3211

DD:ns

STATE OF MICHIGAN



JOHN ENGLER, Governor

DEPARTMENT OF NATURAL RESOURCES

STEVENS T. MASON BUILDING, PO BOX 30028, LANSING MI 48909-7528

K. L. COOL, Director

May 8, 1998

NATURAL RESOURCES
COMMISSION

JERRY C. BARTNIK
KEITH J. CHARTERS
NANCY A. DOUGLAS
L. THORNTON EDWARDS, JR.
PAUL EISELE
WILLIAM U. PARFET
LLOYD F. WEEKS

REPLY TO:
NATURAL HERITAGE
P.O. BOX 30180
LANSING MI 48908

Mr. Gary Crawford
JJR, Inc.
110 Miller Avenue
Ann Arbor, MI 48104

Dear Mr. Crawford:

Your request for information was checked against known localities for special natural features recorded in the Michigan Natural Features Inventory (MNFI) database, which is part of the DNR, Wildlife Division, Natural Heritage Program.

The MNFI database is an ongoing, continuously updated information base, which is the only statewide, comprehensive source of existing data on Michigan's endangered, threatened, or otherwise significant plant and animal species, natural plant communities, and other natural features. Records in the MNFI database indicate that a qualified observer has documented the presence of special natural features at a site. The absence of records in the database for a particular site may mean that the site has not been surveyed. Records are not always up-to-date, and may require verification. In some cases, the only way to obtain a definitive statement on the status of natural features is to have a competent biologist perform a complete field survey.

The presence of threatened or endangered species does not necessarily preclude development but may require alterations in the development plan. An endangered species permit will be required from the Department of Natural Resources, Wildlife Division, if any threatened or endangered species would be taken or harmed.

If the project is located on or adjacent to wetlands, inland lakes, or streams, additional permits may be required. Contact the Michigan Department of Environmental Quality, Land and Water Management Division, P.O. Box 30473, Lansing, MI 48909 (517-373-1170).

The following is a summary of the results of the MNFI review of the site(s) in question:

There are no known occurrences of federal- or state-listed endangered, threatened, or otherwise significant species, natural plant communities, or natural features at the location(s) specified:
Grand Traverse County, road expansion project, T27N R11W Sections 21-28, 34, 35; T27N R10W Sections 8, 9, 16-21, 28-30.

Thank you for your advance coordination in addressing the protection of Michigan's Natural Resource Heritage. If you have further questions, please call me at 517-373-1263.

Sincerely,

Lori G. Sargent
Endangered Species Specialist
Wildlife Division

STATE OF MICHIGAN



JOHN ENGLER, Governor

DEPARTMENT OF ENVIRONMENTAL QUALITY

"Better Service for a Better Environment"

HOLLISTER BUILDING, PO BOX 30473, LANSING MI 48909-7973

INTERNET: www.deq.state.mi.us

RUSSELL J. HARDING, Director

REPLY TO:

LAND & WATER MANAGEMENT DIVISION
PO BOX 30455
LANSING MI 48909-7955

July 30, 1998

Mr. Ronald S. Kinney, Manager
Environmental Section
Project Planning Division
Michigan Department of Transportation
PO Box 30050
Lansing, Michigan 48909

Dear Mr. Kinney:

Subject: Cass Road Bridge Replacement, Grand Traverse County Michigan.

We have reviewed the proposed replacement of the Cass Road crossing as part of the Boardman River Mobility Study and agree with the first concurrence point as to the purpose and need for the project.

The next step will be to develop the alternatives section. At the May 20, 1998 meeting a discussion was held on which alternatives should be included. They included:

1. No action which would include the closing of Cass Road.
2. Providing a new crossing of the Boardman River by extending Hartman and Hammond roads, this would include the improvement to 3 mile road between South Airport and US 31.
3. Traverse City cross town route.
4. Upgrade the Beltner and Keystone roads between US 31 and Hammond Road.
5. Further upgrades to South Airport Road
6. Upgrade the existing Cass Road crossing.


It is assumed that the improvement to 3 mile road between South Airport Road and US 31 would also be a part of the proposal for alternatives 4,5 and 6.

If a new crossing is needed, it would appear that the extension of Hartman and Hammond roads is the most logical location. However, before commenting on that alternative, we believe that alternatives 3,4 and 5 need to be looked at seriously. A combination of one or more of these could meet the purpose and need for the project and eliminate the need for an entirely new structure.

For the Draft EIS we would like to have potential mitigation sites identified. For each identified site, basic information should be included which would indicate that the site will work as a mitigation area. This information would include soil type, water table, land use, whether or not it is tilled and the number of years it has been farmed if appropriate.

If you have any questions please feel free to contact me.

Sincerely,



Gerald W. Fulcher, Jr., P.E. Chief
Transportation and Flood Hazard Management Unit
Land and Water Management Division
517-335-3172

cc: Mr. Duke Domka, MDEQ



JOHN ENGLER, Governor

DEPARTMENT OF ENVIRONMENTAL QUALITY*"Better Service for a Better Environment"*

HOLLISTER BUILDING, PO BOX 30473, LANSING MI 48909-1972

INTERNET: www.deq.state.mi.us

RUSSELL J. HARDING, Director

REPLY TO:

LAND & WATER MANAGEMENT DIVISION
PO BOX 30458
LANSING MI 48909-1958

August 6, 1999

Mr. Mark Dionise
Local Agency Programs
Michigan Department of Transportation
PO Box 30050
Lansing, Michigan 48909

Dear Mr. Dionise:

SUBJECT: Boardman River Crossing Mobility Study - Draft Environmental Impact Statement (DEIS)

Thank you for the opportunity to review the DEIS for the Boardman River Crossing Mobility Study for Grand Traverse County, Michigan. The DEIS identifies four alternatives to carry forward:

1. No-Build Alternative
2. Transportation System Management Alternative
3. South Airport Road Widening with Three Mile Road Alternative
4. Hartman Hammond Connector with Three Mile Road Alternative

Several other alternatives were looked at which were determined not to meet the purpose and need stated for the project. One of these alternatives included improvements to Beitner Road and Keystone Road.

Several other alternatives were looked at which were determined not to meet the purpose and need stated for the project. One of these alternatives included improvements to Beitner Road and Keystone Road.

We would like to see a discussion in the Final EIS indicating why a project, which combines the Beitner Road/Keystone Road Project with the South Airport Road and Three Mile Road alternative, doesn't work.

Assuming this combination doesn't work, we concur with the alternatives indicated in the DEIS as those alternatives which should be carried forward.

Mr. Mark Dionise
Page 2
August 6, 1999

We have the following additional comments regarding the DEIS:

1. If a new crossing is needed, it appears that the extension of Hartman and Hammond roads offers a better solution than trying to upgrade the existing Cass Road structure.
2. Assuming wetlands are impacted with the selected project, a wetland mitigation and monitoring plan should be provided when a permit application is submitted to the Department of Environmental Quality (DEQ).
3. If any proposed bridge or culvert crossing or replacement on a stream with a drainage area of more than two square miles causes an increase in upstream stages, one of the following will be required with the permit application:
 - a. A flood damage certification verifying that the increase in stages will not cause a harmful interference.
 - b. A flood damage waiver from each affected property owner.

If you have any questions, please feel free to contact me at 517-335-3172.

Sincerely



Gerald W. Fulcher, Jr., P.E., Chief
Transportation and Flood Hazard Management Unit
Land and Water Management Division

GWF:cg

cc: Mr. Mike MacMullen, USEPA
Mr. Gary Mannesto, USCOE
Mr. Craig A. Czarniecki, USFWS
Mr. Michael K. Dillenbeck, Grand Traverse County
Mr. Ron Kinney, MDOT
Mr. George Burgoyne, MDNR
Mr. Duke Domke, MDEQ

STATE OF MICHIGAN



JOHN ENGLER, Governor

DEPARTMENT OF NATURAL RESOURCES

STEVENS T. MASON BUILDING, PO BOX 30026, LANSING MI 48909-7526

K. L. COOL, Director

NATURAL RESOURCES
COMMISSION

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L. THORNTON EDWARDS, JR.
PAUL EISELE
BOB GARNER
WILLIAM D. PARFET

REPLY TO:
NATURAL HERITAGE
P.O. BOX 30180
LANSING MI 48908

July 6, 2000

Ms. Trish Beckjord, MLA
SmithGroup JJR, Inc.
110 Miller Avenue
Ann Arbor, MI 48104

Dear Ms. Beckjord:

Your request for information was checked against known localities for special natural features recorded in the Michigan Natural Features Inventory (MNFI) database, which is part of the DNR, Wildlife Division, Natural Heritage Program.

The MNFI database is an ongoing, continuously updated information base, which is the only statewide, comprehensive source of existing data on Michigan's endangered, threatened, or otherwise significant plant and animal species, natural plant communities, and other natural features. Records in the MNFI database indicate that a qualified observer has documented the presence of special natural features at a site. The absence of records in the database for a particular site may mean that the site has not been surveyed. Records are not always up-to-date, and may require verification. In some cases, the only way to obtain a definitive statement on the status of natural features is to have a competent biologist perform a complete field survey.

The presence of threatened or endangered species does not necessarily preclude development but may require alterations in a development plan. If a threatened or endangered species has the potential to be "taken" or "harmed" by a proposed development or activity, an endangered species permit will be required from the Department of Natural Resources, Wildlife Division.

If the project is located on or adjacent to wetlands, inland lakes, or streams, additional permits may be required. Contact the Michigan Department of Environmental Quality, Land and Water Management Division, P.O. Box 30473, Lansing, MI 48909 (517-373-1170).

The following is a summary of the results of the MNFI review of the site in question: proposed bridge across the Boardman River, Grand Traverse County, T27N R11W, Sections 21, 22, 23, 26, 27, 28; T27N R10W sections 7, 8, 17, 18 (JJR No. 23202.00).

The project should have no impact on the special natural features at the location specified if it proceeds according to the plans provided. Please contact me for an evaluation if the project plans are changed.

Thank you for your advance coordination in addressing the protection of Michigan's natural resource heritage. If you have further questions, please call me at 517-373-1263.

Sincerely,

Lori G. Sargent
Endangered Species Specialist
Wildlife Division

LGS:jao



MICHIGAN DEPARTMENT OF STATE
Candice S. Miller, Secretary of State
Lansing, Michigan 48918-0001

STATE HISTORIC PRESERVATION OFFICE
Michigan Historical Center
717 West Allegan Street
Lansing, Michigan 48918-1800

August 16, 1996

MARK PETERSON
SENIOR CIVIL ENGINEER
DE LEUW CATHER AND COMPANY
525 W MONROE ST
CHICAGO IL 60661-3629

PARSONS
DeLEUW Chicago

AUG 22 1996

RECEIVED
CIVIL DEPARTMENT

RE: ER-950527 Cass Road bridge reconstruction project, Garfield Township, Grand Traverse County (LOCL)

Dear Mr. Peterson:

We have reviewed the report entitled, "Phase I Archaeological Survey and Reconnaissance Level Survey of Above-Ground Resources, Cass Road Bridge Reconstruction Project, Garfield Township, Grand Traverse County, Michigan."

For the archaeological portion of the report we do not concur with the consultant's recommendations for Phase II testing on site 20GT101. It is the opinion of the State Historic Preservation Officer that all six sites do not appear to be eligible for listing in the National Register of Historic Places.

In the above-ground portion of the report we do not concur with the consultant's opinion that 1739 Cass Road "does not exhibit distinctive characteristics of a type, period, or method of construction." The house seems to be a good late nineteenth-century example of the gable-ell house form characteristic of southern Michigan. We request additional photographs and historical information on this property.

Except for the property at 1739 Cass Road, we concur with the consultant's recommendation that the remaining properties do not appear to be eligible for listing in the national register.

If you have any questions, please contact Kristine Kidorf, Environmental Review Coordinator, at (517) 335-2721. Thank you for this opportunity to review and comment.

Sincerely,

Kathryn B. Eckert
State Historic Preservation Officer

KBE:ROC:RJH:kk

STATE HISTORIC PRESERVATION OFFICE
Michigan Historical Center
717 West Allegan Street
Lansing, Michigan 48918-1800

September 14, 1998

MR DONALD J WEIR
COMMONWEALTH CULTURAL RESOURCES GROUP
2530 SPRING ARBOR ROAD
JACKSON MI 49203-3602

RE: ER-950527 *Revised Survey of Above-Ground Resources, Boardman River Crossing Mobility Study, Grand Traverse County, Michigan (FHWA)*

Dear Mr. Weir:

We have reviewed the revised, August 1998 *Survey of Above-Ground Resources, Boardman River Crossing Mobility Study, Grand Traverse County, Michigan*, and find the report complete. We concur with the report's conclusions that the following properties appear to meet the national register criteria:

Sleder Meat Packing [Plant] Historic District, 200 Hammond Road.
Black Family Historic District, 759 and 780 Hammond Road plus the Black School at Hammond and Three Mile Roads.
House at 4340 Three Mile Road.

The proposed Log Homes Historic District does not meet the national register criteria because the three properties are not contiguous. Each of the three houses appears to meet the national register criteria as a well-preserved, typical example of the rustic log cottages built between the two world wars. The fact that the three buildings stand so near one another adds to their significance.

We do not concur with the report's recommendation that the former East Bay Town Hall, 1989 Three Mile Road, appears to meet the national register criteria. The reorientation of the entrance to what was once the back of the building and the large shed-roof addition appear to us to represent a substantial loss of integrity that renders this building ineligible.

We concur with the report's conclusions that the other surveyed properties do not appear to meet the national register criteria.

If you have any questions, please contact Martha MacFarlane, Environmental Review Coordinator, at (517) 335-2721. Thank you for this opportunity to review and comment.

Sincerely,



Brian D. Conway
State Historic Preservation Officer

BDC:ROC:jmg



MICHIGAN DEPARTMENT OF STATE
Candice S. Miller, Secretary of State
Lansing, Michigan 48918-0001

J-0197 1157

STATE HISTORIC PRESERVATION OFFICE
Michigan Historical Center
717 West Allegan Street
Lansing, Michigan 48918-1800

October 20, 1998

MR DONALD J WEIR
COMMONWEALTH CULTURAL RESOURCES GROUP
2530 SPRING ARBOR ROAD
JACKSON MI 49203-3602

RE: ER-950527 Boardman River Crossing Mobility Study, Cass Road Bridge Replacement,
East Bay Township, Grand Traverse County (FHWA)

Dear Mr. Weir:

Under the authority of the National Historic Preservation Act of 1966, as amended, we have reviewed the report entitled *Phase I Archaeological Survey, Boardman River Crossing Mobility Study, East Bay Township, Grand Traverse County, Michigan*. Based on the information provided for our review it is the opinion of the State Historic Preservation Officer (SHPO) that no historic archaeological resources exist within the Three Mile Road study area only.

Please maintain a copy of this letter with your environmental review record for this project. If the scope of work changes in any way, or if artifacts or bones are discovered, please contact this office immediately. If you have any questions, please contact Martha MacFarlane, the Environmental Review Coordinator, at (517) 335-2721. Thank you for this opportunity to review and comment.

Sincerely,

Brian D. Conway
State Historic Preservation Officer

BDC:DLA:jmg



MICHIGAN DEPARTMENT OF STATE
Candice S. Miller, Secretary of State

Lansing, Michigan 48918-0001

STATE HISTORIC PRESERVATION OFFICE
Michigan Historical Center
717 West Allegan Street
Lansing, Michigan 48918-1800

January 28, 1999

DONALD J WEIR
COMMONWEALTH CULTURAL
RESOURCES GROUP INC
2530 SPRING ARBOR ROAD
JACKSON MI 49203 3602

RE: ER-950527 *Survey and National Register of Historic Places Assessment of Above-Ground resources along South Airport Road from US-31 to Three Mile Road and Historical Survey and National Register of Historic Places Assessment of the Boardman River Dam and Power House and the Cass Road Bridge over the Boardman River (draft), Garfield Charter Township, Grand Traverse County (FHWA)*

Dear Mr. Weir:

Under the authority of the National Historic Preservation Act of 1966, as amended, we have reviewed the above-cited reports and concur with each report's conclusion that there are no historic above-ground properties eligible for listing in the National Register of Historic Places within the area of potential effects for these project areas.

If you have any questions, please contact Martha MacFarlane, the Environmental Review Coordinator, at (517) 335-2721. Thank you for this opportunity to review and comment.

Sincerely,

Brian D. Conway
State Historic Preservation Officer

BDC:ROC:mlm

cc: Jere Hinkle, De Leuw, Cather and Co. ✓
Karen Gallagher, JJR



MICHIGAN DEPARTMENT OF STATE
Candice S. Miller, Secretary of State

Lansing, Michigan 48918-0001

STATE HISTORIC PRESERVATION OFFICE
Michigan Historical Center
717 West Allegan Street
Lansing, Michigan 48918-1800

March 25, 1999

DONALD J WEIR
COMMONWEALTH CULTURAL RESOURCES GROUP INC
2530 SPRING ARBOR ROAD
JACKSON MI 49203-3602

RE: ER-950527 Boardman River Crossing Mobility Study, South Airport Road Alternative,
Garfield and East Bay Townships, Grand Traverse County

Dear Mr. Weir:

Under the authority of the National Historic Preservation Act of 1966, as amended, we have reviewed and approve the final *Phase I Archaeological Survey* for the above-cited project at the location noted above.

Please maintain a copy of this letter with your environmental review record for this project. If the scope of work changes in any way, or if artifacts or bones are discovered, please contact this office immediately. If you have any questions, please contact Martha MacFarlane, Environmental Review Coordinator, at (517) 335-2721. Thank you for this opportunity to review and comment.

Sincerely,

Brian D. Conway
State Historic Preservation Officer

BDC:DLA:jrc



MICHIGAN DEPARTMENT OF STATE
Candice S. Miller, Secretary of State
Lansing, Michigan 48918-0001

05/10

STATE HISTORIC PRESERVATION OFFICE
Michigan Historical Center
717 West Allegan Street
Lansing, Michigan 48918-1800

RECEIVED

June 7, 1999

MR MICHAEL DILLENBECK
GRAND TRAVERSE COUNTY ROAD COMMISSION
3949 SILVER LAKE ROAD
TRAVERSE CITY MICHIGAN 49684

RE: BR-950527 Three Mile Road Expansion Project, Traverse City, East Bay Township,
Grand Traverse County (HUD)

Dear Mr. Dillenberg:

Under the authority of the National Historic Preservation Act of 1966, as amended, we have reviewed the above-cited project at the location noted above. It is the opinion of the State Historic Preservation Officer (SHPO) that the project will have an adverse effect (federal regulation 36 CFR Part 800.9[b]) on 4273, 4283, 4314, and 4340 Three Mile Road, which have been determined to be eligible for listing in the National Register of Historic Places on the basis of the 1998 report Survey of Above-Ground Resources, Boardman River Crossing Mobility Study, Grand Traverse County, Michigan. The project meets the following "Criteria for Adverse Effect" under 36 CFR Part 800.9[b]:

- * Isolation of the property from or alteration of the character of the property's setting when that character contributes to the property's qualification for the National Register;

The determination of effect cited above will prompt Grand Traverse County to begin the consultation process with this office, and to immediately notify the Advisory Council on Historic Preservation, 1100 Pennsylvania Avenue, NW, Suite 809, Washington D.C. 20004 that an adverse effect determination has been reached (36 CFR 800.5[e] "When the effect is adverse").

The letter to the Advisory Council should include a brief description of the project, a summary of the historic properties affected by the project, and the status of consultation with the Michigan SHPO and other parties.

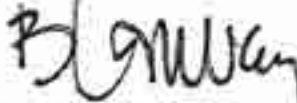
To begin consultation with the SHPO, Grand Traverse County must prepare a case study that demonstrates that all prudent and feasible alternatives have been explored, proposed measures to mitigate the adverse effect, and the views of any interested persons (36 CFR 800.8 (c)).

Please note that the Section 106 review process will not be completed until the consultation process is complete, a memorandum of agreement is developed, and the formal comments of the Advisory Council on Historic Preservation have been received.

If you have any questions, please contact Martha MacFarlane, Environmental Review Coordinator,

at (517) 335-2721. Thank you for this opportunity to review and comment.

Sincerely,



Brian D. Conway
State Historic Preservation Officer

BDC:ROC:bgg

copy: Advisory Council on Historic Preservation



MICHIGAN DEPARTMENT OF STATE
Candice S. Miller, Secretary of State

Lansing, Michigan 48918-0001

STATE HISTORIC PRESERVATION OFFICE
Michigan Historical Center
717 West Allegan Street
Lansing, Michigan 48918-1800

December 6, 1999

MARK DIONESE
URBAN PROGRAM MANAGER
LOCAL AGENCY PROGRAMS
DEPARTMENT OF TRANSPORTATION
425 WEST OTTAWA BUILDING
PO BOX 30050
LANSING MI 48909

RE: ER-950527 Draft Environmental Impact Statement and Section 4(f)/6(f) Evaluation,
Boardman River Crossing Mobility Study, Garfield and East Bay Townships,
Grand Traverse County (FHWA)

Dear Mr. Dionese:

We have reviewed the draft Environmental Impact Statement for the above-cited project. We have no specific comments on the EIS itself, although we note that our June 7 letter to the Grand Traverse County Road Commission regarding the adverse effect of the Three Mile Road Expansion Project had not been issued when the draft EIS was completed. If the adverse effects of the project cannot be avoided, this portion of the project must be mitigated and a memorandum of agreement must be developed. As presented, the remaining project areas do not appear to impact historic properties.

If you have any questions, please contact Martha MacFarlane, Environmental Review Coordinator, at (517) 335-2721. Thank you for your consideration.

Sincerely,

Brian D. Conway
State Historic Preservation Officer

BDC:DLA:ROC:MLM

copy: Jim Kirschensteiner, FHWA
Lori Noblet, MDOT

APPENDIX C-3

ADDITIONAL AGENCIES

ACME TOWNSHIP

P.O. Box 434
Acme, Michigan 49610-0434

Sherrin S. Hood, Zoning Administrator/Planner
Phone (616) 938-1350
Fax (616) 938-1510
Email acme@traverse.net

RECEIVED

July 27, 1999

Michael Dillenbeck, Manager
Grand Traverse County Road Commission
3949 Silver Lake Road
Traverse City, Michigan 49684

Re: Hartman-Hammond Bridge Project

Dear Michael:

It is my understanding that the Grand Traverse County Road Commission is seeking public comment on the Hartman-Hammond bridge project. It is in this capacity that I write this letter to inform the Road Commission of the discussion which transpired at a meeting of the Acme Township Planning Commission last night regarding this project. The Coalition for Sensible Growth was present, and requested that the Planning Commission pass a resolution in opposition to the project. After a somewhat lengthy discussion, the Acme Township Planning Commission passed a motion by a vote of 5 to 0 to recommend that the Grand Traverse County Road Commission table any action on the Hartman-Hammond bridge project and that the issue be taken to a vote of the public. The Acme Township Planning Commission felt that, without a proper public hearing, it would be inappropriate for them to take a definite stance for or against this project on behalf of the residents of Acme Township. However, as it is clear that the citizens of Grand Traverse County are torn on this issue, and understanding that this issue is not likely to resolve itself, the Planning Commission felt that a vote of the public would be the only way to settle the dispute regarding the construction of a bridge to connect Hartman and Hammond Roads, and avoid any further spending of taxpayer dollars to study the issue.

While it is clear that public input is sought regarding the Hartman-Hammond bridge project, the Acme Township Planning Commission would like to reinforce some previous actions and decisions in order to give the Road Commission a better understanding of their position on the broader bypass issue. On June 12, 1996, the Acme Township Planning Commission made a motion to recommend that the Acme Township Board of Trustees pass a resolution on behalf of the Planning Commission to express opposition to the

proposed bypass. I have included excerpts from the meeting minutes, a copy of the memorandum written by Brenda Mathenia, previously Acme Township's Planner/Zoning Administrator, to the Acme Township Board, as well as a list of study issues defined at a study session on the U.S. 31 Regional Corridor project.

It is pertinent to note that the Acme Township Planning Commission has adopted a Master Plan which states in the Transportation, Public Facilities and Services section, *"Community surveys and various sessions have shown that the majority of Acme Township residents are against a by-pass being built in or passing through the township. The construction of any roadways in the township should be required to meet the goals and policies of the township as enunciated in this plan and other township policy documents."* (page 70). This statement, and the adoption of the Acme Township Master Plan reiterates the sentiments of the 1996 Planning Commission in that they are not in support of a by-pass which would directly impact the road system currently in place in Acme Township.

The Acme Township Planning Commission wishes to thank the Grand Traverse County Road Commission for the opportunity to present their views on this subject, which seems to encompass many land use issues which will indirectly affect development and growth in Acme Township. It is our hope that the Road Commission will act prudently to bring the issue back to those whom it will directly affect: the citizens of Grand Traverse County.

Sincerely,



Sherrin S. Hood
Zoning Administrator/Planner

enclosures

June 28, 1996

MEMORANDUM

TO: Acme Township Board

FROM: Brenda G. Mathenia, Planner/Zoning Administrator

RE: Proposed U.S. 31/M-72 Corridor By-Pass

At the June 12, 1996 regular meeting of the Acme Township Planning Commission, the members of the Planning Commission made a recommendation that the Acme Township Board pass a resolution stating opposition to the stated purpose of the by-pass (to move local traffic) and to the fact that by-pass alternatives 2, 2A and 2D would have a negative impact on prime farmland, important wetlands and watershed areas, as well as severely impacting recreational opportunities available to Acme and Grand Traverse County residents and visitors to the area by negatively impacting the VASA trail (alternatives 2 and 2A).

U.S. 31 Regional Corridor (By-Pass) Study
Issues

5/21/96

Is the general location of the "By-pass" realistic for the purpose it is planned to serve?

What is a realistic time frame for the implementation of such a by-pass?

Alternative 2 and 2A will impact the following:

 VASA trail

 Headwaters of Acme Creek and the Acme Creek and Yuba Creek watersheds

 Springbrook Hills subdivision

 Prime agricultural lands north of M-72

 Significant wetland resources and wildlife habitat north of M-72

Why not utilize as many existing roadways as possible, e.g. Supply Road, Williamsburg Road.

By restricting these businesses to industrial areas it would put them in a high traffic and high visibility area. Christopherson indicated that this idea is potentially supportable. The Township would not be excluding these business. Klaver expressed concern that putting sexually oriented businesses in an industrial area would result in a concentration of the businesses. However, the commercial area would be an area of higher rent. Most operators of these businesses do not want to pay high rent or buy a building.

Christopherson indicated that he would like to see some ordinance recommended to the Township Board tonight. He did not want to see another month's delay.

Amon stated that the industrial zoned area required additional setbacks and landscaping or screening. Smith indicated that in traveling he has noted that Toronto has x-rated businesses restricted to industrial areas. The businesses are not as visible.

MOTION by Amon, second by Smith, to recommend to the Township Board approval of the Sexually Oriented Business Ordinance as per the resolution of the Acme Township Planning Commission dated June 12, 1996 with the following amendments

1. The scale of the map in Section 4, B(iv) be changed to no smaller than 1" = 200'
2. Section 10 B change to the Acme Township Boat Launch at the end of Bunker Hill Road.
3. Eliminate Section 15.

Additional discussion was held on hours of operation and locating these businesses in an industrial area. Klaver stated that he felt the Ordinance should be passed as is since changes could be done in the future.

Smith called the question. A roll call vote was taken. Ayes - Kladder, Halliday, Klaver, Friday, Smith. Nays - Amon, Hoxsie.

A vote was taken on the original motion. Motion passed unanimously.

6. Old Business:

- a. Discussion and recommendation to the Township Board related to the US 31 Regional Corridor Study/By-Pass and its implications for Acme Township.

The Township Planner indicated that she would like to put off any recommendation to the Township Board at this time. Mathenia and Smith attended a meeting at East Bay to discuss the proposed by-pass. At this meeting the statement was made that this by-pass was to service local communities, which is not what the original presentation had indicated. Mathenia stated that as the Township Planner she would like to see the Township Board put together a resolution to oppose the by-pass since it will not serve local communities. The by-pass as proposed will not solve the traffic problems, especially for Acme. In addition to that, the cost is prohibitive. This would also delay upgrading of other roads.

Halliday stated that having some kind of by-pass would have benefits for Acme Township. Smith stated that to improve traffic flow the infrastructure must be improved. Roads need to be widened and lanes added. If the by-pass is limited access, people would have to go out of their way to use the by-pass. This issues needs more analysis. Also the effect of a by-pass on the Township Master Plan should be looked at.

Halliday stated that if the Township doesn't approve the plan, the funds will go elsewhere. Smith indicated that no funds are available.

Kladder felt that unless Five Mile was used, a by-pass would do more harm to Acme than good. However, the issues has gotten people talking about how Traverse City and the surrounding area should be developed.

The Township Planner stated that she had a strong concern with the effects of a by-pass on farmland and wetlands in the Township. It would be cheaper to upgrade existing roads. Also, putting in a by-pass encourages sprawl.

Chuck Walter questioned what the people in the Township want. He felt that the businesses in the industrial would like to see a by-pass to help development of the area by providing better routes for truck traffic.

Friday questioned if a Public Hearing should be scheduled to get public input or if the Planning Commission should vote on a resolution.

Smith stated that at the meeting he attended on the by-pass, he specifically asked the purpose. The people conducting the meeting stated that the purpose of the road was to service the Grand Traverse area, not to by-pass the area. The road is now being considered as a beltway.

Halliday responded that this is totally different information from the original presentation given to the Planning Commission by Matt Skeels. Klaver questioned if we should have Matt Skeels back so that the Planning Commission could find out exactly what the project is before any Public Hearing is held. The Township Planner agreed that Skeels could be invited back, but she stressed that this is just plan is just conceptual at this point and no firm decisions have been made. Halliday stated that the group studying the by-pass is asking for input, but how can input be given if we don't know what they are proposing.

Mathenia stated that as Township Planner she could issue an opinion, however this doesn't mean that this will change the results of the study.

Hoxsie felt that the people of Acme Township tend to not consider what is going on out on M-72. This area needs to be considered.

Halliday stated that the Township could limit the opposition to the stated purpose of the plan, since it doesn't significantly help the traffic problem in Acme Township. Hoxsie recommended that the Township Planner draft a recommendation to the Township Board.

MOTION by Amon, second by Halliday, to have a committee, consisting of Mathenia, Hoxsie and Friday, draft a resolution to the Township Board on behalf of the Planning Commission to express opposition to the proposed by-pass based on the stated purpose of the US31 Regional Corridor Study/Bypass.

Motion carried unanimously.

The Township Planner recommended that additional issues including the effects on wetlands, farmland, and recreational land. Amon requested that the copy of the resolution be included in the packet for the next Planning Commission meeting.

- b. Reschedule NBD for a Public Hearing on the construction of a parking lot and new drive for the July 10, 1996 regular meeting of the Planning Commission.

This issue was not advertised for a Public Hearing since the applicant was unable to meet the deadlines. The issue will be continued at the next meeting.

7. New Business:

- a. Request that the Planning Commission formally recommend that the Township Board act to officially sanction a Master Plan Steering Committee to work toward the development of a Master Plan for Acme Township and that certain members of the Planning Commission be appointed to serve as sub-committee chairs as determined by the Master Plan Steering Committee

MOTION by Smith, second by Hoxsie to recommend that the Township Board act to officially sanction a Master Plan Steering Committee to work toward the development of a Master Plan for Acme Township.

Motion carried unanimously.

Smith stated that he would be will be serve on the committee

Hoxsie indicated that the Township Board is aware of the need to proceed with the Master Plan. The proposed Township budget includes fund allocated for the Master Plan.

8. Public Input:

None

9. Other Business:

None

The City of Traverse City

Light and Power Department

GOVERNMENTAL CENTER
400 Boardman Avenue
Traverse City, Michigan
49684



July 31, 1995

Mr. Robert T. Hammond
GOURDIE FRASER & ASSOCIATES, INC.
124 W. State Street
P.O. Box 927
Traverse City, MI 49685-927

Dear Bob:


Enclosed you will find a historical background of the Boardman Dam, structural views of the existing dam, and inundation maps of the Boardman Valley.

As we discussed, construction at any site along the Boardman River must take into consideration the potential inundation and impacts of the operation of the hydro facilities. Construction in and around a dam of this nature would have to be sensitive to the construction and stability of the existing structures. A thorough engineering review would have to be completed to assure that there would be no detrimental impacts on the existing hydro facility.

Of particular concern is any vibration which could alter the hydro geology of the site or excavation which could lead to an undermining of the existing dam.

If I can provide additional information or be of any assistance, please do not hesitate to contact me.

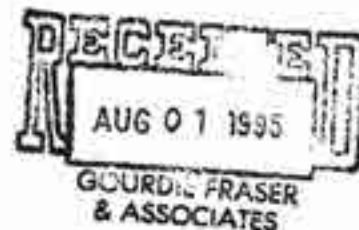
Sincerely,


Charles R. Fricke
Executive Director
922-4470

CRF:er

Enclosure

pc: L/P File



The City of Traverse City

GOVERNMENTAL CENTER
400 Boardman Avenue
Traverse City, Michigan
49684



Light and Power Department

October 29, 1996

Mr. Michael Dillenbeck
GRAND TRAVERSE COUNTY
ROAD COMMISSION
3949 Silver Lake Road
Traverse City, MI 49684

10/30

Dear Mike:

To confirm our understanding of the meeting of October 29, 1996, Light and Power is agreeable to the closing of Cass Road to general public traffic from a point roughly 100 feet east of the bridge to a point 200 feet south of Jack Robbins' driveway. It is further our understanding that vehicle traffic for Light and Power service vehicles will be maintained year round across the bridge so that we may adequately service the Boardman Dam Hydro facility. In addition, access will be available from the west for heavy service vehicles as needed. This west access may be reduced to roughly 10 feet in width and re-routed in order to improve the aesthetic appearances.

It is further our understanding that the access across the bridge and requirements for maintenance of the bridge continue to be handled by Grand Traverse County and/or the Road Commission.

Sincerely,

A handwritten signature in black ink, appearing to read "Charles R. Fricke", is written above the typed name.

Charles R. Fricke
Executive Director
922-4470

CRF:er

pc: L/P File



**GRAND TRAVERSE COUNTY
PARKS & RECREATION DEPARTMENT**

1125 W. CIVIC CENTER DRIVE • TRAVERSE CITY, MI 49684-2964
Civic Center (616) 922-4818 • Twin Lakes (616) 922-4816
Civic Center Pool (616) 922-4814
FAX (616) 922-2064

Mr. Mike Dillenbeck
Grand Traverse County Road Commission
3949 West Silver Lake Road
Traverse City, MI 49684

NOV 4 1996

October 29, 1996

Mr. Dillenbeck,

On behalf of the Grand Traverse County Parks and Recreation Commission let me say thank you for your informative presentation this morning. It has been some time since the Commission has been updated as to the status of the proposed Cass Road Bridge project. It was especially nice to see that the most desired crossing site is North of the Grand Traverse County Nature Education Reserve. With the facts as presented to us this morning, I am happy to report that the Grand Traverse County Parks and Recreation Commission voted unanimously to support the proposed Cass Road Bridge crossing to be placed on the recommended alternative route as designed by the Road Commission's consulting firm. It is the Parks and Recreation Commission's consensus that this location will least disturb our Nature Education Reserve and that the Reserve may benefit from the new bridge removing the current traffic flow from the heart of the Reserve.

In response to the other questions asked of the Parks and Recreation Department, I offer these answers:

1) To the question of: Will the existing bridge (top of dam) be open to vehicle traffic?

The bridge will be closed to public vehicle traffic, but will be open (via opening a locked gate) to maintenance vehicles from the Parks and Recreation Department and Traverse City Light and Power.

2) To the question of: Will the existing bridge (top of dam) be open to pedestrian traffic only?

The bridge will be open to pedestrian traffic, and only those vehicles as listed above.



3) To the question of: How will its closure impact the park use?

The rerouting of traffic over the Boardman river via this new bridge will enhance the Nature Education Reserve due to its elimination of vehicle traffic moving through the heart of the Reserve. This includes our closing of the existing boat ramp on the West side of the Bridge and the modification of the existing Cass Road to make a narrow service road of recycled road materials. There will be new opportunities to develop vegetated areas and walking trail access with the removal of the public roadway and bridge vehicle traffic.

4) To the question of: Where will reserve visitors park in relation to the bridge?

Parking will be located approximately 100 feet East of the existing bridge and 200 feet South of the first private driveway (Jack Robbins) Northwest of the bridge.

5) To the question of: Will they cross the bridge?

The bridge will be open to pedestrian traffic, so they may cross the bridge in this fashion if they so desire.

6) To the question of: How does the closing of the bridge impact the Park/Reserve master plan? and How does the proposed Hartman/Hammond extension project impact the Park/Reserve master plan?

The master plan for the Reserve is currently being developed and is expected to be completed in the near future. At this point in time, it is felt that closing this bridge will enhance the facility due to the elimination of traffic through the Reserve, and this will be shown as the master plan as it is developed. Any future expansion of the Reserve will be compatible with the proposed bridge as long as there is room for wild life and pedestrian passage under the new bridge structure.

I hope that these answers fulfill the needs of the Road Commission in its development plan for the new bridge project. If I can be of further assistance, please contact me at the Civic Center.

Sincerely yours,



Tim Schreiner, Director
Grand Traverse County Parks and Recreation



MICHIGAN UNITED CONSERVATION CLUBS

2101 Wood St. ● P.O. Box 30235 ● Lansing, MI 48909 ● 517/371-1041

08-02-90 10:48 IN

July 29, 1999

Mr. Mark A. Dionise, PE
Urban Program Manager, Local Agency Programs
Michigan Department of Transportation
Transportation Building
425 West Ottawa
P.O. Box 30050
Lansing, MI 48909

Dear Mr. Dionise:

Michigan United Conservation Clubs (MUCC) appreciates the opportunity to review the Draft Environmental Impact Statement (EIS) for improving east-west mobility across the Boardman River in Grand Traverse County. The Boardman River is one of Michigan's top trout streams, and is included in a 1998 MUCC publication, Trout Streams of Michigan.

Overall, the Draft EIS was well-organized and informative in comparing the alternatives. MUCC understands that the Traverse City area is facing significant transportation pressures due to the growth experienced by the Greater Traverse City area. MUCC takes no position on which alternative is preferred. However, MUCC wants to insure that, if construction is the chosen alternative for improving east-west mobility, all measures that would reduce the negative impacts on this great trout stream be carefully identified and implemented. The Hartman-Hammond Connector evaluation raises concerns on this nature.

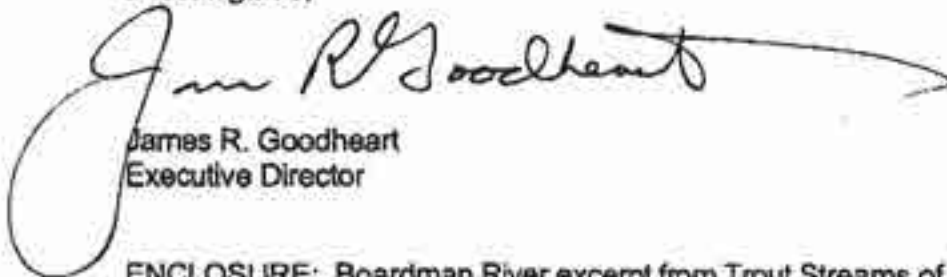
MUCC is concerned about the identification of the potentially significant secondary impacts associated with the Hartman-Hammond Connector, and the associated minimization and avoidance measures. After careful review of the Draft EIS, MUCC believes that the Hartman-Hammond Connector alternative is least conducive to minimization and avoidance measures. Even with careful construction and minimization measures employed, the secondary effects of this alternative could significantly impact the fishing resources on this river, not only in immediate

July 28, 1999

construction areas, but throughout the resource due to increased run-off and sedimentation. The secondary impacts from the build alternatives may be underestimated in this Draft EIS, and MUCC urges the Michigan DOT to further investigate these impacts. Predicting these impacts is a difficult task, as mentioned in the Draft EIS, but a necessary task.

Enclosed you will find a copy of the Boardman River excerpt from MUCC's Trout Streams of Michigan. It highlights the value of the Boardman River fishery and particular locations along the river found to have excellent fishing resources. MUCC hopes this information will be useful in the Final EIS process.

Best Regards,

A handwritten signature in cursive script that reads "James R. Goodheart". The signature is written in black ink and is positioned above the typed name and title.

James R. Goodheart
Executive Director

ENCLOSURE: Boardman River excerpt from Trout Streams of Michigan

THE BOARDMAN RIVER

By JANET D. MEHL



The Boardman River is one of Michigan's top trout streams and one of the few in the state in which natural reproduction alone sustains high-quality fishing. Although brown trout

dominate the entire system, excellent brook trout populations are found in the tributaries. Most of the tributaries contain excellent spawning areas and the more sizable ones offer considerable fishing in themselves. Substantial runs of steelheads and salmon and small runs of lake-run browns and lake trout occur from the mouth of the river to the Union Street Dam in Traverse City, about one mile upstream, the last of five dam sites on the mainstream.

The North and South branches arise in western Kalkaska County and flow westerly into Grand Traverse County to form the mainstream, which is 26 miles long. The mainstream continues west before swinging first northwest and then straight north, through Traverse City and into the west arm of Grand Traverse Bay. The river flows through three impoundments and Boardman Lake, a natural, 340-acre lake.

Bill Prisk of Traverse City, a Trout Unlimited board member, fishes the entire Boardman below Scheck's Bridge regularly.

"The Boardman is for the fisherman's satisfaction of catching fish, not catching pounds of fish," he said. "Fish rarely exceed 20 inches, but the Boardman is still very much appreciated for the fine fishing it offers."

John Rokos, Jr., of Traverse City owns 80 acres on the Boardman near Ranch Rudolph, where he takes from 300 to 400 legal browns every year by spin fishing. He spin-fishes only in cloudy or rainy weather as bright sunlight reflecting off the spinner scares the fish. Rain also washes feed into the river, putting the fish in feeding frenzies and causing them to bite better.

In 1981 Rokos caught a whopping 25.5-inch brown in this area. "That fish was a lot more exciting than fighting the 15-pound steelhead I catch in the Boardman every year," said Rokos, who had taken more than 40 steelheads during the first six weeks of the 1981 fall run, most of which weighed about 10 pounds.

Wildlife abounds in the forested hills overlooking the narrow floodplain along the river. Deer, small game, ducks, geese, and fur-bearing animals offer considerable hunting and trapping opportunities, and an occasional black bear is seen lumbering into the woods. The Boardman River and the Grand Traverse Bay region provide wintering areas for the mute swan. Boardman Lake does not freeze over entirely in the winter and from 200 to 300 swans can be seen at a time at Logan's Landing. Canada geese, mallards, and black ducks winter here as well.

The Boardman offers excellent trout fishing from its headwaters all the way down to Boardman Pond and this entire stretch—practically the entire river—is easily waded. Most canoeing is done between the "Forks"—the area where the North and South branches meet to form the mainstream—and Boardman Lake, with portages necessary around Brown Bridge, Sabin, and Board-

man dams. Narrow or shallow channels, overhanging brush, and fallen trees make canoeing difficult in portions of the North and South branches.

Although only a few developed public fishing sites exist on the river, about 50 percent of the river is publicly-owned, particularly that portion above Brown Bridge Pond, and access is provided by many county roads and trails and at most bridges. The number of campgrounds on the river is limited, with Brown's Dam, Scheck's Place, and Forks campgrounds all located between the Forks and Brown Bridge Dam. Scheck's Place provides 40 campsites, while Forks Campground provides only eight. However, three campgrounds with large numbers of sites are located on Arbutus Lake near Brown Bridge Pond and numerous private campgrounds are located near the river. Ranch Rudolph, about a mile upstream from Scheck's Place, has a restaurant and motel and offers a variety of activities, such as horseback riding and canoeing. It is ideally located for the fly-fishing schools it hosts each year, conducted by the Michigan Council of Trout Unlimited.

Although the entire Boardman contains excellent trout water, the fishing above Brown Bridge Pond is superior. Log jams, overhanging brush, undercut banks, tree roots, and pools provide excellent cover. Shaded banks and a swift flow over firm sand and gravel provide a very cold, well-oxygenated trout habitat of prime quality. About 70 percent of the land adjoining this stretch, which is known as the upper Boardman, is state-owned. Except for Ranch Rudolph and a few cottages near the Forks, few developments are visible from the river. Most of the river is contained in the Pere Marquette State Forest.

The North Branch originates in the Mahon Swamp northeast of Kalkaska and is almost as long as the mainstream of the river—nearly 24 miles. It is about 25 feet wide below Kalkaska and relatively shallow, averaging one to two feet deep with three- and four-foot pools. It drains several lakes, but the warm water the stream receives from these lakes is soon cooled sufficiently by groundwater springs.

Below Kalkaska the North Branch is wide enough to fly-fish and excellent caddis, mayfly, and stonefly hatches from mid-May through mid-July produce choice fishing all the way down to Brown Bridge Pond. Browns large enough to shake the composure of even the most veteran fishermen are taken here. Ten- to 14-inch browns and eight- to 12-inch brook trout are abundant. Much of the stream bottom is gravel, as much as 80 to 90 percent near the Forks, and extensive spawning takes place in most tributaries as well as in the North Branch.

The South Branch arises just south of South Boardman and US-131 and flows northwesterly to the Forks. Its 10 miles of mainstream contain extremely productive trout water, particularly for browns. The stream bottom is primarily gravel and extensive spawning occurs. It is about 25 feet wide and from one to four feet deep when it enters the Boardman mainstream.

From the Forks to Brown Bridge Pond the river is about 40 feet wide and from one to four feet deep with pools as deep

as six feet. Ten- to 16-inch browns and eight- to 12-inch brook trout are common. Characterized by many riffles, this stretch produces the best fly hatches. Prisk said Hexagenia hatches were excellent in late June, particularly in the stretch between Scheck's Place and Brown Bridge Pond and below Sabin Dam. He said fishermen were often lined elbow-to-elbow during this hatch, but during the rest of the fishing season the Boardman was only moderately fished.

Rokos said he enjoys fishing the true caddis hatch near Ranch Rudolph in late July and has his best success fishing from about 9 p.m. to midnight. He said the "after-dark" hatches seem to bring out fish which average two to three inches longer than usual.

Near Scheck's Place, Twenty-Two and Carpenter creeks enter the main river, both of which provide good fishing for brook and brown trout.

In June 1984 the Traverse City Light and Power Department (TCL&P), city of Traverse City, and the Department of Natural Resources signed an agreement forming a partnership in fisheries management of the Boardman River. By the following year the DNR began annual plantings (200,000 to 300,000 spring fingerlings) of chinook salmon in the Boardman River system to enhance the Grand-Traverse Bay fishery and issued all permits necessary to produce hydroelectric power at the Boardman and Sabin dams. Boardman and Sabin dams began producing electricity in 1986 and like the Brown Bridge Dam operate on "run-of-the-river" mode. The TCL&P Department constructed a fish ladder at Union Street Dam and a fish trap and transfer/harvest facility between the Union Street Dam and the mouth of the Boardman River.

The fish trap and transfer/harvest facility is located 0.8 miles upstream from Grand Traverse Bay and is within the city of Traverse City. This facility is named in honor of James P. Price, who was the first chairman of the Traverse City Light and Power Board and was instrumental in the agreement that was signed in 1984. Construction of the facility began early in 1987 and was completed by October. The fish ladder at the Union Street Dam was completed about the same time as the harvest facility. Cost of both facilities, including the land, was about \$1 million dollars.

The 1984 agreement also created the Grand Traverse Area Fisheries Advisory Council. The council consists of 10 representatives from various interest groups and advises the DNR on various fisheries issues in the area.

Pacific salmon are to be harvested at the weir each fall (September and October). The trout and Atlantic salmon are permitted to migrate upstream (through the fish ladder at Union Street Dam) to Sabin Dam. The fish ladder at Union Street Dam is operational year around. Each spring (April-July) metal plates with an overhanging lip are installed in the ladder to block the migration of adult sea lampreys.

The Boardman River is open to year-around fishing from the mouth upstream to Union Street Dam with the exception of a year-around closure 300 feet upstream and 300 feet downstream of the harvest weir. In addition, the river from the mouth upstream to the weir is closed during September and October. To mitigate this closure, the river from Union Street Dam upstream to Sabin Dam was opened to the extended season (April 1 to the last Saturday in April and from October 1 to December 31).

Beginning in 1986, Skamania (summer strain) steelhead have been planted in the Boardman River. Plants have ranged from 15,000 to 20,000 and all have been marked for identification.

The river between Brown Bridge Dam and Boardman Pond,

referred to as the middle Boardman, is also considered classic trout water. The stream bottom is almost entirely gravel and sustains excellent brown trout populations as well as an occasional rainbow or brook trout. A few browns in the 18- to 24-inch class are landed. Barely dimpling the water, they effortlessly rise to the surface to suck in a fly with a quiet blurrp, unlike the sudden splash of a small brook trout darting to the surface. Also unlike a small trout which thrashes near the surface, a big brown lunges for dark cover, bending a small spinning rod or fly rod over double.

The middle Boardman is about 50 to 60 feet wide and from three to six feet deep. Many individual homes are found along this stretch, most of which are occupied seasonally. This portion of the river is also characterized by riffles and supports good fly hatches. Access is more limited in this stretch, but a favorite among fishermen is the Shumsky's landing site on Shumsky Road, a short, gravel road leading south of River Road near Sleights Road.

Gary Marek of Traverse City, a Trout Unlimited regional director, fishes the middle Boardman at least three times a week. He said that although there are some areas in this stretch with deeper pools, there are considerable areas of "flat water"—relatively shallow, riffiling water of quite uniform depth. This makes the Boardman easy to wade at night while fishing for browns. The largest brown he has taken from this stretch was a five-pound, 22-incher in 1979.

Less than a mile downstream from Brown Bridge Dam, East Creek enters the river, which along with its tributaries, provide good fishing and spawning areas. Much of East, Bancroft, and Jackson creeks are gravel-bottomed, containing plenty of 10- to 12-inch browns and eight- to 10-inch brookies. Parker Creek also offers good fishing. It contains a sand bottom and drains two lakes which make it too warm for good trout water until it receives colder spring water downstream. East Creek is nearly 20 feet wide when it enters the mainstream, with pools up to five feet deep.

Just down from the mouth of East Creek, Swainston Creek joins the river, another good spawning and fishing tributary predominated by browns with some brook trout present. The millpond at Mayfield is stocked with rainbows. Joe Nied of Mayfield lives on Swainston Creek and said that although browns are taken on bait from the creek, the fishing is rough. Nied fishes the middle Boardman nearly every day.

There is a public access site on River Road about two miles downstream from the mouth of Swainston Creek.

Jaxon Creek, not to be confused with Jackson Creek, joins the river about midway between Brown Bridge Dam and Boardman Pond. Although it drains four lakes, it is about 50 percent gravel and provides spawning areas for browns in its lower reaches.

Prisk said that except for their lower reaches, most of the tributaries were too overgrown with brush to fish except for "worm dunkers" after brookies.

Although fly hatches on the Boardman do not match those of the Au Sable or perhaps the Manistee, they are not to be scoffed at by any means.

"A guy could probably catch a fly hatch at any time during the entire season if he was up on flies," Prisk said. "He could get his 20-incher during the Hex hatch if he puts his time in."

Bob Summers, a Trout Unlimited board member who lives on the river near Sleights Road, said the Boardman is a challenging river to fly-fish because the faster water requires fishermen to pay their line out better. He said the deeper, faster holes also provide good wet-fly fishing, particularly with the classic

Imitation Muddler.

Summers builds custom bamboo fly rods, one among a handful still in the trade.

The Boardman supports excellent hatches of Hendricksons very early in the season although the water is often high and riley at this time. Stoneflies provide lots of action in late May and early June, particularly above Brown Bridge Dam. Little Sulfur hatches occur about the same time as the Hexagenia hatch which are good some years and occur throughout the whole system. Brown Drake hatches are often good as are hatches of White-winged Blacks. True caddis hatches, particularly black and cream, provide good fishing in July and August. Blue-winged Olives continue to provide fishermen with hatches in late summer and early fall.

The remaining seven miles of river—the lower Boardman—is dominated by impoundments, with the Keystone Dam site located about seven miles upstream from the mouth. In addition to these impoundments, millponds still exist on the North Branch at Kalkaska, on the South Branch at South Boardman, and on Swainston Creek at Mayfield.

Another important aspect to consider was the Boardman Natural River Management Plan. In 1976 the Boardman and most tributaries from just above Sabin Pond to US-131 were designated as a natural river to be managed as such by local governance. It subjected an area 400 feet wide on both sides and the designated river and tributaries to local zoning which restricts development in hopes of preserving the natural character of the watershed. Among the plan's objectives were to maintain the existing free-flowing conditions of the river and to manage the river for the existing fishing species—namely brook and brown trout.

From 5,000 to 20,000 yearling steelheads have been planted in the Boardman below Union Street Dam since 1977, in addition to those planted in Grand Traverse Bay. Substantial runs of steelheads and lake-run browns go up to Union Street Dam

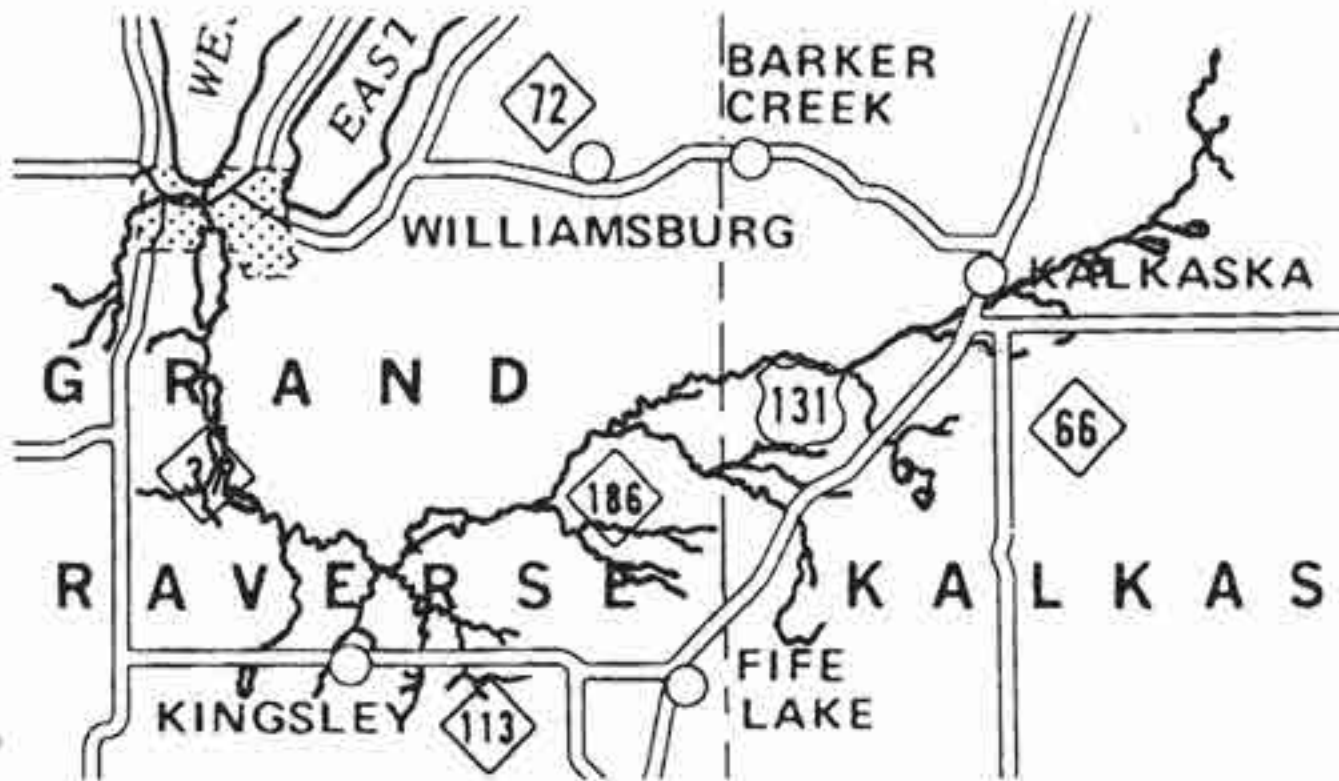
in Traverse City, but this stretch is very short (one mile) and highly developed. The Keystone Dam site was eliminated from the renovation proposal because the entire dam was removed in 1969 and the river allowed to resume its normal flow. Reconstructing the entire site and the altered environmental effects were deemed too costly. Because Boardman and Sabin impoundments already existed, the increased water temperature and decreased oxygen content problems usually associated with creating impoundments would be minimal. Fish passage at Brown Bridge Dam will not be implemented to preserve the quality of trout fishery above.

All of the impoundments, including Boardman Lake, offer good fishing for warmwater species, such as smallmouth bass, northern pike, and panfish. From 500,000 to 750,000 walleye fry have been planted in Boardman Lake each year since 1976, with 1,750,000 planted in 1980.

Steelheads in the Boardman rarely weigh more than 13 or 14 pounds but may weigh as much as 16 or 18. Rokos catches most of his on spawn—single eggs—or corn which he said works almost as well. He also catches menominees this way during October. He throws corn into the river to churn the fish in, then baits a small single hook with corn. Often the water is clear enough to see the fish hit it.

Chinooks approach 30 pounds and are caught primarily on spawn and Mepps and Colorado spinners. Most cohos run about eight to 10 pounds with lake-run browns ranging from four to eight pounds.

Just above the mouth, the river is joined by Kid's Creek, which originates west of M-37. This was once an excellent spawning stream for brook and brown trout, but only the upper reaches now produce trout up to 14 inches. Extensive development and construction along the creek, particularly during the 1970s, destroyed bank vegetation and stream cover along the lower half of the creek. Tons of sand and silt eroded into the stream, making it unsuitable for spawning.



APPENDIX D

SECTION 106 COORDINATION

Appendix D
SECTION 106 COORDINATION

Number

- D-1 Section 106 Mitigation Consultation
- D-2 Advisory Council on Historic Preservation Coordination
- D-3 Memorandum of Agreement

APPENDIX D-1

SECTION 106 MITIGATION CONSULTATION

Consulting Parties
Mitigation of Impacts to Historic Houses on Three Mile Road

The Michigan Land Use Institute
PO Box 228
845 Michigan Avenue
Benzonia, MI 49616

The Coalition for Sensible Growth
PO Box 4627
Traverse City, MI 49685-4627

The Great Lakes Environmental Center
739 Hastings
Traverse City 49686

Robert and Carol Callan
Swanson Leasing, Inc.
4340 Three Mile Road
Traverse City, MI 49686

Ms. Nancy Lou Albrecht
4273 Three Mile Road
Traverse City, MI 49686

~~Ken and Shonda Benah
4283 Three Mile Road
Traverse City, MI 49686~~

moved

↓
Kathleen Boonstra
4283 Three Mile Road
Traverse City, MI 49686

Jack and Joann Leipham
4314 Three Mile Road
Traverse City, MI 49686



2530 Spring Arbor Road
Jackson, Michigan 49203-3602
(517) 788-3550
Fax (517) 788-6594

December 14, 1999

Ms. Nancy Lou Albrecht
4273 Three Mile Road
Traverse City, MI 49686

Re: Historic Buildings on Three Mile Road; Boardman River Crossing Mobility Study

Dear Ms. Albrecht:

Enclosed is the letter sent to the people who attended a public hearing about the Boardman River Crossing Mobility Study and commented on historic buildings in the Traverse City area. We are asking for their comments about how the Michigan Department of Transportation (MDOT) can reduce the impacts to your building, as well as three others on Three Mile Road.

Widening Three Mile Road south of Munson Avenue will require taking approximately 25 feet of land from the front of four historic buildings on Three Mile Road. To reduce impacts to these historic buildings, the Michigan Department of Transportation wants to photograph the properties on Three Mile Road and write a report about the development of recreational housing in the Traverse City area. This will create a permanent report of the properties as they exist today. The photographs and report will be filed in the State Archives in Lansing and will be put in a Traverse City-area library, museum, or historical society files.

The enclosed map shows the road widening in front of the four historic houses. Also enclosed is a form requesting your comments about MDOT's plans to photograph the houses and write a history about Traverse City-area recreational housing. We are asking that you fill out a comment form, too, so that MDOT can give full consideration to your wishes.

If you would like to read the entire environmental report that was prepared for this project, it is available at the Traverse Area District Library. Ask to see the *Draft Environmental Impact Statement and Section 4(f)/6(f) Evaluation* (May 1999), prepared by the Grand Traverse County Road Commission, the Michigan Department of Transportation, and the Federal Highway Administration.



Ms. Nancy Lou Albrecht
December 14, 1999
Page Two

Please help MDOT make the best plans possible for your building by returning the enclosed comment form by December 28, 1999. Your comments will become part of the official project record and are important to MDOT's planning. If you want to talk to someone about the letter and MDOT's plans, you can call me at 1-800-731-3550.

Sincerely,

Nancy Ford Demeter
Compliance Specialist



2530 Spring Arbor Road
Jackson, Michigan 49203-3602
(517) 788-3550
Fax (517) 788-8594

December 14, 1999

Robert and Carol Callan
Swanson Leasing, Inc.
4340 Three Mile Road
Traverse City, MI 49686

Re: Historic Buildings on Three Mile Road; Boardman River Crossing Mobility Study

Dear Mr. And Ms. Callan:

Enclosed is the letter sent to the people who attended a public hearing about the Boardman River Crossing Mobility Study and commented on historic buildings in the Traverse City area. We are asking for their comments about how the Michigan Department of Transportation (MDOT) can reduce the impacts to your building, as well as three others on Three Mile Road.

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Robert and Carol Callan
December 14, 1999
Page Two

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Sincerely,

Nancy Ford Demeter
Compliance Specialist



2530 Spring Arbor Road
Jackson, Michigan 49203-3602
(517) 788-3550
Fax (517) 788-6584

December 14, 1999

Jack and Joann Leipham
4314 Three Mile Road
Traverse City, MI 49686

Re: Historic Buildings on Three Mile Road; Boardman River Crossing Mobility Study

Dear Mr. and Ms. Leipham:

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Widening Three Mile Road south of Munson Avenue will require taking approximately 25 feet of land from the front of four historic buildings on Three Mile Road. To reduce impacts to these historic buildings, the Michigan Department of Transportation wants to photograph the properties on Three Mile Road and write a report about the development of recreational housing in the Traverse City area. This will create a permanent report of the properties as they exist today. The photographs and report will be filed in the State Archives in Lansing and will be put in a Traverse City-area library, museum, or historical society files.

The enclosed map shows the road widening in front of the four historic houses. Also enclosed is a form requesting your comments about MDOT's plans to photograph the houses and write a history about Traverse City-area recreational housing. We are asking that you fill out a comment form, too, so that MDOT can give full consideration to your wishes.

If you would like to read the entire environmental report that was prepared for this project, it is available at the Traverse Area District Library. Ask to see the *Draft Environmental Impact Statement and Section 4(f)/6(f) Evaluation* (May 1999), prepared by the Grand Traverse County Road Commission, the Michigan Department of Transportation, and the Federal Highway Administration.



Jack and Joann Leipham
December 14, 1999
Page Two

Please help MDOT make the best plans possible for your building by returning the enclosed comment form by December 28, 1999. Your comments will become part of the official project record and are important to MDOT's planning. If you want to talk to someone about the letter and MDOT's plans, you can call me at 1-800-731-3550.

Sincerely,

Nancy Ford Demeter
Compliance Specialist



2530 Spring Arbor Road
Jackson, Michigan 49203-3602
(517) 788-3550
Fax (517) 788-6594

January 3, 2000

Ms. Kathleen Boonstra
4283 Three Mile Road
Traverse City, MI 49686

Re: Historic Buildings on Three Mile Road; Boardman River Crossing Mobility Study

Dear Ms. Boonstra:

Enclosed is the letter sent to the people who attended a public hearing about the Boardman River Crossing Mobility Study and commented on historic buildings in the Traverse City area. We are asking for their comments about how the Michigan Department of Transportation (MDOT) can reduce the impacts to your building, as well as three others on Three Mile Road.

Widening Three Mile Road south of Munson Avenue will require taking approximately 25 feet of land from the front of four historic buildings on Three Mile Road. To reduce impacts to these historic buildings, the Michigan Department of Transportation wants to photograph the properties on Three Mile Road and write a report about the development of recreational housing in the Traverse City area. This will create a permanent report of the properties as they exist today. The photographs and report will be filed in the State Archives in Lansing and will be put in a Traverse City-area library, museum, or historical society files.

The enclosed map shows the road widening in front of the four historic houses. Also enclosed is a form requesting your comments about MDOT's plans to photograph the houses and write a history about Traverse City-area recreational housing. We are asking that you fill out a comment form, too, so that MDOT can give full consideration to your wishes.

If you would like to read the entire environmental report that was prepared for this project, it is available at the Traverse Area District Library. Ask to see the *Draft Environmental Impact Statement and Section 4(f)/6(f) Evaluation* (May 1999), prepared by the Grand Traverse County Road Commission, the Michigan Department of Transportation, and the Federal Highway Administration.



Ms. Kathleen Boonstra
January 3, 2000
Page Two

Please help MDOT make the best plans possible for your building by returning the enclosed comment form by January 17, 2000. Your comments will become part of the official project record and are important to MDOT's planning. If you want to talk to someone about the letter and MDOT's plans, you can call me at 1-800-731-3550.

Sincerely,

Nancy Ford Demeter
Compliance Specialist



2530 Spring Arbor Road
Jackson, Michigan 49203-3802
(517) 788-3550
Fax (517) 788-6594

[Date]

[Name]
[Address]
[City, MI Zip Code]

Re: Historic Buildings on Three Mile Road; Boardman River Crossing Mobility Study

Dear [Name]:

You were one of the people or groups who attended a public hearing about the Boardman River Crossing Mobility Study. We are asking for your comments about how the Michigan Department of Transportation (MDOT) can reduce the impacts to four properties on Three Mile Road. All four properties are eligible for listing on the National Register of Historic Places. Properties that are eligible for listing on the National Register are considered important historic resources, and they receive special consideration when agencies, like MDOT, plan projects.

The four National Register-eligible properties on Three Mile Road are:

- The building at **4340 Three Mile Road**. Constructed in 1936, this building is an excellent, well-maintained ranch-style building that incorporates a number of Arts and Crafts details.
- The house at **4273 Three Mile Road**. Constructed in 1941, this house is one of only three round-log houses in the study area. This house has Craftsman-inspired details, which makes it a distinctive house in the project area.
- The house at **4283 Three Mile Road**. This house is another distinctive, round-log house constructed in 1940.
- The house at **4314 Three Mile Road**. Like its two counterparts, this is a distinctive round-log house.

These four historic houses are located along a portion of Three Mile Road that will be widened from two to four lanes. This improvement will require taking an additional 25 feet of right-of-way from the front of these four houses. Specific impacts include:



- **4340 Three Mile Road.** A loss of approximately 25 feet of land back from Three Mile Road, requiring the removal of lawn. No buildings or structures will be removed because of the road widening.
- **4314 Three Mile Road.** A loss of approximately 25 feet of land back from Three Mile Road, requiring the removal of lawn and a privacy fence. No other buildings or structures will be removed because of the road widening.
- **4283 Three Mile Road.** A loss of approximately 25 feet of land back from Three Mile Road, requiring the removal of lawn and possibly a shade tree. No buildings or structures will be removed because of the road widening.
- **4273 Three Mile Road.** A loss of approximately 25 feet of land back from Three Mile Road, requiring the removal of lawn and possibly one or two shade trees. No buildings or structures will be removed because of the road widening.

To reduce the impacts to the four houses on Three Mile Road, MDOT wants to photograph the properties before the road is widened. They will also create a report about the development of recreational housing in the Traverse City area. The photographs and documents will be filed in the State Archives in Lansing and will be put in a Traverse-area library, museum, or historical society files.

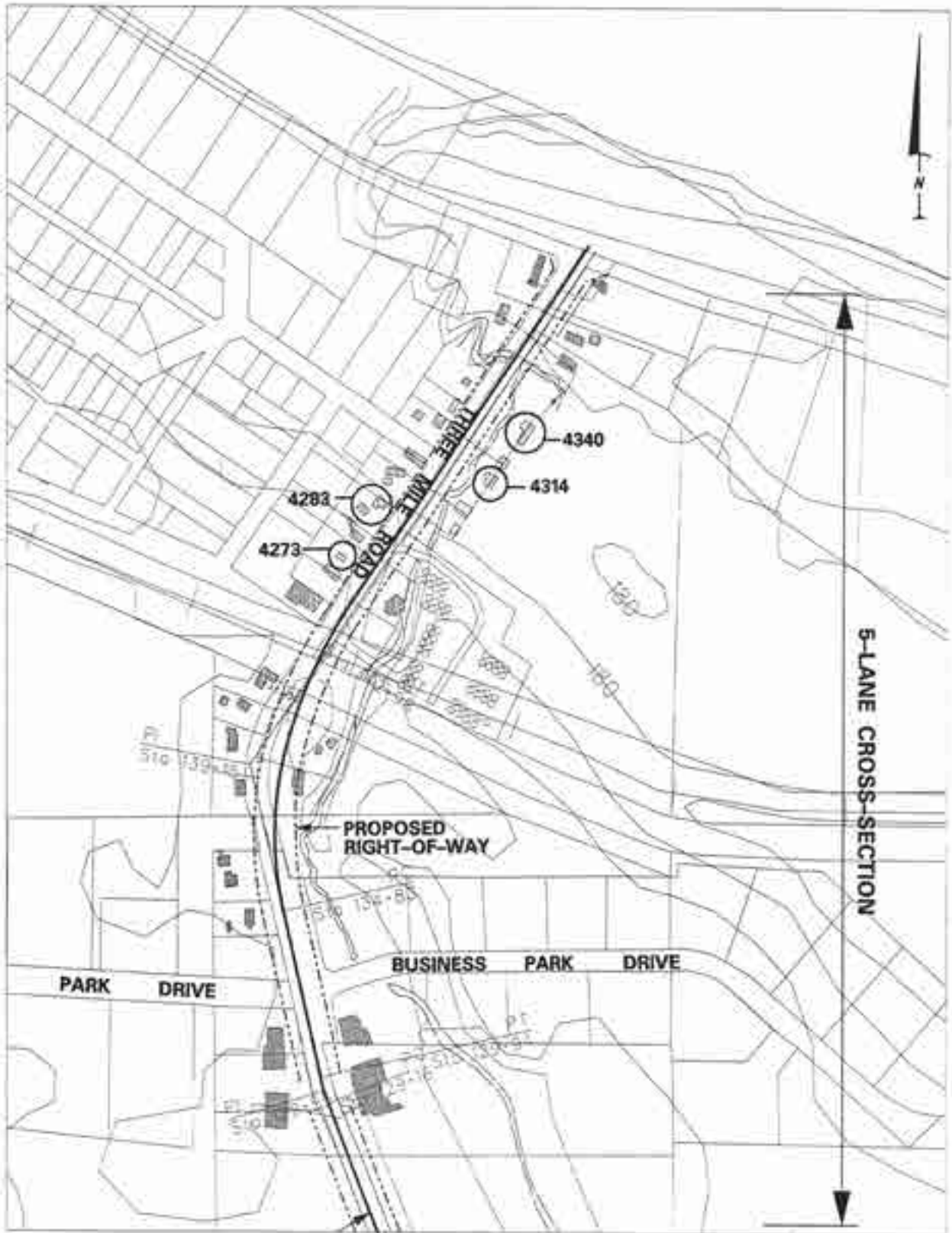
The enclosed map shows the road widening in front of the four historic houses. Also enclosed is a form requesting your comments about MDOT's plans to photograph the houses and write a history about Traverse City-area recreational housing. So that your comments can be given full consideration, please return your written comment form in the enclosed self-addressed, stamped envelope, postmarked by December 28, 1999.

If you would like to read the entire environmental report that was prepared for this project, it is available at the Traverse Area District Library. Ask to see the *Draft Environmental Impact Statement and Section 4(f)/6(f) Evaluation* (May 1999), prepared by the Grand Traverse County Road Commission, the Michigan Department of Transportation, and the Federal Highway Administration.

Please help MDOT make the best plans possible for the historic houses on Three Mile Road by returning the enclosed comment form within the next few days. Your comments will become part of the official project record and are important to MDOT's planning.

Sincerely,

Nancy Ford Demeter
Compliance Specialist



Comment Sheet

Historic Buildings on Three Mile Road

Widening Three Mile Road south of Munson Avenue will require taking approximately 25 feet of land from the front of four historic buildings on Three Mile Road. To reduce impacts to these historic buildings, the Michigan Department of Transportation wants to photograph the properties on Three Mile Road and write a report about the development of recreational housing in the Traverse City area. This will create a permanent report of the properties as they exist today. The photographs and report will be filed in the State Archives in Lansing and will be put in a Traverse City-area library, museum, or historical society files. Please let the Michigan Department of Transportation know how you feel about their plans by filling out this form and returning it in the self-addressed, stamped envelope.

- I agree with MDOT's plans to photograph the historic properties on Three Mile Road and write a history about the development of recreational housing in the Traverse City area.
- I disagree with MDOT's plans. Another plan would be (use a separate sheet of paper if necessary):

If the Michigan Department of Transportation takes photographs and writes a report, where in the Traverse City area do you think they should be filed? The photographs and report should be filed in a place where the public can look at them.

Other Comments :

Name: _____
Address: _____
City, State Zip Code _____
Phone Number: _____

Return this comment form by December 28, 1999.

Comment Sheet

Historic Buildings on Three Mile Road

Widening Three Mile Road south of Munson Avenue will require taking approximately 25 feet of land from the front of four historic buildings on Three Mile Road. To reduce impacts to these historic buildings, the Michigan Department of Transportation wants to photograph the properties on Three Mile Road and write a report about the development of recreational housing in the Traverse City area. This will create a permanent report of the properties as they exist today. The photographs and report will be filed in the State Archives in Lansing and will be put in a Traverse City-area library, museum, or historical society files. Please let the Michigan Department of Transportation know how you feel about their plans by filling out this form and returning it in the self-addressed, stamped envelope.

I agree with MDOT's plans to photograph the historic properties on Three Mile Road and write a history about the development of recreational housing in the Traverse City area.

I disagree with MDOT's plans. Another plan would be (use a separate sheet of paper if necessary):

If the Michigan Department of Transportation takes photographs and writes a report, where in the Traverse City area do you think they should be filed? The photographs and report should be filed in a place where the public can look at them.

Other Comments :

Robert L. Callan
P.O. Box 994
Traverse City, MI 49684

Name:

Address:

City, State Zip Code

Phone Number:

4340 3 MILE RD

231-947-7000

Return this comment form by December 28, 1999

Comment Sheet

Historic Buildings on Three Mile Road

Widening Three Mile Road south of Munson Avenue will require taking approximately 25 feet of land from the front of four historic buildings on Three Mile Road. To reduce impacts to these historic buildings, the Michigan Department of Transportation wants to photograph the properties on Three Mile Road and write a report about the development of recreational housing in the Traverse City area. This will create a permanent report of the properties as they exist today. The photographs and report will be filed in the State Archives in Lansing and will be put in a Traverse City-area library, museum, or historical society files. Please let the Michigan Department of Transportation know how you feel about their plans by filling out this form and returning it in the self-addressed, stamped envelope.

I agree with MDOT's plans to photograph the historic properties on Three Mile Road and write a history about the development of recreational housing in the Traverse City area.

I disagree with MDOT's plans. Another plan would be (use a separate sheet of paper if necessary):

If the Michigan Department of Transportation takes photographs and writes a report, where in the Traverse City area do you think they should be filed? The photographs and report should be filed in a place where the public can look at them.

Other Comments :

Name:
Address:
City, State Zip Code
Phone Number:

Kathy Boonstra
42830 3 mile Rd
T.C. MI 49686
231-935-0053

Return this comment form by January 17, 2000

Comment Sheet

Historic Buildings on Three Mile Road

Widening Three Mile Road south of Munson Avenue will require taking approximately 25 feet of land from the front of four historic buildings on Three Mile Road. To reduce impacts to these historic buildings, the Michigan Department of Transportation wants to photograph the properties on Three Mile Road and write a report about the development of recreational housing in the Traverse City area. This will create a permanent report of the properties as they exist today. The photographs and report will be filed in the State Archives in Lansing and will be put in a Traverse City-area library, museum, or historical society files. Please let the Michigan Department of Transportation know how you feel about their plans by filling out this form and returning it in the self-addressed, stamped envelope.

- I agree with MDOT's plans to photograph the historic properties on Three Mile Road and write a history about the development of recreational housing in the Traverse City area.
- I disagree with MDOT's plans. Another plan would be (use a separate sheet of paper if necessary):

If the Michigan Department of Transportation takes photographs and writes a report, where in the Traverse City area do you think they should be filed? The photographs and report should be filed in a place where the public can look at them.

any of the above mentioned will be fine

Other Comments :

I would like to have a copy of the report upon completion of project. THANK YOU.

Name: NANCY LOU ALBRECHT
Address: 4273 THREE MILE RD.
City, State Zip Code: TRAVERSE CITY, MI 49686
Phone Number: 933-1183

Return this comment form by December 28, 1999

December 23, 1999

Ms. Nancy Ford Demeter
Commonwealth Cultural Resources
2530 Spring Arbor Road
Jackson, MI 49203-3602

Dear Ms. Demeter:

We have received your letter requesting our historic property be photographed for the State Archives in Lansing and the Traverse City library, museum, or historical society files. After reviewing your request for photographs to aid in a report on recreational housing, it is not clear to us the purpose or need for this activity or how a historical file will diminish the negative impact of this ill-conceived highway plan and its intrusion not only on properties of historic nature, but on the distinctive character and natural attributes of the Traverse City area in general.

As you may or may not be aware, the City of Traverse City, as well as Acme Township has adopted a resolution against the Hartman-Hammond proposal which includes the widening of Three Mile Road. The Three Mile Road area, part of which is within the City of Traverse City, has been designated as a two-lane corridor by the city that would accommodate pedestrians and bikers as well as motorists. Within the designated area to be widened are an elementary school, a regional recreation trail crossing Three Mile and a State Park. With the proposed widening it will be possible to build closer to a school (45 feet) than to a salmon (50' building setback from Mitchell Creek which runs alongside Three Mile).

Because of a little-known "deal" made between MDOT and the Grand Traverse County Road Commission almost a decade ago to build a road that would meet the criteria of the State Highway Planners and not the wishes or needs of the people who live here, this project has proceeded without compromise for non-transportation or recreational consideration. With this attitude prevailing, it's difficult for us to accept the idea, promise or feasibility of anything that would minimize or mitigate the sensitive property in the demolition area including the historic properties you mentioned.

We would welcome further explanation of your organization's interest in our attempt to understand the reasoning of those who have pushed for typical, big city, sprawl-type roadways in environments both fragile and unique.

Sincerely,



Chuck & Joann Leipham
4314 Three Mile Road
Traverse City, Michigan
49686

Comment Sheet

Historic Buildings on Three Mile Road

Widening Three Mile Road south of Munson Avenue will require taking approximately 25 feet of land from the front of four historic buildings on Three Mile Road. To reduce impacts to these historic buildings, the Michigan Department of Transportation wants to photograph the properties on Three Mile Road and write a report about the development of recreational housing in the Traverse City area. This will create a permanent report of the properties as they exist today. The photographs and report will be filed in the State Archives in Lansing and will be put in a Traverse City-area library, museum, or historical society files. Please let the Michigan Department of Transportation know how you feel about their plans by filling out this form and returning it in the self-addressed, stamped envelope.

I agree with MDOT's plans to photograph the historic properties on Three Mile Road and write a history about the development of recreational housing in the Traverse City area.

I disagree with MDOT's plans. Another plan would be (use a separate sheet of paper if necessary):

what good are photographs? Another plan would be to forget about widening 3-mile Road & learn to live with what we have.

If the Michigan Department of Transportation takes photographs and writes a report, where in the Traverse City area do you think they should be filed? The photographs and report should be filed in a place where the public can look at them.

Other Comments :

I've seen no evidence to suggest that 3-mile Road needs to be widened. If this is part of the "by-pass", I think it is a bad idea - period.

Name:

Mick DeGraeve

Address:

739 Hastings

City, State Zip Code

Traverse City

Phone Number:

239-941-2230

Return this comment form by December 28, 1999

Comment Sheet

Historic Buildings on Three Mile Road

Widening Three Mile Road south of Munson Avenue will require taking approximately 25 feet of land from the front of four historic buildings on Three Mile Road. To reduce impacts to these historic buildings, the Michigan Department of Transportation wants to photograph the properties on Three Mile Road and write a report about the development of recreational housing in the Traverse City area. This will create a permanent report of the properties as they exist today. The photographs and report will be filed in the State Archives in Lansing and will be put in a Traverse City-area library, museum, or historical society files. Please let the Michigan Department of Transportation know how you feel about their plans by filling out this form and returning it in the self-addressed, stamped envelope.

I agree with MDOT's plans to photograph the historic properties on Three Mile Road and write a history about the development of recreational housing in the Traverse City area.

I disagree with MDOT's plans. Another plan would be (use a separate sheet of paper if necessary):

As a part of the study, MDOT and the Road Commission determined traffic volumes on Three Mile Road will remain unchanged. So, don't widen the road since there is no need. As an added benefit, this will minimize impacts to historic structures.

If the Michigan Department of Transportation takes photographs and writes a report, where in the Traverse City area do you think they should be filed? The photographs and report should be filed in a place where the public can look at them.

Other Comments :

Name: Coalition for Sensible Growth
Address: PO Box 4677
City, State Zip Code: Traverse City, MI 49685
Phone Number: _____

Return this comment form by December 28, 1999

Comment Sheet

Historic Buildings on Three Mile Road

Widening Three Mile Road south of Munson Avenue will require taking approximately 25 feet of land from the front of four historic buildings on Three Mile Road. To reduce impacts to these historic buildings, the Michigan Department of Transportation wants to photograph the properties on Three Mile Road and write a report about the development of recreational housing in the Traverse City area. This will create a permanent report of the properties as they exist today. The photographs and report will be filed in the State Archives in Lansing and will be put in a Traverse City-area library, museum, or historical society files. Please let the Michigan Department of Transportation know how you feel about their plans by filling out this form and returning it in the self-addressed, stamped envelope.

I agree with MDOT's plans to photograph the historic properties on Three Mile Road and write a history about the development of recreational housing in the Traverse City area.

I disagree with MDOT's plans. Another plan would be (use a separate sheet of paper if necessary):

See enclosed:

- Cover letter
- Public Comment
- Appendix

• letters from US EPA

If the Michigan Department of Transportation takes photographs and writes a report, where in the Traverse City area do you think they should be filed? The photographs and report should be filed in a place where the public can look at them.

Other Comments :

Name:

Kelly Thayer

Address:

Michigan Land Use Institute

PO Box 228

City, State Zip Code

Benzie, MI 49616

Phone Number:

(231) 887-4723

Return this comment form by December 28, 1999

MICHIGAN LAND USE INSTITUTE



Dec. 20, 1999

Commonwealth Cultural Resources Group
2530 Spring Arbor Road
Jackson, MI 49203-3602

To Whom It May Concern:

The Michigan Land Use Institute, the Coalition for Sensible Growth, and the Environmental Law & Policy Center of the Midwest submit this letter, letters from the U.S. Environmental Protection Agency, and the enclosed public comment as part of our disagreement with the Michigan Department of Transportation's plans to photograph the historic properties on Three Mile Road and write a history about the development of recreational housing in the Traverse City area.

MDOT's plan for photographing and then irreparably harming the historic properties on Three Mile Road is entirely insufficient.

We have documented in the enclosed public comment the deficiencies of the work performed by MDOT and the Grand Traverse County Road Commission in the Boardman River Crossing Mobility Study, Draft Environmental Impact Statement, FHWA-MI-EIS-99-01-D.

The Institute, the Coalition, and ELPC have requested that the Federal Highway Administration reject the DEIS as inadequate and require the Grand Traverse County Road Commission to address, correct, and redo the clearly faulty and deficient DEIS. In that request, the Institute, the Coalition, and ELPC identified several areas in which the DEIS fails to comply procedurally with the National Environmental Policy Act and the Michigan Environmental Protection Act, and other public laws and regulations. These failures of the DEIS are detailed in the enclosed document and include:

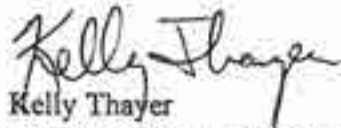
1. The DEIS defines an unreasonably narrow, arbitrary, and factually unsupported statement of purpose and need.
 - Faulty population and traffic projections
2. A failure to develop prudent and feasible alternatives, as required by NEPA.
 - Improperly advancing an alternative that fails to meet project goals
 - Improperly dismissing an alternative that meets project goals
 - Misapplying and inconsistently applying the Section 4(f) requirements
 - Not considering combinations of alternatives
 - Ignoring input from citizens and local governments
3. Illegally segmenting a larger bypass project
4. Improperly analyzing land use impacts
5. Ignoring public input
6. Improperly analyzing wetlands impacts and mitigation procedures

7. Lacking the data to review impacts to threatened or endangered species

The Institute, the Coalition, and ELPC have found serious flaws in the assumptions, methods of evaluation, public involvement process and the conclusions reached in the DEIS. The Institute, the Coalition, and ELPC have urged the Grand Traverse County Board of Commissioners and Road Commission to pursue a series of low-cost improvements to existing roads, including the Smart Roads alternative and repair of the existing Cass Road Bridge, and not put more taxpayer resources into additional study of the Hartman-Hammond Connector with Three Mile Road alternative.

Taking these actions will best protect, respect, and preserve for future generations, the historic properties on Three Mile Road.

Sincerely,



Kelly Thayer

Transportation Project Coordinator
Michigan Land Use Institute



JAMES A. BURKHOLDER
Chairman

ROGER L. THOMPSON
Vice-Chairman

WALTER "JAY" HOOPER
Commissioner

MICHAEL K. DILLENBECK, P.E.
Manager

HAROLD D. SHEFFER
Superintendent

MARK G. LEWIS, P.E.
County Highway Engineer

HAROLD D. KELLY
Financial Director

DEBRA J.M. HUNT
Clerk

"OUR MISSION IS TO UPGRADE AND MAINTAIN A SAFE AND EFFICIENT ROAD SYSTEM"

ANNOUNCEMENT

Meeting to Discuss Impacts to Historic Houses on Three Mile Road

When: Tuesday, January 18, 2000

Where: Traverse Area District Library - Meetings Rooms A and B
610 Woodmere Street, Traverse City MI 49684

Time: 7:00 P.M.

Commonwealth Cultural Resources Group, Inc., (CCRG) and the Grand Traverse County Road Commission (GTCRC) will host a meeting to talk about the impacts to the property in front of four historic houses along Three Mile Road.

To help reduce impacts to these historic houses, the four properties will be photographed prior to the proposed road improvements, and a report will be written about the development of the recreational housing in the Traverse City area. The photographs and report will be put in a Traverse City-area library, museum or historic society office.

This meeting is specially designed to discuss only how to best reduce impacts to the four historic properties on Three Mile Road. Other project issues, such as proposed alignments and environmental impacts, have been and will continue to be, discussed at meetings designated to address those issues.

Please plan to join CCRG and the GTCRC for this important meeting. Your comments will help in planning this project and will become part of the official project record. We hope to hear from you on January 18.

Michigan Land Use Institute
PO Box 228
Benzonia MI 49616

Coalition for Sensible Growth
PO Box 4627
Traverse City MI 49685-4627

Great Lake Environmental Center
739 Hastings Street
Traverse City MI 49686

Robert and Carol Callan
Swanson Leasing, Inc.
4340 Three Mile Road
Traverse City MI 49686

Ms. Nancy Lou Albrecht
4273 Three Mile Road
Traverse City MI 49686

Kathleen Boonstra
4283 Three Mile Road
Traverse City MI 49686

Jack and Joann Leipham
4314 Three Mile Road
Traverse City MI 49686

Jim Kirschensteiner
FHWA
315 West Allegan, Room 211
Lansing MI 48933

Brian Conway, Preservation Off
State Historic Preservation Office
717 West Allegan Street
Lansing MI 48918-1800

Bruce Orttenberger, Planner
East Bay Township
1965 Three Mile Road
Traverse City MI 49686

Rise Rasch
MDOT-TSC
2084 US-31 South, Suite B
Traverse City MI 49684

AGENDA

Section 106 Meeting Historic Properties on Three Mile Road

Traverse Area District Library
Tuesday, January 18, 2000
7:00 p.m.

- 1) Project Summary (M. Dillenbeck)
 - a) Project history
 - b) NEPA process
- 2) Cultural Resources Summary (N. Demeter)
 - a) Section 106 process
- 3) Historic Properties on Three Mile Road (N. Demeter)
 - a) National Register eligibility
 - b) Project impacts to historic properties
 - i) Proposed mitigation
- 4) Audience Questions and Comments

**Section 106 Meeting for Historic Properties
Proposed Three Mile Road Widening
Between South Airport Road (south) and Munson Avenue/US-31 (north)**

**Tuesday, January 18, 2000, 7:00 p.m.
Traverse Area District Library, Traverse City**

Present: Mike Dillenbeck, Grand Traverse County Road Commission
Nancy Ford Demeter, Commonwealth Cultural Resources Group, Inc.
Karen Gallagher, JJR, Inc.
Sue Gott, JJR, Inc.
Nancy Lou Albrecht, owner of 4273 Three Mile Road

The meeting began at 7:10 p.m.

I. Project Summary (presented by Mike Dillenbeck, Grand Traverse County Road Commission)

A. Explanation of Proposed Plans for Three Mile Road

Three Mile Road will be widened from two travel lanes to four travel lanes (with a center turn lane in some areas) from South Airport Road (south) to Munson Avenue (north), and new right-of-way will be needed on both sides of Three Mile Road. Currently, the right-of-way is 66 feet wide; the maximum future right-of-way would be 120 feet wide, perhaps only 100 feet wide in some areas. Curbs and gutters will probably be installed

To minimize impacts to Mitchell Creek, the right-of-way may need to be shifted slightly to the west in some areas along Three Mile Road; however, the need for this has not yet been determined. The property at 4273 Three Mile Road (Ms. Albrecht's property) is located to the southeast of the creek and, therefore, probably would not be affected by a road shift to the east.

B. Explanation of the NEPA Process (presented by Karen Gallagher, JJR, Inc.)

Ms. Gallagher provided a concise explanation about the National Environmental Policy Act (NEPA), its requirements, and the process that has resulted in the issuance of a Draft EIS.

II. Cultural Resource Summary (presented by Nancy Ford Demeter, CCRG, Inc.)

- A. Ms. Demeter explained that historical, archaeological, and architectural studies were conducted as required by Section 106 of the National Historic Preservation Act. Ms. Demeter provided a flow chart to help illustrate the Section 106 process.

III. Historic Properties on Three Mile Road (presented by Nancy Demeter)

- A. Ms. Demeter explained that the four properties on Three Mile Road have been determined eligible for listing on the National Register of Historic Places by the State Historic Preservation Office on the basis of their architectural style and their contribution to the historic context of recreational housing in the Traverse City area.
- B. Ms. Demeter explained that approximately 25 feet would be required for new right-of-way, and that the State Historic Preservation Office has determined this would be an adverse impact to the four historic properties on Three Mile Road. Even though there would be no impacts to the buildings on these properties, widening Three Mile Road would alter the characteristics that contribute to the historic significance of the affected properties.
1. Ms. Demeter explained that the State Historic Preservation Office and the Michigan Department of Transportation agreed that photographing the area before the road widening and writing a detailed context study of recreational housing would be appropriate mitigation. Photographing the properties and creating a history of recreational housing in the Traverse City area will benefit the local citizens by creating a permanent record of how the area looked before Three Mile Road was widened. Further, a study of the development of recreational housing in the Traverse City area will benefit MDOT by providing historical information that can be used on other transportation projects in the northwestern Michigan area.

IV. Questions and Answers; Comments

Q (Nancy Albrecht): What makes the house at 4340 historically significant?

A (Nancy Demeter): It is a well-preserved example of an early ranch-style house.

Q (Nancy Albrecht): How can I estimate how far the new right-of-way will come onto my property?

A (Mike Dillenbeck): To estimate impact, measure 60 feet on either side of the current centerline

Q (Nancy Albrecht): Can landscaping be moved or replaced? One old oak and one large pine would be displaced as a result of the road widening. These trees provide a buffer from people who drive on shoulder and onto the lawn. These trees provide noise, aesthetic, and safety benefits.

A (Mike Dillenbeck): New or replacement landscaping will be negotiated with each landowner during the right-of-way acquisition process.

Q (Mike Dillenbeck to Nancy Albrecht): Are there any preferences regarding sidewalks?

A (Nancy Albrecht): A safer route is needed for people walking from the TART Trail to the beach; but, she would prefer not to have a sidewalk on her property since it would take up that much more of her front yard.

Response (Mike Dillenbeck): Engineers need to look at the final right-of-way width. There may be opportunities to include sidewalks within the proposed right-of-way.

Q (Mike Dillenbeck to Nancy Demeter): Can NRHP eligibility be recorded as part of the Deed?

A (Nancy Demeter): This information is probably not included on a deed, but Ms. Demeter would research that possibility. Ms. Demeter explained that normally, historical significance is something that is disclosed on a standard Realtors Disclosure Statement when selling a house, and that such a disclosure would be required for a house in a local historic district where certain restrictions apply to the routine and extraordinary maintenance of the house.

Q (Nancy Albrecht): Is there any monetary benefit to having a house listed on the NRHP?

A (Nancy Demeter): Tax credits are available for NRHP properties if they are used for commercial purposes. Restoration/rehabilitation must be

done in accordance with the Secretary of the Interior's guidelines and in consultation with the State Historic Preservation Officer. There have been recent attempts to pass legislation giving historic homeowners tax credit for residential rehabilitation, but the legislation has not been approved.

Q (Mike Dillenbeck to Nancy Albrecht): Are there any outbuildings on her property?

A (Nancy Albrecht): Only a small "kit" shed.

Comment (Nancy Albrecht): She would like a copy of the historic research conducted on the house.

Comment (Nancy Albrecht): When she purchased her house, she was aware that the road [Three Mile Road] would probably be widened.

Meeting ended at 8:15 p.m.

Recorded by:



Karen Gallagher, JJR, Inc.
January 18, 2000

Transcribed by Nancy Ford Demeter

APPENDIX D-2

ADVISORY COUNCIL ON HISTORIC PRESERVATION COORDINATION

Advisory Council On Historic Preservation

The Old Post Office Building
1100 Pennsylvania Avenue, NW, #809
Washington, DC 20004

June 23, 2000

James Kirschensteiner
Environmental & Field Operations Engineer
Federal Highway Administration
Region 5, Michigan Division
315 West Allegan Street, Room 207
Lansing, MI 48933

RE: *Boardman River Crossing Mobility Project, Grand Traverse County, Michigan*

Dear Mr. Kirschensteiner:

Thank you for providing us with notification and supporting documentation regarding the adverse effect of the referenced project on 4273, 4283, 4314 and 4340 Three Mile Road, properties considered eligible for inclusion in the National Register of Historic Places. Based upon the information you provided and the criteria included in Appendix A of our regulations, "Protection of Historic Properties" (36 CFR Part 800), we do not believe that our participation in the consultation to resolve adverse effects is needed. However, should circumstances change and you determine that our participation is required, please notify us.

Pursuant to 36 CFR § 800.6(b)(iv), you will need to file the final Memorandum of Agreement (MOA), developed in consultation with the Michigan State Historic Preservation Officer (SHPO), and related documentation at the conclusion of the consultation process. The filing of this MOA with the Council is required in order for the Federal Highway Administration to complete its compliance responsibilities under Section 106 of the National Historic Preservation Act.

Thank you for providing us with your notification of adverse effect. If you have any questions, please contact Laura Henley Dean, Ph.D., by telephone at 202-606-8503 or via email at www.ldean@achp.gov.

Sincerely,

for 
Don L. Klima
Director
Office of Planning and Review

APPENDIX D-3

MEMORANDUM OF AGREEMENT

**MEMORANDUM OF AGREEMENT
BETWEEN THE FEDERAL HIGHWAY ADMINISTRATION
AND THE MICHIGAN STATE HISTORIC PRESERVATION OFFICER
REGARDING
THE PROPOSED BOARDMAN RIVER CROSSING MOBILITY PROJECT
GRAND TRAVERSE COUNTY, MICHIGAN
SUBMITTED TO THE ADVISORY COUNCIL ON HISTORIC PRESERVATION
PURSUANT TO 36 CFR PART 800.6(b)(1)**

WHEREAS, the Federal Highway Administration (FHWA) has determined that widening Three Mile Road as part of the proposed Boardman River Crossing Mobility project (Project) will have an adverse effect on properties at 4273 Three Mile Road, 4283 Three Mile Road, 4314 Three Mile Road, and 4340 Three Mile Road, which are eligible for inclusion in the National Register of Historic Places (NRHP); and

WHEREAS, the FHWA has consulted with the Michigan State Historic Preservation Officer (SHPO) in accordance with Section 106 of the National Historic Preservation Act (16 U.S.C. 470f) (the Act); and

WHEREAS, the Grand Traverse County Road Commissions (GTCRC) and the Michigan Department of Transportation (MDOT) have participated in the consultation and have been invited to concur in this Memorandum of Agreement (MOA);

NOW, THEREFORE, the FHWA and the Michigan SHPO agree that the Project shall be implemented in accordance with the following stipulations in order to take into account the effect of this action on historic properties:

Stipulations

The FHWA shall ensure that the following stipulations are carried out:

1. Recordation

Prior to initiating construction activity for the Project, the GTCRC shall prepare a report containing photographs and a historical narrative regarding the four NRHP-eligible properties on Three Mile Road in accordance with the SHPO documentation guidelines (**Attachment A**). The GTCRC will complete the documentation report and submit it to the SHPO for review and approval before initiating construction activity for the Project. The GTCRC will submit original copies of the approved documentation reports to the SHPO, the owners of the properties at 4273 Three Mile Road, 4283 Three Mile Road, 4314 Three Mile Road, and 4340 Three Mile Road, and appropriate local archives designated by the SHPO.

2. Landscaping

The GTCRC will replace landscaping removed as a result of the Three Mile Road widening. The kind, amount, and placement of landscaping features will be negotiated with each landowner individually. The GTCRC will relocate or replace the privacy fence on the east side of Three Mile Road at 4314 Three Mile Road if it is affected by the Three Mile Road widening.

3. Amendment

Any party to this MOA may propose to the other parties that it be amended, whereupon the parties will consult in accordance with 36 CFR 800.6(c)(7) to consider such an amendment.

4. Dispute Resolution

Should the SHPO, MDOT or the GTCRC object within 30 (thirty) days to any actions proposed pursuant to this MOA, the FHWA shall consult with the objecting party to resolve the objection. If the FHWA determines that the objection cannot be resolved, the FHWA shall forward all documentation relevant to the dispute to the Advisory Council on Historic Preservation (Council). Within 45 (forty-five) days after receipt of all pertinent documentation, the Council will either:

- A. provide the FHWA with recommendations, which the FHWA will take into account in reaching a final decision regarding the dispute; or
- B. notify the FHWA that it will comment pursuant to 36 CFR 800.7(c) and proceed to comment. Any Council comment provided in response to such a request will be taken into account by FHWA in accordance with 36 CFR 800.7(c)(4) with reference to the subject of the dispute.

Execution and implementation of this Memorandum of Agreement and its submission to the Advisory Council on Historic Preservation (Council) evidences that the FHWA has afforded the Council a reasonable opportunity to comment on the Proposed Boardman River Crossing Mobility Project and that the FHWA has taken into account the effects of the project on historic properties.

FEDERAL HIGHWAY ADMINISTRATION

By: *J. C. Kirschstein* Date: 10/17/00
for James J. Steele, Division Administrator

MICHIGAN STATE HISTORIC PRESERVATION OFFICE

By: *Brian Conway* Date: 8/23/00
Brian Conway, State Historic Preservation Officer

Concur:

GRAND TRAVERSE COUNTY ROAD COMMISSION

By: *Walter Hopper* Date: 9/25/00
Walter Hopper, Commissioner

MICHIGAN DEPARTMENT OF TRANSPORTATION

By: *Mark Dionise* Date: 9/1/00
for Mark Dionise, Project Manager, Local Agency Programs

MICHIGAN STATE HISTORIC PRESERVATION OFFICE DOCUMENTATION GUIDELINES

The following guidelines provide instruction for producing permanent documentation of historic properties. Following submittal to the State Historic Preservation Office, the photos produced will be transferred to the State Archives, where they will be maintained and made available to the public for research purposes. In many cases, this documentation will constitute the only visual public record of a resource. It is therefore important that reports, drawings and photographs adequately depict the salient visual characteristics of the resource, and that they be produced using archivally-stable materials and procedures.

The specifications outlined in this memorandum are intended to ensure that the material will be of high quality and remain in usable condition for many years to come. The guidelines were adapted from those used for submitting nominations to the National Register of Historic Places, as described in *National Register Bulletin 16: Guidelines for Completing National Register of Historic Places Forms*. The complete text of this and other National Register Bulletins may be found on the web at <http://www.cr.nps.gov/nr/publications/bulletins.htm>.

I. REPORTS - GENERAL INSTRUCTIONS

Reports should be printed on archival paper and be 8 1/2 by 11 inches in size.

II. DESCRIPTIVE AND HISTORICAL NARRATIVES

The report should contain a descriptive and historical narrative about the resource(s). The descriptive overview should concisely but thoroughly describe the resource, including discussion of its site and setting; overall design and form, dimensions, structural character, materials, decorative or other details, and alterations. The historical narrative should provide an account of the resource's history and explain its significance in terms of the national register criteria (information about the criteria for listing a resource in the national register may be found on the web at <http://www.cr.nps.gov/nr/listing.htm>). Published and unpublished sources should be used as needed to document the resource's significance. For bridges and public structures, public records and newspapers should be used for information concerning the historical background and construction of the resource and to identify those involved in its design and construction. All sources of information (including author, title, publisher, date of publication, volume and page number) should be listed in a bibliography.

III. DRAWINGS - GENERAL INSTRUCTIONS

Drawings should be drawn or printed on archival paper and folded to fit an archival folder approximately 8 1/2 by 11 inches. Use coding, crosshatching, numbering, transparent overlays, or other standard graphic techniques to indicate the information. Do not use color because it can not be reproduced by microfilming or photocopying. Drawings should be used to document the

existing condition of the resource, the evolution of a resource, alterations to a building or complex of buildings, floor plans of interior spaces. Site plans should have a graphic north arrow and include locations and types of trees, shrubs and planting beds. All architectural and site plans should include dimensions indicating the overall size of buildings, sizes of major interior spaces and distances between major site features. If original drawings of the resource(s) exist, add a graphic scale the drawings and reproduce them to fit on 8 1/2 by 11 inch archival paper. Photographic reductions are permissible provided they meet the photographic requirements specified in these guidelines.

IV. PHOTOGRAPHS - GENERAL INSTRUCTIONS

Submit clear and descriptive black and white photographs and negatives in acid-free envelopes. Photographs should provide a clear visual representation of the historic integrity and significant features of the resource. The number of photographs needed will vary according to the project and the nature of the resource. The attached article by David Ames, *A Primer on Architectural Photography and the Photo Documentation of Historic Structures* (Vernacular Architecture Forum News, no date) provides helpful information for photographing buildings and structures. This article is available on the web at <http://www.vernaculararchitecture.org/Features/Photography/article.htm>.

GUIDELINES FOR PHOTOGRAPHIC COVERAGE

The number of photographic views required depends on the size and complexity of the resource. Submit as many photographs as needed to depict the current condition and significant aspects of the resource. When available, prints of historic photographs may supplement documentation.

Buildings, Structures and Objects

- Submit one or more views to show the principal facades and the environment or setting in which the resource is located;
- Additions, alterations, intrusions, and dependencies should appear in the photographs;
- Include views of interiors, outbuildings, landscaping, or unusual details if the significance of the resource is entirely or in part based on them.

Historic and Archaeological Sites

- Submit one or more photographs to depict the condition of the site and any above-ground or surface features and disturbances;

- If they are relevant to the site's significance, include drawings or photographs that illustrate artifacts that have been removed from the site;
- At least one photograph should show the physical environment and configuration of the land making up the site.

BASIC REQUIREMENTS

Photographs must be:

- at least 5 x 7 inches, preferably 8 x 10 inches, unmounted (do not affix the photographs to paper, cards, or any other material); photographs with borders are preferred;
- printed on double or medium-weight black-and-white paper having a matte, glossy, or satin finish; fiber-based papers are preferred; resin-coated papers that have been processed automatically will be accepted provided they have been properly processed and thoroughly washed; we recommend the use of a hypo-clearing or neutralizing agent, and toning in selenium or sepia to extend the useful life of the photographs;
- submitted in acid free envelopes; the envelopes should be labeled in pencil (see labeling instructions below).

ENVELOPE LABELING INSTRUCTIONS

Neatly print the following information on the upper right corner of the envelope in soft lead pencil:

1. Name of the resource;
2. Street Address, township, county, and state where the resource is located;
3. Name of photographer;
4. Date of photograph;
5. Description of view indicating direction of camera;
6. Photograph number.

Do not use adhesive labels for this information.

NEGATIVE SUBMISSION INSTRUCTIONS

The negatives must be submitted with the prints. Each strip of negatives should be submitted in acid free envelopes that have the following information submitted in soft lead pencil in the upper right corner of the envelope.

1. Name of the resource;
2. Name of the photographer;
3. Date of photograph;
4. Negative numbers

V. ADDITIONAL ITEMS

In addition to the items described in these guidelines, the SHPO may request additional documentation, depending on the nature and significance of a particular resource.

If you have any questions, please contact the Environmental Review Coordinator at 517-335-2721.

State Historic Preservation Office
Michigan Historical Center
717 W. Allegan
Lansing, MI 48918-1800

RECEIVAL SUPPLIERS

Known suppliers of acceptable archival photographic envelopes are listed below:

Conservation Resources
International, Inc.
8000 H Forbes Place
Springfield, VA 22151
(703) 321-7730

Franklin Distributors
P.O. Box 320
Denville, NJ 07834
(201) 267-2710

Gaylord Brothers, Inc.
Box 4901
Syracuse, NY 13221
Outside Area Code 315:
TOLL FREE (800) 448-6160
Within Area Code 315:
(315) 457-5070

The Hollinger Corporation
P.O. Box 6185
3810 South Four Mile Run Drive
Arlington, VA 22206
(703) 671-6600

Light Impressions Corporation
439 Monroe Avenue
P.O. Box 940
Rochester, NY 14603
Outside Area Code 716:
TOLL FREE (800) 828-6216
Within Area Code 716:
(716) 271-8960

Photofile
P.O. Box 123
Zion, IL 60099
(312) 872-7557

Pohlig Bros., Inc.
P.O. Box 8069
Richmond, VA 23223
(804) 644-7824

Printfile, Inc.
Box 100
3909 State Street
Schenectady, NY 12304
(518) 374-2334

TALAS
Technical Library
Services, Inc.
213 West 35th Street
New York, NY 10001-1996
(212) 736-7744

University Products
P.O. Box 101
South Canal Street
Holyoke, MA 10141
(413) 532-9431

A PRIMER ON ARCHITECTURAL PHOTOGRAPHY AND THE PHOTO DOCUMENTATION OF HISTORIC STRUCTURES

by David L. Ames, Center for Historic Architecture and Design, University of Delaware

This primer outlines the most basic approach to photographic documentation and provides the photographic knowledge needed to document historic structures. The first step is to determine the minimum number of views required to document a particular building as well as the photographic equipment and information necessary to take them.

THE ESSENTIAL VIEWS

The purpose of photographic documentation of historic structures is to preserve as much visual information about a structure in as few photographs as possible. The photographer must identify the views that reveal the most information about a structure. In looking for that view, you need to think about the attributes of a building: overall shape, size, and major architectural elements such as windows, doors, construction materials, and architectural ornamentation. Photographs often directly indicate construction material—log, masonry, or frame.



If you were allowed only one photograph to document an historic structure, the best choice would be a perspective showing the front and one side of the building. The James Stewart House, circa 1748, Lancaster County, Pennsylvania. All photographs taken by David Ames unless otherwise noted.

They also suggest certain attributes of the building inferentially. The distribution of doors and windows, for example, can suggest the interior floor plan. A single photograph can include most of these elements.

If you were allowed only one photograph to document an historic structure, what would it be? The best choice would be a perspective showing the front and one side of the building, when taken from a position 45 degrees from the front. When framing the building in the viewfinder, be sure that the entire building is visible including the point where the building meets the ground and without clipping off the peak of the roof or chimney.

Although this sounds obvious, beginning photographers are often seduced by buildings and attracted by interesting details such as carpenter-cut jigsaw porches, pointed Gothic windows, and Greek Revival columns. Unfortunately, the resulting pictures sometimes fail to record a view showing the entire structure.

To avoid this problem, include the surroundings of the building, its site, and landscape context. As the subject of the photograph, the building should occupy about 75 percent of the picture area, leaving the surrounding 25 percent of the frame to show visual information about the context of the building.



The second photo should be a perspective of the rear and other side of the building. These two perspective shots now comprehensively document the exterior of the structure. The slope of the hill dictated a vertical view to maintain perspective control. The James Stewart House.

If you were to take a second and third photograph, what would they be? The second photograph should be a perspective of the rear and other side of the building. These two perspective photographs now comprehensively document the exterior of the structure. The third photograph should document what architects call the front elevation. An elevation is a drawing to scale of the side, front, or rear of a building. Projecting features such as window and door moldings, window sills, steps, and eaves are all rendered as if they were totally flat. An elevation photograph shows the true proportions of one side of a building. Because that side is parallel to the film plane, approximate measurements can be taken from the photograph. In fact, measured drawings can be taken from a carefully controlled elevation photograph shot with a view camera.

What about interiors? First, identify the major space, room, or area in the building and then determine how other spaces are organized. Interior photographs should yield information about the floor plan. Some structures, such as hangars, barns, and some industrial buildings, are architectural shells enclosing a space. For such a structure, the first photograph would be taken from a corner opposite the main entrance and shot diagonally across the space. As with exteriors, the second photograph should be from the opposite corner, or should document an important element of the interior.



A photo of hangars, barns, and some industrial buildings should yield some information about its use. Wright-Patterson Air Force Hangar, Dayton, Ohio. Photo courtesy of David Diesing, HAER.

Most interiors of residential structures, for example, are laid out in hierarchical order from the most important, most formal, most elaborate room, to the plainer more functional rooms. First, determine the



This interior shot shows the hierarchical order of the building. Buttonwood, New Castle vicinity, Delaware.

order of importance and then begin to photograph the rooms. To gain information on the floor plan, set up the camera to shoot toward the main doorway, if possible, with the door open to reveal the spaces and rooms beyond. A three-view sequence might include the entry hall, showing how rooms open off of it, the main formal room, and a functional working space such as the kitchen. Three or four views should be sufficient to document the significant elements of the interior, rarely more than seven or eight.

The six essential photographs:

- 1) the front and one side;*
- 2) the rear and one side;*
- 3) the front elevation;*
- 4) environmental view showing the building as part of its larger landscape;*
- 5) major elements of the building, including doors, windows, additions; and*
- 6) details, such as materials and hardware.*

If planning to take more than six photographs, first carefully study the building and make a list of what should be photographed. Rarely will it take more than fifteen photographs to adequately document the exterior of a building.

To say that a building can be well documented with six photographs—three exterior and three interior—may sound hard to believe for individuals who shoot a 36-exposure roll on an outing. But, the purpose of photographic documentation is to be as complete yet as succinct as possible. The sequence of views described here can be used for nearly all photographic documentation of buildings, including the method recommended by HABS/HAER and the

National Register of Historic Places. Finally, when approaching a building, remember that probably only one photograph of the building will ever be published. In choosing the view to photograph, the main question to ask yourself is what one view yields the most information about that structure?

TECHNICAL REQUISITES OF A GOOD ARCHITECTURAL PHOTOGRAPH AND FILM FORMATS

A good architectural photograph is one to which the viewer's reaction is, "What a great building!" not, "What a great photograph!" The photographic technique should be invisible. Such a photograph meets four technical requirements. First, vertical lines that are parallel in the building, such as the exterior walls, are parallel in the photograph. Second, everything in the photograph is in sharp focus and clearly delineated. Third, there is as much readable detail in the photograph as possible. Fourth, the picture includes as much of the whole object being photographed as possible. In photographic terms these requirements translate into a need for depth of field, perspective control, a large negative, and a lens with an adequate angle of view. These requirements are best met by a view camera using sheet film measuring four by five inches, or five by seven inches, or sometimes as large as eight by ten inches. View cameras are generally built like accordions, with a lens in the front connected by a bellows to a viewing screen in the back. Focusing is achieved by moving the lens forward or back until a sharp image is seen on the viewing screen.



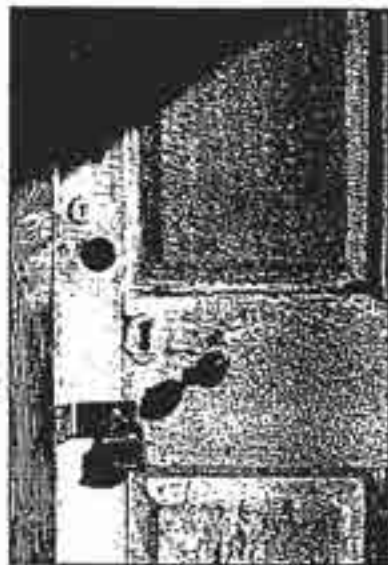
Whereas the large negative and perspective controls of view cameras are needed for the finest doc-

"What a great building!" The photographic technique is invisible. 1415 3rd Avenue, Altoona, Pennsylvania.

umentation of historic structures such as that undertaken by HABS/HAER, most photographic documentation for the National Register of Historic Places and other programs is done with smaller, less elaborate cameras. This primer assumes the use of a smaller camera that uses 35mm or 120 roll film.

Let's start by sorting out film formats and camera types. Cameras are built to use three types of film: 35mm film perforated in a metal cassette; 120 roll film measuring 6.2 cm wide; and sheet film of various sizes, commonly four by five inches. The 35mm color slide is the smallest type used and has become the standard presentation format for government, industry, and education. Photographic documentation shot with black and white film by preservationists, cultural resource managers, and architectural historians is done chiefly with 35mm cameras and to a lesser extent, with roll film cameras, also called medium-format cameras.

Detail of door showing weathering, materials, and history of locks. Clearfield Farm, Smyrna vicinity, Delaware.



The two basic types of 35mm cameras are the view-finder camera and the single-lens reflex camera. On the view-finder camera, the image seen through the viewfinder above the taking lens only approximates what the picture will be. Even the most sophisticated of this type of camera suffers from this drawback. The single-lens reflex camera, on the other hand, is designed, through the use of a prism and mirrors, to view the scene through the taking lens. This allows the photographer to frame the subject precisely and to tell how much every part of the scene, from foreground objects to the distant background, will be sharp or out of focus. Among 35mm cameras, the single-lens reflex is the

best choice for architectural photography and photographic documentation.

The most common roll-film cameras are a single-lens reflex camera and a twin-lens reflex camera. Roll-film cameras make different-sized negatives using the same film. The most common is 2-1/4 inch by 2-1/4 inch or 6 by 6 cm, producing a square negative. The largest is 2-1/4 inch by 3-1/4 inch or 6 by 7 cm. The larger size negative means that more detail is retained because the negative needs less enlargement. Although roll-film or media-format cameras provide a larger negative which is very useful, the cameras and lenses are more expensive than 35mm ones.

THE PHOTOGRAPHIC PROCESS AND CONTROLS

The image of an object being projected on the film by the taking lens is always distorted in some way. The architectural photographer must understand what these distortions are, how they are created, and how to use photographic controls to correct them as much as possible. On the other hand, some commercial and fine arts photographers use these distortions as a creative tool.

Controlling convergence. The purpose of an architectural photograph is to present a building as it appears to the eye. Buildings stand at right angles to the ground and vertical lines in the building appear parallel. Frequently, in photographs, buildings look like they are leaning backwards because the vertical lines of the building seem to converge. In order for vertical lines in the building to remain parallel on the film, the film plane must remain parallel to the building plane, but to include the top of a building in the ground glass or finder, often the photographer tilts the camera backward. Since optically the lens projects an upside down image on the film, when the camera is tipped backwards, the top of the film frame is further away from the building than the bottom of the frame, causing the lines to converge in the photograph toward the top of the building.

To completely correct for convergence, the optical center of the lens must be focused on the center of the building and the film plane must be parallel to

the building. On the view camera the lens is focused at the center of the building optically by a device on the camera called a **rising front**. The lens board on the front of the camera can be raised. Elevating the optical center of the lens a few millimeters is equivalent to raising the camera several feet. The view camera has other controls for convergence. Some manufacturers of 35mm single-lens-reflex cameras make perspective control lenses that accomplish the same task as a rising front on a view camera.

For those without a perspective control lens, there are two ways to raise the optical center of the camera. One way is to raise it literally by shooting from the upper floor of a nearby building. This is even necessary with a rising front when shooting very tall buildings in a city. The second way is to use a wider angle lens and place the building in the top of the

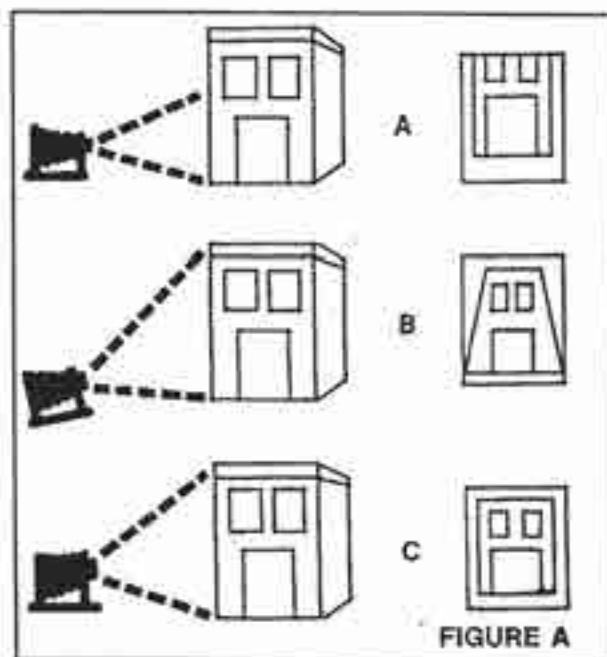


Figure A: The effect of rising front. The rising front adjustment can be used to alter the position of the image within the borders, while keeping the lensboard and film plane parallel. The drawing shows the image of a subject repositioned through this lens shift. (A) is unacceptable because the entire building cannot be captured by the lens. Tilting the camera to show the entire structure creates converging parallel vertical lines (B). But if the camera back is kept vertical and the rising front adjustment used (C), no convergence will occur and perspective is restored. Illustration taken from Lahue et al, Petersen's Guide to Architectural Photography, Petersen Publishing Company, 1972, page 7.

frame, and then crop the foreground when printing the photograph. As such, one of the most important photographic processes to understand is how the image is transmitted through the lens to the film plane. Also, another control for minimizing convergence in an architectural photograph lies in knowing how to hold the camera.

Controlling sharpness with focus and depth-of-field. An image is made on film by light striking it as transmitted through the lens from the object being photographed. The amount of light reaching the film is controlled by a combination of the shutter speed and the size of the opening in the lens, called the **aperture**. All cameras have a standard progression of shutter speeds from the slowest to the fastest. Each successive shutter speed setting is twice as fast as the previous one and admits half as much light. The sequence, defined, in seconds is: 1, 1/2, 1/4, 1/8, 1/15, 1/25, and 1/60, continuing up to the fastest setting, which is frequently 1/500 or 1/1000. In photography, the unit of measurement of light, or the doubling or halving of the amount of light reaching the film, is called a **stop**.

The light transmitted through the lens is also regulated by varying the size of the lens opening which is controlled by expanding or contracting the ring of thin metal blades. Lens openings also follow a standard progression from the largest to the smallest, with each smaller opening allowing half as much light—one stop. The settings on the lens barrel from the largest opening to the smallest are in a sequence of *f/1.0, f/1.4, f/2.0, f/3.5* and upward to *f/22* or *f/32* and sometimes higher depending on the lens. The apparently odd progression of numbers is based on the formula for the area of a circle. Reducing the size of the aperture or increasing the shutter speed is called **stopping down**.

In addition to its effect on the amount of light entering the camera, the size of the aperture helps to determine how much of the image in the photograph is in sharp focus. Measured from near to far between foreground and background, the area or zone which is in sharp focus is called the **depth-of-field**. The smaller the aperture, (remember that the larger number means smaller aperture) the more of the foreground and background will be in focus, or the greater the depth of field. In fact, each time you

double the *f*-stop, for instance from *f/8* to *f/11*, you double the depth of field. The larger the aperture, the shallower will be the area in focus. Controlling depth of field is one of the most important skills in architectural photography.

What does this mean in practical terms? It means, for example, that with a wide-angle 28mm lens on a 35mm camera, at *f/22* everything from 2.5 feet to infinity can be in focus. Because aperture and shutter speed control the amount of light entering the camera stopping down to increase the depth of field requires compensation for the loss of light by using a slower shutter speed and a tripod.

When the camera is hand-held, the prerequisite for sharpness is to use a shutter speed fast enough to stop camera shake. Humans cannot hold a camera rock-steady, only tripods can do that. Even a very slight camera shake can produce a subtle degradation of an image. The rule of thumb is that the shutter speed should be set at 1/125 second, or higher, to assure sharp images with a hand-held camera. Since telephoto lenses magnify an image, and they also magnify shake, so a higher shutter speed of 1/250 second is recommended for use with telephoto lenses. Actually, there is an inverse focal length guide for minimum shutter speed for a hand-held camera: the minimum shutter speed should be the inverse of the focal length of the lens, (this applies only to 35mm cameras) so that one can use a slower shutter speed with wide-angle lenses than with longer ones. For example, shooting with a 28mm lens, you could use a shutter speed of 1/125 second—*theoretically*.



Example of using a longer lens for inaccessible detail. Buttonwood, New Castle vicinity, Delaware.

Lenses and angle of view. Lenses control the width of the scene that will appear on the film. Lenses are classified by their angle: wide-angle, normal, and telephoto. The angle of view of the human eye is about 50 to 55 degrees—that is, the angle of what you can see from the left- to right-of-center as you look straight ahead. The lens approximating this angle of view for a particular format is the normal lens for that format. Lenses are specified in terms of their focal length in millimeters. A 50mm lens, for example, is the normal lens for a 35mm camera, and a 150mm is the normal lens for a 4x5 inch view camera. The longer the focal length of a lens the greater the magnifying power. Lenses that have a wider than normal viewing angle, 65 degrees or more, are called wide-angle lenses. Lenses with narrower angle of view, 35 degrees, which magnify images are called telephoto lenses. Most architectural photography requires wide-angle lenses—28 mm to 35 mm —most frequently ones with about a 65 or 75 degree angle-of-view. A 90mm lens provides the same angle of view for a 4x5 inch view camera.

In considering lenses of a particular focal length, the photographer must examine fixed focal length or prime lenses. Another type, of course, is **zoom lenses** in which the focal length of a lens can be changed, effectively providing several lenses in one. A standard zoom lens that comes with many cameras is a 35mm to 80mm zoom. Wide-angle zoom lenses, from 24mm to 50mm, for example, can be very useful for architecture photography. Zoom lenses, however, have several disadvantages compared to prime lenses. They are generally not as sharp, and they are slower, meaning they don't admit as much light when opened fully. This limits their use in low-light situations. Most professional architectural photographers prefer prime lenses.

Choosing a camera, lenses, and a tripod. Other than the view camera, the most useful 35mm or medium-format camera for architectural photography is one that has a built-in through-the-lens light meter and an electronic shutter that allows for exposures of several seconds. The simplest mode of determining exposure with a built-in meter is a match-needle system. In this system the shutter speed is first chosen and then the aperture setting is

A wide angle lens is necessary for shooting interiors. This photo was taken with the equivalent of a 24 mm lens on a 35 mm camera. Mr. Jones, McDonough vicinity, Delaware.



selected by opening the aperture until a needle in the viewfinder matches the shutter speed. Also useful is an aper-

ture-preferred form of semi-automatic exposure control, in which the aperture is chosen to assure depth of field. The camera automatically selects the correct shutter speed. Fully automatic cameras should not be used unless the automation can be turned off or overridden.

The camera must have interchangeable lenses. The most useful architectural lens is one with a 75 degree angle of coverage which is a 28mm lens for a 35mm camera, about 50mm lens for a 2-1/4 inch roll film camera, and a 90mm for a 4x5 mm. Although fairly wide, it is a very versatile lens. It is wide enough to photograph large structure from fairly close up—such as a hangar—or in cramped locations, such as on a city street. It is also wide enough to handle most interiors. As mentioned earlier, it is also wide enough to provide some degree of perspective control by holding the camera level and placing the building at the top of the frame.

The second most useful lens would be a 35mm lens, a very moderate wide angle for 35mm camera, 65mm lens for 2-1/4 camera, and 121mm lens for a 4x5 view camera. Also, 35mm and 28mm are the focal length of most perspective control lenses manufactured for 35mm cameras. As a third lens, a moderate telephoto from about 80 to 105mm can be useful for photographing inaccessible details such as cornices and chimney stacks.

In architectural photography a tripod is as important as the camera. All view cameras require tripods,

but tripods are as important for smaller cameras as for larger cameras. First, in order to assure that the film plane is parallel to the building, the camera must be leveled. Second, framing an architectural view is a contemplative exercise because one is trying to include as much visual information about the building as possible, and the ground glass needs to be carefully studied. Third, once the view is selected, then camera adjustments have to be made, such as perspective control, rising front, or depth of field which requires choosing the right combination of shutter speed and aperture. Fourth, the small apertures required for adequate depth-of-field (being especially important when photographing interiors) require shutter speeds too slow for the camera to be hand-held. And finally, low light levels, almost always encountered in interiors, often require slow shutter speeds as well.

Film. Because it is archival and color film is not, black and white film is required for photographic documentation of historic structures. Also, many photographers argue that black and white film is a better medium than color for capturing architectural structure and form because it is more abstract. Black and white films are rated according to their speed, which is the measure of how much light is needed to get onto the film in order to get an image.

A slow film requires a lot of light, and a fast film requires less. Films are given a film speed rating called an ISO with the slowest being rated at ISO 25 and the fastest at 1600 or more. The difference between slow and fast films is that slow films have a finer grain and produce sharper photographs. Grain is what you see when a subject in a photograph that should be smooth and featureless, such as a blue sky, has a detectable speckled pattern in it. The finer the grain in the negative, the more detail there will be in the final print. One of the major advantages of larger format cameras over 35mm is that the negative does not need to be enlarged as much to produce an 8x10 inch print. The great advantage of 4x5 and 5x7 sheet film is not only that enlargements are nearly grainless even at great enlargement, but that portions of the negatives can be easily enlarged.

Black and white films are categorized as slow films (below ISO 100), medium-speed films (around ISO 100), fast films (ISO 400), and ultra-fast films (over ISO 400). A number of black and white films on the market have a variety of characteristics beyond grain and sharpness. This primer recommends Kodak T-Max ISO 100 and ISO 400 films for two reasons. First, film manufacturers have made great progress in reducing grain in recent

years with what are called "new technology films" and these are the most grain-free films available. T-Max is Kodak's new technology film. Ilford's new technology films are called Delta 100 and 400. Second, in the United States, the film processing industry has standardized on T-Max films, thus assuring that nearly all labs are equipped to process T-Max.

Which film should you use? With 35mm medium format camera, T-Max 100 will yield excellent 8x10 prints. Remember, however, that small apertures to gain

Some Common Black and White Film Types

<i>Film</i>	<i>ISO</i>	<i>Grain Resolution</i>
Kodak Technical Pan	25	Ultra-fine/Ultra-high
Ilford Pan F	50	Extremely-fine/Very-high
Kodak High Speed Infrared	80	Fine/Medium
Kodak T-Max 100	100	Extremely-fine/Very-high
Ilford FP4 Plus	125	Extremely-fine/High
Ilford Delta 100	100	Extremely-fine/High
Kodak Plus-X	125	Very-fine/High
Kodak Tri-X Professional	320	Fine/High
Kodak Tri-X	400	Fine/High
Kodak T-Max 400	400	Fine/High
Ilford HP5	400	Fine/High
Ilford Delta 400	400	Fine/High

Notes: The slower the ISO, generally the finer the grain and contrast. Also, these films are offered in all formats. Sheer films are generally offered in 4x5, 5x7, and 8x10 sizes and can frequently be obtained in smaller or larger sizes or by special order by the manufacturer.

depth of field, especially for interiors, will make the film effectively slower, necessitating slow shutter speeds and a tripod. On the other hand, a T-Max 400 film can be a good choice in those unfortunate circumstances when you must record a number of buildings in a short period. However, an ISO 400 film can be almost too fast for very bright sunny days. Consider the "Sunny $f/16$ Rule" for exposure. On a sunny day you can calculate the correct exposure (without a meter) by setting your aperture at $f/16$ and your shutter speed at the ISO rating of the film over one. Thus, the correct exposure for an ISO 400 film on a sunny day is $1/400$ at $f/16$ or, in terms of shutter speeds available on the camera, $1/500$ at $f/16$. For some cameras this is almost at the mechanical limit of the camera for highest shutter speed and smallest aperture. Many photographers find a film speed of ISO 200 to be more useful and so will "rate" and shoot an ISO 400 film at 200. Practically, this means setting the ISO dial on the camera at 200. This requires a slightly reduced development of the negative to compensate for the overexposure, which most labs will do on request. It also produces a lower contrast negative that can be very helpful since the lighting in many architectural situations is very contrasty.

THINKING PHOTOGRAPHICALLY

To conclude, automatic cameras are not appropriate for photographic documentation of architecture. For starters, when you use an automatic camera you tend to turn off your brain. Good architectural photography and photographic documentation melds a knowledge of architecture with an understanding of the significant features of a building and the photographic process. You must think about light, depth-of-field, and about what will photographically capture the architectural and historical significance of the building. Not only do you lose control of your materials with an automatic camera, you lose your opportunity to think through the relationship between the film and the building. Ok, it's time to hit the field!

David L. Ames is the Director of the Center for Historic Architecture and Design and Professor in Urban Affairs and Public Policy and Geography, University of Delaware.



College of Urban Affairs and
Public Policy, Center for Historic
Architecture and Design

GLOSSARY

Aperture: The amount of light reaching the film is controlled by a combination of the shutter speed and the size of the opening of the lens.

Depth of Field: The range around a particular point of focus that is rendered as acceptably sharp in a photograph. Depth of field varies with the f /stop.

f /stop: The number that expresses the size of the lens opening relative to focal length.

Large Format: Any camera that is intended to use with film 4 x 5 inches or larger.

Medium Format: Any camera that uses 120 size roll film. The format is between 35 mm and 4 x 5 in size.

Perspective Control (PC) lens: A specifically designed lens that mimics view camera perspective control movements, and is intended to be used with single lens reflex cameras.

Single Lens Reflex: A camera design, incorporating a mirror and a prism, that allows the photographer to see in the viewfinder whatever the taking lens sees.

Telephoto Lens: A lens of a longer-than-normal focal length with a relatively short physical length. Not all long lenses are of tele design.

View Camera: A camera design that allows the photographer to manipulate various optical parameters by altering the relative orientation of a film back and a lens linked together by flexible light-tight bellows. The image is viewed on a ground glass screen in the film back.

Zoom Lens: A lens in which the focal length can be changes, effectively providing several lenses in one.

This publication was funded by the Legacy Program of the United States Air Force, the National Park Service, and the National Council for Preservation Education.

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The activity that is the subject of this document has been financed in part with federal funds from the National Park Service, Department of the Interior. However, the contents and opinions do not necessarily reflect the views and policies of the Department of the Interior, nor does the mention of trade names or commercial products constitute endorsement or recommendations by the Department of the Interior.

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APPENDIX E

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JAMES R. DeSANA, DIRECTOR

December 29, 1999

Mr. Clarence Kroupa
4912 Barney Road
Traverse City, Michigan 49684

Dear Mr. Kroupa:

United States Senator Carl Levin asked me to respond to your letter regarding a proposed bypass around Traverse City. In 1996, the Michigan Department of Transportation (MDOT) completed a Traverse City regional corridor study. The purpose of this study was to determine potential trunkline alignments that would address the congestion and safety problems that Traverse City is experiencing. As a part of the corridor study's recommendations, three bypass alignments were chosen for further analysis.

In a separate study, the Grand Traverse County Road Commission is studying alternatives to improve the east-west mobility in the Traverse City area. This *Boardman River Crossing Mobility Study* includes the analysis of an alternative similar to the Beitner-Keystone Road alternative that you discussed in your letter. At this time, the county has not made a decision regarding a preferred alternative for this study. Once a decision is made and the results of the county's project have been analyzed, MDOT will determine whether there is a need to further analyze the recommendations from the Traverse City regional corridor study.

Thank you for your letter and interest in Michigan's transportation system. I have transmitted a copy of your letter to the Grand Traverse County Road Commission and the project managers for each of the studies. If you have any further questions or comments, please contact either me or Louis H. Lambert, Deputy Director of the Bureau of Transportation Planning at 517-373-0343.

Sincerely,

A handwritten signature in cursive script that reads "James R. DeSana".

James R. DeSana
Director

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JAMES R. DeSANA, DIRECTOR

July 26, 2000

Mr. John A. Nelson
4022 Incochee Crst. C
Traverse City, Michigan 49684

Dear Mr. Nelson:

Thank you for your letter dated June 29, 2000, regarding the Hartman Road to Hammond Road bridge connector in Grand Traverse County. I also enjoyed meeting you and our conversation on Interlochen Public Radio on June 28, 2000. The Michigan Department of Transportation (MDOT) participated in and provided funding to the Grand Traverse County Road Commission (GTCRC) for the study of alternatives to replace the existing Cass Road Bridge over the Boardman River and to improve the east-west mobility through the City of Traverse City.

As part of this study, the GTCRC evaluated a variety of alternatives, including a no build alternative, transportation system, and travel demand management alternatives and build alternatives. As part of the environmental clearance process, the GTCRC selected the Hartman Road to Hammond Road bridge connector as the preferred alternative. This decision was based on the Environmental Impact Study results, public comment, and input received from federal, state, and other local agencies.

To specifically address your question, the decision to implement major highway improvements is often a difficult one. All of the environmental, economic, and social impacts are considered, and public and agency input is received for all major roadway projects. To receive local consensus and support, MDOT will make every attempt to minimize the environmental, social, and economic impacts to the communities affected.

Consensus is an important and often difficult part of the study process and all attempts are made to achieve it for project implementation. Ultimately, MDOT chooses transportation projects that best meet the safety and capacity needs of the local area and region under study, and the entire State of Michigan.

Again, thank you for your letter and your interest in Michigan's road system. If you have any further questions or comments, please contact either me or Louis Lambert, Deputy Director of the Bureau of Transportation Planning at 517-373-0343.

Sincerely,

A handwritten signature in cursive script that reads "Greg Bosine".

Greg Bosine
Chief Administrative Officer

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