NORTHWEST REGIONAL TRANSPORTATION STUDY

STUDY ACTIVITIES

* REGIONAL INVENTORY
* TRANSPORTATION GOALS and ISSUES
* EXISTING TRANSPORTATION SERVICES
* FUTURE TRANSPORTATION ALTERNATIVES
* PUBLIC HEARING RESULTS
* STUDY RECOMMENDATIONS

MICHIGAN DEPARTMENT OF STATE HIGHWAYS AND TRANSPORTATION

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AUGUST 1978
NORTHWEST REGIONAL TRANSPORTATION STUDY

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PLANNING

SYSTEMS PLANNING
Determines Need & Priorities for General Project Location

STATEWIDE SYSTEMS PLANNING
Deals with State & National Transportation Needs - Results in Broad Policy Determination

STATE MODAL PLANS
1. Airports
2. Busses
3. Highways
4. Railroads
5. Waterways

REGIONAL SYSTEMS PLANNING
Relates Statewide Planning to all Regions to Insure Consideration of Local Goals

REGIONAL TRANSPORTATION STUDIES
1. Northeast Michigan Region
2. Northwest Michigan Region
3. East Central Michigan Region
4. etc.
5. etc.

PROJECT PLANNING
Deals with Specific Locations and Types of Facility Designs

CORRIDOR LOCATION STUDIES
Required When Facility must be Relocated or Major Problems Anticipated. Determines General Corridor Location

DESIGN STUDIES
Evaluates Specific Locations and Facility Types Within the General Corridor

THE CONCERN OF THIS STUDY
INTRODUCTION

The Constitution and Statutes of the State of Michigan make the Michigan State Highway Commission responsible for planning, building and maintaining a transportation system for our State. To fulfill these responsibilities, the Michigan Department of State Highways and Transportation has developed a planning process to guide the State and its governmental units in analyzing the adequacy of existing transportation systems and in preparing plans for future systems and facilities.

Traditionally, the planning process has been divided into two phases: systems planning and project planning (see diagram). Systems planning consists of analyzing transportation system needs and developing proposed networks designed to satisfy these needs. The process begins with the analysis of existing systems and facilities and their relationship to goals and objectives of the governmental units of the State and extends through establishment of a set of priorities for the improvement of the system by capital investment projects. Systems planning studies provide a general overview of how all modes of transportation interact in a given area. They address the physical and functional components of the various transportation systems and consider the probable general impacts to its users and non-users. A detailed Environmental Impact Statement (E.I.S.) is not required at this stage due to the general nature of the study and the broad scope of issues. The contents of this report represent a system planning study as it relates to the Northwest Region.

Project planning is the process of analyzing the proposed construction or improvements of specific transportation facilities to a point where all but one of the practical alternatives are eliminated. Because project planning deals with specific facility location and design, an E.I.S. may be required, depending on the extent of improvements and the intensity of impacts.

STUDY AREA

The geographic area considered in this transportation study coincides with the ten-county jurisdiction of the Northwest Michigan Regional Planning and Development Commission. This agency has been designated by the Governor's office as a multi-county regional planning agency for this area. In so doing, the Governor has requested all state agencies cooperate with the regional agency when planning various programs and to develop those programs to be consistent with regional goals and objectives. The Northwest Regional Transportation Study represents the Department of State Highways and Transportation's pledge to meeting this objective.

PURPOSE OF STUDY

The Northwest Regional Transportation Study was initiated as a "pilot project" in 1972. Since this level of planning was new throughout the Nation, a major intent was to test new concepts and procedures for conducting a regional study. Many of these new techniques were being adopted in the Michigan Action Plan, a document required by the Federal government to specify how transportation planning will be conducted by the state. But beyond this challenge, the underlying purpose of the study was to identify current and future deficiencies and recommend improvements to various transportation systems operating in the ten-county Northwest Region.
This map depicts the 14 geographical areas that have been designated by the State as the official multi-county planning regions of the State. The Northwest Michigan Regional Planning and Development Commission, with staff based in Traverse City, is the agency recognized by the State as the official planning organization for Region 10. This Commission and the Transportation Advisory Committee (comprised of a member from each of the ten County Planning Commissions) has worked continuously with the Department of State Highways and Transportation on the Northwest Regional Transportation Study since its inception.
At the inception of the project, a plan was being developed only to facilitate the flow of one mode of transportation—highway travel. The focus was to be on the improvement or relocation and reconstruction of US-31 and US-131 as mandated by Act 327 of the Public Acts of 1972. Shortly after the project had begun, however, the Governor charged the Department of State Highways with the task of providing adequate transportation by all modes of travel in the state. Consequently, the Northwest Regional Transportation Study became a multi-modal transportation planning effort and the scope of the project expanded to include integrated planning of rail, air, public transportation, water and non-motorized, as well as highway, facilities.

PLANNING METHODOLOGY

This study is being conducted by a multi-disciplinary planning team called a "study team". A multi-disciplinary team is one made up of people who have diverse educational backgrounds. The reason for using a multi-disciplinary team is to bring together people with varying perspectives, who can provide a wide variety of ideas that can be applied to problem identification and solution. Typical membership of this study team includes engineers, planners, social scientists, economists and environmentalists. In addition, the study team also has members representing the Northwest Michigan Regional Planning and Development Commission and the Federal Highway Administration.

As mentioned previously, one purpose of this study was to test new concepts and procedures of Michigan's Action Plan. A key element of this document is the requirement to encourage the general public to become involved in the early planning stages for major transportation facilities. To accomplish this task, a three-step meeting process has been established. It consists of Pre-Study Meetings, Public Hearings and Post-Decision Meetings. These meetings are generally required for both the systems and project level planning steps. Thus, the general public will have several opportunities to review and comment on transportation proposals affecting their area. The contents of this report were assembled in preparation for the Public Hearing on the Northwest Regional Transportation Study.

In addition to the prescribed public meetings, the study team has utilized many other sources to obtain public input into the planning process. These sources include questionnaires, travel surveys, correspondence, newspaper articles, interviews with local officials, public information meetings, special interest groups, citizen advisory groups and local planning organizations. Information gathered from these sources has assisted in identifying many important transportation related issues. Within these issues are two key factors that will define much of the character of the region's future transportation systems. These are the availability of energy and growth trends. Therefore, the current planning efforts will illustrate how various multi-modal transportation networks can be developed to satisfy a range of alternative future growth and energy situations. By analyzing these various networks, the study team will be in a better position to advance planning efforts on those projects which show the greatest need and are common to most future conditions.
REGIONAL INVENTORY

The ultimate objective of the Northwest Regional Transportation Study is to identify deficiencies and propose necessary changes in the existing transportation system. These changes will include the provision of adopting an integrated system of transportation facilities that will:

1. Adequately meet the transportation needs of the citizens and visitors of the region and the State.

2. Promote the attainment of social, economic and environmental goals of the citizens of the region and the State.

A transportation system is not an end in itself, rather it is a means to other ends. It is a service network built to facilitate the flow of goods and the movement of people. As a service network, the transportation system should be designed to provide safe and efficient movement of people and goods with minimal adverse impact on social, economic and natural systems.

When any transportation facility is constructed, there are monetary, social and environmental costs. However, if the facility is built to meet known transportation needs, there will also be benefits. These benefits will be social and economic, and possibly environmental. In determining which facilities should be built, the costs and benefits, which will be different for each alternative, must be weighed against one another. A major objective of the planning process is to facilitate the choice of a network which will provide the types of benefits desired yet incur the fewest social, economic and environmental costs.

To make a choice, decision makers must have information upon which to base their decisions. Information regarding the region’s social, economic and environmental characteristics is gathered through an inventory process. This inventory is derived from state and regional data sources and serves as a key indicator of current and future transportation needs.
SOCIAL/ECONOMIC INVENTORY

The Northwest Region is predominantly rural. Wexford County is the only county where 50% or more of the 1970 population lived in a city of more than 2,500 persons.

The largest communities in the region are:

1. Traverse City, servicing the eastern portion of Benzie County, Leelanau County, Grand Traverse County, northern Wexford County, western Kalkaska County and southwestern Antrim County.
2. Cadillac, servicing Wexford and Missaukee Counties.
3. Petoskey/Charlevoix servicing Emmet County, Charlevoix County and northern Antrim County.
4. Manistee, which services Manistee County.

These four areas contain the heaviest concentration of commercial establishments, health facilities, and job opportunities. The smaller communities in the region serve primarily as convenience shopping centers for residents, tourists, and summer visitors. With 69.4% of the total 1970 regional population living in areas of less than 2,500 inhabitants and the concentration of social and economic facilities being located in the four larger cities, mobility is important to area residents.

This situation is in the process of changing. The Northwest Region is considered by the U.S. Bureau of the Census to be one of the fastest growing areas in the country. The growth seems to be occurring in a band along US-31, extending from Benzie County to Emmet County. The 1970 population for the region was 158,333. According to 1980 projections by the Department of Management and Budget, this population is expected to increase by 29% as compared to 5% for the state. This growth seems to be uniformly distributed among different age groups and can be attributed primarily to in-migration, assuming a declining or steady birth rate.

The economy of the area is characterized by lower than average wages and high seasonal employment. A comparison of the 1977 unemployment rates showed 12.7% for the region and 8.2% for the state. Economic activity within the region is geared almost exclusively to small units of service and production. Only the Traverse City State Hospital and the Packaging Corporation of America near Manistee employ substantial work forces. Typical of the region would be a unit employing 50 people with employees of 200 to 500 considered large. Traditionally, there has been a low labor force participation rate due to discouragement from job shortages, low wages, and seasonal fluctuations.

There are four sectors which contribute almost 85% of the total employment. They are manufacturing, public administration, trade and services.

The largest sector is manufacturing. Public administration employment has increased and can be expected to continue. The third sector, retail and wholesale trade, has declined in importance but still continues to play a major role in the region's economic structure. The services sector has been an increasing source of employment. This sector is expected to continue growing as the tourist and recreational demand increases.

WAGE AND SALARY EMPLOYMENT COMPOSITION
NORTHWEST MICHIGAN REGION

<table>
<thead>
<tr>
<th>Sector</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td>24.3%</td>
</tr>
<tr>
<td>Retail &amp; Wholesale Trade</td>
<td>21.0%</td>
</tr>
<tr>
<td>Public Administration</td>
<td>21.3%</td>
</tr>
<tr>
<td>Services</td>
<td>17.9%</td>
</tr>
<tr>
<td>MINING &amp; AQ.</td>
<td>3.3%</td>
</tr>
<tr>
<td>TRAN. &amp; UTILITIES</td>
<td>2.3%</td>
</tr>
<tr>
<td>FINANCE, REAL ESTATE &amp; INS.</td>
<td>1.5%</td>
</tr>
<tr>
<td>CONSTR.</td>
<td></td>
</tr>
</tbody>
</table>

Tourist-oriented industries are projected to expand in the future and provide many more jobs. However, this industry is not an ideal industry on which to base a regional economy. Although it provides jobs, many are part-time and seasonal. Also, the industry is influenced by outside economic conditions. More importantly, average wages are among the lowest. In other words, while providing jobs, the industry does not generate high incomes.

Also, it has been estimated by regional personnel that nearly 30% of the sales in the retail sector (which includes eating and drinking establishments) are made to non-residents of the region. In addition, the majority of hotel-motel receipts indicate non-resident use.

Overall, the region is highly dependent on its own natural resources to provide the basis for its economy. The area's natural beauty and the desire of people living in major metropolitan areas to leave the urban problems have been two factors cited for the recent increases in population.

The Northwest Region has been a tourist haven for a long time. Major attractions include the many rivers, lakes and shorelines which provide fishing and other water sports, forest areas, Sleeping Bear Dunes National Park, Interlochen Center for the Arts, and special celebrations such as the Cherry Blossom Festival.

In addition, the land surrounding the lakes in the region has become developed with cabins and cottages. In 1970, 19% of the homes in the region were classified as seasonal. The greatest concentration of these is found in the following areas where from 20% to over 50% of the homes are seasonal:

1. Crystal Lake/Bear Lake/Onekama area.
2. Charlevoix/Petoskey area.
3. Lake City area.
4. Torch Lake area.
5. Leelanau County.
During the summer season, it is estimated that the population of Benzie, Grand Traverse, Kalkaska and Leelanau counties almost doubles (see following chart).

**SEASONAL POPULATION TRENDS 1975**

![Seasonal population trends chart]

Besides tourism and recreation, the region is a major fruit producing area in the State. The most productive fruits grown in the area are cherries, apples, peaches, blueberries and strawberries. Milk production is also becoming more important to the region's economy. Lumbering also contributes with such wood products as pallets and pulp production. The harvesting, processing and manufacture of timber products returns an estimated $24 million to the region annually. The Michigan Energy Administration is also studying the feasibility of using wood chips as an alternative fuel source.

The region also exports minerals such as salt, sand, limestone, and petroleum.

**Transportation Implications**

The social and economic inventory relates several important factors regarding transportation. First, nearly 70% of the region's population lives in rural areas or small communities while social and health services and employment are
primarily located in the region's larger communities. Therefore, it is important that adequate transit and highway facilities are provided if the people are to derive the maximum benefits offered by these services.

<table>
<thead>
<tr>
<th>Age Group</th>
<th>1970</th>
<th>Estimated 1976</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under 5</td>
<td>8.5%</td>
<td>7.9%</td>
</tr>
<tr>
<td>5 - 19</td>
<td>30.8%</td>
<td>29.9%</td>
</tr>
<tr>
<td>20 - 24</td>
<td>5.9%</td>
<td>8.1%</td>
</tr>
<tr>
<td>25 - 39</td>
<td>16.3%</td>
<td>17.9%</td>
</tr>
<tr>
<td>40 - 64</td>
<td>26.4%</td>
<td>23.2%</td>
</tr>
<tr>
<td>65 or over</td>
<td>12.1%</td>
<td>13.0%</td>
</tr>
</tbody>
</table>

Second, 13% of the region's 1976 residents were 65 years of age or older. By the year 2000, this proportion is expected to increase. Persons in this group have different travel needs than persons in a younger age bracket. There tend to be more trips to doctors or hospitals with elderly people than younger people. Also, the elderly people tend to be located in the rural areas while the health services are in the urban areas.

Third, a survey reported in The Regional Sketch Plan of the Northwest Region indicated that a major criterion for manufacturing plant site location is 30 minutes accessibility to a freeway interchange. Assuming US-131 will be a freeway to Cadillac and US-31 will be a freeway to US-10, and given the present location of I-75 relative to Petoskey, 66% of the existing manufacturing firms in the region's growth centers already meet this accessibility criterion. The remaining 34% are located primarily in the Traverse City area. These and future manufacturers may also benefit by transportation system improvements. The degree of benefit, however, is dependent upon a variety of factors, only one of which is transportation related.

In some instances, it is doubtful that a regional economy would benefit significantly by transportation improvements, especially where a well developed system exists. On the other hand, local economies or individual businesses may derive some economic benefits. This usually occurs where there is either a shift in traffic patterns or where accessibility is improved to communities.

When highway improvements result in a higher level of service for a route connecting a community center to its surrounding area it tends to increase the frequency of trips to the community. When the route is perceived as congested or unsafe, persons tend to postpone trips into a community. Thus, individuals and families may wait until they have several needs before traveling to the community center, or they may choose alternate communities in which to satisfy those needs.

When the roadway is improved, these same individuals, instead of postponing trips, may view such trips as pleasant and increase the number of trips they make. In a similar manner, improved roads also benefit local businesses through a reduction in the cost of receiving raw materials or in shipping finished products to market.

Fourth, regarding tourism and the effect of energy supply on demand for travel, it must be kept in mind that Americans have always pursued recreation as a means of pleasure. Recently, they have been turning more and more to outdoor recreation. Whether or not this trend will continue at the same pace is difficult to say, given the prospects of reduced energy supplies. However, it can be reasonably assumed that recreational activities will continue although the frequency and duration of such trips may change.

In summation, there are two basic problems regarding transportation into and through the Northwest Region. First is the need to provide reasonable service between the local rural and urban areas. Second is serving the long-distance or statewide travel demand. This demand takes its form in tourist-oriented traffic and the movement of economic goods between the region and markets in the southern portion of the State.

ENVIRONMENTAL INVENTORY

The ten county Northwest Region contains many unique and diverse natural environmental attributes. In combination, these geologic and physiographic features, forest lands, wildlife population and exceptional water resources, combined with a high level of air quality, provide a wealth of recreational and natural resource values. Therefore, in a variety of ways, the region's economy is dependent upon its environmental attributes.

The region has been called by some "the playground of Michigan". Recreation activities are available during the four seasons and are aided by a large concentra-
ENVIRONMENTALLY SENSITIVE AREAS
GENERALIZED

LEGEND

PRIMARY ENVIRONMENTAL AREAS ¹

PRIMARY AGRICULTURAL AREAS ²

1. Primary Environmental Areas are those that have unusual aesthetic quality or ecological character of particular importance or fragility. These include lakes, streams, wetlands, coastal areas, steep topography, parks, wildlife refuge, and historical features. Lakes and streams are considered sensitive features even if they are not included in an area depicted on the map as sensitive.

2. Primary Agricultural Areas are those areas which have either the best existing or potential agricultural production in the region.
tion of parks, state and national forests, winter sports complexes, wildlife and quiet areas, public water access sites, scenic vistas and specially protected environmental areas.

Water resources and their surrounding land forms are the major natural attributes of the region. The region contains 461 miles (744 kilometers) of Lake Michigan shoreline, 1,930 miles (3,113 kilometers), of inland streams and rivers and 1,208 miles (1,948 kilometers) of inland lake shoreline. Twenty-five percent of the regions 454 inland lakes have surface areas in excess of 1,000 acres (405 hectares) with Torch Lake, Lake Charlevoix and Crystal Lake ranking second, third and ninth largest in the State. Twenty-two percent of Lake Michigan shoreline and fifteen percent of the inland lakes shoreline are in public ownership.

Among the most environmentally significant rivers in the region are those included or being studied for inclusion in the National Wild and Scenic Rivers Act or the Michigan Natural Rivers Act. The purpose of these programs is to preserve or enhance for all future generations, certain selected streams either nationally or statewide whose immediate environments possess outstanding values. The Manistee and Pine Rivers and the upstream portion of the Muskegon River within the region are under study for the National Wild and Scenic River Program.

The Jordan, Betsie and Boardman Rivers are designated Michigan Natural Rivers, while the Little Manistee River is under study for possible inclusion in this program.

Some of the best fishing waters in the State are encompassed in the region. Many public access sites are provided for fisherman access. Trout are very important with nearly all the region's inland rivers and streams being managed for trout. Also, Lake Michigan supports lake trout and many other fish species. The success of introducing the Coho and Chinook salmon to the Great Lakes has gained national recognition. Fall migration runs of these fish up the major river systems attracts thousands of fishermen and sightseers to the region every fall.

As development has occurred, increasing concern is being expressed for the area's wetlands. Wetlands are a significant attribute to any area, providing natural flood control, improved water quality and recharge areas for ground-water, streams and rivers. They are essential as providers of habitat for fish and wildlife resources. Wetlands also contribute to the production of agricultural and timber products and provide recreational, scientific and aesthetic resources. Wetlands are scattered throughout the region and vary widely in relative importance. Generally, the more valuable wetlands are associated with lakes and streams.
The topography has been of primary importance in directing man's activities in the region. The glaciated surface of the region has influenced the drainage patterns, forestry types, wildlife distribution and with the advent of man, his settlement pattern on transportation links. Dominating these elements is Lake Michigan and its coastline. The lake influences the region's climate, agriculture, recreational use and was responsible for establishment of many of its principal communities. The coastal zone varies dramatically from prominent headlands to rocky shorelines and major sand dune areas. The sand dunes, particularly those in Manistee, Benzie and Leelanau Counties are unusual geological features with the uniqueness of the Sleeping Bear Dunes being recognized in its designation as a National Lakeshore. The Nation and the State have recognized the critical nature of the Nation's shorelines through the Coastal Zone Management Program designed to preserve important values along our shorelines.

The region's bays and harbors support commercial, recreation, boating and fishing activities. Grand Traverse and Little Traverse Bays provide sheltered water for boating and fishing. Ports are located at Manistee, Frankfort, Traverse City, Charlevoix and Petoskey.
Forests abound in the region, providing recreational activities, wildlife habitat, timber resources and a laboratory for scientific study. At least fifty percent of each county is forested for a regionwide total of 1.88 million acres (7,611 hectares). National forest lands are located in Manistee and Wexford Counties and State forest lands are found in all counties. There are no endangered or threatened plant species listed by the Michigan Department of Natural Resources within the region.

Forests as well as other ecosystems in the region provide habitat for a variety of wildlife. The relatively unpopulated and undeveloped northern and certain interior parts of the region still provide suitable habitat for animals requiring large areas of land. The interspersion of farmland which occurs most extensively within the region's southern and near coastal zones enhances wildlife diversity by encouraging those types which are frequently supported by farming activity.

Wildlife resources in the region offer opportunities for recreation and scientific study but, in some cases, require special protection. The Kirtland's Warbler is an endangered species with habitats identified in southern Kalkaska County, northeast Missaukee County and isolated pockets in Wexford County. Critical habitat areas have been identified in southeast Kalkaska County. For other species, the region includes two wildlife sanctuaries, three state game areas and two wildlife research areas which are given legal protection. The wildlife sanctuaries are located in Benzie and Wexford Counties, the state game areas in Grand Traverse, Benzie and Manistee Counties and the research areas in Missaukee and Charlevoix Counties.

Aside from the wildlife areas, a number of specific sites within the region have been determined to be important from an environmental perspective. These sites meet the established criteria of legislatively based programs or belong to conservation organizations whose intent is to preserve the areas. Within the region, sites in the following categories of special environments can be identified: natural areas, environmental shoreline areas and high risk erosion areas as designated by the Department of Natural Resources; lands held by the Nature Conservancy; properties owned by the Michigan Nature Association; and cultural resource areas.

The Wilderness and Natural Areas Act (Act 24, P.A. 1972) was enacted to protect selected areas of high environmental value. According to the Department of Natural Resources, the only designated natural areas within the region are
found in and around Wilderness State Park in northwest Emmet County. Under the Shorelands Protection and Management Act (Act 245, P.A. 1970) the Director of the Department of Natural Resources is empowered to designate "environment areas" along Michigan's Great Lakes shores. These preserve the fisheries and wildlife values within and adjacent to these areas. Also, the Shorelines Protection and Management Act requires the establishment of local and state controls to regulate new development along the Lake Michigan shoreline in high risk erosion areas. These shoreline areas include: fifty percent of Manistee, Benzie and Leelanau Counties; 7 miles (11.3 kilometers) in Grand Traverse, Antrim and Charlevoix Counties; and 13 miles (21 kilometers) in Emmet County.

The Michigan Nature Association (MNA) has a program of habitat preservation and owns a number of nature sanctuaries and plant preserves. The association has two sanctuaries in the region, both in Antrim County. They are the 40 acre (16 hectares) Green River Nature Sanctuary and the 80 acre (32 hectares) Cedar River Nature Sanctuary.

The Nature Conservancy is a National organization which utilizes a variety of legal tools for natural land conservation. Their holdings are found in Antrim, Benzie, Charlevoix, Emmet, Kalkaska and Manistee Counties.

Parks and campgrounds provide many recreational activities for the regional visitor. Sleeping Bear Dunes National Lakeshore, established in 1970, and located in Benzie and Leelanau Counties, attracted approximately 700,000 visitors in 1976. Approximately 71,105 acres (28,787 hectares) of land and water with 31 miles (50 kilometers) of mainland and 33 miles (53 kilometers) of island shorelines are contained in this park.

There are nine state parks located in the region. Wilderness State Park in northern Emmet County is the largest with 6,925 acres (2,804 hectares) and Traverse City State Park had the most users (339,000 visitors) in 1976. In addition, numerous county and municipal parks and private campgrounds offer many opportunities to enjoy the area.

Cultural resources such as historical or archeological sites, districts and objects are located in the region. Historical districts are located primarily in the larger older established towns and archeological sites are generally located near the water areas. Since the region has never been archeologically surveyed, significant sites may still be undiscovered.
Transportation Implications

The unique environmental attributes of the Northwest Region significantly influence travel desires. Countless lakes, streams and other natural features, combined with numerous man-made attractions, create a tremendous increase in traffic, both seasonally and on a week-end basis year-round. This increase in recreational travel is often accompanied by the need for facility improvements, sometimes in the form of capacity increases. But a dilemma exists when trying to safely accommodate the surge of recreational travel without affecting the natural features which attract the visitor.

Transportation improvements involve a number of activities associated with the construction, operation and maintenance of a facility. Environmental impacts of individual projects are generally related to the amount, location and character of the land used for and affected by the facility. Of potentially greater significance is the influence that improved accessibility may have on sensitive features of the region. Both the activities associated with transportation projects and their impacts will differ for the various transportation modes. A more extensive impact discussion is included in pages 63-73 of this report.

The preceding environmental inventory stressed those environmental areas that have some type of official designation. This is not intended to imply that these areas alone are environmentally sensitive, but rather that they are most easily identified. At the systems level of study, the primary environmental input is identification of major natural features and "protected" areas which have transportation implications. Some areas must be avoided by a facility while others require a high level of transportation service. The point should be made that conflicts often arise when naturally sensitive areas are overused. Easy access to such areas can contribute to overuse unless the areas are well managed. On the other hand, many facilities such as parks were established for public enjoyment and a safe and efficient transportation system becomes essential.

In establishing a regional transportation system, whether it includes construction of new facilities or the upgrading of existing facilities, the fact must be recognized that some environmental disruption is unavoidable. The disruption can be minimized by avoiding sensitive areas where possible and mitigating impacts where avoidance of sensitive areas is not possible. The potential secondary impact of improving access, i.e. increased development, is not as easily predicted or controlled. Although transportation facilities may direct future development, the ultimate control of land use and hence, environmental quality, rests in the authority of local governments.
TRANSPORTATION GOALS AND ISSUES

IDENTIFICATION OF ISSUES

Two years ago the study team distributed 2,200 public brochures that outlined the current status of the Northwest Regional Transportation Study. In addition, seven public meetings were held throughout the region and were attended by about 900 persons. The comments received during and after these meetings represented the greatest amount of public interest ever expressed since this study was initiated.

One objective of these meetings was to seek public input on the study team's intent to reduce the fifteen proposed highway corridor alternatives to a lesser and more manageable number for analysis. Although this objective was achieved, there were also many other important transportation related issues raised.

The following graph indicates the major issues identified as a result of the 1976 public information meetings and related correspondence. The graph simply depicts the number of times an issue was mentioned. If a person offered the comment: "I support freeway development because it will improve the economic conditions for our area and still not adversely affect the natural environment". This type of comment would be recorded under three issue categories: pro-freeway, economic growth and environment. It is necessary to point out that the numbers themselves are not important except to provide direction in determining whether the concerns of the region are being adequately covered. In other words, this effort is intended to identify issues that may have been overlooked, or which are perceived to be either over or under emphasized.
DISCUSSION OF ISSUES

In reviewing these issues, there are some definite trends indicated in the concerns or preferences of the region as a whole. The environmental concerns dominated most public meetings and subsequent correspondence received and supports the Department's intent to conduct a detailed environmental analysis for most major transportation projects. Another dominant concern expressed throughout the region was the need to improve the existing highway system. This indicates that there are many highway segments throughout the region that are already experiencing various operational deficiencies. These areas are sometimes characterized by a poor riding surface, passing sight restrictions, traffic congestion, frequent accidents and inadequate traffic lane widths. Correcting these deficiencies has recently been emphasized as a Department priority.

The "growth" and "freeway" issues are interrelated and were usually very controversial in some areas of the region. Most pro-freeway interest was expressed at the Cadillac and Kalkaska meetings. Cadillac residents were particularly concerned with potential traffic increases caused by the present US-131 freeway facility terminating just south of the city. They recommended continuation of the freeway facility around Cadillac. In general, most pro-freeway interest supported freeway development so as to encourage economic growth, control strip commercial development, promote tourism and provide a safer means of highway travel.

The anti-freeway comments expressed concerns that the resulting growth caused by freeways would place excessive development pressure on the area's natural resources. This would in turn lead to a condition already characteristic of downstate areas and thus destroy the unique beauty of the region. Several persons expressed concern about ways to control the increasing development of the North. Because transportation facilities can sometimes influence desired growth patterns, the Department will be working more closely with various local areas in solving their transportation needs.

The concern for future energy availability was mentioned at all meetings. These concerns presented a new issue that had not been adequately considered in the study at that time. Therefore, because the future energy situation could have a significant impact on future transportation proposals, the study was revised to address this issue. In addition, the revision also offered the study team an opportunity to consider alternative multi-modal solutions to the transportation problems of the region and incorporate various growth possibilities.

Other issue categories such as safety, costs, railroads, etc. represent recurring transportation concerns. The railroad issue is an even greater concern now due to possible abandonment of Chessie System tracks north of Manistee. As the study progresses, the issue identification process will continue as a means to insure proper development of future transportation plans.

GOALS AND OBJECTIVES

Planning for what? This is a fundamental question that must be asked in order to define the direction of any planning activity. Planning is viewed as a series of related actions and decisions that are organized around, and moving toward, the accomplishment of certain goals and objectives. These statements of direction are intended to accomplish the following:

1. Guide plans, which should be proposals of action, towards the achievement of a desirable end result.
2. Identify a course of action which is deemed equitable and desirable by affected interests.
4. Offer a comparison of state, regional and local concerns.
5. Through strategies, offer possible solutions to common problems.

Ultimately, the aim of this planning effort is to provide a desired transportation service that minimizes social, economic and environmental costs, yet still meets an identified need. Comparing the various proposals on the basis of goals makes it possible to select the most desirable transportation action.

Following are the state and regional transportation goals, objectives and strategies. These will be useful when evaluating the transportation options of this and subsequent studies. When reviewing them, three points are noteworthy. First, the state goals are preliminary, subject to modification pending finalization of the State Transportation Plan. Second, the regional strategies are summaries of the actual recommendations which are available at the Northwest Michigan Regional Planning and Development Commission's office. And third, they are listed in no particular order of importance.
State Transportation Goals

Statement of Purpose

To ensure a level of mobility for Michigan citizens, visitors and commerce that is reasonable in terms of the social, economic and environmental values of the State.

Aviation Goals

1. Provide a reasonable level of aviation services to all Michigan citizens, visitors and commerce.
2. Reduce the number and severity of accidents and promote the personal safety of air travelers.
3. Maximize economic benefits through aviation program investments.
4. Minimize environmental impacts in the planning, development and operation of airport facilities.

Commercial Harbor Development Goals

1. Provide and maintain an efficient commercial harbor system to meet the needs of Michigan’s economic structure.
2. Promote fiscal integrity, stability and efficiency within the commercial harbor system.
3. Minimize environmental and social impacts resulting from port improvements or expansion.

Highway Goals

1. Develop a highway transportation system which will provide accessibility to existing and anticipated patterns of development throughout the state and effectively serve existing and projected travel demands.
2. Develop a functional statewide highway transportation system which will provide for appropriate types and levels of highway service commensurate with the needs of the various areas and activities in the State.
3. Alleviate traffic congestion and reduce travel time.
4. Provide for increased travel safety.
5. Provide a system which is both economical and efficient, satisfying all other objectives at the lowest possible cost.
6. Coordinate highway planning with land use planning for the development and preservation of resources.
7. Develop a system which is compatible with the aesthetic qualities of the landscape.
8. Develop a system which is integrated with other modes of transportation. Attention should be given to existing and planned terminal locations and their expected levels of activity.
Non-Motorized Goals

1. Make bicycling safer through the provision of bicycle facilities and improvements to appropriate streets and roads.
2. Promote the use of bicycle transportation for utilitarian purposes by improving bicycle accessibility and mobility.
3. Encourage the use of bicycle transportation for recreational purposes by developing long-distance touring routes and routes of shorter duration to and through aesthetically pleasing areas.
4. Provide recreational horseback riding opportunities in cooperation with other state and local agencies.

Public Transportation Goals

1. Provide a reasonable level of public transportation service for all Michigan citizens.
3. Maximize positive environmental impacts achievable through the provision of public transportation services.

Railroad Goals

1. Provide and maintain an adequate efficient railroad network within Michigan and maintain links to the regional and national networks.
2. Promote present and future financial viability, stability and efficiency within the Michigan railroad system.
3. Minimize adverse social and economic impacts of changes in railroad service.
4. Promote and maintain safe railroad freight operations consistent with public need and carrier capability.

Regional Transportation Goals

Primary Goal

To create, through comprehensive transportation planning, a system of transportation services which provide for the efficient movement of people and goods with minimum disruption to social, economic and environmental sectors in the region.

1. OBJECTIVE: To curb adverse environmental impacts.
   STRATEGIES:
   a. Make improvements within existing roadway right-of-way where feasible.
   b. Increase service capacity only to a level where ensuing growth will not cause unnecessary harm to the environment.

2. OBJECTIVE: To promote safety concerns.
   STRATEGIES:
   a. Separate local traffic from through traffic.
   b. Improve roads to contemporary standards and provide passing lanes in critical areas.
   c. Develop road facilities utilizing grade separations, controlled access points, and divided traffic flows.

3. OBJECTIVE: To promote sound land development.
   STRATEGIES:
   a. Improve transportation facilities to a level consistent with local growth-development policies.
   b. Take steps today to preserve the designed functions of roads. Avoid hazardous and congested situations caused by strip development.
   c. Preserve important agriculture and wetland areas.
4. **OBJECTIVE:** To promote energy conservation.

**STRATEGIES:**

a. Plan a transportation system that utilizes energy efficient modes, recognizing the rural and decentralized character of this region.

b. Promote car-pooling, van-pooling and public transit service where a need has been identified.

c. Consider the effects of energy conservation upon transportation service. Design facilities and systems with flexibility in mind so that changing travel demands and user characteristics can be accommodated.

5. **OBJECTIVE:** To reduce costs from the public and user point of view.

**STRATEGIES:**

a. Make investments in transportation that provide the greatest short-term and long-range benefits.

b. Insure that economic costs required for major facility improvements are justified, since various conditions, such as energy availability, are uncertain and may affect transportation services.

c. Structure transportation user charges to reflect the true cost of providing the service.

d. Stress increased efficiency and reduced cost in the recommended system.

6. **OBJECTIVE:** To provide a viable multi-modal transportation system for the region.

**STRATEGIES:**

a. Develop a transportation system based on the efficiency of various modes and the role each plays in serving the region.

b. Provide reasonable access to transportation services for all segments of the population.

c. Develop a transportation system that is direct, efficient and convenient.
EXISTING TRANSPORTATION SERVICES

AVIATION

The Department’s role in air transportation is to insure an orderly and timely development of the State’s Aviation System. To assist in this task, the Michigan Aeronautics Commission in 1974, adopted a Michigan Airport System Plan (MASP) for the years 1975, 1980 and 1990.

A major purpose of the Plan is to show various communities their projected level of aviation demand for future time periods. This will enable them to begin an assessment of potential community and environmental impacts associated with airport development. And depending on the extent of these improvements, these considerations can be addressed in more detail as local airport master plans are prepared or updated.

The accompanying map illustrates the 1990 recommended airport system for the Northwest Region as contained in the MASP. These airports are classified into two basic service related categories: Air Carrier Airports and General Aviation Airports.

Air Carrier System

An Air Carrier Airport is an airport used by certificated scheduled airline service. At the present time, North Central Airlines is the carrier providing passenger service to the Manistee, Pellston, and Traverse City Airports. According to a 1977 summer airline schedule, North Central provided Manistee with one flight/day, Pellston with five flights/day and Traverse City with six flights/day. Normally, air carrier airports have more than one runway, with the longest being at least 5,000 feet (1,524 meters) in length. This enables the larger, 50-passenger, Turbo-prop or jet aircraft to utilize these facilities. In addition, many smaller general aviation type aircraft are served at these facilities.

On a statewide basis, the recommended air carrier system of airports for 1990 will remain about the same as that in service today. However, some changes may be warranted as the various airlines begin to utilize different types of aircraft.
Presently, North Central Airlines is using the 44-passenger Convair 580 Turbo-prop aircraft. In the future, these aircraft will likely be replaced with DC-9 jet aircraft. These larger airplanes are capable of carrying up to 120 passengers. These aircrafts have higher altitude and speed characteristics, and require a runway length of approximately 6,500 feet (1,981 meters). Therefore, because Manistee County’s Blocker Airport runway is 5,500 feet (1,676 meters), these larger aircraft will not be able to serve this facility. However, it is believed that the runway does not need extension as sufficient air passenger service can still be maintained by using the smaller commuter-type aircraft.

In 1977, another study of Michigan’s Air Carrier Airports was conducted. Results indicated that passenger service to the Northwest Region should be improved. This study recommended that airline schedules should be altered to provide better service to the Detroit and Chicago market areas. It was suggested that if the current air carrier is unable to provide this service, then perhaps other commuter-type services could be considered.

Commuter airline services generally operate the smaller 10-20 passenger aircraft and are able to provide an intermediate level of passenger service. Seaco Airlines is now offering commuter service to Chicago from Cadillac while Chippewa Airlines provides service between Manistee, Mt. Pleasant and Detroit. The commuter service to Chicago is provided on a trial basis.
General Aviation System

General Aviation Airports provide a basic level of air service for local communities. These airports offer local communities and businesses the ability to access the vast market area provided by the entire air transportation system. In the Northwest Region, these airports are accommodating up to 28 locally based aircraft. Typical runway lengths vary from 2,700 to 5,000 feet (823 to 1,524 meters). Air freight aircraft are able to utilize the airports with the longer runways. In general, the basic measures used to determine the need for these airports were:

1. To provide aviation capacity sufficient to accommodate forecasted levels of general aviation activity in a given geographic area.

2. To provide a reasonable geographic distribution of airports throughout the State.

The MASP recommends 162 general aviation airports of which 56 are new airports. Sixteen of the recommended general aviation airports are in the Northwest Region and four of the locations — Frankfort, Kaleva, Lake City and Mesick (see map page 21) are proposed as new airports. At this time no site has been selected for these airports.

Mitsubishi MU-2 - Twin engine turboprop, 7-9 place cruise 308 knots and range 1349 nm.

General Aviation Aircraft:

- Grumman American - Single engine, 2 place cruise 198 knots and range 1306 nm at 75% power.
- Beech Baron - Twin engine piston, 4-6 place cruise 190 knots and range 1506 nm at 75% power.
- Cessna 172 - Single engine, 4 place cruise 120 knots and range 691 nm at 75% power.
- Gates Lear - Twin engine turboprop, 6 place cruise 464 knots and range 2000 nm.
Funding

Although the MASP is a product of local, state, and federal planning efforts, it is the responsibility of the local community or airport authority to initiate airport development projects. After these projects have been finalized various financial arrangements are pursued. The present financial sources include:

- Federal Funds, through the Airport Development Aid Program, Upper Great Lakes Regional Commission and FAA Facility and Equipment Funds.
- State Funds, through Michigan Aeronautics Commission revenues from a tax imposed on aviation fuel.
- Local Funds, primarily through long-term borrowing.

Table I illustrates some of the typical airport development projects programmed for the Northwest Region.

| TABLE I |
| 1978-79 RECOMMENDED AIRPORT DEVELOPMENT PROJECTS NORTHWEST REGION |

<table>
<thead>
<tr>
<th>LOCATION</th>
<th>DESCRIPTION</th>
<th>TOTAL ESTIMATED COST</th>
<th>FEDERAL FUNDS</th>
<th>STATE FUNDS</th>
<th>LOCAL FUNDS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bellaire</td>
<td>Overlay runways; construct</td>
<td>$ 1,046,000</td>
<td>$ 1,391,400</td>
<td>$ 77,300</td>
<td>$ 77,300</td>
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<tr>
<td></td>
<td>taxiways; lighting; pavement</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>marking</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cadillac</td>
<td>Purchase land; construct,</td>
<td>$ 1,200,000</td>
<td>$ 900,000</td>
<td>$ 35,360</td>
<td>$ 44,640</td>
</tr>
<tr>
<td></td>
<td>light and runway; instrument</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>landing system; perimeter</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>fencing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Charlevoix</td>
<td>Purchase land; construct,</td>
<td>$ 660,000</td>
<td>$ 534,400</td>
<td>$ 45,000</td>
<td>$ 77,600</td>
</tr>
<tr>
<td></td>
<td>light and runway;</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>pavement markings; instrument</td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>landing system; perimeter</td>
<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>fencing</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pellston</td>
<td>Security and perimeter</td>
<td>$ 400,000</td>
<td>$ 360,000</td>
<td>$ 11,275</td>
<td>$ 28,725</td>
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<tr>
<td></td>
<td>fencing; snow removal</td>
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</tr>
<tr>
<td></td>
<td>equipment</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traverse City</td>
<td>Overlay, light, and mark</td>
<td>$ 572,000</td>
<td>$ 457,600</td>
<td>$ 57,000</td>
<td>$ 57,200</td>
</tr>
<tr>
<td></td>
<td>runway</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Traverse City</td>
<td>Terminal building land</td>
<td>$ 1,000,000</td>
<td>$ 700,576</td>
<td>$ 131,465</td>
<td>$ 165,460</td>
</tr>
<tr>
<td></td>
<td>renovation; fire/crash/</td>
<td></td>
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<td></td>
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<tr>
<td></td>
<td>rescue vehicle and equipment;</td>
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<tr>
<td></td>
<td>storage building; construction</td>
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</tbody>
</table>

Table II illustrates the forecasted air passenger and aircraft operations for the airports located in the Northwest Region. It is important to realize that most of these forecasts were based on aviation trends existing before the emergence of the "energy crisis". In 1973-74, the curtailment of oil imports from the Middle East had a significant impact on some of Michigan's airports. For example, Flint's Bishop Airport operations were reduced by 20%. However, it is also interesting to note that during this same period, aircraft operations at Traverse City's Cherry Capital Airport were unaffected.

| TABLE II |
| AIR CARRIER AIRPORTS OPERATIONAL FORECASTS |

<table>
<thead>
<tr>
<th>AIR CARRIER OPERATIONS</th>
<th>FORECASTED PERIODS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Carrier Operations</td>
<td>10,000</td>
</tr>
<tr>
<td>General Aviation Operations</td>
<td>12,000</td>
</tr>
<tr>
<td>Air Carrier Passengers</td>
<td>100,000</td>
</tr>
<tr>
<td>General Aviation Passengers</td>
<td>150,000</td>
</tr>
<tr>
<td>Traverse City (Cherry Capital)</td>
<td>17,000</td>
</tr>
<tr>
<td>General Aviation Operations</td>
<td>20,000</td>
</tr>
<tr>
<td>Air Carrier Passengers</td>
<td>100,000</td>
</tr>
<tr>
<td>General Aviation Passengers</td>
<td>150,000</td>
</tr>
<tr>
<td>Manistee (Manistee-Blacker)</td>
<td>20,000</td>
</tr>
<tr>
<td>General Aviation Operations</td>
<td>25,000</td>
</tr>
<tr>
<td>Air Carrier Passengers</td>
<td>150,000</td>
</tr>
<tr>
<td>General Aviation Passengers</td>
<td>200,000</td>
</tr>
</tbody>
</table>

Thus, if future fuel resources do become limited, the aviation industry, along with everyone else, will be making some adjustments. The industry has already demonstrated that substantial fuel savings can be achieved by reducing air speeds and increasing passenger load factors.
Benefits

The airport improvement projects shown in Table 1 plus other MASP recommendations are expected to produce a wide range of benefits to a broad spectrum of Michigan residents and visitors. The benefits that will accrue to affected groups from the Michigan Airport System Plan are summarized as follows:

**USERS**
- Reduce travel time and costs for air travelers and shippers.
- Expand recreational opportunities due to increased accessibility of recreation areas and wider opportunities for pleasure flying.

**AIRLINES AND AIRPORT AUTHORITIES**
- Improve safety and convenience of aircraft operations.

**COMMUNITIES**
- Enhance business and industrial growth in areas served by both air carrier and general aviation airports.
- Increase employment opportunities and tax base (from business and industrial growth).
- Improve emergency access to communities for medical supply and evacuation.