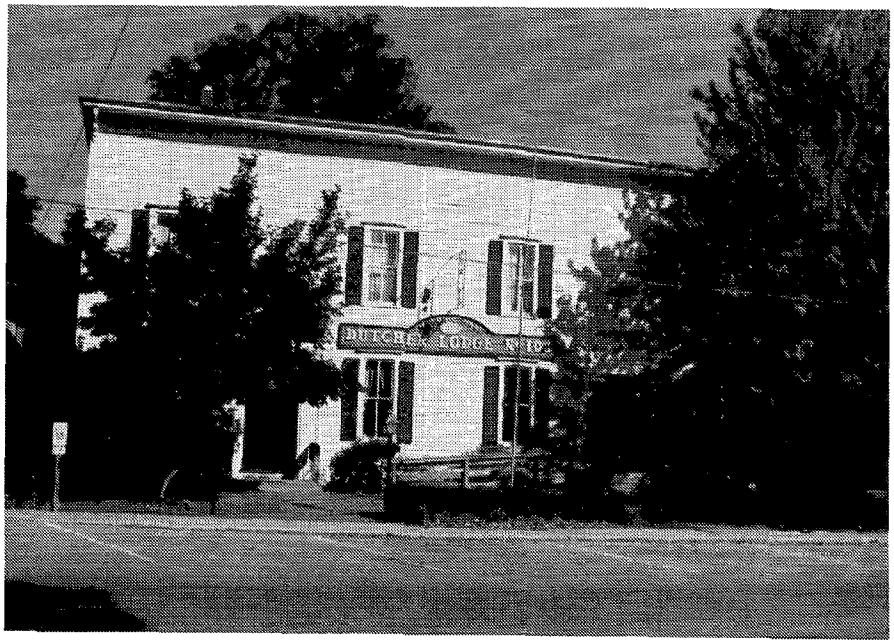
VILLAGE OF DOUGLAS

COMPREHENSIVE PLAN



Prepared By The Village Of Douglas
Planning Commission

VILLAGE OF DOUGLAS COMPREHENSIVE PLAN

Prepared by the

Village of Douglas Planning Commission in cooperation with the Village Council

in cooperation with:

Coastal Zone Management Program
Land and Water Management Division
Department of Natural Resources

and with the assistance of:

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INTRODUCTION

OVERVIEW

The purpose of this Plan is to provide a policy and decision making guide regarding all future land and infrastructure development within the Village of Douglas. Within the Plan, key planning issues are identified; a clear set of goals and policies are outlined; future land uses are described and mapped; and specific implementation measures are recommended.

All future land uses and policies presented in this Plan were developed based on a blending of the natural capability of the land to sustain certain types of development; the important natural functions played by unique land and water resources in the area; the relative future need for residential, commercial, and industrial uses; the existing land use distribution; and the desires of local residents and public officials as expressed through direct interviews, a public opinion survey, town meetings, and public hearings.

This Plan was prepared by the Planning & Zoning Center, Inc., under the direction of the Village of Douglas Planning Commission. Financial support was provided by the Michigan Dept. of Natural Resources, Coastal Zone Management Program.

There are three critical components to using this plan as a decision making guide. First, are the goals, objectives and policies in Chapter 1. Second, is the future land use map and associated descriptive information presented in Chapter 10. Third, is the supporting documentation found in Chapters 2-9.

Although this Plan states specific land use development policy and proposes specific land use arrangements, it has no regulatory power. It is prepared as a foundation for and depends primarily on the Village zoning ordinance (and other local tools) for its implementation. This Plan is intended as support for the achievement of the following public objectives, among others:

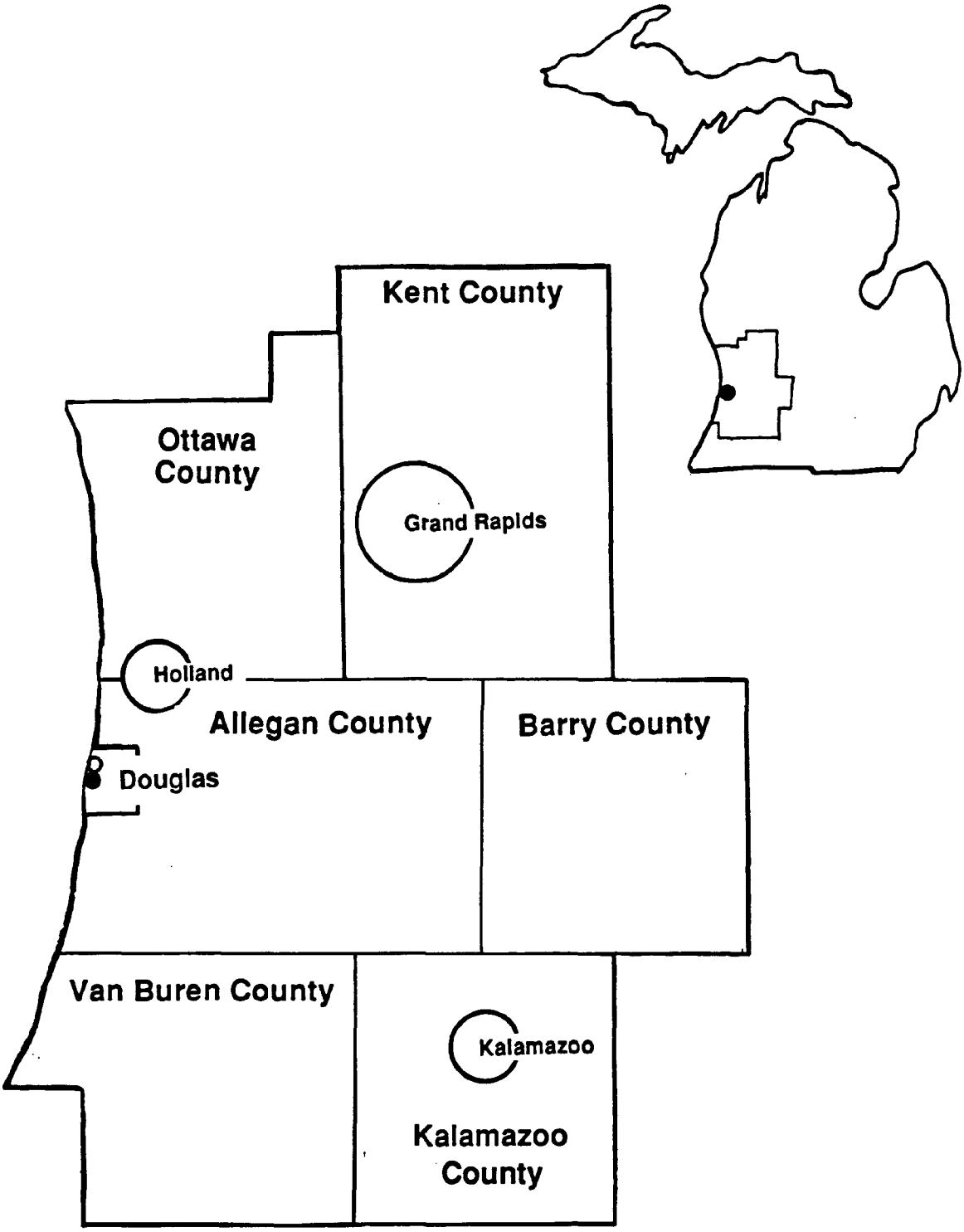
- to conserve and protect property values by preventing incompatible uses from locating adjacent to each other;
- to protect and preserve the natural resources, unique character, and environmental quality of the area;
- to maintain and enhance the employment and tax base of the area;
- to promote an orderly development process by which public officials and citizens are given an opportunity to monitor change and review proposed development; and
- to provide information from which to gain a better understanding of the area, its interdependencies and interrelationships and upon which to base future land use and public investment decisions.

This Plan is unique in that it was prepared concurrently with plans in Saugatuck and Saugatuck Township. It was prepared in light of the issues, problems and opportunities that the three communities face together, rather than being done in isolation as is more frequently the norm. While the Douglas Planning Commission oversaw the production of this plan, the Douglas Village Council was also involved in its preparation. Chapter 11 proposes that the Joint Planning Committee established to prepare a Joint Plan for Douglas, Saugatuck, and Saugatuck Township be continued and that this Plan be updated at a minimum of every five years.

The contents of this Plan draws directly from previously adopted planning documents. There has been no effort made to explicitly footnote when material has been so used. Instead it is intended that the content of those documents continue to carry forward where they were found to be helpful in addressing the current and projected issues facing the tri-community area. In particular, the Village of Douglas Land Use Plan of 1986 was frequently relied upon in drafting portions of this Plan. A number of engineering and technical documents prepared by outside consultants over the past decade have also been relied upon. They are referenced in Appendix A.

SPATIAL LOCATION

The map on the following page show the location of the Village of Douglas on the shores of Lake Michigan. This location along I-196 makes it easily accessible to travelers from across North America. The shoreline along the Kalamazoo


Kent County
Ottawa County
Grand Rapids
Holland
Allegan County
Barry County
Douglas
Van Buren County
Kalamazoo
Kalamazoo County

DOUGLAS

River, Lake Kalamazoo, and Lake Michigan and the beautiful sand dunes and wide beaches make this a tourist mecca and an attractive place for retirement.

The trade area for commercial businesses in the three communities is quite small. Local residents tend to only do daily and weekly shopping locally as Holland, Grand Rapids, and Kalamazoo are nearby for wider selections of consumer goods. Three school districts serve the area but all students within Douglas attend the Saugatuck School District.

KEY FACTORS GUIDING THIS PLAN

Three considerations played prominent roles in fashioning the contents of this Plan just as they do in the Joint Plan. These are based on widely held public opinions, past and present investment by public and private entities and a growing recognition among citizens of the interdependence of the three communities.

First, Douglas, Saugatuck, and Saugatuck Township function as a single economic, and social unit. Many people live in one of the three communities and work in another of the three. Most people live in one and shop with some frequency in another. School children, by in large, attend the same schools. Local cultural, conservancy and retiree activities are jointly supported by residents of all three communities. Several public services are jointly provided including the Interurban bus service, sewer and water (at least between Douglas and Saugatuck) and fire protection. The Kalamazoo River and Lake Kalamazoo connect all three communities, as do the local road network. Sometimes it seems, only the three units of government are separate. Yet despite these interrelationships, each community maintains a strong separate identity among many citizens of the three entities. Even many neighborhoods have strong separate identities (e.g. the hill, the lakeshore, Silver Lake, etc.). This provides an important richness and depth to the area, but it can also be politically divisive.

Second, tourism is the primary engine driving the local economy. Despite several industrial employers that provide important diversity to the area's economy, it is the dollars brought in by tourists and seasonal residents that fuel most of the local wages and local purchasing. The environmental splendor and wide range of activities open to tourists are the primary attraction. But no less significant is the small town character of the area. This character, often described as "cute" or "quaint" by tourists, is highly favored by visitors and deeply cherished by local citizens. As a result, any intensive or poorly planned alterations to the natural environment, or homogenization of the character of the individual communities is likely to have a potentially negative effect on both tourists and residents. This Plan proposes keeping the scale and intensity of such future changes low and proposes a variety of mitigation techniques to prevent adverse impacts on the environment or on the character of the area from these kinds of changes.

Third, a balance of future land uses is necessary to enhance the stability of the community during poor economic times and to broaden the population base. Presently there is a significant lack of housing in the area that is affordable for families with children. That, in concert with a decline in children generally (and an increase in the elderly) has severely impacted the Saugatuck School District. If all future land use decisions were made based exclusively on minimal alteration of the natural environment or maintenance of the existing community character, then over time, the community would become more vulnerable to economic downturn, which usually hits tourist communities very hard. Thus, a balance must be sought between what otherwise become competing goals (economic development and environmental protection/community character). This will present a serious challenge in the future. The pressure will be great to "sell the farm" for developments which promise new jobs/tax base. And while these are important, the long term impact of such proposals (in a particular location) could be very negative and not worth the tradeoff. All such decisions need to be made primarily based on long term considerations, rather than short term ones.

MAPS

Except as otherwise noted, all the full page maps presented in this Plan were produced using C-Map software. This is a PC based computer program initiated by William Enslin, Manager of the Center for Remote Sensing at Michigan State University. All the data on the maps was digitized either by Tim McCauley of the Planning & Zoning Center, Inc. or was downloaded from the Michigan Resource Inventory Program (MRIP) database maintained on the State's mainframe computer system by the Department of Natural Resources.

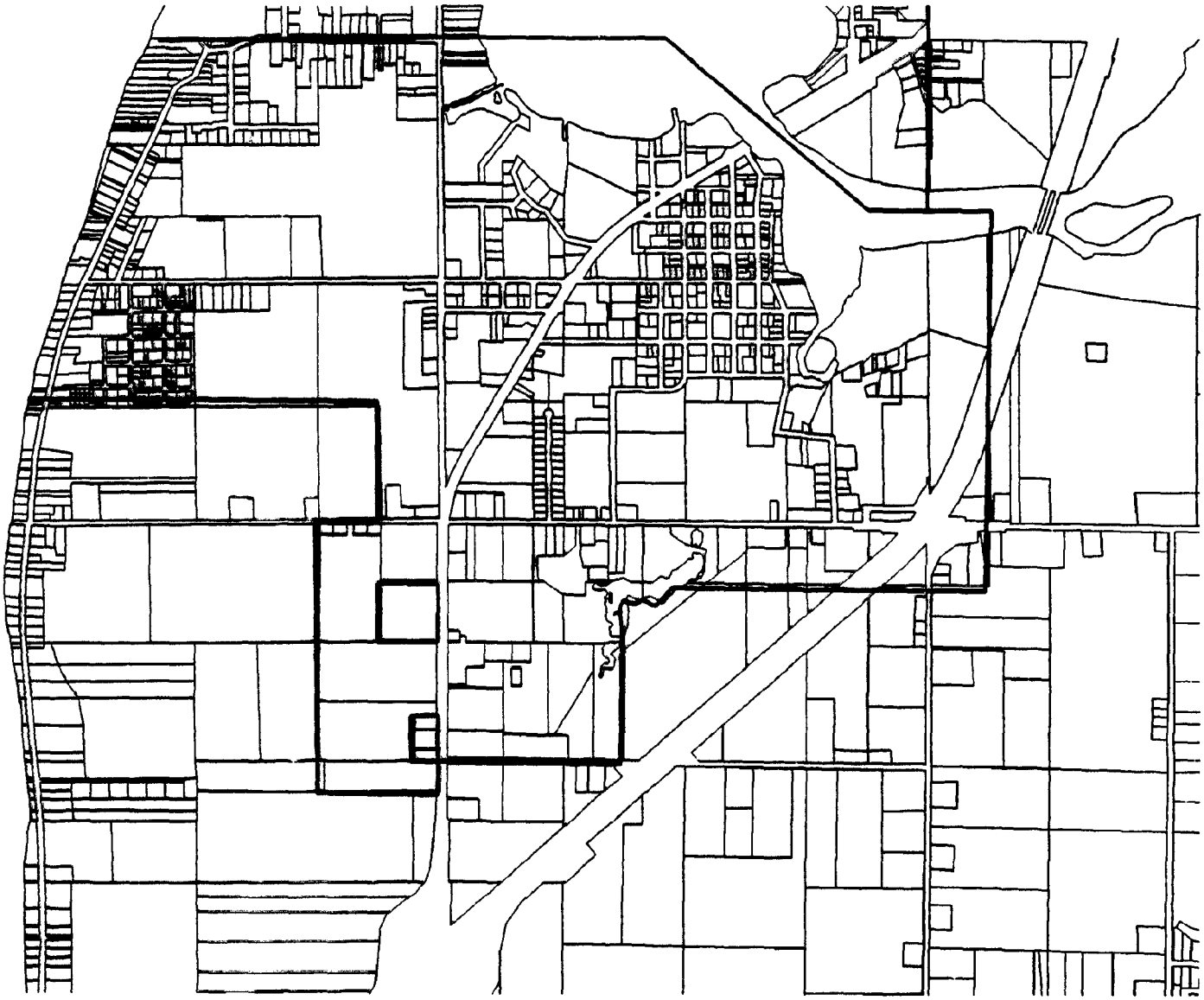
Several advantages are realized by computerizing this data. Typically, geographic information is only available on paper maps at widely varying scales, which makes it difficult to compare data sets for planning purposes. With C-Map, all of the maps can be viewed and printed at any scale via a variety of different media (color plotter, laser or ink jet printer, or dot matrix printer). Information can also be combined (or overlaid) so that composite maps can be created and compared in a fraction of the time and expense normally required to obtain the same results. Another major advantage of computer mapping is the ability to update maps continuously, so that an up-to-date map is always available.

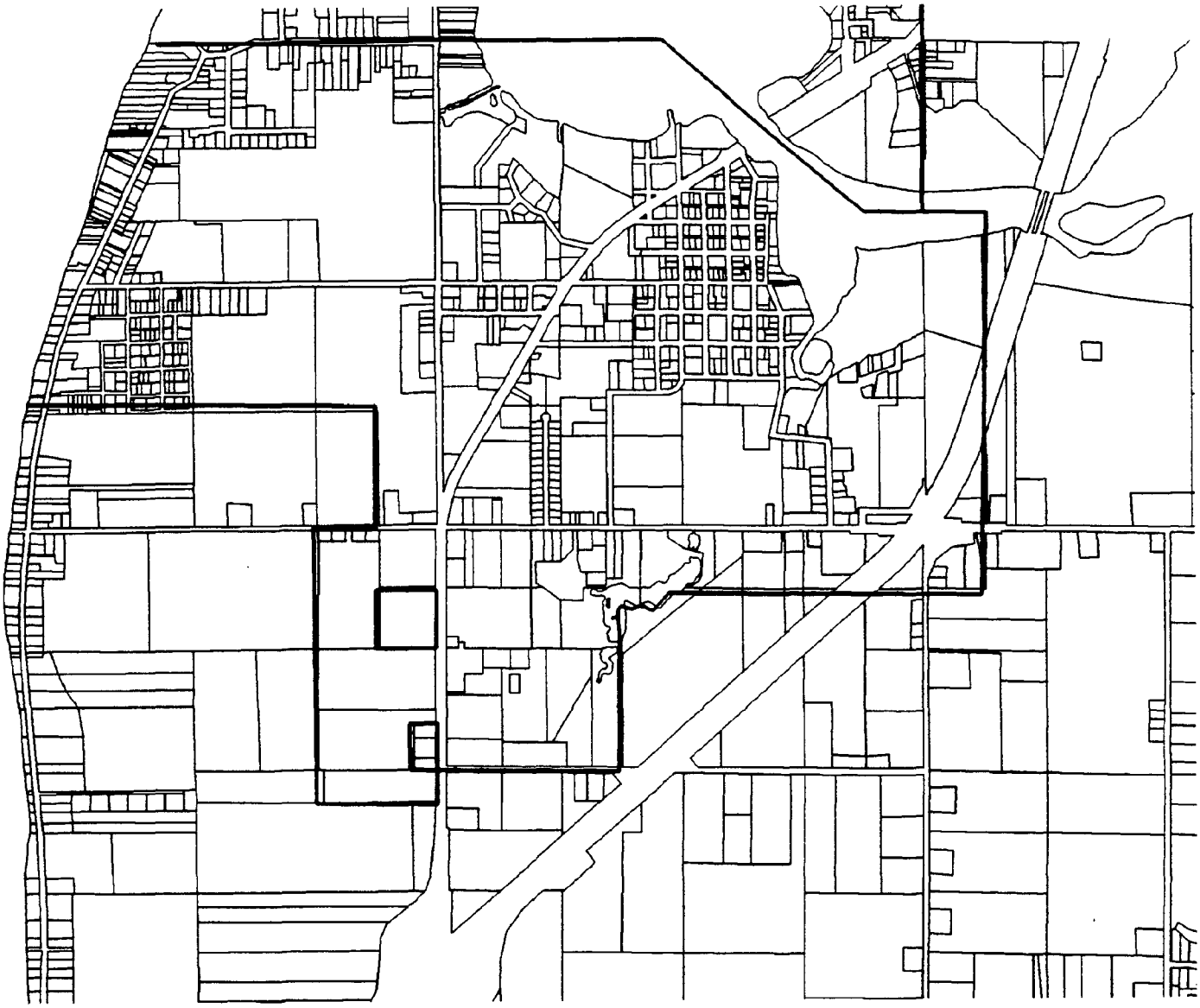
There are three different base maps that have been used in mapping this information: 1) a base map prepared by the DNR which was digitized from the United States Geological Survey (USGS) topographic map series for the area; 2) a lot line map created by digitizing the lots of record used for assessing purposes in the three communities; and 3) a soils base map derived from the SCS Allegan County Soil Survey. None of these base maps are exactly identical as they originate from different sources. All of the land cover and use based information and topography is keyed to the DNR/USGS base map. All of the soils related data is keyed to the soils base (which was interpreted and mapped by the SCS from nonrectified aerial photos, so there is some distortion at the edges of each photo frame). The existing land use, sewer and water line maps are keyed to the lot line base map.

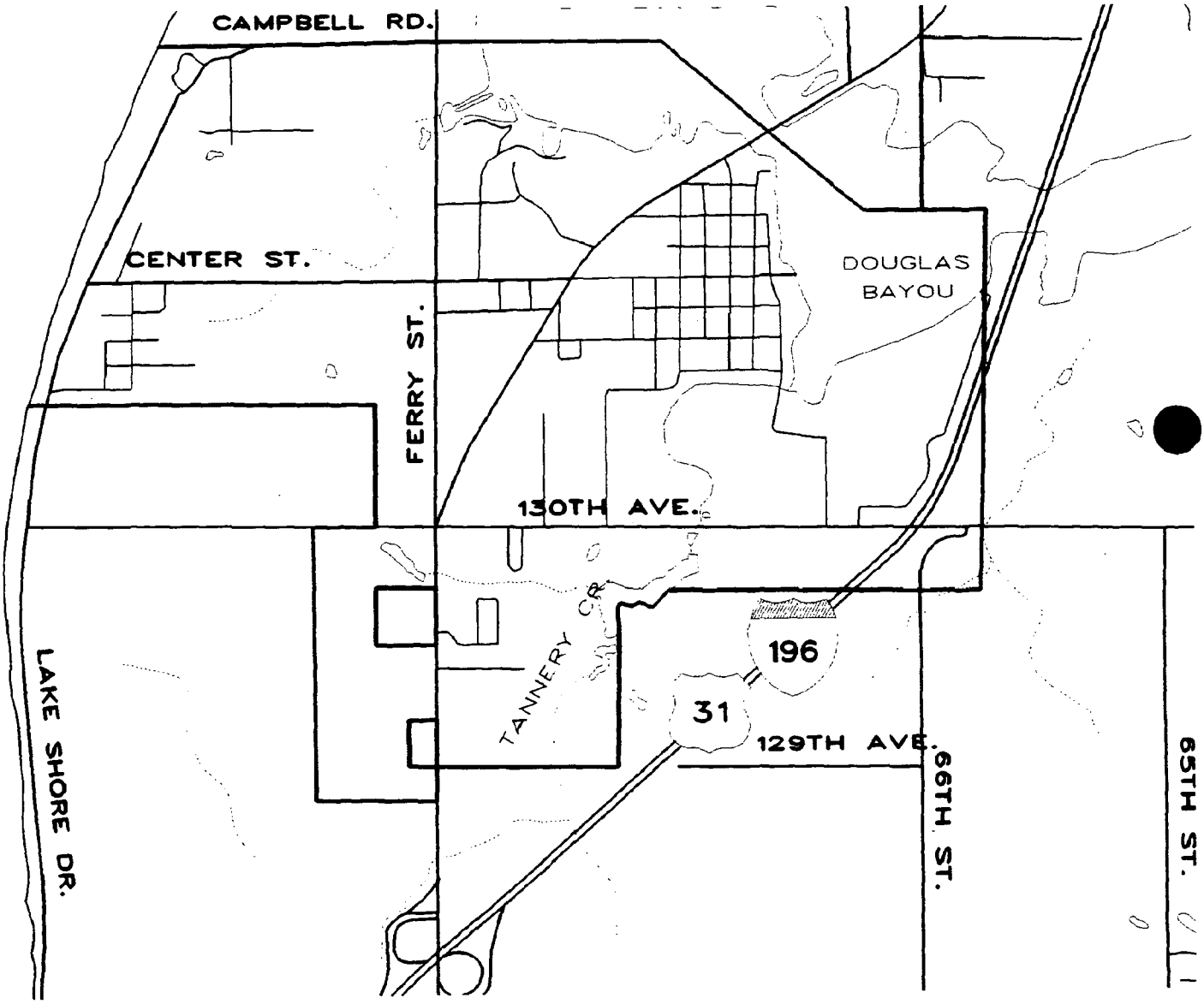
A transparent copy of the DNR/USGS base map and the lot line base map follow. These can be overlaid on any of the maps in this Plan, but the "fit" will be best when overlaying information that it was used as the base for. Please note that the extent of the Kalamazoo River on each base is noticeably different and is related to the water levels at the time the inventory or survey was conducted. On the maps showing all of Saugatuck Township, we have "corrected" the DNR/USGS base map to include Silver Lake, which is merely shown as a wetland (not an open water body) on USGS maps. A transparency can easily be made by photocopying any of these maps in order to overlay several levels of information. Using C-Map on a color monitor, up to ten levels of information can be overlaid on the screen at once, including "zooming" in on any area first (e.g. as would be desirable when examining a specific parcel).

While the accuracy of all of this data is very satisfactory for land use planning purposes (especially when contrasted with traditional techniques), none of it is sufficiently detailed to be absolutely reliable at the parcel level. As a result, detailed site analyses of soils, topography, drainage, etc. are still necessary any time specific site designs are being prepared.

All computerized data is on file locally and accessible via C-Map for local use and updating. Contact the zoning administrator or clerk for further information.



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66TH ST.
129TH AVE.
31
196
TANNERY CR.
130TH AVE.
FERRY ST.
DOUGLAS BAYOU
CENTER ST.
CAMPBELL RD.
LAKE SHORE DR.

Chapter 1

GOALS, OBJECTIVES, & POLICIES: THE VILLAGE OF DOUGLAS POLICY PLAN

Goals, objectives, and policies are the foundation of a comprehensive plan. They address the key problems and opportunities of a community and help establish a direction and strategies for future community development and growth. Goals establish general direction, objectives represent tasks to be pursued, and policies are decision guides. The goals, objectives, and policies embodied in this plan were prepared through an extensive process of leadership surveys, public opinion surveys, meetings with local officials, and town meetings.

The first step in this process was a survey of area leaders– including members of the Village Planning Commission, Village Council, prominent members of the private sector, and other citizens identified in the individual surveys. Leaders were asked their views on the major problems and opportunities facing the Village and the tri-community area, and the results were tabulated and presented to Village officials. These results served as the basis for initiating a public opinion survey.

Citizen views on local planning issues were obtained through public opinion surveys mailed to every property owner in the Village and distributed in each rental complex. Survey questions were prepared for the Village through consultations with the Village Planning Commission and Village Council. Dr. Brent Steel, Oakland University, conducted and tabulated the survey.

The response rate of 47% in Douglas was very high considering the length (about 1 hour completion time) and type of survey and thus responses probably represent the majority view. Most respondents were homeowners in their mid-fifties, registered to vote, who are long-term residents and plan to live in the area for ten or more years. Survey results are shown in Appendix A.

Results of the citizen opinion survey and leadership survey were used to identify issues for discussion at the first town meeting. This meeting was a "futuring" session where participants were asked to imagine how they would like the community to be in the year 2000. Participants were separated into groups and asked to prepare of list of their "prouds" and "sorries" in Douglas, and things from the past which they would like to preserve. The lists were compared and then all engaged in an imaging exercise where groups were established according to topic area and were asked to imagine that element of the Douglas in the year 2000. This futuring process identified key issues and community elements which were pulled together to form a vision and direction for the Village in the year 2000.

A draft policy plan, with defined goals and objectives, was then prepared based on this futuring process and the survey results. The draft was refined through a series of meetings with local officials and then presented to Village citizens in a second town meeting. Citizen comments were reviewed by Village officials and incorporated into the policy plan.

Following completion of the draft policy plan, data and trends in the Village were analyzed. This analysis supported the direction of the policy plan and was first evaluated by the Village Planning Commission, and then by Village citizens at the third town meeting. Next, key elements of the plan and proposed strategies to carry it out were first reviewed by the Village Planning Commission, and then by Village citizens at the fourth and final town meeting.

These goals and policies also look beyond local boundaries to the issues which affect the region. This was accomplished through the joint comprehensive planning process, where representatives of the City of Saugatuck and Saugatuck Township participated in the preparation of joint goals and policies for the region. Thus, these goals and policies are premised on a pledge to mutually cooperate in guiding development consistent with the adopted goals and objectives of the Joint Plan.

Thus, the broad based input of area officials, leaders, and citizens, plus detailed analysis of local trends and land use characteristics have formed the goals, objectives, and policies that comprise the policy portion of this comprehensive plan. These goals and policies will serve

as a guide for land use and infrastructure decisions in the Village of Douglas. With time, some elements may need to be changed, others added, and still others removed from the list. Before amendatory action is taken, however, the impact of the proposed changes should be considered comprehensively in relation to the entire plan, and the joint plan. It is intended that the goals and policies be consulted whenever considering future land use decisions.

VILLAGE CHARACTER

Goal: Retain and enhance the quiet, scenic, and small town character of the Village.

Policy: Encourage new land uses and densities/intensities of development which are consistent with and complement the character, economic base, and image of the area, and which are sited consistent with this plan and zoning regulations.

Policy: Promote site planning and design of new development which is consistent with the established character of the Village and compatible with existing neighborhoods.

Objective: Improve the visual appearance of entrances into the Village through landscape designs, signs, and land development which promote the vitality and character of the Village, without unnecessary clutter or safety hazards.

Objective: Explore the possibility of establishing a sign ordinance which is consistent with the City of Saugatuck and Saugatuck Township.

Policy: Encourage the preservation and restoration of historically significant structures.

Policy: Discourage designs which would block significant views and vistas.

Policy: Encourage traditional American architectural design.

Policy: Manage the trees lining Village streets to provide a continuous green canopy.

Policy: Increase enforcement of existing ordinances and regulations to better preserve the established character of the Village and promote official goals, objectives and policies.

Policy: Preserve wetlands, woodlots, and other wildlife areas wherever feasible.

GROWTH MANAGEMENT

Goal: Guide development in a manner which is orderly, consistent with the planned expansion of public services and facilities, and strives to preserve the scenic beauty, foster the wise use of natural resources, protect environmentally sensitive areas, and enhance the special character of each community.

Policy: Encourage development in locations which are consistent with the capacity of existing and planned public services and facilities, and are cost effective in relation to service extensions.

Policy: Review all plans by other public entities for expansion and improvement of existing road and street networks for impacts on growth patterns and for consistency with the goals, objectives, and policies of this plan.

Policy: Consider the impact of land use planning and zoning changes on Saugatuck and Saugatuck Township, and discuss proposed changes with the affected jurisdiction(s) prior to making such changes. A common procedure for such communication shall be established and followed.

LAND USE & COMMUNITY FACILITIES

Goal: Promote the balanced, efficient, and economical use of land in a manner which minimizes land use conflicts within and across municipal borders, and provides for a wide range of land uses in appropriate locations to meet the diverse needs of area residents.

Policy: Insure compatible land use planning and zoning across municipal borders and minimize land use conflicts by coordinating planning and zoning, separating incompatible uses and requiring buffers where necessary.

Policy: Discourage sprawl and scattered development through planned expansion of roads and public utilities and through zoning regulations which limit intensive development to areas where adequate public services are available.

Policy: Provide for necessary community facilities (i.e. schools, garages, fire halls, etc.)

consistent with this plan and capital improvement programming.

Policy: Coordinate Capital Improvement Programming with the City of Saugatuck and Village of Douglas.

Policy: Encourage approaches to site design which take natural features of the property, such as soils, topography, hydrology, and natural vegetation, into account and which use the land most effectively and efficiently by maximizing open space, preserving scenic vistas, conserving energy, and any other public policies identified in this plan.

Policy: Advise developers during site plan review to contact the State Archaeologist, Bureau of History (517-373-6358) to determine if the project may affect a known archaeological site.

ECONOMIC DEVELOPMENT

Goal: Strengthen and expand upon the area's economic base through strategies which attract new businesses, strengthen existing businesses, and enhance the tourism potential of the area consistent with the character of the Village and its ability to provide needed public services.

Policy: Identify potential sites for industrial development and alternative means of financing necessary public improvements and marketing of the sites (i.e. tax increment financing, special assessments, state grants and loans, etc.)

Policy: Support efforts to foster tourism by preserving the scenic beauty of the environment, expanding recreation opportunities, improving tourist attractions, and preparing promotional materials which highlight the attractions of the Village.

Policy: Promote better communication and cooperation between the public and private sector.

COMMERCIAL

Goal: Encourage high quality commercial development in appropriate locations which serves the current and future needs of residents and tourists.

Policy: Encourage new commercial development to locate adjacent to existing commercial areas.

Policy: Encourage a compatible and desirable mix of commercial uses, including similarity in the height and design of storefronts.

Policy: Encourage the design and location of neighborhood commercial centers in a manner which complements and does not conflict with adjoining residential areas.

Policy: Promote the development of small, commercial centers off of major roads, rather than lot by lot commercial strips.

Policy: Discourage unsafe and unsightly strip commercial development through design and landscaping requirements such as berms, planting, clustered shopping areas, and/or shared access.

Policy: Improve the quality, vitality, and value of Village business districts through sign regulations which control the design and location of signs.

Policy: Avoid separate parking lots for each business where feasible and encourage centrally placed parking lots which serve several businesses.

DOWNTOWN DOUGLAS

Goal: Improve the quality, vitality, and appearance of downtown Douglas.

Policy: Promote efforts to revitalize the downtown, such as remodelling of storefronts, improved storefront displays, preservation of open space, and attractive landscaping.

Objective: Pursue state and local programs aimed at planning, organizing, and financing downtown revitalization projects, such as a Downtown Development Authority and the Main Street program.

INDUSTRIAL

Goal: Increase the amount of non-polluting light industry in the area to offer year-round employment opportunities to the Douglas workforce, without damaging the environment, spoiling the scenic beauty of the area, or

overburdening local roads, utilities, or other public services.

Policy: Encourage new industries to locate contiguous to existing industrial areas and to cluster in small industrial parks which conform to the design guidelines contained in this plan and local zoning regulations.

Policy: Provide land for industrial uses in locations along major thoroughfares, with existing or planned sewer, water, electric, and solid waste disposal services to minimize service costs and negative impacts on other land uses.

Policy: Implement site plan requirements for light industries which are designed to incorporate generous amounts of open space, attractive landscaping, and buffering from adjacent non-industrial uses.

Policy: Require the separation of industrial sites from residential areas through buffers made up of any combination of parking, commercial uses, parks, parkways, or open space.

HOUSING/RESIDENTIAL

Goal: Encourage a variety of residential types in a wide range of prices which is consistent with the needs of a changing population and compatible with the character of existing residences in the vicinity.

Policy: Explore alternative measures to reduce housing costs and make home ownership more affordable, such as zoning regulations and other programs which are designed to reduce the cost of constructing new housing.

Policy: Discourage the development of high intensity residential uses along the waterfront.

Policy: Provide land through zoning for garden apartments, duplexes, and medium density single family residential uses near the Village core.

Policy: Allow only quiet, low traffic, low intensity home occupations in residential areas to preserve their stability and tranquility.

Policy: Discourage the conversion of single family dwellings to multiple family dwellings to preserve the stability of existing neighborhoods.

Policy: Control the operation of bed and breakfast businesses through special zoning regulations to preserve the character and stability of existing neighborhoods.

Policy: Provide street lights and sidewalks in residential areas where there is a demonstrated need and according to the ability of residents to finance such improvements.

Objective: Adopt and enforce a basic property maintenance code and building code.

Objective: Improve residential areas according to an identified need and municipal means to finance such improvements.

Objective: Apply for housing rehabilitation grant funds and explore the possibility of establishing a revolving loan fund for housing rehabilitation with such funds.

SPECIAL ENVIRONMENTS & OPEN SPACE

Goal: Protect special environments and open space, including but not limited to sand dunes, wetlands, and critical wildlife habitat, from the harmful effects of incompatible development activity by limiting the type and intensity of land development in those areas.

Objective: Identify development limitations on special environments through a tiered classification system which classifies these environments based on their value to the ecosystem, unique attributes, the presence of endangered plant and wildlife species, and other characteristics deemed significant.

Policy: Encourage acquisition of special environments of significant public value by public agencies or nonprofit conservancy organizations for the purposes of preservation.

Policy: Require development projects deemed appropriate in and adjacent to special environments to mitigate any negative impacts on such environments.

Objective: Devise regulations through zoning and site plan review for land development in special environments which permit development in a manner consistent with protection objectives and which complement state and federal regulations for special environments.

WATERFRONT

Goal: Protect and enhance the natural aesthetic values and recreation potential of all waterfront areas for the enjoyment of area citizens.

Policy: Promote the preservation of open space and natural areas, as well as limited, carefully planned development along the Kalamazoo River, Kalamazoo Lake, Lake Michigan and connecting streams, creeks, and drainageways to protect and enhance the scenic beauty of these waterfront areas, and permit the continuity of these existing open spaces to remain.

Policy: Some waterfront lands may be developed to meet residential and commercial needs, enhance local tax base, and contribute to paying for local public service costs associated with their use and development, consistent with environmental protection policies in this plan, where such development would contribute to local quality of life.

Policy: Maximize public access to the water, both physically and visually and identify scenic vistas which the Village would like to preserve.

Policy: Acquire scenic easements wherever public values dictate the maintenance of visual access to the waterfront and the property is not available for purchase.

Policy: Limit the height and intensity of new development along waterfront areas to preserve visual access and the natural beauty of the waterfront for the broader public.

Policy: Explore opportunities to convert street ends which abut water bodies for public access to the water for fishing, viewing, and launching of small water crafts.

RECREATION

Goal: Enhance the well-being of area residents by providing a variety of opportunities for relaxation, rest, activity, and education through a well balanced system of private and public park and recreational facilities and activities which serve identified needs of area residents.

Objective: Identify and explore opportunities to cooperate with other jurisdictions and agencies, including Allegan County and the Department of Natural Resources Recreation Division, on recreation projects which would benefit area residents and strengthen the tourism industry.

Objective: Examine the feasibility of, and establish if feasible, a jointly owned and operated community center to serve residents of all ages in all three communities.

Objective: Examine the feasibility of expanding low cost opportunities for public beach and campground facilities for area citizens with boat launching sites, bike paths, cross-country ski trails, and docks for shore fishing.

Objective: Develop a system of cross-country ski trails together with the Village of Douglas, the City of Saugatuck, and other jurisdictions/agencies if possible, through the use of local funds, grants and loans, and capital improvement programming.

Policy: Encourage local government participation in activities designed to enhance the area's seasonal festivals.

Policy: Retain, maintain, and improve all existing publicly owned parks so that they continue to meet the diverse recreation needs of area citizens and tourists.

Objective: Investigate developing a joint public marina and launch facility where federal and state funding is available to assist with financing such a venture.

TRANSPORTATION

Goal: Maintain a safe, effective, and efficient road network and improve roads to promote growth in a way that is consistent with land use goals, objectives and policies.

Objective: Survey the transportation network and identify need for maintenance and improvements.

Objective: Prepare a capital improvement budget for financing transportation maintenance and improvements.

Objective: Prepare a capital improvements program to schedule and prioritize improvements and maintenance.

Policy: Implement traffic controls and design features that will increase the efficiency and safety of major arterials, including but not limited to: traffic signals, deceleration lanes, limiting driveways, minimum standards for driveway spacing, uniform sign regulations, shared or alternate access, left and right turn lanes, and speed limit adjustments.

Goal: Encourage a wide variety of transportation means, such as walking, biking, and public transportation, to meet the diverse needs of area residents.

Objective: Develop an areawide bikepath through local funds, grants and loans, and capital improvement programming.

Policy: Promote pedestrian and bike travel through a coordinated network of bikepaths, trails, and sidewalks.

Policy: Maintain the sidewalk system and require developers to provide sidewalks in appropriate locations through subdivision regulations.

Policy: Promote regularly scheduled, affordable, and dependable public transportation to increase the mobility and quality of life of those who depend on public transportation.

Objective: Encourage expansion of the interurban system consistent with municipal means to finance the increased service and an identified public need.

WATER AND SEWER

Goal: Insure a safe and adequate water supply for the area, and environmentally sound sewage treatment, which are efficiently provided and cost effective.

Policy: Provide a reliable supply of safe, clean, and good tasting drinking water.

Policy: Minimize the potential for groundwater contamination through planning and zoning which is consistent with the capacity and limitations of the land and available services.

Objective: Upgrade and provide adequate mains and lines within the existing sewer and water service.

Objective: Devise alternative mechanisms for financing sewer and water expansions which are financially sound and equitable.

Objective: Promote a joint agreement with the City of Saugatuck and Saugatuck Township to plan and implement areawide sewer and water service, including full participation by each in the Kalamazoo Lake Sewer & Water Authority.

Objective: Investigate refashioning the Kalamazoo Lake Sewer and Water Authority into an independent authority, in order to insure that the needs of area citizen's for quality utility services are met.

Policy: Insure that the expansion of sewer and water service into an area is consistent with the planned intensity of land use for that area, scheduled when affordable, and implemented when necessary to meet an identified need in the area rather than on a speculative basis.

POLICE, FIRE, & EMERGENCY SERVICES

Goal: Provide police, fire, and emergency services consistent with a public need and the ability to finance improvements in the most cost effective manner.

Policy: Consolidate police, fire, and other emergency services across the three communities to eliminate overlap in service and expenditures and improve service delivery.

Objective: Evaluate the feasibility of 24 hour medical service which serves all three jurisdictions to be provided by a public or private entity.

SOCIAL SERVICES

Goal: Promote the availability of necessary social services to meet identified needs of area residents.

Objective: Explore the possibility of establishing support programs for older adults through the use of volunteers for assistance with household chores, personal care, and home repair to help them remain independent, shorten hospital stays, and lower health care costs.

Policy: Support efforts to establish community day care center(s) in appropriate locations to provide quality and affordable day care to working parents.

Policy: Provide those social services which are efficient to provide at the local level to meet the needs of area residents.

WASTE MANAGEMENT

Goal: Insure the safe, effective, and efficient disposal of solid waste and toxic substances.

Policy: Encourage the reduction of solid waste through recycling, composting, and waste-to-energy projects.

Policy: Manage disposal of solid waste and location of solid waste facilities in accordance with the Allegan County Solid Waste Management Plan prepared under PA 641 of 1978.

Objective: Adopt regulations for on-site storage and transportation of hazardous waste which require:

- Secondary containment for on-site storage of hazardous waste;
- No transfer of hazardous waste over open ground;
- Arrangements for inspection of, and monitoring underground storage tanks;
- Existing underground storage tanks must provide spill protection around the fill pipe by 1998 in accordance with 1988 EPA standards.
- All existing underground storage tanks must install leak detection systems within 5 years in accordance with 1988 EPA standards;

Objective: Encourage the development and use of biodegradable containers.

ENERGY

Goal: Promote site design and building which is energy efficient and encourage energy conservation through good land use planning and wise public building management.

Objective: Prepare energy guidelines or standards which address landscaping, solar access, solar energy systems, sidewalks, subdivision layout, proximity to goods and services, etc., and encourage or implement these through zoning and subdivision regulations.

Objective: Establish an educational program (i.e. "energy awareness week") in cooperation with the local school system.

Policy: Require developers to provide sidewalks in appropriate locations through subdivision regulations.

Policy: Encourage higher density residential development near areas with shopping and services to limit the number and length of trips generated from that development.

Chapter 2

DEMOGRAPHICS

POPULATION SIZE

The population of the Village of Douglas has more than doubled since 1950. This represents a 112% increase from 1950 to 1980, and a 17% increase since 1970 (see Table 2.1). There is some skepticism over 1986 Census estimates, which show a 5% decline in Village population. Current trends and projections indicate population growth, rather than decline, and 1990 Census estimates will almost certainly reveal population growth.

SEASONAL POPULATION

The population of the each community in the tri-community area swells during the summer when seasonal residents and tourists return. The 1980 census estimates that 23% (123) of the Village's 529 total housing units are vacant, seasonal, and migratory. Nearly all of these (108) are detached single family units.

An engineering study prepared by Fishbeck, Thompson, Carr & Huber for the Kalamazoo Lake Sewer & Water Authority (KLSWA) estimates that the total tri-community area population is comprised of one-third seasonal residents and two-thirds permanent residents and that the weekend daytime population during the summer is about 2,500 persons. Although sewer and water demand typically grows with population, the study found that demand for sewer and water in the tri-community area increased about 30% between 1980-1986, whereas population increased by an average of 20%. This reflects the impact of the seasonal and tourist population on local services.

HOUSEHOLDS AND AVERAGE HOUSEHOLD SIZE

Until recently, the average household size in the United States has continued to shrink, due to an aging population, higher divorce rates, postponed marriages, and lower birth rates. In keeping with state and national trends, the average household size in the tri-community area declined dramatically, from 2.98 in 1960 to 2.39 in 1980. The average household size in the Village in 1980 was 2.44. Smaller household size means a greater number of households. If the average household size in 1960 held true today, there would be about 300 fewer individual households in the area.

The number of households is an excellent gauge of the demand for land and services. As household size decreases, the additional households create further demand for land, housing, transportation, and public utilities. Although household size has declined substantially over the past few decades, national trends suggest that it will soon cease its decline. Nationwide the average household size has reached a plateau and state demographers predict that Michigan will follow suit.

AGE DISTRIBUTION

Historical age cohort data is available on a regional basis and a comparison of age cohorts in the tri-community area between 1960 and 1980 reveals a large drop in the proportion of young children, with a corresponding increase in the childbearing cohort (20 to 30 year olds) and 45-54 year olds. The proportion of retirees to the total population, however, has remained

TABLE 2.1
POPULATION (1950-1980)

COMMUNITY	1950	1960	1970	1980	CHANGE
Saugatuck	770	927	1,022	1,079	40%
Saugatuck Township	845	1,133	1,254	1,753	107%
Douglas	447	602	813	948	112%
AREAWIDE	2,062	2,662	3,089	3,780	83%

Source: U.S. Census Bureau

FIGURE 2.1

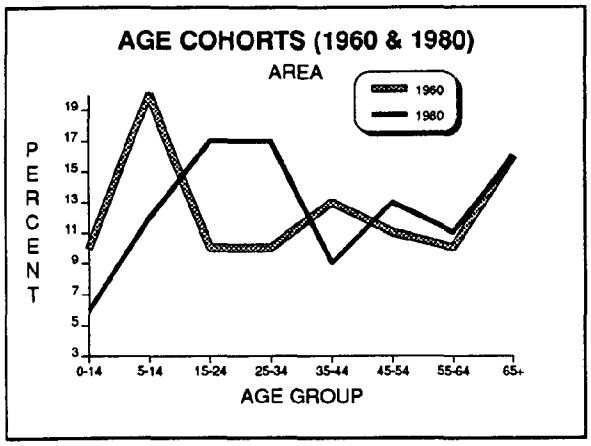
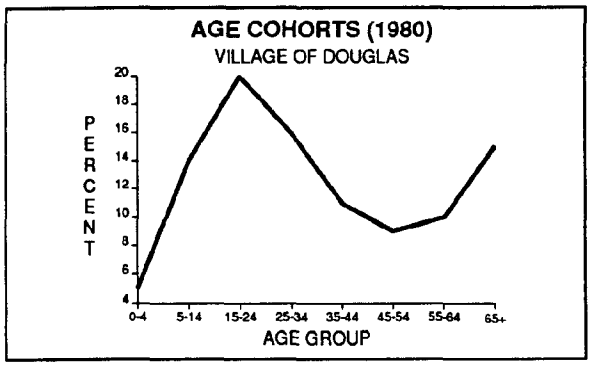


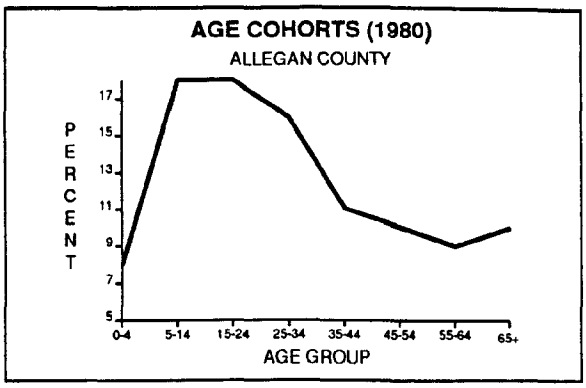
FIGURE 2.3



constant (see Figure 2.1). This is out of keeping with statewide trends and suggests that the area has experienced high in-migration of retirees through time. Retirees are attracted by the area's special resort quality, small town character, and scenic beauty.

Figures 2.2 and 2.3 depict the 1980 age cohort distribution in the Village of Douglas, as compared to Allegan County. In accordance with countywide trends, the Village has a small cohort of infants and toddlers. The cohort distribution of the Village of Douglas resembles that

FIGURE 2.2



of the County, although the Village has a much lower proportion of children aged 5-14, and a much higher proportion of senior citizens. In regional terms, the Village comprises 24% of the area's senior population; the City of Saugatuck comprises 37% (despite its small size); and the Township, 39%.

EDUCATION

The Village of Douglas has a well educated citizenry. An analysis of those aged 25 and older in 1980 reveals that 35.9% have completed 1 or more years of college (see Figure 2.4). Table 2.2 contains complete information on the educational status of persons 25 years old and over by jurisdiction.

SCHOOL ENROLLMENTS

The Saugatuck Public School District serves the Village of Douglas (see Map 2.1). School enrollment data for Saugatuck High School and Douglas Elementary, the two schools which comprise the Saugatuck Public School system, illustrate the impact of areawide demographic trends on the school system. Between 1973 and 1989, enrollments in the

TABLE 2.2
EDUCATIONAL STATUS
PERSONS 25 YEARS OLD AND OVER

	SAUGATUCK TOWNSHIP	SAUGATUCK CITY	DOUGLAS	AREA
Elementary	185	57	73	315
1-3 years HS	199	97	84	380
4 years HS	373	276	213	862
1-3 years College	157	137	123	417
4+ years College	188	196	84	468

FIGURE 2.4

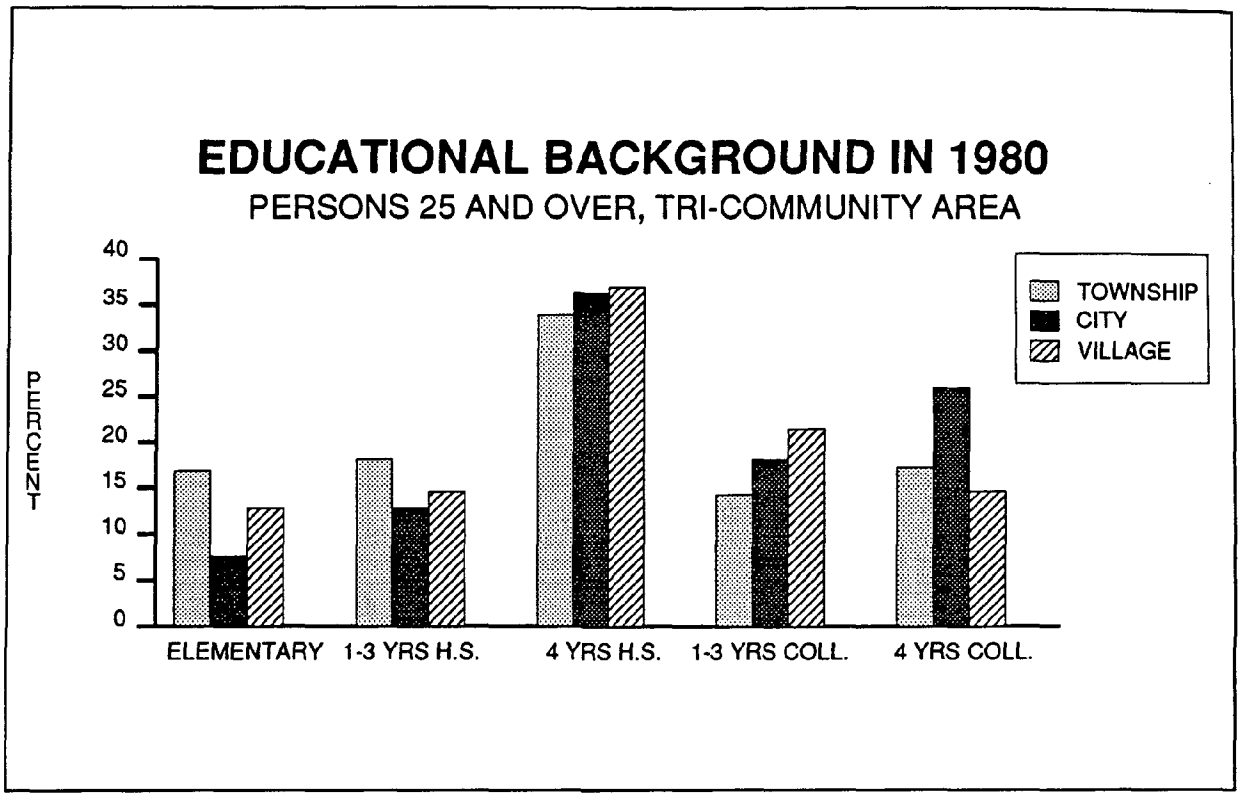
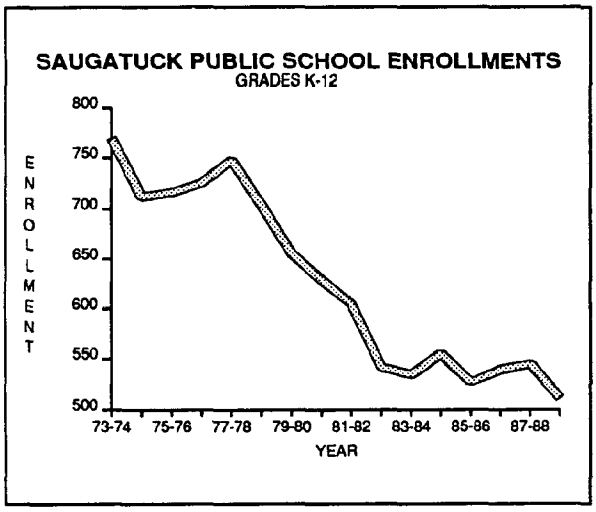


FIGURE 2.5



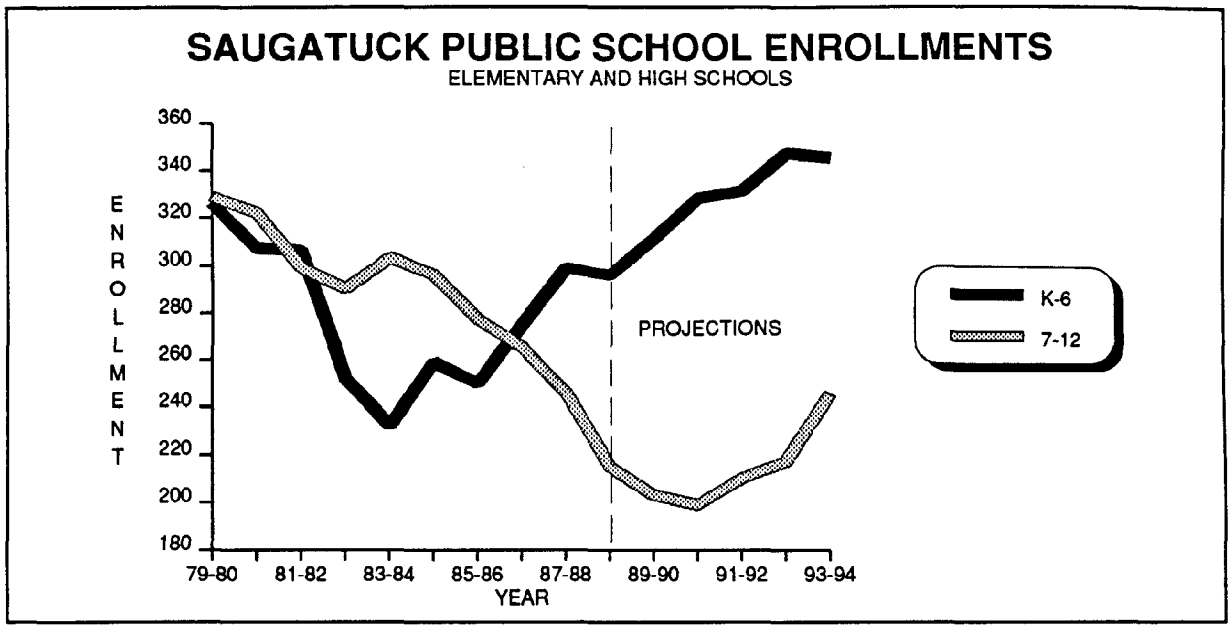
Saugatuck Public School system, grades K-12, have declined by 34% (see Figure 2.5). When divided into elementary and high school enrollments, however, the data reveal a 17% increase in elementary school enrollments since the 1983-84 school year, and a 28% decrease in high school enrollments over the same period (see Figure 2.6). School enrollment data appears in Table 2.3.

Future elementary and high school enrollments were projected by the Saugatuck Public School system. These projections show an upturn in high school enrollments in 1991 with a

TABLE 2.3
SCHOOL ENROLLMENTS
SAUGATUCK PUBLIC SCHOOL DISTRICT

YEAR	K-6	7-12	TOTAL
79-80	326	329	655
80-81	307	322	629
81-82	306	299	605
82-83	252	290	542
83-84	232	303	535
84-85	259	296	555
85-86	250	277	527
86-87	275	265	540
87-88	299	246	545
88-89	296	215	511

FIGURE 2.6



continued climb in elementary school enrollments (see Figure 2.6). Total projected 1994 enrollments, however, are still 23% less than 1973-74 levels.

FUTURE TRENDS

If local demographic trends follow those projected for the county as they have in the past, then the overall proportion of retirees in the area will expand much faster than that of school age children. The Michigan Department of Management and Budget projects that Allegan County's school age population will grow only 3% by the year 2000, while senior citizens will increase by 30%. The area's small cohort of infants and children, large cohort of middle aged to elderly, and high rate of retiree in-migration suggest this will be equally true in the Village.

These figures reveal the need to plan for the needs of an aging community, as well as initiate efforts to attract families with children into the area. The large cohort of individuals in their childbearing years in the Village and Township should result in a natural increase in young children, but because couples are having fewer children, school enrollments will probably expand only slightly. The Saugatuck Public School system is not likely to meet its potential capacity for enrollments unless a sequence of events or actions attracts new families with young children into the area. Two key factors will be the availability of affordable housing and nearby employment opportunities. In the meantime, schools must use space and resources efficiently as they experience tighter budgets and small enrollments.

Many of the demographic characteristics shown here have been analyzed based on 1980 census information. These trends should be updated when the 1990 census information is available. See Appendix B for more demographic information from the 1980 census.

N

MAP 2.1 PUBLIC SCHOOL DISTRICTS

Saugatuck

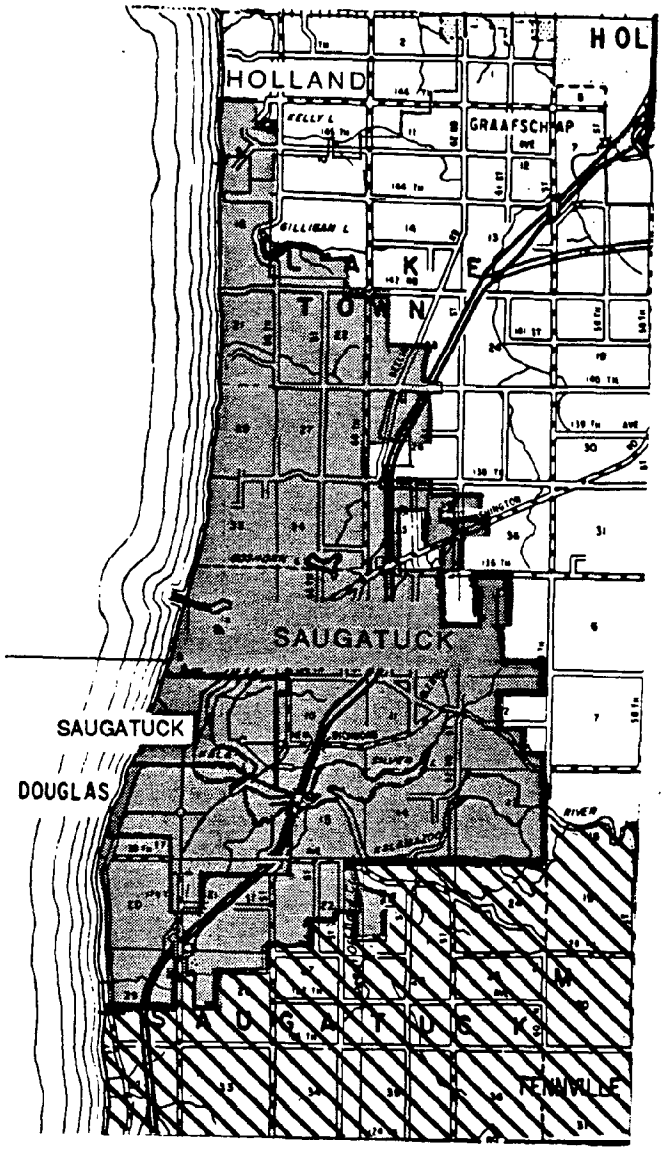
Fennville

Hamilton

DATA SOURCE: Respective School Districts

Planning & Zoning Center Inc, Lansing, MI

August 1989



Chapter 3

THE ECONOMY

ECONOMIC BASE

Tourism

Tourism fuels the economy of the tri-community area, with associated boating, restaurant, lodging, and strong retail sectors. Of the three jurisdictions, the City of Saugatuck relies most heavily on tourism. The Village of Douglas has boating and lodging facilities which capitalize on tourism, but its commercial sector is primarily oriented towards local clientele. The Township has a small commercial sector which compliments that of the Village, but it is primarily seasonal residential and rural, with a large agricultural area to the south. Although the City of Saugatuck is seen as the resort center of the area, the Village also benefits from and contributes to the tourist trade.

The area's resort flair is defined by: historic buildings—including quaint bed and breakfast inns; the many festivals; outstanding boating; Oval Beach; downtown Saugatuck; sand dunes; large wetlands abounding with wildlife; orchards and specialty farms; and a scenic location on Lake Michigan encompassing Silver, Goshorn, Kalamazoo and Oxbow lakes, and the Kalamazoo River. The area also has a reputation as a cultural center which serves as an artists' retreat. The Ox Bow Art Workshop and the Red Barn theater add to the area's cultural ambience.

Although it is located in Laketown Township, the Saugatuck Dunes State Park serves as another tourist attraction to the tri-community area. The Park offers no camping and thus many visitors stay in the tri-community area. Visitor counts from the Michigan Department of Resources, Parks Division, reveal that the park has increased in popularity since the 70's. Visitor counts performed by the Parks Division show that 47,463 people visited Saugatuck Dunes State Park in FY 1988 a 300% increase in park attendance since 1979, when it attracted only 11,714 visitors.

TABLE 3.1
IMPACT OF TRAVEL ON ALLEGAN COUNTY, 1986

	TOT. TRAVEL EXPENDITURES	TRAVEL GENER. PAYROLL	TRAVEL GENER. EMPLOYMENT	STATE TAX RECEIPTS	LOCAL TAX RECEIPTS
$/Jobs	$42,413,000	$7,689,000	869 jobs	$2,191,000	$363,000
% of State Total	.56%	.49%	.62%	.71%	.49%
% change 1983-86	29.52%	37.87%	18.39%	27.98%	32.48%

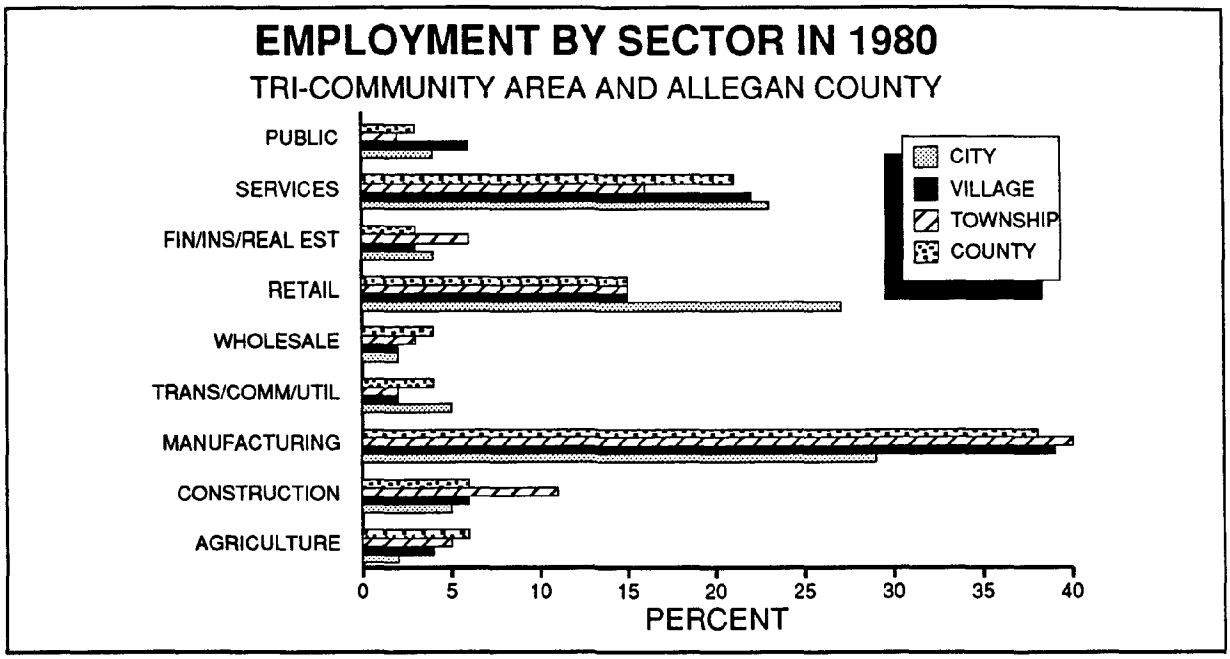
Source: U.S. Travel Data Center, **"The Economic Impact of Travel on Michigan Counties."**

TABLE 3.2
MAJOR EMPLOYERS

	PRODUCT/SERVICE	EMPLOYEES
Hansen Machine	Metal Stampings	43
Haworth	Office Furniture	238
Harbors Health Facility	Nursing Home	78
Enterprise Hinge	Manufacturing	12
Douglas Marine	Marina	21
Tafts Supermarket	Supermarket	32
Paramount Tool Co., Inc.	Machinery	24
Rich Products	Pies	85

Source: Allegan County Promotional Alliance

FIGURE 3.1



How much money does travel and tourism generate in the tri-community area? Although current travel and tourism statistics are not available for the tri-community area, studies conducted for Allegan County reveal the tremendous impact of travel and tourism on local economies in the County. This is especially true for Saugatuck-Douglas– the major resort center in the County. A study prepared for the Michigan Travel Bureau by the U.S. Travel Data Center in 1986 found that travellers spent $42.4 million in Allegan County in 1986, generating $7.7 million for payroll, 869 jobs, $2.1 million in state tax receipts, and $363,000 in local tax receipts. This ranks Allegan County 33rd out of Michigan's 83 counties in travel and tourism revenues. Selected data from this study is reproduced in Table 3.1.

Manufacturing

Manufacturing is central to the year-round stability of the area's economy. Although there

TABLE 3.3
EMPLOYMENT BY INDUSTRY - 1980

	CITY	VILLAGE	TOWNSHIP	AREA	COUNTY
TOTAL	547	433	689	1,669	34,025
Agriculture	9	16	37	62	2,041
Construction	30	27	75	132	2,009
Manufacturing	156	169	274	599	13,033
TCU *	25	10	17	52	1,407
Wholesale Trade	13	7	20	40	1,398
Retail Trade	146	67	106	319	5,017
FIRE **	21	15	39	75	1,126
Services	125	96	107	328	7,105
Public Admin.	22	26	14	62	889

* Transportation, Communicatiion, Utillities
** Finance, Insurance, Real Estate

Source: 1980 U.S. Census of Population, General Social and Economic Characteristics.

TABLE 3.4
EMPLOYMENT BY OCCUPATION - 1980

	CITY	VILLAGE	TOWNSHIP	AREA	COUNTY
TOTAL	547	433	685	1,665	34,025
Manag. & Admin	77	34	43	154	2,315
Prof. Technical	87	62	74	223	3,319
Sales	63	24	83	170	2,696
Clerical	70	45	74	189	4,189
Service	72	73	73	231	4,300
Farm, Fishing	13	13	43	126	1,885
Crafts & Repair	66	70	144	210	5,447
Machine Operators	60	90	120	270	6,129
Laborers, Mat. Moving	39	22	31	92	3,745

Source: 1980 U.S. Census of Population, General Social and Economic Characteristics.

TABLE 3.5
AVERAGE ANNUAL UNEMPLOYMENT RATE

	Tri-Community	County	State
1982	15.2	14.8	15.5
1983	14.7	14.3	14.2
1984	10.8	10.5	11.2
1985	11.3	10.9	9.9
1986	6.5	7.3	8.8
1987	5.8	5.6	8.2
1988	5.2	5.1	7.6

Source: MESC, Bureau of Research & Statistics, Field Analysis Unit

are few manufacturing firms, they provide a high percentage of area jobs. Major area employers are listed in Table 3.2.

Agriculture

Agriculture is another strong component of the area's economic base. Although farms are located in the Township, Census employment information reveal many individuals in agricultural employment in the Village (see Figure 3.1). Rich Products, a major area employer, is an agri-business which was attracted to the region because of its many fruit farms. The future of agri-industry is bright in light of Michigan Department of Commerce efforts to promote and expand food processing industries in the state.

EMPLOYMENT

Table 3.3 breaks down employment by economic sector for the tri-community area and the county in 1980. This information is illustrated in Figure 3.1. Manufacturing employs the most people in each of the three communities. Yet employment in other sectors varies. Thirty-nine percent of the Village of Douglas' labor force is employed in manufacturing. Yet unlike the City, the service sector dominates the retail sector. Service employ 22% of Village workers, with only 15% in the retail sector. Construction (6%) and the public sector (6%) are the fourth largest employers of village residents, and agriculture (4%) is fifth.

Although nearly all of the region's farming occurs in the Township, 1980 employment by sector shows that the proportion of the labor force employed in agriculture in the Township (5%) is low compared to the amount of agricultural activity, and only slightly higher than the Village of Douglas. Many farmers have alternative sources of income outside of farming, causing the census to count them in another employment sector.

Employment by occupation in 1980 is shown in Table 3.4. The highest proportion of workers in Douglas are machine operators, followed by service workers, crafts and repair workers, and professional/technical workers.

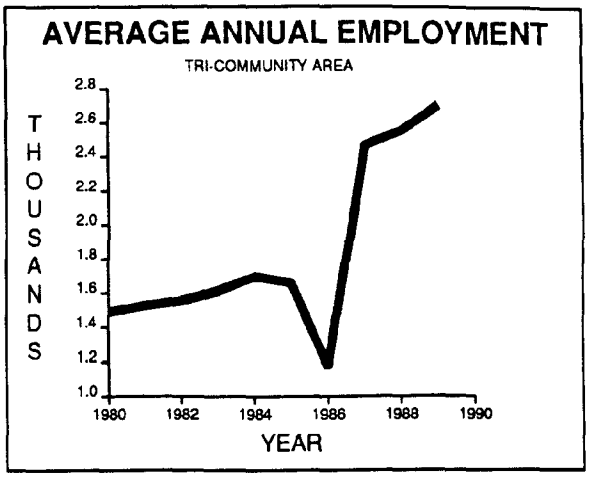
Average Annual Employment and Unemployment

Unemployment has declined dramatically with Michigan's economic growth of the late 80's. Table 3.5 reveals average annual unemployment rates in the area since the last statewide recession. (Employment data is not available for individual communities in the tri-community area. The Michigan Employment Security Commission aggregates it for Saugatuck Township, the Village of Douglas, and the City

of Saugatuck.) The tri-community area has a slightly higher rate of unemployment than Allegan County, although since 1986 the unemployment rate has dipped below that of the state revealing local or regional economic growth.

Average annual employment in the tri-community area bottomed out in 1986. This reflected the loss of American Twisting, which employed about 20 people, and the burning of Broward Marine (about 100 employees) and Brighton Metal (about 10 employees). Yet in 1987, areawide employment jumped dramatically. During that year Broward Marine reopened its doors; Rich Products, Harbor Health Facilities, Paramount Tools and other area businesses increased employment; a number of small businesses and two restaurants opened; and perhaps most significantly, Haworth Corporation expanded adding two new departments. Contributing to this was the state and regional economic boom, and corresponding increases in construction and spending. Figure 3.2 illustrates this trend.

FIGURE 3.2



Seasonal Employment

Local employment increases each summer as tourists flood into the tri-community area. Figure 3.3 reveals the impact of tourism on employment in the tri-community area during the summer months.

The high number of jobs created during the summer months are primarily unskilled jobs in the service/retail sector, especially eating and drinking establishments and various other recreation-oriented uses. Figure 3.4 reveals this explosion in summer employment for tourism-

TABLE 3.6
PER CAPITA INCOME ($), ALLEGAN COUNTY (TOP TEN)

	1979		1985
Saugatuck	9031	Laketown Township	13,013
Laketown Township	8332	Saugatuck	12,631
Holland	8125	Holland	11,608
Gunplain Township	8074	Gunplain Township	10,947
Otsego Township	7437	Otsego Township	10,239
Plainwell	7396	Saugatuck Township	10,228
Saugatuck Township	7286	Douglas	10,150
Allegan Township	7170	Fillmore Township	10,120
Leighton Township	7051	Plainwell	9,886
Fillmore Township	7015	Leighton Township	9,539

Source: 1985 Per Capital Income Estimates, U.S. Census Bureau

TABLE 3.7
INCOME & POVERTY CHARACTERISTICS TRI-COMMUNITY AREA (1980)

	TOWNSHIP	CITY	VILLAGE	COUNTY
Median HH income	16,412	15,182	14,963	17,906
% in poverty	7.1%	8.6%	11.3%	8.0%
Income 200% of poverty level & above	74%	75%	73%	71%

Source: 1980 Census of Population

FIGURE 3.3

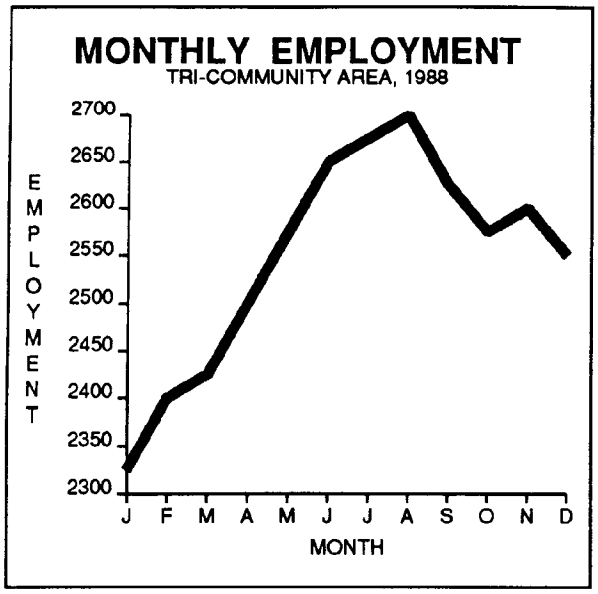


FIGURE 3.4

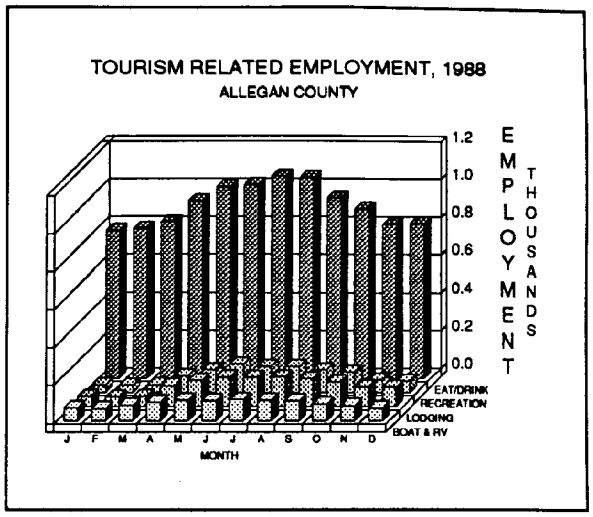
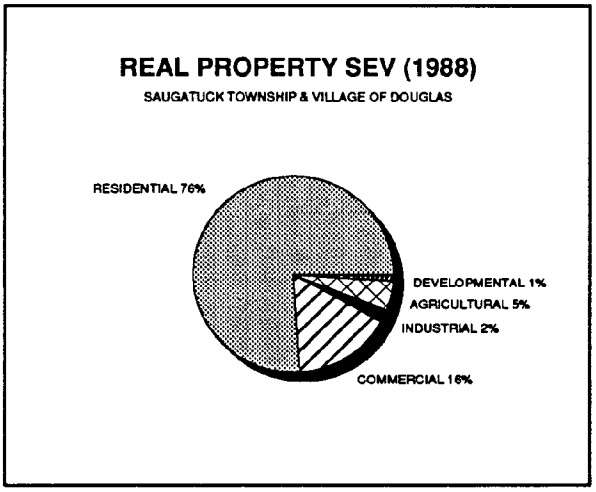


FIGURE 3.5



related industries in Allegan County. This increase creates a high demand for teenage employees. Tri-community area businesses note the difficulty of filling these jobs, and the need to import seasonal labor. This is yet another impact of the demographic make-up of the area (i.e. the low number of teenage children). New industry and affordable housing in the area could attract families with children who, in turn, could staff area businesses during peak summer months.

TAX BASE

Residential uses make up the bulk of the area's tax base. Tax base information is aggregated for the Township and Village of Douglas. In 1988, residential uses comprised 76% of the real property tax base for the Township and Village of Douglas ($43,730,725). Commercial uses comprised 16% ($9,402,800). Agriculture comprised 5% ($2,661,790). Industrial comprised 2% (%1,126,200). Developmental, a recently created category which refers to lands which are assessed at a higher rate due to their high development potential, comprised 1% ($430,733) (see Figure 3.5).

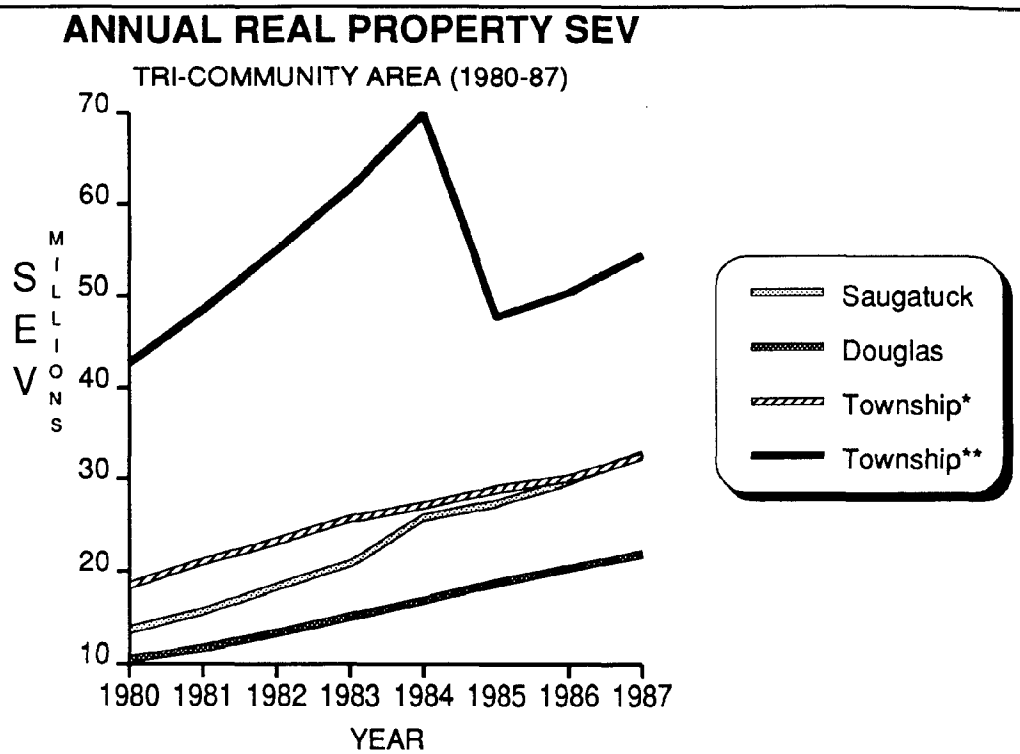
Figure 3.6 illustrates changes in annual real property SEV between 1980 and 1987 for the Village of Douglas, compared to Saugatuck Township and the City of Saugatuck. The figure shows a steady increase in the Village's real property tax base since 1980. The sharp drop in Township SEV is explained by the incorporation of the City of Saugatuck and its corresponding removal from the Township's tax base. More information on annual Sev's and 1988 breakdowns can be found in Appendix B.

INCOME

Between 1979 and 1985, census estimates show a dramatic rise in per capita income in the Village of Douglas— an increase of 47.4%— making it one of the top ten communities in terms of per capita income in Allegan County. Table 3.6 shows this comparison. (Per capita income in 1979 was $7,688 for the state and $6,744 for the county; in 1985 it was $10,902 for the state and $9,346 for the county.)

Table 3.7 reveals selected income and poverty characteristics by jurisdiction in the tri-

FIGURE 3.6

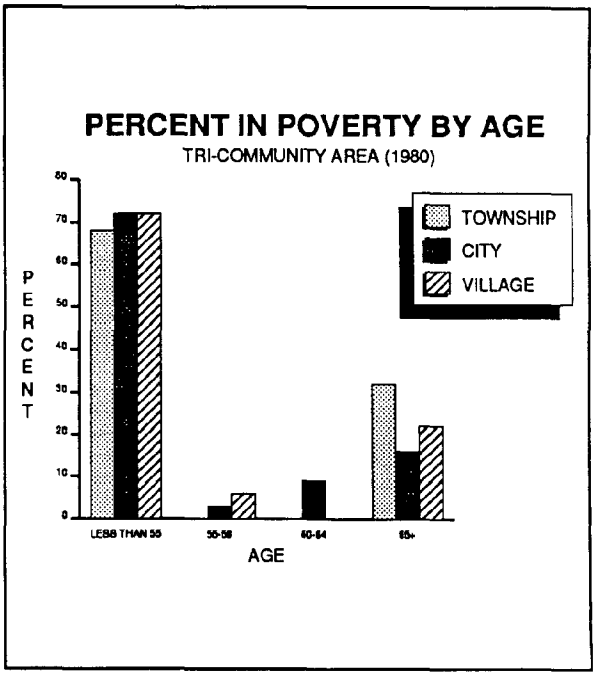


* not including Village(s)
** including Douglas through 1987 and Saugatuck through 1984

community area. Although the per capita income in the area has been consistently higher than that of the county, the median household income is lower. The median household income is the point at which 50% of the households earn more and 50% earn less. This statistic is more representative of local trends as it is less easily distorted by a few high income wage earners.

Poverty data correspond with median household income. As median income goes up, the proportion in poverty goes down. Despite its rapid growth in per capita income, the Village of Douglas has the lowest median household income and the highest percentage of poor in the region. Figure 3.7 reveals the proportion of those in poverty by age. (The poverty level used by the 1980 census in recording this data was an annual income of $3,778 for those under 65, and $3,689 for those 65 and over.) Although the largest number of poor persons are under 55, a high proportion are elderly.

FIGURE 3.7



Chapter 4

NATURAL RESOURCES AND THE ENVIRONMENT

CLIMATE

Weather conditions affect the Village's economic base. Variations in average conditions, especially during the summer months, can cause fluctuations in tourism and outdoor recreation activities, upon which the local economy is dependent. Prevailing winds determine lakeshore and sand dune erosion patterns, which impose limitations on development along the Lake Michigan shore.

Below, in Table 4.1, is relevant climatic information for the area. These conditions generally do not pose limitations on the area's growth except along the Lake Michigan shore, where natural forces can cause rapid and extensive erosion of beaches and sand dunes. The climate is also considered favorable for growing certain fruits, such as apples and blueberries.

GEOLOGY

Douglas is located on the southwestern flank of the Michigan Basin, which is a bedrock feature centered in the middle of the Lower Peninsula. The sandstone and shale bedrock is overlain by glacial deposits from 50 to 400 feet thick. There are no outcroppings of the bedrock and the proximity of the bedrock to the surface of the ground does not impose limitations for normal excavating or construction. Glacial deposits consist primarily of sandy lakebed deposits east of the Lake Border Moraine, a major physiographic formation which is adjacent to Lake Michigan.

TOPOGRAPHY

Most of Douglas is relatively flat, but local variations in elevation of up to 50 feet exist in some places between uplands and the floodplain of the Kalamazoo River, and along the Lake Michigan Shore. The golf course in the northwest part of the Village and Tannery Creek north of Section 21 are areas having steep slopes.

Steep slopes present impressive scenery and pose increased maintenance and construction costs as well as safety risks. This is especially true with unstable landforms such as sand dunes. Generally, slopes exceeding 7% should not be developed intensively, while slopes of more than 12% should not be developed at all because of erosion and storm water runoff problems. On the topographic map (Map 4.1), steep slope areas are indicated by three or more contour lines in close proximity.

DRAINAGE

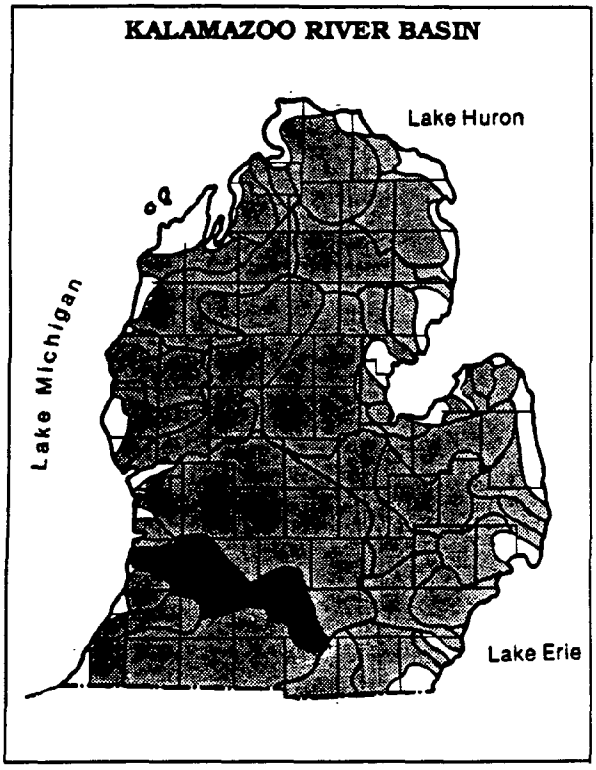
Douglas lies within the Kalamazoo River Basin, which begins near Jackson and extends westward into Saugatuck Township, Douglas and Saugatuck (see Figure 4.1). All of the land in the Village drains into the Kalamazoo River, except for areas directly adjacent to Lake Michigan. Most areas of the Village drain fairly well

TABLE 4.1
SUMMARY OF RELEVANT CLIMATE CONDITIONS

CLIMATE VARIABLES	AVERAGE CONDITION	EXTREME CONDITION
Coldest Months (January-February)	23.3° F - 25.1° F	-11° F - -35° F
Hotest Month (July)	71.5° F	96° F - 106° F
Annual Average Temperature	48.3° F	
Average Rainfall	35.7 inches	
Average Growing Season	153 days	
Average Annual Snowfall	79.7 inches	
Elevation Above Sealevel	590 feet	
Prevailing Winds	Westerly	

Source: USDA Soil Survey, Allegan County

FIGURE 4.1



due to adequate slopes and highly permeable soils. Exceptions are the West Shore golf course area in the northwest part of the Village and Tannery Creek. Watercourses in Douglas are shown on Map 4.2.

FLOODPLAINS

Areas adjacent to creeks, streams and rivers are susceptible to periodic flooding that can cause extensive damage to buildings and can pose a substantial threat to public health and safety. The U.S. Army Corps of Engineers has mapped the boundaries of the 100 year floodplain in Douglas. Those boundaries are denoted by the shaded areas on Map 4.3 and is the area that would be inundated during an Intermediate Regional Flood. The Federal Flood Insurance Program has established guidelines for use and development of floodplain areas. Those regulations indicate that development in floodplains should be restricted to open space, recreational or agricultural uses. Installation of public utilities and permanent construction for residential, commercial or industrial uses should not occur in floodplain areas.

Several homes along Douglas Bayou and small areas of the boat storage and maintenance facilities north of Blue Star Highway on Kalamazoo Lake are the only developments in the floodplain. There is not much floodplain area within the Village, with the West Shore golf course area and Tannery Creek being the only sizeable floodplain areas.

WETLANDS

There are numerous areas within the Village which could be considered wetlands. Most are contiguous to or hydrologically connected to the Kalamazoo River or Tannery Creek. Some are herbaceous and shrub rangelands, which may or may not be considered wetlands, subject to site characteristics. Wetlands are valuable in storing floodwaters and recharging groundwater. They are also habitat for a wide variety of plants and animals.

Because wetlands are a valuable natural resource, they are protected by Public Act 203 of 1979. PA 203 requires that permits be acquired from the Michigan Department of Natural Resources (DNR) prior to altering or filling a regulated wetland. The Wetland Protection Act defines wetlands as *"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 and is contiguous to the Great Lakes, an inland lake or pond, or a river or stream."*

Regulated wetlands include all wetland areas greater than 5 acres or those contiguous to waterways. Wetlands which are hydrologically connected (i.e. via groundwater) to waterways are also regulated. Activities exempted from the provisions of the Act include farming, grazing of animals, farm or stock ponds, lumbering, maintenance of existing nonconforming structures, maintenance or improvement of existing roads and streets within existing rights-of-way, maintenance or operation of pipelines less than six inches in diameter, and maintenance or operation of electric transmission and distribution power lines.

Permits will not be issued if a feasible or prudent alternative to developing a wetland exists. An inventory of wetlands based on the DNR's land use\cover inventory are illustrated on Map 4.4. Table 4.2 shows the land use\cover codes pertaining to regulated wetlands in the area. Herbaceous and shrub rangelands may not actually meet the statutory definition of wetland, so on site inspections will be necessary

to establish whether a wetland indeed exists in such areas.

SOILS

A modern soil survey was completed for Allegan County by the USDA Soil Conservation Service in March, 1987. The soil types present in the Village of Douglas are shown on the map and table in Appendix D. Each soil type has unique characteristics which pose opportunities for some uses and limitations for others. The most important characteristics making the soil suitable or unsuitable for development are limitations on dwellings with basements, limitations on septic tank absorption fields, and suitability for farming. Soil limitations have been classified into three categories, which are described below.

- Slight: Relatively free of limitations or limitations are easily overcome.
- Moderate: Limitations need to be considered, but can be overcome with good management and careful design.
- Severe: Limitations are severe enough to make use questionable.

Approximately half of the soils in Douglas have severe limitations on residential and urban development. The degree of soil limitations reflects the hardship and expense of developing the land.

Basement Limitations

Limitations for dwellings with basements are shown on Map 4.5. Some soils impose severe limitations on basements because of excessive wetness, low strength, excessive slope, or shrink-swell potential. These areas are found primarily in the extreme southern part of the Village, near and within the Felkers Subdivision, in the West Shore golf course area, and along Lakeshore Drive between Center St. and Campbell Rd. Most of these areas are considered severe because of excessive wetness.

TABLE 4.2
LAND COVER CODES FOR PROTECTED WETLANDS IN TRI-COMMUNITY AREA

CODE	DESCRIPTION
31	Herbaceous Rangeland*
32	Shrub Rangeland*
412	Upland Hardwoods
414	Lowland Hardwoods
421	Upland Conifers
429	Lowland Conifers
611	Wooded Swanps
612	Shrub Swamps
621	Marshland Meadow
622	Mud Flats

Source: Michigan DNR Land Cover/Use Classification System
* Wetlands are sometimes, but not always associated with these land cover types.

Septic Limitations

Most of the soils in Douglas impose severe limitations on septic tank absorption fields, while some impose only slight limitations. The remainder are excavated areas or beaches, which are not rated for septic limitations. The permeability of soils in the Village ranges from very poorly drained to excessively drained, with neither one predominant. Map 4.6 shows the septic limitations for the Village. This map suggests the need for municipal sewers to accommodate new development in some areas not presently served, including parts of the Felkers Subdivision and the southeast part of the Village.

The degree of soil limitations reflects the hardship and expense of developing that land for a particular use. Those soils classified as "severe" have varying degrees of development potential based on the nature of the limitation. Map 4.7 provides this more detailed analysis of severe limitations on septic tank absorption fields. The "severe" soils have been categorized as follows:

A. Sandy, moderate to rapid permeability
B. Rapid permeability, wetness and high water table
C. Wet, ponding, heavier (clay) soils, slow permeability
D. Very wet soils, organics, wetlands, floodplains, unable to support septic fields.

Soils in categories B and D are not able to support septic fields because of extreme wetness. Soils in category A are classified as "severe" by the Soil Conservation Service, however the Allegan County Health Department considers them to have only moderate limitations for septic systems. They can be made suitable for development by increasing the distance between the septic system and the water table. Soils with moderate and slight limitations also appear on Map 4.7. Soils that are most suitable for development, with respect to basement and septic limitations, are shown in Map 4.8.

Portions of the Felkers Subdivision in Douglas have been designated by the Allegan County Health Department as unsuitable for new development without sewers.(see Map 4.7a)

Standards for Septic Systems

The Allegan County Health Department has established certain standards for septic systems. These standards apply somewhat different site characteristics when determining the degree of limitations for septic systems, compared to the Soil Conservation Service approach, which focuses on soil types and slope. Below is a review of these Health Department standards by development type.

Single Family Residential
Before a permit is considered, there must be at least four feet of dry soils between the bottom of the septic system and the water table. In addition, there must be one foot between the existing ground surface and the seasonal water table, and two feet between the existing ground surface and the clay. Special permits will be considered only if the site size is at least two acres and the septic system is put on top of four feet of sand. Residential sites that fail to meet those requirements, such as the small lots in Felkers Subdivision, will not be issued septic system permits.

All Other Residential, Plus Commercial
These fall under State guidelines of at least two feet between the existing ground surface and the water table and four feet of dry soil between the bottom of the septic system and the water table. No special permits are issued for these uses. Most of the land along the entire length of Blue Star Highway not served by public utilities does not meet these State standards and has been denied commercial permits. Public sewers will be necessary.

Hydric Soils

Hydric soils are another limitation on development. They are very poorly drained, saturate easily and retain large quantities of water. If artificially drained, they are often suitable for farmland use. Map 4.9 shows where these soils are. In Douglas, hydric soils are found near watercourses and correspond to present or former wetlands. Residential, commercial and industrial development in areas containing hydric soils should be discouraged.

GROUNDWATER

Groundwater is an unseen resource and is therefore particularly vulnerable to mismanagement and contamination. Prior to the 1980's, little was known about groundwater contamination in Michigan, and some startling facts have recently been revealed.

The leading causes of groundwater contamination in Michigan are from small businesses and agriculture. More than 50% of all contamination comes from small businesses that use organic solvents, such as benzene, toluene and xylene, and heavy metals, such as lead, chromium, and zinc. The origin of the problem stems from careless storage and handling of hazardous substances. On paved surfaces where hazardous materials are stored, substances can seep through or flow off the edge of the pavement. Materials can get into floor drains which discharge to soils, wetlands or watercourses.

At present, groundwater is the only tapped source of potable water for the Village of Douglas, City of Saugatuck, and Saugatuck Township. The glacial drift aquifers in the area are especially vulnerable to contamination because of rapid permeability and high water table. In a local example, Douglas' municipal water supply has been contaminated by volatile organic compounds (VOC's), supposedly by an industrial site within the Village. Some areas without municipal sewer and water service are in danger of groundwater contamination due to septic systems, intensive development and a high water table.

Protection of groundwater resources is problematic because of difficulties in locating aquifers. Well depth records indicate the relative location of groundwater at particular points. According to well logs from Michigan Groundwater Survey (MGS) data, well depths in and around Douglas range from 33 ft. to 240 ft. Soils most vulnerable to groundwater contamination are found on Map 4.10.

SPECIAL FEATURES

Lake Michigan Shoreline and Beaches

The Lake Michigan shoreline in Douglas is very susceptible to wind and water erosion during storms and high lake levels due to resultant wave action. The current closing of Lakeshore Drive in Douglas and Saugatuck Township due

to bluff erosion is a graphic example of the power of wave action. These natural processes pose hazards to public health and safety. The Shorelands Protection Act of 1970 was enacted to identify areas where hazards exist by designating them and by passage of measures to minimize losses resulting from natural forces of erosion. High risk erosion areas are defined as areas of the shore along which bluffline recession has proceeded at a long term average of 1 foot or more per year. The entire Lake Michigan shoreline in Douglas has been designated as a high risk erosion area, with some portions eroding at a rate of 1.6 feet per year. Within the designated area, shown on Map 4.11, alteration of the soil, natural drainage, vegetation, fish or wildlife habitat, and any placement of permanent structures, requires a DNR review and permit, unless the local unit of government has an approved high risk erosion area ordinance, which Douglas does not.

Sand Dunes

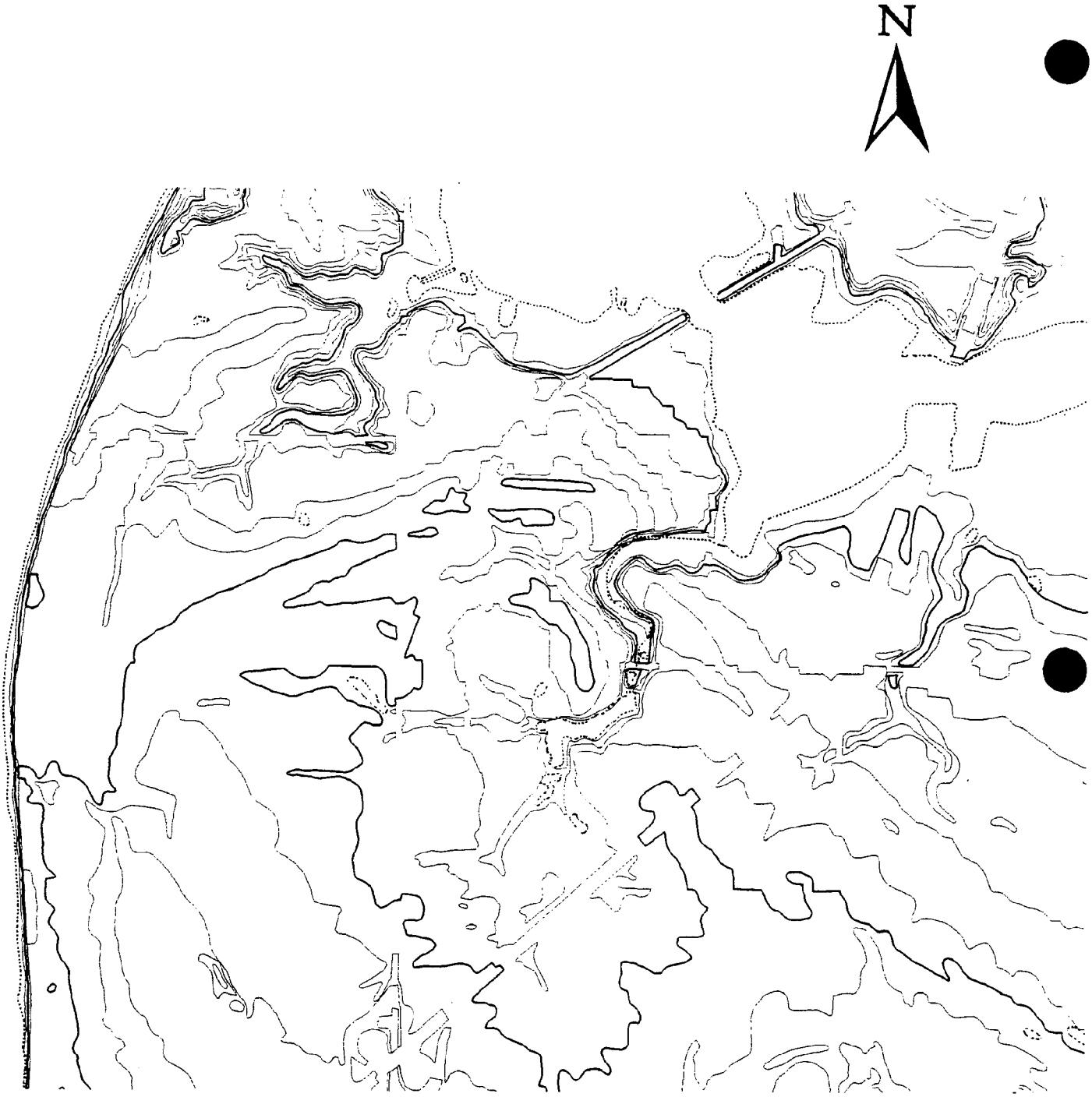
The sand dunes along Lake Michigan in the extreme northwest corner of the Village represent a unique and fragile physiographic formation and ecosystem that is very susceptible to wind and water erosion, and destruction due to careless use or development. The dune area which is in the Village, the City of Saugatuck and Saugatuck Township has been identified by the Michigan Department of Natural Resources (DNR) as a critical dune area, subject to protection under the Michigan Sand Dune Protection and Management Act, PA 222 of 1976. The designated critical dune area is shown in the shaded region of Map 4.12.

Recent legislation (PA 147 & 148 of 1989) provides for additional protection of critical dune areas. Under these Acts, all proposed commercial or industrial uses, multifamily uses of more than 3 acres, and any use which the local planning commission or the DNR determines would damage or destroy features of archaeological or historical significance must ultimately be approved by the State. Single family residential development is to be regulated at the local level. The law prohibits surface drilling operations that explore for or produce hydrocarbons or natural brine as well as mining activities (except in the case of permit renewals). The legislation also imposes certain standards on construction and site design in critical dune areas.

Site design and construction standards for sand dunes should be enhanced to prevent further deterioration of this fragile environment. Areas needing special attention in such standards are vegetation, drainage and erosion protection.

WOODLANDS

The wooded areas of Douglas are a mixture of hardwoods and conifers. Upland hardwoods are scattered throughout the Village, with some large patches near Lake Michigan. Conifers are only found in small patches in the extreme southern part of the Village. Woodlands are shown on Map 4.13 Mature trees represent a valuable resource in maintaining the aesthetic character of the Village, not to mention their overall importance to wildlife and the natural environment. In particular, the wooded areas along the rivers and streams are especially important. In some areas along I-196, especially in the southern part of the Village, trees buffer the freeway from surrounding land uses. They should be managed to insure their long term existence.



MAP 4.1 TOPOGRAPHY

Douglas

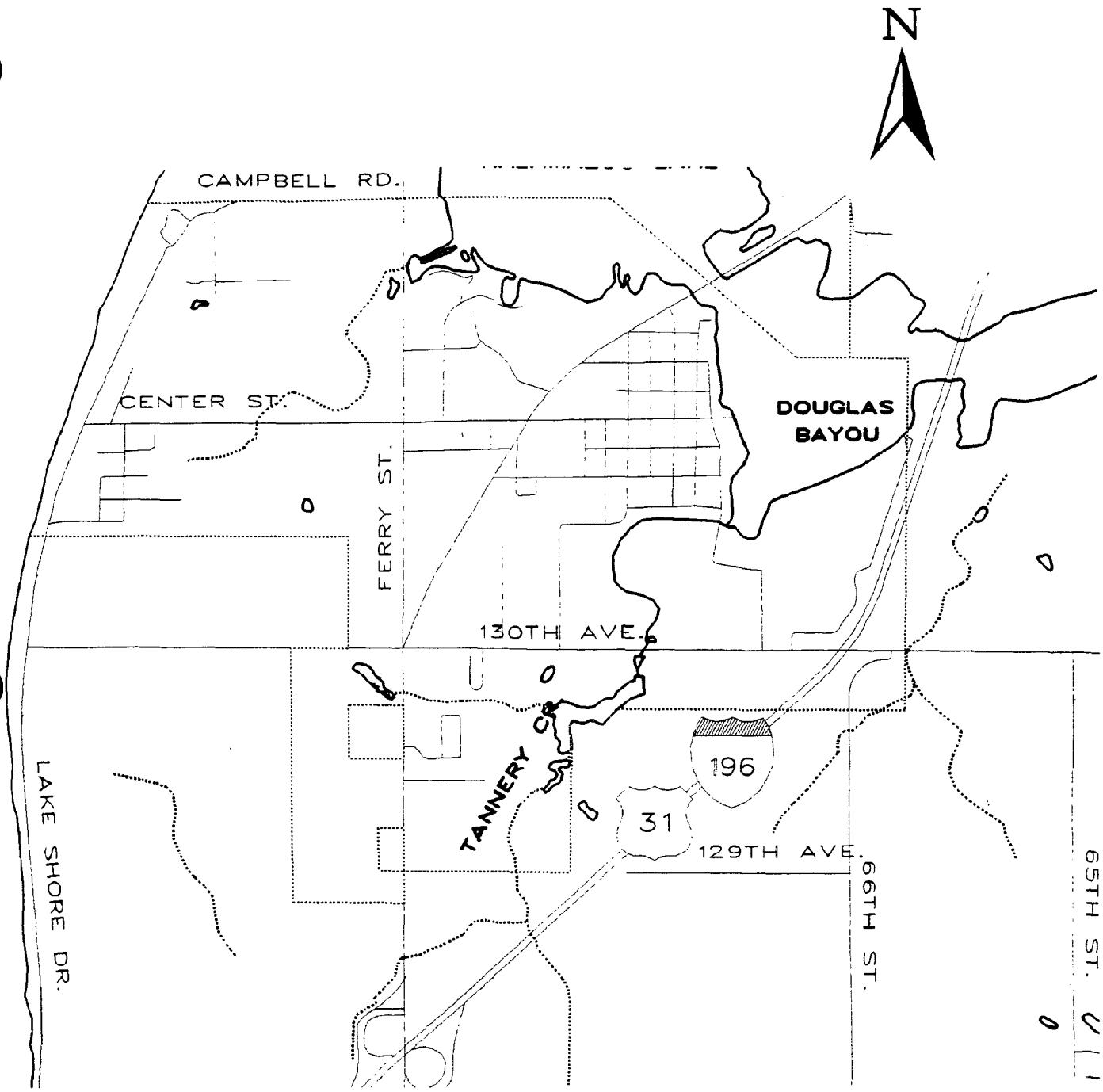
Contour interval is ten feet

Darker lines are 50 foot contours

0 800 1600 2400

Scale 1" = 1748 ft

August 1989 DATA SOURCE: USGS Quadrangle Maps Planning & Zoning Center Inc, Lansing, MI



MAP 4.2 WATERCOURSES

Douglas

Lakes, rivers and streams

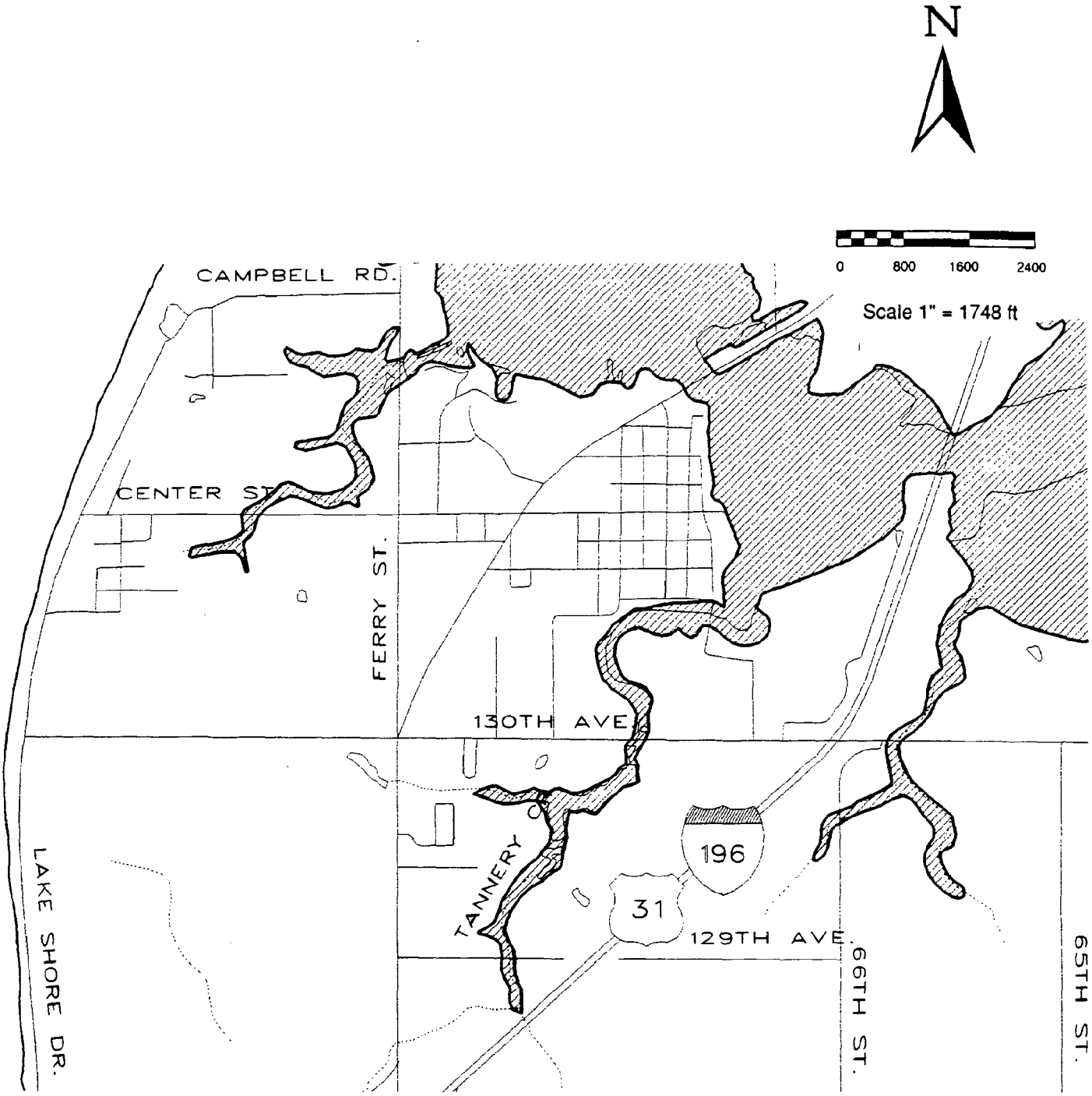
Drains and intermittent streams

0 800 1600 2400

Scale 1" = 1748 ft

August 1989 DATA SOURCE: MDNR

Planning & Zoning Center Inc, Lansing, MI



MAP 4.3 FLOODPLAINS

Douglas

100 Year Flood Area

500 Year Flood Area

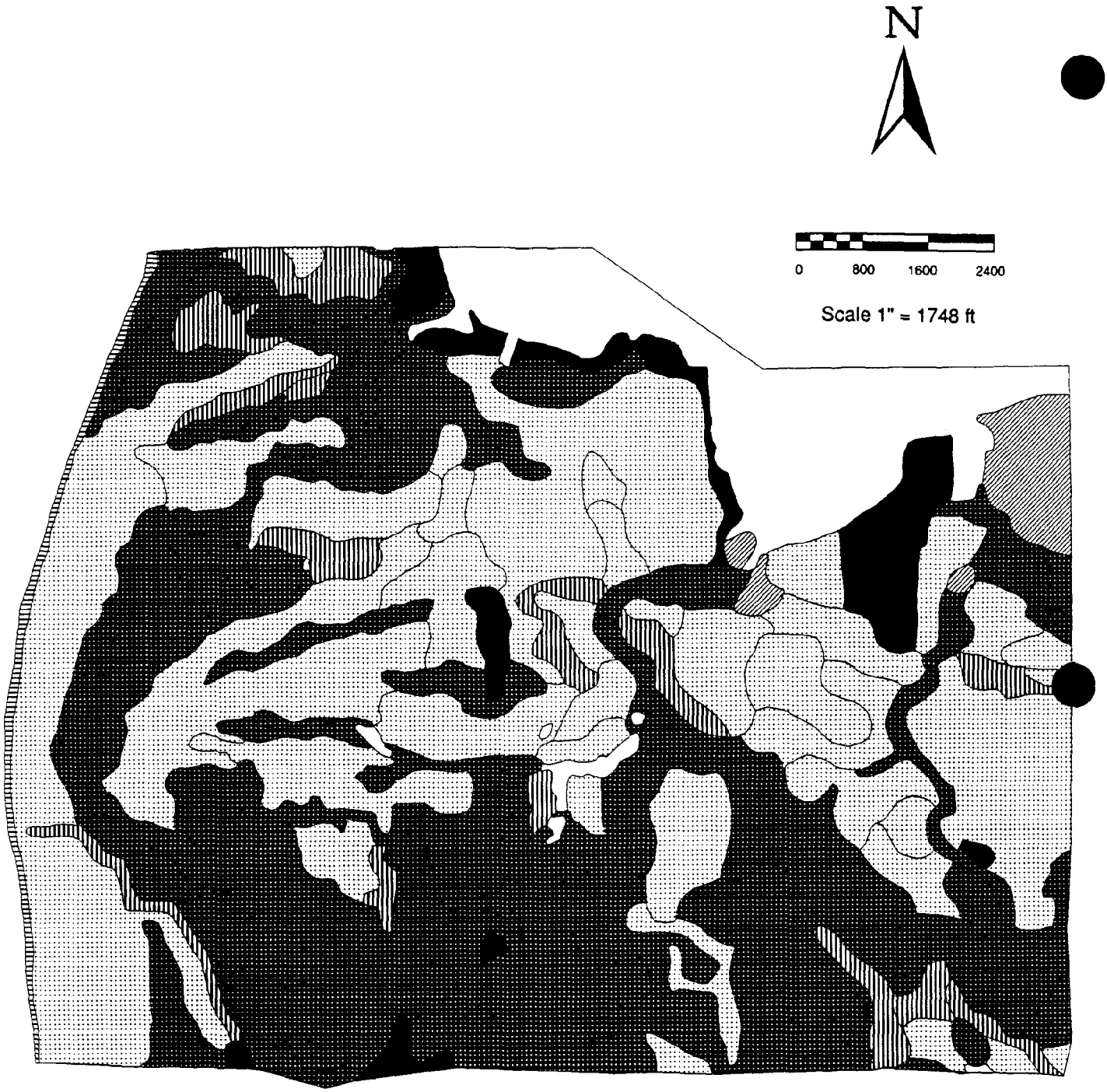
August 1989 DATA SOURCE:MDNR

Planning & Zoning Center Inc, Lansing, MI

MAP 4.4 WETLANDS Douglas

- Lowland Hardwood
- Lowland Conifer
- Wooded Swamp
- Shrub Swamp
- Herbaceous Rangeland
- Shrub Rangeland
- Marshland Meadow & Mud Flats

August 1989 DATA SOURCE: MDNR Planning & Zoning Center Inc. Lansing, MI



MAP 4.5 BASEMENT LIMITATIONS

Douglas

- Severe
- Moderate
- Slight
- Excavated
- Wetland Soils
- Sand Dunes

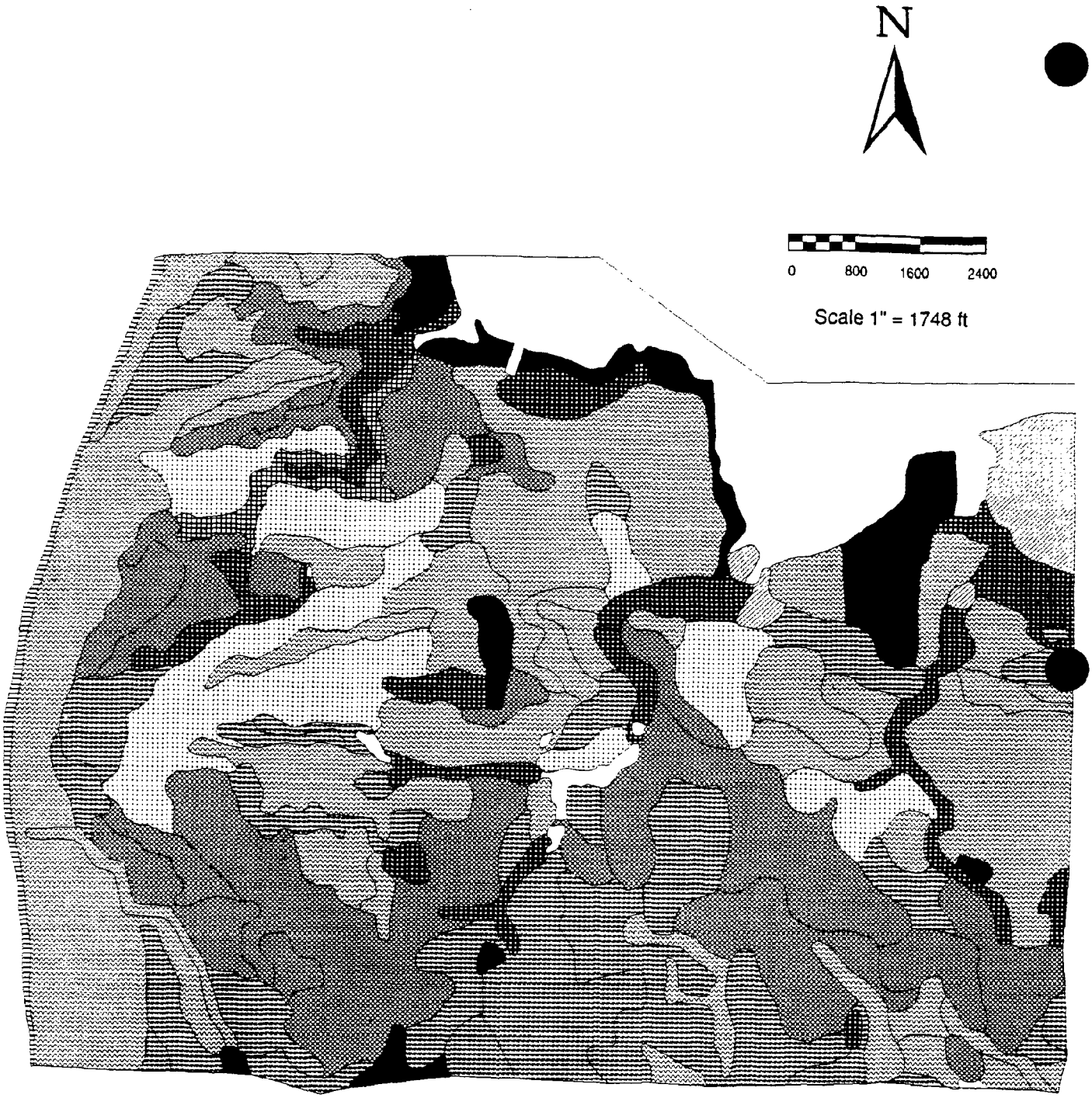
August 1989 DATA SOURCE: USDA Soil Survey, Allegan County: Planning & Zoning Center Inc, Lansing, MI

MAP 4.6 SEPTIC LIMITATIONS

Douglas

- Severe
- Moderate
- Slight
- Excavated
- Wetland Soils
- Sand Dunes

August 1989 DATA SOURCE: USDA Soil Survey, Allegan County: Planning & Zoning Center Inc, Lansing, MI

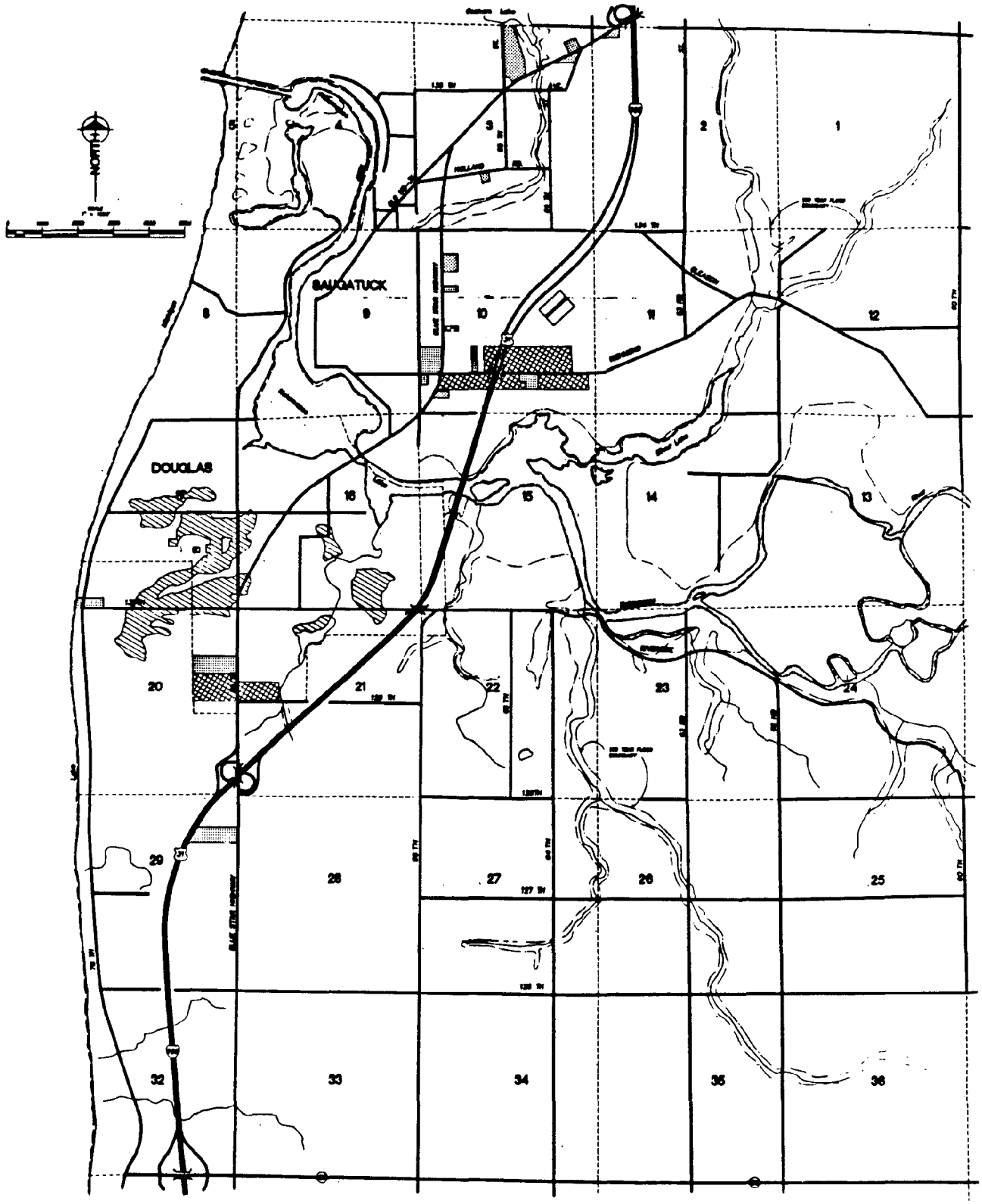


MAP 4.7 SEPTIC LIMITATIONS

Douglas

- Sandy, moderate to rapid permeability
- Rapid permeability, wetness of highwater table
- Wet, ponding, heavier clay soils,slow permeability
- Moderate Limitations
- Slight Limitations
- Excavated
- Sand Dunes
- Wetland Soils
- Very wet soils, organics, wetlands, floodplains

August 1989 DATA SOURCE: USDA Soil Survey, Alleg. Cnty Hlth Dept Planning & Zoning Center Inc, Lansing, MI



LEGEND

SEPTIC SYSTEM FAILURES OR REPAIRS (A.C.H.D.)

SEPTIC SYSTEM PERMITS DENIED (A.C.H.D.)

LOCATIONS IN PROPOSED SERVICE AREAS THAT DO NOT HAVE SEVERE RESTRICTIONS TO ONSITE SEPTIC SYSTEMS (U.S.D.A. S.C.S.)

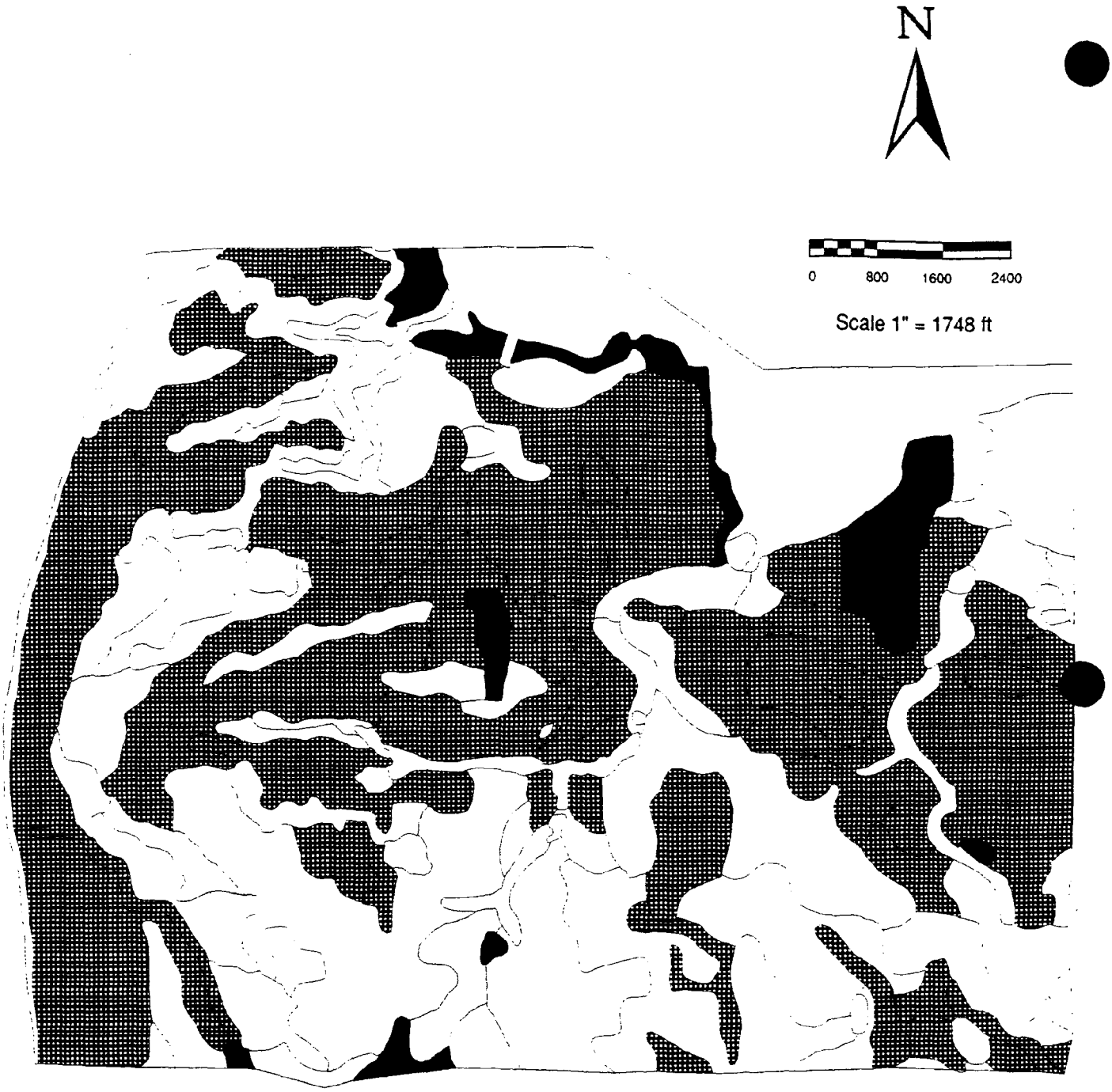
MAP 4.7 A

Douglas

ONSITE WASTEWATER TREATMENT LIMITATIONS

FIG. NO. 2

fc&h



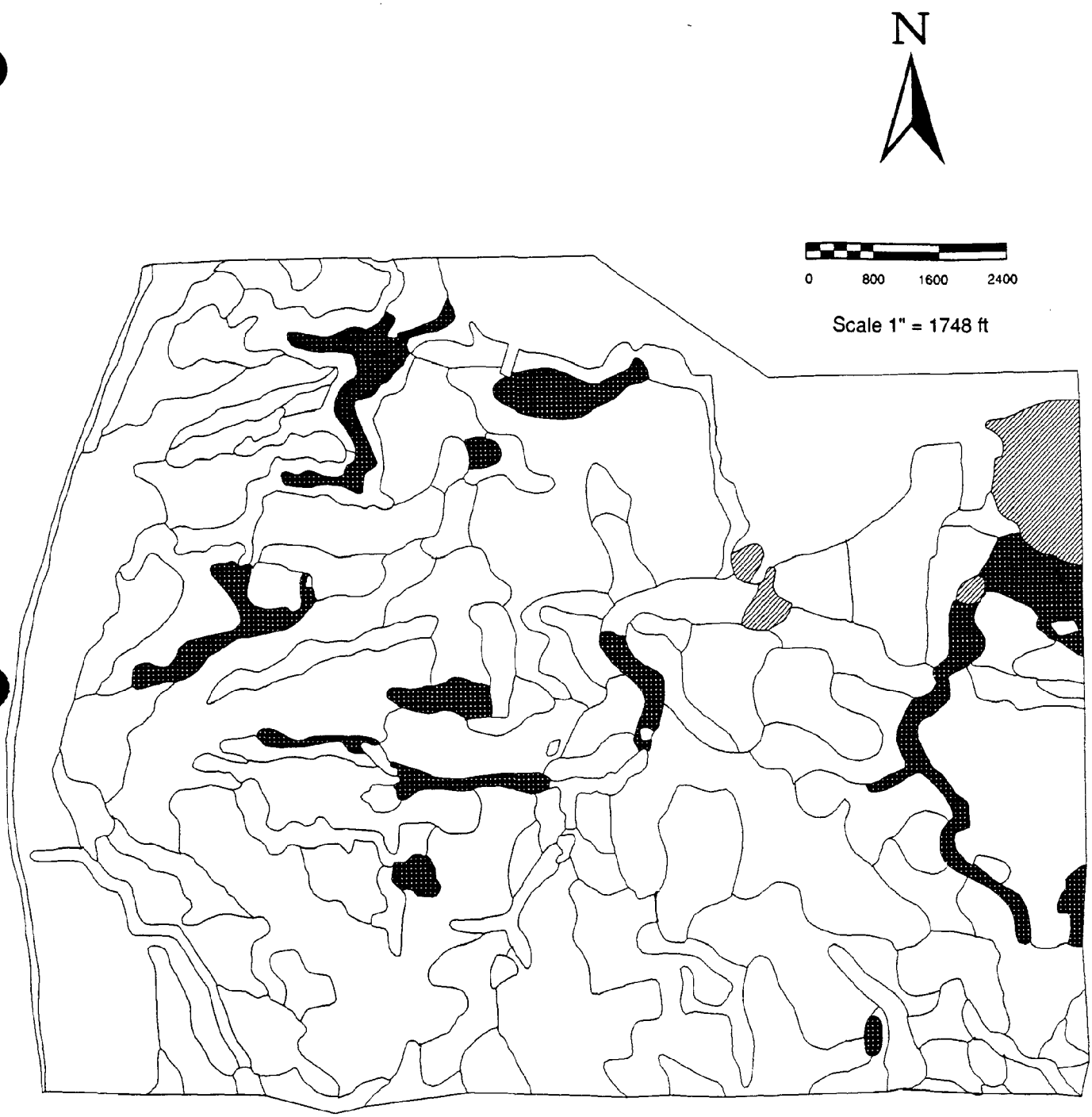
MAP 4.8 MOST SUITABLE SOILS

Douglas

Soils Most Suitable For Development

Excavated Areas

August 1989 DATA SOURCE: USDA Soil Survey, Allegan County Planning & Zoning Center Inc, Lansing, MI



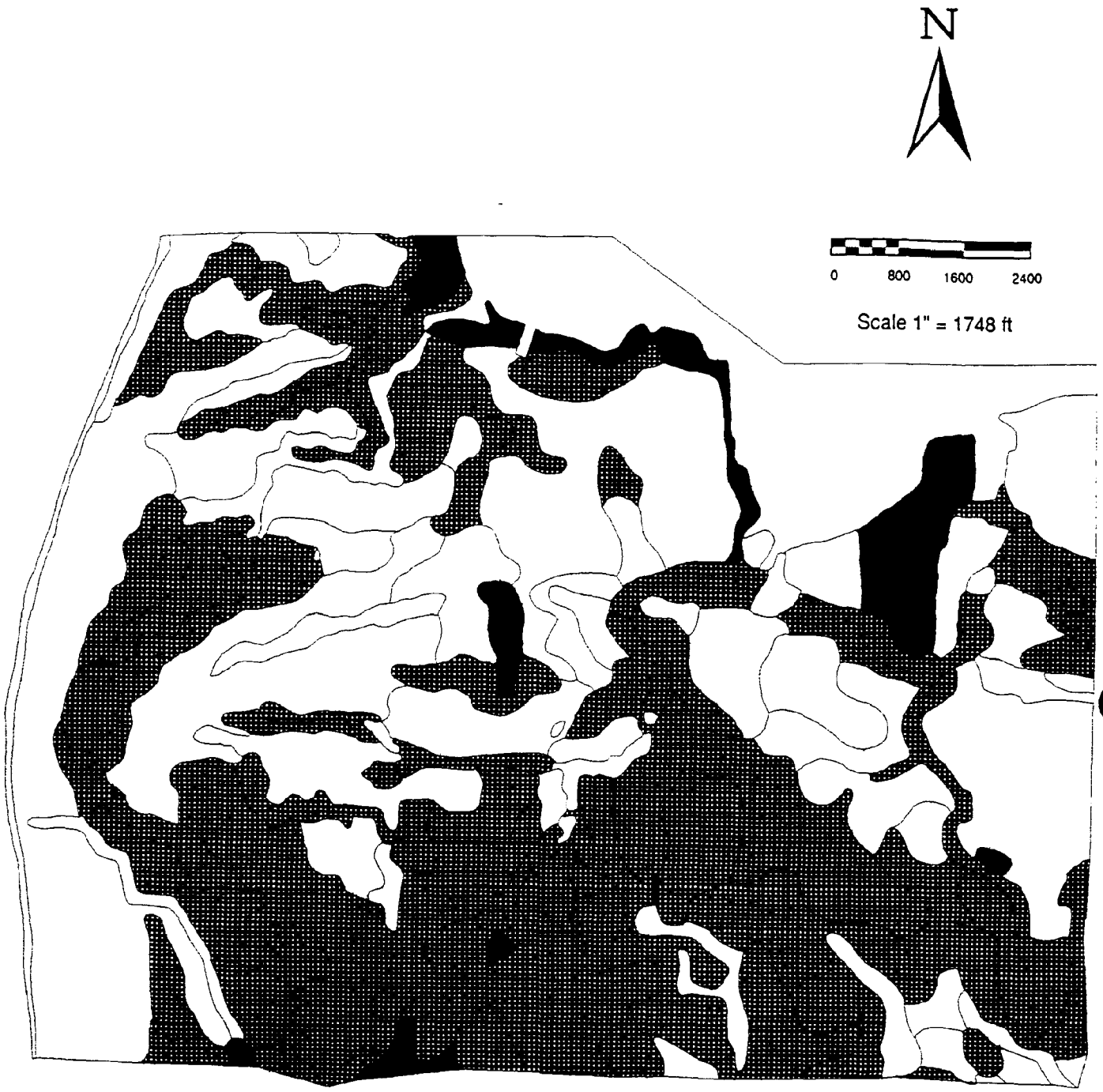
MAP 4.9 HYDRIC SOILS

Douglas

Hydric Soils

Wetland Soils

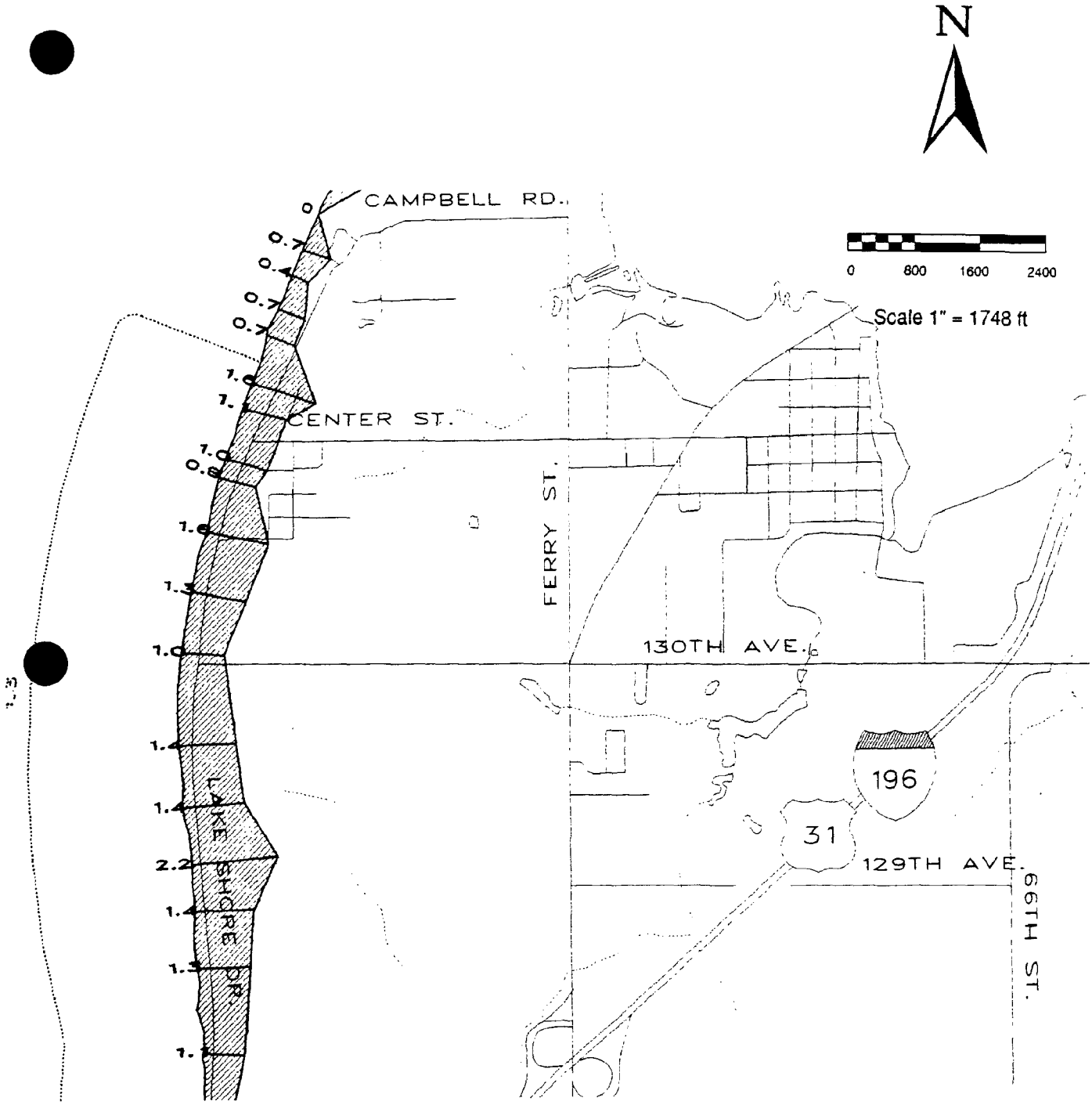
August 1989 DATA SOURCE: USDA Soil Survey, Allegan County Planning & Zoning Center Inc, Lansing, MI



MAP 4.10 GROUNDWATER VULNERABILITY Douglas

- Areas most susceptible to contamination
- Excavated Areas
- Wetland Soils

August 1989 DATA SOURCE: USDA Soils Survey & Alleg. Hlth Dept. Planning & Zoning Center Inc, Lansing, MI



MAP 4.11 HIGH RISK EROSION AREAS

Douglas

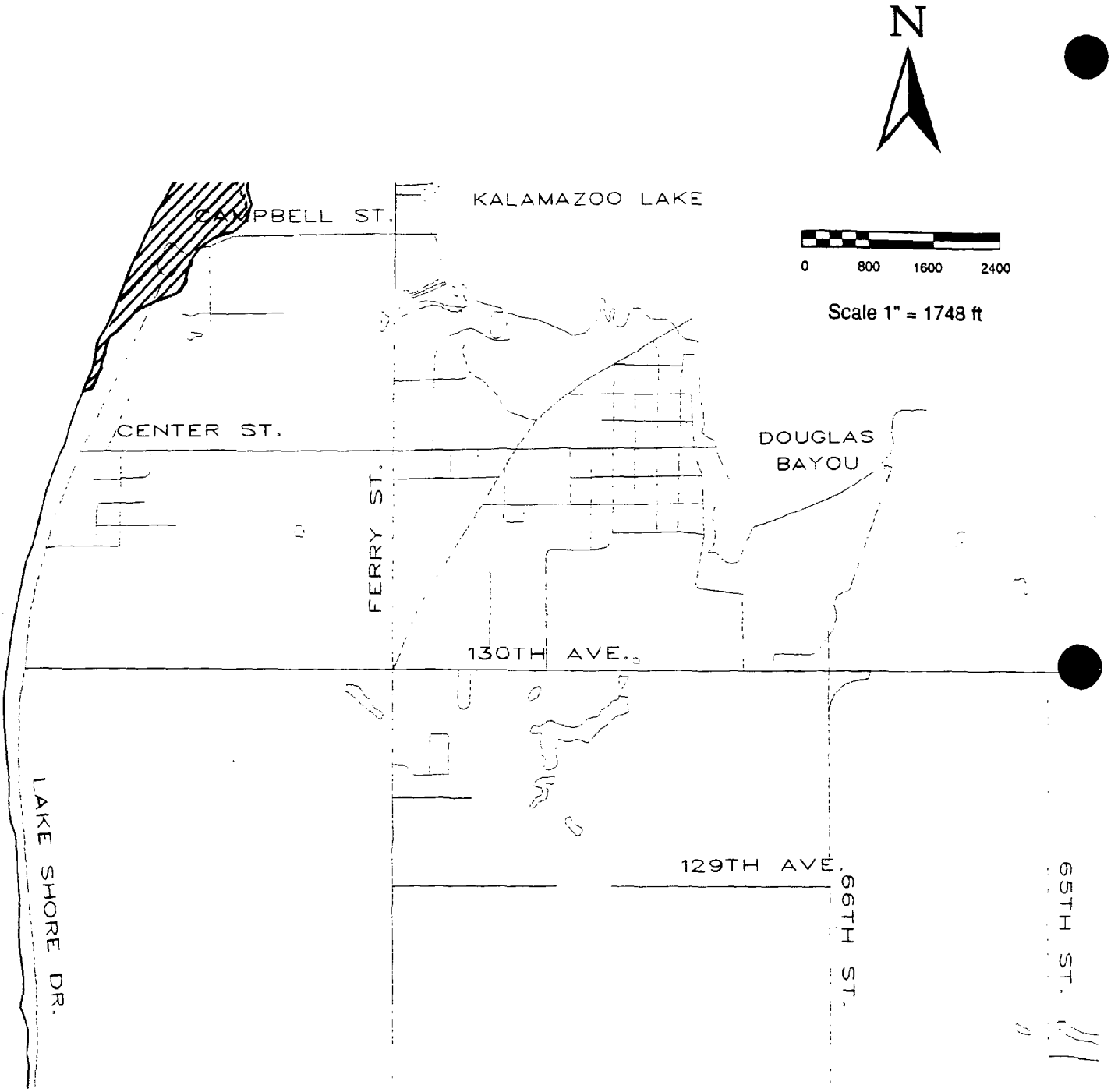
Accretion Area

Recession Area

Numbers indicate accretion/recession rate in feet per year

August 1989 DATA SOURCE: MDNR

Planning & Zoning Center Inc, Lansing, MI



MAP 4.12 CRITICAL DUNE AREAS Douglas

Critical Dune Areas

August 1989 DATA SOURCE: MDNR Planning & Zoning Center Inc, Lansing, MI

MAP 4.13 WOODLANDS Douglas

- Lowland Hardwood
- Upland Hardwood
- Lowland Conifer
- Upland Conifer
- Wooded Swamp
- Shrub Swamp

August 1989 DATA SOURCE: MDNR Planning & Zoning Center Inc, Lansing, MI

Chapter 5

EXISTING LAND COVER AND USE

LAND USE/COVER DATA SOURCES

Land cover and use refers to an inventory of existing vegetation, natural features, and land use over the entire Village (see Map 5.1). This data was obtained in computerized form from the Michigan Resource Inventory System (MIRIS) database, which is maintained by the Michigan Department of Natural Resources (DNR). The data came from photo interpretations of aerial infrared photos by trained interpreters at the West Michigan Regional Planning Commission. The DNR will update this data every 5 years. Land cover and use categories included in the data are explained on the legend to Map 5.1. The wetlands and woodlands maps in Chapter 4 were also derived from this data.

MIRIS data was supplemented by a thorough land use inventory of Douglas, conducted in the summer of 1988. The inventory was based on ownership parcels and conducted both on foot and through a "windshield survey". The existing use of every parcel was recorded and evaluated in combination with low-level aerial imagery available from the Allegan County Equalization Department and the MIRIS land cover/use map to prepare the existing (parcel-based) land use map (see Map 5.2). The following description is based on these maps and data sources and the USDA Soil Survey of Allegan County.

Land use by category is shown in Table 5.1. This information was derived from the aforementioned data sources and areas were calculated using CMAP computer mapping software.

The predominant land use in Douglas is single family residential. This is followed by golf courses, commercial, and boat service and storage, respectively. Vacant land comprises forty five percent of the total land area (street ROW's excluded) of the Village. Following are brief geographic descriptions of existing land use. These descriptions are based on the planning/neighborhood areas depicted on Map 5.3.

RESIDENTIAL

The majority of residential development in Douglas is clustered in the Village Center area and along the Lake Michigan shore. Most resort and seasonal residential development is located along Lake Michigan. Single family structures are the predominant residential type. Two mobile home parks are located in the southern part of the Village near the intersection of Blue Star Highway and 130th Avenue. There are several multiple family structures within the Village. Among these are an apartment building at the corner of Ellis and Center Streets, condominiums between Ferry Street and Kalamazoo Lake, and apartments in the block between Fremont and Center Streets west of Blue Star Highway. Several large older homes have been converted to two or three units or bed and breakfast establishments. There are currently three bed and breakfasts in the Village.

TABLE 5.1
EXISTING LAND USE

LAND USE	ACRES	% TLAMSROW*
Residential		
single-family	218	16.98%
multi-family	29	2.26
mobile home	18	1.40
Commercial	44	3.43
Industrial	32	2.49
Institutional	28	2.18
Agricultural	24	1.87
Parks	23	1.79
Golf Courses	130	10.12
Boat Storage & Service	34	2.65
Kalamazoo River Wetland	34	2.65
Streets & Roads	155	12.07
Vacant	516	40.19
TOTAL	1284	100.08%

* % of total land area minus street ROW's

Village Center

Approximately 25 blocks of long-established neighborhoods surround the original center of the Village. These consist primarily of older homes with some homes less than 30 years old scattered throughout. The condition of homes in this area varies widely, with some structures recently improved and others lacking maintenance over a long a period of time. Although dilapidated houses are relatively few in number, they have a significant negative impact on aesthetics and property values in the Village Center area. Accessory buildings such as separate garages or sheds are prevalent on residential properties in the Village Center area, and many of these are poorly maintained as well as highly visible. One home on north Water Street was built in the floodplain, too close to the waterfront. It is vacant and not maintained, and detracts from the aesthetic quality of the waterfront. The tree lined streets, relatively large lots and large wood frame homes give this part of the Village a classic charm.

Lakeshore Area

The Lake Michigan shore is lined with both large and small single family homes, many of them seasonal dwellings along Lakeshore Drive. The condition of structures in this area is fairly consistent from house to house, with most of them being in good to excellent condition. The lakeshore area is characterized by scenic vistas of the lake, although sand dunes and numerous structures obstruct the view of the lake while travelling north from Center Street. Large trees line the road and many homes are on wooded lots. A bed and breakfast establishment is also located in this area.

Campbell Road & West Center Street

The residential area along Campbell Road in both Douglas and Saugatuck includes a mix of newer and older homes. To the south of this area is the West Shore golf course, which contributes to a rural setting, with its large trees and open space. There is also some vacant land outside of the golf course which is in the floodplain and thus should not be developed. Felkers subdivision south of West Center St. is a partially completed residential subdivision on an area of poor soils where new homes will have to be connected to the sewer system in order to be permitted.

Scattered Residential

In the southern part of the Village along 130th. Avenue, and along Ferry Street between Center Street and 130th. Avenue, residential development is scattered along the road with varying lot and structure sizes. Ferry Street is lightly travelled and residences are minimally affected by vehicle traffic. Commercial uses adjacent to the residential areas are not buffered and also impact upon adjoining residential uses. In addition to single family homes, there are two mobile home parks located next to each other south of 130th. Avenue and east of Blue Star Highway. Harbours Apartments are located south of 130th. Avenue, between Water and Union Streets.

There are also residences along south Water Street, from east 130th. Avenue to South Street. This area is surrounded by undeveloped land, including an orchard, which serves to give it a rural character. Several residences are located on the Kalamazoo River between Schultz Park and Water Street as well.

Condominiums

Three major condominium developments have occurred in Douglas within the last five years. The Amity condominiums are located north of 130th. Avenue between Water Street and Blue Star Highway. The Mariners Cove condominiums are located adjacent to the boat docks on Kalamazoo Lake near Saugatuck. Tower Harbour condominiums are located along Ferry Street directly south of Mariners Cove.

COMMERCIAL

The major commercial areas in Douglas are Blue Star Highway from the Kalamazoo River bridge to 130th. Avenue, and in the Village Center. Boat storage and repair facilities represent a different type of commercial use and are found mostly in areas near the waterfront.

Blue Star Highway

The commercial area along Blue Star Highway is concentrated from Chestnut to 130th and represents a form of unplanned commercial strip development. Lots were developed independently at widely varying points in time without any consideration for safe and functional design vis a vis adjoining parcels. Commercial strips often have inconsistent setbacks, an excessive number of driveways, excessive signs, poorly controlled ingress and egress and are poorly designed with respect to the natural en-

vironment. These characteristics make the strip unattractive, environmentally incompatible, and potentially dangerous. The negative effects of strip commercial areas can be mitigated by consolidation of driveways and parking facilities, grouping of stores into "mini malls" (e.g. Weathervane Mall), reducing the number and size of signs, and site design standards which require that natural features be positively incorporated into new developments, as well as minimizing "asphalt landscaping". This area has a mix of highway service (like motels and gas stations) and general business activities (like the grocery store) but functions more as a general business area meeting the wide general business needs of the tri-community area.

Douglas Village Center

This small retail area consists of restaurants, public and private offices and specialty shops and is used mostly by local residents. Uses include the Post Office, Village Hall, party stores, restaurants, beauty salon, police department, insurance, real estate and legal services, antique shops and the public library. Parking is located along both sides of Center St. and is adequate to meet current needs. There are several vacant lots and buildings in this area which could be used for new retail development.

Boat Storage and Repair

There are several large boat storage and repair establishments in the Village. Most of this type of commercial development is found along Kalamazoo Lake north and west of Blue Star Highway. Other large boat storage and repair establishments are Tower Marine, located at Hamilton and Center Streets, and Douglas Marine, off of Blue Star Highway in the new industrial park.

INDUSTRIAL

Industrial development in Douglas is located primarily along Blue Star Highway. An industrial park area located east of Blue Star Highway between 129th. and 130th. Avenues contains four firms; Rich Products, Douglas Marine, Enterprise Hinge, and a clothing warehouse. Haworth, Inc. is located between Ferry Street and Blue Star Highway in an area otherwise characterized by commercial development. Hansen, Inc. is on Blue Star Highway south of 130th. Avenue. Douglas Gas Co. is located on 130th. Avenue just west of Schultz Park. These are the only significant industrial uses in the Village, occupying approximately 12.9 acres of land, or less than 1% of the Village's total land area.

A major deterrent to new industries locating in the Village is lack of adequately sited land served with good public facilities (water). Douglas is located 150 miles from Detroit, 180 miles from Chicago and 36 miles from Grand Rapids along a major interstate highway. There is also a railroad within five miles. This is an advantageous location for small scale, light industrial development.

AGRICULTURAL

The only active agricultural land use in Douglas is an orchard in the southeast area of the Village on 130th. Avenue between Water Street and The Harbor apartments. The orchard is owned and operated by Michigan State University for conducting agricultural, plant and soil research. There are a few areas in the Village which are considered prime farmland by the USDA Soil Conservation Service. Most, with the exception of the MSU site, are vacant lands which have not been farmed for some time or are used for other purposes (e.g. West Shore golf course). In light of Saugatuck Township's efforts to protect existing farmlands and to concentrate new commercial and residential development where public utilities can be economically provided, it would not be inappropriate to convert prime agricultural lands within the Village of Douglas to other land uses since utilities can be more economically provided here.

WATERFRONT

Large marina and boat dockage characterize the west end of Kalamazoo Lake with the Kewatin (a retired Great Lakes cruise boat now used as a museum) dominating the shoreline on the east end. Adjacent is a small, relatively unimproved public access site. Shoreward is a large expanse of land extending from Blue Star Highway to the west end of St. Peters Drive which is presently being used as a dumping ground for dredge material. The view of Lake Kalamazoo from east St. Peters St. to the bridge along Blue Star Highway is the most scenic public viewing opportunity of the Lake that presently exists. How this land is utilized in the future will have more to do with the resulting character of the Village than the development of any other area.

East of the bridge down to where Tannery Creek enters the Douglas Bayou is characterized by residential development and some boat slips. The balance of the shoreline in Douglas is largely wetland to Schultz Park with a few single family homes.

HISTORIC & ARCHAEOLOGICAL FEATURES

Some archaeological sites historic sites can be found in Douglas. Historic and archaeological sites are designated by the Michigan Bureau of History.

Historic Buildings and Sites

The Michigan State Register of Historic Sites was established in 1955 to provide official recognition for historic resources in Michigan. Designated historic sites have unique historic, architectural, archaeological, engineering, or cultural significance. There are three State historic sites in Douglas, which are listed on Table 5.2.

State historic site designation does not include any financial or tax benefits, nor does it impose any restrictions upon the owner of the property, unlike similar designations under federal law.

TABLE 5.2
STATE HISTORIC SITES

DESCRIPTION	LOCATION
Douglas:	
Dutcher Lodge #193 Hall	86 Center St.
Asa Goodrich House	112 Center St.
Sarah Kirby House	294 W. Center St.

Source: Michigan Bureau of History

Archaeological Sites

Archaeological sites are of particular scientific value to the fields of anthropology, ecology,and biology and may have historic or ethnic significance as well. There are 120 archaeological sites scattered throughout Saugatuck Township, Saugatuck and Douglas, mostly related to Ottawa and Potawatomi cultures. Their exact locations have not been disclosed by the Bureau of History in order to protect them from exploitation. Recipients of Federal assistance must ensure that their projects avoid damage or destruction of significant historical and archaeological resources. The Michigan Bureau of History reviews these projects to assess their impact on archaeological sites.

The Bureau of History also recommends that those proposing development projects in Douglas contact the State Archaeologist to determine if the project may affect a known archaeological site. This is particularly critical given the existence of Indian Burial sites in the area. If an important archaeological site will be affected, archaeologists will negotiate a voluntary agreement to preserve those artifacts. The Bureau of History serves in an advisory capacity and has no legal authority to restrict development rights.

MAP 5.1 LAND USE/COVER

Douglas

URBAN

- 113 Single Family
- 115 Mobile Home
- 124 Neighborhood Business
- 126 Other Institutional
- 193 Outdoor Recreation

FARMLAND

- 21 Cropland
- 22 Orchards

RANGELAND

- 31 Herbaceous Rangeland
- 32 Shrub Rangeland

WOODLAND

- 412}
  414}Broadleaf
- 421}
  429}Conifers

WATER

- 52 Lakes

WETLAND

- 611 Wooded Swamps
- 612 Shrub Swamps
- 621 Marshland Meadow
- 622 Mud Flats

BEACH

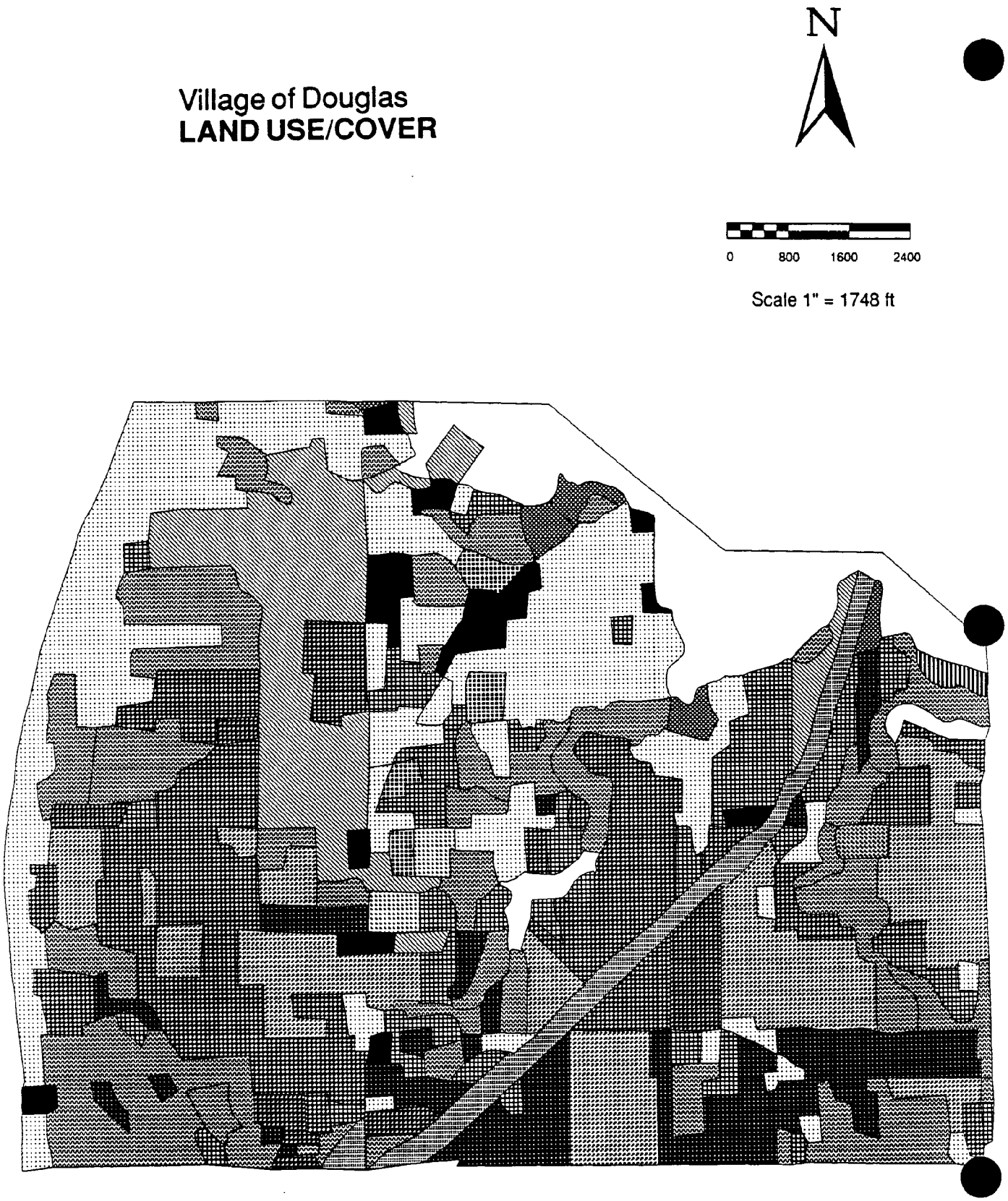
- 72 Beach At Riverbank
- 73 Dunes

August 1989

DATA SOURCE: MDNR

Planning & Zoning Center Inc, Lansing, MI

Village of Douglas
LAND USE/COVER



MAP 5.2 EXISTING LAND USE

Douglas

- Single Family Residential
- Mulltiple Family Residential
- Residential/Commercial
- Commercial
- Boat Storage/Marina
- Industrial
- Institutional
- Agricultural
- Agricultural - Orchard
- Recreational
- Junkyard
- Mobile Home Park
- Vacant
- Wetland
- Water

August 1989 SOURCE: PZC Land Use Survey

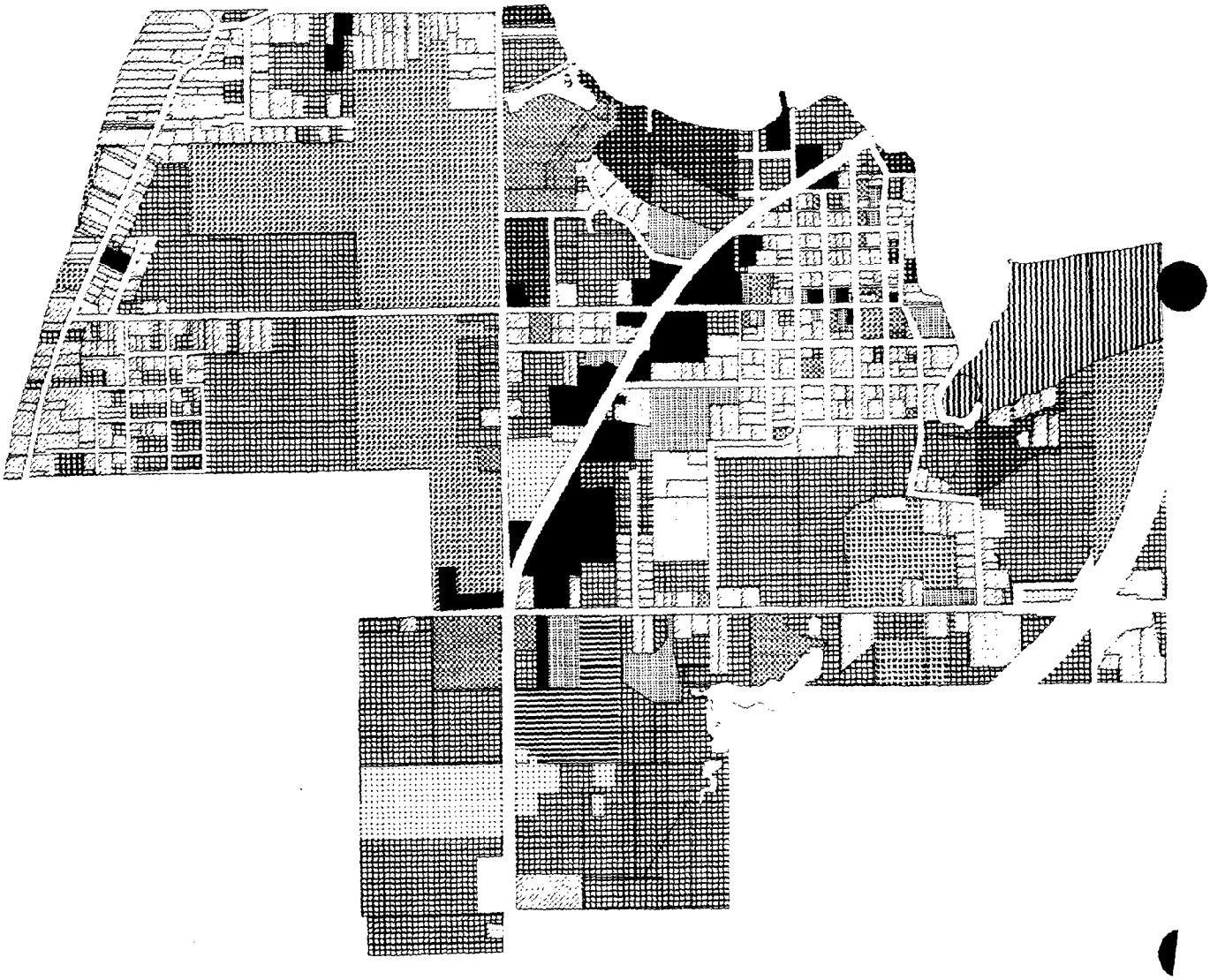
Planning & Zoning Center, Inc, Lansing, MI

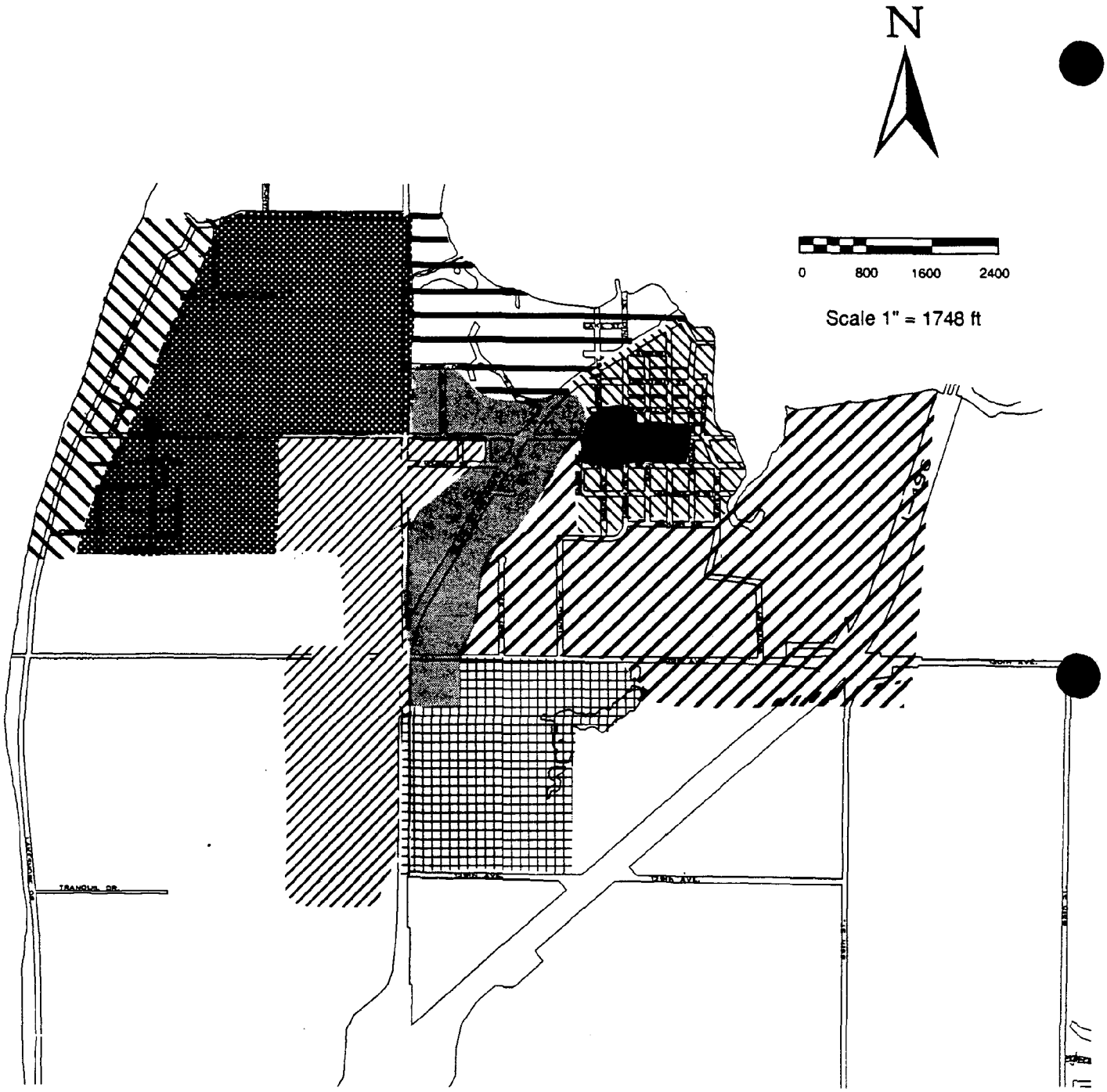
N

Village of Douglas
EXISTING LAND USE

0 700 1400 2100

Scale 1" = 1438'





MAP 5.3 PLANNING AREAS

Douglas

- Lakeshore
- Waterfront
- Village Center Commercial
- Campbell & West Center
- Ferry & W. Of Blue Star
- Village Center Residential
- Blue Star Commercial
- Bluestar Industrial
- East 130th

August 1989 DATA SOURCE: Douglas Planning Commisssion Planning & Zoning Center Inc, Lansing, MI

Chapter 6

PUBLIC FACILITIES AND SERVICES

NON-PARK PUBLIC FACILITIES

A listing of all non-park public facilities in the Village of Douglas is found on Table 6.1. This includes police and fire stations, municipal government offices, vacant lands and other public facilities (see Map 6.1). Table 6.1a lists planned acquisitions and improvements to non-park public facilities.

UTILITIES

Sewer and Water

The Saugatuck-Douglas area sewer and water systems are managed by the Kalamazoo Lake Sewer and Water Authority, which is responsible for operation and maintenance and provides water production and wastewater treatment. Each participating community is responsible for providing and financing their own infrastructure. The KLSWA performs the construction work or contracts it out.

The service areas for the sewer and water systems, shown on maps 6.2 and 6.3, extend only for very short distances into Saugatuck Township. Most of the developed part of the Village is served by both water and sewer, and the system is designed to accommodate expansion and addition of new lines.

Numerous engineering studies have been conducted which discuss various alternatives for improvement of utilities. These include using Lake Michigan for the municipal water supply and extending public utilities into the Township. Proposals must take into consideration the permanent population, seasonal population, number of daily visitors, and future industrial flow. Peak periods for public utilities in the area are more pronounced than in typical communities due to the relatively high seasonal and daily visitor population.

Water System

The reliability of the water system depends on water supply sufficient to meet peak demands, storage capacity to provide fire flows for sufficient duration, adequate water pressure and distribution system loops. The existing system is deficient with respect to meeting peak demands. The water is not treated, except for chlorination and iron sequestering. Parts of the current water system date back to 1907 in Saugatuck, and to 1914 in Douglas. In addition, the water mains are old, small and substandard, leaks are a problem on older service lines and there may be some unmetered taps. Growth is restricted in areas not serviced by the system and is limited overall at present because of insufficient pumping capacity.

The existing water system also has many dead end lines, which are susceptible to water discoloration and development of tastes and odors due to stagnation. The best arrangement for water mains is the gridiron system, where all primary and secondary feeders are looped and interconnected, and the small distribution mains tie to each loop to form a complete grid. If an adequate number of valves are inserted, only a small 1 block area will be affected in the event of a break. A primary feeder from the Saugatuck wells to the system's primary 12" feeder loop has been installed, and all of the primary 12" feeder loop has been completed, including two river crossings.

In 1984 and 1985, a one million gallon above ground storage tank was constructed, which allowed Saugatuck and Douglas to meet normal and fire protection demands. If Saugatuck Township is included in the system, the storage tank is adequate for fire protection for the near future, but additional capacity is needed if service were extended to the southern portions of the Township.

Recent chemical contamination of the Douglas municipal water supply has led to an overburdening of the City of Saugatuck water system, which is presently serving the entire network and is working at full capacity; 24 hours per day during peak months. This has led to restrictions on non-essential uses such as lawn sprinkling, car and boat washing, and has reduced the minimum reserve needed for fire protection (600,000 gallons) down to 2/3 of the needed amount. A moratorium has been imposed on new development other than one or two family dwellings. The pumping capacity of both wells has dropped due to depletion (drawdown) of groundwater.

TABLE 6.1
(NON-PARK) PUBLIC PROPERTY & PUBLIC FACILITIES INVENTORY
VILLAGE OF DOUGLAS

NAME	LOCATION	USE	SIZE *	CONDITION	VALUE
Vacant lot	Corner Ferry & Center	Gravel storage	28,000 sq. ft. (1/2 acre+)	Dry	$35,000
Library (Saugatuck-Douglas)	Mixer & Center Sts.	Library	4327 sq.ft. (1 lot-8400 sq.ft.)	Good	$96,000
Fire barn	Spring & Center Sts.	Office, fire barn	2560 sq.ft. (1/4 acre-10,000 sq.ft.)	Good	$100,000
DPW barn	Water & Center Sts.	Barn (launch ramp curently closed)	2432 sq.ft. (1 3/4 acres-80,000 sq.ft.)	Poor	Land is valuable, river frontage & walk be converted to park and/or marina
Two pumphouses & pumps	DPW barn	Well housing	combined bldgs=360 sq.ft. (land includes DPW barn)	Good	$26,000
1/2 vacant street ends on K. River & Lake	Gerber, South, Fermont, Randolph, Spencer	None	66 sq.ft. wide	Varied	

* Land = acres or square feet (Building = square feet/acres)

TABLE 6.1A
PLANNED ACQUISITIONS/IMPROVEMENTS TO PUBLIC FACILITIES
VILLAGE OF DOUGLAS

NAME	LOCATION	USE	SIZE *	CONDITION	ACQUISITION COST	FINANCING SOURCE
Allegan County Rd. Commission barn	130th & Water Sts.	DPW barn/Interurban facility	3700 sq.ft. (2.2 acres)	Fair	$55,000-total less interurban share	$55,000/land contract with F.M.B.
Douglas Masonic Lodge	Union & Center Sts.	Village & Public Hall	7,000 sq.ft. (8,400 sq.ft., 1 lot)	Poor	Free (lease exchange with Masonic)	$200,000/local fund raisers, historical monies if available

Land = square feet (Building = square feet/acres)

Communications from the Michigan Department of Public Health have demanded that substantial progress be made towards a solution to the water supply problem in the near future. The Health Department has also questioned the usefulness and reliability of both Douglas wells because well #1, which is out of use, is contaminated, and well #2, which is used for emergency purposes only, may become contaminated through further use. As a result, alternatives for additional water sources are currently under review, with Lake Michigan and the City of Holland water system being considered the most viable options. Engineering studies have indicated a cost of nearly $4.5 million for construction of a Lake Michigan water treatment facility which would provide a clean and abundant source of water. A large service area, formed by including large portions of Saugatuck Township, would reduce the per capita cost burden on users. This facility would be capable of pumping 3 million gallons per day, which could serve the needs of all three communities well into the future. This, combined with a desire to retain local control over the water system, makes using Lake Michigan water the favored alternative.

Sewer System

Wastewater treatment is provided at a treatment plant located in Section 10 of Saugatuck Township. The facility was constructed by the City of Saugatuck and the Village of Douglas in 1980. The treatment system provides biological and clarification processes for the reduction of BOD (biochemical oxygen demand) and suspended solids, including chemical precipitation for the reduction of phosphorus from fertilizers and detergents. The plant has two aerated lagoons and was designed for incremental addition of lagoons to accommodate increased wastewater flow. The facility was designed for heavier BOD loading than other facilities its size, in order to accommodate a pie factory, and thus may not need more capacity of that type for many years. The discharge is to the Kalamazoo River on the north side of Saugatuck.

The sewer system in Douglas was built entirely since 1978. Douglas and Saugatuck merged their facilities in the late 1970's to form the KLSWA. The capacity of the sewer system is sufficient to meet the needs of Saugatuck and Douglas until approximately 2008. The capacity of the wastewater treatment facility would have to re-rated to 1.2 MGD for the Township to use the system until 2008.

The treatment facility was designed for a twenty year planning period through 1998, based on a population tributary of 7,695 and a wastewater flow of 0.75 million gallons per day (MGD). The treatment facility is rated at 0.8 million gallons per day by the Michigan Department of Natural Resources (MDNR). The facility was designed for a peak flow of 2 MGD. The present average flow is 0.4 MGD. A larger flow can be accommodated by increasing hours of operation, provided that the lagoons can treat the sewage well enough. An engineering study in 1987 determined that August (maximum day was Aug. 14) is the month of peak flow for wastewater, with 0.598 MGD. Based on the study, the treatment facility operated at 75% of flow capacity, 55% of BOD capacity, and 30% of suspended solids capacity. Existing effluent quality and treatment efficiency was found to be excellent. Increasing the rated capacity of the facility to 1.2 MGD with two aerated lagoons would accommodate all three jurisdictions through 2008 and possibly beyond. Pursuing this option would require detailed preparation of data accompanied by a formal request to the DNR from the KLSWA. Further capacity could be obtained by adding another aerated lagoon, estimated to cost $900,000 in 1987.

Storm Sewers

There are very few mapped stormwater drains in Douglas. Drainage has not been a significant problem in most developed areas because of sandy, high permeability soils and lack of large paved areas. Efforts are currently underway to improve stormwater drainage.

County Drains

There are three County drain districts which are partially located within Douglas. These include the Herring, Jager Crane, and Warnock drains. All are located in the extreme southern part of the Village

Gas, Electric and Telephone

There are no major gas or oil pipelines in Douglas. Gas service is provided by Michigan Gas Utilities Company and approximate locations of gas mains are shown on Map 6.4. Electricity in the Village is provided by Consumers Power Company. Telephone service is provided by General Telephone and Electric Co. (GTE).

TRANSPORTATION

Transportation facilities within the area include streets and roads and a public transportation system (Interurban). Douglas is served by a major Interstate highway (I-196), which runs along the eastern edge of the Village, and by a State highway (M-89), located three miles to the south in Saugatuck Township. Blue Star Highway, part of the Great Lakes Circle Tour, is the other major highway serving the area. The nearest railroad is the Chesapeake and Ohio R.R., which runs north and south one mile east of the Township boundary. Kent County International Airport is within 50 miles and is served by 3 major airlines, with 126 flights per day. The area is also served by Greyhound Bus Lines. Transportation facilities are important in stimulating growth for Douglas and its location is an asset for attracting further economic and industrial development.

Streets and Roads

Streets and roads are classified according to the amount of traffic they carry and the nature of the traffic. Four common categories are local streets, collectors, local arterials, and regional arterials. Local streets typically provide access to residences, with speeds from 20 to 25 mph (Union St.). Collectors connect local streets to arterials and speeds average 25-35 mph. (Center St.). Local arterials facilitate larger volumes of traffic which originates and terminates within the area, with a trip length of ten miles or less and an average speed of 35-45 mph. (Blue Star Hwy.). Regional arterials are typically used for high speed through traffic, and access to the roadway is usually limited (I-196). Locations of collectors, local arterials and regional arterials are shown in Map 6.5. Each class of street has an important function in maintaining the efficient flow of traffic and it is essential that adequate transportation facilities exist or can be efficiently provided.

Accurate and up-to-date traffic counts are needed in order to make some decisions pertaining to priorities for road improvements, monitoring of flows, evaluating impacts of proposed new development, and projecting future traffic conditions. Table 6.2 shows what very limited information is presently available from the County Road Commission.

PA 51 of 1951 provides for the classification of all public roads, streets and highways for the purpose of managing the motor vehicle highway fund. The two classifications which pertain to the Village of Douglas are "Major Street" and "Local Street". These roadways are shown in Map 6.6. Funding is provided to cities and villages for street maintenance and construction based on the number of miles of streets by class, within each community. Douglas has 4.34 miles of Major Roads and 10.92 miles of Local Roads under Act 51 designation.

Lakeshore Drive

Lakeshore Drive provides a scenic link between areas along the Lake Michigan coast. High water levels on the Great Lakes, combined with storms, resulted in powerful wave action which undermined sand and clay bluffs along the shore, causing them to collapse. Because of its close proximity to these bluffs, the road has washed out in two places, one in section 20 which is impassable, and one south of Douglas which has only one lane passable. School buses are not allowed to travel on some segments of the road because of poor and unsafe conditions. The Allegan County Road Commission allocated $260,000 to test the effects of concrete for accretion technology along the shoreline. The erosion barrier was installed in two locations and is having a minimal effect on the shoreline. Cost estimates for rebuilding Lakeshore Drive are at approximately $3.8 million (1988). This would involve relocation of portions of the road and implementation of erosion control measures.

TABLE 6.2
EXISTING TRAFFIC COUNTS

DATE	LOCATION	VOLUME
4/3/78	Blue Star & 64th	5,319
1959 & 1968 (same count)	130th E & W of Blue Star	368
July 1987 (2 different days)	Blue Star & 129th	10,575 8,256
1969	Old Allegan, east of Blue Star	336
1982	130th & 70th, east of Lakeshore Dr.	285
July 1987	North 135th at Blue Star (northbound)	7,018
July 1987	129th at Blue Star (northbound)	6,192
October 1985	Center at Blue Star	10,861

Blue Star Highway

Blue Star Highway serves as a local arterial. Numerous problems inhibit it from performing that function effectively.

Access to commercial and industrial establishments along arterial roads should be controlled by curbing. At present, there is virtually no controlled access in these areas on Blue Star Highway, and wide driveways and open shoulders lead to an elevated risk of accidents. There are no designated pedestrian traffic areas or bike paths (except from the bridge to Center St.), causing pedestrians to use the shoulder, unsafely. The roadway needs to have more than two lanes (at least from Center to 130th) or clearly delineated deceleration and right turn lanes. The shoulders are paved in places and these are often mistaken for actual lanes, which poses a safety hazard and results in the paving deteriorating rapidly since the foundation for heavy use is not in place. There is no cooperative maintenance or planning arrangement among the Village, Saugatuck and Saugatuck Township for Blue Star Highway and the County Road Commission, yet the roadway needs repairs and resurfacing.

Very little useable traffic count information is available, except for the intersection with Center Street, making it difficult to assess where needs are greatest so that improvements can be prioritized. Traffic may be higher in some segments than in others, indicating which speed limits and whether other traffic control measures are necessary.

The entrance into Douglas from south Blue Star Highway does not cause visitors to have a positive first impression of the community.

Over 60% of people responding to the 1988 Public Opinion Survey noted that the appearance of the highway needed improvement. Nearly 76% of Village respondents indicated that the Highway needs improvements in better lane striping, resurfacing, speed limits, traffic flow and safety, and bike paths.

Interurban

The Interurban is the area's public transportation system and is funded in part by a 1 mill assessment. The service was started in May 1980 as a two year experimental project and was initially funded at 100% by the State. Following the experimental period, some of the cost burden was borne by the tri-communities through the 1 mill assessment. The system has four buses and in 1988 there were approximately 37,000 riders. A new maintenance facility in Douglas, to be completed in the spring of 1990, is being constructed at a cost of $211,000 entirely with state and federal funds. It is possible that the Interurban could be used to shuttle people to Saugatuck from remote parking facilitates and ease the parking burden there. The Interurban is governed by a board consisting of members from all three communities.

POLICE, FIRE AND EMERGENCY SERVICES

Police

The Village maintains its own police department, which is housed adjacent to the Saugatuck Township hall on Spring Street. The department has one patrol car and three full time police officers. There are also three officers on reserve. The police department plans to have two patrol cars by the summer of 1990. Police protection for the Village of Douglas is also provided by the Allegan County Sheriff Department and the Michigan State Police. The State Police maintains the Saugatuck Team post north of the Township on 138th Avenue in Laketown Township. The facility has one lieutenant, one sergeant, seven troopers and eight patrol cars. The Allegan County Sheriff Department operates a satellite post in Fennville.

Fire

Saugatuck is included in the Saugatuck Fire District. This district is managed by a five member Fire Authority. Saugatuck, Douglas and Saugatuck Township each appoint one person to the board. These three then appoint two other people from the area at large, subject to approval by the three communities involved. The Saugatuck Fire District has 35 volunteer personnel, including the fire chief. There are two fire stations, one located in downtown Douglas (47 W. Center) and another in Saugatuck Township near the intersection of Blue Star Highway and 134th Avenue. The latter is a new building designed to house six vehicles, offices and a meeting room with 9,600 square feet. It is located adjacent to the existing Maple Street facility.

The Fire District maintains eight vehicles and one vessel:

- 1975 Chevy Pumper
- 1981 International Pumper
- 1968 International Pumper
- 1959 Ford Pumper
- 1949 Seagrave Aerial
- 1977 GMC Step Van

- 1985 FWD Tanker
- 1985 Karavan Trailer
- Boston Whaler boat with pump

Emergency Services

Ambulance services are provided by the Fennville Fire District and by Mercy Hospital in Grand Rapids, dispatched from Holland. The Saugatuck Fire District maintains a first responder unit with 11 volunteers because of the distance from ambulance services. The first responder unit appears to average about 10 calls per month.

SCHOOLS

Douglas is served by the Saugatuck school district. The school system operates two facilities. Douglas Elementary School accommodates grades K through 6, and Saugatuck High School accommodates grades 7 through 12. In addition to being used for educational purposes, the schools also have indoor and outdoor recreation facilities. Enrollment is approximately 550 students.

OTHER COMMUNITY FACILITIES

There is more than 37 acres of public land in Douglas, most of which is parks (see Chapter 7). Other publicly owned facilities are listed in table 6.1.

SOLID WASTE DISPOSAL

PA 641 of 1978 requires that every county prepare both a short term (5 year) and long term (20 years) solid waste management plan. The plan must be approved by the County Planning Committee, the County Board of Commissioners and by at least 2/3 of the municipalities in the county. The Allegan County Solid Waste Plan dates from 1983 and covers a twenty year planning period. It is presently being updated.

The County generates about 220 tons per day of solid waste and has to rely on landfills outside of Allegan County. Solid waste removal in Douglas is handled entirely by private haulers. The waste stream from the County, and thus from the Village, is expected to increase due to population and tourist increases brought about by the area's shoreline, natural attractions, and proximity to Grand Rapids.

The Saugatuck area is defined in the Solid Waste Plan and encompasses Saugatuck Township, Saugatuck and Douglas, as well as small

TABLE 6.3
TONS GENERATED PER DAY BY LAND USE

SOURCE	QUANTITY (PER DAY)
Residential	**6.5**
Commercial	**2.8**
Industrial	**1.8**
Other	**0.7**
Not Collected	**-0.5**
NET TOTAL	**11.3**

Source: Allegan County Solid Waste Plan

TABLE 6.4
SOLID WASTE COMPOSITION

TYPE	POTSW *
Combustible Wastes	**Percentage (%)**
Paper	44.8
Plastics	9.2
Wood	3.5
Yard Wastes	4.1
Textiles	4.2
Food Wastes	11.5
Rubber	2.2
Misc. Organics	3.0
TOTALS	82.5
Noncombustible Wastes	
Glass	5.3
Ferrous	6.6
Aluminum	0.8
Other nonFerrous	0.5
Misc. Inorganics	4.3
TOTALS	17.5

* Proportion of Total Solid Waste
Source: Allegan County Solid Waste Plan

TABLE 6.7
PER CAPITA WASTE GENERATED

USE	QPE * (LBS. PER DAY)
Residential	2.9
Commercial	5.75
Industrial	10.6
Average Overall	4.7

* Quantity Per Employee
Source: Allegan County Solid Waste Plan

portions of the adjoining communities. The Saugatuck area currently generates 11.3 tons of solid waste per day. In some outlying rural areas, 5-10% of the residential waste generated is disposed of or recycled on site. In urban areas, approximately 5% of residential waste is being recycled or scattered by individual efforts. The contributors to the solid waste stream by land use are shown in Table 6.3.

Table 6.4 shows the results of a study conducted by the Northeast Michigan Council of Governments (NEMCOG) in the early 1980's. The study involved counties with both urban and rural characteristics, much like the Saugatuck Township, Saugatuck and Douglas area. Solid waste generated has been broken down into specific categories. The numbers probably do not match the actual breakdown of solid waste components in the tri-community area, but give a rough estimate of the components.

Per capita waste generated from various land uses is shown in Table 6.5.

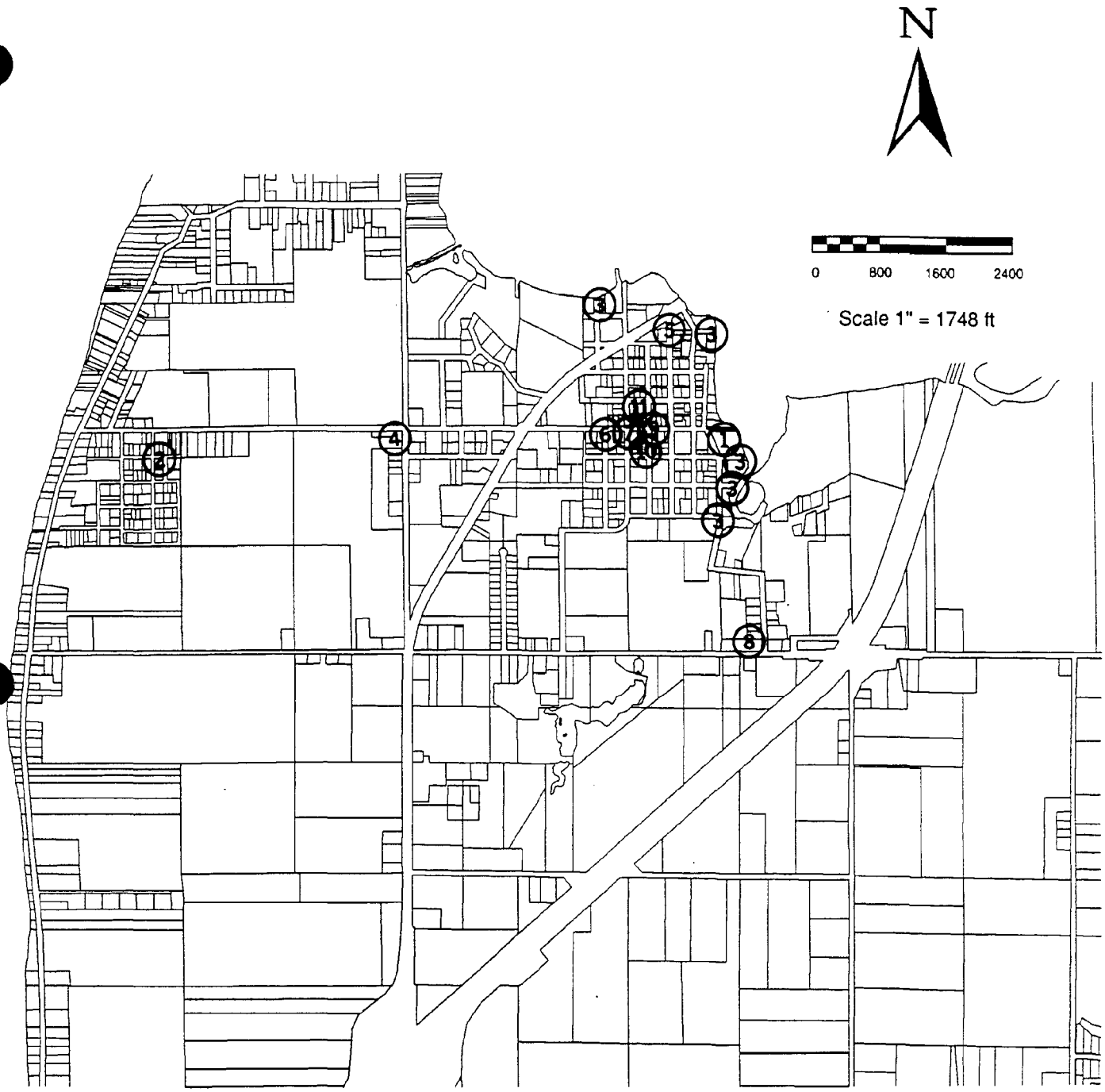
The Allegan County Solid Waste Plan projects that solid waste output for the Saugatuck area will increase by 32% by 2000 to 14.95 tons per day due to projected population increase.

The goals and objectives of the plan focus on reducing the waste stream through separation and recycling, using private haulers for waste collection, recovering energy from the solid waste stream and providing the public with opportunities to develop solutions for solid waste disposal problems. A recycling center is currently in operation on Blue Star Highway adjacent to I-196 and exit 41. The center is partially funded by Saugatuck, Douglas and Saugatuck Township and is very well used. Allegan County Resource Recovery maintains the facility, which collects newspapers, plastics, glass, aluminum and brown paper bags. Pickup of metal appliances and tires is also possible by contacting the center. The recycling center was started in 1984.

State regulations prohibit operation of a new landfill on:

- Land considered by the DNR to be a State recognized unique wildlife habitat.
- Land in the 100 year floodplain.
- Prime agricultural lands.
- A DNR designated and officially mapped wetland.
- So close to an historic or archaeological site that it can be reasonably expected to produce unduly disturbing or blighting influence with permanent negative effect.
- In a developed area where the density of adjacent houses or water wells could be reasonably expected to produce undue potential for groundwater contamination.

Due to the presence of wetlands in the Village (Map 4.4), prime agricultural lands (Map 4.10), and areas susceptible to groundwater contamination (Map 4.11), not much is left for potential landfill sites. Furthermore, most of those sites which may be environmentally suitable for landfills have already been developed. Thus it is not likely that a landfill will be located in the Village.



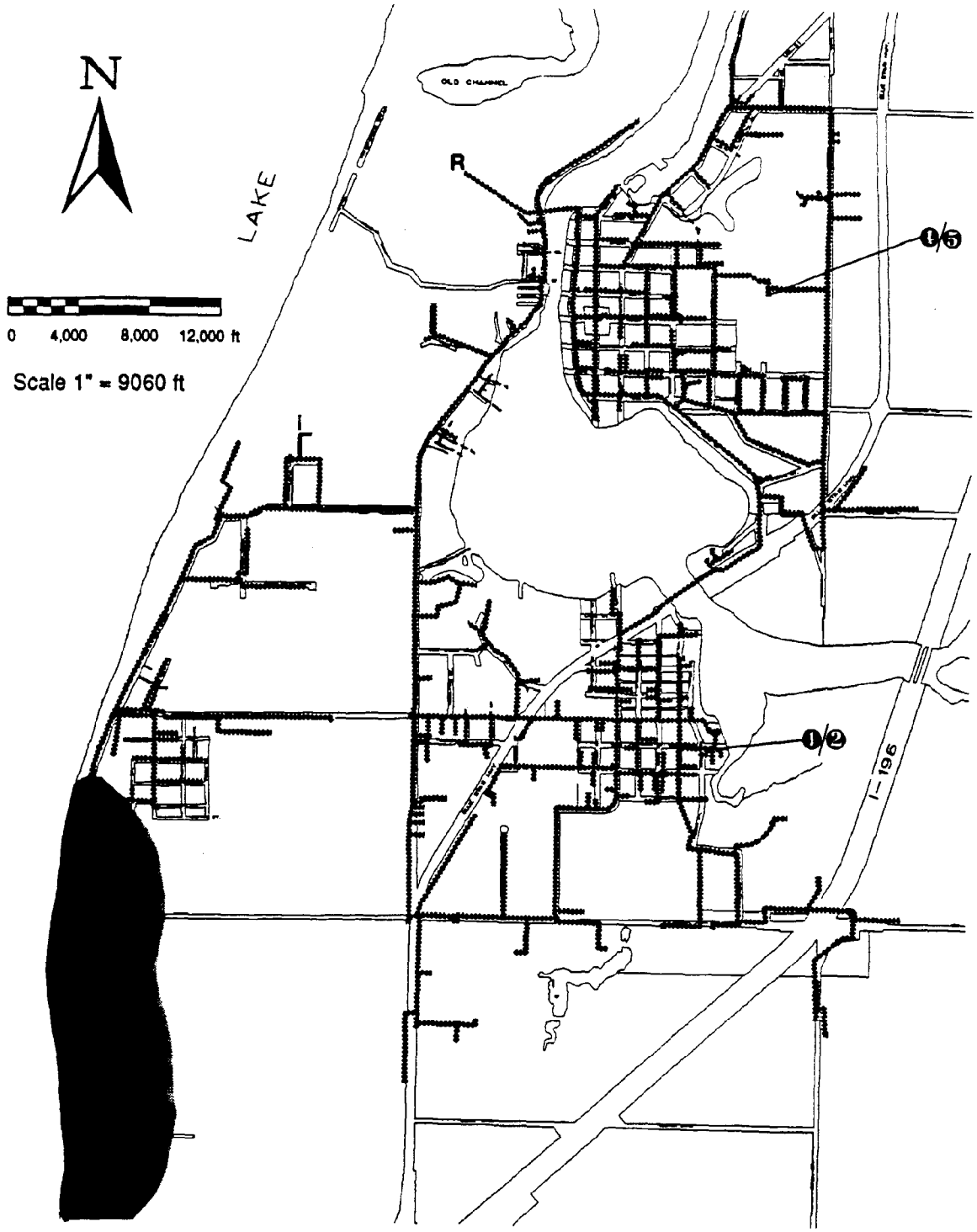
MAP 6.1 Public Facilities

Douglas

1)2 Pumphouses 2)Vacant block 3)1/2 Vacant street ends on Kzoo Rvr & Lake 4 & 5)Vacant lot 6)Library

7)Fire District #1 & Fire Barn 8)DPW Barn 9)Saugatuck Township Hall 10)Village Hall 11)Dutcher Hall

August 1989 DATA SOURCE: Planning & Zoning Center Inc, Lansing, MI



MAP 6.2 WATER SYSTEM

Douglas

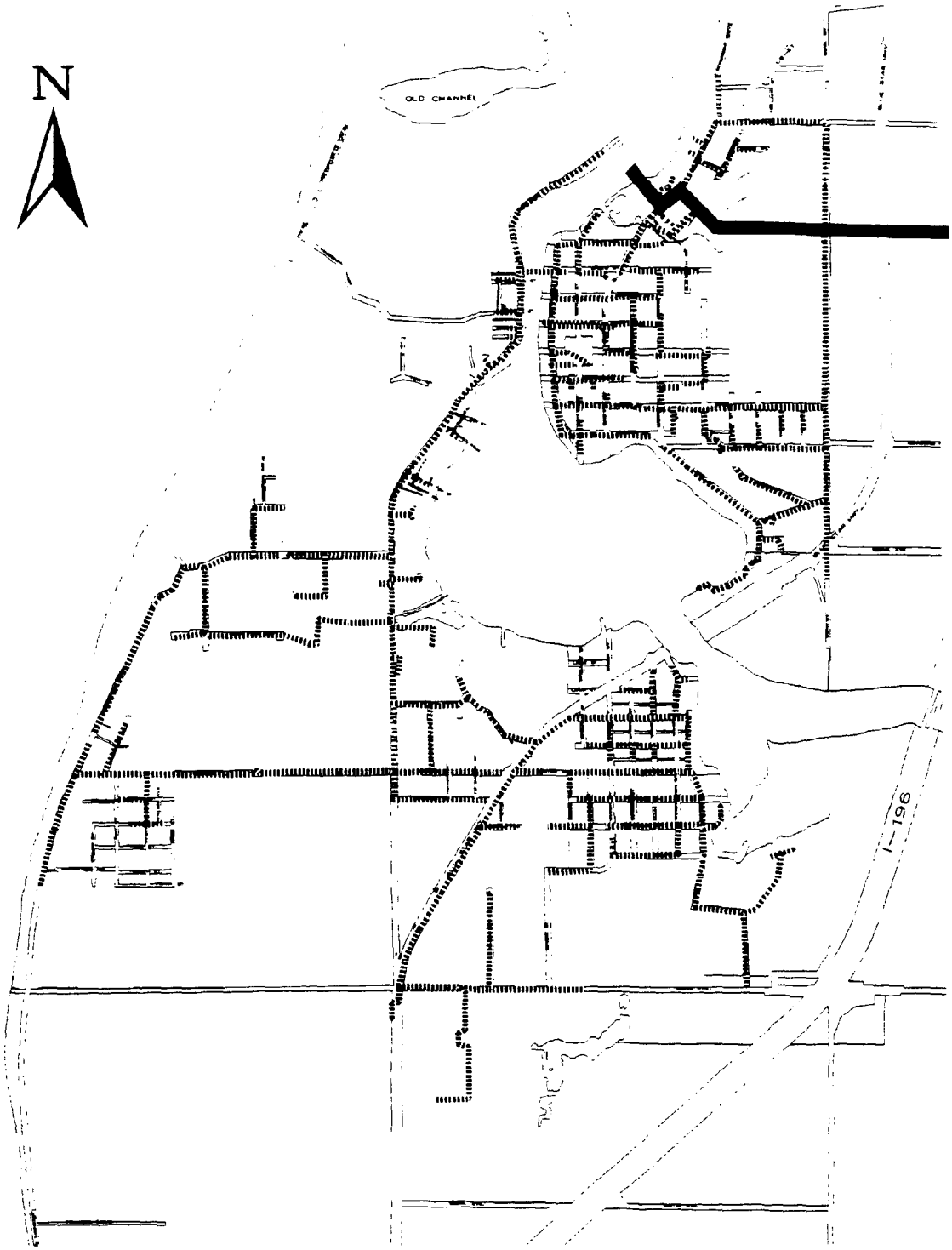
Water Mains

R Reservoir

Proposed Water Intake & Treatment area

1/2 4/5 Existing Well Locations

August 1989 DATA SOURCE: Williams & Works, Inc. Grand Rapids Planning & Zoning Center Inc, Lansing, MI



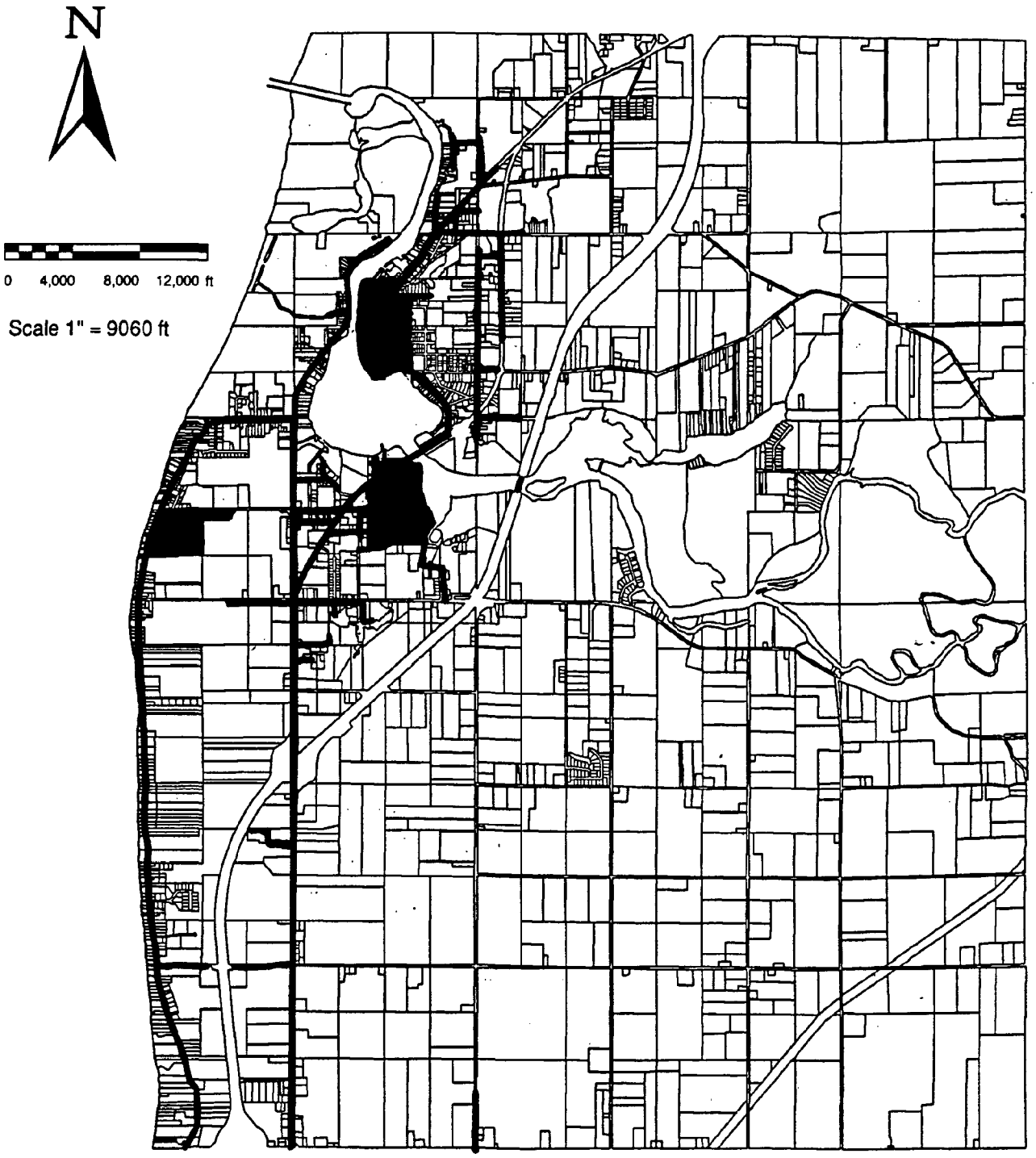
MAP 6.3 SEWER SYSTEM

Tri-Community

Sewer Lines

Discharge Line

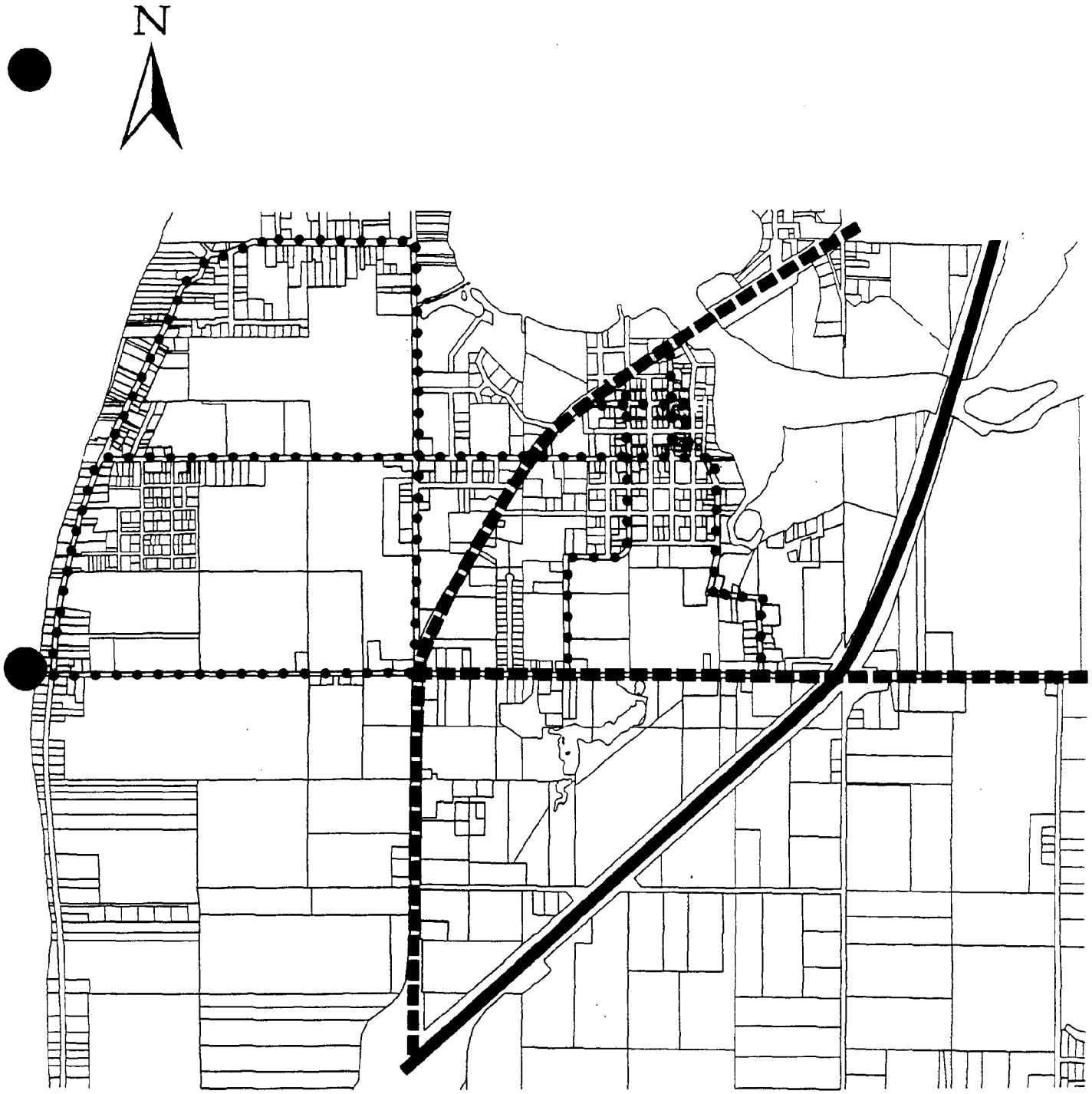
August 1989 DATA SOURCE: Williams & Works, Inc. Grand Rapids Planning & Zoning Center Inc, Lansing, MI



MAP 6.4 GAS MAINS Douglas

Gas Mains

August 1989 SOURCE:Michigan Gas Utilities Company Planning & Zoning Center Inc., Lansing,MI



MAP 6.5 STREET CLASSIFICATIONS

Douglas

Regional Arterials

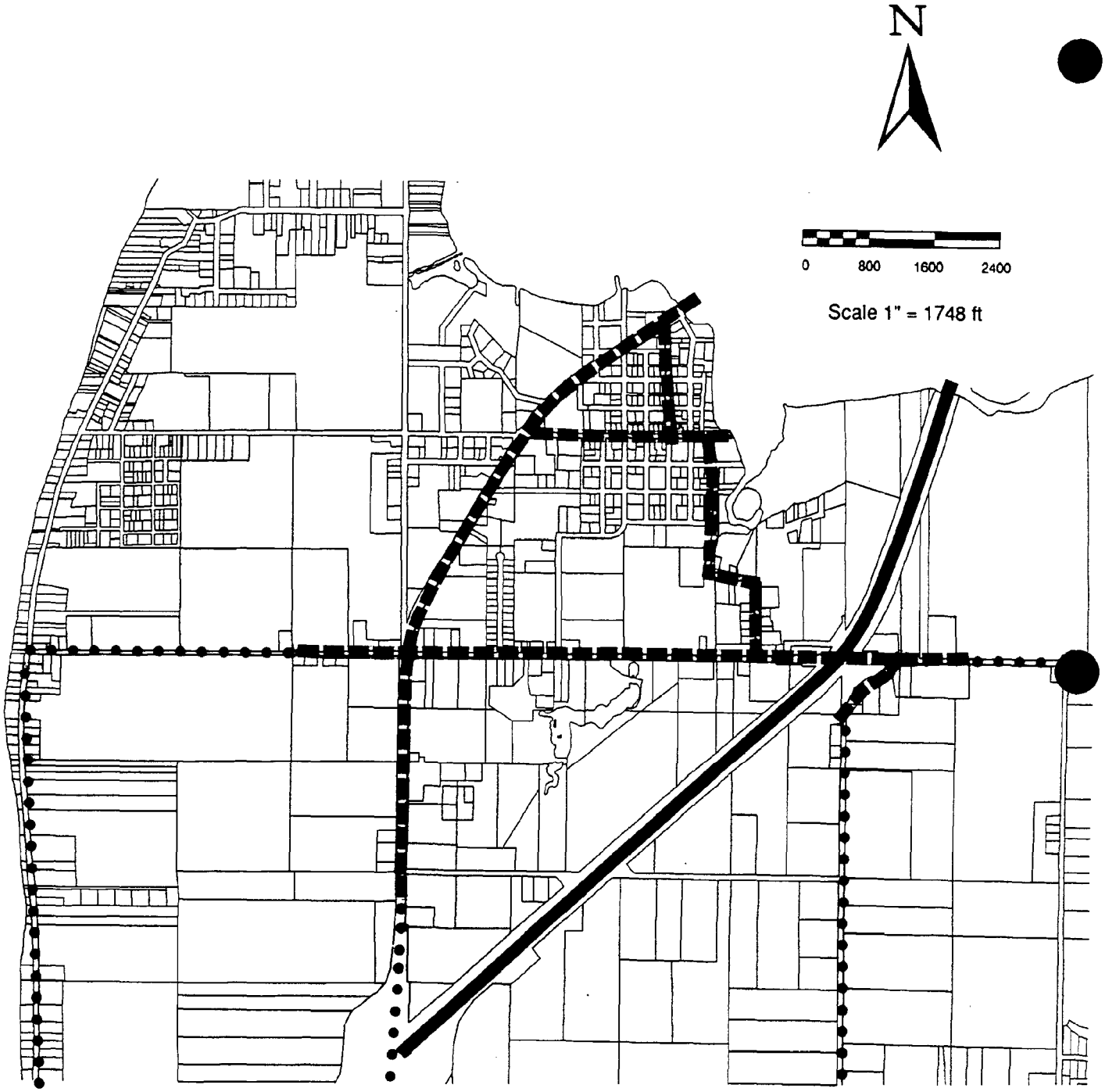
Local Arterials

Collectors

Local Streets

August 1989 DATA SOURCE: PZC

Planning & Zoning Center Inc, Lansing, MI



MAP 6.6 ACT 51 ROADS Douglas

Major Street

State Trunkline

County Primary

August 1989 DATA SOURCE: MDOT Planning & Zoning Center Inc, Lansing, MI

Chapter 7

RECREATION AND OPEN SPACE

Parks, recreation, and open space are essential to the quality of life of area residents, and are an important component of the local tourist economy. They enhance property values, as well as physical and psychological well-being. Parks and open space define the character of each area community, create the scenic atmosphere which stimulates tourism, and provide the basis for popular local leisure activities.

Recreation needs are regional in nature and plans must view local recreational offerings as part of a regional recreational system. Local governments, schools, private entrepreneurs, the County, and the State each have a central role in serving local and regional recreational needs.

ADMINISTRATIVE STRUCTURE

Douglas parks are maintained by the Village's Department of Public Works under the Village Council's Parks and Buildings Committee, which reports to the Village Council. The Village is also represented on the Township Park and Recreation Commission– an independent governmental entity charged with provision of area parks and recreational programs which was created by the Township in November 1970. The Commission has six elected members, and is staffed by a part-time maintenance person. Representatives of both Douglas and Saugatuck Township may be elected to the Commission. The Commission completed the Saugatuck - Douglas Area Parks and Recreation Plan in February of 1985 and updates the plan periodically. Revision of the plan is currently underway.

The City of Saugatuck's parks are maintained by the City through its Department of Public Works. Park planning is done by a committee of three City Council members, who are overseen by the City Manager and the full Council.

Allegan County prepares and periodically updates a countywide parks and recreation plan. County parks are administered by a ten-member County Parks and Recreation Commission whose members include the Chairs of the County Road Commission, the County Planning Commission, the County Drain commissioner, two County Commissioners, and five members appointed by the County Board of Commissioners. The Commission meets on the first Monday of each month. It sometimes provides financial assistance for local recreational efforts which advance the County Recreation Plan.

AREAWIDE RECREATIONAL OPPORTUNITIES

Recreation can be separated into four main categories: physical, social, cognitive, and environmentally related recreation. The former category focuses on sports and various physical activities. Social recreation looks at social interaction. Cognitive recreation deals with cultural, educational, creative, and aesthetic activities. Environmentally related recreation requires the natural environment as the setting or focus for activity. Each of these categories in some way relates to the others.

Physical Recreation

Intramural athletics are popular for children and young adults in the area and are offered through the summer recreation program. Activities include softball, baseball, rocket football, volleyball, bowling and others (see Table 7.1). The elementary school has a newly expanded playground and Kid's Stuff Park. Playgrounds are also found at River Bluff,

TABLE 7.1
SUMMER RECREATION PROGRAMS

ACTIVITY	1989 PARTICIPANTS
T-ball for kids	40
Little League	46
Pony League	19
Slow-pitch softball	10-18
Fast pitch softball (girls)	27
Semi-competitive softball (boys)	15-20
Rocket football	57
Swimming: beginner, advanced beginner, intermediate, swimmer, basic rescue & advanced lifesaving	66

Sundown, Schultz, and Beery Parks and the Douglas Village Square. Aerobic fitness classes are offered at the High school. Walking, hiking, biking, boating, golfing, swimming, and cross country skiing are also popular, and enjoyed by a wide range of age groups.

Social Recreation

A variety of local clubs and activities provide social recreation for people of all ages. Festivals, community education programs, and intramural sports provide an opportunity to socialize. Senior citizens activities are organized through the New Day Senior Citizens Club of Douglas, the High School, the Masonic Hall, and various area clubs.

Cognitive Recreation

The tri-community area is rich in cognitive recreational pursuits. Festivals, art workshops, local theater, historic districts, an archaeological site, summer day camp, and community education programs provide cultural, educational, and aesthetic enjoyment. The Saugatuck Women's Club, Rubenstein Music Club, the Oxbow, Douglas Garden Club, and the Douglas Art Club are among the local clubs which organize cultural activities.

Environmentally Related Recreation

Area lakes, the Kalamazoo River, and state and local parks provide area citizens with unique outdoor recreation opportunities. They provide a location for a variety of outdoor activities including boating, fishing, swimming, nature study, camping, hiking, cross country skiing, and nature walks. These areas also serve the cognitive needs of area citizens and tourists by their scenic beauty and relaxing affect. In fact, the most valued attribute of area water bodies and open space to Village citizens, as identified in the 1988 Public Opinion Survey, is not physical recreation, but the scenic view they provide.

RECREATION INVENTORY

Map 7.1 identifies parks and recreational facilities in the tri-community area. Table 7.2 contains an inventory of outdoor recreation facilities in the tri-community area. There are also two eighteen hole and one nine hole golf courses in the area. This is much higher than typical for such a small population (the standard is 1 golf course per 50,000 people), and reflects the impact of tourism on local recreational facilities. A discussion of the size, condition, and planned improvements for selected area parks is shown in Table 7.3.

Proposed recreation projects contained in the Saugatuck - Douglas Recreation Plan are listed in Table 7.4. Douglas officials have also proposed the following future recreation improvement projects:

- Relocate the public service garage located at Center Street and the Kalamazoo River and develop the site into a riverfront park. Install restrooms.
- Acquire and develop a park site located west of Ferry St. in close proximity to the existing residential area.
- Develop Schultz Park to its fullest potential by: creating a landscaped buffer along I-196; establishing picnic facilities; installing restrooms; installing lawn watering equipment; expanding to add more ball fields and other facilities; and ensuring adequate parking.
- Develop a pedestrian/bicycle route from Schultz Park to the Village's northern boundary which closely follows the waterfront.
- Expand the Douglas public beach.

Table 7.5 includes a schedule of other planned park and open space acquisitions and improvements in Douglas.

RECREATIONAL NEEDS AND USAGE

The 1988 Public Opinion Survey highlighted those recreational facilities which residents feel are inadequate in the tri-community area. Table 7.6 lists these by jurisdiction.

Non-Motorized Trails and Bike Paths

Residents placed highest priority on additional bike paths, cross country skiing routes, and hiking trails. These needs are currently served by non-motorized trails in the Oval Beach/Mt. Baldhead area. The 1985 Saugatuck - Douglas Parks and Recreation Plan, identified bicycle trails as a high priority and prepared a schedule of capital improvements to achieve this objective. These improvements have not been implemented to date.

In 1984, the Saugatuck Township Park and Recreation Commission developed a list of recommended bike paths in the tri-community area. Those recommended for Douglas are shown below in order of priority:

- Center Street from Tara to Lake Shore Drive.

TABLE 7.2
INVENTORY OF OUTDOOR RECREATION

Location	Size (acres)	Ball Diamonds	Tennis Courts	Picnic Tables & Grills	Playground	Parking Area	Trails	Boat Launching	Swimming	Rest Room	Shelter Buildings	Natural Areas	Water Access	Changing Rooms	Concession Stand	Skating	Other
1. River Bluff	27			X	X	X	X			X		X	X				
2. Sundown	.4			X	X												
3. Amalanchier	4						X					X	X				
4. Douglas Beach	1.4					X			X	X			X				
5. H. Beery Field	1.2	X	X		X					X						X	
6. Schultz Park	20	X	X	X	X	X	X	X		X	X		X				
7. Union St. Launch	-							X							X		
8. Center St. Launch	-							X									
10. Village Square	2.5		X		X					X						X	
11. Wicks Park	.5									X			X				X
12. Willow Park	-			X													
13. Cook Park	.5			X													X
14. Spear St. Launch	-							X									
15. Mt. Baldhead	51			X		X	X			X	X	X					X
16. Oval Beach	36			X		X	X		X	X		X			X		
17. Tallmage Woods	60*						X					X					
18. Old "Airport"	154																X
19. Elementary Sch.	8.6	X			X												
20. High School			X			X											X
21. St. Peter's																	X
22. 63rd St. Launch	-			-				X									
23. West Wind KOA	12	X	X	X	X	X			X				X				X
24. Blue Star Hiway Roadside Park				X													
25. Riverside Park																	

- Ferry Street from Center to Campbell Road.
- Lake Shore Drive from Campbell Road to the Village limits.

A path on Blue Star Highway from the bridge to St. Peter's Drive, which was the Village's first priority, has already been completed.

Those bike paths recommended in order of priority for Saugatuck Township are:

- Lake Shore Drive from 130th Avenue to M-89.
- Holland Streets from Saugatuck to the Y.
- Old Allegan Road from Blue Star Highway to 60th St.
- Blue Star Highway from 129th Ave. to M-89.

Those recommended for Saugatuck are shown below in order of priority:

- Park Streets from Campbell to Perryman.
- Oval Beach road.

The regional bike path system would connect with Saugatuck's chain link ferry to afford bicyclists east/west access. This connection runs down Holland Street and across Francis Street to the waterfront and will be served by inner city streets, without the need for additional right of way. At this juncture, bicyclists may ride the chain link ferry to Saugatuck's eastern border. Once on Saugatuck's eastern

TABLE 7.3
PARKLAND INVENTORY

NAME OF PARK	LOCATION	USES	SIZE	CONDITION	PLANNED IMPROVEMENTS TYPE/YEAR
Douglas					
Beery Field	Center & Main Sts.	baseball, playground, picnic	pressbox-220 sq.ft., dugouts-350 sq.ft., land-52,000 sq.ft, 1 acre	pressbox & washroom poor; otherwise good	None
Douglas Beach	Lakeshore Dr.	public beach & picnic	beach-36,400 sq.ft. nearly 1 acre, bathhouse-280 sq.ft.	Fair	None
Schultz	130th & Kalamazoo River	softball, picnic, playground, launch ramp	pavillion-1326 sq.ft., land- 20 acres	Good	Acquisition/'89
Union St. Launch Ramp	Union St. at Kal. River	launch ramp, picnic area	66'x120'	Good	None
Saug. Twp.					
River Bluff	Kal. River above I-196 bridge; access from Old Allegan Rd.	hiking, picnic, boaters stop, nature study, swinging & sandbox	27 acres	newly installed entry road & picnic area. New dock & picnic shelter	pad for dumpster/'89, more flowers/'89, toilet improvements/1990-92
Sundown	Lake MI Bluff at 126th Ave.	picnics, watching lakes & sunsets, scenic turnout	66'x150'	Very poor	new fence; needs landscaping/1989-1992
Blue Star	Blue Star Hwy. south of Skyline Restaurant	picnics, resting for travelers	30'x200'	new flowers; needs new bollards & fence repairs	fence work/1989, bollards/1989-90
Center St. Park	Eastern end of Center at Kalamazoo River	canoe launching, picnics, scenic viewing	3 acres	Poor	additional docking, public restrooms, gazebo
Saugatuck					
Village Square	Butler & Main Streets	tennis courts, drinking fountain, playground, benches, restrooms	2.5 acres	Good	
Wicks Park	Waterfront between Main & Mary Streets	bandstand, boardwalk, benches, fishing, restrooms	1/2 acre approx.	Good	
Willow Park	Waterfront at Butler & Lucy	viewing area, benches	132 ft	Good	
Cook Park	Waterfront on Water Street	picnic tables	132 ft.	Good	
Boat Ramp	Spear Street streetend	boat launch	66 ft.	Good	

TABLE 7.3 (continued)
PARKLAND INVENTORY

NAME OF PARK	LOCATION	USES	SIZE	CONDITION	PLANNED IMPROVEMENTS TYPE/YEAR
Mt. Baldhead Park	Park Street	picnic shelter, tables, restrooms, hiking trails, parking, stairway to observation deck on top of dune, two observation decks on river	51 acres	Good	
Oval Beach Park	Lake Michigan	beach house, concession stand, parking, picnic area, BBQ grills, viewing deck, stairs to beach, observation deck, nature trails	36 acres	Good	new concession stand & restrooms/1990
Tallmadge Woods		current use restricted	100 acres	Good	

side, bicyclists could follow Saugatuck's proposed bike path system down through Douglas and south out of the Township. Bike path right of way would also extend north to Goshorn Lake along Washington Road, thereby connecting with Laketown Township. Another future extension could extend the system east along Old Allegan Road into Manlius Township. This is a scenic route, although somewhat hilly.

Bicyclists wishing to pass through Saugatuck and on south through Douglas would need additional right of way from Lake Street to the bridge, thereby connecting with the Douglas bike path network. Douglas in turn would extend its bike path south on Blue Star Highway to connect with the Township system.

Map 7.2 shows this proposed regional bike path network.

Waterfront Open Space

A survey of waterfront usage revealed that the most popular waterfront activity is viewing. The second most popular use varied by waterbody. Swimming was the primary use of Lake Michigan, powerboating for Lake Kalamazoo and Silver Lake (which also is popular for fishing), and nature study was the most popular for Kalamazoo River due to its large connecting wetlands and wide array of wildlife– including a large population of Great Blue Herons which have established a rookery in the area.

In accordance with usage, the overwhelming majority of residents in each jurisdiction cited preservation of existing waterfront open space and increased access to the waterfront as their highest waterfront need. Acquisition of land and provision of access to Lake Michigan was given highest priority for the waterfront by all three jurisdictions. Open space along Lake Kalamazoo and the Kalamazoo River were also given high priority by the majority of respondents in the Village (64-69%). A large number of respondents also called for additional boat launching facilities.

Parks

Respondents were asked how frequently they used various local parks and the overwhelming majority responded "never". Oval Beach is used most frequently of the area parks by residents of each jurisdiction. Douglas Beach is also frequently used. Wicks, Schultz, and Beery park are more frequently used by Douglas and Saugatuck residents, than those in the Township.

Despite the low usage of area parks reflected in the survey, 50% of Village respondents said that additional parks were a high priority. The survey does not reveal what type of park

TABLE 7.4

PROPOSED RECREATION PROJECTS TRI-COMMUNITY AREA

PROPOSED PROJECT	LOCATION
VERY HIGH PRIORITY	
Willow Park preservation and improvement	Downtown Saugatuck on the river
Acquire extensive land areas	Lake Michigan Shoreline
New dug outs - football field	Saugatuck High School
Renovation of playground equipment	Douglas Elementary School
Convert weight room to storage & coach's offices	Saugatuck High School
Remodel Wicks Park restrooms	On river in Saugatuck
Acquire land to access to Oxbow Lagoon	North of Oval Beach Park
HIGH PRIORITY	
Acquire and improve land for marina and park	Douglas riverfront near bridge
Boat launching facility	City of Saugatuck
Develop bicycle trails	Entire area
Purchase park parcel on hill	In Saugatuck
Acquire additional land for River Bluff Park	Adjacent to River Bluff in Township
Construct additional public restrooms	Downtown Saugatuck
Clear and develop Moore's Creek	Near Amalanchier Park in Saugatuck Township
Rehabilitate tennis courts	Village Square Park - Saugatuck
Update Village Square Park	Village Square Park - Saugatuck
Expand and improve Howard Schultz Park	Village of Douglas
Riverside Park equipment & improvements	Village of Douglas
MEDIUM	
Expand underground sprinkling system	Village Square Park - Saugatuck
Acquire land and develop tot lots	All areas
Develop archery range	River Bluff Park - Township
Beach House rehabilitation	Saugatuck Oval Beach
Acquire land for neighborhood park	Campbell Road area - Saugatuck & Douglas
Construct concession stand	Saugatuck High School Athletic Field
LOW	
Teen Recreation Center	Downtown Saugatuck
Install lighting for tennis courts	Schultz Park
Develop non-motorized trail	Schultz Park
Lighting for tennis courts	Village Square Park - Saugatuck
Construct additional locker rooms	Saugatuck High School

Source: Saugatuck - Douglas Area Parks and Recreation Plan, Feb. 1985.

(active, passive, neighborhood, waterfront, etc.) Village respondents feel is needed. Future recreation plans could explore this issue.

It is important to note that survey responses reflect the usage characteristics of older adults. The average age of survey respondents was 54 to 56 years old. As the age of respondents increases, park usage tends to decrease— especially for parks which specialize in active sports. This reveals the need to orient recreation plans to the recreational needs of older adults. Thus, bike paths, waterfront open space/access, hiking trails, and cross country ski trails should probably receive precedence in future recreation enhancement projects, over more active park facilities like ball diamonds.

Senior Citizens Center

Senior citizens in the area have been lobbying for a senior citizens center to serve the social and recreational needs of the area's elderly population. The survey results reflect support for a senior center in the Village and Township. Forty-five percent of Village respondents and 53% of Township respondents felt that a senior center deserved high priority. Only 25% of City residents called for a senior center—surprising, given the high proportion of seniors in the City's resident population.

RECREATION AND LOCAL SPENDING

In terms of priorities for spending current tax dollars, 42-48% of respondents felt that parks and recreation are a high priority. Waterfront improvement was rated high by Village respondents. Senior programs were given low local spending priority in all three communities, despite the high average age of respondents.

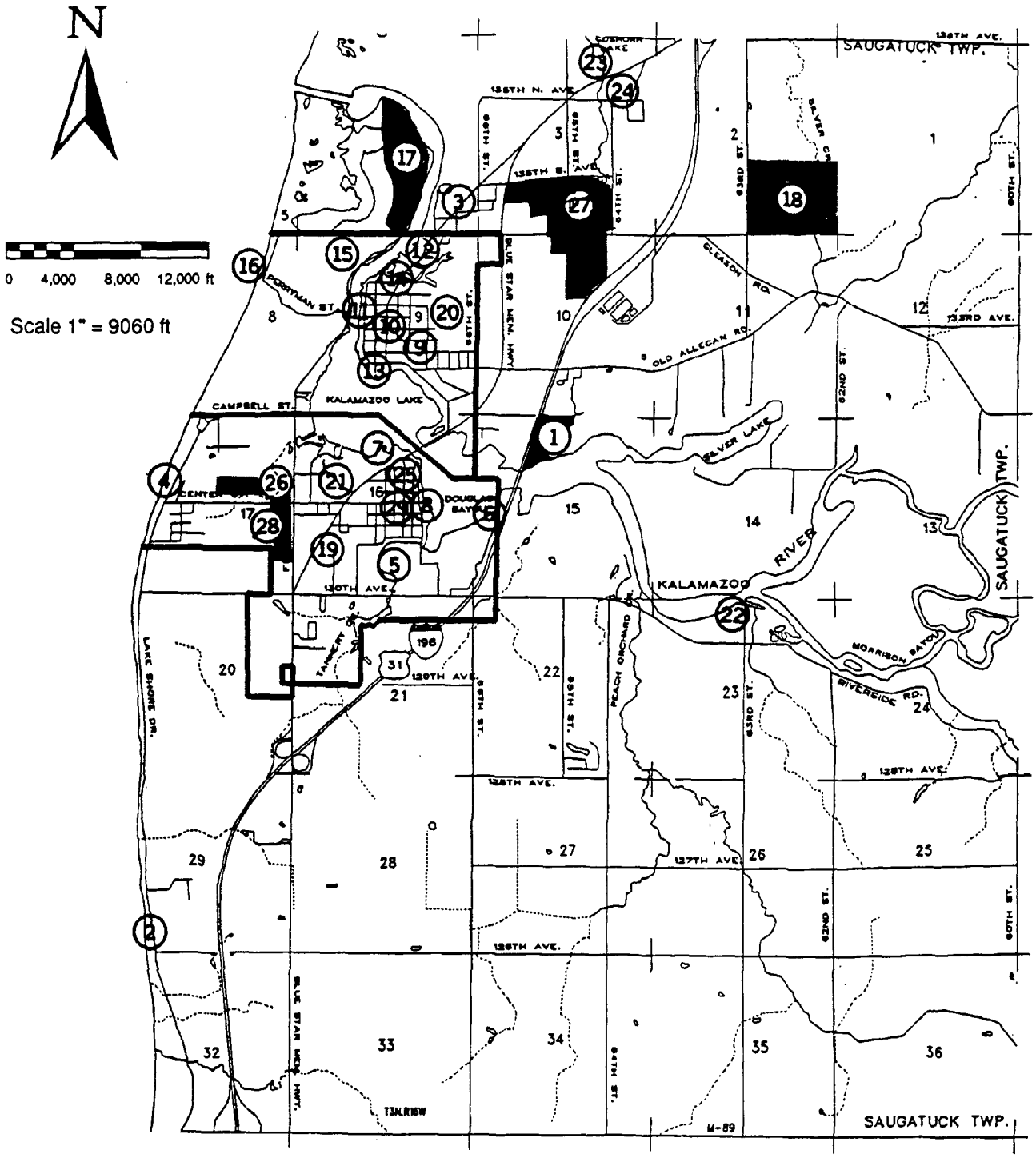
Although they would like to have them, most respondents would not support a community recreation center, a senior center, or a community pool if it meant an increase in general property taxes.

TABLE 7.5
PLANNED ACQUISITIONS/IMPROVEMENTS TO PARKS AND OPEN SPACES

NAME	LOCATION	USE	SIZE	CONDITION	ACQUISITION COST ($)	IMPROVEMENT FINANCING
Esther McSic property	East side Union St. - Kal. Lake, North of Blue Star (Douglas)	Public open space	124,000 sq.ft. (portion under water) vacant	Marshy	185,000	DNR Land Trust
Ruth McNamara property	Land locked end of Schultz Park (Douglas)	Park	132,000 sq.ft. (vacant)	Dry	NA	NA
Vacant Lot	Blue Star & Main St. (Douglas)	Future park	land 18,000 sq.ft.; nearly 1/2 acres	Dry	65,000	NA
Old Saugatuck Airport	SE 1/4 Section 2 (Saugatuck)	Currently forestry management, possible future recreation	154 acres			

TABLE 7.6
RECREATION NEEDS IN THE TRI-COMMUNITY AREA
1988 PUBLIC OPINION SURVEY

CITY	VILLAGE	TOWNSHIP
Bike paths (68%)	Lake MI open space (70%)	Lake MI open space (67%)
Hiking trails (62%)	Lake Kal. open space (69%)	Bike paths (64%)
Cross-country ski trails (62%)	Bike paths (67%)	Lake Kal. open space (62%)
Lake MI open space (61%)	Kal. River open space (64%)	Kal. River open space (62%)
Lake Kal. open space (50%)	Parks (50%)	Cross-country ski trails (60%)
Kal. River open space (49%)	Boat launching ramps (46%)	Boat launching ramps (59%)
Boat launching ramps (45%)	Senior Center (45%)	Senior Center (53%)

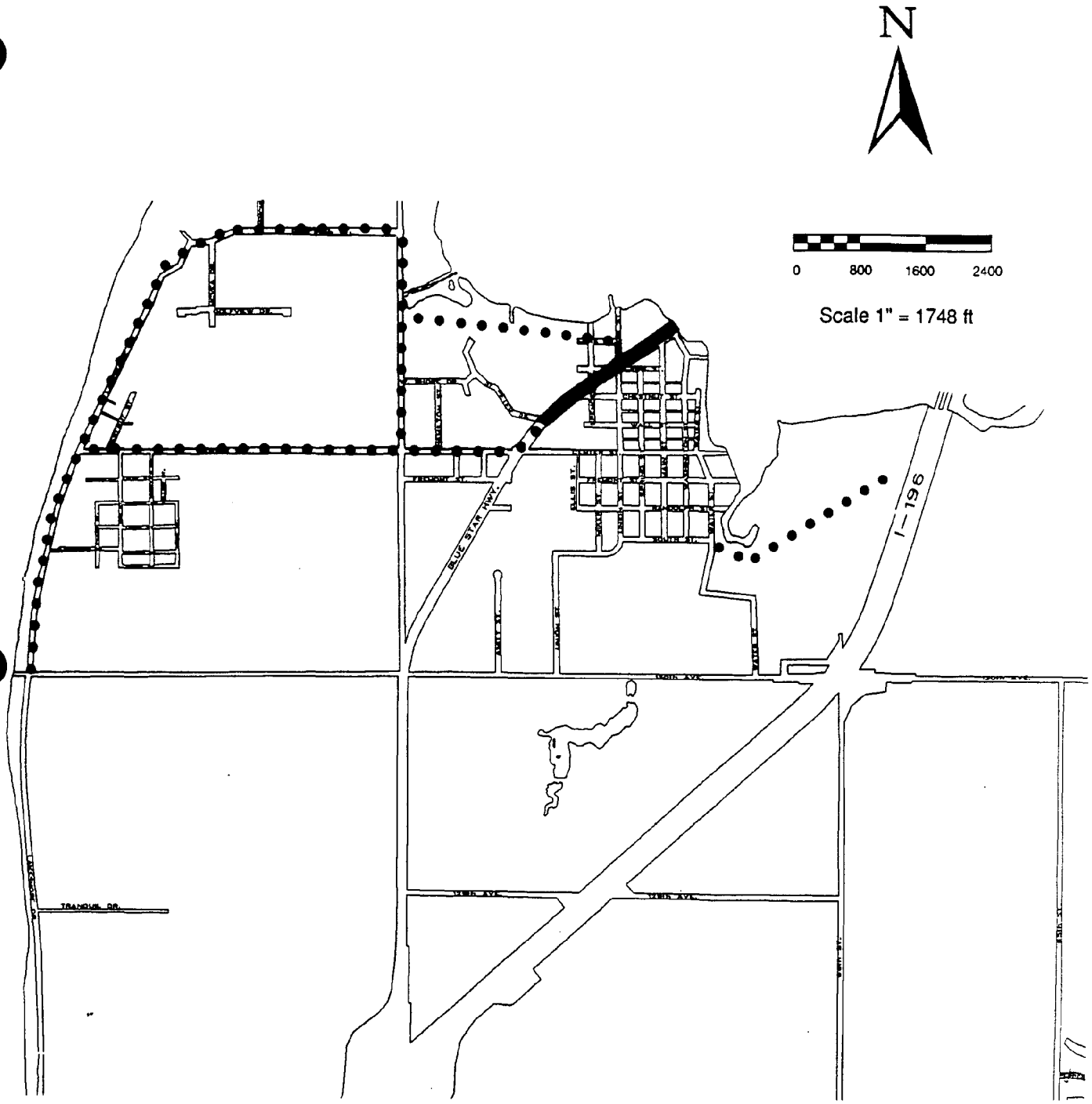


MAP 7.1 OUTDOOR RECREATION SITES Douglas

1) - 25) See Chapter 7, Table 7.2

26) West Shore Golf Course 27) Clearbook Golf Course 28) Mi-Ro Golfcourse 29) Center Street

August 1989 DATA SOURCE:Saug. - Doug. Parks & Rec. Plan, 1985 Planning & Zoning Center Inc, Lansing, MI



MAP 7.2 ACTUAL & PROPOSED BIKE PATHS Douglas

Proposed Bike Paths

Actual Bike Path

August 1989 DATA SOURCE: Saugatuck Township Park and Recreation Commission Planning & Zoning Center Inc, Lansing, MI

Chapter 8

WATERFRONT

Saugatuck was the first settlement in Allegan County. Its natural protected harbor along the Kalamazoo River and proximity to Lake Michigan gave it a ready means of water transport—essential to the commerce of the day. Throughout its history, land use activities along the Lake Michigan shoreline and the riverfront have continued to dominate the economic life of the tri-community area. Lumbering, boat building, basket making, fruit transport, and even large Great Lakes passenger boats have, at different times, relied upon the River connection. Tourists have always been attracted to the area, but tourism is now the number one economic activity. Today's waterfront activities are dominated by tourist and pleasure craft needs, especially sailboats, powerboats, charter fishing boats and other tourist boats. Consequently, how the waterfront is used will be of crucial importance to the future of the tri-community area.

The primary issues concerning proper future use of the waterfront involve competition between economic development and environmental protection. Waterfront lands represent the highest value lands in the tri-community area, and local officials are therefore concerned about the potential tax base associated with use of waterfront lands. In order to finance the service needs of local residents, the tri-communities must balance taxable and nontaxable land uses. This presents a dilemma. Although waterfront lands have high revenue generating potential, a major attraction of both the Lake Michigan and Kalamazoo River waterfronts is their scenic, natural shorelines composed of forested sand dunes and large wetland areas. Should these natural areas be greatly damaged or destroyed through inappropriate development, then the *"goose that laid the golden egg"* will be dead.

It is essential that the natural beauty of the waterfront be maintained along the Lake Michigan shoreline, the Kalamazoo River from the channel to Saugatuck, and from the Blue Star Highway bridge inland. Limited additional development along the waterfront on Lake Kalamazoo and the Douglas side of the bayou east of Blue Star Highway may be both desirable and necessary. However, such development must be undertaken carefully to maintain the delicate balance between economic development and environmental protection.

It is both necessary and possible to manage the waterfront for a variety of purposes. Yet it is always difficult to manage for multiple uses. Some individuals value land management to retain the necessary habitat for birds, fish and wildlife. Others feel it should be managed to maximize surface water use, or for intensive waterfront dependent activities like ship building or power generation. Based on some of the technical data presented below, existing use information, citizen opinions, and the goals and objectives presented at the beginning of this Plan, the waterfront in the tri-community area can, and should, be managed to accommodate a wide range of land uses and activities.

This Plan seeks to define a balance between competing uses. It places protection of the natural environment as first and foremost in making future land use decisions along the Lake Michigan and Kalamazoo River waterfronts. The ultimate goal is to minimize disruption of the natural environment so that new development is in harmony with the environment, rather than in conflict with it. Some destruction of the limited remaining wetland areas along Lake Kalamazoo is only justified where the public benefits of particular projects are very great (e.g. a public marina or additional public access to the waterfront).

Watersheds of the Kalamazoo River Basin

The Kalamazoo River extends from south of Homer in Hillsdale and Jackson Counties to its outlet at Lake Michigan in Saugatuck Township (see Figure 4.1). With the exception of lands adjoining Lake Michigan (which drain directly into the Lake) and a small area in the southeast corner of Saugatuck Township, all land in the tri-community area is part of the Kalamazoo River Basin.

Eight small watershed areas lie within the tri-community area and discharge into Lake Michigan via the Kalamazoo River (see Map 8.1). These include Goshorn, Peach Orchard, Tan-

nery, Silver and "Cemetery" Creeks, as well as the Morrison Bayou at the eastern end of the Kalamazoo River as it enters the Township. Most of Douglas and Saugatuck also drain separately into the Kalamazoo River and Lake Kalamazoo. Slopes in the area are generally less than 10 percent though locally they may be in excess of 20 percent. Runoff erosion is taking place in the highlands, contributing sediment to back-swamp areas and Lake Michigan.

Monthly (exceedance) flows for the Kalamazoo River, based on a 1649 square mile drainage area near Fennville (#0410B500, T2n, R14W, NE 1/4 Sec 5), were averaged from measurements taken between 1929 to 1985 by the Hydrologic Engineering Section, Land and Water Management Division, MDNR. Estimates based on these measurements were then prepared for the larger drainage area of 2060 square miles at the mouth of the Kalamazoo River (T3N, R16W, Sec 4, Saugatuck Township).

Ninety-five percent and fifty percent exceedance flows are shown in Table 8.1. These are flows exceeded 95% or 50% of the time. The lowest 95% exceedance flow in Fennville (nearly drought level) was measured during August at 410 cfs, and is estimated to be 520 cfs at the mouth of the Kalamazoo River. The 50% exceedance flow in Fennville ranged from a low of 860 cfs during the summer months to 2010 cfs during April. Corresponding estimates for the mouth of the Kalamazoo River ranged from 1070 cfs during the summer months to 2510 cfs during April.

The 100 year discharge is estimated at 15,400 cfs at the mouth of the Kalamazoo River, and 12,500 cfs at the Fennville gage.

TABLE 8.1
KALAMAZOO RIVER
EXCEEDANCE FLOWS (1929-85)
MONTHLY AVERAGE
CUBIC FT/SECOND

	FENNVILLE		RIVER MOUTH	
	50%	95%	50%	95%
January	1350	710	1690	890
February	1400	790	1750	990
March	1950	1010	2430	1260
April	2010	1040	2510	1300
May	1600	830	2000	1040
June	1250	630	1560	790
July	970	480	1210	600
August	860	410	1070	520
September	860	480	1070	600
October	980	520	1220	650
November	1210	650	1510	810
December	1300	750	1620	940

Source: Hydrologic Engineering Section, Land and Water Resources Division, Michigan Department of Natural Resources.

PRIMARY ECOSYSTEMS

The tri-community area has three basic ecosystems, two of which parallel the waterfront. The first ecosystem is comprised of hardwoods holding the sand dunes in place along the Lake Michigan shoreline. These woodlots are inhabited by small game such as fox squirrels, rabbits, raccoons, deer, wild turkey, and opossums. This ecosystem is comprised of fauna common to most of Michigan, but its balance is easily upset by the disruption of its shallow organic soils. Any ground cover that is damaged or removed should be quickly replaced with cover that will hold and prevent sand from blowing or rapid wind erosion may occur. Michigan's most famous ghost town, Singapore, once a thriving lumber town, lies beneath these shifting sands near the mouth of the channel.

The second ecosystem is the marsh-wetland ecosystem that covers the area along the Kalamazoo River, Silver Lake and Goshorn Lake, and the connecting tributaries. This area is covered with marsh grasses, low shrubs, poplar trees, spruces, some white pine, and other softwoods. The cover is inhabited by common Michigan marsh dwellers such as frogs, turtles, ducks, blackbirds, and snakes. The marsh ecosystem is also populated by muskrat, mink, mallard duck, black duck, teal, wood duck, blue heron, Canadian geese, and mute swans. Golden eagle and osprey used to frequent the area. The marsh ecosystem is very sensitive to changes in water quality and disruption of vegetation. Great care must be taken to limit siltation and disruption to vegetation when working in this ecosystem.

The third ecosystem covers the rest of the Township and is predominantly agricultural/forest with birds and wildlife common to this dominant ecosystem in Michigan.

The entire Saugatuck/Douglas area is designated as an area of particular concern by the DNR. Areas of particular concern are those having scarce resources, unusual scenic beauty, unusual economic value, recreational attractions, or some combination of the above. They are only located in coastal areas. Altering the

environment in an area of "particular concern" could have a significant impact on the quality of coastal and Great Lakes waters.

WATER QUALITY

The Kalamazoo River watershed includes many types of land uses and the River flows through several large developed urban areas including Kalamazoo and Battle Creek. When it reaches the tri-community area, the quality of this water is not good. Despite the water quality problem, the River from about one-half mile downstream from the Hacklander Public Access Site (in Section 23), has been designated as a "wild-scenic river" under Michigan's Natural River Act, Public Act 231 of 1970. Land use restrictions have been imposed to retain its natural character within 300 feet of the River's edge.

The basic water management goal is the elimination of the pollution threat to surface and groundwater resources. The Kalamazoo River is designated by the DNR to be protected for recreation (partial body contact), intolerant fish (warm water species), industrial water supply, agricultural and commercial uses. Downstream from the Kalamazoo Lake, the river is protected for cold water anadromus fish species (trout and salmon). Kalamazoo Lake and Goshorn Lake are designated to be protected for recreation (total body contact), and intolerant fish (warm water species). These water management objectives are nearly ten years old, but there have been no concerted efforts to update them and carry them out. A push to revise the objectives is underway statewide, but it could be years before any action plans are carried out for the Kalamazoo River.

1988 Public Opinion Survey results reveal that citizens in the tri-community area feel that the water quality of the Kalamazoo River and Lake is poor to very poor (58%-70%), Lake Michigan is rated fair to good (31-50%), and most respondents familiar with the water quality of Silver Lake felt that it was fair. The majority of respondents who are familiar with these water bodies, feel that the water quality of Lake Michigan and Silver Lake has deteriorated slightly in recent years, and Kalamazoo River and Kalamazoo Lake has deteriorated slightly to greatly. Most respondents who reside in Saugatuck, however, felt that the water quality has stayed about the same.

Basic water quality data on the River appears in Table 8.2 for selected months in 1978,

TABLE 8.2
KALAMAZOO RIVER WATER QUALITY

	FECAL COLIFORM PER 100 ML	PHOSPHOROUS TOTAL MG/L	PHOSPHOROUS ORTHO MG/L	NITROGEN NO2 NO3 MG/L	SEDIMENTS MG/L	SEDIMENTS TONS/DAY	HEAVY METALS LEAD MG/L	HEAVY METALS MERCURY MG/L
Fennville								
1/27/88	–	.05	.01	1.4	5	29	–	–
5/18/88	–	.04	<.01	0.5	26	102	<5	<.1
7/28/88	28	.08	<.01	0.67	17	30	–	–
9/21/88	96	.07	.02	0.64	39	202	<5	<.1
Saugatuck								
3/19/86	–	.08	.02	1.6	21	161	<5	<.1
6/25/86	200	.11	.02	0.88	13	102	–	–
9/11/86	200	.14	.01	0.39	21	103	<5	<.1
Saugatuck								
1/10/78	120	.07	NR	1.7	9	27	–	<.5
5/1/78	–	.12	NR	0.34	20	123	20	<.5
7/20/78	69	.12	NR	0.54	15	26	10	.5
9/11/78	–	.15	NR	0.00	28	72	–	–

NR = Not Reported
Source: USGS Water Resource Data For Michigan, Water Resources Division, U.S. Geologic Survey.

1986, and 1988. The sampling point was moved from Saugatuck to Fennville in 1987. This data reveals an increase in sedimentation and a decline in heavy metals. It also shows an increase in fecal coliform (intestinal bacteria) levels to 200/100 ml at the former testing site in Saugatuck—the maximum level permitted under rule 62 of the MDNR Water Resources Commission General Rules of 1986. Phosphorous and certain nitrogen levels have not changed appreciably in the past ten years.

The Kalamazoo River between Calkins Dam and Lake Michigan has been designated an Area of Concern in the 1988 Michigan Nonpoint Source Management Plan (MNSMP), due to contamination of fish from PCB's. The primary source of contamination was identified as PCB contaminated sediments upstream in the Kalamazoo River and Portage Creek. These sediments continue to erode, resuspend, and dissolve PCB's into the water column where they are transported downstream.

Due to the presence of PCB's, advisories are in effect for consumption of fish caught in the Kalamazoo River or Lake Michigan. The advisory warns against any consumption of carp, suckers, catfish, and largemouth bass taken from the Kalamazoo River downstream from the Morrow Pond Dam to Lake Michigan and Portage Creek downstream from Monarch Millpond. Limited consumption of other species (no more than one meal per week) is considered safe for all except nursing mothers, pregnant women, women who intend to have children, and children age 15 and under.

In Lake Michigan limited consumption of Lake Trout 20-23", Coho Salmon over 26", Chinook Salmon 21-32", and Brown Trout up to 23" is considered safe for all except nursing mothers, pregnant women, women who intend to have children, and children age 15 and under. Individuals should not consume carp, catfish, or Lake Trout, Brown Trout, or Chinook which fall outside of the acceptable size for limited consumption.

To address the PCB problem, the MNSMP has devised a Remedial Action Plan with the goal of reducing human exposure to acceptable levels (1:100,000) and thus reducing fish tissue concentration to a maximum .05 mg/kg and reducing water column levels to .02 ng/l. Actions taken to address the problem include: strict controls on direct discharges of PCB's; a feasibility study of remedial alternatives; funding through State Act 307 to take remedial action at three sites; and legal action and negotiations with private parties at two other sites (see MNSMP, November 7, 1988, p. 328).

Efforts initiated in the '70's to identify and require extensive treatment of pollutants prior to their dumping into the River will continue to slowly improve the quality of the water. As the nutrients like phosphorus and nitrogen are removed from wastewater entering the River, less new plant life will be stimulated and more oxygen will be available for fish.

One of these efforts is the Michigan Water Resources Commission Act, which requires all discharges into the water to have discharge permits. In addition, the Federal Water Pollution Control Act established the National Pollutant Discharge Elimination System (NPDES) permit program. Under these laws, any public or private facility which will emit any point-source discharge into the water must first receive a NPDES discharge permit. The permit program sets forth limitations and monitoring requirements to protect water quality and meet treatment standards, and establishes strong enforcement actions for violations. The Surface Water Quality Division, MDNR, administers NPDES permits. NPDES permits issued in the tri-community area are shown on Table 8.3.

However, sedimentation and nonpoint sources of pollution will remain a problem. In contrast to pipes that discharge directly into a waterbody, nonpoint sources of pollution include those pollutants that do not originate from a single point—such as fertilizer and pesticide runoff from farmers fields and petroleum based pollutants that wash off parking lots and roadways. The most obvious pollutants are the physical litter and debris that are carelessly dumped into the River or Lake and which typically wash up along the shore.

Michigan's 1988 Nonpoint Pollution Assessment Report concluded that 99% of Michigan's watersheds have at least one waterbody with a non-point source pollution problem. In-place contamination and atmospheric deposition were listed as the primary non-point sources of pollution for the Kalamazoo River.

Stronger efforts to improve water quality will have a positive affect on tourism, recreation, and future growth and development of the tri-community area. All sources of pollution affect water quality, and hence the utility of the water resource. While the tri-community area must rely on outside agencies to enforce pollution control laws upstream, some efforts can be undertaken by Saugatuck, Douglas and Saugatuck Township to improve water quality

TABLE 8.3
NPDES PERMITS ISSUED IN THE TRI-COMMUNITY AREA

PERMIT RECIPIENT	ADDRESS	DISCHARGE	LOCATION	EXPIRATION DATE
Culligan	201 Culver St., Saugatuck	processed wastewater	Kalamazoo Lake via storm sewers	1991
Kal. Lake Water & Sewer Authority	340 Culver St., Saugatuck	treated municipal waste	Kalamazoo River outfall 001	1990
Kalamazoo Lake Groundwater Purge	6449 Old Allegan Rd., Saugatuck Twp.	900,000 gal/day purged groundwater, purgable halocarbons	Kalamazoo River outfall 001	1993
Rich Products	350 Culver St., Saugatuck	12,000 gal/day non-contact cooling water & cooling tower blowdown	Kalamazoo River via storm sewer	1990

Source: MDNR Surface Water Quality Division

TABLE 8.4
LAKE MICHIGAN LAKE LEVELS

YEAR	LOWEST EL FEET A.S.L.	MONTH	HIGHEST EL FEET A.S.L.	MONTH	DIFFERENCE IN FEET	DIFFERENCE IN INCHES
1977	578.00	February	578.57	July	.57	6.84
1978	578.12	March	579.01	October	.89	10.68
1979	578.31	February	580.02	April	1.75	20.52
1980	578.92	December	579.77	July	.85	10.20
1981	578.51	February	579.43	July	.92	11.04
1982	578.17	March	579.02	April	.85	10.20
1983	578.85	February	580.08	July	1.25	15.00
1984	579.02	February	580.23	July	1.21	14.52
1985	579.57	February	580.84	June	1.27	15.24
1986	580.36	February	581.62	October	1.26	15.12
1987	578.96	December	580.65	January	1.69	20.28
1988	578.10	December	579.04	May	.94	11.28

Source: **The Michigan Riparian**, May 1989

and prevent further pollution within the tri-community area. These will be discussed further later in this Chapter.

LAKE LEVELS

The natural level of the Great Lakes goes through periodic changes that are based predominantly on rainfall and evaporation within the entire Great Lakes Basin. Since a century peak in 1986, Lake Michigan has steadily fallen to its current level of around 578 feet (see Table 8.4).

The Kalamazoo River, Kalamazoo Lake and Lake Michigan are interconnected. Thus, water levels on the River and Lake Kalamazoo are largely dependent on Lake Michigan water levels. Consequently, land uses adjoining the waterfront should be based on the vagaries of fluctuating Lake Michigan water levels. This has not always been done as was evident by extensive shore erosion and flooding during the last high water period.

When water levels are high "no-wake" zones, which are always in effect from the channel to Mason Street in Saugatuck, are extended

to cover all of the Kalamazoo Lake shoreline and parts of the River east of Blue Star Highway (see Map 8.2). When a "no-wake" speed is in effect, then all motor boats and vessels must limit speed to a slow no-wake speed when within 100 feet of:

- rafts, except for ski jumps and ski landing floats;
- docks;
- launching ramps;
- swimmers;
- anchored, moored or drifting boats; and
- designated no-wake zones.

This means a speed slow enough that the wake or wash of the boat creates a minimum disturbance. Owners and operators are responsible for damage caused by wakes.

HARBOR

Map 8.3 is the existing harbor map (June 1987) distributed by the National Oceanic and Atmospheric Administration. It depicts water depth for the shoreline along Lake Michigan, and the River through Kalamazoo Lake. Channel depth is maintained by periodic dredging to a depth of 13 feet to Main Street in Saugatuck. (Dredging at the mouth of the channel is to begin in July 1990 and be completed in the Fall of 1990.) The depth then drops to 20-27 feet for the next 500 feet. Between that point and Tower Marine, the water depth is about 7 feet. Most of the rest of Lake Kalamazoo varies between 1 and 4 feet in depth with not more than 2 feet being the most common. The Douglas shoreline, east of Blue Star Highway is only 1-2 feet in depth except for a small area running NW-SE from the center of the bridge and connecting to the Point Pleasant Yacht Club.

This natural harbor is the principal attraction for nautical tourists which flock to the area during summer months when the marinas are used to capacity. Hundreds rent dockage by the season. Many live on their boats for weeks on end. The demand for dockage appears to be greater than the supply, despite the huge number of slips available (see Map 8.4). In 1976 there were 8 marinas with approximately 800 slips. In 1989, there are 26 legally operating marinas with 966 slips. There are about half dozen marinas without current permits and these contain over 30 more slips. There are also a number of slips maintained by private residences for their own personal use.

Marina permits are required for any commercial activity, so as few as two slips could require a marina permit if they are rented. Permits are issued for a three year period by the DNR. On peak summer weekends the number of boats on the lake could be twice to thrice the normal level. This presents one of the most serious problems jointly facing the tri-community area—how to deal with surface water use conflicts.

The Lake has a total surface water area of 184 acres. Acreage available for recreational boating is dramatically reduced by the dockage which extends into the Lake hundreds of feet and by the shallow water at the edge to about 133 acres. Yet, on summer weekends the River is a constant highway of boats moving in and out of the Lake. Recreational sailing, fishing, swimming, sailboarding and water skiing are limited by all of the motorboat traffic. However, during the week, other water surface activities can go on without much interference.

MARINE SAFETY

The Allegan County Sheriff's Department, Marine Safety Division, maintains strict control of the waterways. The Department has 8 marine officers. Normally, two officers patrol by boat, but three to four officers patrol during holidays and special events. Officers patrol in a 27 foot Boston Whaler with two 150 horsepower outboard motors. This boat is equipped for Lake Michigan rescue, and has a noise meter which monitors the 86 decibel noise limit.

From Memorial Day to Labor Day officers put in 635 hours of patrol duty on Kalamazoo River and Kalamazoo Lake. One hundred and ten hours were spent patrolling Lake Michigan. Most patrols occur between Friday and Sunday, and about half of the Department's budget goes to patrolling the Saugatuck area.

In the summer of 1989, 189 tickets were issued on Kalamazoo River and Kalamazoo Lake, 11 were issued on Lake Michigan, 276 warnings were issued, 10 complaints were received, and 6 boating accidents occurred. The Department also conducted 378 safety inspections. The most common violations are inadequate life preservers on board and lack of current registration.

The Department notes that slow/no wake, and hazardous violations were down in the summer of 1989. The most common surface water use conflicts identified by the Sheriff's Department include sailboat and motorboat conflicts and complaints over the noise and attitude of jet

skiers. Conflicts between sailboats and motorboats are most common on Saturday.

EXISTING LAND USE

Existing land use is described in detail in Chapter 5. All land uses along the waterfront are oriented to the water. The bulk of the waterfront in the Township from the channel to the City is developed as single family residential. The City and Village waterfronts are predominantly residential and marina. The balance of the waterfront, which lies in the Township, is in a natural state with some areas of residential development (such as along Silver Lake). Many commercial establishments (mostly motels and restaurants) are also located here. Except for the Broward Boat Company near the channel, there are no industrial activities along the waterfront. A number of small parks are located along the waterfront, but there are few public access sites and, except for Shultz Park, these provide little space for transient parking.

CONFLICTS/PROBLEMS

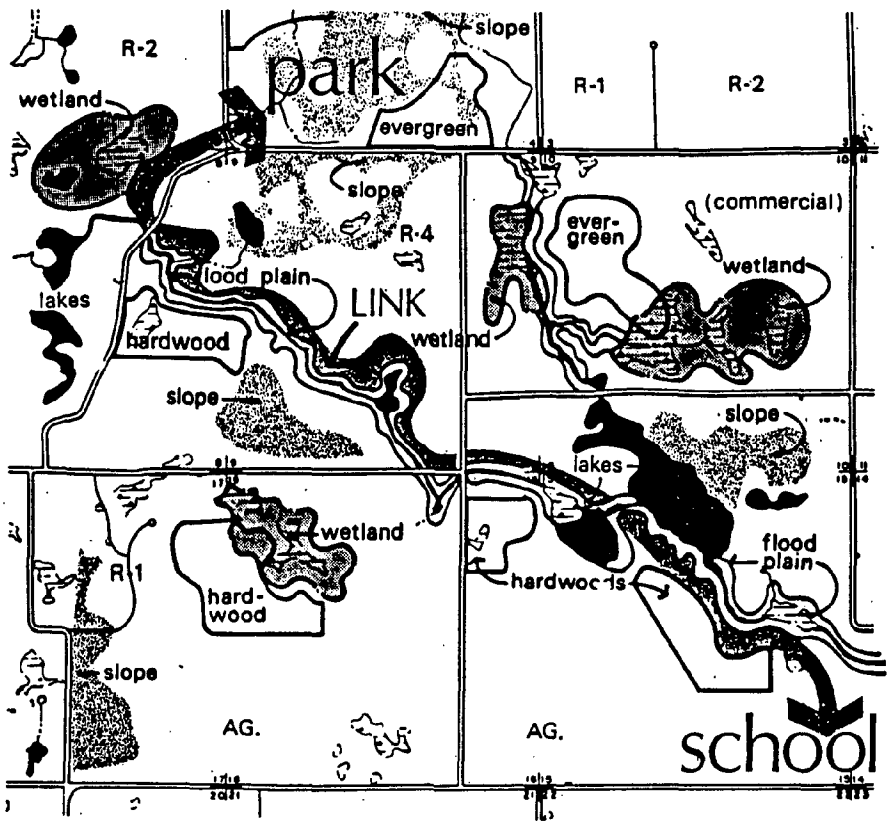
At an interjurisdictional meeting on water front issues on November 1986, five key issues were identified:

- high water and its impacts
- development and acquisition of public lands along the waterfront;
- limiting the intensity of shoreline development;
- preserving the scenic character of the shoreline environment retaining visual access to, of the
- surface water use conflicts.

Each of these remain important issues as shown in the 1988 Public Opinion Survey.

FIGURE 8.1

LINKAGE PLAN



Source: **Conserve Oakland County's Natural Resources: A Manual for Planning & Implementation,** Department of Public Works, Oakland County, MI, September 1980.

High Water

When Great Lakes water levels are high, erosion along the Lake Michigan shoreline increases. The impacts of erosion are clear along Lakeshore Drive, where part of the road has been washed away. Many high value homes will be threatened by additional erosion in this area.

Erosion along the River and Lake Kalamazoo also increases with higher Lake Michigan water levels. Many bulkheads and similar shore protection devices were installed to minimize the effects of the most recent high water level. Raising some of the land and structures would be necessary if lake levels remained high for lengthy periods. On the positive side, the south shore of Lake Kalamazoo becomes more attractive to marina development when water levels are high since it is very shallow in this area. Likewise, when water levels are below average, some existing dockage is unusable.

Fluctuating lake levels are part of a natural system. The costs and implications of trying to artificially manage the entire Great Lakes Basin to maintain even Lake levels is not known, but waterfront land use decisions in the tri-community area should be made based on the assumption that Lake Michigan water levels cannot be artificially maintained.

Acquisition and Development of Public Lands Along the Waterfront

Two types of public lands are needed along the waterfront. One is parkland/open space and the other is a public marina. Existing open space along the waterfront should be preserved (see Map 8.5). Several street ends provide needed relief from structures along the shoreline. These public open spaces are generally well managed, and efforts should be initiated to ensure that they are not lost. Existing parks along the shoreline should also be linked together, and with other inland parks, by pedestrian and bicycle paths whenever the opportunity arises (see Figure 8.1).

The lack of parkland along the Lake Michigan shoreline is most acute for Township residents, and somewhat less severe for Village residents. Outside of purchasing and developing new land for parks, the tri-communities should consider establishing a separate park and recreation authority responsible for maintaining all parks presently owned by the three communities. The benefit would be providing access to Oval Beach by Village and Township residents and spreading the fiscal responsibility for maintenance across more taxpayers. This would also make it more feasible to acquire additional park space as needed. Because residents of three jurisdictions would benefit, grant requests would probably be more favorably reviewed.

Public marina space is also needed as there are only three public access sites along Lake Kalamazoo and the River presently, and two are too far inland for most daily boaters. The third is a street end in Saugatuck and has no adjacent parking. Private marinas provide transient berthing opportunities, but there is considerable demand for more. By having a facility to attract more transient boaters, the three communities would be gaining additional tourist income.

The three most logical places for such a facility are: 1) immediately adjacent to the Blue Star Highway bridge in Douglas and extending to the existing launch facility adjacent to the Kewatin; 2) converting the Center Street maintenance facility in Douglas to a public marina; 3) at some distant time (or if the opportunity arose) by replacing the Rich Products office building in Saugatuck with a public marina and accompanying parking. Alternatively, if adjacent parking could be secured, the street end next to Gleason's in Saugatuck could be a good public access point.

While the public opinion survey did not reflect overwhelming support for a public marina, there appears to be demand for such a facility from persons outside the tri-community area. Its long term economic benefits may well justify its cost, especially if state or federal funds could be secured to help pay for it.

Limiting the Intensity of Development

The primary future development of waterfront lands in the City will be redevelopment of existing parcels. In the Village it will focus on further development along the South Shore of Lake Kalamazoo. In both areas it will be critical that new development is neither so dense, nor so high as to block existing public views of the waterfront or further "wall" the Lake with structures. Recommendations to prevent this are included in Chapter 10. It will be critical that all three communities agree to a common approach to waterfront development, embody that in land use plans, and then implement those plans. To some extent, uniform densities, setbacks, and height regulations will be valuable, especially around Lake Kalamazoo.

Additional development around Silver Lake needs to remain at a very low density in keeping

with the septic limitations of the land and the limited recreational value of this shallow waterbody. The eastern end of the Kalamazoo River should likewise receive little new development in keeping with its Natural River designation.

Retaining Visual Access, Aesthetics and the Character of the Area

As has been emphasized throughout this Plan, the natural beauty of the waterfront has much to do with the attraction of the tri-community area. Local development regulations should be reviewed and revised if necessary, to insure that new development complements, rather than detracts from this natural beauty. Old vessels should not be permitted to lie beached along the shoreline, because this also detracts from the beauty and character of the waterfront. The Kewatin should only be retained if its exterior remains in a good state of repair or if it is restored as an historic landmark.

Several vistas have public values that deserve protection. These include the entry into and exit from Lake Michigan on the Kalamazoo River, the view from Mount Baldhead, the view of Kalamazoo Lake from both ends, and approaches to the Kalamazoo River Bridge. The public opinion survey strongly supports the provision of additional open space along Lake Kalamazoo and the Kalamazoo River and demonstrates that the primary use of the area's water bodies is viewing. Yet, recent development pressures have led to overbuilding of condominiums along the waterfront, shutting off all public viewing of the lake from existing rights-of-way.

Any future development along the channel should be set back sufficiently to maintain the broad open views that are presented to boat travelers entering or leaving the Kalamazoo River. The view from the top of Mount Baldhead should be improved by careful selective pruning of dead or dying trees blocking good views of Saugatuck and Lake Kalamazoo. The curve going northbound on Blue Star Highway in Douglas just before crossing the bridge is the only good panorama of Kalamazoo Lake. A public turnoff, the acquisition of a scenic easement, or the concentration of new development on the western portion of those undeveloped lands should be initiated to protect that important view. In addition, the land adjacent to the west side of the bridge in Douglas should be selectively pruned to improve the view to travelers crossing the bridge (northbound) until a public marina could be established there.

Surface Water Use Conflicts

Resolution of surface water use conflicts will require more planning and a uniform approach to regulation. Most important is establishing the carrying capacity of Lake Kalamazoo and the River to the channel mouth. Carrying capacity refers to the physical capacity and intrinsic suitability of lands (and water) to absorb and support various types of development (or use). Such an analysis is typically performed by an inventory of existing surface water use during weekdays and peak weekends. Data is then examined in terms of the size of the waterbody and its capacity to assimilate various mixes of use. Such an analysis would probably reveal some, but not much excess capacity for new boat slips, because any number of boaters can access Kalamazoo Lake from Lake Michigan.

Without an analysis of carrying capacity, the amount of new boat slip development and related surface water use conflicts are difficult to evaluate. Some time or surface zoning could be established in conjunction with the DNR if desired. For example, water skiing, jet skiing, fishing, sailing, etc, could be limited to particular parts of Lake Kalamazoo or Silver Lake or to particular times of the day. Another option could be a harbor patrol paid for by all three governmental units. More information is necessary to establish the need for regulation. If surface water use is regulated, each unit of government would need to agree to a common regulatory approach.

Surface water use conflicts will grow more acute on Lake Kalamazoo if existing dockage is extended much further into the Lake. Such extensions should not be permitted as the surface area available for various recreational uses will be too drastically reduced. Existing no-wake zones should also be more rigorously enforced.

RECOMMENDATIONS TO GUIDE FUTURE USE

In seeking to balance economic development with environmental protection, the concept of carrying capacity should be a major consideration. If the carrying capacity of land or water is exceeded, then activities cannot be undertaken without unacceptable impacts on users, the environment, or both. Impacts can include increased trip times, decreased safety, pollution, loss of open space, and many other considerations. The key is prevention of overuse by limiting intensity of use on adjoining lands and regulating surface water use.

Environmental protection must be a leading principle in making future land use decisions along the waterfront. Environmentally sensitive areas such as sand dunes, wetlands, high risk erosion areas, floodplains, and key woodlands should be protected from unnecessary destruction. Development should complement rather than destroy these areas and their values. By doing so the environmental quality of the air and water will be improved, wildlife habitat will be preserved, scenic values will be protected, and the character of the area will be maintained. Some new intensive shoreline development will be desirable and necessary, but the balance should not be disproportionately on the side of new tax base as it has been for the past decade.

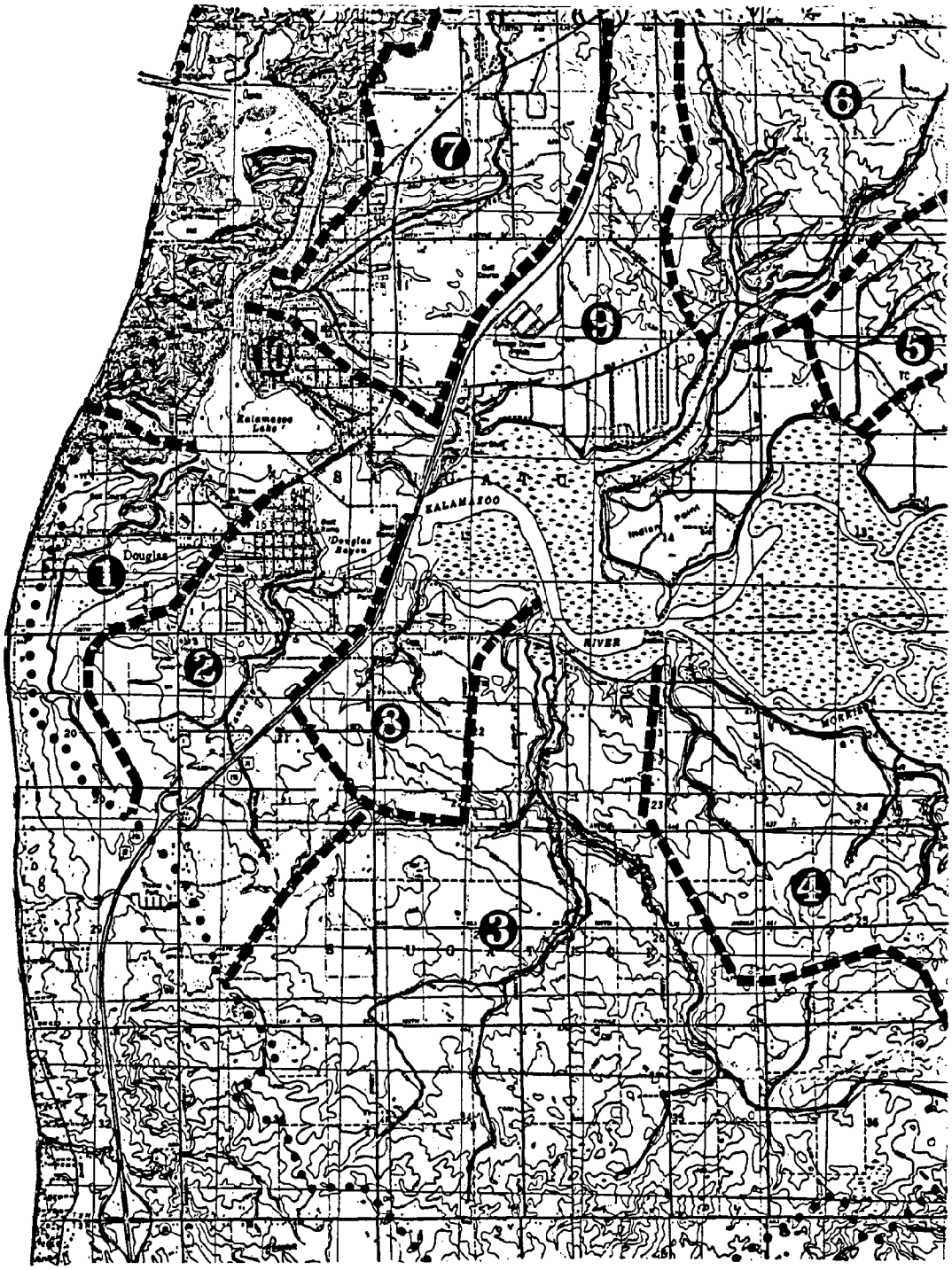
Opportunities to enhance the waterfront should be seized. Parks and open spaces should eventually be linked with other public places. Additional access to the waterfront should be acquired when available, and existing access via street ends and parks should not be lost through neglect or inaction. A new public marina should be constructed if resources are available and the cost could be spread among local citizens and other users (such as through grants or user fees). Visual access from public thoroughfares and walkways should be maintained in all new waterfront development.

Protection mechanisms, like the Natural River designation, should be recognized for the ancillary benefits they bring to the community. A local "Friends of the River" organization could be instituted to annually adopt and clean up the shoreline to remove floating debris, other waste, and downed timber that become lodged there. A special effort to maintain the character of Lakeshore Drive along the Lake Michigan shoreline should also be initiated.

A comprehensive stormwater management plan and wetlands protection plan should be instituted as part of a broad water quality protection program that is based on the small watersheds that feed the Kalamazoo River Basin. The Soil Conservation Service should be asked to assist in preparing nonpoint pollution guidelines to help guide farmers in land management practices that help keep the River clean.

NEED FOR INTERGOVERNMENTAL COOPERATION

Each of these recommendations requires a strong degree of intergovernmental cooperation. Watercourses, like the environment, do not respect jurisdiction boundaries. Their future quality and desirability depends on all governmental units through which they flow playing an active and supportive role in protecting and improving water quality. To advance this goal, the jointly appointed waterfront committee should be reinstituted or its responsibilities shifted to the Joint Planning Committee which helped fashion this Plan.



MAP 8.1 WATERSHEDS

Douglas

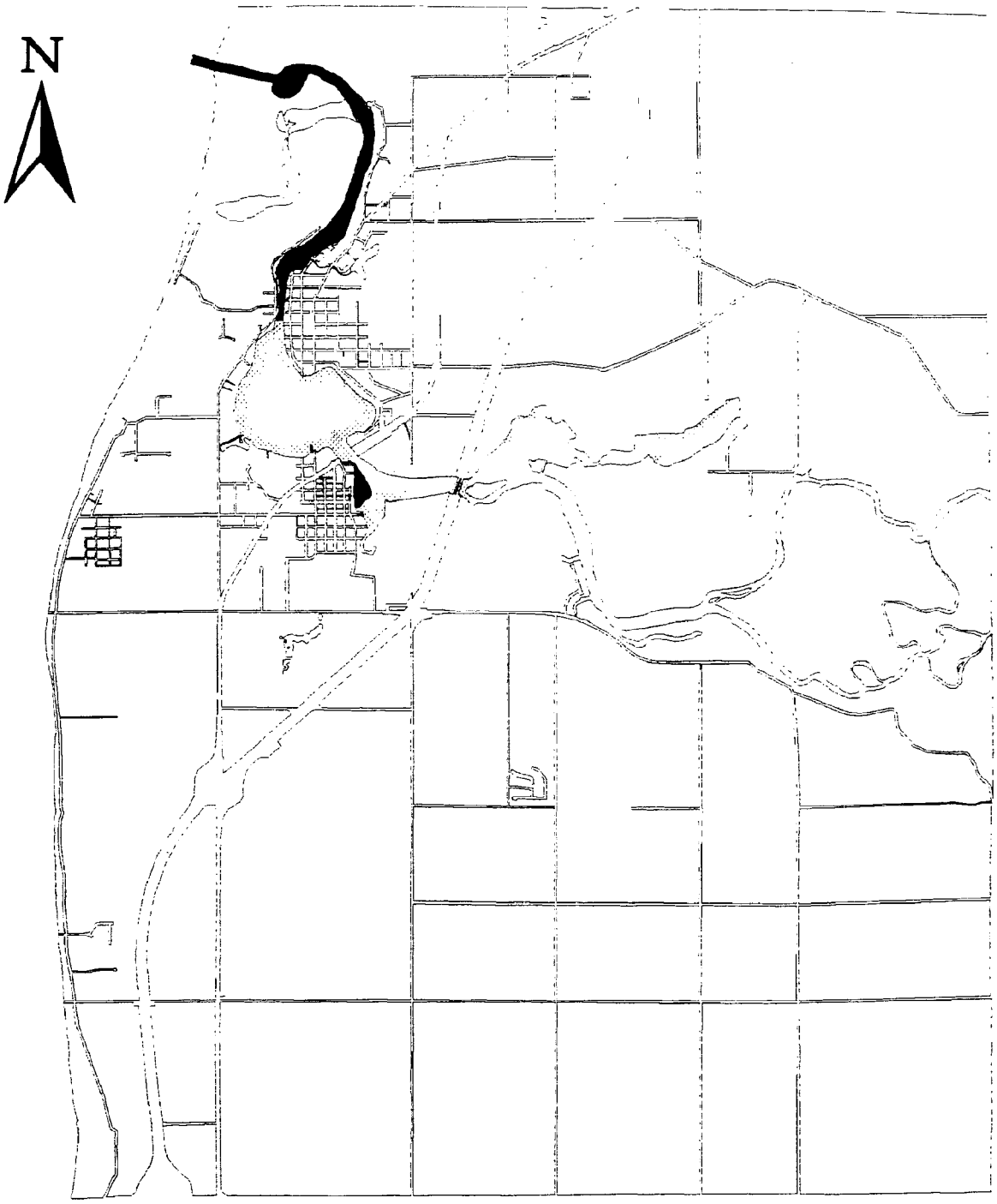
Kalamazoo River Basin Boundary

Creeks & Drains

Small Watershed Areas:

1) Douglas 2) Tannery Creek 3) Peach Orchard Creek 4) Kalamazoo/Morrison Bayou 5) Ash Drain 6) Silver Lake Creek 7) Goshorn Creek 8) "Cemetery" Creek 9) River Bluff-Indian Creek 10)Saugatuck

August 1989 DATA SOURCE:Allegan County Drain Commission Planning & Zoning Center Inc, Lansing, MI



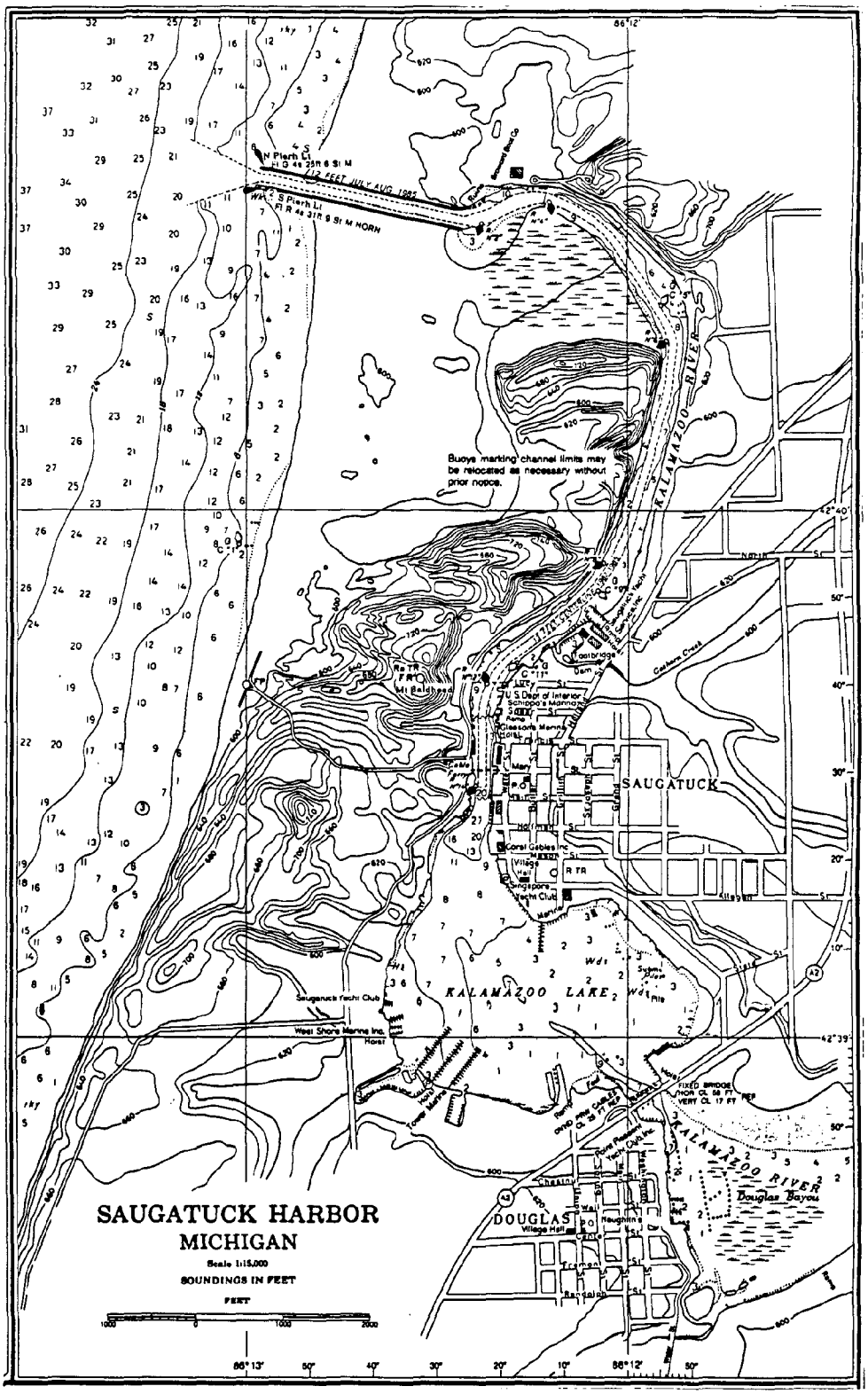
MAP 8.2 NO-WAKE

Douglas

No-Wake Area

Additional No-wake Area During Periods Of High Water

August 1989 DATA SOURCE: Tri-Community Waterfront Committee Planning & Zoning Center Inc, Lansing, MI



MAP 8.3 SAUGATUCK HARBOR

MAP 8.4 MARINAS

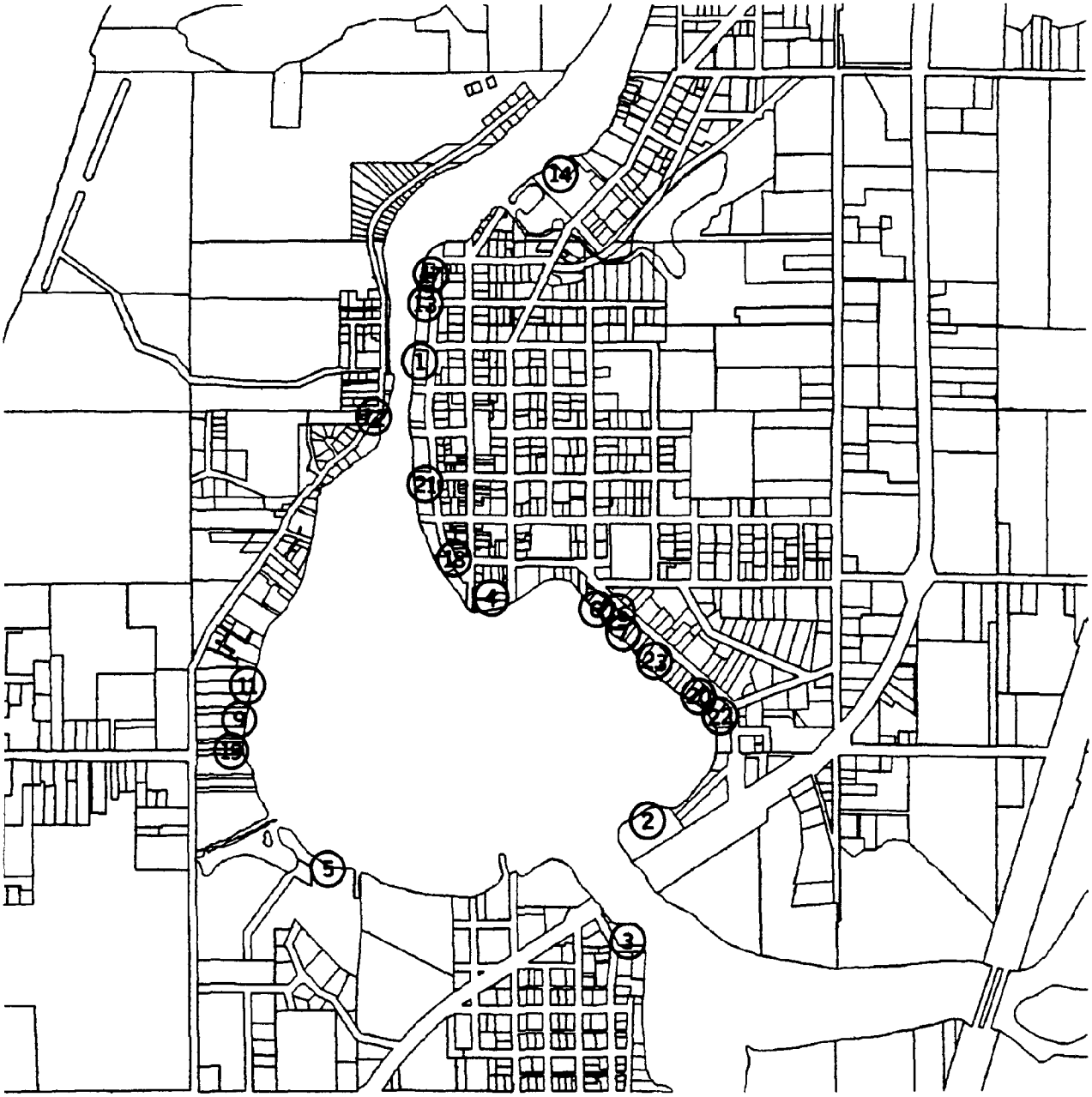
Douglas

1. Ship & Shore Motel/Boatel (0)
2. East Shore Harbor Club (64)
3. Pointe Pleasant Yacht Club (14)
4. Sergeant Marina (63)
5. Tower Marina (322)
6. Skippers Cove (12)
7. Water Side Condo (12)
8. Naughtins Marina (37)
9. Saugatuck Yacht Club (16)
10. Deep Harbor Deve, Inc. (46)
11. South Side Marina (24)
12. Casa Loma (11)
13. Gleasons Marina (9)
14. Saugatuck Yacht Co. (81)
15. Walkers Landing (22)
16. Windjammer Condo Association (12)
17. Schippas Marina (10)
18. Singapore Yacht Club (50)
19. West Shore Marine Inc. (57)
20. Bridges Of Saugatuck (8)
21. Coral Gables (50))
22. V & L Properties (10)
23. Back Bay Marina (12)
24. Southside Marina (24)

Total Number Of Permitted Marina Boat Slips
In Area.....966

August 1989 DATA SOURCE:DNR

Planning & Zoning Center, Inc, Lansing, MI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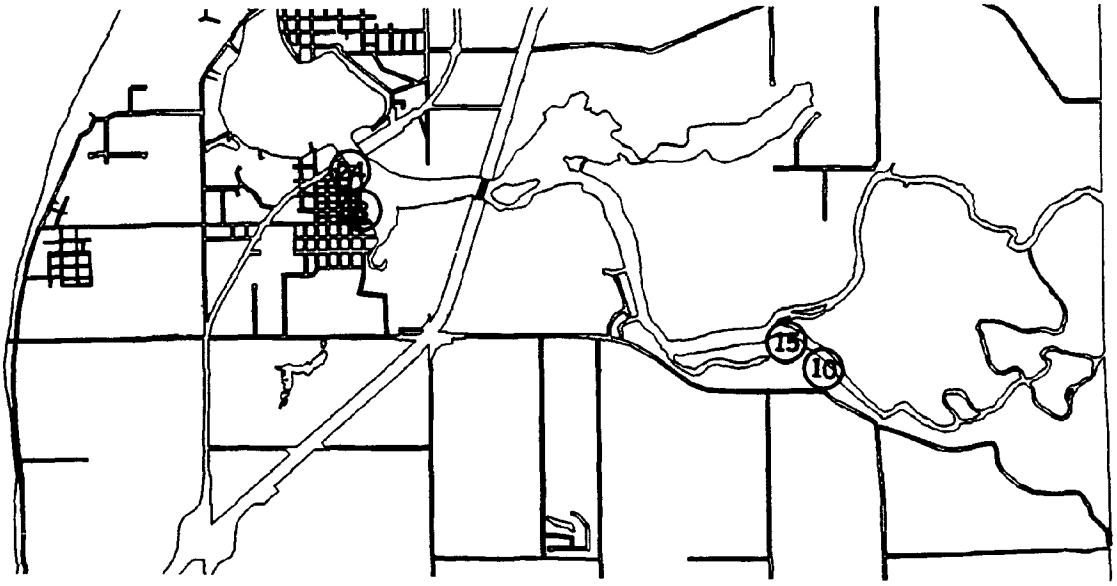
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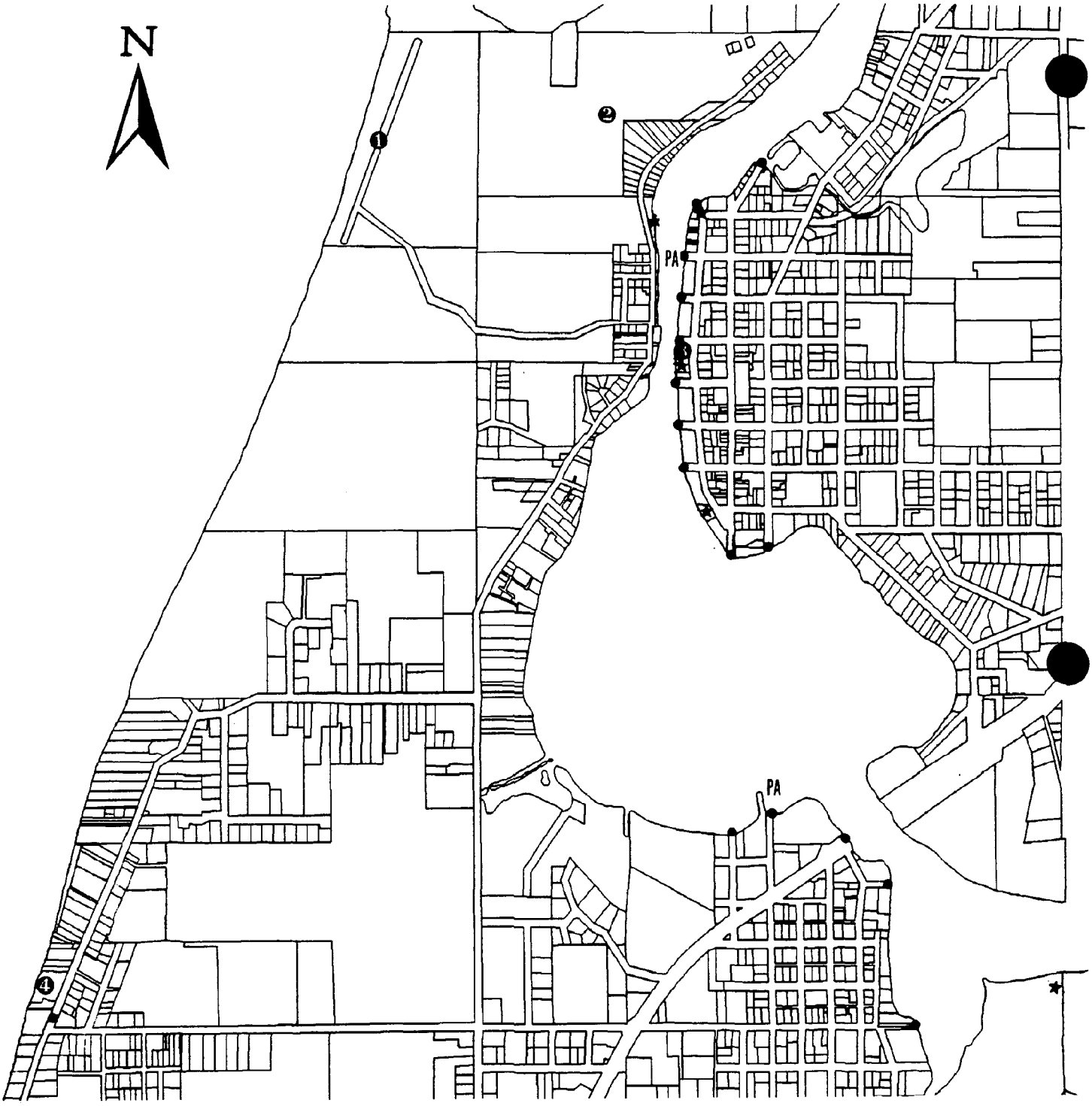


MAP 8.5 STREET ENDS/ PARKS

Douglas

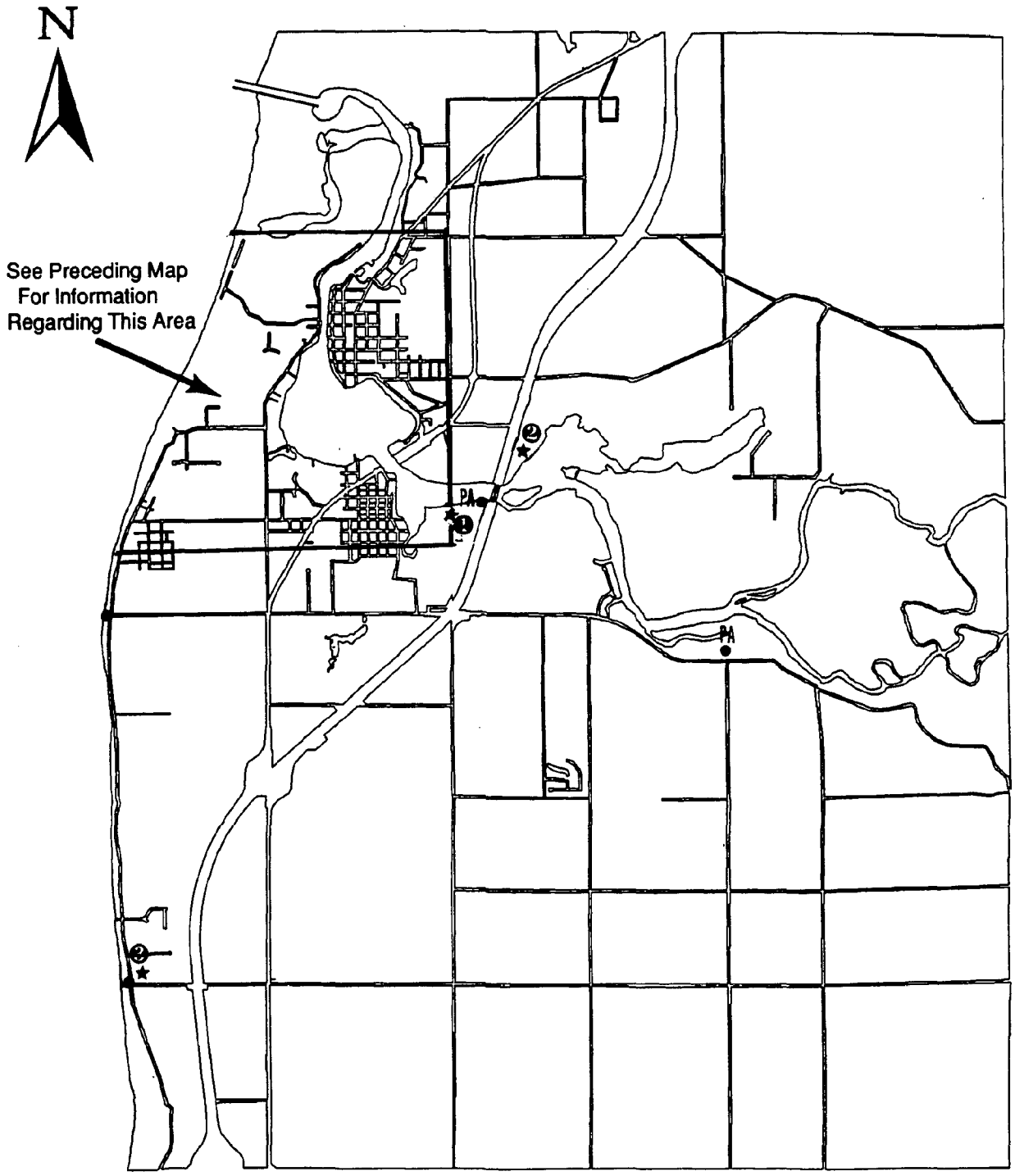
Street/Road Ends

Parks

Public Access

1) Oval Beach 2) Mount Baldhead 3) Chain Link Ferry 4) Douglas Beach

August 1989 DATA SOURCE: Planning & Zoning Center Inc, Lansing, MI



MAP 8.5 A STREET ENDS/ PARKS

Douglas

- ● Street/Road Ends
- PA Public Access
- ★ Parks
  1) Shultz Park 2) River Bluff Park
  3) Sundown Park

August 1989 DATA SOURCE: Planning & Zoning Center Inc, Lansing, MI

Chapter 9

GROWTH AND DEVELOPMENT TRENDS

Growth and development trends reflect past settlement patterns in a community and provide a basis for estimating future development patterns. Growth rates are one aspect of change. These show which areas are growing at a faster rate. Residential construction permits show where most of this residential development is taking place and provide insight into residential preferences.

Land subdivision trends show the rate at which small lots are created. Rapid land subdivision carves up agricultural land and other open spaces for residential use and thus permanently transforms the rural character of an area. Inefficient land subdivision takes large amounts of potentially developable land out of use as long "bowling alley" lots or "flag" lots are created.

Population trends may be used to project future population, which is used to estimate future land use needs and settlement patterns in a community. And finally, a "build out" scenario may be created based upon the vacant or buildable sites in an area to get an idea what the area might look like if it were developed according to current zoning and use requirements. A more complete discussion of these issues is included below.

GROWTH RATES

Between 1950 and 1970 the Village of Douglas grew more rapidly than either Saugatuck Township or Saugatuck, with a growth rate of 35% (see Table 9.1). In terms of actual numbers, the Village's population more than doubled between 1950 and 1980, when it reached a total of 948. Then, between 1970 and 1980 the growth rate slowed to 17% and surrounding Saugatuck Township's growth rate soared at 40%. Saugatuck's growth rate, on the other hand, nearly ground to a halt. These changing growth trends reflect the scarcity of land in the city and the desire for scenic, rural living which is attracting many to the Township. Recent trends, however, suggest that growth in the Village is increasing.

TABLE 9.1
RATE OF POPULATION CHANGE

COMMUNITY	1950-60	1960-70	1970-80
Saugatuck	20%	10%	6%
Saugatuck Twp.	34%	11%	40%
Douglas	35%	35%	17%
AREAWIDE	29%	16%	22%

RESIDENTIAL CONSTRUCTION

Building permit data reveal development trends in Douglas since 1980. The Village has attracted much of the area's multiple family housing development. About 46 single family homes and 73 multiple family units have been constructed in the Village since 1980. Most of this construction has occurred south of Center Street along Lakeshore Drive; in the northwest corner of the Township; and north of Westshore St. and east of Ferry St. (see Map 9.1). Aside from new construction, the number of additions, extensions, and other improvements was also high.

MIGRATION

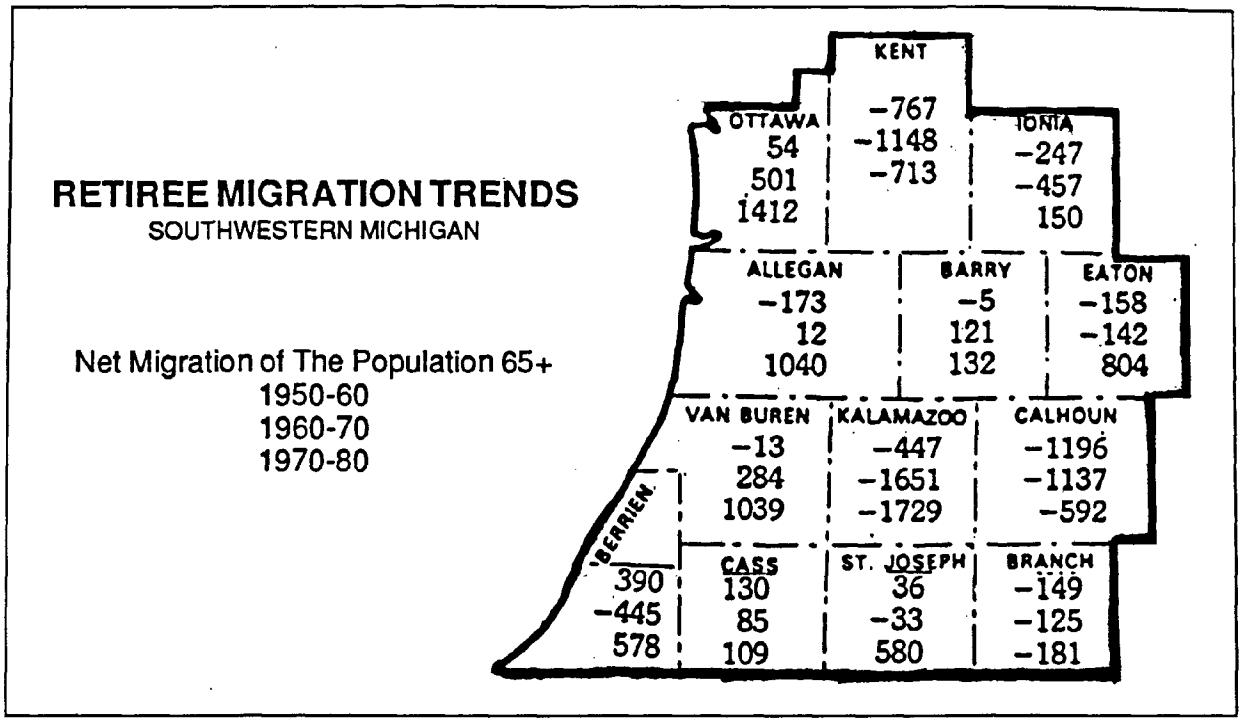
Migration is a strong component of population growth throughout the County. Allegan County experienced net in-migration of 3.03% between 1983 and 1987—the eighteenth highest rate of in-migration in the state. Many of these immigrants are retirees. Figure 9.1 reveals migration patterns of senior citizens in the region over the past three decades. It reveals an explosion of retiree migration into Allegan County since 1970.

Between 1980 and 1985, the rate of retiree migration into the County continued to climb, reaching 2.17 compared to -0.26 for the state as a whole.

POPULATION PROJECTIONS

Future population for the Village of Douglas was projected based on the 1970 to 1980 population trend, rather than long term trends, due to the recent changes in the rate of population

FIGURE 9.1



growth described above. A composite straight-line trend can be projected by applying logarithms to determine the ratio of change based on the 1970 to 1980 trend. Table 9.2 illustrates these results.

Thus if current trends continue, the tri-community area can expect about 1800 more people in 2010 than in 1980. Sixty-four percent of this growth is expected to occur in the Township, with 21% in the Village, and 15% in the City. Due to its greater availability of land, the Village will eventually overtake the City in terms of overall population growth, as seen in Figure 9.2.

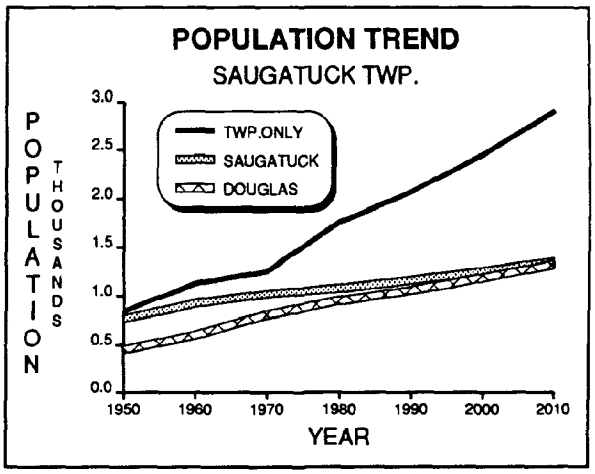
PROJECTED LAND USE NEEDS: 2010

To determine the impact of this population growth on residential land use, future population is translated into new households. This is done by applying the average household size for each community to the projected population in 2010 and then subtracting 1980 households. The result is an estimated 153 new households in Douglas by 2010. These results are shown in Table 9.3.

Future demand for land by these new households may be estimated by looking at land subdivision trends and current settlement patterns or zoned densities.

Residential land in the Village is zoned predominantly for medium density residential development (4 to 5 units per acre). If present trends continue, about 70% of the 153 new households will settle in medium density residential areas, translating into the conversion of 26 acres of land. Only 4 acres would be transformed into low density residential use, and about 4 acres would be developed at higher densities as apartments or clustered units. This would consume 34 acres of the Village's presently undeveloped residentially zoned land,

FIGURE 9.2



leaving an excess of 163 acres. Tables 9.4 to 9.6 show this projection of current trends.

BUILD OUT SCENARIO

The projections shown above are only estimates based on current trends. Any number of events could alter these trends. For example, the location of a new industry in the Village could attract new families into the area. Provision of sewer and water service in the Township could intensify the type, density, and rate of growth that occurs there. And Saugatuck's attraction as a center for tourism could continue to grow, fostering greater in-migration of retirees and others searching for an alternative lifestyle.

If the Village were developed to its full capacity, what would it look like? This exercise, called a "build out" scenario, provides an estimate of the buildable capacity of the Village under currently zoned densities. Acres were estimated for each community in the tri-community area based on vacant or developable land (not including existing agricultural areas) by zoned use and density/minimum lot size. These results are shown in Table 9.7.

This information can be translated into a population estimate by first dividing the developable acres by the minimum lot size in that zoning district to determine the number of households which could occupy the parcel(s). The new households are then multiplied by the average household size for that community to derive a population estimate.

Almost 200 acres of land are available for residential development in the Village. Most of this land is zoned for 4 to 5 units per acre. Thus, under a build out scenario, the Village could accommodate about 1,139 new households, or 2,779 new residents, bringing the total population to over 3,700 people (see Table 9.8).

Douglas also has nearly 50 acres of vacant, industrially zoned land—the highest amount in the tri-community area. Thirty-three acres are available for commercial development.

POLICY IMPLICATIONS

The future land use plan projects that given current population growth trends, Douglas will need only about 37 acres of residential land. Thus, the Village is far from meeting its capacity for residential development, as well as commercial or industrial use. This wealth of land combined with the availability of utilities and proximity to commercial services make Douglas an ideal site for development of an industrial park and affordable housing. This is significant in light of the widely expressed need by both officials and citizens for additional jobs, families with children (in terms of the shrinking school enrollments), and affordable housing in the area.

TABLE 9.2
PROJECTED POPULATION
1970-1980 TREND

COMMUNITY	1970	1980	1990	2000	2010
Saugatuck	1,022	1,079	1,163	1,254	1,352
Saugatuck Township	1,254	1,753	2,074	2,454	2,904
Douglas	813	948	1,061	1,187	1,328
AREAWIDE	3,089	3,780	4,298	4,895	5,584

TABLE 9.3
PROJECTED NUMBER OF HOUSEHOLDS

COMMUNITY	POP. 2010	HH SIZE	# HHs	1980 HHs	NEW HHs
Saugatuck	1,352	2.00	676	537	139
Saugatuck Township	2,904	2.69	1,080	633	447
Douglas	1,328	2.44	544	391	153
AREAWIDE	5,584		2,300	1,561	739

TABLE 9.4
PERCENTAGE OF POPULATION BY DENSITY TYPE

COMMUNITY	LOW	MEDIUM	HIGH
Saugatuck Twp.	80%	10%	10%
Saugatuck	40%	40%	20%
Douglas	5%	70%	25%

TABLE 9.5
NEW HOUSEHOLDS BY DENSITY TYPE

	HOUSEHOLDS			
COMMUNITY	LOW	MED.	HIGH	TOTAL
Saugatuck	56	56	28	139
Douglas	8	107	38	153
Saugatuck Twp.	358	45	45	447
AREAWIDE	421	207	111	739

Totals are based on unrounded figures.

TABLE 9.6
FUTURE RESIDENTIAL LAND NEEDS

	ACREAGE*			
COMMUNITY	LOW	MED.	HIGH	TOTAL
Saugatuck	24	14	3	41
Douglas	4	26	4	34
Saugatuck Twp.	205	13	10	228
AREAWIDE	234	53	17	303

*times 1.25 (20% allowance for rights-of-way)
Totals are based on unrounded figures.

TABLE 9.7
AVAILABLE ACREAGE BY LAND USE TYPE

	ACREAGE		
COMMUNITY	COMM.	IND.	RES.
Saugatuck	3	0	135
Douglas	33	49	197
Saugatuck Twp.	155	22	5,950
TOTAL ACRES	191	71	6,282

TABLE 9.8
POPULATION 2010: BUILD OUT SCENARIO UNDER ZONING IN EFFECT

COMMUNITY	ADDITIONAL HOUSEHOLDS	AVERAGE HH SIZE	ADDITIONAL POPULATION	PRESENT POPULATION	TOTAL POPULATION
Saugatuck	330	2.00	660	1,079	1,739
Douglas	1,139	2.44	2,779	948	3,727
Saugatuck Twp.	16,413	2.69	44,151	1,753	45,904
AREAWIDE	17,882		47,590	3,780	51,370

In the 1988 Public Opinion Survey, 52.4% of Village respondents felt that apartments and 60.6% felt that detached single-family homes in the $50-$70,000 range are needed now. Yet the majority of respondents (41.8%) opposed lowering the minimum residential square footage requirement to make housing more affordable. However, the existing requirement of 1000 square feet is not excessive.

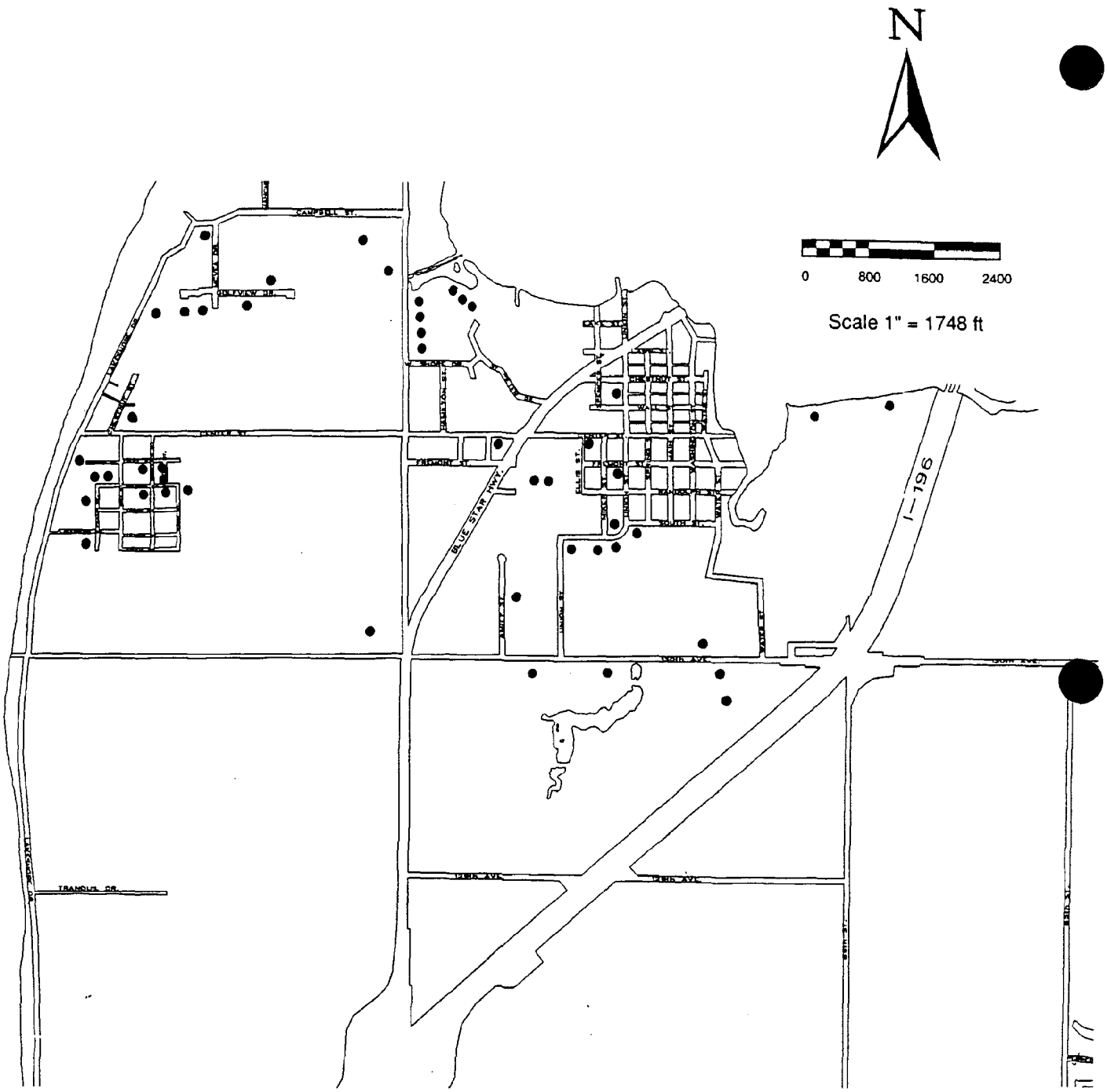
Other strong preferences of Village citizens as revealed in the 1988 Public Opinion Survey are:

- maintain the scenic, small town character of the Village;
- no strip commercial development;
- small commercial shopping centers off of major roads;
- preserve open space along the waterfront;
- protect the environment by prohibiting development of dunes and wetlands;
- additional waterfront condominiums are not needed (81.4% of Village respondents).

The majority of respondents felt that future commercial development is most appropriate along Blue Star Highway (66-71%) and at the freeway interchanges. Village respondents listed fast food restaurants as their top commercial land use priority for Blue Star Highway. E. Center St. in Douglas was the preferred location for future neighborhood commercial development. Priorities for downtown Douglas include more businesses oriented to the needs of residents, historic preservation, flowers and landscaping, a waterfront park, and dressing up store fronts.

When asked how underdeveloped waterfront lands in Douglas should be used, 81% felt that it should be acquired and preserved as open space. Alternatively, 80-90% opposed developing it with condominiums.

Policies to achieve the public's development objectives are included in Chapter 1, and the Future Land Use Plan in Chapter 10. Regulatory tools, such as zoning, subdivision regulations, and site plan review must be amended to insure consistency with this plan and the comprehensive plan of each jurisdiction.



MAP 9.1 RESIDENTAL CONSTRUCTION PERMITS

Douglas

● Residential Construction Permits 1980-1988

August 1989 DATA SOURCE: Douglas Building Permits Planning & Zoning Center Inc, Lansing, MI

Chapter 10

FUTURE LAND USE

Good land use planning is essential to the future quality of life of the tri-community area. Future land use arrangements are difficult to predict and guide to achieve desired results. A future land use map and plan embodies local land use goals, objectives, and policies and provides one land use scenario which a community may use as a physical guide. Goals and policies, in turn, provide the policy guide for land use and development decisions.

The future land use map accompanying this chapter seeks to anticipate community land use needs for 20-30 years (see Map 10.1). These future land use arrangements are based on information in the preceding chapters which includes analyses of existing land use, impacts of area trends, projected future land uses needs if current trends continue, and the relationship of land use activities to the natural resource base. All proposals are intended to be consistent with the goals, objectives, and policies presented in Chapter 1 (which were created with substantial public input).

Many factors could intervene that would require reevaluation of certain arrangements or the entire plan. For example, if a large mixed use development (e.g. 1000 single family units plus some commercial) were built or if a large single employer would enter the scene (e.g. an auto manufacturing facility) then land use arrangements in this plan must be reexamined.

A few key planning and design principles were used to evaluate alternative land use arrangements. With slightly different trends and projections, application of the same principles could lead to different conclusions and different land use arrangements. However, these differences would be related to the amount of particular land uses more than their location or relative relationships to adjoining uses. Likewise, there are many areas in which alternative land use arrangements would be satisfactory providing they remained in keeping with these basic planning principles. Consequently, it is crucial that this plan be regularly reviewed and updated at least once each five years to insure its continued relevance in planning for future land use needs.

PLANNING AND DESIGN PRINCIPLES

Future land use arrangements were determined based on compatibility with surrounding land uses, natural capacity of the land for particular uses, and necessary infrastructure improvements. These land use arrangements can be refined into timed and sequenced development areas, once some key decisions concerning the provision of sewer and water services are made.

The following planning and design principles are the technical foundation (or rationale) in support of the proposed land use arrangements graphically depicted on Map 10.1. Map 10.1 depicts generalized land use, which is partially reflected through mapping of zoning districts. The planning principles listed above are implemented primarily through zoning regulations and applied during the site plan review process. These principles are consistent with the goals, objectives, and policies in Chapter 1 and should remain the basis for reviewing any subsequent changes to the proposed Future Land Use Map.

These planning principles are:

- Protection of Public Health and Safety
- Conservation of Natural Resources
- Environmental Protection
- Minimizing Public Service Costs
- Efficiency and Convenience in Meeting Land Use Needs
- Insuring Compatibility Between Land Uses (Nuisance Prevention)

Often a land use decision based on one principle also advances another. For example, prevention of filling or construction on floodplains protects public health and safety, conserves natural resources, protects the environment, and minimizes public service costs (especially for relief efforts). It may also create a valuable buffer or open space between uses and hence help insure compatibility.

Protection of Public Health and Safety

Key situations in which this principle is applied include:

- avoiding construction in areas which present natural hazards. In the Village these include areas too close to the Lake Michigan shoreline at high risk from erosion from coastal wave action; floodplains; saturated soils and wetlands; soils not well suited for support of foundations or safe disposal of septic wastes; and steep slopes.
- avoiding construction where an intensive land use activity is not adequately serviced by all weather public access;
- avoiding construction in areas with soils contaminated by hazardous and/or toxic waste.

Conservation of Natural Resources

Failure to consciously protect nonrenewable natural resources exposes a community to unbridled destruction of those resources which are the foundation for an area's character and quality of life. Conservation of natural resources usually focuses on: land, water, minerals, certain soils (such as prime farmland), wetlands, sand dunes, areas supporting an abundance and diversity of wildlife, and unique forested lands. Areas where the land and the water meet are the most important. Indiscriminate land subdivision frequently reduces the size or alters the shape of land, thereby compromising the resource value and production potential of those lands. These changes also reflect lost opportunities– usually higher public service costs and gradual degradation of an area's tourism potential.

Environmental Protection

This principle aims at preventing pollution, impairment, or destruction of the environment. While there is considerable overlap with natural resource conservation issues, environmental protection measures focus primarily on air and water quality, and the impact of activities where the water meets the land. Environmental quality is best preserved by planning for appropriate land use activities in and near sensitive environmental areas, and managing development accordingly. This usually means insuring conformance with all applicable federal, state and local environmental regulations.

Minimizing Public Service Costs

Public service costs may be minimized by encouraging new land uses where existing infrastructure is not used to capacity and where expansion can be most economically supplied. This also results in compact settlement patterns, prevents sprawl, and is usually favored by taxpayers because it results in the lowest public service costs both for construction and maintenance.

Efficiency and Convenience in Meeting Land Use Needs

To be efficient in meeting future land use needs, communities must make better use of existing infrastructure and plan for infrastructure expansion in a manner which keeps the costs low and does not create huge areas where infrastructure will not be fully used for many years. It also means locating future land uses so that travel between activity centers is minimized. For example: building schools, neighborhood commercial activities, day care facilities, fire and police protection, etc. near the residential areas they serve. This saves municipal costs on initial road construction and future maintenance, reduces everyone's gasoline expenditures, and conserves fossil fuel supplies for future use.

Insuring Compatibility Between Land Uses

A central objective of land use planning is to locate future land uses so that they are compatible with one another. This prevents future nuisance situations between adjacent land uses, such as loud sounds, ground vibrations, dust, bright lights, restricted air flow, shadows, odors, traffic, and similar impacts. A few obvious examples of incompatible land uses include factories, drive-in establishments, or auto repair facilities adjacent to single family homes. With proper planning, land uses can be tiered to buffer impacts and orderly development can occur. Examples include: commercial service establishments on highway frontage with backlot wholesale, storage, or office uses abutting a residential area; or single family residential uses adjacent to park and recreation areas.

COMMUNITY CHARACTER

When applying the above planning principles to new development proposals, one of the key considerations is compatibility with the character of existing development in an area. To describe the character of Douglas, many descriptive words and phrases come to mind, among them: quiet, friendly, clean, small, aesthetically pleasing, bountiful natural assets, and good location. Several Public Opinion Surveys in the past three years have revealed the

following three factors as among the most important reasons why people like Douglas: small town atmosphere, quiet town and friendly people, respectively. There is a very strong identification on the part of the residents with the character of their Village. Douglas can be described as being both a resort, residential and year round residential community which for the most part has avoided commercial oriented tourism. Two surveys two years apart indicate that this is the way most residents would like it to remain.

DEVELOPMENT

Although Douglas is a small community (approximately 2 square miles), over 50 percent of its land is still undeveloped. This makes the residents sensitive to the quantity and type of development that could occur there. Without proper land development regulation, the character of the community could be significantly changed. In a 1986 survey, almost 70 percent of those responding felt that development in the Village should be encouraged. Yet, residents overwhelmingly still want the community to remain like a small village. In residential development, affordable single-family homes and apartments were the preferred types, with waterfront condos and mobile homes receiving the highest response as not being needed. More industrial development was supported with 68.9 percent of those responding that it was needed in a 1986 survey, but fewer than half so indicating in a 1988 survey. However, the 1988 survey did reveal that over half of the respondents (56%) favored spending tax dollars to stimulate economic development. The need for more commercial development and services was also clearly indicated with Blue Star Highway and East Center Street being the preferred locations.

TOURISM

A strong tourist oriented character is something that it appears most Douglas residents would like to prevent. The increased activity and congestion that go with successful tourism are characteristics which are directly opposed to the existing quiet town atmosphere. This is not an anti-tourism sentiment, rather it is one which opposes the transformation of the existing character of the Village to one dominated by tourism rather than one where tourists are served as a part of other commercial activities in the Village.

YEAR ROUND EMPLOYMENT/ INDUSTRIAL DEVELOPMENT

Historically, Douglas has had very little industrial development and has been primarily a community with residential and commercial development. This situation has reduced the potential for year round employment and has made the attraction of new families into Douglas more difficult. The significance of this trend is that the Village could become even more seasonal and retirement oriented than it already is. This in turn would reduce the capacity of existing commercial businesses to operate year round and further hinder the delivery of certain services such as education. Some new industrial development is both needed and desirable.

BLENDING THE RESORT AREAS WITH THE YEAR ROUND COMMUNITY

There will always be a division within the community between resort and seasonal areas and year-round areas. The recognition of the importance of both and fair representation of both in community decision making will be an ongoing challenge in making future land use and infrastructure decisions. Achieving and maintaining a balance will be the key to long term success.

The mapping of future land use is a logical extension of the goals and policies stated in this Plan. A land use is the primary purpose for which a parcel of land is occupied. The plan is designed to promote orderly development and ensure that appropriate areas are available for all classes of land uses anticipated to be needed within the Village during the planning period (roughly 20 years) and based on existing trends. The future land use plan promotes orderly development in a number of other ways. Home owners can invest in their properties with protection from the intrusion and congestion of undesirable uses in the neighborhood. Overcrowding can be avoided. The Village and utility companies can adequately plan for the services needed in developing areas and ensure that adequate land has been reserved within the Village for all necessary uses.

Each of the major classes of future land use are described below. Descriptions of various geographic areas or neighborhoods are also provided to give a greater depth of understanding to the land uses depicted on Map 10.1.

DEVELOPMENT AND CONSERVATION AREAS

The extensive water resources and other natural assets are at the top of the list as the reasons why Douglas is such a desirable place in which to live. The actions and policies that are instituted in the future to protect the natural environment will be of utmost importance. The future land use map for the Village was prepared by first identifying conservation areas and then examining the suitability of remaining lands for various development purposes.

Conservation areas include sand dunes, wetlands, floodplains, streams, creeks and drains, the Kalamazoo River, Lake Kalamazoo, and areas at high risk of erosion along Lake Michigan. These areas present severe limitations for development and are proposed for very limited future development in keeping with their fragility and importance in buffering Lake Michigan storms, filtering and storing water during periods of flooding, draining stormwater from land, providing habitat for a wide range of plants and animals, and for their wide ranging open space values. Destroying these resources would destroy the essential qualities which continue to attract residents and tourists to the area.

These lands should largely be managed to remain in their natural state. Only when other more important public purposes demand it, should these lands be altered or converted to permit another use. If conserved and wisely used, waterways will present a linked natural greenbelt system that continues to enhance the area for years to come. The Village zoning ordinance should be amended to include better conservation of these areas.

RESIDENTIAL

Residential use will continue to be the predominant developed land use in the Village. The existing residential areas in Douglas provide a rich and interesting mix of housing sizes, styles and ages. The challenge in the next twenty years will be maintaining the older housing stock and ensuring that the growing ranks of part-time residents and absentee owners does not result in housing deterioration. Equally important will be efforts to blend new development with the older character of existing land uses. Douglas has considerable potential for new housing development and has the greatest opportunity of the three jurisdictions to encourage the construction of affordable housing, due to available land that is suited for basement construction and the potential to extend sewer and water efficiently. However, if speculative market forces proceed unabated, then the future residential uses will be high cost condominiums occupied by seasonal residents and in contemporary designs. A large amount of such development would be incompatible with the existing character of the Village. The Public Opinion Survey indicates that 81.4% oppose new condominiums along the Douglas waterfront.

If the Saugatuck School District is to survive with the same breadth of programming and quality it has today, then affordable housing oriented to families must be available. In terms of new construction, affordable housing typically means homes of about 1,000-1,200 square feet, on smaller than average lots, and priced at not more than $70,000. Some public incentives or "write-downs" are typically necessary to alter one of these basic elements. Some housing meeting this definition is being built on large lots in the rural parts of the Township, but not in any significant quantities. Manufactured housing can be built within this price range and if properly designed can meet an important local housing need. There are two mobile home parks in the Village already. However, the Public Opinion Survey revealed nearly 60% of the respondents were opposed to new mobile home parks.

In light of improved quality and design of new manufactured homes, especially if constructed as double wides with pitched roofs, the Village should investigate encouraging the development of a mobile home subdivision with lot sizes consistent with other developed parts of the Village. Such a subdivision would not be a mobile home park (which may also be needed). Existing state standards for mobile home parks are such that lot sizes are too small to fit with the character of many communities and local governments are without authority to require that they be any larger. However, by failing to provide any place that double wide manufactured homes are encouraged to be built, then the market for such homes can usually only be satisfied in new mobile home parks.

A unique opportunity exists for the area communities to take the initiative in providing affordable housing. If plans proceed to acquire the property known as the Jager property, for a new water intake plant, then part of the parcel could also be used for affordable housing. A design competition or specially hired site plan could be arranged to provide for affordable housing in this area. The site plan would be required to tier houses by size and type to blend

with existing homes along Lake Shore Drive. The treatment plant could be buffered from the residential area and the land costs paid back through development.

New residential construction in the village should be encouraged on soils suitable for basements and served with public sewer and water.

COMMERCIAL

There will be three primary commercial centers within the tri-community area. Downtown Saugatuck will continue to serve as the major center for commercial tourist activities. This should be encouraged.

The shopping area in Douglas along Blue Star and extending down to the freeway interchange should be encouraged to continue to (re)develop with a primary focus on local commercial services and a secondary focus on highway related uses near the interchange. This area needs curbs and gutters and right turn lanes. The buildings, parking and signage on many properties are poorly designed, so any opportunity to improve design, safety, and function should be seized. Additional tourist-oriented retail businesses should be discouraged in this area, and instead redirected to downtown Saugatuck and the original Douglas Village Center. However, additional restaurant, motel and related services would not be inappropriate provided the market was adequate to support them. General business uses like shoe stores, banks, hardware stores, etc., should be encouraged in the general business area in Douglas and not in interchange areas.

INDUSTRIAL

The location of the Haworth facility in Douglas is not the best use of that property in the long run (which is commercial). However, it is a well-maintained local company which is a major employer, and without a public effort to relocate it in comparable facilities elsewhere, this plan encourages its continuance. At the same time, the small industrial area south of the mobile home park on the east side of Blue Star should continue to be developed for light industrial activities and should be expanded to the east and south, and possibly to the west across Blue Star as well.

Industrial parks are an excellent way to manage future industrial growth. Although they have broad, long-term public benefits (including lower service costs, fewer nuisance impacts, better design, and less environmental impact), industrial parks require a large short-term investment in land and public services. Therefore, it is crucial that studies be conducted to insure that the park could be competitive with others in the area. The Michigan Department of Commerce maintains an inventory of industrial parks through the Statewide Site Network. Only certified industrial parks will be included on this list, and thereby be able to effectively compete for new industries. To be certified, industrial parks must be at least 40 acres, a site plan for the park must be approved, soil borings must be conducted, infrastructure must be completed, utilities must be installed 300 feet into the park, and protective covenants must be established.

AGRICULTURE

While agricultural activities used to play a significant role in land use in the Village, except for the MSU research facility such is no longer the case. In light of ample agricultural acreage in the Township and the limited availability of public sewer and water, it is more appropriate that lands which might otherwise be suited for agricultural use in the 0Village, be used for more intensive structural uses, such as single family housing. The raising of farm animals within the Village is also not appropriate in light of the nuisance problems they raise (noise, odors, insects, waste disposal, etc.) for present and future residential use.

ENTRY POINTS

There are three major entry points into the Village of Douglas. (See Map 10.2). They are:

- from Lake Michigan on the Kalamazoo River via Lake Kalamazoo
- from I-Blue Star Highway at the Kalamazoo River Bridge
- from I-196 at Blue Star Highway (just south of 129th Street)

At the present time, the entries from Lake Michigan and over the Kalamazoo River provide an aesthetic and inviting entry into the Village. The entry from the south along Blue Star Highway is not as good. The public opinion surveys also reflected citizen concern about the appearance of properties along Blue Star Highway. The situation is further harmed by signs along I-196 which fail to inform southbound travelers at exit # 41 that they can access Douglas (only Saugatuck is mentioned) or along southbound

I-196 at exit # 36 which tell travelers that they can access Ganges, but not Saugatuck and Douglas.

First impressions are very important in the tourism industry. Attractive entryways help entice tourists into the community and leave a positive impression to encourage future visits. The entry points represent the community and should reflect those qualities which make the area special. Fortunately, these design problems are easily overcome, and with only minimum public investment. A special joint effort to develop alternatives for improving the entry points into all three communities should be initiated. In addition, new land developments in these areas (or changes to existing ones) need to be carefully reviewed to insure that changes enhance (and do not further detract from) the positive image and character that should exist in these areas.

FUTURE LAND USE BY AREA

Following are brief geographic descriptions of future land use. These descriptions use the same planning areas depicted on Map 5.3.

Lake Shore - Resort Residential Area

This area should continue to be used for low density single family homes along the lakeshore in keeping with the size and quality of homes presently there. It is anticipated that seasonal vacation homes will continue to be the dominant use. Density will vary within this area, but a minimum lot size of 8,400 feet should be maintained.

The proposed water intake facility, if constructed in this part of the Village, should be designed to be compatible with the character and quality of existing homes, and include extensive insulation and buffering techniques to eliminate (to the maximum practical extent) any noise impacts on adjacent homes.

Campbell Road & West Center Street

Additional single family homes in subdivisions can be compatibly developed behind existing homes along Lake Shore Drive between Center and Golf View Drive by extending public sewer and water in this area. An effort should be made to maintain existing densities or tier the density of new homes so that no sudden density change occurs. Areas south of the golf course (on both sides of 130th) are similarly suited for residential development.

Development under the Planned Unit Development (PUD) concept should be encouraged for this area. Through PUD, development flexibility in design and housing density is allowed to achieve maximum open space. This concept also encourages innovative and imaginative design and efficiency in providing public services. The use of PUD in this area offers the specific advantage that the recreational land and environmentally sensitive areas can be integrated into the development plan and their preservation enhanced. The PUD concept allows buildings to be clustered through mixtures of housing types such as detached houses, townhouses, and apartments. This mixture of housing types creates fine housing opportunities for households and families of all age groups.

Ferry/Blue Star to 129th

This planning area is presently characterized by a golf course, a couple of commercial activities, a multiple family use and an industrial concern, along with a lot of vacant and underdeveloped property. Future land use in this area could arguably be encouraged to go several different ways. The golf course property could remain as such or be converted to single family or multiple family residential use in a compatible way. Additional commercial use or expansion of the Haworth facility could occur north of the existing plant. However, such expansion, if it occurred should be carefully scrutinized and restricted to prevent unnecessary impacts on adjoining residential uses to the north. Over time this area should be encouraged to develop for multiple family use.

South of 130th on the west side of Blue Star could be developed for commercial on the Blue Star frontage and medium to high density residential behind it in order to be compatible with the Township future land use plan. However, it would also not be inappropriate for the industrial area on this side of the road to expand to the quarter section line in compliment to the industrial area under development on the east side of Blue Star. The likelihood of this occurring is not great however, due to significant soil limitations in this area.

The small residential area that is landlocked from the rest of the Township should be annexed into the Village at the first opportunity.

South of East 130th and East of South Blue Star

There are presently two existing mobile home parks and the emerging light industrial park in this area. The residential activity should be encouraged to expand east to the pond. Typical development in this area could include mobile home parks, duplexes, and garden style apartments not to exceed three habitable stories. This area is suited for higher density activity because of its location along major arterial roads which can accommodate the heavier traffic flow. It can also act as a buffer use between single-family residential development to the north and the light industrial area to the south. Individual multiple-family uses should be designed with a landscaped buffer or open space where abutting single family residential uses.

The area south to the Village limits should be used for light industrial activity. Light industrial development that will provide year round employment and thereby contribute to and stabilize an existing economy that suffers somewhat from seasonal business, should be targeted to locate in this area. The location chosen for this area was based on its access to the Blue Star Highway (U.S. 31) and its close proximity to the interchange for I-196.

For industrial uses locating in this area, it is recommended that an industrial park design concept be used. An effort to insure quality design of the fronts of such buildings, with deep landscaped setbacks, minimal signage and no front yard parking should be initiated to both improve and enhance this major entrance into the Village.

Blue Star Commercial Area

This area is intended to provide opportunities for a full range of commercial uses. Grocery, hardware, clothing, pharmaceutical, hairdressing, bank and similar businesses should characterize this area. It is not an appropriate location for boat and vehicle storage or similar warehousing activities. Office development would also be acceptable in this area. Larger merchandisers should be encouraged to locate here because there is opportunity for smaller retail outlets or service establishments to locate in the Village Center Commercial area and also because the highway can better accommodate the larger volume of traffic that is generated by larger retail stores. No industrial uses should be allowed in this area.

This area should be encouraged to develop in clusters of general business activity in small commercial complexes with shared parking facilities. The parking should be off of the street and gained via much better defined access. Curb, gutter and sidewalks should be provided through this area. The properties extending down West Center Street to Ferry Street could be commercially developed, but should be less intensively used than the properties along Blue Star. They should also be designed to blend with the character of residences in the area.

This entire area deserves more refined study than this plan is able to undertake at this time. A lot-by-lot corridor analysis and access redesign plan should be prepared. Significant improvement to both the aesthetic quality and function of this area could be accomplished if a special plan for the corridor were prepared.

East 130th Street

This area has significant potential for new residential development west of Schultz Park. As long as the wetlands and floodplain along Tanner Creek are respected, very interesting subdivisions or planned unit development could occur. No lots should be allowed to be established that are unbuildable under existing DNR or Army Corps of Engineers wetland regulations and local zoning. The area that backs up to the Village Center should either be buffered by the existing woods or an effort should be made to insure compatibility in structure type between new residences in this area and the existing character of Village Center homes. This area is not well suited for either commercial or industrial development.

Eventual housing unit density for this area will be only slightly lower than in the Village Center Residential neighborhood. The recommended average density for these areas is two to three dwelling units per net acre with a minimum lot size of 8,400 square feet. Linear form residential development along 130th should be prohibited.

Village Center Residential

This area represents the older more established neighborhoods immediately surrounding the Village Center Commercial (downtown). Housing in this area for the most part is architecturally similar with most homes being built pre-1950. Housing density generally ranges between one and three units per net acre. It is also within this area where homes offering potential

for historic preservation can be found. The area also has some development potential. This development could occur in three ways: 1) existing vacant lots could be developed, 2) the second lot of a double lot could be sold off and developed, and 3) existing housing stock could be improved and expanded.

Recommendations for this area are as follows:

- Maintain an average density of three or four dwelling units per net acre while maintaining a minimum lot size of 7,920 feet.
- All new housing development should be required to hook into the Village water and sewer system.
- All new development should be encouraged to maintain a similar architectural theme with existing housing in the area.
- Housing rehabilitation and historic preservation efforts should be focused on this area.

Strong efforts will be necessary to retain the charm and ambiance of the old Village Center. A housing code enforcement program should be considered to insure the safety and habitability of the old homes in the area. An inventory, maintenance and replanting program for the aging trees should be initiated. Sidewalk repairs, replacement and installation are badly needed in some blocks. No nonresidential activity should be permitted outside of the Village Center Commercial area, except perhaps along the waterfront, and then only if compatible with adjacent uses. Expansion and improvement of public land along the waterfront here should be initiated whenever possible. Ultimately a pedestrian and/or bikepath connecting the Village Center with Schultz Park along the waterfront should be considered.

Village Center Commercial

This is the original commercial area of the Village. While it no longer performs many of the functions that it once did, it still plays a valuable role and should be maintained. The several vacant lots should be developed for new commercial. Small retail and service establishments such as restaurants, specialty shops, barber shops, bakeries, government and other small offices are appropriate here. New buildings should be of a style that is compatible with existing structures in the area.

The exterior of the Township Hall should be better maintained and the Lodge (Town Hall) should be acquired by the Village and its historic character restored. The upstairs could be properly rehabilitated into offices for municipal use, or leased to local professionals.

The Village office space is too small and should be expanded into the area being vacated by the fire equipment. A conference room is badly needed. Second floor space above existing commercial establishments should be made available for residential use provided that all building code requirements are met.

Harborfront

This area is well suited for a combination of multiple-family residential, commercial and recreational uses. Because of its high values stemming from its waterfront location, development should be restricted to a specific blend of uses and design to preserve and enhance its unique character in the community.

Recommendations for this area are as follows:

1. Multiple-family development should be clustered on the western portion and on the southern one-quarter of this area. It should be limited in height so as to not block the lake view by backlot properties. It should be tucked into the hill as much as possible and designed to enhance the natural setting rather than detract from it.

2. A bonus system should be considered that would allow higher than normal densities on certain areas of a site in exchange for retaining an increased amount of open space as common space or for general public use on other areas of the site.

3. A pedestrian/bike path available for public use should be developed in close proximity to the waterfront. This path could be developed in conjunction with the already existing private road or be placed right along the waterfront.

4. Use of the Planned Unit Development concept should be encouraged for this area.

5. Boat cradle storage would be more appropriately located elsewhere.

6. The private road presently servicing the Harborfront should be improved and dedicated to the Village.

7. A parking lot for cars and trailers adequate to meet the needs of marina users should be constructed so as to blend into the natural land form as much as feasible.

8. Any recreational use which is not disruptive to the residential community along the Harborfront should be allowed.

9. The eastern end should remain free of any structures tall enough to block the view of the Lake from Blue Star Highway. The old platted but never developed public streets north of the Kewatin should be improved to the width of the right-of-way and utilized to establish a public parking and viewing area to take advantage of this, the single best view of Lake Kalamazoo. The parking area should provide for auto and trailer space. The Spencer Street end at the waterfront should be improved to establish a public boat launching area. A small amount of additional land may need to be acquired to permit adequate vehicular access and viewing.

10. Additional marina development, if any, should be restricted to the west end and middle portion of the property, not extend into the Lake any further than the existing dock line and be served by more than one point of access. Whether additional dockage should be developed will be dependent upon an analysis of dockage on Lake Kalamazoo at the time of the proposal, and in consideration of the factors discussed in Chapter Eight – Waterfront.

MAP 10.1 FUTURE LAND USE

Douglas

- Low Density Residential
- Village Center Residential
- Resort Residential
- Planned Residential
- Harborfront
- Blue Star HighwayCommercial
- Village Center Commercial
- Industrial
- Floodplain/Wetland
- Recreation

August 1989

Planning & Zoning Center, Inc, Lansing, MI

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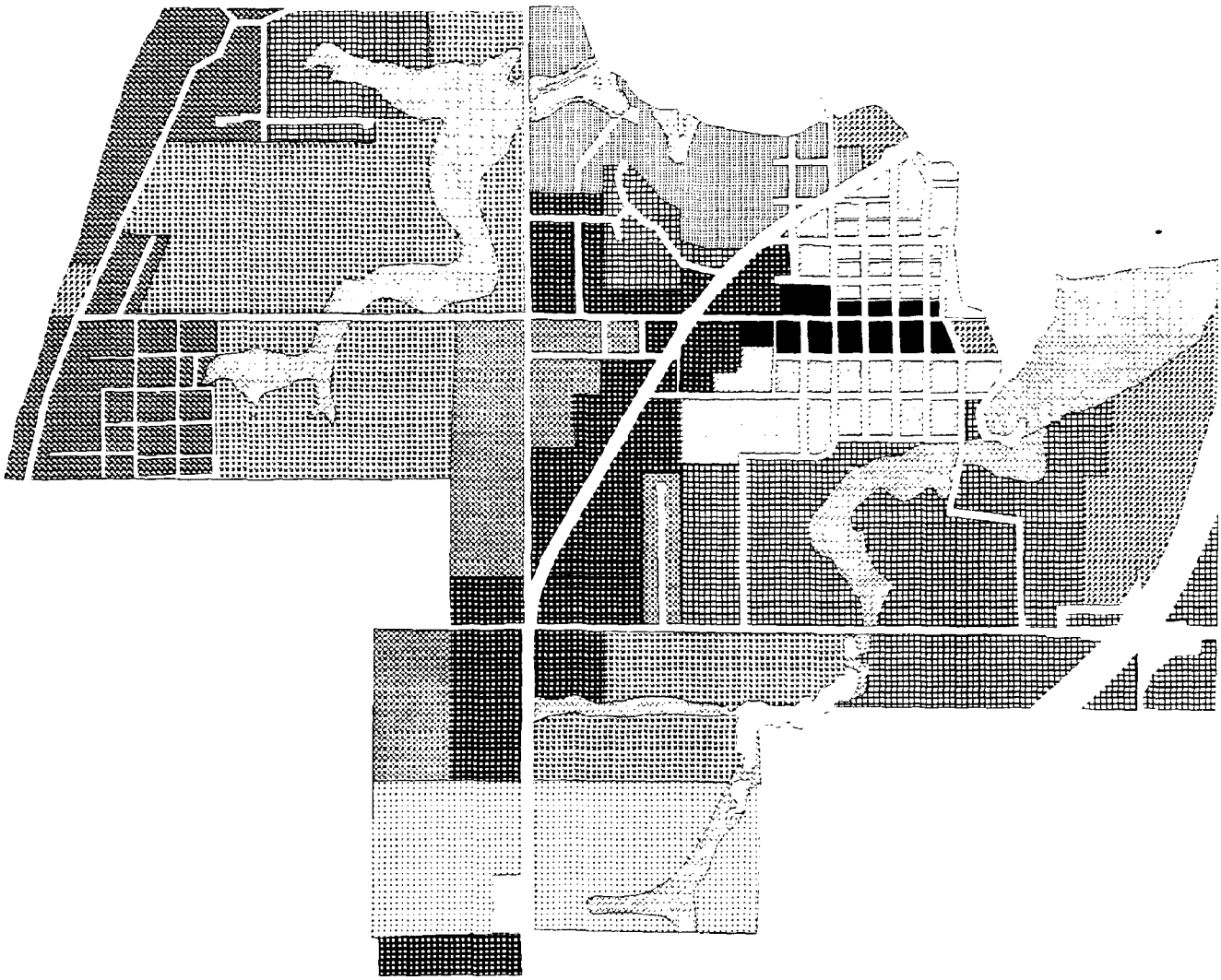
Village of Douglas
FUTURE LAND USE

0 700 1400 2100

Scale 1" = 1438'



MAP 10.2 ENTRY POINTS

Douglas

Entry Points

Minor Entry Points

August 1989 DATA SOURCE: Planning & Zoning Center Inc, Lansing, MI

Chapter 11

INTERGOVERNMENTAL COOPERATION

By itself this plan has no legal regulatory force but rather, serves as a foundation upon which regulatory measures are based. The two primary land use regulatory documents which are also the principal means of implementation of this plan, are the zoning ordinance and subdivision control regulations. These regulatory instruments are described in the next chapter.

However, effective integration of this Plan will also require an ongoing commitment to intergovernmental cooperation with Saugatuck and Saugatuck Township. In particular, the Joint Plan prepared concurrently with this one should be implemented as steadfastly and also kept current with comprehensive reviews at least once each five years.

It will also be very important to make every effort to keep Saugatuck and Saugatuck Township officials informed of proposed changes to this Plan or any of its regulatory instruments (such as zoning) and to encourage their input prior to such a change being made. Likewise, those jurisdictions should be encouraged to reciprocate with proposals and an opportunity for review by the Village of Douglas prior to action on any change which may impact on the Village. A copy of this Plan and any amendments to it will be filed with the clerk of each of these jurisdictions, as well as with the County Clerk, the County Planning Commission, the County Economic Growth Alliance, the West Michigan Regional Planning Commission, and Department of Natural Resources.

Ongoing efforts to consolidate additional public services such as police and possibly public works should be continued where mutually beneficial. Likewise, efforts to convert the Kalamazoo Lake Sewer & Water Authority into a truly independent authority should be continued. This would take it outside of political influence in day-to-day administration.

Likewise, at some point, additional consideration should be given to consolidation of all governmental services into a single unit of government. A formal analysis of costs and benefits of consolidation may reveal the benefit of this alternative. See the additional thoughts in this regard in Chapter 12.

Chapter 12

STRATEGIES FOR IMPLEMENTATION

PRIMARY IMPLEMENTATION TOOLS

Relationship to Zoning

The Village of Douglas has a zoning ordinance adopted pursuant to the City-Village Zoning Act, PA 207 of 1921. The intent of that ordinance is to regulate the use of land to provide for orderly growth and development and allow the integration of land uses without creating nuisances. The zoning ordinance defines land use districts and regulates height, bulk, use, area of lot to be covered, and open space to be preserved within each district.

Because the Zoning Enabling Act requires the zoning ordinance be based upon a Plan and this Plan, prepared by the Planning Commission, has been prepared to guide future land use decisions, the zoning ordinance should be revised to reflect this Plan's new goals, policies, and future land use proposals. However, the zoning district map and the future land use map (10.1) will not be identical. The zoning map typically reflects existing land use (where it is desirable to continue it) and small areas zoned for more intensive use then at present. The future land use map reflects land use arrangements at some future time. (See Section 10.10, p. 245-250, **Michigan Zoning & Planning**, 3rd Ed., by Clan Crawford, ICLE, Ann Arbor, 1988).

The Village should continue to maintain a formal site plan review process. Through this process applicants, in order to obtain zoning approval, must submit plans which clearly indicate how their development proposals will change and affect both the parcel of land being developed as well as surrounding properties. It is recommended that all commercial and industrial development, as well as all subdivisions, multiple family housing, planned unit developments, and other development requiring more than five (5) parking spaces, undergo site plan review.

In addition, the zoning ordinance and fee structures should be amended to permit the Village to require developers of new commercial and industrial uses and all proposed multi-family developments to pay into an escrow fund to be used for payment of professional review fees by engineers, planners and attorneys (if necessary). Unused escrowed dollars would be returned.

Relationship To Plans/Zoning In Adjacent Jurisdictions

The land use proposals in this plan were carefully prepared with an eye to ensuring compatibility with those of Saugatuck and Saugatuck Township. Equal care should be taken in the future to seek and receive comment on proposals that are on or near a border from an adjoining jurisdiction. Failure to do so will only insure future conflict over adjacent land uses, or the provision of new public services.

Relationship to Subdivision Regulations

The Village of Douglas adopted subdivision regulations Dec. 7, 1987. The enabling legislation that permits the enactment of such regulations is Public Act 288 of 1967, also known as the Subdivision Control Act of 1967. This Act allows a community to set requirements and design standards for streets, blocks, lots, curbs, sidewalks, open spaces, easements, public utilities, and other associated subdivision improvements. With the implementation of a subdivision ordinance there is added assurance that development will occur in an orderly manner. The Village of Douglas should consider amending the subdivision and zoning regulations to prohibit the establishment of lots which would be unbuildable under existing state or local regulations (such as lots which are wholly within a protected wetland).

Relationship to Capital Improvements

In its basic form, a CIP is a complete list of all proposed public improvements planned for a 6 year period (the time span may vary), including costs, sources of funding, location, and priority. The CIP outlines the projects that will replace or improve existing facilities, or that will be necessary to serve current and projected land use development within a community.

Advanced planning for public works through the use of a CIP assures more effective and economical capital expenditures, as well as the provision of public works in a timely man-

ner. The use of capital improvements programming can be an effective tool for implementing the comprehensive plan by giving priority to those projects which have been identified in the Plan as being most important to the future development and well being of the community. The Village Planning Commission should develop a formal capital improvement program.

Land Use & Infrastructure Policies

A strong effort will be necessary to coordinate future capital improvement decisions and land use policies with adjoining units of government. As a result, proposed policy changes should be circulated for comment early. Likewise, proposed capital improvement programs should be prepared with adequate time for review and comment by the adjoining jurisdictions.

Community Participation And Education

In order to gain the support, acceptance, and input of area residents for future planning, ongoing efforts should be continued to provide information to them, and involve them in the planning process. The importance of their role in that process should be emphasized. Public acceptance will make the implementation of plans much easier and public input makes plans better and more responsive to local needs.

SPECIAL AREA & FINANCING TECHNIQUES

Building and Property Maintenance Codes

BOCA (Building Officials and Code Administrators International, Inc.) is the basic building code adopted by the Village to regulate construction methods and materials. The adoption and enforcement of a building code is important in maintaining safe, high quality housing and in minimizing deteriorating housing conditions which contribute to blight within neighborhoods. This should be continued.

The Village should consider adopting a basic property maintenance code to regulate blighting influences which result from failure to properly maintain property and structures. A standard code such as the BOCA Basic Housing - Property Maintenance Code or a locally developed code could be adopted.

Community Development Block Grant Program

The Community Development Block Grant program was authorized under Title I of the Housing and Community Development Act of 1974. The Act had the effect of combining several federal categorical grants such as Urban Renewal and Model Cities into one. Grants under the program must principally benefit low and moderate income families.

In Michigan there are two categories of eligible applicants: entitlement and non-entitlement. Entitlement communities, by meeting specific eligibility criteria, are given grant funds outright without having to compete for them. Non-entitlement applicants must compete for grant funds by applying through the Michigan Small Cities Community Development Block Grant Program. The Village of Douglas is not an entitlement community. Therefore, it must apply through the Small Cities Program.

Operation of the Michigan CDBG Program is the responsibility of the Michigan Department of Commerce with central program administration by the Department's Office of Federal Grant Management (OFGM). The Department of Commerce has entered into an agreement with the Michigan State Housing Development Authority (MSHDA) assigning administrative responsibilities for the housing component of the program.

In the housing area, samples of grant eligible activities include:

- Home Improvement Programs
- Rental Rehabilitation Programs
- Weatherization and Energy Conservation
- Home Repair for the Elderly
- Public Improvement in conjunction with targeted housing activity (limited to 25 percent of grant request)
- Housing Related Services
- Housing for the Homeless.

The maximum grant amount is $250,000. By applying and obtaining a Small Cities Block Grant, the Village alone, or in concert with Saugatuck and Saugatuck Township could establish a housing rehabilitation program which would help preserve housing throughout the area.

The CDBG program also has the following categories of assistance:

- Base Industrial Loan program helps financially viable businesses needing financial assistance for growth, modernization, or expansion. Limit $750,000).

- Commercial Retail Loan program is for commercial, services, tourism, and other non-residential projects; and minority owned and retail projects in distressed communities. Limit $400,000.
- Public Infrastructure Assistance program funds public improvements for the location and expansion of public infrastructures. Limit $750,000.
- Downtown Development program provides financing to assist businesses in the redevelopment of the downtown area. Limit $500,000 or $300,000 for infrastructure improvement.
- Communities in Transition program funds community development activities, such as public sewer and water systems, parks, bridges, roads, and comprehensive redevelopment planning. Limit $400,000.
- Emergency Community Assistance program funds communities experiencing an imminent and urgent threat to public health, safety, or welfare which occurred within 90 days of application. Limit: $500,000.

Downtown Development Authority - Act 197 of 1975

This Act permits a city, village, or township to establish a nonprofit development corporation called a Downtown Development Authority (DDA) with broad powers, including those of taxation and bonding, to focus on revitalization and development within established "downtown" boundaries.

The Act gives an authority broad powers with regard to the planning and development of the downtown district. It may engage in downtown planning, promote housing and public facility developments, and economic development projects. Operating revenues may be raised through public and private contributions or through properties the DDA may control. With the approval of the municipal governing body, an ad valorem tax may be levied on real and tangible personal property within the downtown district. Capital financing may be raised in a number of ways:

- A DDA may issue revenue bonds. These, with municipality approval, may be secured by *"the full faith and credit"* of the municipality.
- A DDA can request the municipality to borrow money and issue notes in anticipation of collected taxes.
- A DDA, with municipality approval, may create a *"tax increment financing plan"* in which it devotes projected increases in future tax revenues from increased assessed valuation in the project area - *"captured assessed value"* - for repayment of debts incurred in making selected public improvements. Revenue bonds are issued in anticipation of future revenue.

Michigan State Housing Development Authority (MSHDA) Programs

To help preserve Michigan's older existing housing, Public Act 130 was passed in 1977 to allow MSHDA to begin a home improvement loan program that offers reduced interest rates to eligible low and moderate income families. MSHDA has created the Home Improvement, Neighborhood Improvement and Community Home Improvement Programs (HIP/NIP/CHIP). To get a loan, residents should apply to one of the banks, savings and loans, or credit unions that take part in HIP/NIP/CHIP.

Land and Water Conservation Fund

The Land and Water Conservation Fund (LWCF) grant program was authorized by Public Law 88-578, effective January 1, 1965. The purpose of the program is to provide federal funds for acquisition and development of facilities for outdoor recreation. The LWCF Program is administered jointly by the National Park Service, U.S. Department of the Interior, and the Michigan Department of Natural Resources.

All political subdivisions of the state, including school districts, are eligible to participate in the program. Eligible projects include:

1. Acquisition of land for outdoor recreation, including additions to existing parks, forest lands, or wildlife areas.

2. Development including, but not limited to such facilities as: picnic areas, beaches, boating access, fishing and hunting facilities, winter sports areas, playgrounds, ballfields, tennis courts, and trails.

For development grants, the applicant must have title to the site in question. The minimum grant allowable is $10,000 and the maximum grant allowable is $250,000.

For all grant proposals, the amount of the grant cannot exceed more than 50 percent of the total project cost.

Michigan Natural Resources Trust Fund

The Kammer Recreational Land Trust Fund Act of 1976 (Public Act 204) was passed by the Michigan Legislature and signed by the Governor on July 23 1976. This Act created the Michigan Land Trust Fund. The purpose of the program was to provide a source of funds for public acquisition of recreational lands. Funds accrued from the sale of oil, gas and mineral leases and royalties from oil, gas, and mineral extractions on state lands.

On November 6, 1984, Michigan residents cast their vote in favor of Proposal B. This constitutional amendment created the Michigan Natural Resources Trust Fund (MNRTF) and requires that oil, gas, and other mineral lease and royalty payments be placed into the Fund, with proceeds used to acquire land or rights in land for recreation uses or for protection of the land because of its environmental importance or its scenic beauty, and to develop public recreation facilities. The Michigan Legislature passed the Michigan Natural Resources Trust Fund Act of 1985 (Public Act 101) to implement the amendment. The MNRTF officially replaced the Michigan Land Trust Fund on October 1, 1985.

Any individual, group, organization, or unit of government may submit a land acquisition proposal, but only units of government can take title to and manage the land. Only units of government can submit development proposals. All proposals for local grants must include a local match of at least 25 percent of the total project cost. There is no minimum or maximum for acquisition projects; for development projects, the minimum funding request is $15,000, the maximum is $750,000.

Michigan Natural Resources Trust Fund

The Kammer Recreational Land Trust Fund Act of 1976 (Public Act 204) was passed by the Michigan Legislature and signed by the Governor on July 23 1976. This Act created the Michigan Land Trust Fund. The program provided funds for public acquisition of recreational lands through the sale of oil, gas, and mineral leases and royalties from oil, gas, and mineral extractions on state lands.

On November 6, 1984, Michigan residents cast their vote in favor of Proposal B. This constitutional amendment created the Michigan Natural Resources Trust Fund (MNRTF). Public Act 101 of 1985, which officially replaced the Michigan Land Trust Fund on October 1, 1985. MNRTF assists state and local governments (including school districts) in acquiring land or rights to land for recreational uses, protecting land because of its environmental importance or scenic beauty, and developing public recreational facilities.

Any individual, group, organization, or unit of government may submit a land acquisition proposal, but only units of government may take title to and manage the land. Only units of government may submit development proposals. All proposals for local grants must include a local match of at least 25 percent of the total project cost. There is no minimum or maximum for acquisition projects; for development projects, the minimum funding request is $15,000, the maximum is $375,000.

TABLE 12.1

RECREATION FACILITIES & THEIR MINIMUM NUMBER OR SIZE NECESSARY TO ACHIEVE MINIMUM POINTS

RECREATION FACILITY	MINIMUM SIZE
Bicycle Trail	1 mile
Playground	3 pcs. of play equipment
Swimming Beach	50 feet
Boat Launch	5 parking spaces
Campground	10 campsites
Non-motorized Trail	1/2 mile
Cross-country Ski	
Hiking	
Nature	
Horse	
Fishing Access	50 feet
Fishing Piers	1
Nature Area	10 acres

NOTE: Points are not to be awarded separately for cross-country ski trails, nature trails, and hiking trails. These trails are to be considered as one facility.

Source: DNR, **Michigan's 1987-88 Recreation Action Program Guidebook.**

Costal Zone Management Fund

The Land & Water Management Division of the Department of Natural Resources offers grants for the purpose of planning, designing, and carrying out low-cost projects to improve Great Lakes shorelines and connecting waterways.

The Recreation Bond Fund

The Recreation Bond Fund draws from bonds approved by voters in 1988. It calls for money to be spent on DNR and local recreation facilities in four categories:

Recreation infrastructure: such as ballfields, tennis courts, beaches and other shoreline areas, boat launches, trails, picnic areas, historic structures, playgrounds, roads, parking, restrooms, etc., which are not less than 15 years old;

Waterfront recreation: such as fishing piers, boardwalks, boat launches, marinas, amphitheaters, landscaping, and shoreline stabilization;

Community recreation: playgrounds, sportsfields, community centers, senior centers, fishing sites, and trails for the handicapped;

Tourism-enhancing recreation: including campgrounds, boating facilities, historical sites, recreational conversion of abandoned rights-of-way, and fishing access.

In its statewide inventory of recreational facilities, the DNR has identified Allegan County as deficient in a number of recreational facilities. Those relevant for the tri-community area include deficiencies in bicycle trails, fishing access, fishing piers, boat launches, campgrounds, nature areas, hiking trails, nature trails, cross country ski trails, picnic areas, and playgrounds. Allegan County communities with proposals for such projects will get funding priority over similar projects proposed in non-deficient counties. Table 12.1 includes the minimum number or size of selected recreation facilities to be considered toward bond funding.

Grant requests may not exceed $750,000 and may not be less than $15,000. Applicants must match bond funds with 25% of the total project cost, not including other state grants or legislative appropriations. Bond money will only be allocated to projects on sites controlled by public agencies. In the tourism category, priorities are given to projects which: create new and innovative recreation-related tourism attractions; involve partnerships between the public and private sector; and projects for which feasibility studies have been conducted which demonstrate local, regional, and statewide economic benefits. [Applications and further information may be obtained from: DNR, Recreation Services Division, P.O. Box 30028, Lansing, MI 48909 (517) 335-3043.]

Recreation Improvement Fund

The Recreation Improvement Fund was created from State fuel tax revenue. About $750,000 per year is being targeted for development of non-motorized trails (hiking, bicycle, cross-country, and nature trails). No application forms or criteria have yet been prepared, but the Recreation Division is encouraging local governments to submit proposals based on local determination of need, location, and financing.

Local Facility Development Grants

These grants come from a number of funding sources and are available for planning, design, or development of local recreational facilities. The Village of Douglas received $11,000 through this program in FY 1987-88 for improvement of its boat launch site on Kalamazoo Lake.

Land Acquisition Grants

Land acquisition grants are available for projects aimed at open space preservation; park creation or expansion; acquisition of environmental resources such as sand dunes, woodlots, or wetland areas; waterfront access sites; and many other land acquisition projects intended for (passive or active) recreational purposes.

Waterways Fund

The Waterways Division of the Department of Natural Resources offers grants for the purpose of developing public boating facilities. The emphasis is on creating boat access sites and supporting facilities.

Road Funds

In 1987, three acts were passed to provide a new source of revenue for cities, villages,and county road commissions. The Transportation Economic Development Fund (Act 231 of 1987, as amended), the Road Construction and Improvement Act (Act 233 of 1987), and the Local Road Improvements and Operation Revenue Act (Act 237 of 1987, as amended). The acts will be in effect for five years, when they will be reviewed for continuation by the legislature.

The Local Road Improvements and Operation Revenue Act authorizes county road commissions to impose a vehicle registration fee and use these funds for road improvements. This Act has had little utility, however, because the fee must be approved by a public vote. Michigan voters in 3 counties rejected proposed fees in the November 1988 election. Many counties chose

not to even put it on the ballot, fearing the same result.

The Road Construction and Improvement Act (Act 233) provides funding through the transportation economic development fund only to rural counties (less than 400,000 population) with a national lakeshore, national park, or in which 34% or more of the land is commercial forest land. Then a portion of the remaining funds are available for use for county, city, and village street improvements.

The Transportation Economic Development Fund allocates money for the purposes of bringing county roads to all season highway standards. This is important because heavy trucks can only travel regularly on all season roads.

The Transportation Economic Development Act also offers counties, cities, and villages the opportunity to compete for additional funding on special projects with economic development objectives. This competitive grant is awarded by the State Highway Commission. Qualified project categories are listed below:

(a) Economic development road projects in any of the following targeted industries: agriculture or food processing; tourism; forestry; high technology research; manufacturing; office centers solely occupied by the owner or not less than 50,000 square feet occupying more than 3 acres of land.

(b) Projects that result in the addition of county roads or city or village streets to the state trunk line system.

(c) Projects for reducing congestion on county primary and city major streets within urban counties.

(d) Projects for development within rural counties on county rural primary roads or major streets within incorporated villages and cities with a population of less than 5,000.

PUBLIC WORKS FINANCING

In addition to using general fund monies, it is often necessary for a community to bond to raise sufficient funds for implementing substantial public improvements. Bonding offers a method of financing for improvements such as water and sewer lines, street construction, sidewalks, and public parking facilities. Common municipal bond types include:

1. General Obligation Bonds - full faith and credit pledges, the principal amount borrowed plus interest must be repaid from general tax revenues.

2. Revenue Bonds - require that the principal amount borrowed plus interest be repaid through revenues produced from the public works project the bonds were used to finance (often a water or sewer system).

3. Special Assessment Bonds - require that the principal amount borrowed plus interest be repaid through special assessments on the property owners in a special assessment district for whatever public purpose the property owners have agreed (by petition or voting) to be assessed.

TAX INCENTIVES

The state law permitting communities to provide property tax incentives for industrial development is Act 198. This Act allows a community to provide tax abatements as an incentive for industrial firms which want to renovate existing or build new facilities.

ADDITIONAL RECOMMENDATIONS

Other Planning & Economic Development Assistance

The Village Planning Commission should maintain regular communication with the County Planning Commission, with the West Michigan Regional Planning Commission, and with the Allegan County Community Growth Alliance. These organizations should be encouraged to continue their County and region-wide planning and economic development efforts and to share relevant materials with the Village. Likewise a copy of this Plan should be forwarded to each of these agencies when adopted.

Pro-Business Alliance

One way to strengthen Douglas's economic development potential is to establish a pro-business exchange in Village government (or jointly with Saugatuck and Saugatuck Township) modelled after the Michigan Bell Business Retention and Expansion Program. (Douglas is not eligible for participation in the Michigan Bell Business Retention and Expansion program because it is not in a Michigan Bell service area.) A pro-business exchange creates an atmosphere of cooperation which benefits both the business and the community.

The role of a pro-business exchange is to assist existing businesses in finding solutions

for their problems (i.e. inadequate parking, expansion or relocation needs, etc.) and help make new businesses feel welcome. The exchange would work with area businesses to determine their needs and appoint an ombudsman to inform new businesses of local services and contacts. Businesses are often not aware of the services available to them or who to contact for more information. A brochure could be prepared which identifies who to contact for information on zoning, construction, planning, utilities, and taxation. The brochure could also identify permit fees, tax and utility rates, and transportation, delivery, freight, health, and financial services available in the area.

Poverty

The changing economy, higher health care costs, higher literacy and skills requirements for employees, and inflation have seriously hurt the nation's poor, including the elderly on fixed incomes. Social security benefits are the only retirement income for about two-thirds of all American retirees, and an estimated one million Michigan residents have no private or public health insurance.

The poor are often overlooked in community development efforts, yet they are the group most in need of public assistance. Over eleven percent of the Village's residents were living below the poverty level in 1980. That's an annual income of less than $3,778 for those under 65, and $3,479 for those 65 and over.

The Village should continue to monitor the number of people in poverty through the census counts and work with local churches and nonprofit groups to assist them through food drives, temporary shelters, or other needed services.

Collection of Traffic Count Data

A more detailed analysis of street and road needs should be undertaken. However, doing so is limited by the lack of any systematic and recent traffic count information. The tri-community jurisdictions would greatly benefit from jointly purchasing the necessary equipment and undertaking specific traffic counts on a regular basis. The cost and training associated with this is minimal compared to the benefit.

Blue Star Highway Corridor Study

Blue Star Highway from the Kalamazoo River south to the freeway exit has the potential to grow haphazardly under existing zoning regulations. As a result it deserves a more thorough and careful analysis than has been possible to date. A lot by lot analysis with an emphasis on traffic flow, ingress, egress, bicycle use, pedestrian access, parking, shared access, signs, land use, and the potential impact and appropriate timing for the extension of sewer and water should be initiated. The first and most important step will be the collection of data on traffic flow and traffic generation by road segment.

Public Open Space Acquisition

Programs to acquire public open space along the water should be initiated. One option is to create a local nonprofit land conservancy. There are several very effective ones operating in Michigan. Priority should be given to building a trust fund for acquisition and maintenance or tying into existing ones by the Nature Conservancy and similar organizations.

Kalamazoo Lake Sewer & Water Authority

Once the Township joins as a full member of the Kalamazoo Lake Sewer & Water Authority, it should be modified so that it is a more independent operating authority and not under the control of the legislative bodies of the three jurisdictions. This would distance it from political influences in day to day administration. Efforts are presently underway to evaluate the potential for doing so.

One Jurisdiction

The benefits of merging the three communities into one jurisdiction far outweigh the detriments if the long term future of the area is considered. However, past efforts to do so have been met with failure and the citizen opinion survey still reflects an evenly divided electorate. Yet, no systematic analysis of the issue considering all aspects (planning, development control, cost, revenues, taxes, economic development, short versus long term, impact on community character, etc.) have ever been performed. Such an analysis should be done to more clearly lay out and analyze the issues. It should be undertaken by the three communities together, but could also be done by an outside group, such as the business community or a taxpayers organization.

Periodic Updating and Revisions

As these additional studies are undertaken the plan should be updated to reflect the new information. At a minimum the Plan should be

comprehensively reviewed and updated at least once every five years.

Managing Growth and Change

The key to successfully managing future growth and community change is integrating planning into day-to-day decision making and establishing a continuing planning process. The only way to get out of a reactionary mode (or crisis decision making) is by planning and insuring the tools available to meet a broad range of issues are current and at hand. For that reason it will be especially important that the recommendations of this Plan be implemented as the opportunity presents itself (or revised as circumstances dictate).

Many new tools may be made available to local governments over the next few years to manage the growth and change process. It will be a challenge to Village officials to pick from among the new tools, those that will provide greater choice over local destiny and quality of life.

REFERENCES

Listed below are some of the key reports, studies, plans, and data sources which were used as references in the preparation of this plan. Other data sources are referenced throughout the plan.

DEMOGRAPHICS

U.S. Census, **Current Population Reports**, East North Central 1986 Population and 1985 Per Capita Income Estimates for Counties and Incorporated Places, Series P-26, No. 86-ENC-SC *(also referenced for economic data).*

U.S. Census of Population and Housing, 1980—Summary Tape File 3A (microfiche) for Saugatuck, Saugatuck Township, the Village of Douglas, and Allegan County.

HISTORY

Joe Armstrong and John Pahl, **River & Lake: A Sesquicentennial History OF Allegan County, Michigan**, published by the 1835 Committee, 1985.

MASTER PLANS

Saugatuck Township General Development Plan, prepared for Saugatuck Township by Williams & Works, Inc., 1975.

Village of Douglas Land Use Plan, prepared by the Village of Douglas Planning Commission with the assistance of the West Michigan Regional Planning Commission, adopted November 19, 1986.

Land Use—Village of Saugatuck, prepared by the Saugatuck Planning Commission with the assistance of the West Michigan Regional Planning Commission, 1979.

NATURAL RESOURCES

Michigan Resource Inventory System Database, Department of Natural Resources.

Soil Survey of Allegan County, Michigan, United States Department of Agriculture, Soil Conservation Service, March 1987.

OWNERSHIP

Land Atlas and Plat Book, Allegan County, Michigan, Rockford Map Publishers, Inc., 1987-1989.

Saugatuck Township Plat Book, Township Treasurer's Office, Saugatuck, Township.

RECREATION

A Parks and Recreation Plan for Allegan County, Michigan, prepared for Allegan County by Williams & Works, Inc., 1986.

Saugatuck-Douglas Area Parks and Recreation Plan, prepared by the tri-community area Parks and Recreation Commission, with the assistance of the Saugatuck Public School District, February 1985.

SOLID WASTE

Allegan County Solid Waste Plan, prepared for the Allegan County Board of Commissioners and the Michigan Department of Natural Resources by the Allegan County Planning Commission, P.A. 641 solid Waste Planning Committee, and the West Michigan Regional Planning Commission, September 1983.

ECONOMY

Real and Personal Property SEV, 1980-88, Michigan Department of Treasury, State Tax Commission.

The Economic Impact of Travel on Michigan Counties, prepared for the Michigan Travel Bureau by the U.S. Travel Data Center, July 1988.

Travel and Tourism in Michigan: A Statistical Profile, First Edition, Research Monograph #1, Michigan State University, Travel, Tourism and Recreation Resource Center, 1986.

Michigan Employment Security Commission, Bureau of Research & Statistics, Detroit, Michigan.

UTILITIES

A Feasibility Study on the Utilization of a Single Ground Storage Reservoir, Saugatuck-Douglas Water System, prepared for Kalamazoo Lake Sewer & Water Authority by Holland Engineering, Inc., January 18, 1983.

Facilities Plan for Wastewater, prepared by Williams & Works, April 1976.

Saugatuck Township Area Utility Service Study, prepared by Fishbeck, Thompson, Carr & Huber, Inc., March 1988.

Village of Douglas Water Supply Contamination Problem Evaluation and Recommendations, Wolverine Engineers & Surveyors, Inc., July 1, 1987.

Village of Saugatuck Streets and Public Utilities Condition Report, May 1984.

Waterworks Reliability Study for Kalamazoo Lake Sewer and Water Authority, prepared by Fishbeck, Thompson, Carr, & Huber, Inc., March 1987.

ZONING

City of Saugatuck Zoning Ordinance, as amended through October 1989.

Saugatuck Township Zoning Ordinance, as amended through October 1989.

Village of Douglas Zoning Ordinance, as amended through October 1989.

APPENDIX B

Demographic, Economic, and Housing Data

A. DEMOGRAPHIC CHARACTERISTICS

1. Age Cohorts (Raw Data)

	Saugatuck	Douglas	Saug. Twp.	Area	County
under 1	13	23	25	61	1496
1-2	15	11	26	52	2560
3-4	21	17	56	94	2544
5	3	19	24	46	1289
6	11	6	29	46	1332
7-9	30	36	20	86	4274
10-13	47	59	106	212	5989
14	6	14	47	67	1522
15	17	15	23	55	1642
16	18	23	32	73	1758
17	15	18	34	67	1666
18	19	14	4	37	1392
19	13	16	51	80	1403
20	24	22	34	80	1402
21	14	18	21	53	1230
22-24	50	60	78	188	4267
25-29	106	84	107	297	6706
30-34	92	72	166	330	6503
35-44	101	106	142	349	9306
45-54	136	82	265	483	7820
55-59	59	48	108	215	3927
60-61	21	17	8	46	1172
62-64	27	30	75	132	1882
65-74	138	85	110	333	5151
75-84	57	49	104	210	2555
85+	26	4	17	47	767

Source: U.S. Census of Population and Housing, 1980--Summary Tape File 3A, item 15. Detroit, MI, tel. 313-354-4654.

2. Age Cohorts (Aggregated and Percent Comparisons)

Age	Saugatuck	Douglas	Saug. Twp.	Area	County
0-4	49 (4.5)	51 (5.4)	107 (6.3)	207 (5.5)	6,600 (8.1)
5-14	97 (9.0)	134 (14.1)	226 (13.2)	457 (12.2)	14,406 (17.7)
15-24	170 (15.8)	186 (19.6)	277 (16.2)	633 (16.9)	14,760 (18.1)
25-34	198 (18.4)	156 (16.5)	273 (15.9)	627 (16.8)	13,209 (16.2)
35-44	101 (9.4)	106 (11.2)	142 (8.3)	349 (9.3)	9,306 (11.4)
45-54	136 (12.6)	82 (8.6)	265 (15.5)	483 (12.9)	7,820 (9.6)
55-64	107 (9.9)	95 (10.0)	191 (11.2)	393 (10.5)	6,981 (8.6)
65+	221 (20.5)	138 (14.6)	231 (13.5)	590 (15.8)	8,473 (10.4)

Source: (same as above, 1960 and 1980).

3. Change in Age Cohorts from 1960-1980 - Tri-Community Area

Age	1960 M/F	1960	1980 M/F	1980	Change 1960-80
0-4	121/140	261 (9.8)	113/94	207 (5.5)	-20.7%
5-14	274/249	523 (19.6)	233/224	457 (12.2)	-12.6%
15-24	133/146	279 (10.5)	325/308	633 (16.9)	126.9%
25-34	129/139	268 (10.1)	337/290	627 (16.8)	134.0%
35-44	170/166	336 (12.6)	170/179	349 (9.3)	3.9%
45-54	142/147	289 (10.9)	239/244	483 (12.9)	67.1%
55-64	115/163	278 (10.4)	192/201	393 (10.5)	41.4%
65+	196/232	428 (16.1)	231/359	590 (15.8)	37.9%

Source: (same as above, 1960 and 1980).

4. Place of Birth

	Saugatuck	Douglas	Saug. Twp.*	Area	County
Michigan	615 (56.9)	577 (60.9)	990 (57.8)	2182 (58.3)	63,771 (78.2)
Another State	422 (39.1)	320 (33.8)	598 (34.9)	1340 (35.8)	15,934 (19.5)
Born Abroad	5 (0.4)	2 (0.2)	-	7 (0.2)	227 (0.3)
Foreign Born	37 (3.4)	49 (4.4)	124 (7.2)	210 (5.6)	1,623 (2.0)

* Some individuals not accounted for.
Source: (same as above), item 33.

5. Place of Residence - 1975 (Persons 5 years old and over)

	Saugatuck	Douglas	Saug. Twp.	Area	County
Same House	503 (48.6)	423 (47.9)	984 (59.5)	1910 (53.4)	44,575 (59.3)
Same County	187 (18.0)	156 (17.6)	144 (8.7)	487 (13.6)	15,428 (20.5)
Another County	228 (22.0)	198 (22.4)	244 (14.7)	670 (18.7)	10,923 (14.5)
Another State	117 (11.3)	103 (11.6)	280 (16.9)	500 (14.0)	3,962 (5.2)
Abroad	-	8 (0.9)	-	8 (0.2)	241 (0.3)

Source: (same as above), item 34.

6. Household Characteristics

	Saugatuck	Douglas	Saug. Twp.	Area	County
Total HHs	537	391	633	1561	27,282
Ave. HH size	2.00	2.44	2.69	2.39	2.95
2 parent fam.	219	222	411	852	19,520
Female HH head	41	31	28	100	1,911

Source: (same as above), items 10 and 20

7. Marital Status

	Saugatuck	Saug Twp	Douglas
Single	262 (28.1%)	325 (23.9%)	177 (23.2%)
Married	467 (50.1%)	849 (62.5%)	449 (58.8%)
Separated	25 (2.7%)	28 (2.1%)	16 (2.1%)
Widowed	107 (11.5%)	75 (5.5%)	66 (8.7%)
Divorced	72 (7.7%)	82 (6.0%)	55 (7.2%)

Source: (same as above), item 26.

B. HOUSING STOCK

1. Structure Type

	Saugatuck	Douglas	Saug Twp.	Area	County
Total units	772	529	850	2,151	31,864
Year Round Units	569	406	734	1,709	28,985
1 in Structure	385	290	636	1,311	23,190
2 in Structure	49	20	32	101	1,001
3 and 4 in Struct	68	16	-	84	583
5 or more	60	40	-	100	1,199
Mobile Homes	7	40	66	113	3,012
Vacant, Seasonal, & Migratory	203	123	116	442	2,879
1 in Structure	150	108	106	364	2,250
2 in Structure	6	11	5	22	51
3-4 in Structure	18	4	-	22	57
5 or more	29	-	-	29	153
Mobile Home/Trailer	-	-	5	5	368

Source: U.S. Census of Population and Housing, 1980--Summary Tape File 3A, item 102/103. Detroit, MI, tel. 313-354-4654

2. Year Structure Built - Year Round Units

	Saugatuck	Douglas	Saug Twp.	Area	County
1975-80	36 (6.3)	22 (5.5)	72 (9.8)	130 (7.6)	3568 (12.3)
1970-74	19 (3.3)	46 (11.3)	116 (15.8)	181 (10.6)	4326 (14.9)
1960-69	51 (9.0)	81 (19.9)	133 (18.1)	265 (15.5)	4458 (15.4)
1950-59	73 (12.8)	32 (7.9)	99 (13.5)	204 (11.9)	3647 (12.6)
1940-49	56 (9.8)	36 (8.9)	68 (9.3)	160 (9.4)	2507 (8.6)
Pre 1940	334 (58.7)	189 (46.5)	246 (33.5)	769 (45.0)	10479 (36.2)

Source: (same as above), item 109.

3. Occupancy

	Saugatuck	Douglas	Saug Twp.	Area	County
Total Units	772	529	850	2,151	31,864
Owner occupied	334 (43.2)	271 (51.2)	531 (62.4)	1,136 (52.8)	22,271 (69.8)
Renter occupied	205 (26.5)	117 (22.1)	117 (13.7)	439 (20.4)	4,961 (15.5)

Source: (same as above), item 97.

C. ECONOMIC CHARACTERISTICS

1. Type of Employment

	Saugatuck	Douglas	Saug Twp.	Area	County
Private Wage/Salary	402 (73.5)	333 (76.9)	492 (71.4)	1227 (73.5)	26697 (78.5)
Federal Gov.	7 (1.3)	1 (0.2)	11 (1.6)	19 (1.1)	308 (0.9)
State Gov.	21 (3.8)	25 (5.8)	2 (0.3)	67 (4.0)	775 (2.3)
Local Gov.	49 (9.0)	33 (7.6)	56 (8.1)	138 (12.0)	3022 (8.9)
Self Employed	68 (12.4)	40 (9.2)	92 (13.4)	200 (12.0)	2977 (8.7)
Unpaid Family Worke	-	1 (0.2)	17 (2.5)	18 (1.0)	246 (0.7)

Source: (same as above), item 67.

2. Real Property SEV - 1988

	Saugatuck	Twp/Douglas	Area	County	County (%)
Residential	21,167,486	43,730,725	64,898,211	604,509,215	66.2
Commercial	10,677,205	9,402,800	20,080,005	101,799,772	11.1
Industrial	779,150	1,126,200	1,905,350	50,272,956	5.5
Agricultural	N/C	2,661,790	2,661,790	153,232,546	16.8
Developmental	N/C	430,733	430,733	3,251,687	0.4

Source: Michigan Department of Treasury, State Tax Commission, 1988.
Lansing, MI, tel. 517-373-1091.

3. Total Annual Real Property SEV - 1980-88

Year	Saugatuck	Douglas	Saug Twp.*	Saug. Twp.**	Area
1980	13,709,600	10,560,200	18,482,350	42,752,150	42,752,150
1981	15,682,000	11,723,580	21,042,164	48,447,744	48,447,744
1982	18,314,033	13,341,647	23,287,428	54,943,108	54,943,108
1983	20,855,000	15,101,800	25,691,300	61,648,100	61,648,100
1984	25,831,436	16,848,894	27,155,345	69,835,675	69,835,675
1985	27,382,650	18,756,700	28,922,650	47,679,350	75,062,000
1986	29,737,980	20,321,283	30,023,509	50,344,792	80,082,772
1987	32,727,560	21,957,626	32,464,745	54,422,371	87,149,931

* not including Villages.
** including Saugatuck and Douglas through 1984 and Douglas only after 1984.
Source: Michigan Department of Treasury, State Tax Commission, 1988.
Lansing, MI, tel. 517-373-1091

4. Annual Average Employment -Tri-Community Area

Year	Ave. Emp.
1980	1,491
1981	1,527
1982	1,555
1983	1,613
1984	1,695
1985	1,656
1986	1,175
1987	2,461
1988	2,550
1989	2,700

Source: Michigan Employment Security Commission, Field Analysis Unit.
Detroit, Michigan, tel. 313-876-5427.

5. Persons in Poverty by Age

	Saugatuck	Douglas	Saug Twp.	Area	County
Less than 55	67	77	83	227	5181
55-59	3	6	-	9	281
60-64	8	-	-	8	206
65+	15	24	39	78	1127

Source: U.S. Census of Population and Housing, 1980--Summary Tape File 3A, item 93.
Detroit, MI, tel. 313-354-4654.

APPENDIX C

Public Opinion Survey Responses

VILLAGE OF DOUGLAS

PUBLIC OPINION SURVEY
RESULTS

PAUL HARRIS: ASSISTANT RESEARCH DIRECTOR

RESPONSE RATE

WE SENT 550 SURVEYS FROM OAKLAND UNIVERSITY USING THE MAIL LABELS FROM THE VILLAGE. WE RECEIVED (as of 11/29/88) 257 SURVEYS FROM THIS MAILING, PRODUCING A RESPONSE RATE OF 46.7 PERCENT. IN ADDITION, WE RECEIVED 30 RENTER SURVEYS WHICH WERE DISTRIBUTED BY THE VILLAGE. THE TOTAL NUMBER OF SURVEYS USED IN THE FORTHCOMING ANALYSES IS: 287.

COMMUNITY VALUES

Q.1: Importance of things people look for in a community.

NOTE: ORIGINAL RESPONSES HAVE BEEN COLLAPSED
1 & 2 = NOT IMPORTANT, 4 & 5 = IMPORTANT, 3 = HAS BEEN OMITTED

	NOT IMPORTANT	IMPORTANT
small town atmosphere	9.8%	84.6%
quiet town	9.2%	87.9%
friendly people	7.1%	86.9%
attractive/beutiful surroundings	4.9%	85.7%
good place to raise children	31.6%	57.3%
traditional values	24.3%	57.1%
religious opportunities	34.9%	43.1%
freedom to be myself	5.6%	79.0%
chance to get involved in local org's	29.0%	41.3%
low crime rate	4.9%	90.3%
good school system	24.6%	61.7%
low tax rates	10.4%	65.4%
close to larger cities	16.4%	59.9%
convenient shopping opportunites	17.9%	50.6%
availability of good housing	25.5%	62.2%
family in the area	43.6%	52.2%
job in area	42.9%	44.1%
water based recreation nearby	13.5%	61.2%
not industrialized	27.2%	53.6%

Q.2: How has the community changed.

	PERCENT CHECKED
better place to live	24.6%
stayed about the same	56.6%
worse place to live	18.9%

Q.3: As the area grows and chanes, which best describes Douglas.
1= small village, 2= bedroom community, 3= Holland suburb, 4= Small city

	1	2	3	4
community as is	93.7%	3.7%	1.1%	1.5%
community as would like it to be	76.8%	6.7%	3.4%	13.1%
community as think it will be	37.9%	23.1%	15.2%	23.9%

Q.4: How would you rate the communites on the following.

NOTE: ORIGINAL RESPONSES HAVE BEEN COLLAPSED
1 & 2 = POOR, 4 & 5 = EXCELLENT, 3 = HAS BEEN OMITTED

	POOR	EXCELLENT
business climate	33.2%	30.2%
churches	5.4%	72.1%
community events	21.6%	45.9%
entertainment	47.2%	25.1%
general appearance	18.5%	67.2%
housing	33.3%	33.4%
jobs	47.4%	9.5%
location	2.2%	88.5%
medical care	48.9%	31.0%
recreation	13.2%	74.6%
restaurants	15.3%	61.1%

Q.4: cont

	POOR	EXCELLENT
roads	28.1%	39.5%
schools	13.5%	64.0%
senior citizen services	20.8%	52.3%
shopping	33.6%	38.7%
social services	35.4%	10.6%
taxes	61.4%	13.9%

Q.6: Problems faced by the communities, how important are they to you.

NOTE: ORIGINAL RESPONSES HAVE BEEN COLLAPSED
1 & 2 = NOT A PROBLEM, 4 & 5 = A PROBLEM, 3 = HAS BEEN OMITTED

	NOT A PROBLEM	A PROBLEM
violent crime	80.2%	7.2%
property crime	51.3%	29.3%
vandalism	39.4%	26.4%
teens w/ nothying to do	13.6%	69.5%
drugs	8.2%	59.6%
alcohol	6.7%	68.2%
unemployment	28.5%	29.4%
new job opportunities	21.5%	49.6%
housing shortages	27.9%	42.0%
public recreation	63.0%	18.3%
too much development	50.0%	35.5%
not enough development	52.5%	28.2%
lack of health care...	19.1%	70.0%
trafic safety	51.9%	22.3%
parking daowntown Saug.	23.8%	67.2%
skateboards/bikes downtown Saug.	47.3%	23.4%
run down property	42.9%	32.6%
litter downtown area	64.5%	9.8%
litter along blue star Hwy	57.1%	20.3%
appearance of businesses along Blue	39.4%	49.6%
congestion at oval beach	39.6%	15.9%
quality oval beach facilities	45.5%	15.4%
access to waterbodies	61.3%	22.7%
local schools	49.8%	18.1%
Village gov't services	41.7%	22.8%
county gov't services	34.4%	26.7%
leadership elected officials	28.5%	39.0%
Inadequate taxes	59.6%	8.7%
inadequate local planning	49.8%	31.7%
inadequate local development	42.6%	31.3%
erosion & flodding	39.7%	40.1%
contamination driking water	14.6%	77.4%
water quality	13.1%	74.2%
wetlands	23.2%	53.9%
sand dunes	23.0%	57.4%
other env. destruction	26.0%	35.2%
inad. senior programs	49.6%	19.6%
erosion along Lakeshore Dr.	11.1%	81.0%
inad. water supply	29.5%	57.8%
inad. sewer service	59.7%	22.5%
snowmobiling on public roads	47.8%	26.3%

Q.8: Where do you go most often for the following things.

1= Saugatuck, 2= Holland, 3= close to work, 4= better service
5= more choice, 6= lower cost

	1	2	3	4	5	6
appliances	23.0%	56.7%	6.0%	1.2%	6.7%	6.3%
auto/truck sales	3.5%	67.3%	6.7%	1.2%	10.6%	10.6%
auto /truck services	20.3%	57.4%	7.2%	6.4%	6.0%	2.8%
bakery goods	84.4%	7.4%	1.1%	1.5%	3.3%	2.2%
banking	86.0%	4.9%	5.7%	2.3%	0.0%	1.1%
beautician/barber	68.3%	21.0%	5.7%	1.5%	2.3%	1.1%
books	41.8%	42.2%	1.6%	0.0%	12.1%	2.3%
car wash	47.8%	42.7%	5.5%	1.2%	1.6%	1.2%
clothing	10.5%	53.1%	3.5%	1.2%	27.1%	4.7%
day care	55.4%	37.0%	7.6%	0.0%	0.0%	0.0%
dept. store	3.5%	70.7%	4.2%	0.0%	20.1%	1.5%
dry cleaners	63.7%	24.1%	5.7%	4.1%	1.2%	1.2%
family restaurants	75.0%	17.5%	2.2%	1.5%	2.6%	1.1%
fancy restaurants	45.4%	34.1%	2.4%	4.0%	11.6%	2.4%
fast food	6.3%	82.4%	3.4%	0.0%	3.4%	4.6%
flower shop	81.0%	15.5%	1.3%	0.0%	0.0%	2.3%
furniture	26.6%	42.6%	4.3%	1.2%	23.4%	2.0%
groceries	61.7%	30.1%	2.6%	0.0%	1.1%	4.5%
hardware	74.2%	15.7%	1.5%	0.0%	0.0%	8.6%
laundromat	91.6%	4.5%	1.7%	0.0%	0.0%	2.2%
lawn & garden supplies	48.0%	43.5%	3.6%	1.6%	1.2%	2.0%
lumber	76.8%	14.9%	3.7%	1.7%	0.0%	2.9%
medical services	38.0%	45.5%	4.1%	4.9%	6.4%	1.1%
movies	1.3%	80.6%	2.6%	1.3%	14.1%	0.0%
pharmacy	74.4%	18.6%	3.1%	0.0%	1.2%	2.7%
sporting goods	13.2%	62.6%	4.7%	0.0%	8.5%	11.1%

Q.10: Approve or disapprove of future commercial development.

NOTE: ORIGINAL RESPONSES HAVE BEEN COLLAPSED
1 & 2 = DISAPPROVE, 4 & 5 = APPROVE, 3 = HAS BEEN OMMITTED

	DISAPPROVE	APPROVE
in small shopping centers	14.0%	72.8%
in one large shopping center	50.8%	34.6%
in downtown Saug.	50.6%	27.3%
in downtown Douglas	50.2%	38.0%
in scattered commercial areas	42.1%	38.0%
in strip commercial areas	46.7%	42.2%
nowhere	61.5%	20.3%

Q.11: Where should new commercial development occur.

NOTE: ORIGINAL RESPONSES HAVE BEEN COLLAPSED
1 & 2 = DISAPPROVE, 4 & 5 = APPROVE, 3 = HAS BEEN OMITTED

	DISAPPROVE	APPROVE
Along North Blue Star Hwy.	27.0%	65.7%
Along South Blue Star Hwy.	22.8%	70.8%
Along Butler St. in Saugatuck	63.8%	21.1%
along Water St. in Saugatuck	61.3%	23.8%
along Lake St. in Saugatuck	63.8%	17.5%
along M-89 outside of Fennville	36.5%	38.5%
at freeway interchanges	17.9%	65.0%

Q.12: Where should new neighborhood commercial development occur.
(1= strongly disapprove, 5= strongly approve)

NOTE: ORIGINAL RESPONSES HAVE BEEN COLLAPSED
1 & 2 = DISAPPROVE, 4 & 5 = APPROVE, 3 = HAS BEEN OMITTED

	DISAPPROVE	APPROVE
along Main St. in Douglas	40.7%	34.7%
along E. Center St. in Douglas	30.8%	54.0%
along W. Center St. in Douglas	37.1%	42.0%
along 130th Ave. in Douglas	51.3%	26.6%

Q.13: What are your priorities for Douglas downtown.

NOTE: ORIGINAL RESPONSES HAVE BEEN COLLAPSED
1 & 2 = LOW PRIORITY, 4 & 5 = HIGH PRIOTIRY, 3 = HAS BEEN OMITTED

	LOW	HIGH
Additional public restrooms	56.7%	32.5%
benches for pedestrians	46.0%	37.8%
control truck traffic	50.4%	28.0%
dress up store fronts	26.1%	60.5%
flowers & landscape	21.1%	61.3%
historic preservation	21.0%	62.3%
resident oriented businesses	17.6%	68.0%
More parking	37.5%	23.6%
tourist oriented businesses	45.0%	26.6%
new lighting	47.1%	22.1%
Offices	45.4%	25.3%
reduce car traffic	73.9%	4.0%
restaurants	45.8%	29.2%
shopping	32.7%	49.2%
waterfront retail businesses	53.6%	34.9%
waterfront wholesale business	70.8%	17.3%
waterfront boat services	50.4%	25.8%
waterfront park	30.7%	61.1%

Q.14: Does the area need more industrial development.
(1= strongly disagree to 5= strongly agree)

1= 28.7%, 2= 14.7%, 3= 11.6%, 4= 8.5%, 5= 36.4%

RESIDENTIAL DEVELOPMENT

Q.15: What type of residential development is needed in douglas.
(1= needed now, 2= needed later, 3= not needed, 4= don't know)

	1	2	3	4
apartments	52.4%	14.2%	21.0%	12.4%
attached single-family homes	37.4%	13.0%	28.9%	20.7%
detached single-family homes(50-70)	60.6%	11.6%	14.1%	13.7%
detached single-family homes(70+)	19.9%	14.2%	36.2%	29.7%
waterfront condos	6.1%	5.7%	81.4%	6.9%
low income housing	39.8%	9.1%	31.5%	19.7%
mobile homes	10.2%	5.3%	58.8%	25.7%
seniors housing	21.4%	24.1%	27.2%	27.2%
country estates	16.0%	12.3%	38.7%	32.9%

Q.16: Would you favor lowering the min. square footage to make housing more affordable. (1= strongly disagree to 5= strongly agree)

1 = 41.8%, 2 = 6.6%, 3 = 11.7%, 4 = 13.9%, 5 = 26.0%

Q.17: New housing should be built at a density that...
(1=higher than, 2= lower than, 3= same as, 4= uncertain)

	1	2	3	4
along the Saug. waterfront of Kal.	3.0%	65.3%	21.3%	10.4%
on the hill in Saugatuck	2.9%	20.0%	65.2%	11.9%
in downtown Saugatuck	4.3%	62.3%	20.8%	12.6%
in downtown Douglas	15.7%	36.4%	35.5%	12.4%
along the shore of Lk. MI	14.9%	19.9%	48.8%	16.4%
as the agr. areas of Saug. twp.	42.6%	10.3%	26.5%	20.6%

RECREATION

Q.18: Type of additional recreational facilities are needed in the Douglas area.

NOTE: ORIGINAL RESPONSES HAVE BEEN COLLAPSED
1 & 2 = LOW PRIORITY, 4 & 5 = HIGH PRIORITY, 3 = WAS OMITTED

	LOW PRIORITY	HIGH PRIORITY
basketball courts	35.9%	29.7%
bike paths	20.0%	66.5%
boat launching ramps	32.4%	45.6%
camping	51.9%	21.6%
community center	25.2%	44.7%
cross country ski trails	36.2%	43.8%
fitness center	37.7%	39.2%
golf course	65.7%	15.1%
hiking trails	39.6%	33.1%
horseback trails	57.3%	11.6%
ice rink	33.6%	39.7%
Lk. front open space(Lk. MI)	16.2%	69.6%
Lk. front open space(Lk.Kal)	17.2%	69.1%
public Marinas	38.2%	32.8%
private marinas	52.5%	7.8%
movie theater	28.5%	38.4%
neighborhood playgrounds	33.6%	33.6%
parks	30.1%	49.8%
picnic areas	26.9%	37.0%
requetball courts	48.5%	14.2%
riverfront open space(Kal river)	15.5%	64.1%
senior citizen center	25.7%	45.2%
shuffle board	48.2%	18.5%
softball fields	54.7%	19.4%
swimming pool(s)	38.2%	40.2%
tennis courts	51.0%	28.1%

WATERFRONT DEVELOPMENT & SURFACE WATER QUALITY

Q.19: Which of the following best desribe your use (s) of nearby water bodies. (VALUES REPRESENT THE PERCENT CHECKED)

Desription	KR	KL	LM	SL
viewing	71.4%	70.0%	82.6%	18.1%
swimming	2.4%	2.4%	58.2%	4.9%
sunbathing	11.5%	6.3%	54.7%	3.5%
fishing(boat)	23.7%	11.5%	27.2%	10.8%
fishing(shore)	21.6%	9.1%	11.5%	8.0%
nature study	31.7%	16.0%	33.8%	20.6%
sailing	7.3%	18.8%	30.3%	2.1%
windsurfing	1.0%	5.2%	10.5%	1.0%
waterskiing	8.4%	13.9%	17.4%	11.5%

Q.19: cont	KR	KL	LM	SL
powerboating	31.0%	36.6%	39.4%	23.7%
scuba diving	0.0%	1.0%	7.3%	2.1%
waterfowl hunt.	9.8%	3.1%	1.0%	5.6%
ice fishing	3.8%	3.1%	3.1%	8.0%
ice skating	8.4%	8.4%	1.0%	2.1%
cross country ski.	4.5%	4.2%	10.1%	5.6%
snowmobiling	0.0%	2.1%	3.1%	3.5%
iceboating	1.4%	3.1%	1.0%	2.1%
other	-----	-----	-----	-----
I dont use it	13.6%	9.8%	7.7%	35.9%

Q.20: Which term best describes your opinion of the present water quality of the following water bodies.

	KR	KL	LM	SL
very good	0.0%	0.0%	7.4%	0.0%
good	4.8%	3.8%	26.1%	7.2%
fair	15.1%	19.2%	35.3%	15.9%
poor	26.8%	26.3%	19.1%	23.5%
very poor	43.4%	40.2%	5.5%	15.9%
don't know	9.9%	10.5%	6.6%	37.5%

Q.21: Based on your experience in recent years the water quality of the following water bodies has.

	KR	KL	LM	SL
improved greatly	7.5%	7.7%	4.1%	0.4%
improved slightly	26.2%	25.7%	19.1%	18.5%
stayed the same	18.7%	18.0%	21.0%	14.0%
deteriorated slightly	15.4%	16.9%	32.6%	4.5%
deteriorated greatly	18.4%	18.8%	12.7%	20.6%
dont' know	13.9%	13.0%	10.5%	42.0%

Q.22: Indication of feeling about the adequacy of the following facilities on each water body.

	KR		KL		LM		SL	
DESCRIPTION	INAD	ADQ	INAD	ADQ	INAD	ADQ	INAD	ADQ
boat launch	29.6	42.6	31.0	37.9	50.0	15.0	32.9	12.7
boat slips(r)	27.3	38.2	24.4	46.0	35.1	22.5	29.6	13.2
boat slips(c)	4.7	56.8	6.6	56.9	25.8	27.8	18.3	29.7
marinas	6.5	57.9	12.9	64.6	22.8	39.0	13.3	20.2
swim.beaches	52.6	17.9	49.4	18.8	36.7	46.0	26.8	13.0
boat service	16.3	34.5	12.6	57.0	28.7	20.7	18.7	16.8
pumpout facil.	22.8	22.9	16.1	43.2	33.7	13.4	21.8	14.3
fish cleaning	16.5	26.0	11.7	28.7	29.9	12.7	17.1	11.6
camp grouds	45.3	15.7	39.6	19.6	46.5	13.2	38.1	10.2
parks	46.6	23.1	46.2	18.0	36.9	34.0	30.6	10.0
public rest.	52.3	16.8	42.4	18.7	36.8	20.9	32.5	18.0
other public	36.0	9.2	34.0	21.7	43.3	7.1	45.5	4.2
des. boat mor	31.8	20.2	35.8	21.4	31.3	12.3	21.0	10.2
des. no wake	24.6	41.7	25.0	50.0	19.7	34.5	27.8	26.2

Q.23: Should the village actively cooperate in the construction of an areawide marina. (1= strongly disagree to 5= strongly agree)

1= 39.4%, 2= 3.0%, 3 = 23.4%, 4 = 14.9%, 5 = 19.3%

Q.24: Should the village actively seek to find alternatives for low cost access by village residents to additional Lake Michigan beach facilities. (1= strongly disagree to 5= strongly agree)

1= 23.6%, 2= 4.9%, 3= 21.7%, 4= 25.1%, 5= 24.7%

Q.25: How should underdeveloped waterfront lands be used in Douglas.

NOTE: ORIGINAL RESPONSES HAVE BEEN COLLAPSED
1 & 2= DISAGREE, 4 & 5= AGREE, 3= HAS BEEN OMITTED

	DISAGREE	AGREE
public aquisition to leave open	11.2%	80.9%
develop for residential sub.s	69.8%	14.9%
develop 1 story condos	81.7%	11.0%
develop 2 story condos	81.5%	13.4%
develop 3 story condos	90.3%	6.2%
develop marinas	63.8%	20.4%
mixed use...	47.9%	31.5%

OTHER LAND USE QUESTIONS

Q.26: What are your priorities for Blue Star Highway.

NOTE: ORIGINAL RESPONSES HAVE BEEN COLLAPSED
1 & 2= LOW PRIORITY, 4 & 5= HIGH PRIORITY, 3= HAS BEEN OMITTED

	LOW PRIORITY	HIGH PRIORITY
better lighting	45.5%	36.8%
uniform sign controls	28.7%	50.6%
improve traffic flow	29.3%	47.6%
add a center turn lane	30.5%	48.4%
install public sewer	32.5%	36.2%
install public water	30.0%	37.4%
improve drainage	28.4%	29.2%
improve appearance	16.6%	75.7%
create commercial strip	35.8%	32.9%
more tourist orientated bus.	41.0%	27.9%
more shopping	33.4%	44.6%
more industry	37.5%	42.0%
more personal services	29.2%	36.3%
more auto services	38.7%	38.7%
more offices	42.3%	25.5%
fast food rest.s	37.2%	50.2%
drive thru businesses	44.2%	30.0%
no changes	49.7%	28.1%
better lane striping	34.8%	48.7%
bresurfacing	23.1%	65.1%
uniform speed limit	27.8%	59.0%
bike bath	27.1%	60.2%
more trees	22.7%	61.0%

Q.27: Which, if any, of the following types of "home occupations" do you favor being permitted in residentially zoned areas.

NOTE: ORIGINAL RESPONSES HAVE BEEN COLLAPSED
1 & 2= OPPOSE, 4 & 5= FAVOR, 3= HAS BEEN OMITTED

	OPPOSE	FAVOR
bed & breakfast	21.6%	65.9%
hairdressers/barbers	43.7%	33.9%
music lessons	13.0%	76.5%

Q.27: cont.	OPPOSE	FAVOR
dance lessons	18.0%	66.0%
accounting/tax prep.	19.1%	66.4%
law offices	41.0%	40.1%
medical offices	37.9%	37.9%
adult foster care	30.7%	41.1%
day care	27.0%	36.9%
"avon", "amway"	40.0%	42.4%
typing services	16.2%	69.7%
dressmaking/alt.	11.2%	71.2%
ceramics	50.2%	25.3%
clothing boutiques	74.2%	14.5%
bakery	72.5%	20.4%
pizzaria	79.3%	11.7%
small engine repair	71.3%	19.5%
antique sales	48.1%	16.6%

ENVIRONMENTAL PROTECTION

Q.28: What limitations, if any, should be imposed on development in each of the following areas.
(1= no new development, 2= very low density, 3= moderate density)
(4= No special regulation)

	1	2	3	4
forested sand dunes	76.7%	13.6%	4.7%	5.0%
open sand dunes	78.6%	10.5%	4.7%	6.2%
wetlands & swamps adj.	71.6%	5.8%	12.8%	8.6%
wetlands & swamps in.	62.3%	15.6%	12.1%	10.1%
along the Kal. river	26.8%	39.7%	28.0%	5.4%
along Kal. lake	23.2%	31.1%	39.0%	6.7%
along Lk. MI	22.2%	35.8%	37.0%	5.1%
along Silver Lk.	20.6%	36.4%	38.6%	4.4%

PUBLIC SERVICES

Q.29: How would you rate the following local public services.

NOTE: ORIGINAL RESPONSES HAVE BEEN COLLAPSED
1 & 2= POOR, 4 & 5= EXCELLENT, 3= HAS BEEN OMITTED

	POOR	GOOD
ambulance	26.3%	30.1%
animal control	62.1%	16.4%
building inspections	33.8%	28.7%
fire protection	9.7%	64.5%
first responder unit	11.7%	64.3%
Inturban bus	12.9%	75.4%
land use planning	43.1%	19.7%
library	9.7%	69.8%
other village hall services	12.6%	48.1%
parking in downtown	25.7%	43.3%
park maintainace	18.6%	52.7%
playground equip.	17.4%	57.9%
police protection	5.2%	69.7%
property assessment	74.0%	4.4%
public boat launching	41.3%	28.2%
schools K-6	9.5%	65.7%
schools 7-12	16.6%	59.4%
schools- community ed.	19.3%	51.3%
sewer service	14.7%	45.3%

Q.29: cont

	POOR	GOOD
snow removal	13.8%	62.4%
storm drainage	28.6%	35.1%
street lighting	23.1%	45.0%
street maintainance	22.9%	44.6%
street resurfacing	33.2%	24.7%
water service	25.2%	41.6%
waterfront maintanance	38.3%	17.9%
zoning enforcement	41.1%	17.4%

Q.30: What are your priorities for how the village spends your tax dollars.

NOTE: ORIGINAL RESPONSES HAVE BEEN COLLAPSED
1 & 2= LOW PRIORITY, 4 & 5= HIGH PRIORITY, 3= HAS BEEN OMITTED

	LOW PRIORITY	HIGH PRIORITY
preventing crime	15.1%	72.7%
enforcing ordinances	18.6%	47.8%
traffic enforcement	23.2%	37.2%
fire protection	4.5%	86.8%
ambulance service	9.5%	74.2%
water supply	7.0%	83.4%
sewer service	10.5%	66.8%
street repair	10.4%	71.3%
park & recreation	22.6%	45.3%
improve parking downtown	51.0%	19.2%
senior programs	36.9%	38.0%
improve village appearance	22.2%	49.2%
planning for future	10.5%	65.7%
waterfront improvement	17.9%	54.5%
interurban bus service	21.8%	56.6%
economic development	17.4%	56.1%

Q.31: If it meant an increase in general property taxes, which of the follwing services do you think Douglas should increase or add.

	CHECKED
police protection	12.9%
fire protection	18.1%
better St. maintenance	24.0%
more parking	10.1%
better water quality	59.9%
better sidewalk	18.5%
sidewalk snow removal	15.0%
new street lighting	10.5%
More flowers & trees	24.4%
community rec. center	24.4%
seniors center	19.5%
industrial park	15.7%
drainage control	17.8%
trash collection	25.4%
combined maint. garage	17.4%
economic development	23.0%
24hr. medical service	41.8%
community pool	25.8%

Q.32: Which of the following statements is closet to your position on government services and property taxes.

	CHECKED
Nice to have better services, but...	58.4%
I would like better government services,...	15.7%
Local government tries to do to much,...	16.9%
Other	9.0%

Q.33: How frequently do you use the following services.
(1= never, 2= less than 1 time/month, 3= one time/month)
(4= one time/week, 5= more often)

	1	2	3	4	5
recycling center	79.4%	6.7%	9.1%	3.6%	1.2%
interurban bus service	46.7%	25.4%	7.7%	2.6%	17.6%
river bluff park	58.6%	31.3%	5.5%	3.5%	1.2%
Saug.-Doug. district library	36.4%	23.5%	15.1%	17.6%	7.4%
oval beach	38.8%	33.1%	11.5%	6.9%	9.6%
Douglas beach	43.3%	34.1%	10.0%	9.2%	3.4%
sun down park	79.0%	15.6%	3.1%	1.2%	1.2%
shultz park	41.4%	35.6%	12.3%	7.3%	3.4%
Saug. Dunes St. Park	61.5%	24.1%	9.7%	2.3%	2.3%
beery field	59.4%	19.5%	13.4%	5.4%	2.3%
wicks park	66.5%	18.1%	11.5%	1.5%	2.3%
other parks out of area	56.8%	28.4%	10.2%	3.0%	1.7%
village hall services	36.0%	38.3%	21.7%	1.2%	2.8%

Q.34: How important a priority is it to you for the Township to improve the exterior appearance of the Township Hall.
(1=low priority to 5= high priority)

1 = 32.6%, 2 = 25.7%, 3 = 21.0%, 4 = 10.9%, 5 = 9.8%

Q.35: Place a check before each of the follwing Village boards/commissions at which you have attended a meeting in the last 2 years.

	CHECKED
Village council	44.6%
planning commision	37.6%
zoning board of appeals	12.5%
board of review(taxes)	15.7%
school board	4.2%
Saug twp fire district	5.9%
interurban trans.system	16.4%
Kal. Lk. water & Sewer Auth.	10.1%
Saug. twp. Park & Rec. Comm.	5.6%

Q.36: How responsive do you feel these parts of local government are to Douglas citizens. (1= not very responsive to 5= very responsive)

NOTE: ORIGINAL RESPONSES HAVE BEEN COLLAPSED
1 & 2= NOT VERY RESPONSIVE, 3 & 4= VERY RESPONSIVE
3 = HAS BEEN OMITTED

	NOT VERY RESPONSIVE	VERY RESPONSIVE
Village council	22.4%	48.8%
planning commision	25.6%	41.0%
Zoning board of appeals	29.8%	19.1%

Q.36:	NOT VERY RESPONSIVE	VERY RESPONSIVE
board of review(taxes)	59.0%	12.8%
school board	21.1%	37.3%
Saug twp fire district	21.0%	56.9%
interurban trans. system	16.7%	53.7%
Kal. Lk. water & Sewer Auth.	30.0%	46.6%
Saug. twp. Park & Rec. Comm.	14.2%	40.1%

Q.37: Should the Village adopt a policy of consolidating services with other governmental units.

yes	68.2%
no	11.7%
uncertain	20.1%

Q.38: If yes, what services should be consolidated.

NOTE: THESE VALUES CORRESPOND TO THE PERCENT WHO ANSWERED "YES" ABOVE

	CHECKED
Sewer	53.0%
water	54.7%
strorm water	34.1%
police	47.4%
street & roads	44.6%
parks & summer Rec.	43.9%
planning	38.3%
zoning	32.8%
building permits	28.2%
village manager	24.0%
Comb. interurban vehical maint.	51.2%

Q.39: Should the City of Saugatuck, the village of douglas, and the Township of Saugatuck consolidate into a single unit of government.

yes= 47.5%, no= 52.5%

Q.40: Are you a registerd voter.

yes= 87.6%, no= 12.4%

Q.41: How many years have you resided in the Village of Douglas.

	CHECKED
less than 1	3.2%
1 - 5	18.8%
5 - 10	22.3%
10 - 20	23.4%
more than 20	32.3%

Q.42: How many more years do you think you will stay in the Douglas area.

	CHECKED
less than one	2.2%
1 - 3	2.2%
4 - 10	20.5%
more than 10 yrs.	75.0%

Q.43: How many months of each year do you typically reside in the Douglas area.

73.5% responded that length of stay is 12 months
11.8% responded that length of stay is less than 6 months

Q.44: Please check each of the following that apply to you.

	CHECKED
residential property owner	78.4%
renter	17.1%
own or manage a business in area	21.3%

Q.45: Which of the following best represents where you live.

	CHECKED
on the dunes/bluff along Lk. MI	16.8%
on the dunes along Kalamazoo Lk	1.1%
elsewhere along Kalamazoo Lake	1.1%
along Kalamazoo River	0.4%
along Silver lake	0.0%
elswhere along the Kal. river	0.0%
on hill in Saug.	1.1%
else. in Saug.	2.2%
near downtown Doug.	41.0%
else. in Doug.	34.0%
in arg. area of Saug. Twp.	2.2%
else. in Saug. twp.	0.0%

Q.46: What is the highest level of education you have finished.

	CHECKED
less than high school	5.7%
high school graduate	19.9%
some college	30.6%
associate's or technical degree	3.2%
college graduate	21.0%
graduate or professional degree	19.6%

Q.47: Please provide the following information abouteach person that normally lives in your household.

AVERAGE AGE OF RESPONDENTS		55.06
SEX OF RESPONDENTS		
	male	62.5%
	female	37.5%
PERCENT OF RESPONDENTS EMPLOYED		61.4%
COMMUNITY	Douglas	51.0%
	City of Saugatuck	13.5%
	Saugatuck Twp.	0.0%
	Holland	6.7%
	other	27.4%
PERCENT OF RESPONDENTS RETIRED		38.0%

APPENDIX D

Soil Types - Tri-Community Area

SOIL TYPES - TRI-COMMUNITY AREA

SOIL TYPE AND SLOPE	SOIL NUMBER	LIMITATIONS FOR SEPTIC TANK ABSORPTION FIELDS	LIMITATIONS FOR DWELLINGS WITH BASEMENTS
CATEGORY A - SANDY, RAPID PERMEABILITY, LOW WATER TABLE			
Chelsea loamy fine sand, 0-6%	44B	SE4	SL
Chelsea loamy fine sand, 6-12%	44C	SE4	MD1
Chelsea loamy fine sand, 12-18%	44D	SE1, SE4	SE1
Chelsea loamy fine sand, 18-30%	44E	SE1, SE4	SE1
Oakville fine sand, 0-6%	10B	SE4	SL
Oakville fine sand, 6-18%	10C	SE4	MD1
Oakville fine sand, 18-45%	10E	SE1, SE4	SE1
Oakville fine sand, loamy substratum, 0-6%	53B	SE3, SE5, SE4	SL
Urban land - Oakville complex, 0-6%	72B	SL	SE4
CATEGORY B - SANDY, RAPID PERMEABILITY, HIGH WATER TABLE			
Brady sandy loam, 0-3%	19A	SE3	SE3
Covert sand, 0-4%	57A	SE3, SE4	MD3
Matherton loam, 0-3%	22A	SE3, SE4	SE3
Metea loamy fine sand, 1-6%	27B	SE4, SE5	SL
Metea loamy fine sand, 6-12%	27C	SE4, SE5	MD1
Morocco fine sand, 0-3%	70A	SE3, SE4	SE3
Morocco-Newton complex, 0-3%	15B	SE3, SE4	SE3
Pipestone sand, 0-4%	26A	SE3, SE4	SE3
Thetford loamy fine sand, 0-4%	51A	SE3	SE3
Tedrow fine sand,0-4%	49A	SE3, SE4	SE3
CATEGORY C - WET, HEAVY, SLOW PERMEABILITY			
Blount silt loam, 1-4%	41B	SE3, SE5	SE3
Capac loam, 0-6%	16B	SE3, SE5	SE3
Capac-Wixom complex, 1-4%	21B	SE3, SE5	SE3
Glynwood clay loam, 1-6%	8B	SE5, SE3	MD3, MD2
Glynwood clay loam, 6-12%	8C	SE5, SE3	MD1, MD2, MD3
Kibbie fine sandy loam, 0-3%	33A	SE3	SE3
Marlette loam, 6-12%	14C	SE5	MD1
Marlette loam, 12-18%	14D	SE1, SE5	SE1
Marlette loam, 18-35%	14E	SE1, SE5	SE1
Marlette-Capac loams, 1-6%	75B	SE3, SE5	SL
Metamora sandy loam, 1-4%	42B	SE5, SE3	SE3
Rimer loamy sand, 0-4%	28A	SE3, SE5	SE3
Seward loamy fine sand, 1-6%	60B	SE5, SE3	SL

SOIL TYPE AND SLOPE	SOIL NUMBER	LIMITATIONS FOR SEPTIC TANK ABSORPTION FIELDS	LIMITATIONS FOR DWELLINGS WITH BASEMENTS
CATEGORY D - VERY WET SOILS, ORGANICS, FLOODPLAINS			
Adrian muck	6	SE6, SE4	SE6, SE10
Algansee loamy sand, protected, 0-3%	73A	SE3, SE4	SE8, SE3
Aquents and Histosols, ponded	50		
Belleville loamy sand	48	SE6, SE5	SE6
Brookston loam	17	SE6	SE6
Belleville-Brookston complex	64	SE6, SE5	SE6
Cohoctah silt loam,	29	SE3, SE8	SE8, SE3
Cohoctah silt loam, protected	65	SE6	SE8, SE6
Colwood silt loam	30	SE6	SE6
Corunna sandy loam	36	SE6, SE5	SE6
Dune land and beaches	4		
Glendora loamy sand	2	SE6, SE3, SE4	SE8, SE3
Glendora loamy sand, protected	74	SE6, SE4	SE8, SE6
Granby sandy loam	39	SE6, SE4	SE6
Houghton muck	5	SE6, SE5	SE6, SE10
Martisco muck	67	SE8, SE6, SE5	SE8, SE6
Napolean muck	47	SE6	SE6, SE10
Newton mucky fine sand	69	SE6, SE4	SE6
Palms muck	7	SE11, SE6	SE6, SE10
Pewamo silt loam	45	SE5, SE6	SE6
Sebewa loam	23	SE4, SE6	SE6
Sloan silt loam	62	SE8, SE3, SE5	SE8, SE3
CATEGORY E - WELL DRAINED LOAM AND LOAMY FINE SAND			
Ockley loam, 6-12%	12C	MD1	MD2, MD1
Ockley loam, 12-18%	12D	SE1	SE1
Ockley loam, 18-30%	12E	SE1	SE1
Riddles loam, 6-12%	63C	MD1	MD1, MD2
Tekenink loamy fine sand, 6-12%	31C	MD1	MD1
Tekenink loamy fine sand, 12-18%	31D	SE1	SE1
Tekenink loamy fine sand, 18-35%	31E	SE1	SE1
CATEGORY F - WELL DRAINED LOAM AND LOAMY FINE SAND			
Ockley loam, 1-6%	12B	SL	MD2
Oshtemo-Chelsea complex, 0-6%	11B	SL	SL
Oshtemo-Chelsea complex, 6-12%	11C	MD1	MD1
Oshtemo-Chelsea complex, 12-18%	11D	SE1	SE1
Oshtemo-Chelsea complex, 18-35%	11E	SE1	SE1
Riddles loam, 1-6%	63B	SL	MD2
Tekenink loamy fine sand, 2-6%	31B	SL	SL

UNCLASSIFIED SOILS

Aquents, sandy and loamy	34
Pits	18
Udipsamments	66

KEY FOR LIMITATION CODES

SEVERE LIMITATIONS:

SE1	SLOPE
SE2	SHRINK-SWELL
SE3	WETNESS
SE4	POOR FILTER
SE5	PERCS SLOWLY
SE6	PONDING
SE7	CUTBANKS CAVE
SE8	FLOODING
SE9	EXCESSIVE HUMUS
SE10	LOW STRENGTH
SE11	SUBSIDES

MODERATE LIMITATIONS:

MD1	SLOPE
MD2	SHRINK-SWELL
MD3	WETNESS

SLIGHT LIMITATIONS:

SL	SLIGHT LIMITATIONS

DOUGLAS
SOIL TYPES

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