

For example, within the past thirty years, several major innovations in land development have occurred. Included among these are: the initiation and expansion of the freeway system; modifications in shopping facilities (shopping centers, enclosed malls, free parking); relocation of employment centers from the cities to the suburbs; changes in housing preferences from the traditional single-family home to apartments, townhouses, condominiums, and mobile homes; and the declining family size.

It is, of course, impossible to predict the variety of changes which may occur over the next decade or two. Therefore, the Plan should be analyzed and modified periodically to reflect changing conditions.

6. **The Plan Must Be Updated Periodically.** A comprehensive review of the Future Land Use Plan should be undertaken approximately every five years to provide for an adequate analysis of new conditions and trends. Should major rezonings which are in conflict with Plan recommendations be accomplished, the Plan should be reviewed and amended accordingly, to reflect the current community development goals and policies.

The Township Plan depicts the generalized desired development pattern for the Township into the next century. It is designed to provide the necessary guidelines for making future land use, community facility, and capital improvement decisions.

PLAN RECOMMENDATIONS

Twelve land use classifications are proposed for Thetford Township. The various land uses have been portrayed on Map 10 and in Table 39 for each classification. A discussion of each land use category is presented below.

TABLE 39
FUTURE LAND USE, YEAR 2000
THETFORD TOWNSHIP, GENESEE COUNTY, MICHIGAN

<u>LAND USE</u>	<u>AREA (ACRES)</u>	<u>PERCENT OF TOTAL</u>
Agriculture	3,995.51	18.26
Suburban Farm	4,555.50	20.82
Rural Estate	2,538.17	11.60
Single-Family	4,619.91	21.11
Multiple-Family	164.72	0.75
Mobile Home Park	84.94	0.39
Office	48.78	0.22
Local Commercial	18.08	0.08
General Commercial	77.48	0.35
Industrial	160.70	0.73
Municipal	216.66	0.99
Recreation/Conservation	<u>5,400.25</u>	<u>24.70</u>
TOTAL	21,880.70	100.00


Compiled by IMPACT: Improved Planning Action from Map 10.


Note: Area totals include water bodies and public rights-of-way.

 SUBURBAN FARM

 RURAL ESTATE

 SINGLE FAMILY

 MULTIPLE FAMILY

 MOBILE HOME PARK

 LOCAL COMMERCIAL

 GENERAL COMMERCIAL

 INDUSTRIAL

 MUNICIPAL

 RECREATION-CONSERVATION

10. FUTURE LAND USE PLAN

THETFORD TOWNSHIP, GENESEE COUNTY, MICHIGAN



Impact Improved Planning Action

State of Michigan
Department of Transportation
1000 West Grand Avenue
Lansing, Michigan 48906

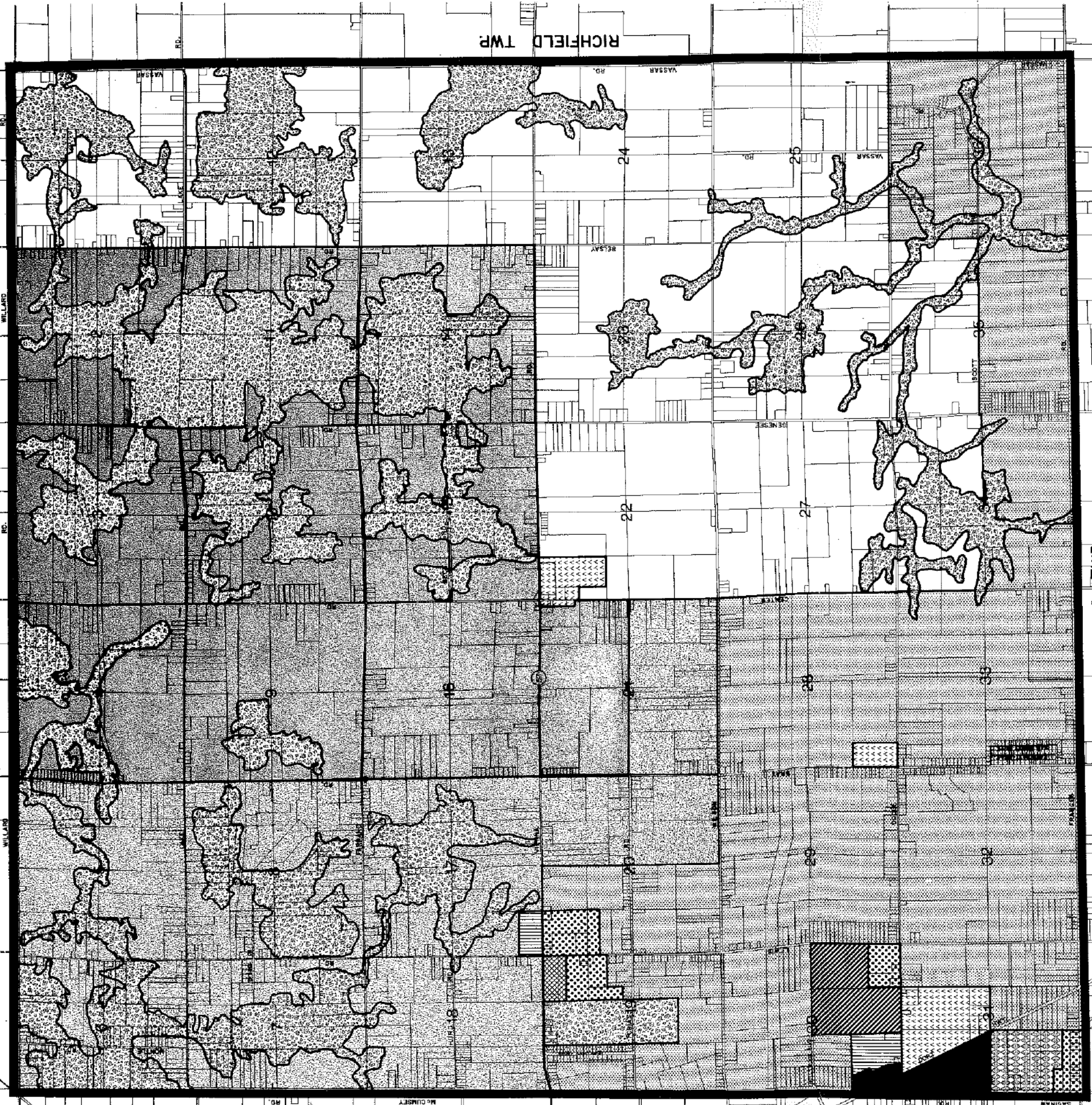
TUSCOLA CD.

ARBELA TWP

RICHFIELD TWP

VIENNA TWP

GENESEE TWP



THE PREPARATION OF THIS PLAN WAS FINANCED THROUGH A GRANT PROVIDED UNDER TITLE I OF THE HOUSING AND COMMUNITY DEVELOPMENT ACT OF 1974, AS AMENDED. THE GRANT WAS ADMINISTERED BY THE GENESEE COUNTY COMMUNITY DEVELOPMENT PROGRAM.

AGRICULTURE

OFFICE

Agriculture

This use is composed of those areas of the Township whose principal activity is, and ought to be, farming. Designated areas lie outside the reaches of existing and expected sanitary sewer facilities and contain most of the prime farmlands acreage in the Township.

This land area is designed to conserve, stabilize, enhance, and develop farming and related resource utilization activities, to minimize conflicting uses of parcels, lots, buildings, and structures detrimental to, or incompatible with, these activities and to prohibit uses of parcels, lots, buildings, and structures which require streets, drainage, and other public facilities and services of a different type and quantity than those normally required by these activities. The district, in preserving areas for agricultural use, is also designed to prevent proliferation of residential subdivision and urban sprawl.

Agricultural properties may be used for general and specialized farming and agricultural activities including the raising or growing of crops, livestock, poultry, bees, and other farm animals, products and foodstuffs, and any building or structure may be located on such land and used for the day-to-day operation of such activities for the quartering, storage or preservation of crops, livestock, poultry, bees, animals, products, and foodstuffs until consumed on the premises or until moved to a place of collection, distribution, or processing, and for the incidental sale of crops, products, and foodstuffs raised or grown on any agricultural lot or on such buildings or structures. Any lot that is kept as idle cropland should be so treated as to prevent soil erosion by wind or water and so treated as to prevent excessive growth of obnoxious weeds and shrubs. Any lot kept as noncropland should also be treated as to prevent soil erosion by wind or water.

The minimum lot area recommended for an agricultural parcel is ten (10) acres.

Suburban Farm

The Suburban Farm category is intended to provide open land area for orderly residential growth, continued agricultural use, and residential activities of a semi-rural character in areas that are presently without public water and sewerage facilities, and are likely to remain without such services for an extended period of time. It is further intended that the district protect and stabilize the existing large lot development found in these areas in order to promote and encourage suitable environments for low density family life, and to maintain and protect the positive natural features of the Township.

This category would act as a transition zone between the agricultural lands and higher density Rural Estate and Single-Family districts. A minimum lot area of five acres is recommended for lots located within this land class.

Rural Estate

Data presented in previous chapters indicate that there is a limited supply of higher valued housing units in the Township, and that an increasing number of families desire and appear to accept the expense of building and maintaining estate type homes in semi-rural settings even considering building, land, and energy costs. The Thetford Township Planning Commission has also expressed a strong desire to preserve the rural character of the community as a planning objective to be pursued. In addition, much of the Township is suitable for only large lot development so long as septic tanks and individual wells provide the only means of providing sewage disposal and potable water.

The Rural Estate classification is intended primarily for single-family "executive" residences on large lots which do not need urban services such as sanitary sewer or water. The minimum lot size proposed is one acre. Normally, lot sizes of less than one acre are not recommended because individual septic tanks and wells on small lots often do not function efficiently.

The Township has significant areas of great natural beauty which can provide an excellent setting for this type of development. About 2,500 acres are set aside for this type of development. This acreage is also proposed as a transitional land use between the Suburban Farm and Single-Family Districts.

Single-Family

This land use is intended for single-family residential development of relatively small lots of a more urban nature, with the following objectives.

1. To protect the residential character of areas so designated by excluding activities and land uses which are not compatible such as, but not limited to, principal commercial and industrial uses;
2. To encourage a suitable environment for family life by permitting appropriate neighborhood facilities such as churches, schools, playgrounds, and open space;
3. To permit certain institutions and utility facilities considered necessary in, or compatible with, residential neighborhoods;
4. To preserve openness of the living space and to avoid overcrowding by requiring certain minimum yards and open spaces, and by restricting maximum coverages and the bulk of structures;

5. To provide for access of light and air to windows, and for privacy, as far as reasonable, by controls over the spacing and height of buildings and other structures;
6. To protect residential areas from unnecessary traffic and to restrict volume of traffic to the greatest degree possible; and
7. To encourage development within residential areas that is attractive, consistent with family needs, and conducive to constantly improved environmental quality.

Space allocated for this use is 4,600 acres. The area provided is planned as being coincidental with the expected limits of the Township's Year 2000 sanitary sewer system. Connection to the public sanitary sewer is assumed, due to the generally high frequency of clay soils in the southeast and southwest sections of the community.¹³ Until such time full utility service is supplied throughout this land area, the following densities and lot areas are recommended:

<u>Minimum Lot Area Required</u>	<u>Utility Service Available</u>
1 acre	None
20,000 square feet	Public Sewer
9,600 square feet	Public Sewer and Water

Although a significant amount of the Township is planned for single-family residential land use, there is no reason why single-family development needs to be dull and unimaginative. For example, designing single-family units in small groups or clusters reduces lot sizes and increases common open space. The land area gained through the decrease in lot size can be used collectively for a park area available to residents of that subdivision.

¹³Data from the Genesee County Health Department, August 1987.

Another concept which adds flavor to single-family neighborhoods is planned unit development. This incorporates a mixture of land uses such as single-family housing, multiple-family housing, and common open spaces. This would create a slightly higher density than proposed for low density residential and, at the same time, could establish an area with a variety of housing types.

Cluster subdivisions and planned unit developments are new concepts which should be encouraged in future single-family development, where density bonuses are given to developers as a means of preserving fragile or environmentally important lands.

Multiple-Family

Previous analysis indicated that more and more households will be forced out of the single-family housing market, as homes continue to rise in price at a greater rate than family income. Also, certain segments of the population, such as the newly married or retired, find townhouse or garden apartment living more suited to their needs. Therefore, selected areas of the Township are proposed for multiple-family development.

Approximately 165 acres of land area have been allocated for multiple-family development. Permitted uses within this district would be group housing for the elderly, garden apartments, townhouses, multiplex and duplex units. Projects can either be condominium or rental development.

Permitted development densities may range between four to five units per acre (duplex) to ten to fifteen units per acre (garden apartments), depending on dwelling unit type.

The areas of the Township recommended for multiple-family are adjacent to existing and proposed intensive land uses to buffer neighboring single-family development and to provide for a transition of land use. They are also planned to be sited along improved, major roadways for optimum traffic movement, and to be connected to the municipal sanitary sewer system.

It is imperative that only market supported and attractive developments of multiple-family residential housing be allowed to locate in the community. Thetford Township can exercise control through the site plan review process to ensure that development of this type will be an asset to the community.

Mobile Home Park

A mobile home park area is included on the Future Land Use Plan. This 80 acre area is intended to acknowledge the site of the existing North Morris Estates Trailer Park, and to encourage its full utilization. (This park has a capacity of 598 units. Only 576 units are currently located in this development.)

The prescribed area is also supported by the fact that there are very limited areas in which mobile home residential development would correspond to the existing character of the general area. The North Morris Estates Trailer Park is properly located. Access is provided off a major thoroughfare (Saginaw Road). Proximity to Dort Highway and existing and planned nonresidential uses further enhances its locational value.

Office

Commercial development is an important aspect of the growth of any community, in terms of offering adequate commercial services to residents as well as providing a reasonable tax base and increased employment opportunities. The size of the potential market will ultimately determine the extent of the Township's commercial base. Some commercial uses are designed to serve a relatively small, local market, and depend almost exclusively upon the population residing within the community. Other uses, such as office developments, demand a much larger market extending well beyond the Township boundary.

The Office classification is intended to facilitate planned locations for grouped office facilities in the nonresidential activity areas of the Township. This is the preferred method of accommodating the potential need for office space instead of permitting such use throughout various areas of the Township. This classification, however, should permit commercial uses that are compatible with and related to office development subject to site plan review including banks, personal service uses, and standard restaurants. About 50 acres are indicated for office use on the Future Land Use Plan.

Two areas are identified on the Plan for Office use. The first is located at the intersection of Vienna and Lewis Roads. It is designed as a complementary land use to the intensive development planned near the Vienna Greens Golf Course and to take advantage of the traffic volumes along M-57. The second office location is shown near the intersection of Dodge Road and Dort Highway. It is planned as a transition area between the residential development along Hollywood Boulevard and the general commercial uses developing south of Dodge Road.

Local Commercial

The Local Commercial category is intended to meet the daily shopping needs of residents who live close to the stores. Such shopping areas are usually anchored by a supermarket and also contain a drug store, hardware outlet, and other similar businesses.

One 18 acre Local Commercial area is shown on the Future Land Use Plan. It is at the intersection of Vienna and Lewis Roads, adjacent to the Leisure Days Recreational Vehicle Sales establishment. This property should be developed as a planned shopping area to avoid the problems associated with strip commercial development. Suggested design features are provided in the previous chapter and illustrated on the Vienna Road Concept Development Plan. This center, combined with services offered by similar centers in Mount Morris and Vienna Township, will serve the convenience shopping needs of residents throughout the Township through the Year 2000.

Two other types of planned shopping environments normally recognized by a Future Land Use Plan are community and regional shopping centers. As indicated in Table 37, these needs are projected to be met by the City of Clio Central Business District and Courtland and Genesee Valley Malls, respectively.

General Commercial

General Commercial uses do not require location in a shopping center. They represent uses which serve passing motorists or which benefit from a location on a major thoroughfare permitting good access. Such uses include gasoline stations, car washes, liquor stores, florists, auto sales establishments, and other miscellaneous retail and wholesale establishments.

General Commercial development is planned for the area immediately north of the North Morris Estates Trailer Park. There is already sizable General Commercial development in this area. Future General Commercial uses can be expected to be drawn to this vicinity due to the accessibility afforded by Dort Highway and Dodge and Saginaw Roads.

Industrial

The Future Land Use Plan allows adequate space within the Township for industrial growth. Approximately 160 acres have been reserved for this land use.

This acreage is well suited for industrial development. It is well drained, relatively flat, and unoccupied by structures or woodlands. It is bordered by Lewis and Dodge Roads, both of which are paved, major thoroughfares. The site has access to the existing sanitary sewer system. This acreage is also sited near the community's most urbanized sections, and buffered by a cemetery to the south. Due to these factors, this district has been established to provide for those uses which are generally compatible with, or, which under the imposition of certain reasonable standards, may be safely and aesthetically located in close proximity to commercial or residential uses. Light industrial uses are recommended.

Light industrial uses include operations which are, in the main, confined within enclosed structures. Compliance with reasonable performance standards is required in an effort to reduce adverse affects on neighboring properties. Typical light industrial uses may include the manufacturing of products for component parts, parts assembly, food packaging, warehousing, and tool and die shops. In addition, certain commercial uses are also allowed because their building size and architecture are similar with industrial uses. Examples include indoor tennis clubs, ice rinks, bowling alleys, etc.

It should also be recognized that the proposed industrial area covers only two existing parcels; thus, this acreage could easily be assembled and developed as an industrial park. The industrial developer would have his investment protected through zoning and covenants established by the industrial park in which he would locate. The types of industry that the Township should seek to attract are not interested in the old ribbon roadside-type development with pockets of residential uses intermingled with industrial. They create traffic conflicts, stifle expansion opportunities, and make difficult or impossible the assembly of separate parcels into sufficiently large sites for industrial use. The trend in today's marketplace is to develop industrial areas for inter-related uses. Thetford Township should actively work to create such a work environment at this location.

Municipal

Community growth brings with it the need to increase the level of public services. A corresponding increase in public employment may also be necessary to administer the conduct of the typical Township Hall. It is not the function of the Future Land Use Plan to prepare an analysis of future administrative office space needs, or public service facilities (i.e., fire stations, libraries, ball diamonds, etc.,). Such an analysis is typically completed in a Community Facilities Plan. The Future Land Use Plan does, however, recommend certain additional lands be reserved for municipal purposes in anticipation of this increased level of public services.

Approximately 60 acres of Municipal property is shown at the intersection of Vienna and Center Roads. It is intended that this acreage be developed as the Township Civic Center. It would permit Township Hall expansion, the creation of a public works garage, and storage area, as well as property for a police building and community recreation facilities.

Twenty acres of Municipal land is also proposed at the intersection of Dodge and Bray Roads. This site is centrally located to the center of the Township's projected urbanized area. Proposed development at this location could include a new fire station and community park.

The remaining Municipal property on Map 10 is located at Dort Highway and Dodge Roads. This represents the site of the existing Flint Memorial Park Cemetery.

Recreation/Conservation

If Thetford Township is to fulfill its increasing role as an optimum community environment with a full range of community services, it must actively encourage the preservation of environmentally sensitive and/or important lands.

The Future Land Use Plan incorporates an open space network - the Recreation/Conservation classification. It is necessary for a Township to have lands available for recreational use, but it is also necessary to have land remain in its natural state untouched by any type of development. The value to the public of certain open areas of the Township is represented in their natural, undeveloped, or unbuilt condition. It is recognized that the principal use of certain open areas is, and ought to be, the preservation, management, and utilization of the natural resource base possessed by these areas. In order that this value may be maintained and this use encouraged, this Plan has established a district designed to control the density and location of buildings and structures, and the use of parcels and lots, in order to protect and enhance the Township's natural resources.

In so doing, the Township may see a reduction of hardships and financial burdens imposed upon the Township through the wanton destruction of resources, the improper and wasteful use of open land, wooded areas, and the periodic flooding and overflow of creeks and streams.

Recreation/Conservation areas are of extreme importance to a growing community. Not only do they meet the increasing opportunities afforded by increasing leisure time and are a source of health and pleasure, but also serve as a reminder that man can never put his natural habitat back. Approximately 5,400 acres of the Township's total land area dispersed through the community is devoted to this category. Included in this category is the Vienna Greens Golf Course and the Buell Lake County Park.

PLAN IMPLEMENTATION

INTRODUCTION

Thetford Township's Long-Range Development Plan is, itself, a comprehensive community policy statement. The Plan is comprised of a variety of both graphic and narrative policies intended to function as benchmarks and to provide basic guidelines for making reasonable, realistic community development decisions. The Plan is intended to be employed by Township officials, by those making private sector investments, and by all of those Thetford Township citizens interested in the future development of the community.

The completion of the Plan is but one part of the community planning process. Realization, or implementation of the goals, objectives, and recommendations of the Plan can only be achieved over an extended period of time and only through the cooperative efforts of both the public and private sectors. Implementation of the Plan may be realized by actively:

1. assuring community-wide knowledge, understanding, support, and approval of the Plan;
2. regulating the use and manner of development of property through up-to-date reasonable zoning controls, subdivision regulations, and building and housing codes;
3. providing a program of capital improvements and adequate, economical public services by using available governmental financing techniques to encourage desired land development or redevelopment; and

4. participating with the private sector in the process of co-development, whereby local government provides incentives, subsidy, or other inducements to assist the private sector in their development efforts.

PUBLIC SUPPORT OF THE LONG-RANGE PLAN

The necessity of citizen participation and understanding of the general planning process and the specific goals, objectives, and policies of the Plan are critical to the success of the Township planning program. A well organized public relations program is needed to identify and marshal public support. Lack of citizen understanding and support could well have serious implications for the eventual implementation of planning proposals. Failure of the public to back needed bond issues and continuing dissatisfaction concerning taxation, special assessments, zoning decisions, and development proposals are some of the results of public misunderstanding and rejection of long-range plans.

In order to organize public support most effectively, the Township must emphasize the necessity of, and reasons for, instituting the planning program and encourage citizen participation in the planning process. Public education can be achieved through an informational program involving newspaper articles, preparation of plan and program summary statements for general distribution, and through public hearings held as part of the Plan adoption process.

Michigan planning enabling legislation governing township planning activities (Township Planning Act, Act 168, 1959, as amended) provides for the adoption of all or part of the Plan by the Township Planning Commission, following a public hearing.

The validity of the Plan, as well as the right of the Planning Commission to review various development proposals to assure their compatibility with the Township's expressed policies, requires that the Plan be officially adopted by the Commission. It is also desirable for the Township Board to adopt a resolution stating their concurrence with the goals, objectives, and policies stated in the Plan.

LAND DEVELOPMENT CODES

Zoning Ordinance

Zoning regulations are adopted under the local police power granted by the State for the purpose of promoting community health, safety, and general welfare. Such regulations have been strongly supported by the Michigan courts, as well as by the U.S. Supreme Court. Zoning consists of dividing the community into districts, for the purpose of establishing density of population and regulating the use of land and buildings, their height and bulk, and the proportion of a lot that may be occupied by them. Regulations in different kinds of districts may be different; however, regulations within the same district must be consistent throughout the community.

The intent of zoning is to assure the orderly development of the community. Zoning is also employed as a means of protecting property values and other public and private investments. Because of the affect which zoning can have on the use of land and related services, it should be based on a comprehensive long-range community plan.

Zoning is an effective tool not only for the implementation of the Plan, it also benefits individual property owners. It protects homes and investments against the potential harmful intrusion of business and industry into residential neighborhoods; requires the spacing of buildings far enough apart to assure adequate light and air; prevents the overcrowding of land; facilitates the economical provision of essential public facilities; and aids in conservation of essential natural resources.

There are a variety of zoning approaches and techniques which may be used to help assure that Thetford Township remains an attractive community in which to live and conduct business. These techniques acknowledge the critical role of both Township officials and staff in enforcing the provisions of the Township Zoning Ordinance. Two key tools available to Township officials seeking to assure quality development are: special approval use procedures, and performance guarantee provisions.

Some land uses are of such a nature that permission to locate them in a given district should not be granted outright, but should only be approved after assurances that the use will meet certain specified conditions. These types of land uses are called special approval, conditional, or special exception uses. The Planning Commission may use this flexible zoning process to permit uses of land by following special procedures, including a public hearing and a site plan, to ensure the compatibility of the use within the vicinity in which it is to be located. This technique is based upon discretionary review and approval of special land uses. The site development requirements and standards upon which these decisions are made must be specified in the Ordinance. However, additional reasonable conditions may be attached in conjunction with the approval of special land use including provisions to conserve natural resources and measures designed to promote the use of land in an environmentally and economically desirable manner.

To ensure compliance with a zoning ordinance and any conditions imposed under the ordinance, a Township may require that a performance guarantee, cash deposit, certified check, irrevocable bank letter of credit, or surety bond, acceptable to the Township and covering the estimated cost of improvements on the parcel for which site plan approval is sought, be deposited with the Township Clerk. This performance guarantee protects the Township by assuring the faithful completion of the improvements. The Township must establish procedures under which rebate of cash deposits will be made, in reasonable proportion to the ratio of work completed on the required improvements, as work progresses.

A stable, knowledgeable Planning Commission is critical to the success of the zoning process. The Commission's responsibilities include long-range plan formulation and the drafting of appropriate, reasonable Zoning Ordinance regulations designed to implement plan goals and objectives. Adoption of the zoning ordinance by the Board of Trustees then provides the legal basis for enforcement of zoning ordinance provisions. The ultimate effectiveness of the various ordinance requirements, however, is dependent upon the overall quality of ordinance administration and enforcement. If administrative procedures are lax, or if enforcement of regulations is handled in an inconsistent, sporadic manner, the result will be unsatisfactory at best. The Township Building Official is responsible for carrying out a variety of zoning/development related functions including building inspections, ordinance administration, community/developer liaison, and so forth. Each of these functions requires a substantial investment of staff time. If sufficient time is not made available to carry out these critical functions, they may only be accomplished in a cursory manner. Therefore, the Township should provide for adequate Building Department staff levels and/or consulting assistance to assure that these essential day-to-day functions will receive the professional attention required to assure quality development.

Subdivision Regulations

When a developer proposes a subdivision of land, he is, in effect, planning a portion of the Township. To assure that such a development is in harmony with the Township's objectives, the subdivision or resubdivision of residential or nonresidential land must be guided by the Township in accordance with the Michigan Subdivision Control Act, Act 288, P.A. 1967, as amended.

Several direct benefits accrue from the regulation of subdivisions by a local unit of government. By requiring the subdivider to install adequate utilities and improved streets, purchasers of the lots are not later burdened with unexpected added expenses. A subdivision without adequate physical improvements is detrimental not only to itself, but it also reduces the opportunity for reasonable development of adjacent parcels. In addition, long-range economy in government can be realized only when adequate improvements are provided by the subdivider.

As a part of its review of proposed subdivisions, the Township Planning Commission focuses on such features as the arrangement and width of streets, the grading and surfacing of streets; the width and depth of lots; the adequate provision of open space; and the location of easements for utility installations. The subdivision review process is one of the methods of implementing the goals, objectives, and policies of the community's long-range Plan.

CAPITAL IMPROVEMENTS PROGRAM

The term "capital improvements" is generally intended to embrace large-scale projects of a fixed nature, the implementation of which results in new or expanded public facilities and services. Such items as public building construction, park development, sewer installation, waterworks improvements, street construction, land acquisition, and the acquisition of certain large-scale pieces of equipment (graders, sweepers, trucks, etc.) are included in the Capital Improvements Budget.

Few communities are fortunate enough to have available at any given time sufficient revenues to satisfy all demands for new or improved public facilities and services. Consequently, most are faced with the necessity of determining the relative priority of specific projects and establishing a program schedule for their initiation and completion. The orderly programming of public improvements is to be accomplished in conjunction with a long-range plan.

In essence, the Capital Improvements Program is simply a schedule for implementing public capital improvements which acknowledges current and anticipated demands, and which recognizes present and potential financial resources available to the community. The Capital Improvements Program is a major planning tool for assuring that they proceed to completion in an efficient manner. The Capital Improvements Program is not intended to encourage the spending of additional public monies, but is simply a means by which impartial evaluations of need may be made. The program is a schedule established to expedite the implementation of authorized or contemplated projects.

Long-range programming of public improvements is based upon three fundamental considerations. First, the proposed projects must be selected on the basis of community need. Second, the program must be developed within the community's financial constraints and must be based upon a sound financial plan. Finally, program flexibility must be maintained through annual review and approval of the capital budget. The strict observance of these conditions requires periodic analysis of various community development factors, as well as a thorough and continuing evaluation of all proposed improvements and related expenditures. It is essential that in the process of preparing and developing the program, the Planning Commission be assigned a role in reviewing project proposals to assure conformity with the Land Use Plan and to make recommendations regarding priority special projects, and appropriate methods of financing.

Following Planning Commission adoption of the Plan, the Commission should prepare an initial six-year Capital Improvements Program. Final responsibility for adopting this capital budget rests with the Township Board, which may adopt or amend any of the budget recommendations in the light of legislative objectives and financial constraints. The Commission reviews the Capital Improvements Program annually, taking into account projects completed during the previous year, making necessary adjustments based on current need and available resources, and forwards the updated six-year program to the Township Board.

Many sources of governmental assistance are available to aid local officials in meeting desired land use objectives or improvement needs; however, inasmuch as Thetford Township is currently, and planned to remain, a rural community, we recommend it limit its involvement to the following two grants-in-aid programs. This will establish confidence in the ability of the community to produce results, thereby generating enthusiasm for competing for additional funding resources.

Community Development Block Grants

The CDBG program is a flexible program designed to provide financing for activities previously eligible under separate categorical grant programs, including urban renewal, rehabilitation loans, water and sewer grants, and so forth.

Metropolitan cities (50,000 or more people) and qualified urban counties are guaranteed an amount called an "entitlement." Smaller communities compete for the remaining "discretionary" funds. This competition is better known as the "small cities" program which is administered by the Michigan Department of Commerce, Office of Community Development. A community participating in an urban county CDBG program (such as Thetford Township) is ineligible to enter into the small cities program fund competition.

CDBG funds can be used for a variety of eligible projects, such as property acquisition, the installation or repair of public facilities and improvements (roads, water, and sewer lines, etc.), building construction, rehabilitation and preservation activities, and planning activities, among others.

Monies can only be used under specific circumstances. They can be used for an activity, which serves an area, where a majority of residents are of low and moderate income; which provides direct assistance to low and moderate income individuals, such as housing rehabilitation; which provides a facility or service predominately used by low and moderate income people (i.e., child care centers,); or which are used for special economic development activities designed to create or retain jobs for low and moderate income individuals.

CDBG dollars may also be used to, and in the prevention of, the elimination of slums and blight, or to meet an urgent need of the community, such as providing a waterline where there is a sudden failure of local wells due to groundwater contamination.

The Township should carefully coordinate the expenditure of CDBG funds with the objectives of this Plan, as a means of implementing land use recommendations.

Michigan Natural Resources Trust Fund

The Township is beset with numerous natural assets which should be protected from development and preserved for the recreational benefit of the public. Acquisition can be funded by the Natural Resources Trust Fund (formerly called the Michigan Land Trust Fund).

The Michigan Land Trust Fund was established by the legislature and signed into law by Governor Milliken in 1976, as Act 204.

The Act provided that all revenues from oil, gas, and mineral leases and extractions would be deposited into the Land Trust Fund. The fund was supposed to accumulate a "principal sum" of \$150 million with interest on the principal to be used to buy public recreation acreage.

Attempts to use the Trust money for other purposes forced legislators in early 1984 to pass a resolution to place a proposal on the state ballot to constitutionally create a Natural Resources Trust Fund. On November 6, 1984, Michigan cast their vote in favor of this proposal (Proposal B). As a result, the Trust Fund will not be subject to the funding diversions that have plagued it over its previous years.

Acquisition costs are eligible under the Trust only where such action is directed toward acquiring recreational land in and near urban areas which provide access to, and use of, water, preserve rare, fragile, and scenic resources, and protect endangered species, among others. Thus, the Township would be able to submit projects which would have a higher priority for award.

Any individual, group, organization, or unit of government may submit a land acquisition proposal, but only units or 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 total project cost and be supported by a locally adopted Recreation Plan. There is no minimum or maximum for acquisition projects; for development projects, the minimum funding request is \$15,000, the maximum \$750,000.

CO-DEVELOPMENT

Township government must also be cognizant of enhancing the financial feasibility of private development projects through "co-development." Co-development is simply joint public and private investment for a common purpose.

The participation can range from direct loans to private interests to reduce the capital needed to develop a project, selling publicly controlled land at less than fair market value to lower construction costs, or by issuing bonds to acquire land, construct buildings, or acquire equipment which the Township would sell or lease to private industry. The Township may be also able to participate with private interests using Tax Increment Financing (TIF).

Tax Increment Financing

TIF is an attractive financing tool because it allows communities to pay for needed public improvements at virtually no cost to their general fund. TIF works by capturing, for a specifically defined time, all or a portion of the increased tax revenue (above a "frozen" base year), that may result from increases in assessed valuation which arise from new development. Property taxes normally allocated to all taxing jurisdictions (school district, county, etc.) can be captured to finance public improvements. It is important to recognize that TIF is not a new tax. It is simply a method which allows for the diversion of tax dollars to be used for specified public improvements.

Thetford Township would be eligible to use TIF under Act 281 of 1986 (the Local Development Finance Authority Act), once it reaches a population of 10,000 people.

To apply TIF, the Township would create a Local Development Finance Authority and designate the district(s) within which the Authority can exercise its powers. These powers include planning, land acquisition, and property improvement, among others.

The activities of the Authority can be financed from contributions, rents, proceeds from bonds, or tax increments. The Act provides only for the use of tax increment revenues to construct public facilities for eligible property whose captured assessed value produces the tax increment revenues, or to the extent eligible property is located within a certified industrial park, for other eligible property located within the certified industrial park. (Eligible property is defined as manufacturing plants, agricultural processing plants, and high technology activities.)

Thus, it is clear that tax increment financing through an LDFA has major limitations. First, the community must have a "bird-in-the-hand" that is an eligible property. Secondly, the amount of captured TIF revenues is only that amount created by the eligible property. Increases in SEV due to inflation, for example, could not be used. Lastly, monies could only be spent for public facility improvements serving the eligible property.

TABLE 29
 MAJOR MANUFACTURING EMPLOYERS
 WITHIN GENESEE COUNTY, MICHIGAN*
 (Continued)

<u>NAME/ADDRESS</u>	<u>PRODUCT/SERVICE</u>	<u>EMPLOYMENT (50 OR MORE)</u>	<u>SQUARE FEET</u>
General Motors Corp. 1300 N. Dort Highway Flint, MI 48556	Electronic Components Electrical Equipment, Engine Fluid Meters and Counting Devices Instruments, Electric Measuring Controlling Devices - Miscellaneous	12,000	4,300,000
General Motors Corp. Atherton at Van Slyke Road Flint, MI 48551	Motor Vehicle Parts and Accessories	7,600	3,500,000
General Motors Corp. Fisher Body Grand Blanc, MI 48439	Motor Vehicles and Car Bodies Parts and Accessories	3,600	
Genesee Cement G-3478 S. Dort Highway Flint, MI 48506	Concrete, Ready Mix	80	
Genova Inc. 7034 E. Court Street Davison, MI 48423	Plastic Products - Miscellaneous	80	
Helmac Products Corp. 528 Kelso Street Flint, MI 48506	Needles, Pins, and Fasteners Brooms and Brushes Surgical and Medical Instruments	60	35,000
Hougen Mfg., Inc. G-5072 Corunna Flint, MI 48504	Machine Tool Accessories, Cutting Tools, High Speed Steel Drilling Machines	100	17,000

TABLE 29
 MAJOR MANUFACTURING EMPLOYERS
 WITHIN GENESEE COUNTY, MICHIGAN*
 (Continued)

<u>NAME/ADDRESS</u>	<u>PRODUCT/SERVICE</u>	<u>EMPLOYMENT (50 OR MORE)</u>	<u>SQUARE FEET</u>
Hydreclaim Corp. 3145 Copper Avenue Fenton, MI 48430	Plastic Granulators and Pellitizers	50	30,000
I & H Conveying & Machine Co. 11533 Liberty Street Clio, MI 48420	Food Machines, Choppers, Grinders, Cutters, Dicers	50	12,000
Koegel Meats, Inc. 3400 W. Bristol Flint, MI 48507	Meat Products and Sausage Nonpacking Plant, Jellied Goods, Not Canned	105	86,000
Lasalle Machine Tool Inc. 200 Alloy Drive Fenton, MI 48430	Tools, Dies, Jigs, and Fixtures	150	
McDonald Dairy Co. 609 Lewis Street Flint, MI 48501	Milk	337	13,000
Mechanical Design & Engineering Co. G-4025 S. Center Burton, MI 48519	Test and Inspecting Equipment, Physical Properties	68	24,000
Moore Iron Works, Inc. G-5210 S. Saginaw Street Flint, MI 48507	Trucks and Tractors Industrial	70	

TABLE 29
 MAJOR MANUFACTURING EMPLOYERS
 WITHIN GENESEE COUNTY, MICHIGAN*
 (Continued)

<u>NAME/ADDRESS</u>	<u>PRODUCT/SERVICE</u>	<u>EMPLOYMENT (50 OR MORE)</u>	<u>SQUARE FEET</u>
Nu Vision Optical 2284 S. Ballanger Flint, MI 48503	Ophthalmic Goods	125	20,000
Paramount Potato Chip Co. 2727 Lippincott Flint, MI 48507	Food Preparations - Miscellaneous	78	
Pepsi-Cola Metro Bottling Co. 500 S. Averill Flint, MI 48506	Soft Drinks	150	85,000
Richfield Iron Works, Inc. 3313 Richfield Road Flint, MI 48506	Conveyors and Equipment Railroad Equipment, Wire Products, Cages, Steelwire	300	20,000
Ring Screw Works 2480 Owen Road Fenton, MI 48430	Bolts, Nuts, Rivets, Washers	80	56,600
Schmelzer Corp. G-4444 W. Bristol Road Flint, MI 48507-3144	Motor Vehicle Parts and Accessories	500	40,000
Sycron Corp. 8300 Holly Road Grand Blanc, MI 48439	Electrical Equipment, Engine	148	12,000

TABLE 29
 MAJOR MANUFACTURING EMPLOYERS
 WITHIN GENESEE COUNTY, MICHIGAN*
 (Continued)

<u>NAME/ADDRESS</u>	<u>PRODUCT/SERVICE</u>	<u>EMPLOYMENT (50 OR MORE)</u>	<u>SQUARE FEET</u>
Williams Gun Sight Co. 7389 E. Lapeer Davison, Mi 48423	Ordinance and Accessories - Miscellaneous	70	
Zack Co. 4401 Western Road Flint, MI 48506	Sheet Metalwork	115	

*Compiled by IMPACT from the Michigan Manufacturing Directory, 1986 edition.

Many of the displaced workers will be able to rely, in the short run, on supplementary unemployment benefits (SUB pay) which provides 91 percent of hourly employees take-home pay for about two years, depending on seniority. In the case of plant closings, workers with over ten years of seniority may receive from 45 - 65 percent of their take home pay after SUB expires, until they find comparable jobs or qualify for social security at retirement age.

In the long term, displaced workers will have to rely on growth industries for employment. As noted above, these are the retail, service, and administrative jobs that typically pay only one-half of what manufacturing workers earn. This drop in disposable income will reduce future purchases of retail goods and housing. In addition, the search for new jobs may require the relocation of some households outside the existing labor market area.

The impact on Thetford Township will depend upon the extent of the "ripple-effect." It is, however, the consultant's opinion that the community will continue to be a focal point for growth during the planning period due to its juxtaposition in relation to Flint, Frankenmuth, Saginaw, and Lapeer, and owing to its natural amenities and undeveloped character at the present time. These growth determinants will be discussed in greater detail in the following chapter.

FUTURE LAND USE PLAN DETERMINANTS

INTRODUCTION

Land use proposals are guided by the existing development pattern, future land requirements, and the goals and objectives of the community. This Chapter will focus on the first two issues.

EXISTING DEVELOPMENT CHARACTERISTICS

The future land use pattern is greatly influenced by the extent of existing land development, inasmuch as it creates both problems and opportunities. These are highlighted below.

Land Use Conflicts

A principal problem confronting urbanizing areas is that of incompatible land uses. Incompatible land use problems are instances where neighboring land uses, either by their nature of business or scale of development, create an environment wherein they are unsuitable for association. The normal result of this land use problem is the preponderance of nonconforming uses (land uses not permitted within the zoning district in which they are located) and a deteriorating physical and monetary effect on the surrounding area.

Land use conflicts are readily apparent along Dort Road in Section 31, where single-family homes are intermixed with industrial and commercial development, without benefit of suitable setbacks or screening. Long range planning should attempt to eliminate incompatible uses.

Poor Parceling

There are many lots in the Township which front section line roads which are excessively long and narrow (see Map 1). In such instances the frontages become developed and the rear yards remain vacant. Thus, land assembly is required in the future if such vacant area is to become accessible.

This condition exists on the south side of Wilson Road, east of Genesee Road, along Vienna Road, west of Bray Road, and along Farrand and Lake Roads, west of Bray Road. Modern lot subdivision standards require a lot depth to width ratio of 3:1. Any future lot splitting or subdividing should be required to adhere to this standard.

Frozen Lands

Frozen lands are large land masses occupied by a single use. The Township has two such uses.

They are the Buell Lake County Park and Vienna Greens Golf Course. The amount of acreage occupied by these developments is so significant that meaningful future land analysis must consider the traffic and social impacts of these lands on the rest of the Township.

Sanitary Sewer System

This utility is important not only from a public health and safety standpoint, but is also important if higher densities are to be permitted. Sanitary sewer service is primarily restricted to the southwest corner of the Township and along a segment of Vienna Road. Intensive land development should be restricted to these areas.

Prime Farmlands

As noted earlier, prime farmlands are soils that are best suited for food, feed, forage, fiber, and oilseed crops. They also sustain high yields of crops, given acceptable farming methods. Such property should be recognized as an important natural resource and be protected.

Nearly one-half of the Township's acreage is considered prime farmland (see Map 5). The majority of this lies south of Tobias Road. Every effort should be made to maintain this acreage in active farm production.

Accessibility

Many land uses benefit from exposure along high traffic volume corridors. This is particularly true for general commercial uses.

At the present time, Vienna Road (M-57), Saginaw Road and Dort Highway represent the major traffic arterials in the community. These roads should be considered the most likely candidates for nonresidential development.

Environmentally Sensitive Lands

The Township contains significant woodlands and wetlands areas. If the Township is to fulfill its role as an optimum community, it must actively encourage the preservation of important natural lands. Future land use planning must acknowledge that the value to the public of certain open areas is manifested in their natural, undeveloped, or unbuilt condition.

FUTURE LAND REQUIREMENTS

Land use planning must ensure that the total supply of land for urban use be controlled to match demand for this land. This is known as "land market equilibrium." If supply meets demand, orderly growth can be achieved. If too much developable land is recommended, urban sprawl and haphazard development could occur with adverse effect on property values.

This following text will identify the market potential for commercial and industrial properties within Thetford Township through the application of nationally recognized planning and design standards. This data, combined with the results of the Housing Characteristics chapter, will be used to determine the amount of urban land which can reasonably be expected to be needed by the community by the end of this century.

Commercial Development Standards

Commercial development is a very important ingredient of the community economic base. Commercial establishments provide goods and services to consumers, promote economic stability, and can generally enhance the quality of life for area residents. However, if commercial districts are not suitably located and carefully planned, they can be a disruptive element and ultimately detract from, rather than enhance, the community environment.

Planned shopping centers have distinct advantages over strip commercial development. The developer of a planned center is able to locate the center in a strategically favorable market demand setting, plan for controlled site access and adequate parking, provide effective, attractive landscaping, leave room for building expansion, and coordinate architectural facade and signage treatments. On the other hand, relatively unplanned shopping areas, situated along major thoroughfares, and generally

developed in a piecemeal, uncoordinated fashion, are often constructed as individual speculative ventures, without forethought to possible future changes in market demands or community needs. For these reasons, the Township should encourage the development of carefully planned, clustered, commercial developments, rather than isolated uses in uncoordinated commercial strips.

There are three primary types of shopping centers: the neighborhood center, community center, and regional center.

A neighborhood center serves the convenience goods needs of local shoppers and traditionally includes uses such as grocery stores, drugstores, barber and beauty shops, coin laundries, hardware stores, and other similar uses established primarily to serve the day-to-day shopping and personal service needs of local neighborhood residents. The neighborhood center is typically designed to serve a population of 2,500 to 40,000 persons (depending upon the density of development) living within a 1-1/2 mile radius. Based upon the development characteristics of the Thetford market area, a trade area population of 5,000 people would be required to support one neighborhood center. A land area of three to five acres is generally required to accommodate buildings, parking, and service/loading space and to honor setback standards.

A community scale shopping center is built around a junior department store or a variety store as the major tenant, as well as a supermarket. In addition, the center may contain other kinds of comparison goods establishments. Commercial uses included in these types of centers include restaurants, general merchandise, apparel and accessories, furniture and appliance stores, and so forth. Professional offices may also be located in these centers. Community shopping centers typically serve a population of 40,000 to 150,000 people living within a 3-mile radius.

The regional scale shopping center provides a wide variety of goods, including general merchandise, apparel, furniture, and home furnishings. The regional center is built around a full-line department store and is designed to serve a population of 150,000 people or more, living within a 15-mile radius.

The shopping center standards, discussed above, are summarized and presented in Table 30.

Not all commercial uses are sited within preplanned shopping centers. Special attention must also be given to uses which are free-standing, independent structures, not part of a planned shopping center environment.

Most of these uses are considered "highway-oriented" businesses, since much of their trade results from exposure and accessibility to passing motorists.

Data in Table 31 present recommended market base standards for many of these uses such as apparel stores, restaurants and liquor stores. For land use planning purposes, the total amount of such acreage which can be expected must be projected. IMPACT recommends that five acres per 1,000 people be provided for such development.

Data in Table 31 also document the population base necessary to support different types of office development typical of local, rural communities (doctors, real estate, accounting, travel agencies, legal offices, and banks). To provide for additional office development, IMPACT recommends that three acres per 1,000 people be provided for planning future office development.

TABLE 30

TYPICAL SHOPPING CENTER STANDARDS*

CENTER TYPE	SITE SIZE	COMPOSITION	POPULATION BASE	SERVICE AREA
Neighborhood Center	3-5 acres	Supermarket as the principal tenant with other stores providing convenience goods or personal services. Typical GLA of 30,000 to 100,000 square feet.	Trade area population of 2,500 to 40,000 people.	Neighborhood, 6-minute drive time 1 to 1-1/2 mile radius
Community Center	10 acres	Junior department store or variety store as the major tenant, in addition to the supermarket and several merchandise stores. Typical GLA of 100,000 to 300,000 square feet.	Trade area population of 40,000 to 150,000 people.	3-mile radius
Regional Center	30-50 acres	Built around a full-line department store with minimum GLA of 100,000 square feet. Typical center GLA of 300,000 to 1,000,000 square feet.	150,000 or more people.	10-15 mile radius

*Urban Land Institute, Shopping Center Development Handbook, (Washington, D.C.), 1977.

NOTE: GLA represents gross leasable area.

TABLE 31

RECOMMENDED STORE OR SERVICE USE STANDARDS
 THETFORD TOWNSHIP, GENESEE COUNTY, MICHIGAN
 1986*

<u>STORE OR SERVICE USE</u>	<u>POPULATION BASE</u>	<u>MARKET PENETRATION</u>	<u>RENTAL REVENUE POTENTIAL</u>	<u>TYPICAL BUILDING SIZE (SQUARE FEET)</u>
Food Stores	4,000	low	low	20,000
Drug Stores	9,000	high	medium	5,400
Liquor Stores	3,100	high	high	2,000
Restaurants and Taverns	varies	low	high	3,300
Laundries (coin-operated)	12,400 ^a	high	low	1,600
Dry Cleaners	3,000	high	low	1,300
Beauty Shops	2,100	high	medium	1,200
Barber Shops	3,300	high	medium	750
Television Repair	5,300	medium	low	1,400
Real-Estate Offices	n/a	high	high	1,000
Branch Banks	4,500	low	high	4,000
Accounting Offices	n/a	n/a	n/a	n/a
Nurseries	16,200	high	medium	1,300
Travel Agencies	varies	high	high	800
Women's Apparel Stores	6,000	low	medium	2,500
Sporting-Goods Stores	18,000	medium	medium	n/a
Books and Stationery	6,500	low	medium	2,000
Furniture and Home Furnishings Stores	6,200	low	medium	10,200
Camera Stores	55,100	medium	medium	2,000
Automotive Service Stations	2,800	low	high	varies
Hardware, Paint, and Building Supply Stores	8,700	medium	medium	5,700

TABLE 31

RECOMMENDED STORE OR SERVICE USE STANDARDS
 THETFORD TOWNSHIP, GENESEE COUNTY, MICHIGAN
 1986*
 (Continued)

<u>STORE OR SERVICE USE</u>	<u>POPULATION BASE</u>	<u>MARKET PENETRATION</u>	<u>RENTAL REVENUE POTENTIAL</u>	<u>TYPICAL BUILDING SIZE (SQUARE FEET)</u>
Convention Hotels	b	varies	n/a	varies
Bowling Alleys and Billiard Parlors	c	c	c	c
Doctors Offices	1,000	low	high	1,000
Legal Offices	6,000	low	high	800
Stock-Brokerage Offices	15,000	low	high	800

*Data from Darley/Gobar Associates, Economic, Real Estate, and Marketing Consultants, as published in House and Home Magazine, 1973.

^aFigure is very approximate, depending on whether residents have their own machines.

^bNot applicable; does not depend on residential population.

^cCurrent figures not available - popularity is declining rapidly.

n/a Not Available

NOTE: Population base refers to the number of actual customers each store or service requires for its support. Market penetration is each one's relative ability to withstand competition; a store with low penetration needs a greater number of residents in the area than one with the same population base and high penetration. Assume a 3:1 site to building size ratio to determine total land area need.

Industrial Development Standards

The quantity of developed industrial land a community may have in future years is dependent upon its current employment base, availability of utilities, local political philosophy, as well as a myriad of other factors industry considers when deciding to locate in a particular community. Table 32 lists the more important features industries analyze when choosing a site. For land use planning purposes, however, it is necessary to estimate the amount of land that can reasonably be expected to be developed for industrial purposes, so capital improvements can be adequately programmed in advance and to ensure that an ample supply of land is available. Tables, 33, 34, and 35 summarize three methodologies commonly used in calculating future industrial land area needs. They are population, land use, and employment density ratios.

The greater accuracy is achieved through application of employment/density ratios. If employment by industry type can be estimated, a worker density factor can be applied, resulting in a total acreage requirement. Estimating employment levels is, however, beyond the scope of this study. Industrial land needs are more readily estimated using land or population ratios.

Population ratios represent acreage requirements as a proportion of the total population. Data in Table 34 indicate that 12 acres of industrial land are required for every 1,000 people.

Estimating industrial land use can also be accomplished by employing land use ratios. By surveying the amount of land devoted to industrial uses in other communities, an average can be calculated and used as a standard for planning purposes. The American Planning Association recently compiled this data; it is presented in Table 35. Using this standard, eight percent of the land area in Thetford Township should be utilized for industrial development.

TABLE 32

LOCATIONAL CRITERIA USED BY INDUSTRY*

Availability of Adequate Sites: The trend is to one-story plants with adequate space for parking, loading, a reserve for expansion, and, if the industry abuts a residential area, a landscaped buffer strip.

Reasonable Tax Rates: Two of the more frequently stated reasons for an industrial move are the lack of an adequate site or the lack of a reasonable tax rate.

Location of Production Material: Improved methods for moving bulk products is lessening the importance of this factor.

Power: Electric power is the type most often required today, and there should be no local problems in this respect.

Water: Many industries require large quantities of water, either raw or treated, in their manufacturing process, and some find it desirable to have water as a means of cheap transportation.

Industrial Fuel: Industries requiring gas are limited as to their potential locations. If coal is required in large quantities, the industry should be located along railroads or waterways.

Transportation Facilities: The importance of rail sites has diminished for some industries. Many now locate with only major highways as the means of bringing in production materials and distributing the finished products.

Favorable Competitive Pattern: Certain industries are finding it worthwhile to establish branch plants and to decentralize in order to maintain competitive advantages.

Living Conditions: An industry will also investigate a community's resources in terms of educational and recreational facilities, housing, availability of professional services, nature of shopping facilities, and public attitudes.

Compatible Laws: Up-to-date industrial thinking recognizes the desirability of sound zoning, building, and other codes.

Site Characteristics: Such things as soil and topography, amount of grading required, drainage conditions, waste disposal service, etc., are important to certain industries.

Labor: The cost of labor as a factor of production is important to industries where added costs cannot be shifted to the consumer without sacrificing competitive advantage.

*Compiled by IMPACT: Improved Planning Action.

TABLE 33
EMPLOYMENT/DENSITY RATIOS
FOR ESTIMATING INDUSTRIAL
LAND USE*

<u>INDUSTRY</u>	<u>AVERAGE NUMBER OF EMPLOYEES PER NET SITE ACRE</u>
Intensive Industries ^a	30
Intermediate Extensive Industries ^b	14
Extensive Industries ^c	8

*Urban Land Institute, Industrial Development Handbook, 1975.

^aIndustries include electrical equipment and supply, printing and publishing, apparel and textile products, transportation equipment and similar uses.

^bIndustries include lumber and wood products, furniture and fixtures, food and kindred products, chemicals and similar uses.

^cIndustries include tobacco products, petroleum and coal products, wholesale trade and similar uses.

TABLE 34
POPULATION RATIOS FOR
ESTIMATING INDUSTRIAL
LAND USE*

<u>CATEGORY</u>	<u>RATIO</u>
Total gross land requirement for all industry	12 acres/1,000 population
Land requirements for light industry	2 acres/1,000 population
Land requirements for heavy industry	10 acres/1,000 population

*Joseph DeChiara and Lee Koppleman, Planning Design Criteria, 1969.

TABLE 35
LAND USE RATIOS FOR
ESTIMATING INDUSTRIAL
LAND USE*

<u>COMMUNITY SIZE</u>	<u>PERCENT INDUSTRIAL LAND AVERAGE</u>
Small Cities and Towns (under 42,000 people)	8%
Large Cities (over 200,000 people)	12%

*American Planning Association, PAS Memo: Land Use Ratios, May, 1983.

Housing Needs

Housing need is based upon three components. First, the number of housing units must be calculated in consideration of a projected population. Secondly, the replacement of existing structures which are expected to become substandard during the planning period must be accounted for. Lastly, the amount of acreage to be consumed by new and/or replacement housing must be calculated.

Data in Table 36 show the number of housing units required to accommodate the Township's year 2000 population of 11,000 people. In total, 4,631 year round housing units will be required, or 1,816 (64.5%) above their 1980 total.

As indicated above, the replacement of substandard structures must also be considered when determining future housing requirements. This amount will, of course, depend upon the actual number of homes that will, in fact, become substandard during the planning period. We know, however, that housing units generally have a lifespan of 50 years, without housing rehabilitation occurring. Data in Table 22 indicate that by the Year 2000, 461 housing units will be older than 50 years. It is estimated that approximately 30 percent (138) of these units will require replacement.

Calculating the Year 2000 housing requirements of the Township can be computed then as the total number of new units plus replacement units. Thus, 1,954 units will be required to be constructed between 1980 and the end of this century, or approximately 98 per year. As indicated earlier, only 112 housing units were added to the Township housing supply since 1980.

As of January 1987, there were 2,927 year round housing units in the Township (see Tables 4 and 24). They occupied a total land area of 2,546.2 acres. This represents a density of 1.14 units per acre or 0.87 acres per unit.

TABLE 36

HOUSING UNIT REQUIREMENTS
 THETFORD TOWNSHIP, GENESEE COUNTY, MICHIGAN
 1980 AND 2000*

<u>CATEGORY</u>	<u>1980</u>	<u>2000</u>	<u>CHANGE, 1980 - 2000</u>	
			<u>NUMBER</u>	<u>PERCENT</u>
Total Population	8,499(a)	11,000(e)	2,501	29.4
Persons Per Household	3.13(b)	2.5(f)	(0.63)	(20.1)
Total Occupied Units	2,715(c)	4,400	1,685	62.1
Vacancy Rate (%)	<u>3.5(d)</u>	<u>5.0(f)</u>	<u>(1.5)</u>	<u>(42.9)</u>
Total Year Round Housing Units	2,815(c)	4,631	1,816	64.5

*Analysis by IMPACT, April 1987.

(a)Data from Table 4.

(b)Data from Table 6.

(c)Data from Table 19.

(d)Data from Table 7.

(e)See Population Trends diagram.

(f)Consultant estimates.

Data in Table 36 indicate that by the Year 2000, 4,631 housing units will be required. Assuming a similar development pattern to what exists today, a factor of 0.9 can be utilized as the acreage standard for determining future residential land area needs.

The acreage needs for each urban land use can be projected using the standards identified above. Data in Table 37 indicate the future land area requirements for each of the urban land use requirements. At minimum, nearly three square miles of additional acreage will become "urbanized" over the next 14 years.

The urban land projection is based upon a premise of an ideal situation shielded from political, economical, and environmental constraints. Its use lies in its function of projecting the minimum amount of land that can reasonably be anticipated to develop over a given period of time. However, other factors must be considered in land use plan development which will influence the amount of land provided. These factors, as they pertain to Thetford Township, include flexibility, principals of neighborhood planning, large lot development, preservation of natural areas, community promotion, and the Township's relationship with the Cities of Clio and Mt. Morris.

1. Flexibility

Ideally, when locating residential development in a land use plan, the amount of such proposed land use should closely correlate with anticipated population growth. However, it must also be understood that the ideals of land use planning do not necessarily correlate with the realities of zoning. For example, if several vacant areas appear to be competitive for future growth, because of such factors as potentially available utilities, proximity of existing development or good major road access, it is often unfeasible from a zoning

TABLE 37

FUTURE URBAN LAND USE ACREAGE REQUIREMENTS
 THETFORD TOWNSHIP, GENESEE COUNTY, MICHIGAN
 YEAR 2000*

<u>URBAN LAND USE</u>	<u>STANDARD</u>	<u>REQUIREMENTS</u>	<u>EXISTING</u>	<u>DEFICIENCY</u>	<u>COMMENTS</u>
Commercial Neighborhood Center	1 per 5,000 people, 5-minute drive time service radius	2	-0-	Two or ten acres	Locate in south and north end of Township to improve accessibility
Community Shopping Center	1 per 40,000 people	0	City of Clio CBD	-0-	Adequate through Year 2000
Regional Shopping Center	1 per 150,000 people or more	-	Courtland Mall, Genesee Valley Mall	-0-	Adequate through Year 2000
Unrelated Uses	5 acres per 1,000 people	55	17.4 acres	37.6 acres	Cluster uses near major intersections
Offices	3 acres per 1,000 people	33	5.9 acres	27.1 acres	Assumes growth in office development in City of Clio
Industrial	12 acres per every 1,000 people or 8 percent of total land area	132 acres or 1,750 acres	9.1 acres	122.9 acres	
Residential	0.9 acres per unit	4,167.9 acres	2,636.8 acres	<u>1,531.1</u> acres	
Minimum Requirements				1,728.7 acres or 2.70 sq. miles	

*Analysis by IMPACT: Improved Planning Action.

Note: Data based upon a future population of Thetford Township of 11,000 people.

standpoint (i.e., considering the legal implications) to limit growth to one of the areas just because population projections suggest that there will be sufficient land in that area alone to accommodate all future growth. Therefore, additional acreage is necessary to provide a degree of flexibility in future land development.

2. Neighborhood Planning

Where appropriate and feasible, the Land Use Plan should encourage neighborhood-size residential developments. The neighborhood unit is an area which has all of the public facilities, services, and other amenities required for family living. It is generally characterized by an elementary school and park at its center. Ideally, no through traffic enters the area. It is thought of as an environment in which children and their parents (or other age groups in some cases) can move freely and in safety without barriers to their activities. Anticipating sufficient acreage to accommodate viable neighborhood units may increase the amount of urban land provided.

3. Large Lot Development

Much of the Township is suitable for only large-lot residential development so long as septic tanks provide the only means of sewage disposal which requires a larger land area. The Township also has significant areas of great natural beauty which can provide an excellent setting for this type of development. Moreover, an increasing number of families desire and can afford and appear to accept the expense of building and maintaining estate-type homes in semi-rural settings even considering building, land, and energy costs. The Land Use Plan should reserve specific areas for this type of development.

4. Preservation of Natural Areas

Areas of natural beauty should be preserved wherever possible; and areas suitable for recreation should be protected and development restricted, as appropriate. Development of such areas and adjacent areas should be controlled to reinforce the preservation of their natural character. Such a controlling device is providing additional acreage for development elsewhere in the Township.

5. Community Promotion

To effectively service the needs and desires of Township residents, while at the same time strengthening the Township's tax and employment base, requires the promotion of a well planned and diversified economy. Often a community will attempt to attract additional commercial or industrial development if it finds itself lacking in this type of land use. This is done by providing more acreage for a particular use than it can reasonably expect to obtain. In this matter, a community can "advertise" that it desires a particular type of development.

6. Relationship with Cities of Clio and Mt. Morris

Future land planning decisions for the Township must recognize the important role of the City of Clio and the City of Mt. Morris in meeting the majority of the consumer needs of the resident population. The Township should actively seek to support efforts which maintain the economic vitality of these business centers, either through new development, or redevelopment, of existing City properties. The Township should only seek to absorb nonresidential uses that, by reason of site restrictions or market penetration, cannot be accepted by either of these communities.

DWELLING UNIT TYPE

With the evident need for additional housing units in the Township, attention must be given upon the type of housing which should be provided. This includes identification of immediate needs and long term needs.

Immediate Needs

The discussion on housing affordability revealed that lower income households were avoiding available affordable rental units and opting to live in single-family homes, even though they were paying more than what is considered acceptable for such housing (30 percent). Thus, special attention should be given to low income groups to make certain that affordable and equivalent housing types be provided.

A viable option which the Township should encourage is manufactured housing. The average cost of each unit, including carpeting, draperies, furniture, and all appliances, (but not land) range from \$10,000 to \$50,000. It also affords its purchaser a residence that is easy and inexpensive to maintain. Exterior finishes typically used are cedar siding, prefinished aluminum horizontal lap siding, or hardwood paneling. Due in large part to these qualities, manufactured housing is now accounting for one out of every three new homes being sold in the United States.

Local units of government can, however, make single-family housing more affordable by adopting regulations which stimulate the construction of smaller, less expensive homes. For example, some communities do not require lot sizes for single-family detached homes any larger than 6,000 - 8,000 square feet or a density of five to seven units per acre in areas served by sanitary sewer. Other local governmental units do not include a house size requirement since minimum house sizes are adequately controlled

by local building codes.⁵ Additionally, "bonuses" (usually in the form of density increases for residential developments) may be awarded to a development that meets desirable criteria. Density increases can be awarded to encourage construction of low income housing. Other techniques such as cluster or zero lot line development will similarly reduce home ownership costs as savings enjoyed by the developer through reduced utility and paving construction charges are passed through to the buyer.

Long Term Needs

From the time the person forms a household until retirement age, the chances of living in an owned versus rented housing unit increases with age. Similarly, age is related to the size of the residence. As a rule, as age increases, the size of the residence also increases (up to about age 50, when the empty-nest stage of the life-cycle begins). Age is related to size of the residence because an increase in age is generally accompanied by an increase in family size (which makes more room desirable), and an increase in income (making a larger residence more affordable).

⁵The Michigan Uniform Building Code specifies that every dwelling unit shall have at least one room which shall have not less than 150 square feet of floor area. Other habitable rooms, except kitchens, shall have an area not less than 70 square feet. An efficiency dwelling unit shall have a living-room of not less than 220 square feet of floor area.

The Thetford Township population is aging (see Table 5). By the 1990s, most of the baby-boom generation (persons 25 - 34 years of age) will be married and have children to raise, and many will be well-off, dual-carrier couples.⁶ The first-time housing market will shrink. Concessions in housing size and quality made by first-time buyers will not be acceptable to a maturing, home buying public. Thus, more and more housing will be built for upscale repeat buyers and upscale renters looking for ownership.⁷ Builders should expect an increased demand for large homes in the next two decades.⁸

Builders must be cautious, however, because buyers become increasingly price sensitive as home costs escalate. As noted in the previous chapter, the gap between decent housing and what families can afford to pay is growing. Today, the typical cost of constructing a 2,000 square foot home is nearly \$70,000 (see Table 36). This data includes contractor's overhead and profit, but not the cost of basements, garages, fireplaces, porches, decks, central air, and most importantly land costs. In the last 12 months, the price of finished lots has jumped more than 20 percent nationwide, and now average \$2.25 a square foot.⁹ As a result, the median price of new homes (single-family detached or attached and multi-family condominium units) sold in December 1986, reached \$95,500.¹⁰

⁶ Sternlieb, George and James W. Hughes, "Demographics and Housing in America," Population Bulletin 41 (1), 1986.

⁷ Becker, William E., "The New Demographics," Builder, December, 1985.

⁸ Albrecht, Don E., "Demographic Trends and Real Estate Development," The Journal of Real Estate Development, Fall, 1986.

⁹ Sumichrast, Michael, "Land Prices Go Crazy," Builder, February, 1987.

¹⁰ National Association of Home Builders, Economics, Mortgage Finance and Housing Policy Division, "Outlooks," Builder, March, 1987.

TABLE 38

TOTAL COST FOR EACH JOB

COMPONENT	1,200 SQUARE FEET			2,000 SQUARE FEET			3,000 SQUARE FEET		
	LABOR	MATERIALS	TOTAL	LABOR	MATERIALS	TOTAL	LABOR	MATERIALS	TOTAL
Foundation	\$ 1,422	\$ 1,308	\$ 2,750	\$ 1,711	\$ 1,554	\$ 3,265	\$ 2,581	\$ 2,323	\$ 4,904
Concrete Floor	1,250	1,601	2,851	1,395	1,778	3,173	3,484	4,386	7,870
Exterior Walls	3,903	6,557	10,460	4,104	6,974	11,078	5,376	8,728	14,104
Wall and Roof Framing	3,087	2,463	5,550	4,840	3,484	8,324	7,899	5,645	13,544
Roofing	1,127	1,060	2,187	2,655	2,720	5,375	4,280	4,339	8,619
Partitions	2,212	3,869	6,081	3,529	6,412	9,941	5,790	10,614	16,404
Ceiling Finishes	1,117	472	1,589	1,888	819	2,707	3,161	1,371	4,532
Wall Finishes	1,548	750	2,298	2,413	1,160	3,573	3,851	1,852	5,703
Cabinets and Appliances	563	3,284	3,847	564	3,246	3,810	628	3,625	4,253
Flooring and Carpet	709	2,587	3,296	1,182	4,275	5,457	1,980	7,163	9,143
Heating	558	985	1,543	934	1,614	2,548	1,565	2,704	4,269
Plumbing	1,168	1,400	2,568	1,733	2,299	4,032	1,934	2,567	4,501
Electrical	1,152	2,027	3,179	1,908	3,393	5,301	3,192	5,682	8,874
Construction Total	\$19,836	\$28,363	\$48,199	\$28,856	\$39,728	\$68,584	\$45,721	\$60,999	\$106,720

Most of the items in the table above represent construction subcategories:

Foundation. Excavating, building forms, and reinforcing and pouring concrete. (Note: This figure doesn't include the cost of a full basement.)

Concrete floor. What it costs to pour loose fill, damp-proof, and pour concrete for a slab.

Exterior walls. Most of the home's skin—its wall sheathing, wood siding, windows, doors, trim, and paint.

Wall and roof framing. Structural elements: joists, studs, rafters, roof sheathing, 3½ inches of batt insulation.

Roofing. Asphalt shingles, flashing,

gutters and downspouts.

Partitions. All materials and labor needed to construct interior walls—studs, drywall, window and door frames, and hardware.

Ceiling finishes. Drywall and paint.

Wall finishes. Paint, vinyl wall covering, and wallpaper.

Cabinets and appliances. Counters, cabinets, range, dishwasher, garbage disposal, and range hood.

Heating, plumbing, and electrical. Usually based on the home's square footage. Long plumbing runs increase plumbing costs disproportionately. Allow for above-average heating capacity

in cold-winter areas.

Source: Cost information systems, as published in the Spring 1987 edition of Building Ideas.

As single-family homes continue to rise in price at a greater rate than family income, more and more families will be forced out of the single-family home market and seek alternative housing types. Low and moderate income families will be particularly hard hit. It is expected that multiple-family development will, therefore, continue to represent an important share of all future housing units constructed.

The precise share multiple-family residential units will be of the total housing units constructed in Thetford Township by the Year 2000 is ultimately a public policy decision which must be made by Township officials. However, it is the opinion of the consultant that the multiple-family units should represent 25 percent of the total housing unit supply in the Township. This is roughly three times the amount of existing multiple-family development in Thetford Township. This amount would allow for maximization of choice of housing opportunities for current and future residents of the Township, or those currently occupying rental units below what they could afford.

The multi-family market is expected to be soft in the near term. Recent surges in this market in recent years was distorted by an explosion of new tax-exempt revenue bonds issued for multi-family housing. Nationally, multi-family starts are expected to drop 15 percent this year.¹¹ Much of this decline is attributable to changes caused by the Tax Reform Act of 1986.

The Tax Reform Act restricts real estate investment. The biggest change is caused by changes to the passive loss limitation. Under the previous law, an investor could claim the losses up front; this is no longer available. For example, the developer, previously, could put \$10,000 down and acquire a loan for \$90,000 for a total development cost of \$100,000. He would then be able to get a deduction on the full \$100,000. This is known as leveraging. Due to changes in the Tax Reform Act, the investor may only

¹¹Sumichrast, Michael, "Multi-family to drop 15 percent," Builder Magazine, February, 1986.

get a deduction on the \$10,000 down payment. In addition, capital gains are now taxed at the ordinary rate; that is, it is taxed on the same basis as other income. This creates a condition where the return to developers is approximately one-third of what it was before. As a result, it is highly unlikely that small investors, who were previously active in the housing market, will now participate without raising rents or other inducements.

Thetford Township may wish to consider offering density bonuses to encourage multiple-family construction for low and moderate income persons. For example, the Township could permit an increase in residential density if 10 percent of the units were set aside for elderly or low income groups.

Special consideration should also be given to meeting elderly housing needs since their housing needs differ from other population segments. It is estimated that 70 percent of the elderly population own their homes.¹² This creates several problems. Such homes are generally larger than what they need. This "overhousing" contributes to a shortage of housing for younger families.

Specific housing programs must be devised to benefit the elderly population. Traditionally, subsidized housing programs accounted for the majority of this effort. Other techniques are also available.

Zoning regulations can be revised to permit smaller homes and lots that can be maintained by one or two-person elderly households more easily and at less cost. Ordinances can be revised to permit shared living arrangements for the elderly. Some recent Zoning Ordinances permit either accessory apartments or echo units. (Accessory apartments are independent units contained within a single-family house; in contrast, echo housing is a small temporary housing unit, often a trailer or prefabricated unit, placed in the rear yard of the principal residential structure.) Elderly housing

¹²Carole Shifman, Increasing Housing Opportunities for the Elderly, Planning Advisory Service Report Number 381, 1984.

and retirement housing zoning districts have been established close to public transportation, commercial establishments, and medical and support services. Special housing environments such as congregate care facilities should be permitted through local zoning. Lastly, incentive zoning techniques (cluster development, density bonuses etc.,) have been used to foster elderly housing.

As noted in the Population Profile chapter, approximately 10 percent of the Township's population is 55 years of age and older. Housing programs should be directed to meeting senior needs. This will become especially important as more employees in manufacturing industries are offered early retirement incentives in the years ahead.

GOALS, OBJECTIVES, AND POLICY STATEMENTS

INTRODUCTION

The previous chapter explored how existing development characteristics influence future land use decisions, as well as estimated the amount of land area required by land use type, by the Year 2000. However, before a community can actively plan for its future growth and development, it must also set certain goals and objectives that define the boundaries of its needs and aspirations and, thus, establish a basis for Future Land Use Plan formulation. These goals and objectives must reflect the type of community desired and the kind of lifestyle its citizens wish to follow, given realistic economic and social constraints.

The following text represents a recommended set of goals (the ultimate purposes or intent of the Plan), objectives (means of attaining community goals), and policy statements (specific statements which guide action) which are prepared to guide local decisionmakers in reviewing future land use proposals.

GOALS

Thetford Township, in recognition of its role as an area of eventual growth, and as an area endowed with an abundance of natural assets, adopts the following general community goals to guide future land development activities:

1. Create an optimum human environment for the present and future residents of the Township, an environment that will not only solve their physical needs but will offer variety, choice, opportunity for change, and individual growth.

2. Promote community identity, and community pride, while recognizing the dependent nature of Thetford Township to the wider urban community.
3. Maintain and enhance those desirable qualities of Thetford Township which have attracted its residents.
4. Ensure diversity, stability and balance of land uses to serve human needs by maintaining and planning for residential areas, agricultural land, natural and recreational areas, schools and cultural activities, adequate public services, access to shopping, health services, and places of employment.
5. Relate land use primarily to the natural characteristics of the land and the long-term needs of the community, rather than to short-term private economic gain.
6. Preserve and promote the rights of the individual property owner while maintaining the rural character of the Township.
7. Encourage all future development to place a high priority on aesthetics and environmental conservation.

OBJECTIVES AND POLICIES

Achievement of these goals can be accomplished if the community adopts and adheres to the following objectives and policies with respect to agricultural, residential, commercial, industrial, public and semi-public lands, the natural environment, and planning and zoning.

Agriculture

Objective

To retain, wherever possible, prime agricultural lands in the Township by protecting them from urban development through the concentration of urban growth.

Policies

1. Recognize agriculture as a desirable economic activity essential to the economic base of Thetford Township.
2. Maintain agriculture as an environmental asset as well as an important economic resource of the Township through endorsement of existing legislative tools and techniques such as the Farmland and Open Space Preservation Act, and farmland conservation easements, among others.
3. Avoid rural-urban land use conflicts by encouraging only very low density, dispersed, residential uses in agricultural areas.
4. Establish policies to prevent the extension of urban utilities into agricultural areas.
5. Study areas to be retained permanently as productive agricultural lands, and not necessarily as a holding bank for future urbanization.

Residential Development

Objective

Promote the development of planned residential areas designed to offer a variety of identifiable living environments.

Policies

1. Encourage and guide the development of housing at densities which relate to natural and man-made environmental features.
2. Encourage innovative development techniques such as cluster housing and planned unit developments as means of meeting future housing needs.
3. Require that suitable and adequate transition areas or buffers be established between residential, commercial, and industrial areas to maintain property values and physical attractiveness.
4. Encourage the removal of conflicting or undesirable land uses from residential areas.
5. Promote higher densities in areas which are or may be served by public utilities and service investments, such as sewer and water, parks, and major roads, to reduce urban sprawl and random development.
6. Seek means of encouraging the development of suitable housing for the elderly population and for low and moderate-income households, including accessory apartments, congregate care facilities, and manufactured housing subdivisions.
7. Remove all housing which falls below minimum standards, partly by clearance and redevelopment action and comprehensive code enforcement, and partly by encouraging home improvements and private and public investment in rehabilitation programs.
8. Discourage the random development of single-family homes along section-line roads.

9. Develop a comprehensive monitoring system to collect, on a continuous basis, information needed to assess structural and environmental conditions in the Township.
10. Encourage residential developers to place design controls and review procedures on their building or development projects.
11. Utilize standardized design standards and review procedures for all new residential uses.
12. Encourage programs for the placing of all existing and future utility lines below ground.

Commercial Development

Objectives

To provide for a full range of commercial facilities which are adequate to serve the resident population within the Thetford market area.

Policies

1. Recognize the City of Clio as the primary commercial center serving the community shopping needs of the local consumer population.
2. Encourage the establishment of new commercial uses and the expansion of existing establishments in pace with the expansion of the local population.
3. Encourage the development of clustered commercial and/or office facilities in close proximity to major street intersections, thus providing the opportunity to offer a variety of goods and services most conveniently, rather than fostering the development of strip commercial development.

4. Strip commercial thoroughfare frontage developments should be discouraged except where it can be substantiated that there is a need for highway-oriented type businesses and other business uses that are not typically involved in comparison or multi-purpose shopping trips.
5. Encourage the use of marginal access drives and limit the number of entrances and exists serving commercial uses as a means of reducing traffic conflicts along major roads.
6. Adopt reasonable sign regulations designed to adequately govern the type, size, and placement of signs to avoid visual clutter.
7. Require all proposed commercial rezoning to be justified in terms of neighborhood, community, and market area needs, as applicable.
8. A compatible relationship should be established between commercial centers and adjacent residential properties through the use of such buffer devices as walls, landscape areas, and transitional uses.

Industrial Development

Objective

Encourage a variety of industrial development with attractive sites which will strengthen the tax base and provide a place of employment for area residents.

Policies

1. Encourage the development of new types of industries and those that are economically associated with the existing industrial base.
2. Provide industry at locations which can be readily serviced by public utilities and are easily accessible to the existing transportation network.

3. Locate industrial areas where they have reasonable boundaries and are not subject to encroachment by incompatible uses.
4. Establish adequate review and control mechanisms for uses which generate, disperse, or dispose of products and/or substances which may be hazardous to individual health (excessive noise, solid waste, toxic waste, etc.).
5. Incorporate and utilize the concept of development of industrial land in industrial parks or planned industrial districts with well designed points of entrance and exit, controlled site and building design, and adequate parking areas.

Public/Semi-Public Land Uses

Objective

Provide for public and semi-public use areas offering a variety of opportunities for human fulfillment in locations appropriate for their development and utilization.

Policies

1. Provide public facilities and encourage private community facilities in size, character, function, and location suitable to their user populations.
2. Encourage citizen participation and utilize professional expertise to determine needed and desired public and semi-public improvements.
3. Research alternative methods and manners of providing public and semi-public services and choose those most conducive to citizen needs and desires, considering sound budgetary practices.

4. For Township provided facilities, plan, locate, and provide public areas based on a long range general plan, short-range project plans, and capital improvements programming.
5. Assist and guide semi-public and citizen groups in their efforts of providing needed community facilities.

Natural Environment

Objective

To maintain and preserve sufficient open space and recreation facilities to satisfy the needs of Township residents.

Policies

1. Implement land use patterns which will ensure sufficient open space to serve the needs of the future population and which will protect essential natural resources.
2. Encourage patterns of development which will maximize environmental protection and compatibility while striving to meet the Township's social and economic needs, by recognizing the fact that natural resources are a vital community benefit.
3. Evaluate all future development and redevelopment in terms of protecting and enhancing the natural environment including, but not limited to, air and water quality.
4. Adopt protection ordinances for wetlands, woodlands, and other important environmental features.

Planning and Zoning

Objective

Coordinate land development through the planning process.

Policies

1. Require land use proposals to be consistent with the future land use plan and in compliance with local land development codes.
2. Require that all requests for development including zoning changes, site plans, lots splits and proposed plats to be submitted to the Township administration for comment, prior to the final review by the approval body.
3. Grant variance requests only upon a showing that a practical difficulty exists; deny variances requests when the hardship is self-imposed.
4. Regularly contact public and private agencies and organizations which are involved in local planning and development to coordinate planning functions, responsibilities, and implementation measures.
5. Update the Zoning Ordinance at regular intervals to incorporate possible new zoning techniques, as well as to adopt amendments required by new enabling law or court decisions.
6. Establish an annual planning meeting comprised of Township Board members, Planning Commissioners, and Board of Appeal representatives to discuss mutual areas of concern and to devise improvement strategies.

The proposals enumerated above for Thetford Township are guidelines for the future development of the Township. If the planning program is to be more than a confusion of varied opinions, it is essential that these goals and objectives be seriously considered. They will help maintain an orderly, prosperous, and attractive development pattern in the Township. These statements are suggested as a starting point for the Township officials. As the planning process progresses, the goals, objectives, and policies may be altered and new ones formed. Thus, these recommendations are flexible and need constant attention. It is recommended that the goals, objectives and policies be reviewed and updated as necessary, and adopted on an annual basis.

CONCEPT DEVELOPMENT PLAN

INTRODUCTION

The Township's comprehensive plan is the official statement of the goals and policies that express a vision about the future of a community. The plan must also address important physical aspects of the Township since the built environment directly affects the social and economic well being of its citizens. Of particular concern to the Township is the potential for urban design along its major travel patterns taking the form of "strip commercial" development. This chapter will focus on this issue in relation to three of the Township's primary roads: Vienna Road, Saginaw Street, and Dort Highway.

ROADWAY CHARACTERISTICS

The success of strip centers obviously depends on the mix and quality of the uses located within the area. However, there are certain development factors which influence whether such an area will attain its optimum use potential. The most influential factor affecting strip centers is accessibility.

Strip uses are established in the belief that their dollar volume of business is directly proportional to the flow of traffic on the roadway which they front. The ability of traffic to flow at its highest efficiency is predicated to a great extent upon the ability of traffic to move as unrestricted as practical. Roads where traffic controls, intersections, and turning movements are few, plus where the road is straight and smooth, will move traffic with little difficulty, and thus carry more traffic.

A detailed examination of the roadway characteristics of Vienna Road, Saginaw Street, and Dort Highway is beyond the scope of this study; however, IMPACT, along with traffic engineers from Wade, Trim & Associates, Inc., have reviewed these arterials and have identified the problems associated with strip development most likely to affect Thetford Township along these routes. These are presented below.

PROBLEM IDENTIFICATION

The Planning and Design Standards chapter recommended that commercial development be clustered in planned shopping centers to avoid the problems associated with strip development.

The mixture of uses, typical of strip development, can promote an image of visual clutter, including unattractive facades, sign blight, and few aesthetic amenities. This creates a negative community image to passersby. Furthermore, being improperly planned, with its many individual buildings constructed separately, make a comprehensive security program more difficult to operate.

Strip commercial uses also generally result in shallow lot development, which restricts the amount of desirable parking and loading area, and requires shoppers to drive from one store location to another. This situation creates the need for excessive curb-cuts.

Excessive curb-cuts influence turning movement decisions of motorists. Multiple "decision points" can cause motorists to become confused, thus increasing the accident potential of a trafficway. Accident potential is also heightened by increasing the number of turning movements from or onto the adjacent thoroughfare, as well as by promoting fast-moving through-traffic conflicts with local circulation. This situation can limit the carrying capacity of the adjacent roadway. The resultant congestion can actually produce a decline in property values and retail sales for abutting commercial properties.

Saginaw Street, and to a lesser extent, Dort Highway exhibit each of these traits. A mixture of incompatible land uses, limited parking areas, and numerous curb-cuts are evident. If this unregulated roadside development is permitted, the efficiency of the highway system becomes impaired, creating a need to upgrade the adjacent arterial. Such improvement is already occurring along Saginaw Street. Most farsighted investors realize that it is in their best interest to have a program of regulation in effect that will maintain a balance between the traffic carrying capacity of the highway and the development of the adjacent land. It is only in this manner that their long term investment can be protected from the premature obsolescence of the roadway.

LAND USE REGULATION

There are a number of ways in which roadside development can be regulated. Some of the more significant ones are:

1. **By limiting the intensity of use.** Generally the more intense the use of the land, the more intense will be the use of the roads serving it. This applies to both residential and nonresidential uses.
2. **By restricting the type of use(s) permitted.** Land uses with high traffic generation potentials and low social utility (i.e., drive-in theaters), should be discouraged.
3. **By requirements of sufficient setbacks, off-street loading and parking facilities.** These requirements are usually a part of the Zoning Ordinance.
4. **By controlling the placement of different types of uses in relation to the road system.** A balance should be struck between the locational requirements for accessibility to the road system and the use(s) traffic generating potentials.

Legislation has recently been passed by both the House of Representatives and Senate at the state level which would amend the Township Planning Act by requiring all site plans to comply with "area plans" prepared and adopted by the community. The Governor signed this legislation into effect as Act No. 73 on June 27, 1987. Thus, the placement of specific uses can now be controlled.

VIENNA ROAD CONCEPT PLAN

IMPACT has selected Vienna Road as the corridor for completing a Concept Development Plan. In our estimate, it is the most likely candidate for new growth for several reasons. First, this corridor is served by a sanitary sewer system which can accommodate intensive land development. Secondly, Vienna Road is a state trunkline (M-57) which connects M-15 and I-75. Thus, it is a regional transportation link carrying a consistently high volume of traffic. Thirdly, urban development along this route has historically migrated from downtown Clio, to the east. This trend is expected to continue. Finally, a review of the property layout pattern along this corridor indicates that there remains a number of large and vacant parcels. This facilitates land assembly, and land development.

Urban Design Criteria

Project area planning ensures that land development will occur in a complete, orderly and systematic manner. It is principally concerned with factors that affect community appearance and how people see and respond to the physical environment. Development proposals must be cognizant of the image it conveys to passersby and local consumers. It is the character, and later its recall, which finalizes the image of the area in people's minds.

Character is a physical phenomenon made up of large series of elements within the context of scalar relationships. Included are building masses and distribution of uses, landscaping, open space preservation, and other aspects of the structural environment.

In "corridor planning", scale is significantly more important than detailed architectural character. This is due to the fact that when in a moving vehicle, the individual cannot visually absorb architectural details quickly. Yet he does perceive the spatial continuity resulting from the physical and natural closure of the sides, as well as the overall impression of its quality. Thus, it is more important to "infill" using building masses and landscape forms than to worry about smaller scaled details.

Prior to the presentation of specific recommendations for Vienna Road, it is necessary to establish a set of urban design criteria which will govern plan proposals. Ten major criteria have been established for this plan. They are:

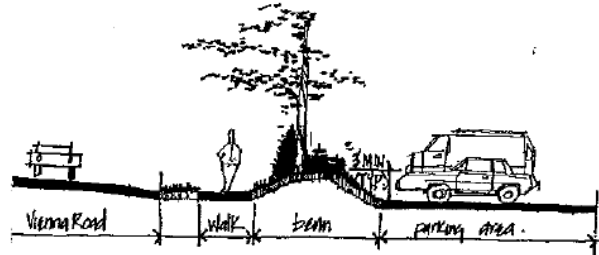
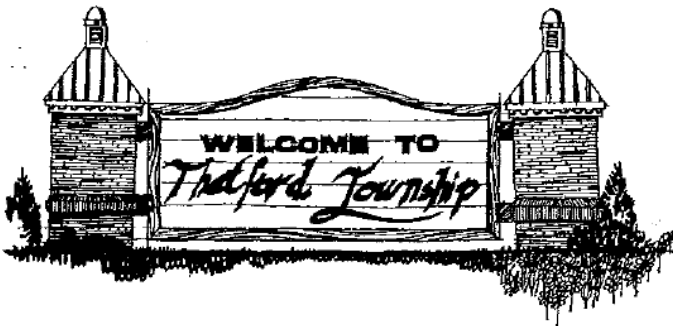
1. Design proposals must consider both linear and vertical dimensions to ensure that the integrity of human scale is maintained;
2. Residences and nonresidential uses should be separated by distance or buffering devices;
3. Landscape elements should be distributed. All areas of building sites should receive attention, including the building perimeter, street edge, and rear yard;
4. The number of vehicle access points to the sites must be minimized to reduce accident potential and increase traffic flow;
5. Contrasts between differing land uses should be minimized to convey an image of a uniform and related urban environment;

6. Parking needs should be determined by relating the specific use to the Zoning Ordinance requirements for parking for that type of use. Overflow parking should be provided, where permissible;
7. Proposed building and parking arrangements should give optimum consideration to grouping of buildings and parking in order to attract the consumer, provide convenience to the employer, and support optimum vehicle movement between uses;
8. New buildings should respect the height, width, and setbacks of surrounding buildings;
9. Significant environmental features must be protected in the development of land use proposals;
10. Small and/or irregular shaped lots under separate ownership should be assembled into parcels large enough to accommodate appropriate development and to attract private investment.

Development Proposals

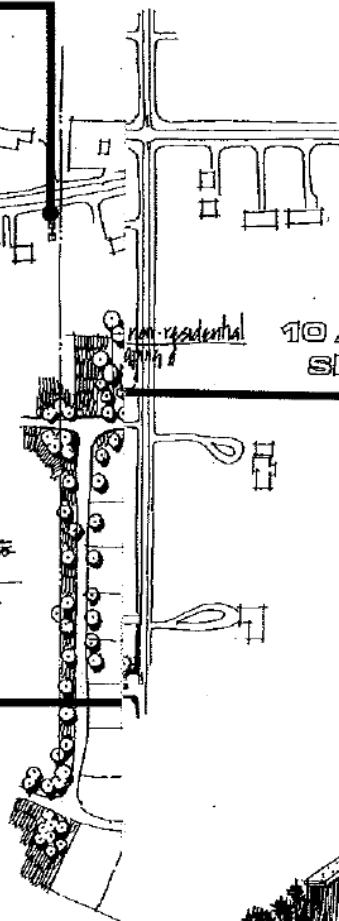
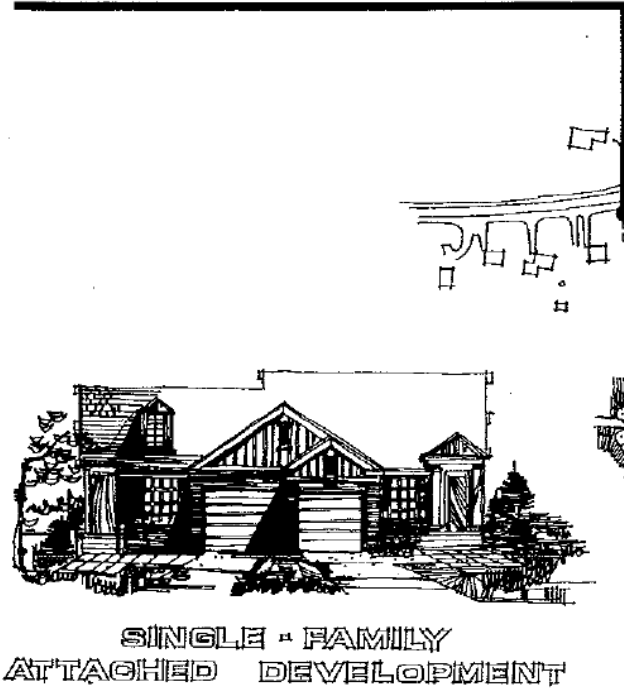
The Concept Development Plan prepared for Vienna Road is presented below. It incorporates several different types of land uses.

The plan recognizes the major existing land developments along this route. These include the Hawthorne Heights Subdivision along Berkshire Drive, Vienna Greens Golf Course, and Leisure Days Recreation Vehicle Sales.



IMPROVING OF OFF-STREET PARKING

COMMUNITY IDENTIFICATION SIG



10 ACRE CONVENIENCE SHOPPING CENTER



RENTAL CLUSTER TOWNHOUSE DEVELOPMENT

THE PREPARATION OF THIS PLAN WAS FINANCED THROUGH A GRANT PROVIDED UNDER TITLE I OF THE HOUSING AND COMMUNITY DEVELOPMENT ACT OF 1974, AS AMENDED. THE GRANT WAS ADMINISTERED BY THE GENESSEE COUNTY COMMUNITY DEVELOPMENT PROGRAM.



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The plan also addresses recommended future land use needs. A neighborhood shopping center for the Township's north end is shown (see Table 47). Higher valued rental housing, in the form of cluster townhouse development, has been provided east of the golf course (see Table 20). A single-family attached development is illustrated east of the Hawthorne Heights Subdivision as a means of satisfying the immediate need of providing smaller, less expensive single-family houses. Large lot single-family development is proposed north of Vienna Road.

The proposals also address the policies of the previous chapter. These include: providing a diversity of land uses; using innovative development techniques (i.e., attached single-family and cluster housing development); discouraging the random development of single-family homes along section line roads; clustering commercial uses at intersections; limiting the number of entrances and exits along section line roads as a means of reducing traffic conflicts; and employing transitional land development and buffering devices (walls, landscaping, etc.) to encourage a compatible relationship between residential and nonresidential properties.

FUTURE LAND USE PLAN

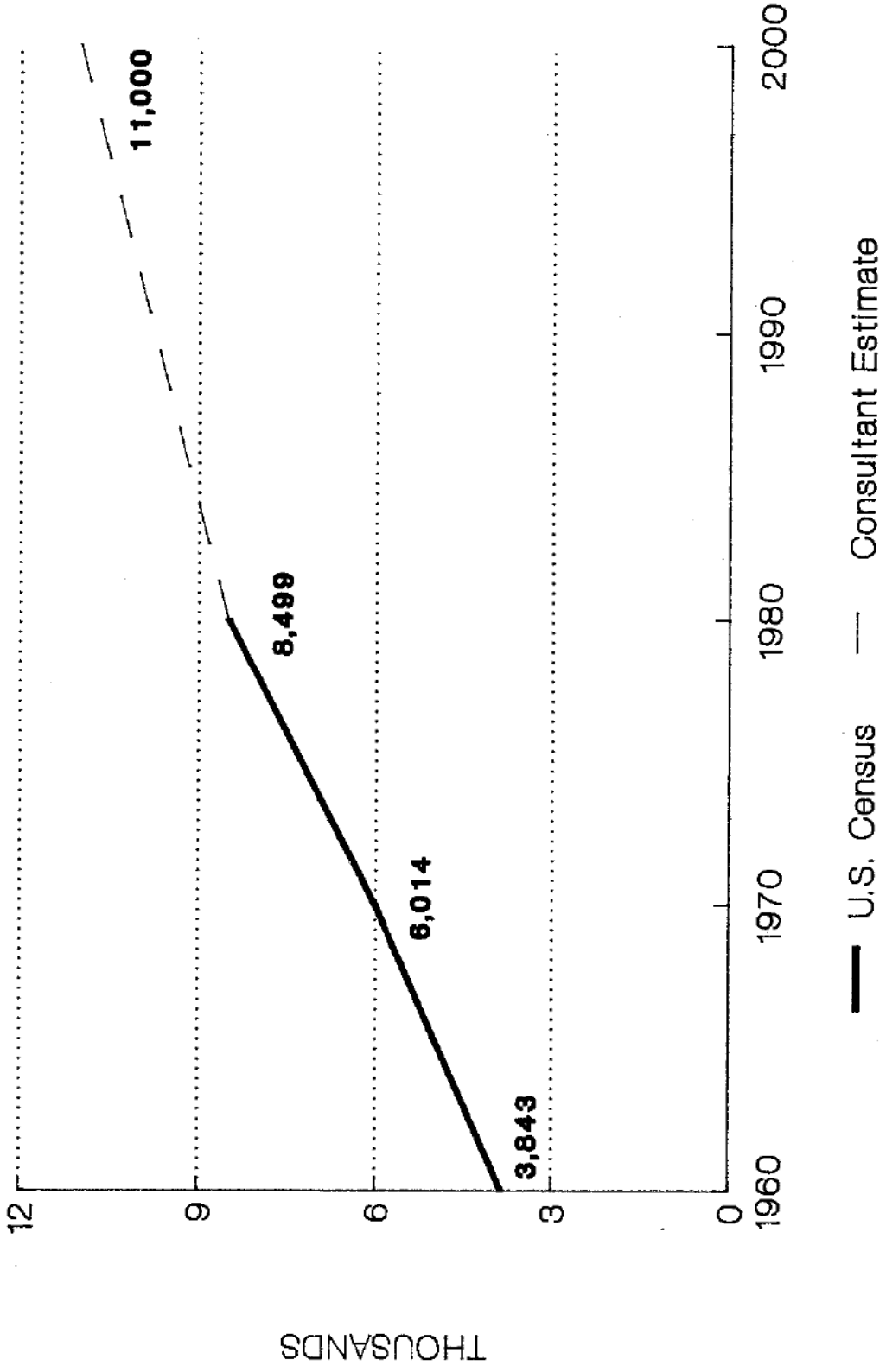
INTRODUCTION

The Future Land Use Plan is designed to serve as a guide for future development. If it is to serve the needs of the community and function effectively, it must incorporate several important characteristics.

1. **The Plan Must Be Generalized.** The Plan, by its very nature, cannot be implemented immediately. Therefore, only generalized locations (not necessarily related to property lines) for various land uses are indicated on the Plan.
2. **The Plan Should Embrace An Extended But Foreseeable Time Period.** The Plan depicts land uses and community development strategies through the Year 2000.
3. **The Plan Should Be Comprehensive.** The Plan, if it is to serve its function as an important decision-making tool, must give adequate consideration to the sensitive relationships which exist between all major land use categories, including environmentally sensitive properties.
4. **The Plan Should Acknowledge Regional Conditions and Trends.** Thetford Township is an integral part of the Flint Region; therefore, the Plan should acknowledge the Township's regional context. Through recognition of regional implications, the Township's Future Land Use Plan will be more realistic and reasonable in terms of guiding the future utilization of land resources in the Township.
5. **The Plan Must Be Flexible.** The Plan may require periodic revisions to reflect significant changes in local, state, or national conditions which cannot be foreseen at this time.

Population Trends

Thetford Township, Genesee County



INCOME CHARACTERISTICS

One of the most important determinants of the economic vitality and potential of a community is the income available to its residents. Data presented below analyze the per capita, family and household income characteristics of Thetford Township residents.

Per Capita, Family and Median-Household Income

Data in Table 10 compare per capita, family and median-household income between Genesee County and the Township for the Year 1979, the most recent year comparable data are available.

The County's 1979 per capita income of \$7,951 was \$330 or 4.3 percent greater than Thetford Township's per capita income. The Township's 1979 median-family income of \$25,051 was \$1,334 or 5.3 percent greater than Genesee County's median-household income for the same year. Genesee County's median household income was \$2,512 (10.7 percent) less than Thetford Township's median-household income of \$23,508. This pattern can be explained, to a large extent, by the fact that the Township has a higher persons per household and family ratio than the County and that the County, on a per capita basis, has a higher proportion of its population employed in higher wage occupations and industries. This relationship will be presented in the Labor Force Characteristics chapter.

TABLE 10
 PER CAPITA, MEDIAN FAMILY AND
 MEDIAN HOUSEHOLD INCOME COMPARISON
 THETFORD TOWNSHIP, GENESEE COUNTY, MICHIGAN
 1979*

<u>INCOME CATEGORY</u>	<u>THETFORD TOWNSHIP</u>	<u>GENESEE COUNTY</u>	<u>DIFFERENCE</u>	
			<u>NUMBER</u>	<u>PERCENT</u>
Per Capita ^a	\$ 7,621	\$ 7,951	\$ 330	4.3
Median Family ^a	\$25,051	\$23,717	\$1,334	5.3
Median Household ^a	\$23,508	\$20,996	\$2,512	10.7

*Analysis by IMPACT: Improved Planning Action.

^aData from 1980 U.S. Census, General Social and Economic Characteristics, Michigan.

Family Income Distribution

There are 2,272 families in Thetford Township. Data in Table 11 show the distribution of families by income category by Township subarea. The Township Census Tract Map (Map 7), identifies the location of each area. Approximately 13 percent of all families have an annual income of less than \$10,000. Almost 35 percent of all families have incomes of less than \$20,000. This data suggests that a significant portion of the Township's population can be classified as low and moderate income. Data in Table 12 confirm this assumption.

The Genesee County Metropolitan Planning Commission has authorized Public Demographics, Inc., to calculate and identify through a U.S. Department of Housing and Urban Development approved eligibility methodology, the number of low and moderate income persons in each Census Tract by GDP (Census Designated Place). This data is displayed in Table 12.

This data is essential in determining "project eligibility areas" under the Community Development Block Grant Program.

CDBG is a flexible program designed to provide financing for activities previously eligible under separate categorical grant programs, such as water and sewer grants, urban renewal, and housing rehabilitation loans or grants.

Metropolitan cities and qualified urban counties are guaranteed an amount called an "entitlement." Thetford Township is part of Genesee County's CDBG program. Smaller communities compete for the remaining "discretionary" funds. This competition is better known as the "Small Cities" program which is administered by the Michigan Department of Commerce. A community participating in an urban county CDBG program is ineligible to enter into the Small Cities competition.

TABLE 11

COUNT OF FAMILIES BY FAMILY INCOME
 THETFORD TOWNSHIP, GENESEE COUNTY, MICHIGAN
 1979*

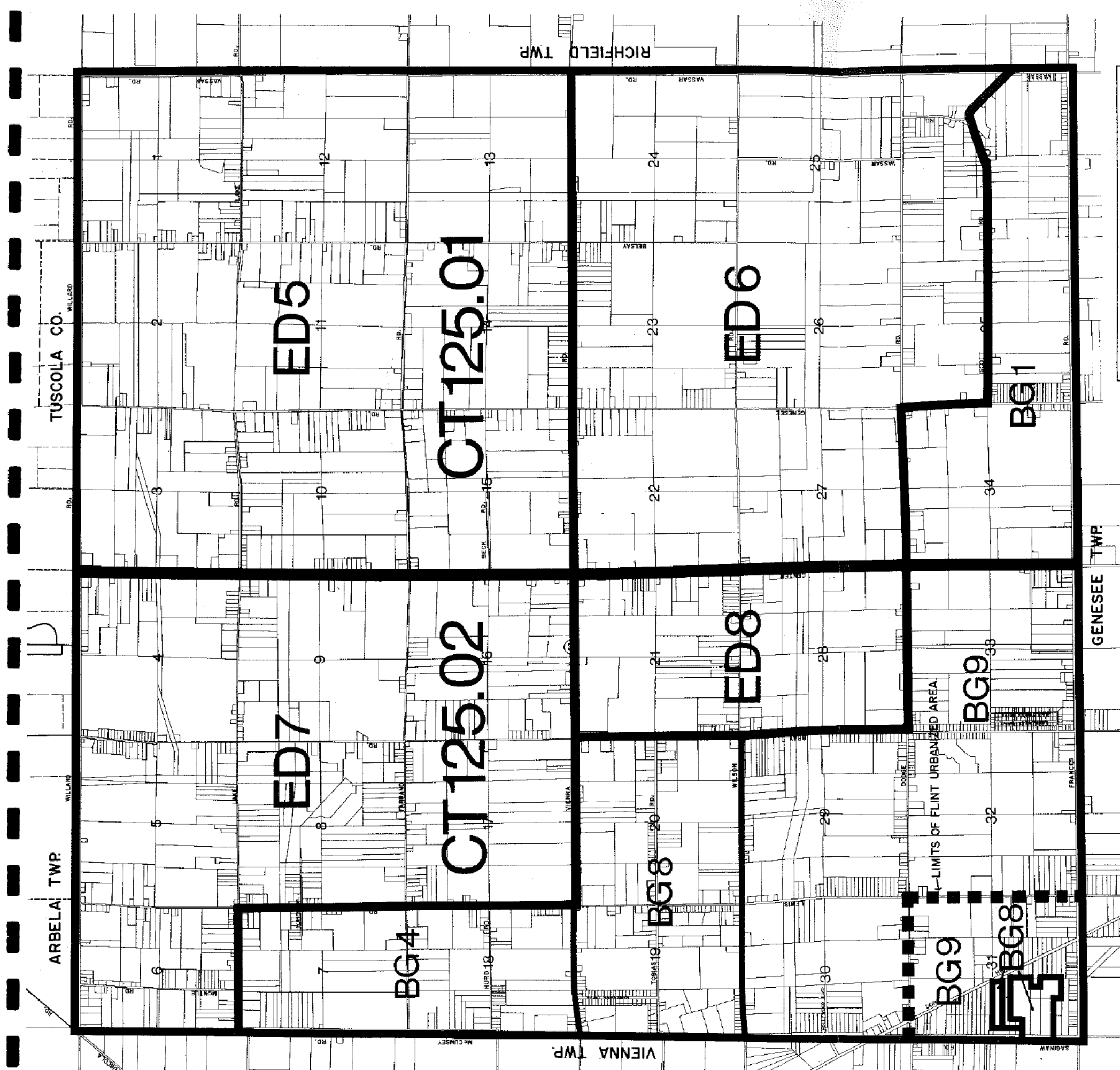
FAMILY INCOME(a)	CENSUS TRACT 125.02 UA		CENSUS TRACT 125.01		
	BG 8	BG 9	BG 1	ED 5	ED 6
Less than \$5,000	38	9	0	17	0
\$5,000 to \$9,000	29	22	0	33	10
\$10,000 to \$14,999	34	5	8	12	22
\$15,000 to \$19,999	69	20	28	52	18
\$20,000 to \$24,999	81	20	0	48	6
\$25,000 to \$34,999	103	61	44	59	75
\$35,000 to \$49,999	11	11	22	69	71
\$50,000 or more	8	0	9	6	8
TOTAL FAMILIES	373	148	111	296	210
MEDIAN INCOME	\$21,086	\$24,286	\$29,417	\$24,028	\$31,302

FAMILY INCOME(a)	CENSUS TRACT 125.02					TOTAL	
	BG 4	BG 8	BG 9	ED 7	ED 8	NUMBER	PERCENT
Less than \$5,000	0	8	5	41	0	118	5.2
\$5,000 to \$9,999	14	0	26	39	7	180	7.9
\$10,000 to \$14,999	0	31	35	23	5	175	7.7
\$15,000 to \$19,999	16	33	27	44	8	315	13.9
\$20,000 to \$24,999	25	26	56	56	26	344	15.1
\$25,000 to \$34,999	33	68	109	124	15	691	30.4
\$35,000 to \$49,999	8	7	72	78	18	367	16.2
\$50,000 or more	6	9	9	22	5	82	3.6
TOTAL FAMILIES	102	182	339	427	84	2,272	100.0
MEDIAN INCOME	\$24,231	\$23,654	\$26,830	\$25,820	\$24,286	\$25,051	

*Analysis by IMPACT: Improved Planning Action

(a)Data from the Michigan Metropolitan Information Center, U.S Census STF file data request.

Note: UA represents "urbanized area."



ARBELLA TWP.

TUSCOLA CO.

VIENNA TWP.

GENESEE TWP.

RICHFIELD TWP.

CT 125.01

CT 125.02

ED5

ED6

ED7

ED8

BG4

BG8

BG1

BG9

BG9

BG10

LIMITS OF FLINT URBANIZED AREA

THE PREPARATION OF THIS PLAN WAS FINANCED THROUGH A GRANT PROVIDED UNDER TITLE I OF THE HOUSING AND COMMUNITY DEVELOPMENT ACT OF 1974, AS AMENDED. THE GRANT WAS ADMINISTERED BY THE GENESSEE COUNTY COMMUNITY DEVELOPMENT PROGRAM.

DECEMBER 1986

CT 125.01 CENSUS TRACT NUMBER

ED 6

ENUMERATION DISTRICT NUMBER

BG 9

BLOCK GROUP NUMBER

7. CENSUS TRACTS

THETFORD TOWNSHIP, GENESEE COUNTY, MICHIGAN

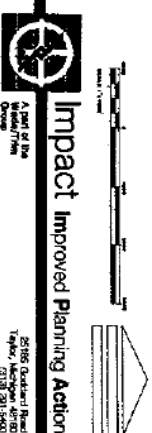


TABLE 12

COUNT OF LOW AND MODERATE INCOME POPULATION
 BY TOWNSHIP CENSUS DESIGNATED PLACE,
 THETFORD TOWNSHIP, GENESEE COUNTY, MICHIGAN*

	<u>AREA</u>	<u>TOTAL POPULATION</u>	<u>LOW AND MODERATE POPULATION</u>	<u>PERCENT LOW AND MODERATE</u>
Tract	125.01	2,174	643	29.58
Place	Block			
	BG-1	381	101	26.51
	101	8	S	S
	102	127	31	24.41
	103	5	S	S
	104	167	44	26.35
	105	39	12	30.77
	106	35	13	37.14
Place	ED			
	5	1,097	382	34.82
	6	696	164	23.56
Tract	125.02	4,304	1,196	27.79
Place	Block			
	BG-4	377	101	26.79
	401	136	45	33.09
	402	92	20	21.74
	403	144	35	24.31
	404	5	S	S
	BG-8	688	147	41.59
	801	156	35	22.44
	802	175	32	18.29
	803	103	26	25.24
	804	105	22	20.95
	805	50	8	16.00
	806	10	S	S
	807	89	24	26.97
	BG-9	1,309	339	30.90
	913	334	96	28.74
	914	26	0	0.00
	915	100	34	34.00
	916	1	S	S
	919	340	52	15.29
	920	135	52	38.52
	921	152	57	37.50
	922	221	48	21.72

TABLE 12

COUNT OF LOW AND MODERATE INCOME POPULATION
 BY TOWNSHIP CENSUS DESIGNATED PLACE,
 THETFORD TOWNSHIP, GENESEE COUNTY, MICHIGAN*
 (Continued)

	<u>AREA</u>	<u>TOTAL POPULATION</u>	<u>LOW AND MODERATE POPULATION</u>	<u>PERCENT LOW AND MODERATE</u>
Place	ED			
	7	1,624	533	32.82
	8	306	76	24.84
Tract	125.02 UA			
Place	Block			
	BG-8	1,382	450	32.56
	*808	321	200	62.31
	809	109	S	S
	810	116	12	10.34
	*811	76	49	64.47
	812	164	S	S
	813	97	35	36.08
	814	0	0	--
	815	79	24	30.38
	816	184	69	37.50
	817	66	S	S
	818	74	S	S
	*819	96	61	63.54
	BG-9	597	350	58.62
	918	117	32	27.35
	948	480	318	45.42

*Compiled by IMPACT: Improved Planning Action

Note: Data from Public Demographics, Inc. Data used with permission. Block detail may not add to tract or block group totals due to rounding. "*" Identifies low and moderate qualified blocks - 51% or greater low and moderate income population. "S" identifies census suppression of data.

Eligibility is based upon family income limits. The Detroit area office of the U.S. Department of Housing and Urban Development (HUD) sets the income limits for the CDBG programs. These income limits are shown on Table 13.

Eligibility areas are defined as those districts within which reside 51 percent or more of the people having incomes characterized as low and moderate. Thus, data in Table 12 can be used to arrange various geographic groupings of contiguous tracts, block groups, and/or blocks for CDBG program targeting. Qualified blocks can be grouped with non-qualified blocks to form one CDBG service area if the resulting area is one contiguous piece of geography; however, the overall low and moderate income percentage for any such CDBG area must be 51 percent or greater. In addition, there is no limit to the number of blocks which can be grouped together for one such area; but, such grouping is permissible only if such assembly receives the benefit of the activity. In addition, public facility improvements (i.e., sewer and water lines, etc.) cannot occur on private property unless they are part of eligible rehabilitation and preservation activities or special economic development activities. (See 24 CFR, 570.202 and 570.203.)

Data in Table 14 reveal that two areas can qualify under the criteria defined above. The location of these CDBG eligibility areas are shown on Map 8. The Township should select the option which will meet their most pressing community development needs.

TABLE 13
 FAMILY INCOME LIMITS
 FOR THE
 COMMUNITY DEVELOPMENT BLOCK GRANT PROGRAM
 THETFORD TOWNSHIP, GENESEE COUNTY, MICHIGAN*

<u>MODERATE INCOME LIMITS</u>		<u>LOW INCOME LIMITS</u>	
<u>SIZE OF FAMILY</u>	<u>FAMILY INCOME</u>	<u>SIZE OF FAMILY</u>	<u>FAMILY INCOME</u>
1	\$17,850	1	\$11,150
2	20,400	2	12,750
3	22,950	3	14,350
4	25,500	4	15,950
5	27,100	5	17,250
6	28,700	6	18,500
7	30,300	7	19,800
8+	31,900	8+	21,050

*U.S. Department of Housing and Urban Development, Detroit Area Office, Economic and Market Analysis Division, July 19, 1986.

TABLE 14

CALCULATION OF CDBG PROJECT ELIGIBILITY AREAS
 THETFORD TOWNSHIP, GENESEE COUNTY, MICHIGAN*

OPTION A

	<u>AREA</u>	<u>TOTAL POPULATION^a</u>	<u>LOW AND MODERATE INCOME POPULATION^a</u>	<u>PERCENT LOW AND MODERATE INCOME^a</u>
Tract Place	125.02 UA Block			
	808	321	200	62.31
	811	76	49	64.47
	814	0	0	0
	819	96	61	63.54
	948	480	218	45.42
Tract Place	125.02 Block			
	914	26	0	0
	915	100	34	34.00
	916	<u>1</u>	<u>5</u>	<u>5</u>
	TOTAL	1,100	562	51.09

OPTION B

	<u>AREA</u>	<u>TOTAL POPULATION</u>	<u>LOW AND MODERATE INCOME POPULATION</u>	<u>PERCENT LOW AND MODERATE INCOME</u>
Tract Place	125.02 UA Block			
	808	321	200	62.31
	811	76	49	64.47
	814	0	0	0
	819	96	61	63.54
	918	117	32	27.35
	948	480	218	45.42

TABLE 14

CALCULATION OF CDBG PROJECT ELIGIBILITY AREAS
 THETFORD TOWNSHIP, GENESEE COUNTY, MICHIGAN*
 (Continued)

OPTION B

	<u>AREA</u>	<u>TOTAL POPULATION^a</u>	<u>LOW AND MODERATE INCOME POPULATION^a</u>	<u>PERCENT LOW AND MODERATE INCOME^a</u>
Tract	125.02			
Place	Block			
	916	<u>1</u>	<u>S</u>	<u>S</u>
	TOTAL	1,091	560	51.32

*Analysis by IMPACT: Improved Planning Action.

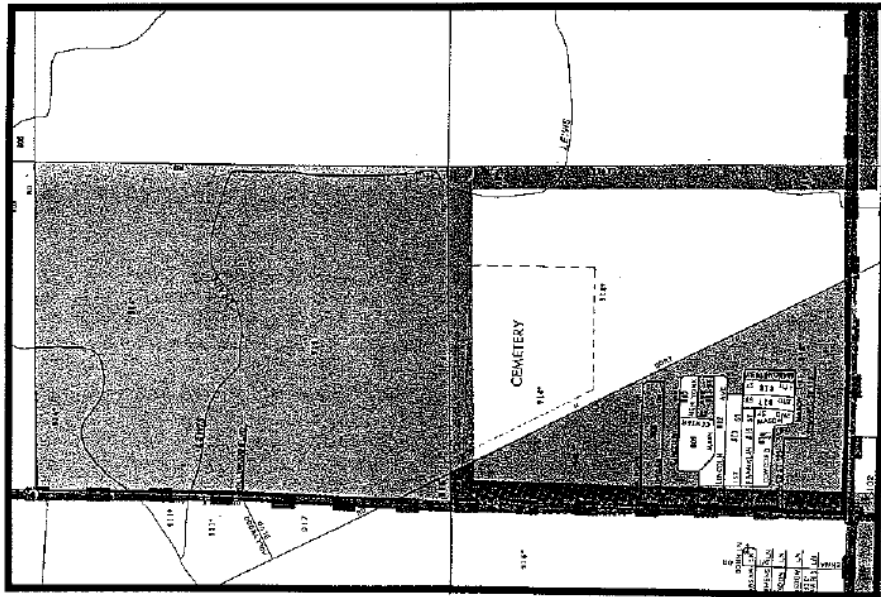
^aData from Table 12.

(S)Identifies data supression envoked; calculated as 0.

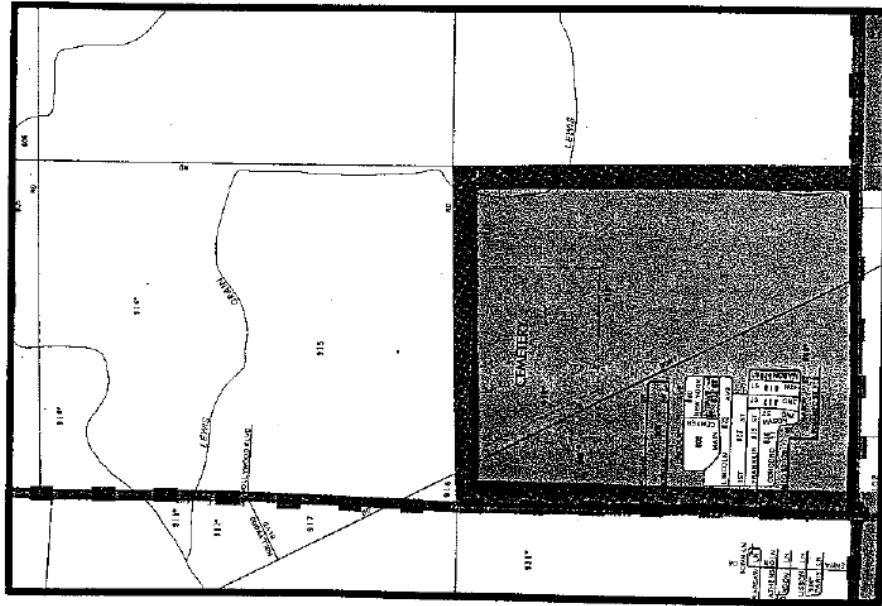
Note: The overall low and moderate income percentage to qualify under the CDBG program must be 51 percent or greater of the total population.

CDBG PROJECT ELIGIBILITY AREAS

OPTION A



OPTION B



**THETFORD TOWNSHIP
GENESEE COUNTY, MICHIGAN**

Poverty Status

In order to maintain the confidentiality promised respondents and required by law, the U.S. Census Bureau withholds or suppresses tabulations of characteristics of very small groups of people. Thus, published data on low and moderate income characteristics by race or age at the Township subarea level are not available. One indicator which can be used to identify such groups is poverty status.³

According to the 1980 U.S. Census data, there are 607 persons in the Township who are in poverty. This represents 7.1 percent of the Township's total population. Data in Table 15 reveal how this population is distributed by age group.

Contrary to what might be expected, only 6.3 percent of the population in poverty is composed of senior citizens. The majority of impoverished people (558 persons) are under 55 years of age, with 44.1 percent of this total (246 persons) composed of related children under 18 years of age. This data suggests that many of the people in poverty are likely to be single heads of households with children. Data in Table 16 indicate that 229, or 8.4 percent of all Township households are single parent households. The responsibilities of meeting financial obligations and

³The term poverty connotes a complex set of economic, social, and psychological conditions. The statistics presented in the report provide only estimates of economic poverty based upon the receipt of money income before taxes. Non-money income is not considered in determining poverty status. For a detailed explanation of the poverty definition see Current Population Reports, Characteristics of the Population Below the Poverty Level: 1980, Series P-60, No. 133.

TABLE 15

COUNT OF PERSONS BELOW POVERTY LEVEL, BY AGE
 THETFORD TOWNSHIP, GENESEE COUNTY, MICHIGAN
 1980*

AGE GROUP (a)	CENSUS TRACT 125.02 UA		CENSUS TRACT 125.01				
	BG 8	BG 9	BG 1	ED 5	ED 6		
Under 55 years	157	28	--	33	26		
55 - 59 years	5	--	--	--	6		
60 - 64 years	--	--	--	--	--		
65 years +	5	--	--	14	12		
TOTAL	167	28	--	47	44		

AGE GROUP(a)	CENSUS TRACT 125.02					TOTAL	
	BG 4	BG 8	BG 9	ED 7	ED 8	NUMBER	PERCENT
Under 55 years	34	31	36	206	7	558(b)	91.9
55 - 59 years	--	--	--	--	--	11	1.8
60 - 64 years	--	--	--	--	--	0	--
65 years +	--	--	--	7	--	38	6.3
TOTAL	34	31	36	213	7	607	100.0

*Analysis by IMPACT: Improved Planning Action.

(a)Special request of the Michigan Metropolitan Information Center, from 1980 U.S. Census STF computer file. Poverty thresholds for one person family units are \$4,774 for persons under 65 years of age and \$3,479 for persons 65 years of age and older.

(b)According to the 1980 U.S. Census, General Social and Economic Characteristics, Michigan, 441 percent of this total (246 people) are related children under 18 years of age.

TABLE 16

COUNT OF HOUSEHOLDS BY PRESENCE OF CHILDREN
THETFORD TOWNSHIP, GENESEE COUNTY, MICHIGAN
1980*

HOUSEHOLD TYPE (a)	CENSUS TRACT 125.02 UA		CENSUS TRACT 125.01		
	BG 8	BG 9	BG 1	ED 5	ED 6
Married Couple Family					
With Own Children	140	42	60	163	98
Without Own Children	139	73	37	113	108
Family, Male HHLDR, No Wife					
With Own Children	5	--	--	6	--
Without Own Children	6	--	--	--	--
Family, Female HHLDR, No Husband					
With Own Children	71	27	6	4	4
Without Own Children	12	6	8	10	--
Nonfamily Household	<u>166</u>	<u>92</u>	<u>26</u>	<u>24</u>	<u>41</u>
TOTAL HOUSEHOLDS	539	240	137	320	251

HOUSEHOLD TYPE (a)	CENSUS TRACT 125.02					TOTAL	
	BG 4	BG 8	BG 9	ED 7	ED 8	NUMBER	PERCENT
Married Couple Family							
With Own Children	68	123	203	276	47	1,220	44.3
Without Own Children	23	55	102	87	26	763	27.7
Family, Male HHLDR, No Wife							
With Own Children	--	--	4	9	--	24	0.9
Without Own Children	--	--	--	--	--	6	0.2
Family, Female HHLDR, No Husband							
With Own Children	11	4	19	55	4	205	7.5
Without Own Children	--	--	11	--	7	54	2.0
Nonfamily Household	<u>7</u>	<u>11</u>	<u>42</u>	<u>60</u>	<u>11</u>	<u>480</u>	<u>17.4</u>
TOTAL HOUSEHOLDS	109	193	381	487	95	2,752	100.0

*Analysis by IMPACT: Improved Planning Action.

(a)Special request data provided by the Michigan Metropolitan Information Center, from 1980 U.S. Census STF file.

Note: A family consists of a householder and one or more persons living in the same household who are related to the householder by birth, marriage, or adoption. Nonfamily households are composed of groups of unrelated individuals.

balancing the commitments of career and children make such families ill-equipped to bear the burden of rising housing costs or of supporting additional public sector revenue requests. Special care must be taken to ensure that their specialized needs are addressed as part of the land planning program.

Persons in poverty can be found throughout the Township, with the greatest concentration residing in Census Tract 125.02, ED7.

Data in Table 17 document the distribution of persons in poverty by race. It is clearly evident that nearly all persons in poverty are white; however, 15.5 percent of the Township population in poverty is nonwhite. Most of these persons are in Census Tract 125.01, ED5, and Census Tract 125.02, BG9. Due to data suppression requirements, it is not possible to determine the racial characteristics of those minority persons for whom poverty status was determined.

TABLE 17

COUNT OF PERSONS IN POVERTY, BY RACE
 THETFORD TOWNSHIP, GENESEE COUNTY, MICHIGAN
 1980*

PERSONS BELOW POVERTY LEVEL (a)	CENSUS TRACT 125.02 UA		CENSUS TRACT 125.01		
	BG 8	BG 9	BG 1	ED 5	ED 6
White	158	26	0	S	44
Black	S	--	0	S	--
American Indian, Eskimo, and Aleut	S	--	0	S	--
Asian and Pacific Islander	S	--	0	S	--
TOTAL	167	36	0	47	44

PERSONS BELOW POVERTY LEVEL (a)	CENSUS TRACT 125.02					TOTAL	
	BG 4	BG 8	BG 9	ED 7	ED 8	NUMBER	PERCENT
White	34	31	S	213	7	513	84.5
Black	--	--	S	--	--		
American Indian, Eskimo, and Aleut	--	--	S	--	--	94 (Nonwhite)	15.5
Asian and Pacific Islander	--	--	S	--	--		
TOTAL	34	31	28	213	7	607	100.0

*Analysis by IMPACT: Improved Planning Action.

(a) Persons for whom poverty status is determined.

(S) Data suppressed to maintain confidentiality.

Source: Special request of the Michigan Metropolitan Information Center, from 1980 U.S. Census STF file.

HOUSING CHARACTERISTICS

INTRODUCTION

This chapter details the characteristics of Thetford Township's housing stock by type, age, value, occupancy characteristic, and other indices. Such an analysis is essential in determining the type of new housing which should be built in the Township and, to a large extent, it is the characteristics of the existing structures which will determine what can be built and marketed in the future.

HOUSING ATTRIBUTES

Type of Structure

Data in Table 18 describe the type of structures which exist in the Township as of 1980. Overall, the housing stock is characterized by single-family homes. In 1980, a total of 70.6 percent of the Township's homes were of the one-family variety. Only a small portion of the housing stock was composed of duplexes or triplexes and quadplexes. They represented 2.1 percent of the available year-round housing units. Thetford Township also has a significant number of its dwelling units in multiple-family units. Approximately 7.0 percent of its housing supply existed in structures containing five or more units. There were 578 mobile homes or trailer units in Thetford Township in 1980, accounting for about 20 percent of the available housing supply.

TABLE 18
 TYPE OF STRUCTURE
 YEAR-ROUND HOUSING UNITS
 THETFORD TOWNSHIP, GENESEE COUNTY, MICHIGAN
 1980*

<u>UNIT TYPE</u>	<u>NUMBER</u> ^a	<u>PERCENT</u>
1, Detached	1,984	70.4
1, Attached	5	0.2
2, Duplex	26	0.9
3 and 4	32	1.2
5 or more	192	6.8
Mobile Home/Trailer	<u>578</u>	<u>20.5</u>
TOTAL	2,817	100.0

*Analysis by IMPACT: Improved Planning Action.

^aSpecial request data provided by the Michigan Metropolitan Information Center, from 1980 U.S. Census STF computer file.

Housing Tenure

Occupancy characteristics are presented in Table 19 and in the following diagram. Of the total 2,817 housing units, 2,815 are available for year-round living. About 96 percent of the housing units are occupied, with 86 percent of all dwelling units being owner-occupied. This is as expected, since the Township has a high proportion of single-family development.

It is important to recognize that the Township has a vacancy rate of 3.5 percent. Five percent of a community's habitable housing stock should remain vacant to provide diversity in housing selection, to permit housing rehabilitation or replacement activities, and to ensure asking prices for homes are indicative of actual market conditions, while at the same time protecting private investment. Vacancy rates below five percent (0-4 percent) demonstrate a restricted housing environment and afford little opportunity for interested households to acquire available units. Thus, it can be inferred that Thetford Township housing units are in demand, and that the available supply should be expanded, otherwise housing values will become inordinately inflated.

Unit Value

Housing costs in the region, as in other areas of the nation, have been rising rapidly in recent years. The gap between the cost of decent housing, particularly new housing, and what families can afford to pay is growing, resulting in increased numbers of people being priced out of the new housing market.

TABLE 19

OCCUPANCY CHARACTERISTICS, EXISTING HOUSING
 THETFORD TOWNSHIP, GENESEE COUNTY, MICHIGAN
 1980*

<u>CATEGORY</u>	<u>NUMBER^a</u>	<u>PERCENT OF TOTAL HOUSING UNITS</u>
Year-Round Housing Units	2,815	99.9
Occupied Housing Units	2,715	96.4
Owner-Occupied	2,426	86.1
Renter-Occupied	289	10.3
Vacant Housing Units	100	3.5
Vacant For Sale	27	0.9
Vacant For Rent	47	1.7
Other	26	0.9
Vacant Seasonal and Migratory	<u>2</u>	<u>0.1</u>
TOTAL HOUSING UNITS	2,817	100.0

*Analysis by IMPACT: Improved Planning Action.

^aData from the 1980 U.S. Census, General Housing Characteristics, Michigan.

According to a recent report prepared by MIT/Harvard Joint Center for Housing Studies entitled "Home Ownership and Housing Affordability in the United States," typical home buyers now spend nearly 32 percent of their gross incomes to own and maintain a home, compared with an average 26 percent in the 1970s (see Homeownership Costs diagram). In addition, the report indicates that the share of renters paying more than 25 percent of their incomes climbed to 60 percent in 1983, up from 40 percent in 1974.

Thetford Township is not immune from rising housing costs. Data in Table 20 show the median value of housing in the Township for the years 1970 and 1980 for owner- and renter-occupied units. Values are expressed in 1980 dollars. The cost of owner-occupied units has increased by \$10,787 (29.0 percent) over this 10-year period reaching a 1980 level of \$47,912. Contract rent has also increased by 29 percent (\$53) over the same period, reaching a 1980 level of \$235.

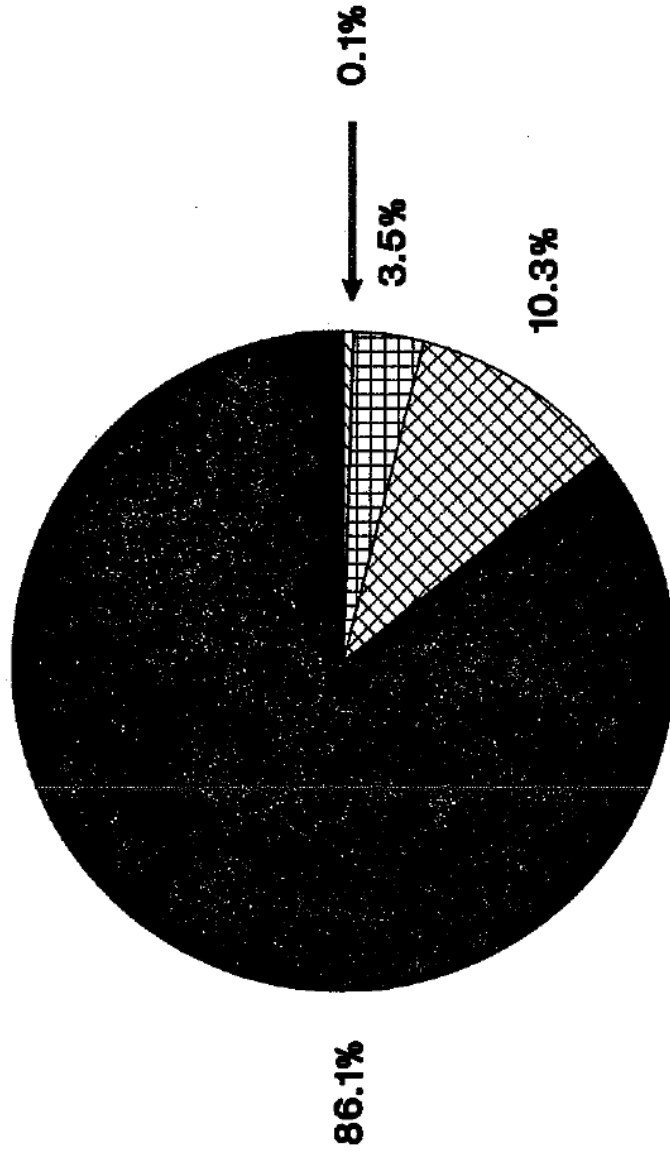
Data in Table 21 present, in detail, the housing sale and rent prices, respectively, for units sited in Thetford Township in 1980, as compared to Genesee County, Michigan.

The data provided in Table 21 reveal that Thetford Township can generally equal or command higher prices in the housing market as measured against Genesee County. This can be attributed to several factors.

The value of housing units in a community is related to the size, age and maintenance of the structures. Another factor which determines the value and enters into the supply and demand analysis is the location of the residential structure. The same house in the same community can vary in value by several thousand dollars based on whether it is north or south, east or west of a certain real or intangible barrier. Also, identical housing units vary in value from one community to another, based on the connotation that the community has developed as a "better" place in which to reside.

Housing Occupancy Characteristics

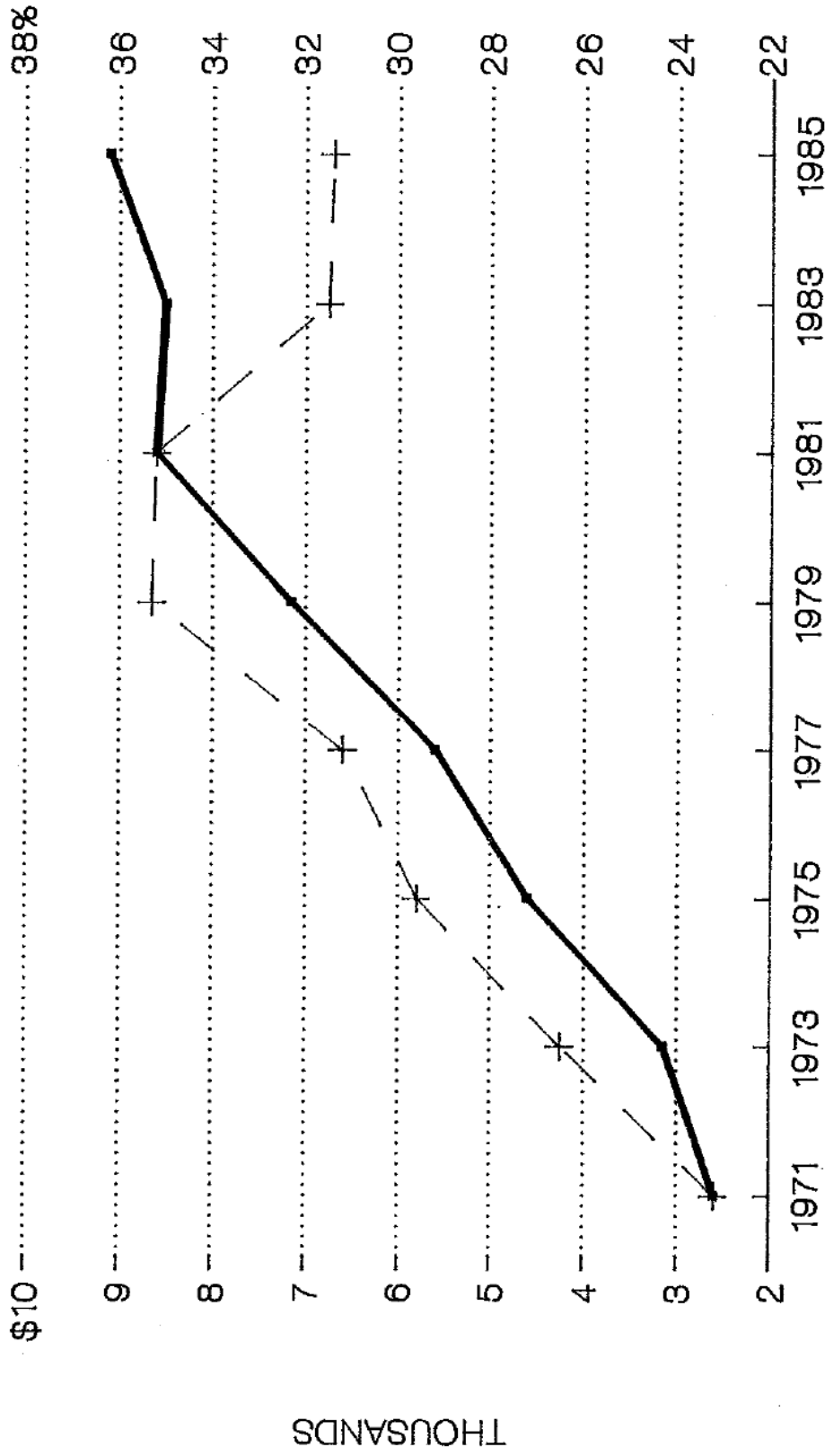
Theftord Township, Genesee County



- 86.1% Owner Occupied Housing Units**
- 10.3% Renter Occupied Housing Units**
- 3.5% Vacant Year-Round Housing Units**
- 0.1% Vacant Seasonal and Migratory Units**

Homeownership Costs

The Nation



— After-tax cash costs (ownership and maintenance) + Percent of income

Source: MIT/Harvard Joint Center for Housing Studies

TABLE 20
 MEDIAN VALUE OF HOUSING
 THETFORD TOWNSHIP, GENESEE COUNTY, MICHIGAN
 1970 - 1980*

CATEGORY	1970 ^a	1980 ^b	CHANGE 1970 - 1980	
			NUMBER	PERCENT
Median Value of Owner-Occupied Units	\$37,125	\$47,912	\$10,787	29.0
Median Value (Contract Rent) Renter-Occupied Units	\$ 182	\$ 235	\$ 53	29.1

*Analysis by IMPACT: Improved Planning Action.

^a 1970 U.S. Census data indicate the Township's 1969 median value of owner-occupied units approximates \$16,500 and median contract rent value approximates \$81 (consultant estimates). These figures have been updated by a factor of 2.25 to reflect the increase in the Consumer Price Index and to represent 1980 dollars. (CPI of 109.8 for 1969 and 246.8 for 1980; 1967 = 100.)

^b 1980 U.S. Census recorded the Township's 1979 median value of owner-occupied units as \$42,400 and median contract rent value as \$208. These figures have been updated by a factor of 1.13 to reflect the increase in the Consumer Price Index and to represent 1980 dollars. (CPI of 217.4 for 1979 and 246.8 for 1980; 1967 = 100.)

TABLE 21
HOUSING SALE PRICES
THETFORD TOWNSHIP, GENESEE COUNTY, MICHIGAN
1979*

<u>FINANCIAL CHARACTERISTICS</u>	<u>TOWNSHIP OF THETFORD</u>		<u>GENESEE COUNTY</u>	
	<u>NUMBER</u>	<u>PERCENT</u>	<u>NUMBER</u>	<u>PERCENT</u>
VALUE				
Specified Owner-Occupied Housing Units(a)	1,450	100.0	96,908	100.0
Less than \$10,000	17	1.2	1,841	1.9
\$10,000 to \$19,999	55	3.8	11,793	12.1
\$20,000 to \$29,999	200	13.8	23,283	24.0
\$30,000 to \$49,999	726	50.1	33,675	34.8
\$50,000 to \$99,999	449	30.9	24,226	25.1
\$100,000 to \$149,999	2	0.1	1,664	1.7
\$150,000 to \$199,999	---	---	288	0.3
\$200,000 or more	1	0.1	138	0.1
Median	\$42,400		\$35,500	
CONTRACT RENT				
Specified Renter-Occupied Housing Units(b)	250		37,317	
Less than \$50	1	0.4	306	0.8
\$50 to \$99	14	5.6	1,798	4.8
\$100 to \$149	15	6.0	3,871	10.3
\$150 to \$199	65	26.0	9,955	26.7
\$200 to \$249	126	50.4	11,210	30.1
\$250 to \$299	9	3.6	6,133	16.4
\$300 to \$349	2	0.8	1,940	5.2
\$350 to \$399	1	0.4	583	1.6
\$400 to \$499	4	1.6	323	0.9
\$500 or more	---	---	77	0.2
No Cash Rent	13	5.2	1,121	3.0
Median	208		208	

*Compiled by IMPACT: Improved Planning Action, from 1980 U.S. Census Data.

(a)Specified housing units include only one-family houses on less than 10 acres without a commercial establishment or medical office on the property.

(b)Contract rent is the monthly rent agreed to, or contracted for, regardless of any furnishing, utilities, or services that may be included. For vacant units, it is the rent asked for. Specified renter-occupied and specified vacant for rent units include all rental units except one-family houses on 10 or more acres.

All of these factors influence the unit value of the housing stock in Thetford Township to some degree; however, age of structures is undoubtedly the most influential.

Age of Structure

The age of a house is one factor used in the evaluation of the structural quality of the building. The average lifespan of a structure approximates 50 years, with some lasting longer while others deteriorate faster, depending upon the quality of construction and maintenance. Using this standard, many homes built in Thetford Township prior to 1940 should be approaching the end of their utility.

Data in Table 22 document the number of year-round housing units by year of construction. Nearly 70 percent were built since 1960 and about 49 percent were constructed since 1970. Conversely, only 12.3 percent of the homes were built before 1940. Thus, based upon this barometer alone, it can be inferred that the vast majority of the housing stock is structurally sound.

The number of housing units grew in the Township by over 86 percent between 1970 and 1980, over 40 points more than that of population growth during the same period of time. (See Table 4 and Table 23.) The significant growth in dwelling units and the comparatively smaller growth in the total population is explained by trends toward a smaller household size.

Recent Residential Activity

Residential construction activity in the Township has continued over the last six years. Data in Table 24 document the trends in new residential activity in the Township since the last U.S. Census (1980). This information is also compared in the following diagram.

TABLE 22

AGE OF STRUCTURE
 THETFORD TOWNSHIP, GENESEE COUNTY, MICHIGAN
 1980*

<u>YEAR STRUCTURE BUILT</u>	<u>NUMBER^a</u>	<u>PERCENT</u>
1970 to March, 1980	1,364	48.5
1979 to March, 1980	166	5.9
1975 to 1978	395	14.0
1970 to 1974	803	28.6
1960 to 1969	593	21.0
1950 to 1959	397	14.1
1940 to 1949	116	4.1
1939 or earlier	<u>345</u>	<u>12.3</u>
TOTAL YEAR-ROUND HOUSING UNITS	2,815	100.0

*Analysis by IMPACT: Improved Planning Action.

^aSpecial request data provided by the Michigan Metropolitan Information Center, from 1980 U.S. Census STF computer file.

TABLE 23

YEAR-ROUND HOUSING UNIT TRENDS
 THETFORD TOWNSHIP, GENESEE COUNTY, MICHIGAN
 1970 - 1980*

CATEGORY	YEAR		CHANGE, 1970-1980	
	1970	1980	NUMBER	PERCENT
Year-Round Housing Units	1,645 ^a	2,815 ^b	1,430	86.9

*Analysis by IMPACT: Improved Planning Action.

^aData from the 1970 U.S. Census, Census Tracts, Flint, Michigan, SMSA, (CT0125).

^bSpecial request data provided by the Michigan Metropolitan Information Center, from 1980 U.S. Census STF file.

TABLE 24

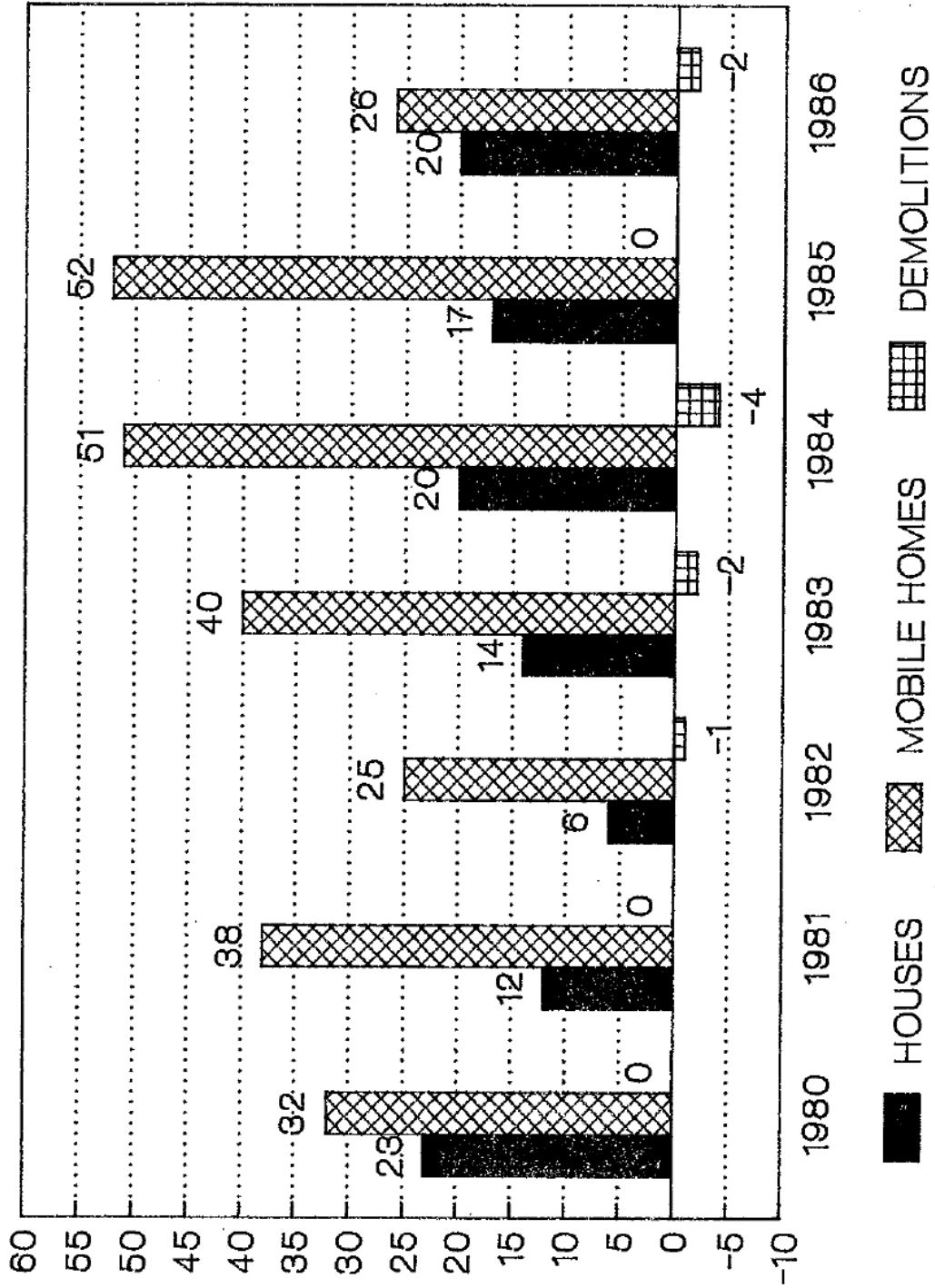
RESIDENTIAL BUILDING PERMITS ISSUED,
 BY UNIT TYPE,
 THETFORD TOWNSHIP, GENESEE COUNTY, MICHIGAN
 1980 - 1986

<u>DWELLING TYPE</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>TOTAL</u>
Mobile Homes	32	38	25	40	51	52	26	264
Houses	23	12	6	14	20	17	20	112
Multiple-Family	--	--	--	--	--	--	--	--
Gross Total	55	50	31	54	71	69	46	376
Less Demolitions	<u>0</u>	<u>0</u>	<u>1</u>	<u>2</u>	<u>4</u>	<u>0</u>	<u>2</u>	<u>9</u>
Net Total	55	50	30	52	67	69	44	367

*Compiled by IMPACT: Improved Planning Action from Township Building Inspector's Annual Report, for respective year.

Building Permits Issued Since 1980

Theftord Township, Genesee County



During these seven years, 376 building permits were issued for housing units. Most of these (264) were for mobile homes; however, this figure is misleading as a mobile home permit can be issued for a new location of an existing unit. According to Region V, there were 587 mobile homes in Thetford Township as of January 1986, or nine more than there were in 1980 (see Table 18). In addition, during this same period, however, nine demolitions occurred. Thus, a net gain of only 112 units was achieved. As a result, it can be calculated that as of January 1, 1987, there were 2,927 year-round housing units in the Township.

Housing Affordability

The housing stock in a community should be affordable to its residents. If housing costs are prohibitive, housing needs remain unmet in spite of housing unit availability.

Total household income determines the price range of affordable housing for virtually all families. As noted above, in the case of purchased housing, the price of a house is typically three times the family income. Thus, it is assumed that a family earning \$20,000 per year can afford a \$60,000 home.

One must recognize that this type of analysis is only one indication of affordable housing. In actual practice, the price of a house that a household can afford is determined mainly by three factors: the size of the mortgage that must be secured and its interest rate; the property tax, insurance, and utility rates on the house at that particular location; and the total indebtedness of the household for all items other than housing. Nevertheless, such an analysis provides an indication of housing cost trends and the ability of the purchaser to acquire such housing. Data in Tables 25 and 26 show the breakdown of affordable purchase and rental housing by household income for Thetford Township residents.

TABLE 25
 INCOME COST CORRELATION
 OWNER-OCCUPIED HOUSING UNITS
 THEIFORD TOWNSHIP, GENESEE COUNTY, MICHIGAN
 1980*

HOUSEHOLD INCOME CATEGORY	MAXIMUM VALUE OF AFFORDABLE HOUSING ^a	NUMBER OF OWNER-OCCUPIED HOUSEHOLDS IN INCOME CATEGORY ^b	NUMBER OF SPECIFIED OWNER-OCCUPIED UNITS IN THIS HOUSING VALUE CATEGORY ^c	HOUSING UNIT SURPLUS/DEFICIENCY ^d
Less than \$5,000	Less than \$15,000	104	53	-51
\$5,000 - \$9,999	\$15,000 - \$29,999	152	219	+67
\$10,000 - \$19,999	\$30,000 - \$59,999	339	815	+476
\$20,000 - \$49,999	\$60,000 - \$149,999	800	362	-438
\$50,000 or more	\$150,000 or more	54	1	-53
		1,450	1,450	-

*Analysis by IMPACT: Improved Planning Action.

^aMaximum value of affordable housing calculated to be 300 percent of income.

^bData estimated from the 1980 U.S. Census by applying the percentage of households per income category to the total number of specified owner-occupied housing units.

^cConsultant estimate based on 1980 U.S. Census data on housing value and existing land use inventory.

^dSurplus/deficiency calculated to be the difference between the number of households per income category and number of units per income category.

TABLE 26
 INCOME COST CORRELATION
 RENTER-OCCUPIED HOUSING UNITS
 DAVISON TOWNSHIP, GENESEE COUNTY, MICHIGAN
 1980*

HOUSEHOLD INCOME CATEGORY	MAXIMUM AFFORDABLE MONTHLY RENT ^a	NUMBER OF HOUSEHOLDS IN INCOME CATEGORY ^b	NUMBER OF RENTAL UNITS IN VALUE CATEGORY ^c	HOUSING UNIT SURPLUS/DEFICIENCY ^d
Less than \$5,000	Less than \$125	18	22	+4
\$5,000 - \$9,999	\$125 - \$249	26	199	+173
\$10,000 - \$14,999	\$250 - \$374	57	11	-46
\$15,000 - \$19,999	\$375 - \$499	136	5	-131
\$20,000 or more	\$500 or more	<u>9</u>	<u>0</u>	<u>-9</u>
		246	246	-

*Analysis by IMPACT: Improved Planning Action.

^aMaximum affordable monthly rent calculated to be 30 percent of monthly household income.

^bData estimated from the 1980 U.S. Census, by applying the percentage of households per income category to the total number of specified renter-occupied housing units for which cash rent was received.

^cConsultant estimate based upon 1980 U.S. Census data. Excludes units for which no cash rent was received.

^dSurplus/deficiency calculated to be the difference between the number of households per income category and number of units per income category.

Owner-Occupied Units

Data in Table 25 correlate 1980 household income levels of Township residents with the assumed maximum value of a house which they can afford and with the values of specified owner-occupied housing units in the Township.

The value of owner-occupied homes in the Township bears very little relationship to income. The income level under \$5,000, as well as the income level above \$20,000, have large numbers of households that are not finding housing at prices they can afford. Families with incomes ranging between \$5,000 and \$19,999 have few problems finding affordable housing, as an oversupply of owner-occupied housing units valued between \$15,000 and \$59,999 exists in the Township. What is occurring is that the surplus of housing valued in this range is being utilized by three disparate groups: by families which can afford such housing; by those who are expending a higher proportion of their income than is normally considered acceptable; and by those who can afford housing of greater value. Data in Table 25 indicate a need for both lower and higher cost owner-occupied housing.

Renter-Occupied Units

A similar analysis was conducted for renter-occupied units. Data provided in Table 26 show the results.

In 1980, there was an oversupply of rental units available to serve low and moderate income groups; however, there was a severe deficiency of rental units available for higher income households.

Comparing Tables 25 and 26 provides additional information. The data indicate that low income households (those with annual incomes under \$5,000 or less) are avoiding available rental units and opting to pay a higher share of their income to live in and own higher valued single-family units.

The data also indicate that higher income households are not selecting higher valued housing opportunities, whether they be rental properties or owner-occupied units. This may be because some residents are choosing to expend a substantially small share of their income for housing. For the most part, it is because there is a limited supply of higher valued housing units in the Township.

LABOR FORCE CHARACTERISTICS

INTRODUCTION

The primary determinant of population within an area in the state of Michigan is the employment opportunities available in the local labor market. However, within a particular labor market area some local municipalities function as major employment centers while others are primarily places of residence or "bedroom" communities. Thetford Township, being in the County of Genesee, is part of the Flint Area Labor Market. Thus, the employment opportunities available, not only in the Township but in other parts of the Flint Labor Market Area, primarily in Genesee County, constitute the economic base to which the Township is inexorably tied.

According to the U.S. Census, there were 3,260 Township residents employed, or 38.4 percent of the total population. The following text will identify what industries this group works for, and what positions they hold. Historical data is also presented to reveal changes in employment patterns.

EMPLOYMENT BY INDUSTRY

Data in Table 27 document the employment by major industry grouping for the employed residents of the Township for the years 1970 and 1980.

There were 2,064 Township residents employed in 1970. The greatest share of this population segment (44.5 percent) were employed in the manufacturing industries. In 1980, a similar proportion (43.2 percent) were so employed. This situation is expected, due to the heavy reliance on the automotive industries in the Flint area.

TABLE 27
 EMPLOYMENT BY SELECTED INDUSTRY
 THETFORD TOWNSHIP, GENESEE COUNTY, MICHIGAN
 1970 and 1980*

INDUSTRY	1970 ^a		1980 ^b		CHANGES 1970 - 1980	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
Agriculture, Forestry, and Fisheries	70 ^c	3.4	97	3.0	27	38.5
Construction	93	4.5	144	4.4	51	54.8
Manufacturing	919	44.5	1,409	43.2	490	53.3
Transportation, Communications, Utilities, and Sanitary Services	90	4.4	180	5.5	90	100.0
Wholesale and Retail Trade	419	20.3	563	17.3	144	34.4
Finance, Insurance, and Real Estate	63	3.1	117	3.6	54	85.7
Business, Personal, and Entertainment Services	98	4.7	135	4.1	37	37.8
Professional, Health, Education, and Related Services	254	12.3	506	15.5	252	99.2
Public Administration	43	2.1	97	3.0	54	125.6
Mining	<u>15^c</u>	<u>0.7</u>	<u>12</u>	<u>0.4</u>	<u>3</u>	<u>20.0</u>
TOTAL ^d	2,064	100.0	3,260	100.0	1,196	57.9

*Analysis by IMPACT: Improved Planning Action.

^aData from the 1970 U.S. Census, Census Tracts, Flint, Michigan, SMSA. (CT125)

^bData from the 1980 U.S. Census, General Social and Economic Characteristics, Michigan, STF file.

^cConsultant estimates based upon 1970 "other" total of 85 persons.

^dEmployed persons 16 years of age and older.

During the previous decade, manufacturing industries also provided the greatest number of new jobs, adding 490 new positions. The greatest rates of growth, however, occurred in the communication, finance, and professional industries. This can be directly attributed to the change from a manufacturing economy to expansion of the service sector. This trend is expected to continue.

EMPLOYMENT BY OCCUPATION

Data in Table 28 display trends in employment, by occupation, for the Township, for the years 1970 and 1980. This data also indicate a transition in the type of work being performed.

In 1970, 53 percent of the employed workers were production workers or laborers. This percentage remained stagnant over the next ten year period. Conversely, dramatic growth occurred in professional, sales and service worker positions.

PLACE OF WORK

According to the 1970 U.S. Census, 1,790 or 88 percent of the employed Township residents worked in Genesee County. The 1980 U.S. Census data reports that 2,716 or 83.3 percent of those employed residents worked in the County. Thus, the County can be considered as the primary labor market area for Township residents.

Census data also reveal an additional important characteristic. The mean (average) travel time to work for employed residents not working at home, was 23.3 minutes. This compares to a County average of 19.1 minutes, and a state average of 20.5 minutes. It can be concluded that although employed residents find most of their work within the County, they must travel farther than most other workers to find jobs. This is because there are few nearby employment opportunities.

TABLE 28
 EMPLOYMENT BY SELECTED OCCUPATIONS
 THETFORD TOWNSHIP, GENESEE COUNTY, MICHIGAN
 1970 and 1980*

OCCUPATION	1970 ^a		1980 ^b		CHANGES 1970 - 1980	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
Managerial and Professional Specialty	186	9.0	361	11.1	175	94.1
Technical and Administrative Support	383	18.6	461	14.1	78	20.4
Sales Workers	123	6.0	259	7.9	136	110.6
Service Workers	213	10.3	365	11.2	152	71.4
Farming, Forestry, and Fishing	63	3.1	84	2.6	21	33.3
Precision Production, Crafts, and Repair	451	21.8	648	19.9	197	43.7
Operators, Fabricators, and Laborers	<u>645</u>	<u>31.2</u>	<u>1,082</u>	<u>33.2</u>	<u>437</u>	<u>67.8</u>
Total Employed	2,064	100.0	3,260	100.0	1,196	57.9

*Analysis by IMPACT: Improved Planning Action

^aData from the 1970 U.S. Census, Census Tracts, Flint, Michigan, SMSA. (CT 125)

^bData from the 1980 U.S. Census, General Social and Economic Characteristics, Michigan.

Note: Data is for employed persons, 16 years of age and older.

Data presented above infer that the greatest number of employed residents work for manufacturing industries located at distant Genesee County locations. A review of the major employers provides additional information on where these positions are held.

Data in Table 29 identify the major (50 employees or more) manufacturing employers in Genesee County by name, product/service, total employment, and size of facility. The data show that most of the manufacturers are located in Flint, Burton, Grand Blanc, or Fenton.

EMPLOYMENT OUTLOOK

The listing of firms reveals that many of the manufacturing jobs are automobile related. Recent trends and projections indicate that such positions and opportunities will be greatly reduced in the years ahead.

A review of automotive layoff announcements over the last year reveal that the Flint area will lose 9,400 jobs by 1990. While automotive employment was cyclical in the past, (layoffs followed by rehiring), it appears that these layoffs will be permanent due to structural changes in the marketplace.

The transition to front-wheel drive and smaller engines resulted in major alterations to existing manufacturing systems. Material substitutions also affected procedures. While this enables producers to purchase state-of-the-art equipment and increase productivity, it also reduces the number and types of jobs which are necessary.

The impact in Genesee County is expected to be severe since 37 percent of the households include at least one GM employee, and another 9 percent have someone who works for an auto-related firm.⁴

⁴Ourlian, Robert and Scott Foust, "Rebound From Auto Cuts Unlikely," The Detroit News, April 26, 1987, pg. 15A.

TABLE 29
 MAJOR MANUFACTURING EMPLOYERS
 WITHIN GENESEE COUNTY, MICHIGAN*

<u>NAME/ADDRESS</u>	<u>PRODUCT/SERVICE</u>	<u>EMPLOYMENT (50 OR MORE)</u>	<u>SQUARE FEET</u>
Anderson Safeway Guardrail Corp. 2610 N. Dort Highway Flint, MI 48501	Sheet Metalwork	100	
Anderson Tank & Mfg., Co. 2702 Dort Highway Flint, MI 48506	Barrels, Drum, Pail, Metal	100	
Autohaul Industries Inc. G5254 S. Saginaw Flint, MI 48507	Truck Trailers	70	
Automa Corp. One Quality Way Grand Blanc, MI 48439	Machinery, Metalworking - Miscellaneous Conveyors and Equipment	75	18,000
Automated Manufacturing Systems, Inc. 201 Alloy Drive Fenton, MI 48430	Machinery, Metalworking - Miscellaneous General Industrial - Miscellaneous	120	36,000
Burkland Inc. 6520 S. State Road Goodrich, MI 48438	Stampings, Metal - Miscellaneous Power Transmission Equipment - Miscellaneous	90	60,000
Carpenter Enterprises Ltd. 3061 Thompson Road Fenton, MI 48430	Motor Vehicle Parts and Accessories	200	100,000

TABLE 29
 MAJOR MANUFACTURING EMPLOYERS
 WITHIN GENESEE COUNTY, MICHIGAN*
 (Continued)

<u>NAME/ADDRESS</u>	<u>PRODUCT/SERVICE</u>	<u>EMPLOYMENT (50 OR MORE)</u>	<u>SQUARE FEET</u>
Community Industries 420 W. 5th Avenue, 5th Floor Flint, MI 48503	Wood Products - Miscellaneous Manufacturing Industries	240	
Consolidated Packaging Flint Inc. 1409 E. Pierson Road Flint, MI 48505	Boxes, Corrugated and Solid Fiber	175	108,000
Container Specialties Inc. 3261 Flushing Road Flint, MI 48504	Surgical Appliances and Supplies Safety Devices, Other Personal	50	12,000
Cramer, Dee Inc. 1819 S. Dort Highway Flint, MI 48503	Sheet Metalwork	120	
Creative Foam Corp. 300 N. Alloy Drive Fenton, MI 48430	Plastic Products - Miscellaneous	300	250,000
DuPont DeNemours E.I., & Co. 1555 G.P. Cole Blvd. Flint, MI 48502	Paint, Varnish, and Allied Products Oil, Automotive, and Machinery	300	
Eaton Corp. 9475 Center Road Fenton, MI 48430	Instruments, Process Control Computing Equipment, Electronic	140	70,000

TABLE 29
 MAJOR MANUFACTURING EMPLOYERS
 WITHIN GENESEE COUNTY, MICHIGAN*
 (Continued)

<u>NAME/ADDRESS</u>	<u>PRODUCT/SERVICE</u>	<u>EMPLOYMENT (50 OR MORE)</u>	<u>SQUARE FEET</u>
Excel Corp. 1101 Copper Avenue Fenton, MI 48430	Machinery, Special - Miscellaneous Metalworking - Miscellaneous	85	80,000
F.E.C. 201 S. Alloy Drive Fenton, MI 48430	Machinery, General - Miscellaneous Controls, Industrial Electric	80	43,000
Fernco Inc. 300 S. Dayton Davison, MI 48423	Plastic Products	60	72,000
Fin-Tec Inc. 8340 Silver Lake Road Linden, MI 48451	Conveyors and Equipment	100	53,000
Flint Area Newspaper Inc. 11319 S. Saginaw St. Grand Blanc, MI 48439	Newspapers	50	3,200
Flint Boxmaker, Inc. G-2490 E. Bristol Drive Burton, MI 48529	Boxes, Corrugated and Solid Fiber	50	50,000
Flint Goodwill Industries, Inc. 501 S. Averill Avenue Flint, MI 48506	Coating Engraving, Metal Machinery - Miscellaneous, Except Electric	190	78,000

TABLE 29
 MAJOR MANUFACTURING EMPLOYERS
 WITHIN GENESEE COUNTY, MICHIGAN*
 (Continued)

<u>NAME/ADDRESS</u>	<u>PRODUCT/SERVICE</u>	<u>EMPLOYMENT (50 OR MORE)</u>	<u>SQUARE FEET</u>
Flint Journal 200 E. First Street Flint, MI 48502	Newspapers	350	
Flint Mfg., Co. G-3084 Hemphill Road Burton, MI 48529	Motor Vehicle Parts and Accessories	100	60,000
General Motors Corp. 902 E. Hamilton Flint, MI 48550	Motor Vehicles and Car Bodies	20,000	9,500,000
General Motors Corp. 4300 S. Saginaw Street Flint, MI 48557	Motor Vehicles and Car Bodies	5,800	
General Motors Corp. 1245 E. Coldwater Road Flint, MI 48559	Motor Vehicles and Car Bodies	2,200	1,000,800
General Motors Corp. 2238 W. Bristol Road Flint, MI 48552	Motor Vehicles and Car Bodies	3,150	1,876,940
General Motors Corp. G-3248 Van Slyke Road Flint, MI 48552	Motor Vehicles and Car Bodies	4,600	

A PLAN FOR FUTURE LAND USE

A black and white photograph of a farm. In the foreground, there is a dark, textured wall or fence. Behind it, a large barn with a dark roof is visible. To the left of the barn, there is a tall, cylindrical silo with a dark lower section and a lighter upper section. To the right of the barn, there are two more tall, cylindrical silos, both with dark lower sections and lighter upper sections. The sky is bright and overcast. The overall scene is a typical rural farm setting.

**THETFORD TOWNSHIP
GENESEE COUNTY, MICHIGAN**

A PLAN FOR FUTURE LAND USE

THETFORD TOWNSHIP
GENESEE COUNTY, MICHIGAN

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ZZZ 6292-01

Approved by the Genesee County Metropolitan Planning Commission at the
November 3, 1987, meeting.

Adopted by the Thetford Township Planning Commission at the
November 9, 1987, special meeting.

Adopted by the Thetford Township Board of Trustees at the
November 9, 1987, regular meeting.

Reviewed and discussed by the Thetford Township Board of Trustees at the
November 9, 1992, regular meeting, the November 13, 2000, regular meeting,
November 14, 2005, regular meeting and the November 8, 2010 regular meeting.

TABLE OF CONTENTS

<u>SUBJECT</u>	<u>PAGE NO.</u>
EXISTING LAND USE	1 - 13
INTRODUCTION	1
SURVEY METHODOLOGY	1 - 2
LAND USE CLASSIFICATIONS	2 - 5
Residential	2
Nonresidential	3 - 5
THETFORD TOWNSHIP LAND USAGE	5 - 13
Residential Land Development	5 - 7
Nonresidential Land Development	7 - 13
NATURAL FEATURES	14 - 23
INTRODUCTION	14
SIGNIFICANT SITE FEATURES	14 - 17
Topography	15
Woodlands	15
Major Bodies of Water	16
Surface Drainage	16 - 17
WETLANDS	18 - 19
SOILS	19 - 22
PRIME FARMLANDS	23
POPULATION PROFILE	24 - 51
INTRODUCTION	24
POPULATION CHARACTERISTICS	24 - 36
Historical Population Growth	24 - 27
Age - Sex Distribution	28
Minority Group Composition	28 - 30
Household Size	30 - 33
Population Projections	33 - 36
INCOME CHARACTERISTICS	37 - 51
Per Capita, Family and Median-Household Income	37 - 38
Family Income Distribution	39 - 46
Poverty Status	47 - 51
HOUSING CHARACTERISTICS	52 - 67
INTRODUCTION	52
HOUSING ATTRIBUTES	52 - 67
Type of Structure	52 - 53
Housing Tenure	54
Unit Value	54 - 59
Age of Structure	59
Recent Residential Activity	59 - 63
Housing Affordability	63 - 67

TABLE OF CONTENTS
(Continued)

<u>SUBJECT</u>	<u>PAGE NO.</u>
LABOR FORCE CHARACTERISTICS	68 - 81
INTRODUCTION	68
EMPLOYMENT BY INDUSTRY	68 - 70
EMPLOYMENT BY OCCUPATION	70
PLACE OF WORK	70 - 71
EMPLOYMENT OUTLOOK	72 - 81
 FUTURE LAND USE PLAN DETERMINANTS	 82 - 106
INTRODUCTION	82
EXISTING DEVELOPMENT CHARACTERISTICS	82 - 84
Land Use Conflicts	82
Poor Parceling	83
Frozen Lands	83
Sanitary Sewer System	83
Prime Farmlands	84
Accessibility	84
Environmentally Sensitive Lands	84
FUTURE LAND REQUIREMENTS	85 - 99
Commercial Development Standards	85 - 90
Industrial Development Standards	91 - 93
Housing Needs	94 - 99
DWELLING UNIT TYPE	100 - 106
Immediate Needs	100 - 101
Long Term Needs	101 - 106
 GOALS, OBJECTIVES, AND POLICY STATEMENTS	 107 - 116
INTRODUCTION	107
GOALS	107 - 108
OBJECTIVES AND POLICIES	108 - 116
Agriculture	109
Residential Development	109 - 111
Commercial Development	111 - 112
Industrial Development	112 - 113
Public/Semi-Public Land Use	113 - 114
Natural Environment	114
Planning and Zoning	115 - 116
 CONCEPT DEVELOPMENT PLAN	 117 - 123
INTRODUCTION	117
ROADWAY CHARACTERISTICS	117 - 118
PROBLEM IDENTIFICATION	118 - 119
LAND USE REGULATION	119 - 120
VIENNA ROAD CONCEPT PLAN	120 - 123
Urban Design Criteria	120 - 122
Development Proposals	122 - 123

TABLE OF CONTENTS
(Continued)

<u>SUBJECT</u>	<u>PAGE NO.</u>
FUTURE LAND USE PLAN	124 - 138
INTRODUCTION	124 - 125
PLAN RECOMMENDATIONS	125 - 138
Agriculture	127
Suburban Farm	128
Rural Estate	128 - 129
Single-Family	129 - 131
Multiple-Family	131 - 132
Mobile Home Park	132
Office	133
Local Commercial	134
General Commercial	134 - 135
Industrial	135 - 136
Municipal	136 - 137
Recreation/Conservation	137 - 138
PLAN IMPLEMENTATION	139 - 151
INTRODUCTION	139 - 140
PUBLIC SUPPORT OF THE LONG-RANGE PLAN	140 - 141
LAND DEVELOPMENT CODES	141 - 144
Zoning Ordinance	141 - 143
Subdivision Regulations	144
CAPITAL IMPROVEMENTS PROGRAM	145 - 148
Community Development Block Grants	147 - 148
Michigan Natural Resources Trust Fund	148 - 149
CO-DEVELOPMENT	149 - 151
Tax Increment Financing	150 - 151

TABLE OF CONTENTS
(Continued)

LIST OF TABLES

<u>TABLE NO.</u>	<u>DESCRIPTION</u>	<u>PAGE NO.</u>
1	Existing Land Use	6
2	Nonresidential Use Inventory By Section	8 - 10
3	Soil Series	20 - 22
4	Population Trends	25 - 26
5	Age-Sex Composition	29
6	Minority Group Composition	31
7	Persons Per Household Trends	32
8	Estimates of Average Size of Household (All Persons) The Nation, 1985 - 1995	34
9	Population Projections	35
10	Per Capita, Median Family and Median Household Income Comparison	38
11	Count of Families by Family Income	40
12	Count of Low and Moderate Income Population by Township Census Designated Place	41 - 42
13	Family Income Limits for the Community Development Block Grant Program	44
14	Calculation of CDBG Project Eligibility Areas	45 - 46
15	Count of Persons Below Poverty Level, By Age	48
16	Count of Households by Presence of Children	49
17	Count of Persons in Poverty, By Race	51

TABLE OF CONTENTS
(Continued)

LIST OF TABLES
(Continued)

<u>TABLE NO.</u>	<u>DESCRIPTION</u>	<u>PAGE NO.</u>
18	Type of Structure, Year-Round Housing Units	53
19	Occupancy Characteristics, Existing Housing	55
20	Median Value of Housing	57
21	Housing Sale Prices	58
22	Age of Structure	60
23	Year-Round Housing Unit Trends	61
24	Residential Building Permits Issued, By Unit Type, 1980-1986	62
25	Income Cost Correlation Owner-Occupied Housing Units	64
26	Income Cost Correlation Renter-Occupied Housing Units	65
27	Employment by Selected Industry	69
28	Employment by Selected Occupations	71
29	Major Manufacturing Employers Within Genesee County, Michigan	73 - 80
30	Typical Shopping Center Standards	88
31	Recommended Store or Service Use Standards	89 - 90
32	Locational Criteria Used by Industry	92
33	Employment/Density Ratios for Estimating Industrial Land Use	93
34	Population Ratios for Estimating Industrial Land Use	93

TABLE OF CONTENTS
(Continued)

LIST OF TABLES
(Continued)

<u>TABLE NO.</u>	<u>DESCRIPTION</u>	<u>PAGE NO.</u>
35	Land Use Ratios for Estimating Industrial Land Use	93
36	Housing Unit Requirements	95
37	Future Urban Land Use Acreage Requirements	97
38	Total Cost for Each Job, (Housing Construction Costs)	103
39	Future Land Use, Year 2000	126

TABLE OF CONTENTS
(Continued)

LIST OF MAPS

<u>MAP NO.</u>	<u>DESCRIPTION</u>	<u>FOLLOWS PAGE NO.</u>
1	Existing Land Use	5
2	Significant Site Features	15
3	Wetlands	18
4	Soils	19
5	Prime Farmland	23
6	Regional Location Map	24
7	Census Tracts Map	39
8	CDBG Project Eligibility Areas	46
9	Vienna Road Concept Development Plan	122
10	Future Land Use Plan	125

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Mc CUNSEY

RD.

ARBELA TWP.

WILLARD

TUSCOLA CO.

WILLARD

RICHFIELD TWP.

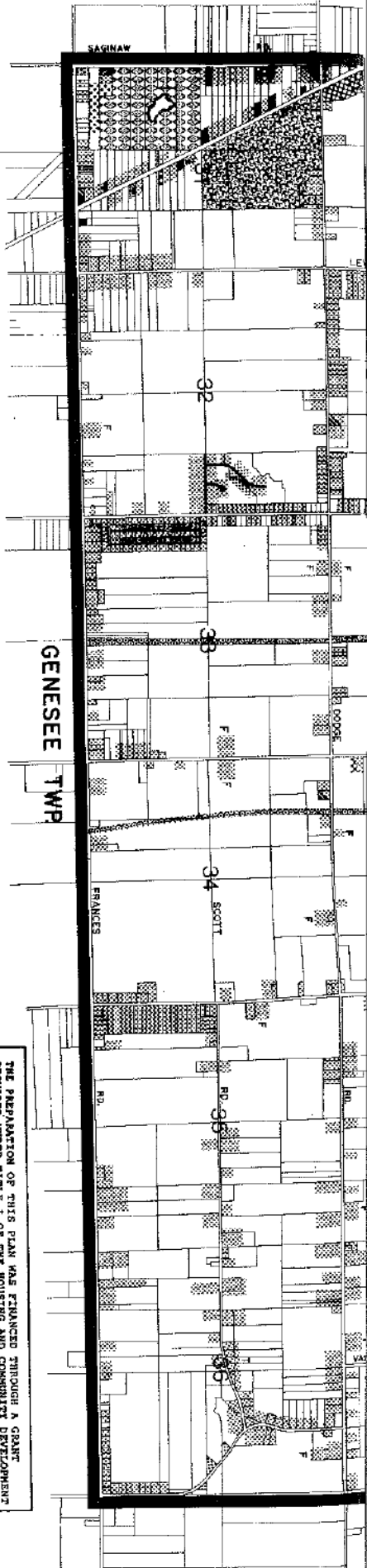
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THE PREPARATION OF THIS PLAN WAS FINANCED THROUGH A GRANT PROVIDED UNDER TITLE I OF THE HOUSING AND URBAN REDEVELOPMENT ACT OF 1974, AS AMENDED. THE HOUSING AND URBAN REDEVELOPMENT ACT OF 1974, AS AMENDED, IS ADMINISTERED BY THE GENESSEE COUNTY COMMUNITY DEVELOPMENT PROGRAM.

FIELD SURVEY DECEMBER 16 & 17, 1986.

RESIDENTIAL

- SINGLE-FAMILY (113, 114, 291)
- F FARMSTEAD
- T TRAILER

- MULTIPLE-FAMILY (112)
- MOBILE HOME PARK (115)

COMMERCIAL (123, 125)

- CONVENIENCE COMMERCIAL
- COMPARISON COMMERCIAL
- GENERAL COMMERCIAL
- OFFICE/SERVICE

INDUSTRIAL

- GENERAL INDUSTRIAL (131-139, INC.)
- UTILITIES (1461, 1462)

PUBLIC AND SEMI-PUBLIC (126, 193, 194)

- RIGHTS-OF-WAY, OPEN SPACE AND OTHER (21, 144, 231)
- ☁ WATER BODIES (522-525, 625)

NOTE: NUMBERS IN PARENTHESES REFER TO THE LAND USE CATEGORIES OF THE MICHIGAN LAND COVER/USE CLASSIFICATION SYSTEM.

1. EXISTING LAND USE

THETFORD TOWNSHIP, GENESSEE COUNTY, MICHIGAN



Impact Improved Planning Action

2100 Goodland Road
Lansing, Michigan 48205
Phone: (313) 291-2900

Recent residential developments contain a curvilinear street design, hard surfaced roads with curbs. Such home sites have been built in the south end of the Township in Section 32, in the Mador-Royl Heights Subdivision. New residential construction is also occurring in the north end of the Township in Section 8, in the Woodside Hills Subdivision.

Multiple-Family Residential

Such dwellings account for about 9.4 acres of land in Thetford Township which is only about 0.04 percent of the total land area.

These dwelling units consist solely of the Sugartree apartment units found in close proximity to Frances and Saginaw Roads in Section 31. This complex contains 174 units, 150 of which are occupied at the present time.

Mobile Home Park

There is one mobile home park in Thetford Township. It is the North Morris Estates Trailer Park located in Section 31. This approximately 80 acre facility has a capacity of 598 units. Currently, there are 576 occupied units in this complex.

Nonresidential Land Development

There are only 59 nonresidential uses in Thetford Township. These uses are listed in Table 2, by section number and MLC/UCS Code. A discussion of each use, by land use type, is presented below.

Commercial

At the present time, approximately 53 acres are occupied by commercial uses. This amounts to about 0.24 percent of the total Township land area. Most of this acreage is found along Dort Highway and M-57 (Vienna Road). The uses are described below.

TABLE 2
 NONRESIDENTIAL USE INVENTORY
 BY SECTION
 THETFORD TOWNSHIP, GENESEE COUNTY, MICHIGAN*

SECTION	NAME	ROAD(S)	LAND USE	MLC/UCS CODE
1	I & J Wolverine Nursery	Lake	General Commercial	2233
2	Buell Lake County Park	Genesee	Public	1935
3	Stoke's Tax and Accounting Service	Genesee	Office/Service	1232
4	---			
5	Lake Road Baptist Church County Line Liquor Store	Lake & Lewis Willard & Bray	Semi-Public General Commercial	1265 1231
6	F. Bloss & Sons Hardware	Lewis & Lake	Convenience Commercial	1231
7	Gloria's Music Stop Whitmen's Grocery Judy's Styling & Tanning	Lake Lewis & Lake Byrnes & Lewis	General Commercial Convenience Commercial General Commercial	1231 1231 1231
8	Master Shop (Repair Service)	Byrnes	General Commercial	1239
9	Warthing A & W Plumbing and Heating	Bray	General Commercial	1231
10	Patio and Pub	Genesee & Lake	General Commercial	1231
11	(See Section 2 above)			
12	---			
13	---			
14	Light Hi-Vacs, Inc. Quick-Save Party Store and Gas Station	Genesee Vienna and Genesee	General Industrial Convenience Commercial	1359 1231
15	Ed's Sport Center	Vienna	Comparison Commercial	1231
16	---			
17	---			

TABLE 2
NONRESIDENTIAL USE INVENTORY
BY SECTION
THETFORD TOWNSHIP, GENESEE COUNTY, MICHIGAN*
(Continued)

SECTION	NAME	ROAD(S)	LAND USE	MLG/UCS CODE
18	Geo. Lacures Elementary School	Lewis	Public	1264
	Natural Gas Substation	Vienna	Utility	1462
19	Vienna Greens Golf Course	Tobias	Public	1933
	Leisure Days RV Sales	Vienna	Comparison Commercial	1231
20	---			
21	Old Township Hall (Historic)	Center	Public	1269
	The Grange Hall	Center	Public	1268
22	Township Hall	Center	Public	1268
	Fire Station	Center	Public	1268
	Thetford Cemetery	Center	Public	194
	Thetford Center United Church	Center	Semi-Public	1265
	Parker's Greenhouse	Genesee	General Industrial	2922
23	---			
24	---			
25	---			
26	---			
27	Consumer's Power Plant	Genesee	Utility	1461
	Dodge Center Saddlery	Center	Comparison Commercial	1239
28	---			
29	Tree Surgeon's	Dodge	General Industrial	139
30	Calvert Tractor Sales	Dort	Comparison Commercial	1239
	Water Wonderland	Dort	Comparison Commercial	1239
	Michigan Bell	Dort	Office/Service	1232
	Ideal Careers Employ Agency	Saginaw	Office/Service	1232

TABLE 2
 NONRESIDENTIAL USE INVENTORY
 BY SECTION
 THETFORD TOWNSHIP, GENESEE COUNTY, MICHIGAN*
 (Continued)

SECTION	NAME	ROAD(S)	LAND USE	MLC/UCS CODE
31	Junk Yard	Saginaw	General Industrial	139
	Mott's Bros. Hardware	Saginaw	Convenience Commercial	1231
	American Lumber	Saginaw	General Industrial	139
	Hardware & Plumbing Supplies	Saginaw	Convenience Commercial	1231
	Vail's Furniture	Saginaw	Comparison Commercial	1231
	Electric Beach Tanning Studio	Saginaw	General Commercial	1231
	Ann's Used Cars	Saginaw	Comparison Commercial	1231
	Arnold's Flower's	Saginaw	General Commercial	1231
	Party Store	Saginaw	Convenience Commercial	1231
	Professional Bldg. (Attorney)	Saginaw	Office/Service	1232
	Margies' Menagerie (Dog Grooming)	Dort	General Commercial	1231
	VCR Repair	Dort	General Commercial	1231
	Barber Shop	Dort	Convenience Commercial	1231
	Party Store	Dort	Convenience Commercial	1231
	Chiropractor	Dort	Office/Service	1232
	Danny's Flowers	Dort	General Commercial	1231
	Junes Florist	Dort	General Commercial	1231
	Bellott Auto Sales (and Collison)	Dort	Comparison Commercial	1231
	Fireplace Shop	Dort	General Commercial	1231
	Auto Clinic	Dort	General Commercial	1238
	Flint Memorial Park Cemetery	Dort	Public	194
	Cole's Furniture Center	Dort	Comparison Commercial	1231
	Long Branch Saloon	Frances	General Commercial	1231
	Twilight Tavern	Dort	General Commercial	1231
	Rourke Mailer's	Frances	General Industrial	139
32	---			
33	---			
34	Red's Country Collision	Dodge	General Industrial	139
35	---			
36	---			

*Analysis by IMPACT: Improved Planning Action, based upon field data collected during December 16 and 17, 1986.

Convenience Commercial

Approximately 11 acres of commercial land use in the Township consist of convenience establishments. Included are the F. Bloss and Son's Hardware, Whitmen's Grocery, the Quick-Save Party Store and Gas Station, and Mott's Brother's Hardware, among others.

Comparison Commercial

Comparison commercial uses in Thetford Township occupy 18.4 acres of land. Ed's Sport Center, Leisure Days RV Sales, Dodge Center Saddlery, Calvert Tractor Sales, Water Wonderland, Vail's Furniture, Ann's Used Cars, Bellott Auto Sales, and Cole's Furniture are all comparison shopping facilities.

General Commercial

About 17 acres of commercial usage in the Township is general commercial. It consumes just over 0.08 percent of the Township land area. Included in this classification are a liquor store, music shop, two tanning salons, several florists, a VCR repair store, an auto clinic, eating establishments, one plumbing and heating establishment, and I & J Wolverine Nursery.

Office-Service

Office-service uses constitute only 0.02 percent or 6 acres of Township land area. The Stoke's Tax and Accounting Service, Michigan Bell Telephone office, Ideal Careers Employment Agency office, a chiropractor's office on Dort Highway and legal office on Saginaw Road are the only Office-Service uses in the Township.

Industrial

Four (4) percent of the Township is used for general industrial or utility purposes. Each of these is discussed below.

General Industrial

There are approximately 9 acres or 0.04 percent of Township land used for general industrial purposes. This figure includes Light Hi-Vacs, Inc., Parker's Greenhouse, tree surgeon's (on Dort Highway), a junk yard and lumber yard on Saginaw Road, Rourke Mailer's on Frances Road, and Red's Country Collison on Dodge Road. As exhibited on Map 1, these uses are primarily found in the southwest corner of Thetford Township.

Utilities

The most noticeable man-made land development feature in Thetford Township is the overhead network of major transmission lines. These power lines extend throughout the eastern and northern portions of the Township, feeding into a Consumer's Power Plant in Section 27. A natural gas substation can be found in Section 18. All totaled, public utility development occupies 951 acres of Township land area.

Public and Semi-Public

Nearly all of the 289 acres in this category are utilized by the Buell Lake County Park, Vienna Green's Golf Course and Flint Memorial Park Cemetery. Other uses in this category include the Lake Road Baptist Church, the George Lacures Elementary School, Township public buildings, and the Thetford Center United Church.

Rights-of-Way, Open Space and Other

This category represents the largest amount of land area in the Township. There are some 17,900 acres of land so classified, amounting to 82 percent of the total land area. Included are rights-of-way for minor and section line roads; however, due to the undeveloped nature of Thetford Township, these rights-of-way represent only a minor share of the acreage contained in this class of land use. Most of the acreage is utilized for farming purposes, or pasture land. Similarly, all other undeveloped properties, such as marshes, wetlands, and woodlands, were classified as open space.

Water Bodies

Thetford Township has several water bodies consisting in total of approximately 45.4 acres or 0.21 percent of its land area. This includes Buell Lake in Sections 2 and 11, plus other minor bodies of water found throughout the community. A detailed description of these will be presented in the next chapter.

NATURAL FEATURES

INTRODUCTION

The natural resources inventory is an important input to local comprehensive plan preparation, and most useful in the review of subdivision and other development plans. Such studies can provide an indication as to which areas in the community are environmentally suitable for development and which are not. In addition, they also can provide:

1. Acceptable levels of development intensity;
2. Background information for the preparation of environmental impact statements or assessments;
3. Disclosure of current imbalances between development and the environment; and
4. Information to local residents on the environmental impacts of development.

The applicable natural features of Thetford Township are discussed below.

SIGNIFICANT SITE FEATURES

Significant site features are those surface characteristics which serve to "shape the community," in some instances discouraging development, and in others attracting particular land use activities. The first of these to be examined is topography.

Topography

The topography of Thetford Township is predominately flat with a few gently rolling to hilly areas. Land elevations range from a low of about 730 feet above sea level near the intersection of Bray and Willard Roads to a height of 826 feet above sea level near the junction of Farrand and Bray Roads.

Severe grade changes can be found in the northcentral sections (Sections 9, 10, 15, 16) of the Township. Slopes in excess of 10 percent can be found. This rugged topography presents many possibilities to developers, willing to take advantage of this terrain, although development costs are severely increased. Steep slopes are readily apparent on Map 2. These are areas where contour lines are close together. Such areas should only be developed with caution in regards to erosion and drainage problems that might affect adjacent properties. It is generally recommended that development be avoided, however, on such properties.

Woodlands

United States Geological Survey (U.S.G.S.) data for Thetford Township show the existence of numerous woodlands throughout the community. This information is shown on Map 2. These likely second-and third-growth woodlands are valuable as wildlife habitat and for aesthetic enjoyment. Woodlands also moderate certain climate conditions, such as flooding and high winds, by protecting watersheds from siltation and soil erosion caused by stormwater runoff or wind. Woodlands can also improve air quality by absorbing certain air pollutants, as well as buffer excessive noise generators. To the extent feasible, these woodlands should be exempt from future land development.

Major Bodies of Water

The major bodies of water within Thetford Township include Buell Lake and adjacent tributaries plus lakes within the north Morris Estates Trailer Park and Vienna Green Golf Course. Other minor bodies of water are distributed throughout the community. These bodies of water are identified on Map 2.

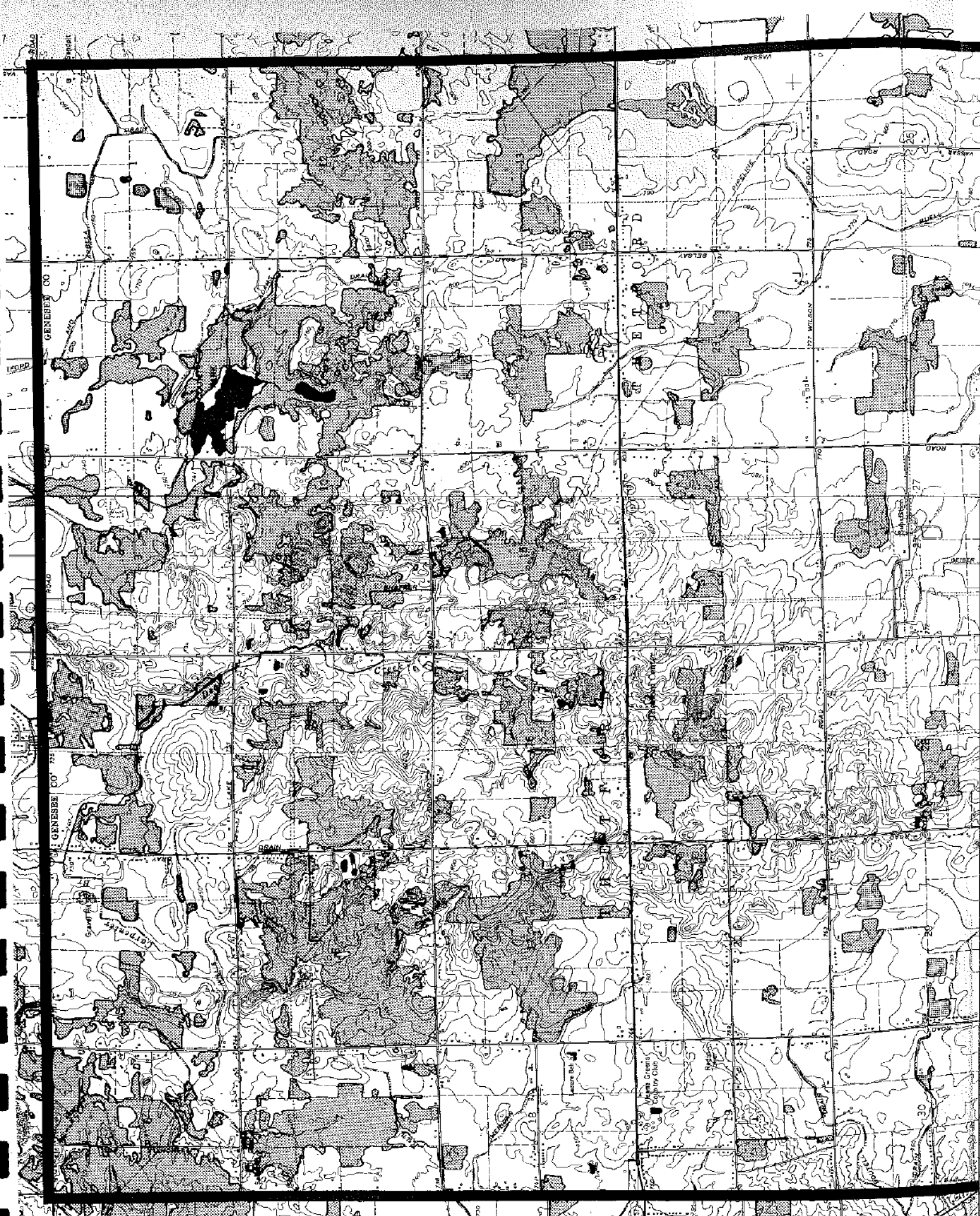
Besides their obvious aesthetic and recreational benefits, lakes serve as natural retention areas for stormwater runoff, act as a groundwater recharge resource and also tend to moderate the microclimate in proximity to its shores. Protection of these natural assets should be given high priority in future land use planning decisions.

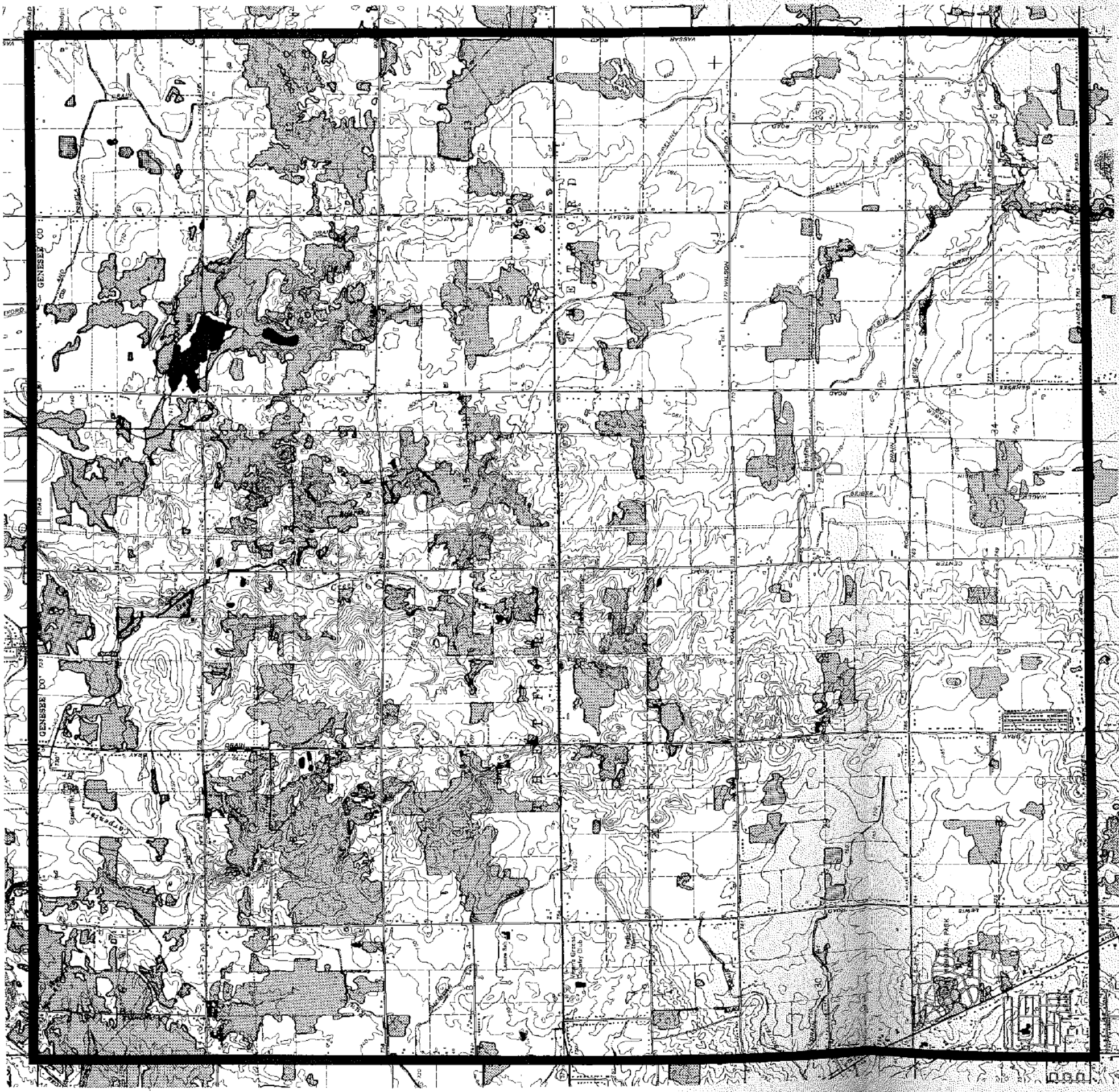
Surface Drainage

Surface drainage in the Township is accomplished by a system of natural drainageways, creeks, and source waters. Included is the Butternut Creek, Dead Creek, the Carpenter Branch of the Dead Creek and the source waters of the Run River. Also located in the Township are the Wager, Geiger, Wilbur, Buell, Drudge, Averill, Thetford and Arbela, Shaffer, Willis, Graham, Sheridan, Lewis Boutell and Adams Drains. These drains are shown on Map 2.

According to the Genesee County Drain Office, some of these watercourses are prone to flooding during major wet weather events. In particular, Butternut Creek is a concern.

To help alleviate flooding problems, the County has undertaken several drain improvement projects in Thetford Township over the last ten years. Work has been done on the Dead Creek, The Thetford and Arbela Drain, and the Lewis Boutell Drain.





THE PREPARATION OF THIS PLAN WAS FINANCED THROUGH A GRANT PROVIDED UNDER TITLE I OF THE HOUSING AND COMMUNITY DEVELOPMENT ACT OF 1974, AS AMENDED. THE GRANT WAS ADMINISTERED BY THE GENESSEE COUNTY COMMUNITY DEVELOPMENT PROGRAM.

- CONTOUR ELEVATION LINES
- WOODLAND
- DRAINAGEWAY
- MAJOR BODY OF WATER

2. SIGNIFICANT SITE FEATURES

THETFORD TOWNSHIP, GENESSEE COUNTY, MICHIGAN

Land development should not encroach into flood hazard areas. The Federal Emergency Management Association (FEMA) publishes maps indicating flood hazard zones for local communities. These maps were prepared for the Township in 1978; however, the maps were withdrawn in 1981 inasmuch as the Township was considered minimally prone to flooding.

In the fall of 1986, however, the Township reconsidered its position, and successfully became a participating community under the National Flood Insurance Program. Flood insurance became available to local property owners in October, 1986.

The program is based upon an agreement between local communities and the federal government that if a community will implement programs to reduce flood risks, the federal government will make flood insurance available within the community as financial protection against flood losses which do occur.

Local control of encroachment into flood prone areas is directed by the Township Building Official under the authority of the BOCA Basic National Building Code, Section 1313. This section stipulates that "all buildings or structures located in areas prone to flooding as determined by the governmental body having jurisdiction shall be floodproofed..." Thus, at the present time, local knowledge is sufficient to determine which areas are flood prone.

Flood hazard maps can once again be prepared for Township use, if it provides evidence to the state Michigan Department of Natural Resources and FEMA that a significant number of buildings in the Township are at risk to flooding. The Township should continually monitor its development pattern and, when sufficient growth pressures are realized, pursue having flood hazard maps prepared.

WETLANDS

Wetlands are, more than any other natural landform, working landscapes whose ecosystems meet a variety of human needs. They support wildlife, purify water and contain floods. Despite these benefits, wetland losses continue to grow. Wetland losses of 300,000 to 400,000 acres per year have been estimated for the United States.¹

In 1979, the Goemaere-Anderson Wetland Protection Act was enacted by the state of Michigan. This legislation was passed to protect wetlands by restricting their use to certain activities (fishing, boating, farming, among others) while permitting other activities only after permit approval by the state of Michigan. Permits are approved only upon a review of an environmental assessment filed by the petitioner and upon a finding that the activity is in the public interest.

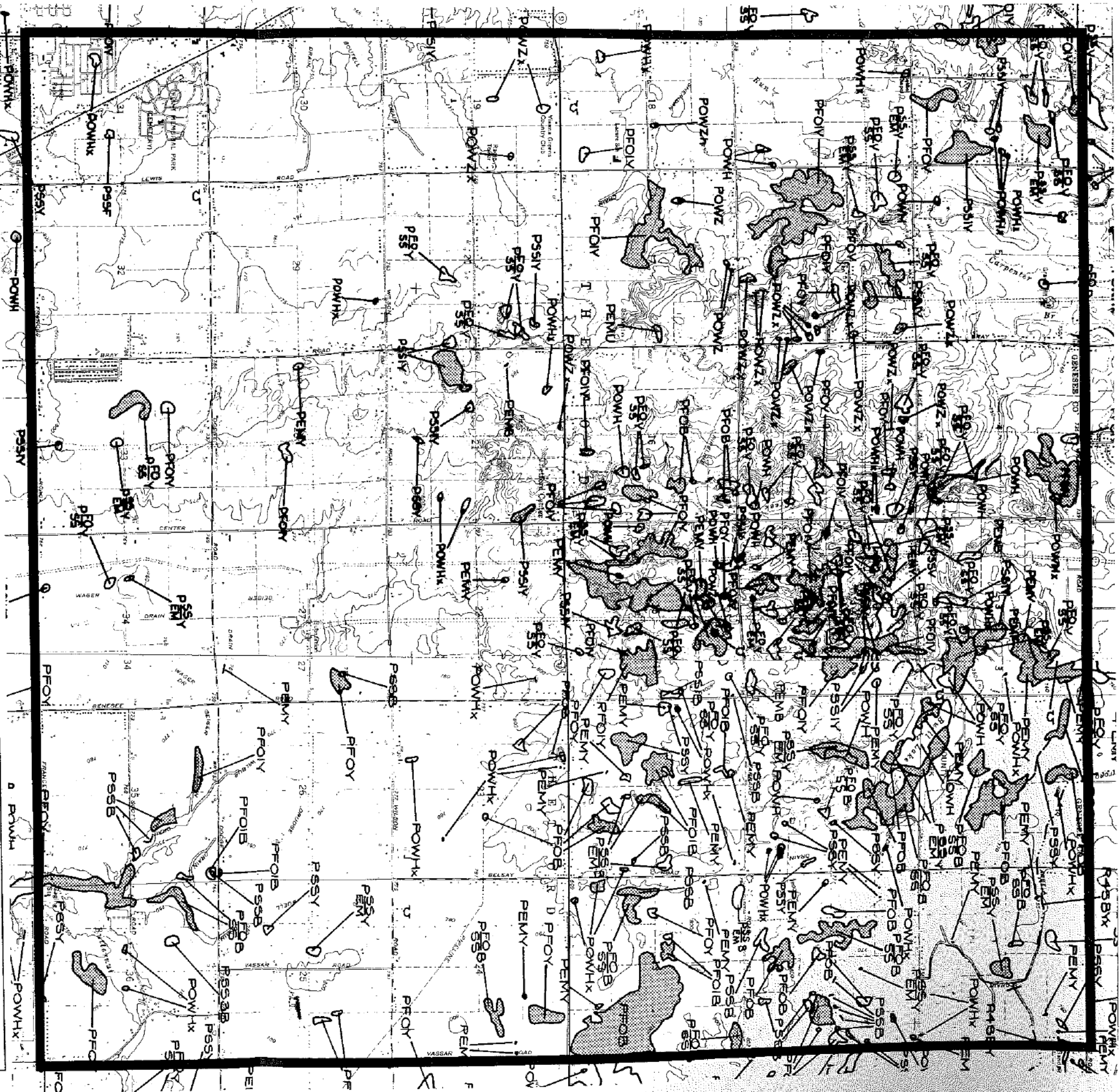
Under the Act, the following wetlands are protected:

1. Wetlands contiguous to an inland lake, pond, river, stream, or similar natural water course.
2. Wetlands five acres in size or larger in counties which contain a population of at least 100,000 people.

The Act also permits a municipality, by ordinance, to provide for a more stringent definition and regulation of wetlands.

The Fish and Wildlife Service of the U.S. Department of Interior has conducted a wetlands inventory of Thetford Township using stereoscopic analysis of high altitude aerial photographs. This inventory is shown as Map 3.

¹Malcolm Forbes Baldwin, "Wetlands Warning," American Land Forum Magazine, Fall 1986, page 65.



THE PREPARATION OF THIS PLAN WAS FINANCED THROUGH A GRANT PROVIDED UNDER TITLE I OF THE HOUSING AND COMMUNITY DEVELOPMENT ACT OF 1974, AS AMENDED. THE COUNTY DEVELOPMENT PROGRAM, GENERAL COUNTY COMMUNITY DEVELOPMENT PROGRAM.


PROTECTED WETLANDS

Map 3 indicates that there is an abundance of wetlands in the Township, most of which are protected under the Goemaere-Anderson Wetland Protection Act.

SOILS

Soils represent significant limitations to urban development in Thetford Township.

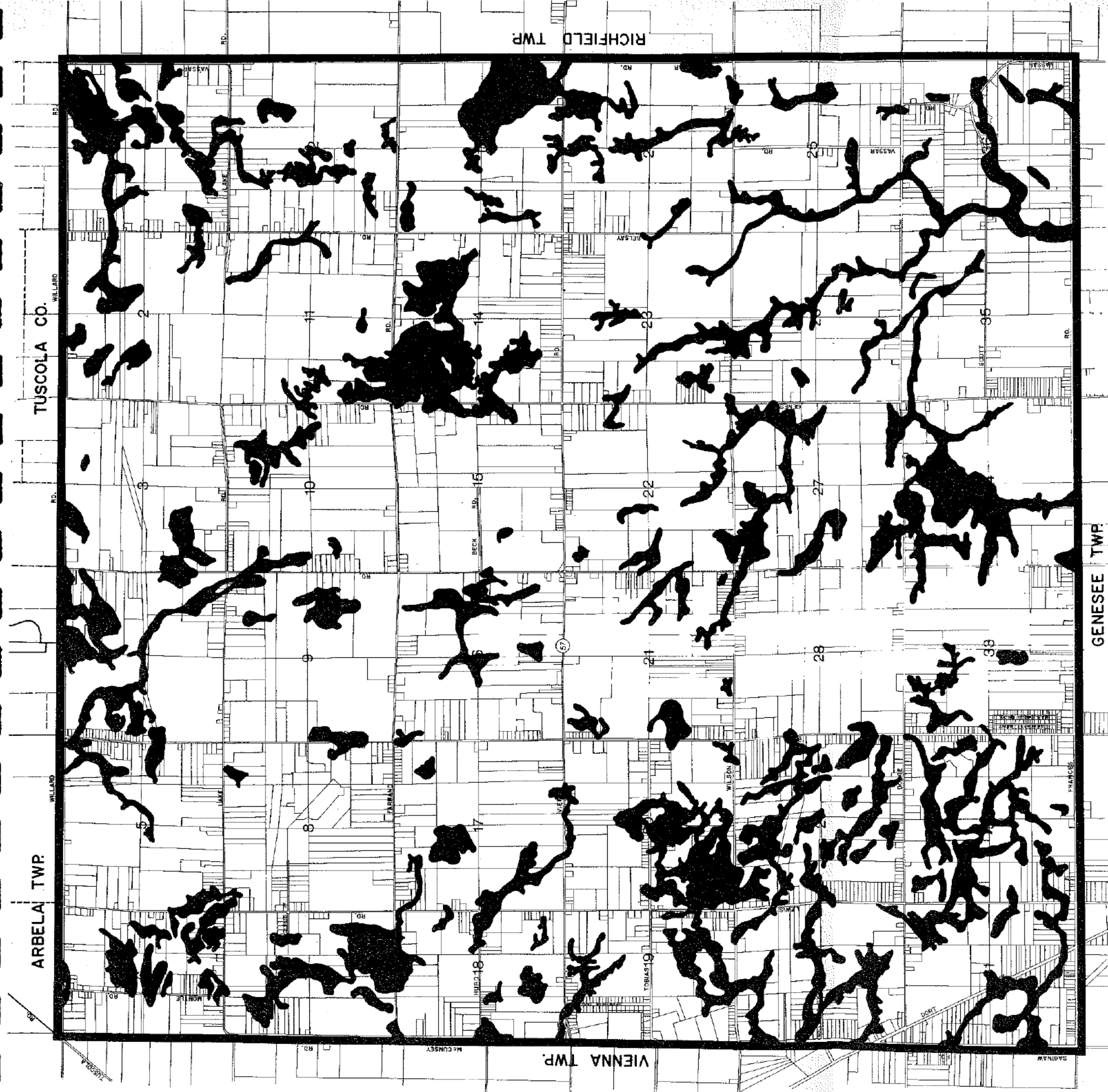
Data in Table 3 indicate that there are 69 different soil types within the Township, 15 of which (21 percent) can be classified as sensitive soils. The sensitive soils are shown on Map 4.

Some of these soils are poorly drained and have a high water table making them unsuitable for waste disposal. It is difficult to keep basements dry in such soils. Poorly drained soils also cause cracking of pavement. Substantial frost heaving also occurs in such soils. Other sensitive soils are prone to flooding and are located near the Township's identified water courses. Development in these areas should be discouraged.

It should be noted, however, that these soil interpretations are general in nature and will not eliminate the need for on-site study and testing of specific sites for the design and construction of specific uses. This data can be used to plan more detailed investigation and for avoiding undesirable sites for temporary uses.

TABLE 3
SOIL SERIES
THETFORD TOWNSHIP, GENESEE COUNTY, MICHIGAN*

<u>SOIL SYMBOL(a)</u>	<u>SOIL DESCRIPTION(a)</u>
ArB -	Arkport loamy fine sand, 2 to 6 percent slopes
ArC -	Arkport loamy fine sand, 6 to 12 percent slopes
AsB -	Au Gres loamy sand, 0 to 6 percent slopes
AuB -	Au Gres loamy sand, loamy substratum, 0 to 6 percent slopes
Bp -	Borrow pits
BrB -	Booyer loamy sand, 2 to 6 percent slopes
BrC -	Boyer loamy sand, 6 to 12 percent slopes
BrD -	Boyer loamy sand, 12 to 18 percent slopes
Bt -	Breckenridge-Brevort complex
Bv -	Brevort loamy sand
Bw -	Brookston loam
Cc -	Carlisle muck
CeC -	Celina loam, 6 to 9 percent slopes
C1A -	Celina-Conover loams, 0 to 2 percent slopes
C1B -	Celina-Conover loams, 2 to 6 percent slopes
CmB -	Celina-Owosso sandy loams, 2 to 6 percent slopes
Cn -	Ceresco fine sandy loam
Co -	Cohoctah silt loam
Cp -	Colwood silt loam
CvA -	Conover loam, 0 to 2 percent slopes
CvB -	Conover loam, 2 to 6 percent slopes
CwA -	Conover-Metamora sandy loams, 0 to 2 percent slopes
CwB -	Conover-Metamora sandy loams, 2 to 6 percent slopes
CxB -	Croswell sand, 0 to 6 percent slopes
DrA -	Del Ray silt loam, 0 to 2 percent slopes
DrB -	Del Ray silt loam, 2 to 6 percent slopes



ARBELAI TWP

TUSCOLA CO.

VIENNA TWP

GENESEE TWP

THE PREPARATION OF THIS PLAN WAS FINANCED THROUGH A GRANT PROVIDED UNDER TITLE I OF THE HOUSING AND COMMUNITY DEVELOPMENT ACT OF 1974, AS AMENDED. THE GRANT WAS ADMINISTERED BY THE GENESSEE COUNTY DEVELOPMENT PROGRAM.

TABLE 3
SOIL SERIES
THETFORD TOWNSHIP, GENESEE COUNTY, MICHIGAN*
(Continued)

<u>SOIL SYMBOL(a)</u>	<u>SOIL DESCRIPTION(a)</u>
Ed -	Edwards muck
Gd -	Gilford sandy loam
Gm -	Granby loamy sand
Gr -	Gravel pits
KfA -	Kibbie fine sandy loam, 0 to 2 percent slopes
Lb -	Lamson loamy fine sand
Le -	Lenawee silty clay loam
Lm -	Linwood muck
Lu -	Lupton muck
Md -	Made land
Mk -	Markey muck
M1A -	Metamora sandy loam, 0 to 2 percent slopes
M1b -	Metamora sandy loam, 2 to 6 percent slopes
MnA -	Metea loamy sand, 0 to 2 percent slopes
MnB -	Metea loamy sand, 2 to 6 percent slopes
MnC -	Metea loamy sand, 6 to 12 percent slopes
MoB -	Miami loam, 2 to 6 percent slopes
MoC -	Miami loam, 6 to 12 percent slopes
MpC2 -	Miami clay loam, 6 to 12 percent slopes, eroded
MpD2 -	Miami clay loam, 12 to 18 percent slopes, eroded
MtB -	Miami-Metea complex, 2 to 6 percent slopes
MtC -	Miami-Metea complex, 6 to 12 percent slopes
MuA -	Minoa loamy fine sand, 0 to 2 percent slopes
MvB -	Morley silt loam, 2 to 6 percent slopes
MvC -	Morely silt loam, 6 to 12 percent slopes
OaB -	Oakville fine sand, 0 to 6 percent slopes
OaC -	Oakville fine sand, 6 to 12 percent slopes

TABLE 3
SOIL SERIES
THETFORD TOWNSHIP, GENESEE COUNTY, MICHIGAN*
(Continued)

<u>SOIL SYMBOL(a)</u>	<u>SOIL DESCRIPTION(a)</u>
OkB -	Oakville fine sand, loamy substratum, 0 to 6 percent slopes
PeB -	Perrin loamy sand, 2 to 6 percent slopes
PnA -	Pinconning-Allendale loamy fine sands, 0 to 2 percent slopes
Se -	Sebewa loam
SdA -	Selfridge loamy sand, 0 to 2 percent slopes
SdB -	Selfridge loamy sand, 2 to 6 percent slopes
SfB -	Sisson fine sandy loam, 2 to 6 percent slopes
Sn -	Sloan silt loam, occasionally flooded
SpA -	Spinks loamy sand, wet subsoil variant, 0 to 2 percent slopes
SvA -	Spinks-Oakville loamy sands, 0 to 2 percent slopes
SvB -	Spinks-Oakville loamy sands, 2 to 6 percent slopes
SvC -	Spinks-Oakville loamy sands, 6 to 12 percent slopes
SvD -	Spinks-Oakville loamy sands, 12 to 18 percent slopes
TsA -	Tuscola silt loam, 0 to 2 percent slopes
TsB -	Tuscola silt loam, 2 to 6 percent slopes
WeA -	Wasepi sandy loam, 0 to 2 percent slopes

*Analysis by IMPACT: Improved Planning Action

(a) Soil symbol and description from the U.S. Department of Agriculture, Soil Conservation Service, Soil Survey of Genesee County, Michigan, 1972.

NOTE: Bolded text indicates sensitive soil.

PRIME FARMLAND

The U.S. Department of Agriculture, Soil Conservation Service has also analyzed soils data to determine which soils are best suited for farming.

Prime farmland soils, as defined by the U.S. Department of Agriculture, are soils that are best suited to producing food, feed, forage, fiber, and oilseed crops. Such soils have soil properties that are favorable for the economic production of sustained high yields of crops. The soils need to be treated and managed using acceptable farming methods. The moisture supply, must, however, be adequate, and the growing season has to be sufficiently long.

Prime farmland soils may presently be used as cropland, pasture, or woodland, or they may be in other land uses. They are either used for producing food or fiber or are available for these uses. Urban and built-up land or water areas cannot be considered prime farmland.

Prime farmland soils usually get an adequate and dependable supply of moisture from precipitation or irrigation. The temperature and growing season are favorable. The acidity or alkalinity level of the soils is acceptable. The soils have few or no rocks and are permeable to water and air. They are not excessively erodible or saturated with water for long periods and are not frequently flooded during the growing season. The slope ranges mainly from 0 to 6 percent.

Soils that have limitations (sensitive soils) may qualify as prime farmland soils if the limitations are overcome by such measures as drainage, flood control, or irrigation. Onsite evaluation is necessary to determine the effectiveness of corrective measures.

The prime farmlands in Thetford Township are identified on Map 5. Thetford Township should recognize such property as a valuable natural resource and encourage its continued utilization as farm property.

POPULATION PROFILE

INTRODUCTION

The purpose of this examination is to identify the characteristics of the Township population to reveal what trends are occurring and what opportunities may exist for future land use development activities. For example, a population comprised of members in the family formation group would indicate a need for multiple-family dwellings, active recreation areas, primary educational facilities, and ample employment opportunities. The first of the population characteristics to be analyzed is Thetford Township's historical population pattern.

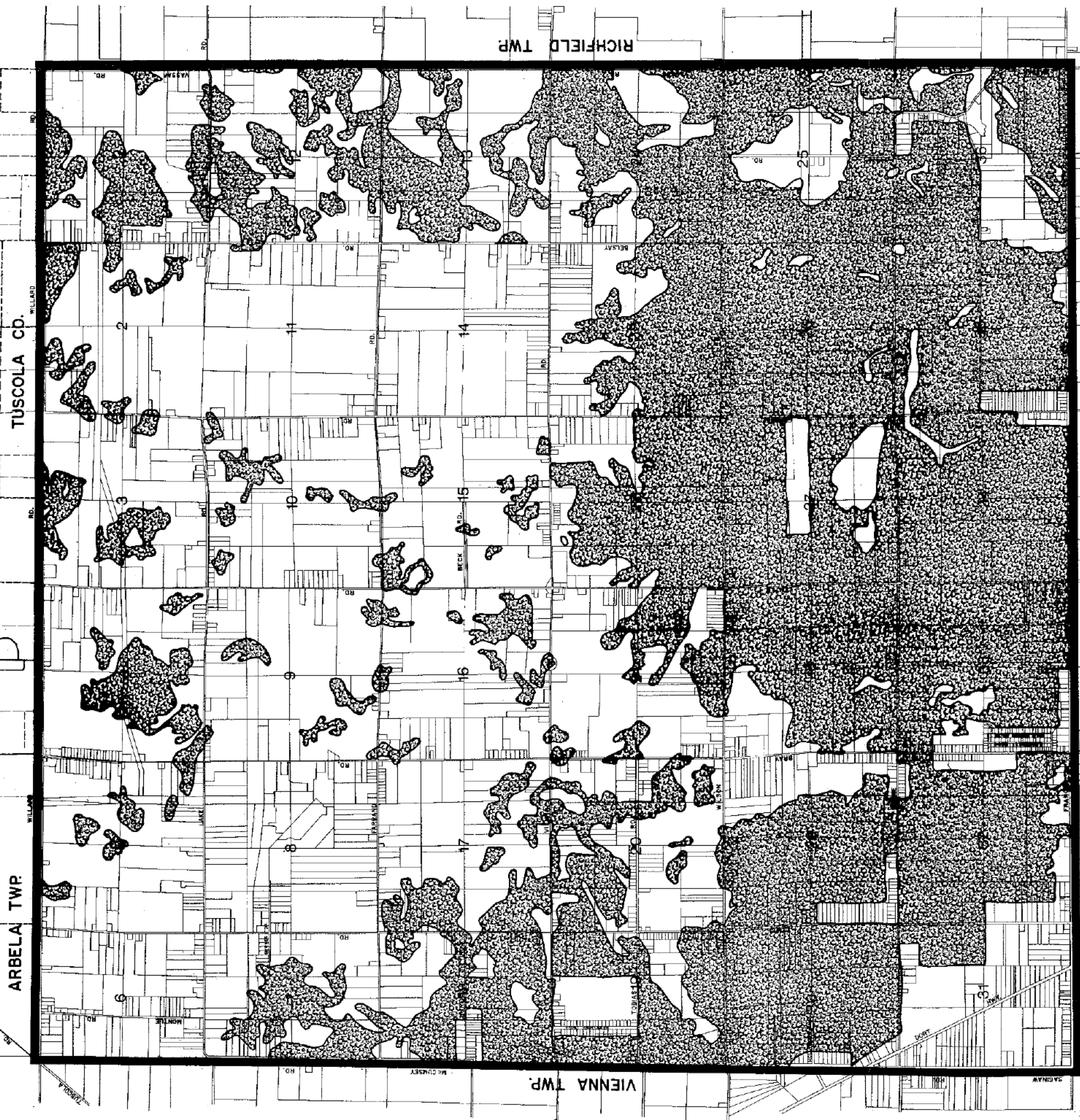
POPULATION CHARACTERISTICS

Historical Population Growth

Thetford Township is a part of the region embraced by the Genesee, Lapeer, Shiawassee Planning Development Commission (Region V). The Region, one of fourteen such planning and development regions in the state, includes among its members the various governmental units located in this three county area. Thetford Township, as a constituent of the Region V, as well as the Flint Metropolitan area, is directly affected by regional conditions and trends (see Map 6).

Since 1960, the Flint Metropolitan area has been characterized by population growth and by a significant geographical shifting of population. Evidence of this trend can be seen from the data presented in Table 4.

The City of Flint, the largest city in the region, has shown continued decreases in population since 1960, most of which occurred during the last decade. During the 20-year period presented, the City of Flint lost 37,329 people, a decrease of 19.0 percent.



ARBELA TWP

TUSCOLA CD.

RICHFIELD TWP

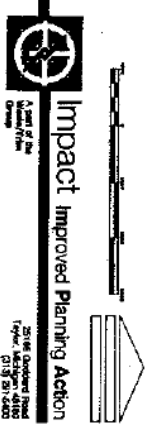
VIENNA TWP

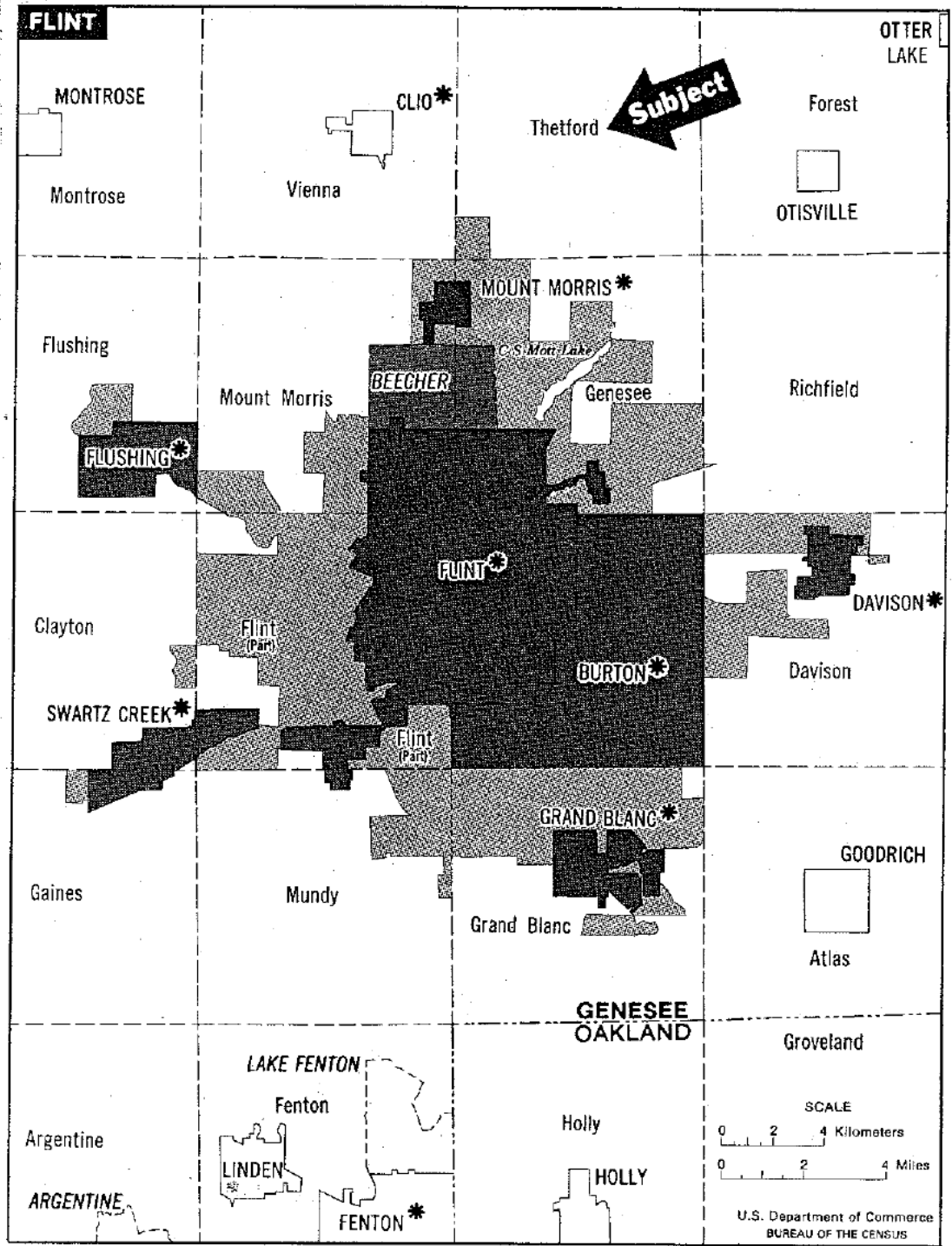
GENESEE TWP

THE PREPARATION OF THIS PLAN WAS FINANCED THROUGH A GRANT PROVIDED UNDER TITLE I OF THE HOUSING AND COMMUNITY DEVELOPMENT ACT OF 1974, AS AMENDED. THE GRANT WAS ADMINISTERED BY THE GENESEE COUNTY COMMUNITY DEVELOPMENT PROGRAM.

5. PRIME FARMLAND

THETFORD TOWNSHIP, GENESEE COUNTY, MICHIGAN





SYMBOLS



Open six-spoked asterisk following place name indicates the place is coextensive with a county subdivision. The county subdivision name is shown only when it differs from that of the place.



Solid eight-spoked asterisk following an incorporated place name indicates the place is treated as a county subdivision for census purposes.

COMPONENTS OF URBANIZED LAND AREA



Incorporated place
 Census designated place
 Other area

TABLE 4
POPULATION TRENDS, GENESEE COUNTY COMMUNITIES
1960 - 1980*

	1960 POPULATION ^a	1970 POPULATION ^b	CHANGE 1960 - 1970		PERCENT OF OUT-COUNTY GROWTH ^c	1980 POPULATION ^d	CHANGE 1970 - 1980		PERCENT OF OUT-COUNTY GROWTH ^c	CHANGE 1960 - 1980		PERCENT OF OUT-COUNTY GROWTH ^c
			NUMBER	PERCENT			NUMBER	PERCENT		NUMBER	PERCENT	
THETFORD TOWNSHIP	3,843	6,014	2,171	56.5	3.3	8,499	2,485	41.3	6.4	4,656	121.2	4.5
Burton City	29,700 ^d	32,540 ^e	2,840	9.6	4.3	29,976	(2,564)	7.9	-	276	0.9	0.3
Clio City	2,212	2,357	145	6.6	0.2	2,669	312	13.2	0.8	457	20.7	0.4
Davidson City	3,761	5,259	1,498	39.8	2.3	6,087	828	15.7	2.1	2,326	61.8	2.2
Fenton City	6,142	8,284	2,142	34.9	3.3	8,098	(186)	2.2	-	1,956	31.8	1.9
Flint City	196,940	193,317	(3,623)	(1.8)	-	159,611	(33,706)	(17.4)	-	(37,329)	(19.0)	-
Flushing City	3,761	7,190	3,429	91.2	5.3	8,624	1,434	19.9	3.7	4,863	129.3	4.7
Gainess Village	387	403	21	5.4	0.0	440	32	7.8	0.1	53	13.7	0.0
Goodrich Village	701	774	73	10.4	0.1	795	21	2.7	0.1	94	13.4	0.1
Grand Blanc City	1,565	5,132 ^f	3,567	227.9	5.5	6,848	1,716	33.4	4.5	5,283	337.5	5.1
Lennon Village (pt)	-	102	-	-	-	114	12	11.8	0.0	-	-	-
Linden Village	1,146	1,546	400	34.9	0.6	2,174	628	40.6	1.6	1,028	89.7	1.0
Montrose Village	1,466	1,789	323	22.0	0.5	1,706	(83)	(4.6)	-	240	16.4	0.2
Mount Morris City	3,484	3,778	294	8.4	0.5	3,246	(532)	(14.1)	-	(238)	(6.8)	-
Ottsville Village	701	724	23	3.3	-	682	(42)	(5.8)	-	(19)	(2.7)	-
Otter Lake Village (pt)	6	2	(4)	(66.7)	-	14	12	600.0	0.0	8	133.3	0.0
Swartz Creek City	3,006	4,928	1,922	63.9	3.0	5,013	85	1.7	0.2	2,007	66.8	1.9
Argentine Township	2,106	2,901	795	37.7	1.2	4,180	1,279	44.1	3.3	2,074	98.5	2.0
Atlas Township	1,509	2,315	806	53.4	1.2	4,096	1,781	76.9	4.6	2,587	171.4	2.5
Clayton Township	2,680	5,203	2,523	94.1	3.9	7,155	1,952	37.5	5.1	4,475	167.0	4.3
Davidson Township	4,948	8,260	3,312	66.9	5.1	13,708	5,448	66.0	14.1	8,760	177.0	8.5
Fenton Township	11,615	7,304	(4,311)	(37.1)	-	9,570	2,266	31.0	5.9	(2,045)	(17.6)	-
Flint Township	19,178	31,175	11,997	62.6	18.5	35,405	4,230	13.6	11.0	16,227	84.6	15.7
Flushing Township	8,535	6,957	(1,578)	(18.5)	-	9,246	2,289	32.9	5.9	711	8.3	0.7
Forest Township	1,955	2,590	635	32.5	0.9	3,559	969	37.4	2.5	1,604	82.0	1.5
Gainess Township	1,884	2,971	1,087	57.7	1.7	4,769	1,798	60.5	4.7	2,885	153.1	2.8
Genesee Township	21,011	25,589	4,578	21.8	7.0	25,065	(524)	(2.0)	-	4,054	19.3	3.9

TABLE 4
POPULATION TRENDS, GENESSEE COUNTY COMMUNITIES
1960 - 1980*
(Continued)

	1960 POPULATION ^a	1970 POPULATION ^b	CHANGE 1960 - 1970		PERCENT OF OUT-COUNTY GROWTH ^c	1980 POPULATION ^d	CHANGE 1970 - 1980		PERCENT OF OUT-COUNTY GROWTH ^c	CHANGE 1960 - 1980		PERCENT OF OUT-COUNTY GROWTH ^c
			NUMBER	PERCENT			NUMBER	PERCENT		NUMBER	PERCENT	
Grand Blanc Township	9,418	19,229	9,811	104.2	15.1	24,413	5,184	27.0	13.4	14,995	159.2	14.5
Montrose Township	3,540	4,679	1,139	32.2	1.7	6,164	1,485	31.7	3.9	2,624	74.1	2.5
Mount Morris Township	20,633	29,349	8,716	42.2	13.4	27,928	(1,421)	(4.8)	-	7,295	35.4	7.0
Mundy Township	5,004	8,029	3,025	60.5	4.7	10,786	2,757	34.3	7.1	5,782	115.5	5.6
Richfield Township	4,147	5,535	1,388	33.5	2.1	6,895	1,360	24.6	3.5	2,748	66.3	2.6
Vienna Township	7,232	9,359	2,127	29.4	3.3	12,914	3,555	38.0	9.2	5,682	78.6	5.5
Genessee County	384,216 ^g	445,589	61,373	15.9		450,449	4,860	1.1		66,233	17.2	
Genessee County (Excluding Flint)	187,276	252,272	64,996	34.7		290,838	38,566	15.3		103,562	55.3	

*Analysis by IMPACT: Improved Planning Action.

^aData from the 1970 U.S. Census, Number of Inhabitants, Michigan

^bData from the 1980 U.S. Census, Number of Inhabitants, Michigan

^cPercentages do not sum to 100 percent inasmuch as population gains for individual governmental units include growth from intra-county migration. Figures, however, are representative of general degree of community appeal within the out-county area.

^dBurton Township total.

^eIncorporated from Burton Township.

^fLennon Village was incorporated in Genessee and Shiawassee Counties (1970 population: 624 total; 102 in Genessee County).

^gFigure represents sum of minor civil divisions within Genessee County as reported in the 1970 U.S. Census, Number of Inhabitants, Michigan, exclusive of unincorporated places. Sum does not equal Genessee County total population reported in same.

Opposite the City of Flint's declining population trend was an increase of population in the out-county. Genesee County, excluding the City of Flint, increased by 103,562 people (55.3 percent) between 1960 and 1980. Thus, it can be seen that many of the residents moving from Flint and to Genesee County have located to suburban and rural areas throughout the remainder of Genesee County and in other areas of the region.

This shifting of the population was of particular importance to Thetford Township's population growth in that some of those wishing to relocate from the City of Flint, or moving into Genesee County for the first time, located in the Township.

The Township has been subjected to considerable and consistent population growth over the last 20 years. It has been one of the fastest growing communities in Genesee County since 1960. Data in Table 4 document the population trends of all governmental units in Genesee County since 1960.

In 1960, Thetford Township had a population of 3,843 persons. By 1970, it had gained an additional 2,171 people, an increase of 56.5 percent. Only eight other communities in Genesee County received a larger percentage gain during this decade. This is significant since four of the Genesee County communities lost population during this same 10-year period.

Thetford Township achieved a similar increase in population since 1970, adding 2,485 persons to its 1970 population of 6,014. Its 1980 population of 8,499 represents a 41.3 increase over its 1970 total, placing it sixth in terms of numerical change and rate of growth among all Genesee County communities over the same 10-year period. More importantly, Thetford Township is capturing a greater share of the population growth occurring in the out-county area. During 1960-1970, the Township's population growth represented 3.3 percent of all of the out-county's population gain. Between 1970-1980, the Township's population increase accounted for 6.4 percent of the out-county population growth.

Age - Sex Distribution

Community development planning must anticipate the services different age groups will demand in the future. This can be accomplished by examining age-sex data trends. For example, established family groups demonstrate a tendency to reside in single-family residential units, while a population consisting of mostly family formation groups, (i.e., young married couples), are inclined to reside in multiple-family developments. Data provided in Table 5 document the age-sex composition for Thetford Township for the Years 1970 and 1980. This information is also contrasted in the following diagram.

The number of males and females are similar in each age group and the proportion of the population who are young adults (15-19 years) and who are 55 years and older remained stable during the decade. The number of persons under 14 years of age and those between the ages of 35-44 years actually dropped; however, dramatic growth occurred in the 20-34 year age cluster. It can be inferred from this data that the population growth which occurred in the Township during the previous decade was composed primarily of the family formation cohort consisting of couples with few children.

Minority Group Composition

The Township's racial mix has remained predominately white over the last decade; however, there have been significant gains achieved by the nonwhite population over this time period.

TABLE 5
AGE-SEX COMPOSITION
THETFORD TOWNSHIP, GENESEE COUNTY, MICHIGAN
1970 AND 1980*

1970 AGE-SEX CHARACTERISTICS^a

AGE COHORT	MALE		FEMALE		TOTAL	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
Under 5	308	10.2	268	8.9	546	9.6
5 - 9	381	12.6	373	12.5	754	12.5
10 - 14	396	13.1	402	13.4	798	13.3
15 - 19	283	9.4	295	9.8	578	9.6
20 - 24	201	6.7	198	6.6	399	6.6
25 - 34	357	11.8	416	13.9	713	12.9
35 - 44	430	14.3	404	13.5	834	13.9
45 - 54	322	10.6	314	10.5	636	10.6
55 - 59	94	3.1	111	3.7	205	3.4
60 - 64	84	2.8	71	2.4	155	2.6
65 +	162	5.4	144	4.8	306	5.0
	<u>3,018</u>	<u>100.0</u>	<u>2,996</u>	<u>100.0</u>	<u>6,014</u>	<u>100.0</u>

1980 AGE-SEX CHARACTERISTICS^b

AGE COHORT	MALE		FEMALE		TOTAL	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
Under 5	393	9.3	376	8.8	769	9.0
5 - 9	424	10.0	408	9.6	832	9.8
10 - 14	441	10.4	404	9.5	845	9.9
15 - 19	431	10.1	389	9.2	820	9.6
20 - 24	383	9.0	438	10.3	821	9.7
25 - 34	771	18.2	825	19.4	1,596	18.8
35 - 44	541	12.7	529	12.4	1,070	12.6
45 - 54	441	10.4	398	9.4	839	9.9
55 - 59	159	3.7	145	3.4	304	3.6
60 - 64	102	2.4	110	2.6	212	2.5
65 +	161	3.8	230	5.4	391	4.6
	<u>4,247</u>	<u>100.0</u>	<u>4,252</u>	<u>100.0</u>	<u>8,499</u>	<u>100.0</u>

*Analysis by IMPACT: Improved Planning Action.

^aData from the 1970 U.S. Census, Census Tracts, Flint, Michigan, SMSA.

^bData from the 1980 U.S. Census, General Population Characteristics, Michigan.

Data in Table 6 exhibit the racial composition of the Township for 1970 and 1980. The nonwhite population increased by 201 persons, or 291.3 percent over the last decade. This compares to only a 38.4 percent increase (2,284 persons) for the white population over the same period of time.² This relationship is shown in the diagram below.

The 1980 U.S. Census reports that the small nonwhite population consisted of 144 Blacks, 53 American Indians, 14 Koreans, 2 Vietnamese, 2 Guamanian, and 55 "other" (Asian and Pacific Islander groups, i.e., Fiji Islanders, Cambodian, Laotian, etc.). Due to their limited number to date, it is not expected that future growth in the nonwhite population will significantly influence future land planning decisions.

Household Size

A relatively recent phenomenon, characteristic of today's population, is one of the declining household size. As a result, it has not been uncommon for communities to register a net increase in the housing supply while simultaneously recording a population loss. This trend has evolved due, to a large extent, to the declining family size.

The Township is experiencing this trend. Data in Table 7 depict the number of persons per household for the years 1970 and 1980.

²The difference in reporting has a substantial impact on the counts and comparability for the white and other population groups between the two census years. In 1980, a much larger proportion of Spanish origin population reported their race as other. In 1970, most persons who marked other and wrote in a Spanish designation (i.e., Mexican) were reclassified as white; thus, the data presented above should be used only to infer general trends, and not be considered to represent a precise measurement.

Age Composition

Thetford Township, Genesee County

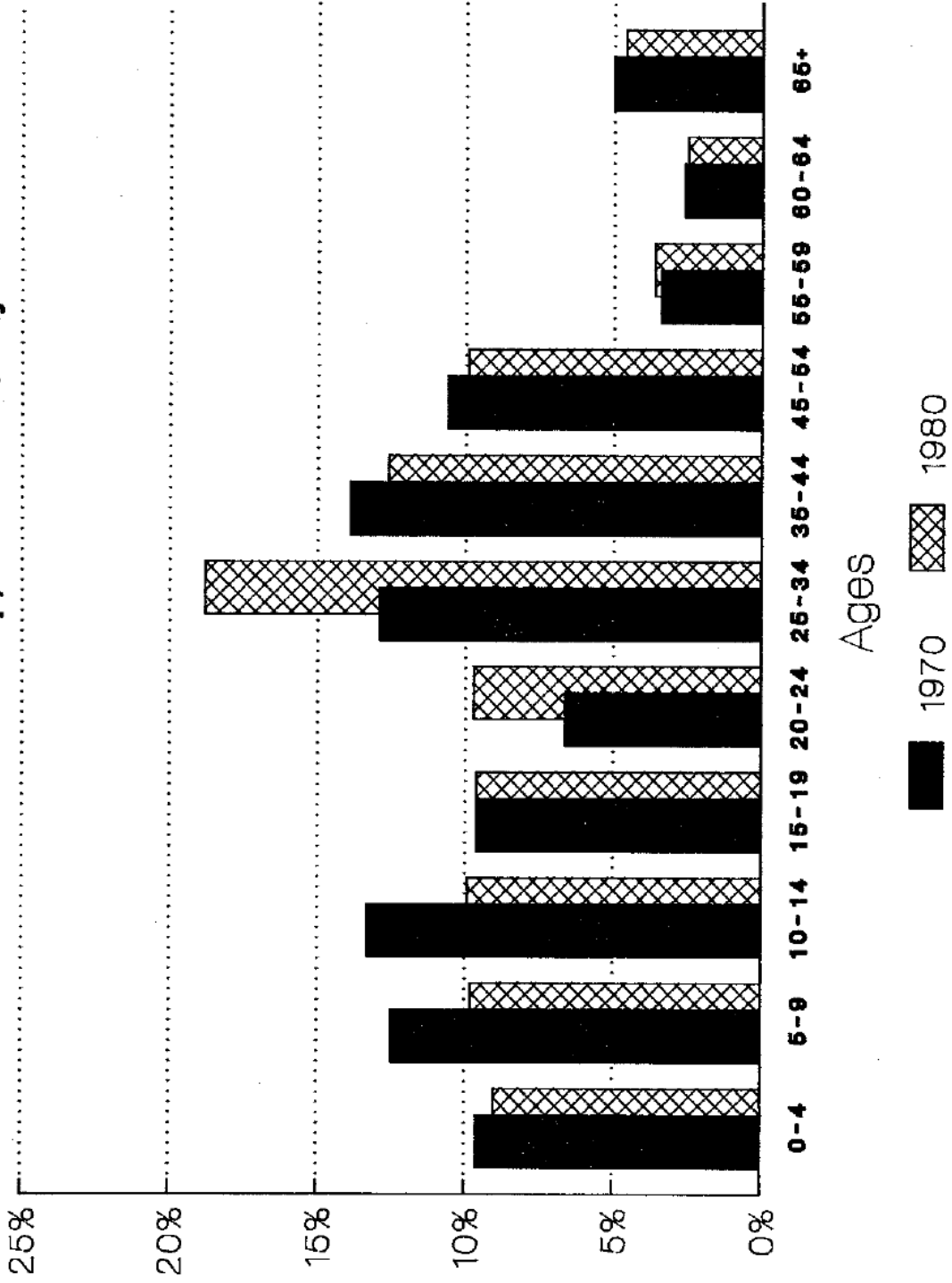


TABLE 6
 MINORITY GROUP COMPOSITION
 THETFORD TOWNSHIP, GENESEE COUNTY, MICHIGAN
 1970 AND 1980*

RACE	1970 ^a		1980 ^b		CHANGE 1970 - 1980	
	NUMBER	PERCENT	NUMBER	PERCENT	NUMBER	PERCENT
White	5,945	98.9	8,229	96.8	2,284	38.4
Nonwhite ^c	69	1.1	270	3.2	201	291.3
TOTAL	6,014	100.0	8,499	100.0	2,485	41.3

*Analysis by IMPACT: Improved Planning Action.

^aData from the 1970 U.S. Census, Census Tracts, Flint, Michigan, SMSA.

^bData from the 1980 U.S. Census, General Social and Economic Characteristics, Michigan.

^cIncludes Blacks, American Indian, Eskimo, Aleut, Asian and Pacific Islander, among others.

TABLE 7

PERSONS PER HOUSEHOLD TRENDS
 THETFORD TOWNSHIP, GENESEE COUNTY, MICHIGAN
 1970 - 1980*

<u>CATEGORY</u>	<u>YEAR</u>		<u>CHANGE, 1970-1980</u>	
	<u>1970^a</u>	<u>1980^b</u>	<u>NUMBER</u>	<u>PERCENT</u>
Persons Per Houshold	3.73	3.13	(0.60)	(16.1)

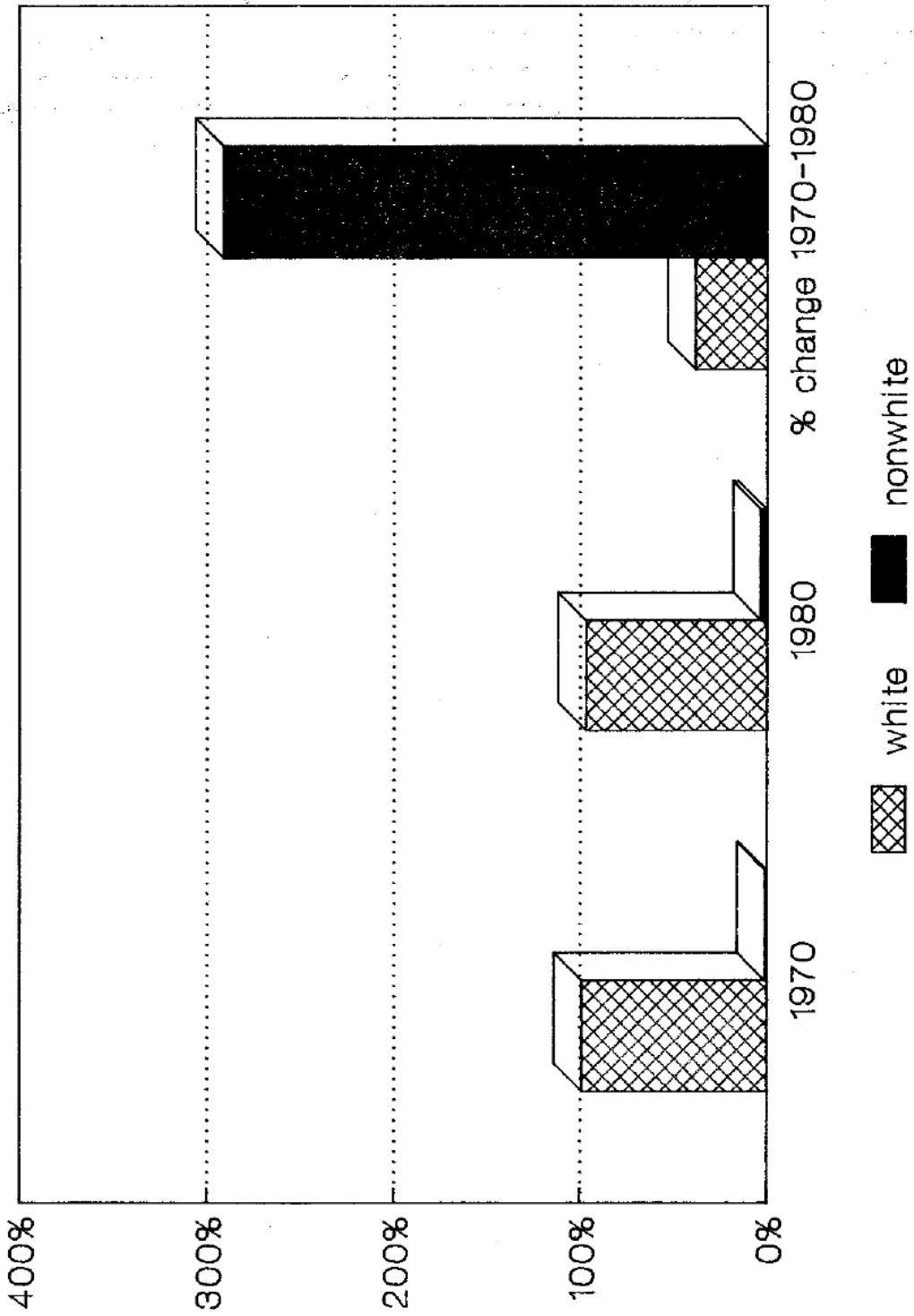
*Analysis by IMPACT: Improved Planning Action.

^aData from the 1970 U.S. Census, General Population Characteristics, Michigan.

^bData from the 1980 U.S. Census, General Population Characteristics, Michigan.

Minority Group Composition

Thetford Township, Genesee County



The Township has experienced a decrease in the number of persons per household between 1970 and 1980. In 1980, the Township's persons per household ratio was 3.13, a decline of 16.1 percent (0.6 persons) since 1970.

Such a decline must be considered when analyzing future housing needs in conjunction with population projections, as housing units will be occupied by far fewer people. It is estimated that Thetford Township will continue to show a decline in household size.

The U.S. Department of Commerce, Bureau of the Census, has prepared a series of estimates for the average size of future households in its publication "Projections of the Number of Households and Families: 1979 to 1995." This report, issued in May, 1979, represents the latest projections on this topic issued by the U.S. Census. Data in Table 8 document these projections.

The presentation of data in Table 8 indicate that projecting the average number of persons per household requires making certain assumptions about the composition of the population, including the number of future births and age, sex and marital status distributions. Such an analysis is beyond the scope of this report. Thus, it will be assumed that the average size of households added to Thetford Township between 1980 and the Year 2000 will follow national trends. For simplification purposes, 2.7 persons per household will be used for 1990 and 2.5 persons per occupied household will be used as the estimated Year 2000 figure.

Population Projections

There are several methods often utilized to project the future population of a community, but all basically involve, to some degree, the extension of past trends into the future. Data in Table 9 present four different approaches.

TABLE 8
ESTIMATES OF AVERAGE SIZE OF
HOUSEHOLD (ALL PERSONS)
THE NATION, 1985 - 1995*

HOUSEHOLD SERIES ^a	AVERAGE NUMBER OF PERSONS PER HOUSEHOLD ^b		
	1985	1990	1995
A	2.50 - 2.61	2.34 - 2.53	2.21 - 2.46
B	2.53 - 2.65	2.40 - 2.59	2.28 - 2.55
C	2.53 - 2.65	2.39 - 2.58	2.28 - 2.54
D	2.60 - 2.71	2.51 - 2.70	2.44 - 2.72

*U.S. Department of Commerce, Bureau of the Census,
Projections of the Number of Households and Families:
1979 to 1995, May, 1979.

^aSeries distinctions based upon variations in age, sex
and marital status distribution of population.

^bRange reflects different assumptions about the number
of future births.

TABLE 9
 POPULATION PROJECTIONS
 THETFORD TOWNSHIP, GENESEE COUNTY, MICHIGAN
 1980 - 2000*

1980 POPULATION ^a	YEAR 2000 PROJECTION			
	GLS REGION V ^b	Batelle Laboratories ^c	ARITHMETIC ^d	GEOMETRIC ^e
8,499	9,548	8,335	13,469	19,472

*Analysis by IMPACT: Improved Planning Action.

^aData from the 1980 U.S. Census, Number of Inhabitants, Michigan.

^bGLS, Region V, Planning and Development Commission, 1985 - 2010
 Population Allocation Study, November, 1985.

^cPopulation Projections for the GLS Region V Area, 1980-2005, Batelle
 Laboratories, 1977.

^dRepresents extension of population trend between 1970 and 1980 on a
 numerical basis.

^eRepresents extension of population trend between 1970 and 1980 on a
 percentage basis.

Region V prepared a population projection for Thetford Township as part of their "1985 - 2010 Population Allocation Study" completed in November, 1985. Their recent projection predicts that Thetford Township will have a population of 9,548 people by the end of this century.

Arithmetic and geometric projections are shown in Table 9. They reflect the population trends in the Township during the last decade. The arithmetic projection extends the population growth on a numerical basis (248.5 person/year) while the geometric method extends the growth on a percentage basis (four percent/year). Using the arithmetic technique, a Year 2000 population of 13,469 people can be anticipated. The geometric method projects Thetford Township will have 19,472 people at the end of this century.

The last projection listed in Table 9 is one prepared by Batelle Laboratories for Region V communities in 1977. Their estimate was based upon trends which took shape previous to the severe economic decline which occurred in the Flint region at the end of the last decade. They estimated that Thetford Township would have a Year 2000 population of approximately 8,335, or 164 people less than the Township actually had in 1980.

As evidenced by the data provided in Table 9, a long-range forecast is, at best, a reasonable estimate of future population growth, based upon some reasonable past indices of information. It is assumed the population of Thetford Township at the end of this century will fall between the ranges identified above. It is the consultant's estimate, however, that the GLS Region V is a conservative value in view of Thetford's previous population gains. Conversely, the geometric projection is unlikely unless higher density development is permitted through the expansion of the local sanitary sewer system. IMPACT estimates that the actual population gains will be closer to the arithmetic figure. Thus, for purpose of this report, a year 2000 population projection of 11,000 will be utilized.

The following diagram charts the Township's past and expected population growth.