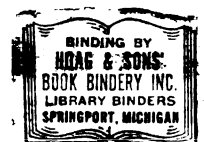


ZONING POLICY AND ITS RELATIONSHIP
TO URBAN SPRAWL IN THE
FLINT METROPOLITAN AREA

Thesis for the Degree of M. S.
MICHIGAN STATE UNIVERSITY
PRICE TERRANCE BANKS
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ABSTRACT

ZONING POLICY AND ITS RELATIONSHIP TO URBAN SPRAWL IN THE FLINT METROPOLITAN AREA

By

Price Terrance Banks

The metropolitan areas in the United States have grown at an unprecedented rate in the last thirty years. Much of this growth has occurred on the fringe of these areas and has resulted in the conversion of rural lands to urban uses. The process in most cases has not been carried out in an orderly fashion but has occurred in an uncoordinated manner. Any lands within relatively easy access of a large city were subject to development. As a result, a situation known as urban sprawl developed on the fringe of most large cities.

This sprawl consists of scattered, uncoordinated urban development which leaves vacant lands scattered throughout. It is not an efficient use of land resources and causes urban uses to occupy considerably more land than is necessary to perform their function. Moreover, these lands are not available for other uses such as agriculture or recreation.

Since its conception in the early part of the 20th

century, zoning has been the most important and most frequently applied of all land use controls in the United States. Zoning gives the local community the power to regulate the location, character and extent of the various classifications of land use. It would therefore, appear to be the obvious tool available to control urban sprawl.

Local communities are generally given considerable freedom where zoning is concerned and can formulate their own policies to conform to their needs or aspirations. These policies may or may not provide for the control of urban sprawl.

This thesis examines an urban region in an attempt to determine a relationship between zoning policy in local communities and the extent of urban sprawl in those communities.

As a consequence of this examination, it was concluded that a relationship exists between zoning policy and urban sprawl in the Flint Metropolitan Area. However, a number of exceptions to this relationship exist.

The thesis concludes by outlining ways in which zoning policy and responsibility could be changed to improve its function in regard to controlling urban sprawl.

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By

Price Terrance Banks

A THESIS

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CHAPTER I

INTRODUCTION

Considerable concern is presently being voiced about the pre-emption of our nation's valuable agricultural lands for urban development. In Michigan, the first report of the recently formed Governor's Commission on Land Use deals with this as if it were the most important of all land use problems. The report cites a steady decline in agricultural production in southern Michigan, and states that it is primarily caused by the transition of agricultural land to urban uses.¹

Meanwhile, urbanologists are seeking solutions to the problem of uncoordinated growth in urban regions. Urban development is occurring in a haphazard manner with little regard for existing land use patterns or for the economics of providing municipal services. The suburbs have removed themselves from the cities in many cases, and have left considerable areas of unused vacant land in between. Often the suburbs themselves have developed in a random fashion scattering urban uses over vast land areas interspersed with vacant or agricultural lands. In some cases, initial

¹Governor Milliken's Special Commission on Land Use, Land Use Programs for Michigan (Lansing, Michigan: Office of the Governor, State of Michigan, August 26, 1971), p. 18.

development occurs in a manner that renders adjacent lands extremely difficult to develop. Examples of this include urban residential development which usurps the frontage of rural roads isolating those lands which lie on the interior of the section.

In essence, the process by which lands are presently being converted from rural to urban uses is providing for a very low utilization of land resources. Lands are being wasted. Vivid examples of this waste can be found in ribbon development along roads or indiscriminate mixtures of dwellings on small lots in rural areas. Even the highly urbanized suburbs of our metropolitan regions are pock-marked with parcels of land that have no present use.

Frequently, speculation removes land from the current market in hopes of future gains in value. These lands, removed from agricultural use, may remain dormant for years or decades before they are developed in urban uses.

The combined effects of the above described phenomena cause urbanity to dominate a much larger land area than is necessary to serve its function. Moreover, this factor greatly reduces the efficiency of the urban center in providing goods and services.

For the purposes of this treatise, the disorderly urban growth which prematurely pre-emptes agricultural lands and results in overall inefficient land utilization will be termed "urban sprawl."

The control of urban sprawl can only be accomplished

by controlling land development and land use. The most frequently used method of controlling these factors is the zoning of land. In Michigan, cities, villages, townships, and counties are given the power to zone by the state legislature.

The County Board of Commissioners is given the power to establish a zoning ordinance which governs all lands lying outside the limits of incorporated cities and villages by the County Rural Zoning Enabling Act.² This act appears to give counties general zoning powers for all unincorporated lands within their boundaries. However, the Township Rural Zoning Act transmits these same powers to the township board and further provides that any township adopting a zoning ordinance under the provisions of this act shall be exempt from the county zoning ordinance.³ Consequently, most townships in metropolitan areas adopt zoning ordinances so they can have the power to control land use within their boundaries.

This student suggests that the phenomena of urban sprawl can be partially attributed to permissive zoning policy on the part of the suburban units of government. Zoning policy, it is suggested, frequently is not based upon a rational estimate of the needs of a community, but

²Act 183 of the Michigan Public Acts of 1943.

³Act 184 of the Michigan Public Acts of 1943.

is instead used as a means of competing with other municipalities for growth and tax base.

Petitions for changes in zoning are often filed on a speculative basis with no immediate plans to develop the site under consideration. The petitioner requests the change to a less restrictive zoning district in order to increase the value of his property, and in hopes that he may be able to sell it for a more intensive use than would be permitted under the present classification. In communities with permissive zoning policies, it is more likely than not that his request will be approved. Consequently, lands may be overzoned for higher intensity uses, and the market for lands of those classifications becomes saturated.

Even though the market may be saturated, it will often fail to drive down the value of these lands to their previous level. Considerable time and expense is involved in the rezoning of land and this must be added on to the price of the land in order for the petitioner to recoup his original investment. Moreover, the speculator often is in a position to wait for many years in anticipation of increased land values. The rezoning of vacant land, therefore, can partially inflate its value and remove it from the market place. Consequently, urban growth is forced to skip over these lands and urban sprawl occurs.

Lands located in remote rural areas are generally less expensive than those near the urban center with easy

access to essential services, and with a complete range of public utilities. This combines with the amenities of "country living" and the exodus to suburbia, and results in these rural lands being favored for urban development. Contemporary township zoning ordinances, however, generally provide agricultural districts which require a minimum residential lot size that is prohibitive for residences that are not part of a farm. Moreover, these agricultural districts do not usually permit the more intensive uses.

However, if a community is permissive in its administration of the ordinance, it may readily approve a change in zoning to a more intensive use district. Therefore, urban development is encouraged to occur in remote areas.

The second method that encourages urban development in remote areas involves the very structure of the zoning ordinance. In some ordinances, ~~an~~ an agricultural district is established but minimum lot size provisions may be decreased or waived for residential development upon existing roads. Again, the result is the promotion of ribbon urban development in rural areas.

The Flint, Michigan, metropolitan area presents a vivid example of urban sprawl. There is no apparent evidence of any attempt to coordinate urban growth. The entire metropolitan region is spotted with remote pockets of urban development. Scattered building development reaches out in all directions from the City of Flint

leaving numerous patches of unused land. Nearly all of the major roads in the area are victims of ribbon development.

For the purposes of the study, the Flint Metropolitan Area is defined as having the same boundaries as Genesee County. The county contains thirty-two municipalities including the City of Flint, seven smaller cities, six villages, and eighteen townships. The City of Flint lies near the center of the region.

The cities and villages within the county are old and well established. Most provided shopping and services to the farm community before the post war migration to the suburbs. Compared to the townships, they contain very little undeveloped land. Most of their existing boundaries were established long before the era of explosive urban growth that we are now witnessing.

The townships in Genesee County have experienced nearly all of the recent urban growth. Some have more than doubled in population in ten years. Here are the critical areas of urban sprawl. Therefore, this study will direct itself toward the eighteen townships within Genesee County.

These townships provide an interesting cross section of suburban municipalities since they range from highly urbanized communities adjacent to the City of Flint to remote rural townships on the periphery of the metropolitan area. Population figures run from 32,540 in Burton

Township to 2,590 in Forest Township. The combined population of the eighteen communities is 208,859.⁴

The county as a whole is highly urbanized compared with other counties in the state. In 1967, it ranked fourth in the state in the percent of its total land area that was developed with residential, commercial or industrial uses. Only the southeastern Michigan counties of Wayne, Oakland, and Macomb, respectively, exceeded Genesee County. At that time 17.9 percent of the county's total land area was devoted to urban uses.⁵

Perhaps even more important is the rate at which the county has been losing agricultural lands. In the five-year period between 1959 and 1964, 33,000 acres of farm land were abandoned to either urban uses or to dormancy.⁶ It can be assumed that at least a portion of that left dormant fell into the hands of speculators and will probably remain dormant until it is developed into urban uses.

A reconnaissance survey of the area leaves the

⁴U.S. Department of Commerce, Bureau of the Census, "Census of Population and Housing for Genesee County" (Unpublished. 2nd report data, 1970).

⁵William J. Kimball and Gordon Bachman, "Focus on Land Use in Michigan," Land Use in Michigan (East Lansing, Michigan: Cooperative Extension Service, Michigan State University, 1969), p. 11.

⁶Batelle Memorial Institute, Columbus, Ohio, Genesee County Economic Conditions (Flint, Michigan: Genesee County Metropolitan Planning Commission, 1969), p. 2-5.

impression that a considerable area of rural land has been developed in urban uses in the last two decades. Moreover, the majority of this development appears to have created situations that could be classified as urban sprawl.

A search of the literature regarding zoning and urban sprawl unveiled no previous attempts to demonstrate a relationship between zoning and urban sprawl. Many authors have referred to this relationship as if it were a foregone conclusion. However, none have apparently sought to establish a firm relationship between these two phenomena.

For example, Marion Clawson discusses this relationship in regard to over-zoning for high intensity uses in a study of selected cities in Northeastern United States. Moreover, he actually assumes a causal relationship.⁷

Another discussion of this relationship which involved a good deal of evidence was contained in a study by Max Neutze. This study involved multiple family over-zoning in the Washington, D.C. area and indicated that the situation had created the existence of large areas of wasteland that had been withdrawn from any use.⁸

The task undertaken in this thesis is to identify the

⁷Marion Clawson, Suburban Land Conversion in the United States (Baltimore: Johns Hopkins Press, 1971), pp. 250-254.

⁸Max Neutze, The Suburban Apartment Boom: Case Study of a Land Use Problem (Washington, D.C.: Resources For the Future, 1968), p. 45.

areas of urban sprawl, and to determine whether they might be related to the zoning policy of the townships in which they are found. It will involve an extensive survey of the entire county in order to delineate areas which meet the necessary criteria to be classified as urban sprawl. Then it will be necessary to examine the zoning policy of each of the townships in terms of the overall ordinance and its administration as well as individual zoning actions. Finally an attempt will be made to relate permissive zoning ordinances and policies with the areas of urban sprawl.

Hypothesis

The basic hypothesis suggested here is that where zoning policy has departed from the intent of the state enabling act, and has become instead a tool to increase tax base or compete with other communities for growth, urban sprawl will dominate the landscape.⁹ It is also

⁹Section 3 of Act 184 of Michigan Public Acts of 1943 states the purpose of township zoning as follows: "To promote the public health, safety, morals and general welfare, to encourage the use of lands in accordance with their character and adaptability and limit the improper use of land, to avoid the overcrowding of population, to provide adequate light and air, to lessen congestion on the public roads and streets, to reduce hazards to life and property, to facilitate adequate provision for a system of transportation, sewage disposal, safe and adequate water supply, education, recreation and other public requirements, and to conserve the expenditure of funds for public improvements and services to conform with the most advantageous uses of land, resources and properties; and shall be made with reasonable consideration, among other things to the character of each district, its peculiar suitability for particular uses, the conservation of property values and natural resources, and the general and appropriate trend and character of land, building and population development."

hypothesized that specific areas of urban sprawl can generally be related to specific zoning actions, and that zoning ordinances which place no restrictions on urban development in rural areas have encouraged the pre-emption of agricultural lands by higher intensity uses. The study attempts to verify or disprove this proposition.

In conclusion, zoning is examined as a means to control urban sprawl in the Flint Metropolitan Area. Recommendations are formulated to update zoning policy and laws in order to ameliorate urban sprawl.

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CHAPTER II

A BRIEF HISTORY OF LAND DEVELOPMENT IN THE FLINT METROPOLITAN AREA

Shortly after the Revolutionary War, a survey of the Northwest Territories including Michigan was undertaken. Because of the obstacles to transportation, the survey teams did not travel north of Detroit. However, they did receive word from French trappers that not more than one out of a thousand acres was fit for human residence because of extensive swamp lands.¹⁰

It was probably this impression that retarded the settlement of the area now known as Genesee County. The first English speaking settlement in the area did not occur until the mid-1820's. This settlement was established in the area that is now known as Grand Blanc Township and was located on a road connecting Detroit and Saginaw. The original settlements in Genesee County were primarily stopping off or resting places for travelers making the journey between these two cities. The road traveled was an old Indian trail known as the Saginaw Trail and it was at the

¹⁰William V. Smith, ed., "An Account of Flint and Genesee County from the Organization," Historical Michigan, Land of the Great Lakes, Vol. III (n.p.: National Historical Association, Inc., 1952), p. 20.

junction of this trail and the Flint River that the City of Flint was established.

Flint first became prosperous during the lumbering era. Genesee County was the home of large pine and fir forests and Flint was the ideal center for the lumbering business. Its location on the Flint River made water transportation readily available. It was during this era that Flint incorporated as a city. The city incorporated in 1855 with a population of 2,000.¹¹ It was also during this era that the chain of events began which led to the birth of General Motors in Flint.

Most of the lumbering companies in the area were eastern companies that exploited the timber resources on the lands they controlled and then left. One lumber magnate by the name of Crapo decided to make Flint his seat of operations and home. When the lumber was depleted, Mr. Crapo turned to other interests such as grocery stores or the manufacture of barrel staves. He employed many members of his family including his grandson in these enterprises. This grandson, William Crapo Durant, got his first business experience in his grandfather's store. He was eventually to become the founder of General Motors Corporation. W. C. Durant is credited with converting the City of Flint from a lumber town with diminishing resources to a large industrial city.

¹¹Carl Crow, The City of Flint Grows Up (New York: Harper Bros., 1954), p. 19.

One of Durant's first acquisitions was the Buick Motorcar Company. He developed this enterprise and in 1908 Buick was the largest selling automobile in the country.¹² As a result of the phenomenal growth of the industry, the Flint area experienced a great in-migration. In 1910 thousands of families in Genesee County were living in tents because of a shortage of housing to accommodate them. Between 1900 and 1910 the population of the City of Flint more than tripled and the population of Genesee County rose from 41,805 to 64,555. In the following ten years, Flint population doubled and the country rose from 64,555 to 125,668.¹³

From this point on, Flint became dependent upon the automobile industry. It grew with that industry and suffered in its depression.

As Flint grew so did its unincorporated environs. In fact, the unincorporated areas of Genesee County had a higher total population than the City of Flint from 1840 to 1900.¹⁴ It may be that the precedent was set for urban sprawl in the Flint Metropolitan Area when it was first being settled.

¹²Willus P. Dunbar, Michigan. A History of the Wolverine State (Grand Rapids, Michigan: William B. Eerdman's Publishing Company, 1965), p. 564.

¹³Genesee County Metropolitan Planning Commission, Genesee Conty 1990 Land Use Transportation Plan (Flint, Michigan: Genesee County Metropolitan Planning Commission, September, 1971), p. I-6.

¹⁴Ibid.

After World War II, the metropolitan area followed the national trend toward suburbanization. During the 1950's the townships in Genesee County grew in population at an unprecedented rate. It was during this growth process that most of the townships began to witness some of the problems associated with urban development. The communities apparently saw zoning as a means to ameliorate these problems. Consequently, most of the townships adopted zoning ordinances during the 1950's.

In 1956, development began in Warwick Hills Subdivision in southern Grand Blanc Township. This subdivision was conceived as a development of highly prestigious homesites around an equally prestigious country club and golf course. It was developed according to plan and became a milestone in the history of land development in the area. Grand Blanc Township suddenly became the most prestigious address in Genesee County.

The Warwick Hills Golf Course won accreditation from the Professional Golfers Association and became the home of one of that organization's national tournaments, the Buick Open.

Other developers sought to capitalize on Warwick Hills' reputation and started acquiring and developing land in Grand Blanc Township. As a result the community experienced a greater rate of growth between 1960 and 1970 than any other township. The township's population more than doubled during that decade. It grew from 9,418 in 1960 to 19,229 in 1970.

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The remaining seventeen townships have grown rather consistently in proportion to each other. Most had some population in 1850 and have constantly increased until they reached their present population. None have experienced the phenomenal growth of Grand Blanc, but all were impacted by the exodus to the suburbs.

By the end of the 1950's the demand for additional governmental services generated by suburban development was felt in many areas of the county. Most of the suburban residences had been provided with septic tank systems and private wells. The county is notorious for soils of low permeability and high water table, and many septic tank failures became evident within a short time after the facility was installed.

There were also incidents of well failures which ranged from saline water to drying up.¹⁵ Furthermore, well water in almost every case was so hard it demanded chemical softening.

Additional problems evolved as the townships were required to extend police and fire protection and other governmental services to the development that was scattered over their land areas. It became necessary to either embark on expansion programs or to cut the level of services available to each citizen.

¹⁵U.S. Department of Interior, U.S. Geological Survey, "Water Resources of the Flint Area, Michigan" (Washington, D. C.: Government Printing Office, 1963).

As the individual local governments began to receive distress calls from their suburban citizens, they looked to the county government for help.

In 1961, the county established a program designed to serve all the areas of urban development with public sanitary sewers. The local communities were to be financially responsible for the program but they could use county credit to bond for the projects. In addition, the county drain commission would contract for the construction of the facility and would handle the administrative aspects.

Shortly after this program was established, the county established a water distribution program which was set up in the same manner.

Sprawl continued to occur in the remote areas of the county, however, and it eventually became evident that the original proposed sewer network would not be capable of serving many of the developing areas. Therefore, the drain commission embarked upon a study that proposed a sewer network capable of serving the entire county. That study is now ready to be implemented.

At present, many communities have taken advantage of the original sanitary sewer program and are bonding beyond their normal debt limitations by using county credit. This effort merely represents the first attempt to provide one essential service to the areas of scattered development throughout the county. It will be expensive and will create an unnecessary financial burden on all of the taxpayers in

the local units being served. It should be stressed that this is only one of a number of services that will be required. Police and fire protection, transportation networks, public water and perhaps storm sewers are among the services that will need to be expanded in the future to meet the needs of the population.

This student doubts that it is financially feasible to provide these services adequately to all of the areas that will require them when present development patterns are considered. Nevertheless, development continues to occur in the remote areas of the county with little regard for the provision of essential services.

The Problem

Urban sprawl can be controlled only if the location and extent of urban development can be controlled. Zoning is generally the major tool available to local governments to control development. However, in order to be effective in this regard, zoning ordinances must contain provisions directed at controlling sprawl and must be properly administered.

Most of the townships in Genesee County adopted zoning ordinances while suburbanization was at its height. Nevertheless, sprawl continued in the communities. Therefore, it must be concluded that these ordinances either were not conceived with any regard for urban sprawl or were not properly administered, or that zoning is ineffective in controlling urban sprawl.

CHAPTER III

THE DEVELOPMENT OF A METHOD

The first stage in the examination of the relationship of zoning policy to urban sprawl will be to identify areas which could be classified as urban sprawl. As explained earlier, urban sprawl, in this thesis, will be defined as areas where urban development patterns have either created situations of low land utilization or unnecessarily pre-empted use of agricultural lands. Therefore, the identification of these areas will involve a degree of subjectivity on the part of the researcher.

In order to minimize this subjectivity, it is necessary to establish a set of standards by which to judge urban development to determine whether or not it qualifies as urban sprawl.

Low land utilization generally involves advanced areas of urban sprawl. It refers to an inefficient development pattern which creates large areas of land with no apparent use. Major characteristics of these areas include ribbon development along streets which leaves interior lands vacant, and scattered building development interspersed with vacant land.

The pre-emption of agricultural lands with urban

uses generally occurs in areas which are more rural in character and could be considered to be the early stages of urban sprawl. These areas consist of small pockets of urban uses in primarily rural areas.

Therefore, lands possessing the following characteristics are classified as urban sprawl for the purposes of this thesis:

1. Ribbon development along roads
2. Scattered urban development interspersed with vacant and agricultural lands
3. Isolated pockets of urban development.

Lands are classified as ribbon development if three or more establishments lie adjacent to each other while interior lands lie vacant, or if one-third or more of the frontage of the road is developed with urban uses and interior lands are left vacant. Lands are classified as scattered urban development if approximately one-fourth or more of the total area lies vacant. Lands are classified as isolated pockets of urban development if three or more establishments lie adjacent to each other, and are not contiguous to an existing urban center.

Before these areas can be identified, however, it is necessary to examine land use distribution in the community.

In 1968, a land use survey was completed for all of Genesee County by the Genesee County Metropolitan Planning Commission (GCMPC). The information obtained in that survey is used as a base for this study and is updated by

examining local building permits and by conducting a field survey. The field survey was greatly simplified by the fact that in most cases it merely involved a field check of building permit data. Furthermore, uses needed only to be classified as urban, agricultural, or vacant.

Once the land use information was assembled, areas possessing one or more of the three previously described characteristics of urban sprawl were delineated on township base maps. Also illustrated on these maps were land areas where no apparent uses existed. These maps, therefore, provide a pictorial account of the quantity and distribution of urban sprawl in each of the communities and its relationship to vacant lands.

Zoning information is more easily obtained than the land use information. Zoning ordinances and maps are available for each of the communities examined. Furthermore, each zoning change is made by ordinance by the legislative body, and all ordinances are a matter of public record.

Zoning data is first examined for each township on a community-wide basis. A review of the ordinances reveals their degree of compliance with the state enabling act, as well as their potential ability to actually control land uses within the community.

The procedural ease of obtaining zoning changes or variances was considered as a criterion affecting a local community's ability to control urban sprawl. However, it

was discovered that all of the townships in Genesee County adhere to the same provisions in this regard. The Township Rural Zoning Act establishes certain provisions for processing zoning changes. These provisions are as follows:

Zoning Changes

1. After receiving a petition for a change in zoning and before submitting a recommendation to the township board, the zoning board (or planning board) shall hold at least one public hearing. Notice of that hearing is required to be published twice in a newspaper of general circulation. The first publication must occur not more than thirty nor less than twenty days and the second not more than eight days preceeding the date of such hearing.
2. Following that hearing the petition must be forwarded to the county zoning commission, the county planning commission or the county coordinating zoning committee for review and approval or disapproval.
3. The township board may then officially act to approve or disapprove the zoning change.¹⁶

¹⁶Act 184 of the Michigan Public Acts of 1943, Sections 11 through 14.

Appeals are handled in a much simpler manner but still require a public hearing which is held before the board of appeals.¹⁷

The communities have all chosen to adopt the minimum standards of the state enabling acts for zoning changes and appeals. It is suggested that this is the case because the legislation has already complicated the process.

The total rezoning process becomes time consuming and it is likely that township officials come under considerable pressure from petitioners to accelerate the process. Nevertheless, they are forced to schedule hearings in accordance with newspaper publication dates, and to wait until the county zoning agency reviews and returns the petition before the final action is taken. Consequently, townships have chosen not to complicate the procedure further by adding additional provisions to the ones required by state law.

Because of the similarity of these procedures in all the townships it was decided that they would not be useful in a comparison situation. Therefore, the ordinances are discussed in relation to the following criteria regarding their ability to effectively control urban sprawl:

1. The inclusion or lack of an agricultural district which excludes or severely limits urban uses. An example of the provisions of such a district could include a provision

¹⁷Ibid., Sections 22 and 23.

stating that the only permitted uses would be of an agricultural or passive recreational nature, and that any residential dwellings must be incidental to farms.

Perhaps a more common example is the provision of an agriculture or rural estate district which requires that residences be permitted only if they occupy parcels or lots of an extremely large size.

2. Whether the structure of the ordinance is exclusive or pyramidal in character. A pyramidal ordinance allows in each more intensive use district, all of those uses allowed in the less intensive use districts, while an exclusive ordinance confines the permitted uses in any one district to that district. There are of course numerous variations of this, and it is generally considered undesirable that an ordinance be either completely pyramidal or completely exclusive.

The pyramidal ordinance can encourage urban sprawl by permitting both "agricultural and urban uses in the more intensive use districts.

3. Whether the original ordinance and map were based upon a plan, as required by the state

enabling act, and whether that plan contained provisions designed to control urban sprawl.¹⁸ Again these provisions would include the designation of remote areas for agriculture and open space or rural estates.

Individual changes in zoning are examined in regard to specific areas of urban sprawl within the community. In this instance the characteristics of that sprawl determines the zoning analysis.

If the sprawl consists of ribbon development or isolated pockets of urban development, an examination will be made to determine whether zoning changes made such development possible. An attempt is made to disclose whether the property had to be rezoned to accommodate the use, or whether the adoption of the original ordinance provided for the use. In both instances, the zoning of surrounding lands is revealed to determine whether they vary from that of the site under consideration.

If the sprawl consists of scattered urban development interspersed with vacant and agricultural lands, the general zoning pattern of the area is compared with the land use pattern. The zoning of the vacant areas is discussed in regard to its role in their exemption from urban development. If these lands are zoned for high intensity uses, they have

¹⁸Ibid., Section 3.

probably been exempted because of their relative high cost when compared with the expense involved in acquiring more remote lands and having them rezoned.

An analysis will also be made in all cases to determine if the zoning changes are made in accordance with a plan. If not, it is assumed that these changes may be more subject to the impulses or whims of the zoning body. Moreover, there is a greater chance that personalities or actions of those involved may have influenced the decision. For example, a particularly convincing argument on the part of a developer presenting his case to the township board may have a greater effect if the trustees do not feel bound to previously conceived policy guidelines.

A quantitative analysis of the communities' zoning pattern is made regarding the high intensity use districts (multiple family dwellings, commercial, and industrial). The purpose of this analysis is to determine if the community has in fact over-zoned for high intensity uses. If they have, it is likely that they have encouraged urban sprawl by artificially inflating the price of lands, and therefore, removing them from the market place. Had this artificial inflation not occurred, it is more likely that urban development would have taken place sequentially from the existing urban core.

The existing land area zoned for each of the broad high intensity use categories (multiple family dwellings, commercial and industrial) is computed for each community

as well as the existing area which is actually devoted to these uses. A comparison is then made to determine the amount of land that is not presently occupied by the use it is zoned to accomodate. This information alone, however, is not sufficient to indicate over-zoning for there is a need to have enough land zoned to accommodate future growth as well as to satisfy existing needs.

Therefore, it is necessary to project future needs for multiple family dwellings, commercial uses, and industrial uses before a realistic comparison of the amount of land zoned to the amount needed can be made. These projections would be a monumental task in themselves if they were to be undertaken without the benefit of previous studies. However, the GCMPC recently completed a land use transportation plan for the year 1990. Five years of extensive background studies provided the data for the conclusions in that plan, and many of the same studies provided either the projections or the data necessary to formulate the projections for this study.

In each case projections are made to the year 1990. That year was selected because the area-wide land use transportation plan was formulated for 1990. Moreover, no local community plan projects beyond that year. If a community's zoning policies are designed to implement the Genesee County 1990 Land Use Transportation Plan, it is reasonable to assume that lands could be zoned for uses which may not occupy the site for the next eighteen years.

The county projections for future land requirements for high intensity urban uses were based upon historical patterns, projected population, and national trends. Moreover, all of the local communities participated in formulating that plan. The projections varied for each community depending upon its distance from the urban core, its position in relation to existing or proposed transportation facilities, and a number of other factors which have the potential of affecting urban growth.

These projections will provide the data necessary to determine whether the amount of land that is presently zoned for each use bears a relationship to the amount necessary to accommodate the future needs of the community. If there exists a significant oversupply of land zoned for high intensity uses, it is reasonable to assume that the situation is conducive to urban sprawl.

Finally, a correlative analysis is made of the urban sprawl and zoning policies of all communities in order to draw a comparison between the degree of urban sprawl and the zoning policies of the communities. If a direct relationship exists, those townships exhibiting the largest number of those zoning policy characteristics that have been suggested as being conducive to urban sprawl, will possess the largest areas of urban sprawl.

Because of the multitude of factors which influence urban development decisions, it would not be logical to attempt to prove a decisive causal relationship between

zoning and urban sprawl. For example, it is believed that our present tax system which taxes land on the basis of its potential rather than its actual use causes lands to be withdrawn from agricultural use prematurely. Other influences might include social values, platting practices, or the public improvement policies of a local unit of government. Therefore this research will merely attempt to provide evidence of a strong relationship between the two, and to demonstrate an influence exerted by zoning policy upon urban development.

A number of tools for statistical analysis were examined in an attempt to find a tried method of demonstrating the existence of a significant relationship between two variables. Unfortunately, nearly all of the methods involved either a control group, an expected numerical value, or the ranking of variances. Therefore, a simple scoring method was developed in which zoning policies were scored for their ability to perpetuate urban sprawl and the scores compared with the ranking of the communities according to the proportion of urban development that is devoted to urban sprawl.

The communities are first ranked according to the percent of land devoted to urban development within their boundaries that has one or more of the characteristics previously described as being indicators of urban sprawl. More particularly, the factors on the horizontal scale are outline as follows:

1. Zoning ordinance has provisions to limit urban sprawl
2. Zoning ordinance based upon a plan
3. Zoning ordinance pyramidal in nature
4. Percent of zoning decisions which do not relate to plan
5. Percent of total commercially zoned land which is vacant
6. Percent of total industrially zoned land which is vacant
7. Percent of total land zoned for multiple family uses which is vacant
8. Percent of commercially zoned land that exceeds 1990 needs
9. Percent of industrially zoned land that exceeds 1990 needs
10. Percent of total land zoned for multiple family uses that exceeds 1990 needs.

The completed table begins to illustrate a relationship or lack of relationship between zoning policy and urban sprawl. At this point, the table is examined to determine major variances from the proposition. If a zoning policy factor demonstrates severe inconsistencies with the theory, it may be necessary to examine that policy further. For clarification purposes the factors shown in the table are simplified, illustrated numerically, and scored.

Each of the ten zoning policy characteristics are assigned an arbitrary maximum value of ten points. In the factors expressed as percentages each ten percentage points equals one scoring point. Therefore, a factor measuring 40 percent is worth four points for scoring purposes. In the factors which can be expressed simply yes or no, ten points are given for policies which promote urban sprawl and zero points for those which control urban sprawl.

These scores are then totaled for each township, and the totals compared. The communities with the highest scores are suggested to have zoning policies that are favorable to urban sprawl and therefore, should also be the communities having the most severe incidence of sprawl.

In conclusion, the ramifications of the relationship between zoning and urban sprawl are discussed and an attempt is made to briefly examine national, state, and regional conditions that have contributed to this relationship.

CHAPTER IV

THE TOWNSHIPS

Introduction

The following pages examine each of the townships in regard to their zoning policies and the distribution of urban sprawl within their boundaries. Figure 1 illustrates the location of each of the townships in relation to the remainder of Genesee County.

Argentine Township

Argentine Township lies in the southwestern corner of Genesee County. Its 1970 population was 2,901¹⁹ and its total land area is 24,003 acres.²⁰ None of the community's land area has been incorporated into a municipality. It is therefore, one of three "whole" townships in the metropolitan area.

The southern portion of Argentine Township contains several lakes. It is on the shores of Lobdell Lake, the largest, where most of the urban development is located.

¹⁹U.S., Department of Commerce, Bureau of the Census, Census of Population and Housing for Genesee County" (Unpublished, 2nd count data, 1970).

²⁰Genesee County Metropolitan Planning Commission, Genesee County Land Use (Flint, Michigan: Genesee County Metropolitan Planning Commission, February, 1970), p. A-19.

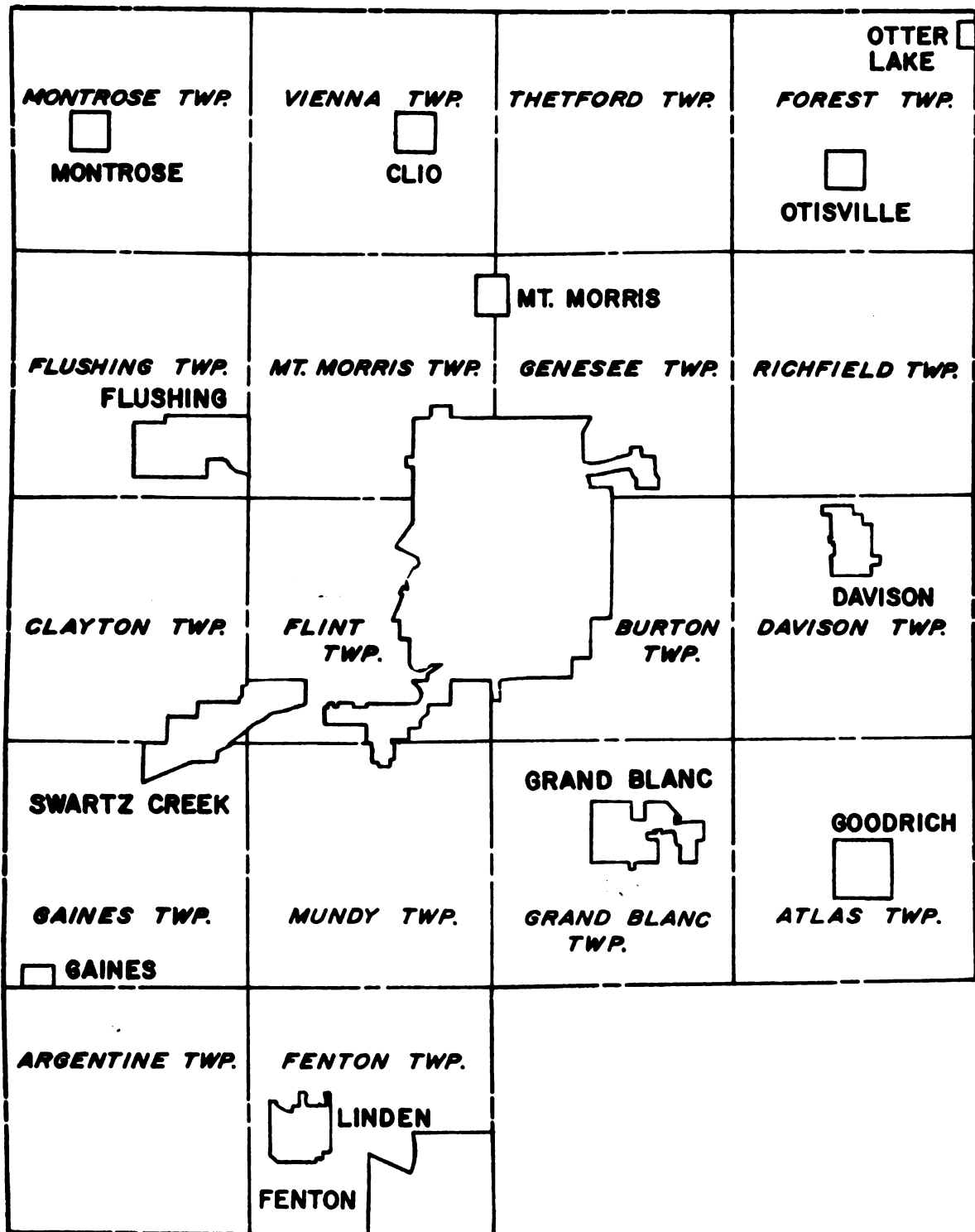


Figure 1

GENESEE COUNTY
RELATIVE LOCATION OF LOCAL COMMUNITIES

Although this settlement is not incorporated, it has come to be known as Argentine.

Urban Sprawl

Approximately 994 acres of the township's total land area are developed with urban uses.²¹ About 427 acres of the developed land is in the lake area, and consists of contiguous development adjacent to the lakes. The remainder is scattered throughout the township, mostly on section line roads. Nevertheless, only about 259 acres of this land could be classified as urban sprawl. The remainder is in the form of rural dwellings and farm residences.

Although significant areas of land with no apparent use are evident in the community, there is nothing that indicates a relationship between these areas and those which can be classified as urban sprawl. Figure 2 delineates the areas of urban sprawl within Argentine Township.

Zoning Ordinance

The existing zoning ordinance in Argentine Township was adopted in 1970. This ordinance was preceded by an ordinance that was adopted in 1956. Neither ordinance was based upon a plan. Very little zoning activity has been carried out under the provisions of the new zoning ordinance. Therefore, this analysis will concern itself

²¹Urban land uses in this context will include all residential development including farm residences and resort property.

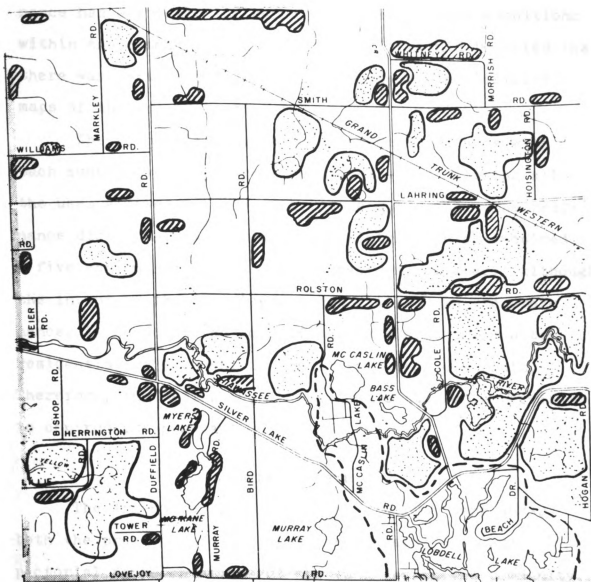


Figure 2

GENERALIZED AREAS OF URBAN SPRAWL ARGENTINE TOWNSHIP

LEGEND



North

Areas of Urban Sprawl



Vacant Lands



Scale: 4,000 ft.

Boundary of Urbanized Area



with the previous ordinance since it is assumed that ordinance had a greater influence upon the existing conditions within the community. Nevertheless, it should be noted that there was little difference between the zoning district maps of the two ordinances.

The 1956 ordinance was a pyramidal ordinance with each successively less restrictive district allowing all the uses allowed in more restrictive districts. The ordinance did contain an agricultural district which required a five acre minimum lot size for residential uses. Although the intent of the lot size was not outlined in the ordinance, it no doubt had some effect in discouraging urban residential development in the agricultural districts. Therefore, the ordinance, in essence, contained a provision to control urban sprawl.

Zoning Pattern

The Argentine Township zoning district maps under both the previous ordinance and the present one, are pictorial representations of the land use in the community. Except for a few instances, properties are zoned for the use they contain. The major exceptions to this rule are presented by the commercial and industrial zoning districts.

Commercial zoning districts occupy approximately 110 acres in the township. Only twenty-five acres of this land is developed in commercial uses. Therefore, eighty-five acres or approximately 77 percent of the land zoned for commercial uses is vacant.

The Genesee County 1990 Land Use Transportation Plan suggests that by 1990 the population of Argentine Township will grow to 6,860.²² Based upon that population the plan projects a need for 44.3 acres of land devoted to commercial uses.²³ Therefore, 65.7 acres or approximately 60 percent of the existing land zoned for commercial purposes is in excess of what will be required to meet the community's needs for 1990. The community has apparently over-zoned for commercial uses.

None of Argentine Township's land is zoned for either industrial or multiple family residential uses. Four acres are presently in industrial use, but there are no multiple dwellings in the community. The county plan projects a need for no industrial land and only thirteen acres of high intensity residential uses by 1990. The omission from the map of districts in these classification seems reasonable at present.

In summary, Argentine Township has apparently over-zoned for commercial use, but not for other high intensity uses. Table 1 illustrates the relationship between land zoned and the needs of the community.

Changes in Zoning Districts

Argentine Township has no community development plan

²²Genesee County Metropolitan Planning Commission, 1990 Plan, p. I-36.

²³Ibid. , p. III-27.

or land use plan. Therefore, zoning decisions have been made without formal policy guidelines. No professional guidance is consulted in zoning changes, and in most cases the township board concurs with the recommendation of the zoning board.

TABLE 1
HIGH INTENSITY ZONING VS NEED, ARGENTINE TOWNSHIP

Classification	Land Zoned (acres)	Existing Uses (acres)	Projected 1990 Needs (acres)
Commercial	110	25	44.3
Industrial	0	4	0
Multiple Family	0	0	13
Total	110	29	57.3

Atlas Township

Atlas Township lies adjacent to Lapeer and Oakland Counties in the southeast corner of Genesee County. The Village of Goodrich occupies 1,257 acres near the center of the township. Atlas Township has the lowest population of any community analyzed. In 1970 the population was 2,315.²⁴ Its land area includes 21,380 acres.²⁵

²⁴U.S., Department of Commerce, Bureau of the Census, "Genesee County."

²⁵Genesee County Metropolitan Planning Commission, Land Use, p. A-19.

Urban Sprawl

About 1,152 acres of the community's total land area is developed with urban land uses. Approximately 240 acres of that land is adjacent to the Village of Goodrich, and for the purposes of this study is within the urbanized area. The remainder is scattered throughout the township and the majority of it meets the criteria to be classified as urban sprawl. Approximately 698 acres or 60 percent of the township's total developed land area is classified as urban sprawl.

A much larger area of the community is impacted by this sprawl. In many areas, section line roads are developed with urban uses and interior lands are left vacant with no apparent use. Figure 3 illustrates the areas in Atlas Township that are devoted to urban sprawl.

Zoning Ordinance

The Atlas Township Zoning Ordinance was adopted in 1966. It is a simple pyramidal ordinance and contains no provisions to control urban sprawl. The ordinance was not based upon a plan.

Zoning Pattern

The zoning map for Atlas Township contains a commercial zoning district at nearly every intersection. The remaining districts are scattered about the map and

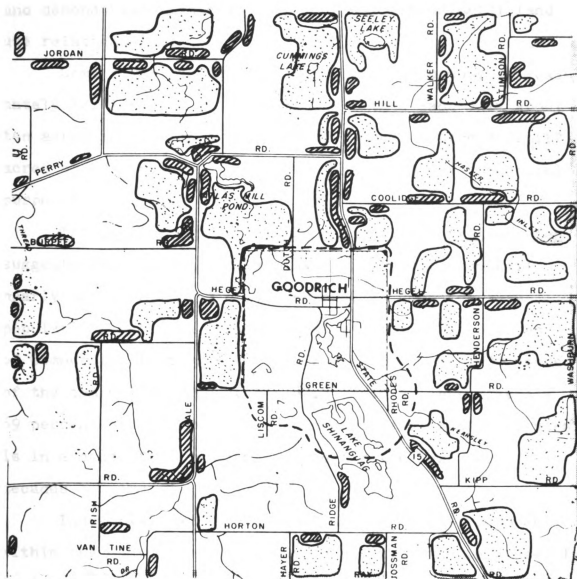


Figure 3




GENERALIZED AREAS OF URBAN SPRAWL ATLAS TOWNSHIP



North

Scale: 4,000 ft.

LEGEND

Areas of Urban Sprawl Vacant Lands Boundary of Urbanized Area 

and demonstrate little attempt to provide meaningful land use relationships.

Commercial zoning districts presently occupy approximately 127 acres in the township. Of this land only about ten acres is developed in commercial uses. Therefore, 117 acres or 92 percent of the total land zoned for commercial purposes is vacant.

The Genesee County 1990 Land Use Transportation Plan suggests that by 1990, Atlas Township's population will nearly triple reaching 6,160 persons.²⁶ Based on this population, the plan projects that a total of 39.8 acres of commercial land will be required to fill the 1990 needs of the community.²⁷ Therefore, 87.2 acres or approximately 69 percent of the land zoned to accommodate commercial uses is in excess of the projected need for the next two decades.

Industrial zoning districts occupy only five acres within the community. Three acres of this land is presently in industrial use, and two acres or 40 percent is vacant.

The 1990 county plan projects a need for three acres of industrial land in 1990. Therefore, 40 percent of the existing industrial land is in excess of the projected 1990 needs.

High intensity residential zoning districts occupy

²⁶Genesee County Metropolitan Planning Commission, 1990 Plan, p. I-36.

²⁷Ibid. , p. III-27.

forty acres in Atlas Township. All of this land is vacant.

The Genesee County 1990 Land Use Transportation Plan projects a need for thirteen acres of multiple family residential land uses by 1990. Therefore, twenty-seven acres or approximately 68 percent of the community's residentially zoned land is in excess of what is projected to fill 1990 needs.

Atlas Township has apparently zoned lands for all high intensity uses beyond its projected needs for the next two decades. Table 2 illustrates the relationship between land zoned and the projected needs of the community.

TABLE 2
HIGH INTENSITY ZONING VS NEED, ATLAS TOWNSHIP

Classification	Land Zoned (acres)	Existing Uses (acres)	Projected 1990 Needs (acres)
Commercial	127	10	39.8
Industrial	5	3	3
Multiple Family	40	0	13
Total	172	13	55.8

Changes in Zoning Districts

Zoning changes in Atlas Township are made without the benefit of any formal policy guidelines other than those outlined in the zoning ordinance itself. Those are merely procedural guidelines and do not pose criteria for a change or a means of analysis. The zoning board and township board act upon zonings without the benefit of professional guidance, and there is a tendency to approve almost all rezonings except those for multiple family residential districts.

Burton Township

Burton Township is adjacent to the eastern boundary of the City of Flint. It is highly urbanized and has a higher population than any other township in Genesee County. The 1970 population of Burton Township was 32,540,²⁹ and its land area is 14,805 acres.³⁰ A considerable portion of its original land area has been pre-empted by the City of Flint.

Urban Sprawl

About 6,962 acres of Burton Township's total land area is developed with urban uses. Of this developed land about 1,529 acres could be considered to be within the

²⁹U.S., Department of Commerce, Bureau of the Census, "Genesee County."

³⁰Genesee County Metropolitan Planning Commission, Land Use, p. A-19.

contiguous urbanized area of Flint. The remaining 5,433 acres exists in the form of urban sprawl. The majority of the open lands in the community have been impacted by urban sprawl. In total, approximately 78 percent of the community's developed land meets the criteria to be classified as urban sprawl. Figure 4 illustrates the areas of urban sprawl in Burton Township.

Zoning Ordinance

The existing zoning ordinance for Burton Township was adopted in 1957 without the benefit of a plan. The ordinance is completely pyramidal in character, and contains no provision to control urban sprawl.

Zoning Pattern

The Burton Township Zoning District Map presents a considerable area devoted to commercial and industrial districts. Every major street in the community is spotted with commercial zoning districts, intermixed with low intensity residential and agricultural districts.

Commercial zoning districts presently occupy approximately 920 acres in the community. Only 287 acres of this land is presently developed in commercial uses. Therefore, 633 acres or approximately 69 percent of the land zoned for commercial use is vacant.

The Genesee County 1990 Land Use Transportation Plan projects that by 1990 the population of Burton Township will grow to 49,170 persons.³¹ Based on that population, the

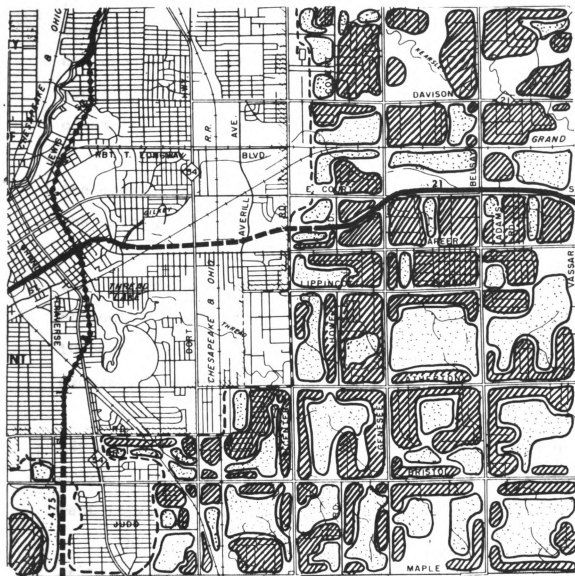


Figure 4

GENERALIZED AREAS OF URBAN SPRAWL
BURTON TOWNSHIP

LEGEND



North

Areas of Urban Sprawl



Vacant Lands



Boundary of Urbanized Area



Scale: 1 4,000 ft.

plan suggests a need for 315.5 acres in commercial development by 1990.³² Therefore, 604.5 acres or approximately 66 percent of the land presently zoned for commercial uses would not be required to meet the commercial needs of the community for the next twenty years.

Industrial zoning districts occupy 1,755 acres in the community. Approximately 1,571 acres or 90 percent of the existing industrially zoned land is vacant.

The 1990 plan projects that a total of 1,571 acres of land devoted to industrial uses will be required to fill the community's 1990 needs. Therefore, 184 acres or about 10 percent of the existing industrial districts are in excess of what will be required in 1990.

Multiple family residential zoning districts occupy 229 acres in Burton Township. About 182 acres or 80 percent of the land zoned for multiple family residential development is vacant.

The county plan projects that a total of 226.2 acres of land will be required to fill the need for high intensity residential uses in 1990. Therefore, 2.8 acres or slightly over 1 percent of the land zoned for multiple family uses is in addition to that required to fill the 1990 needs of Burton Township.

³¹Genesee County Metropolitan Planning Commission, 1990 Plan, p. I-36.

³²Ibid.

Burton Township has apparently zoned far beyond its present needs in all of the high intensity districts. Nevertheless, it appears that both multiple family zoning and industrial zoning are reasonable if viewed in regard to 1990 needs. Table 3 illustrates the relationship between lands zoned and the needs of the community.

TABLE 3
HIGH INTENSITY ZONING VS NEED, BURTON TOWNSHIP

Classification	Land Zoned (acres)	Existing Uses (acres)	Projected 1990 Needs (acres)
Commercial	920	287	315.5
Industrial	1755	184	1484
Multiple Family	229	47	226.2
Total	2894	518	2025.7

Changes in Zoning Districts

Since Burton Township has no community development plan or land use plan, zoning decisions have been formulated in the absence of scientific growth projections. There are no written policy guidelines available which deal with locational criteria or land requirements for the various uses.

In the last few years, Burton Township has actually encouraged rezonings to commercial use districts. In the last four years all requests to rezone large areas (ten acres or more) for commercial uses have been granted.

Occasionally, small area requests have been denied, and this has usually occurred when the petitioner has stated that his intent was to develop a service station on the site.³³

Clayton Township

Clayton Township lies on the western edge of the county due west of the City of Flint. It has a population of 5,305 and has had approximately 1,100 acres of its land area usurped by the City of Swartz Creek.³⁴ Excluding this municipality, the township has a land area of approximately 21,253 acres.³⁵

Urban Sprawl

Approximately 1,656 acres of the community's total land area is developed with urban uses. With few exceptions, the majority of this land meets the criteria to be classified as urban sprawl. Nearly all of the residential development in Clayton Township has occurred in linear subdivisions fronting on section line roads.

About 91 percent of the land devoted to urban uses in the township is classified as urban sprawl. Intermingled

³³Genesee County Metropolitan Planning Commission, "Records of the County Coordinating Zoning Commission" (Flint, Michigan: Genesee County Metropolitan Planning Commission), 1967 through 1971.

³⁴U.S., Department of Commerce, Bureau of the Census, "Genesee County."

³⁵Genesee County Metropolitan Planning Commission, Land Use, p. A-19.

with these uses are sizeable parcels of vacant land with no apparent use. Figure 5 illustrates the areas of urban sprawl in Clayton Township.

Zoning Ordinance

The Clayton Township Zoning Ordinance was adopted in 1969 and was the community's first zoning ordinance. The township has never had a land use plan or community development plan on which to base land development decisions. The ordinance is pyramidal in character except that the industrial districts have been amended to exclude residential uses. There are no provisions in the existing ordinance to control urban sprawl.

Zoning Pattern

The township zoning map delineates a considerable land area that is devoted to commercial use districts. These districts are the most striking feature of the map and are distributed throughout the community, usually at the intersection of section line roads.

Presently, commercial districts occupy approximately 629 acres of the township's total land area. About twenty-five acres of this land actually contains commercial uses. Therefore, 604 acres or 96 percent of the land zoned for commercial uses is vacant.

The Genesee County 1990 Land Use Transportation Plan projects a 1990 population of 10,040 for Clayton Township.³⁶

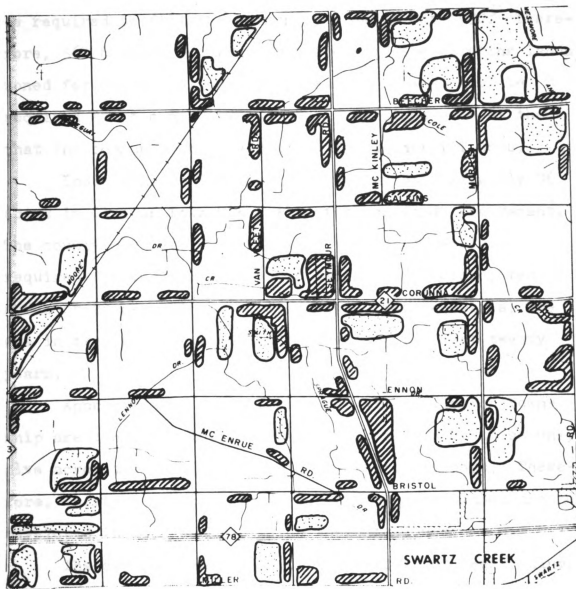


Figure 5

GENERALIZED AREAS OF URBAN SPRAWL
CLAYTON TOWNSHIP

LEGEND



North

Areas of Urban Sprawl



Vacant Lands



Scale: 4,000 ft.

Boundary of Urbanized Area



It suggests that 64.2 acres devoted to commercial uses will be required to fill the community's needs for 1990.³⁷ Therefore, 564.8 acres or about 90 percent of the existing lands zoned for commercial use are in excess of what will be required for the next two decades. It seems evident then that the community has over-zoned for commercial uses.

Industrial zoning districts occupy approximately 36 acres in Clayton Township. All of these lands are vacant. The county plan projects that about 26 acres will be required for industrial uses in 1990. Therefore, ten acres or 28 percent of the lands zoned for industrial use are in excess of what will be needed for the next twenty years.

Approximately forty-four acres within Clayton Township are zoned for multiple family purposes. Of these only five acres are developed with multiple family uses. Therefore, thirty-nine acres or 89 percent of these lands are not developed in the use for which they are zoned.

The county plan projects that a total of twenty-nine acres of multiple family uses will be required to fill the 1990 needs of the community. Therefore, fifteen acres or approximately 39 percent of the existing land zoned for

³⁶ Genesee County Metropolitan Planning Commission, 1990 Plan, p. I-36.

³⁷ Ibid., p. III-27.

multiple family residential uses is in excess of the 1990 community needs.

Clayton Township has apparently over-zoned for all high intensity uses. Commercial over-zoning is especially apparent. Nearly one square mile of the community of 5,305 persons has been designated for commercial uses. Table 4 illustrates the relationship between land zoned and the needs of the community.

TABLE 4

HIGH INTENSITY ZONING VS NEED, CLAYTON TOWNSHIP

Classification	Land Zoned (acres)	Existing Uses (acres)	Projected 1990 Needs (acres)
Commercial	629	25	64.2
Industrial	36	0	26
Multiple Family	44	5	29
Total	709	30	119.2

Changes in Zoning Districts

Clayton Township is among the communities in the Flint Metropolitan Area that have no formal policy guidelines for land development decisions except for those procedural guidelines outlined in the zoning ordinance. There is no community plan on which to base zoning decisions.

The community has been especially permissive in granting requests for commercial zoning. Since the

adoption of the ordinance, all of the requests for commercial zoning that have been denied, except one, have been cases that have witnessed considerable citizen protest. Six out of twenty-three requests during this period have been denied.

Davison Township

Davison Township lies opposite Clayton Township on the eastern edge of the county. It has a population of 8,260³⁸ and a land area of 21,847 acres after approximately 1,042 acres near the northern edge are exempted for Davison City.³⁹

Urban Sprawl

About 2,693 acres of Davison Township's total land area is devoted to urban uses. Nearly all of this land meets the criteria to be classified as urban sprawl. The majority of the urban development occurring within the community has been either in the form of linear development along section line roads or in the form of isolated pockets of urban development (usually in the form of residential subdivisions). About 96 percent of the urban development in Davison Township is classified as urban sprawl. Figure 6

³⁸U.S., Department of Commerce, Bureau of the Census, "Genesee County."

³⁹Genesee County Metropolitan Planning Commission, Land Use, A-19.

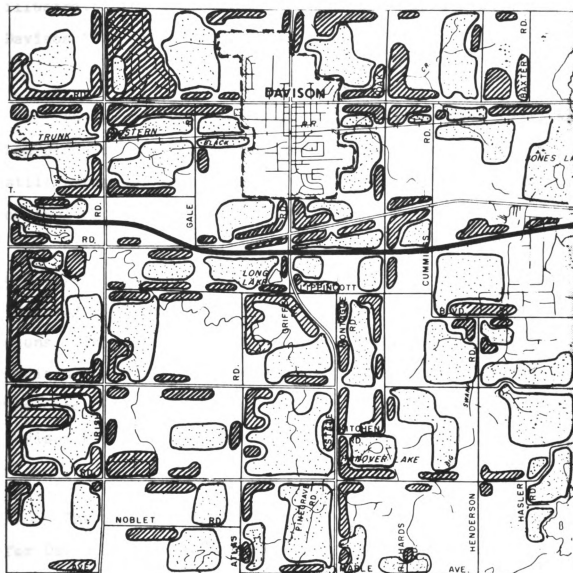


Figure 6

GENERALIZED AREAS OF URBAN SPRAWL
DAVISON TOWNSHIP

LEGEND



North

Areas of Urban Sprawl



Vacant Lands



Boundary of Urbanized Area



Scale: 4,000 ft.

illustrates the areas classified as urban sprawl in Davison Township.

Zoning Ordinance

The existing zoning ordinance was adopted in 1952, and has since undergone numerous amendments. However, it is still pyramidal in character and contains no provisions to control urban sprawl.

Although the ordinance was not originally based upon a plan, the Davison Richfield Community Plan was developed in early 1969 and could be used as a base for zoning decisions. This plan was the result of cooperation between Davison and Richfield Townships and the city of Davison. The communities are all participating agencies in the Davison Richfield Regional Planning Commission.

Zoning Pattern

The most significant characteristic of the zoning map for Davison Township is the vast area covered by multiple family zoning districts. Considerable area is also dedicated to commercial and industrial districts but not nearly as much as is zoned for multiple family use.

Commercial zoning districts occupy approximately 456 acres in the township. Only about sixty-five acres of this land is actually developed with commercial uses. Therefore, approximately 391 acres or 86 percent of the commercially zoned land in the community is not developed with commercial uses.

The Genesee County 1990 Land Use Transportation Plan suggests that by 1990 the community will have a population of 22,000, and that a total of 141.2 acres of commercial uses will be required to serve that population.⁴⁰ Therefore, 314.8 acres or 69 percent of the existing land zoned for commercial uses is in excess of what will be required to meet the needs of the community for the next two decades.

Industrial zoning districts presently occupy about 334 acres in Davison Township. Approximately 305 acres of these or 91 percent are not in industrial use.

The county plan projects a need for a total of 605 acres of industrial land in 1990. Therefore, the community may need an additional 290.2 acres during the next twenty years. There is no evidence that Davison Township has over-zoned for industrial uses in regard to future needs.

Approximately 1,036 acres in Davison Township are zoned for multiple family residential uses. Of this land 1,001 acres or 97 percent is presently vacant.

The county plan suggests that by 1990 approximately 153.3 acres of multiple family uses will be required to serve the needs of the population. Therefore, 882.7 acres or about 85 percent of the land presently zoned for multiple family uses is in excess of what will be needed to fulfill 1990 needs.

⁴⁰Genesee County Metropolitan Planning Commission, 1990 Plan, pp. I-36 and III-27.

Davison Township has apparently over-zoned for commercial and multiple family uses. Industrial districts occupy more land than is necessary to meet present needs but are far below what is projected to be the 1990 needs of the community. Table 5 illustrates the relationship between land zoned and the needs of the community.

TABLE 5

HIGH INTENSITY ZONING VS NEED, DAVISON TOWNSHIP

Classification	Land Zoned (acres)	Existing Uses (acres)	Projected 1990 Needs (acres)
Commercial	456	65	141.2
Industrial	334	29	605
Multiple Family	1036	35	153.3
Total	1826	129	899.5

Changes in Zoning Districts

Davison Township is apparently ignoring the investment it has made in the Davison Richfield Community Plan. Since that plan was adopted, forty-nine zoning changes have been petitioned for in the township. In thirty-four of these cases, the Township Board of Trustees has elected to ignore the recommendations of that plan. This factor is especially evident in cases involving commercial or multiple family districts and probably at least partially accounts for the over-zoning in these classifications.

Fenton Township

Fenton Township lies in the southern portion of the county adjacent to Oakland and Livingston Counties. Approximately 6,159 acres of the township's total land area has been usurped by the City of Fenton and the Village of Linden leaving a total land area of 17,233 acres.⁴¹ Lakes and rivers occupy about 1,917 acres of this area. The community has a population of 7,304.⁴²

Urban Sprawl

About 1,950 acres of the community's land area is developed in urban uses. Most of this development has occurred around the lakes in the community. About 463 acres or 24 percent of the total land area meets the criteria to be classified as urban sprawl. Most of this development consists of linear development along section line roads. Figure 7 illustrates the generalized areas of urban sprawl in Fenton Township.

Zoning Ordinance

The existing Fenton Township Zoning Ordinance was adopted in the fall of 1971 based upon the Fenton Township Master Plan which was adopted earlier that year. However, this ordinance has not been in effect long enough to

⁴¹Genesee County Metropolitan Planning Commission, Land Use, p. A-19.

⁴²U.S., Department of Commerce, Bureau of the Census, "Genesee County."

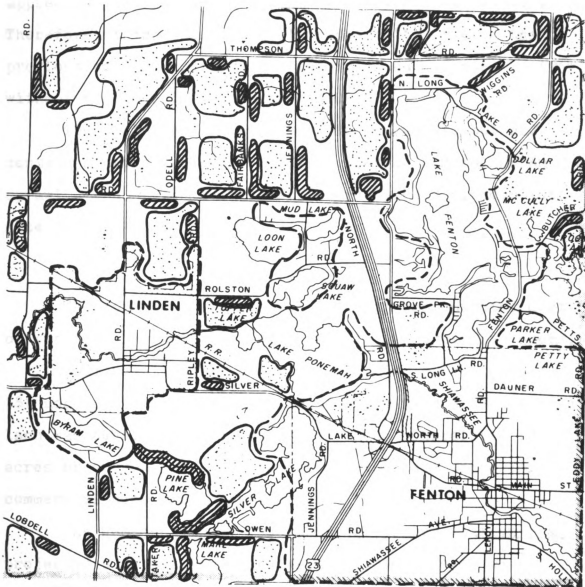


Figure 7

GENERALIZED AREAS OF URBAN SPRAWL
FENTON TOWNSHIP

LEGEND



North

Areas of Urban Sprawl



Vacant Lands



Boundary of Urbanized Area



Scale: 4,000 ft.

appreciably influence land development in the community. Therefore, this discussion will concern itself with the previous zoning ordinance and map which was adopted in 1954 without the benefit of a plan.

The ordinance was pyramidal in character, but did contain a provision which could be used to control urban sprawl. The agricultural district required a minimum lot size of five acres.

Zoning Pattern

The zoning map for Fenton Township concentrated most of the high intensity use districts in the urbanized areas.

Commercial zoning districts occupied approximately 181 acres in the community. About forty-four acres of this land was developed with commercial uses. Therefore, 137 acres or approximately 76 percent of the land zoned for commercial uses was undeveloped.

The Genesee County 1990 Land Use Transportation Plan projected a population increase to 17,660 persons by 1990.⁴¹ Based on this figure, it was estimated that the community would require 113.7 acres of commercial uses to satisfy 1990 needs.⁴² Therefore, 67.3 acres or 37 percent of the lands zoned for commercial uses were in excess

⁴¹Genesee County Metropolitan Planning Commission, 1990 Plan, p. I-36.

⁴²Ibid., p. III-27.

of that required to fill projected 1990 needs for commercial facilities.

Approximately 111 acres were zoned for industrial use while none of it was being used for industrial purposes.

The county plan projected a need for 580 acres of industrial land by 1990. Therefore, the community could be expected to provide an additional 469 acres throughout the next twenty years.

Sixteen acres within Fenton Township were zoned for multiple family residential uses. All of this land was occupied by multiple family dwellings. There was no excess land in these zoning districts.

The county plan projected a need for 132.4 acres of multiple family dwellings by 1990. Therefore, the community could be expected to provide an additional 116.4 acres within the next twenty years.

In essence, Fenton Township had more land devoted to commercial zoning districts than could be expected to be developed for twenty years. Nevertheless, this did not apply to the other high intensity districts. Table 6 illustrates the relationship between land zoned and the needs of the community.

Changes in Zoning Districts

The community had no plan on which to base zoning decisions. Nevertheless, professional consultation was

sought in recent years to advise the community in zoning matters.

TABLE 6

HIGH INTENSITY ZONING VS NEED, FENTON TOWNSHIP

Classification	Land Zoned (acres)	Existing Uses (acres)	Projected 1990 Needs (acres)
Commercial	181	44	113.7
Industrial	111	0	580
Multiple Family	16	16	132.4
Total	308	60	304.1

Flint Township

Flint Township lies adjacent to the western boundary of the City of Flint. A large portion of its land area has been usurped by the cities of Flint and Swartz Creek. It is therefore, the second smallest township in the county with only 15,472 acres of total land area.⁴³ The township has a population of 29,927 and therefore, ranks second in the county in population.⁴⁴

Urban Sprawl

About 5,306 acres of the township's total land area

⁴³Genesee County Metropolitan Planning Commission, Land Use, p. A-19.

⁴⁴U.S., Department of Commerce, Bureau of the Census, "Genesee County."

is developed with urban uses. Approximately 1,233 acres of the developed land is adjacent to the City of Flint and could be considered as part of the urbanized area. The remaining 4073 acres consists primarily of scattered urban development interspersed with lands with no apparent use. About 77 percent of the community's total land area is devoted to urban sprawl. Figure 8 illustrates the areas of urban sprawl in Flint Township.

Zoning Ordinance

The existing zoning ordinance for Flint Township was adopted late in 1971. Unfortunately that ordinance bears little resemblance to a community development plan which preceded it by a few months. Nevertheless, little zoning activity has occurred under the provisions of the new ordinance. Therefore, this discussion will concern itself with the previous ordinance which was adopted in 1950 without the benefit of a plan.

The previous ordinance was completely pyramidal in nature until 1968 when the industrial districts were ammended to become exclusive. That ordinance provided for a minimum lot size of ten acres in the agricultural district and therefore, contained a tool which could be used to control urban sprawl.

Zoning Pattern

The Flint Township Zoning District Maps' primary characteristics were the amount of land zoned commercially

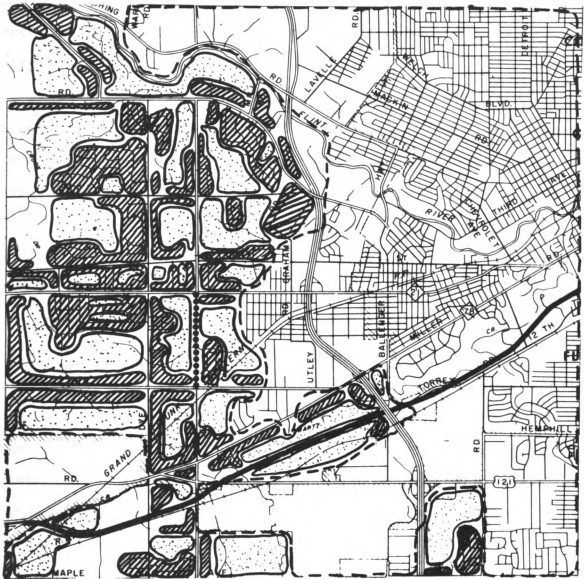


Figure 8

GENERALIZED AREAS OF URBAN SPRAWL
FLINT TOWNSHIP

LEGEND



Areas of Urban Sprawl



Vacant Lands



Scale: 4,000 ft.

Boundary of Urbanized Area



and the location of this land. Linear commercial districts occupied a considerable portion of the community's major street frontage.

Commercial districts occupied approximately 1,207 acres on the zoning map. Approximately 411 acres of this land was in commercial use and the remaining 796 or 65 percent was vacant.

The Genesee County 1990 Land Use Transportation Plan suggests that by 1990, Flint Township will contain approximately 63,610 persons and will require about 408.3 acres of commercial uses to serve that population.⁴⁵ The plan is in fact advocating the phasing out of some of the commercial uses in Flint Township. With this in mind, the community presently has 798.7 more acres zoned for commercial uses than it will need for the next two decades. In essence, 66 percent of the community's commercially zoned land is in excess of what will be required to fill 1990 projected needs.

Industrial zoning districts occupy approximately 613 acres of the community's total land area. About 527 acres or 85 percent of this land is vacant.

The county plan projects a need for 1,606 acres of industrial land by 1990. Therefore, it can be assumed that the community will be required to rezone approximately

⁴⁵Genesee County Metropolitan Planning Commission, 1990 Plan, pp. I-36 and III-27.

993 acres to industrial districts over the next twenty years. There is no evidence to indicate an over-zoning for industrial lands based on future needs.

Approximately 270 acres within the township are zoned for multiple family uses. About ninety acres of this land or 33 percent is presently vacant.

The county plan projects a need for 408.3 acres of high intensity residential uses by the year 1990. Therefore, there is no reason to believe that the township has over-zoned for high intensity residential uses in relation to future need.

In summary, all high intensity zoning districts are presently occupying considerably more land than they are using. Nevertheless, commercial districts are the only ones occupying more land than will be required to meet 1990 projected needs. Table 7 illustrates the relationship between land zoned and the needs of the community.

TABLE 7

HIGH INTENSITY ZONING VS NEED, FLINT TOWNSHIP

Classification	Land Zoned (acres)	Existing Uses (acres)	Projected 1990 Needs (acres)
Commercial	1207	411	408.3
Industrial	613	86	1606
Multiple Family	270	180	558.2
Total	2090	677	2572.5

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Changes in Zoning Districts

The community did not have a plan until late 1971 and therefore, no zoning decisions were based upon a plan. Nevertheless, the township sought professional guidance on zoning decisions from 1969 to 1971. Generally zoning policy could be described as permissive except in the case of multiple family districts. In these cases, about 63 percent of the petitions were disapproved.

Flushing Township

This township lies northwest of Flint Township and has had lands near its southeast corner pre-empted by the City of Flushing. The township covers approximately 20,474 acres and has a population of 6,957.^{46 47} The Flint River traverses the community from south to north.

Urban Sprawl

Approximately 1,556 acres of the community's total land area is developed in urban uses. Of these lands approximately 771 acres are contiguous to the City of Flushing and are considered within the urbanized area. Of the remaining lands about 519 acres or 33 percent of the total developed lands meet the criteria to be classified as urban sprawl. Most of this sprawl takes the form of

⁴⁶Genesee County Metropolitan Planning Commission, Land Use, p. A-19.

⁴⁷U.S., Department of Commerce, Bureau of the Census, "Genesee County."

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linear development along rural roads. Figure 9 illustrates the area devoted to urban sprawl in Flushing Township.

Zoning Ordinance

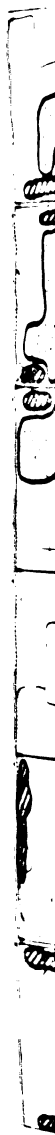
The existing zoning ordinance for Flushing Township was adopted in 1966 without the benefit of a plan. This ordinance was exclusive in nature since it prevented the establishment of residential uses in commercial or industrial districts. The ordinance contained no provisions directed at controlling urban sprawl.

Zoning Pattern

The zoning map for Flushing Township does not depart from what one would expect from a rural community. The vast majority of the land is zoned agriculturally and there are few significant parcels of commercial or industrial land.

Commercial zoning districts occupy approximately 152 acres within the community. About twelve acres of this land are actually in commercial uses. However, this may be misleading because approximately seventy-two acres of this land is occupied by a private airport. (The township zoning ordinance requires that airports be developed on lands zoned for commercial uses.) Therefore, sixty-eight acres or approximately 45 percent of the lands zoned for commercial uses are vacant.

The Genesee County 1990 Land Use Transportation Plan suggests that by 1990, Flushing Township will have a



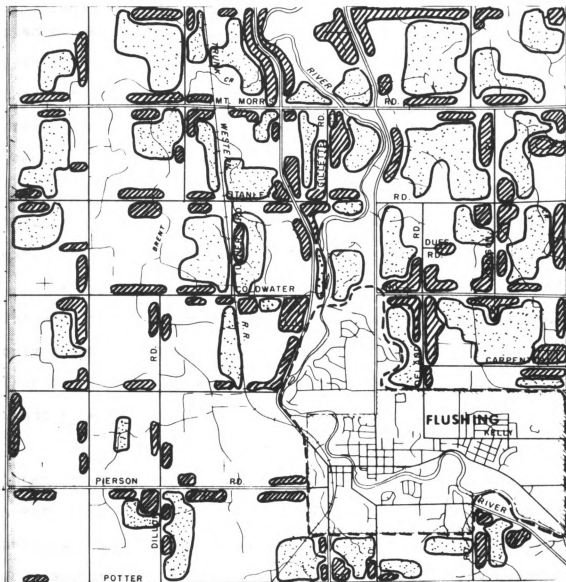


Figure 9

GENERALIZED AREAS OF URBAN SPRAWL
FLUSHING TOWNSHIP

LEGEND



North

Areas of Urban Sprawl



Vacant Lands



Boundary of Urbanised Area



Scale: 4,000 ft.

population of 12,570.⁴⁸ Based upon this population, the plan projects that a total of 80.8 acres of commercial uses will be required to fill the needs of the community.⁴⁹ Therefore, if the airport is discounted, the community presently has enough land zoned commercially to meet 1990 needs.

There are presently no industrially zoned land or industrial uses in Flushing Township and projections indicate that none will be needed for the next two decades.

About 112 acres in the community are presently zoned for multiple family residential development. Of this land, only eighteen acres are developed with multiple family uses. Therefore, ninety-four acres or about 83 percent of the lands zoned for multiple family dwellings are vacant.

The county plan suggests that 52.4 acres of high intensity residential uses will be needed to fill the 1990 needs of the community. Therefore, 59.6 acres or about 53 percent of the lands zoned for high intensity residential uses are in excess of that needed to fill the 1990 needs of the community.

The community has over-zoned for commercial and multiple family residential uses, but has not for industry.

⁴⁸Genesee County Metropolitan Planning Commission, 1990 Plan, p. I-36.

⁴⁹Ibid., p. III-27.

The relationship between zoning and the needs of the community is illustrated on Table 8.

TABLE 8
HIGH INTENSITY ZONING VS NEED, FLUSHING TOWNSHIP

Classification	Land Zoned (acres)	Existing Uses (acres)	Projected 1990 Needs (acres)
Commercial	152	12	80.8
Industrial	0	0	0
Multiple Family	112	18	52.4
Total	264	30	133.2

Changes in Zoning Districts

Flushing Township has received few petitions for changes in zoning in the last four years. It has in fact, averaged about six cases per year.⁵⁰ Since the community has no plan, none of the decisions can be based on a plan.

Forest Township

Forest Township is located in the northeast corner of Genesee County, and has lost land to the villages of Otisville and Otter Lake. It has a land area of about 17,995 acres and a population of 2,590.^{51 52}

⁵⁰Genesee County Metropolitan Planning Commission, "Records of the County Coordinating Zoning Commission" (Flint, Michigan: Genesee County Metropolitan Planning Commission), 1967 through 1971.

Urban Sprawl

About 1,229 acres of the township's total land area is developed with urban uses. Approximately 154 acres of this land is adjacent to the Village of Otisville and is considered to be within the urbanized area. Most of the remaining developed lands are classified as urban sprawl. Approximately 1,024 acres or 83 percent of the total land devoted to urban development is in the form of urban sprawl. Figure 10 illustrates the generalized areas of urban sprawl in Forest Township.

Zoning Ordinance

The present zoning ordinance for Forest Township was adopted in 1955 without the benefit of a land use plan or community development plan. However, a plan was adopted early in 1968. The ordinance is pyramidal in character but contains a minimum lot size requirement of ten acres in the agricultural district. It therefore, has a provision capable of controlling urban sprawl.

Zoning Pattern

The existing zoning map for Forest Township illustrates the zoning pattern of a more urbanized community.

Commercial zoning districts occupy 155 acres within

⁵¹Genesee County Metropolitan Planning Commission, Land Use, p. A-19.

⁵²U.S., Department of Commerce, Bureau of the Census, "Genesee County."

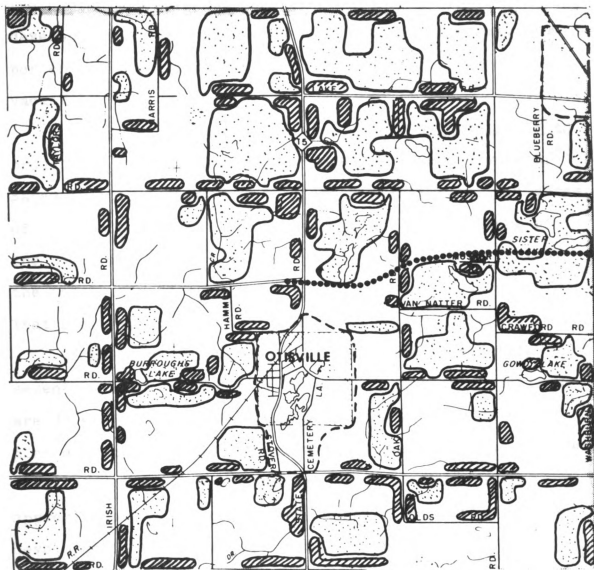


Figure 10

GENERALIZED AREAS OF URBAN SPRAWL
FOREST TOWNSHIP

LEGEND



North

Areas of Urban Sprawl



Vacant Lands



Boundary of Urbanized Area



Scale: 4,000 ft.

the community. Of this land only about ten acres are developed in commercial uses. Therefore, 145 acres or 94 percent of the total land zoned for commercial uses is vacant.

The Genesee County 1990 Land Use Transportation Plan projects a 1990 population of 5,520 for Forest Township.⁵³ Based on this population, the plan suggests that 35.4 acres of commercial land will be required to fill the needs of the community.⁵⁴ Therefore, 199.6 acres or 77 percent of the total land zoned for commercial uses is in excess of that required to fill 1990 needs.

Industrial zoning districts occupy approximately seventy-six acres in Forest Township. None of these lands are developed with industrial uses. Moreover, the county plan does not indicate any need for industrial land in 1990.

High intensity residential districts account for approximately 132 acres in the township. Three acres are developed in multiple family uses. Therefore, 129 acres or 97 percent of the total lands zoned for high intensity residential uses are vacant.

The county plan suggests that ten acres will be required for multiple family residential land uses in 1990. Therefore, 122 acres or 92 percent of the total lands zoned

⁵³Genesee County Metropolitan Planning Commission, 1990 Plan, p. I-36.

⁵⁴Ibid., p. III-27.

for multiple family residential uses are in excess of those required to serve the 1990 needs of the community.

Forest Township has apparently over-zoned for all high intensity uses. Table 9 illustrates the relationship between land zoned and the needs of the community.

TABLE 9
HIGH INTENSITY ZONING VS NEED, FOREST TOWNSHIP

Classification.	Land Zoned (acres)	Existing Uses (acres)	Projected 1990 Needs (acres)
Commercial	155	10	35.4
Industrial	76	0	0
Multiple Family	132	3	10
Total	363	13	45.4

Changes in Zoning Districts

Since the Forest Township Master Plan was developed about 60 percent of all zoning changes have been in accordance with that plan. However, it should be noted that the plan seems relatively optimistic in regard to the community's growth and a considerable portion of the community is proposed to be developed in urban uses.

Gaines Township

Gaines Township is located adjacent to the western boundary of the county, southwest of the City of Flint. The City of Swartz Creek and the Village of Gaines each

occupy a portion of the township's land. After excepting the lands occupied by these municipalities the township contains approximately 22,148 acres.⁵⁵ The population of the community is 2,971.⁵⁶

Urban Sprawl

About 1,090 acres of the total land area is developed with urban uses. None of these exist within an urbanized area. About 959 acres or 88 percent of the developed land in Gaines Township exists in the form of urban sprawl. Figure 11 illustrates the areas in Gaines Township that are devoted to urban sprawl.

Zoning Ordinance

The existing zoning ordinance in Gaines Township was adopted in 1956 without the benefit of a plan. The ordinance is pyramidal in nature and contains no provisions to control urban sprawl.

Zoning Pattern

The most striking characteristic of the Gaines Township Zoning District Map is the fact that thirteen out of twenty-five interior intersections of section line roads have commercial districts on all four corners. Most of these corners are undeveloped.

⁵⁵Genesee County Metropolitan Planning Commission, Land Use, p. A-19.

⁵⁶U.S., Department of Commerce, Bureau of the Census, "Genesee County."

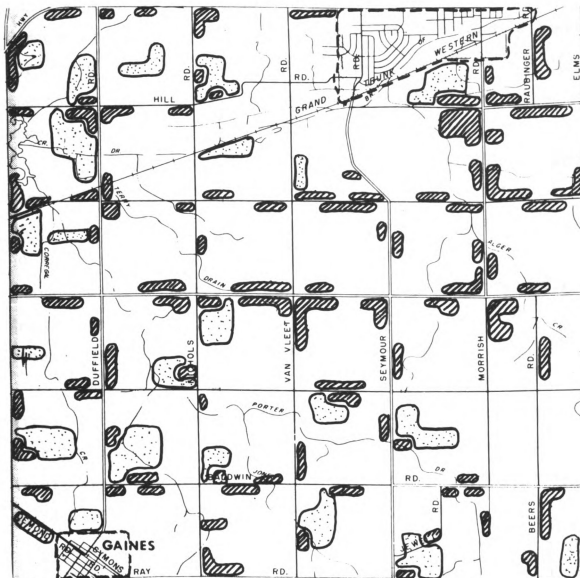
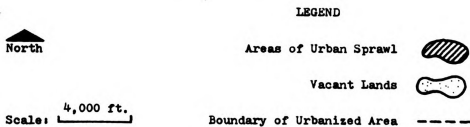


Figure 11

GENERALIZED AREAS OF URBAN SPRAWL
GAINES TOWNSHIP



Approximately 346 acres within the community are zoned for commercial uses. Only eight acres of this land is zoned for commercial use. Therefore, 338 acres or 98 percent of the total land zoned for commercial uses, is not being used for commercial development.

The Genesee County 1990 Land Use Transportation Plan suggests that the 1990 population of Gaines Township will be 7,870.⁵⁷ Based on this figure, the plan projects that 50.7 acres of commercial ~~uses~~ will be needed in 1990.⁵⁸ Therefore, 295.3 acres or 46 percent of the land presently ~~med~~ for commercial uses is in excess of what will be required to serve the 1990 needs of the community.

Industrial districts presently occupy 938 acres within the community. None of this land is developed and none is expected to be needed in 1990. All of the industrially zoned land is apparently in excess of what is needed to fill either present or 1990 community needs.

About 109 acres in Gaines Township are zoned for high intensity residential development. None of this land is presently developed in multiple family residential uses. Moreover, the county plan projects that only sixteen acres will be needed to fill 1990 needs. Therefore, ninety-three acres or 85 percent of the existing land zoned for multiple residential uses is in excess of 1990 needs.

⁵⁷ U.S., Department of Commerce, Bureau of the Census, "Genesee County."

⁵⁸ Genesee County Metropolitan Planning Commission, Land Use, p. A-19.

Gaines Township has apparently over-zoned for all high intensity uses. Table 10 illustrates the relationship between land zoned and the needs of the community.

TABLE 10
HIGH INTENSITY ZONING VS NEED, GAINES TOWNSHIP

Classification	Land Zoned (acres)	Existing Uses (acres)	Projected 1990 Needs (acres)
Commercial	346	8	50.7
Industrial	438	0	0
MultipleFamily	109	0	16
Total	1393	8	66.7

Changes in Zoning Districts

Gaines Township has approved every zoning petition that has been filed in the last four years, and has done so without the benefit of a plan. This fact becomes less startling when we consider the fact that only four petitions have been filed during this time period. Three of these were for multi-family districts and one for industrial.

The abundance of commercially zoned land can be blamed on the original ordinance and map as adopted in 1956.

Genesee Township

This township lies adjacent to the City of Flint along the northeastern boundaries. It has a population of

25,529 and has had a considerable portion of its total land usurped by the cities of Flint and Mt.Morris.⁵⁹ Excluding these municipalities, the community contains approximately 19,132 acres.⁶⁰ Of this land about 3,343 acres are occupied by the Genesee County Recreation Area adjacent to the Flint River.

Urban Sprawl

About 6,630 acres of the township's total land area is developed with urban land uses. Of this developed land, about 1,681 acres lie contiguous to the urbanized areas of the cities of Flint and Mt.Morris. The remainder is scattered throughout the community in the form of either isolated subdivisions or linear development along roads. The only lands in the entire township that have not been impacted by urban sprawl are those occupied by the Genesee County Recreation Area and those that are completely urbanized.

In essence, 4,949 acres or 74 percent of the total land developed in urban uses is in the form of urban sprawl. Moreover, this sprawl exists throughout all areas of the community. Intermingled with these urban land uses are sizeable parcels of vacant land that have no apparent use.

⁵⁹U.S., Department of Commerce, Bureau of the Census, "Genesee County."

⁶⁰Genesee County Metropolitan Planning Commission, Land Use., p. A-19.

Figure 12 illustrates the areas of Genesee Township that are devoted to urban sprawl.

Zoning Ordinance

The existing zoning ordinance for Genesee Township was adopted in 1955 without the benefit of a plan. The ordinance was pyramidal at that time but has since been amended to make its use districts more exclusive. It contains an agricultural district which permits agricultural and related land uses as well as open space. However, this district also permits urban residential uses, and contains no provisions to control urban sprawl.

The ordinance itself is perhaps the most complex zoning ordinance in the entire metropolitan area. It contains ten separate and distinct commercial districts. Most ordinances of other communities in the region contain a total of ten or eleven districts of all classifications. The result is that even the slightest change in land use in Genesee Township requires a zoning change. Consequently, zoning activity is greater in Genesee Township than in any other community studied.

Zoning Pattern

The Genesee Township Zoning District Map presents a collage of use districts, most of which bear little apparent relationship to adjacent districts. Commercial, industrial, and multiple family zoning districts are scattered

throughout the community intermixed with low density residential and agricultural districts.

Commercial zoning districts presently occupy approximately 446 acres in the township. Only 185.6 acres of this land is developed in commercial uses. Therefore, 260.4 acres or approximately 58 percent of the land zoned for commercial uses is vacant.

The Genesee County 1990 Land Use Transportation Plan suggests that by 1990 the population of Genesee Township will nearly double to 46,560 persons.⁶¹ Projections indicate that a total of 298.6 acres of commercial land uses will be required to fill the community's needs in 1990.⁶² Therefore, 147.4 acres or approximately 33 percent of the existing land zoned for commercial uses is in excess of what will be required for the next two decades. It seems evident then, that the community has over-zoned for commercial uses.

Industrial zoning districts occupy 1,391.1 acres in the community. Approximately 1,064 acres or approximately 76 percent of the land zoned for industrial uses is vacant.

The 1990 plan projects that a total of 994 acres devoted to industrial uses will be required to serve the

⁶¹Genesee County Metropolitan Planning Commission, 1990 Plan, p. I-36.

⁶²Ibid., p. III-27.

1990 needs of Genesee Township. Therefore, 397 acres or approximately 28.5 percent of the existing industrially zoned land is in excess of that required to fill 1990 needs.

Multiple family residential zoning districts occupy 1,090.2 acres in Genesee Township. About 993.6 acres or approximately 92 percent of the land zoned for multiple family residential development is vacant.

The county plan projects that a total of 316.5 acres of land will be required to fill the need for multiple family residences in 1990. Therefore, 673.7 acres or approximately 62 percent of the existing land zoned to accommodate these uses is in excess of that required to fill 1990 needs.

In summary, Genesee Township appears to have zoned lands for high intensity uses with little regard for existing or future needs of the community. Table 11 illustrates the relationship between land zoned and the needs of the community.

Changes in Zoning Districts

Since Genesee Township has no community development plan or land use plan, zoning decisions have been formulated in the absence of formal growth projections. The only policy guidelines for zoning changes are outlined in the zoning ordinance itself and none of these deal with location of districts or land area requirements for the

various uses. Except for the provisions of the ordinance, zoning decisions must be made in a vacuum.

In recent years, zoning changes for high intensity urban uses have for the most part resulted in the land under consideration being left vacant. This is especially true for high intensity residential uses. Nearly 1,000 acres in this classification have been rezoned in the last four years and only about thirty-seven of those acres have been developed. In fact, out of thirty-eight requests for multiple family zoning in the last four years only four have been denied by the township board. Although the other high intensity districts do not match this record, the vast majority of all requests are approved.

TABLE 11

HIGH INTENSITY ZONING VS NEED, GENESEE TOWNSHIP

Classification	Land Zoned (acres)	Existing Uses (acres)	Projected 1990 Needs (acres)
Commercial	446	185	298.6
Industrial	1391	327	734
Multiple Family	1090	97	316.5
Total	2927	610	1349.1

Grand Blanc Township

Grand Blanc Township lies southeast of the City of Flint. The community has a population of 19,229 and a land area of 20,664 acres.⁶³⁶⁴ A portion of the township's land area has been usurped by the City of Grand Blanc. This township is considered one of the most prestigious residential communities in the metropolitan area.

Urban Sprawl

Approximately 4,775 acres of the community's total land area is developed in urban uses. Of these lands about 706 acres are adjacent to the City of Grand Blanc and are considered to be within the urbanized area. The remaining 4,069 acres meet the criteria to be classified as urban sprawl. In all, approximately 85 percent of the developed land is in the form of urban sprawl. Most of this exists in the form of isolated residential subdivisions surrounded by open lands. Figure 13 illustrates the areas in Grand Blanc Township that are devoted to urban sprawl.

Zoning Ordinance

The Grand Blanc Zoning Ordinance was adopted in 1959 without the benefit of a plan. However, a plan was completed by the community in 1970. The ordinance contains no

⁶³U.S., Department of Commerce, Bureau of the Census, "Genesee County."

⁶⁴Genesee County Metropolitan Planning Commission, Land Use, p. A-19.

provisions to limit urban sprawl and is pyramidal in nature except for two heavy commercial districts which are exclusive.

Zoning Pattern

The most interesting aspect of the Grand Blanc Township Zoning District Map is its close resemblance to the Land Use Plan. This can partially be attributed to the fact that the plan reflected much of the existing land use in the community when it was adopted.

Commercial zoning districts comprise approximately 203 acres of the community's land area. Of this land, 168 acres are presently in commercial use. Therefore, 35 acres or about 17 percent of the existing commercially zoned land is vacant.

The Genesee County 1990 Land Use Transportation Plan suggests that by 1990 the township population will be 52,120.⁶⁵ Based on this figure the plan projects a need for 334.5 acres of commercial uses.⁶⁶ Therefore, it appears as though 131.5 acres of additional commercially zoned land will be needed by 1990.

Industrial zoning districts occupy approximately 280 acres in the township. Of this land 162 acres or 58 percent

⁶⁵Genesee County Metropolitan Planning Commission, 1990 Plan, p. I-36.

⁶⁶Ibid., p. III-27.

is vacant. The county plan projects a need for 1,406 acres of industrial land in 1990 in Grand Blanc Township. Therefore, the township will be required to provide approximately 1,126 additional acres of industrially zoned land in the next twenty years.

Approximately 219 acres within Grand Blanc Township is zoned for multiple family residential uses. All of this land is presently occupied by these uses. Therefore, there is no land zoned in excess of present needs. The county plan projects a need for 470.2 acres of multiple family residential uses in 1990. The community will therefore be required to provide approximately 251.2 acres of multiple family residentially zoned land in the next twenty years.

Grand Blanc Township does not appear to have zoned lands in excess of long range needs for any of the high intensity uses. Nevertheless, both industrial and commercial lands are zoned in excess of present needs. Table 12 illustrates the relationship between lands zoned and the needs of the community.

Changes in Zoning Districts

Since the adoption of the community plan in 1970, Grand Blanc Township's zoning actions have exhibited remarkable adherence to this plan. About 85 percent of these petitions were approved or denied in conformance with the plan.

In the last four years the community has received

forty-six petitions to rezone land within its boundaries. Twenty-eight of these requests or 61 percent have been approved by the community.

TABLE 12
HIGH INTENSITY ZONING VS NEED, GRAND BLANC TOWNSHIP

Classification	Land Zoned (acres)	Existing Uses (acres)	Projected 1990 Needs (acres)
Commercial	203	108	334.5
Industrial	280	118	1406
Multiple Family	219	219	470.2
Total	702	505	2210.7

Montrose Township

Montrose Township is located in the northwest corner of Genesee County adjacent on two sides to Saginaw County. Approximately 606 acres near the center of the township is occupied by the Village of Montrose. The township itself occupies 21,264 acres and has a population of approximately 4,679.^{67 68}

Urban Sprawl

Approximately 1,285 acres within the township are

⁶⁷Genesee County Metropolitan Planning Commission, Land Use, p. A-19.

⁶⁸U.S., Department of Commerce, Bureau of the Census, "Genesee County."

devoted to urban uses. About forty acres of this land could be considered within the urbanized area of Montrose Village. About 1,147 acres or 89 percent of the developed land exists in the form of urban sprawl. Figure 14 illustrates the areas of urban sprawl in Montrose Township.

Zoning Ordinance

The existing Montrose Township Zoning Ordinance was adopted in 1956 without a plan. The ordinance is pyramidal in nature and contains no provisions to control urban sprawl.

Zoning Pattern

Commercial zoning districts occupy 243 acres in Montrose Township. Of this land approximately nineteen acres are presently developed in commercial uses. Therefore, 224 acres or 92 percent of the land zoned for commercial uses is vacant.

The Genesee County 1990 Land Use Transportation Plan projects a 1990 population of 10,440 for the community, and suggests that 66.7 acres in commercial uses will be required to meet the needs of that population.⁶⁹ Therefore, 176.3 acres or 73 percent of the commercially zoned

⁶⁹Genesee County Metropolitan Planning Commission, 1990 Plan, pp. I-36 and III-27.

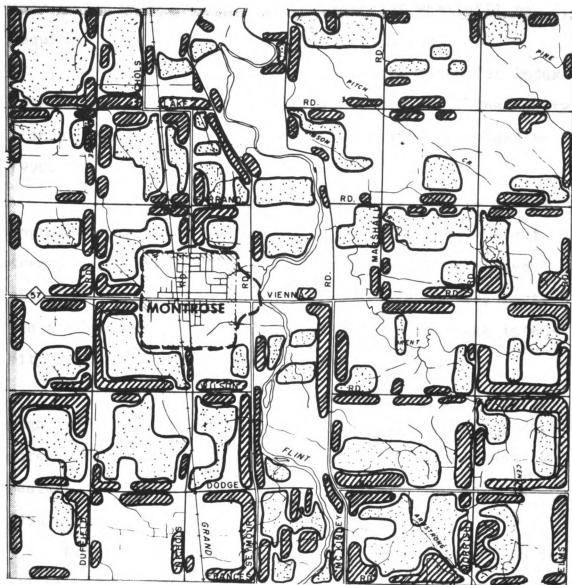


Figure 14

GENERALIZED AREAS OF URBAN SPRAWL
MONTROSE TOWNSHIP

LEGEND



North

Areas of Urban Sprawl



Vacant Lands



Scale: 4,000 ft.

Boundary of Urbanized Area



Land in Montrose Township is in excess of what will be required to serve the community's 1990 needs.

About 173 acres in the township are zoned for industrial use. None of those lands are developed. The county plan suggests that no industrial lands will be needed by 1990.

High intensity residential zoning districts occupy approximately sixty-four acres in the community. About twenty-three acres of this land is presently developed with multiple family residential uses. Therefore, forty-one acres or 64 percent of the land zoned for high intensity residential uses is vacant.

The county plan projects a need for 36.4 acres of high intensity residential uses by 1990. Therefore, 28.6 acres or 45 percent of the land zoned for high intensity residential uses is in excess of that required to meet 1990 needs.

Montrose Township has apparently zoned more land for all high intensity uses than will be necessary to fill the community's needs for the next twenty years. Table 13 illustrates the relationship of land zoned to the needs of the community.

Changes in Zoning Districts

The existing zoning pattern in Montrose Township is mostly a result of the original zoning map as adopted in 1956. Nine petitions for zoning changes have been filed

in the last four years. Six of these were approved and two denied. Since the community does not have a plan, none of the changes related to a plan.

TABLE 13
HIGH INTENSITY ZONING VS NEED, MONTROSE TOWNSHIP

Classification	Land Zoned (acres)	Existing Uses (acres)	Projected 1990 Needs (acres)
Commercial	243	19	66.7
Industrial	173	0	0
Multiple Family	64	23	36.4
Total	480	42	103.1

Mt. Morris Township

This township is located north of the City of Flint and a considerable portion of its land area has been usurped by the cities of Flint and Mt. Morris. The community contains approximately 19,755 acres and has a population of 29,349.^{70 71}

Urban Sprawl

Approximately 4,022 acres of Mt. Morris Township's land area is presently in urban uses. About 2,771 acres

⁷⁰Genesee County Metropolitan Planning Commission, Land Use, p. A-19.

⁷¹U.S., Department of Commerce, Bureau of the Census, "Genesee County."

Of this land is considered to be within the urbanized area. Of the remaining acreage, about 1,613 acres meet the criteria to be classified as urban sprawl. About 38 percent of the land devoted to urban uses in the community are in the form of urban sprawl. Figure 15 illustrates the areas of urban sprawl in Mt. Morris Township.

Zoning Ordinance

The Mt. Morris Township Zoning Ordinance was adopted in 1951 without the benefit of a plan. However, a plan was developed in 1969 and never adopted. The ordinance is pyramidal in character. However, it requires a minimum lot size of ten acres in the agricultural district and therefore contains a provision to control urban sprawl.

Zoning Pattern

The Mt. Morris Zoning District Map contains significant areas of commercially zoned land. Commercial districts account for approximately 1,253 acres in the community. About 301 acres of this land is presently in commercial use. Therefore, approximately 952 acres or 76 percent of the commercially zoned land in the community is vacant.

The Genesee County 1990 Land Use Transportation Plan projects a 1990 population of 57,800 for the township.⁷² It suggests that 371.1 acres of commercial development

⁷²Genesee County Metropolitan Planning Commission, 1990 Plan, p. I-36.

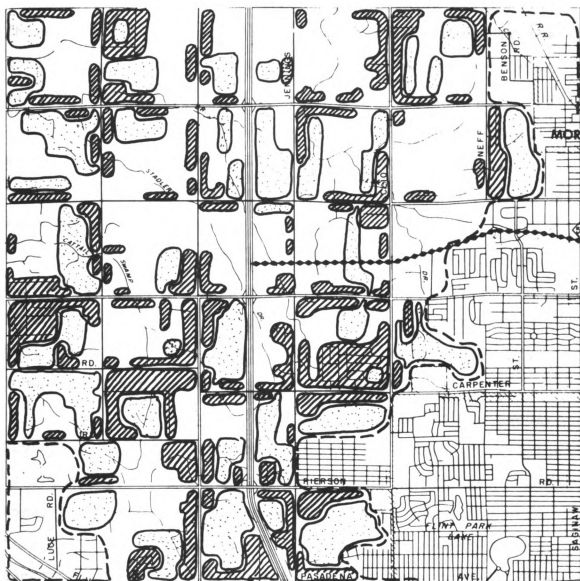


Figure 15

GENERALIZED AREAS OF URBAN SPRAWL
MT. MORRIS TOWNSHIP

LEGEND



North

Areas of Urban Sprawl



Vacant Lands



Scale: 4,000 ft.

Boundary of Urbanized Area



will be required to serve the needs of that population.⁷³ Therefore, 881.9 acres or approximately 70 percent of the total area zoned for commercial uses is in excess of what will be required to serve 1990 needs.

Industrial zoning districts occupy approximately 157 acres in the community. Only forty-four acres are in industrial use. Therefore, 113 acres or 72 percent of the land zoned for industrial uses is vacant.

The county plan suggests that approximately 1,057 acres of industrial land will be necessary to serve the 1990 needs of the community. Therefore, it is expected that there will be a need for an additional 900 acres of industrial land in the next two decades.

Multiple family residential zoning districts occupy 229 acres in Mt. Morris Township. Fifty acres of this land is presently occupied by multiple family dwellings. Therefore, 179 acres or 78 percent of the land zoned for high intensity residential uses is vacant. The county plan suggests a 1990 need for 331.8 acres of land for multiple family residential uses. Therefore, it is reasonable to assume that the community will be required to provide an additional 109.1 acres of lands in this classification within the next twenty years.

While Mt. Morris Township is heavily over-zoned for commercial uses, it does not appear as though industrial

⁷³Ibid., III-27.

or high intensity residential districts are zoned in excess of future needs. Table 14 illustrates the relationship between the land zoned and the needs of the community.

TABLE 14
HIGH INTENSITY ZONING VS NEED, MT. MORRIS TOWNSHIP

Classification	Land Zoned (acres)	Existing Uses (acres)	Projected 1990 Needs (acres)
Commercial	1253	301	371
Industrial	157	44	1057
Multiple Family	229	50	338.1
Total	1639	395	1766.1

Changes in Zoning Districts

The record of zoning changes in Mt. Morris Township leaves little doubt as to why the community is over-zoned for commercial uses. Out of sixty-six zoning petitions in the last four years, forty-five were for commercial uses. Out of these forty-five, the township approved thirty-six. The permissiveness is not demonstrated in the other high intensity districts. Since the community master plan was formulated in 1969, about 70 percent of the rezonings have violated the provisions of this plan.

Mundy Township

Mundy Township is located southwest of the City of Flint and has had a very small portion of its land area

pre-empted by the city. The township presently contains about 21,892 acres and has a population of 8,029.⁷⁴ ⁷⁵

Urban Sprawl

About 2,313 acres of the community's land area is presently developed in urban uses. Approximately 383 acres are considered within the urbanized area. Of the remaining lands approximately 1,891 acres meet the criteria to be classified as urban sprawl. About 81 percent of the developed land in Mundy Township is in the form of urban sprawl. Figure 16 illustrates those areas in Mundy Township that are devoted to urban sprawl.

Zoning Ordinance

The zoning ordinance for Mundy Township was adopted in 1954 without the benefit of a plan. The ordinance is pyramidal in character and provides for a minimum ten acre lot in the agricultural districts. However, this provision is waived in instances where developemnt occurs on section line roads. In those cases lot areas can be reduced to 20,000 square feet. Therefore, this provision could not effectively control urban sprawl.

⁷⁴Genesee County Metropolitan Planning Commission, Land Use, p. A-19.

⁷⁵U.S., Department of Commerce, Bureau of the Census, "Genesee County."

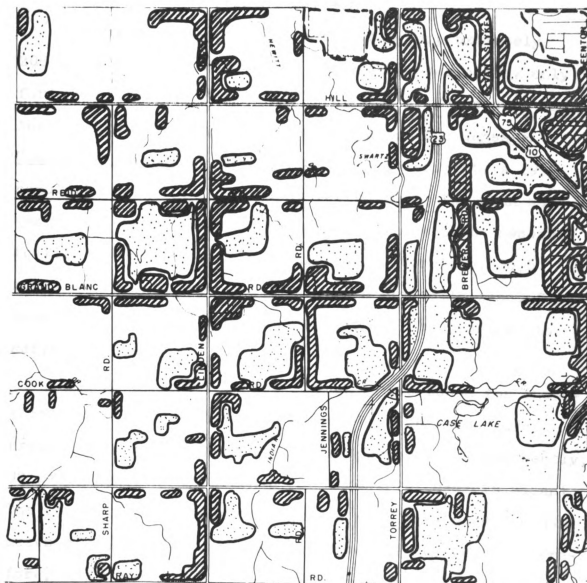


Figure 16

GENERALIZED AREAS OF URBAN SPRAWL
MUNDY TOWNSHIP

LEGEND



North

Areas of Urban Sprawl



Vacant Lands



Boundary of Urbanized Area



Scale: 4,000 ft.

Zoning Pattern

Commercial zoning districts occupy approximately 208 acres in Mundy Township. Commercial uses occupy only forty-nine acres. Therefore, 159 acres or 77 percent of the commercially zoned lands are vacant. The Genesee County 1990 Land Use Transportation Plan projects a 1990 population of 18,840 for Mundy Township.⁷⁶ The plan suggests that 121.2 acres of commercial uses will be required to fill the needs of this population.⁷⁷ Therefore, 86.8 acres or about 42 percent of the land presently zoned for commercial uses is in excess of what will be required to serve 1990 needs.

About 295 acres in the community are zoned for industrial use. Of this land approximately eight acres are presently being used for industrial purposes. Consequently, 97 percent of the land zoned for industrial uses is vacant. The county plan suggests that there will be a need for 399 acres of industrial land in Mundy Township by 1990. Therefore, the community will be required to provide an additional 104 acres by that time.

High intensity residential zoning districts occupy 230 acres within the township. Of this total, two acres are **being** used for multiple family dwellings. Therefore,

⁷⁶Genesee County Metropolitan Planning Commission, 1990 Plan, p. I-36.

⁷⁷Ibid., p. III-27.

228 acres or 99 percent of the land zoned for high intensity residential uses are vacant. The county plan projects a need for 113 acres for multiple family residential development by the year 1990. Therefore, 117 acres or 51 percent of the land presently zoned for multiple family residential uses is in excess of the twenty year needs of the community.

It is evident that Mundy Township has over-zoned for both commercial and multiple family uses. Nevertheless, the present industrial districts do not appear to be in excess of what will be required to serve future needs. Table 15 illustrates the relationship between the land zoned and the needs of the community.

TABLE 15

HIGH INTENSITY ZONING VS NEED, MUNDY TOWNSHIP

Classification	Land Zoned (acres)	Existing Uses (acres)	Projected 1990 Needs (acres)
Commercial	208	49	121.2
Industrial	295	8	399
Multiple Family	230	2	113
Total	733	59	633.2

Changes in Zoning Districts

In the last four years Mundy Township has been petitioned for zoning district changes forty-eight times. Of these requests, twenty-four were for commercial uses, thirteen were for industrial uses, ten were for high intensity residential uses, and one was for a single family residential use. There is a relatively even distribution of approvals and denials in all classifications except commercial in which eighteen out of twenty-four were approved. This may be partially responsible for the over-zoning which exists in the commercial classifications.

Richfield Township

This community is located on the eastern edge of the county adjacent to Lapeer County. It is a "whole" township and contains approximately 21,977 acres.⁷⁸ About 4,672 acres are occupied by the Genesee County Recreation Area. The township has a population of 5,535.⁷⁹

Urban Sprawl

About 1,862 acres in Richfield Township are devoted to urban uses. Approximately 1,635 acres of this land meets the criteria to be classified as urban sprawl. In total, 88 percent of the developed land in the township

⁷⁸Genesee County Metropolitan Planning Commission, Land Use, p. A-19.

⁷⁹U.S., Department of Commerce, Bureau of the Census, "Genesee County."

exists in the form of urban sprawl. Figure 17 illustrates generalized areas of urban sprawl in Richfield Township.

Zoning Ordinance

The zoning ordinance in Richfield Township was adopted in 1953 and was not based on a plan. The Davison Richfield Community Plan was adopted by the community in 1969. The zoning ordinance closely parallels that of Mundy Township with the same lot area provisions in the agricultural district. The ordinance is pyramidal in character.

Zoning Pattern

Commercial zoning districts occupy 244 acres in the township. Only about forty-four acres of this land is presently developed in commercial uses. As a result, 200 acres or 82 percent of the commercially zoned land is vacant.

The Genesee County 1990 Land Use Transportation Plan projects a population of 10,650 for Richfield Township in 1990.⁸⁰ To serve this need it suggests that 68.1 acres of commercial facilities will be needed.⁸¹ Therefore, 175.9 acres or 72 percent of the land zoned for commercial uses is in excess of that needed in 1990.

About 418 acres is zoned for industrial uses. Only

⁸⁰Genesee County Metropolitan Planning Commission, 1990 Plan, p. I-36.

⁸¹Ibid., p. III-27.

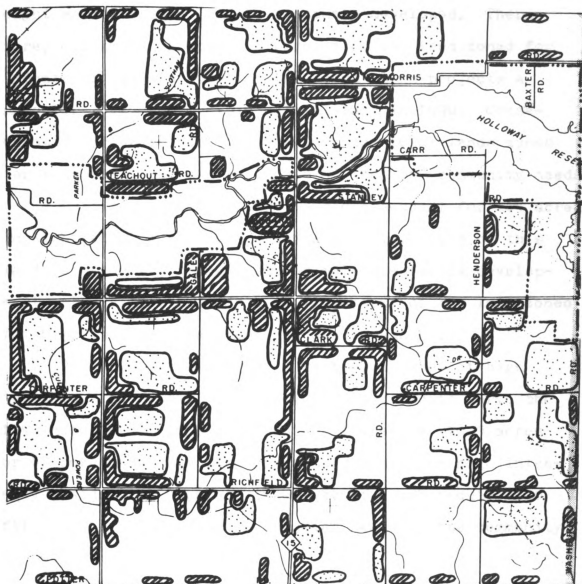


Figure 17

GENERALIZED AREAS OF URBAN SPRAWL
RICHFIELD TOWNSHIP

LEGEND

North

Areas of Urban Sprawl



Vacant Lands



Boundary of Urbanized Area



Genesee County Recreation Area



Scale: 4,000 ft.

eight acres of this land is presently developed. Therefore, 410 acres or about 98 percent of the land zoned for industrial uses is vacant. The county plan projects a need for forty acres of industrial land in 1990. Consequently, 378 acres or 90 percent of the total lands zoned for industrial use are in excess of the 1990 community needs.

Multiple family zoning districts account for 114 acres in Richfield Township. Approximately nine acres of this land is presently being used for multiple family development. Therefore, 105 acres or 92 percent of the land zoned for high intensity residential uses is vacant.

The county plan suggests that 37.1 acres of high intensity residential uses would be required to serve the 1990 needs of Richfield Township. Therefore, 76.9 acres or 67 percent of the lands presently zoned for high intensity residential uses are in excess of those required to fill the high intensity residential needs of the community in 1990.

Richfield Township has apparently zoned for all high intensity uses in excess of the community needs for the next twenty years. Table 16 illustrates the relationship of land zoned to the needs of the community.

Changes in Zoning Districts

Much of the over-zoning evident in Richfield Township is the result of the adoption of the original zoning ordinance in 1953. There have been only seven petitions for

changes in zoning in the community in the last four years. All of these were approved except one for commercial use. Since the Davison Richfield Community Plan was adopted, only four rezonings have occurred. Two of these concurred with the provisions of the plan.

TABLE 16

HIGH INTENSITY ZONING VS NEED, RICHFIELD TOWNSHIP

Classification	Land Zoned (acres)	Existing Uses (acres)	Projected 1990 Needs (acres)
Commercial	244	44	68.1
Industrial	418	8	40.0
Multiple Family	114	9	37.1
Total	776	61	145.2

Thetford Township

This township lies adjacent to the northern boundaries of Genesee County, northeast of the city of Mt. Morris. It is a "whole" township with a land area of approximately 22,236 acres.⁸² The community has a population of 6,014.⁸³

Urban Sprawl

Approximately 1,453 acres in Thetford Township are

⁸²Genesee County Metropolitan Planning Commission, Land Use, p. A-19.

⁸³U.S., Department of Commerce, Bureau of the Census, "Genesee County."

developed with urban uses. Of this land, 1,202 acres or 83 percent is in the form of urban sprawl. Most of this sprawl occurs in the form of linear development along section line roads. Figure 18 illustrates the areas of urban sprawl in Thetford Township.

Zoning Ordinance

The existing zoning ordinance in Thetford Township was adopted in 1954. Thetford Township has never had a plan. The zoning ordinance is pyramidal in nature and contains no provisions to control urban sprawl.

Zoning Pattern

In relation to other rural townships, Thetford Township Zoning Map provides a vast acreage devoted to commercial districts. These districts occupy about 718 acres in the community. Only thirty-two acres of this land is being used for commercial purposes. Therefore, 686 acres or about 96 percent of the total land zoned for commercial uses is vacant.

The Genesee County 1990 Land Use Transportation Plan projects a population of 11,450 for Thetford Township in 1990.⁸⁴ It is suggested that approximately 73.6 acres of commercial uses will be required to fill the needs of this population.⁸⁵ As a result, 644.4 acres or approximately

⁸⁴Genesee County Metropolitan Planning Commission, 1990 Plan, p. I-36.

⁸⁵Ibid., p.III-27.

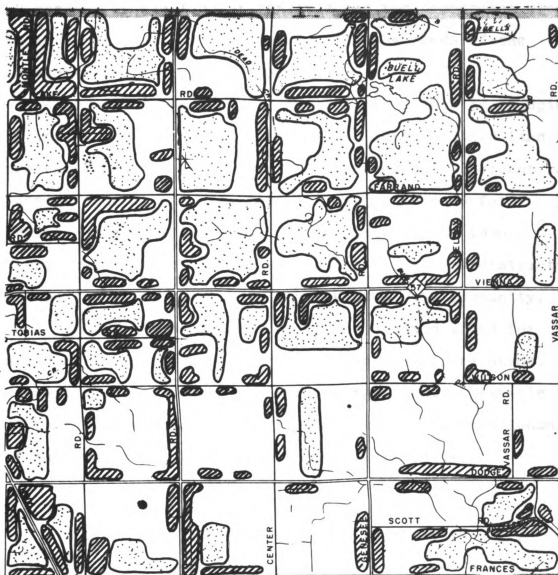


Figure 18

GENERALIZED AREAS OF URBAN SPRAWL
THETFORD TOWNSHIP

LEGEND



North

Areas of Urban Sprawl

Vacant Lands



Scale: 4,000 ft.

Boundary of Urbanized Area

90 percent of the land presently zoned for commercial uses is in excess of that required to fill the needs of the community for the next two decades.

About thirty acres of the township's land is occupied by industrial zoning districts. Five acres of this land is presently developed and twenty-five acres or 83 percent is vacant. The county plan does not project a need for additional industrial lands in the community in 1990. Therefore, 83 percent of the existing industrial districts are in excess of the twenty year needs of the community.

Thetford Township has an excess of land zoned for all high intensity uses in relation to its future needs. Commercial districts are by far the most blatant example of this over-zoning. Table 17 illustrates the relationship of the land zoned to the needs of the community.

TABLE 17

HIGH INTENSITY ZONING VS NEED, THETFORD TOWNSHIP

Classification	Land Zoned (acres)	Existing Uses (acres)	Projected 1990 Needs (acres)
Commercial	718	32	73.6
Industrial	30	5	5
Multiple Family	38	0	28
Total	786	37	106.6

Changes in Zoning Districts

Requests for rezoning to commercial uses have far outnumbered all others in Thetford Township in the last four years. The community has approved 70 percent of these requests. None were in accordance with the provisions of any plan.

Vienna Township

Vienna Township lies on the northern edge of Genesee County, northwest of the City of Mt. Morris. About 628 acres near the center of the township are occupied by the City of Clio. The township contains 22,116 acres and has a population of 9,359.^{86 87}

Urban Sprawl

About 2,875 acres in the community are devoted to urban uses. Approximately 541 acres of this land is adjacent to the City of Clio and is considered to be within the urbanized area. Of the remaining lands, 2,275 acres or 79 percent takes the form of urban sprawl. Figure 19 illustrates the areas of urban sprawl in Vienna Township.

Zoning Ordinance

The existing zoning ordinance was adopted in 1955 and was not based upon a plan. The ordinance is pyramidal

⁸⁶Genesee County Metropolitan Planning Commission, Land Use, p. A-19.

⁸⁷U.S., Department of Commerce, Bureau of the Census, "Genesee County."

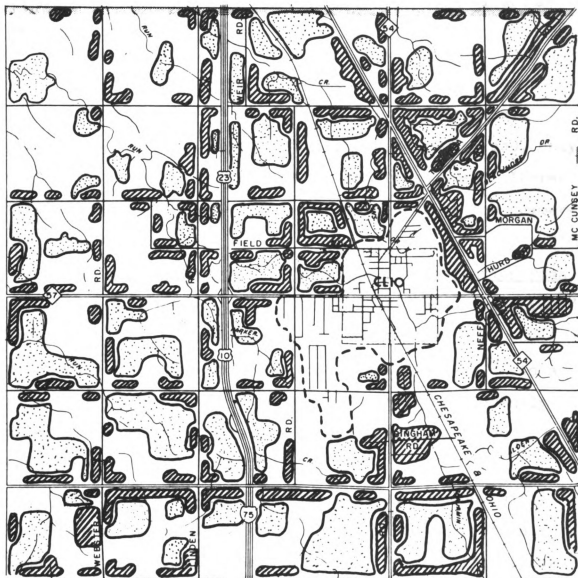


Figure 19

GENERALIZED AREAS OF URBAN SPRAWL
VIENNA TOWNSHIP

LEGEND



North

Scale: 4,000 ft.

Areas of Urban Sprawl

Vacant Lands

Boundary of Urbanized Area



in character and contains no provisions to control urban sprawl.

Zoning Pattern

Approximately 890 acres in Vienna Township are devoted to commercial zoning districts. Of this land, only eighty-two acres are developed in commercial uses. Therefore, 808 acres or 91 percent of the land zoned for commercial uses is vacant.

The Genesee County 1990 Land Use Transportation Plan projects a 1990 population of 17,100 for Vienna Township.⁸⁸ Based upon this projections, the plan suggests that 109.8 acres will be needed for commercial uses in 1990.⁸⁹ As a result, 780.2 acres or 88 percent of the lands presently zoned for commercial uses are in excess of the 1990 requirements.

Industrial zoning districts presently occupy sixty-three acres in Vienna Township. Only five acres of this land is in industrial uses. Therefore, fifty-eight acres or 92 percent of the lands zoned for industrial use is vacant. The county plan suggests that five acres will be required for industrial uses in 1990. Consequently, 92 percent of the lands presently zoned for industrial uses are

⁸⁸Genesee County Metropolitan Planning Commission, 1990 Plan, p. I-36.

⁸⁹Ibid., p. III-27.

in excess of those required to serve the 1990 needs of the community.

Approximately 322 acres in the community are zoned for high intensity residential uses. Only fourteen acres of this land is presently developed. Therefore, 308 acres or 96 percent of the land zoned for high intensity residential uses is vacant. The county plan suggests that in 1990, 93.1 acres will be required to serve the high intensity residential needs of the community. Therefore, 228.9 acres or 71 percent of the total land zoned for multiple family residential uses is in excess of that required to fill the 1990 needs of the community.

Vienna Township has an excess of land zoned for all high intensity uses. The township in fact has approximately eight times as much commercially zoned land as will be required for the next twenty years. Table 18 illustrates the relationship of land zoned to the needs of the community.

TABLE 18
HIGH INTENSITY ZONING VS NEED, VIENNA TOWNSHIP

Classification	Land Zoned (acres)	Existing Uses (acres)	Projected 1990 Needs (acres)
Commercial	890	82	109.8
Industrial	63	5	5
Multiple Family	322	14	93.1
Total	1275	101	207.9

Changes in Zoning Districts

The incidence of over-zoning for commercial uses in Vienna Township has apparently occurred as a result of a few large area rezonings. The majority of the requests for rezonings for the last four years have been for multiple family uses. About 75 percent of the zoning changes petitioned for during this period have been approved. As previously mentioned, the township has no plan on which to base zoning decisions.

CHAPTER V

ZONING AND URBAN SPRAWL

Sprawl

An overview of the quantitative analyses of urban sprawl in all of the communities examined reveals an abundance of lands meeting the criteria to be classified as sprawl in the metropolitan area. An average of 65.3 percent of the developed land in each township qualifies as urban sprawl according to the criteria established in Chapter III. More startling perhaps, is the median of 80 percent of the developed land which is devoted to urban sprawl. Table 19 illustrates the percent of developed land in each community that qualifies as urban sprawl, ranks the communities accordingly, and scores them in accordance with the system discussed earlier.

Zoning Ordinances

As is evident from Table 19 the zoning ordinances of the townships in Genesee County leave a great deal to be desired in controls directed toward urban sprawl. Only three of the eighteen communities have zoning ordinances that contain provisions to control urban sprawl. Each of these is in the form of a high minimum lot size in the agricultural district. Unfortunately, in each of these

TABLE 19
SCORING ZONING POLICY

TOWNSHIPS	Percent of developed land in urban sprawl	ZONING ORDINANCE No provision to limit sprawl	Not based upon a plan	Pyramidal in character	ZONING PATTERN Percent of commercial districts vacant	Percent of industrial districts vacant	Percent of multiple family districts vacant	Percent of commercial districts exceeding 1990 needs	Percent of industrial districts exceeding 1990 needs	Percent of multiple family districts exceeding 1990 needs	ZONING CHANGES Percent of zoning changes not based upon a plan	TOTAL POINTS
DAVISON	96	X	X	X	86	91	97	69	0	85	69	81
CLAYTON	91	X	X	X	96	100	89	90	28	39	100	85
MONTROSE	89	X	X	X	92	100	64	73	100	45	100	87
GAINES	88	X	X	X	98	100	100	46	100	85	100	94
RICHFIELD	88	X	X	X	82	98	92	72	90	67	50	85
GRAND BLANC	85	X	X	X	17	58	0	0	0	0	15	40
FOREST	83		X	X	94	100	97	77	100	92	40	80
THETFORD	83	X	X	X	96	83	100	90	83	26	100	88
MUNDY	81	X	X	X	77	97	99	42	0	51	100	77
VIENNA	79	X	X	X	91	92	96	88	92	71	100	93
BURTON	78	X	X	X	69	90	80	66	10	1	100	72
FLINT	77	X	X	X	65	85	33	66	0	0	100	56
GENESEE	74	X	X		58	76	92	36	29	62	100	65
ATLAS	60	X	X	X	92	40	100	69	40	68	100	81
MT. MORRIS	38		X	X	76	72	78	70	0	0	70	57
FLUSHING	33	X	X		45	0	83	0	0	53	100	48
ARGENTINE	26		X	X	77	0	0	60	0	0	100	44
FENTON	24	X	X		76	100	0	37	0	0	100	52

communities, this provision has been made at least partially ineffective. This has been accomplished either by adopting an original map which creates higher intensity districts along section line roads or by means of zoning changes.

It is noted that none of the township zoning ordinances in Genesee County were originally adopted on the basis of a plan. This element could have been omitted from the scoring system without a noticeable effect upon the scores themselves.

All but three of the ordinances were pyramidal in character. This is to be expected because of the vintage of most of them (mid 1950's). Those that were exclusive were either adopted in more recent years or were recently amended for that purpose.

Zoning Patterns

The zoning patterns of the communities generally demonstrated over-zoning for most high intensity uses. The worst offender here was Forest Township which had zoned about 88 percent more lands for high intensity uses than its projected needs for the year 1990. In most cases the most extreme examples of over-zoning occurred in commercial districts. It is possible that this can be explained by the reliance of the townships upon property taxes as a fiscal resource. Commercial property has a high value and in many cases is seen as an easy way to increase the revenue of the community. Consequently, communities

may become permissive where requests are for commercial zoning.

Changes in Zoning Districts

Because of the lack of land use plans or community development plans in most townships the majority of them based none of their decisions on a plan. Of the five townships that did have plans only two followed the provisions of these plans in over 50 percent of their zoning cases.

Most of the communities approved considerably more requests for rezoning than they denied. This was especially true where the request was for commercial zoning. In many cases this factor is largely responsible for the over-zoning of commercial land.

Comparison of Scores

In general, the townships exhibiting the greatest percentage of developed land as urban sprawl scored highest in the analysis. However, a number of inconsistencies evolved and the results were by no means conclusive. For example, the township of Grand Blanc ranks sixth in the county in the amount of developed land that exists in the form of urban sprawl. However, it scored the lowest in the comparative analysis.

One problem that is evident in the comparison is the fact that the communities are not distributed over a wide

spread of percentage points. In fact, half of the townships lie within the 81 percent to 96 percent area.

These townships' average score is 79.7 points, while the four communities whose urban sprawl represents between 24 and 38 percent of their total developed lands have an average score of 50.3 points. The five townships whose urban sprawl ranges between 60 and 79 percent have an average score of 73.6 points and the five townships at the top of the list, whose urban sprawl represented from 88 to 96 percent of their developed land, averaged 86.4 points. Nevertheless, if the communities are examined individually their scores do not directly reflect the amount of developed land that exists as urban sprawl within their boundaries.

The ranking of the communities on the urban sprawl scale bears little relationship to their other physical characteristics. Fenton Township and Davison Township lie on opposite ends of the scale. Fenton is low with only 24 percent of its total developed land in the form of urban sprawl and Davison is high with 96 percent.

Both of these communities lie on the edge of the county and have similar populations. (Davison Township has a population of 8,260 and Fenton Township has a population of 7,304) Both have had a portion of their land usurped for an incorporated city or village, and both contain lakes. Each township is traversed by a major limited access divided highway. Nevertheless, there is a sharp contrast in the way these communities have developed. Most of the section

line roads in Davison Township have been developed in urban uses and many residential subdivisions are found in isolated areas. On the other hand, in Fenton Township most of the development has occurred adjacent to the municipalities and within the lake area, leaving the majority of the remainder of the community to agriculture and open space.

The highly urbanized townships, however, are found concentrated on the mid portion of the urban sprawl scale. Five of the townships have populations over 10,000. These are the townships of Burton, Flint, Genesee, and Grand Blanc. Three of these communities are located adjacent to each other on the scale and contain urban sprawl ranging from 74 to 78 percent of their total developed land area. Mt. Morris Township lies one place removed from the others, but has a much lower percentage of its total developed land devoted to urban sprawl (38 percent). Grand Blanc Township provides the major exception since it lies much nearer the top of the scale and has devoted 85 percent of its total developed land area to urban sprawl.

As previously mentioned, Grand Blanc was also a major apparent exception to the hypothesis. The point scoring system indicated that Grand Blanc Township had zoning policies which were the best of all the communities examined in regard to the control of urban sprawl. Nevertheless, the community ranked sixth in the amount of its total developed land area that existed in the form of sprawl. This fact

was in direct conflict with the hypothesis and deserved closer inspection.

The urban sprawl in Grand Blanc Township consists mostly of isolated residential subdivisions surrounded by open or agricultural lands. Many of these subdivisions required no zoning change but were developed under the provisions of the agricultural district which contained no provisions to control urban sprawl. The fact that this type of development activity was so intense in Grand Blanc Township can probably be explained by its reputation as a prestigious residential community as explained in Chapter II. Therefore, a large amount of urban sprawl probably occurred in this community, primarily as a result of one of the previously identified causal factors, the lack of controls in the zoning ordinance text.

Another major exception to the hypothesis is Vienna Township. This township ranks tenth in urban sprawl and yet earned a score of 93 points which is second highest of all the communities examined. According to the criteria used here, this community has zoning policies which are extremely conducive to urban sprawl. Nevertheless, only 79 percent of its urban development has occurred in the form of urban sprawl.

It is suggested that Vienna Township's departure from the norm is caused in part by the physical characteristics of its landscape. Most of the soils in the northern portion

of the township have severe limitations for septic tank systems.⁹⁰ Furthermore, much of this land is very low in relation to the rest of the area, and has a high water table.⁹¹ Therefore, a relatively large area in the community presents significant deterrents to urban development. The area adjacent to the City of Clio, is among the highest land in the community. Furthermore, this area has better soil conditions than much of the remainder of the township. It is reasonable to assume that these factors have encouraged development to occur adjacent to the City of Clio and partially compensated for the lack of zoning policy that controlled urban sprawl.

An examination of the criteria used to evaluate zoning policy reveals the fact that whether or not the original zoning ordinance is based on a plan had little to do with the final score, since none of the original ordinances had been based on a plan. Moreover, the percent of decisions that did not relate to a plan did not score the townships in the manner anticipated. All but one of the communities that scored less than 100 percent in this area were within the top seven townships in terms of sprawl. With these facts

⁹⁰U.S., Department of Agriculture, Soil Conservation Service, Genesee County Soils Survey and Soil Limitation Rating System (Flint, Michigan: U.S. Department of Agriculture, 1966).

⁹¹United Aerial Mapping, "Photogrametric Maps of Genesee County" (Flint, Michigan: Unpublished, Prepared for the Genesee County Metropolitan Planning Commission, 1966).

in mind, it would appear as though the existence of or compliance with a plan had little to do with preventing urban sprawl in the community.

A review of the content of each of these plans revealed a relatively conventional "Master Plan" created by a planning consultant under contract with the community. The plans were all developed for twenty years in the future except the Grand Blanc Plan which was based on the ultimate holding capacity of the community. Each plan designates a large area for urban use. In some cases, as in Forest Township, this area seems rather optimistic in view of the present size of the community. In no case was the plan designed to provide for staged sequential growth nor did the implementation section deal with this factor. Consequently, urban development could occur on the outer fringe of an area that was programmed to be urbanized in twenty years and still be in conformance with the provisions of the plan.

In the case of Grand Blanc Township, the plan was based on the assumption that at some future date the entire community would be urbanized. Therefore, urban development could occur any place in the community and still be in accordance with the provisions of the plan as long as it conformed to the use requirements.

Each community in a metropolitan area is generally optimistic about its own growth potential. The governing body usually believes that their community has a

significant growth potential and is often determined to exploit that potential. When a consultant is employed to create a plan for future development, it is generally in his interest to agree with, and in fact, reinforce the beliefs of his employer. Therefore, it becomes easy for the consultant to produce an optimistic plan. Unfortunately, zoning in accordance with an optimistic plan can provide an incentive for urban sprawl by allowing premature development in remote areas. In essence, the community plans in Genesee County could be discounted as a means to evaluate zoning policy.

All of the townships examined have set a precedent for urban sprawl. Most are in advanced stages of sprawl. Consequently, the problems associated with urban sprawl already exist in most areas of the county.

Zoning is primarily a tool to direct growth and prevent problems such as those associated with sprawl. Those communities that have zoning ordinance provisions directed toward controlling urban sprawl in most cases adopted those provisions after considerable sprawl had occurred. Consequently, even if these provisions are properly applied, they will merely aid in preventing additional sprawl and will do little to ameliorate existing problems.

The comparison of the townships in Genesee County reveals a relationship between zoning policy and urban sprawl. There is nothing to indicate a definite causal

relationship. However, communities with higher incidence of urban sprawl generally scored higher under the system used.

Perhaps the most startling revelation of this study was the vast percentage of the total developed land in the townships that was devoted to urban sprawl.

CHAPTER VI

CONCLUSIONS AND RECOMMENDATIONS

General Conclusions

In the introductory chapter of this thesis, urban sprawl was said to produce low utilization of land resources, to take lands out of agricultural production, to create unnecessary expenses in the provision of urban services and to provide a disorderly and inefficient pattern of growth in urban regions. With that in mind, it must be concluded that the Flint Metropolitan Area contains considerable areas of wasted land resources. Furthermore, the provision of essential services to a large portion of the region must be unnecessarily expensive in view of the amount of land that is dedicated to urban sprawl.

It is evident from this study that township zoning ordinances in the Flint area have not in the past been effective in controlling urban sprawl. In most cases, there has been no apparent attempt to control the problem. Moreover, the present situation existing in most of the communities seems to indicate that there is no present concern about the amount of their land resources being wasted.

Most of the communities are continuing to rezone lands for high intensity uses even though they already have sufficient lands in these classifications to meet their needs far beyond the foreseeable future. The majority of the townships have never adopted provisions in their zoning ordinances that are directed toward controlling urban sprawl. Of the few communities that do have these provisions, most have not made effective use of them. It must be concluded then that the communities are either unaware of the critical stage that sprawl is approaching or that they are subject to other pressures which outweigh the problem of sprawl. In either case, it is apparent that the zoning policies of the townships in Genesee County are generally not directed toward the amelioration of the problems associated with urban sprawl.

This conclusion presents further questions in view of the fact that most of the townships' zoning ordinances were formulated while suburbanization was at its height. It would seem reasonable to conclude that the purpose of adopting these ordinances was to control and direct this growth. However, other authors have suggested that there are underlying reasons for the adoption of zoning ordinances in general and especially during periods of suburbanization.

Marion Clawson suggests that zoning is used effectively to keep certain solid-economic groups out of suburbs where they are not desired.⁹² He indicates that

this rather than urban sprawl is the reason that many suburban communities adopt zoning ordinances. This author would go one step further and suggest that perhaps zoning ordinances are also used to promote socio-economic homogeneity within neighborhoods and that this has been the case in Genesee County while urban sprawl has not necessarily been an influencing factor in zoning decisions.

For example, numerous examples can be cited where rezoning for multiple family residential uses adjacent to single family neighborhoods has been denied even though the area was programmed for that use in the plan adopted by the community. Most of these cases involve some citizen protest from the single family neighborhoods.

On the other hand, the same request concerning a similar parcel of land in a remote area of the township surrounded by agricultural lands would stand a better chance of being approved because there are no neighbors to complain. Unfortunately, the latter site is often removed from community facilities and shopping and must rely upon private wells and septic tanks rather than public water and sanitary sewers. Nevertheless, it is easier for the Township Board to approve this request and perpetuate urban sprawl than to confront citizen opposition.

The present citizens of an area and the developers operating within it have the greatest financial stake

⁹²Marion Clawson, Suburban Conversion, p. 70.

in the community and therefore are likely to have the loudest voice. However, these elements of the community may be concerned with short range goals or gains and are not necessarily aware of the long term implications of land development decisions. Consequently, more concern may be voiced over the possibility of living near persons of a different socio-economic background than over the costs involved in losing large areas of agricultural lands to urban sprawl.

Another fact that may be instrumental in the townships' apparent lack of concern regarding the problem is the fact that urban sprawl occurs gradually. The individual decision allowing a country store or a few residences to be developed in a remote area of the community does not appear to have a significant effect on land use patterns. It is the combined effect of numerous such decisions that actually creates the impact. Therefore, it is easy for a community to approve a request to develop "an acre or two" on the basis that the overall impact will be negligible.

It can be concluded that most of the townships in Genesee County are not entirely aware of the serious implications presented by uncontrolled urban sprawl. Furthermore, evidence suggests that township officials come under considerable pressure from sources that may in fact, encourage the development of scattered urban uses.

Recommendations

Zoning is the major tool used to control the development of land. In its present form, zoning is apparently not effective in controlling urban sprawl in Genesee County. Consequently, it would seem desirable to restructure the zoning process in order to create a device that would be more effective. This is especially true if zoning is to continue its role as the major land development guide.

It is often recommended that zoning be de-emphasized as a tool for guiding development, and that other methods be adopted which would have a more positive effect. The National Commission on Urban Problems organized under the Johnson Administration recommended public land assembly resale with restrictions. This method would involve the exercise of the power of eminent domain to acquire parcels of land that had a potential for urban sprawl. The land would then be sold to private parties subject to heavy deed restrictions or reverter clauses that would prevent developing the land in a manner that would create sprawl.⁹³

The commission also recommended the purchase of land development rights in areas with potential for urban sprawl. Under this proposal the local unit of government would, after payment of an agreed upon price, acquire the rights to develop the property from the owner. The owner would

⁹³Fred P. Bosselman, Alternatives to Urban Sprawl: Legal Guidelines for Governmental Action, Report for the National Commission on Urban Problems (Washington, D.C.: U.S. Printing Office, Research Report Number 15, 1968).

be free to use the property for any purpose he desired as long as it stayed within other laws and did not involve urban development.⁹⁴

Other methods available to control urban sprawl include subdivision regulations, utility policies and tax incentives. However, zoning has the historical advantage of having existed for a number of years. During these years it has earned some degree of acceptance. Moreover, it is possible to conduct an historical analysis of zoning in order to determine the problems associated with it and attempt to correct them. Consequently, it would seem desirable to attempt to control urban sprawl by means of altering existing tools rather than seeking new ones.

Existing zoning enabling legislation in Michigan gives the townships power to zone land and provides a few standards for the adoption of ordinances other than procedural standards. The townships are required to police their own ordinances, and there is no provision which requires that these ordinances be reviewed in regard to content or map by any other agency except the County Planning or Zoning Commission or the County Coordinating Zoning Committee of the County Board of Commissioners. These agencies are only given the power to review the ordinance

⁹⁴Ibid., pp. 27-39.

in regard to the ordinances of other communities to determine whether a conflict exists.

The Genesee County Board of Commissioners has created a Coordinating Zoning Committee which has gone one step further than the provisions of the enabling legislation. All township changes in zoning are referred to this committee. The committee utilizes the professional staff of the Genesee County Metropolitan Planning Commission to develop comprehensive analyses of each zoning case. These analyses are given to the township at the same time as the recommendation of the Coordinating Zoning Committee. Therefore, a professional analysis of each zoning case is available to each township. Nevertheless, the local communities make little use of these analyses and in fact, frequently disregard the recommendation of the Coordinating Zoning Committee.

It does not appear as though action at the local level is effective in changing the township zoning policies. The program of the Genesee County Coordinating Zoning Committee was designed to make local communities aware of the problems and implications involved in rezoning land, but it could not be termed a success. A broad range public education program may help to inform the citizens of the implications and problems associated with urban sprawl but would not guarantee solutions. The major problems lie within existing land development laws at the state level.

The final report of Governor Milliken's Commission on Land Use recommends that counties be required to adopt land use plans and police local communities to assure their compliance with those plans. The report also recommended that the county be required to formulate these plans according to guidelines established at the state level.⁹⁵ This recommendation assumes that counties would be less susceptible to local interest group pressures than the local communities and that they would have a better overview of the entire region and its growth problems. Furthermore, the state guidelines would be developed to insure county compliance with land development policies at the state level.

It would seem advisable to go one step further in this regard and require state agency review and approval of all county plans. In addition, periodic checks should be made to assure county compliance.

If the plans adopted by the county are in the form of traditional "master plans," they would be of little value in controlling urban sprawl. As explained in the Grand Blanc Township example in Chapter V, land development can occur in accordance with the provisions of a long range plan and still create urban sprawl.

Ideally the county plans required would stage growth

⁹⁵Governor Milliken's Special Commission on Land Use, Governors Special Commission on Land Use Report (Lansing, Michigan: Office of the Governor, State of Michigan, December 14, 1971).

in relatively short range stages so that growth could be assured of proceeding sequentially from the existing urban core. A third dimension of time which is now omitted from most plans would then be included in all the county plans. In the policing process, local zoning would be required to comply with the time element of these plans as well as the general development pattern.

For example, the counties could be required to adopt development plans which staged projected growth in five year stages. Local communities could then zone lands according to their projected needs for up to five years in the future as long as this zoning complied with the use provisions of the plan. Areas outside the five year projected growth would remain zoned for agricultural and open space uses. Each five years another land area would be open to zoning changes.

It would, of course, be necessary to provide for the amendment of these plans if growth did not occur as originally projected. If a community experienced sudden unexpected growth it may be advisable to expand the five year growth areas to accommodate it. If the converse were true, it may be advisable to amend the plan to reduce these areas.

The existing township zoning enabling act would need to be restructured considerably in order to provide for the above recommendations. The legislation currently

states that a zoning ordinance must be adopted in accordance with a plan. It does not, however, give the plan any definition, and many communities have ignored this provision.⁹⁶

It would also be necessary to provide standards in the enabling legislation for the establishment of use districts. Specifically, use districts would be required which exempted all urban uses and were designed to protect the rural character of open lands. It may be desirable to set standards for other use districts in order to assure some degree of conformity in the administering of state guidelines.

Zoning is not seen as a panacea for urban problems or even for urban sprawl. Evidence indicates that it has failed miserably in regard to controlling urban sprawl in Genesee County. This study suggests, however, that it can play an important part in the directions that future land development patterns take. It can be used to contain urban sprawl if it is modernized and properly administered. It should be remembered though that zoning is not a remedy but a preventive measure. It can not eradicate existing areas of urban sprawl or the problems associated with them, but it can prevent these problems from re-occurring in the future.

⁹⁶Act 184 of the Michigan Public Acts of 1943, Section 3.

BIBLIOGRAPHY

BIBLIOGRAPHY

- Act 183 of the Michigan Public Acts of 1943.
- Act 184 of the Michigan Public Acts of 1943.
- Battelle Memorial Institute, Columbus, Ohio. Genesee County Economic Conditions. Flint, Michigan: Genesee County Metropolitan Planning Commission, 1969.
- Bosselman, Fred P. Alternatives to Urban Sprawl: Legal Guidelines for Governmental Action. Report for the National Commission on Urban Problems. Washington, D.C.: U.S. Printing Office, Research Report Number 15, 1968.
- Clawson, Marion. Suburban Land Conversion in the United States. Baltimore: Johns Hopkins Press, 1971.
- Consoer Townsend and Associates. Public Works Plan for Water Pollution Control. Flint, Michigan: Genesee County Drain Commission, January, 1970.
- Crow, Carl. The City of Flint Grows Up. New York: Harper Bros., 1954.
- Dunbar, Willus F. Michigan. A History of the Wolverine State. Grand Rapids, Michigan: William B. Eerdman's Publishing Co., 1965.
- Genesee County Metropolitan Planning Commission, Genesee County Land Use. Flint, Michigan: Genesee County Metropolitan Planning Commission, February, 1970.
- Genesee County Metropolitan Planning Commission. Genesee County 1990 Land Use Transportation Plan. Flint, Michigan: Genesee County Metropolitan Planning Commission, September, 1971.
- Genesee County Metropolitan Planning Commission. "Records of the County Coordinating Zoning Committee." Flint, Michigan: Genesee County Metropolitan Planning Commission, 1967 through 1971.

Governor Milliken's Special Commission on Land Use.
Governors Special Commission on Land Use Report.
 Lansing, Michigan: Office of the Governor, State of
 Michigan, December 14, 1971.

_____. Land Use Programs for Michigan. Lansing,
 Michigan: Office of the Governor, State of Michigan,
 August 26, 1971.

Jahoda, Marie; Deutsch, Morton; Cook, Stuart W. Research
 Methods in Social Relations. Part Two: Selected
 Techniques. New York: The Dryden Press, 1951.

Kimball, William J. and Bachman, Gordon. Land Use in
 Michigan. "Focus on Land Use in Michigan" East
 Lansing, Michigan: Cooperative Extension Service,
 Michigan State University, January, 1969.

McCormick, Thomas C. and Francis, Roy G. Methods of
 Research in the Behavioral Sciences. New York:
 Harper Bros., 1958.

Neutze, Max. The Suburban Apartment Boom: Case Study of a
 Land Use Problem. Washington, D.C.: Resources For
 the Future, 1968.

Smith, William V., ed. Historical Michigan. Land of the
 Great Lakes, Vol. III. "An Account of Flint and
 Genesee County from the Organization." n.p.:
 National Historical Association, Inc., 1952.

United Aerial Mapping. "Photogrametric Maps of Genesee
 County." Unpublished. Prepared for the Genesee
 County Metropolitan Planning Commission, 1966.

U.S., Department of Agriculture, Soil Conservation Service.
Genesee County Soils Survey and Soil Limitation Rating
 System. Flint, Michigan: U.S. Department of
 Agriculture, 1966.

U.S., Department of Commerce, Bureau of the Census.
 "Census of Population and Housing for Genesee County."
 Unpublished 2nd count data.

U.S., Department of Interior, U.S. Geological Survey.
 "Water Resources of the Flint Area, Michigan."
 Washington, D.C.: Government Printing Office, 1963.

Willbern, York. The Withering Away of the City. Univer-
 sity, Alabama: University of Alabama Press, 1964.

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