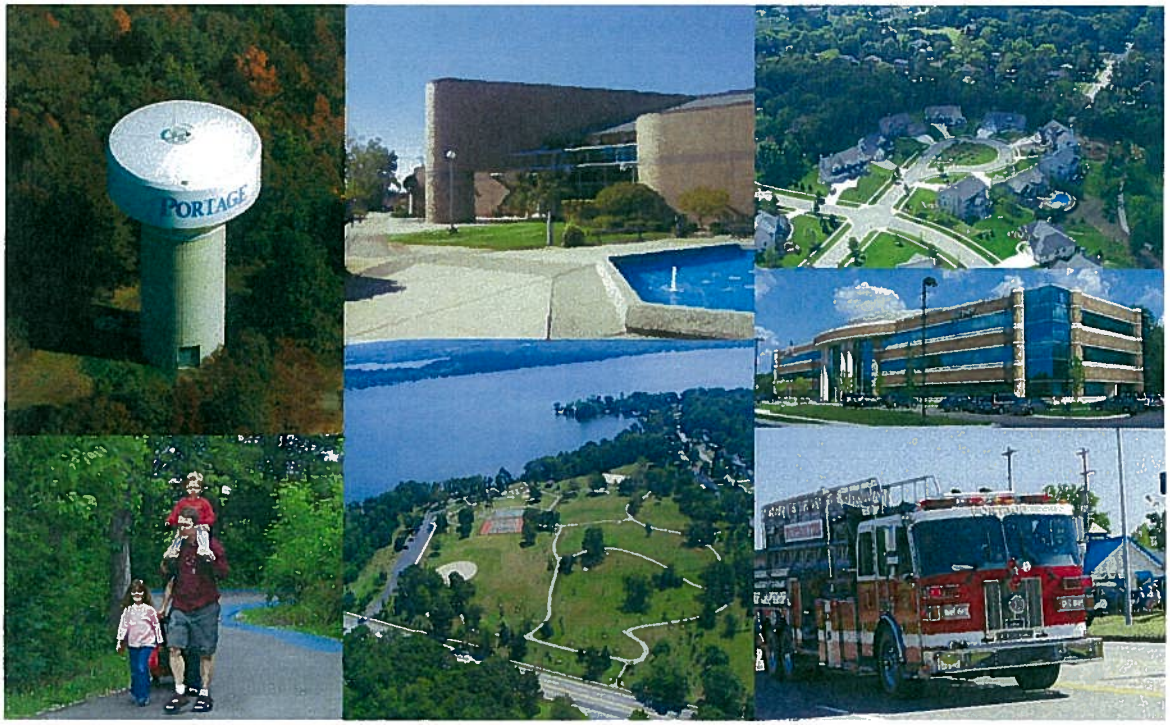
CITY OF PORTAGE

A PLACE FOR OPPORTUNITIES TO GROW

2008 COMPREHENSIVE PLAN



CITY OF PORTAGE

2008 COMPREHENSIVE PLAN UPDATE

Prepared and adopted by the City of Portage Planning Commission

Elizabeth Campbell (former member)
James Cheesebro, Vice-Chairman
Bruce Dean
Thomas Fox, Chairman
Kerry Hettinger
James Hoppe
James Pearson
Nancy Vander Roest, Secretary
Paul Welch
Richard Yonke

Department of Community Development

Jeffrey M. Erickson, Director
Christopher T. Forth, Deputy Director of Planning and Development Services
Michael K. West, Assistant City Planner

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Chapter 1 – Introduction

Steady growth, high quality neighborhoods, excellent schools and municipal services, regional shopping, strong industrial base and a mixture of uses to provide a stable tax base and employment opportunities are among the many assets in the City of Portage. Few communities in the area can match Portage for its quality of life. The city has been well planned and the plans and planning process are consistently used to further land use and development activities throughout the community.

Purpose of a Comprehensive Plan

Like most communities, Portage is undergoing constant change somewhere within its borders. Businesses and industries develop and redevelop, homes are remodeled or new ones built, streets and parks are improved. Some communities simply let the change happen, hope for the best, and react to development proposals when presented. Others, like Portage, work diligently to influence change in a manner that maintains the high quality of life enjoyed by residents and businesses today. A major step in that "influencing process" is the preparation and consistent use of the Comprehensive Plan.

Community leaders are proud of Portage and the way growth has been managed. Yet there are still a number of issues to address to help strengthen the local economic base and sustain the high quality of life residents have to come to expect. The Comprehensive Plan provides a written framework for the future which will help city leaders in making substantive, well thought-out decisions that reflect the vision of the community and fulfill its potential.

What is a Comprehensive Plan?

The Comprehensive Plan is a policy document that guides future decision-making related to land use, community development and capital investments (streets, utilities and municipal buildings). It is intended to convey a clear statement of community goals, objectives and development guidelines - a vision for the future. A community-supported Comprehensive Plan helps ensure that decisions made on matters of growth and development and capital expenditures will maintain and enhance the community. A well-designed and implemented Comprehensive Plan will help maintain Portage's position as a highly desirable community in which to reside, work and enjoy an array of leisure activities.

How was the Comprehensive Plan Developed?

The authority to adopt a new Comprehensive Plan or amend an existing Plan is permitted under Michigan law, Public Act 285 of 1931, as amended. This law authorizes the Planning Commission to prepare and adopt a Comprehensive Plan which best promotes health, safety, order, convenience, prosperity and general welfare. The Plan considers efficiency and economy in the process of development; including providing for:

- ✓ Adequate provisions for traffic
- ✓ Healthful and convenient distribution of population
- ✓ Good civic design and arrangement
- ✓ Wise and efficient expenditure of public funds
- ✓ Adequate provisions for public utilities and other public requirements

Public Act 285 also requires the Planning Commission to review the Plan every five years and determine whether to a) amend the plan, or 2) adopt a new plan. In November 2006, the Planning Commission concluded that each chapter of the 2002 Comprehensive Plan should be reviewed and amended, where

necessary, to consider recommendations from the Portage 2025 visioning effort, address new issues, consider new ideas and confirm or revise existing goals and objectives. Changes will also involve technical details such as updated demographics where available, public infrastructure, existing land use patterns and future land use patterns, among others.

Involvement of city officials and the public was obtained through a series of monthly meetings with the Planning Commission and public input sessions. The public input sessions allowed those interested to share their ideas and reaction to information presented in the Plan before the official public hearing was conducted. Public input was documented, and all comments were considered before the Plan was adopted.

Input from city officials, residents and business representatives involved in the process identified some key areas of focus, including:

- ✓ Protection of neighborhoods from conflicting land uses and traffic related impacts.
- ✓ Diverse and affordable housing options to retain existing residents, attract new residents and meet changing needs.
- ✓ Access management techniques including shared driveways and cross access connections along major thoroughfares.
- ✓ Maintenance of a safe and coordinated multi-modal transportation system to accommodate future growth and development and provide pedestrian-friendly alternative modes of travel.
- ✓ Protection of water bodies, wetlands/floodplains and other natural resources.
- ✓ Economic development strategies that retain, grow and attract diverse businesses.
- ✓ Maintenance of vibrant commercial areas and establishment of a distinct and identifiable city centre area.

Comprehensive Plan Compared to the Zoning Ordinance

The relationship between the Comprehensive Plan and Zoning Ordinance is important to understand. Stated concisely, the Comprehensive Plan is a general guide for the future development of the community. It's flexible in order to respond to changing conditions and it is not a binding legal document. The Zoning Ordinance sets forth specific legal requirements for the use of land. It's a document that requires formal amendment to change. The Comprehensive Plan is adopted and used by the Planning Commission while the Zoning Ordinance is adopted by the City Council. In summary, the Comprehensive Plan shows how land is to be used in the future; while the Zoning Ordinance regulates the use of land today.

Table 1-1
Comprehensive Plan vs. Zoning Ordinance

Provides general policies, a guide.	Provides specific regulations, the law.
Describes what should happen in the future - recommended land use for the next 5-20 years, not necessarily the recommended use for today.	Describes what is and what is not allowed today, based on existing conditions.
Adopted under the City Planning Act, Public Act 285 of 1931, as amended.	Adopted under the Michigan Zoning Enabling Act, Public Act 110 of 2006.
Includes recommendations that involve various agencies and groups.	Deals only with development-related issues under city control.
Flexible to respond to changing conditions.	Fairly rigid, requires formal amendment to change.

While the basis for the two documents is very different, they are much the same in terms of purpose. Should a public decision made by a government body ever be challenged, the courts will often verify that the Comprehensive Plan supports that decision. Conflicts will arise, and when they do, courts lend weight to a Zoning Ordinance or decision that is backed by a Comprehensive Plan. It is for this reason that the Comprehensive Plan be consistently used in the decision-making processes.

How to Use the Comprehensive Plan

The Comprehensive Plan is the guiding tool and provides the framework for land use decisions in the City of Portage. It is a dynamic document, and therefore requires regular revision and updating. It should also serve as a basis for capital improvement decisions and programming, as funds are allocated for yearly work programs and tasks with outside sources of funds, such as grants, are sought for local enhancement and development activities. The following guidelines should be followed consistently for best use of the Comprehensive Plan:

- ***Refer to the Comprehensive Plan in all zoning decisions***

Use of the Comprehensive Plan ensures that the desires of the community regarding future development are translated into action...one site plan approval, variance, or rezoning at a time. Those everyday decisions, collectively dictate the future of Portage. Specifically, **Appendix D, Development Guidelines** should be referred to prior to every development decision.

- ***Encourage other decision-making bodies to use the Comprehensive Plan***

Decision-making efforts of other agencies and adjacent communities can also be influenced through the Comprehensive Plan. Transportation policies and recommendations in this Plan can be used by the Michigan Department of Transportation (MDOT) during evaluation of potential changes along state highways. The Kalamazoo Area Transportation Study (KATS), the agency designated by the state and federal government for area-wide long range transportation planning, can use the findings to help project future traffic, needs and funding. Other agencies, such as the school district, the Michigan Department of Environmental Quality (MDEQ) and economic development groups, can reference this Plan during their planning and funding decisions. These agencies, to varying degrees, all have a role in the implementation of the Comprehensive Plan.

- ***Keep the Comprehensive Plan current***

Comprehensive Plan recommendations and policies should be reviewed and evaluated annually by the Planning Commission to determine the level of program achievement. Appropriate amendments to the Comprehensive Plan should be made if circumstances in the community change.

- ***Amend the Zoning Ordinance, Zoning Map and other city codes to implement the Plan***

Recommendations from the Comprehensive Plan can be implemented through amendments to the Zoning Ordinance, Zoning Map and other city codes. Care must be taken, however, to fully review and consider all ramifications of such actions. In some cases, recommendations in this Plan are long range, with the idea that implementation will be gradual. In other cases, recommendations focus on issues today and change may be more immediate.

What the Comprehensive Plan Means to Residents & Landowners

What the Comprehensive Plan means to Portage residents and landowners depends on the particular situation. Property owners have several interests, including not only their own property, but the surrounding properties as well. Resident interests generally lie in their own subdivisions or neighborhoods. They may wish to know

which uses are proposed for vacant parcels in the area or what decisions are being made for various properties. Site plan approvals, variances, and rezonings all affect the property owners and residents of Portage. The text and maps in this Comprehensive Plan are intended to serve as a direct guide to those types of decisions as they come before Portage's governing bodies.

Organization of the Plan

Residents should also take an interest in the overall concepts of the Comprehensive Plan, as expressed in **Chapter 2, Goals and Objectives** and **Appendix D, Development Guidelines**. These statements give an indication of the Planning Commission's view of the City of Portage, both today and in the future.

The Comprehensive Plan is intended to act as a guide for future activity within the city. As such, the Plan should be organized in such a manner that allows the user to easily locate key information. The goals and objectives that guide the recommendations of Comprehensive Plan are found in **Chapter 2**. **Chapter 3** provides a general picture of the community that includes a brief comparison of Portage to both surrounding communities and to similar communities statewide. This comparison helps provide a better understanding of Portage's profile relative to these communities.

Chapters 4 through 10 each discuss a specific subject such as natural features or transportation. Each chapter begins with a brief description of the existing conditions, followed by recommendations that provide more specific direction for the city on how to accomplish its goals. Although these topics are included in separate chapters, it is important to understand they all work together, not in competition or conflict with each other, to accomplish the vision of the city.

The Comprehensive Plan is not useful if it does not provide the proper tools and methodology for implementation. Therefore **Chapter 11, Implementation** and **Appendix D, Development Guidelines** and are provided to assist the city with fundamental strategies on the most efficient and effective methods of accomplishing the goals and policies set forth in **Chapter 2**.

Chapter 2 – Goals & Objectives

Goals and related objectives form the foundation for this Comprehensive Plan. Goals respond to specific issues identified by the public and city officials during the planning process and incorporate elements of vision statements and goals developed through the Portage 2025 Visioning Project. Goals and corresponding objectives should be viewed collectively when programs, regulatory changes or development proposals are being considered.

These goals and objectives form the basis for all the recommendations set forth in **Chapters 4 through 10**. The goals and objectives are arranged to directly correspond with the appropriate chapter, with the exception of the community identity goal and objectives. Community identity goals and objectives are integrated into each of the chapters throughout the Plan and therefore do not have a separate chapter. **Chapter 11 Implementation** then serves to summarize the goals and objectives and recommendations by topic.

Land Use & Development

Goal 1: Establish a well organized, balanced and efficient use of land at densities that:

- **meets the current and future needs of the public**
- **ensures compatibility and harmony amongst land uses**
- **protects key natural and historic resources**
- **complements the existing and planned capacity of streets and infrastructure**
- **sustains prosperity to support desired public facilities and services**

Objective 1.1: Provide an attractive business environment and opportunities for businesses to expand the economic diversity of Portage and contribute to the overall economic strength. In particular, encourage businesses that will be sensitive to the environment.

Objective 1.2: Continue to sustain the overall residential character of the city.

Objective 1.3: Accommodate appropriate non-residential uses adjacent to and in some situations within residential areas when the location is essential or supports the neighborhoods, provided such uses and site design are compatible.

Objective 1.4: Ensure the transition from one use or grouping of uses to another is compatible with surrounding uses through screening and buffering.

Objective 1.5: Foster the revitalization and redevelopment of existing uses or areas which have deteriorated or have become obsolete.

Objective 1.6: Promote systematic development of residential, commercial and industrial uses in specific areas and corridors as recommended to take advantage of existing infrastructure and future improvements.

Objective 1.7: Promote compatibility between existing and future uses along the city's boundaries with other communities.

Housing

Goal 2: Provide a diverse and stable housing stock providing for a range of housing opportunities for all income groups and a quality living environment for all persons.

Objective 2.1: Encourage single family, home and lot ownership for all income groups in an effort to maintain the single-family character of Portage.

Objective 2.2: Protect residential neighborhoods from intrusion of incompatible land uses, noise and air pollution, groundwater contaminates, and traffic at inappropriate speeds.

Objective 2.3: Reinforce neighborhood character by providing sidewalks and other pathways as well as connections to activity centers, such as parks and schools.

Objective 2.4: Provide assistance and incentives (whether public expenditure, tax or regulatory) to local nonprofit housing organizations, housing providers and other groups to expand housing opportunities.

Objective 2.5: Promote larger lot, upscale housing opportunities in appropriate locations of the city and administer appropriate zoning regulations for such developments.

Objective 2.6: Promote awareness of the needs for housing and services for special groups such as: low to moderate-income households, seniors, physically challenged, and families in need of child or adult day care.

Economic Development/Marketplace

Goal 3: Encourage sensible and sustainable, high quality office, commercial and industrial development in designated areas to:

- **provide for business expansion needs**
- **achieve compatibility with surrounding land uses and environmental features at a pace supportable by the community's existing and reasonably anticipated future infrastructure**

Objective 3.1: Encourage (re)development activities which ensure the continued strength of the Portage Commerce Square, the central business area, and the City Centre Area, the geographic center of the city.

Objective 3.2: Encourage planned commercial development in designated areas and corridors for business expansion as nodes rather than strip commercial development.

Objective 3.3: Support appropriate future development or redevelopment of identified prime and marginal industrial areas (which may include obsolete sites, brownfields or isolated industries).

Objective 3.4: Encourage specialized business centers/parks for industry, corporate offices, high technology and small to medium enterprises.

Objective 3.5: Encourage and promote industrial development activities in the prime industrial corridors such as Shaver Road and Sprinkle Road.

Objective 3.6: Develop and implement public programs, incentives, regulations and taxation policies which encourage economic development and protect the environment.

Objective 3.7: Develop a balanced commercial base that meets the daily convenience needs of residents, employees and visitors/travelers that maintains Portage as a regional retail center for Southwest Michigan.

Objective 3.8: Encourage development within the West Centre Avenue Corridor of uses such as corporate and regional office centers, high-tech facilities and research-driven activities.

Objective 3.9: Complement state and area-wide economic development activities to stimulate commercial and industrial growth in Portage and the region.

Objective 3.10: Promote a dynamic economy that fully employs a skilled workforce.

Objective 3.11: Nurture a small town feel and sense of community while facilitating access to cultural and recreational amenities.

Objective 3.12: Create mixed-use developments, including residential uses located within or adjacent to nonresidential uses, that will become community gathering areas.

Objective 3.13: Continue to lead and partner with other local agencies in intergovernmental cooperation to promote positive economic development.

Environment/ Natural & Cultural Resources

Goal 4: Preserve and provide natural, historic and cultural resources for the benefit, enjoyment and quality of life of existing and future residents.

Objective 4.1: Protect environmentally sensitive areas and natural resources through zoning, site design, or if loss is unavoidable, replacement of features.

Objective 4.2: Evaluate the degree of potential impacts, the relative significance of the resources involved, and the feasible alternatives of proposed developments or capital improvements in order to minimize impacts and consider the relationship to other policies.

Objective 4.3: Preserve key natural and historic resources through public acquisition, flexible zoning or tax incentives that encourage private preservation, public dedication, or adaptive reuse.

Objective 4.4: Link natural areas through greenways, rather than isolated pockets, where appropriate, to maximize environmental and recreational benefits.

Objective 4.5: Protect water resources through management practices covering discharges into streams and lakes, storm water infiltration, and hazardous material spill prevention programs.

Objective 4.6: Pursue regional cooperation in areas of recycling for the entire community (industrial, commercial and residential), sustainable groundwater vision and environmental education resources.

Objective 4.7: Avoid overbuilding and loss of natural habitat and open space through reuse of residential and commercial sites and open space development.

Objective 4.8: Provide recreational opportunities for all including creation and maintenance of high quality parks and trails.

Transportation

Goal 5: Create a safe, balanced and coordinated multi-modal transportation system adequate to accommodate the ongoing growth and development of Portage.

Objective 5.1: Ensure roadway capacity can accommodate site-generated traffic at the time of occupancy. This may require participation by the developer to fund improvements directly necessitated by a proposed project.

Objective 5.2: Preserve adequate rights-of-way to accommodate both existing and future transportation needs.

Objective 5.3: Set aside adequate financial resources to maintain transportation facilities (roadways, bridges, bikeways, walkways) as a priority before funds are allocated for capacity expansion.

Objective 5.4: Evaluate capital investments on the basis of capacity needs, safety, pavement condition, relationship to other transportation improvements, planned land use and impacts on the environment and community character.

Objective 5.5 Ensure streets are designed to protect pedestrians and bicycle traffic.

Objective 5.6: Examine the appropriate reuse of abandoned transportation corridors for other transportation and recreation purposes. Preserve abandoned rights-of-way when appropriate.

Objective 5.7: Coordinate transportation issues of regional significance with area communities and road agencies through the Kalamazoo Area Transportation Study (KATS) organization.

Objective 5.8: Promote alternative modes of transportation (such as pedestrian, bicycle, ride-sharing and forms of mass transit) through capital investment, removal of existing barriers and designs that support alternative modes of safe transportation.

Objective 5.9: Use access management standards to reduce the number of access points, regulate their design and placement and require shared access through easements to help preserve capacity and improve safety along arterial roads.

Objective 5.10: Maximize the lifespan of roadways through transportation system management techniques (such as intersection signalization, intersection improvements, and access control) and transportation demand management techniques (such as ride-sharing, preferential parking for multiple-occupancy vehicles, and removal of physical access barriers to alternative modes).

Objective 5.11: Continue to work with the Michigan Department of Transportation to complete the I-94/US-131 improvements including the reconstruction of the I-94 interchange area at Westnedge Avenue and ensure these improvements complement the desired image of the city as viewed from the expressways.

Objective 5.12: Ensure an environmentally-friendly and user-friendly transportation system.

Public Services

Goal 6: Efficiently provide, maintain and improve public services necessary to support the needs of existing and future residents and businesses.

Objective 6.1: Continue to be an active participant and leader in local and regional government leadership and cooperation to deliver better services to the community.

Objective 6.2: Ensure that water, sanitary sewers and storm water drainage systems are adequate to accommodate the demands necessitated by a proposed development project. This may require participation by the developer to fund improvements directly necessitated by a proposed project.

Objective 6.3: Ensure adequate provision and maintenance of storm water facilities to avoid flooding, protect water quality, preserve groundwater supply, provide visual enhancement and provide recreational opportunities where appropriate. The use of rain gardens over traditional retention basins is encouraged.

Objective 6.4: Promote underground utilities (electric, telecommunications).

Objective 6.5: Promote development of a high-technology utility infrastructure to support business, personal and public utilization of the "information highway."

Objective 6.6: Provide for the health, safety and welfare of Portage residents and maintain high quality community facilities (municipal, police, fire, natural resource and cultural) to meet projected changing needs, demographics and life styles, enhance the quality of life and promote sustainable economic development activities.

Objective 6.7: Provide adequate right-of-way or easements for existing and future utilities.

Objective 6.8: Modify or expand community facilities based on applicable standards and the needs for expanding and aging populations. This may include land acquisition when key parcels become available.

Objective 6.9: Create friendly walkable business centers with ample lighting, pathways and benches, incorporating landscaping and rain gardens that integrate with the existing commercial/retail district.

Community Identity

Goal 7: Strengthen community identity so residents and businesses realize an enhanced sense of community.

Objective 7.1: Enhance the appearance/functionality of Portage Commerce Square, the central business area of the community and a retail center for southwest Michigan.

Objective 7.2: Define and communicate an identity that attracts and retains residential, commercial and industrial prospects.

Objective 7.3: Strengthen active and passive recreational opportunities building on the presence of Portage Creek, lake areas, nature preserves, and existing park areas.

Objective 7.4: Enhance the City Center Area by establishing appropriate zoning provisions that nurture the unique characteristic and potential of this area and ensure walkable community and business centers that connects entertainment, restaurants and retail venues and is connected to trailways and transportation.

Objective 7.5: Provide opportunities for public awareness and citizen participation in community affairs through workshops, forums, city newsletters, web page, public access television, and other means.

Objective 7.6: Nurture single-family neighborhoods throughout the city through communication, concern and involvement to ensure that these diverse residential areas remain as defining features of this community.

Objective 7.7: Encourage Portage neighborhoods to celebrate and contribute to a readily recognized identity.

Chapter 3 – Community Profile

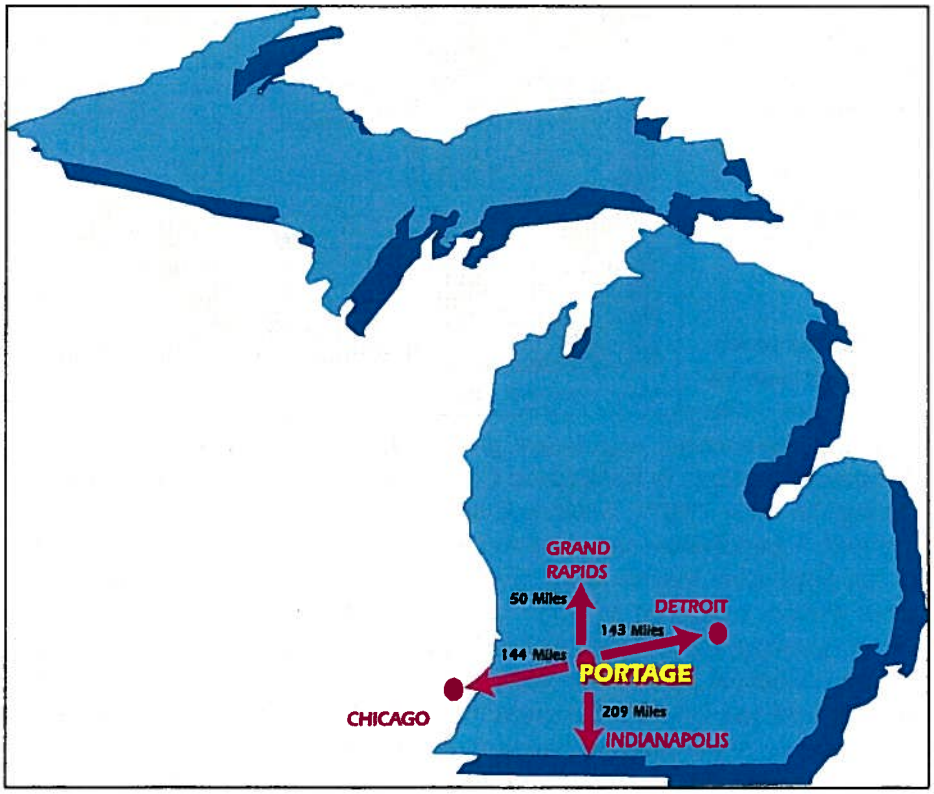
Portage is located in southwest Michigan in the County of Kalamazoo, approximately half way between Chicago and Detroit. Though originally known for its fertile farmland and agricultural production, Portage is now known as a community of excellent residential neighborhoods, retail trade center for southwest Michigan and a community with a growing industrial base. The city has also taken a progressive approach to economic development by providing unique opportunities for industries to grow and is the location of the largest manufacturing facility for Pfizer, Inc., a global pharmaceutical company. The community is known to have a growing population, desirable housing, excellent schools, numerous shopping and recreation areas, proximity to a variety of post-secondary education opportunities, and an educated workforce. These characteristics, coupled with one of the largest employment bases in the region, make Portage a very attractive place in which to live, work and learn.

Portage enjoys a high quality of life because of its excellent school system, quality neighborhoods, numerous recreation opportunities & a stable employment base.

Portage is in a prime location approximately halfway between Chicago & Detroit.

The City of Portage contains almost 36 square miles. It is bordered by the City of Kalamazoo to the north, Pavilion Township to the east, Schoolcraft Township to the south, and Texas Township to the west. Regional accessibility to the community is provided by several interchanges along the US-131 and I-94 expressways.

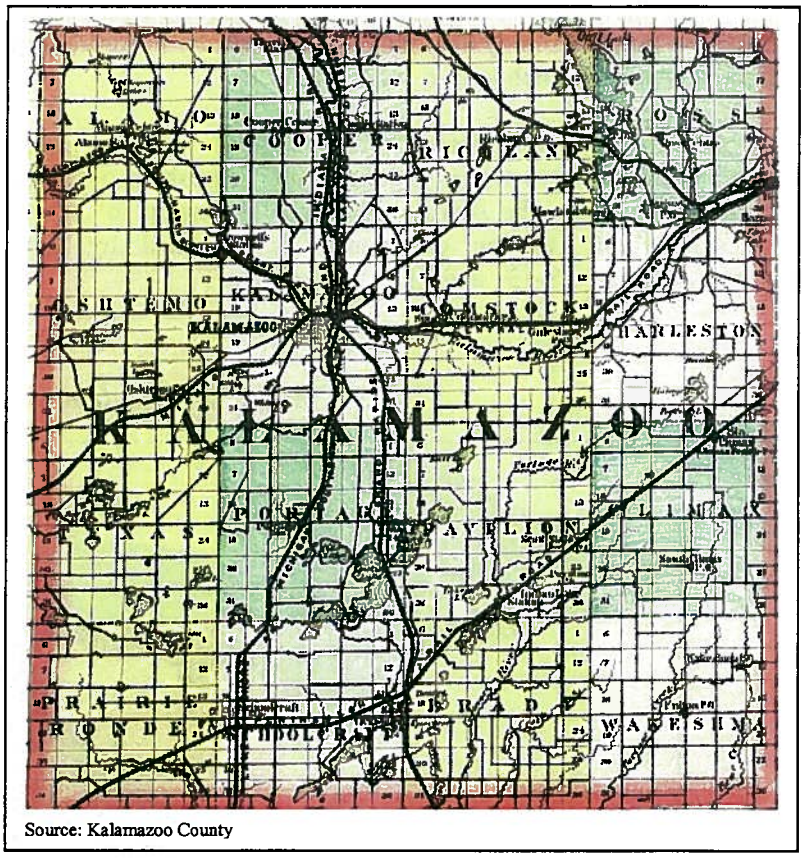
Map 1 Location Map



History of Portage

History shows that the first inhabitants of Portage were the Potowatomi Indians. It is believed that the Potowatomis traveled between the Kalamazoo and St. Joseph river basins, needing to "portage" their canoes only for a short distance. Settlers began to occupy the area in the early 1830's. The early settlers arrived and began crop production and related agricultural activities. Early settlements were situated in the northeast portion of the area called Indian Fields (near the Kalamazoo/Battle Creek International Airport) and in the center of the area near Centre Avenue and South Westnedge (near the railroad). Original settlers included Caleb Sweetland, John Kilgore, Joseph Beckley, Thomas Cooley, Ebeneezer Stone, William Milham, David Ingersoll, Moses Austin, William Bishop, among others, whose names are recognizable in various ways throughout the community today. The settlements and the vicinity were renamed Portage Township in the late 1830's, after the Portage Creek, which runs through the area. Portage formally incorporated as a city on December 31, 1963.

1874 Kalamazoo County Map



Source: Kalamazoo County

Initially Portage was known as a farming community, with corn and wheat being the primary crops. Nearby communities were also expanding in the late 1800's including the Village of Kalamazoo and the Village of Vicksburg. By the turn of the century, Portage began to utilize its lakes. Commercial fishing, ice cutting and resort operations were prominent. The most significant thrust to the growth and development in Portage was the construction of the original 33-acre Upjohn Company facility in the early 1950's, now known as the Pfizer Corporation, the world's largest pharmaceutical company that provided, and continues to provide a significant number of jobs in the community.

From the 1960's, and with the newly completed east-west Interstate-94 through southern Michigan, the former farming community experienced significant growth forces. Southland Mall, one of the first enclosed suburban shopping complexes in Kalamazoo County, was developed and expanded in the 1950's and early 1960's. During the early 1990's, Southland Mall was converted to a "power center." Due to the large population growth – population surged between 1960 and 1970 – commercial facilities located in Portage to capture the disposable income from the families in these newly located residential "roof-tops". Additional retail growth continued to occur and in the late 1970's, the first regional mall was located on former celery growing fields along South Westnedge Avenue. The Crossroads Mall took advantage of the growing residential base in the south and west portions of Kalamazoo County and the market access provided by I-94 and US-131, the major traffic routes serving southwest Michigan. From the initial "Portage" settlements to the early suburban Portage Township, the modern City of Portage is now a community of excellent residential neighborhoods and is the regional retail trade center with more than 4.5 million square feet of commercial and office building space within the South Westnedge Avenue

Commercial Corridor. These two sectors are complemented by an expanding industrial base, anchored by the Pfizer Corporation and Stryker Corporation and many other manufacturers, to create a vibrant, progressive community where opportunities can grow!

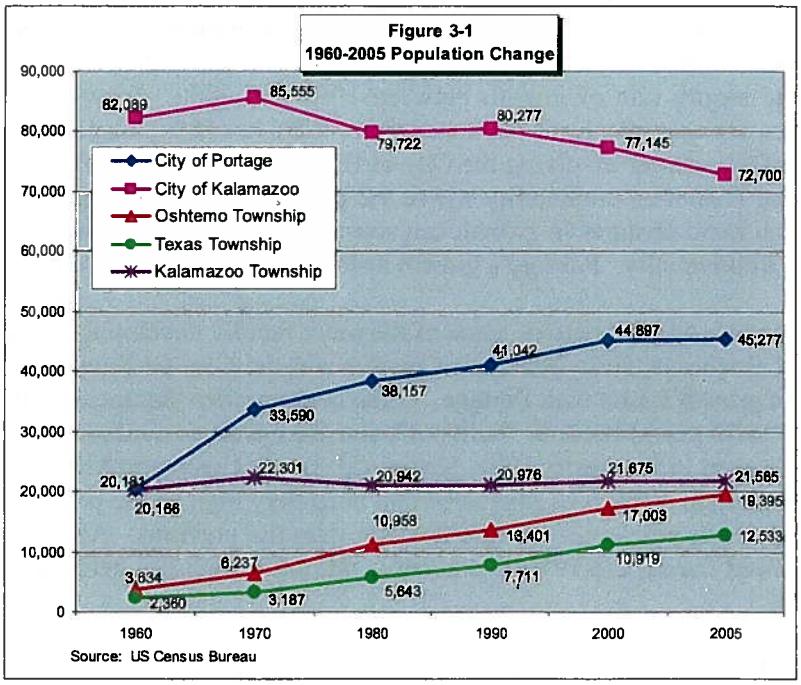
For an excellent history of the City of Portage, see Portage and Its Past (1976) by Grace J. Potts and This Place Called Portage: Its Past and Present (2006) by Larry B. Masssie. These books contain many historical reference points and photographs of the City of Portage.

Demographics

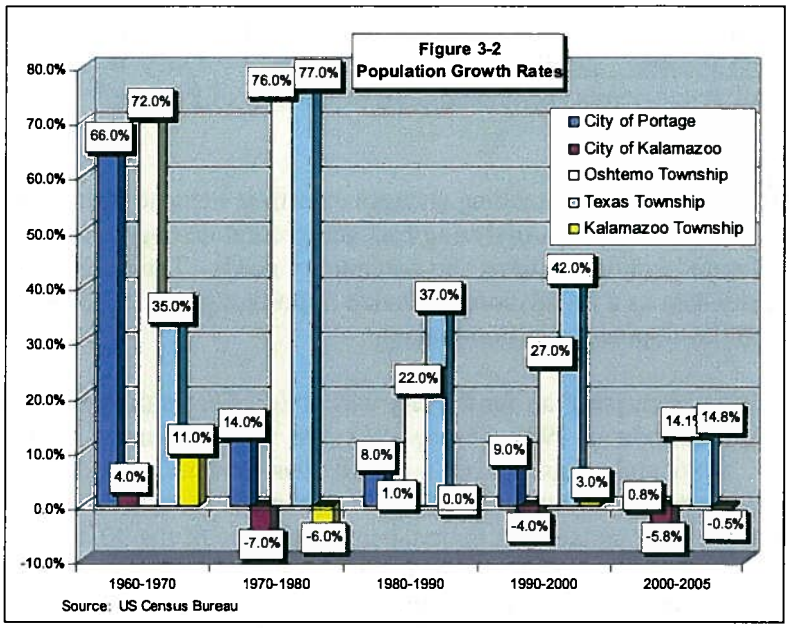
Understanding changes over time helps to provide a better picture of what the future may hold for a community. Analyzing past and present demographic, social and economic data may help anticipate future land use patterns and community needs. The Comprehensive Plan utilizes a wide range of community data as a foundation to provide important guidance for both private sector and public sector land use and development decision-making.

The first Comprehensive Plan for the city was undertaken in the late 1970's and formally adopted by the Planning Commission in 1981. Since 1981, the Comprehensive Plan has been updated on two other occasions: 1996 and again in 2002. Both Plan updates included an extensive review of statistics available through the 1990 and 2000 U.S. Census data and other information. Although the 2007 Comprehensive Plan update was undertaken in advance of the 2010 Census data, the US Census Bureau publishes select demographic estimate information annually or at specific intervals. Available demographic estimates have been incorporated into the update process, which more accurately reflects the current trends and conditions within Portage. If updated data is not available, data from the 2000 Census was continued.

Population. As shown in **Figure 3-1**, the population of Portage has been growing at a relatively steady rate since 1970, and has more than doubled since 1960. The greatest increase was between 1960 and 1970, when the population surged by more than 66% (**Figure 3-2**). Since that time, the population has been increasing but at decreasing rate during each decade. By the year 2000, the population reached 44,897 persons. This 122% increase during the 40 year period was due in large part to the out migration from the central city, robust regional economy, employment opportunities, educational facilities, cultural and recreational amenities and the abundance of quality housing choices. This trend is also evident in the other communities shown in **Figure 3-1** with the exception of the City of Kalamazoo. Although the City of Kalamazoo maintains a higher total population (72,700 persons in 2005), like many centralized urban areas, has been slowly decreasing since 1960. An exception to this trend occurred during the 1980's, when Kalamazoo experienced a 1% increase in population. During the 1990's, Portage had the largest population increase of any community in Kalamazoo County. As shown in **Figures 3-1 and 3-2**, the population of Portage had grown to 44,897 persons at growth rate of 9.4%.



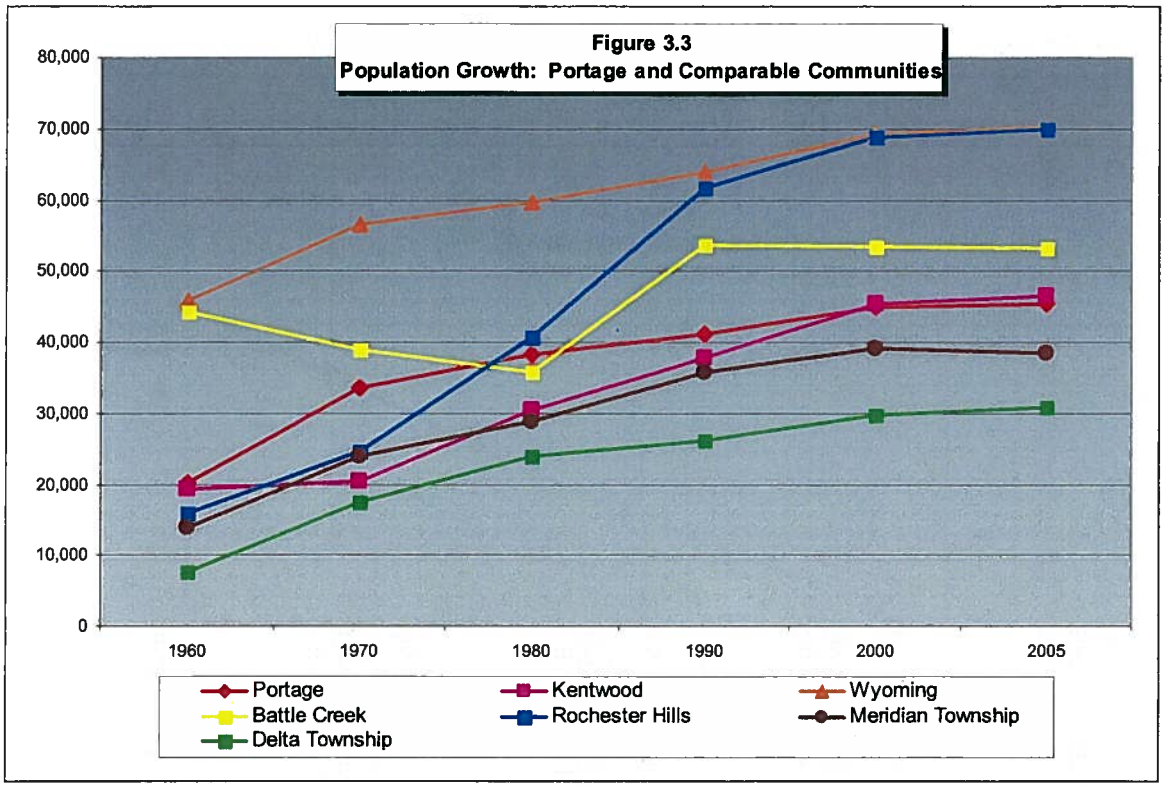
According to population estimates provided by the U.S. Census Bureau, the population growth for the communities shown in **Figures 3-1 and 3-2** slowed or decreased between 2000 and 2005. The population of Portage increased only slightly to 45,277 (380 persons) at a growth rate of 0.8%. Texas Township and Oshtemo Township experienced the highest rate of growth (14.8% and 14.1%, respectively) during this five year period but at a much lower rate of growth compared to the previous decades. The population of the City of Kalamazoo and Kalamazoo Township decreased during this five year period (-5.8% and -0.5%, respectively). This slower rate of population growth or loss of population can be attributed to several factors including job losses resulting from corporate consolidations/relocations.



While each community is different, comparisons with other communities exhibiting similar characteristics were prepared. These comparisons help to understand the dynamics associated with community demographics. Total population and rate of growth for Portage when compared to these other communities across the state is very similar. As can be seen in **Figure 3-3 and Table 3-2**, although Portage has been growing at a slower rate than several comparable communities, it has retained both a positive and steady rate of growth between 1960 and 2000. City of Battle Creek (Calhoun County) growth rates, for example, have fluctuated from –12% to +50% (the population increase during the 1980's is a result of the merger involving the City of Battle Creek and Battle Creek Township). Delta Township near Lansing is another community where the growth rates have ranged from nearly +130% to less than +10%. Such rapid changes in growth can sometimes indicate fluctuations in economic and employment stability in a community. Portage's growth history indicates stability in the marketplace.

During this same 40 year period, some of the more rapidly developing communities in Michigan, such as the City of Rochester Hills (Oakland County) and the City of Kentwood (Kent County), have all had more recent growth spurts than Portage. Often communities that incur significant growth in short periods of time (10 to 20 years) become "built out", and are unable to continue growing due to lack of land. This trend can be seen in Rochester Hills, Kentwood, Battle Creek and Meridian Township (Ingham County), where even though rates have fluctuated and been very high in the past, rates have begun to decline, and subsequently each year's growth rate is lower than the previous. Although the population expansion in Portage slowed during the 1970's, a positive rate of growth has been maintained throughout the 1980's and 1990's.

Between 2000 and 2005, population growth and the rate of growth for all the communities shown in Figure 3-3 slowed. The City of Kentwood gained the most in terms of total population by increasing from 45,255 to 46,491 (2.7% rate of growth). The City of Portage increased slightly from 44,897 to 45,277 (0.8% rate of growth). Delta Township had the highest rate of growth (4.1%) increasing from 29,682 to 30,904. Of the seven communities shown, two lost population: City of Battle Creek decreased from 53,364 to 53,202 (-0.3%) and Meridian Township from 39,116 to 38,341 (-1.9%).



Source: 1960-2000 US Census Bureau

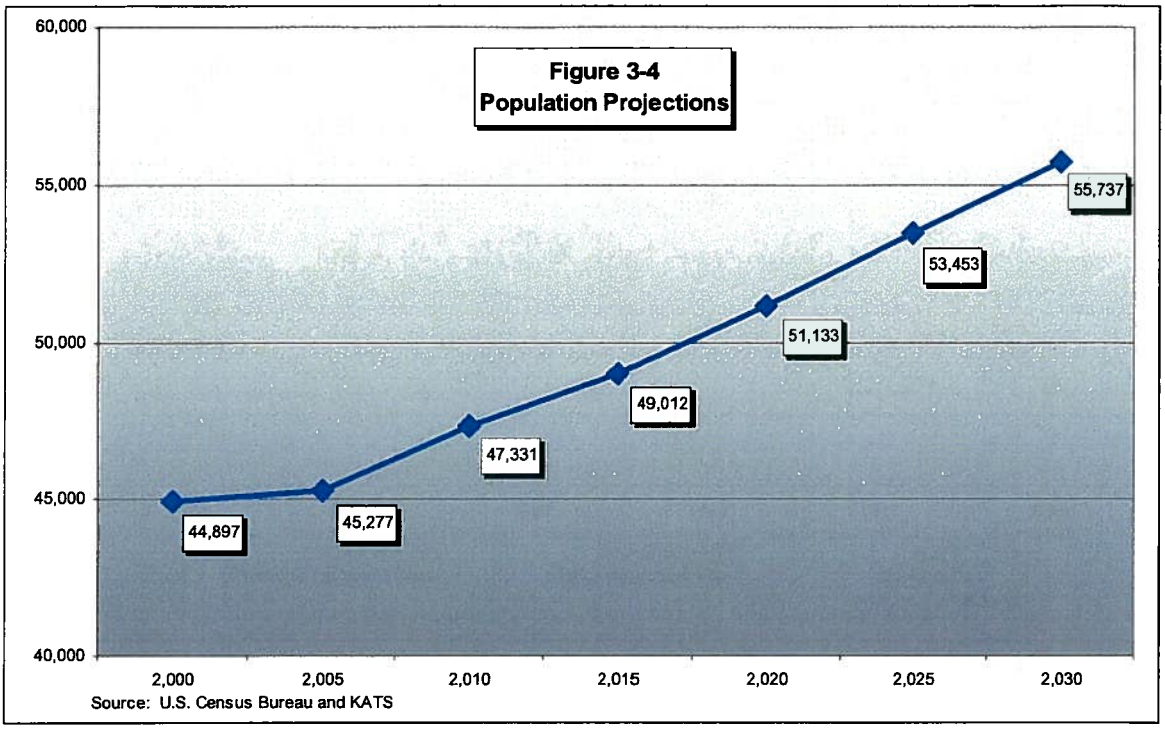
Table 3-2
Statewide Population Trends

Community	1990-2000 % Change	2000-2005 % Change
City of Portage	9.4%	0.8%
City of Battle Creek	0.0%	-0.3%
City of Wyoming	8.5%	1.1%
Delta Township	13.6%	4.1%
Kentwood	19.6%	2.7%
Rochester Hills	11.4%	1.7%
Meridian Township	9.7%	2.0%

Source: 2000-2005 US Census Bureau

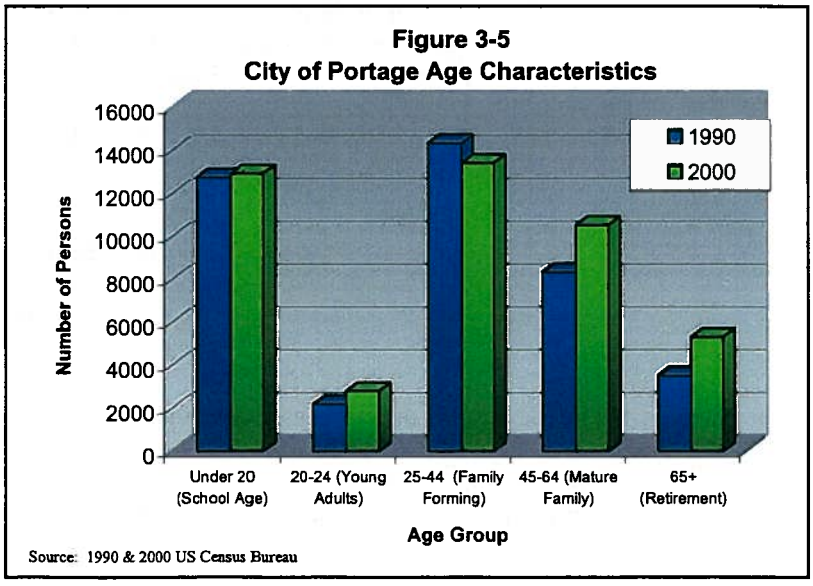
Population projections for the city based on information provided by the Kalamazoo Area Transportation Study (KATS) are depicted in **Figure 3-4**. According to the research completed by KATS, the 2030 population is projected to be just under 56,000 people. However, research conducted by Claritas, Inc. indicates the population will increase but at a much slower rate (.55%) by 2012. Depending on several

factors, the future population is expected to fall between the high projected by KATS and the low projected by Claritas, Inc.



Age Characteristics. Age characteristics of residents can help indicate economic, transportation, recreational, educational, residential, health care and other needs. The median age of city residents was 35.8 years in 2000. As shown in **Figure 3-5** and **Figure 3-6**, Portage's largest age group in 2000 included people in the 25 to 44 year age bracket, making up over 30% of the city's total population. This age group is generally considered the "family forming" age group. Although its size decreased from the 1990 estimate, (14,595 persons) the family-forming group still represents 13,408 persons (the actual numbers by category are shown on **Table 3-3**).

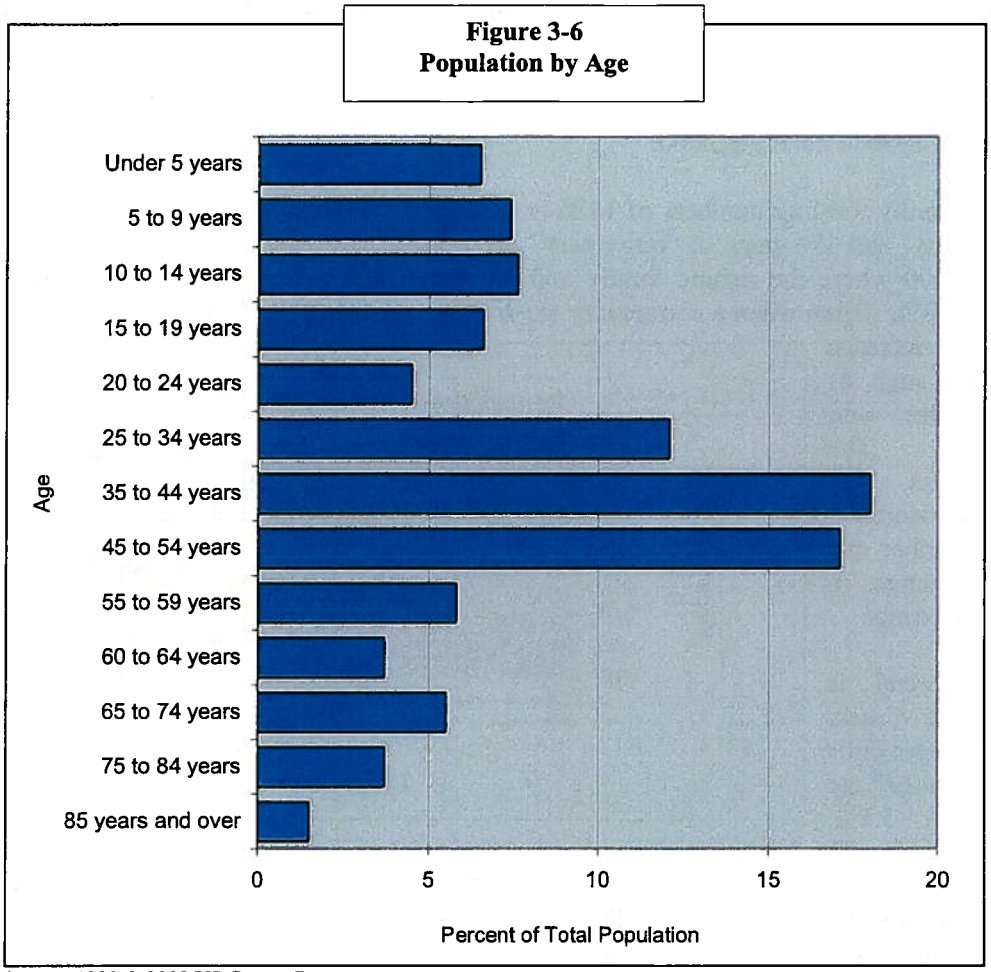
In comparison, this estimate is very close to the family forming age group percentages of Battle Creek (29.5%), Kentwood (33.7%) and Rochester Hills (30.1%). It is also slightly larger than that of Kalamazoo County (28%) and the State of Michigan at (20%).



Another trend that is evident in Portage is the transition from the school age group to the workforce age group. The effect of this can be seen in **Table 3-3** above. As can be seen, the number of students graduating from high school and college has a direct effect on the number of

people in the city's work force. In 1990, approximately 31% of Portage's population was of school age, and 61% were in the labor force. When the school age percentage dropped to 29% (a drop of 2%), the labor force also dropped by 2% to 59%.

Figure 3-6
Population by Age



Source: 1990 & 2000 US Census Bureau

In 2000, the median age of Portage residents was 35.8 years.

Portages largest age group, was 24-44 years. This age group is also known as the "family forming" group & makes up nearly one-third of the city's total population.

Portage's fastest growing age group was the 65 and older, or retirement group. This indicates that the needs of the community might be changing.

Table 3-3
Age Characteristics

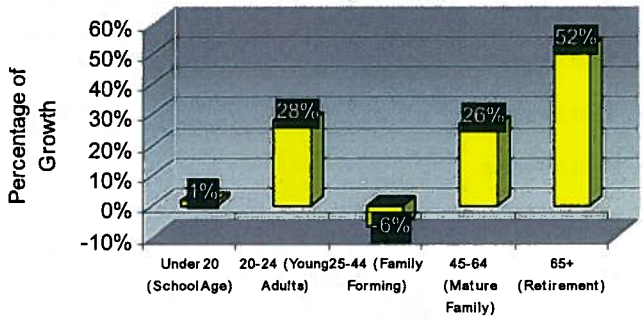
Age group	1990 Total Persons	2000 Total Persons	Age Group
Under 20 (School Age)	12,730	12,917	School Age 1990 - 31% 2000 - 29%
Age 20 to 24 (Young Adults)	2,175	2,775	Labor Force 1990 - 61% 2000 - 59%
Age 25 to 44 (Family Forming)	14,338	13,408	
Age 45 to 64 (Mature Family)	8,315	10,506	
Age 65 or more (Retirement)	3,484	5,291	Senior Citizens 1990 - 8% 2000 - 12%

However, during the same time period, a reverse effect occurred between the labor force and the retirement community. As the labor force decreased by 2% between 1990 and 2000, the retirement-aged population *increased* by 4% during the same time period. This is most likely due to the significant increase in mature family population (45 to 64), as more and more people were retiring from the labor force.

With regard to Kalamazoo County, however, the children and teenagers or "school age" decreased slightly from 28.9% in 1990 to 28.7% in 2000.

The decrease in the family-forming numbers of 1990 is reflected in the succeeding age groups -- 45-64 years, or "mature family" and 65+ years, or "retirement" age groups. This change was the case in Portage between 1990 and 2000 where the mature family and retirement age groups grew by 26% and 52% respectively **(Figure 3-7)**. Often when a community experiences growth in its older population, demand will correspondingly increase for related facilities such as health care facilities and retirement housing. The number of persons per household can also decrease, so the population number can shrink without any changes in the number of housing units.

Figure 3-7
Portage Growth Rates (1990-2000)



This demographic trend is comparable to Battle Creek, Kentwood and Rochester Hills where the "mature family" age groups increased by 3.6%, 3.4% and 7%, respectively. The "retirement" age groups also grew in Kentwood and Rochester Hills by 0.3%, and 2%, respectively, but *decreased* in size by 0.7% in Battle Creek. Finally, compared to Kalamazoo County and the State of Michigan, Portage is exhibiting a larger aging population: Median age in Portage is 35.8 while it is 32.7 for the county and 36.9 for the state (2007 State of Michigan estimate).

Educational Characteristics. In terms of educational attainment, 92.6% of the residents of Portage over the age of 25 were high school graduates or higher in 2000. Nearly 37% of that group holds a college degree. This level of education attainment in Portage exceeds that of the county and Michigan, as shown in **Table 3-4** below.

Over 92% of Portage's residents hold at least a high school education.

Table 3-4
Educational Attainment

	High School Diploma	College Degree
City of Portage	92.6%	36.8%
Kalamazoo County	88.8%	31.2%
State of Michigan	83.4%	21.8%

Source: 2000 US Census Bureau

Income and Employment. A breakdown of employment trends and household incomes can help provide a better understanding of a community's economic conditions. As shown in **Table 3-5,** Portage's median household income in 1990 was $39,045 and by 2000 it had increased to $49,410 (27%).

Although the 27% increase is slightly less than the other comparable communities, the median household income in Portage continued to exceed that of households in Kalamazoo County during the 1990's. Between 2000 and 2005, only a modest increase to $51,900 (5%) was estimated by City-Data.com (income estimate not available by the US Census Bureau). A modest increase in income between 2000 and 2005 is also evident with several of the other comparable communities and Kalamazoo County. Two communities, City of Kalamazoo and City of Wyoming, and the State of Michigan recorded a slight decrease in the median family income level.

Table 3-5
Median Household Income

Community	1990[1]	2000[1]	2005[2]	% Change 2000-2005
City of Portage	$39,045	$49,410	$51,900	5.0%
City of Kalamazoo	23,207	31,189	31,152	-0.1%
City of Rochester Hills	54,996	74,912	80,937	8.0%
City of Kentwood	34,324	45,812	46,300	1.0%
City of Wyoming	31,103	43,164	42,729	-1.0%
City of Battle Creek	25,306	35,491	36,700	3.4%
Meridian Township	41,530	55,203	Not available	---
Delta Township	42,727	52,711	Not available	---
Kalamazoo County	31,060	42,022	43,540	3.6%
State of Michigan	31,020	44,667	44,409	-0.5%

[1] Source: US Census Bureau
[2] Source: City-Data.com

Table 3-6 depicts the occupations of those who live in the City of Portage. Portage traditionally has had a large majority of its residents work in either managerial & professional or sales & office industries. During the past decade the number of Portage residents who work in sales & office; construction, crafts & repair; and farming, forestry & fishing have declined, while the other industries such as managerial & professional, service, and operators, fabricators & laborers have increased.

Table 3-6
Occupation of Residents

Occupation Type	1990	2000	% Change
Managerial & Professional	37.1%	39.0%	11.7
Service Workers	11.1%	11.9%	15.1
Sales & Office	30.1%	28.4%	-2.4
Farming, Forestry & Fishing	0.9%	0.3%	-66.0
Construction, Crafts & Repair	8.3%	7.1%	-8.7
Operators, Fabricators & Laborers	12.6%	13.3%	11.3

Source: 1990 & 2000 US Census Bureau

A more detailed discussion of employment and economic development characteristics can be found in **Chapter 6**.

Housing. Housing development in Portage has been growing to accommodate the increasing numbers of people who have chosen to reside in the community. In 2000 Portage had a total of 18,885 housing units, a 17% increase over 1990's estimated 16,133 units. This rate of growth equates to an annual average of 275 new units constructed in the city. According to statistics compiled annually by the W.E.Upjohn Institute for Employment Research, Portage approved more permits for new residential dwelling units than any other community in Kalamazoo County during the 1980's and 1990's. By 2006, the number of housing units increased 1,215 to 20,100 total units representing only a 4% increase. In comparison, Oshtemo Township issued more permits for new residential dwelling units than Portage in 2004, 2005 and 2006. Texas Township also issued more permits for new residential dwelling units than Portage in 2005. This trend is expected to continue.

While the number of housing units in Portage has been increasing, the average household size has been decreasing slightly. In 2000, the average household size was 2.45 persons per household, while in 1990 it was 2.64 persons per household. This trend is generally consistent with state and national averages, where household sizes have been shrinking over the past twenty years. Per the U.S. Census, the average household size in Michigan in 2000 is 2.56, for example.

A more detailed discussion of housing characteristics can be found in **Chapter 5**.

Chapter 4 – Existing Land Use

The collection and analysis of existing land use and natural features information represents one of the most important steps in the Comprehensive Plan update process. The analysis of such information not only identifies what and where particular uses exist, but also provides insight as to where future development might occur, as well as where conflicts may exist or can develop. Land use conflicts occur when incompatible uses occur adjacent to one another, with various negative short and long-term impacts on a community. An example is an industrial operation, such as a manufacturing plant, next to or near an existing single-family neighborhood. Immediate negative effects from the plant may include specific nuisances such as fumes, light, noise, or heavy truck traffic, and general nuisances due to plant operations or building characteristics. In time, these nuisances can lead to property depreciation in the neighborhood as well as the surrounding area. Conversely, opportunities for future development that would greatly benefit the general health and welfare of a community can also be identified as part of the same process. Industrial operations and single-family neighborhoods can either serve as tremendous assets to a community, or severely handicap the quality of life: It depends entirely on the nature and location of the developments.

In order to avoid negative land use situations such as the example above, communities must take the appropriate land planning steps. The existing land use patterns as well as growth trends must be analyzed as part of the process to identify existing or potential opportunities and, also, conflicts. This process not only provides the basic framework upon which future land use proposals will be developed, but will also provide guidance for future land use and development decisions.

Methodology

For the purposes of this update, an array of land use and land cover information was obtained from a variety of sources including Geographic Information System data, 2006 digital aerial photography and visual field surveys throughout the city. This information was compiled and analyzed in order to provide an accurate portrayal of land use and current development patterns in the city today.

The **Map 2 Existing Land Use** presents a generalized picture of existing land uses and development patterns in the City of Portage. Existing land use classifications and general definitions are listed and explained in more detail on the following pages.

Existing Land Use Classifications

Existing land uses across the City of Portage have been summarized into 17 different categories which are further described below.

Single-Family Residential – *Includes detached, single-family structures up to approximately 4 dwelling units per acre.*

Two-Family Residential – *Includes land area occupied by a two-family dwelling units. Two-family dwelling units are defined as a structure with two families occupying the same structure (i.e., duplex or a two-family apartment house)*

Manufactured Home Park – *Includes land area specially designed as a mobile home park.*

Multi-Family Medium Density Residential – *Includes land area occupied by a multi-family structure(s) with a density up to 8 dwelling units per acre.*

Multi-Family High Density Residential – *Includes land area occupied by a multi-family structure(s) with a density of 8 to 15 dwelling units per acre.*

Office *– Includes professional offices (doctors, dentists, lawyers, engineers, accountants, etc.);real estate and insurance offices; banks and other financial institutions; art and photographic studios; general offices and community research facilities.*

Local Business *– Includes neighborhood supportive uses and services (convenience stores, dry cleaners, banks, small sit-down restaurants), and may include personal service establishments (hair and nail salons, clothing tailors, etc.) and small-scale/ professional offices.*

Regional Business *– Includes community and regional shopping centers, as well as general and professional offices.*

General Business*- Includes a full range of retail uses (nondurable and durable goods – large and small), hotel/motel and other highway services, recreation facilities and personal service establishments, and may include general and professional offices.*

Light Industrial *– Includes land area occupied by industrial operations that may include research facilities, which manufacture, prepare, or assemble a product from previously prepared materials. Types of operations include tool and die shops, machine shops, automotive repair such as body repair, painting, engine rebuilding, etc.*

Heavy Industrial *– Includes land area occupied by large scale industrial and manufacturing operations that may include research facilities, which generally produce a product from raw materials.*

Public/Institutional *– Includes a variety of public uses such as government buildings, police stations, fire stations, schools (elementary, middle and high), and public wellhead for drinking water. Institutional uses include such uses as hospitals, churches, cemeteries and private schools.*

Agriculture *– Includes land area occupied by active agricultural uses (i.e. cropland).*

Utility *– Includes land area occupied by major utility easements (i.e. Consumers Energy) and other public and private utility uses.*

Vacant Land/Undeveloped *– Includes all platted and unplatted land that is currently undeveloped.*

Public Recreation *– Includes public park, public golf courses, public nature preserves, and public and quasi-public (i.e. Consumers Energy) greenways.*

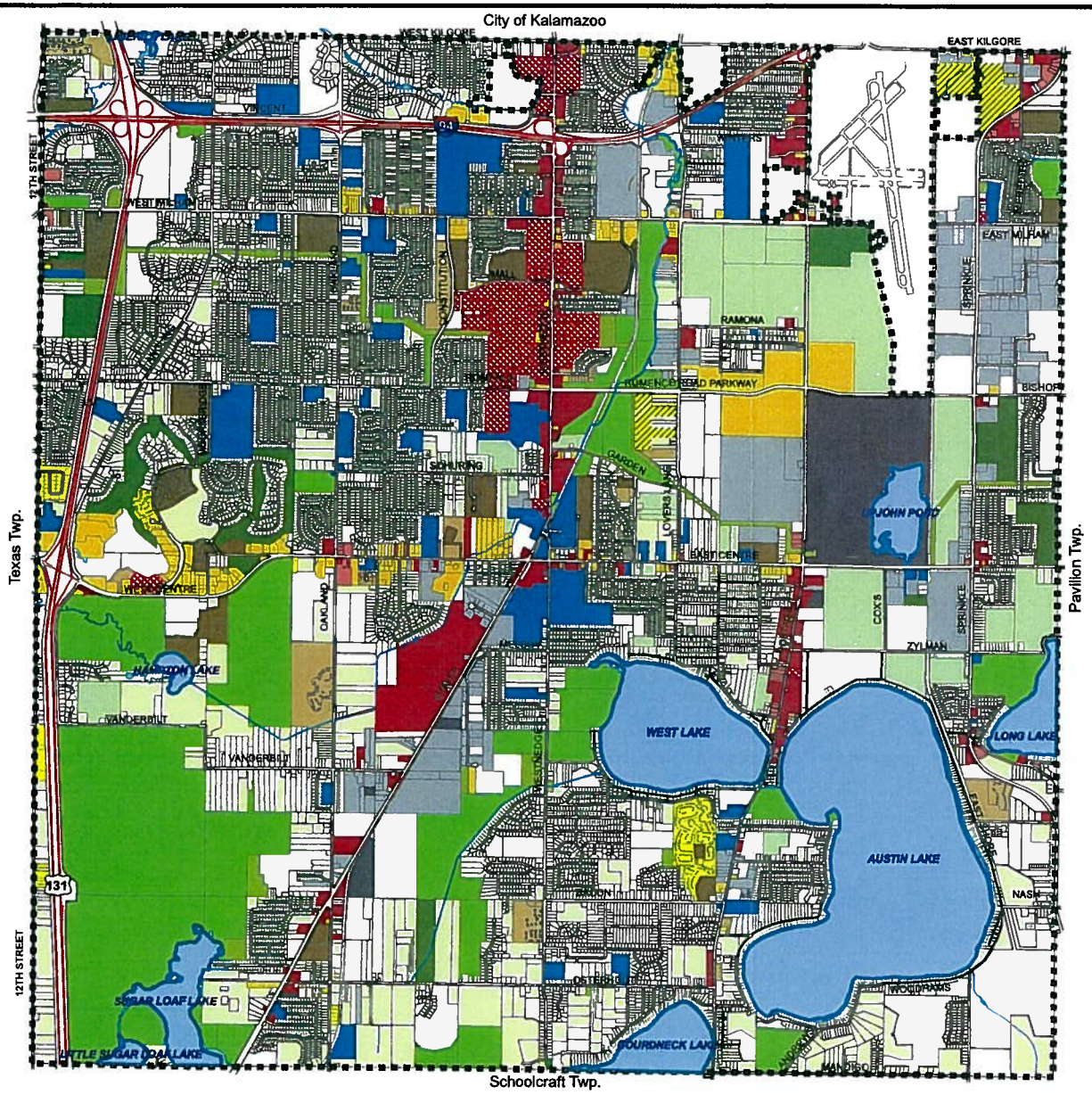
Private Recreation *– Includes private parks, golf courses, and shooting ranges.*

Overview of Growth in the City of Portage

Between 1974 and 2007, the City of Portage continued to grow due to available land already served by public utilities and as a result of the expansion of new infrastructure such as roadways, public sanitary sewer and water mains. Since the corporate boundaries of the city are "fixed," all land use development activities must occur on agricultural, vacant, or undeveloped property or through the redevelopment of other properties. **Table 4-1** shows land use trends during the past approximate thirty-five years. It is important to note that the land use categories have been generalized to make comparisons in land use categories since 1974 and the existing land use categories described in this plan are more specific. Therefore, for comparison purposes, many categories have been blended to create a comparable land use category.

As seen in **Table 4-1**, approximately 1,023 acres of vacant or agricultural land was developed with a variety of land uses between 2002 and 2007. This represents a 4.5% "transition" in land use, which is common in urbanized communities with undeveloped areas within the jurisdictional boundaries.

Figure 4-1 contains a more detailed summary of existing (2007) land use percentages which does not directly correlate with the generalized land use categories contained in **Table 4-1**.



Map 2
City of Portage
Existing Land Use

Existing Land Use

- Single-Family
- Two-Family
- Manufactured Home Park
- Multi-Family Medium Density
- Multi-Family High Density
- Local Business
- General Business
- Office
- Regional Business
- Light Industrial
- Heavy Industrial
- Public/Institutional
- Agriculture
- Utility
- Vacant/Undeveloped
- Public Recreation
- Private Recreation
- Lakes & Streams

0 750 1,500 3,000 4,500 Feet

N

Map Document: (R:\GISADMIN\Kalamazoo\projects\comdev\comp plan maps\ELU_map 2.mxd) - 7/26/2007 - 2:47:10 PM

Table 4-1
City of Portage Land Use Comparisons

Generalized Land Use	1974 Land Use	1978 Land Use	1988 Land Use	1995 Land Use	2002 Land Use	2007 Land Use	Acres Gained/ *Lost* 2002-2007	% 2002-2007 Change	% 1995-2007 Change	% 1974-2007 Change
Single-Family Residential (including manufactured home park)	3,374 (15.4%)	4,140 (18.9%)	5,620 (25.6%)	6,398 (29.1%)	6,918 (30.7%)	7,321 (32.5%)	403	5.8%	14.4%	117.0%
Multi-Family Residential (including two family)	187 (0.9%)	263 (1.2%)	448 (2.0%)	646 (2.9%)	700 (3.1%)	865 (3.8%)	165	23.6%	34.5%	364.7%
Commercial	427 (1.9%)	450 (2.0%)	646 (2.9%)	667 (3.0%)	904 (4.0%)	936 (4.2%)	32	3.4%	40.2%	119.7%
Office	169[4] (0.8%)	51 (0.2%)	343 (1.6%)	429 (2.0%)	531 (2.4%)	586 (2.6%)	55	10.4%	36.6%	246.7%
Industrial	708 (3.2%)	737 (3.4%)	778 (3.5%)	922 (4.2%)	1,412 (6.3%)	1,622 (7.2%)	210	14.9%	76.9%	130.4%
Public/Quasi-Public Recreation & Institutional	2,409 (11.0%)	3,119 (14.2%)	2,788 (12.7%)	3,213 (14.6%)	3,360[1] (15.0%)	3,401[1] (15.1%)	41	0.1%	5.8%	41.1%
Intensive Agriculture (including only greenhouses & truck gardens)	2,336 (10.6%)	2,348 (10.7%)	140 (0.6%)	170 (0.8%)	170 (0.8%)	154 (0.7%)	*-16*	*-0.9%*	*-9.4%*	*-93.4%*
Other (including water, utility, R.O.W.)	3,992 (18.2%)	4,214 (19.2%)	4,351 (19.8%)	4,435 (20.2%)	4,388 (19.5%)	4,551 (20.1%)	163[3]	0.4%	2.5%	13.8%
Vacant[2]	8,359 (38.1%)	6,642 (30.2%)	6,988 (31.8%)	5,082 (23.1%)	4,124 (18.3%)	3,101 (13.8%)	*-1,023*	*-24.8%*	*-39.0%*	-62.9%
TOTAL	21,962	21,962	21,962	21,962	22,507[3]	22,537[3]	NA	NA	NA	NA

Sources: 1995 Portage Comprehensive Plan Community Profile, LSL Planning, 2002 Portage Comprehensive Plan, aerial photographs (1974, 2002 and 2006)

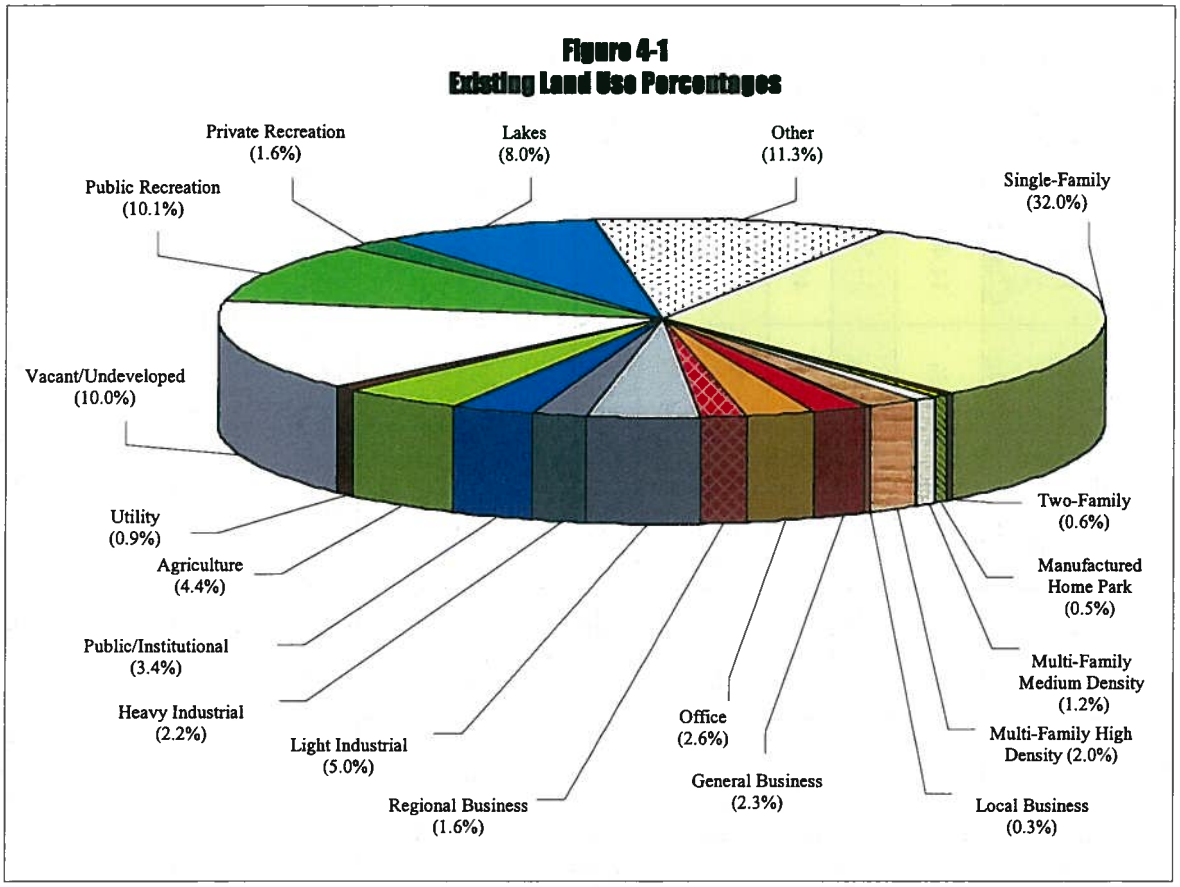
[1] Includes the approximately 1,555 acre Gourdneck State Game area.

[2] This includes areas temporarily being used for agricultural purposes but are planned and zoned for more intense uses (approximately 847 acres).

[3] Discrepancies exist between this plan and previous plans due to manual calculations done in the past versus the computerized approach used for this plan.

[4] Includes approximately 119 acres of office development which was related to former Upjohn Company industrial activities.

Figure 4-1
Existing Land Use Percentages



Source: Land Use Inventory by Department of Community Development – June 2007

Single-Family Residential. Single-family residential land use is by far the most predominant land use within Portage. Single-family residential growth has continued during the past five years, but at a slower pace. In 2007, this type of low-density development occupied approximately 32% (7,216 acres) of the total land area (compared to the 2002 figure of almost 31%). The acreage devoted to single-family development increased by 14.4% between 1995 and 2007.

Numerous single-family residential neighborhoods are located throughout the city, with the largest concentrations located in the northwest and southeast quadrants of the city. The vast majority of these subdivisions are served by public sewer and water. These neighborhoods exhibit such features as curvilinear streets, cul-de-sacs, deep setbacks and various lot sizes. The older neighborhoods constructed shortly after WW-II, were designed and constructed with smaller lots and setbacks with a more traditional grid-type street pattern. Several of these residential tracts can be observed in the north portion of the city near I-94 and South Westnedge Avenue and in the central part of the community near Centre Avenue and South Westnedge Avenue, for example.

Manufactured Home Park. There are currently two manufactured home parks in the City of Portage: Chateau Estates and Oakbrook Estates. Chateau Estates is the largest park in the city and is located near Sprinkle Road and East Kilgore Road. Oakbrook Estates is located near the southwest corner of Romence Road and Lovers Lane. The two parks have a combined area of roughly 105 acres, or approximately 0.5% of the total land area.

Two-Family Residential. Two-family residential structures, or duplexes, are buildings with two, separate units under single or sometimes dual ownership. Contrary to the single-family uses, two-family residential uses comprise one of the smallest but fastest growing land use categories. In 2007, there were approximately 127 acres of land, or 0.6% of the total land area, allocated to two-family residential uses in the City of Portage. The low percentage of this type of housing stock is due in part to the availability of a wide range of single-family homes, as well as medium and high density, multi-family residential developments, which reduce the demand for two-family units.

Multi-Family - Medium Density Residential. Medium density residential land uses (up to 8 units per acre) are found throughout Portage on larger tracts of land up to 80 acres in size. In 2007, approximately 277 acres, or 1.2% of the city accounts for these types of uses.

Multi-family residential developments also tend to generate higher volumes of traffic and, as a result, are often located along major thoroughfares such as Centre Avenue and Constitution Boulevard. There are a number of medium density multi-family developments in Portage including Marsh Point Apartments located on West Centre, the Courtyards located on Constitution Boulevard and Pheasant Run located on South Westnedge. Newer medium density multi-family developments which target the "empty nester" housing market (typically 55 years old and up) include the Village at Brighton Lane located on Oakland Drive, Woodlands at Austin Lake located on Sprinkle Road, Sterling Oaks located between Bacon Road and South Shore Drive and Oakland Hills located on Oakland Drive. These projects typically include 2 and/or 4 unit attached condominium buildings.

Multi-Family High Density Residential. Of the two types of multi-family residential use, high density land use is the most predominant occupying approximately 461 acres, or 2% of the total land area in the city. This type of land use includes multi-family structures at densities of 8 to 15 units per acre. High-density residential developments generate the highest volumes of traffic of any residential use. As a result, most of these uses are located along major thoroughfares and collector streets. There are a number of larger, high-density multi-family developments in the city including Walnut Trails located near the intersection of East Milham and Newport, The Crossings located on Shaver Road near Oakland Drive and Greenspire Apartments located on West Centre Avenue. The Foxwood Planned Development, located in the northwest portion of Portage, also has a number of medium and high-density multi-family units, as well as single-family units.

Office. Office development within Portage is an important, growing asset. With Portage situated in an attractive regional location approximately 586 acres (2.6% of the total land area) are developed with various office operations, including Trade Center I and II and Creekside Commons Office Park. The city currently has two major office corridors: Centre Avenue between South 12th Street and Portage Road and Milham Avenue between Oakland Drive and Portage Road. Other significant office development areas

include Lovers Lane near East Kilgore Road (Trestlebridge/Trestlewood Office Park), Moorsbridge Road north of West Centre Avenue and Romence Road Parkway between Lovers Lane and Portage Road (Pfizer, Inc. office facilities).

While office development is often the most difficult type of use to attract and retain in a community, particularly large office park developments, it generally offers stable employment and sound tax base (with a limited demand on public services). Office development is also often considered more visually appealing than other types of higher intensity land uses. Consequently, office uses have successfully served as an important "transitional" use between higher intensity uses and major streets and interior residential neighborhoods. With the exception of the Trade Center office buildings located along the north side of I-94, west of South Westnedge Avenue, the trend in office development over the past five years has been in smaller, owner-occupied office buildings.

Local Business. The local business classification includes commercial uses that cater primarily to neighborhood residents. These uses include small grocery and convenience stores, dry-cleaners, movie rental stores, and smaller dining establishments, among others. These uses are typically located near single-family neighborhoods and can be often accessed by means other than a motorized vehicle. Local businesses are important to the economic health of a community by providing employment opportunities. Local businesses also provide convenience needs to local residents. Currently, the City of Portage has approximately 61 acres (0.3% of the total land area) dedicated to local business uses. This total acreage is minor in comparison to other nonresidential land uses, however, most local business operations occupy smaller parcels of land. Examples of local business uses in the city include Portage Pharmacy, Educational Community Credit Union, Hollywood Video, Rite-Aide Pharmacy and Centre Square Retail development located at the northwest corner of Oakland Drive and West Centre Avenue, among others.

Regional Business. Regional business uses include both local and regional shopping centers, that draw patrons from the Kalamazoo County area and beyond, with access to this larger market via US-131 and I-94. Crossroads Mall and Southland Mall, located along South Westnedge Avenue between Milham Avenue and Romence Road, are the largest regional business uses in the city. As identified in a preceding section, this area of the city, known as the Portage Commerce Square, represents the heart of the commercial activity in the city. There are currently 350 acres of regional business land use in Portage, which represents approximately 1.6% of the city's total land area.

The core of the central business area which is characterized primarily by regional business land use is identified as the Portage Commerce Square, bounded by Milham Avenue, Constitution Boulevard, Romence Road and Lovers Lane. This area has experienced significant growth in the past five years with approximately 360,000 square feet of business space (re)constructed between 2002 and 2007.

The vitality and importance of the Portage Commerce Square area is further reflected in the high building occupancy rate. According to the *2006 South Westnedge Avenue Commercial Corridor Study,* more than 94% of the 4,212,000 square feet of commercial building space was occupied. Over the past ten years, an occupancy rate ranging between 93% - 98% has been consistently maintained within the Portage Commerce Square area. This high occupancy rate confirms a healthy and vibrant commercial shopping center.

General Business. Unlike local businesses, which cater primarily to nearby residents and can often be accessed by non-motorized transportation, general business operations tend to cater more to automobile traffic from a broader market area, including surrounding communities. General business uses include retail stores, hotels and motels, fast food restaurants, and highway service establishments. General business uses are by far the most predominant type of commercial development in Portage, occupying approximately 525 acres, or 2.3% of the total land area.

Because general business uses depend heavily on automobile traffic, these businesses are usually located along major thoroughfares. Major thoroughfares of general business development include Westnedge Avenue from the I-94 south to Centre Avenue, Portage Road from I-94 to Milham and from East Centre Avenue to South Shore Drive and the west side of Shaver Road from West Centre Avenue to Vanderbilt Drive.

The South Westnedge Avenue Commercial Corridor (which includes the Portage Commerce Square area) and expanding Shaver Road Business Corridor has experienced the most general business and regional business growth (new and redevelopment activity) in the last five-year period. For example, between 2002 and 2007, approximately 640,000 square feet of business space was (re)constructed in the South Westnedge Avenue Commercial Corridor (over 360,000 square feet of which was constructed within the Portage Commerce Square area). An additional approximate 156,000 square feet of business space has also been constructed within the Shaver Road Business Corridor (primarily Wal-Mart) during this five-year period.

Light Industrial. Portage has two separate classifications for industrial uses: Light industrial and Heavy industrial. However, and unlike residential classifications, which are distinguished by variations in densities, industrial operations are characterized by the intensity of operations. Light industrial operations typically involve the manufacture of a product from previously prepared materials. Heavy industrial operations manufacture a product from raw materials that are brought to or excavated on-site.

Light industrial operations are the predominant industrial land use in Portage. There are 1,119 acres dedicated to light industrial uses, which is approximately 5.0% of Portage's total land area. The largest concentrations of such uses are found primarily along two corridors: Shaver Road and Sprinkle Road. Light industrial continues to be one of the fastest growing land use categories in the community and new light industrial development during the past five years include Stryker Medical (new facility), Bowers Manufacturing (expansion), Midwest Fasteners (expansion), Stryker Instruments (expansion), Eurofins/AvTech Laboratories (expansion), among others.

Heavy Industrial. Currently, Portage has 504 acres of heavy industrial land, which is approximately 2.2% of the total land area. Pfizer, Inc. located along Portage Road, occupies or owns a significant amount of this land. Other heavy industrial operations are located along Shaver Road and along Sprinkle Road, the two primary industrial corridors in the city. During the period between 2002 and 2007, growth in heavy industrial uses has been modest with focus primarily on upgrades and expansions within existing uses such as the Pfizer, Inc., Charles River Laboratories, among others.

Agriculture. The amount of agricultural activity in Portage has steadily decreased over time as the city has continued to develop. In 1974, there were 2,336 acres of active agricultural land in Portage. Today, that amount has decreased by roughly 57%, and only 1,001 acres (4.4% of the total land area) of agricultural land remains active. The remaining parcels of active farmland are primarily located along portions of Portage Road and Sprinkle Road.

Utility. Land classified as utility include uses such as the Consumers Energy facilities, which meander through the city, as well as other public and private utility sites, such as sanitary sewer lift stations, water towers, electrical transformers, and telephone service facilities. In 2007, there are approximately 201 acres (0.9% of the total land area) dedicated to utility-related land uses in Portage, most of which include the Consumers Energy facilities.

Public/Institutional. Public and institutional uses account for a great variety of public and quasi-public operations throughout the city. Public uses are generally identified as government owned and operated buildings or facilities such as City Hall, fire and police stations, and libraries. Institutional uses are similar in function to public uses, but are not necessarily under local government control. Examples of these uses include schools, churches, hospitals, nonprofit organizations, among others. Portage currently has 760 acres of land used as public/institutional, which is approximately 3.4% of the total land area.

Public Recreation. Public recreational uses account for 2,283 acres or 10.1% of the total land area. These uses, which include public parks, nature preserves, state game areas and multi-use trails, are found throughout the city. Such uses provide numerous outdoor recreational opportunities to residents, and add significantly to the quality of life within the community. This land use element is specifically discussed and examined in Chapter 9. Recommendations for future recreational uses are also contained in Chapter 9.

During the period between 2002 and 2007, additional public recreational uses were developed. These expanded recreational opportunities include construction of Liberty Park, the westerly expansion of the Northwest Portage Bikeway and acquisition of additional land area and trail relocation of the Bicentennial Trial north of Milham Avenue.

Private Recreation. These recreational uses are similar to public uses since they provide recreational opportunities; however they are usually privately owned and operated. Private recreational uses should be considered separately from public recreational uses since they have the potential to be redeveloped for a different type of land use. For example, the former Oakland Hill Golf Courses was sold and redeveloped as a medium density condominium community in 2005. There are currently 358 acres (1.6% of total land area) dedicated to private recreational uses. Private recreational uses include the Moors Golf Course, South Portage Little League, West Portage Little League, Portage Soccer Club, Soccerzone, Courthouse and Kingdom Indoor Center, among others.

Vacant/Undeveloped. Based on the 2007 land use survey, there are 2,254 acres of vacant/undeveloped property in Portage, which represents approximately 10.0% of the total land area. These vacant land areas are concentrated in the following three primary areas:

1. In the southwest quadrant of Portage along Shaver Road. This area has been rapidly developing as a business (industrial/commercial uses) corridor.
2. Along West Milham Avenue near the I-94/US-131 interchange. This area is identified for future residential development.
3. In the southeast quadrant in the area around Austin Lake, specifically along the lake's east and south side.

Other vacant parcels of various sizes are found scattered in almost every area of Portage.

Vacant and undeveloped property is an important element to consider in the comprehensive planning process because it is most likely to be developed in the future.

Existing Land Use Comparisons

Table 4-2 compares existing land use in the City of Portage to similar communities throughout Michigan. As stated above, single family residential is the most predominant land use, occupying approximately 33% of total land area in Portage. This land use percentage is similar to many of the other surveyed communities of similar size and population. Portage also has a higher than average percent of industrial land uses (7%) with the exception of Battle Creek, Kalamazoo and Kentwood. The remaining communities have 6% or less of their total land area devoted to industrial land use.

Table 4-2
Land Use Comparisons[1]

Generalized Land Use	Portage	Oshtemo Twp.	Kalamazoo	Texas Twp.	Battle Creek	Delta Twp.	Kentwood	Rochester hills	Meridian Twp.
Single-Family Residential	33%	23%	38%	19%[2]	21%	24%	26%	44%	35%
Multiple-Family Residential	4%	2%	9%	NA	9%	3%	6%	5%	5%
Commercial/Office	7%	3%	9%	1%	5%	4%	8%	5%	5%
Industrial	7%	1%	12%	1%	13%	6%	13%	3%	1%
Public/Quasi Public	14%	2%	32%	1%	17%	7%	13%	21%	29%
Agriculture	4%	9%	NA	23%	NA	20%	NA	NA	18%
Other[3]	31%	60%	0%	55%	35%	36%	34%	22%	7%
TOTAL	100%	100%	100%	100%	100%	100%	100%	100%	100%

Sources: City of Portage 2007 land use inventory, Oshtemo Twp. 2007 Land Use Survey, City of Kalamazoo 1996 Plan, Texas Twp. 1998 Plan, City of Battle Creek 1997 Comprehensive Plan, Delta Township – 2004 Comprehensive Plan, City of Kentwood 2003 Land Use Inventory, City of Rochester Hills – 2007 Master Land Use Plan, Meridian Twp – 2002 Land Use Inventory.

1 The statistics used in this table have been generalized. The land use totals must be compared to other land use statistics related to each community.
2 Includes Multi-Family Residential
3 Includes surface water features, recreation, public and private rights-of-way and easements, utilities, and vacant/undeveloped lands.

Chapter 5 – Housing

Housing is an essential resource in any community. People looking for a place to live, or deciding whether to stay within a geographic area, typically focus on several factors. Those factors include the character of the neighborhood/immediate area, quality of the public school district, distance from the workplace, perceptions of home value appreciation, the diversity of housing available to meet changing needs and income levels, among other issues.

As a land use, single family residential accounts for more land area (almost 33% of the total land area) of the city than any other type of land use. This chapter provides background information on housing in Portage with comparisons to historical data and other communities. This chapter serves as a basis for future land use plan strategies regarding housing and public improvements to support residential land uses.

1981 Comprehensive Plan

- Preserve and strengthen viable residential areas.
- Protect and improve the City's existing housing stock.
- Improve the existing housing stock while promoting an increase in the supply of new units available, providing for a range of housing opportunities for all income groups.

Portage 2000 Report (1981)

- Maintain a balanced socio-economic and general ethnic mix throughout the city in order to maintain a vital population (new housing developments and distribution of multiple housing units).

Portage 2020 Report (1991)

- Develop an organization to handle short term housing needs for at-risk families
- Develop a plan for neighborhood houses for recovering substance abuse victims.
- Encourage schools to offer credit to students volunteering for human service organizations such as Habitat for Humanity

1996 Comprehensive Plan

- A residential flavor for Portage where the majority of housing remains single-family detached.
- Provide a diverse and stable housing stock providing for a range of housing opportunities for all income groups and a quality living environment for all persons.
- Implement programs and polices that support housing opportunities for all persons.

2002 Comprehensive Plan

- Provide a diverse and stable housing stock providing for a range of housing opportunities for all income groups and a quality living environment for all persons.

The importance housing diversity, stability and affordability has been a community-wide goal for nearly 30 years as identified in several planning and citizen-based visioning documents. The box to the right includes the housing vision statements/goals from the **1981 Comprehensive Plan, Portage 2000 Report, Portage 2020 Report, 1996 Comprehensive Plan and 2002 Comprehensive Plan.** The most recent citizen-based visioning project, **Portage 2025**, concluded in April 2007. Through the collective vision of many Portage volunteers, the following Housing/"Neighborhoods" vision statement was developed:

"Portage will offer desirable and diverse neighborhoods through progressive planning and active citizen involvement."

Each document reflects the value of housing and neighborhoods to current and future Portage residents and the efforts needed to preserve and maintain this important community asset.

In general, the housing strategies described in this chapter are intended to support the following housing goal and objectives (summarized from **Chapter 2**):

Goal: Provide a desirable, diverse and stable housing stock through a range of housing opportunities for all income and age groups and a quality living environment for all persons.

- Promote single family home and lot ownership as the most preferred land use in terms of land area.
- Encourage citizen involvement through communication as a means to strengthen neighborhood cohesiveness.

- Continue to protect stable neighborhoods from intrusive land uses and traffic but provide low impact, nonresidential convenience needs for neighborhood residents.
- Promote maintenance and continual public improvements and private reinvestment in existing residential areas.
- Provide or improve cost-effective public facilities and services such as streets, walkways/bikeways, parks & recreation and police/fire protection to ensure safe and quality residential areas.
- Provide a range of housing choices.
- Provide incentives, assistance and education to support inclusive housing for all income levels and for groups with special needs, such as seniors or persons with disabilities.

Housing Characteristics

Households/Household Size. Housing in Portage over the last several decades grew rapidly in response to population increases. According to the 1980 U.S. Census, 13,152 households existed in Portage. A household is defined by the US Census Bureau as all the persons who occupy a housing unit. By 1990, the number of households increased 17% to 15,467. In 2000, there were 18,138 households representing another 17% increase. While the number of households in Portage has been increasing, the average household size (the number of persons in a typical household) has been gradually decreasing. In 1980, the average household size was 2.89 persons per household and by 2000, the average household size decreased to 2.45 persons per household. This decreasing trend is generally consistent with national averages. These statistics are shown in **Table 5-1**.

Table 5-1
Household Size

	1980	1990	2000	90-00 % Change
Number of Households	13,152	15,467	18,138	17.2%
Average HH Size	2.89	2.64	2.45	-7.2%

Source: 1980-2000 US Census Bureau

Housing Units. Consistent with households, the number of housing units in Portage has also been steadily increasing. A housing unit is defined by the US Census Bureau as a house, apartment, mobile home, group of rooms or a single room (or if vacant, is intended for occupancy) as separate living quarters. In 1980, there were a total of 13,633 housing units and by 1990, the number increased to 16,133 (18.3% increase). By 2000, the number of housing units increased to 18,885 which represents a 17% increase. Although housing unit growth continued since 2000, the rate of growth has slowed. In 2006, there were 20,100 total housing units, representing an increase of 6.4% since 2000. These statistics are shown in **Table 5-2**.

Table 5-2
Housing Units

	1980	1990	2000	2006	% Change		
					1980-90	1990-00	2000-06
Number of Housing Units	13,633	16,133	18,885	20,100	18.3	17%	6.4%

Sources: 1980-2000 US Census Bureau, W.E. Upjohn Institute and Department of Community Development

Occupancy. Housing occupancy is the percentage of units that were occupied when the Census was taken. The figure can be an indicator of housing stability, a high percentage generally indicates a stable or growing residential market. Based on census findings, Portage had a very low number of vacant units available for occupancy in 2000. The occupancy rate was 96.1%, which while slightly higher than the rate in 1990, is still higher in comparison to Kalamazoo County (see **Table 5-3** below) and much higher than in Michigan (89.4%). Occupancy rates in Portage were also higher than in nearby communities such as the City of Kalamazoo (92.5%), Kalamazoo Township (94.9%), Oshtemo Township (94.5%), and Texas Township (95.7%).

Table 5-3
Occupancy

	Occupied Units			Vacant Units		
	1990	2000	90-00 % Change	1990	2000	90-00 % Change
City of Portage	95.9%	96.1%	0.2%	4.1%	3.9%	-0.2%
Kalamazoo County	94.1%	94.2%	0.1%	5.9%	5.8%	-0.1%

Source: 1990 & 2000 US Census Bureau

Home Ownership. Between 1990 and 2000, the city experienced an increase in renter occupied units, which accounted for almost a third of the housing units in 2000 (see **Table 5-4**): The percentage of owner occupied units (68.9%) was lower than in Michigan overall (73.8%).

Table 5-4
Home Ownership

	Owner Occupied Units			Renter Occupied Units		
	1990	2000	% Change	1990	2000	% Change
City of Portage	71.6%	68.9%	-2.7%	28.3%	31.1%	2.7%
Kalamazoo County	64.4%	65.7%	1.3%	35.6%	34.3%	-1.3%

Source: 1990 & 2000 US Census Bureau

The owner occupied rate in Portage was higher than in Kalamazoo County, however, the county rate is perhaps skewed by the City of Kalamazoo, where because of student housing and other factors, the percentage of owner occupied was 47.7% as shown in the 2000 census. Owner occupied percentages varied in other nearby communities: Kalamazoo Township at 68.4%, Oshtemo Township at 54.5%, and Texas Township at 90.2%.

Table 5-5 compares the residency in 1995 with 2000. Figures indicate almost half of the city residents moved during the five year period.

Table 5-5
Residency in 1995

	City of Portage	City of Kalamazoo	Kalamazoo County	State of Michigan
Same House as Present	51.7%	40.1%	49.8%	57.3%
Different House in Kalamazoo County	28.7%	26.5%	27.2%	25.1%
Different House in Michigan	9.6%	22.9%	14.7%	10.9%
Different House out of state	10.1%	10.5%	8.3%	6.7%

Source: 2000 US Census Bureau

Additional comparisons to similar communities, also used as benchmarks elsewhere in this Plan, are listed on **Table 5-6**. The information shows the percentage of owner occupied housing in the City of Portage is higher than most of the other communities.

Type of Housing Units. Consistent with the County, the majority of housing units in the city as reported by the Census Bureau for 2000 were single-family detached. The city had a lower percentage of multiple family units in 2000 compared to the county and to most of the comparable communities, as shown in **Table 5-6** below.

Table 5-6
Household Type

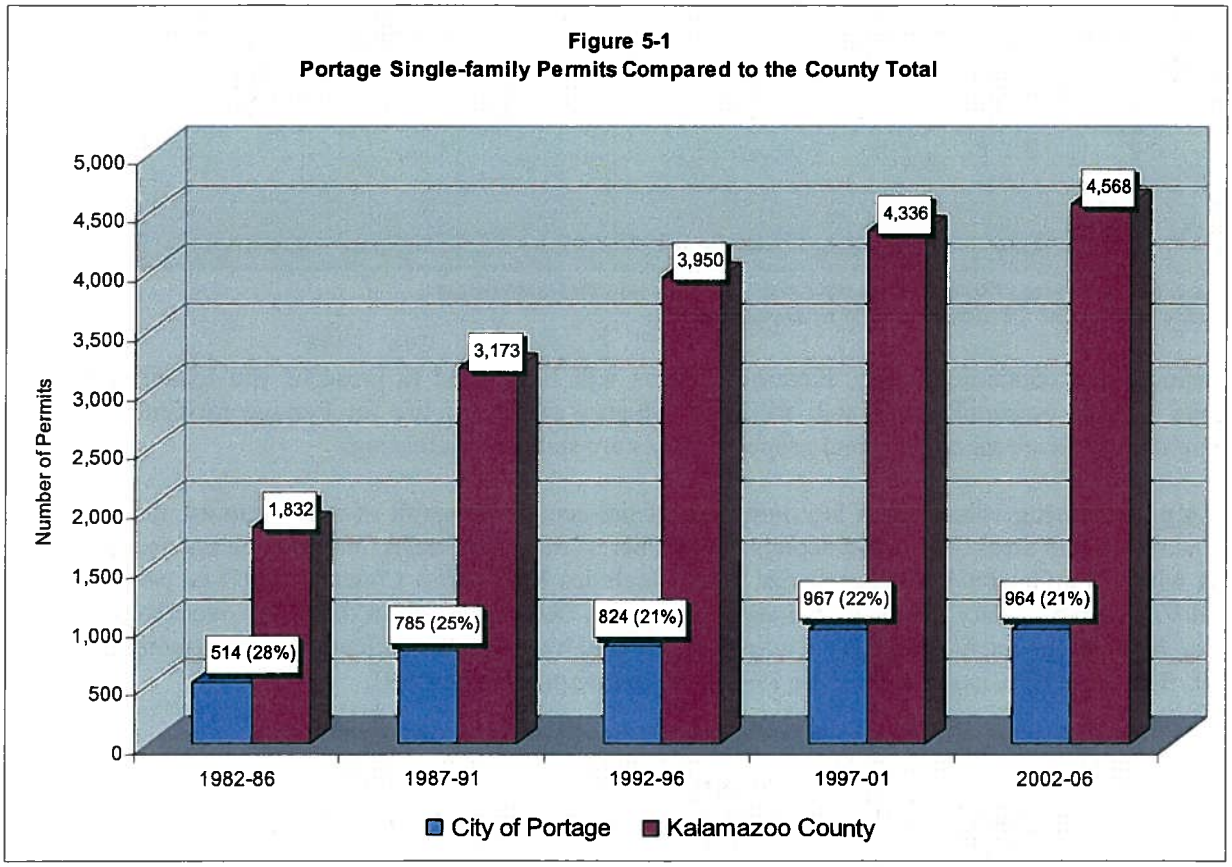
	Single Family		Multiple Family		Mobile Home Unit		Owner Occupied	
	1990	2000	1990	2000	1990	2000	1990	2000
Oshtemo Township	40%	45%	52%	45%	8%	10%	49%	55%
Kalamazoo Township	65%	66%	28%	27%	7%	7%	67%	68%
City of Kalamazoo	52%	53%	44%	44%	4%	3%	47%	48%
City of Portage	72%	71%	25%	27%	3%	2%	72%	69%
Battle Creek	70%	71%	28%	28%	1%	2%	63%	66%
Texas Township	87%	85%	8%	7%	5%	8%	88%	90%
Kentwood	51%	55%	42%	40%	6%	5%	58%	61%
Rochester Hills	73%	75%	21%	19%	6%	5%	78%	79%
Meridian Township	61%	63%	36%	36%	3%	1%	60%	62%
Alpine Township	61%	49%	24%	40%	15%	10%	75%	56%
Delta Township	65%	56%	32%	35%	3%	2%	67%	64%
Kalamazoo County	65%	66%	30%	29%	5%	5%	64%	66%

Source: 1990 & 2000 US Census Bureau

Building Permits. The net number of building permits issued provides a representation of the additional housing units for the community. **Figure 5-1** shows the number of single-family permits issued in Portage compared to the total number of single-family permits issued in Kalamazoo County during five year periods beginning with 1982. As illustrated in **Figure 5-1**, the City of Portage accounted for 21 to 28% of all new single-family residential units constructed in Kalamazoo County between 1982 and 2006. During this 25 year period, more single family residential units were constructed in Portage in 23 of the 25 years per the annual report by the W.E. Upjohn Institute for Employment Research. In 2005, Texas Township issued more new single-family residential permits than Portage and in 2006, both Texas

Township and Oshtemo Township issued more new single-family residential permits than Portage. Compared to the County total, Portage accounted for only 17% of the single-family permits issued between 2005 and 2006. Although single-family residential construction is expected to continue, a smaller percentage of the total units constructed in Kalamazoo County will occur in Portage due to the availability of developable land for single-family use.

Figure 5-1
Portage Single-family Permits Compared to the County Total



Of the 1,554 residential units constructed between 2001 and 2006, approximately 25% (381 units) were multi-family attached residential units, which is consistent with the 1990-2000 increasing trend for multi-family residential shown in **Table 5-6**. Approximately 26% of the 381 multi-family attached residential units were owner-occupied condominium units designed for older citizens (empty-nesters or retirees). The modest increase in multi-family residential units is expected to continue with an increasingly larger share designed to accommodate an older population and others seeking this housing alternative.

Year Structure Built. The City of Portage has a diverse housing mixture representing various housing styles that have evolved over time. These phases are visually evident touring the community and are also evident when evaluating annual community statistics. Of the 20,439 housing units that existed in 2006, 40% were built between 1960-79 (**Table 5-7**).

Table 5-7
Year Structure Built

Period	1990		2000		2006	
	Units	Percent	Units	Percent	Units	Percent
2000 – 2006	N/A	N/A	N/A	N/A	1,554	8.6%
1990 – 1999	N/A	N/A	3,204	17.0%	3,204	15.5%
1980 – 1989	3,172	19.7%	3,083	16.3%	3,083	15.0%
1970 – 1979	3,958	24.5%	3,878	20.5%	3,878	18.8%
1960 – 1969	4,302	26.7%	4,343[1]	23.0%	4,343	21.0%
1950 – 1959	3,118	19.3%	3,762	19.9%	3,762	18.2%
1940 – 1949	881	5.5%				
1939 or earlier	702	4.4%	615	3.3%	615	2.9%
Total	16,133	100%	18,885	100%	20,439	100%

[1] The difference between 1990 and 2000 is a result of the data reported by the Census Bureau.
Source: 1990 & 2000 US Census Bureau/W.E. Upjohn Institute

As the housing stock continues to age, increased efforts will be needed to preserve and rehabilitate existing units. These essential efforts will facilitate a higher quality of life for Portage residents by ensuring neighborhoods are maintained and property values are stable or increasing.

Housing Value. Housing values are a key indicator of the economic health of a community and the stability of its residential areas. **Table 5-8** depicts the number of residential sales, and average and median sales prices within the Greater Kalamazoo area, which includes Kalamazoo County as well as parts of Allegan and Van Buren County. Housing values have steadily increased, almost doubling, over the past two decades. In 2000, the median sales price was $111,750 and by 2001, the median sales price increased to $119,900. This is an 85% increase over the 1991 median sale price of $64,600.

Table 5-8
Housing Value Trends in Greater Kalamazoo Area

Year	Number of Residential Sales	Average Sales Price	Median Sales Price
1990	4,127	$70,900	N/A
1991	4,123	$76,231	$64,600
1992	4,292	$79,004	$68,500
1993	4,603	$84,432	$72,100
1994	4,565	$88,712	$74,600
1995	4,386	$97,579	$82,900
1996	4,762	$107,846	$91,700
1997	4,928	$116,563	$98,000
1998	5,315	$119,755	$103,900
1999	5,563	$127,582	$113,500
2000	5,054	$127,282	$111,750
2001	5,350	$133,717	$119,900
2002	4,750	$135,657	$125,000
2003	4,832	$151,265	$131,000
2004	4,886	$154,737	$133,900
2005	4,872	$157,726	$137,000
2006	4,614	$161,031	$133,000

Source: Greater Kalamazoo Association of Realtors

The US Census provides some additional data for comparison of housing values. This data is not considered as accurate as the figures in **Table 5-8**, since those numbers are based on actual sales and the Census figures for value are estimates by the residents. Although this data is six years old, a comparison to nearby communities is important (refer to **Table 5-9** and **Appendix B**). Information on the median number of rooms and percentage of housing units built since 1990 is also listed, as this influences the overall housing value.

Portage exhibits a median housing value of $120,800, exceeding that in Kalamazoo County ($108,000) by nearly 12% and in the City of Kalamazoo by nearly 46%. However, the figures indicate the highest value homes are being constructed in outlying townships, generally on larger lots or near attractive features such as lakes or other open space.

Table 5-9
Housing Comparisons

Location	Median Housing Value	Median Number of Rooms	% Built Since 1990
City of Portage	$120,800	5.8	17.0
City of Kalamazoo	$83,000	5.0	6.2
Kalamazoo Township	$84,700	5.2	10.5
Oshtemo Township	$150,300	4.9	28.4
Pavilion Township	$119,400	5.8	22.7
Texas Township	$193,000	7.1	41.5%
Kalamazoo County	$108,000	5.5	15.5

Source: 2000 US Census Bureau

Density. Portage is characterized as a suburban community with a low population and housing density compared to the City of Kalamazoo and higher in comparison to Texas and Oshtemo Townships, as examples. Higher density development can create more traffic and service demands, but there are also community issues associated with density that is too low. These latter issues involve longer vehicle trip lengths to shop and work, higher infrastructure costs, the provision of emergency services and economic/operational disincentives associated with mass transit options, among others. One goal of this Plan is to encourage a range of housing opportunities and providing housing at different densities (i.e. units per acre) as methods to achieve that goal.

Additional housing information related to affordability, homelessness and related issues are available that supplements the previously discussed housing characteristics. This housing information can be found in the Affordable Housing Data for Kalamazoo prepared for the County Housing Planning Committee; 10-Year Plan to End Homelessness prepared for the Kalamazoo County Housing Partnership; Community Housing Plan, Strategies for Affordable Housing in Kalamazoo County prepared for the County Housing Planning Committee; and the City of Portage FY 2005-2009 Consolidated Plan: Strategy for Housing and Community Development Needs. These documents can be obtained from the Department of Community Development.

Findings

Based on the foregoing information, the following findings have been identified:

- Household sizes continue to decrease.
- Low to moderate density, single-family residential growth is expected to continue, but is likely to diminish since many primary single-family residential locations have been developed. Remaining developable

parcels that have unique features or constraints exist and will necessitate creative development tools such as varying average lot sizes, cluster housing and mixed use housing and other housing types.

- As the age of the population continues to increase, the demand for housing choices to accommodate and care for an older population will continue to increase.
- While the value of residential development is significant in Portage, the value of new residential construction is not keeping pace with nearby communities. Higher value residential development provides a greater revenue-to-service demand ratio than the lower value properties. Essentially, all households demand relatively similar levels of service but the Michigan property tax structure produces different levels of revenue to support municipal services. In response, Portage should continue to consider actions to promote higher value housing while continuing to provide locations for more affordable housing.
- The city is gradually maturing and the more desirable land areas necessary to support new low-density residential development are decreasing. In response, the city must monitor overall housing and neighborhood quality and develop housing strategies as appropriate. Part of maintaining higher quality housing and neighborhoods includes continued quality of life improvements such as park and walkway/bikeway systems in more mature neighborhoods where such amenities may not be currently available.

Implementation Strategies

The creation, preservation and enhancement of residential neighborhoods are essential to the success of the community. Neighborhoods define and characterize the unique cultural and historical qualities of the city. Intrinsic to the success of Portage neighborhoods and to a stable and attractive quality of life for all citizens is an emphasis on preservation and rehabilitation of the housing stock, the availability of home ownership, housing options for all segments of the population and the proximity to community facilities and services.

HOUSING STRATEGIES

Portage offers a range of housing opportunities including single-family residential, manufactured home communities, multi-family residential (low to high density apartment or condominium developments) and mixed use developments that offer a variety of housing choices within a single development. Retention of high quality residential areas and creation of new housing opportunities for various income and age groups is a goal of this Plan.

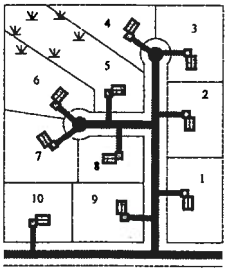
As indicated in **Chapter 3**, all age cohorts are continuing to expand with the greatest rate of increase occurring in the 45 to 64 age cohort (mature family) and the 65 and older age cohort (retirement). Several opportunities are described below in an effort to meet the housing demands (see also the future land use discussion and map in Chapter 10).

Small Sized Lots. Older residential areas in the northern sections of the city exhibit a traditional grid street pattern with small to moderate sized lots. Smaller dwelling unit sizes proportionate to the size of the lot is also permitted. Also, some "curvilinear" street patterns with small to medium-sized lots are also evident. Smaller lots and smaller dwelling unit size tend to be more affordable than larger lot subdivision development while still offering the opportunity for home ownership.

Future opportunities for single-family homeownership on smaller lots (consistent with the lot width and area requirements of the R-1A, one-family residential zoning district) have been identified and are described in more detail in Chapter 10.

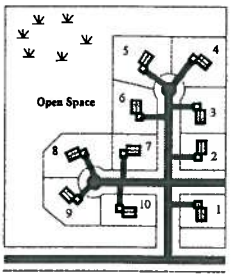
Moderate to Large Lots. As noted earlier in this chapter, single-family residential development and the value of dwelling units are not keeping pace with nearby communities. The city could facilitate this type of development through incentives such as provision of public parks or open space adjacent to or within the project. The cluster or open space approach noted below could be used to establish varying densities, but with amenities to attract more exclusive housing.

Cluster or Open Space Development. A "cluster housing" district typically establishes an average density for the project area and allows a reduction in lot size if open space is preserved while maintaining an appropriate density level. This approach can be used to attract high value housing and/or preserve key natural areas on the balance of the site. The city could encourage this type of development where key natural features would be preserved and developer incentives are perceived, such as flexibility to develop difficult parcels or a density bonus is available.



Traditional Subdivision Development

Multiple Family Residential. Multiple-family residential dwelling units help to improve the choice of housing types and to provide housing opportunities. Several areas have been classified for medium and high density residential use throughout the city and provide opportunities for development. Multi-family residential also provides opportunities for an older population (empty-nesters, retirees and those in need of care), which is the fastest growing age group in the city. Single-family attached condominium units as part of planned development projects have been a fast growing housing choice for empty-nesters and retirees.



Cluster/Open Space Development

Mixed Use Developments. Mixed-use developments allow for a variety of residential and non-residential land uses within one zoning district. By locating places where people live, work and shop in close proximity to one another, alternatives to driving, such as walking or biking, become more viable. Mixed use developments can offer a variety of residential opportunities so that younger and older people, singles and families of varying income levels may find places to live. A more diverse and sizable population and commercial base can also better support public transportation. Mixed use developments facilitate pedestrian oriented, nonresidential, which creates gathering places.

NEIGHBORHOOD IMPROVEMENT STRATEGIES

Housing Preservation and Maintenance. The importance of the day-to-day maintenance of housing and property cannot be overemphasized. To ensure neighborhood preservation, the City of Portage will continue to use a variety of strategies now in place, including assistance to low and moderate income families to rehabilitate existing dwellings:

- ✓ Conduct community awareness programs on blighting influences, annual refuse collections, and comprehensive code enforcement efforts throughout residential neighborhoods and nonresidential areas adjacent to residential neighborhoods.
- ✓ Encourage homeownership in areas with increased renter-occupied dwellings with first time homebuyer down payment assistance.
- ✓ Actively participate in County-wide efforts that encourage the creation of housing opportunities for all segments of the housing market.
- ✓ Assist developers and nonprofit agencies in the development of affordable housing for low and moderate income households.
- ✓ Continue to consider innovative/flexible zoning and density bonus standards for development which include housing for low and moderate income households.
- ✓ Continue property maintenance and building code administration and enforcement efforts.
- ✓ Maintain and improve sidewalks and public infrastructure (water, sanitary sewers, streets and drainage) in neighborhoods with a concentration of low and moderate income households.
- ✓ Maintain and improve essential public services including police protection, fire and emergency services and administration to support existing neighborhoods.
- ✓ Explore neighborhoods that might benefit from low impact nonresidential uses by expanding home occupation regulations and/or other mixed-use options.
- ✓ Continue, and update as needed, current housing and community development programs outlined in the City of Portage FY 2005-2009 Consolidated Plan: Strategy for Housing and Community Development Needs and other related documents.

Chapter 6 – Economic Development/Marketplace

The Vision

The importance of economic development has been a documented, community-wide goal for nearly 30 years. The box to the right includes economic development-related vision statements/goals from the **1981 Comprehensive Plan, Portage 2000 Report, Portage 2020 Report, 1996 Comprehensive Plan and 2002 Comprehensive Plan.** The most recent citizen-based visioning project, **Portage 2025**, concluded in April 2007. Through the collective vision of many Portage volunteers, the following vision statement was developed:

"Portage will be a dynamic, entrepreneurial and opportunity-rich community that proactively supports responsible economic development."

Each document reflects the importance of economic development and growth to the future vitality of Portage. The realization of economic development/ growth objectives will occur through sustained, proactive, and coordinated efforts by the business community, educators, city leaders, and the citizenry as a whole. The Comprehensive Plan and Future Land Use Plan are intended to provide appropriate guidance to these efforts.

1981 Comprehensive Plan

- Concentrate and expand industrial development in the City, expanding employment opportunities and broadening the City's tax base.
- Provide for continued commercial development and redevelopment to serve the diverse needs of the consumer.

Portage 2000 (1981)

- Pursue land use policies conducive to economic development.

Portage 2020 Report (1991)

- Economic growth is essential to the maintenance and further improvement of the city's quality of life. To that end elected officials, government staff, advisory board members, educational administrators, community and business leaders and the general citizenry should strive to work together in the City and in the region to foster economic growth.

1996 Comprehensive Plan

- Sensible and sustainable, high quality, economic growth and development of a kind consistent with a diversified economy and with environmental protection and at a pace supportable by the community's existing and reasonably anticipated future infrastructure.
- Office, commercial and industrial development in designated areas to provide for business expansion needs, while achieving compatibility with surrounding land uses, the environment and public infrastructure investment.
- The location and timing of public infrastructure (modern transportation, water, sewer and utility systems) expenditures for sustained economic expansion.
- Public programs, incentives, regulations and taxation policies that are consistent with development and environmental goals.
- Regional cooperation for an attractive business climate and for effective and efficient delivery of business support activities.

2002 Comprehensive Plan

- Encourage sensible and sustainable, high quality office, commercial and industrial development in designated areas to provide for business expansion needs, achieve compatibility with surrounding land uses and environmental features at a pace supportable by the community's existing and reasonably anticipated future infrastructure.

Location Attributes

The success of Portage is heavily influenced by geographic location and proximity to interstate highways. Geographically, the city is closely aligned with the City of Kalamazoo and to a somewhat lesser extent with the City of Battle Creek.

The three principal cities are situated along I-94 and are nearly centrally located between the Detroit and Chicago metropolitan regions, an approximate two hour drive to either urban center. This proximity provides opportunities for manufacturers and for retailers in these communities. Similarly, the manufacturers and businesses of Portage, Kalamazoo and Battle Creek may readily avail themselves of goods and services originating from the Detroit and Chicago locations.

On a more regional basis, Portage is centrally located between the urban centers of the Grand Rapids, Lansing, Jackson, Benton Harbor/St. Joseph and South Bend, Indiana. This convenient relationship provides local industries and businesses the opportunity to readily serve the manufacturers and businesses in these surrounding urban centers.

Interstate 94. I-94 is one of the nation's most important interstate corridors in terms of imports, exports, and the supply of goods and services to business and is designated as a North American Free Trade Agreement (NAFTA) highway. The system also supports a very high level of non-business automobile traffic comprised of area residents, visitors and pass-through motorists.

According to the Michigan Department of Transportation, the 2006 average vehicles per day on I-94 between US-131 and Sprinkle Road is approximately 71,000. The average vehicles per day (vpd) for several segments of I-94 are:

- US-131 to Oakland Drive: 79,600 (vpd);
- Oakland Drive to South Westnedge Avenue: 74,600 (vpd)
- South Westnedge Avenue to Portage Road: 70,600 (vpd)
- Portage Road to South Sprinkle Road: 59,300 (vpd) .

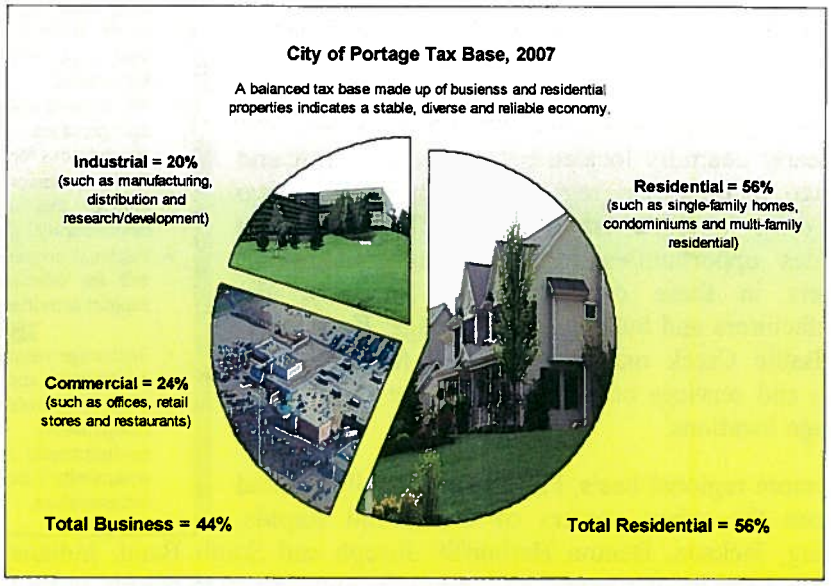
US-131. Traversing the west side of the City of Portage, US-131 is a major route in the State of Michigan. The highway links Portage to the Grand Rapids metropolitan area and Interstate 96 to the north and to southern Michigan and northern Indiana where Interstate 80/90 connects Chicago and Toledo.

The 2006 Michigan Department of Transportation average vehicles per day traffic count near the I-94 interchange averaged approximately 42,000. The average vehicles per day north and south of I-94 are:

- North of I-94: 52,000 (vpd); and
- South of I-94: 32,200 (vpd).

Balanced Economy

A strong economic base is viewed as vital to the continued ability of the City of Portage to meet future growth and development challenges. Although the state, regional and local economies continue to show weakness, the City of Portage has made significant progress to balance and diversify the local economy. A balanced and diverse economy is essential to maintain community stability and provides the economic foundation from which essential public services can be financed. While the City of Portage is a primary retail shopping destination, home to one of the largest pharmaceutical manufacturing plants in the world and has high quality residential character, a close examination confirms a balanced and diverse economy that can further grow and develop. The City of Portage Tax Base, as illustrated in the graphic to the right, indicates a balance of residential, commercial and industrial development.



Employment Sector Profile

Existing Patterns and Trends

A basic understanding of the present economic character of the city is useful when charting a future course of action. Knowledge of the structure of the community economy is fundamental to land use planning. A strong economy sustains employment and an expanding economy creates new employment opportunities, which attract people and results in an increased population and visitor base. Collectively, a growing economy and population also place additional demands on the community in areas such as housing, schools, community facilities and the provision of a variety of municipal services.

Updated employment statistical information for Portage will be available upon release of the 2010 US Census data. However, **Table 6-1** from the 2002 Comprehensive Plan provides a summary of the employment base of people who live in Portage for 1990 and 2000. **Table A-1** in the appendix, also from the 2002 Comprehensive Plan, provides specific Standard Industrial Code (SIC) detail for varied employment sectors shown in **Table 6-1** including information on the number of business establishments, level of employment and, as applicable, annual sales. This table classifies uses by the SIC established by the federal government for economic evaluations. **Table 6-2** contrasts the employment base of Portage with that of the City of Kalamazoo and Kalamazoo County.

In terms of employment trends for the City of Portage, the following is provided (also refer to **Tables 6-1 and 6-2**):

- Total employment increased 6.2% during the 1990's.
- The services category accounts for 40.1% of the work force.
- Service employment was also the largest category in 1990, and increased 33.2% by 2000.
- Manufacturing employment decreased in the number of employees and percentage but remains the second highest employment category at 21%.
- Retail trade and wholesale trade declined during the decade but remain higher when compared to Michigan.
- The fastest growing sector during the ten year period was construction, which grew by over 80%.

Table 6-1
Employment of People Who Live in the City of Portage

Employment Sector	1990	Percent	2000	Percent	90-00 % Change
Agricultural Services	194	0.9	128	0.5	-34.0
Construction	710	3.2	1,281	5.4	80.4
Manufacturing	6,076	27.4	5,023	21.3	-17.3
Transportation/Communication/Utilities	921	4.1	1,317	5.6	43.0
Wholesale Trade	1,140	5.1	887	3.8	-22.2
Retail Trade	3,975	17.9	3,031	12.9	-23.7
Finance/Insurance/Real Estate	1,508	6.8	1,707	7.2	13.2
Services	7,088	31.9	9,440	40.1	33.2
Public Administration	583	2.6	752	3.2	29.0
Total	22,195	100	23,566	100	6.2%

Source: 1990 & 2000 US Census Bureau

Table 6-2
Employment Base Comparison

Employment Sector	City of Portage		City of Kalamazoo		Kalamazoo County		State of Michigan	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Agricultural Services	128	0.5	245	0.7	1,303	1.1	49,496	1.1
Construction	1,281	5.4	1,506	4.1	6,747	5.6	278,079	6.0
Manufacturing	5,023	21.3	5,788	15.6	24,648	20.4	1,045,651	22.5
Transportation/ Communication/Utilities	1,317	5.6	1,890	5.1	6,267	5.2	290,686	6.2
Wholesale Trade	887	3.8	840	2.3	3,740	3.1	151,656	3.3
Retail Trade	3,031	12.9	4,416	11.9	14,169	11.7	550,918	11.9
Finance/Insurance/ Real Estate	1,707	7.2	2,062	5.6	6,948	5.8	246,633	5.3
Services	9,440	40.1	19,641	52.8	53,762	44.5	1,856,611	40.1
Public Administration	752	3.2	753	2.0	3,156	2.6	167,731	3.6
TOTAL	23,566	100	37,141	100	120,740	100	4,637,461	100

Source: 2000 US Census Bureau
Note: Percent refers to the percentage of employees of the specified employment sector in relationship to the total employees for all sectors in the identified governmental unit. Percentages are rounded.

- Portage accounts for approximately 20% of the overall employment base of Kalamazoo County and 0.5% of the State of Michigan.
- 20% of the county manufacturing employment base and 21% of the county retail base is located in Portage.

A Diversified Employment Base

Economic diversity continues as a major objective. For Portage, diversity is apparent through well-located commercial and industrial centers with opportunities for future growth.

The following is a list of major employers:

Employer	Product/Service	No. Employees (Full & Part Time)
Pfizer, Inc.	Pharmaceuticals	3,500
Stryker Instruments	Medical Equipment	1,600
Portage Public Schools	Education	1,121
State Farm Insurance	Insurance	750
Meijer Incorporated	Retail/Grocery	650
Summit Polymers, Inc.	Plastics Manufacturing	550
Wal-Mart	General Retail	406
KRESA	Education - Intermediate	350
J C Penney Company, Inc.	General Retail	300
Bowers Manufacturing	Aluminum Extrusion	295
City of Portage	Municipal Services	225

Source: Pfizer, Inc., Municipal Financial Consultants Incorporated (July 2007 Bond Report), City of Portage Department of Community Development, based on employers responses to survey

Employment Projections

Long term employment projections are also a helpful planning tool. Projections can help anticipate the need for various types of land uses. Similar to population projections, forecasts of future employment

include variables outside of city control such as competition from other communities and states, state taxation, and corporate decisions and mergers (such as the change of Upjohn to Pharmacia to Pfizer).

New information on economic trend and statistics is released on a more regular basis than the 10-year US Census. Based on available data, employment in the city is projected by one source to increase by approximately 8% over the next 25 years (See **Table 6-3**). Recognizing these figures are projections, the actual number of employees will vary. The same study anticipates employment in Kalamazoo County will grow at a slightly higher rate of (9.2%). Those projections are based, in large part, on historic trends.

Table 6-3
Employment Projections

Employment Sector	2006	2030	06-30 % Change
Retail Employment	10,296	10,490	1.9%
Service Employment	11,527	16,619	44.2%
Other Employment	14,616	14,912	2.0%
Total Employment	**36,439**	**42,020**	**15.3%**

Source: Kalamazoo Area Transportation Study (KATS) based on Michigan REMI Socio-Economic Forecast for Kalamazoo County, US Census, MESC data, Bureau of Economic Analysis (BEA), and other data sources

Household Income

In addition to basic information on employment opportunities and general economic growth, knowledge of household income can be useful when examining economic health and well-being of the community. Household income relates directly to local purchases for goods and services; investments in homes and real estate; and, ability to support public facilities, services, and programs. Income trends from 1990 to 2007 estimates are shown in **Table 6-4**. Median household income rose from $39,717 in 1990 to an estimated $54,820 in 2007. Median family household income as well as per capita income also increased.

Table 6-4
Income Trends

Income	1990	2000	% Chg 1990-00	2007 Estimate	% Chg 2000-07
Aggregate ($Mil)	$720	$1,132	57.2	$1,299	14.8%
Per Capita	$17,542	$25,414	44.9	$28,689	12.8
Median Household	$39,717	$49,410	24.4	$54,820	11.0
Median Family Household	$45,038	$61,285	36.1	$69,068	12.7

Source: 1980-2000 US Census Bureau, 2007 Claritas, Inc.

Table 6-5 compares the income levels of Portage households to those of Kalamazoo and Kalamazoo County and the State of Michigan and uses several sources that show 2006 and 2007 estimates.

Table 6-5
Estimated Income Comparisons

Unit	City of Portage	City of Kalamazoo	Kalamazoo County	State of Michigan
Aggregate Income ($ Millions)	$1,299	$1,236	$5,839	$236,976
Per Capita Income	$28,689	$18,451	$24,477	$24,097
Median Household Income	$54,820	$27,494	$44,327	$47,182
Median Family Income	$69,690	$41,418	$61,187	$57,996

Source: 2006 American Community Survey estimates for City of Kalamazoo, Kalamazoo County and State of Michigan. 2007 Claritas, Inc. estimates for City of Portage

Based on recent income estimates, it can be observed that:

- Collectively, the aggregate income for the Cities of Portage and Kalamazoo account for nearly 50% of Kalamazoo County.
- Per capita, median household and median family household incomes are higher for Portage than the other governmental units.
- The estimated aggregate income for the City of Portage (total household income for a unit of government) now exceeds the estimate for the City of Kalamazoo.

Based on these trends, increasing income levels are anticipated to continue.

Business Development and Trends

Key Community Issues and Concerns

Recent research has identified a number of important community characteristics and characteristics of adjacent communities that have the potential to significantly impact the continuing prosperity of Portage. Communities face competition from a variety of sources for business and industrial growth and the tax base and job opportunities it represents. There is also competition for residential growth, necessary for the success of the business sector. Issues and concerns that impact the residential, commercial and industrial sectors in Portage are summarized in the following sections. Charts and graphs that provide an illustrated comparison are contained in **Appendix B**.

Residential Sector Issues and Concerns

A key residential sector issue involves the amount and value of construction in adjacent and growth communities compared to Portage. Despite an approximate 25% decline in single family residential building permits between 2005 and 2006, Portage remains a growing community of neighborhoods with 125 new single family permits issued in 2006. Although Portage issued more single family residential permits (964) during the past five years (2002-2006) than any other comparable community in Kalamazoo County, the total number of permits has declined. While residential construction continues in Portage, the average value of new residential permits is less in Portage than in several competing communities during this same period. Between 2002 and 2006, the average value of new single family residential dwellings in Portage was $127,751, compared to $143,457 in Oshtemo Township, $168,288 in Richland Township and $173,244 in Texas Township. Higher value residential development provides a greater revenue-to-service demand ratio than lower value properties. In essence, all households demand relatively similar levels of service but with the property tax system in place in Michigan, produce different levels of revenue to support municipal services.

Portage continues to exhibit the largest total residential SEV of the eight communities listed in Appendix B and is nearly equivalent to the total residential SEV of all other "exurban" areas in Kalamazoo County. In comparison with the communities listed, Portage experienced the largest residential SEV increase ($253 million) over the 2002 to 2006 period. While overall residential SEV increased 25% in Portage between 2002 and 2006, six comparison communities in Southwest Michigan had greater overall residential growth rates. Three residential townships (Texas Township, Antwerp Township, Oshtemo Township) located in the west part of the Kalamazoo-Portage metropolitan statistical area (MSA) and along I-94 experienced the greatest growth rates.

Commercial Sector Issues and Concerns

While Portage is a retail trade center for Southwest Michigan, commercial growth is occurring in other areas of Kalamazoo County and also in Calhoun and Van Buren Counties. Out-city competition impacts

the continued viability of the business sector in Portage. Increasing rates of nonresidential sector growth and development in adjacent and competing communities have the potential to negatively affect the demand for commercial properties as well as the occupancy/vacancy rates of these properties and can also involve issues of commercial deterioration and blight with an accompanying reduction in financial resources for Portage.

Commercial SEV is greatest in the cities of Kalamazoo and Portage for each year between 2002 and 2006. Competing commercial centers serving the urbanizing townships in the Kalamazoo-Portage MSA showed commercial SEV growth between 2005 and 2006, except for Richland Township. While the commercial SEV growth rate between 2002 and 206 was slower in Portage in comparison to five other communities, Portage exhibited the 2nd largest commercial SEV in the region. Total commercial SEV for Kalamazoo County continues to grow and is nearly three times larger than that of Calhoun County and more than six times larger than Van Buren County. Portage remains a significant contributor to the county commercial SEV as a retail trade center serving Southwest Michigan.

Industrial Sector Issues/Concerns

Consistent with the commercial sector, the competition for industrial tax base is also high. While the core communities in Kalamazoo County (Portage and Kalamazoo) have significant industrial SEV tax base, industrial growth in adjacent counties is also significant Between 2005 and 2006, slight increases were experienced in Kalamazoo and Calhoun counties, while Van Buren County experienced a 24% increase due to new development in Antwerp and Covert townships. Industrial SEV growth rates exhibited large variability over the 2002 to 2006 period. Industrial SEV in Portage increased by 7% during this period, while Richland Township increased by 161% (attributed to ongoing Pfizer investments) and Antwerp Township increased by 98% (likely due to MPI Research facility investments). The cities of Battle Creek, Portage and Kalamazoo continue to have significantly larger industrial SEV tax bases compared to the surrounding townships over this five year period.

It is anticipated that industrial centers developing or planned in outlying areas will continue to impact Portage. These industrial centers can be expected to generate additional residential and commercial growth and attendant SEV growth. Such growth will be at the expense of growth in core communities such as in Portage and Kalamazoo, and in Battle Creek in Calhoun County.

Since 1996, the City of Portage has been involved in three public/private partnerships that have significantly increased the number of job opportunities in the city and also the tax base. The results of these three initiatives, 1996 Industrial development Initiative, 1998 Community Investment Initiative and 1999 Commerce Square Enhancement Initiative, are summarized in the **Table 6-6**.

Table 6-6
Total Economic Development Initiative Impacts, 1996-2007

Number of :		Jobs from Expansion	Jobs Retained	New Jobs	Total Jobs[1]	Taxable Value[2]	Estimated Market Value[3]
Businesses	49	122	787	2,799	3,708	$75,965,210	$157,785,909
Industries	30	129	215	557	901	$18,157,032	$37,244,798
TOTAL	**79**	**251**	**1,002**	**3,356**	**4,609**	**$94,122,242**	**$195,030,707**

Source: City of Portage

[1] Includes both full- and part-time jobs.

[2] Taxable value as reported by the city Assessor Office or estimated from information provided by the developer

[3] Estimated market value is based on the 2007 State Equalized Value as reported by the city Assessor or estimated from information provided by the developer

These initiatives, in which development is still ongoing, illustrate a leadership role by the City of Portage in addressing economic issues relevant to the city and to Kalamazoo County and counteract the effects of recent corporate mergers and acquisitions, and the closure/sale of major manufacturing facilities. It is important to underscore that the three initiatives were accomplished without a tax increase and with a combination of local tax resources, private sector participation as well as state and federal funds. The City of Portage should continue to pursue such initiatives when and where applicable.

Historically, development trends are used to project future events. Such information is useful when planning for future needs and in the delineation of land area, infrastructure, and community services necessary to supply those needs. While past and present trends are normally reliable indicators of events to come, the information must be used with a certain level of caution. Portage, like all urban centers, is subject to the influence of state and national events which can affect outcomes.

The following economic trends are expected to continue for the next five years:

- ✓ Continued stability in employment patterns, with modest employment gains. A majority of those gains will occur in the retail trade and services sectors.
- ✓ Ongoing dominance of the services sector. The service sector now accounts for about 40% of the employment opportunities.
- ✓ The cities of Portage and Kalamazoo are the primary employment center for Kalamazoo County. However, the percentage of total jobs in the two communities has decreased from 66% of total county jobs in 2000 to an estimated 54% in 2007. Job growth in other areas of Kalamazoo County is anticipated and can be confirmed with the 2010 Census information.
- ✓ Ongoing modest gains in employment income and median household income with Portage/Kalamazoo generating almost one-half of the county's household income base.
- ✓ Manufacturing remains a critical employment base since generally it provides higher salaries than the retail and service trades, but the manufacturing sector has declined, so efforts to retain and attract manufacturing employers are needed.
- ✓ Continued diversification of the employment base.
- ✓ The number of employment opportunities in the City of Portage will continue to exceed the labor force of those living in Portage, so additional commuting to and from the city will occur.

Economic Development Opportunities

As part of business retention and recruitment efforts, and for short and long range planning purposes, Portage maintains a database of potential site development opportunities covering office, general commercial and industrial locations. **Table 6-7** provides information regarding office, commercial and industrial land use absorption rates between 2002 and 2007. The corresponding zoning districts are shown in parentheses after each land use category. Also included in **Table 6-7** is a future estimate of need for each of the three generalized land use categories to the year 2012 when the Comprehensive Plan will again be updated based on the 2010 US Census data. Readers are also advised to refer to **Chapter 4 Existing Land Use**, for additional detail regarding existing office, commercial, and industrial land uses.

Table 6-7
Nonresidential Absorption Rate/Future Need

Generalized Land Use Category[1]	2002 Existing Land Use	2007 Existing Land Use	Acres Gained 2002-2007 (absorption rate)	Available Vacant Acres 2007[2]	Estimated Future Need (2008-2012)[3]
Office	531	586	55 (11 acres/year)	78	55
Commercial	904	936	32 (6.4 acres/year)	136	32
Industrial	1,412	1,622	210 (42 acres/year)	1,743[4]	125

[1] Corresponding zoning district for office is OS-1, for commercial B-1, B-2, B-3, CPD and for industrial I-1, I-2, OTR

[2] Vacant acreage figures determined from the Office of the City Assessor "unimproved" residential property classifications, excluding vacant non-taxable parcels such as city, school and church owned properties. Wetlands, floodplains or other environmental constraints which may limit acreage available for development were not considered in these figures. Additionally, existing residential parcels with residences where excess acreage could be developed were also not included in figures.

[3] Anticipated future acreage for the next five years based upon average annual absorption rates seen since 2002.

[4] Includes land owned by Pfizer, Inc.

The following sections provide an analysis of office, commercial and industrial opportunities.

Office Development

Currently, 586 acres of land are utilized for office development in the City of Portage. This represents an increase of 55 acres (10.4%) since 2002. A similar increase over the next five year period would result in the addition of 55-60 acres of new office space.

Opportunities for office development are primarily concentrated in two locations. These include the linear corridors paralleling Centre Avenue and Milham Avenue. A more detailed description of these two corridors along with other possible office locations is provided below.

A. Centre Avenue Office Corridor

The "Future Land Use Map" generally extends the Centre Avenue Office Corridor in linear design, from US 131 to Portage Road. The corridor is periodically broken by small enclaves of retail uses. Benefits of the corridor include its direct proximity and access to US 131; central city location; existing base of office uses; opportunity to accommodate a range of office site demands including office parks and sites for large corporate facilities; and, potential for high levels of compatibility with neighboring land uses bordering on the north and south.

B. Milham Avenue Office Corridor

The Milham Avenue Office Corridor extends between Oakland Drive to just east of Lovers Lane. Similar to the Centre Avenue Office Corridor, this corridor is periodically broken by small enclaves of residential, retail uses and industrial uses. The benefits of this office sector include its proximity to I-94; location adjacent to the city's primary business sector; potential for high levels of compatibility with neighboring land uses bordering on the north and south; linkage to planned industrial sites; and availability to accommodate a range of office site demands.

C. Other Office Locations

In addition to the Centre Avenue Office Corridor and the Milham Avenue Office Sector, small office areas are planned for locations near Lovers Lane, north of I-94; south of Kilgore, west of

Westnedge; north of East Milham and east of Sprinkle. These additional areas have been identified as locations suitable and appropriate for office use.

Office Development Strategies. There are a number of strategies to maintain and promote the health and vitality of the office centers in the community which include:

- ✓ Continuation of development in the primary office corridors, including zoning changes where appropriate, as envisioned in the Comprehensive Plan,
- ✓ Initiate actions in the Centre Avenue Office Corridor to provide and preserve large sites for corporate office and office/research activities.
- ✓ As office uses are intended to be transitional uses between higher intensity nonresidential uses/major thoroughfares and residential neighborhoods, protection of abutting residential areas should be given careful consideration during the zoning process. Consider the implementation of "aesthetic" site and building design standards and/or landscaping and screening standards to ensure compatibility of the office facilities with nearby neighborhoods.
- ✓ Pursue access management principles and methods to protect neighborhoods and combine/coordinate parking between abutting uses.
- ✓ Enforce property and building maintenance codes.
- ✓ Where appropriate, encourage non-motorized pedestrian circulation systems and features (e.g. sidewalks, bike paths, cross-walks, etc.) to encourage the safe and efficient movement of pedestrians between business establishments and between business establishments and residential neighborhoods.

Commercial Development

Unlike previous years, the rate of commercial growth has slowed due to increasing limits of available land, projected demand for the area, and commercial development expected to locate in other communities in the area. As shown in **Table 6-7**, during the five year period between 2002 and 2007, commercial land uses (e.g., local, general and regional business categories) increased from 904 total acres of land to 936 acres. This represents an increase of only 32 acres (4%) since 2002. A similar increase over the next five year period would result in the addition of approximately 30-40 acres of new commercial development. However, Portage is still in an excellent position to absorb a large percentage of the new growth through redevelopment or invigoration of existing commercial areas with remaining growth through the development of vacant sites.

The Future Land Use Map delineates three levels of business development. These include:

1. Local Business nodes oriented to neighborhood and local shopping needs. Currently, there are 118 acres designated to local business development.

2. General Business areas supporting local and cross-town traffic, as well as surrounding communities. Currently, there are 508 acres of land designated to general business uses.

3. Regional Business centers serving a regional market. Currently, there are 476 acres of land area designated to regional business sites.

Local Business Nodes

The Future Land Use Map identifies a series of Local Business nodes in the city. These business areas result from historic land development patterns, as well as a desire to provide a multiple small business centers capable of serving the day-to-day needs of area neighborhoods. The economic vitality of these

business nodes is a direct result of patronization by local customer traffic. Generally, as local neighborhoods remain healthy, so do these small centers.

Local Neighborhood Business Strategies. The following recommendations are proposed to help promote the long term success of these business nodes as neighborhood centers:

- ✓ Continue to encourage a range of uses associated with day-to-day neighborhood needs. The selective mixing of uses (e.g. convenience store, coffee shop, ice cream shop, and other similar uses should be encouraged).
- ✓ Confine neighborhood centers to small nodes. Avoid allowing nearby parcels, such as those occupied by existing dwellings, to be converted to commercial use. This often leads to the decentralization of the small business node ultimately resulting in a strip commercial area.
- ✓ Enforce property and building maintenance codes.
- ✓ Consider the implementation of "aesthetic" site and building design standards and/or landscaping and screening standards to ensure compatibility of the commercial facilities with nearby neighborhoods.
- ✓ Pursue access management principles and methods to protect neighborhoods and combine/coordinate parking between abutting uses.

General Business Areas

The Future Land Use Map delineates several General Business areas. The General Business areas provide full-service retail and other commercial opportunities. Patrons originate from area and regional neighborhoods, surrounding communities, through travelers, and employees of the city's numerous businesses and industries traveling into the city on a daily basis.

In addition, the Future Land Use Map designates three commercial revitalization areas where commercial rezonings of contiguous properties would be entertained and public actions (such as infrastructure improvements) would stimulate private reinvestment:

1. Portage Road from I-94 to Yellowbrick
2. Portage Road from Centre Avenue to Emily Drive
3. Sprinkle Road at Long Lake Drive

General Business Strategies. There are various ways to maintain the health and vitality of the General Business areas including:

- ✓ Continue to encourage a range of uses encompassing the full-service and specialty retail and service activities attractive to a wide population base.
- ✓ Due to the linear development character along major streets, General Business areas will likely continue to experience development pressures to expand. Appropriate locations to provide expansion opportunities should be identified and the impacts of expansion should be carefully measured. Decentralization of a business district has the potential to diminish the synergistic qualities of the district.
- ✓ Considering development of a program for preparing revitalization plans for the three Commercial Revitalization areas covering appropriate rezonings, public infrastructure improvements and financial assistance and incentive programs.
- ✓ Within business settings, provide opportunities for a range of site sizes including smaller sites of 1 to 2 acres to accommodate smaller businesses and the financial capabilities of new entrepreneurs.
- ✓ Enforce property and building maintenance codes.

- ✓ Apply access management principles to ensure safe and efficient traffic flow and access and combine/coordinate access and parking between abutting uses.
- ✓ Site design (zoning) regulations should include specific standards governing landscape, signs, exterior lighting, access, and so forth.
- ✓ Where appropriate, encourage non-motorized pedestrian circulation systems and features (e.g. sidewalks, bike paths, cross-walks, etc.) to encourage the safe and efficient movement of pedestrians between business establishments and between business establishments and residential neighborhoods.

The character and/or quality of contiguous development often influence the economic health of General Business Sectors. Therefore, it is important that nearby residential and nonresidential areas maintain community quality standards.

Regional Business Centers

The Regional Business Center areas provide full-service retail and other business opportunities oriented to regional markets. Patrons originate from area and Southwest Michigan regional communities.

The largest Regional Business Center area is located within the South Westnedge Avenue Commercial Corridor between Kilgore Road and Centre Avenue. Also located within the South Westnedge Avenue Commercial Corridor is Portage Commerce Square, a major retail center. Portage Commerce Square is a focus of regional retail activities in southwest Michigan, and is bounded on the west by Constitution Boulevard, on the north by Milham Avenue, on the east by Lovers Lane and on the south by Romence Road Parkway.

Portage Commerce Square encompasses approximately 1.7 square miles (1,088 acres) of land area. South Westnedge Avenue which intersects with I-94 to the north of Portage Commerce Square and which carries in excess of 50,000 vehicles per day, bisects the area.

Portage Commerce Square and the adjacent South Westnedge Commercial Corridor:

- Is the location of a regional mall and numerous retail complexes, strip developments and freestanding retail and office service uses.
- Accommodates approximately 447 businesses in approximately 4,211,248 square feet of building space (refer to **Table 6-8**).
- Significant park and open space land area exists in the "Square". Bicentennial Park is adjacent to Portage Creek along the eastern perimeter of the area.
- The primary business and office character of the "Square" provides a significant employment base.

Table 6-8
Business Uses in the Westnedge Area

	% Sq. Ft. Occupied	Number of Businesses	Total Square Footage
Westnedge, north of Milham	97.2%	92	842,418
Portage Commerce Square	91.2%	290	2,976,440
Westnedge, south of Romence	85.5%	65	392,390
Total	**91.8%**	**447**	**4,211,248**

Source: South Westnedge Avenue Commercial Corridor Study, 2006 Office of the City Assessor

Regional Business Strategies. The health of Regional Business Centers, similar to other business areas, is based on fostering economic vitality and business synergy. Factors important to Regional Business Centers include:

- ✓ Continue to provide opportunities for a range of compatible mixed-use opportunities in planned unit development settings.
- ✓ Continue to provide appropriate opportunities for expansion within Regional Business Centers to ensure (re)development needed to attract the population/consumers from the regional market.
- ✓ Maintain efficient access alternatives providing for ease of vehicular movement from the area's freeways and major roads to the respective business center sites. Encourage joint access and parking opportunities between adjacent uses.
- ✓ Due to the size and character of Portage Commerce Square, identify opportunities to improve vehicular and pedestrian traffic flow for future planning and development purposes.
- ✓ The primary routes to each Regional Business Center (from point of entry into the City of Portage to the respective Regional Business Center) should reflect a high quality, aesthetically attractive, image. Motorists should view movement into and through the city as a pleasant experience.
- ✓ Enforce property and building maintenance codes.
- ✓ Site design should fulfill specific standards governing landscape, signs, exterior lighting, access, and building façade treatments.

Industrial Development Opportunities

Industrial development activities generally occur within two following primary corridors in the City of Portage:

Sprinkle Road Industrial Corridor. The Sprinkle Road Corridor generally extends from Kilgore Road to Zylman Avenue. Independent of Pfizer, Inc., the corridor contains about 300 acres for industrial development. Including the Pfizer complex, the corridor also includes another approximate 500 acres of industrial land.

Shaver Road Business Corridor. The Shaver Road Business Corridor extends from West Centre Avenue to Oakland Drive. The corridor contains a mix of commercial and industrial uses encompassing approximately 275 acres.

As shown in **Table 6-7**, industrial land uses expanded more during the five year period between 2002 and 2007 than either office or commercial. Industrial land uses increased a total of 210 acres (15%) during this period and included two Stryker Medical/Instruments projects that accounted for approximately 47% of the 210 acres). However, this pace is not likely to continue during the next five year period. A more realistic absorption rate would be 100-125 acres.

When industrial growth occurs, Portage is still in position to take advantage of these new industrial opportunities given the proximity to US-131 and I-94; infrastructure availability; existing industrial base; and, residential, health, education, and cultural amenities are attractive draws for development.

Industrial Development Strategies. To continue to foster additional industrial development, as well as retain existing businesses, the following strategies are important:

- ✓ Maintain efficient access alternatives providing for ease of employee and commercial truck movement from the area's freeways and major roads to the respective industrial districts. Where appropriate, encourage joint access and parking opportunities.
- ✓ Encourage development of industrial parks and technology centers and similar developments.
- ✓ Within industrial settings, provide opportunities for a range of site sizes including smaller sites of 1 to 2 acres to accommodate smaller companies and the financial capabilities of new entrepreneurs.

- ✓ Improve the compatibility of industrial areas with other use districts through transitional zoning and/or the use of increased setbacks, landscape buffers, and architectural screening.
- ✓ Enforce property and maintenance codes

The Future Land Use Pattern provides a total of 3,693 industrial-related acres (1,890 acres designated general industrial, 1,104 acres designated research & development/technology and 699 acres designated Shaver Road Business Corridor). While significant areas are designated to address projected future demand for 100-125 additional acres for new/expanded sites (other than the Pfizer Corporation), the provision of infrastructure and the consolidation of tracts in the Sprinkle Road Industrial Corridor and Shaver Road Business Corridor are important so that a variety of industrial sites in different locations can be marketed.

Financial and Business Development Incentives

Concerted efforts have been made by the City of Portage to maintain a low tax rate and competitive utility fees. Over the years, Portage has also employed a variety of incentives to retain and attract commercial and industrial development. Incentives include those classified as "indirect" such as the construction of infrastructure (e.g. streets, utilities, etc) in planned locations to attract and support future development needing and/or desiring these amenities, to "direct" incentives such as qualified reductions in real estate and personal property taxes granted to specific businesses, bond financing and public improvement assessment/financing terms.

Maintaining low tax rates and utility costs and the use of appropriate incentives are considered to be essential to the continued nurturing of commercial and industrial growth and development and the retention and creation of job opportunities. It is the policy of the city to employ the following "direct" and "indirect" incentives, as appropriate:

- ✓ Maintain low/competitive millage rates.
- ✓ Maintain low/competitive water and sewer utility rates.
- ✓ Ensure a well-maintained infrastructure system of public streets, water system, sanitary sewer system, storm sewer system to facilitate growth and development.
- ✓ Improve quality of life attributes to ensure a livable, attractive and desirable community.
- ✓ Continue appropriate commercial and industrial incentives, including industrial tax abatements, to strengthen and diversify the tax base on the community.
- ✓ Continue to annually prepare a short and long range Capital Improvements Program addressing the infrastructure and service requirements of the city's business and industrial sectors.
- ✓ Employ appropriate economic development activities such as available through the Economic Development Corporation (EDC), Tax Increment Financing Authority (TIFA), Downtown Development Authority (DDA), Brownfield Redevelopment Authority or Local Development Finance Authority (LDFA).
- ✓ Continue to provide a full range of development services to the business community such as development project review assistance, dissemination of business related information (e.g. census data, utility information, Geographic Information System data and so forth) and other information of interest to the business community.
- ✓ Continue to maintain a database/inventory of undeveloped business and industrial sites for use in planning and marketing efforts. Provide specific detail on site location, size, utilities, zoning classification, master plan district classification, owner of record, and other such information.

Chapter 7 – Natural & Historic Resources

Natural and historic resources contribute to the unique character and quality of life in Portage. This chapter provides a brief narrative and illustrative description of some of the key resources. The municipal park system, which includes several of the more notable natural, cultural and historic resources, is described in **Chapter 9, Public Services**.

The importance of protecting and preserving valuable natural resources has been a community-wide goal for nearly 30 years as identified in several planning and citizen-based visioning documents. The box to the right includes the environmental vision statement/goals from the **1981 Comprehensive Plan, Portage 2000 Report and Portage 2020 Report, 1996 Comprehensive Plan and 2002 Comprehensive Plan.** The most recent citizen-based visioning project, **Portage 2025**, concluded in April 2007. Through the collective vision of many Portage volunteers, the following Environment and Natural Resources vision statement was developed:

"Portage will be recognized for sustainable planning based on ethical environmental standards and incentives".

Each document reflects the value of natural resources to current and future Portage residents and the efforts needed to preserve these important community assets.

1981 Comprehensive Plan

- Preserve and protect those areas in the city having particular environmental significance (e.g. lakes, bog areas, flood prone lands, state conservation lands, etc.)

Portage 2000 Report (1981)

- Preserve and/or improve the quality and quantity of water and aquatic life in the local streams, lakes, connecting channels and underground aquifers.
- Develop land uses along the shores of all streams, lakes and connecting channels that promote ecological balance, preserve unusual natural areas, promote general recreational use and protect residential areas.

Portage 2020 Report (1991)

- The future environmental health of the City of Portage depends on our stewardship and ability to manage the abundant water, air and land resources with which we have been blessed. The City of Portage must protect and enhance its natural resources and promote optimum standards of environmental ethics in its residents to ensure a high quality of life for current and future Portage residents.

1996 Comprehensive Plan

- Natural, historic and cultural resource preservation for the maximum benefit and enjoyment of all.
- Air and water (both surface and ground) quality consistent with the existing and anticipated future use of such resources
- A recreation system that meets the active and passive needs of the existing and future characteristics of the people of Portage.

2002 Comprehensive Plan

- Preserve and provide natural, historic and cultural resources for the benefit, enjoyment and quality of life of existing and future residents.

Natural Resources

The natural environment is an obviously critical element in the physical development and quality of life in the city. The various components of the natural environment function, change, and interact as part of an overall ecosystem. These natural elements need to be considered as a community resource. Development should be directed to areas that can best sustain the physical changes to the landscape while minimizing any impacts to the most sensitive natural resources.

Soils. Construction costs and risks to the environment can be minimized by developing areas where the native soils are suitable for the intensity of development. Certain types of native soils have characteristics that make them less suitable for building foundations, or a base for pavement. Where native soils are less suitable for development, additional engineering or replacement of soils is needed, which adds to development costs and maintenance.

Since most of the city is served by sanitary sewer, soils generally are not a significant constraint to development. However, there are poorly drained soils in low-lying areas, along creeks and around lakes that coincide with the wetland and floodplain areas of the city. Severe limitations associated with development on these organic soils are due to problems of drainage, low bearing capacity and frost action. A majority of soils within Portage are well suited for development. In general, loam, sandy loam and loamy sand soils are most common. Loamy soils are found primarily in the northern one-half of the city, sandy loam most commonly in the southeast quadrant, and loamy sand soils in the southwest quadrant.

These soils are, for the most part, well-drained. Physical limitations to development, where it occurs, exist because of excessive slopes.

Surface Water. Portage has seven lakes that account for 1,732 acres or 7.9% of the geographic area of the city. These include Austin, West and Hampton, as well as portions of Long, Gourdneck, Sugarloaf and Little Sugarloaf Lakes. The lakes continue to be a valuable natural resource in the city and protection of lake water quality is essential. A combination of monitoring regulations and public education can help limit adverse impacts from storm water runoff and prevent wastewater leaching from on-site septic systems and sanitary sewer leaks. Best management practices are used to protect streams and bodies of water from soil erosion resulting from storm water runoff (Soil Erosion and Sedimentation Control Act), pre-treatment of storm water prior to infiltration or discharge, when applicable (Storm Water Design Criteria Manual) and all dwellings and businesses within the city are required to connect to the municipal sanitary sewer, where available.

Floodplains. Flooding of streams and lakes can cause environmental damage and pose a threat to safety and properties. **Map 3, Natural Features** identifies the flood-prone areas of the city associated with the 100-year floodplain. Only agricultural, recreational, and limited accessory uses are permitted in those areas. The flood-prone areas are identified by the Portage Creek Flood Hazard Analysis[1] and the Federal Emergency Management Agency (FEMA) Flood Hazard Boundary Maps.

Land Resources. Portage contains significant land areas that have remained relatively undisturbed. Collectively, these areas are not only significant in size but also demonstrate a wide variety of natural habitats. Several kinds of grassland, forest, and wetland environments are found. Such environmental diversification results in a wide array of wildlife including a number of rare plants and animals, and significant populations of game animals such as deer and turkey. These natural areas provide educational, recreational, aesthetic, and wildlife preservation benefits with minimal maintenance costs.

Natural areas are primarily located in the southwestern quadrant of the city, although several are located in the north-central and southeastern sections. Lands in the vicinity of Hampton and Sugarloaf lakes are primarily under State ownership and are used as game areas. Bishop's Bog Preserve is a wetland area under public and multiple private ownership. In the southeast quadrant, Mandigo Marsh and the West Lake Nature Preserve also demonstrate significant and unique natural resources. Both of these areas are under public ownership.

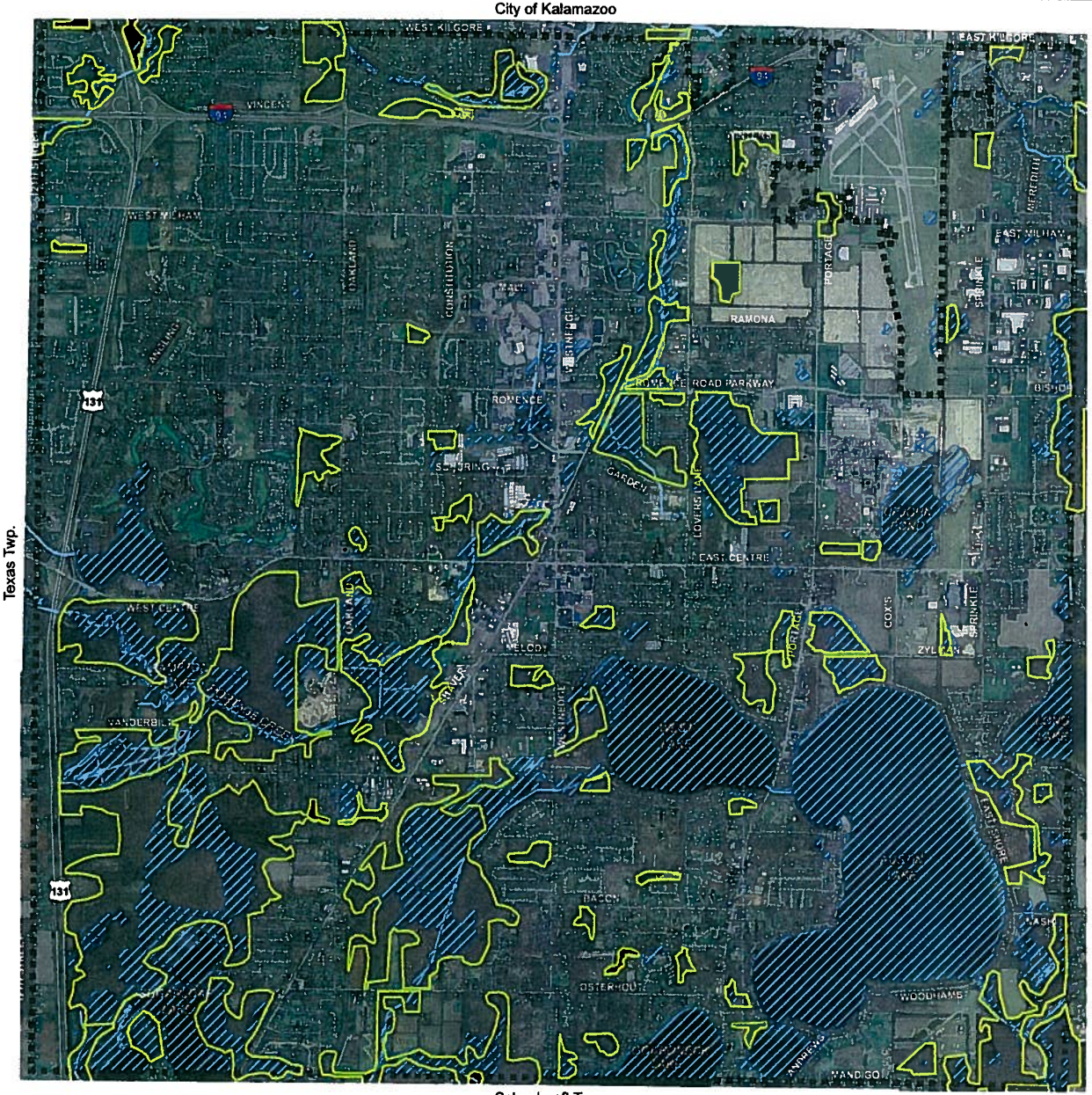
Key natural areas include:

- **West Lake Nature Preserve:** This 110-acre park preserve along West Lake boasts a variety of upland, wetland, marsh, woodland and sensitive woodland area with unique plant species and animal habitats. There is over 1,400 feet of frontage on West Lake which is primarily a wetland bog. The marsh habitat within the interior of the preserve is ideal for waterfowl.

- **Bishop's Bog Preserve:** A 145-acre site north and northwest of Schrier Park. Bishop's Bog, the largest "relict" bog in southern Michigan, has been registered with the Nature Conservancy. It is uncommon for this type of bog which harbors a number of rare plants to be found in southern Michigan. A linear trail connecting Schrier Park, Bishop's Bog, South Westnedge Park and the West Lake Nature Preserve allows for passive nature study without disturbing this unique environment. Bishop's Bog Preserve continues to be a site used by local and regional educators for study due to the unique environmental attributes.

[1] Flood Hazard Analysis, Portage Creek, Kalamazoo County, Michigan U.S. Department of Agriculture, Soil Conservation Service.

City of Kalamazoo



Texas Twp.

Pavilion Twp.

Schoolcraft Twp.

Map 3
City of Portage
Natural Features

- Wetlands
- Streams
- Wooded Areas (> 5 acres)

0 2,500 5,000 Feet

Note: This map is intended to depict the general location of natural features and to serve as a guide for community-wide planning. This map does not create any legally enforceable presumptions regarding whether property that is or is not included on this map is or is not in fact a regulated wetland or floodplain. There may be areas not shown on this map that are subject to regulation. This map should not be considered a substitute for on-site field inspections which are necesssary to delineate the precise boundaries of protected natural features.

Data Sources: Base Information - City of Portage, MDNR (MIRIS), 2006 Aerial Photography

- **Mandigo Marsh:** A historically well-known wetland area on the southwest corner of Austin Lake. A large portion of Mandigo Marsh was purchased by the City of Portage to ensure permanent protection. Comprising about 40 acres, the marsh is home to a wide variety of marshland birds and other types of waterfowl, and harbors an unusual assembly of plants that are peculiar to this area. Mandigo Marsh has been classified by the Nature Conservancy as an example of a coastal plain marsh community, which is common to the Atlantic coast. The community and many of its characteristic plant and animal species are far removed -- often thousands of miles -- from the main range along the Atlantic coast, likely nature's happenstance associated with early plant migration and changes in geologic and weather conditions. Many of these species are listed by the State of Michigan and are protected under the Michigan Endangered Species Act.

- **State Game Area:** The Gourdneck State Game area, which encompasses nearly 1,555 acres in Portage, is located in southwest Portage from Centre Avenue into Schoolcraft Township to the south. The Michigan Department of Natural Resources owns and maintains this land area for limited hunting and fishing opportunities. The large expanse of land will remain open and undeveloped for the foreseeable future.

  The State game area consists of three separate tracts in Portage. The primary tract south of Vanderbilt Avenue is separated from two smaller tracts on Centre Avenue by private property on the north side of Vanderbilt Avenue and around Hampton Lake. The two smaller tracts along Centre Avenue are likewise separated by private property between Centre Avenue and Hampton Lake.

Sensitive Land Areas. The City of Portage completed a sensitive land areas inventory in November of 1995 to improve its capability in considering natural resources protection during development review and long-term planning. **Map 3, Natural Features** identifies lands within the city where there are unique or otherwise important resources, or where human activities could adversely impact resources on adjacent lands.

Few Michigan cities contain the quality and diversity of wetlands found in the City of Portage. One hundred sixty-one individual wetland complexes were identified within the city, which include forested wetlands, marshes, bogs, fens, and wet meadows, representing all of the important types found in Southern Michigan. In addition to threatened plant and animal species in some of the wetland complexes, the wetlands are also important to local groundwater recharge and as wildlife habitat.

The sensitive land areas include:

1. All wetlands larger than five acres or connected with a lake, pond, or stream are protected under Part 303 (Wetland Protection) of the Michigan Natural Resources and Environmental Protection Act (NREPA), Act 451 of 1994, as amended. This state law prohibits filling, dredging, or draining of the wetlands without a permit. However, it does not prohibit other types of alternatives such as tree and brush removal.

2. All lands within 200 feet of Portage Creek and other water bodies are protected from dredging and filling without a permit by Part 301 (Inland Lakes and Streams) of NREPA, Act 451 of 1994, as amended. This law, along with Part 91 (Soil and Sedimentation Control) of NREPA, Act 451 of 1994, as amended, also restricts most construction activities within 500 feet of the ordinary high water mark. Surface water runoff from some types of developments is also controlled under the federal Clean Water Act as amended in 1987.

3. The 100-year floodplain is delineated on the FEMA Flood Insurance Rate Maps. Although primarily aimed at discouraging potential loss of property due to floods, the FEMA-mapped floodplain also represents a topographically defined area where activities could add sediment or other pollutants to Portage Creek or other water bodies in the city.

As part of the 1995 inventory, sensitive areas were identified as high sensitivity, moderate sensitivity and low sensitivity, respectively:

1. High Sensitivity - Areas containing or considered extremely important to protecting resources of city-wide importance. Loss or degradation of such an area would represent a significant reduction in the city's natural resources.

2. Moderate Sensitivity - Lands with resources of local importance or serving as buffer areas protecting locally important resources. Loss or degradation of such an area would result in a significant reduction in landscape diversity, and the cumulative loss of such areas could seriously reduce the natural resources base in the city.

3. Low Sensitivity - Areas containing natural resources of a type recognized by environmental planners and managers as generally important or serving as buffer zones protecting important resources. Loss or degradation of such areas would not necessarily negatively impact the city's natural resource base, but certain development activities in these areas could harm important resources.

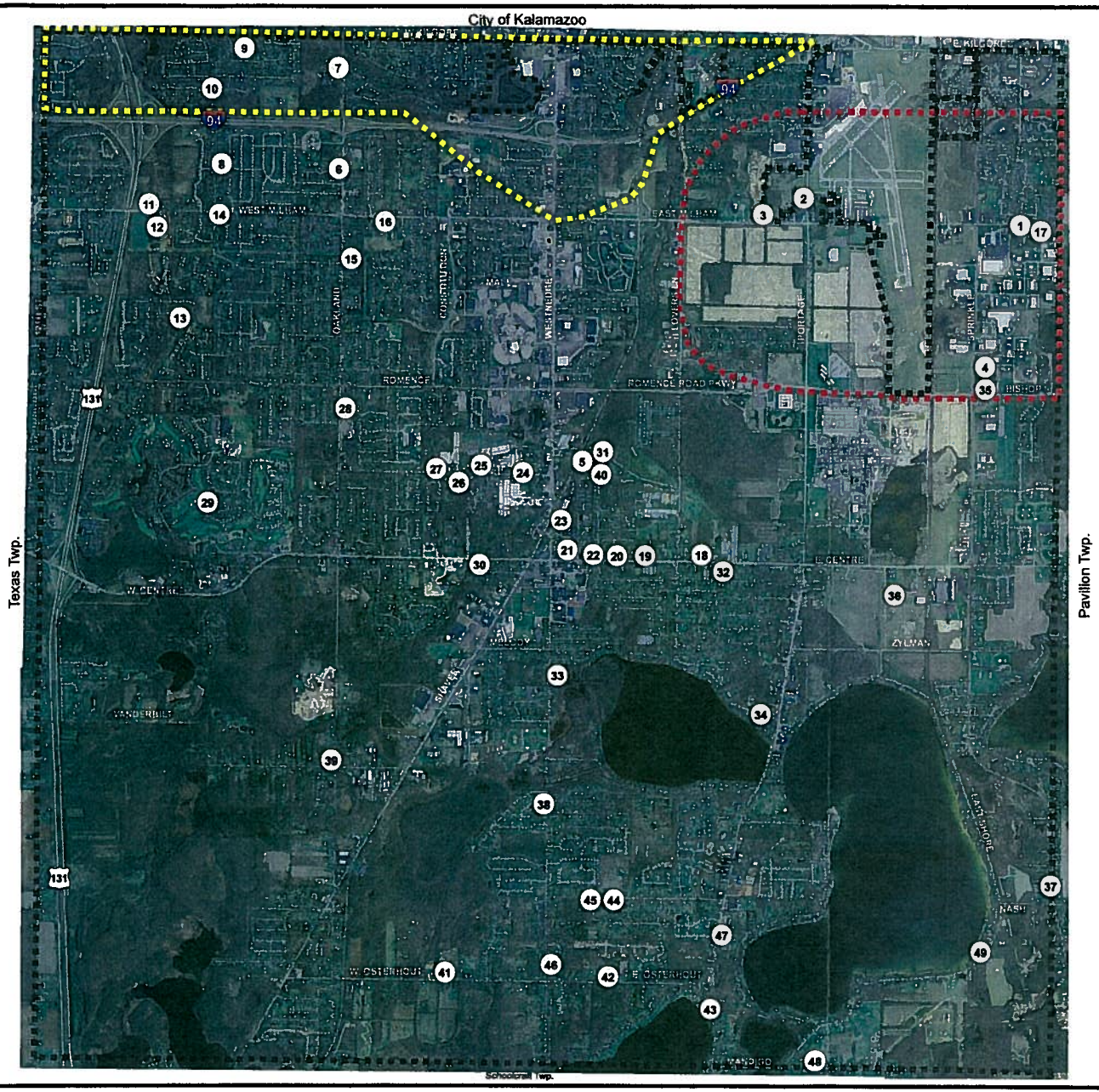
Historical Resources

Archaeological Sites. The Potowatomi Indians are known to have inhabited Portage prior to the first settlers. They were related to the Ottawas and Chippewas farther north and all three cultures are thought to be descended from the Algonquin tribe, which inhabited large areas of New York and Canada.

Portage was one of the favored areas of the Potowatomis because one of their larger villages, known as Indian Fields, located in the vicinity of the Kalamazoo/Battlecreek International Airport. The village had the navigational advantage of falling on the basin divide of the Kalamazoo River and St. Joseph (of Lake Michigan) River. This area is shown on **Map 4, Historical Sites** as an archaeological sensitive zone. Other areas that have the potential to produce historical artifacts are designated on Map 4 as potential sites.

A continuing recommendation in this 2007 update is that an archaeologist should be consulted before construction begins in any undisturbed areas where there is a high likelihood of locating archaeological artifacts. An archaeologist should be contacted if artifacts are found during construction in previously distributed areas.

Historical Sites. The City of Portage is a distinctive city with a rich history. **Map 4, Historical Sites** shows 49 historic district homes/sites. The homes not only serve as monuments to the past, but enrich the aesthetic quality of the city today and offer unique contributions to the architectural quality and diversity of the community. The non-renewable nature of these cultural resources, however, reflects the need to ensure their preservation. These sites should be carefully taken into consideration when future planning decisions are made within these areas.



Map 4
City of Portage
Historical Sites

Archaeological Sites

Potential Sites

Sensitive Zone

1 4415 E. Milham (1895)
2 5830 Portage (1850)
3 2027 E. Milham - Indian Fields Cemetery (1832)
4 6851 S. Sprinkle (1850)
5 7334 Garden Ln. (1846)
6 5720 Oakland (1873)
7 5134 Oakland (c. 1890)
8 5719 Angling (1852)
9 5029 Angling (c. 1890)
10 5260 Angling (1868)
11 3910 W. Milham (1873)
12 3821 W. Milham (1859)
13 6638 Angling (1870)
14 3321 W. Milham (1850)
15 6235 Oakland - District #2 School (1864)
16 1705 W. Milham - Dry Prairie Cemetery (1835)
17 4416 E. Milham (c.1905)
18 1521 E. Centre (c. 1915)
19 903 E. Centre (1915)
20 515 E. Centre (1853)
21 214 Brown (c. 1900)
22 505 E Centre (1927)
23 7737 Westnedge - Portage Central Cemetery (1894)
24 618 Schuring (c. 1910)
25 702 Shuring (c. 1900)
26 904 Schuring (c. 1910)
27 1124 Schuring (1900 & 1920)
28 7119 Oakland (c.1850)
29 7706 Innisbrook (1870)
30 8021 Oak (c.1926)
31 W. Centre at Shaver Rd - Portage Grain Elevator (1930)
32 1612 E. Centre (c. 1900)
33 8643 Westnedge (1920)
34 2106 Forest (c. 1900)
35 6869 S. Sprinkle (1892)
36 8007 Cox's - District #6 School (1927)
37 9844 S. Sprinkle (c. 1850)
38 9426 Westnedge (1870)
39 2112 Vanderbilt (1878)
40 10219 Oakland - District #8 School (1856)
41 922 W. Osterhout (1853)
42 703 E. Osterhout (1920)
43 10630 Portage (c. 1900)
44 704 Bacon (1870)
45 506 Bacon - District #7 School (c. 1860)
46 10327 Westnedge - Portage South Cemetery (1858)
47 10209 Portage (1870)
48 2663 Mandigo (1865)
49 10234 East Shore (c. 1918) barns (c. 1880)

0 2,500 5,000 Feet

N

Implementation Strategies

A number of strategies can be considered to help implement the objectives outlined in this chapter:

- ✓ Use planned development and/or cluster zoning to preserve key natural features on sites.
- ✓ Continue public awareness efforts for homeowners on what they can do to protect the quality of the natural resources.
- ✓ Continue to implement Best Management practices during the design and construction of private and municipal development projects to protect land and water resources.
- ✓ Encourage redevelopment of brownfield sites as a method to remediate environmental contamination.
- ✓ Research and review Zoning Ordinance alternatives designed to encourage preservation of environmentally sensitive areas.
- ✓ Continue to consider natural features and waterfront setbacks in the Zoning Ordinance.
- ✓ Consider available options involving the State Game Area if the State ever declares the area as excess property, as the city could facilitate/determine the most appropriate uses.
- ✓ Continue to support the Environmental Board in their efforts and programs to protect and improve environmentally sensitive areas in the City of Portage.
- ✓ Continue to support the Historic District Commission in their efforts and programs to preserve historic structures and sites in the City of Portage.

Chapter 8 – Transportation

For many communities, transportation and access have the potential to significantly influence the location, type and intensity of land use activities. A review of the existing land use map in **Chapter 3** illustrates how the development pattern in the City of Portage has been greatly influenced by the street pattern and proximity to US-131 and I-94.

The Vision

The link between transportation and land use is visible in the historical development pattern of Portage. Managing this "link" to ensure safe and efficient traffic flow has been an important community-wide goal for nearly 30 years as identified in several planning and citizen-based visioning documents. The box to the right includes the transportation vision statements/goals from the **1981 Comprehensive Plan, Portage 2000 Report, Portage 2020 Report, 1996 Comprehensive Plan and 2002 Comprehensive Plan.** The most recent citizen-based visioning project, **Portage 2025**, concluded in April 2007. Through the collective vision of many Portage volunteers, the following Transportation vision statement was developed:

Portage will have a safe, efficient, multi-modal, optimally-accessible and environmentally-friendly transportation system that connects the region.

Due to the forethought of city officials and citizen volunteers, current and future Portage residents enjoy and will continue to enjoy an excellent motorized and non-motorized transportation network.

1981 Comprehensive Plan

- Provide for the safe and efficient movement of people and goods utilizing all components of the City's transportation system.

Portage 2000 (1981)

- Develop an overall plan of street construction which protects environmental concerns.
- Develop a system of pathways through the community with the motive of encouraging safe, economical, non-motorized modes of transportation, and promoting safe pedestrian movement within the city.

Portage 2020 Report (1991)

- As Portage matures and broadens its residential and commercial base, it will require a viable transportation system that allows for an efficient flow of traffic. In addition, in 2020 and emphasis will be placed on public transportation and traffic support systems to alleviate traffic congestion.

1996 Comprehensive Plan

- A balanced and coordinated, multi-modal transportation system for the movement of people and goods throughout the community in a safe, efficient manner.
- A transportation system adequate to accommodate the initial and ultimate development of Portage.
- Effectively use existing transportation system capital investments.

2002 Comprehensive Plan

- Create a safe, balanced and coordinated multi-modal transportation system adequate to accommodate the ongoing growth and development of Portage.

Land Use/Transportation Linkage

Transportation routes and access provide opportunities for development. In addition to transportation routes and access, other factors which influence development decisions include the availability of land, development costs, convenient access to emerging employment centers and other period-specific social and cultural factors. Residential growth typically facilitates other types of land use activities including commercial uses needed to support a growing population. Larger scale regional commercial centers were also attracted to Portage as a result of the growing population base and market throughout Kalamazoo County and convenient access provided by I-94 and US-131. Increasing traffic volumes along major thoroughfares will continue to attract businesses to the commercial areas of the rapidly growing Portage community.

While a variety of factors involving available land, development costs, convenience, and labor markets have historically influenced industrial activities, development patterns remain principally related to transportation and access. Older industrial uses have typically located near rail lines, while most newer industrial uses along with offices have developed along major roadways and freeways. This development trend is readily apparent in Portage with industrial and other intensive land uses occurring along major street corridors, on major streets with interchange access to freeways and interstates, and also proximate to the airport.

During the past 30+ years, the City of Portage has invested heavily in the transportation network to meet the needs of a growing community through the ten year Capital Improvement Program that is updated annually. Roadway (re)construction projects have improved the capacity and traffic operations to and through the community including residential areas, commercial corridors and the employment areas. Several of the more recent projects include construction of boulevards designed to enhance traffic flow, safety and appearance; roadway projects designed to preserve the residential character of existing neighborhoods and at the same time address traffic flow and safety; and intersection improvements and traffic signal installations intended to address economic development activity in addition to improving aesthetics and traffic operations. Significant efforts continue to be made toward a citywide non-motorized system of sidewalks, bicycle lanes and multi-use pathways.

Investment in the transportation network is intended to ensure a comprehensive motorized and non-motorized system which preserves the quality of life for residents and also facilitates a successful business climate. As noted in **Chapter 2, Goals and Objectives**, the future vision for Portage involves creation of a "...safe, balanced and coordinated multi-modal transportation system adequate to accommodate the ongoing growth and development of Portage". Thus, recommendations are provided both for the street system and toward continued improvements for other modes of transportation such as walking, bicycling or use of transit. A convenient, congestion free, safe and multi-modal transportation system will continue to be an important goal for the community.

While Portage has control over most of the streets within the city, cooperation from other agencies is needed. Sections of Kilgore Road are under the jurisdiction of the City of Kalamazoo and South 12th Street and Sprinkle Road are under the jurisdiction of the Kalamazoo County Road Commission. The Michigan Department of Transportation and Federal Highway Administration controls the allocation of federal and state dollars for transportation improvements involving US-131 and I-94, and also for major streets within the community. Federal and state funds are coordinated through the Kalamazoo Area Transportation Study (KATS), in which Portage is an active member of the KATS Policy and Technical committees. KATS also maintains a computer simulation model that projects future traffic volumes based on land use. Updates of that model are based on land use plans. The City of Portage transportation documents are integrated with the KATS Long Range Transportation Plan for Kalamazoo County. KATS also develops an annual list of transportation projects eligible for funding based on a variety of criteria required by the state and federal governments.

Roadway System

Portage has taken a comprehensive approach to management of the transportation system. While road widening projects and intersection improvements remain an important element, the city continues to apply other approaches to reduce traffic demand and improve flow. These include the provision of options to automobile travel and ways to shorten the number or length of vehicle trips. These approaches, described later in this chapter help address traffic issues in conjunction with other more traditional improvements.

Functional Street Classification

Streets can be defined based on a functional classification, using factors such as capacity, traffic volumes, length, spacing from other streets and the types of traffic served (shorter versus longer distance and the percentage of trucks, for example). In theory, major streets designed to move traffic are classified as arterial or collector streets, while streets designed to provide access to adjacent land uses with little or no through traffic are classified as local streets. In reality, many roadways may serve both functions in varying degrees.

The City of Portage functional street classification is consistent with the requirements of Michigan Public Act 51 which is the state law that annually distributes transportation funding to units of government for

maintenance and construction of roads and support of transit systems. The functional classification illustrated on **Map 5, Functional Street Classification** takes into account the annual state funding criteria as well as local land use patterns and land development regulations. The functional street classification is also generally consistent with the National Functional Classification (NFC) developed by Federal Highway Administration and is illustrated on **Map 6, National Functional Classification**. The NFC is used to determine local eligibility for federal funds regarding roadway construction projects. Some minor differences exist between Map 5 and Map 6 based on eligibility requirements.

The local functional classification categories are summarized below. A more detailed set of criteria, a list of streets by classification, recommended cross sections by classification and current traffic counts can be found in **Table C-1, C-2, C-3** and **C-4** in **Appendix C**. All city streets are considered "urban" within the Kalamazoo Metropolitan area by the state and federal road agencies for purposes of planning and funding.

- **Interstates/Expressways.** Interstates/expressways serve most of the longer distance travel to and through the Kalamazoo County urban area and thus are designed to carry the highest traffic volumes. The designated interstates/expressways in the city are I-94 and US-131 both of which are under the jurisdiction of the Michigan Department of Transportation.

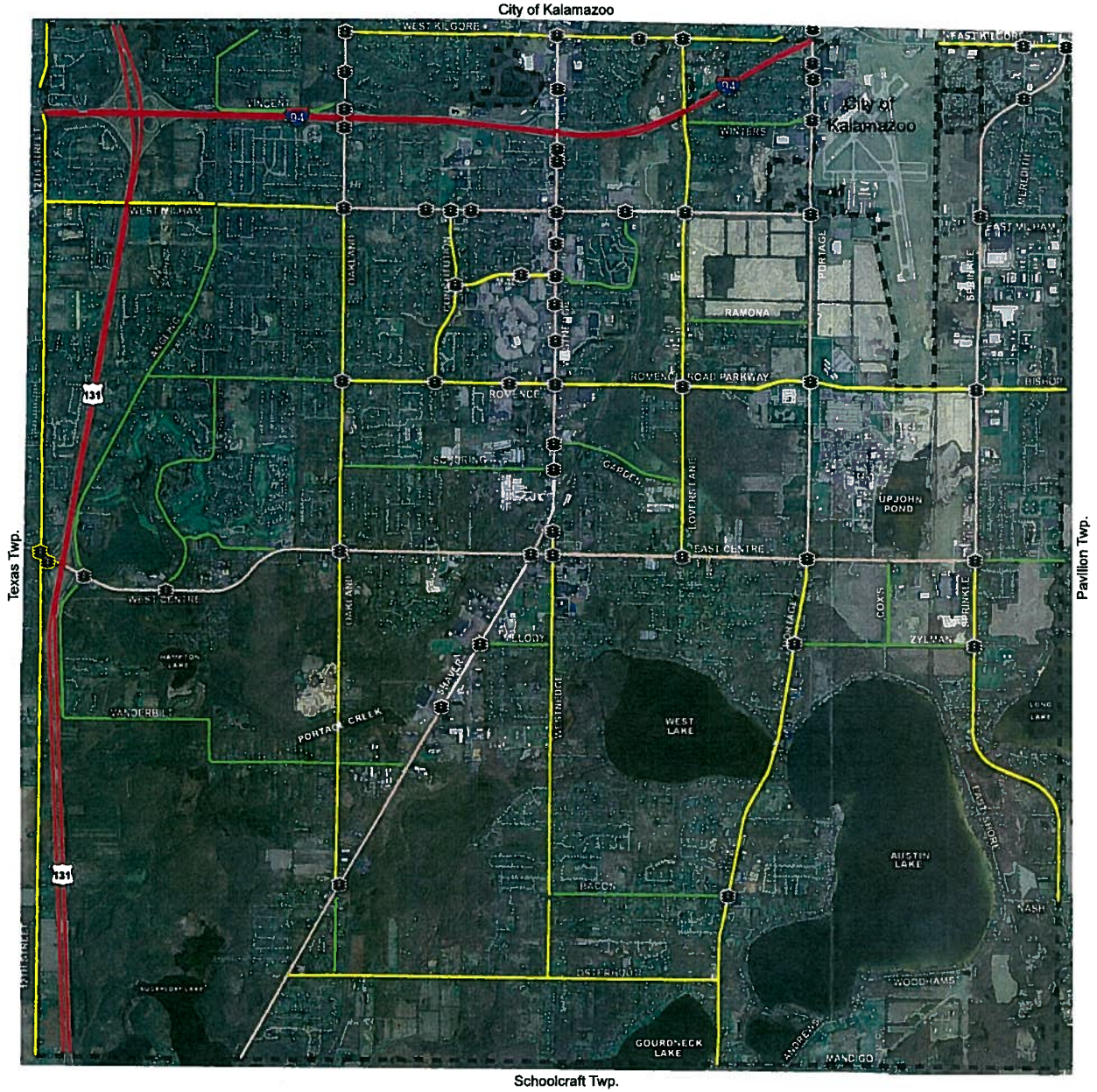
- **Major Arterials**. Major arterials serve trips of greater length and often have links to the expressways through interchanges and thus move large volumes of traffic through the city or to and from major destinations within the city.

- **Minor Arterials.** This functional class serves trips of moderate length and moderate volumes, usually with a lower design speed than the major arterials. Minor arterials are intended to provide links to and between the major arterials, but have more emphasis on access to adjacent land uses. Ideally, these streets should not penetrate identifiable neighborhoods.

- **Collector Streets.** These streets serve as a link between local streets and arterial streets. Collector streets provide both access and traffic circulation within residential, commercial, and industrial areas. Moderate to low traffic volumes are typical, but they may have slightly wider pavement or design speeds than the local streets.

- **Subcollector Streets** - Subcollector streets are those streets within a subdivision or development which collect traffic from streets interior to that subdivision or development. These streets are normally major ingress and egress avenues for the development area. Because subcollector streets are determined on a case-by-case basis associated with specific development proposals and receive Act 51 funding, **this functional class of street is <u>not</u> part of the Major Thoroughfare network.**

- **Local Streets.** Local streets make up the highest percentage of streets in the city. The primary purpose is to move traffic from adjacent land uses to the arterials, sometimes via a collector street. Design speed is typically low, as are volumes. Through-traffic on these streets is discouraged. Because these streets are developed in association with specific development proposals, **this functional class of street is <u>not</u> part of the Major Thoroughfare network.**



Map 5
City of Portage
Functional Street Classification

Street Classification

- Interstate / Expressway
- Major Arterial
- Minor Arterial
- Collector
- Traffic Signal
- City Boundary

Note:
-Subcollector and local streets are not part of the Major Thoroughfare network and not identified on the map.

-Refer to text and appendix "C" for description of categories.

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N

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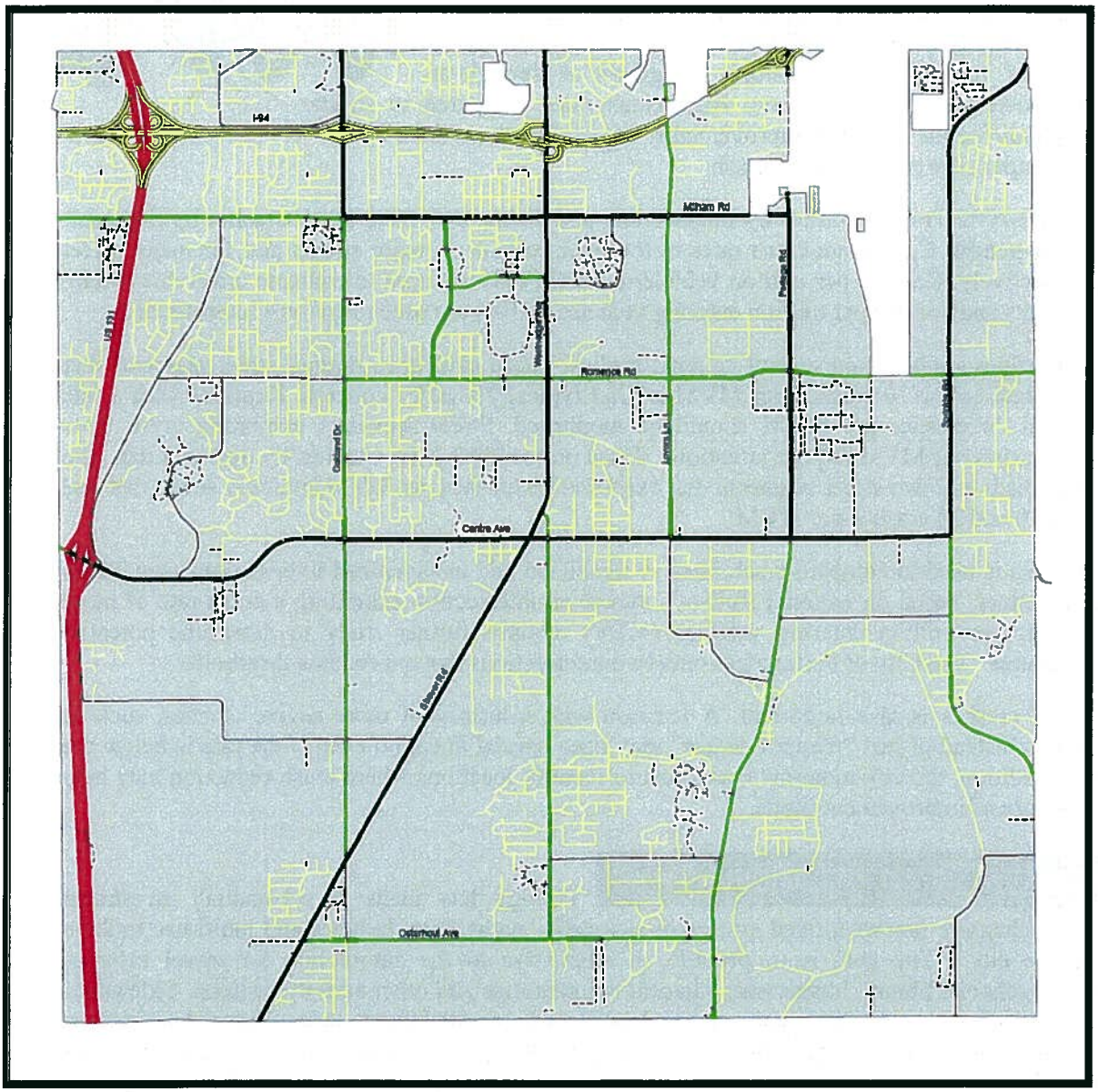
Map 6



National Functional Classification

N

Legend

- Uncoded
- Urban Interstate
- Urban Other Freeway
- Urban Other Principal Arterial
- Urban Minor Arterial
- Urban Collector
- Urban Local

KATS KALAMAZOO AREA TRANSPORTATION STUDY

Crashes

Traffic accidents, simply termed "crashes" by traffic engineering professionals, are one factor used to identify problems in the street system that may require correction. The number of crashes is compared to the number of vehicles traveling along a segment or through an intersection to determine the crash rate. High crash rates compared to similar locations may indicate the need for improvements, especially where there is a trend for a particular type of correctable crash.

Table C-5, 2003-2005 Traffic Crashes by Intersection, and **Table C-6**, 2003-2005 Crashes by Segment, contained in **Appendix C**, indicate crash rates at the intersections of major streets and for major street segments, respectively. Crashes per million vehicle-miles (MVM) are used to estimate crash rates along roadway segments and crashes per million entering vehicles (MEV) are used to analyze intersections.

Crash rate guidelines are based on several national studies. Those guidelines suggest street segments that exhibit a crash rate below 10 crashes per MVM are not typically a major concern, locations with a rate between 10 and 20 crashes per MVM should be monitored. Street segments exhibiting crash rates exceeding 20 crashes per MVM require attention. Based on the 2003-2005 Crashes by Segment data, the City of Portage had only two street segments that exceeded 20 crashes per MVM and only seven that had a rate between 10 and 20 crashes per MVM.

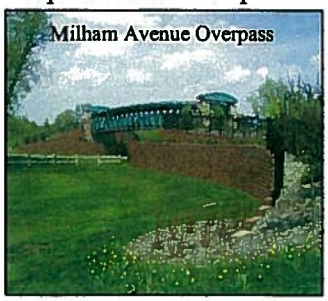
A similar process is used to compare crash rates at signalized and unsignalized intersections (see **Table C-5**). The guidelines, based on national studies, indicate an intersection exhibiting a crash rate of more than 2.5 crashes per million entering vehicles (MEV) requires further study to determine potential corrective measures. The City of Portage has only two intersections that exceed this threshold.

The severity of crashes is also important. A location with a history of more severe crashes, such as personal injuries instead of just "fender benders" may need special attention even if the rate is below the thresholds. In addition, the city monitors crash data to identify locations where crash reduction may help justify expenditure of improvement funds.

Non-Motorized Transportation and Other Modes

Portage has made a substantial investment toward a comprehensive non-motorized system of sidewalks, paths, bicycle lanes and multi-use trails to serve the entire city. The goal is to provide an alternative to the automobile for travel between neighborhoods, schools, library, businesses, adjacent communities and other activity centers. Sidewalks, bicycle lanes and where appropriate, paths and multi-use trails, parallel streets where the right-of-way is sufficient. Other non-motorized facilities and multi-use trails pass through parks, along a stream or elsewhere outside of the street system to provide variety and encourage use. The overall non-motorized system offers recreational benefits and the opportunity for social interaction that contributes to the overall quality of life in the city.

As evidence of the commitment to non-motorized facilities, the city has completed and has planned several major trail additions which include:


Milham Avenue Overpass

- Portage Creek Bicentennial Trail, Phase II (2000). This approximate one mile extension of the Portage Creek Bicentennial from East Milham Avenue to Kilgore Road included construction of the Milham Avenue Pedestrian Overpass. This overpass is a key connector for the Bicentennial Trail and is a national award-winning overpass that facilitates pedestrian and bicycle travel over a major thoroughfare.

- Millennium Trail (2001). This approximate one mile trail extends from the Portage Creek Bicentennial Trail west to Millennium Park through the consolidated drain storm water treatment facility.
- Northwest Portage Bikeway, Phase I (2005). The first phase of the Northwest Portage Bikeway (NWPB) consists of a two-mile, 12-foot wide asphalt trail along a Consumers Energy transmission line that bisects the city from east to west. Located in the most populated area of the community, NWPB represents another critical leg in the multi-use trailway system serving the community.
- Northwest Portage Bikeway, Phase II (2008). The second phase of the NWPB will extend the trail from Angling Road to McGillicuddy Lane on the west end and from Constitution Boulevard to Romence Road around the perimeter of Crossroads Mall.

Walkway/Bikeway Plan

Planning for alternative transportation modes is essential in a growing community and enhances quality of life characteristics. Linking neighborhoods, activity centers and adjacent communities via pedestrian, bicycling and other non-motorized facilities is the focus of the Walkway/Bikeway Plan element. The substance of this planning initiative is explained in the following paragraphs.

Pedestrian Facilities. The goal of the walkway system is to include sidewalks along both sides of all streets to accommodate and encourage pedestrian activities, particularly where separation from higher speed automobiles is most important. An important element of a functional walkway system is to provide additional sidewalk linkages along both sides of all local residential streets. The linkages are for the purpose of connecting existing and new residential neighborhoods and to connect these residential areas to commercial and industrial (employment centers) land uses, as appropriate, in the interests of providing an alternative method of travel to the more typical vehicular/motorized transportation options.

Although sidewalks may not be planned (or constructed), other acceptable alternate facilities may be provided that are suitable for multiple, non-motorized activities and purposes. These alternative facilities will typically consist of multi-use trails.

The city will continue to seek available funding to construct sidewalks and to fill in sidewalk "gaps" in areas that have already developed. Sidewalks will also be added when construction or reconstruction of streets is planned and during installation of public water and sewer utilities, as appropriate.

It is recognized that in addition to sidewalks, special purpose paths may also be designed and used. These special purpose paths are distinct from other forms of non-motorized facilities in that these facilities may be established through environmentally sensitive areas and could involve facilities that consist of temporary platforms, bark/wood chips and crushed stone, materials that are particularly suited for walking activities.

In addition to the installation of sidewalks and special purpose paths where appropriate, the city continues to address improvements to the pedestrian environment and safety in other ways. Site plans can be designed to ensure that the pedestrian will feel comfortable walking within a site or from one site to another. Site plans should include a convenient connection between the public walkway and the building entrances. Other examples include improving traffic signalization specifically for pedestrian crossings and in some cases, pedestrian overpasses.

Bicycle Facilities. Designing bicyclist infrastructure to meet the mobility and safety needs of people using non-motorized, wheeled equipment needs to be multi-faceted in order to adequately address the skill levels and interests of a diverse population/customer base. No single type of "bicycle" facility will meet all user-type needs. Within the community, bicycle enthusiasts would be provided with more than one option to meet the travel/use needs of potential users.

A variety of non-motorized bikeway facilities are planned to meet the various user needs and situations in the city. Generally, the goal is to connect community activity centers, adjacent communities and landmarks, as well as shopping and employment centers with facilities for bicyclists. As an example, for recreational and other purposes the city has developed several bicycle routes (a series of connecting bicycle lanes and so designated by appropriate route markers) in the community and identified as "The Portage Bikeway".

An additional example of the variety of bicycle facilities available in the community involves "widened vehicle travel lanes", particularly in major street corridors. Widened vehicle travel lanes are provided for bicyclist enthusiasts who are confident riding in traffic and who are more experienced commuter cyclists using major streets for directness, speed and convenience. Wider lanes are a treatment used to make major streets more bike-friendly for experienced cyclists, minimize real and perceived operating conflicts and maintains motor vehicle capacity of these major roads. Such widened travel lanes are not recommended to be signed as bicycle routes, however.

The existing bicycle facilities, together with future, planned additions to the overall system, are shown on **Map 7, Bikeways**.

Walkway/Bikeway Facility Terms

The facilities associated with the walkway and bikeway system within Portage include the following:

- **Sidewalks.** Five-foot wide concrete surfaces on both sides of a major thoroughfare for the purpose of providing pedestrian circulation. Four-foot wide concrete sidewalks on both sides of all local residential streets. Sidewalks are normally separated from the curb of a street or paved road shoulder by several feet of grass or brick pavers.


Multi-use Trail

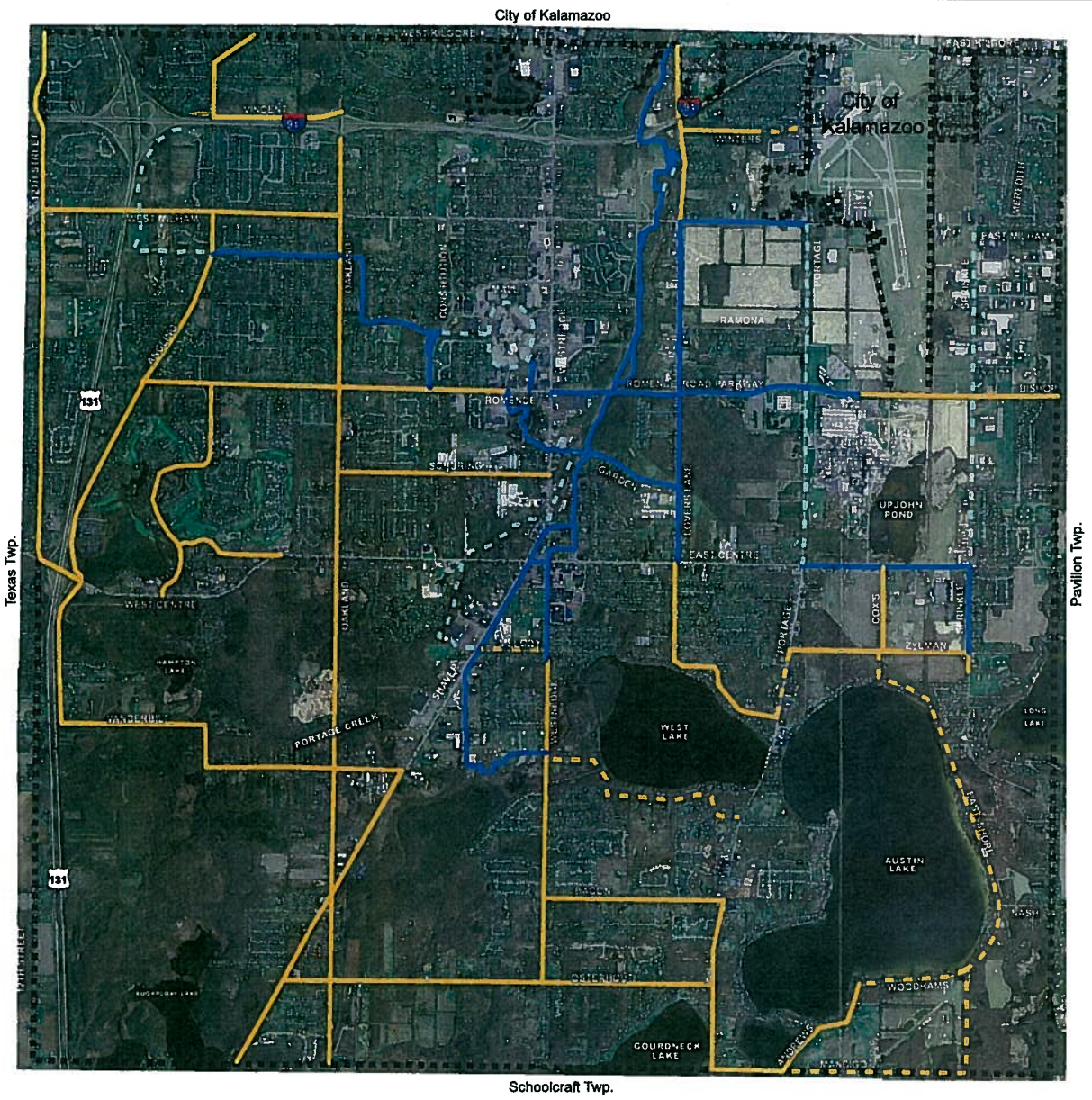
- **Paths**. A special purpose walking facility generally a minimum of four-foot wide and constructed of bark/wood chips, crushed stone or floating platform and used within environmentally sensitive and wooded areas.

- **Multi-Use Trails.** An 8-12 foot wide asphalt or concrete surface within a park, public space or along a public street for the purpose of providing both pedestrian travel and for use by people with non-motorized wheeled equipment/gear.

- **Bikeways.** A bikeway includes a paved facility intended for non-motorized use and specifically designated for bicycle travel. Such facilities consist of an on-road bicycle lane and may be along streets equipped with curbing, or streets equipped with a paved shoulder. Parking motor vehicles in a bikeway with curbing is prohibited.

For the purpose of planning and designing bikeway and multi-use trail facilities in Portage, the City Administration will utilize the AASHTO *Guide for the Development of Bicycle Facilities* and the *Michigan Manual of Uniform Traffic Control Devices* (MMUTCD) when constructing specific facilities.

Because sidewalks are planned to be provided along both sides of all major and local residential streets, except where alternative pedestrian-oriented facilities are provided, a map showing future, planned pedestrian facilities is not needed.



Map 7
City of Portage
Bikeways

- Existing Bikeways
- Future Bikeways
- Existing Multi-Use Trail
- Future Multi-Use Trail
- City Boundary

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Metropolitan Transportation

Portage is provided with bus service by Kalamazoo Metro Transit. Following approval of a millage increase by Portage voters in 2006, the Metro Transit routes in Portage were expanded to four fixed-route/fixed-schedule bus routes that provide service to the primary residential, commercial and industrial areas of the city. These four City of Portage routes are highlighted on **Map 8, Metro Transit Routes**. Sidewalks and on-site pedestrian facilities can help make transit use more convenient and encourage its use. In addition, Kalamazoo County provides a Care-a-Van service. This carrier provides curb-to-curb service for elderly and handicapped persons residing in Portage to destinations within Portage or the Kalamazoo County area.

Regional Rail Transportation

Two rail lines are operational in the city, one runs north-south through the city, and the other serves the industrial area between Portage Road and Sprinkle Road. These rail lines provide freight service in the area. AMTRAK provides passenger service though a station in the city of Kalamazoo. The lines run east through Battle Creek, Ann Arbor and other cities of metropolitan Detroit. A separate line runs to Port Huron, generally along the I-69 corridor. All the lines run to Chicago where longer distance travel can be made throughout the nation. The speed of rail service is limited by the speeds allowed along the current tracks and the frequent conflicts with freight trains which have priority. A more exclusive passenger line, with higher speed capability, has been discussed along the Detroit to Chicago line for many years.

Regional Air Transportation

Kalamazoo/Battle Creek International Airport provides the area with air-carrier and charter passenger services as well as air cargo services. The airport has completed several runway/taxi-way improvements and plans to reconstruct the airport terminal are underway. Construction of the new terminal building is anticipated to begin in 2008.

Street and Corridor Character

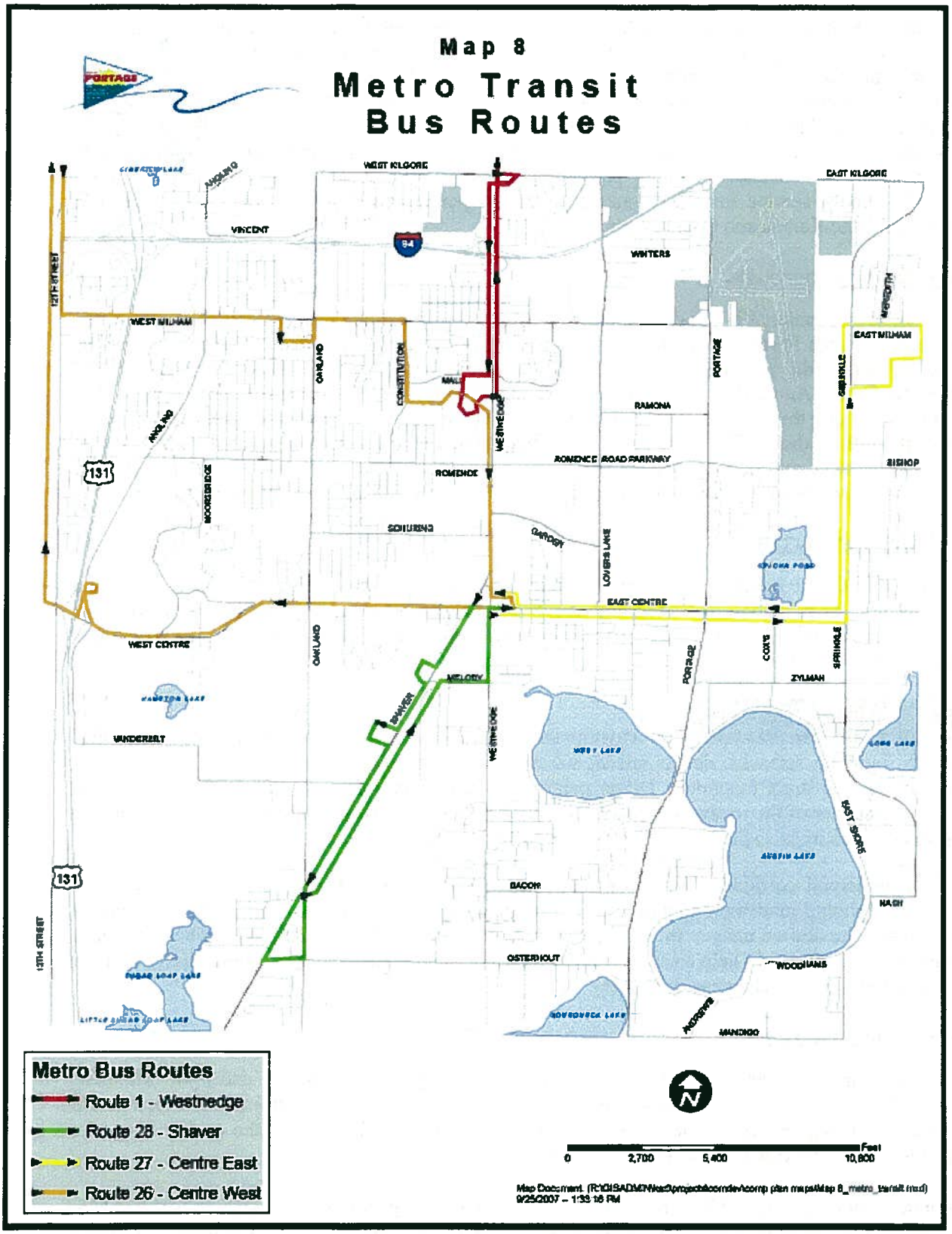
Street width and scale, presence of on-street parking and sidewalks, block length, building setbacks, design speed, street trees and even pavement markings and signs all contribute to how the street functions. Driver perceptions can affect vehicle speed and the care used in driving. The character of the roadway corridor as viewed by the motorist and by people using alternative transportation modes impacts the image of the community.

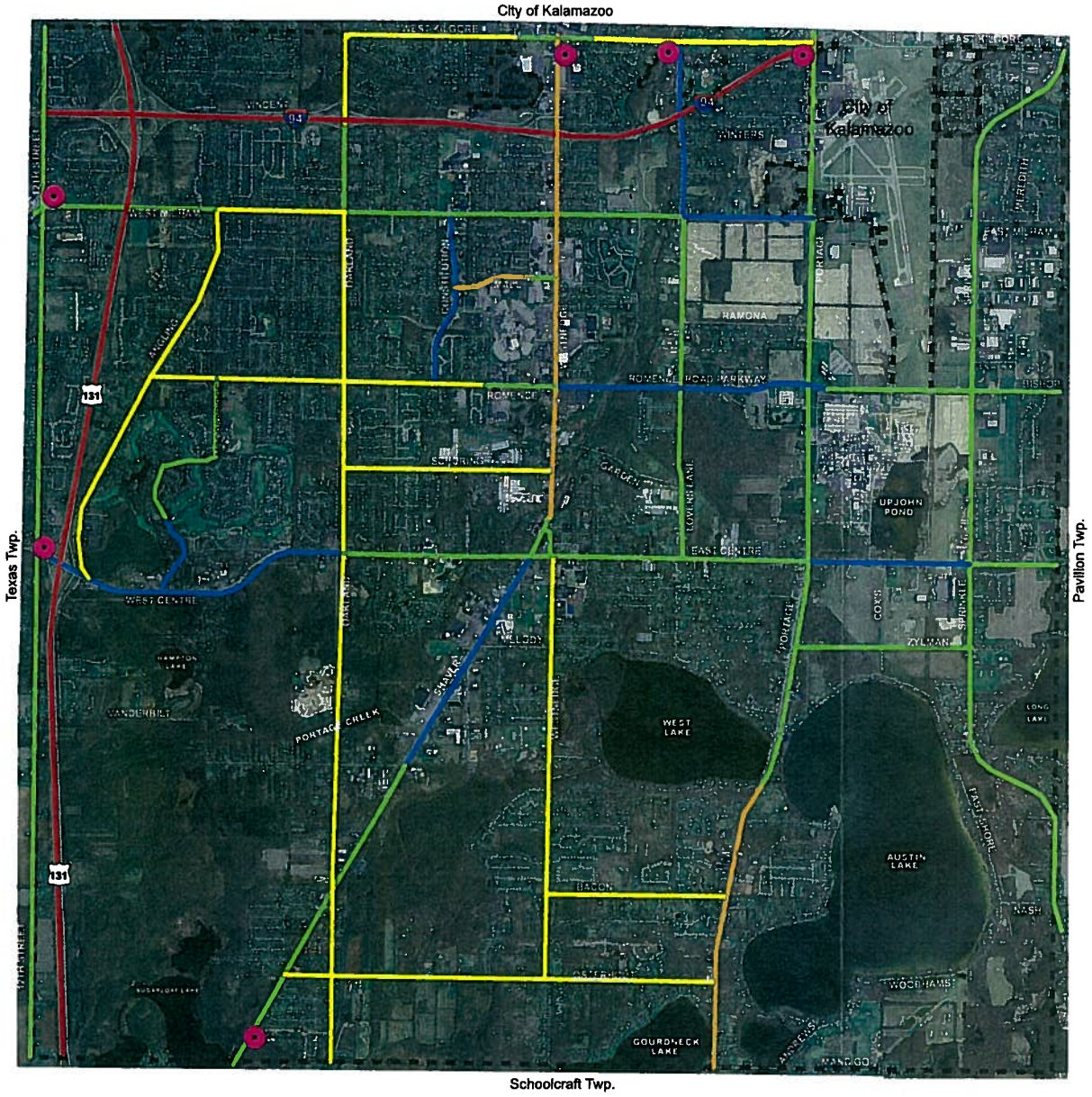
Successful commercial corridors should be free of unsightly clutter and easy to navigate. Streets in residential areas should intuitively encourage a lower speed. In some cases, the road design elements in the city reinforce the desired image: In other cases, improvements need to be considered. This Plan relies on a wide range of concepts to help ensure the future transportation system operates safely and efficiently, but also in context with the character of the city.

Expressway Corridor Views

An average of almost 120,000 vehicles a day pass through Portage along U.S. 131 and I-94. Motorists perceptions of Portage are largely created from views along the expressways or from their experience if exiting at the interchanges. A number of techniques will be used to help promote the quality image for the areas designated on **Map 9, Corridor Character**.

- Continue to work with the MDOT to ensure the ongoing widening and improvements to I-94 and U.S. 131 and use diverse materials for bridges and medians (not just standard concrete), extensive landscaping and appropriate lighting so the expressways contribute to the urban landscape.


Map 8
Metro Transit
Bus Routes
WEST KILGORE
EAST KILGORE
VINCENT
WINTERS
94
WEST MILHAM
EAST MILHAM
RAMONA
ROMENCE ROAD PARKWAY
ROMENCE
SCHUMAN
EAST CENTRE
WEST CENTRE
ZYLMAN
MELODY
VANDERBILT
BACON
OSTERHOUT
MANDOGO
131
Metro Bus Routes
Route 1 - Westnedge
Route 28 - Shaver
Route 27 - Centre East
Route 26 - Centre West
0
2,700
5,400
10,800
Feet



Map 9
City of Portage
Corridor Character

Corridors

Residential Conservation Corridor
Residential in character and appropriate for moderate improvements consistent with predominant residential neighborhood features.

Preservation Corridor
Corridors in need of minor improvements to preserve existing capacity, such as access management, intersection improvements or installation of medians.

Limited Access Boulevards
Limited Access Boulevards are roadways through traffic capabilities and/or limited access within residential, commercial or industrial areas or a combination thereof. Limited Access Boulevards are also designated as Preservation Corridors.

Correction Corridor
Corridors facing congestion, crash and design problems and in need of multiple actions to remedy existing and projected traffic problems such as widenings and median installation.

Expressway Corridor
Interstate corridors to be treated as a "Front Door" for the community to create more aesthetic views by utilitzing high quality road design and materials.

City Boundary

Key Community Entryways
A variety of identifying treatments are used at key entrances to the city. Treatments can also be used to identify key landmarks or areas and as "wayfinding" guides through the city.

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- Promote use of the state's standard freeway logo signs and informative signs along the expressways to help direct motorists to activity areas.
- Continue to apply access management and special zoning standards to help ensure uses near interchanges are well designed in terms of access, landscaping, lighting and signs.
- Treat uses located along the expressway as a "front door" to the community. Sites and buildings should be designed to project a quality image. This may involve special setbacks, requirements for building wall design, and specific expressway frontage landscaping. Loading and parking areas should only be permitted within this front door area if well screened or landscaped.

Entryways

Entryway features are used to announce key gateways into the city. Key gateways include the expressway interchanges and along select major streets near the city corporate limits. Entryway features may also be associated with certain natural features such as Portage Creek or the lake areas. Centers of activity in the city such as Portage Commerce Square, City Centre Area or the industrial corridors could also incorporate entryway features. Existing entryway locations are shown on **Map 9, Corridor Character**.

Current entryway features include welcome to Portage signs with landscaping and/or sculptures or other structural elements. The standard design has been developed and is used consistently, though not every element must be used at every entryway. The existing entryway feature network should be continued and enhanced and, when appropriate, expanded to include other gateways into the city .

Major Street Corridors

Travelers along the major streets encounter a diverse mixture of land uses and a range of physical characteristics. The range extends from the tree-lined residential street with sidewalks to commercial areas with a complexity of signs, parking, traffic controls, and many turning movements. Major institutional, research and industrial land uses usually fall between those two extremes of land use intensity.

Consistent with the approach of linking land use and transportation, the evaluation of the major streets was made from a corridor-wide perspective. A corridor is defined as not only the street, but also sidewalks, streetscape and the adjacent sites extending from building face to building face. A "zone of influence" that extends beyond those boundaries also affects the corridor, such as nearby major land uses with their primary access to the corridor.

Both land use and traffic characteristics along major streets were inventoried to help plan for the development and redevelopment. This evaluation considered potential land uses that would complement the existing character and the traffic carrying capability of the streets.

Using the "character" approach, the major corridors were classified into three categories (refer to **Map 9, Corridor Character**). Some corridors can be placed within one category. Other corridors exhibit varying characteristics and may change category from one segment to another. The category used to identify the major thoroughfare corridor or segment thereof is particularly important in identifying and programming planned actions to address problems. The three major thoroughfare corridor categories are described below and illustrated on the Corridor Character Map.

- **"Residential Conservation Corridors"** are streets which are residential in character, even where there are non-residential uses along the street. Generally, these are corridors with land use consistency and relatively low levels of activity/intensity. The quality and capacity of these streets need to be conserved through routine maintenance and enhancement. Improvements to these corridors should complement the adjoining residential area and include landscaping, streetscape and

street design amenities that reflect the residential neighborhood. Land use or other changes which would alter the current balance of activity and/or physical characteristics by increasing the intensity of use should be discouraged.

Residential Conservation Corridors typically should have two travel lanes with a turn lane at major intersections or access points. These streets should have bikeways and at a minimum five foot wide walkways along both sides which may be widened at locations that warrant more activity such as schools or parks. Traffic volumes along certain Residential Conservation Corridors have experienced increases in traffic to a point where limited roadway improvements are desirable to improve traffic flow and safety. Where some type of widening is justified, a maximum of three lanes should be used.

- **"Preservation Corridors"** are streets which pass through areas not yet fully developed, or where potential for significant redevelopment or conversions from one land use to another exists. These parcels should be reviewed with an eye toward preventing land use and thoroughfare conflicts through application of zoning and access management standards. Streets in this category have the opportunity to contribute positively to a well coordinated transportation system in a setting consistent with the desired character of the corridor.

- **"Limited Access Boulevards"** are roadways that provide through traffic capabilities and/or limited access within residential, commercial or industrial areas or a combination thereof. A boulevard design provides the capability to enhance traffic safety by separating opposing traffic through the use of raised median islands, provide controlled turning movements at designated locations and eliminate the problems associated with a continuous left turn lane. In addition to providing increased traffic and pedestrian safety, limited access boulevards encourage higher quality development activities such as technology/business park type uses. Limited Access Boulevards are also designated as Preservation Corridors.

- **"Correction Corridors"** are streets bounded primarily by commercial and/or industrial uses. Traffic volumes along several of these corridors are well above the capacity envisioned when the roads and right-of-way were conceived. Several of the expressway interchanges were not designed for the level of use today. Most of these corridors developed over a period of years under old street design, subdivision, and zoning/site plan design standards that did not contemplate today's volume and did not reflect the city's current design philosophy. These corridors are complex, with confusion, traffic congestion, intensive activity and/or an incomplete transportation network. These corridors are in need of multiple actions to correct problems that resulted from cumulative change over time.

  For the interchanges, corrective actions may be a redesign of the ramps and access around them. Corrective actions for the corridors can include select street widening, intersection improvements, or replacement of center turn lanes with boulevards. Boulevards increase capacity and typically have significantly fewer crashes than streets with a center turn lane. Attention to road design elements also needs to be considered with construction projects to improve the appearance of these corridors such as mast arm traffic signals, street trees, ornamental lighting, an improved environment for pedestrians and bicyclists and attractive public signs.

  Corrective actions also include improvements to sites that line the street. These may include access management such as closure or redesign of driveways and connection of uses through service drives, addition of landscaping, replacement of signs and lighting, on-site pedestrian improvements, screening of waste receptacles and loading areas and so forth. Some of these corrective actions will occur gradually over time as land uses change. The zoning ordinance should assure site plans are reviewed when uses change or expand so that upgrades to the site features can be applied.

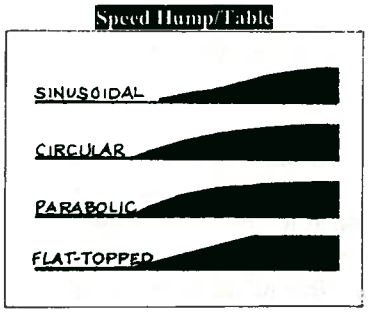
Traffic Calming

Residents expect low volumes of traffic and low speeds within neighborhoods. The increase in how frequently people drive, width of some streets and other factors may cause neighborhood traffic safety and related concerns.

Traffic calming measures cause drivers to slow-down and be more attentive. Traffic calming is a way to visually and physically impede speeding in residential areas. The physical change in the road parameters and the psychological change in the "feel" of the road reduce the speed of vehicles. Some of the most common traffic calming devices include:

- **Speed humps**. Vertical constraints that reduce vehicular speed.
- **Speed tables**. Similar to speed humps but constructed with a table or flat portion in the center.
- **Street narrowing.** Curb modifications, channelization and sometimes landscaping features that narrow the street to a minimum safe width.
- **Angle points or chicanes**. Curbed horizontal deflections in the path of vehicle travel similar to street narrowing treatments. Trees are often used at the slow point to restrict driver vision and create a feeling of a "closed" street.
- **Boulevard slow points or channelization.** Centrally located islands that divide the opposing travel lanes at intersections or at mid-blocks.
- **Intersection diverters**. Improvements that partially close an intersection to limit the allowable turning movements and divert traffic.
- **Roundabouts**. Center islands that are used as a replacement for traffic signals and stop signs at intersections.
- **Perimeter treatments**. Visual and physical treatments, such as traffic signs or textured pavement, used to communicate a message to drivers entering a residential neighborhood.

Speed Hump/Table



Street Narrowing

Roundabout

Residential developers should be specifically encouraged to incorporate traffic calming measures during the planning and design phases of new residential areas. Where appropriate, these concepts greatly reduce future problems and will help maintain the value of the neighborhood. With regard to existing neighborhoods, "retrofitting" traffic calming measures may also be appropriate. For example, there may be complaints about cut-through traffic, especially when the adjacent arterial streets become congested and motorists begin seeking alternate routes. In some cases, the traffic problems are just a perception, but in other cases there may be a problem to address. Installation of stop signs is a common response, but studies have shown they are not always effective in producing desired results.

Street Capacity & Operational Improvements

Street capacity refers to the capability of a roadway to accommodate the expected traffic flow with an acceptable amount of delay, i.e. minimal congestion. Traffic engineers measure this capacity through a comparison of the volumes, usually during the peak hour, to the designed capacity. This determines the amount of average delay per vehicle. This

statistical analysis is then translated into a "level-of-service" from A-F or a "volume-to-capacity ratio" (V/C).

A V/C ratio of 0.90 to 0.99 indicates the facility is approaching capacity and improvements should be examined in the immediate future. A V/C ratio of 1.00 to 1.20 means that the facility is operating at capacity, has little capability of handling future traffic growth, is highly congested during the peak hours, and should be considered for capacity improvement. A V/C ratio over 1.20 indicates that the facility will likely break down during peak hours and capacity improvements should be in the planning or later stages. Ratios for select streets are shown in the appendix. Streets with current or projected poor traffic operations are designated for improvements. Actual traffic conditions, including crashes, will need to be frequently monitored to adjust the list of recommended projects in the Capital Improvement Program.

In addition to the analysis in this Plan, the KATS transportation model can be used to identify future traffic conditions based on land use and socio-economic factors. KATS is currently updating the model to project traffic volumes for the year 2030. The Major Thoroughfare Plan may need to be revised upon completion of the model update.

Based on the statistical analysis, street improvement projects fall into two major categories: Capacity Expansion Projects and Capacity Preservation Projects. Capacity Expansion projects include major roadway widenings that add through-lanes, new roadways, and new freeway interchanges. Capacity Preservation Projects include reconstruction without addition of lanes, signal improvements or enhancement actions such as bikeways, walkways, landscaping, and historic preservation. Pavement management, bridge maintenance and many types of safety improvements are included in the preservation category.

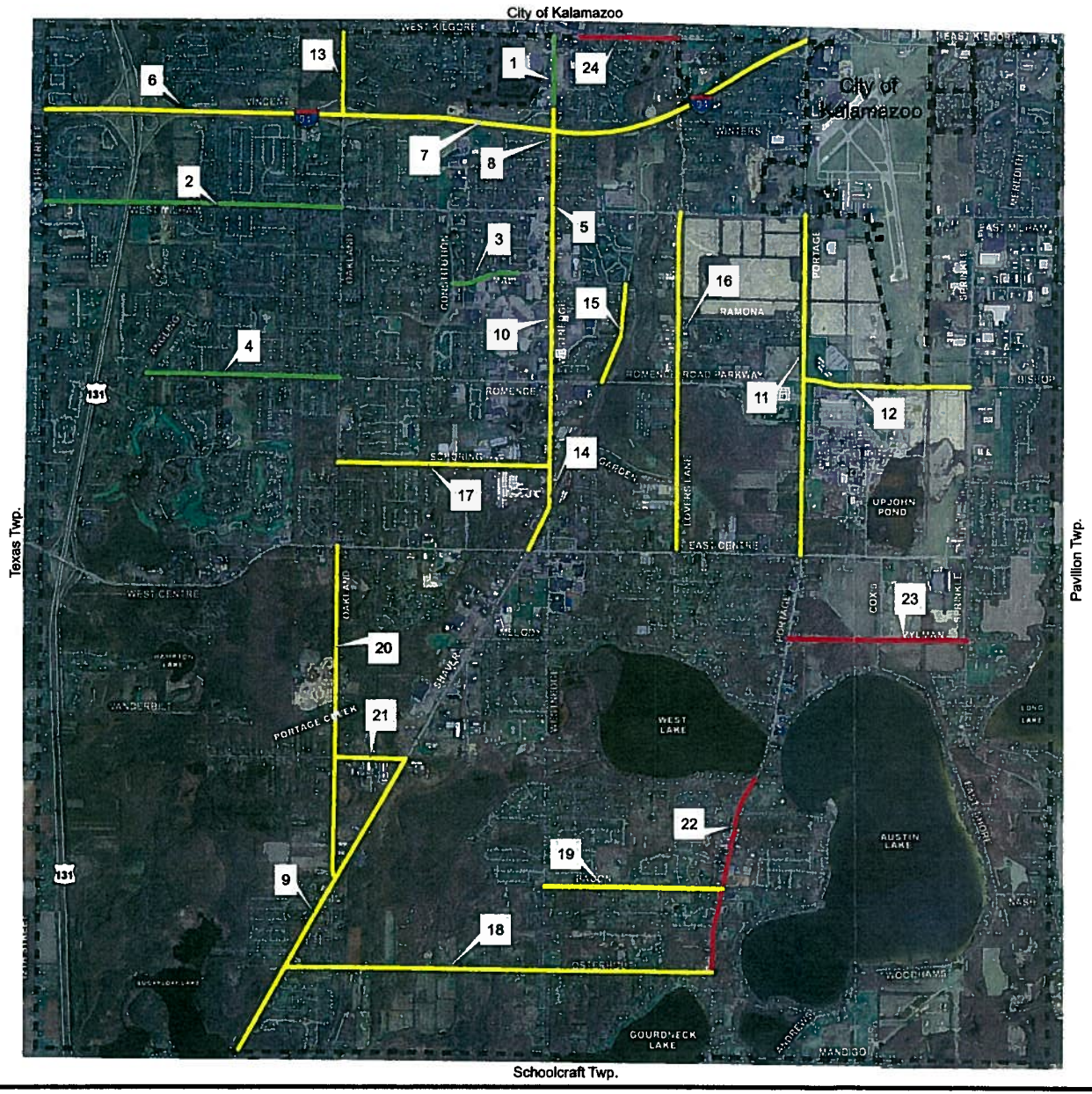
Projects eligible to be included in the KATS Long Range Plan must not only meet certain physical or traffic criteria, but must also meet funding criteria, i.e. a likelihood the projects will be funded with matching state and/or federal dollars. Thus, those projects would need either city funding or some special funding source. Major planned transportation improvements are illustrated on **Map 10, Planned Transportation Improvements**.

Among the desired transportation improvements most frequently cited by the public is the South Westnedge Avenue/I-94 interchange area. This interchange area is congested and tentatively scheduled for reconstruction during FY 2011-12. Because of the limited right-of-way, the design involves a single point interchange. This type of interchange fits into a confined area since the ramps terminate at a point below the bridge. This type of design is growing in popularity and has been used in other areas of Michigan as well as other states.

Transportation Management Techniques

In addition to the street improvements noted above, the city can help manage traffic through a variety of tools to reduce vehicle trips or lessen their impact. These various "transportation management" tools are described below.

The concept of transportation management is that many automobile trips can be eliminated by giving people other choices, such as transit or walking, which will help relieve the street system. So will a land use arrangement that shortens trips. Every driveway that is eliminated or redesigned will help preserve capacity and reduce potential for crashes. Current streets may be able to operate better with new technology, such as signals that respond to actual traffic conditions or informing motorists of alternate routes when there is congestion or a crash. All of these ideas collectively can help address the city's transportation needs in the future.



Map 10
City of Portage
Planned Transportation Improvements

Short Range (2007 - 2011)

1. Widen from 5 lanes to 6 lane boulevard
   (South Westnedge Avenue-Kilgore Road to Trade Centre Way)
2. Widen from 2 lanes to 3 lanes plus bike lanes on both sides
   (West Milham Avenue – Oakland Drive to 12th Street)
3. Widen from 3 lanes to 5 lanes
   (Mall Drive – J.C. Penny Drive to Constitution Boulevard)
4. Widen from 2 lanes to 3 lanes with bike lanes on both sides
   (Romence Road – Oakland Drive to Angling Road)

Mid - Range (2012 - 2018)

5. Widen northbound lanes from 2 to 3 lanes with boulevard
   (South Westnedge Avenue- Dawnlee Avenue to Milham Avenue)
6. Widen to 6 lanes
   (I-94 from 12th Street to east of Oakland Drive)
7. Widen to 6 lanes
   (I-94 from east of Oakland Drive to Portage Road)
8. Widen to 7 and 8 lanes with boulevard in conjunction with I-94 improvements
   (South Westnedge Avenue – Dawnlee Avenue to Trade Centre Way)
9. Widen from 2 and 3 lanes to 4 lane boulevard or 5 lanes
   (Shaver Road – Vanderbilt Avenue to South City Limits)
10. Widen northbound lanes from 2 lanes to 3 lanes
    (South Westnedge Avenue – Milham Avenue to Romence Road)
11. Widen from 4 lanes to 5 lanes or boulevard
    (Portage Road – East Milham Avenue to East Centre Avenue)
12. Widen from 2 and 3 lanes to 4 lane boulevard
    (Romence Road – Portage Road to Sprinkle Road)
13. Widen from 4 lanes to 5 lanes
    (Oakland Dive – I-94 to Kilgore Road)
14. Widen from 5 lanes to 7 lanes
    (South Westnedge Avenue/ Shaver Road – Romence Road to West Centre Avenue)
15. Construct new roadway, 4 lane boulevard
    (Newport Avenue Extension – Gladys Street to Romence Road Parkway)
16. Widen from 4 to 5 lanes
    (Lovers Lane – East Milham Avenue to East Centre Avenue)
17. Widen from 2 lanes to 3 lanes with bike lanes both sides
    (Schuring Road – Oakland Drive to South Westnedge Avenue)
18. Widen from 2 lanes to 3 lanes with bike lanes both sides
    (Osterhout Avenue – Shaver Road to Portage Road)
19. Widen from 2 lanes to 3 lanes with bike lanes both sides
    (Bacon Avenue – South Westnedge Avenue to Portage Road)
20. Widen from 2 lanes to 3 lanes with bike lanes both sides
    (Oakland Drive – West Centre Avenue to Shaver Road)
21. Widen from 2 lanes to 3 lanes with bike lanes both sides
    (Vanderbilt Avenue – Oakland Drive to Shaver Road)

Long Range (2019 - 2030)

22. Widen from 4 lanes to 5 lanes with bike lanes on both sides
    (Portage Road – Lakeview Drive to Osterhout Avenue)
23. Widen from 2 lanes to 4 lane boulevard
    (Zylman Road – Portage Road to Sprinkle Road)
24. Widen from 4 to 5 lanes
    (Kilgore Road – Old Kilgore Road to Lovers Lane)

0 2,500 5,000 Feet

N

Map Document: (R:\GISADMIN\karl\projects\comdev\comp plan maps\Map 9_Planned Transportation Improvements.mxd) 9/24/2007 – 12:23:17 PM

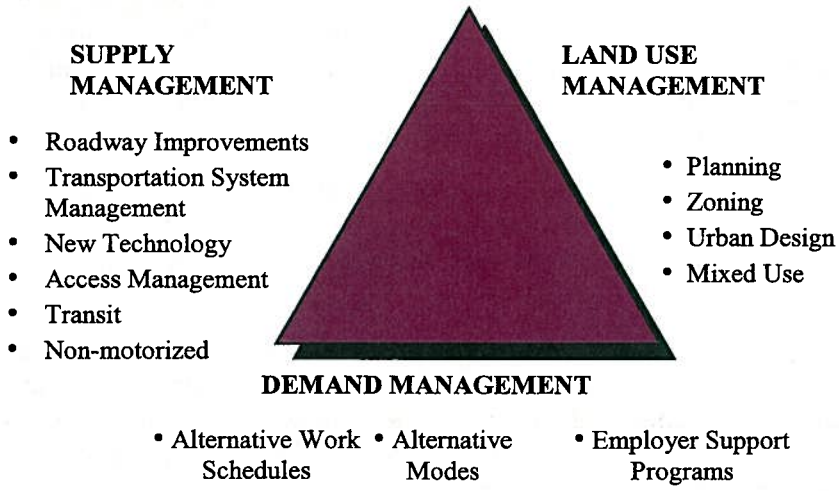
Another tool to help address traffic flow is to reduce the amount of travel demand, especially during the peak travel hours when congestion is most prevalent. This approach, called demand management, can involve working with major employers to revise shifts or offer flexible hours to reduce peak demands. Other ideas could be to encourage use of transit for employees by working with the transit agency on scheduling and to ensure site plans are designed in a "transit friendly" way.

Traffic Impact Analysis

One procedure to help ensure that traffic impacts are properly evaluated is to require a traffic impact study. Generally, a traffic impact study would be required for a rezoning or project that would generate 50 or more directional (one-way) trips in the peak hour or 500 trips in an average day.

A well prepared traffic impact study will also address site access issues, such as the potential to share access or use service drives. The study should analyze options to mitigate traffic impacts, such as changes to access or improvements to the roadway. In some cases, the developer may assist in funding improvements to help offset the impacts of the project. The traffic estimation figures can also be applied to the KATS model to determine impacts of larger scale projects and to keep that model up-to-date.

Driveway/Access Management



Widening and intersection improvements are not the only way to improve traffic operations along a street. One technique to help preserve capacity and promote safety while delaying or avoiding the need for widening is access management. Access management involves comprehensive controls to minimize conflict points, reduce the potential for crashes and help preserve the street's ability to carry traffic.

Benefits of Access Management

1. Reduce crashes and crash potential,
2. Preserve roadway capacity and the useful life of roads,
3. Decrease travel time and congestion,
4. Improve access to properties
5. Coordinate land use and transportation decisions,
6. Improve air quality, and
7. Maintain travel efficiency and related economic prosperity.

Source: Michigan Department of Transportation

Portage has adopted an access management ordinance as part of the Codified Ordinances. This ordinance applies to new development proposals, but is also used during road improvements and to correct existing access that does not meet the current requirements. A general review of access management concepts is provided below, which serves as a foundation for the Codified Ordinances.

- **Number of Access Points.** Reasonable access will be provided for each use. If direct access to the adjacent roadway is necessary, the number of

access points should be limited to one where possible. The number of driveways allowed along major streets affects traffic flow, ease of driving and crash potential. Every effort should be made to limit the number of driveways and encourage access off side streets, service drives, frontage roads, and shared driveways.

Certain developments generate enough traffic or have sufficient frontage to consider allowing more than one driveway. Where possible, these second access points should be located on a side street or shared with adjacent uses.

Basic Principles of Access Management

Six basic principles are used to achieve the benefits of access management:

1. Limit the number of conflict points,
2. Separate conflict points,
3. Separate turning volumes from through movements,
4. Locate traffic signals to facilitate traffic movement,
5. Maintain a hierarchy of roadways by function, and
6. Limit direct access on higher speed roads.

Source: Michigan Department of Transportation

- **Alternative Access.** Alternative access should be encouraged along arterials, such as shared driveways, rear service drives or frontage roads. Commercial developments and parking lots should be connected through front or rear service drives. Frontage drives, rear service drives, shared driveways, and connected parking lots should be used to minimize the number of driveways, while preserving the property owner's right to reasonable access. Certain turning movements should be limited, especially left turns, where safety hazards may be created or traffic flow may be impeded.

  In areas within one-quarter mile of existing or future signal locations, access to individual properties should be provided via these alternative access methods rather than by direct connection to a major arterial. Ideally, this should be through a rear service drive (a rear service drive has adequate depth for on-site stacking, compared to a "frontage" road).

  In the case of existing, proposed or recommended rear service drives, additional access to individual properties may be allowed through direct connection to the adjacent arterial street, provided that movements at these driveways are restricted to right turns into and/or out of the site, and are appropriately spaced as discussed later in this section.

  In areas where frontage roads or service drives are proposed or recommended but adjacent properties have not yet developed, the site should be designed to accommodate a future drive, with access easements provided. The city may temporarily grant individual properties a direct connection to an arterial road until the frontage road or service drive is constructed. This access point should be closed when the frontage road or service drive is constructed.

- **Driveway Spacing from Expressway Ramps, Public Street Intersections and Other Driveways.** The latest edition of Policy on Geometric Design of Highways and Streets published by American Association of State Highway and Transportation Officials, Transportation and Traffic Engineering Handbook published by the Institute of Transportation Engineers and/or the Access Management Guidebook published by the Planning and Zoning Center and Michigan Department of Transportation should be consulted for the applicable standards and guidelines.

Right-of-Way Preservation

Many of the streets in Portage were originally designed for much lower traffic volumes than they are expected to handle now or in the future. The right-of-way and development along several segments limits road widening, intersection improvements, installation of boulevards and/or the addition of desired bikepaths. Acquisition of additional right-of-way to accommodate desired improvements can delay projects and escalate costs. The advance right-of-way acquisition process also reduces later disruption to home and businesses that would otherwise need to relocate or redesign their site.

A cooperative effort to preserve right-of-way in advance of the planned roadway improvements could help address this issue. Three methods that could be considered are negotiations to donate lands during development approvals, advanced acquisition or preservation through clustering.

1. **Donation**. Landowners and developers often understand the benefits of donation of land needed for right-of-way. Land donation can expedite improvements that will benefit the landowner. A landowner may also be eligible for tax benefits through donation of dedication. In some cases, the city may wish to support variances from setbacks where the setback from the new right-of-way would create a non-conforming situation. Alternatively, the zoning ordinance could include special standards for such situations.

2. **Advance acquisition**. Traditionally, right-of-way is purchased after the improvement has been designed. Advanced acquisition could involve purchase at an earlier date when costs are lower. Some road agencies maintain funds to purchase right-of-way if a development is proposed where right-of-way will be needed in the future. Thus, the right-of-way can be purchased at a lower cost.

3. **Clustering**. The city might allow a developer to transfer the density that could occur in the future right-of-way to another location on the site through special zoning provisions.

Implementation Strategies

In order to help achieve the goals and objectives identified in the chapter, a number of actions and strategies can continue to be pursued and implemented.

- ✓ Annually review the progress on proposed road improvements in the Capital Improvement Program and KATS Transportation Improvement Program.
- ✓ Ensure adequate roadway facilities to accommodate new and expanded development through development project review.
- ✓ Pursue local and state funding to complete the planned bikeway and walkway systems.
- ✓ Require clear and convenient on-site pedestrian connections from the public walkway system to building entrances.
- ✓ Plan the development of walkway and bikeway facilities in conjunction with scheduled shoulder and strip-paving projects and with improvements to county roads.
- ✓ Continue to work with MDOT regarding improvements to the I-94 and US-131 corridors and interchange areas.
- ✓ Ensure all transportation projects, including expressways and city streets, are designed in consideration of aesthetics and image along with traffic and safety factors.
- ✓ Require traffic impact studies for certain projects to determine direct impacts, improvements needed and data for future planning.
- ✓ Update the Access Management Ordinance consistent with MDOT guidelines and continuing research by transportation organizations.
- ✓ Continue to pursue alternatives for improved traffic flow and safety such as new signal technology to respond to actual conditions and access management principles including parking lot interconnection and driveway consolidation.
- ✓ Continue to monitor traffic counts and crash data in conjunction with proposed roadway improvement projects.
- ✓ Consider advanced acquisition of right-of-way where needed (such as when a development project is submitted).
- ✓ Annually prepare the Major Thoroughfare Plan Status Report.
- ✓ Ensure transit friendly design in areas that are currently or have the potential to be served by transit.

Chapter 9 – Public Services

The availability of public services influences the development and redevelopment of land, protection of natural features, recreational opportunities, public safety and enhances the quality of life in the community. The City of Portage continues to invest in the public infrastructure to meet current and future demands. Public facilities and services offered within the city include:

1. Public Utilities
2. Public Safety Facilities
3. Recreational Facilities
4. General Government
5. Library Facilities (operated separately from municipal services)
6. Educational Facilities (operated separately from municipal services)

The importance of providing high quality public services has been a documented, community-wide goal for nearly 30 years. The box to the right includes public service related vision statements/goals from the **1981 Comprehensive Plan, Portage 2020 Report, 1996 Comprehensive Plan and 2002 Comprehensive Plan.** The most recent citizen-based visioning project, **Portage 2025**, concluded in April 2007. Through the collective vision of many Portage volunteers, the following vision statement was developed:

"Portage shall be a leading-edge city providing equitable state-of-the-art municipal services that ensure the highest quality of living and outstanding economic opportunities."

Each document reflects the value of high quality public infrastructure, facilities and services to current and future Portage residents and the efforts needed to maintain and expand these important community assets.

1981 Comprehensive Plan

- Provide for the development of an integrated municipal complex of functions and services located at the geographic center of the city, necessary to meet community needs.

Portage 2000 (1981)

- Ensure that Portage taxpayers receive the greatest benefit from the dollars expended for city services.

Portage 2020 Report (1991)

- The City of Portage must plan for the future to support positive growth and all of the elements required for a "world class community." Adequate utility infrastructure and well designed and flexible-use city and public buildings and related facilities are an integral part of the city's future success. Of equal or perhaps more importance are the issues of regional cooperation and privatization.

1996 Comprehensive Plan

- The efficient maintenance and expansion of utility systems to serve development while protecting the environment, improving water quality, protecting development from environmental hazards and providing recreational opportunities.
- Public water, sanitary sewer and storm water drainage systems adequate to accommodate initial and ultimate development of Portage.
- High quality community facilities (municipal, police, fire library, educational, cultural) to meet the projected changing needs, demographics and life styles and the health, safety and welfare of Portage residents.
- A variety of community facilities necessary to enhance community image and to contribute to a superior quality of life within Portage and the region.

2002 Comprehensive Plan

- Efficiently provide, maintain and improve public services necessary to support the needs of existing and future residents and businesses.

Public Utilities

From a land use planning perspective, the location and type of public sewer and water systems influence the location and type of development within a community. For example, high density or more intense land uses require public water and sanitary sewer service. Certain types of projects have special demands for high capacity utility lines or high pressure water systems or even specialized electrical service. Decisions concerning the expansion of public utilities must be made in order to accommodate service demands, as well as development and redevelopment activities. Importantly, for Portage, connection to the public sanitary sewer system helps protect valuable ground and surface water resources in the city.

Programming for sanitary sewer, water and drainage improvements to meet needs is provided through the Capital Improvement Program (CIP). The CIP is annually updated and includes ten years for planning/budgeting purposes. The CIP 2007-2017 CIP includes several water/sanitary sewer infrastructure projects to improve and expand these systems. Most of the city is served by both public

water and sanitary sewer systems (see **Map 10, Non-Service Areas**). The proposed level of investment to accommodate residential, commercial and industrial development and redevelopment in the next 10 years includes:

- $8.5 million in sanitary sewer improvements and expansions.
- $26 million in water system improvements and expansions.

Over the next 10 years, Portage plans to spend approximately $34.5 million to continue improvements to its water & sanitary sewer systems.

Sanitary Sewer System The sanitary sewer system consists of 227.3 miles of sewer main and 55 sewage lift stations. The system has a capacity of 10.8 million gallons per day while the average flow is 5.0 million gallons per day.

Future expansion projects are prioritized in consideration of the Comprehensive Plan and on-going evaluation of the system. Areas with potential failures due to infrastructure age or where groundwater contamination may occur are given the highest priority. Citizen petitions for service are also given high priority. Public sanitary sewers and new or expansion projects are reviewed annually by the Administration. Funding for planned improvements and expansions is proposed through various financing methods including the Sewer Enterprise Fund.

The 2007-2017 CIP proposes numerous operational improvements in anticipation of current and future demands placed on the sanitary system including:

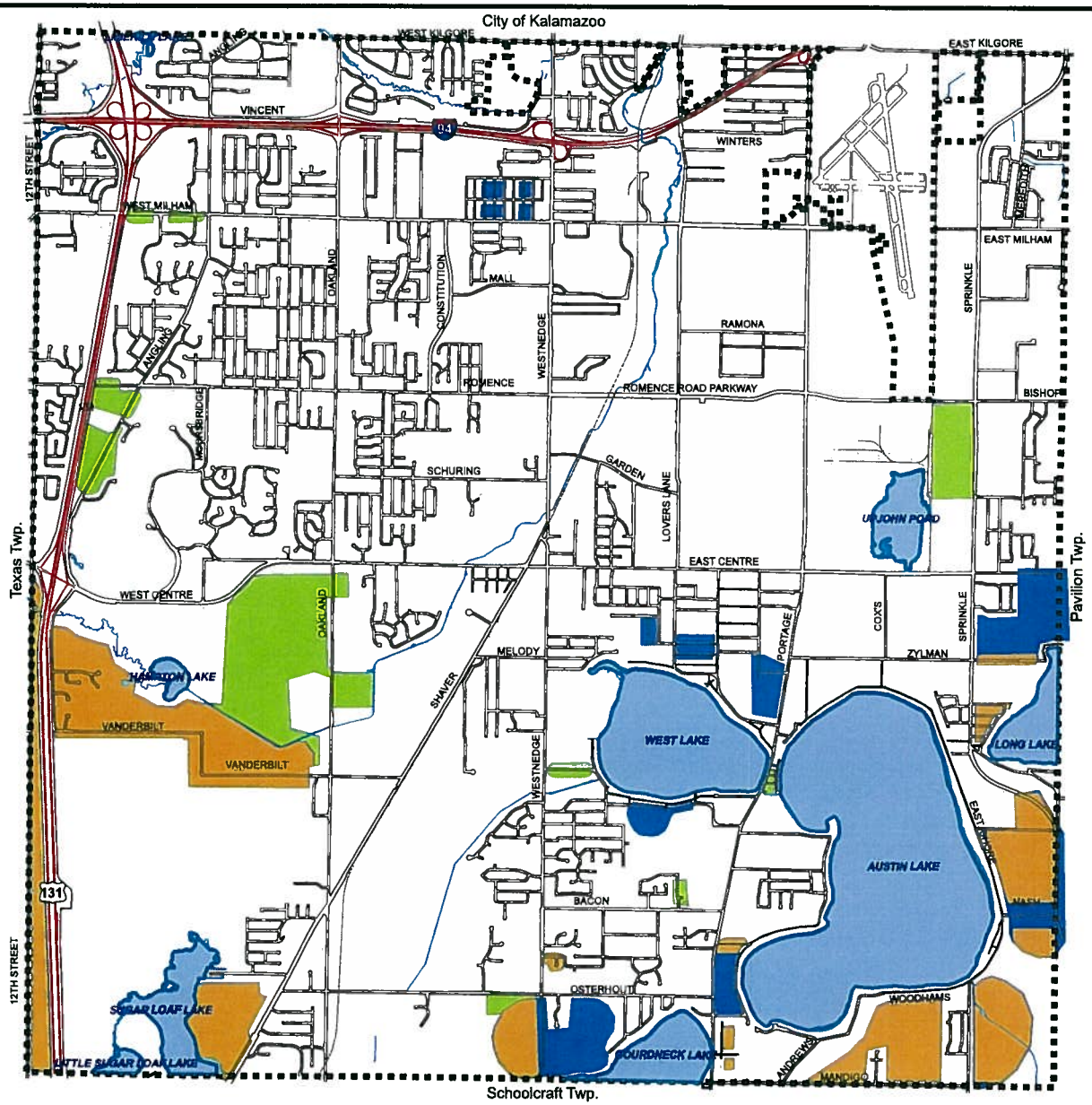
- Replacement/upgrade to the sanitary sewer control and monitoring system.
- Updated topographic mapping and oblique imagery of entire city.
- Main installations to provide sanitary sewer service in developing areas or in existing developed areas not previously served.

Water System The water system consists of 21 production wells, one 750,000 gallon elevated storage tank, one 1.5 million gallon elevated storage tank, and 240.3 miles of water main. The water system has a capacity of 22 million gallons per day, and the average production is 5.9 million gallons per day.

Public water system enhancements and expansion projects are also reviewed on an annual basis in the context of the recommendations in the Comprehensive Plan and also public health and public safety standards. Similar to sewer system improvements, various funding mechanisms are employed including resources of the Water Enterprise Fund.

The 2007-2017 CIP proposes numerous operational improvements in anticipation of current and future demands placed on the water system including:

- Replacement/upgrade to the municipal water control and monitoring system.
- Main installations to provide municipal water service in developing areas or in existing developed areas not previously served.
- Construction of arsenic, iron and manganese removal facilities at existing wellfield sites to meet new federal guidelines for public water supply systems.
- Additional water supplies to meet increasing demand and fire flow requirements.
- Construction of additional storage facility in northwest quadrant of city.



Map 11
City of Portage
Non-Service Areas

- Non-Serviced Water
- Non-Serviced Sanitary
- Non-Serviced Both
- Lakes & Streams

0 750 1,500 3,000 4,500 Feet

N

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An important element of the public water supply system is the wellhead protection program. The city updated wellhead protection in 2000 and received approval from the Michigan Department of Environmental Quality (MDEQ) in March 2001. The Wellhead Protection Plan calls for proactive development standards in identified wellhead protection areas, as well as public education for groundwater protection.

Storm Water Drainage The general hydrology of Portage is such that surface and subsurface drainage flows between the Kalamazoo River Basin, which runs through the central and northern portion of the city, and the St. Joseph River Basin, in the southeast part of the city. The drainage divide traverses the city in roughly an east-west line. The areas located north of this drainage divide drain into Portage Creek, which in turn flows into the Kalamazoo River. The areas located south of this drainage divide flow into Gourdneck Creek, which in turn flows into the St. Joseph River. The average annual precipitation is 37 inches, which generates in excess of 644 million gallons per square mile per year.

Recognizing the importance to accommodate storm water runoff and to prevent pollution of water resources, the City of Portage has acted to protect residents and businesses through the adoption of numerous best management practices as outlined in the following documents/programs:

- Storm Water Master Plan
- Storm Water Design Criteria Manual
- Storm Water Pollution Prevention Initiative
- Elicit Discharge Elimination Program
- Watershed Management Plan
- Wellhead Protection Plan

The City of Portage addresses storm water issues with an environmental focus and has been implementing water quality measures in advance of federally mandated rules. Water quality improvement measures include treatment before infiltration, installation of sediment cells, elimination/reduction of direct storm water discharges to surface water bodies, use of deicing alternatives to traditional road salt, ongoing water quality monitoring and considering innovative storm drainage techniques, where applicable. In 2001, approximately $4 million was invested to create a regional storm water collection and treatment facility involving Consolidated Drain No. 1 and surrounding retail/industrial development including Crossroads Mall. In 2005, approximately $2 million was invested to create the Storm Water Treatment Enhancement Project which collects and treats storm water runoff from the South Westnedge Avenue drainage area, north of Shaver Road, through a series of retention/treatment ponds and transfer channels prior to discharge to the Portage Creek.

The 2007-2017 CIP outlines current and future projects intended to address storm water discharges into open water bodies and also to improve the quality of ground water recharge areas including:

- Improvement to storm water collection systems.
- Improvement to storm water recharge areas.
- Eliminate and/or improve lake and creek direct storm water discharge connections.

Public Safety Facilities

Portage Fire Department The Fire Department is staffed by a total of 35 career firefighters, 18 on-call firefighters and two administrative staff (2007). There are presently three fire stations that provide fire protection service within Portage, which are:

Station #1 (Central), 7830 Shaver Road, is located in the City Centre Area at Shaver Road and South Westnedge Avenue across from City Hall. The 16,700 square foot building was built in 1984 and is

located on a 1.7-acre parcel. Station #1 houses administrative offices and training facilities as well as providing fire protection services for the central portion of the city.

Station #2, 6101 Oakland Drive, is located in the northwest quadrant of the city on Oakland Drive south of West Milham Avenue. The 6,900 square foot building was built in 1976 and is located on a 3-acre parcel. Station #2 generally provides fire protection services to the northwest area of the city.

Station #3, 8503 Sprinkle Road, is located on Sprinkle Road south of Zylman Avenue. The 7,600 square foot building was built in 1994 and is located adjacent to Ramona Park. Station #3 generally provides fire protection services to the east portion of the city.

A fire training facility is located on South Westnedge Avenue adjoining South Westnedge Park and a fourth fire station is proposed in the future within the south Portage area.

Portage Police Department The Police Department, established in 1964, was originally housed in a small section of City Hall. In 1965, the Department was moved to a two-story house located where the Police/Court Building now stands. The existing Police Court building was constructed in 1970 and contains approximately 15,000 square feet of floor area. The Police Department occupies most of the first floor of this two-story structure. Most of the upper floor and a portion of the first floor offices house the State of Michigan Eighth District – South Court. In 2005 a major renovation was completed of the Police/Court facility. The Police Annex was in part demolished due to the age and physical condition. The remainder of the Annex was connected to the Police Court building providing an additional 7,000 square feet of much needed space. The renovation added a state of the art Public Safety Communications Center, improved citizen contact areas, and training area.

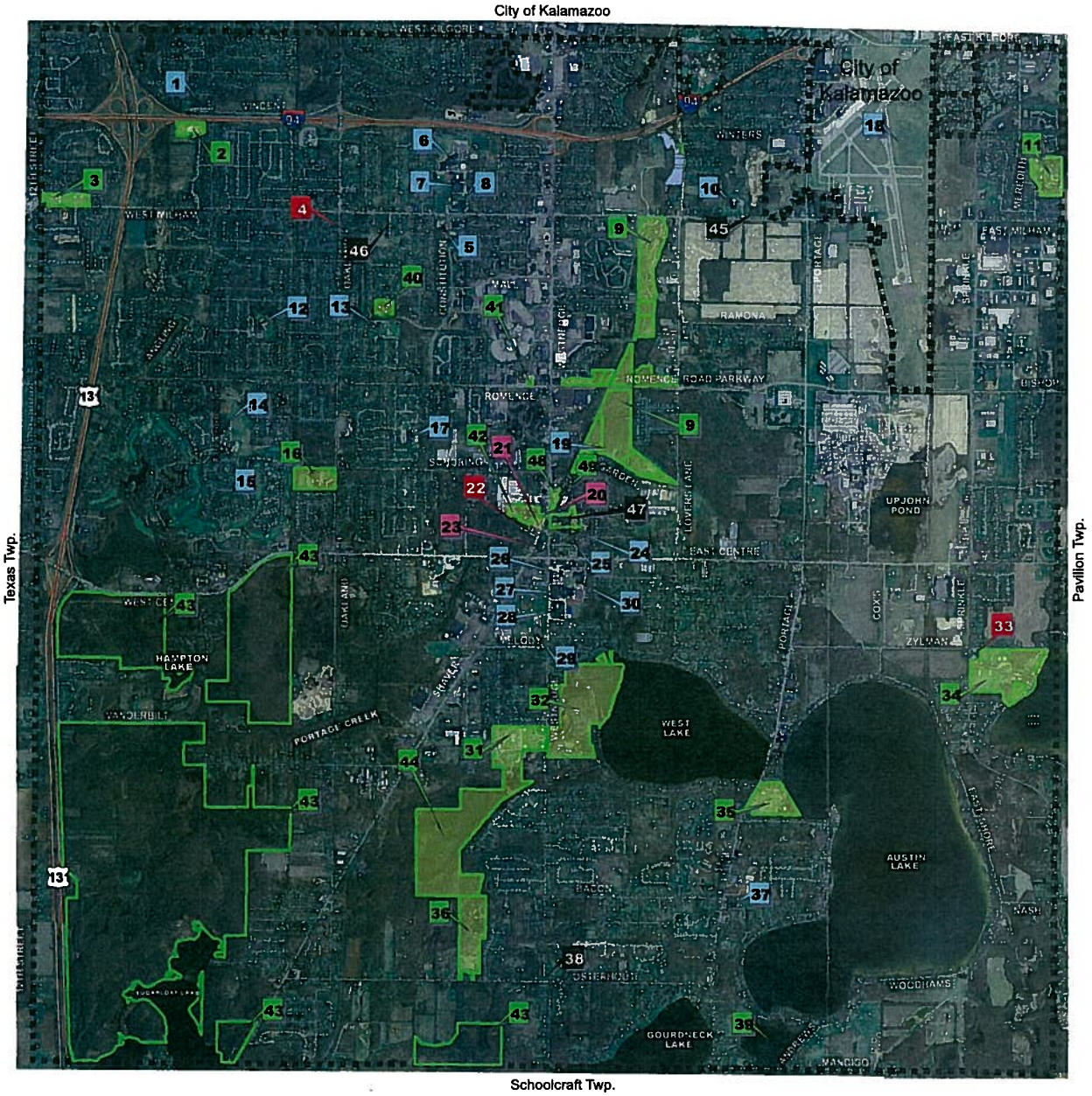
Recreational Facilities

Numerous and diverse recreational opportunities in high quality recreational facilities are provided throughout the community. There are several different types of recreational areas/facilities including neighborhood, community and regional parks, nature preserves and cultural event facilities. Such amenities are a valuable resource and contribute to the quality of life in Portage.

The city will continue to experience (re)development activities. Positive and decisive action will be needed to maintain existing resources, preservation of land for open space and establishment of recreational opportunities/facilities. Community parks and open space account for the majority of land dedicated to recreational uses in Portage. Passive recreational areas not formally dedicated as parklands are classified open space areas. All parks and open spaces are shown on **Map 11 Community Facilities**.

The following information summarizes the community recreational facilities detailed in the City of Portage Recreation and Open Space Plan. The complete Recreation and Open Space Plan is an element to the Comprehensive Plan and is updated, as needed, to 1) fulfill the Michigan Department of Natural Resources (MDNR) requirements for grant funding and 2) to ensure project priority as part of the annual Capital Improvement Program process. A copy of the Recreation and Open Space Plan can be obtained from the Department of Parks, Recreation and Property Management or the Department of Community Development.

Regional Parks Regional parks are a highlight of the Portage Park system, offering numerous recreational opportunities on large expanses of land. These regional parks are rich in history, well-maintained and easily accessible. Portage maintains two regional parks:



Map 12
City of Portage
Community Facilities

1 Angling Road Elementary School
2 Harbors West Park
3 Westfield Park
4 Fire Station #2
5 Post Office
6 Portage Northern High School
7 Portage North Middle School
8 Portage Community Education Center
9 Portage Creek Bicentenial Park
10 Kalamazoo Regional Educational Service Agency
11 Lexington Green Park
12 Amberly Elementary School
13 Haverhill Elementary School
14 Portage West Middle School
15 Moorsbridge Elementary School
16 Oakland Drive Park
17 Woodlawn Elementary School
18 Kalamazoo/Battle Creek International Airport
19 Celery Flats Interpretive Center
20 District Court
21 Police Station
22 Fire Station #1
23 City Hall
24 Library
25 Senior Center
26 Portage School Administration
27 Portage Central High School
28 Portage Central Middle School
29 Portage Central Elementary School
30 Waylee Elementary School
31 South Westnedge Park
32 West Lake Nature Preserve
33 Fire Station #3
34 Ramona Park
35 Lakeview Park
36 Schrier Park
37 Lake Central Elementary School
38 South Cemetery
39 Mandigo Marsh
40 Haverhill Park
41 Millennium Park
42 Central Park/Bandstand
43 State Game Area
44 Bishops Bog
45 Indian Fields Cemetery
46 Day Prarie Cemetery
47 Portage Central Cemetery
48 Liberty Park
49 Veterans Memorial Park

00 Cemeteries
00 Fire Stations
00 Municipal Buildings
00 Public/Institutional
00 Recreation/State Game Area
Recreation Boundaries

0 2,500 5,000 Feet

N

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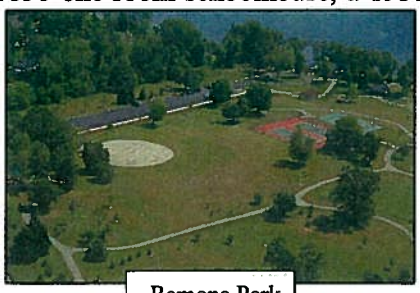
- **Portage Creek Bicentennial Park (PCBP)** (205 acres) – Located in central Portage along Portage Creek, this 3.6 mile linear park protects the sensitive environment of the Portage Creek basin and offers residents and visitors many opportunities to enjoy the creek – from overlook decks to canoeing. PCBP was started in 1976 in honor of the 1776-1976 U.S. Bicentennial celebration. Featured attractions include over six miles of hiking and biking trails, the Milham Avenue activity area, and the Celery Flats Interpretive Center and Historical Area.

  The Celery Flats Interpretive Center is a facility that allows visitors to relive the time period (from the 1890's through the 1930's) when Kalamazoo County was known as the Celery Capital of the World. The Celery Flats Historical Area is a unique park facility dedicated to the preservation of community structures of historical significance. Included in the area is an 1856 one-room schoolhouse, a 1931 grain elevator, Stuart Manor and the Hayloft Theatre.

- **Ramona Park** (67 acres) – Located on the north side of Long Lake and provides a number of recreational opportunities. Ramona is the most heavily used park in the Portage Park System due to a swimming area with a sandy beach, and fishing facilities. The park also provides numerous court sports (volleyball, basketball, and tennis), field sport areas (softball, football, and soccer) and picnic areas.



Ramona Park

Community Parks Community parks provide for the recreational needs of the larger community and include field sports (e.g., baseball, softball, football, soccer) facilities in addition to the facilities found at neighborhood parks. Portage has seven dedicated community parks including:

- **South Westnedge Park** (30 acres) – Located in south-central Portage and provides six softball fields serving the greater Kalamazoo County area. A skate park and soccer field are also available.

- **Portage Central Park** (12 acres) – The Park is nestled in a bend of Portage Creek and provides picnic shelters, play equipment and restroom facilities. Central Park is also home to the Overlander Bandshell facility, at which various performing arts are held throughout the summer season.

- **Lakeview Park** (24 acres) – Located along the shore of Austin Lake and provides areas for fishing and picnics, as well as playground equipment, ball field, tennis/basketball courts and walking trails.

- **Schrier Park** (20 acres park and 36 acres open space) – Located in south-central Portage off Osterhout Road and includes an orchard, shelter, playground and trails as well as 36 acres of passive recreational open space.

Lakeview Park

- **Millennium Park** (18 acres) – Located along Romence Road near South Westnedge Avenue, Millennium Park includes Kalamazoo County's only outdoor-refrigerated ice skating rink. In addition to the rink, an outdoor stage/amphitheater is utilized during the spring/summer and an asphalt trail connects Millennium Park to Bicentennial Park and Crossroads Mall.

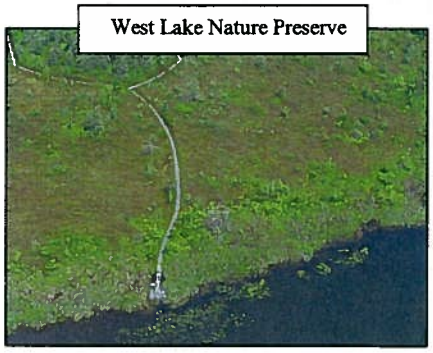
- **Liberty Park** (2 acres) – Located along South Westnedge Avenue just north of the Shaver Road-South Westnedge Avenue intersection, Liberty Park was created as a result of an environmental and economic development initiative called STEP (Stormwater Treatment Enhancement Project). In addition to treating storm water runoff from the adjacent South Westnedge Avenue drainage area and preventing pollutants from entering Portage Creek, Liberty Park enhances the visual and landscape elements in the City Centre Area through a series of landscaped storm water retention ponds,

limestone transfer channels, waterfalls, sidewalks, a boardwalk along Portage Creek and stunning floral displays.

- **Veterans Memorial Park** (1 acre) – Located near the Portage District Library, adjacent to Portage Central Cemetery, Veterans Memorial Park was dedicated in 2005 as a memorial to honor area residents who have served in the United States military. The memorial is approximately 40 feet long and consists of five large engraved stones, four flagpoles, lighting, brick walkway and landscaping features for quiet and festive enjoyment.

Nature Preserves and Open Space Areas The city has set aside three large and unique green spaces in the community for the benefit of preserving animal and plant habitat along with some passive recreation activities:

West Lake Nature Preserve



- **West Lake Nature Preserve** (110 acres) – West Lake has a variety of upland, woodland and sensitive woodland area with unique plant species and animal habitats.
- **Bishop's Bog Preserve** (145 acres) – Bishop's Bog is the largest "relict" bog in southern Michigan and has been registered with the Nature Conservancy (also see Chapter 7 Natural and Historic Resources).
- **Mandigo Marsh** (40 acres) – Mandigo Marsh is a historically well-known wetland area on the southwest corner of Austin Lake. The marsh is home to a wide variety of marshland birds and other types of waterfowl, and harbors an unusual assembly of plants that are peculiar to this area.

Local Parks Local parks provide playground facilities for young children and court sports (e.g. basketball, tennis, volleyball) facilities for all ages. Although available to the entire community, local parks also serve surrounding neighborhood areas and are situated throughout the city. Elementary school sites, such as Amberly, Angling Road, Central, Haverhill, among others, constitute a portion of the local parks and playgrounds in Portage. However, the dedicated public local parks that are under city jurisdiction include:

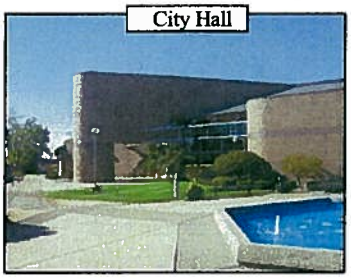
- **Haverhill Park** (4 acres) - Located in the Haverhill neighborhood near Oakland Drive between Romence Road and West Milham Avenue, Haverhill Park provides basketball and tennis courts, open play areas with picnic areas and playground facilities.

Lexington Green Park

- **Lexington Green Park** (23 acres) – Located in the Lexington Green neighborhood of northeast Portage, this park provides a ball field, basketball and tennis courts, and play equipment, as well as trails, picnic shelters, and restroom facilities.
- **Oakland Drive Park** (19 acres) – Located north of Center Avenue, Oakland Drive Park provides softball and soccer fields, tennis, volleyball and basketball courts, play equipment and a restroom/picnic shelter. Oakland Drive Park also has a sledding hill and ice skating area for winter activities.
- **Westfield Park** (12 acres) – Located in northwest Portage, this park facility provides basketball and tennis courts, ball fields and a soccer field, as well as a picnic shelter, play equipment and restrooms.
- **Harbors West Park** (6 acres) – Also Located in northwest Portage, Harbors West Park provides an open play area, court games, walking trails, playground and picnic/restroom facilities.

General Government

Portage City Hall The City of Portage is committed to providing efficient, quality municipal facilities within the city. The primary government facility is in the geographic heart of the community where Centre Avenue and South Westnedge Avenue intersect: Portage City Hall was completed in 1988 and is located in the "triangle" between Westnedge, Shaver and West Centre Avenue. Development/redevelopment within this area has been ongoing although government facilities together with public educational activities form the nucleus for the "City Centre Area" of Portage (additional discussion regarding the City Centre Area is contained in **Chapter 10**). City Hall presently houses the offices of City Manager, City Clerk, Community Development, Financial Services, Employee Development, Benefit Services, City Assessor, Information/Technology Services and Parks, Recreation and Property Management. City Council, Planning Commission and a variety of city advisory board and commission meetings are also held in the facility.

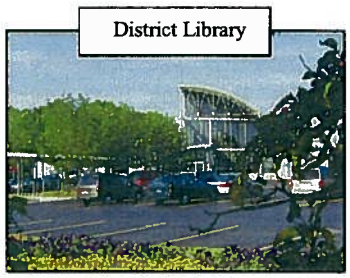

City Hall

Public Services Facility The Public Services facility is located immediately northeast of City Hall, across South Westnedge Avenue and is also within the City Centre Area. This facility was constructed in 1964 and has undergone several building modifications in order to better serve Portage residents and businesses. The most recent building modification/expansion was completed in 2001. The facility houses the offices and operations activities of the Departments of Transportation and Equipment, and Streets and Equipment, parks maintenance and municipal utilities.

Senior Center The Senior Center was established in 1979 and is located on Currier Drive, east of City Hall, within the City Centre Area. The Senior Center was the first center in Michigan to be fully accredited by the National Council on the Aging/National Institute of Senior Centers. The Senior Center offers a wide variety of programs and activities for people aged 55 and older which promote personal growth, health, friendship and independence. Participation in Senior Center programs and activities is expected to increase during the coming years as a result of the aging "baby boomer" population.

Library Facilities

The Portage District Library is also located within the City Centre Area. The library has been a dependable community resource and center for intellectual freedom since its conception 40 years ago. It began in 1962 as the Portage Township Library and since 1976, has been located at 300 Library Lane. The Library recently underwent a major remodeling and expansion project to more fully utilize the two-floor facility. An additional 12,892 total square feet has been added to the existing 17,000 square feet to meet increased demands for seating, library books, and other reference materials. The expanded building is able to handle 600,000 circulations per year and serve an estimated population of 50,000.


District Library

Educational Facilities

The Portage Public School District encompasses 45 square miles, the predominant portion of which is within the City of Portage. Portions of Texas Township, Pavilion Township and the City of Kalamazoo are also contained within the district. Although the Portage, Vicksburg and Schoolcraft Public School systems provide primary and secondary educational services within the City of Portage, only a limited portion of the City is served by the Vicksburg and Schoolcraft Districts. Accordingly, this section covers only the Portage Public School system.

Population estimates from the 2000 Census indicate that the proportion of the school age population to the total population has increased slightly since 1990. This trend is a reversal of the 1980–1990 estimates,

at which time the total school age population was declining. If this trend continues, increasing demand for educational facilities within Portage can be anticipated.

Elementary Schools There are eight elementary schools in the Portage Public School District:

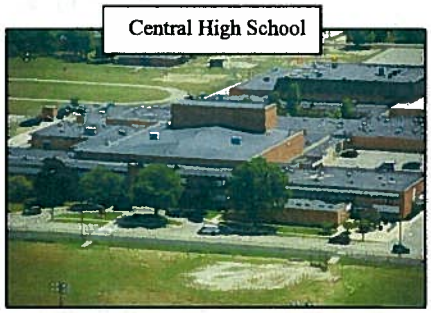
- **Amberly Elementary** (18.8 acres)
- **Angling Road Elementary** (11.4 acres)
- **Portage Central Elementary** (shares campus with Central Middle and High Schools)
- **Haverhill Elementary** (10.9 acres)
- **Lake Center Elementary** (8.7 acres)
- **Moorsbridge Elementary** (shares site with West Middle School)
- **Waylee Elementary** (3.4 acres)
- **Woodland Elementary** (9.4 acres)

The elementary schools have been located within residential areas with the intent to minimize walking distances and long-range transportation needs. These elementary school sites also provide recreational opportunities after normal school hours.

Since 1981, Lexington Green, Pershing and Ramona Avenue Elementary Schools have been closed and Milham Elementary School was converted to the Portage Community Education Center. The newest elementary school, Moorsbridge Elementary, opened in 1996. A wide range of indoor and outdoor recreational opportunities are also available in conjunction with the elementary school facilities.

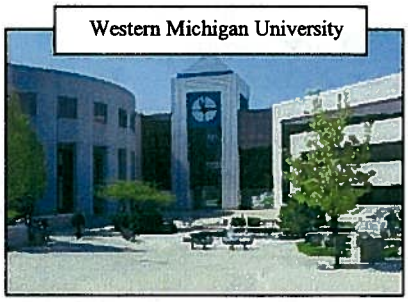
Middle and High Schools There are presently three middle schools and two senior high schools in the Portage Public School District:

- **Portage North Middle and High School** (78.9 acres)
- **Central Middle and High School** (93.4 acres)
- **West Middle** (64.5 acres)


Central High School

The middle and high schools all contain gymnasiums, library media centers, auditoriums and extensive outdoor recreation areas. The middle school facilities also contain indoor swimming pools. Middle and high school facilities play a major role in providing a wide range of recreational opportunities for the Portage community.

Other Educational Facilities and Higher Education In addition to public schools, there are a number of other charter schools, and private and parochial schools at all levels servicing the area. There are also a number of other educational and secondary educational programs/facilities within Portage and the surrounding region including Special Education, Post-Secondary Education and Vocational Education opportunities. Some of the key facilities are listed below:


Western Michigan University

- Portage Community Education Center
- Kalamazoo Regional Educational Service Agency
- Kalamazoo Valley Community College
- Davenport College
- Kalamazoo College
- Cornerstone University
- University of Phoenix
- Western Michigan University
- Extensions of several colleges, universities, training and continuing education programs

Implementation Strategies

In order to help achieve the goals and objectives identified in the chapter, a number of actions and strategies can continue to be pursued and implemented.

- ✓ Continue to annually update the CIP to reflect the current and future infrastructure needs of the community including governmental facilities.
- ✓ Continue planning activities to protect existing water resources through continued implementation of the best management practices.
- ✓ Encourage innovative storm water treatments that are environmentally friendly and aesthetically pleasing.
- ✓ Continue to guide development to areas in the city served by adequate public water and public sewer.
- ✓ Continue to pursue the long and short term goals identified in the Recreation and Open Space Plan, as amended.
- ✓ Update the Recreation and Open Space Plan to maintain eligibility for state funding, as needed and as approved by City Council.
- ✓ Create a friendly walkable "downtown" City Centre Area that integrates with the existing commercial/retail district along South Westnedge Avenue.
- ✓ Consider available options involving the State Game Area if the State ever declares the area as excess property, as the city could facilitate/determine the most appropriate uses.
- ✓ Utilize the Web page and newsletter to educate residents and keep them informed.

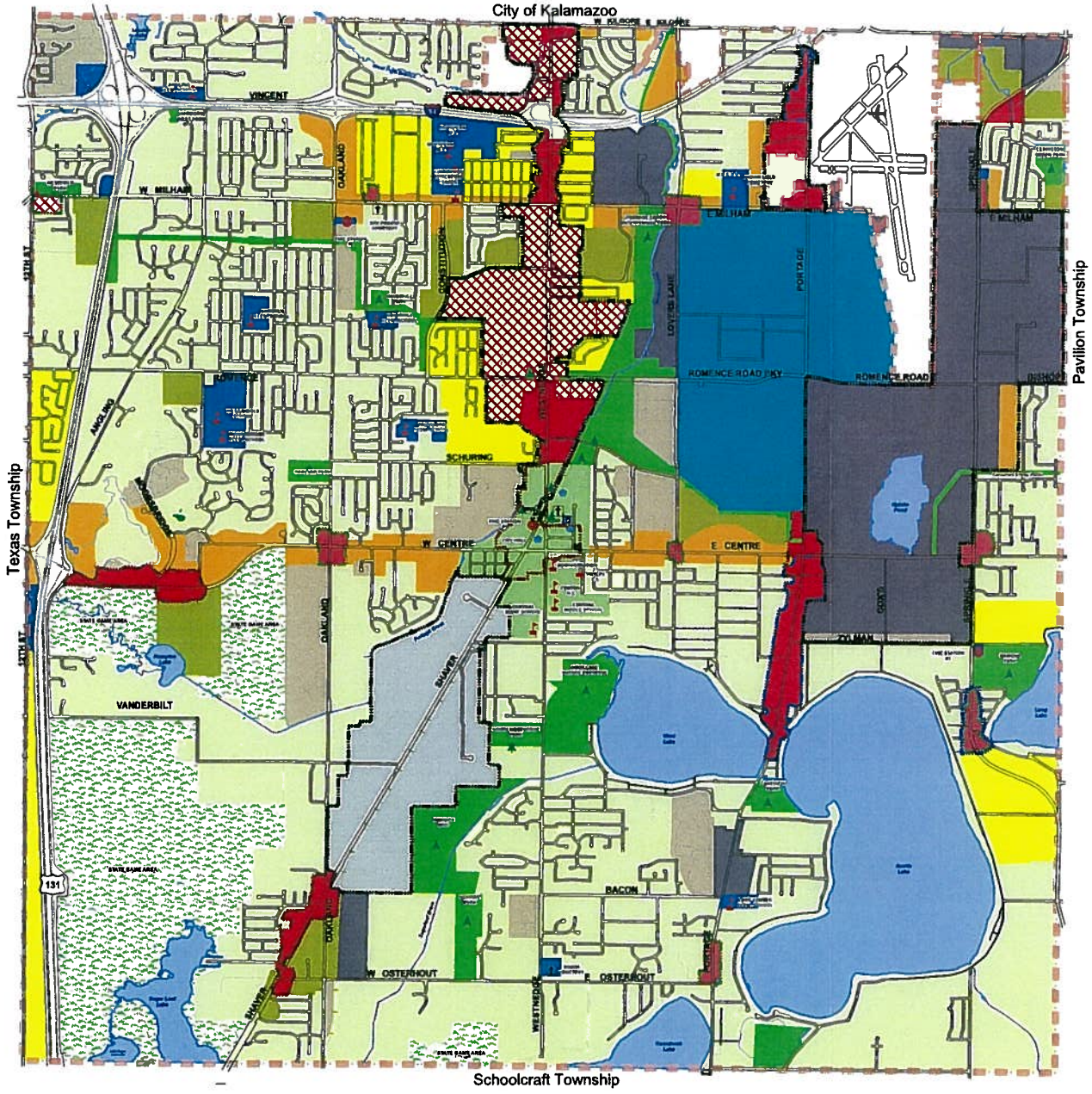
Chapter 10 – Future Land Use

It is necessary to plan for future land use and development in a manner consistent with community goals and objectives. The City of Portage is a community with quality residential neighborhoods, strong commercial and industrial areas to provide tax base and employment, with quality municipal services and an abundance of recreational opportunities. The future land use plan provides a long-range focus to help continue this balance. The future land use recommendations in this Plan evolved from the Future Land Use information and Map in the 2002 Comprehensive Plan and from land use goals developed through the Portage 2025 Visioning Project. With this information and analysis, the Map has been revised and updated based on changing development conditions, review of new economic data, as well as input from city staff, planning commissioners and public input. The product of this effort is shown on **Map 13, Future Land Use** and is further detailed in the following pages in this chapter.

New land use challenges arise as Portage continues to mature: Competition for desirable land uses from surrounding communities will increase (see **Chapter 6** and **Appendix B** for further discussion); Redevelopment of aging sites will increase in importance; Management of traffic on an existing roadway network will continue to be a priority; and Public infrastructure systems will continue to age. As a result, land use decisions involving vacant or under utilized property to provide for quality redevelopment become critical.

The Future Land Use Plan is a representation of general physical features/land use activities in the city when fully developed and does not imply that all of the changes will or should occur in the near term. Development and redevelopment will proceed in a manner consistent with policies on the environment, transportation and infrastructure capacity, as examples, and other matters which help determine the appropriate timeframe. Also, zoning decisions should, over time, produce changes that gradually establish greater conformity between the Zoning Map and the Future Land Use Plan. The Future Land Use Map should be carefully considered to ensure consistency is maintained when making decisions on planning and development matters: Community changes which directly conflict with the Future Land Use Map could undermine the long-term objectives of the city and should be avoided.

Importantly, deviations from the Future Land Use Map and the Comprehensive Plan may be appropriate when justified by more detailed information, changes to conditions, or in cases where a deviation is not contrary to the overall intent and purpose of the Plan. The Future Land Use Map or the Comprehensive Plan may require update in cases where proposed deviations would significantly alter the general direction or vision as depicted by the Plan. An amendment to the Future Land Use map and/or the policies should be required in the case where a development, because of its scale or intensity, has a potential to create significant impact on surrounding uses, services or traffic and most be carefully considered in the context of community goals and objectives.



Map 13
Future Land Use Map
(Draft)
City of Portage

Draft Date: Nov 2, 2007

Legend

- Low Density Residential
- Single-Family Detached-Medium Density Residential
- Medium-Density Residential
- High Density Residential
- General Business
- Local Business
- Regional Business
- General Industrial
- Shaver Road Business Corridor
- Research, Development & Technology
- Office
- Park / Recreation
- Gourdneck State Game Area
- Public
- City Centre
- Primary Commercial Node
- Secondary Commercial Node
- Commercial or Industrial Corridor
- Commercial Revitalization Area
- Airport
- Cemetery
- City Park
- Court
- Fire Station
- Golf Course
- Library
- Municipal
- P.C.O.C.
- Police
- Public School
- CITY BOUNDARY

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Factors Considered

Remaining consistent with the 2002 Comprehensive Plan process, this five-year update of the Future Land Use Map and the Comprehensive Plan incorporates input received during the public consultation process, acknowledges existing land use patterns, and reflects proper planning principles. More specifically, the following factors were taken into consideration in preparing the Future Land Use Map:

- **Existing Land Use.** Locations of most existing commercial and industrial developments are appropriate and will continue to serve as the primary business centers. Residential areas have developed throughout many sections of the city. The community land use patterns have evolved in a relatively orderly manner and will be built upon, with slight modification, rather than altered in a significant manner.

- **Existing Zoning.** There is no "vested interest" that guarantees zoning will not change: In fact changes are suggested by this Comprehensive Plan. However, such changes were carefully considered to ensure the general development arrangement remains consistent and landowners will be ensured a reasonable use of their land.

- **Population and Employment Projections.** Projections for the number or residents and job opportunities help predict demand for various land uses throughout the city. These projections can give the city an idea of where potential land use deficiencies or surpluses exist.

- **Relationship of Incompatible Uses.** The Future Land Use Plan provides important guidance in the ongoing effort to reduce or eliminate incompatible land use relationships. Providing a transition between land uses, such as the introduction of office or multiple-family residential between light industrial and single family residential areas, is one approach that can accomplish such a transition. In other cases natural features, such as Portage Creek, or landscaping and setback buffering strategies can help facilitate such a transition, as discussed in **Appendix D, Development Guidelines**. Importantly, the Plan designates general land use patterns areas for uses considered most appropriate to fulfill the long-term objectives of the community.

- **Natural Features.** The types of development and allowable densities were determined, in part, by the location and extent of natural features. Natural rolling topography, stream corridors, woodlots and lakes provide highly attractive and marketable property for certain types of development. Lower overall development densities are proposed for properties containing significant natural features, although the use of clustered developments in buildable areas of properties, while conserving features, can provide a balance between the environment and development potential of the property. Planned Developments (PD) are discussed in more detail at the end of this chapter.

- **Capacity of Streets, Infrastructure and Facilities/Services.** The density of residential uses and the designation of land for industrial and commercial development are dependent on the availability and capacity of the infrastructure. Accessibility to and the capacity of the street network help establish the types and intensity of uses that may be served in an area without adversely impacting traffic operations. The availability of community facilities such as schools and recreational facilities affects the areas that are especially attractive for residential development, while police and fire protection places limits on the ability and the quality of service provided to all land uses.

- **Market Conditions and Trends.** Market conditions were considered even though they will change during the time frame of this Plan. U.S Census information on population, income and housing statistics were considered. Reports from the W.E. Upjohn Institute for Employment Research and Claritas, Inc. provided a basis to evaluate commercial and industrial development trends in the area. These issues are explored in greater detail in **Chapter 6 Economic Development/Marketplace**.

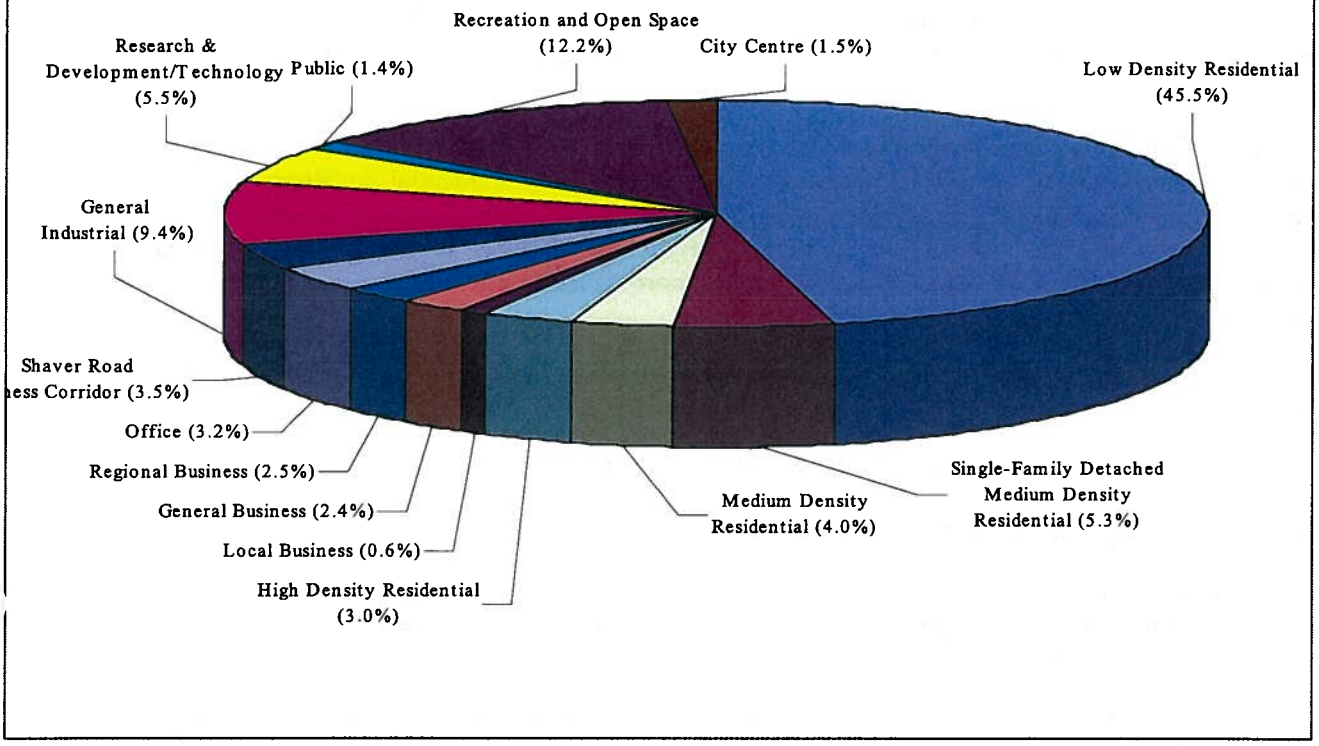
- **Land Use Patterns in the Kalamazoo Area and Other Communities.** Land use patterns for surrounding communities and the region, including the City of Kalamazoo, were also considered.

- **Previous Comprehensive Plan.** Recommendations from the previous 2002 Comprehensive Plan formed the foundation of this Plan update. Those recommendations were refined based on analysis of new data, recent development trends and other factors. While the previous recommendations were largely based on statistical analysis and population projections, this Plan provides a broader perspective for land use recommendations and incorporates appropriate and important aspects of all of these factors.

- **Public Input.** While by no means last in importance, public input is valuable in the Comprehensive Plan process. The Portage 2025 Vision Statements were particularly valuable during the Plan update process. Finally, comments and opinion about land use patterns and related community planning issues as conveyed at various public forums, informal meetings and discussions with property owners, people and officials were also considered.

Future Land Use Classifications were developed to implement the vision set forth in this Comprehensive Plan, as supported by the Goals, Policies, and Development Guidelines. For the most part, the classifications are representative of the Existing Land Use classifications, but have been generalized in order to provide greater development flexibility for future growth. In addition, several classifications have been added which may lead to amendments to the Zoning Ordinance. **Figure 10-1** depicts the approximate percent of land designated for each category. These percentages are estimates and include the adjacent public street right-of-way, natural features such as streams and wetland areas, as examples, and therefore cannot be directly compared to existing land use figures.

Figure 10-1
Future Land Use Percentages



Future Land Use Categories

Residential Land Uses. Residential land use categories encompass the established and anticipated residential uses including single and multiple family. The Future Land Use Plan maintains the predominant single-family, detached housing character of Portage and provides an array of other housing choices throughout the community. Four residential categories are illustrated on the Future Land Use Map:

- **Low Density Residential** - up to 4 single family dwelling units per gross acre
- **Single-Family Detached - Medium Density Residential** – up to 6 single family dwelling units per gross acre
- **Medium Density Residential** - 4 to 8 multiple dwelling units per gross acre
- **High Density Residential** - 8 to 15 multiple family dwelling units per gross acre

(Note: gross acres for density calculations are exclusive of state regulated wetland areas)

The Future Land Use Plan identifies 11,632 acres for residential uses including:

- 9,163 acres of Low Density Residential
- 1,062 acres of Single Family Medium Density Residential
- 798 acres of Medium Density Residential
- 609 acres of High Density Residential

Low Density Residential

Purpose – To establish areas for future low density, single family development, and protect existing established neighborhoods from the intrusion of incompatible land uses. An additional purpose is to encourage additional "higher value" housing taking advantage of available attractive natural features and other amenities.

Description – This land use classification includes areas planned for future low density (1 to 4 units per acre) residential development, as well as areas of existing low density residential development and is typical for traditional single-family detached dwelling unit subdivisions. Low Density Residential (LDR) uses primarily constitute the majority of numerous neighborhood areas in Portage. Creating and maintaining neighborhoods will help form a stronger, more vibrant community. Connection to a municipal sanitary system is a requirement for LDR uses.

Under the Zoning Ordinance, this designation generally corresponds to the R-1B, R-1C, R-1D and R-1E zoning districts.

Locations – Low-density residential uses are planned throughout the city.

Single-Family Detached - Medium Density Residential

Purpose – To establish areas for future single family development at higher densities than those allowed in LDR areas in order to provide greater opportunities for affordable single family home ownership within Portage while maintaining the integrity of the housing stock.

Description – The Single-Family Detached - Medium Density Residential (SFD-MDR) classification is intended to provide for a greater diversity in single-family housing development within the city. This land use classification includes areas planned for future medium-density (up to 6 units per acre) residential development. SFD-MDR uses include single-family detached housing units. Connection to a municipal sanitary system is a requirement for all SFD-MDR uses. Under the Zoning Ordinance, this designation generally corresponds to the R-1A zoning district.

Locations – SFD-MDR uses are planned in a number of areas throughout the city. As illustrated on the map, in most cases these uses are adjacent or near to areas planned for LDR development. SFD-MDR and LDR uses are compatible with one another, and can therefore be co-located. Also, because SFD-MDR uses allow for higher densities, they are also planned adjacent to some of Portage's higher-intensity uses, such as the areas surrounding the Regional Business area.

Medium Density Residential

Purpose – To establish appropriate areas for quality, medium-density residential development that contributes to the diversity and stability of Portage's housing stock.

Description – This land use classification covers the transition from detached to attached dwelling units and includes areas planned for future medium density (4 to 8 units per acre) residential development such as duplexes, attached condominiums and townhomes, and certain apartment buildings. Under the Zoning Ordinance this designation corresponds to the R-1T, MHC, RM-2 and PD zoning districts.

Locations – As illustrated on the Future Land Use Map, many MDR uses are adjacent or near to areas planned for LDR development. Some MDR areas are also planned adjacent to some of Portage's higher-intensity uses, such as the areas surrounding the Regional Business area.

High Density Residential

Purpose – To allow for a limited amount of quality, high-density residential development in appropriate areas to ensure the choice of housing types to provide a more dispersed pattern of multi-family sites and to provide housing opportunities for low to moderate income households.

Description – This land use classification covers a variety of attached dwelling units and includes areas planned for future multi-family, high-density (8 to 15 units per acre) residential development such as apartment complexes and manufactured home parks. Under the Zoning Ordinance this designation generally corresponds to the RM-1 zoning district.

Locations – Similar to MDR uses, areas planned for HDR uses are limited to locations which provide access to major thoroughfares and have compatible surrounding land uses. HDR uses are planned along Sprinkle Road and East Centre Avenue, in areas surrounding the Regional Business and other select locations. In some cases, with appropriate screening or buffering, HDR uses can be located adjacent to lower density residential areas. However adjacency to Portage's higher intensity commercial, office and industrial uses is usually preferred to minimize land use conflicts.

Commercial Land Uses The City of Portage contains a wide range of commercial and service uses to serve residents of the city as well as consumers across Southwest Michigan. Three business designations and one office designation are included on the Future Land Use Map, each with specific purposes and characteristics.

- **Local Business**
- **General Business**
- **Regional Business (including Portage Commerce Square)**
- **Office**

The differences between these business designations are summarized in **Table 10-1** on the following page. The Future Land Use Plan identifies 1,764 acres for commercial uses covering four different designations:

- 118 acres of Local Business
- 520 acres of General Business
- 479 acres of Regional Business (including Portage Commerce Square)
- 647 acres of Office

In addition, commercial uses are also included within the Shaver Road Business Corridor. Some of the acreage noted is vacant and available for development, and much is developed but appropriate for redevelopment or expansion or change in use.

Table 10-1
Differentiation between Commercial Land Use Categories

	Local Business	General Business	Regional Business
Potential Uses	Small scale, pedestrian oriented, personal service establishments, convenience retail, sit-down restaurants	Moderate scale, auto-oriented, grocery stores, moderate scale gas stations, all types of restaurants, retail	Large scale shopping centers/malls, home improvement centers, one-stop shopping centers and businesses, accessory commercial that serve shoppers such as restaurants, hotels/motels, gas stations
Approximate Market Area	2 mile radius	Most customers from city and nearby communities within 2-10 mile radius along with pass-by arterial and expressway users	These destination users serve the county and beyond (up to 30 mile radius) as well as expressway users

Source: Urban Land Institute Shopping Center Handbook.

The Future Land Use Map focuses commercial land uses in two major commercial corridors, three commercial revitalization areas, four primary commercial nodes and nine secondary commercial nodes. The two major commercial corridors which support primarily general business, regional business and office uses are defined as follows:

- South Westnedge Avenue Commercial Corridor: Defined as area extending from Kilgore Road to Shaver Road and encompassing the Portage Commerce Square.
- Portage Road Commercial Corridor: Defined as area extending from Interstate 94 to Milham Avenue and from just north of Centre Avenue to Emily Drive near Austin Lake.

Commercial revitalization areas are defined as those areas where commercial rezonings of contiguous properties would be entertained and public infrastructure improvements could be initiated to stimulate private reinvestment and (re)development. The three commercial revitalization areas identified on the Future Land Use Map include:

1. Portage Road from Interstate 94 to Yellowbrick Road
2. Portage Road from Centre Avenue to Emily Drive
3. Sprinkle Road near Long Lake Drive

The Future Land Use Map also identifies four primary commercial nodes where both local and general business uses (i.e., grocery, pharmacy, hardware store, restaurant, personal services, business services, etc) are encouraged.

1. Centre Avenue-Westnedge Avenue-Shaver Road (heart of City Centre area)
2. Centre Avenue near Moorsbridge Road
3. Centre Avenue at Portage Road
4. Shaver Road from Oakland Drive to Osterhout Avenue

Secondary commercial nodes are intended to encourage and support low intensity local business uses and services establishments (i.e., convenience store, small sit-down style restaurant, pharmacy, bank, offices, etc.) which serve the neighboring residential areas. These secondary commercial nodes typically

correspond with the B-1, local business zoning district. The Future Land Use Map identifies nine secondary commercial nodes across the city.

1. Milham Avenue at 12th Street
2. Milham Avenue at Roanoke Street
3. Milham Avenue at Lovers Lane
4. Sprinkle Road at Milham Avenue
5. Sprinkle Road at Long Lake Drive
6. Centre Avenue at Oakland Drive
7. Centre Avenue at Lovers Lane
8. Centre Avenue at Sprinkle Road
9. Portage Road at Osterhout Avenue

Local Business

Purpose – To provide convenience goods and services to residents and employees in the immediate neighborhood, generally within a two mile radius, while maintaining a compatible neighborhood scale.

Description – The local business classification includes commercial uses that cater primarily to nearby residents and employees. These uses include small grocery, convenience and drug stores, dry-cleaners, video rental, smaller dining establishments and may include personal service and office establishments. The local business designation generally corresponds to the permitted uses in the B-1 zoning district.

Locations – These uses are typically located near single-family neighborhoods and can be often accessed by walkway or bikeway connections in addition to automobile access. Local business uses are typically found in small secondary commercial nodes at intersections throughout the city.

General Business

Purpose – To provide for the full range of retail uses, for hotel/motel and other highway services, for recreation facilities and for personal service establishments, and may include general offices and community research facilities.

Description – Unlike local businesses, which cater primarily to nearby residents and can often be accessed by non-motorized transportation, general business operations tend to cater more to automobile traffic from a broader market area, up to a ten mile radius, including surrounding communities. General business uses include retail stores, hotels and motels, fast food restaurants, and highway service establishments. This designation adds the land extensive and large durable goods retail and service uses such as garden centers, home materials, automobile sales and services, furniture stores and large appliance stores. Thus, the full range of retail goods and services are provided to the community and travelers in this commercial designation. The general business designation generally corresponds to the permitted uses in B-3 zoning district.

Locations – General business areas are concentrated in primary commercial nodes, along major thoroughfares and at major intersections in a manner that prevents a sprawling commercial corridor. Major thoroughfares of general business development include selected areas along Westnedge Avenue, Portage Road and Shaver Road.

Regional Business (South Westnedge Avenue Commercial Corridor and Portage Commerce Square)

Purpose – To provide shopping goods and services to residents and employees throughout southwest lower Michigan.

Description – South Westnedge Avenue Commercial Corridor and Portage Commerce Square represent the heart of the commercial activity in the city, offering conveniently located commercial services that draw patrons from the Kalamazoo County area and beyond, with easy access via US-131 and I-94. Typical uses include commercial power centers, large shopping centers, home improvement centers, hotels/motels, movie theaters and other regional/national retailers. Also permitted are accessory commercial uses that serve shoppers and nearby employers such as restaurants and gas stations. This designation generally corresponds to the permitted uses in B-2 and CPD zoning districts.

Locations – South Westnedge Avenue between Kilgore Road and Centre Avenue; Portage Commerce Square is centered around the Westnedge corridor between Milham and Romence Roads.

Office

Purpose – To provide a variety of high quality, stable employment opportunities for residents, to help maintain a well-balanced tax base and to provide an effective transition between higher intensity uses and major streets and interior residential neighborhoods.

Description – The office category includes professional offices such as doctors, dentists, lawyers, engineers, accountants, etc.; real estate and insurance offices; banks and other financial institutions; art and photographic studios; general offices; and community research facilities. General office use and community research facilities require larger sites than the typical pre-existing residential uses along arterials and compatibility with the abutting residential area will be important in the selection of the appropriate type and intensity of office use. This designation generally corresponds to the permitted uses in the OS-1 and OTR zoning districts.

Locations – Office uses are concentrated along two evolving corridors (Centre Avenue Office Corridor and Milham Avenue Office Corridor), as well as located where appropriate to create a mixture of business types including areas along Lovers Lane, Oakland Drive, Moorsbridge Road and Old Centre Avenue.

Industrial Land Uses The City of Portage contains a variety of industrial uses which provide employment for the citizenry and substantial tax base for the city. Three industrial designations are recommended on the Future Land Use Map, each with its own purpose and characteristics.

- **General Industrial (includes the Sprinkle Road Industrial Corridor)**
- **Shaver Road Business Corridor**
- **Research & Development/Technology**

The Future Land Use Plan provides 3,693 acres for industrial uses including:

- 699 acres of within the Shaver Road Business Corridor
- 1,890 acres of General Industrial
- 1,104 acres of Research & Development/Technology

General Industrial

Purpose – To serve as an employment generator and as a source of production of a variety of products and services that benefit the region and beyond.

Description – General industrial operations encompass manufacturing activities involving raw materials, assembly operations, pharmaceutical manufacturing, and medical equipment development, among others. Due to more intense operations, the guidelines should focus on minimizing impacts by aggregating

industrial activities and also through the use of architectural and landscaping enhancements and appropriate screening. These uses are generally associated with the I-1 and I-2 zoning districts.

Locations – General industrial operations are primarily located within the Sprinkle Road Industrial Corridor and Shaver Road Business Corridor. The Sprinkle Road Industrial Corridor is the primary industrial corridor in the City of Portage and also Kalamazoo County. It is the principle location for more than 75 industries, including Pfizer, Inc., Stryker Corporation, Mann+Hummel, Summit Polymers, Bowers Manufacturing, among others, that provide several thousand job opportunities for area residents.

Shaver Road Business Corridor

Purpose – To serve as an employment generator as a source of production of a variety of products and commercial needs that benefit the city.

Description – The Shaver Road Business Corridor is a developing corridor and, as a result, consists of a mixture of land uses. Uses located on the east side of the corridor, east of the Norfolk Southern railroad line, are primarily growing or stable industrial uses with some vacant land available for further development. The land uses located along the west side of the corridor consist of a mixture of light industrial uses, commercial uses and some nonconforming single-family dwellings. The west side of the corridor has experienced significant (re)development activity during the past several years involving both light industrial and commercial uses. Vacant land also exists for further commercial development. This (re)development activity is expected to continue which will further strengthen this important community corridor and provide additional job opportunities.

Locations – Industrial and commercial uses are located along Shaver Road south of Centre Avenue. This is the area where the city should direct uses with the characteristics noted above.

Research & Development/Technology

Purpose – To provide a location for certain industrial-related uses distinct from other types of industrial or commercial businesses. This classification responds to essential diversification in the region's economic base away from dependence on heavier industrial uses to a broader range of emerging uses. Such uses help expand the employment base and can help achieve many of the objectives referenced throughout the Comprehensive Plan.

Description – While the definition of Research & Development/Technology is somewhat broad, the intent is to concentrate certain compatible uses in a planned, campus-like setting with more extensive landscaping, higher quality architecture and more site amenities than typically found in general industrial areas. Outdoor storage of materials and equipment is limited, with screening required where it is to occur. Representative uses include: Research facilities and centers, technology or pilot testing facilities, micro-electronic and biotechnology uses, certain industrial operations that are compatible with others uses envisioned within the Research, Development and Technology designation and large-scale corporate or professional offices. Other types of uses may also be appropriate such as, pharmaceutical production in the Portage Road area between East Milham and East Centre Avenue. Certain types of supporting businesses such as accommodation/motels, conference facilities and service oriented businesses that cater to other businesses rather than the general public may also be appropriate.

Locations – Research & Development/Technology uses have locational requirements distinct from other types of industrial uses. These more specialized uses typically desire a concentrated location, separate from other industrial uses. Preferred locations offer proximity to expressway interchanges, airports and universities. Based on these factors, research & development/technology land uses are identified in the central portion of the city generally south of Milham Avenue and north of Centre Avenue, between Lovers Lane and Portage Road.

Public Land Uses The Future Land Use Map provides 285 acres for public land uses.

Purpose – To provide high quality facilities for residents and visitors of the city.

Description – Public uses encompass all community facilities under public ownership other than public parks and public nature preserves. Examples of public facilities include cemeteries, fire stations, schools and public wellhead sites. Public uses are permitted in all zoning districts; however, most are found in residential zoning districts.

(Because of private land ownership, there is no designation for quasi-public land uses such as churches, nonprofit organizations, utilities and private recreation facilities and such existing land uses are designated according to the predominant surrounding land use.)

Locations – Public uses are identified throughout the city to best serve residents in a variety of geographic locations. Public uses such as government offices and library are concentrated primarily within the City Centre Area.

Recreation and Open Space The Future Land Use Map identifies 2,440 acres designated for recreation, park and open space including 1,591 acres within the Gourdneck State Game Area.

Purpose – To provide locations for both active and passive recreational opportunities to enhance the quality of life for residents as well as provide natural greenspace areas.

Description – The recreation and open space designation includes public parks, public nature preserves, public/quasi-public greenways and state recreation/game areas. Privately owned property designated for recreation and open space facilities are not included in this category. Under the Zoning Ordinance public recreation and open space is permitted in all zoning districts; however, most areas are found in single residential zoning districts.

Locations – Recreation and open space areas are distributed throughout the community to provide convenient access to residents. Examples of some of the larger areas include Portage Creek Bicentennial Park and Celery Flats Interpretive Center within the central portion of the city adjacent Portage Creek; Schrier Park-Bishops Bog and West Lake Nature Preserve along Westnedge Avenue, south of Centre Avenue; Ramona Park near Sprinkle Road and Zylman Road; Mandigo Marsh along the south end of Austin Lake; and several other smaller parks and facilities across the city. In addition to these local facilities, the State of Michigan maintains the Gourdneck State Game Area, which encompasses 1,591 acres generally located in the southwest portion of the city. These facilities have a strong presence in the community and are an important the quality of life component.

City Centre The Future Land Use Map designates 309 acres for City Centre land use.

Purpose – To encourage an area in the geographic center of Portage that can be easily identified by residents and visitors as the "downtown" and which provides a core activity area for public facilities and a destination for the general public.

Description – Through the various public forums and meetings held since development of the 2002 Comprehensive Plan and most recently with the Portage 2025 Visioning project, there has been a common desire to develop a centralized "city center" that could be identified as the heart of Portage. These elements include:

- *Common design* – Signs/wayfinding, lighting, streetscaping, building design and landscaping features should be coordinated throughout the City Center to enhance its identity. Also, in order to promote activity in the City Centre, it must be a pedestrian friendly environment. Perhaps the most

important design element of the Centre would be a well-connected walkway and bikeway system that connects various destinations.

- *Pedestrian Linkages* – The City Centre is also identified to be the "hub" from which pedestrian-friendly linkages connect parks, pedestrian/bicycle trails, cultural venues, municipal facilities, education facilities and also business centers. While the City Centre should be designed to promote pedestrian activity, it should also be easily accessible by vehicle, providing ample-parking areas that do not conflict with pedestrian activity.

- *Complementary Land Uses* – The City Centre is primarily intended to provide a concentrated area of municipal facilities, such as City Hall, District Library, the Public Works facilities, the Donald E. Overlander Community bandshell and other similar public uses. Additionally, the City Centre should also provide for a variety of mixed land uses in an effort to make the area a multi-purpose destination for residents and visitors alike. Such complementary uses include, but are not limited to, local and specialty retail and eateries (sidewalk cafes and coffee shops), bookstores, music stores, museums, flower shops, personal service establishments, secondary educational facilities, banks, offices and other similar ancillary uses. The City Centre should also permit high quality single and/or multiple family residential uses.

  This mixture of uses would allow the land situated at a prime location in the city to be utilized to its maximum potential. It would also help create an area of concentrated development easily accessible by both vehicles and pedestrians. While the proposed range of land uses are generally compatible, care will be needed when developing the zoning regulations that will apply to the area. Each use will need to be of a scale, density, and design that results in benefit to the general area and minimizes negative impacts on other uses.

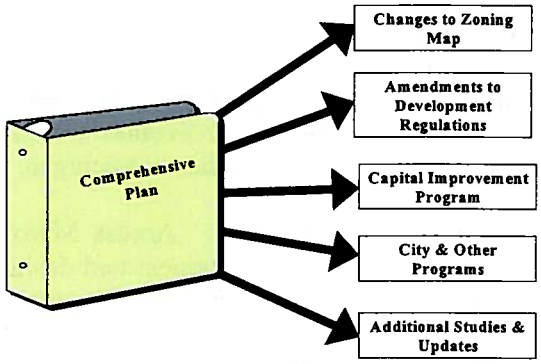
- *Location* – The designated City Centre area is centered near the intersection of South Westnedge Avenue, Centre Avenue, and Shaver Road.

In order to further identify and implement City Centre recommendations, a City Centre Sub-Area Plan will be developed and adopted as an amendment to the 2008 Comprehensive Plan. Development of a City Centre zoning district can then be considered that would address building setbacks, establish specific site design standards on/off-street parking in certain areas, among others, together with other techniques, as applicable.

Chapter 11 – Implementation

The Comprehensive Plan is intended to serve as a guide for land use and physical development or redevelopment. Goals, objectives and strategies noted throughout the Plan should be carefully considered during decisions on zoning, capital investments for improvements to streets, bikeways/walkways, utilities and facilities, private sector development proposals and other land use issues. Recommendations in this Plan are specifically intended for private landowners and provide guidance for development and redevelopment of privately owned property. Some Plan recommendations may involve the need for changes to land use regulations and/or potential new programs. Since the Plan is a long range guide, refinements or additional studies may also be appropriate in the future to reflect new information, respond to unanticipated factors or to address changes in city policies.

The Comprehensive Plan is only valuable if used consistently. This chapter has been prepared to summarize the various recommendations into a checklist to outline actions and responsibilities for implementation. A cumulative listing of implementation recommendations is found in the table at the end of this chapter. Where appropriate, a timetable is suggested for execution of these strategies and actions consistent with available staff and financial resources of the City of Portage.



Tools to implement the Comprehensive Plan generally fall into five categories:

- Land use regulations derived from police powers
- Capital improvement programs derived from budgetary powers
- Property acquisition programs derived from eminent domain powers
- Revenue generation policies derived from taxing powers
- Programs or additional studies derived from the city charter and approvals by the City Council or the City Administration

Each tool has a different purpose toward Plan implementation and may suggest specific immediate changes, long term policies and others involve on-going activities.

1. Land Use Regulations

The primary tool for Plan implementation, which includes the Zoning Ordinance and other land use regulations, is summarized below. The city also has a number of other codes and ordinances to ensure that activities remain compatible with the surrounding area, such as noise, blight and nuisance ordinances.

Zoning Regulations. Zoning regulations control the intensity and arrangement of land development through standards on lot size or units per acre, setbacks from property lines, building dimensions and similar minimum requirements. Various site design elements discussed in this Plan are also regulated through site plan review and address landscaping, lighting, driveways, parking and circulation, pedestrian systems and signs. Zoning can also be used to help assure performance in the protection of environmentally sensitive areas such as floodplains, state regulated wetlands, woodlands and wellhead areas.

Zoning Map. Over time, changes to the zoning map should become more consistent with the land use pattern identified on the Future Land Use Map. In some cases, the city may wish to initiate certain rezonings as part of an overall zoning map amendment. Other changes to the zoning map can be made in response to requests by landowners or developers. In those cases, city officials will need to determine if the time is proper for a change. It is important that the future land use plan be understood as a long range blueprint: Implementation is expected, but gradually in response to needs, conditions and availability of infrastructure. Appendix D contains rezoning guidelines.

Construction Codes. The City of Portage is required to administer the State of Michigan Construction Codes (building, mechanical, plumbing and electrical). The City of Portage has also adopted the National Fire Code. These construction codes are intended to protect the public health, safety and welfare related to building construction and occupancy. Administration of one set of standardized state construction codes ensures consistency and uniformity during building plan preparation/review and construction.

Subdivision, Land Division and Condominium Regulations. Subdivision, land division and condominium regulations control the manner in which property is subdivided in the city and the public improvements required to support the development. The distinctions are not always apparent once a project is built, but the approval procedures are different due to separate state statutes that govern these types of land development approaches in Michigan.

Access Management Ordinance. Access Management Ordinance governs the number, location, placement and design of access points. The foundation for this ordinance has been established through the Comprehensive Plan, Transportation element updates and findings from national studies. The provisions of the Access Management Ordinance are applied to development proposals, street improvement projects and other opportunities to improve traffic flow and enhance safety through modifications to driveways or interconnection of properties.

Public Infrastructure Standards. Public infrastructure refers to the basic facilities and services needed for the functioning of the city such as city streets, water, sanitary sewer, storm sewer, among others. Standards to ensure consistency and uniformity have been adopted so that each facility is designed and constructed to support existing and future development.

Land Use Regulations

- **Zoning Ordinance**
- **Construction Codes**
- **Subdivision Regulations**
- **Access Management**
- **Public Street and Utility Design Standards**

Most land use regulations are applied when new construction or substantial redevelopment is proposed. The City of Portage has a comprehensive development review process from development conceptualization to building occupancy. This process is explained in the various public information materials available at City Hall. Once proper zoning is in place, a site plan must be approved followed by approval of building and site engineering, construction plans and then permits for construction. Buildings and sites are inspected and then occupancy permits are issued. The subdivision and subsequent development of land is also carefully reviewed. Regulations are administered and enforced through monitoring by city staff and in response to complaints.

2. Capital Improvement Program (CIP)

Since 1985, the City of Portage has had an annual multi-year CIP that contains recommended capital projects, timing, estimated costs and funding for public infrastructure (streets, bikeways, sidewalks,

sanitary sewers, waterlines, storm sewers and drainage) and community facilities (public buildings, fire, police and parks). Capital projects have been identified and constructed to help support and promote desired development, and to meet the needs of residents and businesses in the city. The number of projects and project timing are influenced by several factors, in particular, the cost, need for environmental clearance or approval by other agencies, and funds available. For example, the amount of funding available from outside sources varies as new programs are established.

3. Property Acquisition Programs

Like all municipalities, Portage has the power of eminent domain to acquire private property for a public purpose. The definition of "public purpose" is quite broad. In addition to the ability to acquire private property for public infrastructure or facilities such as roads, sewers, public buildings and parks, the city may acquire private property to facilitate redevelopment and to eliminate nonconforming uses or structures. The city can also acquire land to reduce development pressure. Land may also be acquired through donation, such as road right-of-way or through conservation easements for historic and environmental preservation purposes.

4. Revenue Policies

Revenue policies are the purview of the Portage City Council, within the confines of Michigan law. In addition to traditional sources, the city has the ability to raise revenues within a specific geographic area for specific purposes, or to capture the new increment of tax revenues in a specific geographic area for specific purposes. The City of Portage has used special assessment districts for several public improvement projects. In cooperation with other local governmental units, the city has effectively used tax increment finance programs to capture the new increment of tax revenue for a specific area and use those funds for public improvements within that area.

5. Other Programs

A variety of housing, economic development, informational and other programs are used by the city to assist with implementation of recommendations in this Plan. Many of these programs are discussed in the Economic Development/Marketplace, Transportation and Housing chapters.

Implementation Strategies

These implementation tools are available and should be used to achieve the goals and objectives of the Comprehensive Plan. Comprehensive implementation strategies have been developed to organize and apply these tools. Under each implementation tool, specific actions and a timeframe for implementation should be identified. The details of the strategies to implement the Comprehensive Plan are specified in the accompanying **Table 11-1.**

Table 11-1
Implementation Strategies

Housing (Chapter 5)	Land Use Regulations	CIP	Property Acquisition	Programs or Studies	Short Term	Long Term	On-Going
Continue to offer and expand upon programs to encourage home ownership and maintenance for low and moderate income groups.				✓			✓
Continue community awareness programs on blighting influences, annual refuse collections, and comprehensive code enforcement efforts throughout residential neighborhoods.				✓			✓
Continue sidewalk and public utility (water, sanitary sewers and drainage) improvements in all neighborhoods.		✓					✓
Maintain and improve essential public services including police protection, fire and emergency services and administration to support existing neighborhoods		✓					✓
Require adequate buffering and transitions between residential and non-residential uses.	✓						✓
Conduct a careful analysis of potential impacts on residential neighborhoods for any non-residential development that is constructed adjacent to or near residential areas.	✓						✓
Consider incentives/amenities to encourage larger lot/dwelling single-family residential development in certain areas.	✓						✓
Encourage cluster housing in an attempt to preserve key natural features.	✓				✓		✓
Consider zoning changes to encourage additional single-family homeownership on smaller lots consistent with the single-family detached - medium density residential description and locations identified in Chapter 10.	✓						
Explore neighborhood areas that might benefit from low impact nonresidential uses by expanding home occupation regulations and/or other mixed-use options.	✓				✓		
Enforce property maintenance and zoning codes.	✓						✓

Table 11-1
Implementation Strategies

Economic Development/Marketplace (Chapter 6)	Land Use Regulations	CIP	Property Acquisition	Programs or Studies	Short Term	Long Term	On-Going
Continue efforts to achieve the success of major office corridors as envisioned in the Comprehensive Plan, consider corridor-wide rezoning plans and capital improvement projects within the Centre Avenue and Milham Avenue office corridors.	✓	✓		✓			
Consider the implementation of aesthetic site and building design standards and/or landscaping and screening standards to ensure compatibility of the office facilities with nearby neighborhoods.	✓						✓
Where appropriate, encourage safe and efficient non-motorized pedestrian circulation between businesses and also between businesses and residential neighborhoods.	✓	✓					✓
Pursue access management principles (parking lot interconnection/driveway consolidation) involving adjacent/nearby businesses to improve traffic flow and safety.	✓	✓					✓
Encourage neighborhood centers in small nodes and encourage uses associated with day-to-day neighborhood needs (e.g. convenience store, coffee shop, ice cream shop, and other similar uses).	✓						✓
Encourage a range of uses encompassing the full-service and specialty retail and service activities attractive to a wide population base within the general business areas.	✓						✓
Consider a revitalization program for the three Commercial Revitalization areas covering appropriate rezonings, public infrastructure improvements and financial assistance and incentive programs.	✓			✓		✓	
Identify appropriate locations for general business expansion opportunities and the impacts of should be carefully considered.	✓					✓	
Continue to evaluate (re)development opportunities involving the South Westnedge Avenue Commercial Corridor, Portage Road Commercial and Shaver Road Business Corridor needed to attract the population/consumers from the regional market.	✓	✓		✓		✓	

Table 11-1
Implementation Strategies

Economic Development/Marketplace (Chapter 6)	Land Use Regulations	CIP	Property Acquisition	Programs or Studies	Short Term	Long Term	On-Going
Prepare a City Center Area plan that focuses on the unique mixed-use attributes of the geographic center of the city. The Plan should emphasize the city center as an urban gathering place	✓	✓		✓		✓	
Review site design to ensure specific standards governing landscape, signs, exterior lighting, access, and building façade treatments are fulfilled.	✓						✓
Review the primary routes to each business area (from point of entry into the city) to ensure a high quality, aesthetically attractive, image. Motorists should view movement into and through the city as a pleasant experience.	✓	✓		✓	✓		
Continue to review access alternatives for ease of vehicular movement from area freeways and major roads to the business areas. Encourage joint access and parking opportunities between adjacent uses.	✓	✓		✓		✓	✓
Maintain efficient access alternatives providing for ease of employee and commercial truck movement from area freeways and major roads to the respective industrial districts. Where appropriate, encourage joint access and parking opportunities.	✓	✓				✓	✓
Encourage development of industrial parks and technology centers and similar developments.		✓		✓			✓
Within industrial settings, provide opportunities for a range of site sizes including smaller sites of 1 to 2 acres to accommodate smaller companies and the financial capabilities of new entrepreneurs.	✓						✓
Improve the compatibility of industrial areas with other use districts through transitional zoning and/or the use of increased setbacks, landscape buffers, and architectural screening.	✓						✓
Proactively seek redevelopment of vacated industrial sites.							✓
Compile and maintain an inventory of undeveloped business and industrial sites to assist private sector development initiatives.				✓			✓

Table 11-1
Implementation Strategies

Economic Development/Marketplace (Chapter 6)	Land Use Regulations	CIP	Property Acquisition	Programs or Studies	Short Term	Long Term	On-Going
Enforce property and maintenance codes.	✓						✓
Target infrastructure improvements to retain and encourage development centers/generators.		✓				✓	✓
Evaluate programs to provide financial assistance or incentives to landowners to upgrade their buildings and sites.				✓		✓	
Natural/Historic Resources (Chapter 7)	**Land Use Regulations**	**CIP**	**Property Acquisition**	**Programs or Studies**	**Short Term**	**Long Term**	**On-Going**
Consider all available options involving the State Game Area, if the State ever declares the area as excess property as the city could facilitate/determine the most appropriate uses.		✓		✓		✓	
Use zoning to encourage planned and/or cluster development to preserve key natural features on sites.	✓					✓	
Encourage redevelopment of brownfield sites as a method to remediate environmental contamination.				✓			✓
Continue the best management practices associated with site design to protect streams, groundwater and well-head facilities.	✓						✓
Continue public awareness campaign for homeowners on what they can do to protect the quality of the lakes and other natural features.				✓			✓
Research and review Zoning Ordinance alternatives designed to encourage preservation of environmentally sensitive areas.	✓			✓			✓
Continue to support the Environmental Board in their efforts and programs to protect and improve environmentally sensitive areas in the City of Portage.				✓			✓
Continue to support the Historic District Commission in the effort to preserve historic structures and sites in the City of Portage.				✓			✓

Table 11-1
Implementation Strategies

Transportation (Chapter 8)	Land Use Regulations	CIP	Property Acquisition	Programs or Studies	Short Term	Long Term	On-Going
Annually review the progress on proposed road improvements in the Capital Improvement Program and KATS Transportation Improvement Program.		✓		✓			✓
Ensure adequate roadway facilities to accommodate new and expanded development through development project review.	✓	✓		✓			✓
Pursue local and state funding to complete the planned bikeway and walkway systems.				✓			✓
Require clear and convenient on-site pedestrian connections from the public walkway system to building entrances.	✓						✓
Plan the development of walkway and bikeway facilities in conjunction with scheduled shoulder and strip-paving projects and with improvements to county roads.		✓		✓			✓
Continue to work with MDOT regarding improvements to the I-94 and US-131 corridors and interchange areas.		✓		✓	✓		
Ensure all transportation projects, including expressways and city streets, are designed in consideration of aesthetics and image along with traffic and safety factors.				✓			✓
Require traffic impact studies for certain projects to determine direct impacts, improvements needed and data for future planning.	✓						✓
Update the Access Management Ordinance consistent with MDOT guidelines and continuing research by transportation organizations.	✓				✓		
Continue to pursue alternatives for improved traffic flow and safety such as new signal technology to respond to actual conditions and access management principles including parking lot interconnection and driveway consolidation.				✓			✓
Continue to monitor traffic counts and crash data in conjunction with proposed roadway improvement projects.		✓		✓			✓

Table 11-1
Implementation Strategies

Transportation (Chapter 8)	Land Use Regulations	CIP	Property Acquisition	Programs or Studies	Short Term	Long Term	On-Going
Consider advanced acquisition of right-of-way where needed (such as when a (re)development project is submitted).			✓			✓	
Annually prepare the Transportation/Major Thoroughfare Plan Status Report.				✓		✓	
Ensure transit-friendly design (Refer to design guidelines) in areas that are currently or potentially to be served.	✓			✓			✓
Public Services (Chapter 9)	**Land Use Regulations**	**CIP**	**Property Acquisition**	**Programs or Studies**	**Short Term**	**Long Term**	**On-Going**
Continue to annually update the CIP to reflect the current and future public infrastructure and facility needs of the community		✓		✓			✓
Continue planning activities to protect existing water resources through continued implementation of the best management practices.	✓			✓			✓
Encourage innovative storm water treatment options that are environmentally friendly and aesthetically pleasing.	✓			✓			✓
Continue to guide development to areas of the City served by adequate public water and public sewer.	✓			✓			✓
Utilize the Web page, Cable Access, newsletter and emerging technologies to educate residents and keep them informed.				✓			✓
Continue to pursue the long and short term goals identified in the Parks and Recreation Plan, as amended, and annually update the Park and Recreation Plan to maintain eligibility for state funding.				✓			✓
Create a friendly walkable "downtown" City Centre Area that integrates with the existing commercial/retail district along South Westnedge Avenue.				✓	✓		

Appendix A

Appendix A
Employment Data

Table A-1
Employment Base, SIC Detail
City of Portage

SIC Code	Description	Establishments	Employees	Sales (Millions)	Establishment 20+ Employees
01	Agricultural Production – Crops	9	104	7	2
02	Agricultural Production – Livestock	2	93	3	1
07	Agricultural Services	28	164	7	1
13	Oil and Gas Extraction	3	13	1	0
15	Building Construction – General Contractors	50	424	121	3
16	Heavy Construction, Except SIC 15	8	78	8	2
17	Construction – Special Trade Contract	86	949	155	10
24	Lumber & Wood Products, Except Furniture	2	66	4	1
25	Furniture and Fixtures	1	5	0	0
26	Paper and Applied Products	1	18	1	0
27	Printing, Publishing & Applied Industrial	26	264	17	4
28	Chemicals and Applied Products	3	47	3	1
30	Rubber and Miscellaneous Plastic Products	11	1552	110	7
33	Primary Metal Industries	3	307	19	2
34	Fabricated Metal products	7	95	6	2
35	Industrial and Commercial machinery & Computers	17	328	24	5
36	Electric/Electronic Equipment (Example: Computers)	1	25	1	1
37	Transportation Equipment	2	50	3	1
38	Instruments and Related Products	7	1577	134	3
39	Miscellaneous Manufacturing Industries	7	16	1	0
41	Local, Suburban & interurban Transportation	2	28	1	1
42	Motor Freight Transportation	20	219	22	2
43	US Postal Service	2	119	0	1
44	Water Transportation	0	0	0	0
45	Transportation By Air	1	6	0	0
46	Pipe Lines, Except Natural gas	1	9	1	0
47	Transportation Service	14	64	17	0
48	Communication	12	193	16	2
49	Electric, Gas & sanitary Services	2	20	2	0
50	Wholesale Trade- Durable Goods	82	776	132	11

51	Wholesale Trade Nondurable Goods	34	246	40	4
52	Building material/Garden Supplies/Mobile Homes	33	479	70	7
53	General merchandise Stores	16	1561	170	13
54	Food Stores	42	1315	214	8
55	Automobile Dealers & Gas Service Stations	48	408	98	3
56	Apparel and Accessory Stores	50	491	34	6
57	Home Furniture/Furnishing/ Equipment	59	635	108	9
58	Eating and Drinking Places	104	2781	127	46
59	Miscellaneous Retail	163	1330	128	20
60	Depository Institutions	25	287	75	1
61	Nondepository Credit Institutions	19	172	52	3
62	Security/Commodity Brokers & Service	31	113	18	0
63	Insurance Carriers	3	25	2	0
64	Insurance Agents, Brokers & Service	67	607	141	5
65	Real Estate	90	826	122	10
67	Holding & other Investment Offices	1	4	0	0
70	Hotels and Other lodging Places	3	8	0	0
72	Personal Services	118	640	24	4
73	Business Services	116	922	120	8
75	Automobile Repair, Services and Parking	55	291	20	2
76	Miscellaneous Repair Services	25	65	6	0
78	Motion Pictures	14	96	12	0
79	Amusement and Recreation Service (example Movies)	30	359	28	4
80	Health Services	248	1770	161	15
81	Legal Services	28	162	29	2
82	Educational Services	30	1512	156	21
83	Social Service	38	405	24	6
86	Membership Organizations	60	391	19	3
87	Engineering/Accounting/Resume/ Management Relative Services	99	640	85	9
89	Miscellaneous Services	7	23	1	0
90	Public Administration (SIC 90-97	28	464	0	7
99	Nonclassifiable Establishments	166	1377	0	5

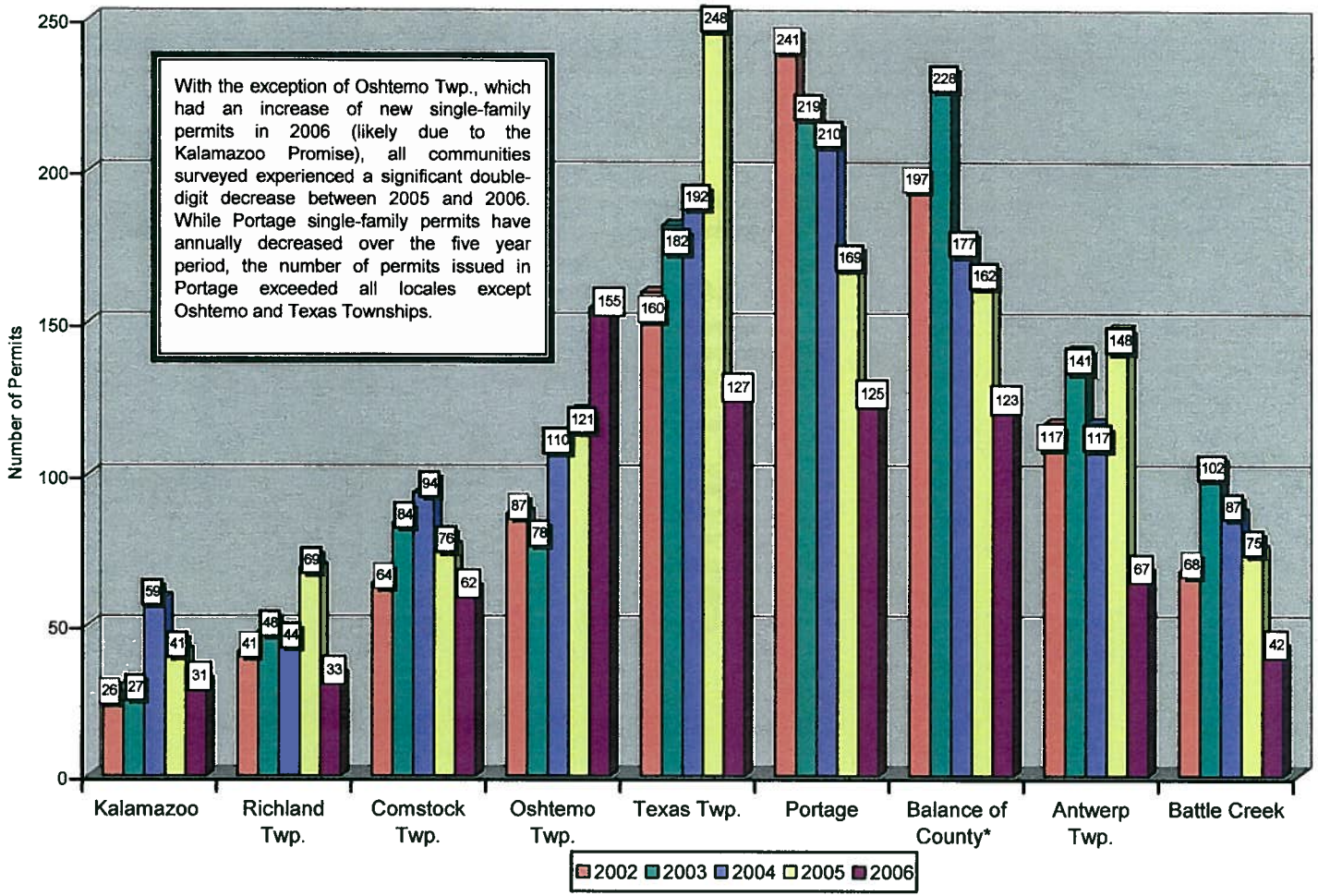
Source: Claritas, 2001

Appendix B

Appendix B
Economic Development Comparison Data

FIGURE B-1

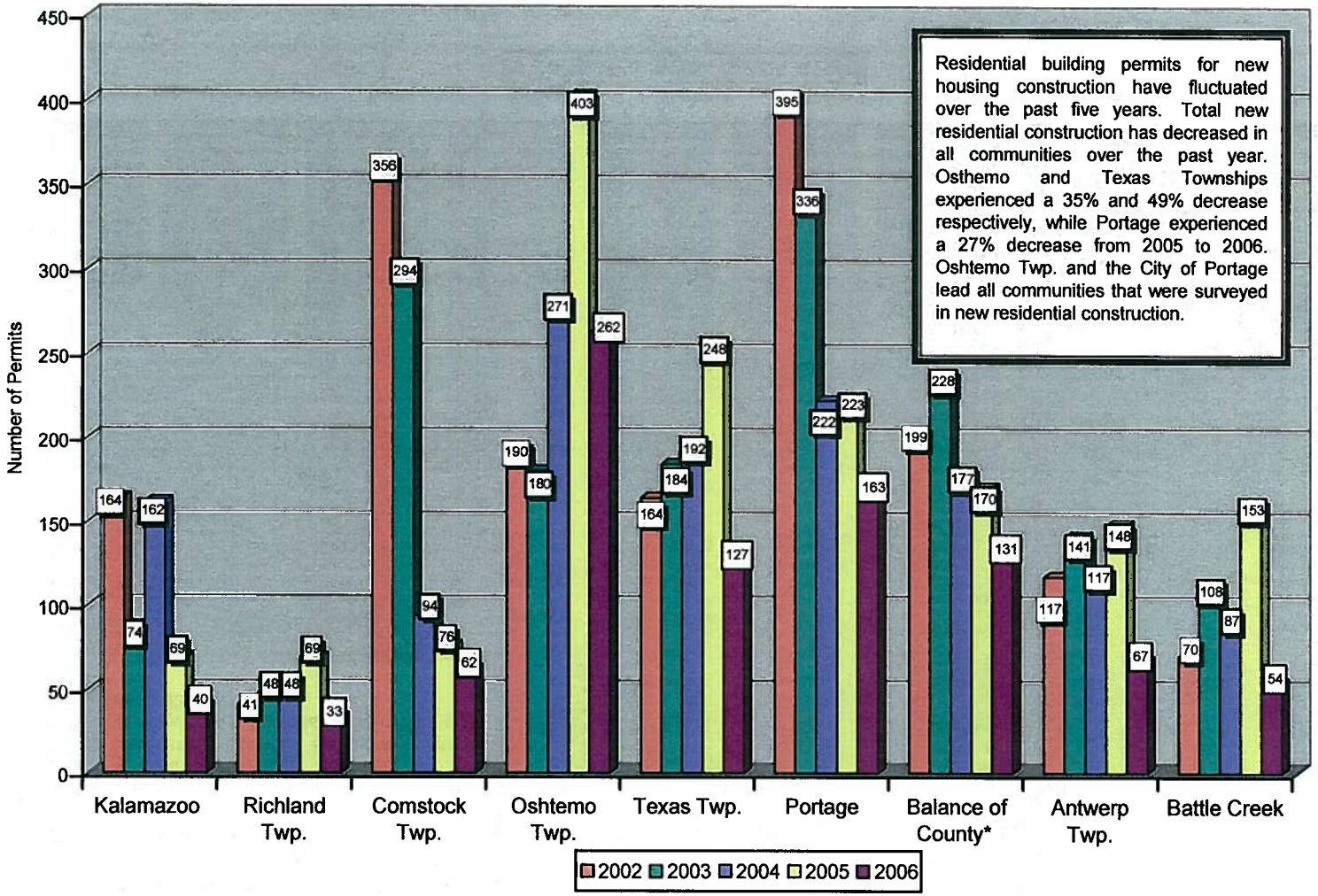
New Single-family Residential Housing Unit Trends: 2002-2006[1]



[1] Sources: Antwerp Township Officials, the City of Battle Creek, and the W.E. Upjohn Institute, "New Private Housing Units Authorized by Building Permits, Kalamazoo County, April, 2002-2007.
* Balance of Kalamazoo County includes "Exurban" areas. Leading growth communities in such areas include: Pavilion, Ross and Schoolcraft Townships and the Village of Vicksburg.

FIGURE B-2

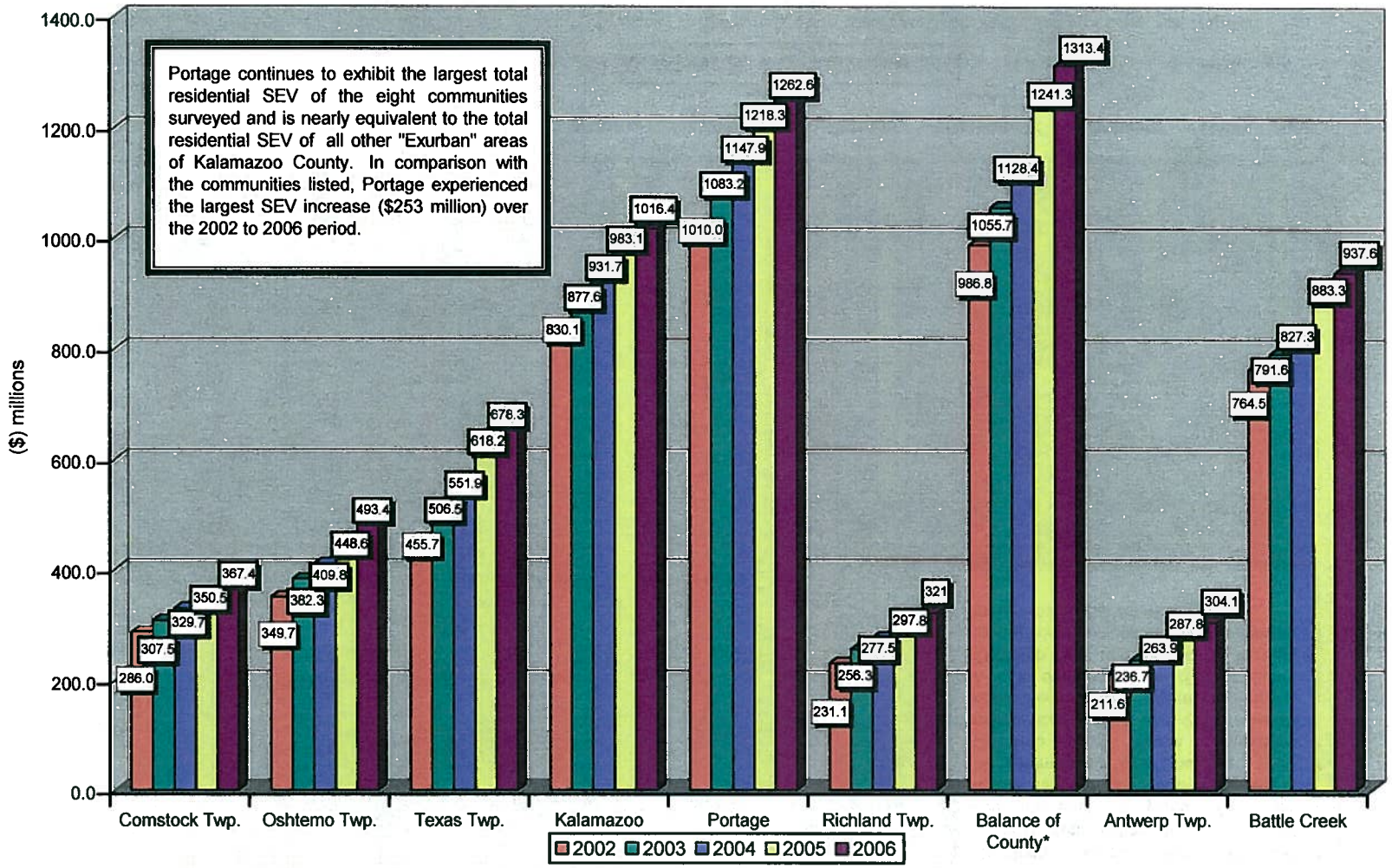
Total New Residential Housing Unit Trends: 2002-2006[1]



[1] Sources: Antwerp Township Officials, the City of Battle Creek, and the W.E. Upjohn Institute, "New Private Housing Units Authorized by Building Permits, Kalamazoo County, April, 2002-2007.
* Balance of Kalamazoo County includes "Exurban" areas. Leading growth communities in exurban areas include: Pavilion, Ross and Schoolcraft Townships and the Village of Vicksburg

FIGURE B-3

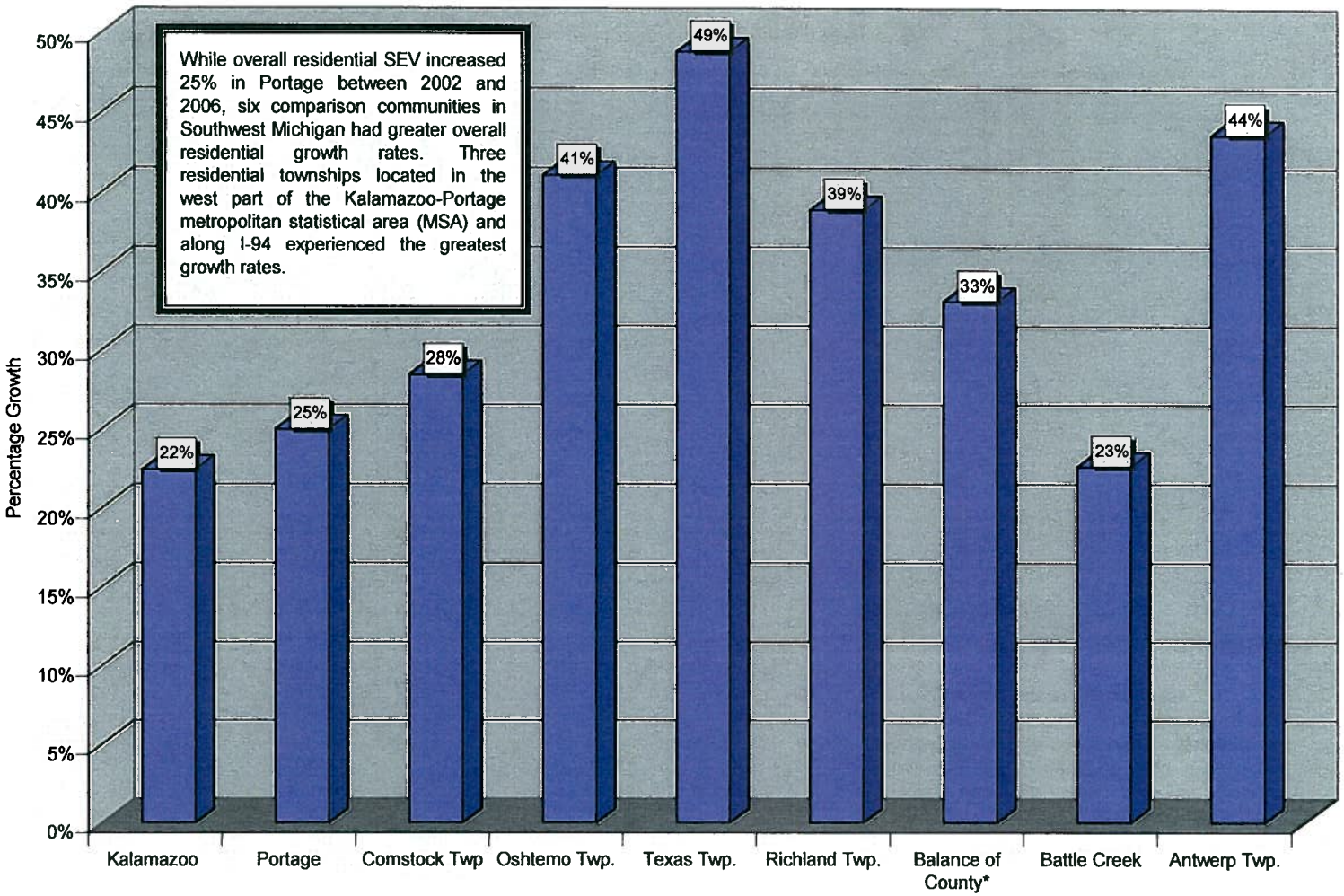
Residential SEV Trends: 2002-2006[1]



[1] Residential SEV includes single-family and 2-4 unit buildings for existing and newly developed property.
Source: Kalamazoo, Calhoun, and Van Buren County Equalization Reports, 2002-2007.
* Balance of Kalamazoo County includes "Exuban" areas. Leading growth communities in exurban areas include: Brady, Pavilion, Ross and Schoolcraft Townships

FIGURE B-4

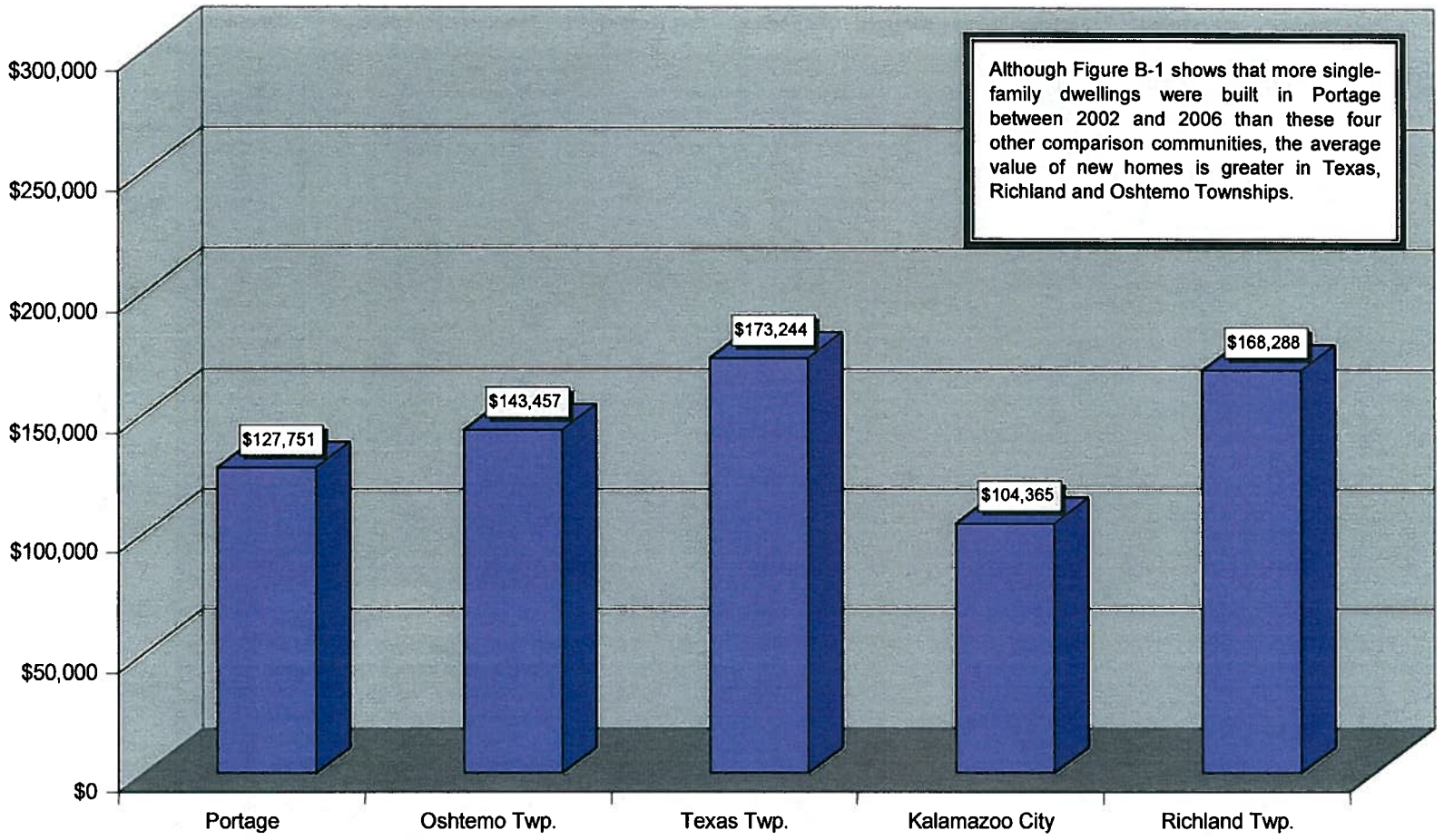
Residential SEV Growth Rates: 2002-2006[1]



[1] Residential SEV includes single-family and 2-4 unit buildings for existing and newly developed property.
Source: Kalamazoo, Calhoun, and Van Buren County Equalization Reports, 2002-2007.
* Balance of Kalamazoo County includes "Exurban" areas. Leading growth communities in such areas include: Pavilion, Ross and Schoolcraft Townships and the Village of Vicksburg.

FIGURE B-5

Average Value of New Residential SEV: 2002-2006[1]

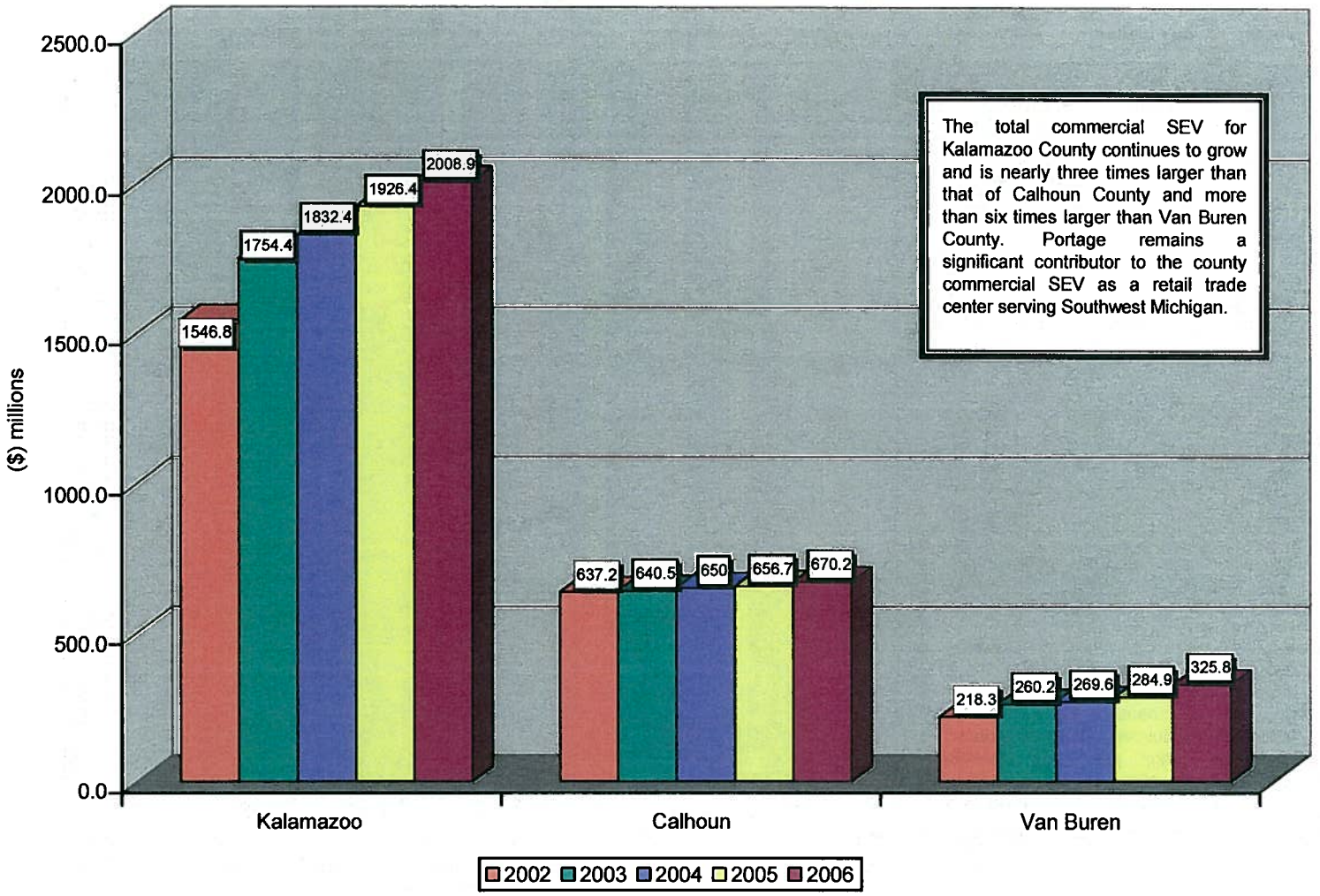


[1] Includes single-family residential houses (site built and modular/manufactured houses outside manufactured housing parks)

Source: Assessing offices of Kalamazoo and Van Buren County local units of government, methodology for data collection may vary slightly by local unit of government

FIGURE B-6

Commercial SEV Trends By County[1]

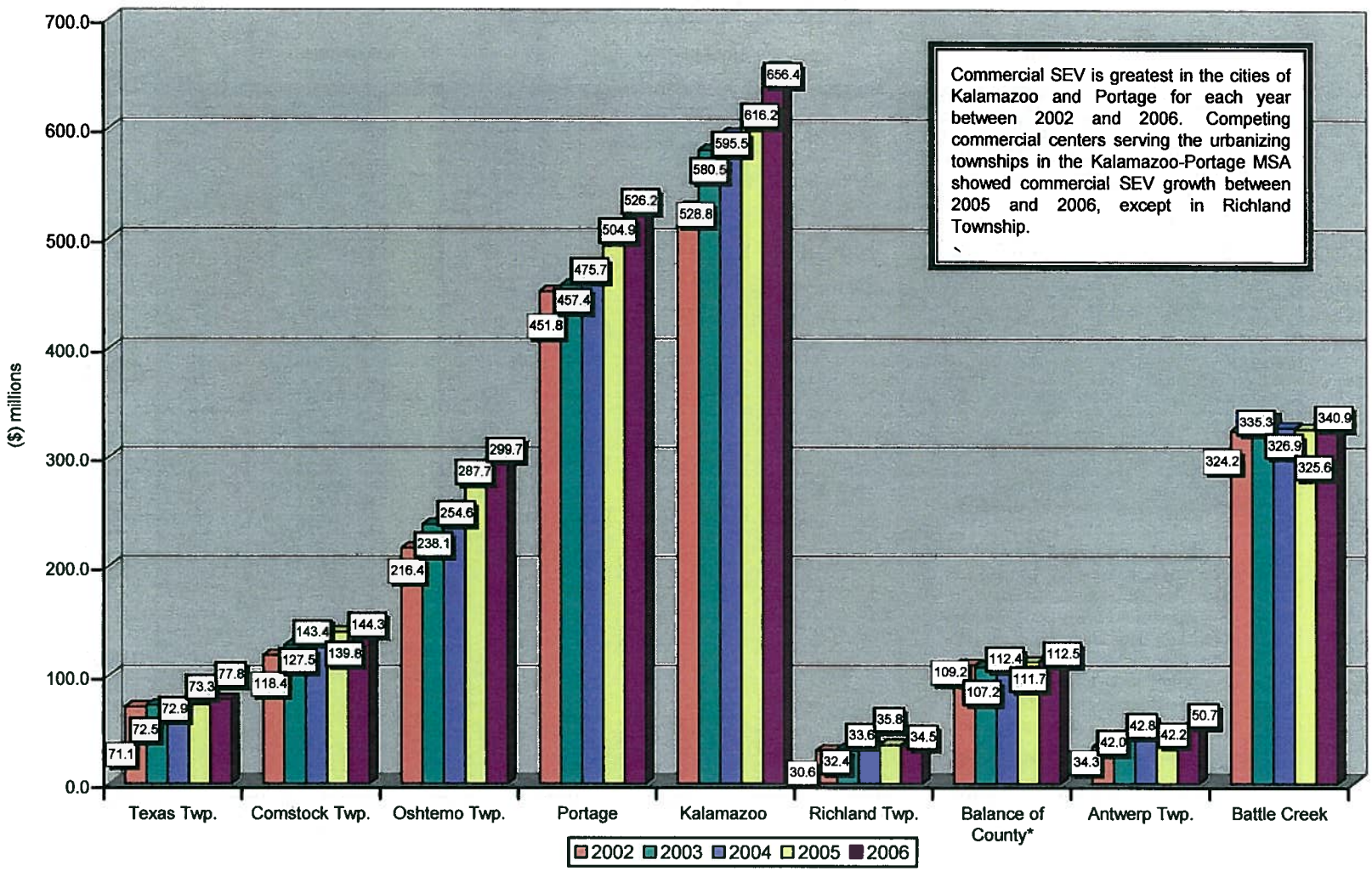


[1] Data also includes multiple-family properties with five or more units.

Source: Kalamazoo, Calhoun, and Van Buren County Equalization Reports, 2002-2007.

FIGURE B-7

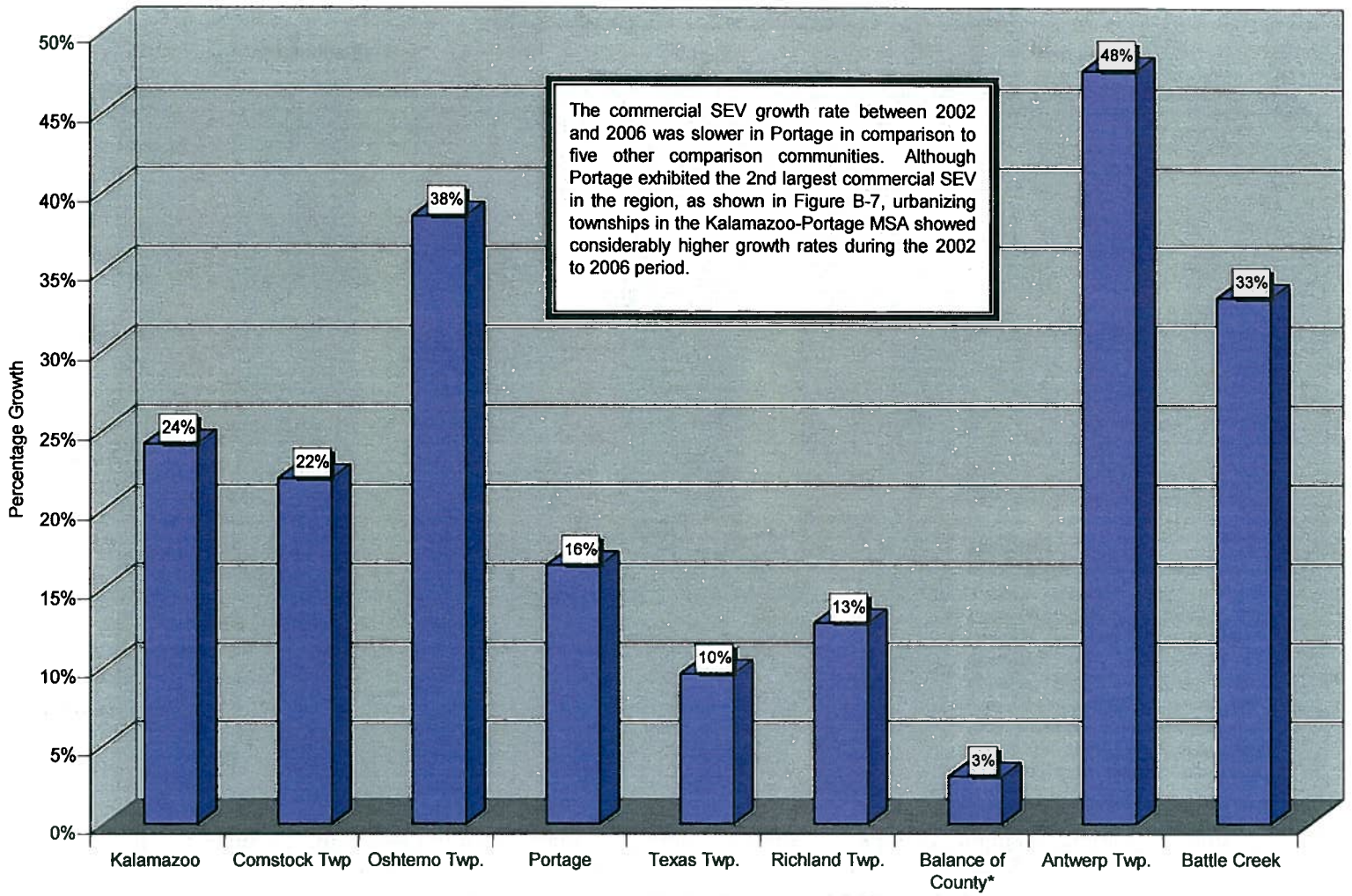
Commercial SEV Trends: 2002 - 2006[1]



[1]Data also includes multiple family properties with five or more units.
Source: Kalamazoo, Calhoun, and Van Buren County Equalization Reports, 2002-2007.

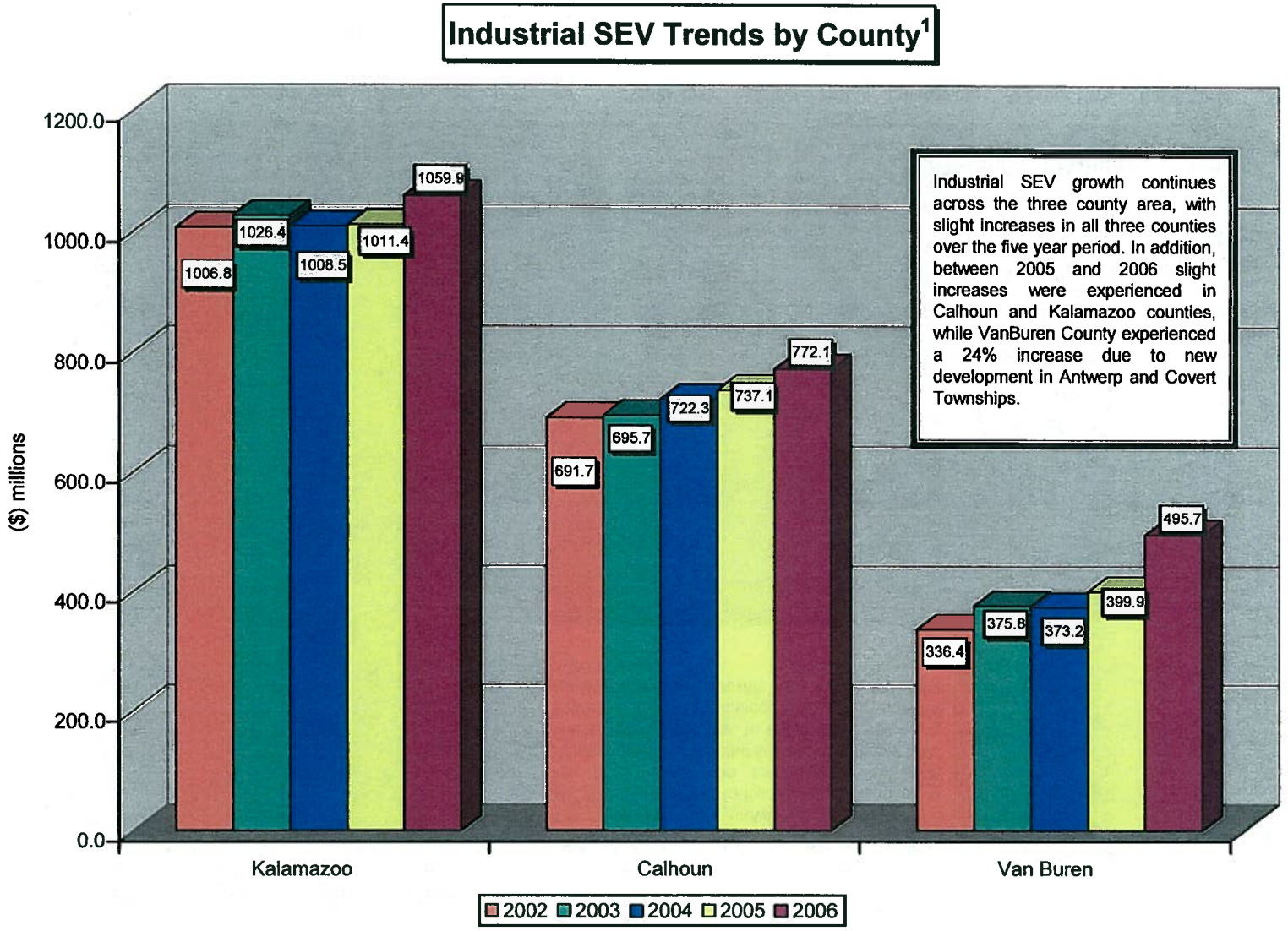
FIGURE B-8

Commercial SEV Growth Rates: 2002-2006[1]



[1] Data also includes multiple family properties with five or more units.
Source: Kalamazoo, Calhoun, and Van Buren County Equalization Reports, 2002-2007.
* Balance of Kalamazoo County includes "Exurban" areas. Leading growth communities in such areas include: Charleston, Ross and Schoolcraft Townships.

FIGURE B-9

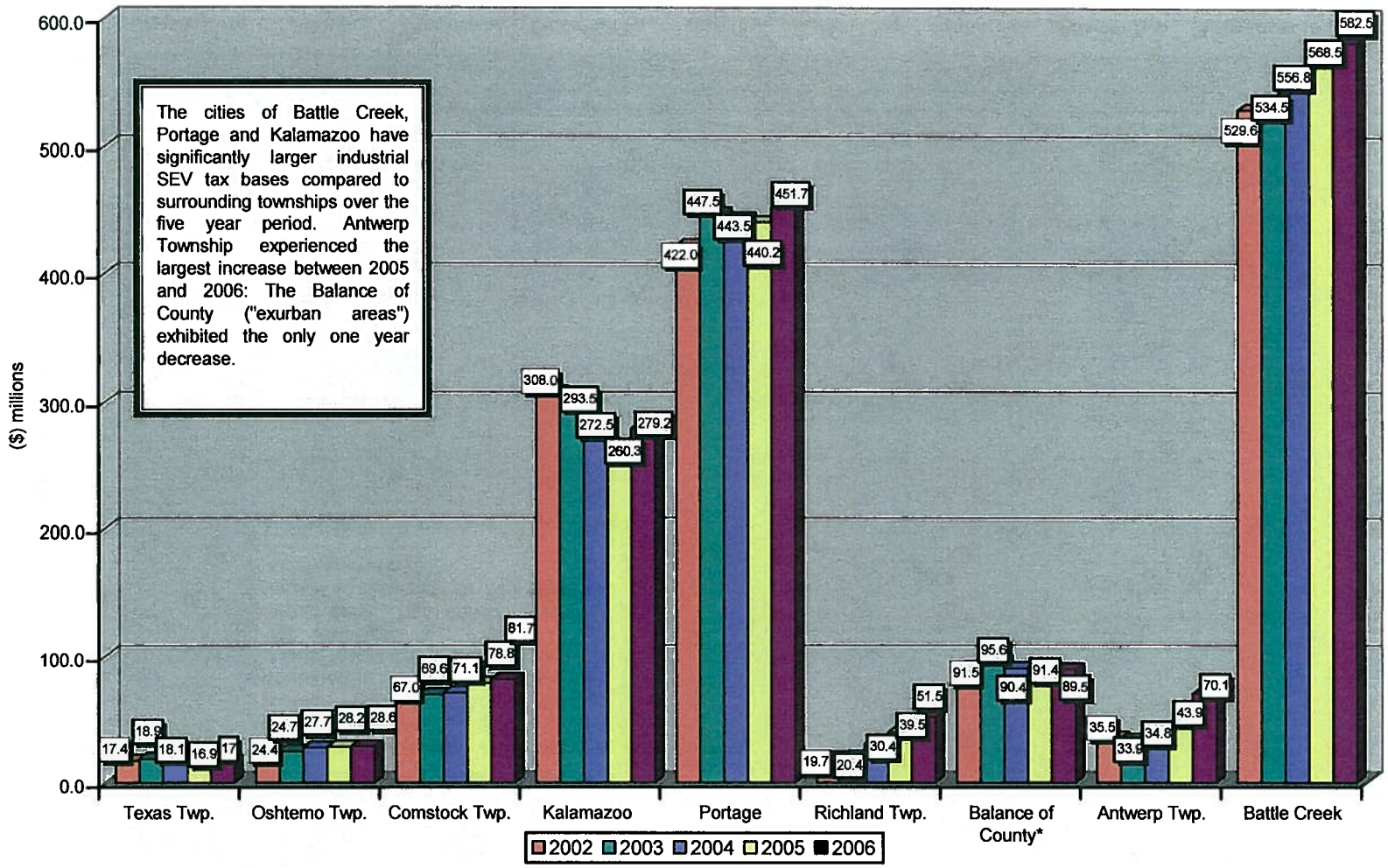


[1] Data includes regular and tax abated property values.

Source: Kalamazoo, Calhoun, and Van Buren County Equalization Reports, 2002-2007.

FIGURE B-10

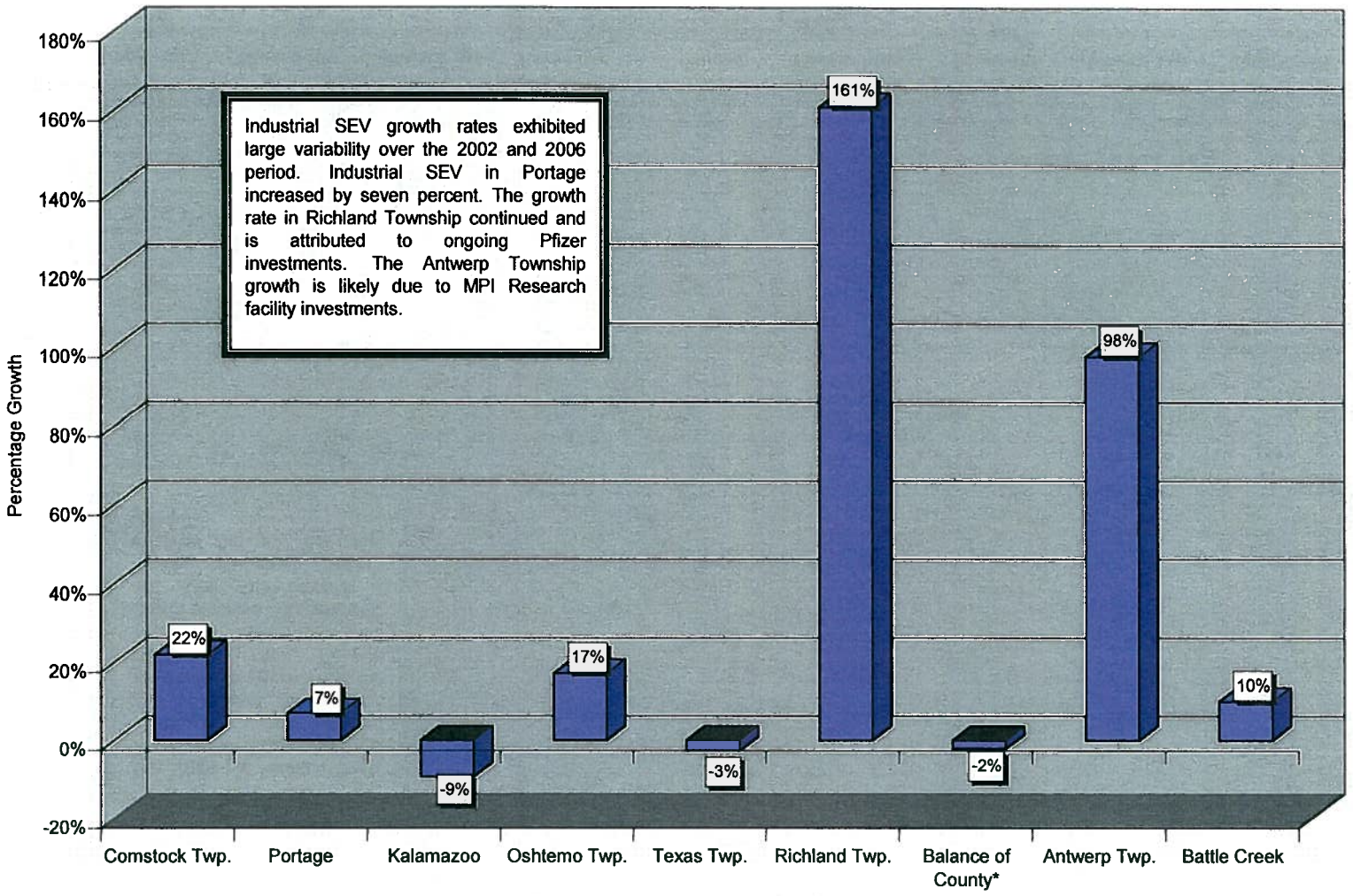
Industrial SEV Trends: 2002 - 2006[1]



[1] Data includes regular and tax abated property values.
Source: Kalamazoo, Calhoun, and Van Buren County Equalization Reports, 2002-2007.
* Balance of Kalamazoo County includes "Exurban" areas.

FIGURE B-11

Industrial SEV Growth Rates: 2002-2006[1]



[1] Data includes regular and tax abated property values.
Source: Kalamazoo, Calhoun, and Van Buren County Equalization Reports, 2002-2007.
* Balance of Kalamazoo County includes "Exurban" areas.

Appendix C

Appendix C
Transportation Information

Table C-1
Thoroughfare Designation Guidelines

	Freeway/Expressway	Major Arterial	Minor Arterial	Collector
Trip Distance	Provides for long-distance (over three miles) traffic movement between Portage and other metropolitan areas.	Provides for long-distance) traffic movement between Portage and other communities within the Kalamazoo metropolitan area.	Provides for moderate-distance traffic movement within Portage and between Portage and adjacent communities.	Provides for short-distance traffic movement between the local and arterial street systems in Portage.
Access Control	Full access control -- no service to abutting land uses. Access points limited to other freeways and arterials with a minimum interchange spacing of one mile.	Limited access control -- Access control through frontage roads, raised medians, and the spacing and location of driveways and intersections.	Partial access control -- moderate service to abutting land uses. Access control through raised medians, and the spacing and location of driveways and intersections.	Provides direct access to abutting land uses and some access control through raised medians and the spacing and location of driveways and intersections.
Traffic Separation	Opposing traffic flows are physically separated and cross streets are grade-separated except that expressways may have at-grade signalized intersections at least one mile apart.	Opposing traffic flows are physically separated by a raised median. Collector and arterial cross streets may be signalized.	Opposing traffic flows are physically separated by a raised median or continuous left-turn lane. Collector and arterial cross streets may be signalized as well as major development entrances.	Opposing traffic flows are generally unseparated.
Signalization	Not applicable.	Traffic signals are coordinated for progressive movement.	Traffic signals may be coordinated for progressive movement.	Some traffic signals are coordinated.
Traffic Volumes	Over 50,000 average daily trips.	30,000 to 50,000 average daily trips.	15,000 to 30,000 average daily trips.	5,000 to 30,000 average daily trips.
Speed	65 to 70 miles per hour	35 to 45 miles per hour	35 to 40 miles per hour	30 miles per hour
Number of Lanes	2 or more lanes in each direction.	2 or more lanes in each direction.	2 through lanes in each direction	1 or 2 through lanes in each direction
Land Use Linkages	Major activity centers and the metropolitan core.	Major activity centers and the metropolitan core. Usually form neighborhood boundaries.	Secondary activity centers. Occasionally form neighborhood boundaries.	Main neighborhood interior streets.
Parallel Spacing	Variable, not less than 3 miles.	1.5 to 2.0 miles	0.75 to 1.0 miles	0.25 to 0.5 miles
Percent of System	0 to 5	5 to 10	5 to 10	5 to 10

Table C-2
FUNCTIONAL CLASSIFICATION-CITY OF PORTAGE STREET SYSTEM

Expressway	Major Arterial	Minor Arterial	Collector	Subcollector
• I-94 • US 131	• Westnedge Ave. from Kilgore Rd. to Shaver Rd. • Shaver Rd. from Westnedge Ave. to the south city limits • Sprinkle Rd. from Kilgore Rd. to south city limits. • Centre Ave. from 12th St. to Sprinkle Rd. • Milham Ave. from Oakland Dr. to Portage Rd. • Oakland Dr. from Kilgore Rd. to Milham Ave. • Portage Rd. from Kilgore Rd. to Centre Ave.	• Westnedge Ave. from Shaver Rd. to Osterhout Ave. • Milham Ave. from 12th St. to Oakland Dr. • Romence Rd./Romence Rd. Parkway from Oakland Dr. to east city limits • 12th St. from the north city limits to the south city limits • Oakland Dr. from Milham Ave. to Shaver Rd. • Lovers Ln. from Kilgore Rd. to Centre Ave. • Portage Rd. from Centre Ave. to Mandigo Ave. • Kilgore Rd. from Oakland Dr. to Sprinkle Rd. • Osterhout Ave. from Shaver Rd. to Portage Rd. • Mall Dr. from Constitution Blvd. to Westnedge Ave. • Constitution Blvd. from Milham Ave. to Romence Rd.	• Milham Ave. from Sprinkle Rd. to east City limits. • Oakland Dr. from Shaver Rd. to south City limits. • Centre Ave. from Sprinkle Rd. to east City limits. • Romence Rd. from Angling Rd. to Oakland Dr. • Angling Rd. from Merryview Dr. to Vincent Ave. • Vincent Ave. from Angling Rd. to Oakland Dr. • Angling Rd. from Milham Ave. to Vanderbilt Ave. • Zylman Ave. from Portage Rd. to Sprinkle Rd. • Cox's Dr. from Centre Ave. to Zylman Ave. • Newport Rd. from Milham Ave. to Gladys. • Gladys from Newport Rd. to Westnedge Ave. • Bacon Ave. from Westnedge Ave. to Portage Rd. • Melody Ave. from Shaver Rd. to Westnedge Ave. • Old Centre Ave. from Centre Ave. to Moorsbridge Rd. • Ramona Ave. from Lovers Lane to Portage Rd. • Vanderbilt Ave. from Angling Rd. to Shaver Rd. • Moorsbridge Rd. from Centre Ave. to Romence Rd. • Schuring Rd. from Oakland Dr. to Westnedge Ave. • Garden Lane from Westnedge Ave. to Lovers Lane. • Winters Dr. from Lovers Ln. to Portage Rd.	• Old Kilgore from Westnedge Ave. to Kilgore • Idaho from Westnedge Ave. to Oregon Ave. • Oregon Ave. from Idaho to Milham Ave. • Rockford St. from Romence Rd. to Schuring Rd. • Commercial Ave. from Sprinkle to American Ave. • American Ave. from Commercial Ave. to Executive • Executive Ave. from American Ave. to Corporate Ave. • Corporate Ave. from Milham to the south terminus. • Forest Ave. from Lovers Ln. to Portage Rd. • Nash Ave. from East Shore to Sprinkle Rd. • East Shore from Mandigo to Nash Ave. • East Shore from Nash to Cox's Dr. • Mandigo from East Shore to Portage Rd. • Meredith from Milham Ave.to Sprinkle Rd. • Winters Dr. from Lovers Lane to Portage Rd.

Table C-3
Street Cross Section Standards

Functional Class	Minimum Right-of-Way	Number of Moving Lanes	Pavement Cross Section				Median Divider	Border Section	
			Through Lanes	Auxiliary Lanes	Bikeway (a)	Curb & Gutter Each Side		Outer Separation	Sidewalk
Freeway	Varies	4 to 8	12' per lane	12' each	N.A.	Paved shoulder	Varies	N.A.	N.A.
Major Arterial	100' to 140' (a)	4 to 8	11' or 12' per lane	12' or 14' (b)	6' (c)	2'	Min. 16' (d)	5'	5'
Minor Arterial	100' to 120' (b)	4	11' or 12' per lane	12' or 14' (b)	6' (c)	2'	12' or 14' (d)	5'	5'

Notes:
(a) Additional right-of-way width within 500 feet of the intersection may be required for separate turn lanes.
(b) 14-foot left-turn lanes may be required when a median does not provide separation for opposing traffic.
(c) The bike lane width may be reduced by one foot, assuming a continuous curb and gutter section that is suitable for bicycles, or may be eliminated if a parallel bikeway facility exists.
(d) A raised median or median barrier curb is highly desirable for major arterials. A continuous left-turn lane is most likely for minor arterials although a median may be appropriate in some cases. A continuous left-turn is required for all collectors.

Source: The Corradino Group.

Table C-4:
Existing Thoroughfare Street Segment Characteristics

Street	From	To	Street Class	Jurisdiction	Lanes	Pavement Width	ROW Width	Posted Speed	Curb & Gutter	Daily Capacity	Daily Traffic	Year	Present V/C Ratio	2030 ADT (a)	2030 V/C Ratio
Westnedge	Kilgore	Andy	Major Art.	Portage	5	60	66 to 93	35	Yes	34,200	37,792	2004	1.11	30,251	0.88
Westnedge	Andy	Idaho	Major Art.	Portage	5	60	66 to 119	35	Yes	34,200	45,562	2004	1.33	42,255	1.24
Westnedge	Idaho	Milham	Major Art.	Portage	6-7	72-84	110	35	Yes	40,500	46,893	2006	1.16	59,586	1.47
Westnedge	Milham	Mall	Major Art.	Portage	6	72	83 to 125	35	Yes	40,500	40,271	2004	0.99	58,769	1.45
Westnedge	Mall	Ruth	Major Art.	Portage	6	72	93 to 110	35	Yes	40,500	40,549	2004	1.00	57,881	1.43
Westnedge	Ruth	Hudson	Major Art.	Portage	6	72	93 to 110	35	Yes	40,500	36,817	2004	0.91	57,881	1.43
Westnedge	Hudson	Romence	Major Art.	Portage	6	72	90 to 110	35	Yes	40,500	39,356	2006	0.97	35,054	0.87
Westnedge	Romence	Garden	Major Art.	Portage	5	57	66 to 93	35	Yes	32,200	32,515	2004	1.01	31,717	0.99
Westnedge	Garden	Schuring	Major Art.	Portage	5	57	66 to 93	35	Yes	32,200	24,150	2004	0.75	29,578	0.92
Westnedge	Schuring	Shaver	Major Art.	Portage	5	60	66 to 93	35	Yes	32,200	24,147	2004	0.75	25,141	0.78
Westnedge	Shaver	Centre	Minor Art.	Portage	4	44	99	30	Yes	30,600	20,061	2004	0.66	6,224	0.20
Westnedge	Centre	Melody	Minor Art.	Portage	3	38	66 to 86	30	50%	17,000	10,629	2006	0.63	6,514	0.38
Westnedge	Melody	Osterhout	Minor Art.	Portage	2	24	66	40	No	16,200	8,419	2006	0.52	5,668	0.35
Milham	12th	Heverly	Minor Art.	Portage	2	32	66	40	Pvd Sldr	16,200	13,340	2006	0.82	10,624	0.66
Milham	Heverly	Oakland	Minor Art.	Portage	2	32	66	35	Pvd Sldr	16,200	14,580	2004	0.90	13,536	0.84
Milham	Oakland	Constitution	Major Art.	Portage	5	60	83	35	Yes	32,200	25,924	2006	0.81	20,700	0.64
Milham	Constitution	Westnedge	Major Art.	Portage	5	58	83	35	Yes	32,200	15,959	2004	0.50	19,936	0.62
Milham	Westnedge	Norfolk Southern	Major Art.	Portage	5	55	66 to 83	35	Yes	34,200	9,991	2004	0.29	14,131	0.41
Milham	Norfolk Southern	Lovers Lane	Major Art.	Portage	4-5	55	66 to 83	35	Yes	34,200	10,975	2004	0.32	14,351	0.42
Milham	Lovers Lane	Portage	Major Art.	Portage	4	48	131 to 148	40	Yes	34,200	8,357	2004	0.24	4,904	0.14
Milham	Sprinkle	E. City Limits	Collector	Portage	2	24	66	25	Pvd Sldr	16,200	2,325	2004	0.14	2,105	0.13
Oakland	Kilgore	I-94	Major Art.	Portage	4	40	66 to 135	35	Yes	30,600	23,633	2006	0.77	23,095	0.75
Oakland	I-94	Milham	Major Art.	Portage	5	60	99	35	Yes	34,200	33,920	2004	0.99	35,440	1.04
Oakland	Milham	Romence	Minor Art.	Portage	3	44	66	35	Yes	16,200	15,491	2004	0.96	19,589	1.21
Oakland	Romence	Centre	Minor Art.	Portage	3	44	66	35	Yes	16,200	12,817	2004	0.79	14,745	0.91
Oakland	Centre	Shaver	Minor Art.	Portage	2	22	66	40	Pvd Sldr	16,200	7,821	2005	0.48	4,079	0.25
Oakland	Shaver	Osterhout	Collector	Portage	2	22	66	40	Pvd Sldr	16,200	9,186	2006	0.57	4,181	0.26
Oakland	Osterhout	S. City Limits	Collector	Portage	2	22	66	40	Pvd Sldr	16,200	5,022	2004	0.31	3,792	0.23
Portage	Milham	Centre	Major Art.	Portage	4 & 5	44	66 to 100	45	Yes	32,500	22,210	2004	0.68	21,419	0.66
Portage	Kilgore	Milham	Major Art.	Portage	5	59	100	45	Yes	34,200	22,270	2004	0.65	23,435	0.69
Portage	Centre	Lakeview	Minor Art.	Portage	4 & 5	44	66 to 100	40-45	Yes	32,500	21,709	2005	0.67	17,305	0.53
Portage	Lakeview	Mandigo	Minor Art.	Portage	2-4	22-44	66	45	No	16,200	12,069	2006	0.75	16,102	0.99
Sprinkle	Kilgore	Meredith	Major Art.	KCRC	5	60	100	50	No	34,200	22,818	2004	0.67	19,794	0.58
Sprinkle	Meredith	Milham	Major Art.	KCRC	5	60	100	50	40%	34,200	19,174	2004	0.56	20,631	0.60
Sprinkle	Milham	Bishop	Major Art.	KCRC	5	60	100	50	No	34,200	19,225	2004	0.56	20,487	0.60
Sprinkle	Bishop	Centre	Major Art.	KCRC	5	60	100	50	No	32,500	16,194	2004	0.50	24,876	0.77
Sprinkle	Centre	S. City Limits	Major Art.	KCRC	5	60	66 to 100	50	Yes	24,700	11,498	2004	0.47	18,304	0.74
Centre	12th	Oakland	Major Art.	Portage	4-5	48-60	83 to 120	45	Yes	32,500	27,343	2006	0.84	26,084	0.80
Centre	Oakland	Westnedge	Major Art.	Portage	5	55	76 to 86	45	Yes	34,200	22,310	2006	0.65	21,292	0.62
Centre	Westnedge	Waylee	Major Art.	Portage	5	55	66 to 86	35	Yes	34,200	22,329	2006	0.65	22,916	0.67
Centre	Waylee	Portage	Major Art.	Portage	5	55	66 to 86	35-45	Yes	32,500	16,710	2004	0.51	20,859	0.64
Centre	Portage	Sprinkle	Major Art.	Portage	4	48	100 to 122	45	Yes	34,200	10,205	2004	0.30	17,984	0.53
Centre	Sprinkle	E. City Limits	Collector	Portage	2	22	66	40	Pvd Sldr	16,200	10,222	2004	0.63	10,447	0.64
Romence	Angling	Oakland	Collector	Portage	2	24	66	35	Pvd Sldr	16,200	10,727	2006	0.66	8,141	0.50
Romence	Oakland	Sears	Minor Art.	Portage	3	35	66	35	Yes	16,200	14,237	2004	0.88	13,118	0.81
Romence	Sears	Westnedge	Minor Art.	Portage	5	55	66	35	Yes	34,200	18,221	2006	0.53	12,546	0.37
Romence	Westnedge	Lovers Lane	Minor Art.	Portage	4	44	132 to 186	35	Yes	34,200	14,687	2004	0.43	13,604	0.40

Table C-4:
Existing Thoroughfare Street Segment Characteristics

Street	From	To	Street Class	Jurisdiction	Lanes	Pavement Width	ROW Width	Posted Speed	Curb & Gutter	Daily Capacity	Daily Traffic	Year	Present V/C Ratio	2030 ADT (a)	2030 V/C Ratio
Romence	Lovers Lane	Portage	Minor Art.	Portage	4	44	100 to 273	35	Yes	32,500	12,073	2004	0.37	10,068	0.31
Romence	Portage	Mastenbrook	Minor Art.	Portage	3-4	36-44	66	45	40%	16,200	12,284	2007	0.76	12,543	0.77
Romence	Mastenbrook	Sprinkle	Minor Art.	Portage	2-3	22-33	66	45	Pvd Sldr	16,200	8,510	2004	0.53	13,486	0.83
Bishop	Sprinkle	E. City Limits	Minor Art.	Portage	2-3	23-33	66	40	Pvd Sldr	16,200	2,693	2006	0.17	3,163	0.20
Lovers Lane	Kilgore	I-94	Minor Art.	Portage	4	44	66 to 83	35	Yes	32,500	13,468	2004	0.41	22,856	0.70
Lovers Lane	I-94	Milham	Minor Art.	Portage	4	44	66 to 83	35	Yes	32,500	10,983	2004	0.34	19,455	0.60
Lovers Lane	Milham	Romence	Minor Art.	Portage	4	44	66 to 99	40	Yes	32,500	10,067	2007	0.31	11,750	0.36
Lovers Lane	Romence	Garden	Minor Art.	Portage	4	44	66 to 99	40	Yes	32,500	13,634	2004	0.42	10,010	0.31
Lovers Lane	Garden	Centre	Minor Art.	Portage	4	44	66 to 99	40	Yes	32,500	11,011	2004	0.34	7,839	0.24
Lovers Lane	Centre	Forest	Subcollector	Portage	2	24	66 to 99	25	Pvd Sldr	16,200	2,622	2004	0.16	1,954	0.12
Kilgore	Oakland	Westnedge	Minor Art.	Kalamazoo	2-3	24-36	66 to 83	35	Yes	16,200	16,213	2004	1.00	10,015	0.62
Kilgore	Westnedge	Burdick	Minor Art.	Portage	4-5	44-55	66 to 83	35	Yes	32,500	19,730	2006	0.61	25,614	0.79
Kilgore	Burdick	Lovers Lane	Minor Art.	Portage	4	44-55	66 to 83	35	Yes	32,500	15,965	2006	0.49	25,688	0.79
Kilgore	Lovers Lane	Portage	Minor Art.	Portage	3	44	66 to 120	35	Yes	16,200	11,656	2006	0.72	15,898	0.98
Kilgore	Norfolk Southern	Sprinkle	Minor Art.	Kalamazoo	4	44	66	45	Yes	32,500	5,571	2007	0.17	12,229	0.38
Kilgore	Portage	Norfolk Southern	Minor Art.	Kalamazoo	4	44	66 to 120	45	Yes	32,500	11,542	2007	0.38	15,767	0.49
Angling	Merryview	Vincent	Collector	Portage	2	24	66 to 83	25	Pvd Sldr	16,200	1,418	2004	0.09	1,651	0.10
Vincent	Angling	Oakland	Collector	Portage	2	24	66	25-35	Pvd Sldr	16,200	1,329	2004	0.08	2,428	0.15
Angling	Milham	Romence	Collector	Portage	2	22	66 to 83	35	Pvd Sldr	16,200	4,137	2006	0.26	2,171	0.13
Angling	Romence	Centre	Collector	Portage	2	24	66 to 105	35	Pvd Sldr	16,200	4,277	2006	0.26	3,797	0.23
Angling	Centre	Vanderbilt	Collector	Portage	2	24	66 to 90	35	Pvd Sldr	16,200	4,379	2006	0.27	1,034	0.06
Vanderbilt	Angling	Shaver	Collector	Portage	2	22	66	35	Pvd Sldr	24,700	1,779	2004	0.07	1,985	0.08
Osterhout	Shaver	Westnedge	Minor Art.	Portage	2	21	66	40	Pvd Sldr	16,200	4,597	2004	0.28	4,470	0.28
Osterhout	Westnedge	Portage	Minor Art.	Portage	2	24	66	40	Pvd Sldr	16,200	4,886	2005	0.30	5,421	0.33
Shaver	Westnedge	Centre	Major Art.	Portage	5	55	66 to 73	35	Yes	34,200	24,518	2004	0.72	18,917	0.55
Shaver	Centre	Vanderbilt	Major Art.	Portage	4-5	44-55	78 to 100	45	Yes	32,500	18,114	2004	0.56	19,605	0.60
Shaver	Vanderbilt	S. City Limits	Major Art.	Portage	2-3	22-33	18 to 200	45-50	Pvd Sldr	16,200	6,623	2006	0.41	15,247	0.94
Moorsbridge	Centre	N. Old Centre	Collector	Portage	2	24	66 to 100	30	Yes	16,200	3,956	2004	0.24	3,494	0.22
Moorsbridge	N. Old Centre	Muirfield	Collector	Portage	2	34	66	30	Yes	16,200	3,457	2004	0.21	5,210	0.32
Moorsbridge	Muirfield	Romence	Collector	Portage	2	28	66	30	Pvd Sldr	16,200	3,696	2004	0.23	5,210	0.32
Schuring	Oakland	Westnedge	Collector	Portage	2	22	66	30	20%	16,200	633	2004	0.04	5,511	0.34
Garden	Westnedge	Lovers Lane	Collector	Portage	2	21	33 to 66	35	Pvd Sldr	16,200	2,456	2004	0.15	3,044	0.19
Mall	Constitution	JC Penney	Minor Art.	Portage	3	35	66	35	Yes	16,200	8,331	2004	0.51	1,482	0.09
Mall	JC Penney	Westnedge	Minor Art.	Portage	5	58	80	25	Yes	34,200	13,754	2004	0.40	3,653	0.11
Constitution	Milham	Mall	Minor Art.	Portage	4	48	100	35	Yes	34,200	19,804	2004	0.58	14,763	0.43
Constitution	Mall	Romence	Minor Art.	Portage	4	48	100	35	Yes	34,200	4,464	2004	0.13	3,464	0.10
Forest	Lovers Lane	Portage	Subcollector	Portage	2	24	66	25	Pvd Sldr	16,200	1,860	2006	0.11	2,036	0.13
Zylman	Portage	Sprinkle	Collector	Portage	2	24	66	45	Pvd Sldr	16,200	5,036	2004	0.31	4,147	0.26
S. 12th St.	N. City Limits	Hickory Hill	Minor Art.	KCRC	2	22	66	45	No	16,200	4,932	2004	0.30	8,961	0.55
S 12th St.	Briarhill	Milham	Minor Art.	KCRC	3	44	66	45	Yes	16,200	8,009	2004	0.49	7,331	0.45
S 12th St.	Milham	Golden Ridge	Minor Art.	KCRC	2	24	66	45-55	No	16,200	4,956	2004	0.31	6,956	0.43
S 12th St.	Norfolk Circle	Centre	Minor Art.	KCRC	2	24	66	45-55	No	16,200	6,576	2004	0.41	9,646	0.60
S 12th St.	Centre	Whipporwill	Minor Art.	KCRC	2	21	66	55	No	16,200	5,034	2004	0.31	7,607	0.47
S 12th St.	R Ave	S Ave	Minor Art.	KCRC	2	21	66	55	No	16,200	1,533	2004	0.09	1,274	0.08
S 12th St.	S Ave	S. City Limits	Minor Art.	KCRC	2	21	66	55	No	16,200	1,105	2004	0.07	1,105	0.07

Table C-4:
Existing Thoroughfare Street Segment Characteristics

Street	From	To	Street Class	Jurisdiction	Lanes	Pavement Width	ROW Width	Posted Speed	Curb & Gutter	Daily Capacity	Daily Traffic	Year	Present V/C Ratio	2030 ADT (a)	2030 V/C Ratio
Nash	E Shore	Sprinkle	Subcollector	Portage	2	22	66	25	No	16,200	251	2004	0.02	227	0.01
East Shore	Mandigo	Nash	Subcollector	Portage	2	22	30 to 66	25-35	No	16,200	768	2004	0.05	695	0.04
East Shore	Nash	Cox's Drive	Subcollector	Portage	2	22	30	25	No	16,200	478	2004	0.03	1,521	0.09
Mandigo	Portage	E. Shore	Subcollector	Portage	2	22	66	35	Pvd Sldr	16,200	1,088	2004	0.07	1,582	0.10
Newport	Milham	Alfa	Collector	Portage	2	28	66 to 99	25	Yes	17,000	6,443	2004	0.38	6,347	0.37
Newport	Alfa	Gladys	Collector	Portage	2	34	66	25	Yes	16,200	6,540	2004	0.40	6,309	0.39
Gladys	Newport	Gladys Ser Dr	Collector	Portage	2	22	66	25	No	16,200	2,140	2004	0.13	5,140	0.32
Gladys	Gladys Ser Dr	Westnedge	Collector	Portage	3	36	66 to 100+	25	Yes	25,200	7,451	2004	0.30	8,739	0.35
Bacon	Westnedge	Portage	Collector	Portage	2	24	66	35	Pvd Sldr	16,200	1,860	2004	0.11	1,947	0.12
Meredith	Kilgore	Sprinkle	Subcollector	Portage	3	33	51 to 66	30	Pvd Sldr	16,200	5,670	2004	0.35	3,740	0.23
Melody	Shaver	Dolphin	Collector	Portage	2	22	66	25	No	16,200	1,591	2004	0.10	3,029	0.19
Melody	Dolphin	Westnedge	Collector	Portage	2	34	66	25	Yes	16,200	1,596	2004	0.10	3,540	0.22
Ramona	Lovers Lane	Portage	Collector	Portage	2	22	66	25	No	16,200	2,061	2004	0.13	3,470	0.21
Cox's Drive	E Shore	Zylman	Collector	Portage	2	22	66	25	No	16,200	878	2004	0.05	3,468	0.21
Cox's Drive	Zylman	Centre	Collector	Portage	2	22	66	25	No	16,200	886	2004	0.05	3,500	0.22
Winters	Lovers Lane	Portage	Collector	Portage	2	24	66	25	Pvd Sldr	16,200	2,095	2004	0.13	3,044	0.19
Old Centre	Centre	Cooley	Collector	Portage	2	22	66	30	No	16,200	2,284	2004	0.14	1,483	0.09
Old Centre	Cooley	Moorsbridge	Collector	Portage	2	34	66	30	Yes	16,200	2,165	2004	0.13	1,481	0.09

Source: City of Portage Department of Transportation and Utilities

Table C-5
2003-2005 Traffic Crashes By Intersection

No.	Intersection	Crash Frequency by Year													Estimated Vehicles Per Day (EVPD) (Average 2003-05)	Average Crash Rate Per Million Estimated Vehicles (MEV)			
		2003			2004			2005			Average/Year								
		Total	Injury	Fatal	Total	Injury	Fatal	Total	Injury	Fatal	Total	Injury	Fatal	Severity		Total	Injury	Fatal	Severity
1	Westnedge & Kilgore	35	9	0	30	5	0	30	1	0	31.67	5.00	0.00	46.67	39,151	2.22	0.35	0.00	3.27
2	Westnedge & Andy	24	4	0	22	6	0	27	3	0	24.33	4.33	0.00	37.33	38,871	1.72	0.31	0.00	2.63
3	Westnedge & Dawnlee	14	1	0	12	1	0	14	3	0	13.33	1.67	0.00	18.33	39,699	0.92	0.12	0.00	1.27
4	Westnedge & Idaho	18	5	0	10	1	0	10	1	0	12.67	2.33	0.00	19.67	41,753	0.83	0.15	0.00	1.29
5	Westnedge & Milham	44	12	0	37	6	0	28	3	0	36.33	7.00	0.00	57.33	53,591	1.86	0.36	0.00	2.93
6	Westnedge & Southland/Plaza	2	1	0	1	0	0	4	0	0	2.33	0.33	0.00	3.33	35,376	0.18	0.03	0.00	0.26
7	Westnedge & Mall/Gladys	47	8	0	41	5	0	36	10	0	41.33	7.67	0.00	64.33	38,892	2.91	0.54	0.00	4.53
8	Westnedge & Ruth	17	2	0	10	0	1	17	6	0	14.67	2.67	0.33	26.67	34,065	1.18	0.21	0.03	2.14
9	Westnedge & J L Hudson	7	2	0	11	1	0	12	3	0	10.00	2.00	0.00	16.00	34,699	0.79	0.16	0.00	1.26
10	Westnedge & Romence	49	11	0	50	7	0	29	4	0	42.67	7.33	0.00	64.67	38,968	3.00	0.52	0.00	4.55
11	Westnedge & Garden Lane	4	0	0	4	0	0	3	2	0	3.67	0.67	0.00	5.67	22,796	0.44	0.08	0.00	0.68
12	Westnedge & Schuring	5	0	0	6	3	0	5	0	0	5.33	1.00	0.00	8.33	22,796	0.64	0.12	0.00	1.00
13	Westnedge & Shaver	9	2	0	5	1	0	4	2	0	6.00	1.67	0.00	11.00	22,839	0.72	0.20	0.00	1.32
14	Westnedge & Centre	9	1	0	12	0	0	17	3	0	12.67	1.33	0.00	16.67	32,204	1.08	0.11	0.00	1.42
15	Shaver & Centre	21	6	0	20	8	0	19	4	0	20.00	6.00	0.00	38.00	33,763	1.62	0.49	0.00	3.08
16	Shaver & Melody	2	2	0	7	3	0	8	4	0	5.67	3.00	0.00	14.67	20,140	0.77	0.41	0.00	2.00
17	Shaver & Oakland	11	2	0	11	1	0	11	1	0	11.00	1.33	0.00	15.00	15,323	1.97	0.24	0.00	2.68
18	Oakland & Milham	32	4	0	35	6	0	25	4	0	30.67	4.67	0.00	44.67	48,516	1.73	0.26	0.00	2.52
19	Oakland & Romence	22	8	0	8	3	0	8	3	0	12.67	4.67	0.00	26.67	27,204	1.28	0.47	0.00	2.69
20	Oakland & Centre	21	4	0	23	5	0	23	5	0	22.33	4.67	0.00	36.33	33,398	1.83	0.38	0.00	2.98
21	Centre & Lovers Lane	8	2	0	16	2	0	7	1	0	10.33	1.67	0.00	15.33	27,333	1.04	0.17	0.00	1.54
22	Milham & Monticello/Devon	4	0	0	3	1	1	6	2	0	4.33	1.00	0.33	11.33	27,731	0.43	0.10	0.03	1.12
23	Milham & Constitution	9	1	0	11	2	0	10	2	0	10.00	1.67	0.00	15.00	33,613	0.82	0.14	0.00	1.22
24	Milham & Oregon	4	0	0	6	1	0	3	0	0	4.33	0.33	0.00	5.33	23,645	0.50	0.04	0.00	0.62
25	Lovers Lane & Kilgore	9	2	0	11	1	0	3	0	0	7.67	1.00	0.00	10.67	29,441	0.71	0.09	0.00	0.99
26	Lovers Lane & Milham	6	1	0	9	1	0	6	1	0	7.00	1.00	0.00	10.00	25,559	0.75	0.11	0.00	1.07
27	Lovers Lane & Romence	23	8	0	18	2	0	15	5	0	18.67	5.00	0.00	33.67	24,946	2.05	0.55	0.00	3.70
28	Constitution & Mall	10	1	0	1	1	0	6	2	0	5.67	1.33	0.00	9.67	19,441	0.80	0.19	0.00	1.36
29	Romence & Sears	9	3	0	8	3	0	4	1	0	7.00	2.33	0.00	14.00	21,516	0.89	0.30	0.00	1.78
30	Mall & J C Penney	3	1	0	3	1	0	0	0	0	2.00	0.67	0.00	4.00	15,151	0.36	0.12	0.00	0.72
31	Constitution & Romence	8	1	0	5	2	0	11	1	0	8.00	1.33	0.00	12.00	21,204	1.03	0.17	0.00	1.55
32	Portage & Winters	5	2	0	4	3	0	3	2	0	4.00	2.33	0.00	11.00	29,323	0.37	0.22	0.00	1.03
33	Portage & Milham	4	0	0	6	1	0	9	2	0	6.33	1.00	0.00	9.33	29,000	0.60	0.09	0.00	0.88
34	Portage & Romence	1	0	0	6	0	0	15	3	0	7.33	1.00	0.00	10.33	33,118	0.61	0.08	0.00	0.85
35	Portage & Centre	16	2	0	31	8	0	16	3	0	21.00	4.33	0.00	34.00	32,903	1.75	0.36	0.00	2.83

TABLE C-6
2003-2005 TRAFFIC CRASHES BY SEGMENT

No.	Street	From	To	2003			2004			2005			Average/Year				Average Daily Traffic (ADT) 2003-05)	Length (mile)	Average Crash Rate Per Million Vehicle Miles (MVM)			
				Total	Injury	Fatal	Total	Injury	Fatal	Total	Injury	Fatal	Total	Injury	Fatal	Severity			Total	Injury	Fatal	Severity
1	Westnedge	Kilgore	Andy	67	16	0	50	8	0	36	12	0	51.00	12.00	0.00	87.00	37,792	0.317	11.66	2.74	0.00	19.90
2	Westnedge	Andy	Idaho	76	11	0	78	13	0	71	14	0	75.00	12.67	0.00	113.00	45,562	0.471	9.58	1.62	0.00	14.43
3	Westnedge	Idaho	Milham	39	11	0	40	6	0	20	1	0	33.00	6.00	0.00	51.00	58,526	0.250	6.18	1.12	0.00	9.55
4	Westnedge	Milham	Mall	75	16	0	72	16	0	73	16	0	73.33	16.00	0.00	121.33	40,271	0.373	13.38	2.92	0.00	22.13
5	Westnedge	Mall	Ruth	53	10	0	47	6	1	48	11	0	49.33	9.00	0.33	80.33	40,549	0.162	20.58	3.75	0.14	33.50
6	Westnedge	Ruth	Hudson	2	1	0	4	0	0	7	4	0	4.33	1.67	0.00	9.33	36,817	0.201	1.60	0.62	0.00	3.46
7	Westnedge	Hudson	Romence	52	15	0	43	8	0	49	2	0	48.00	8.33	0.00	73.00	34,259	0.271	14.16	2.46	0.00	21.54
8	Westnedge	Romence	Garden Lane	21	5	0	31	8	0	23	4	0	25.00	5.67	0.00	42.00	32,515	0.348	6.05	1.37	0.00	10.17
9	Westnedge	Garden Ln.	Schuring	2	0	0	8	3	0	7	1	0	5.67	1.33	0.00	9.67	24,150	0.155	4.15	0.98	0.00	7.08
10	Westnedge	Schuring	Shaver	8	0	0	2	0	0	7	2	0	5.67	0.67	0.00	7.67	24,147	0.342	1.88	0.22	0.00	2.54
11	Westnedge	Shaver	Centre	11	3	0	6	1	0	3	1	0	6.67	1.67	0.00	11.67	20,061	0.184	4.95	1.24	0.00	8.66
12	Westnedge	Centre	Melody	10	1	0	14	2	0	6	0	0	10.00	1.00	0.00	13.00	9,753	0.533	5.27	0.53	0.00	6.85
13	Westnedge	Melody	Osterhout	14	2	0	17	2	0	11	1	0	14.00	1.67	0.00	19.00	4,014	1.974	4.84	0.58	0.00	6.57
14	Milham	12th	Heverly	10	2	0	13	2	0	15	1	0	12.67	1.67	0.00	17.67	12,123	1.386	2.07	0.27	0.00	2.88
15	Milham	Heverly	Oakland	13	2	0	12	3	0	9	2	0	11.33	2.33	0.00	18.33	14,580	0.377	5.65	1.16	0.00	9.14
16	Milham	Oakland	Constitution	36	8	0	51	9	1	38	6	0	41.67	7.67	0.33	68.67	24,300	0.629	7.47	1.37	0.06	12.31
17	Milham	Constitution	Westnedge	33	7	0	34	9	0	28	5	0	31.67	7.00	0.00	52.67	15,959	0.626	8.68	1.92	0.00	14.44
18	Milham	Westnedge	Conrail RR	9	1	0	5	0	0	14	5	0	9.33	2.00	0.00	15.33	9,991	0.506	5.06	1.08	0.00	8.31
19	Milham	Conrail RR	Lovers Lane	2	0	0	3	0	0	3	0	0	2.67	0.00	0.00	2.67	10,975	0.256	2.60	0.00	0.00	2.60
20	Milham	Lovers Lane	Portage	8	1	0	6	0	0	12	0	0	8.67	0.33	0.00	9.67	8,357	0.746	3.81	0.15	0.00	4.25
21	Milham	Sprinkle	E City Limits	1	0	0	0	0	0	0	0	0	0.33	0.00	0.00	0.33	2,325	0.516	0.76	0.00	0.00	0.76
22	Oakland	Kilgore	I-94	31	3	0	37	8	0	22	3	0	30.00	4.67	0.00	44.00	22,814	0.498	7.23	1.13	0.00	10.61
23	Oakland	I-94	Milham	46	4	0	28	5	0	24	6	0	32.67	5.00	0.00	47.67	33,920	0.543	4.86	0.74	0.00	7.09
24	Oakland	Milham	Romence	41	9	0	28	9	0	22	3	0	30.33	7.00	0.00	51.33	15,491	1.005	5.34	1.23	0.00	9.03
25	Oakland	Romence	Centre	10	2	0	10	0	0	1	0	0	7.00	0.67	0.00	9.00	12,817	1.001	1.49	0.14	0.00	1.92
26	Oakland	Centre	Shaver	15	4	0	13	4	0	12	4	0	13.33	4.00	0.00	25.33	5,900	1.981	3.13	0.94	0.00	5.94
27	Oakland	Shaver	Osterhout	5	1	0	6	1	0	3	0	0	4.67	0.67	0.00	6.67	5,267	0.473	5.13	0.73	0.00	7.33
28	Oakland	Osterhout	S. City Limits	1	0	0	2	0	0	3	2	0	2.00	0.67	0.00	4.00	5,022	0.501	2.18	0.73	0.00	4.36
29	Portage	Kilgore	Milham	41	15	1	47	12	0	37	10	0	41.67	12.33	0.33	82.67	22,270	1.145	4.48	1.33	0.04	8.88
30	Portage	Milham	Centre	31	3	0	38	8	0	46	8	0	38.33	6.33	0.00	57.33	22,210	2.014	2.35	0.39	0.00	3.51
31	Portage	Centre	Lakeview	31	11	0	29	6	0	37	9	0	32.33	8.67	0.00	58.33	15,281	1.364	4.25	1.14	0.00	7.67
32	Portage	Lakeview	Mandigo	22	5	0	26	3	0	22	6	1	23.33	4.67	0.33	41.33	12,522	1.707	2.99	0.60	0.04	5.30
33	Sprinkle	Kilgore	Meredith	3	0	0	2	0	0	6	2	0	3.67	0.67	0.00	5.67	22,818	0.422	1.04	0.19	0.00	1.61
34	Sprinkle	Meredith	Milham	5	1	0	3	0	0	0	0	0	2.67	0.33	0.00	3.67	19,174	0.812	0.47	0.06	0.00	0.65
35	Sprinkle	Milham	Bishop	33	8	0	42	11	0	33	13	0	36.00	10.67	0.00	68.00	19,225	1.006	5.10	1.51	0.00	9.63
36	Sprinkle	Bishop	Centre	20	8	1	6	1	0	12	4	0	12.67	4.33	0.33	29.67	16,194	1.009	2.12	0.73	0.06	4.97
37	Sprinkle	Centre	Zylman	19	3	0	17	3	0	10	4	0	15.33	3.33	0.00	25.33	11,498	0.505	7.23	1.57	0.00	11.95
38	Centre	12th	Oakland	60	8	0	68	18	0	67	14	0	65.00	13.33	0.00	105.00	27,528	1.887	3.43	0.70	0.00	5.54
39	Centre	Oakland	Westnedge	39	11	0	33	8	0	50	8	0	40.67	9.00	0.00	67.67	24,329	1.258	3.64	0.81	0.00	6.06
40	Centre	Westnedge	Waylee	15	2	0	15	3	0	12	3	0	14.00	2.67	0.00	22.00	20,809	0.222	8.30	1.58	0.00	13.05
41	Centre	Waylee	Portage	22	0	0	35	4	0	17	1	0	24.67	1.67	0.00	29.67	16,710	1.283	3.15	0.21	0.00	3.79
42	Centre	Portage	Sprinkle	7	0	0	11	0	0	9	1	0	9.00	0.33	0.00	10.00	10,205	1.001	2.41	0.09	0.00	2.68

TABLE C-6
2003-2005 TRAFFIC CRASHES BY SEGMENT

No.	Street	From	To	2003			2004			2005			Average/Year				Average Daily Traffic (ADT) 2003-05)	Length (mile)	Average Crash Rate Per Million Vehicle Miles (MVM)			
				Total	Injury	Fatal	Total	Injury	Fatal	Total	Injury	Fatal	Total	Injury	Fatal	Severity			Total	Injury	Fatal	Severity
43	Centre	Sprinkle	E City Limits	0	0	0	1	0	0	0	0	0	0.33	0.00	0.00	0.33	10,222	0.527	0.17	0.00	0.00	0.17
44	Romence	Angling	Oakland	10	2	0	11	4	0	6	3	0	9.00	3.00	0.00	18.00	9,139	1.145	2.36	0.79	0.00	4.71
45	Romence	Oakland	Sears	39	10	0	24	6	0	18	5	0	27.00	7.00	0.00	48.00	14,237	0.988	5.26	1.36	0.00	9.35
46	Romence	Sears	Westnedge	26	7	0	32	7	0	21	2	0	26.33	5.33	0.00	42.33	19,822	0.268	13.58	2.75	0.00	21.83
47	Romence	Westnedge	Lovers Lane	22	4	0	20	1	0	10	1	0	17.33	2.00	0.00	23.33	14,687	0.758	4.27	0.49	0.00	5.74
48	Romence	Lovers Lane	Portage	8	0	0	12	2	0	14	1	0	11.33	1.00	0.00	14.33	12,073	0.756	3.40	0.30	0.00	4.30
49	Romence	Portage	Mastenbrook	2	0	0	1	0	0	4	0	0	2.33	0.00	0.00	2.33	10,292	0.503	1.23	0.00	0.00	1.23
50	Romence	Mastenbrook	Sprinkle	5	2	0	7	1	0	5	1	0	5.67	1.33	0.00	9.67	8,510	0.493	3.70	0.87	0.00	6.31
51	Bishop	Sprinkle	E City Limits	1	0	0	2	1	0	4	0	0	2.33	0.33	0.00	3.33	2,386	0.536	5.00	0.71	0.00	7.14
52	Lovers Lane	Kilgore	I-94	11	4	0	9	2	0	8	0	0	9.33	2.00	0.00	15.33	13,468	0.426	4.46	0.96	0.00	7.32
53	Lovers Lane	I-94	Milham	13	2	0	8	2	0	9	1	0	10.00	1.67	0.00	15.00	10,983	0.608	4.10	0.68	0.00	6.15
54	Lovers Lane	Milham	Ramona	8	1	0	18	1	0	2	1	0	9.33	1.00	0.00	12.33	9,995	0.645	3.97	0.42	0.00	5.24
55	Lovers Lane	Ramona	Centre	29	9	0	17	5	0	24	6	0	23.33	6.67	0.00	43.33	13,634	1.398	3.35	0.96	0.00	6.23
56	Lovers Lane	Centre	Forest	3	1	0	3	0	0	2	1	0	2.67	0.67	0.00	4.67	2,622	0.581	4.80	1.20	0.00	8.39
57	Kilgore	Westnedge	Burdick	18	5	0	22	5	0	31	5	0	23.67	5.00	0.00	38.67	16,213	0.501	7.98	1.69	0.00	13.04
58	Kilgore	Burdick	Lovers Lane	7	1	0	3	1	0	1	0	0	3.67	0.67	0.00	5.67	18,838	0.259	2.06	0.37	0.00	3.18
59	Kilgore	Lovers Lane	Portage	28	5	0	26	4	0	26	4	0	26.67	4.33	0.00	39.67	10,849	0.966	6.97	1.13	0.00	10.37
60	Angling	Merryview	Vincent	1	0	0	1	0	0	0	0	0	0.67	0.00	0.00	0.67	1,418	0.597	2.16	0.00	0.00	2.16
61	Vincent	Angling	Oakland	2	1	0	2	1	0	0	0	0	1.33	0.67	0.00	3.33	1,329	0.747	3.68	1.84	0.00	9.20
62	Angling	Milham	Romence	3	0	0	4	1	0	4	0	0	3.67	0.33	0.00	4.67	3,938	1.104	2.31	0.21	0.00	2.94
63	Angling	Romence	Centre	3	2	0	7	1	0	5	1	0	5.00	1.33	0.00	9.00	5,024	1.286	2.12	0.57	0.00	3.82
64	Angling	Centre	Vanderbilt	1	0	0	4	0	0	3	2	0	2.67	0.67	0.00	4.67	1,429	0.875	5.84	1.46	0.00	10.23
65	Vanderbilt	Angling	Shaver	9	2	0	7	1	0	3	2	0	6.33	1.67	0.00	11.33	1,779	2.265	4.31	1.13	0.00	7.71
66	Osterhout	Shaver	Westnedge	8	0	0	7	0	0	4	1	0	6.33	0.33	0.00	7.33	4,597	1.528	2.47	0.13	0.00	2.86
67	Osterhout	Westnedge	Portage	10	0	0	4	1	0	4	0	0	6.00	0.33	0.00	7.00	4,329	1.011	3.76	0.21	0.00	4.38
68	Shaver	Westnedge	Centre	12	1	0	12	4	0	6	3	0	10.00	2.67	0.00	18.00	24,518	0.181	6.17	1.65	0.00	11.11
69	Shaver	Centre	Vanderbilt	16	7	0	20	4	0	16	4	0	17.33	5.00	0.00	32.33	18,114	1.441	1.82	0.52	0.00	3.39
70	Shaver	Vanderbilt	S City Limits	26	1	1	20	4	0	16	2	0	20.67	2.33	0.33	31.67	8,010	2.004	3.53	0.40	0.06	5.40
71	Moorsbridge	Centre	N.Old Centre	1	0	0	1	0	0	2	0	0	1.33	0.00	0.00	1.33	3,956	0.347	2.66	0.00	0.00	2.66
72	Moorsbridge	N.Old Centre	Muirfield	1	0	0	3	1	0	6	1	0	3.33	0.67	0.00	5.33	3,457	0.757	3.49	0.70	0.00	5.58
73	Moorsbridge	Muirfield	Romence	0	0	0	4	0	0	1	0	0	1.67	0.00	0.00	1.67	3,989	0.489	2.34	0.00	0.00	2.34
74	Schuring	Oakland	Westnedge	8	2	0	1	0	0	6	0	0	5.00	0.67	0.00	7.00	633	1.258	17.20	2.29	0.00	24.08
75	Garden Ln.	Westnedge	Lovers Lane	5	0	0	5	1	0	1	0	0	3.67	0.33	0.00	4.67	2,456	0.809	5.06	0.46	0.00	6.43
76	Mall	Constitution	JC Penney	4	0	0	4	0	0	5	1	0	4.33	0.33	0.00	5.33	8,331	0.401	3.55	0.27	0.00	4.37
77	Mall	JC Penney	Westnedge	22	3	0	12	2	0	10	1	0	14.67	2.00	0.00	20.67	13,754	0.202	14.46	1.97	0.00	20.38
78	Constitution	Milham	Mall	13	1	0	11	1	0	18	2	0	14.00	1.33	0.00	18.00	19,804	0.870	2.23	0.21	0.00	2.86
79	Constitution	Mall	Romence	13	1	0	6	5	0	8	2	0	9.00	2.67	0.00	17.00	4,464	1.193	4.63	1.37	0.00	8.75
80	Forest	Lovers Lane	Portage	0	0	0	1	0	0	1	0	0	0.67	0.00	0.00	0.67	1,932	0.772	1.22	0.00	0.00	1.22
81	Zylman	Portage	Sprinkle	1	0	0	6	0	0	3	0	0	3.33	0.00	0.00	3.33	4,370	1.067	1.96	0.00	0.00	1.96
82	S 12th St.	N City Limits	Briarhill	2	0	0	3	0	0	4	2	0	3.00	0.67	0.00	5.00	4,932	0.808	2.06	0.46	0.00	3.44
83	S 12th St.	Briarhill	Milham	1	1	0	1	1	0	3	0	0	1.67	0.67	0.00	3.67	8,009	0.276	2.07	0.83	0.00	4.54
84	S 12th St.	Milham	Golden Ridge	2	1	0	1	0	0	2	1	0	1.67	0.67	0.00	3.67	4,956	1.537	0.60	0.24	0.00	1.32
85	S 12th St.	Golden Ridge	Centre	4	2	0	4	2	0	10	3	0	6.00	2.33	0.00	13.00	6,576	1.915	1.31	0.51	0.00	2.83
86	S 12th St.	Centre	Whipporwill	1	1	0	3	1	0	3	1	0	2.33	1.00	0.00	5.33	5,034	0.967	1.31	0.56	0.00	3.00
87	S 12th St.	R Ave.	S Ave.	1	0	0	1	0	0	0	0	0	0.67	0.00	0.00	0.67	1,533	1.005	1.19	0.00	0.00	1.19
88	S 12th St.	S Ave.	S city limits	1	0	0	1	0	0	1	0	0	1.00	0.00	0.00	1.00	1,105	1.002	2.47	0.00	0.00	2.47

TABLE C-6
2003-2005 TRAFFIC CRASHES BY SEGMENT

No.	Street	Fron	To	2003			2004			2005			Average/Year				Average Daily Traffic (ADT) 2003-05)	Length (mile)	Average Crash Rate Per Million Vehicle Miles (MVM)			
				Total	Injury	Fatal	Total	Injury	Fatal	Total	Injury	Fatal	Total	Injury	Fatal	Severity			Total	Injury	Fatal	Severity
89	Nash	E Shore	Sprinkle	0	0	0	0	0	0	2	1	0	0.67	0.33	0.00	1.67	251	0.319	22.81	11.41	0.00	57.03
90	East Shore	Mandigo	Nash	2	1	0	2	1	0	1	0	0	1.67	0.67	0.00	3.67	768	1.072	5.55	2.22	0.00	12.20
91	East Shore	Nash	Cox's Dr	2	0	0	0	0	0	0	0	0	0.67	0.00	0.00	0.67	478	1.602	2.39	0.00	0.00	2.39
92	Mandigo	Portage	E Shore	0	0	0	2	0	0	2	1	0	1.33	0.33	0.00	2.33	1,088	1.510	2.22	0.56	0.00	3.89
93	Newport	Milham	Charlie	5	1	0	2	0	0	3	0	0	3.33	0.33	0.00	4.33	6,443	0.538	2.63	0.26	0.00	3.42
94	Gladys	Charlie	Westnedge	7	0	0	3	1	0	3	0	0	4.33	0.33	0.00	5.33	7,451	0.370	4.31	0.33	0.00	5.30
95	Bacon	Westnedge	Portage	4	0	0	3	2	0	1	0	0	2.67	0.67	0.00	4.67	1,860	1.061	3.70	0.93	0.00	6.48
96	Meredith	Kilgore	Sprinkle	6	2	0	12	1	0	4	2	0	7.33	1.67	0.00	12.33	5,670	0.316	11.21	2.55	0.00	18.86
97	Melody	Shaver	Dolphin	0	0	0	2	1	0	0	0	0	0.67	0.33	0.00	1.67	1,591	0.077	14.91	7.45	0.00	37.27
98	Melody	Dolphin	Westnedge	2	0	0	1	0	0	2	2	0	1.67	0.67	0.00	3.67	1,596	0.346	8.27	3.31	0.00	18.19
99	Ramona	Lovers Lane	Portage	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	2,061	0.750	0.00	0.00	0.00	0.00
100	Cox's Dr	East Shore	Zylman	0	0	0	1	0	0	0	0	0	0.33	0.00	0.00	0.33	878	0.165	6.30	0.00	0.00	6.30
101	Cox's Dr	Zylman	E(Centre	0	0	0	1	0	0	1	0	0	0.67	0.00	0.00	0.67	886	0.498	4.14	0.00	0.00	4.14
102	Winters	Lovers Lane	Portage	1	1	0	1	0	0	0	0	0	0.67	0.33	0.00	1.67	2,095	0.758	1.15	0.58	0.00	2.88
103	Old Centre	Centre	Cooley	1	0	0	1	1	0	0	0	0	0.67	0.33	0.00	1.67	2,284	0.330	2.42	1.21	0.00	6.06
104	Old Centre	Cooley	Moorsbridge	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	2,165	0.258	0.00	0.00	0.00	0.00
105	Sprinkle	Zylman	Nash	12	2	0	21	4	0	12	2	0	15.00	2.67	0.00	23.00	11,972	1.767	1.94	0.35	0.00	2.98

Appendix D

Appendix D
Development Guidelines

The Development Guidelines are intended to be used by city officials and staff in the review of development proposals (rezonings, special land uses, site plans, subdivisions, condominiums, and variances). In addition property owners, developers and their design professionals should refer to the guidelines to gain an understanding of the community goals and polices prior to application submittal. For mixed-use, institutional, and quasi-public projects, the guidelines for the most similar types of project should be used.

Rezoning Requests

Z-1 Rezoning Requests.

Intent. To provide guidance on use of the Plan for requests to rezone land. Land uses should be arranged consistent with the policies and recommendations of this Plan.

Guideline Z-1 Consider the following factors during a rezoning process:

a) Is the request consistent with the future land use plan, applicable policies, and related recommendations of the Plan?
   - If yes, is the timing for a change appropriate in relation to adjacent land uses, demand, infrastructure capacity, and similar factors?
   - If no, have conditions changed since Plan adoption that supports a change in zoning or have all sites within a designated area been developed or redeveloped?

b) Are the uses allowed in the requested zoning district appropriate given the size and character of the site and surrounding land uses?

c) Can the traffic associated with the project be accommodated by the existing transportation network (Note: a traffic impact study may be required).

d) Can the impacts of the uses allowed in the requested zoning district be accommodated by the existing utility infrastructure and services? Development should be in areas that are or will be served, rather than where premature publicly funded improvements are required.

e) Is there a lack of available land zoned the same or similar to the requested zoning district, including land that could be redeveloped?

f) Is the rezoning request consistent with the applicable guidelines listed below?
   - **Residential Guidelines** - R-1, R-2, R-3, R-6 (for manufactured housing park), M-1, M-2
   - **Office/Commercial Guidelines** – C-1, C-2, C-3 (for regional and general commercial), C-4 (for local business), C-5 (for Portage Commerce Square), M-1, M-2
   - **Research/Technology/Industrial Guidelines** – I-1, I-2, I-3, M-1, M-2

Residential (Housing & Neighborhoods)

R-1 Protection of Residential Neighborhoods

Intent. To protect people's living environment.

Guideline R-1: Recognize the vulnerability of residential areas and protect these neighborhood areas through the following:

a) Eliminate/Minimize traffic, noise and light from existing non-residential uses.
b) Ensure that new or expanded non-residential land uses are not detrimental to existing or future residential areas.
c) Prevent the conversion of stable residential uses within the neighborhood to non-residential uses.
d) Maintain and/or strengthen the stability of neighborhoods.

This guideline does not mean that new or expanded non-residential land uses are automatically inappropriate on the perimeter of residential neighborhoods. Rather, it states a primary emphasis of the Plan -- preservation of the single-family, detached structure, residential character of Portage.

R-2 Residential Development along Arterial Roadways.

Intent. To permit residential uses to locate along arterial streets when appropriate design is used for compatibility and for arterial capacity preservation. Strip residential development along arterial streets where lot depth is insufficient to sustain the use in the future is discouraged.

Guideline R-2: Ensure appropriate residential lot and subdivision design when new residential uses abut arterial roadways to ensure compatibility and roadway capacity through:

a) Establishment of reverse frontage lots which front on local streets rather on the arterial;
b) Shared driveway entrances with an appropriately designed turn-around if access to a major thoroughfare is necessary; or
c) Increased the front yard set backs, providing a continuous hedge or earthen berm (or combination thereof) to screen the residential use, and an appropriately designed turn around in the driveway so that all vehicles face forward when entering the arterial if access to a major thoroughfare is necessary.

R-3 Locational Criteria for Residential Uses According to Density, Environmental and Traffic Factors.

Intent. To limit residential densities when sensitive environmental conditions exist on the development site. To prevent severe soil erosion and sedimentation problems, foundation failures, drainage problems, and associated water pollution problems. Medium and high density residential development should have both a public centralized sanitary sewer and public potable water supply.

To create desirable land use relationships by locating higher residential densities on higher street classes, thereby making residential and non-residential uses more compatible and promoting complementary land uses. To ensure that development of this density has streets with adequate capacity to handle the traffic volumes generated. The appropriate street class must exist at the time the development is proposed or at the time the development will be occupied. Higher densities should be on higher street classes to prevent disruption to significantly lower density or intensity areas from excessive through-traffic. If access is not directly to a collector street, it may be on a lower class street provided access to the collector is not through a lower density residential or lower land use intensity area and does not create traffic problems. Medium density residential development may locate on an arterial street.

Guideline R-3a: Limit residential development to the "low density" category when:

a) The development does not have a collector or higher street type for major access; or
b) The development does not have both a public centralized sanitary and public potable water supply.

Guideline R-3b: Limit residential development to the "medium density" category or "low density" category when:

a) The development site has soils characterized as wet; or
b) A collector street is the highest available major access point for the development.
c) There is public water/sanitary sewer systems; and
d) No floodplains or wet lands are affected by site development.

Guideline R-3c: Locate residential developments of the high density category only where:

a) There is a major access point on or very near an arterial street;
b) There is adequate water pressure and quantity for domestic use and internal fire protection systems;
c) There is public water/sanitary sewer systems; and
d) No floodplains or wet lands are affected by site development.

R-4 Compatibility with Adjacent Land Uses.

Intent. To encourage gradual, rather than abrupt, changes in size, height, mass and scale of abutting residential development and between residential and non-residential development to create harmonious neighborhoods that are visually compatible.

Significant changes in scale and size between adjacent developments may be undesirable or incompatible. Residential development of significantly different size, height or mass to adjacent areas may require special site design, careful building placement, or extensive buffering and screening. Likewise, low-density residential development may be inappropriate next to higher intensity non-residential uses without special site design for appropriate visual transition, and higher density residential development may be more appropriate where limitations exist to appropriate separation, screening and buffering. To ensure an appropriate transition between types (single-family detached, townhouses, quadraplex, apartments, etc.) and densities of residential uses internal to a development or abutting the development. To permit the clustering of dwelling units at higher densities so that greater separation, buffering and screening may be used to create a visual transition between residential areas of differing intensities or densities, to provide appropriate separation and buffers for environmentally sensitive areas and to preserve environmentally sensitive areas.

Guideline R-4a: Ensure new residential development is compatible with existing, abutting residential or non-residential development in size, height, mass, and scale.

Guideline R-4b: Provide landscaping to serve as a buffer from adjacent land use, where appropriate.

Guideline R-4c: Encourage innovative residential design such that a development may target a variety of markets, preserve and protect environmentally sensitive areas, and integrate different types and densities of housing while providing for appropriate transitions internal to the development.

R-5 Open Space and Natural Resource Protection.

Intent. To encourage innovative design of residential developments that provide for functional requirements of buildings and minimize the disruption of the natural site.

Guideline R-5: Encourage the design of residential development to:

a) Provide planned, usable open spaces of adequate size to serve the needs of residents;
b) Use, where possible, the natural drainage patterns;
c) Save, to the extent possible, the natural vegetation;
d) Provide vegetation that complements the natural environment, especially where existing vegetation must be removed;
e) Use natural areas to act as a buffer from adjacent land uses or to soften views along roadways; and
f) Incorporate natural areas and large open spaces as recreational amenities within a project.

R-6 Streets and Pedestrian Systems.

Intent. To ensure traffic flows at appropriate speeds for the neighborhood. To reduce the number of vehicle trips. To encourage travel by walking and bicycle. To improve views along streets.

Guideline R-6: Ensure streets and pedestrian systems achieve the following:

a) Street width, alignment, and geometric design should encourage travel at 25 miles per hour;
b) Street width should be reduced where densities are low and natural features can be preserved, provided utility and service needs can be accomplished;
c) Subdivisions should be interconnected;
d) Street design should respect the natural terrain to the extent practical;
e) Sidewalks, walkways, or bikepaths must be provided along all streets to provide access to appropriate open space areas; and
f) Street trees can be used to help reduce speeds and improve appearance.

R-7 Manufactured Housing.

Intent. To provide quality manufactured housing living environments to community residents. To recognize that manufactured housing can help satisfy the need for affordable, sound housing.

Guideline R-7 Safety and compatibility objectives should be met by:

a) Locating manufactured housing as a transitional use between lower and higher density uses;
b) Providing lots of adequate size for fire protection and public safety;
c) Providing adequate open space; and
d) Ensure manufactured housing parks are designed and maintained at least to the minimum standards established by the state.

R-8 Neighborhood Quality in Established Areas.

Intent. To promote neighborhoods and to preserve housing redevelopment rather than demolition. Examples of techniques that can be used to create and preserve neighborhoods and to encourage development and redevelopment include:

a) Innovative building design to fit oddly shaped or narrow lots;
b) Adaptive reuse of existing buildings and underutilized land;
c) Appropriate public services;
d) Incentives through zoning and other land use regulations;
e) Financial assistance through public and private institutions;
f) Land assembly and improvement for new construction; and
g) Historical designation.

Guideline R-8: Create housing development, redevelopment, rehabilitation, and reinvestment opportunities in older and declining neighborhoods.

R-9 Residential Planned Unit Developments.

Intent. To facilitate the supply of housing available to all income groups. To create convenient living environments where shopping and other services are included in the development. To take advantage of innovative design techniques such as housing clusters, types and designs, and common open space as part of an overall design for unique living environments.

Guideline R-9 Encourage the mixture of housing types and land uses within planned developments to:

a) Utilize cost-efficient site layout and design techniques;
b) Create new, self-contained neighborhoods and areas; and
c) Allow clustering or mixture of lot sizes when there is a clear benefit to the public overall and the environment.

Other Applicable Guidelines.

In addition to the above, the following guidelines may also be applicable for residential projects.

N-1 Environmental Protection
N-2 Floodplain
N-3 Water Quality
N-4 Noise
N-5 Historic Resource Preservation
N-6 Open Space Protection
T-1 Transportation Systems in General
T-2 Street Design
T-3 Access Management
T-4 Non Motorized Travel
T-5 Right-of-Way Preservation
M-2 Sanitary Sewer
M-3 Underground Utilities

Commercial & Office Uses

C-1 Coordinated Development.

Intent. To promote the development of compact groupings of commercial/office uses with a coordinated design, even if on separate parcels, to:

a) share vehicular access points and circulation patterns;
b) cluster commercial uses together;
c) share utility hook-ups, service entrances, and other building systems; and
d) provide common pedestrian circulation.

To utilize land in an economical manner and limit the number of access points to major streets, reduce traffic congestion, and promote pedestrian safety. To restrict individual or isolated commercial uses from developing along streets or in non-commercial areas. To allow commercial/office uses in older or redeveloping areas. To allow single-lot development when a commercial/office use is appropriate and planned center development is not possible.

Guideline C-1 Locate commercial/office uses only in existing or proposed planned commercial/office centers, as illustrated on the future land use map, and when the following situations exist (as applicable):

a) for any "outlots" the future access and site design shall be compatible with the primary lot;
b) a conversion from an existing non-commercial/office building to a commercial/office use is compatible with adjacent buildings and uses;
c) an existing commercial/office use proposes to expand and the expansion is compatible to adjacent uses;
d) a proposed use is of an intensity and size to be comparable to a planned commercial/office center;
e) a proposed use requires a location in or near an existing specific land use or activity center; and/or
e) single lot development shall only be considered when and ownership patterns, existing land use conditions or other circumstances prohibit coordinated development.

C-2 Commercial/Office Uses in General.

Intent. To allow some commercial/office uses in mixed land use areas. To encourage commercial/office revitalization in redeveloping areas. To prevent undesirable strip commercial/office development. To restrict linear and isolated development of single commercial/office uses along streets. To restrict commercial/office developments that do not share common access points, parking lots or other facilities. To prevent vehicular traffic problems and congestion. To utilize land in a more economical manner and prevent visually unpleasant and confusing environments along streets.

Guideline C-2 Allow commercial/office uses:

a) that limit strip commercial development
b) where there is direct access to a major or minor arterial;
c) when traffic impacts are addressed through access design or improvements such as passing lanes, signals, or deceleration lanes;
d) when the size, intensity, and character of the proposed use is compatible with adjacent areas;
e) on the edge of large scale new residential developments where the commercial/office use mainly serves residents of the development (planned unit development), is buffered from the residential area, and is similar in design and intensity to the residential uses;
f) adjacent to older or redeveloping residential areas where the commercial/office use does not create nuisances and is compatible with the surroundings;
g) within recreational and public areas where the commercial/office use is an ancillary use such as a concession business.

C-3 Local Business Uses.

Intent. To allow the development of small "local" business uses or centers that primarily serve nearby neighborhoods or uses. To provide convenience shopping close to residential areas that is accessible by pedestrians or short vehicle trips.

Examples of commercial uses serving areas or neighborhoods or providing convenience goods, include neighborhood shopping centers, grocery, drugstores, convenience stores, small restaurants or take-out food service, barbers, laundromats, dry cleaners, and video rental.

Guideline C-3 Local or neighborhood commercial uses should meet the following standards:

a) location is preferably adjacent or near existing convenience shopping facilities;
b) safe pedestrian access should be provided within the site and with connections to the public walkway system;
c) the intensity, size and hours of operation will not adversely affect existing residential areas;
d) a good transition between adjacent uses must be provided that reflects existing architectural and residential character; and
e) site design shall be consistent with the **Guideline C-6**

C-4 Regional and General Commercial Uses.

Intent. Certain general and regional commercial uses are of such size and intensity that their potential for creating adverse impacts on surrounding areas is can be significant. These guidelines are intended to ensure such uses are located in appropriate areas and designed to complement the city's policies.

Guideline C-4 Locate and design commercial uses attracting large numbers of people or generating large volumes of traffic (200+ trips in peak hour or 1000+ daily) in accordance with the following:

a) the use must be located on a major arterial street;
b) access to a traffic signal may be necessary;
c) the use should be sufficiently spaced or buffered from residential or institutional uses; and
d) the design standards of **Guideline C-6** should be met.

C-5 Portage Commerce Square.

Intent. To guarantee that there is sufficient land for new development that would be appropriate at and near Portage Commerce Square.

Guideline C-5 Allow the expansion of Portage Commerce Square when:

a) there are no longer sites of appropriate size for development;
b) neighboring vacant sites not within the Square would be appropriate for the type of development compatible with existing development; and/or
c) all sites within the Square with obsolete uses have been redeveloped.

C-6 Office/Commercial Site Design.

Intent. To encourage the provision of pedestrian circulation and site amenities. To ensure compatibility between adjacent uses and to provide buffering for adjacent areas where necessary. To reduce the affects of stormwater runoff. To improve aesthetics through site and building design. To improve traffic circulation and safety and still provide reasonable access to businesses. To ensure that signs are not a nuisance, but are simple so businesses can be easily located.

Guideline C-6 Encourage innovative commercial/office design to:

a) preserve and protect quality significant trees and environmentally sensitive areas;
b) to create a desirable transition in the type and intensity of uses through buffering, setbacks, and building/site design;
c) provide clear, on-site circulation patterns for pedestrians, bicycles, and handicapped people;
d) provide trees and landscaping along the street and within the site;
e) where appropriate, include benches, bus stops, bicycle storage facilities, and other site amenities;
f) promote a good transition between adjacent buildings and land uses in terms of building size, height, scale, and materials;
g) provide access design consistent with the recommendations of the Plan
h) locate and screen waste receptacles to improve views and avoid nuisance;
i) use properly designed lighting at appropriate footcandles to avoid glare and light pollution while still providing adequate lighting for safety;
j) ensure sign base and materials complement the principal building and have a landscaped base; and
k) prevent signs from being a visual nuisance or a safety hazard to vehicular traffic.

Other Applicable Guidelines.

In addition to the above, the following guidelines may also be applicable for commercial and office projects.

N-1 Environmental Protection
N-2 Floodplain
N-3 Water Quality
N-4 Noise
N-5 Historic Resource Preservation
T-1 Transportation Systems in General
T-2 Street Design
T-3 Access Management
T-4 Non Motorized Travel
T-5 Right-of-Way Preservation
T-6 Parking
M-2 Sanitary Sewer
M-3 Underground Utilities

Industrial Uses

I-1 Industrial Uses in General.

Intent. To promote clustering of industrial and related uses to minimize conflicts with non-industrial land uses. To ensure more economical construction and a more effective use of roads and utilities. To promote effective screening, buffering and site planning.

Guideline I-1: Locate, to the extent possible, in the Shaver Road Business Corridor and Sprinkle Road Industrial Corridor, areas near the airport, and other designated areas of the Future Land Use Map, industries and industrial developments adjacent to an existing industry to form clusters.

I-2 Environmental Standards.

Intent. To reduce the danger to human life, property and the environment associated with hazardous materials. To prevent the effects of offensive industrial land uses on residential areas.

Hazardous materials include, but are not limited to, flammable liquids, gases, corrosives, poisons, explosives, toxins, and other materials used in such hazardous industrial operations as oil refineries and chemical plants.

Guideline I-2 Locate industries which handle hazardous or flammable materials or are potentially offensive such as junkyards, landfills, and quarries away from residential areas, population concentrations, and outside of well head protection zones.

I-3 Industrial Expansion.

Intent. To allow industry to expand at existing locations, rather than having to relocate. To retain jobs and the city's economic base, when such expansion can be compatible with the area.

Guideline I-3 Allow the expansion of existing industries which are adjacent to non-industrial development in a manner that meets the needs of the industry and protects surrounding development from nuisances. Where adjacent to residential uses, expansion may be considered if the site can be redesigned to improve buffering and compatibility with adjacent uses and operations are contained to limit adverse off-site impacts such as noise, odors, and truck routing.

I-4 Research and Technology Parks.

Intent. To ensure adequate zoned land, up-to-date development regulations and infrastructure expenditure priorities consistent with the creation of specialized business parks for heavy industry, corporate offices and high technology and small to medium sized enterprises.

Guideline I-4 Facilitate the preservation of land for and the development of specialized research and technology business parks.

I-5 Retention and Recruitment.

Intent. To retain existing industries and to attract new industries which can meet environmental requirements, expand the diversity of the economic base and provide jobs. Methods for increasing industrial employment include:

a) providing reasonable flexibility through zoning and other regulations;
b) acquiring land suitable for industrial use;
c) assisting in the redevelopment of brownfield sites;
d) providing local tax abatements consistent with city policies;

e) participating in job training programs to increase job skills; and
f) providing public service and facility improvements--e.g., utilities and transportation.

Guideline I-5 Provide incentives to expand industrial employment, giving special attention to industries which are environmentally sensitive, expand the economic diversity of Portage and provide employment opportunities for community and area residents.

I-6 Building and Site Design.

Intent. To ensure site design that provides adequate space for a safe, efficient site layout that is compatible with surrounding land uses.

Guideline I-6 Design industrial development to:

a) be compatible with adjacent development in terms of size, height, mass, and scale;
b) provide, where appropriate, adequate lot sizes for buffering and screening adjacent development;
c) provide sufficient space for on-site parking and service areas;
d) use, where possible, the natural drainage patterns;
e) save, to the extent possible, the natural vegetation;
f) provide landscaping to improve aesthetics within a site, along street frontage, and as a buffer from other land uses;
g) ensure access meets city standards, especially along arterial and collector streets;
h) ensure site design promotes use for pedestrians, bicyclists, and transit users;

Other Applicable Guidelines.

In addition to the above, the following guidelines may also be applicable for industrial projects.

N-1 Environmental Protection
N-2 Floodplain
N-3 Water Quality
N-4 Noise
N-5 Historic Resource Preservation
T-1 Transportation Systems in General
T-2 Street Design
T-3 Access Management
T-4 Non Motorized Travel
M-2 Sanitary Sewer
M-3 Underground Utilities

Natural & Historic Resources

N-1 Environmental Protection.

Intent. To ensure that new or expanded development will not cause the pollution of groundwater, streams, land, and air. To minimize the danger associated with hazardous wastes. To minimize measures required to mitigate environmental hazards. To reduce the potential for environmental degradation.

To direct development away from environmentally sensitive areas such as floodplains, wetlands, natural groundwater recharge areas, steep slopes, unstable soils, lakes/streams and areas with archeological artifacts.

Guideline N-1 Provide assurances that air emissions and the disposal of industrial waste water and solid wastes will meet environmental standards and that the storage, handling, and disposal of hazardous materials will be done in a safe and environmentally sound manner. In particular, locate certain uses away from environmentally sensitive areas.

N-2 Floodplain.

Intent. To protect persons and property from the hazards of flooding. To strongly discourage the placement of structures in the floodplain and to prevent development which would increase flooding pursuant to the Michigan Department of Environmental Quality requirements.

Examples of land uses suitable for the floodplain include private and public recreational uses—golf courses, parks, wildlife preserves, hiking trails and horseback riding trails; agricultural uses managed to prevent excessive soil loss—sod farming, pasture, orchards, horticulture and truck farming; and accessory uses to residential, commercial, and industrial development—landscaped open space.

Guideline N-2 Restrict development in the 100-year floodplain by:

a) prohibiting the location or expansion of structures and storage areas in the floodplain, except for instances when it is conclusively demonstrated that no increase in floodwater elevation and velocity will result and that no public hazards will be created; and
b) allowing the modification or restoration of existing structures located in the floodplain only if the structural alterations do not increase the level or velocity of the 100-year flood and if flood proofing measures are taken.

N-3 Water Quality.

Intent. To prevent increased flooding and erosion from causing property damage and environmental problems. To prolong the useful life of man-made drainage improvements. To protect water quality in streams from pollution caused by stormwater runoff. To help achieve

quality standards for lakes, streams, watersheds, and drinking water sources. To minimize adverse impacts on wetlands.

Adequate means to convey stormwater drainage, both on-site and off-site, are necessary for all development. Where existing on-site or off-site facilities are inadequate, the developer must provide all drainage improvements required by the proposed development. In some instances, correcting past drainage deficiencies may be the only way to properly develop an area. In those cases, developers may be required to improve on-site or off-site drainage conditions to remedy existing drainage problems if the proposed development would add to on-site or off-site drainage problems.

Guideline N-3 Provide adequate stormwater design and avoid significant modifications to natural stream channels so that:

a) water quality is preserved within the watershed and natural groundwater recharge areas;
b) natural or man-made filtration of sediment is provided through retention basins, traps, or secondary containment ponds;
c) natural systems are used or enhanced;
d) flooding is significantly reduced;
e) only minor impacts will occur to any wetlands or endangered species, and any such impact will be mitigated; and
f) best management practices will be followed during and after construction; and
g) spill prevention and response programs are included for any operations that involve potentially hazardous materials.

N-4 Noise.

Intent. To prevent health hazards and nuisances caused by locating noise-sensitive development in areas which already have excessive noise levels such as the Kalamazoo/Battle Creek International Airport and major freeway arteries.

The most common noise-sensitive land uses are residences, hospitals, nursing homes, schools, and churches. Noise-abatement measures include vegetative buffers, structural barriers, distance, and soundproofing of structures.

Guideline N-4 Discourage noise-sensitive land uses in areas where accepted noise standards may be exceeded, unless adequate abatement measures are provided.

N-5 Historic Resource Preservation.

Intent. To preserve the community's heritage. Historically significant buildings, sites or districts are those listed on the National Register of Historic Places, the Michigan State Historic Preservation Office list, listed in the National Landmarks' records, or places which are locally significant and are designated under a city ordinance.

Guideline N-5 Preserve buildings, sites and districts that are recognized as having historic, cultural or architectural value.

N-6 Open Space Protection.

Intent. To maintain the open space, vegetation and wildlife resources in Portage for future generations. To preserve significant natural areas from negative impacts due to intense development.

In some cases, when publicly owned open space is the site for the location or expansion of a necessary community facility, utility, highway, land use, etc., replacement in kind of the open space resource would be acceptable under this guideline. Privately owned open space, unique natural areas and significant environmental features such as natural stream corridors, which are of proven significance to the public may be preserved through public acquisition, conservation easements, or protection as private open space. In some cases, a buffer area may be needed to maintain the quality of these resources.

Guideline N-6: Protect wildlife and endangered species areas, wetlands, publicly owned parks, unique natural areas, and other areas with significant landscape features.

Transportation

T-1 Transportation Systems in General.

Intent. To ensure that all parcels proposed for development have access to established facilities for deliveries, service, maintenance, emergency vehicles and parking. To ensure that access points are adequate in number and design to prevent both on and off-site traffic congestion. To prevent discontinuity in travel movements that would increase the length of trips, local trips on the thoroughfare system, public facility costs, travel costs, energy costs and air pollution.

Guideline T-1 Provide adequate access to, from and through all development for the proper functioning of the streets, walkways, bikeways and transit systems and for emergency vehicles by linking the interior roadway, walkway, bikeway and transit systems with systems already built or planned in the surrounding area.

T-2 Street Design.

Intent. To ensure streets are constructed with adequate pavement materials, width, grade, and curvature to accommodate existing and anticipated vehicle, pedestrian and bicycle movements and the mix of vehicle types. To ensure that public expenditures are not necessary in the immediate future to correct deficiencies that could be reasonably anticipated at the time of initial development. To ensure that the internal circulation system of a development is designed to separate motor vehicle and pedestrian conflicts as needed and to provide continuous roadway, walkway and bikeway systems. To ensure street design is appropriate for the character of the development in terms of design, speed, streetscape, and protection of natural features.

Guideline T-2 Streets should be designed for use by all modes of travel and in consideration of the desired character of the project and surrounding environment.

T-3 Access Management.

Intent. To preserve the traffic carrying capability of the streets and promote safety. To promote reasonably through not always the most direct, access to properties. To promote shared access among lots whenever possible.

Where property access on major arterials by way of local roads or frontage roads is impractical, appropriate design measures should be taken to control the frequency and manner of access such as driveway entrances, turnaround driveways, rear access to the property or right-in/right-out driveway entrances.

Guideline T-3 Preserve the through traffic capacity of the thoroughfare system by:

a) providing reasonable access to abutting property.
b) placing access points a sufficient distance from interchange ramps, intersections, and other driveways as noted in **Chapter 8**;
c) using, to the extent possible, local streets, frontage roads, rear service drives, or other types of shared access for access to property along arterials;
d) providing improvements at access locations to minimize negative impacts on traffic flow and safety such as turning lanes, deceleration lanes or traffic signals when warranted.

T-4 Non Motorized Travel.

Intent. To encourage pedestrian and bicycle travel as an alternative to the private automobile between closely related land uses in the neighborhood. To improve pedestrian access to public transit routes from places of residence and employment in order to encourage the use of public transit as an alternative to the car. To encourage the provision of walkways between retail facilities and major concentrations of pedestrian activity. To reduce major conflicts between vehicular and pedestrian movements for improved safety.

Guideline T-4: Provide for non-motorized travel through the provision of:

a) walkways/sidewalks and clear pedestrian routes throughout all types of projects
b) walkways/bikeways from residential areas to recreation areas, schools, and nearby shopping facilities;
c) walkways for access to transit stops;
d) walkways where heavy pedestrian movements may be anticipated between land uses;
e) pedestrian overpasses/underpasses when street closings are impractical and vehicular and pedestrian volumes warrant such separation;
f) bicycle storage facilities at major bicycle destinations such as parks, shopping centers and schools; and
g) walkways through expressway interchange areas where appropriate.

T-5 Right-of-Way Preservation.

Intent. To ensure adequate rights-of-way for streets and walkways are required or used by the proposed development and that pass through or abut the development to maintain system continuity. The developer may be required to dedicate rights-of-way and/or easements for street, bikeway and walkway facilities within or abutting the development as set forth in the subdivision and other land use regulations and the adopted Thoroughfare Plan.

Guideline T-5 Provide adequate rights-of-way and/or easements to accommodate required and anticipated roadway, walkway and bikeway improvements, utilities and landscaping through dedication.

T-6 Parking.

Intent. To ensure that off-street parking and loading facilities are adequate in quantity and design for efficient and safe traffic movement on public streets to and from the site and within the site. To vary parking and loading requirements with the type and intensity of land use, the type of access to the site and the characteristics of the users.

The amount of off-street parking should be adequate to accommodate peak hour volumes by the automobile. If it can be demonstrated that a portion of the residents, clients or employees use other types of transportation than the automobile or that parking can be shared with adjacent uses, off-street parking requirements may be reduced. Off-street parking should be convenient (but not excessive) and not separated by heavy traffic volumes from the principal use.

Guideline T-6 Provide off-street parking and loading of sufficient quantity and adequate design for the type and intensity of development.

Municipal Facilities & Services

M-1 Sound Fiscal Growth.

Intent. To guarantee that new growth can be accommodated and does not result in an undue financial burden on the community.

Guideline M-1: Ensure that public infrastructure expenditures are adequate for future growth.

M-2 Sanitary Sewer.

Intent. To prevent health hazards due to contamination of ground and surface waters. To achieve and maintain water quality standards.

Adequate treatment and disposal of sewage wastes should be achieved through connection to the public sewer system. If public sanitary sewers are available, development must connect to the public sanitary sewer system. On-site sewage treatment systems may be approved for low intensity uses in

areas where public sanitary sewers are not anticipated within the next ten years and in areas where environmentally sensitive lands do not exist.

Guideline M-2: Provide that all development has adequate means of sewage treatment and disposal to protect public health and protect water quality in lakes, streams, and water table. All future developments must be connected to the public sewer system.

M-3 Underground Utilities.

Intent. To improve the compatibility of traditional overhead utilities with surrounding land uses by placing them underground. This should be practical in new developments regardless of use and planned industrial, office and commercial areas. Exceptions may be appropriate for infill development on small lots.

Guideline M-3 Require all new development to locate electric and telecommunications utilities underground.

M-4 Utility Installation and Wireless Communication Towers.

Intent. To ensure that utility installations are compatible with surrounding land uses. To include proper design measures in utility installations to reduce visual intrusion, odor, air pollution, noise, vibration, through traffic, siltation, erosion and disruption of drainage facilities. To facilitate the flow of automobile and truck traffic generated by large-scale utility facilities. To protect residential neighborhoods from increased volumes of through traffic, siltation, erosion, and flooding. For purposes of this guideline, "utility installations" are:

a) power generation plants and electric substations,
b) natural gas processing and storage facilities and pumping substations (above six feet in height),
c) sewage pumping stations (above six feet in height),
d) water treatment plants, water storage tanks and pumping stations (above six feet in height),
e) telecommunications main switching facilities and substations, but exclude overhead and underground transmission lines, and
f) wireless communication towers.

Guideline M-4 Take all feasible measures to prevent utility installations from creating nuisances to the surrounding area. Where location within a residential area is the only practical one, landscaping and site design should be used to improve compatibility. Wireless communication facilities should utilize public land or locations where their visual impact can be reduced, sufficiently spaced from residential areas.

M-5 Public Facilities in General.

Intent. To ensure that community facilities and services are provided in a manner that satisfies area-specific and community-wide needs. To ensure that facility sites are located and designed to be physically accessible to their intended users.

Guideline M-5: Locate or expand community facilities:

a) in areas with a demonstrated need for the facility;
b) to avoid duplication of services;
c) with convenient access to the area that the facility is intended to serve;
d) where access into and within the facility is provided for elderly and handicapped persons;
e) to improve response times and public safety;
f) with design sensitivity to surrounding land uses and the environment;
g) locate, where possible, on a shared site with compatible public uses or facilities;
h) larger facilities should be located in the City Centre or along arterial streets; and
i) reuse of existing buildings should be considered as an alternative to new construction.

M-6 Regional Cooperation.

Intent. To ensure the compatibility between existing and proposed uses on the boundaries of the City of Portage. To establish a mechanism for referral between abutting planning jurisdictions when major development projects with significant impacts (such as traffic) on other jurisdictions are being reviewed for approval. To coordinate area-wide transportation issues with the Kalamazoo Area Transportation Study and other area-wide infrastructure issues through appropriate regional forums.

Guideline M-6 Coordinate the review of major developments and major infrastructure investments that have major regional impacts or significant impacts on abutting jurisdictions.