Amendment to




Master Plan
City of Royal Oak














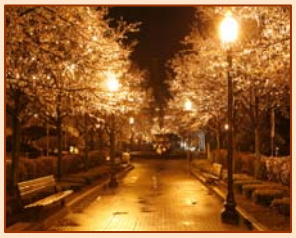


City of Royal Oak, Michigan
Adopted: April 17, 2012

ACKNOWLEDGEMENTS

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Introduction

What is Planning?

Planning is an activity that has been ongoing since the beginning of civilization. Quite simply, planning is preparation for a future event, activity or endeavor. Everyone conducts some type of planning in their daily lives. Where the issues are simple and the outcomes are clear, the plans can be simple. More complex issues and problems require plans to be more complex and detailed. It is relatively easy to propose plans for events that can reasonably be anticipated. It is much more difficult to prepare plans for events which are not anticipated. The most effective plans are those which are accurate enough to prepare for anticipated events, and flexible enough to provide guidance for events which are not anticipated.

In the process of planning, the following steps are involved:

- *Identification of the problem or issue.*
- *Setting of goals to be achieved.*
- *Formulation of alternative solutions and evaluation of impacts.*
- *Developing a plan of action.*

How Is the City Authorized to Plan?

The City of Royal Oak derives its authority to prepare a Master Plan from the Michigan Planning Enabling Act, Public Act 33 of 2008, as amended. The Act states:

> *Sec. 7. (1) A local unit of government may adopt, amend, and implement a master plan as provided in this act.*
>
> *(2) The general purpose of a master plan is to guide and accomplish, in the planning jurisdiction and its environs, development that satisfies all of the following criteria:*
>
> *(a) Is coordinated, adjusted, harmonious, efficient, and economical.*
>
> *(b) Considers the character of the planning jurisdiction and its suitability for particular uses, judged in terms of such factors as trends in land and population development.*
>
> *(c) Will, in accordance with present and future needs, best promote public health, safety, morals, order, convenience, prosperity, and general welfare.*
>
> *(d) Includes, among other things, promotion of or adequate provision for 1 or more of the following:*
>
> *(i) A system of transportation to lessen congestion on streets.*
>
> *(ii) Safety from fire and other dangers.*
>
> *(iii) Light and air.*
>
> *(iv) Healthful and convenient distribution of population.*
>
> *(v) Good civic design and arrangement and wise and efficient expenditure of public funds.*
>
> *(vi) Public utilities such as sewage disposal and water supply and other public improvements.*

(vii) Recreation.

(viii) The use of resources in accordance with their character and adaptability.

Sec. 31. (1) A planning commission shall make and approve a master plan as a guide for development within the planning jurisdiction …

(2) In the preparation of a master plan, a planning commission shall do all of the following, as applicable:

(a) Make careful and comprehensive surveys and studies of present conditions and future growth within the planning jurisdiction with due regard to its relation to neighboring jurisdictions.

(b) Consult with representatives of adjacent local units of government in respect to their planning so that conflicts in master plans and zoning may be avoided.

(c) Cooperate with all departments of the state and federal governments and other public agencies concerned with programs for economic, social, and physical development within the planning jurisdiction and seek the maximum coordination of the local unit of government's programs with these agencies.

(3) In the preparation of the master plan, the planning commission may meet with other governmental planning commissions or agency staff to deliberate.

(4) In general, a planning commission has such lawful powers as may be necessary to enable it to promote local planning and otherwise carry out the purposes of this act.

Sec. 33. (1) A master plan shall address land use and infrastructure issues and may project 20 years or more into the future. A master plan shall include maps, plats, charts, and descriptive, explanatory, and other related matter and shall show the planning commission's recommendations for the physical development of the planning jurisdiction.

(2) A master plan shall also include those of the following subjects that reasonably can be considered as pertinent to the future development of the planning jurisdiction:

(a) A land use plan that consists in part of a classification and allocation of land for agriculture, residences, commerce, industry, recreation, ways and grounds, public buildings, schools, soil conservation, forests, woodlots, open space, wildlife refuges, and other uses and purposes. …

(b) The general location, character, and extent of streets, railroads, airports, bicycle paths, pedestrian ways, bridges, waterways, and waterfront developments; sanitary sewers and water supply systems; facilities for flood prevention, drainage, pollution prevention, and maintenance of water levels; and public utilities and structures.

(c) Recommendations as to the general character, extent, and layout of redevelopment or rehabilitation of blighted areas; and the removal, relocation, widening, narrowing, vacating, abandonment, change of use, or extension of streets, grounds, open spaces, buildings, utilities, or other facilities.

(d) For a local unit of government that has adopted a zoning ordinance, a zoning plan for various zoning districts controlling the height, area, bulk, location, and use of buildings and premises. The zoning plan shall include an explanation of how the land use categories on the future land use map relate to the districts on the zoning map.

(e) Recommendations for implementing any of the master plan's proposals.

Sec. 41. (1) After preparing a proposed master plan, a planning commission shall submit the proposed master plan to the legislative body for review and comment. The process of adopting a master plan shall not proceed further unless the legislative body approves the distribution of the proposed master plan.

Sec. 45. (2) At least every 5 years after adoption of a master plan, a planning commission shall review the master plan and determine whether to commence the procedure to amend the master plan or adopt a new master plan. The review and its findings shall be recorded in the minutes of the relevant meeting or meetings of the planning commission.

Why Plan for Royal Oak?

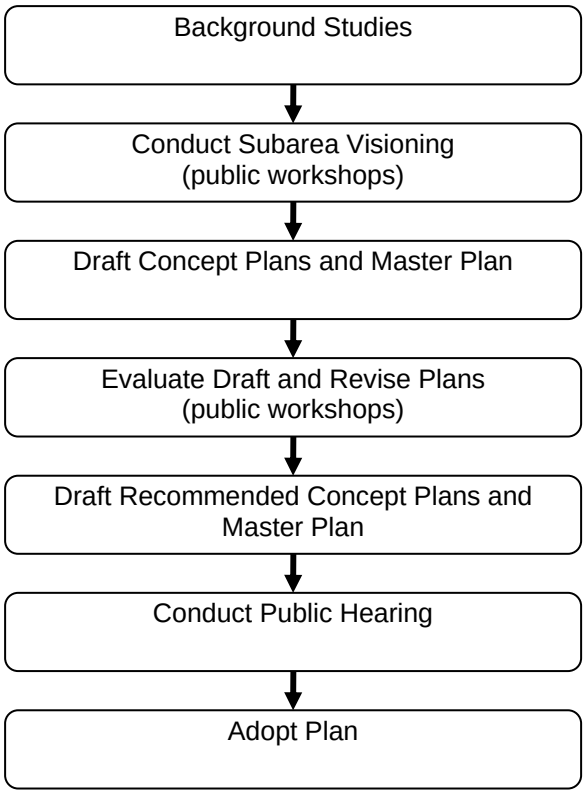
As the year 2000 approached, there was a strong need to evaluate the physical development of the city. The Master Plan in place at that time was adopted in 1968 and had not undergone any major revision since its adoption. Despite a perception that the city was fully developed, significant changes had occurred in those thirty years:

- *The construction of I-696 provided a conduit for metropolitan traffic at the front door of Royal Oak.*
- *Downtown transformed into a mixed-use retail, service, and entertainment district.*
- *New housing was built in response to a desirable residential environment (a total of 772 new dwellings from 1980 to 1999, the majority of which were owner-occupied condominiums in multiple-family complexes ranging from 3 to 124 units).*

What Process Has Been Followed?

The city's response in 1999 to those changes was to undertake a systemic process which involved analysis of the community, citizen participation, and revision of the Master Plan. The revised Master Plan provided for the orderly development of the city, assisted the community in its effort to maintain and enhance a pleasant living environment, and sparked a vision toward the future.

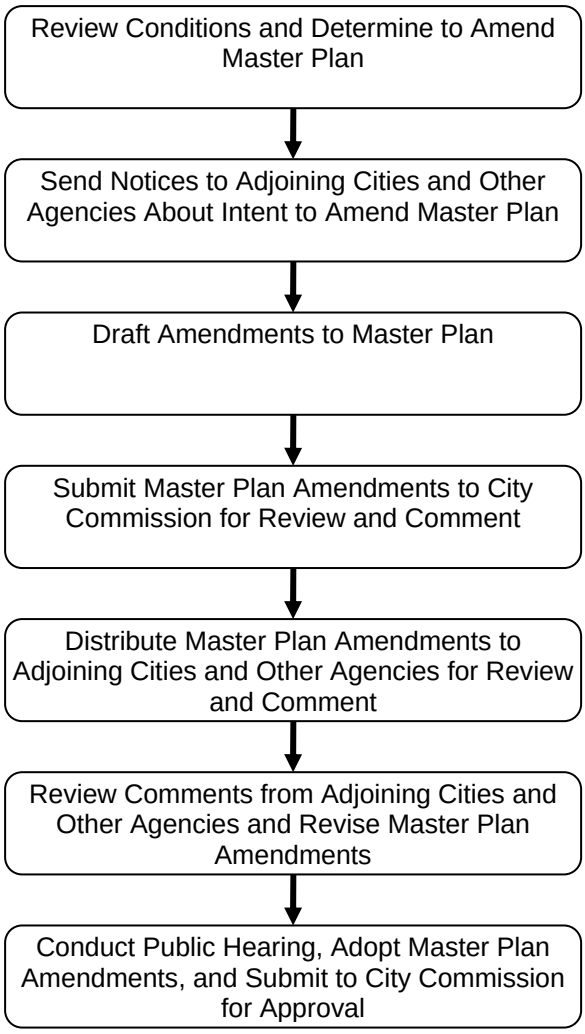
The following flow chart depicts the Master Plan process that led to adoption of the revised Master Plan in 1999, and at what points public input was obtained:



In 2004, the Planning Commission reviewed the Master Plan to determine whether to commence procedures to amend the plan or to adopt an entirely new plan. At that time the Commission determined that conditions within the city had not changed significantly since the Master Plan's adoption in 1999 to warrant amending the plan or adopting a new one, and that the goals and objectives of the current plan were still relevant and applicable to the physical development of the City of Royal Oak.

In 2009, the Planning Commission again took up a 5-year review of the Master Plan as now required under the Michigan Planning Enabling Act. This time the Commission concluded that although many of the policies and recommendations of the 1999 plan remained pertinent, several conditions and circumstances had changed since then. The Planning Commission determined that amendments should be made to the Master Plan but adopting an entirely new plan was not necessary. It was felt amendments to the plan were needed to address conditions that have changed since 1999 while still providing for the elements of original plan which are still relevant. The Planning Commission then embarked on a process to amend the Master Plan.

The following flow chart depicts the process that led to this amendment of the Master Plan and at what points public input was obtained:



The revised and amended Master Plan has the following characteristics:

- It is a **physical plan**. Although social and economic conditions are considered, the plan will be a guide to the physical development of the community.

- It provides a **long-range viewpoint**. The Master Plan will depict land use and community development within a time frame of 20 years.

- It is **comprehensive**, covering the entire city and all the components that affect its physical makeup.

- It is the official **statement of policy** regarding such issues as land use, community character and transportation which impact the physical environment. As a policy guide, it must be sufficiently flexible to provide guidance for changing conditions and unanticipated events.

How is the Master Plan Different from Zoning?

The Master Plan is not a Zoning Ordinance. The Master Plan is the long-range policy guide for the physical arrangement and appearance of the city. The Zoning Ordinance more specifically regulates the manner in which individual properties are used. The Zoning Ordinance is only one of a number of tools used to implement the Master Plan. Formulating a Master Plan is the first step in providing a sound and legal basis for revising the Zoning Ordinance and other regulatory ordinances, investing in public capital improvements, and guiding private land use decisions.

The Master Plan provides general direction on the city's future development pattern. The plan also provides policies and actions for community leaders to consider in the future. Some of the Master Plan's recommendations will be implemented through amendments to the Zoning Ordinance text and map. However, the Master Plan itself does not change the Zoning Ordinance nor the zoning of any property.

Differences Between Master Plan & Zoning Ordinance

Master Plan	*Zoning Ordinance*
• *Provides general policies – preserve residential neighborhoods, protect natural features, redevelop downtown, etc.*	• *Sets forth specific legal requirements on permitted uses, setbacks from lot lines, building heights, parking spaces, landscaping, etc.*
• *A policy guide that can be vague and subjective – not legally enforceable.*	• *A law that must be objective and quantifiable – legally enforceable.*
• *Flexible – written to be able to respond to changing conditions.*	• *Rigid – requires formal legislative amendment to change.*
• *Shows future land use intentions.*	• *Shows how land is regulated today.*
• *Adopted and amended by Planning Commission while City Commission authorizes distribution and may reserve right to approve or reject.*	• *Adopted and amended by City Commission upon recommendation from Planning Commission.*

How Has the Community Been Involved?

The master planning program conducted in 1999 relied on the involvement of and input from various stakeholder groups including neighborhood groups, citizens-at-large, non-residential property owners, business owners, outside planning consultants, city staff, City Commissioners, and Planning Commissioners. Public input was obtained through a series of workshop sessions conducted throughout the city. The public input process is described more fully in the section entitled "Visioning & Public Participation."

Who Is Responsible for Planning & Zoning?

The City of Royal Oak has a number of bodies that are actively involved in the planning and zoning decision-making process:

- City Commission – The City Commission is the chief governing body of the city. By Michigan statute, the City Commission approves rezoning requests, zoning and text amendments, and subdivision plats. The City Commission also authorizes distribution of the Master Plan to adjoining cities and other agencies, and may reserve the right to approve or reject the Master Plan and any amendments to it.

- Planning Commission – The Mayor, one City Commissioner, and one administrative staff member serve on the Planning Commission as required by the state law option adopted by the city. Seven of the 9 Planning Commission members, including an administrative staff member, are appointed by the Mayor and approved by the City Commission. The Planning Commission is the principal recommending body to the City Commission on matters pertaining to the planning and development of the community. The Planning Commission approves site plans and special land uses and makes recommendations to the City Commission on rezoning requests, zoning text amendments, subdivision plats, and a capital improvements program. Michigan statutes require a Planning Commission to prepare and adopt a Master Plan.

- Zoning Board of Appeals – The Zoning Board of Appeals serves to interpret provisions of the Zoning Ordinance when requested and determine when variances should be granted when practical difficulties or unnecessary hardships with property make it impossible to meet the strict provisions of the Zoning Ordinance.

Goals, Objectives & Strategies

This portion of the Master Plan identifies goals, objectives, and strategies for the city, thereby setting forth the basis for action. The identification of community visions will be the motivating force behind change. But more must be done to transform the vision into action. While vision statements are broad expressions of a desire for the future, goals, objectives and strategies progressively provide structure for future action.

Goals represent a desired outcome, objectives provide more specific direction, and the strategies are actions aimed at achieving particular objectives. Goals, objectives and strategies are organized according to the predominant issues and topics identified in the previous section and are described in the following pages:

Neighborhood Preservation & Residential Land Use

Historic Resources

Downtown

Commercial Corridors

Woodward Corridor

Transportation & Circulation

Parks & Recreational Uses

Community Resources & Facilities

Neighborhood Preservation & Residential Land Use

GOAL 1: To recognize, preserve and enhance existing neighborhoods as the foundation of a strong community, and provide a balanced residential environment.

Rationale:

Neighborhood viability is one of the foundations of any community. Royal Oak has enjoyed substantial investment in its existing neighborhoods by both individuals and families expecting stable residential environments. Land use decisions must be balanced with and support the interests of existing neighborhoods, while still supporting housing opportunities to both new residents and residents who wish to remain in Royal Oak as their needs change.

OBJECTIVE 1.1 Preserve, maintain and enhance the character of existing neighborhoods.

Strategies:

A) Establish clear and understandable boundaries on the Future Land Use Map of the Land Use Plan between established neighborhoods and non-residential areas.

B) Support residential projects within neighborhoods that are compatible with existing density and architectural character by such methods as:

- Allowing density based on the average density of the existing neighborhood;
- Requiring setbacks which are comparable to the balance of the neighborhood;
- Specifying spacing patterns of buildings from the street view consistent with the balance of the neighborhood;
- Limiting location of garages and parking to rear yards or side yards.

C) Encourage single-family dwellings that have features and characteristics of homes in older, more traditional neighborhoods:

- Encourage dwellings oriented towards the public street with a defined frontage;
- Encourage primary entrances and windows that face a public street; and
- Encourage parking to the side or rear of dwellings – detached garages in rear yards or attached garages on the sides of dwellings that do not project into front yards.

D) Discourage single-family dwellings that have features and characteristics of more modern and rural subdivisions:

- Discourage dwellings oriented away from the public street or without a defined frontage;
- Discourage primary building entrances that lead to the side of a dwelling or an attached garage;
- Discourage attached garages that project further into a front yard than the rest of the dwelling; and
- Discourage blank, windowless façades.

E) Ensure that the sizes of any divided lots are compatible with existing neighborhood lots but not less than the minimum city code standard.

F) Promote distinct neighborhoods organized around neighborhood parks, schools and shopping.

G) Implement overlay zoning techniques to address the areas in proximity to the downtown (see "Implementation").

H) Ensure redevelopment of vacant school sites is consistent with and complimentary to surrounding neighborhoods through overlay zoning techniques, planned unit development, conditional rezoning, special redevelopment design standards, etc.

OBJECTIVE 1.2 Enhance the physical appearance and the economic value of existing neighborhoods.

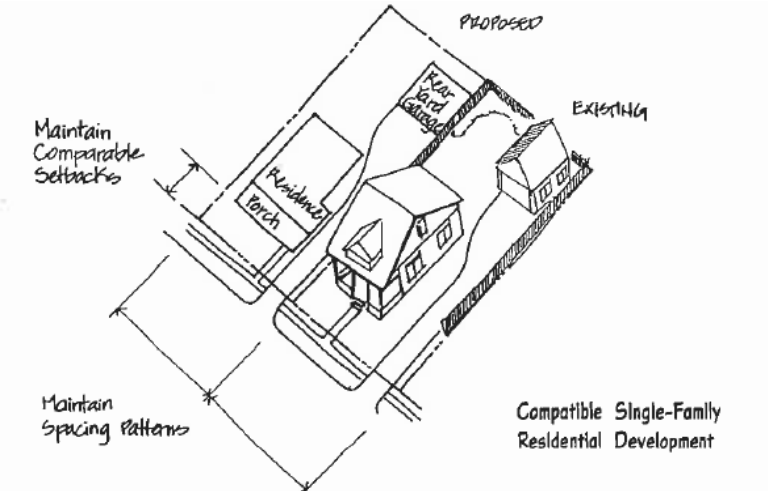
Strategies:

A) Establish building standards that are style-neutral for new residential development and rehabilitation of existing residences which are compatible with existing conditions (density, setbacks, building spacing, and rear and side garage locations).

B) Provide code enforcement of all residential properties.

C) Explore the establishment of a neighborhood identification system such as unified street signs, entryway signs, and landscaping.

D) Promote neighborhood enhancement programs and strategies such as preservation of mature trees, street tree plantings, neighborhood gardens, and sidewalk improvements.



OBJECTIVE 1.3 Ensure that multiple-family development and redevelopment is compatible with the surrounding neighborhood characteristics.

Strategies:

A) Encourage multiple-family development and redevelopment that has features and characteristics of surrounding established neighborhoods:

- Encourage townhomes, row houses, brownstones, walk-ups, courtyard apartments and duplexes with common side walls and 2 to 8 units per building;
- Encourage buildings oriented towards the street with terraces, courtyards or stoops.
- Encourage primary building entrances and windows that face a public street;
- Encourage parking to the side or rear of buildings with common, shared driveways; and
- Encourage building setbacks similar to and consistent with single-family dwellings.

B) Discourage multiple-family development that has features and characteristics of more modern apartment complexes:

- Discourage multiple buildings without common walls dispersed throughout a site with more than 8 units per building;
- Discourage buildings oriented inward towards each other or the interior of the site and away from the street;
- Discourage primary building entrances that lead to parking lots or the interior of a site with side or rear facades facing the street;
- Discourage parking in front of buildings with multiple entrances or driveways for each individual unit; and
- Discourage significantly greater setbacks than those required for single-family dwellings.

C) Ensure multiple-family developments locate along or near public transit corridors and encourage those that adhere to transit-oriented design principles.

D) Adopt regulations for multiple-family dwellings that comply with fair housing laws and do not discourage the provision of affordable housing.

E) Limit the height of buildings to no more than two and one-half stories, taking into consideration the height of surrounding established neighborhood buildings.

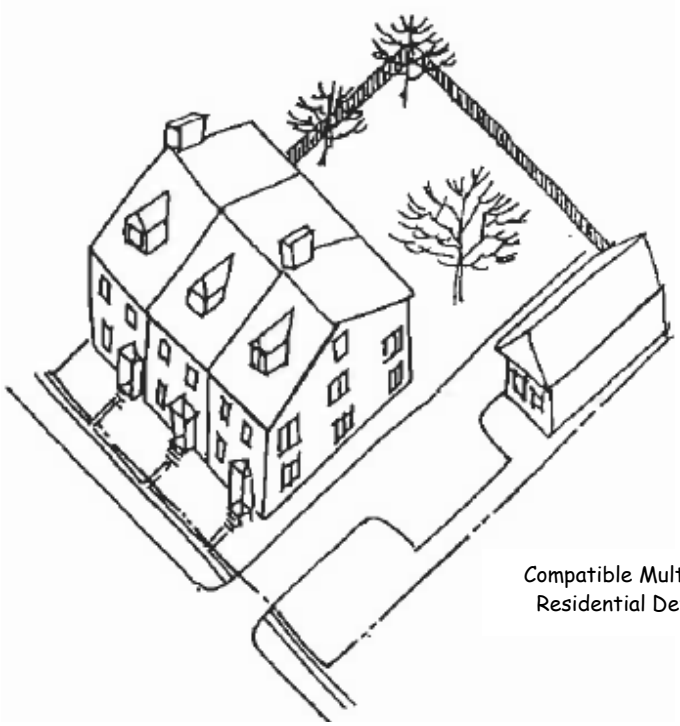
F) Require setbacks that are consistent with neighboring buildings.

G) Set reasonable maximum lot coverage.

H) Establish style-neutral design standards which respect the existing architectural character of the neighborhoods.

I) Limit garage and parking locations to rear and side yards.

J) Support strict code enforcement of rental, residential and commercial properties.



Compatible Multiple-Family Residential Development

OBJECTIVE 1.4 Promote safety and security through the management of traffic volumes and speeds which are detrimental to residential neighborhoods.

Strategies:

A) Evaluate methods which slow down, discourage, and divert cut-through traffic but maintain continuous access for residents, fire, police and emergency personnel.

B) Promote and support walkable streets and livable neighborhoods through appropriate design principles and solutions.

C) Evaluate feasibility of closing streets in proximity to areas which promote cut-through traffic (i.e., Woodward Avenue Public Spaces Design Framework Plan).

OBJECTIVE 1.5 Promote a "Walkable Community" environment that will facilitate pedestrian and bicyclist use.

Strategies:

A) Promote and support walkable streets and livable neighborhoods through appropriate design principles and solutions.

B) Recognize and promote where possible bicycle routes throughout the city as recommended by the Non-Motorized Transportation Plan, creating a system of signed, shared roadways that connect to similar systems in adjacent cities.

C) Encourage transit-oriented design principles where possible while supporting clean, efficient public transit service to new developments and existing neighborhoods.

D) Enhance pedestrian and bicycle access from surrounding neighborhoods with cross walks and consistent sidewalk ramps at key locations.

E) Provide and maintain continuous sidewalks linking neighborhoods, schools, community facilities, and the downtown.

F) Continue to support the city's maintenance plan for existing and new sidewalks.

G) Discourage the use of drive-through traffic and multiple curb cuts that are a detriment to a pedestrian-oriented environment.

H) Continue to work with railroads to provide safer crossings.

I) Minimize the amount and speed of traffic through neighborhoods by using "traffic calming" devices and other appropriate design principles.

J) Promote neighborhood enhancement programs and strategies such as preservation of mature trees, street and tree plantings, neighborhood gardens and sidewalk improvements.

K) Implement the objectives and strategies of the Non-Motorized Transportation Plan throughout the entire city.

Historic Resources

GOAL 2: To encourage the preservation of the city's historic character through the identification and preservation of historically significant neighborhoods and other properties.

Rationale:

The city has many significant historic structures both in the downtown and in neighborhoods. Preservation efforts such as rehabilitation and adaptive reuse will contribute to the city's historic character and the community at large.

OBJECTIVE 2.1 Recognize and promote the community's historic resources.

Strategies:

A) Study the community-wide inventory which identifies historically significant and contributing structures.

B) Support educational efforts to publicize historic structures and their importance to the fabric of the community.

C) Encourage voluntary participation in a program of identification and formal recognition of restored homes and other structures in acknowledged historical areas.

OBJECTIVE 2.2 Encourage the maintenance and rehabilitation of historic structures and neighborhoods.

Strategies:

A) Investigate potential incentives which will maintain the use of historic structures within neighborhoods as single-family residences.

B) Where there are concentrations of historic structures, ensure that new development is compatible with the existing historic character of the area. Encourage an architectural theme which complements existing historic structures.

Downtown

GOAL 3: To maintain and improve a healthy and vibrant mixed-use downtown center as a desirable business address that integrates expanded commercial, entertainment, office, residential, retail and service uses.

Rationale:

The future for downtown Royal Oak will be built upon its exciting combination of the traditional and the unique. A strong sense of its past creates the foundation for change and enhancement. A vital mix of activities, along with a freedom of expression, will continue to give Royal Oak its special flair and appeal as a shopping, entertainment, and living experience.

OBJECTIVE 3.1 Enhance the physical appearance of the downtown.

Strategies:

A) Maintain the traditional development pattern of the downtown, ensuring new projects are compact and pedestrian-scaled, with buildings that front directly onto the street.

B) Encourage sustainable projects that contribute to "placemaking" — the creation of a unique downtown that is compact, mixed-use, pedestrian-scaled, and transit-oriented with a strong civic character and lasting economic value.

C) Develop building standards that are style-neutral and provide assistance to enhance our vibrant urban environment with specific consideration for building height, setbacks, signage and streetscape design.

D) Require taller buildings of four or more stories to have an adequate setback from the front property line for the fourth story and above to prevent them from overwhelming the public realm, creating unusual noise and wind patterns, and to maintain the downtown's pedestrian-friendly atmosphere.

E) Continue to improve public and private signage and lighting downtown.

F) Upgrade parking and parking lots with improved, safe lighting and signage, and incorporate separation by landscaping and decorative screening measures that ensure compatibility with neighboring residential areas where applicable.

G) Support strict code enforcement of commercial, residential, and rental properties.

OBJECTIVE 3.2 Enhance the mixed-use environment downtown with emphasis on expanded retail, office, entertainment and housing compatible with neighboring residential areas.

Strategies:

A) Encourage an expanded retail environment in the core of the downtown, including, but not only, mixed-use retail options on ground floors combined with office and residential uses on upper floors, and discourage ground floor office uses on Main Street and Washington Avenue.

B) Promote the establishment of boutique and specialty retailers that serve as an attraction while also providing adequate convenience and day-to-day shopping for downtown workers and residents.

C) Encourage small to medium development projects within the downtown.

D) Encourage the relocation of uses not dependant on a downtown location and allow conversion to uses which are complementary to and compatible with a pedestrian-scaled downtown environment.

E) Encourage mixed-use, multiple-level parking structures which provide the opportunity for retail and office ground floors and parking on upper floors.

F) Discourage new or expanded surface parking lots which detract from the appearance and pedestrian-oriented environment of the downtown, especially for residential developments.

G) Create a central business overlay district which will permit increased building height for projects that include the following:

- exemplary architectural and site design features;
- an appropriate mix of retail, office, and upper-level residential uses;
- increased off-street parking; and
- landscaping and/or decorative screening measures that ensure compatibility with neighboring residential areas.

OBJECTIVE 3.3 Provide guidelines for treatment of buffers to create a smooth transition between residential areas and non-residential uses.

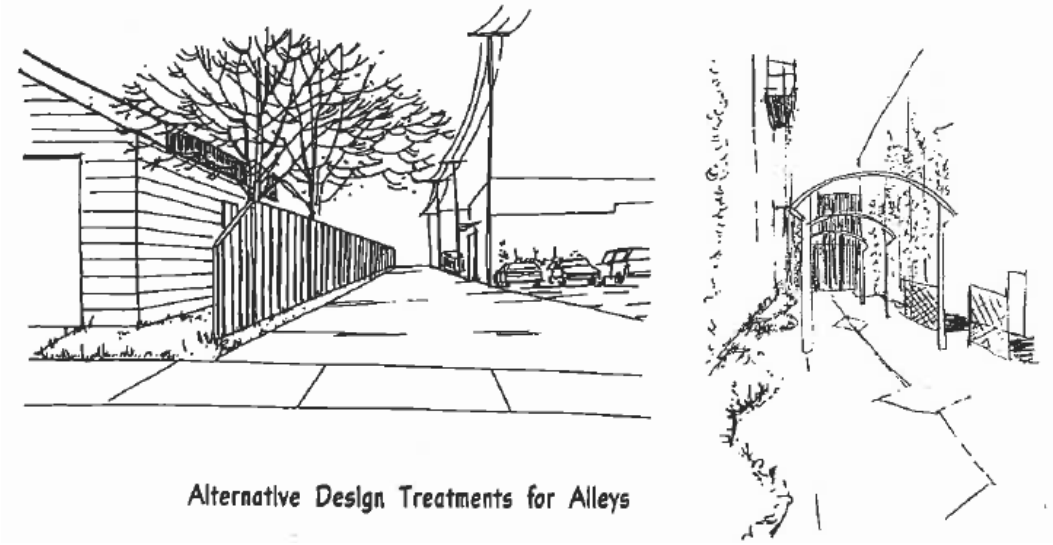
Strategies:

A) Provide consistent screening of more intensive uses (i.e., multiple-family, commercial, and office uses) from residential neighborhoods through the use of walls, fences and/or landscaping.

- Provide separation as well as an attractive physical barrier between the residential and non-residential uses as necessary to minimize disruptive light, noise, odor, dust, unsightly appearances and intrusive activity relative to the residential environment.
- Buffers should consist of a landscape area along the residential boundary, with a decorative screen wall along the non-residential side of said buffers.
- Landscape areas should be planted with trees and shrubs to visually screen non-residential areas and provide an attractive boundary that encourages continued investment in the adjacent residential property.
- Buffers and screening should be scaled in accordance with the scale of the non-residential use.

B) Establish alternative design treatments of existing alleys typically located between residential and commercial or office uses.

- Attempt to create more space for screening of automobile service, parking areas, and storage areas through the use of fences, walls, and/or landscaping.
- Use alleys as second access to buildings providing parking and pedestrian ways through the use of alley-scape and courtyard amenities such as paving, landscaping, lighting and street furniture.



Alternative Design Treatments for Alleys

OBJECTIVE 3.4 Promote a pedestrian-friendly environment.

Strategies:

A) Support and encourage design principles and solutions to promote walkable streets throughout the downtown and surrounding neighborhoods.

B) Support and encourage transit-oriented design principles for appropriate new downtown developments.

C) Support and encourage clean, efficient public transit service for the downtown, such as light rail and bus rapid transit to local destinations, and high-speed rail to more distant locations along established railroad rights-of-way.

D) Increase pedestrian and bike access from surrounding neighborhoods with cross walks and consistent sidewalk ramps at key locations.

E) Provide continuous sidewalks linking neighborhoods, schools, community facilities, and the downtown.

F) Discourage uses that are a detriment to pedestrian-oriented environment such as drive-throughs, surface parking lots, and uses which require multiple curb cuts.

G) Continue to support the city's maintenance plan for new and existing sidewalks.

H) Continue to work with the railroads to provide safer crossings.

OBJECTIVE 3.5 Create new and enhance existing public spaces.

Strategies:

A) Reorganize the Civic Center (City Hall and Library) as a community focal point around an open space or plaza used for outdoor concerts, community events, and informal gatherings.

B) Expand Farmers Market to its fullest potential by attracting uses which serve as a destination point and one of the city's gateways while also improving the linkages between the Farmers Market and downtown.

Commercial Corridors

GOAL 4: To improve both the function and visual appearance of the major commercial corridors within Royal Oak while protecting and enhancing neighboring residential areas.

Rationale:

Varied in terms of use, the appearance of the major commercial corridors leaves a lasting impression on both the casual visitor and the residents. The lack of defined entryways into the community, uncoordinated mix of uses, a multitude of curb cuts, proliferation of signs, predominance of paved surfaces and absence of landscaping all contribute to portions of many corridors that are visually unattractive.

OBJECTIVE 4.1 Provide design guidelines for treatment of buffers to create a smooth transition between residential and non-residential uses.

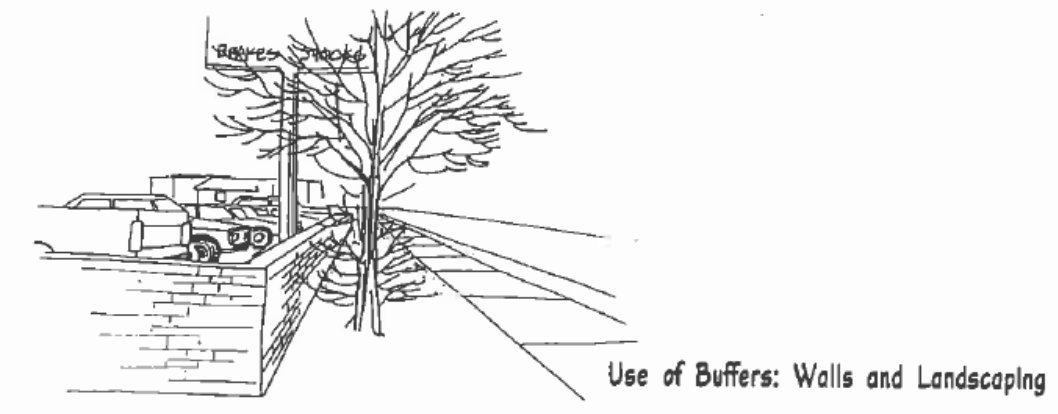
Strategies:

A) Provide consistent screening of more intensive uses (i.e., multiple-family, commercial, and office uses) from residential neighborhoods through the use of decorative landscaping.

- Provide sufficient setback as well as an attractive physical barrier between the residential and non-residential uses as necessary to minimize disruptive light, noise, odor, dust, unsightly appearances and intrusive activity relative to the residential environment.
- Buffers should consist of a landscape area along the residential boundary, with a decorative wall along the non-residential side of said buffers.
- Landscape areas should be planted with trees, flowers, grasses and shrubs to visually screen non-residential areas and provide an attractive boundary that encourages continued investment in the adjacent residential property.
- Buffer dimension should be larger and the screening more intensive when the nature and/or scale of the non-residential use is more intensive than the residential use.

B) Establish alternative design treatments of existing alleys typically located between residential and commercial or office uses.

- Attempt to create more space for screening of automobile service, parking areas, and storage areas through the use of decorative screening and/or landscape materials.
- Use alleys as second access to buildings providing parking and pedestrian ways through the use of alley-scape and courtyard amenities such as paving, landscaping, lighting and street furniture.



OBJECTIVE 4.2 Improve the visual appearance of the commercial corridors.

Strategies:

A) Support land use decisions that enhance the economic, aesthetic and functional qualities of each corridor which do not detract from neighboring residential uses, and which are of compatible design, scale and use to the neighboring residential areas.

B) Encourage transit-oriented development patterns at appropriate locations along commercial corridors – intersections of major streets with mixed-use development patterns and lots of sufficient size.

C) Develop building standards that are style-neutral for new and renovated buildings with specific consideration for building height, setbacks, signage and streetscape design.

D) Develop stronger buffer standards between the right-of-way and parking areas through the use of decorative screening and landscaping materials.

E) Reduce the number of curb cuts along the corridors.

F) Encourage consolidated parking at side or rear of buildings, while ensuring continuous screening between commercial and adjacent residential areas.

G) Develop streetscape amenities unique to each corridor with the use of consistent paving, furniture, landscaping, lighting and signage.

H) Continue the façade / building line north and south of the downtown along Main Street, with buildings that are appropriately located and oriented to the street, to better integrate with the downtown and to create an entryway into the city.

I) Continue efforts to improve signage along commercial corridors and to reduce the number of nonconforming signs.

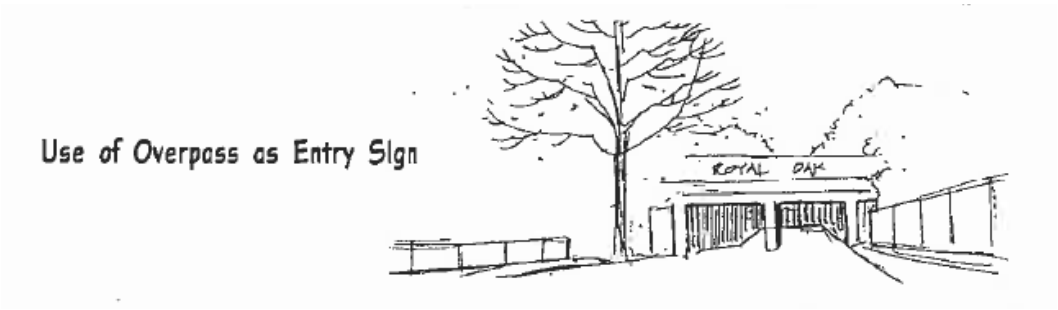
OBJECTIVE 4.3 Provide linkages between various community elements through enhanced corridors.

Strategies:

A) Identify and enhance entryways and gateways into the city through the use of landscaping and identification signs such as Main Street / I-696, Woodward Avenue / Eleven Mile Road, Woodward Avenue / Twelve Mile Road, and Eleven Mile Road / I-75.

B) Encourage the use of corridors as linkages such as Eleven Mile Road linking Woodward Avenue to civic areas downtown, and Main Street linking I-696 and downtown.

C) Support and encourage clean, efficient public transit service along commercial corridors, such as light rail and bus rapid transit to local destinations, and high-speed rail to more distant locations along established railroad rights-of-way.



Woodward Corridor

GOAL 5: To recognize the economic, social, and cultural importance of the Woodward Corridor and pursue the improvements needed to enhance and maintain its vitality.

Rationale:

The economic health and physical improvement of the Woodward Corridor are vital not only to the City of Royal Oak but the entire area traversed by Woodward Avenue. While some improvements have occurred to individual properties, comprehensive strategies, such as the ones embodied in the Woodward Avenue Public Spaces Design Framework Plan, need to be actively pursued.

OBJECTIVE 5.1 Provide design guidelines for treatment of buffers to create a smooth transition between residential and non-residential uses.

Strategies:

A) Provide consistent screening of more intensive uses (i.e., multiple-family, commercial, and office uses) from residential neighborhoods through the use of decorative landscape materials.

- Provide setback as well as an attractive physical barrier between the residential and non-residential uses as necessary to minimize disruptive light, noise, odor, dust, unsightly appearances and intrusive activity relative to the residential environment.
- Buffers should consist of a landscape area along the residential boundary, with a decorative screen wall along the non-residential side of said buffers.
- Landscape areas should be planted with trees and shrubs to visually screen non-residential areas and provide an attractive boundary that encourages continued investment in the adjacent residential property.
- Buffers and screening should be scaled in accordance with the scale of the non-residential use.

B) Establish alternative design treatments of existing alleys typically located between residential and commercial or office uses.

- Attempt to create more space for screening of automobile service, parking areas, and storage areas through the use of fences, walls and/or landscaping.

- Use alleys as second access to buildings providing parking and pedestrian ways through the use of alley-scape and courtyard amenities such as paving, landscaping, lighting and street furniture.

OBJECTIVE 5.2 Improve and maintain the overall appearance of buildings and streetscapes.

Strategies:

A) Develop building standards that are style-neutral for new and renovated buildings with specific consideration for building height, setbacks, signage and streetscape design.

B) Utilize streetscape elements such as lighting, landscaping, furniture and signage to help visually unify areas and improve the pedestrian environment along with corridor.

C) Improve the appearance of strip buildings that have multiple tenants by unifying the individual storefronts through similar use of material, color, signage, lighting, etc., and encourage proper maintenance of said corridor properties.

D) Develop treatments for rear building elevation that improve the appearance of entrance and service areas.

E) Preserve, establish, and re-establish street trees and related landscape components in the corridor.

OBJECTIVE 5.3 Provide sufficient, accessible, and attractive parking conditions for businesses.

Strategies:

A) Investigate methods of reorganizing existing parking areas to increase their efficiency and improve their appearance.

B) Screen adjacent residential neighborhoods from parking areas located behind businesses.

C) Investigate opportunities to increase parking through the removal of existing non-conforming, underutilized, or blighted commercial buildings.

D) Consider the purchase of homes adjacent to the corridor for the provision of off-street parking where appropriate.

E) Encourage street and right-of-way reconstruction projects that eliminate on-street parking where it does not meet minimum design and safety standards and provide for safe on-street parking where possible throughout the Woodward Corridor.

OBJECTIVE 5.4 Create a corridor that is distinctive, visually rich, and well organized.

Strategies:

A) Develop a significant, unique, overriding design concept that reflects the importance of Woodward to the community, county, and state.

B) Identify historic places, buildings, structures, locations and events to Woodward and highlight them as features for the corridor.

C) Identify opportunities for "corridor-scaled" public art / elements and public spaces at key locations along the corridor.

D) Identify individual communities and districts through the use of "gateways" and "landmarks."

E) Maintain and enhance existing open space and investigate opportunities for additional open space on or adjacent to the corridor.

OBJECTIVE 5.5 Improve safety and control of traffic speed and congestion.

Strategies:

A) Support and encourage design principles and solutions to control and reduce speeds where appropriate while providing for efficient traffic flow.

B) Consolidate and reduce the number of ingress and egress points along Woodward while maintaining sufficient access to business parking.

C) Reduce conflict points between pedestrian and vehicular circulation.

D) Investigate signalization and traffic engineering methods such as IVHS (Intelligent Vehicle Highway Systems) that can improve safety and reduce traffic congestion.

OBJECTIVE 5.6 Encourage multi-modal use of the corridor.

Strategies:

A) Encourage the renovation of Woodward Avenue so it accommodates ALL users, including pedestrians, bicycles, transit, freight and motor vehicles.

B) Support and encourage design principles and solutions to support and promote walkability throughout the Woodward Corridor.

C) Facilitate pedestrian movement between the east and west sides of Woodward through development and redevelopment of the corridor.

D) Incorporate a bicycle route network along or in areas adjacent to the corridor, with connections to existing community bike route systems.

E) Develop a network of existing and future parks and recreation facilities for the corridor and surrounding area.

F) Support and encourage clean, efficient public transit systems that support redevelopment of the corridor, such as light rail and bus rapid transit.

OBJECTIVE 5.7 Maintain a healthy and vibrant retail and institutional mix that allows Woodward to be a sought after business address and phase out over time uses or buildings that have a negative impact on the corridor.

Strategies:

A) Encourage transit-oriented development patterns where possible along the Woodward Corridor – intersections of major arterials with mixed-use development patterns and lots of sufficient size.

D) Enhance pedestrian and bicycle access to businesses with dedicated access points and from surrounding neighborhoods with cross walks and consistent sidewalk ramps at key locations.

B) Promote uses and activities that maintain or increase the commercial tax base.

C) Identify negative or inappropriate uses along the corridor.

D) Identify buildings or sites with outmoded site characteristics and recommend creative redevelopment concepts for underutilized properties along the corridor.

E) Develop recommendations for the reuse of such parcels.

F) Investigate financing options for the redevelopment of such sites.

Transportation and Circulation

GOAL 6: To provide an integrated and accessible transportation system comprised of a balanced range of travel options to facilitate the safe, convenient, reliable and smooth flow of motorized and non-motorized vehicles and pedestrians.

Rationale:

An efficient and safe transportation system is vital to the quality of life in the City of Royal Oak for both residents and businesses.

OBJECTIVE 6.1 Ensure that the roadway system respects the context of adjacent neighborhoods, accommodates all users, and is safe, efficient and adequate to meet the needs of city residents and businesses.

Strategies:

A) Support, design, and build streets that accommodate appropriate users, including pedestrians, bicycles, transit, freight and motor vehicles.

B) Support, design, and build streets that respect and complement adjacent development patterns, densities, and land uses, making all modes of travel efficient and enjoyable.

C) Change the design of a street as it passes through areas where there is a change in development patterns, context, and character or where such a change is desired and appropriate.

D) Achieve regional transportation capacity through appropriate methods and multiple travel modes, such as network connectivity and properly-sized thoroughfares, instead of simply widening lanes or adding more lanes.

E) Establish a priority system of street improvements which improve traffic flow and safety, relieve congestion, and are coordinated with commercial corridor improvements.

F) Promote safety improvements at problematic intersections.

G) Limit the number of egress / ingress access and service drives and encourage shared drives along major corridors.

OBJECTIVE 6.2 Promote a "Walkable Community" environment that will facilitate pedestrian and bicyclist use.

Strategies:

A) Support, design, and build streets that accommodate appropriate users, including pedestrians, bicycles, transit, freight and motor vehicles.

B) Support and encourage design principles and solutions to support and promote walkable streets and livable neighborhoods.

C) Encourage transit-oriented design principles where possible while supporting clean, efficient public transit service to new developments and existing neighborhoods.

D) Enhance pedestrian and bicycle access from surrounding neighborhoods with cross walks and consistent sidewalk ramps at key locations.

E) Provide and maintain continuous sidewalks linking neighborhoods, schools, community facilities, and the downtown.

F) Continue to work with railroads to provide safer crossings.

G) Continue to support the city's maintenance plan for existing and new sidewalks.

H) Discourage the use of drive-through traffic and multiple curb cuts that are a detriment to a pedestrian-oriented environment.

I) Minimize the amount and speed of traffic through neighborhoods by using "traffic calming" devices.

J) Promote neighborhood enhancement programs and strategies such as preservation of mature trees, street and tree plantings, neighborhood gardens and sidewalk improvements.

OBJECTIVE 6.3 Promote non-motorized transportation and use of public transit.

Strategies:

A) Support, design, and build streets that accommodate appropriate users, including pedestrians, bicycles, transit, freight and motor vehicles.

B) Support and encourage design principles and solutions to support and promote walkable streets and livable neighborhoods.

C) Encourage pedestrian orientation and provide safe pedestrian linkages through sidewalks between neighborhoods, parks, schools and commercial areas.

D) Increase opportunities for biking within the city by developing a bicycle master plan with designated bike routes and appropriate connections.

E) Recognize and promote bicycle routes throughout the city, creating a system of signed, shared roadways that connect to similar systems in adjacent cities.

F) Encourage transit-oriented development patterns within mixed-use areas with adequate lot sizes and along existing and planned transit corridors.

G) Support and encourage clean, efficient public transit service throughout the city, such as light rail and bus rapid transit to local destinations, and high-speed rail to more distant locations along established railroad rights-of-way.

H) Implement the objectives and strategies of the Non-Motorized Transportation Plan throughout the entire city.

Parks & Recreational Resources

GOAL 7: To provide recreational land in the form of community parks, neighborhood parks, mini-parks and recreational facilities which are convenient, accessible, and meet the needs of Royal Oak residents.

Rationale:

The desirability of Royal Oak as a residential community is enhanced by its excellent parks and recreational facilities. Parks and recreational services contribute to the economic and social well being of the community. Increased demands will be placed on parks and recreational services as population and resident expectations increase.

OBJECTIVE 7.1 Provide recreation land in the form of community parks, neighborhood parks, and mini-parks which are convenient and accessible to all residents.

Strategies:

A) Provide balanced geographical distribution of parks.

B) Provide neighborhood parks or mini-park facilities wherever available in deficient areas.

C) Encourage new development and existing projects, where applicable, to reserve park and open space.

OBJECTIVE 7.2 Provide fields and facilities that meet the community-wide recreation needs of Royal Oak residents.

Strategies:

A) Provide high-quality recreation fields and facilities for organized team play at community parks.

B) Organize a steering committee to investigate the feasibility of developing an outdoor, city-owned swimming facility with a range of amenities including outdoor shallow depth areas, zero-depth play facilities, and ancillary facilities.

C) Expand promotion of current swimming programs held at school facilities. Coordinate with school district to consider expansion of swimming programs.

OBJECTIVE 7.3 Provide, promote, and encourage the establishment and maintenance of non-motorized trails.

Strategies:

A) Create a multiple-purpose pathway system in several parks throughout the city that can be used for walking, jogging, in-line skating, skateboarding, etc., and other pedestrian activities.

B) Recognize and promote bicycle routes throughout the city, creating a system of signed, shared roadways that connect to similar systems in adjacent cities.

C) Implement the objectives and strategies of the Non-Motorized Transportation Plan throughout the entire city.

OBJECTIVE 7.4 Eliminate existing barriers to recreation facilities and programs by creating barrier-free facilities and adopting a policy of "inclusive recreation."

Strategies:

A) Provide recreation and leisure opportunities to all residents.

B) Ensure that each play setting and activity area is accessible, that accessible play components are placed wherever possible, and that similar play opportunities are provided to citizens with disabilities.

C) Improve accessible routes of travel, connecting parking areas and drop-off points, and provide safe access to activity areas and accessible activities.

D) Provide a means of getting on and off the equipment for children with a range of mobility impairments.

E) Ensure that landscape areas, gardens, picnic areas, parking areas, park facilities, and significant natural features are accessible.

F) Encourage consultation between operator, manufacturer or designer, and people with and without disabilities who reside in the community.

OBJECTIVE 7.5 Increase parking capacity of parks.

Strategies:

A) Review current parks for parking deficiencies and establish a plan of long-term goals to rectify these deficiencies.

Community Resources & Facilities

GOAL 8: To provide community facilities and services which contribute to the overall improvement of the community and goals of the Master Plan and meet the needs of the Royal Oak community.

Rationale:

Providing basic facilities and services is an essential role of local government. However, well planned and strategically located community facilities can contribute to the advancement of other community goals. As with other public services, demand for improved community facilities will increase as community expectations increase.

OBJECTIVE 8.1 Provide Master Plan goals for consideration in the planning, programming, construction, and maintenance of community facilities.

Strategies:

A) Incorporate evaluation of Master Plan goals, objectives, and strategies in the preparation of a future city Capital Improvement Program as required per state law, providing for long-term capital expenses that require substantial investment (public buildings, infrastructure, equipment, etc.)

B) Encourage dialog regarding planning with other governmental units and neighboring cities.

C) Develop a separate overlay district or "special redevelopment" zone for former school sites and larger, vacant commercial sites, as well as public and institutional uses outside of the downtown, including parks, schools, cemeteries, utilities, etc.

OBJECTIVE 8.2 Develop new or improve upon existing community facilities that contribute to the community visions embodied in the Master Plan.

Strategies:

A) Continue developing the downtown civic plaza as a focal point for public services and gatherings.

B) Maintain and improve the Farmers Market.

OBJECTIVE 8.3 Increase awareness of Royal Oak's rich cultural and artistic heritage; celebrate and expand cultural expressions; and encourage cultural institutions to develop and grow.

Strategies:

A) Promote Royal Oak's arts and cultural institutions and programs.

B) Promote Royal Oak's arts, architecture, and cultural assets to advance Royal Oak as a community and tourist destination.

OBJECTIVE 8.4 Encourage understanding and support for the unique needs of our aging population and the value they provide to our entire community.

Strategies:

A) Support the voluntary choice of older residents who wish to remain in their homes, making it easier and more inviting to "age in place."

B) Encourage projects that address the services and housing needs of our aging population.

C) Encourage design standards that accommodate the special needs of these residents.

D) Encourage consideration of the needs of our aging population in making decisions regarding Royal Oak's civic, cultural, and recreational services.

E) Support the review of current housing options for our aging population.

Land Use Plan

The Land Use Plan and Future Land Use Map presented on the following pages illustrate the proposed physical arrangements of land use for the City of Royal Oak. The Land Use Plan serves to translate community goals into a narrative and graphic illustration. It is based largely upon the existing land use, current zoning and planning analysis, and the desires of the residents of the City of Royal Oak as expressed in the visioning workshops which were conducted to solicit public input.

The plan is prepared to serve as a policy for the city regarding current issues, land use decisions, investments in public improvements and future zoning decisions. The plan is intended to be a working document which will provide for the orderly development of the city, assist the community in its effort to maintain and enhance a pleasant living environment, while fostering economic development and redevelopment where needed.

The land use plan is based upon comments and opinions gathered during the planning process including numerous meetings with the Steering Committee and city staff, and the public input obtained from the visioning workshops. To this extent, it reflects general policy toward development and redevelopment within the city. The land use plan is based on equal consideration of a number of factors. These factors include:

- *Citizen opinion and input*
- *Existing land use*
- *Existing zoning*
- *Existing plans*
- *Population projections and characteristics*
- *Community facilities and parks*
- *Economic outlooks*
- *Socio-economic considerations*
- *Traffic and circulation*
- *Utilities*
- *Compatible uses*
- *Community goals, objectives, and strategies*

The proposed land use categories were developed in an effort to create a long term plan for the development and redevelopment of the City of Royal Oak. These classifications and their general location are described in more detail below.

Residential

Low Density Single-Family Residential

Low Density Single-Family Residential provides for single-family detached dwellings on individual lots requiring a minimum of 13,000 square feet of lot area provided for each dwelling.

This designation is intended to provide an environment of lower-density, single-family detached dwellings, along with other related facilities such as parks and schools. There are only a few areas of low density single-family residential in the city including the south side of Fourteen Mile Road east of Rochester Road, the Lakeside Drive neighborhood between Main Street and Rochester Road, the Vinsetta Park neighborhood south of Twelve Mile Road between Woodward Avenue and the railroad, and north of Thirteen Mile Road between Main Street and Quickstad Park.

Medium Density Single-Family Residential

Medium Density Single-Family Residential provides for single-family detached dwellings requiring a minimum of 5,000 square feet of lot area provided for each dwelling.

This designation is intended to provide an environment of medium-density, single-family detached dwellings, along with other related facilities such as parks and schools. Aside from the neighborhoods identified above as Low Density Single-Family Residential, the remaining single-family detached neighborhoods in Royal Oak are comprised of medium-density, single-family residential housing.

These existing medium-density, single-family residential neighborhoods include but are not limited to neighborhoods and subdivision plats know as Arlington Park, Beverly Hills, the northern portion of Vinsetta Park, Forest Heights, Kensignton-Highland, Lawson Park, Marks Park, Maudlin Park, Maxwell Park, Memorial Park, North Shrine area, Connecticut Street area, Oak Run, Oakview, Quickstad Park, Southpointe, Starr Park, Sullivan Park, and Wendland Park.

Attached / Detached Single-Family Residential

Attached / Detached Single-Family Residential provides for single-family attached and detached dwellings requiring a minimum of 4,000 to 5,000 square feet of site area provided for each dwelling.

This category is intended to provide a transitional residential designation between single-family residential as described above and more intense land uses such as office, commercial, or multiple-family residential, and to allow a mix of housing types, including both attached and detached residential developments such as townhomes and row houses.

There are existing areas in the city developed at this density including the duplexes between Webster Road and Glenwood Road east of the railroad, on the west side of Campbell Road, on the east side of Rochester Road, and on both sides of Fourth Street. This designation can accommodate a wide variety of single-family developments.

Multiple-Family Residential

Multiple-Family Residential is intended to provide for multiple-family dwelling units requiring a minimum of 2,400 to 4,800 square feet of site area provided for each dwelling depending on the number of bedrooms in each dwelling units.

This designation is intended to allow a higher density residential environment such as apartments, condominiums, and townhouses. High-density residential can generate significant amounts of traffic and therefore should be directly adjacent to a major thoroughfare with adequate public transit service. There are many areas of existing multiple-family residential uses throughout the city, the largest being the Coventry Parkhomes Condominiums development in the northern portion of the city, and the developments along I-696 along the southern border of

the city including the Main Street Square and Maryland Club developments. Small pockets of other multiple-family uses exist throughout the city.

Multiple-family developments should exhibit the same design features and characteristics as the established single-family neighborhoods to which they are adjacent. Compatible types would include brownstones, walk-ups, and courtyard apartments, usually with 4 to 12 units per building. More modern style apartment complexes with their exurban traits are to be discouraged.

Both single- and two-family residential uses are permitted in the district. High-density residential serves as a transition between non-residential districts and lower density residential uses and should be developed at a density no greater than 9 to 18 units an acre or 2,400 to 4,800 square feet of lot area per unit. No new areas of Multiple-Family Residential have been designated in the city.

Mixed Use

Two categories of mixed use are provided, each with a different emphasis. The mixed use designations are intended to provide for a dynamic environment of compatible uses for areas of the city with the following characteristics:

- Mixed land uses in close proximity to one another.
- Relatively compact developments, both residential and commercial.
- Entrances that front directly onto the street without parking between buildings and the street.
- Building, landscape, and thoroughfare design that is at a pedestrian-scale.
- A highly-connected circulation network created by relatively small blocks.
- Streets and public spaces that contribute to "placemaking" — the creation of unique neighborhood centers that are compact, mixed-use, pedestrian-scaled, and transit-oriented with lasting economic value.

This designation will provide for a transition between more intensely developed commercial areas and residential areas and/or between busy thoroughfares and residential areas.

Mixed Residential / Office / Public / Institutional

Mixed Residential / Office / Public / Institutional is intended to provide for a mixture of residential, public / institutional uses, professional offices, general offices, and business and personal service uses, but would not include retail commercial uses. Such uses may be located in combination with one another within a single building. Upper floor residential uses would be encouraged.

This land use designation is designed to maintain and promote the flexible redevelopment of certain areas of the city with a mixture of residential, public / institutional, and office uses.

Areas of mixed residential / office uses are proposed for the south of downtown on the east side of the railroad, the northwest corner of Sherman Drive and West Street, the southeast corner of

Crooks Road and Normandy Road, and the southeast corner of Campbell Road and Lincoln Avenue.

Office uses would be those compatible with residential uses. It is proposed that the city consider a new mixed residential / office zoning district which would allow single-family and attached / detached residential housing as permitted uses, while multiple-family residential, schools, churches, day care and office uses would be allowed as special land uses. This mixed-use residential classification may also provide locations for smaller-scale senior housing developments that are compatible with adjacent neighborhoods. The intensity of the residential and office uses allowed would depend upon site characteristics. Upper floor residential uses would be encouraged.

Mixed Residential / Office / Commercial

Mixed Residential / Office / Commercial is intended to provide for a mixture of residential, office, and lower-intensity commercial uses. This designation allows for any combination of residential, office, or local commercial use. Upper floor residential uses above retail or office uses would be encouraged.

This land use designation is also designed to maintain and promote the flexible redevelopment or certain areas of the city. The emphasis of this designation is a combination of residential, office, and local commercial uses.

Mixed residential / office / commercial use areas are proposed for areas adjacent to the Central Business District, such as south of the downtown along Main Street including the gateway development area along I-696, the area between Main Street and the railroad south of Lincoln Avenue, the area surrounding Oakland Community College south of Lincoln Avenue, and the Fourth Street area from Knowles Street to Alexander Avenue. Additional areas of the mixed residential / office / commercial designation are located along commercial corridors such as portions of Woodward Avenue south of Lincoln Avenue, the west side of North Main Street south of Twelve Mile Road, both sides of North Main Street between University Avenue and Catalpa Drive, the intersections of Twelve Mile Road, Thirteen Mile Road, and Fourteen Mile Road with Crooks Road, areas along Eleven Mile Road, and areas along Rochester Road near Thirteen Mile Road.

It is proposed that the city consider a new mixed-use residential / office / commercial zoning district which would allow residential uses as permitted uses, while office, schools, churches, day care, and local commercial uses would be allowed as special land uses based upon site specific conditions. This mixed-use residential classification may also provide locations for senior housing developments such as independent living, assisted living, and congregate care. Upper-floor residential uses in combination with non-residential uses would be encouraged.

Consideration should also be given to reducing the required amounts of off-street parking in mixed-use areas to encourage redevelopment of these sites. The whole concept of mixed-use zoning is aimed at providing access to many different uses without the need for multiple automobile trips, thus reducing the need for each individual use to supply its own off-street

parking. Many of these sites are also too small to accommodate the full amount of parking that may be required, especially along the south side of Fourth Street between Troy Street and Alexander Avenue, both sides of Main Street between Eleven Mile Road and Catalpa Drive, and Washington Avenue and Main Street south of Lincoln Avenue.

Commercial & Industrial

General Commercial

General Commercial is intended to provide suitable locations for general retail and service establishments. These types of commercial uses are generally developed along major roads. Uses typically found include larger supermarkets, discount stores, department stores, appliance and furniture stores, and specialty shops. These types of land uses rely on a market area much larger than that of the local commercial areas and can provide either convenience and/or comparison goods.

General Commercial may take the form of either a shopping center or groups of buildings sharing common access, architectural style and, design elements. The General Commercial designation also includes special retail and service uses, such as garden sales, building supplies, and automobile dealerships.

General Commercial land uses are restricted to primarily the Woodward Avenue corridor, with additional areas in the northwest portion of the city north of Meijer Drive, and along the west side of Coolidge Highway north of Fourteen Mile Road, the northeast corner of Thirteen Mile Road and Rochester Road, the north side of Twelve Mile Road at Main Street and Rochester Road, and select areas along Stephenson Highway and Campbell Road.

The area north of downtown along Main Street and Eleven Mile Road was initially designated as General Commercial in 1999. This area included properties on the north side of Eleven Mile Road between Washington Avenue and Troy Street, the northwest corner of Main Street and Eleven Mile Road, and the east side of Main Street between Pingree Boulevard and Eleven Mile Road. Many of these sites have since been redeveloped in a pattern consistent with the rest of the downtown, while others have become vacant. These sites have therefore been changed to a combination of General Commercial and Mixed Use – Residential / Office / Commercial.

Central Business District

Central Business District is exclusive to the downtown of the City of Royal Oak. This designation is intended to promote the center of the city as a special business area functioning as the commercial center of the city and offering a range of convenient commercial, specialty shops, personal services, housing, restaurants, business, governmental, office, and banking uses.

The Central Business District is exclusive to the commercial center or downtown of the City of Royal Oak which exhibits the following characteristics:

- Mixed land uses in close proximity to one another.

- Compact development for all land uses.
- Building entrances that front directly onto the street without parking between buildings and the street.
- Building, landscape, and thoroughfare design that is at a pedestrian-scale.
- A highly-connected circulation network created by relatively small blocks.
- Streets, sidewalks, and other public spaces that contribute to "placemaking" — the creation of a unique town center that is compact, mixed-use, pedestrian-scaled, and transit-oriented with a strong civic character and lasting economic value.

The Central Business District is the area between West Street, Eleven Mile Road, Troy Street, and Lincoln Avenue with an additional area extending east to Knowles Street on both sides of Fourth Street. The CBD designation is designed to provide for pedestrian-accessible mixed uses consisting of a variety of retail, banking, office, residential, civic, and service uses in the downtown area. It should provide for the comparison shopping, entertainment, convenience, cultural, and service needs for the entire City of Royal Oak area. This district includes and promotes uses which would provide convenient pedestrian shopping along a continuous retail frontage. Automotive related services and other uses which tend to interfere with the continuity of retail frontage and hinder pedestrian circulation are discouraged.

An area that may need to be added to the Central Business District is the south side of Fourth Street between Troy Street and Kayser Street. These lots were designated as Mixed Use – Residential / Office / Commercial in 1999, while the north side was designated as Central Business District. Both sides have little to no off-street parking. But while the north side has seen significant redevelopment since 1999 and is vibrant and thriving, the south side has remained stagnant with several vacant buildings. Few proposals to occupy these vacant buildings have been submitted since then. To encourage redevelopment on the south side it should be re-designated as Central Business District. Lower building heights may be necessary along Fourth Street than the rest of the downtown, however, due to the close proximity of single-family dwellings to the north and south.

Several tall buildings were built in the downtown since adoption of the Master Plan, some with 10 stories or more. The first of these towers were built with the front façade of the lower floors placed immediately next to the sidewalk, while the upper floors were setback about 10 feet. The more recent ones were built with the entire front façade of the building flush with the sidewalk all the way to the top of the building. It has been observed that these buildings seem to overwhelm the comfortable human scale of the downtown's sidewalks and detract from its pedestrian-friendly environment. They also have a tendency to more readily deflect noise into surrounding neighborhoods and create unusual wind currents. For these reasons the Zoning Ordinance should require the front façade of taller buildings in the Central Business District to maintain an adequate setback from the sidewalk above the 4^{th} or 5^{th} story. Levels below these stories should maintain the build-to line at the sidewalk to preserve the downtown's defined street frontage.

Industrial

Industrial uses are considered warehousing, research, designing and manufacturing. Such uses are intended to be enclosed within a building and external effects are not to be experienced beyond their property boundaries. Outdoor storage is intended to be minimal. Such areas should be located on roads capable of adequately accommodating necessary truck traffic, and should be isolated from residential areas.

The Industrial designation is designed to primarily accommodate warehousing, research, laboratory, and light manufacturing whose external and physical effects are restricted to the immediate area having only a minimal effect on surrounding districts. Outdoor storage is intended to be minimal. This category is also designed to provide, by special land use approval, locations for general industrial activities such as those which involve the use of heavy machinery, extensive amounts of contiguous land, service by railroad lines or major thoroughfares, processing of chemicals or raw materials, assembly, generation of industrial waste, noise, odor, or traffic problems or similar characteristics. These uses would require service by large trucks. All industrial uses should be adequately screened from adjacent residential uses.

It is recommended that the Industrial designation be confined to smaller lots with utilitarian buildings that could be readily occupied by numerous small-scale manufacturers and research facilities. Such properties are extremely flexible and can be easily redeveloped over time when they become vacant. Larger lots with buildings dedicated to a single use may become obsolete in today's economic climate since they are extremely difficult to redevelop once they become vacant, and subsequently become blighted. The city may need to consider dedicating these sites to other use groups such as General Commercial that have more feasible redevelopment solutions should these site become vacant in the future.

The areas planned for Industrial include the areas between Coolidge Highway and Delemere Boulevard south of Fourteen Mile Road, the areas south of Bellaire Avenue east of Campbell Road, the area between Twelve Mile Road and Bellaire Avenue, and the area between Leafdale Boulevard and Coolidge Highway north of Fourteen Mile Road.

The area between the railroad and Morse Avenue south of Harrison Avenue was designated as Mixed Use – Residential / Office / Institutional in 1999. Since then the area has continued to be used and redeveloped for industrial and manufacturing uses that were in existence prior to 1999. Theses sites have not redeveloped into other mixed uses as planned. These sites have therefore been re-designated as Industrial.

Parks & Open Space

Parks and Open Space is intended to provide public and private parks, recreation, and open space systems.

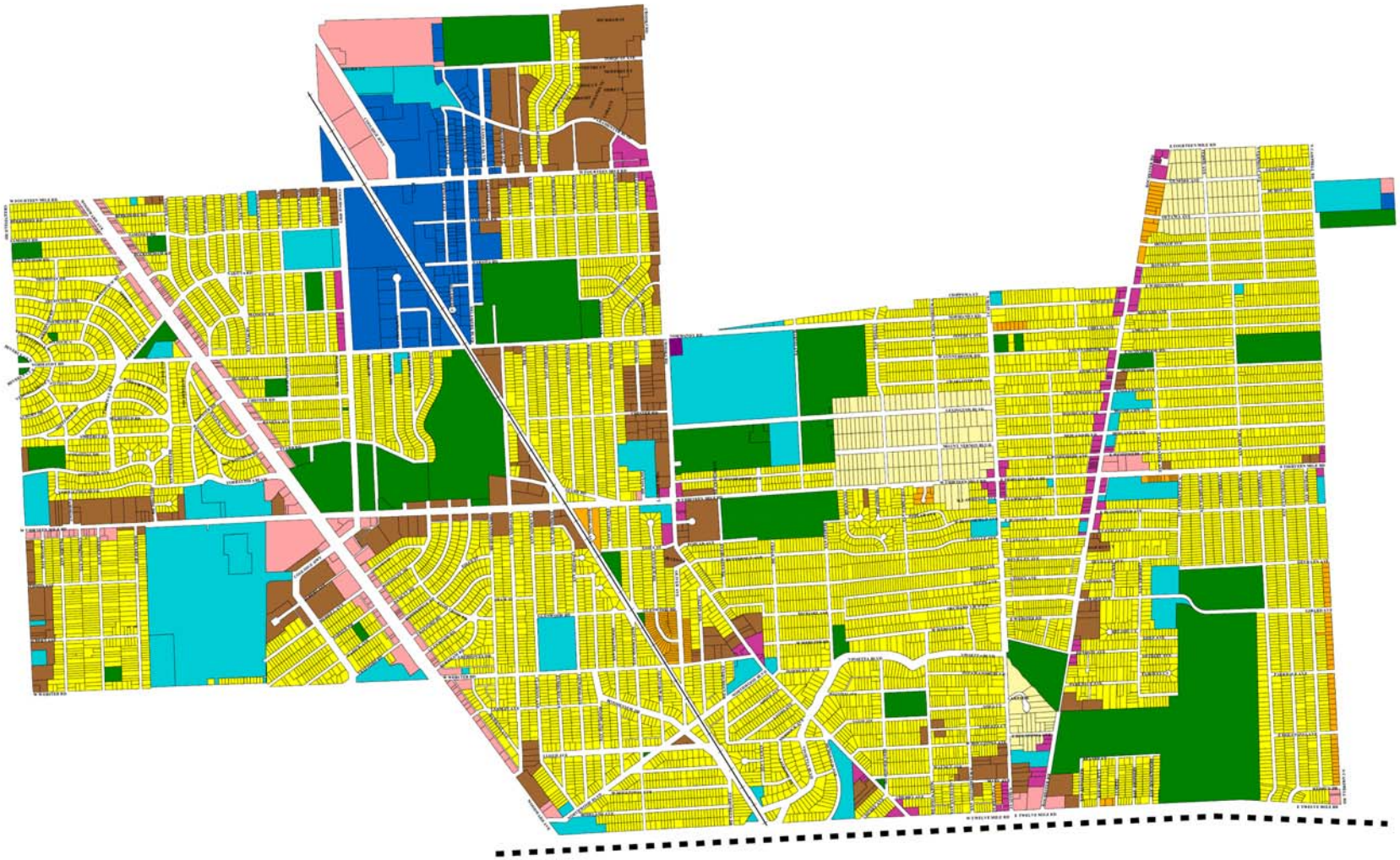
This classification includes existing parks as specified in the city's current Parks and Recreation Master Plan located throughout the city, as well as the city's cemetery. Consideration should be

given to creating a separate overlay district or "special redevelopment" zone that would include parks and recreational facilities along with public and institutional uses but exclude residential or commercial development.

Public / Institutional

Areas designated as Public / Institutional land uses are intended to accommodate such activities as governmental and public buildings, schools, and churches.

This designation includes government service buildings such as City Hall, the Farmer's Market, library, etc. It also includes elementary, middle, and high schools, Oakland Community College, and Beaumont Hospital. Consideration should be given to creating a separate overlay district or "special redevelopment" zone that would include these uses that are outside of the downtown along with parks and open space.



Future Land Use Map - North Half

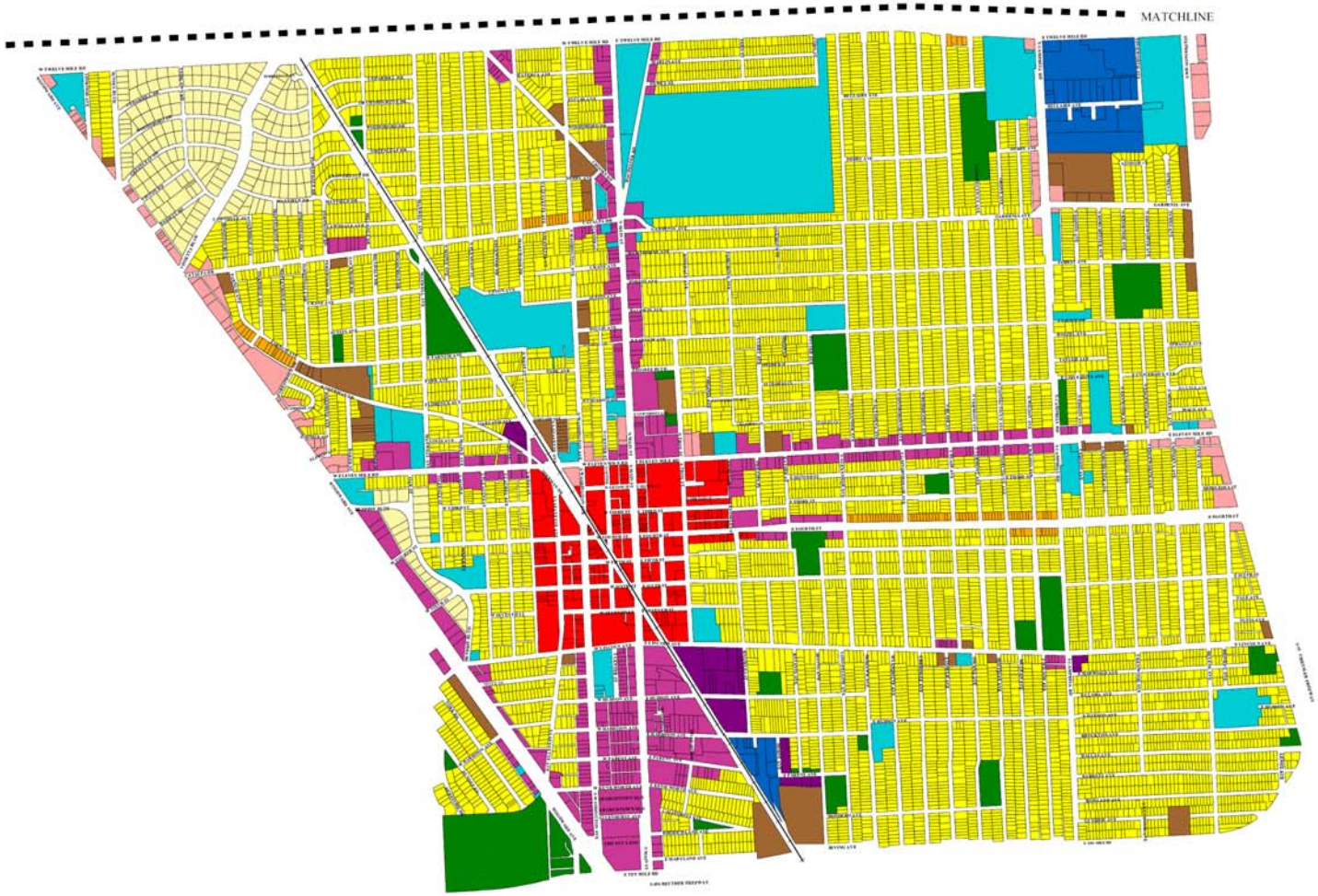
City of Royal Oak
Oakland County, Michigan

02/24/2012

N

Not To Scale

- Single Family Residential - Low Density
- Single Family Residential - Medium Density
- Single Family Residential - Attached - Detached
- Multiple Family Residential
- Mixed Use - Residential / Office / Commercial
- Mixed Use - Residential / Office / Institutional
- General Commercial
- Central Business District
- Industrial
- Public / Institutional
- Parks and Open Space



Future Land Use Map - South Half

City of Royal Oak
Oakland County, Michigan

02/24/2012

N

Not To Scale

- Single Family Residential - Low Density
- Single Family Residential - Medium Density
- Single Family Residential - Attached - Detached
- Multiple Family Residential
- Mixed Use - Residential / Office / Commercial
- Mixed Use - Residential / Office / Institutional
- General Commercial
- Central Business District
- Industrial
- Public / Institutional
- Parks and Open Space

Implementation

The Master Plan is a statement of goals and strategies designed to plan for preservation, growth, and redevelopment. The plan forms the policy basis for the more technical and specific implementation measures that will follow after adoption of the plan. The plan will have little effect upon future planning unless adequate implementation programs are established. This section identifies actions and programs which will be useful if the Master Plan is to be followed.

Zoning Requirements

Zoning is the development control that is most closely associated with implementation of the Master Plan. Originally zoning was intended to inhibit nuisances and protect property values. However, zoning should also serve additional purposes which include:

- To promote orderly growth, preservation, and redevelopment in a manner consistent with land use policies and the Master Plan.
- To promote attractiveness in the city's physical environment.
- To accommodate special, complex, or unique situations through such mechanisms as planned unit developments, overlay districts, or special use permits.
- To promote the proper relationship between potentially conflicting land uses (i.e. industrial uses adjacent to residential areas).
- To preserve and protect existing land uses, where appropriate.
- To promote the positive redevelopment of underutilized areas of the city.

The Zoning Ordinance and official Zoning Map, in themselves, should not be considered as the major land range planning policy of the city. Rather, the Master Plan must be regarded as a statement of planning policy and zoning should be used to assist in implementing that policy.

Zoning Plan & Zoning Map Adjustments

As required under Section 33 (2)(d) of Michigan's Planning Enabling Act, this Master Plan must include a "Zoning Plan" for the Zoning Ordinance's various districts that also includes an explanation of how the land use categories on the Future Land Use Map relate to the districts on the Zoning Map. The intent of this Master Plan is to have the zoning districts of the Zoning Ordinance and their boundaries on the city's Zoning Map evolve over time to more closely resemble the Future Land Use Map and its land use categories, regardless of how they may be zoned today. This long-term evolution is the essence of the city's Zoning Plan.

The following is a comparison of the land use categories contained in this Master Plan and its Future Land Use Map, and what zoning districts of the Zoning Ordinance and Zoning Map they most closely relate to:

Future Land Use Categories		Zoning Districts
Single Family Residential – Low-Density	⇨	One Family Residential – Large Lot
Single Family Residential – Medium Density	⇨	One Family Residential
Single Family Residential – Attached / Detached	⇨	Two Family Residential
	⇨	Multiple Family Residential
Multiple Family Residential	⇨	Multiple Family Residential
Mixed Use – Residential / Office / Institutional	⇨	Mixed Use 1
Mixed Use – Residential / Office / Commercial	⇨	Mixed Use 2
General Commercial	⇨	Office Service
	⇨	Neighborhood Business 1 & 2
	⇨	General Business
Central Business District	⇨	Central Business District
Industrial	⇨	General Industrial
Public / Institutional	⇨	Special Redevelopment
Parks & Open Space	⇨	Special Redevelopment

Certain areas of the city have been designated for a land use classification in the Master Plan which may conflict with either exiting zoning or existing land uses. The Master Plan recommendations will provide guidance as to the proper zoning of these properties in the future. The Planning Commission and City Commission will further study and make decisions in regards to which areas warrant city-initiated rezoning.

There is currently no zone that directly relates to the Public / Institutional or Parks & Open Space land use designations. Most of these properties are zoned for single-family residential uses and can be divided into separate lots for detached dwellings with no further review from the city, provided the originally platted parcel boundaries are re-established. Creating a "special redevelopment" zone for these sites would give the city the ability to approve any new residential or commercial development at these locations through a special land use permit and/or site plan review before they could be converted into another use. They could no longer be automatically converted to residential use should they become vacant.

Zoning Ordinance Text Amendments

The Zoning Ordinance text and the Zoning Map underwent over 240 collective amendments since their original adoption in 1957. This is not an unusual situation. Ordinances are not static documents and, therefore, should be prudently modified to reflect changes in community needs, conditions, and/or city policy. Unfortunately, isolated text changes often are made without fully assessing their relationship to other critical portions of the text. The end result is troublesome regulatory gaps, or worse, conflicting regulations.

An initial review of the Zoning Ordinance in 1999 identified the need to address the following specific issues:

- Improved alphabetical subject index and comprehensive table of contents with articles, sections, and sub-sections;
- Consolidation of requirements into logical functional areas;
- Streamlined district regulations, including elimination of unnecessary repetition;
- Presenting information in schedule and/or chart form whenever possible, and utilizing graphics to illuminate critical points;
- Review of zoning districts to evaluate pertinent differences between districts;
- Give consideration to elimination of some districts and to the addition of others, as may be desirable;
- Incorporate techniques such as overlay districts to address specific conditions;
- Updating of performance / protection design standards, including formulation of an environmental provisions section as a means of consolidating these types of requirements;
- Updating all design standards (parking, landscaping, buffering / screening, setbacks, signs, etc.) to reflect current planning practices;
- Improved site plan review process, including clear, concise information to be submitted for review, expansion of review standards, and consideration of an administrative review process for minor site plan amendments;
- Improved special land use review process, including succinct identification of objectives, provision of clear, concise standards designed to meet objectives, and review / amendment of approval process, if desirable.

Many of these matters were addressed in the comprehensive Zoning Ordinance and Zoning Map revisions adopted in 2001 and its subsequent amendments. However, some of these issues still remain. Various goals and objectives of the Master Plan have yet to be incorporated in the Zoning Ordinance, and unforeseen issues have arisen where standards adopted in 2001 either contradict the Master Plan or resulted in unintended consequences. The city must regularly and continually review the Zoning Ordinance and Zoning Map to resolve these concerns.

Form-Based Coding & Building Standards

The foundation of Royal Oak's Zoning Ordinance was the conventional zoning model created as part of the federal Standard State Zoning Enabling Act adopted by Michigan and all other states in the 1920's. That model was based on the separation of residential, commercial, and industrial uses, density controls, and proscriptive standards for attributes such as building setbacks and heights. This is still the basic model used today by nearly all communities to regulate development.

Over time, dissatisfaction with the effects of this conventional zoning model on older, developed communities has grown. While numerous factors have created today's development trends (loss of farmland and open spaces, deterioration of traditional downtowns and urban centers, proliferation of suburban strip malls and "cookie cutter" subdivisions, etc.), zoning has been identified as a main culprit. While originally intended to limit negative impacts of commercial and industrial uses upon residential neighborhoods, the separation of uses and limits on density have also lead to the excessive consumption of land associated with conventional suburban development or "sprawl." Additionally, the lack of a positive prescription for physical form has

promoted the encroachment of incompatible building types and development patterns into traditional urban neighborhoods.

As a reaction to these trends, "form-based" techniques to regulate development and land use were created as both an alternative and a companion to conventional use-based zoning. Form-based regulations can be characterized as prescriptive or contextual in nature, emphasizing the physical character of a development – its form – as much as the land use. Where used-based zoning's primary objective is to separate uses into various zoning districts, form-based coding places an equal emphasis on the relationship between building façades and the public realm, as well as the form and mass of buildings in relation to one another. While traditional zoning proscribes minimum setbacks, permitting building placement anywhere within the allowable zone, form-based zoning prescribes build-to lines, specifically defining desired development patterns.

The aim is to codify the physical parameters of development based upon a desired or ideal urban form typically derived from community input. The premise of form-based codes is that the regulation of physical form and creating a "sense of place" by defining the public realm is just as important as regulating the specific use of land and other factors (off-street parking, landscaping, etc.) in order to produce a better built community. Land uses can and do change relatively often over time, while buildings last for many years.

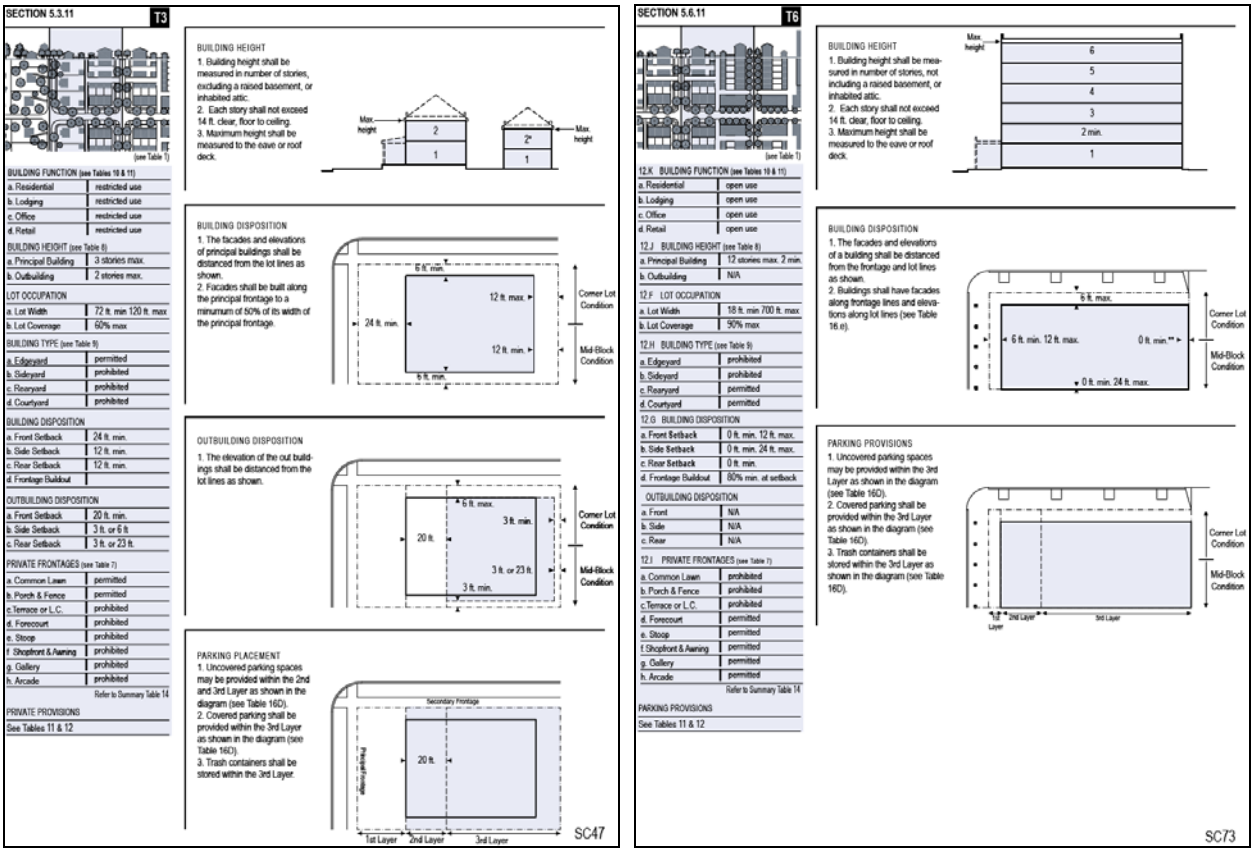
Rather than focusing on what building characteristics are prohibited and forbidden, form-based codes focus on what is desirable. The specific building standards and underlying principles that are desired would have their foundation in a vision developed through public workshops called "charrettes." Charrettes take place over multiple days and involve all stakeholders – elected and appointed officials, staff, developers, interest groups, and most importantly, the general public.

At these charrettes the public actually participates in determining what the preferred character of the city should be by creating and drawing required site layouts, building forms, etc. During most other public hearings the public just gets to respond favorably or unfavorably to already developed proposals. In this way form-based codes possess more credibility and integrity over more conventional regulations, and they better ensure that new buildings will be appropriate to the community's preferred vision and character.

Form-based building standards have several other advantages over zoning ordinances with only used-based regulations. Rather than just using words and numbers, examples of desired building forms are graphically illustrated with diagrams and pictures of site layouts, frontage types, and building forms. This makes form-based standards more easily understood by potential developers and the general public.

Form-based codes provide a better link between buildings and public spaces by integrating private development with the public realm, addressing the character and orientation of buildings and how they address public streets. They encourage buildings with flexible floor plans and layouts that can be easily adapted to different uses over the life of the structure, buildings that are necessary for mixed-use areas to thrive. Talented, well-educated people who are the key to success in the 21st century economy are attracted to the quality living environments. They like

amenities and places that attract people. Form-based code are better at creating these amenities and places as they offer greater predictability in what new buildings and development will look like.



Examples of Form-Based Codes
(source: Smart Code & Manual, New Urban Publications, Inc.)

Form-based coding techniques could be incorporated into the Zoning Ordinance where possible to ensure that future development is compatible with the existing characteristics of adjacent neighborhoods and fits desired forms as expressed in this Master Plan's goals, objectives, and strategies. These new standards should be developed in conjunction with, but not entirely replace, the more conventional use-based regulations that are already a part of the city's Zoning Ordinance.

Regardless of what types of form-based standards are adopted, they should strive to be style-neutral. Form-based regulations should neither favor nor discourage one architectural style over others. The goal is to prescribe a building's form, not its style. All architectural styles should be allowed provided they meet required form-based standards for providing more contextual buildings rather than prominent, individualized objects. Architectural creativity should be encouraged within the limits prescribed by the form-based standards.

Sustainability, Green Building, & LEED® for Neighborhood Development

Another method of reviewing new development that the city can adopt and apply is a rating system developed by the U.S. Green Building Council. This organization publishes various systems for rating sustainability and green building practices, called the "Leadership in Energy and Environmental Design," or LEED® certification systems. One such system, LEED for Neighborhood Development (LEED-ND), rates neighborhood design and development based on the combined principles of smart growth, the New Urbanism, and green infrastructure.

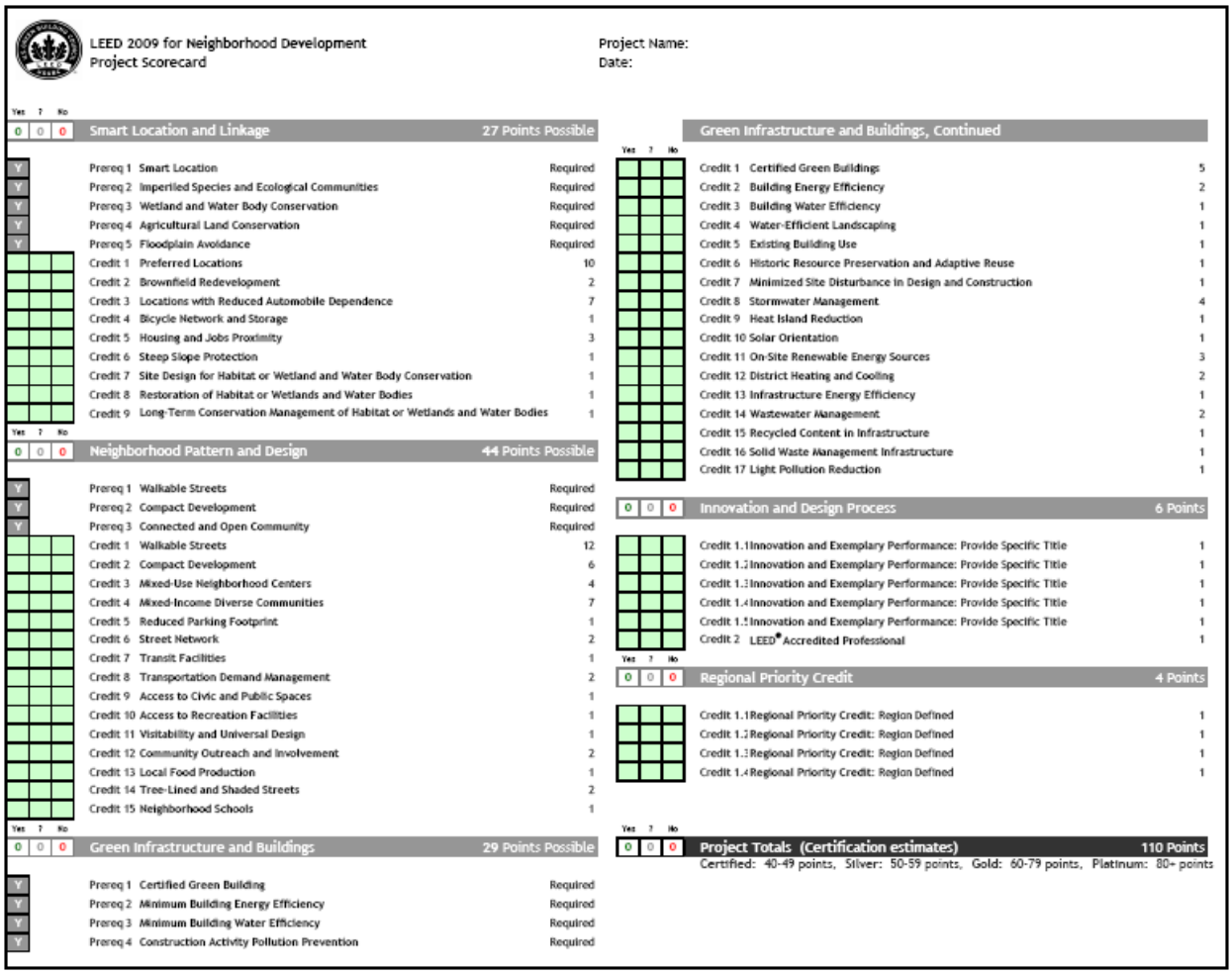
Establishing the rating system for LEED-ND was guided by sources such as the Smart Growth Network's ten principles of smart growth, the charter of the Congress for the New Urbanism, and other LEED rating systems. In particular, LEED-ND contains a set of measurable standards that identify whether a development can be deemed environmentally superior. These standards are made up of prerequisites, which all projects must meet, and a set of credits, from which each project can choose to earn enough points for certification.

Like other LEED rating systems, LEED-ND is a voluntary program designed to evaluate and guide the design and construction of development projects in an environmentally sustainable manner. Unlike other LEED rating systems which focus primarily on individual buildings, LEED for Neighborhood Development places its emphasis on bringing buildings and infrastructure together into a cohesive neighborhood. It looks beyond the individual building to the larger community, recognizing that a building can only be as green as its surroundings and context.

One important focus of LEED for Neighborhood Development is the creation of walkable communities that integrate into the framework of the surrounding environment. A number of requirements in the rating system specify minimum density levels, walk distance thresholds, and street connectivity levels.

LEED for Neighborhood Development is another tool the city could utilize in addition to form-based coding and building standards to ensure that new developments are both sustainable and compatible with surrounding neighborhoods. The city could require that new developments provide proof of attaining a certain score on the LEED-ND Project Scorecard, or even rate each new development itself using the same scorecard as part of the site plan review process. The scorecard defines the minimum characteristics that a project must possess to be eligible for certification by the U.S. Green Building Council under LEED-ND.

Rather than issue a blanket mandate that all new development must achieve certification, it may be more effective to simply remove barriers to achieving certification and encourage projects seeking certification. Simple modifications in the Zoning Ordinance can yield impressive dividends for developers and building owners alike who chose to follow green building and development standards. Incentives such as density bonuses, reduced off-street parking, and expedited permitting can be implemented at little or no cost to encourage developers to build green and adopt green practices.



LEED 2009 for Neighborhood Development
Project Scorecard

Project Name:
Date:

Yes	?	No		
0	0	0	**Smart Location and Linkage**	**27 Points Possible**
Y			Prereq 1 Smart Location	Required
Y			Prereq 2 Imperiled Species and Ecological Communities	Required
Y			Prereq 3 Wetland and Water Body Conservation	Required
Y			Prereq 4 Agricultural Land Conservation	Required
Y			Prereq 5 Floodplain Avoidance	Required
			Credit 1 Preferred Locations	10
			Credit 2 Brownfield Redevelopment	2
			Credit 3 Locations with Reduced Automobile Dependence	7
			Credit 4 Bicycle Network and Storage	1
			Credit 5 Housing and Jobs Proximity	3
			Credit 6 Steep Slope Protection	1
			Credit 7 Site Design for Habitat or Wetland and Water Body Conservation	1
			Credit 8 Restoration of Habitat or Wetlands and Water Bodies	1
			Credit 9 Long-Term Conservation Management of Habitat or Wetlands and Water Bodies	1

Yes	?	No		
0	0	0	**Neighborhood Pattern and Design**	**44 Points Possible**
Y			Prereq 1 Walkable Streets	Required
Y			Prereq 2 Compact Development	Required
Y			Prereq 3 Connected and Open Community	Required
			Credit 1 Walkable Streets	12
			Credit 2 Compact Development	6
			Credit 3 Mixed-Use Neighborhood Centers	4
			Credit 4 Mixed-Income Diverse Communities	7
			Credit 5 Reduced Parking Footprint	1
			Credit 6 Street Network	2
			Credit 7 Transit Facilities	1
			Credit 8 Transportation Demand Management	2
			Credit 9 Access to Civic and Public Spaces	1
			Credit 10 Access to Recreation Facilities	1
			Credit 11 Visitability and Universal Design	1
			Credit 12 Community Outreach and Involvement	2
			Credit 13 Local Food Production	1
			Credit 14 Tree-Lined and Shaded Streets	2
			Credit 15 Neighborhood Schools	1

Yes	?	No		
0	0	0	**Green Infrastructure and Buildings**	**29 Points Possible**
Y			Prereq 1 Certified Green Building	Required
Y			Prereq 2 Minimum Building Energy Efficiency	Required
Y			Prereq 3 Minimum Building Water Efficiency	Required
Y			Prereq 4 Construction Activity Pollution Prevention	Required

Yes	?	No		
			Green Infrastructure and Buildings, Continued	
			Credit 1 Certified Green Buildings	5
			Credit 2 Building Energy Efficiency	2
			Credit 3 Building Water Efficiency	1
			Credit 4 Water-Efficient Landscaping	1
			Credit 5 Existing Building Use	1
			Credit 6 Historic Resource Preservation and Adaptive Reuse	1
			Credit 7 Minimized Site Disturbance in Design and Construction	1
			Credit 8 Stormwater Management	4
			Credit 9 Heat Island Reduction	1
			Credit 10 Solar Orientation	1
			Credit 11 On-Site Renewable Energy Sources	3
			Credit 12 District Heating and Cooling	2
			Credit 13 Infrastructure Energy Efficiency	1
			Credit 14 Wastewater Management	2
			Credit 15 Recycled Content in Infrastructure	1
			Credit 16 Solid Waste Management Infrastructure	1
			Credit 17 Light Pollution Reduction	1

Yes	?	No		
0	0	0	**Innovation and Design Process**	**6 Points**
			Credit 1.1 Innovation and Exemplary Performance: Provide Specific Title	1
			Credit 1.2 Innovation and Exemplary Performance: Provide Specific Title	1
			Credit 1.3 Innovation and Exemplary Performance: Provide Specific Title	1
			Credit 1.4 Innovation and Exemplary Performance: Provide Specific Title	1
			Credit 1.5 Innovation and Exemplary Performance: Provide Specific Title	1
			Credit 2 LEED® Accredited Professional	1

Yes	?	No		
0	0	0	**Regional Priority Credit**	**4 Points**
			Credit 1.1 Regional Priority Credit: Region Defined	1
			Credit 1.2 Regional Priority Credit: Region Defined	1
			Credit 1.3 Regional Priority Credit: Region Defined	1
			Credit 1.4 Regional Priority Credit: Region Defined	1

Yes	?	No		
0	0	0	**Project Totals (Certification estimates)**	**110 Points**

Certified: 40-49 points, Silver: 50-59 points, Gold: 60-79 points, Platinum: 80+ points

LEED® for Neighborhood Development Scorecard
(source: U.S. Green Building Council)

LEED for Neighborhood Development is not meant to replace Royal Oak's Zoning Ordinance or Master Plan. Instead, LEED-ND is intended to be a voluntary standard that can promote sustainable land development.

Off-Street Parking

The Zoning Board of Appeals continues to see several variance requests each year to waive minimum parking requirements. During most cases, the Board questions whether the parking standards in the Zoning Ordinance are excessive, and if there are simply too few properties within Royal Oak that can actually meet them.

It may be necessary to review the minimum amounts of off-street parking required in the Zoning Ordinance to see if any of these standards should be reduced. Most commercial, office, and industrial sites in Royal Oak have difficulty meeting these standards, especially along Woodward Avenue. The parking requirements for each use should therefore be studied to see if any could be

reduced and if so, by how much. Doing so could make it much easier to redevelop commercial property throughout Royal Oak.

The City of Ann Arbor conducted such a review in 2001 and found that parking for commercial and office developments in their city was seldom if ever used to capacity, even during peak days and times. They found most parking lots had occupancy rates of 70% or lower even during peak times. As a result, Ann Arbor reduced their minimum required amounts of parking for office and retail uses by approximately 20% to 25%.

Royal Oak should also study other factors related to parking as part of any review of minimum off-street parking requirements. A map should be created to accurately show streets with "resident permit only" parking, and also areas where patrons of nearby commercial uses park on residential side streets. Another map could be created showing sites or buildings with inadequate and substandard parking lots. This map could also identify obsolete or blighted properties that could be removed to provide additional parking. Consideration should also be given to creating an overlay district where on-street parking spaces could be counted toward a business's minimum requirement provided they agree to improve and maintain those spaces. Such an overlay district would be especially useful along the Woodward Avenue corridor.

At the same time they reduced minimum required amounts of parking, Ann Arbor imposed a maximum permitted amount of off-street for office and commercial uses. Previously, such uses were allowed to have as much parking as they wanted. But with the proliferation of ever larger "big box" retailers and the environmental hazards excessive amounts of pavement can create, they questioned the wisdom having no limits on the amount of parking. They therefore imposed maximum levels of off-street parking to limit the amount of pavement any development can have.

Considering the requirements of Royal Oak's Stormwater Detention Ordinance for impervious surfaces, it may be time to consider a similar maximum permitted level of off-street parking. Limiting the amount of parking a development can have would also prevent excessively large expanses of pavement which could be a barrier to many of the goals and objectives of this Master Plan. Business could also be encouraged to use pervious pavers instead of asphalt or concrete pavement that allow stormwater to seep into the ground in exchange for reduced parking requirements.

State Legislation

Changes to state legislation may also require amendments to the city's Zoning Ordinance. Since the adoption of the Master Plan in 1999, the State of Michigan adopted new planning and zoning enabling legislation. Those new acts will require minor amendments to the Zoning Ordinance. State acts have also been passed regulating massage therapists, medical marijuana, complete streets, and other issues. The Planning Commission and City Commission will need to review any new legislation from Lansing carefully to determine if further amendments to the Zoning Ordinance are warranted.

Neighborhood Preservation

The residents in Royal Oak take great pride in their neighborhoods. The integrity of many areas has been threatened by past zoning and development practices that have resulted in projects that some consider to be incompatible with existing neighborhoods.

New development projects, if not properly done, can have a dramatic impact on the character and viability of existing neighborhoods. However, other actions such as the division of platted lots into smaller lots and the granting of variances, provide more subtle but lasting change within a given area. Finally, the consistent enforcement of regulatory codes and ordinances can have a long-term positive effect on neighborhoods.

A series of steps can be taken which involve both regulatory and administrative measures:

- Adopt Neighborhood Design Standards. Many of the controversies that have arisen in Royal Oak have been as a result of new residential design which is incompatible with the scale, density, and character of existing neighborhoods. By incorporating neighborhood design standards within the Zoning Ordinance, the existing character of neighborhoods can be better maintained to prevent new developments and additions to existing structures which are incompatible. The intent of the design guidelines is to ensure building designs are compatible with the characteristics of the neighborhood in terms of scale, mass, building patterns, façade articulation, and incorporating design elements of prevalent neighborhood architectural style; and that building additions are compatible with the principal structure. This will allow for modern design and modern interpretation of neighborhood architectural styles.

- Increase Housing and Property Maintenance Code Enforcement. Evident through the visioning workshops and concept plan review process was the desire from a broad spectrum of the community for the city to increase enforcement efforts. While it would be expedient to target only rental properties, a credible and equitable effort would have all properties abide by minimum standards. Stepping up housing and property maintenance enforcement will involve the evaluation of existing codes to determine necessary revisions. Furthermore, additional staff will be necessary to increase enforcement efforts.

- Review of Lot Division / Combination Requirements. Lot size compatibility with existing neighborhood standards can be incorporated in the Zoning Ordinance. Procedures outlining a compatibility determination process will ensure that lot divisions do not create incompatible building sites.

Areas Adjacent to the Central Business District

Many issues associated with the Master Plan involved the residential area adjacent to the downtown. Generally, a new viability of existing single-family residential neighborhoods has taken place. In the past, the multiple-family use authorization adjacent to the Central Business District arose out of an era in which the viability of single-family residential uses adjacent to an in close proximity of the Central Business District was in serious question.

A significant and material change of circumstances then took place, namely:

- The location of Royal Oak as a focal point within the southeast Michigan area was provided with accessibility, and thus became functional with the construction of I-696.
- A revitalization of the Central Business District created a dramatic change in the character of the downtown area and, consequently, a change in the relationship with the surrounding residential area.
- A new and substantial demand and viability for the existing single-family uses has been established, bringing about a renewal and regeneration of the life of the city.

Allowing the expansion of existing two-family and/or multiple-family uses within what remains as predominantly single-family residential neighborhoods will undermine the new viability, and thus, frustrate the re-establishment of the city as a mature community area which has been able to make meaningful progress toward renewal and regeneration.

Moreover, expansion of existing two-family and/or multiple-family uses may result in the destruction of the neighborhoods in which they are situated, and thus result in a long-term blighting effect.

It has been determined that, as a matter of policy, the existing two-family and/or multiple-family uses within the predominantly single-family area of the city adjacent to the Central Business District should be permitted to exist as special land uses, although it must be recognized that an authorization for additional existing two-family and/or multiple-family uses within such area would be detrimental and destructive of the neighborhoods.

Definitions

To better describe land use and land use changes in these supplemental areas, the following definitions are provided:

Existing Two-Family and/or Multiple-Family Uses shall be those two-family and multiple-family uses that meet the following criteria:

1. An occupancy permit has been issued for the residences within the structure.
2. A license has been issued for more than one residence within the structure under the city's Landlord Tenant Ordinance.

Material Modification shall mean a modification that results in any one or more the following:

1. An increase of density;
2. A modification of the exterior appearance of the structure; and/or
3. A modification that will have some other demonstrable adverse impact upon one or more single-family residential users in the neighborhood.

Establishment of Overlay District

A Single-Family Residential Overlay District situated adjacent to the Central Business District should be established, consisting of the area shown on the Single-Family Overlay Map. Within such overlay district, special regulations should be established relative to the existing two-family and/or multiple-family uses and the existing commercial uses fronting on North Washington Avenue.

Existing Two-Family and/or Multiple-Family Uses

By means established in the Zoning Ordinance, existing two-family and/or multiple-family uses within the Single-Family Residential Overlay District should be granted the status of being uses which conform with the use, setback, and density provisions of the Zoning Ordinance, and therefore should not become burdened with customary "nonconforming use" status, i.e., destruction by natural causes should not prohibit reconstruction of the same use with the same setback and density provided that building and safety codes are met. However, such grant of conforming status should be subject to the condition that all additions and "material modifications" should conform with the construction codes and all other ordinance requirements of the city with the exception of the use and setback restrictions of the Zoning Ordinance specifying single-family residential use.

Properties within the Single-Family Residential Overlay District that do not have existing two-family and/or multiple-family uses should not, as part of the amendment of the Zoning Ordinance, be granted the status of being uses which conform with the use and density provisions of the Zoning Ordinance.

Existing Commercial Uses

By means established in the Zoning Ordinance, existing commercial uses fronting on North Washington Avenue within the Single-Family Residential Overlay District should for a limited period of time be permitted to apply for the status of being uses which conform with the use, setback, and parking provisions of the Zoning Ordinance, and therefore should not become burdened with customary "nonconforming use" status, i.e., destruction by natural causes should not prohibit reconstruction of the same use with the same setback and parking provided that building and safety codes are met. However, such grant of conforming status should be subject to the condition that all additions and "material modifications" should conform with the construction codes and all other ordinance requirements of the city with the exception of the use and setback restrictions of the Zoning Ordinance specifying single-family residential use.

Mixed Use – Residential / Office / Public / Institutional

It is recognized that, within the Mixed Use – Residential / Office / Public / Institutional area, all land may not be immediately rezoned in conformance with this Master Plan designation. However, as a long-term goal, it is the intent of the city to achieve uniform conformance of the property within the area.

Downtown Development

Any community that strives for improvement must have a strong relationship between city officials and various business development organizations (i.e., Downtown Development Authority and Chamber of Commerce). Important issues related to the retail mix, parking, need for civic plaza space, relationship to the Farmers Market, and the relationship between downtown and the neighborhoods were raised throughout the Master Plan process. As a result, important discussions were initiated between city officials and business leaders. An ongoing process will help ensure implementation of the key concepts of this plan.

The Downtown Development Authority is responsible for maintaining a Development and Tax Increment Financing Plan. The goals, objectives, and strategies of this Master Plan should be incorporated into any future amendments that may be proposed by the Downtown Development Authority for their Development and Tax Increment Financing Plan.

Transportation & Circulation

Complete Streets

Until recently streets were built with only one primary purpose – the efficient and safe movement of motor vehicles. As traffic increased, new streets were built and existing ones were widened, with more lanes and greater capacities. Little or no thought was ever given to pedestrians or bicyclists.

Over the last few years there has been a gradual adjustment in transportation philosophy among engineering and planning professionals. Since streets are typically the biggest component of public space in any city, they should benefit the entire community and not just motorists. Greater emphasis is now placed on balancing the needs of automobiles with pedestrians and bicyclists. This new philosophy aims to provide people with access to multiple forms of transportation, while at the same time making their communities more inviting and enjoyable places to live, work, learn, and play.

In response to this philosophical shift, new laws were adopted by Michigan's legislature in 2010 that significantly impacted road systems throughout the state. Public Acts 134 and 135 of 2010, popularly known as the "Complete Streets Acts," became effective August 2, 2010. Act 134 amended the state's planning enabling act (Act 33 of 2008) while Act 135 amended Michigan's transportation funding act (Act 51 of 1951). Both mandated a policy of "complete streets" for all roads and highways throughout Michigan.

Act 134 revises the definition of "street" in the Michigan Planning Enabling Act to mean streets and other public thoroughfares "*…intended for use by motor vehicles, bicycles, pedestrians, and other legal users.*" It further requires that any master plan adopted by a local community include "*…All components of a transportation system and their interconnectivity including streets and bridges, public transit, bicycle facilities, pedestrian ways, freight facilities and routes, port facilities, railroad facilities, and airports, to provide for the safe and efficient movement of*

people and goods in a manner that is appropriate to the context of the community and, as applicable, considers all legal users of the public right-of-way."

Act 135 establishes the complete streets policy for both the state and local communities. As defined in Act 135, complete streets means *"…roadways planned, designed, and constructed to provide appropriate access to all legal users in a manner that promotes safe and efficient movement of people and goods whether by car, truck, transit, assistive device, foot, or bicycle*." Act 135 further defines a complete streets policy as:

> "*…document that provides guidance for the planning, design, and construction of roadways or an interconnected network of transportation facilities being constructed or reconstructed and designated for a transportation purpose that promotes complete streets and meets all of the following requirements:*
>
> *(i) is sensitive to the local context and recognizes that needs vary according to urban, suburban, and rural settings;*
> *(ii) considers the functional class of the roadway and project costs and allows for appropriate exemptions; and*
> *(iii) considers the varying mobility needs of all legal users of the roadway, of all ages and abilities*."

"Complete streets" are essentially transportation networks that are planned, designed, operated and maintained so all users, not just automobiles, may safely, comfortably, and conveniently move along and across streets. They can promote healthier and more vibrant communities by reducing congestion and offering viable alternatives to driving. Complete streets are also planned and designed in a manner that respects the context of adjacent land uses, striving for compatibility with the surrounding neighborhood through which they travel. Complete streets can improve a city's economic climate by increasing the potential number of customers to businesses through improved access for all people. They also go hand-in-hand with the tenets of transit-oriented development or TOD.

Truly complete streets do more than just accommodate bicyclists and walkers to consider children, the elderly, and the disabled. These individuals, especially the elderly and disabled, rely heavily on sidewalks and public transit to get around. Complete streets make it possible for these vulnerable populations to better use transportation systems by equipping streets with necessary infrastructure, including curb ramps, textured and varied pavement, audible crossing signals, countdown signals, and high-visibility crosswalks.

The Michigan Department of Transportation (MDOT) has until 2012 to adopt a state-wide complete streets policy and to develop model complete streets policies for local communities. Many communities throughout Michigan have decided to not wait until then and have already adopted their own complete streets policies and ordinances, including Allegan, Ann Arbor, Berkley, Dexter, Ferndale, Flint, Hamtramck, Houghton, Jackson, Lansing, Linden, Mackinaw City, Manistique, Midland, Novi, Saline, Sault Ste. Marie, St. Ignace, and Taylor.

It is recommended that the City Commission consider adopting a complete streets policy and ordinance as soon as feasible in order to best implement the transportation goals and objectives of this Master Plan. The Planning Commission and City Commission will need to determine if the city should draft its own complete streets policy based on the examples of other communities in Michigan or wait until MDOT's model is available.

Context-Sensitive Design

Designers of streets and highways in Michigan can no longer just focus only on moving as many automobiles as fast as possible due to the Complete Streets Acts. Roads must now be designed to accommodate all legal users, including pedestrians and bicycles as well as motor vehicles, while also better respecting the context of surrounding land uses. An innovative method to accomplish this task that is gaining wide-spread acceptance is "context-sensitive design." While "complete streets" is the overriding policy, "context-sensitive design" is the method by which such streets actually get built. Although there are many definitions for context-sensitive design, they usually all share a common set of principles:

- *Address all modes of travel including, but not limited to, automobiles, bicycles, walking, public transit, and freight delivery.*
- *Accommodate all travelers conveniently and comfortably on all streets, including the young, old, and disabled, as well as able-bodied adults.*
- *Balance mobility and safety as well as community and environmental goals in all transportation projects.*
- *Involve the public and all stakeholders early and continuously in the planning, design, and development process.*
- *Use a collaborative, multiple-disciplinary design team tailored to each project's needs, not just engineers and contractors.*
- *Incorporate aesthetics and accessibility as an integral part of good street design.*
- *Allow for flexibility when applying design guidelines and standards.*

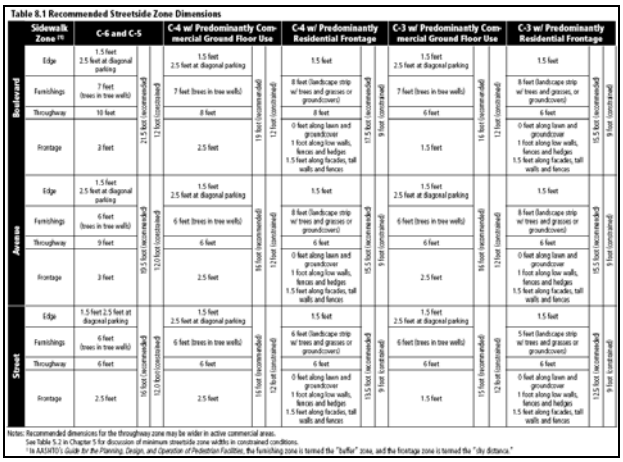
There are some misconceptions about context-sensitive design, however. It does not always involve a "road diet" or limiting roads to only two lanes. It does not require that all modes of travel be allowed on every street, or require landscaping and bike lanes on all streets. In some cases, all users may not be able to safely and comfortably share a given street. It may still be necessary with context-sensitive design to not provide bike lanes on more heavily-traveled streets, for instance. In these circumstances, a decision will need to be made as to what travel modes are going to be favored. Context-sensitive design will not guarantee that all stakeholders will agree with a street's final design and it is not a substitute for informed technical decision making.

A new manual for designing streets in urban environments was recently published that utilizes the "complete streets" philosophy and "context-sensitive design" principles. Designing Walkable Urban Thoroughfares: A Context Sensitive Approach was approved and published as a recommended practice by the Institute of Transportation Engineers (ITE) in 2010. The new ITE manual identifies specific design elements that could produce walkable streets with characteristics suited to Royal Oak's development patterns. This manual could provide a basis for adoption of the city's "Complete Streets" policy and ordinance.

Table 6.5 Main Street Design Parameters

Context	Suburban (C-3)		General Urban (C-4)		Urban Center (C-5)	
	Commercial Main Streets					
	Avenue	Street	Avenue	Street	Avenue	Street
Building Orientation (entrance location)	front, side	front, side	front	front	front	front
Maximum Building Setback	5 ft.	5 ft.	0 ft.	0 ft.	0 ft.	0 ft.
Off–Street Parking Access/Location	rear, side	rear, side	rear, side	rear, side	rear, side	rear, side
Streetside						
Recommended Streetside Width	15 ft.	14 ft.	16 ft.	14 ft.	19.5 ft.	16 ft.
Edge Zone	1.5 ft. minimum for operational clearance. Use 2.5 ft. if angled parking is considered. Ensure edge zone is wide enough to accommodate parking meters, utilities and signs.					
Furnishings Zone Width	6 ft. tree well	6 ft. tree well	6 ft. tree well	6 ft. tree well	6 ft. tree well	6 ft. tree well
	Wider furnishings zone is needed to provide public spaces and if main street uses include the potential for street cafes.					
Pedestrian Throughway (minimum)	6 ft.	6 ft.	6 ft.	6 ft.	9 ft.	6 ft.
Frontage Zone	2.5 ft. to 3 ft. minimum to accommodate commercial activity along building fronts. Wider frontage zone is needed (6 ft. or wider) if potential for street cafes or merchandise displays.					
Street Lighting	Intersection safety lighting, basic street lighting and pedestrian–scaled lighting.					
Traveled Way						
Target Speed (mph)	25	20–25	25	20–25	25	20–25
Number of Through Lanes	2–4	2	2–4	2	2–4	2
Lane Width	10–12 ft.	10–12 ft.	10–12 ft.	10–12 ft.	10–11 ft.	10–11 ft.
Parallel On–Street Parking Width	8 ft.	8 ft.	8 ft.	8 ft.	8 ft.	8 ft.
Min. Combined Parking/Bike Lane Width	13 ft.	13 ft.	13 ft.	13 ft.	13 ft.	13 ft.
Medians	Optional	None	Optional	None	Optional	None
Bike Lanes (minimum/preferred width)	5 ft./6 ft.	5 ft./6 ft.	5 ft./6 ft.	5 ft./6 ft.	5 ft./6 ft.	5 ft./6 ft.
Access Management	Minimize driveways on main streets. Access land uses via cross streets and/or alleys.					
Typical Traffic Volume Range (vehicles per day)	5,000–20,000+	1,000–15,000	5,000–20,000+	1,000–15,000	5,000–20,000+	1,000–15,000
Intersections						
Curb Extensions (with on–street parking)	Yes	Yes	Yes	Yes	Yes	Yes
Minimum Curb Return Radii (if extensions not used)	10–15 ft.	10–15 ft.	10–15 ft.	10–15 ft.	10–15 ft.	10–15 ft.
Roundabouts	Not recommended on main streets, except as gateway intersections					

Excerpts from the design manual Designing Walkable Urban Thoroughfares: A Context Sensitive Approach. (Institute of Transportation Engineers; 2010)



Commercial Entry Corridors

Throughout the visioning workshops strong preference was expressed about improving the image and identity of the city's main corridors. Stronger linkages need to be developed between I-696 and downtown, and Woodward Avenue and downtown.

The city should undertake a study of the Main Street, Eleven Mile Road, and Twelve Mile Road entry corridors which would outline long-range strategies for traffic management as well as visual components such as parking setbacks, landscaping, and signage.

In addition to visual improvements within key corridors, review of amendments to the Zoning Ordinance in the commercial zoning districts should address the following policies:

- A stronger buffer between the public right-of-way and require on-site parking areas.

- Reduce the number of curb cuts and driveways along the major commercial corridors.

- Greater amounts of landscape material be provided for new commercial development along the major corridors.

- The character and importance of entry corridors.

Woodward Corridor

The Woodward Corridor provides a vital economic and transportation corridor within the community. Extensive study in the form of the Woodward Avenue Public Spaces Design Framework Plan has already been completed. No further study is recommended. The Woodward business community and city officials should discuss implementation of the Woodward plan with specific emphasis on demonstration projects that will improve parking, manage access, and enhance buffering between commercial uses and the adjacent neighborhoods.

Historic Preservation

Strong preference for identifying and preserving historic structures has been expressed by residents. However, a plan for preserving historic structures should be supported by the preparation of a detailed inventory currently underway. Efforts to identify both significant historic structures and neighborhoods should be pursued in the context of a historic preservation master plan.

Cultural Resources

The words “culture” and “cultural” are defined as the collective, shared history of thought and work of the people who have made Royal Oak what it is today and what it seeks to be tomorrow – a complex and fascinating blend of people, experiences, and heritages. The collective culture of Royal Oak consists of the visual, performing, literary and media arts, science and technology, humanities, architecture, customs, and other means of expression.

It is the goal of the city to ensure that Royal Oak’s cultural institutions are an integral part of the Master Plan consideration and to support arts and cultural organizations that seek funding from state and federal agencies. It is the responsibility of the arts and cultural organizations to share in the effort for ensuring that the cultural needs of our citizens are included in the Master Plan and to seek opportunities to assist the city in accomplishing the goals of the plan.

Aging Population

We recommend that the Royal Oak Senior Citizen Advisory Committee continue its history of advocacy and play a leadership role in the development of a Senior Master Plan Committee. This committee will review community-based housing options which encourage “housing in place” and make recommendations for consideration, approval, and implementation within Royal Oak. An evaluation of the need to expand and/or modify staffing and new services to Royal Oak’s aging population should also be considered.

Capital Improvements Program

Capital improvements programs consider the funding and timing of all municipally related capital needs including such items as roadways, utilities, parks and recreation, and major public building expansions and improvements. The Michigan Planning Enabling Act mandates the preparation and annual review of a 6-year capital improvements program by the Planning Commission. Yearly on-going review provides the opportunity to keep the plan up to date and add new projects. Efforts should be made to coordinate capital improvement plans with the Master Plan to help identify priorities for needed improvements.

Plan Education

Citizen involvement and support will be necessary as the Master Plan is implemented. Local officials should constantly strive to develop procedures which make citizens more aware of the planning process and the day-to-day decision making which affects implementation of the Master Plan. A continuous program of discussion, education, and participation will be extremely important as the city moves toward realization of the goals and objectives contained within the Master Plan.

Plan Updates

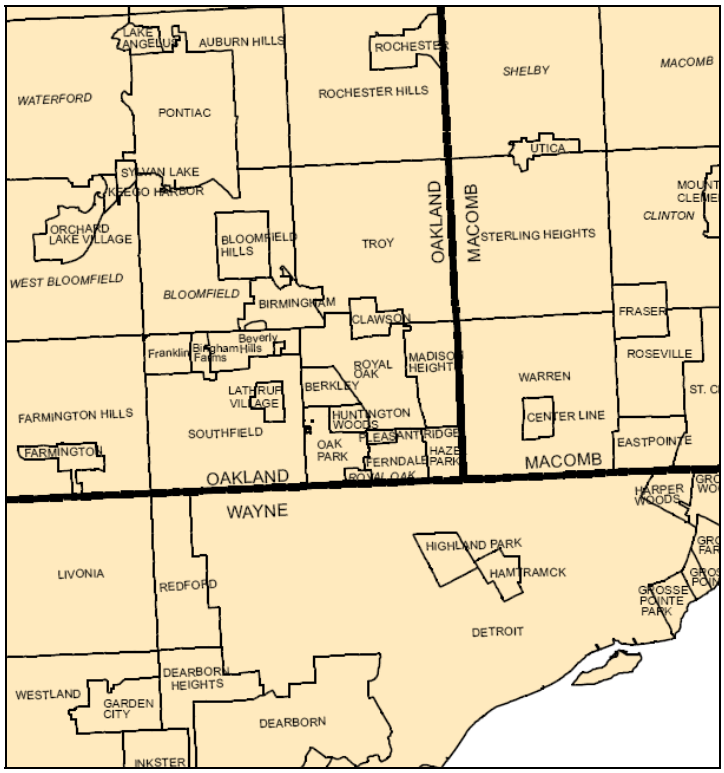
The Master Plan should not become a static document. The Planning Commission is required to review the Master Plan every 5 years according to the Michigan Planning Enabling Act for either potential amendments, a comprehensive revision, or a determination that the Master Plan still reflects the city's goals and objectives.

Background Studies

Regional & Metropolitan Setting

The City of Royal Oak is located approximately two and one-half miles north of Detroit. First laid out in 1838, Royal Oak was a typical railroad town located halfway between Pontiac and Detroit. Its location along Woodward Avenue contributed to the early growth of the city. A unique feature about Royal Oak in comparison to other Detroit suburbs is that it is a self-contained community with its own downtown and residential neighborhoods. The city is now described as having: a vibrant downtown and commercial districts; mature, established neighborhoods; a significant number of historic structures located within both neighborhoods and commercial districts; and an exemplary system of community and neighborhood parks. The map below illustrates the location of Royal Oak in relation to surrounding communities.

Royal Oak & Surrounding Communities



Source: SEMCOG

Implications for Planning

- Consideration of what is occurring in adjacent communities is integral to the planning process.
- Coordination should occur with adjacent communities to benefit the entire area.

Past Planning Efforts

The City of Royal Oak has initiated various planning efforts in the past. The Master Plan adopted in 1968 was amended 6 times. The latest amendment occurred in 1996. The following list indicates other significant planning efforts and studies that have occurred in the past which were made available to the Steering Committee and Planning Commission members during the Master Plan process that lead to the new plan adopted in 1999:

General Development Plan (Master Plan) – 1968. The General Development Plan was adopted in 1968 to coordinate and guide decisions regarding the physical development of the community. The 1968 plan called for low density residential at 6 to 8 units per acre, medium density residential at 14 to 18 units per acre, and high density at 20 to 25 units per acre.

Strategy for Improving the Eleven Mile Road Corridor – 1989. This plan examined the land uses and conditions of the Eleven Mile Road Corridor between Troy and Campbell Streets. Recommendations included 14 programs and strategies to improve the physical appearance and enhance the commercial vitality of the commercial corridor.

Parks & Recreation Master Plan – 1999. The scope of this plan included an analysis of all existing city-owned parks and recreation programs. The plan was intended to establish goals and objectives so that a basis was set forth for future decision making in regards to future improvements. Furthermore, the Michigan Department of Natural Resources requires a community to have an up-to-date recreation plan in order to qualify for grant programs. The plan includes an action plan which spells out which improvements should occur over a five-year period. This plan has since been amended and updated in 2006.

Downtown Royal Oak Master Plan – 1994. This document was a plan prepared for the Downtown Development Authority (DDA) to assist its Board in planning activities for the future. It contains strategies for the following issues: market growth; land use and development; urban design enrichment; and cooperative downtown management. A vision for the future was achieved from interviews, an interactive workshop, and observation and research.

Downtown Parking Study & Master Plan – 1995. This study researched the existing parking situation in the downtown area and made recommendations for improvement or expansion of: parking operations; valet service; signage; trolley; marketing; additional parking; and financing.

Woodward Avenue Corridor Study – 1995. This study was a cooperative effort between the six communities along Woodward Avenue from Eight Mile Road to Quarton Road and Oakland County. The following topics were covered, each with extensive recommendations: the median; open space; buildings and parking; districts and gateways; signs; transportation; financing improvements; history; market potential; creation of the Woodward Avenue Action Association (WA3); and promoting the corridor.

Implications for Planning

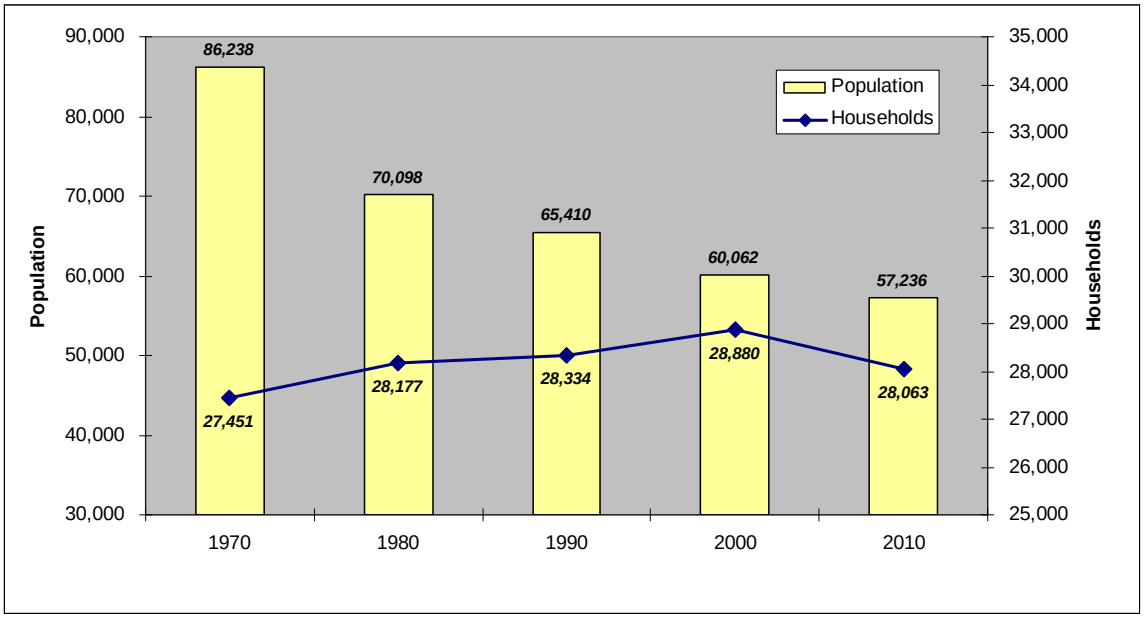
- Past plans should be utilized in all current and future planning efforts.
- The city should update and re-evaluate the city Master Plan on an on-going basis.

Populations Trends & Projections

Historical Trends

The City of Royal Oak has historically been moderately sized. The population peaked in the year 1970 with 86,238 people, and has decreased to 57,236 in 2010. Although the population has declined by 33% since 1970, the number of households has increased slowly and remained relatively constant, indicative of a smaller number of people per household, and reflecting the additional housing built in the city since 1970. The following graph depicts the population and household trends for the City of Royal Oak from 1970 to 2010.

Population & Households for 1970 to 2010
City of Royal Oak



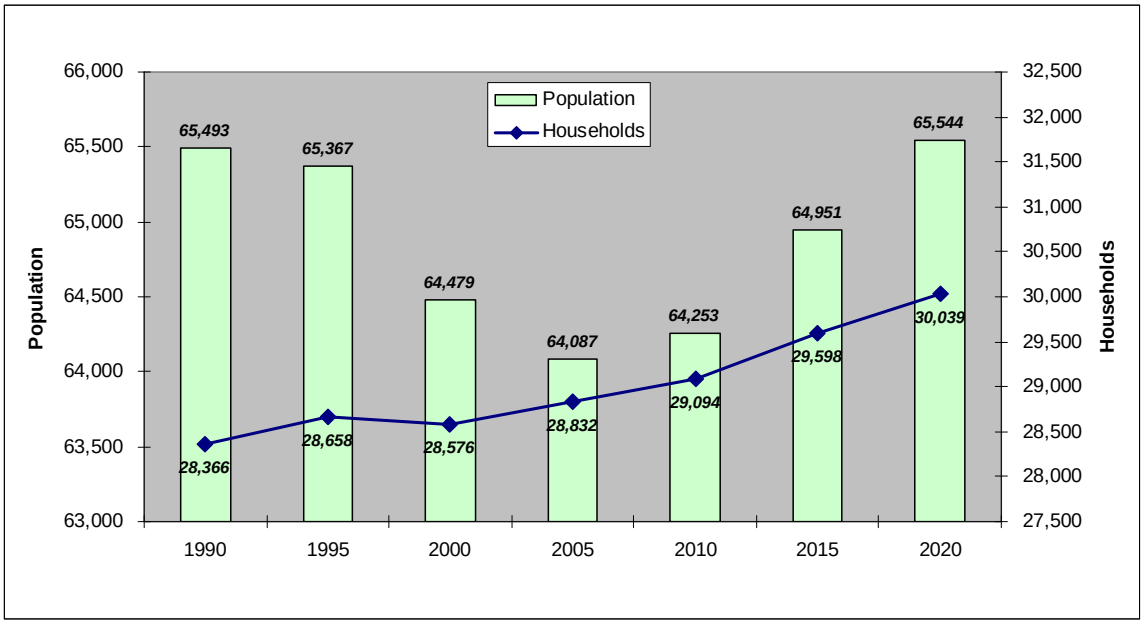
Source: U.S. Census Bureau

Projections

Population for the City of Royal Oak was projected to decrease slightly (2%) between 1990 and 2005, and then projected to rise slowly to 65,544 by the year 2020. Projections were based on a variety of inputs including demographic and housing data and regional and historical trends. The number of households was projected to steadily increase (5.8%) by the year 2020.

The following graph depicts projections for the city as estimated in 1997 by the Southeastern Michigan Council of Governments (SEMCOG) to the year 2020. Also shown is the number of households projected.

Population & Household Projections for 1990 to 2020
City of Royal Oak

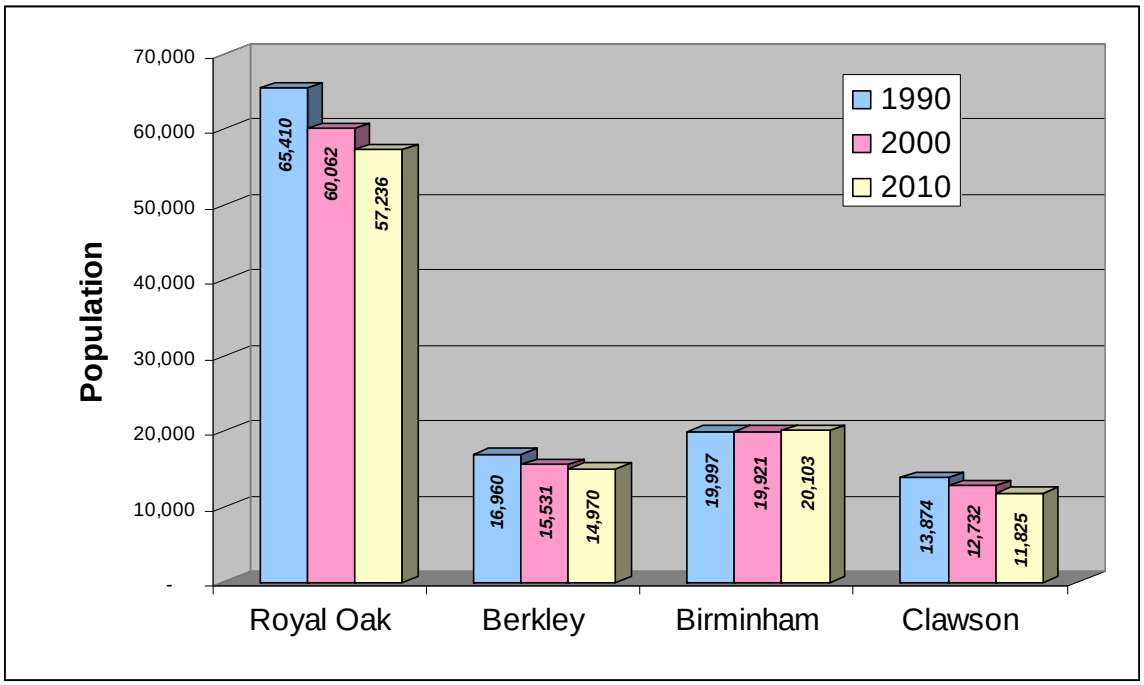


Source: SEMCOG

Population Comparisons

Population changes between 1990 and 1995 were small for Royal Oak and surrounding communities, but they grew larger by 2010. Royal Oak, Berkley, and Clawson have experienced slight decreases in population, while Birmingham experienced a slight increase from 2000 to 2010. These slight changes are reflective of the fact that all of these communities are relatively built out in comparison to other more rural communities in Oakland County and have rather stable population bases. The following graph compares 1990, 2000, and 2010 population figures for Royal Oak and surrounding communities.

Population for 1990 to 2010
Royal Oak & Surrounding Communities



Source: U.S. Census Bureau

Implications for Planning

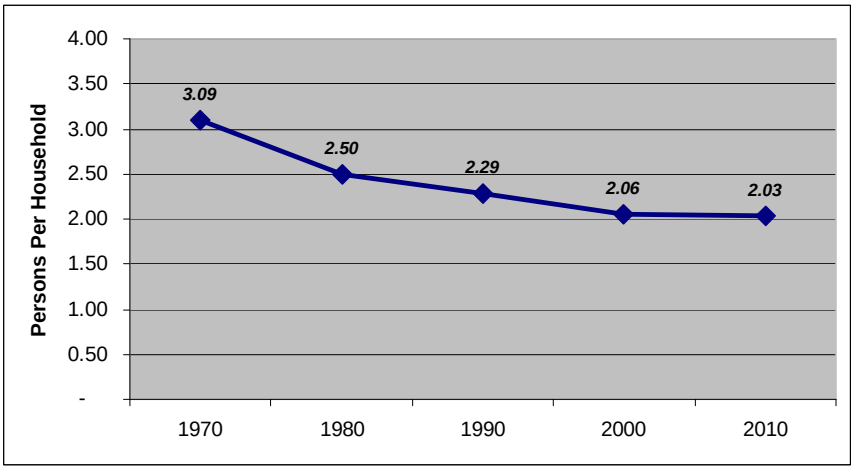
- The city can expect a relatively stable population base in the future.

Population & Housing Characteristics

Household Size

Household size has decreased from 3.09 persons per household in 1970 to 2.06 persons per household by 2000, and further to 2.03 persons per household by 2010. The largest decrease occurred between 1970 and 1980 where the household size decreased by 19%. This compares with an 8.4% decrease between 1980 and 1990. Overall, this is consistent with state and national trends of decreasing household size. The following graph depicts the changes in household size from 1970 to 2010.

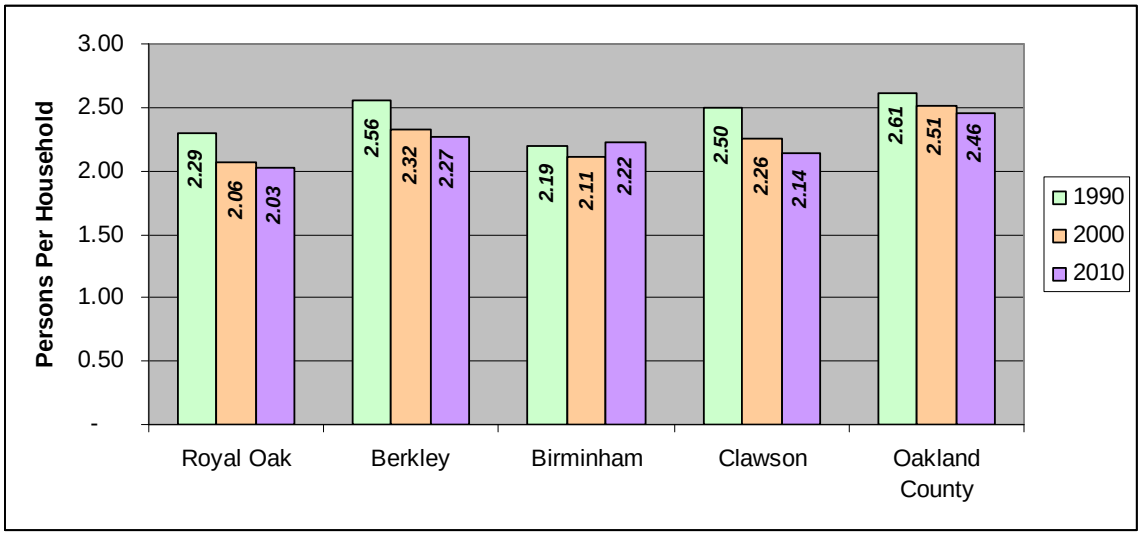
Household Size for 1970 to 2010
City of Royal Oak



Source: U.S. Census Bureau

Royal Oak has a smaller household size than Berkley, Clawson, Birmingham, and Oakland County as a whole. Surrounding communities have also experienced a decrease in household size since 1990, as typical of the more mature communities, although Birmingham's household size did increase between 2000 and 2010. Household size for the county as a whole also decreased, in spite of all of the new development occurring in the northern and western suburbs and the increasing number of families with children locating in these areas. The following chart shows the changes in household sizes for Royal Oak and surrounding communities between 1990 and 2010.

Household Size for 1990 to 2010
Royal Oak & Surrounding Communities

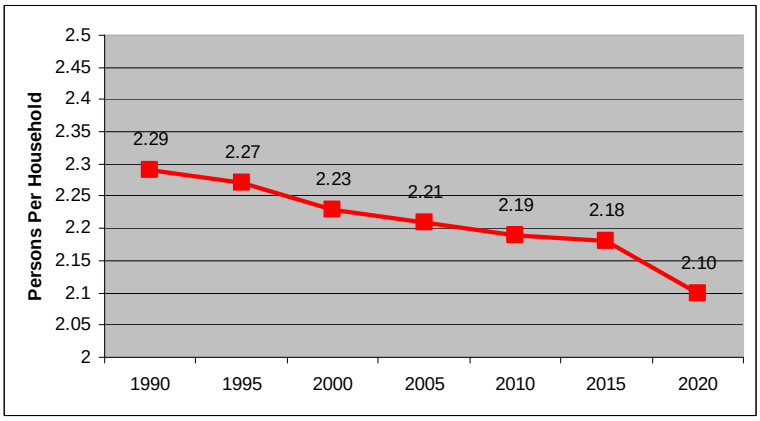


Source: U.S. Census Bureau

Household size was expected to continually decrease, with a projected 2.17 persons per household by the year 2020 according to SEMCOG (a 13% decrease since 1980 and a 30% decrease since 1970). However, the actual household size as determined by the U.S. Census was

already well below these projections by 2000. This trend is consistent with the national trend of decreasing household size as families wait longer to have children, are having fewer children in general, and single parent families increase. The following graph depicts the projected household size for Royal Oak as estimated by SEMCOG in 1997.

Projected Persons Per Household for 1990 to 2020
City of Royal Oak



Source: SEMCOG

Gender, Race, & Age Composition

As of the 2010 Census, 49% of the population of Royal Oak is male and 51% is female. Racial composition is predominantly white, as depicted in the following table.

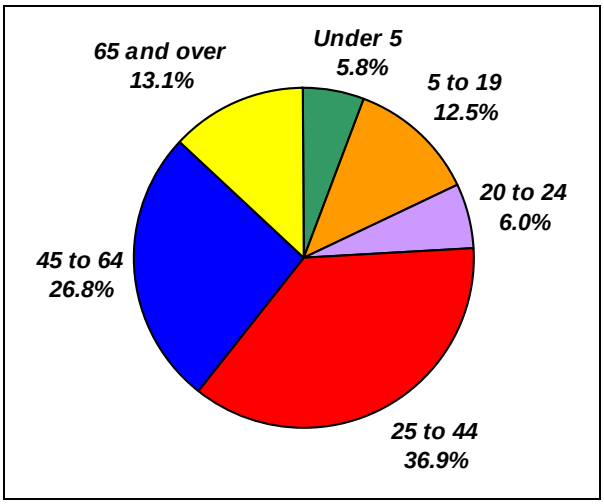
Racial Composition in Royal Oak
2000-2010

	Percent %	
Population by Race	**2000**	**2010**
White	96.1%	92.5%
Black or African-American	1.8%	5.0%
American Indian	0.7%	0.8%
Asian	2.0%	3.1%
Native Hawaiian or Pacific Islander	0.1%	0.1%
Other	0.8%	0.6%
Hispanic (all races)	1.3%	2.3%

Source: U.S. Census Bureau

In comparison to Oakland County as a whole, Royal Oak has more residents under the age of 17, and Royal Oak has more residents over 45 years of age. This is indicative of an aging population in addition to a majority of households without children, a trend projected to continue to increase over time. Age distribution in Royal Oak is depicted in the following graph.

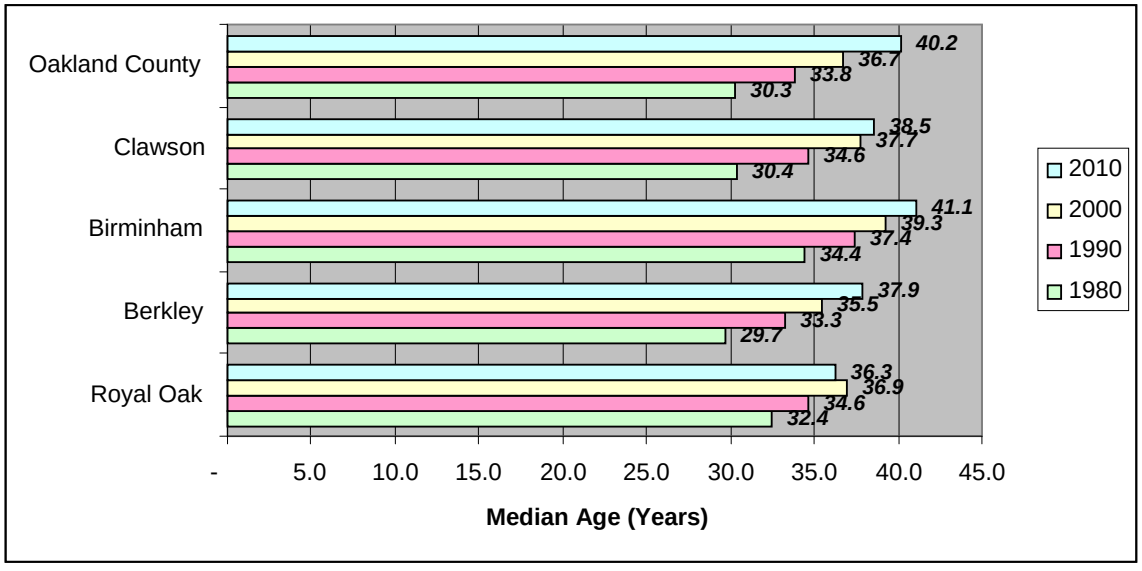
Age Distribution for 2010
Royal Oak



Source: U.S. Census Bureau

The median age of Royal Oak residents has increased from 1980 to 2010 by 4.9%, although it decreased slightly from 36.9 to 36.3 between 2000 and 2010. The city has a number of residents over the age of 65 which contributes to a higher median age. Surrounding communities have also experienced an increase in median age. As the "baby boomer" generation continues to age, median age will steadily rise. The following chart depicts the median age of Royal Oak residents in comparison to adjacent communities.

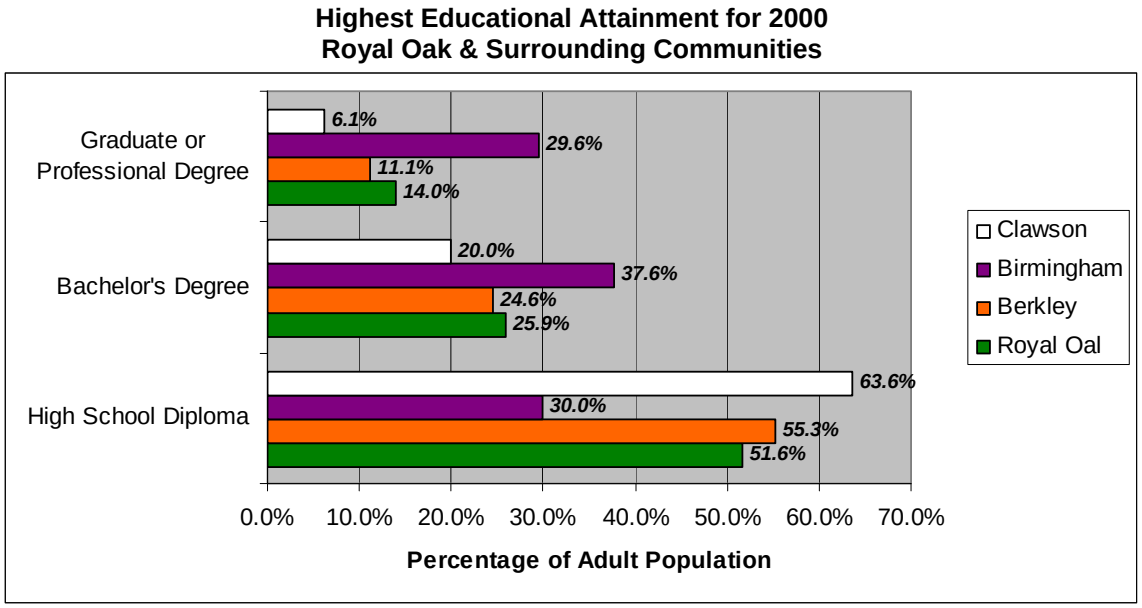
Median Age Distribution for 1980 to 2010
Royal Oak & Surrounding Communities



Source: U.S. Census Bureau

Educational Achievement

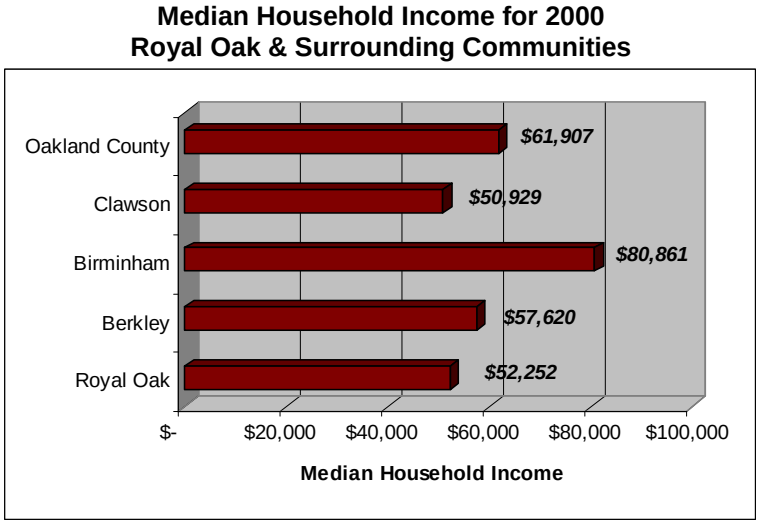
Royal Oak has a well-educated population with 39.9% of the population having at least a bachelor's degree or higher as of 2000, a significant increase from only 28.4% in 1990. The following graph depicts educational attainment levels for Royal Oak residents in comparison to surrounding communities.



Source: U.S. Census Bureau

Income

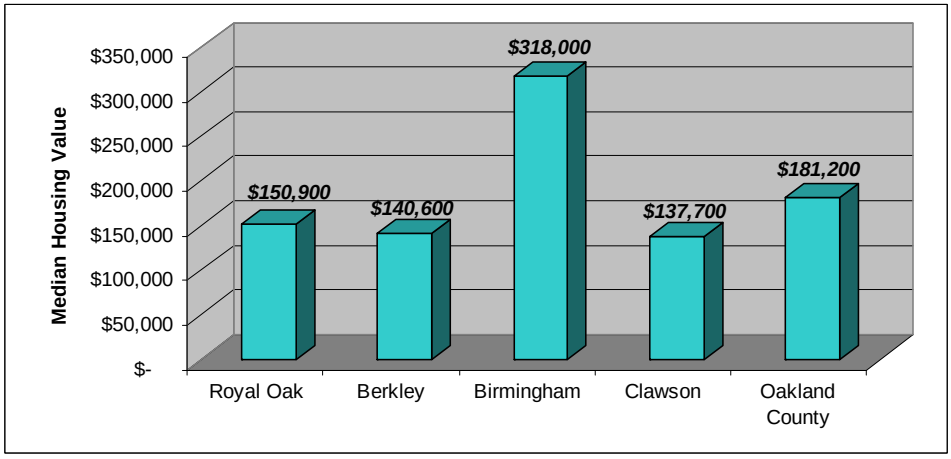
The median household income in Royal Oak in 2000 was $52,252 according to the U.S. Census Bureau. This was higher than the neighboring communities of Berkley or Clawson, as well as Oakland County as a whole, but lower than that of Birmingham. Median per capita income in 2000 was $30,990 according to the U.S. Census Bureau, an increase from the 1990 level of $18,065. The 2000 per capita income is comparable with the average for Oakland County ($32,534). The following graph depicts median household income for Royal Oak and surrounding communities.



Source: U.S. Census Bureau

Housing Value

Although dated, the 2000 Census revealed that the majority of the housing in Royal Oak (72.9%) was valued in the $100,000 to $199,999 range, with 17.7% valued over $200,000, and 9.4% valued less than $99,999. The 1990 median value was $74,900, which nearly doubled to $150,900 by 2000. Between 1990 and 2000 housing values increased dramatically. Values have since fallen significantly, although by how much will not be known until 2010 Census figures become available. Average housing costs in Royal Oak rank above those in Berkley and Clawson, but below Birmingham and Oakland County as a whole. Housing values for Royal Oak and surrounding communities are depicted in the following graph.



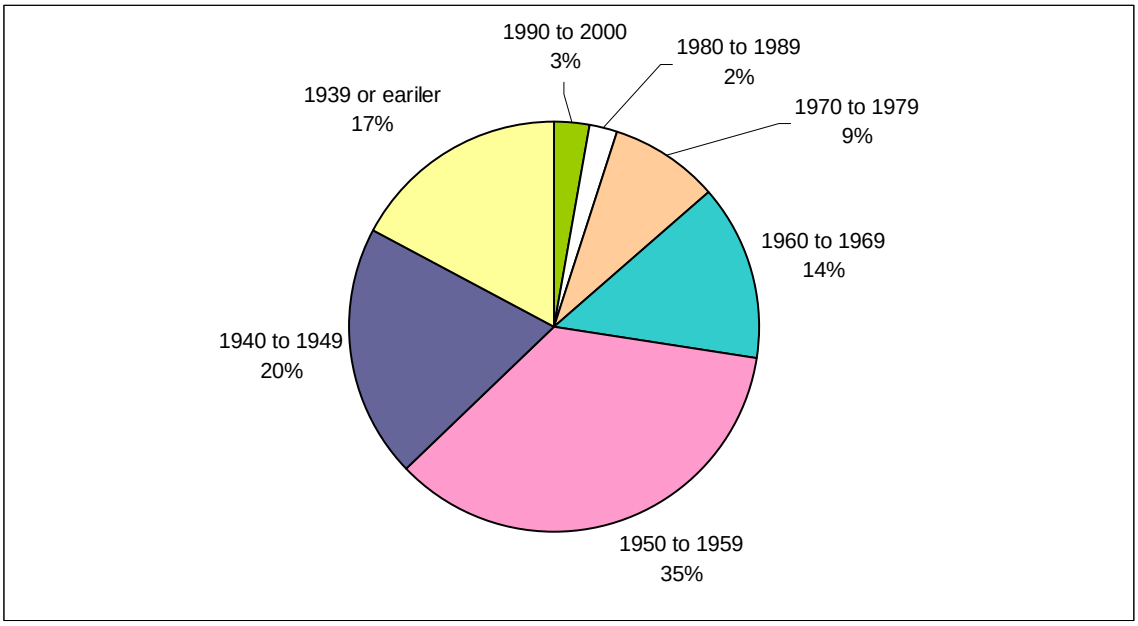
Source: U.S. Census Bureau

Housing Characteristics

Based upon 2000 Census data, the largest percentage (35.2%) of housing in the city was constructed between 1950 and 1959. However, a large percentage of housing (37.2%) was

constructed prior to 1949. These figures are indicative of an older suburb, where much of the housing was built prior to World War II. Mature trees in most neighborhoods reflect the older nature of these neighborhoods with distinct architecture and a variety of housing styles. The following chart reveals when housing was built in Royal Oak by decade.

Year Housing Built in City of Royal Oak

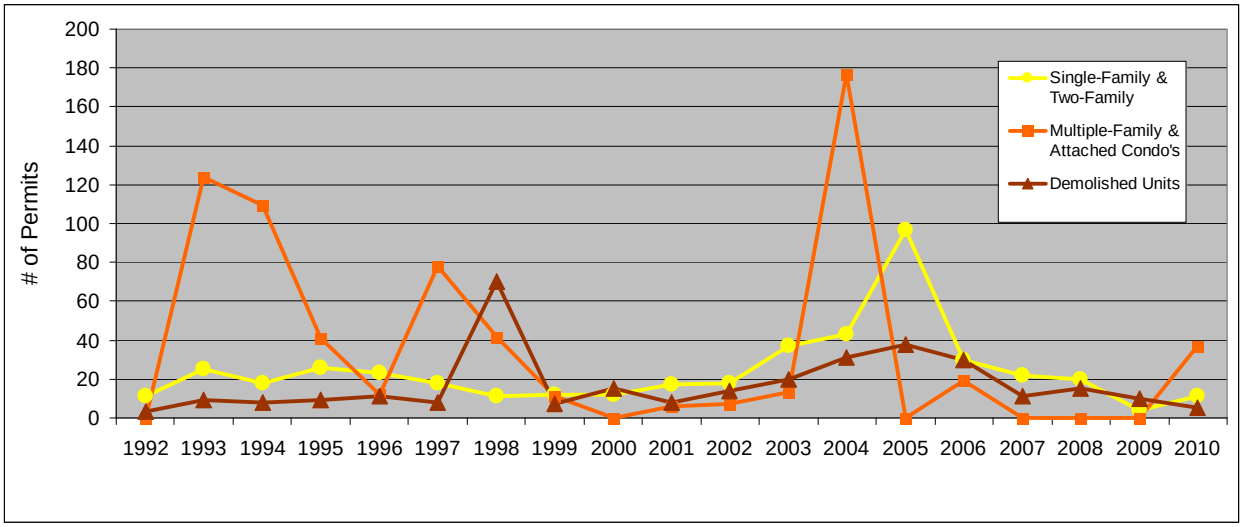


Source: U.S. Census Bureau

Residential Construction

Redevelopment of areas of the city into higher density housing has been a common occurrence since 1995, indicative of the high quality of life the city has to offer and subsequent market conditions which facilitate such development. Most of the new construction has been in owner-occupied condominium developments. The following graph depicts building permit activity for development of single and two-family housing, multiple-family housing, and demolitions.

Residential Construction Permits Issued from 1992 to 2010
City of Royal Oak



Source: SEMCOG

The net gain of housing units from 1980 to 1990 was 196 units, compared with 379 new units from 1990 to 2000 which is nearly twice as many units over the same time period. The net gain of housing units from 2000 to 2010 was similar at 373 units. That's a net addition of 752 dwelling units of a 20 year period. However, more demolitions occurred between 2000 and 2009 than between 1980 and 1989 or 1990 and 1999. The following graph depicts residential construction trends since 1980.

Residential Construction Permits Issued By Decade
1980 to 2009
City of Royal Oak

	1980-89	1990-99	2000-09
Single-Family	171	161	296
Two-Family	76	4	4
Attached Condominiums	0	0	126
Multiple-Family	88	436	96
Demolitions	139	137	192

Source: SEMCOG

Implications for Planning

- Decreasing household size will slow population increases and have implications on the types of new housing that will be needed in the city.
- An aging population will increase the demand for senior housing and services.
- The amount of older housing stock in the city will require proactive and on-going rehabilitation measures.

Economic Base

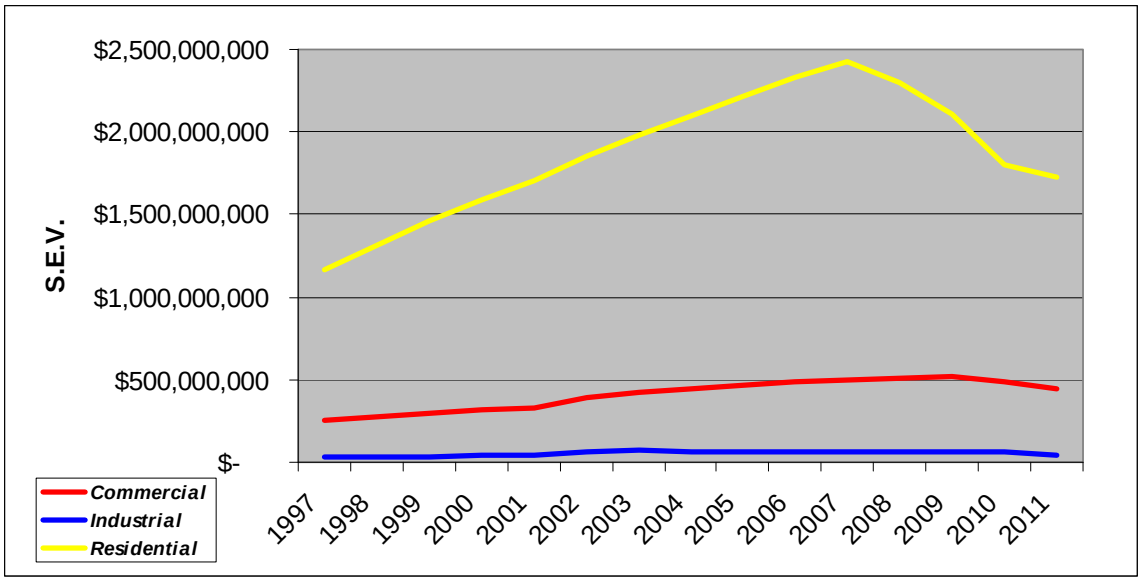
Regional Influences

Royal Oak is within a short distance to major regional job and trade centers located in Detroit, Southfield, and Troy. As job growth in these areas continues, Royal Oak's central location and high quality of life will continue to attract new residents.

Tax Base

Residential property has continued to be the largest tax generator for the City of Royal Oak, indicative of the large number and quality of neighborhoods in the city. Commercial and industrial state equalized value (SEV) have remained relatively stable after a slight increase in 1991. Residential SEV experienced a slight decline between 1990 and 1992, but then increased steadily from 1992 to 2007. Since then residential SEV has decreased sharply every year, although the rate of decline slowed somewhat from 2010 to 2011. The following chart shows the SEV between 1997 and 2011.

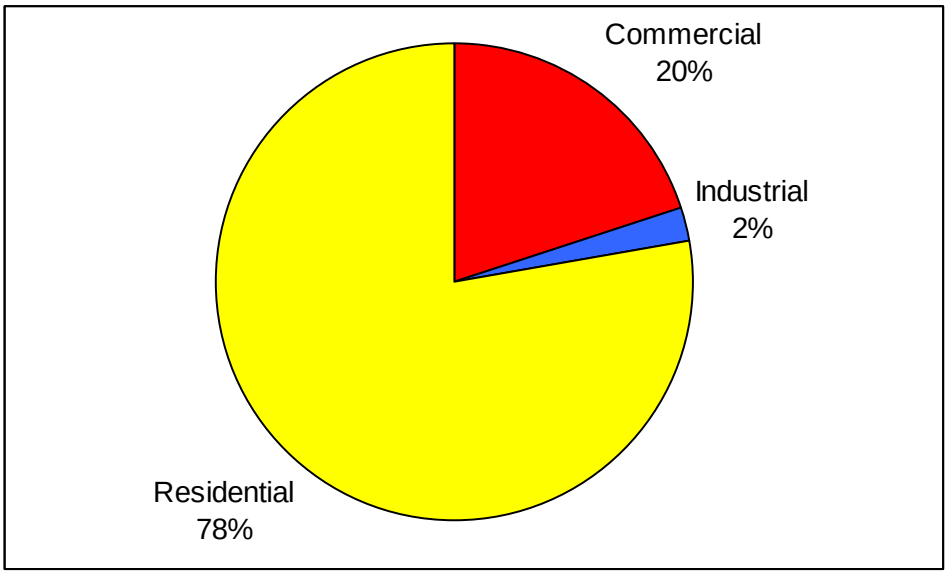
State Equalized Value of Real Property from 1997 to 2011
City of Royal Oak



Source: Oakland Co. Equalization Dept.

The following chart shows how the SEV is distributed amongst residential, commercial, and industrial lands in 2011.

State Equalized Value by Percentage for 2011
City of Royal Oak



Source: Oakland Co. Equalization Dept.

Commercial Base

The commercial base in Royal Oak is the largest category in terms of tax base after residential land use. Commercial uses are located primarily along Woodward Avenue and in the downtown area, with small pockets along Mile Roads and intersections. There are five major office buildings on Woodward which comprise 140,000 square feet of office space, and range in rents from $12.50 to $18.50 a square foot according to the Woodward Avenue Corridor Study Market Analysis. Two large retail centers located along Woodward are the Northwood Center which contains 214,675 square feet of space, and the Beaumont Center which contains 150,000 square feet of space. The downtown contains approximately 325,000 to 375,000 square feet of retail space according to the Downtown Royal Oak Master Plan, with rents ranging from $8 to $17 a square foot. The health of these commercial areas has a direct impact on the entire city as they provide a significant portion of the tax base.

Industrial Areas

There are three general industrial areas in the City of Royal Oak. The largest area is located on the east side of Coolidge Highway, north of Normandy Road. A smaller industrial area is located at the southeast corner of Campbell Road and Bellaire Avenue, and lastly, there are a few remaining industrial uses along the railroad between Lincoln Avenue and I-696.

Employers

Beaumont Hospital is the largest employer in the City of Royal Oak, employing over 15,000. Major employers in Royal Oak are listed in the following table.

Royal Oak Employers

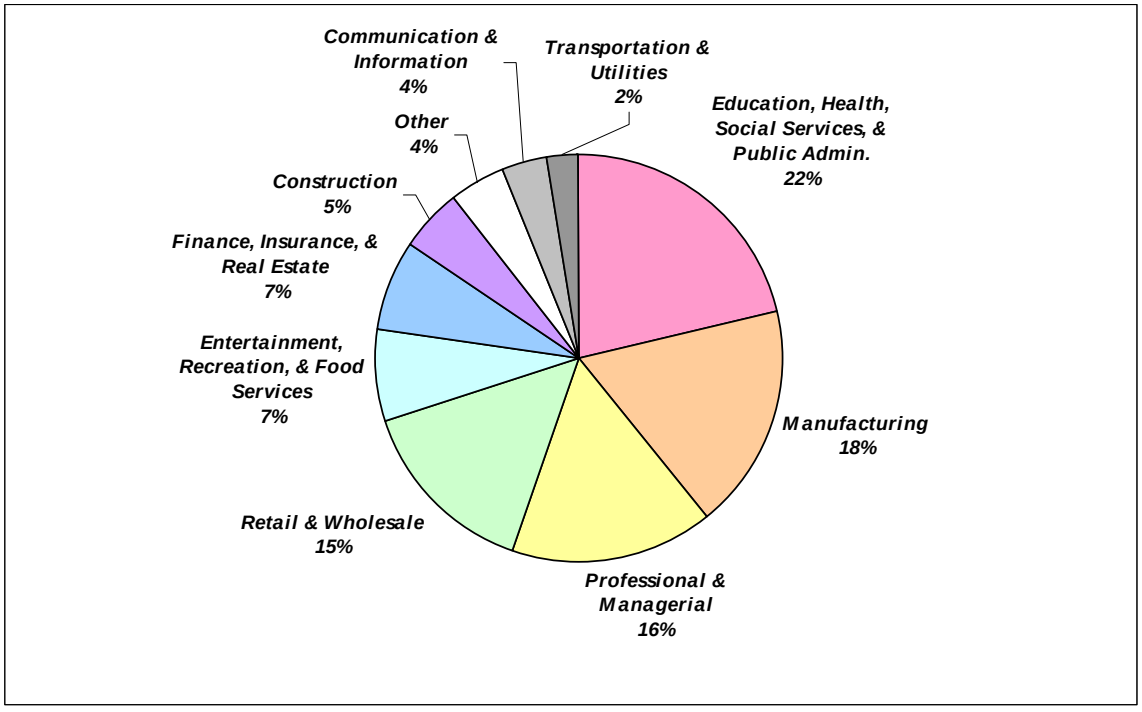
Rank	Company	Name Industry	Employees
1	William Beaumont Hospital	General medical and surgical hospital	15,358
2	Royal Oak Neighborhood Schools	Primary education	473
3	City of Royal Oak	Local government services	376
4	Flex-N-Gate Royal Oak	Motor vehicle metal stamping	371
5	Consumer's Energy	Public utilities	350
6	Holiday Market	Grocery store	307
7	Meijer	Grocery and discount department store	293
8	Detroit Zoo	Botanical and zoological gardens	237
9	Form Tech Industries	Manufacturing	222
10	Howard & Howard	Law firm	132

Source: Royal Oak Planning Dept., 2011.

Employment

In 2000, 35,487 residents were employed or 62% of the population. This percentage is expected to decrease significantly in the 2010 Census. Mean travel time to work is 22.5 minutes for Royal Oak residents meaning most residents are employed in close proximity to their homes. The majority of Royal Oak residents (70%) are in the professional / managerial, education / health / social services, wholesale / retail, and manufacturing type industries. The following graph depicts job sectors for Royal Oak residents.

Employment by Industry for 2000
City of Royal Oak



Source: U.S. Census Bureau

Implications for Planning

- A strong, stable residential base is vital to the city.
- Large employers in the city should be encouraged to stay and provide jobs for residents.
- The continued strong economic role of the Woodward Avenue corridor, downtown, and other economic areas are vital to the future of the city.

Community Facilities

Public Services & Recreation

The city's Recreation Department is responsible for parks, the library, and the senior / community center. The department offers a comprehensive program for youth, adult, and senior activities. There are 50 parks in the City of Royal Oak. The city has a variety of mini-parks, neighborhood parks, and community parks. Facilities include two 9-hole golf courses, a driving range, softball fields, an ice rink, and others. Parks provide a range of activities including both passive and active pursuits. The 2006 Parks and Recreation Master Plan included goals addressing needs for programs, recreation lands, administration and organization, and facilities. The plan also established a five-year action plan for programs and facilities improvements.

The senior / community center is located in the northern section of the city on Marais Street where a variety of programs and activities are offered for youth, adults, and seniors. Senior support services include ROSES (Royal Oak Senior Emergency Services) which offers a variety of support services to residents 60 years of age and older. These services include home repairs, chores, and personal home care. Outreach and other support services such as the Alzheimer support group are also offered.

The City of Royal Oak has a library which is under the jurisdiction of the city's Recreation Department. The library is located downtown in the civic center area and offers a variety of programs and services including classes and special programs such as a summer reading program and the poet in residence program.

Royal Oak Neighborhood Schools

The school district for the City of Royal Oak has approximately 5,300 students, down from 7,100 in 1998. The district includes all of the City of Royal Oak and small portions of Huntington Woods, Clawson, and Berkley. Due to decreasing enrollment, redistricting in 1998 resulted in the following mix of schools: 10 elementary schools; 2 middle schools; and 2 high schools. Further redistricting and consolidation in 2007 resulted in only 6 elementary schools, one middle school, and one high school. Additionally, a vocational school operated by the Oakland Tech Center School District is located in the north part of the city.

Oakland Community College

The Oakland Community College system comprises of five campuses throughout Oakland County and is the largest community college in the state. The Royal Oak campus, located at the northeast corner of Washington and Lincoln Avenues, contains four buildings totaling approximately 164,000 square feet and a parking structure, all of which comprise the entire block. The college has been in Royal Oak since 1971. The Royal Oak campus is combined with the Southfield campus in terms of administration and programming and serves approximately 7,000 students. The majority of students come from Royal Oak, Ferndale, and Madison Heights. A recent master plan for the college calls for expansion of the campus to allow for additional classroom and counseling space. Any expansion would take place adjacent to the existing campus.

Police & Fire

The city's police station is located downtown in the civic center. The department has approximately 70 employees and performs a variety of functions and programs. Divisions include Traffic Safety, Traffic Enforcement, Parking Enforcement, Traffic Education, Traffic Engineering, Traffic Accident Investigation, and Criminal Investigation. The department, in conjunction with the Royal Oak school district, runs the THINK Program (Teaching, Helping, Involving, Nurturing, Kids) which sponsors substance abuse education classes in elementary and the middle schools. The Police Department has three crime prevention programs run through the Crime Prevention Section: (1) Neighborhood Watch; (2) Business Watch; and (3) School Crime Prevention. In addition to the employed officers, the city has an auxiliary police force. Members of the auxiliary force are trained and uniformed volunteers from the community who help patrol neighborhoods and business districts and report suspicious circumstances. The force also provides additional support for emergency calls and traffic control at accidents.

The city has the following three active fire stations: the main station at Sixth Street and Troy Street in the downtown; Thirteen Mile Road and Woodward Avenue; and Thirteen Mile Road and Rochester Road. There are approximately 50 active members who in addition to fire protection also provide emergency medical services (EMS) and transport services. The Fire Department also conducts public fire education with school children and seniors. The average response time in the city for emergency calls is approximately 2.8 minutes. The department is an active member of the Oakway Mutual Aid Pact including Ferndale, Birmingham, Madison Heights, Pontiac, Southfield, Bloomfield Township, and West Bloomfield Township. The pact has an agreement to assist in times of extraordinary need. The pact also shares the "Haz-Mat" team for hazardous materials response and shares a vehicle equipped to address emergencies involving hazardous materials.

Public Services

Water service is through the Southeast Oakland County Water Authority (SOCWA), which purchases water from the City of Detroit. The Authority has water mains at several locations throughout the city where the city taps into and water is metered. Royal Oak is one of ten nearby participating communities in the Authority.

Sanitary sewer and storm sewer utilizes the Oakland County Water Resources Commission drains which are then treated in Detroit at the treatment plant. The majority of the city has combined sewer and storm drains. Currently the 12 Towns Drain Improvement Project is underway, as directed by the Water Resources Commissioner, to improve capacity in the north arm of the drain system. The city performs maintenance on all drains, and the Engineering Department is responsible for new or replacement projects, while the city's Department of Public Services performs minor repairs.

The city also participates in the Southeast Oakland County Resource Recovery Authority (SOCRRA) for refuse and curbside recycling service. There is, however, a separate millage for refuse pick-up. Yard waste removal is available for a small fee. Royal Oak is one of 14 nearby communities who participate.

Implications for Planning

- Residents will continue to expect the high quality of city services and programs currently provided.
- The city should continue to seek cooperative efforts with neighboring communities to increase efficiency of services.

Transportation

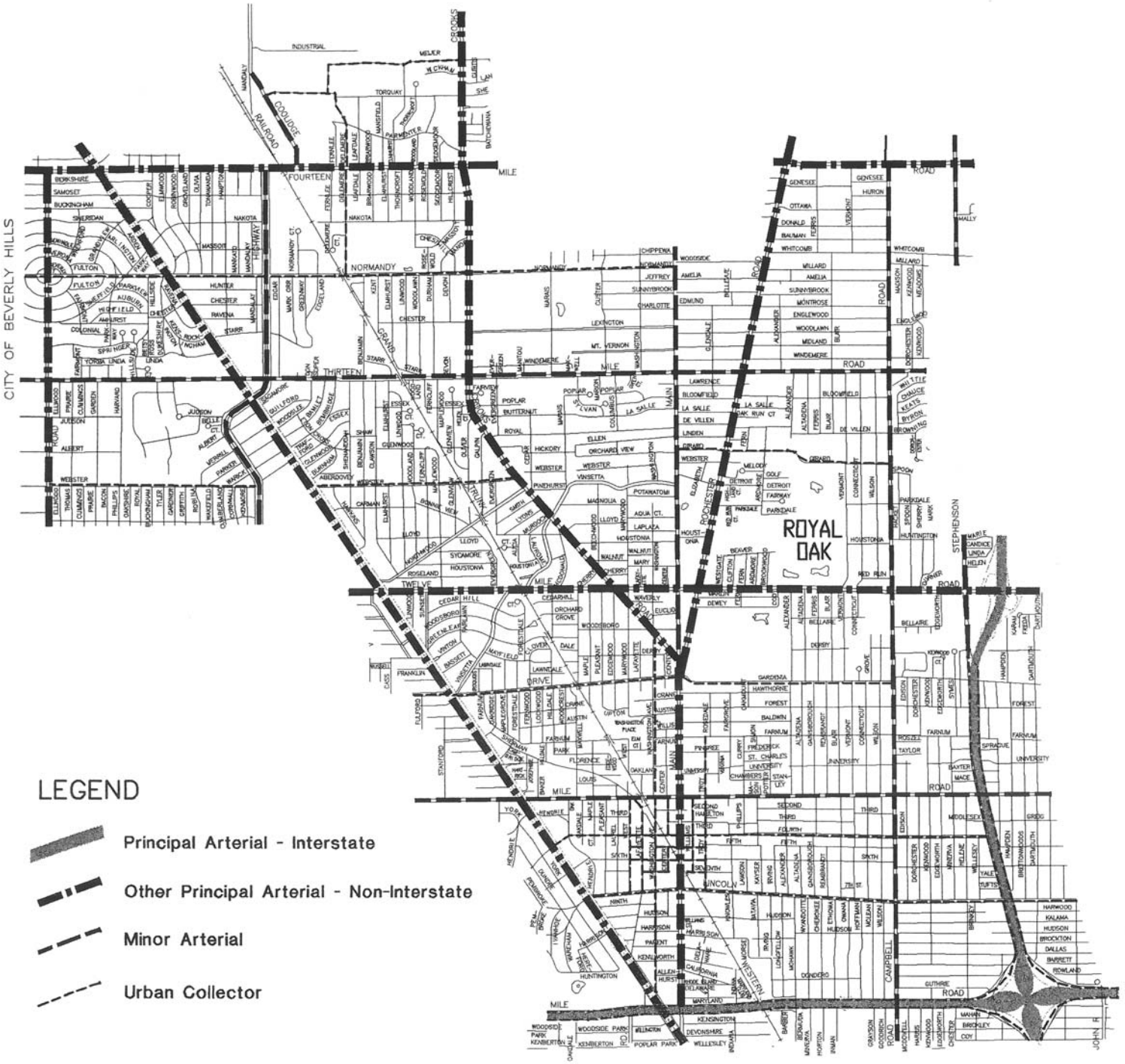
Being an older community, Royal Oak has a well-established grid-style street system. This type of system helps deliver traffic in a spread-out manner. Roadway improvements are mainly maintenance and resurfacing related.

Functional Classification System

Road classifications identify the volume and type of traffic that is appropriate for each segment of the roadway network. For purposes of transportation planning, a functional classification of roads has been developed. The Michigan Department of Transportation (MDOT) and the Road Commission for Oakland County utilize the classification system to determine the order in which improvement projects should be completed. The Roadway Functional Classifications Map illustrates the functional classification system for various streets with Royal Oak. The following is a description of the different roadway classifications:

> Principal Arterials – Interstate / Non-Interstate. These roadways are at the top of the classification hierarchy and the primary function of such roadways is to carry vehicles relatively long distances and to provide through-travel movements.

Roadway Functional Classifications
City of Royal Oak



Source: Michigan Dept. of Transportation and Carlisle / Wortman Associates, Inc.

Minor Arterials. Minor arterials include roads connecting intra-urban land uses. These roads tend to accommodate slightly shorter trips than a major arterial.

Urban Collectors. There are two types of collectors: minor and major. Major collectors provide access and mobility within residential, commercial, or industrial uses. Major collectors generally carry more traffic than minor collectors.

Local Streets. The remainder of the streets within the city provide access to individual properties, with limited continuity and mobility. Local streets are designed for low volumes and are linked by collector roadways to other land uses or arterials.

City Roadway Improvement Programs

The city maintains and repairs all roads in Royal Oak, coordinated by the Department of Public Services. There are, however, roadways that are under county jurisdiction that the city is reimbursed to maintain as listed in the following table:

Roadway Segments Under Oakland County Jurisdiction
City of Royal Oak

Roadway	From	To
Coolidge Highway	Woodward Avenue	Fourteen Mile Road
Eleven Mile Road	Main Street	Campbell Road
Twelve Mile Road	Campbell Road	Stephenson Highway
Fourteen Mile Road	Rochester Road	Campbell Road
Greenfield Road	Webster Road	Fourteen Mile Road

Source: Road Commission of Oakland County

Downtown Parking

Parking in the downtown area is comprised of a combination of surface lots, structures, and on-street parking spaces. According to the City of Royal Oak Downtown Parking Study and Master Plan report, there area 4,656 total parking spaces in the downtown area: 566 on-street parking spaces and 4,090 off-street parking spaces. The city controls 2,010 of the off-street parking spaces, and the remainder are privately managed and owned. The on-street parking provided allows for a variety of length of stay with one-hour, 2-hour, and 10-hour metered parking. The study concluded that occupancy rates are highest between the hours of 8:00 p.m. and 10:00 p.m., reflecting the position of the downtown as an entertainment and restaurant district with strong night-time activity.

Transit

Royal Oak residents have a variety of transit opportunities provided by SMART (Suburban Mobility Authority for Regional Transportation) which has a service hub in downtown Royal Oak. SMART transit opportunities include fixed-route service to Detroit and nearby suburbs, park-and-ride facilities, and Community Transit services, which provides curb-to-curb transit

services within a six-mile radius of Royal Oak. Community Transit charges seniors and handicapped customers $1.00 a ride, and all others pay $2.00. The service uses large vans which hold up to 18 people. Advance scheduling in required except for common destination points. Also coordinated with SMART is Greyhound bus service and taxi-cab service. Amtrak service is also provided.

Airports

Royal Oak is conveniently located in close proximity to three major airports: Detroit Metropolitan Airport, Detroit City Airport, and Oakland County International Airport.

Non-Motorized Transportation

Many people have chosen to live in Royal Oak because of the pedestrian scale of the community. The primary means of providing non-motorized transportation are the traditional city sidewalks. Lacking is a well-defined bikeway system providing designated linkages between neighborhoods and key community facilities. Royal Oak is designated, however, in the Southeast Michigan Greenways Concept Plan as having potential for pedestrian and bike paths which connect to the larger Oakland County system.

Implications for Planning

- On-going maintenance of existing city roadways is imperative.
- Continue efforts to lessen and slow traffic along local streets within residential neighborhoods.
- Explore alternative transportation measures to lessen traffic and improve circulation throughout the city.
- Ensure adequate parking is provided to meet the growing demand.

Existing Land Use

Royal Oak was once part of Royal Oak Township and is now defined by an assortment of mile roads, half-mile roads, and freeways. The municipalities of Royal Oak, Oak Park, Royal Oak Township, Huntington Woods, Ferndale, Berkley, Hazel Park, Madison Heights, and part of Clawson all occupy land which was once Royal Oak Township. Of this collection of communities, Royal Oak is by far the largest, occupying over 12 square miles of the 36-square mile area.

The majority of the city is located east of Woodward Avenue. I-696 serves as a southern boundary and I-75 serves as much of the boundary to the east. The north boundary is roughly defined by Fourteen Mile Road but jogs both north and south in some places to the nearest half-mile roads.

Existing Land Use Definitions & Descriptions

Existing land uses were mapped through a combination of reviewing existing land use maps prepared by Oakland County, current aerial photography, and quarter section mapping available from the city. Since all current resources were both dated and/or inaccurate, field verification by both the consultant and staff were necessary. Maps on pages 88 and 89 illustrate existing land use patterns for the northern and southern portions of the city. Existing land uses in the city are defined and generally described below. The figure on page 87 illustrates the distribution of existing land uses within the city. More detailed descriptions of land use characteristics by subarea are found in the next section.

Single-Family Residential – single-family detached dwellings located on individual lots. Single-Family Residential is the largest existing land use category in the city. Single-Family Residential uses are located throughout the city.

Two-Family Residential – buildings which contain two attached dwellings (also called duplexes). Two-Family Residential uses exist in both scattered patterns throughout the city and in concentrated areas such as the north side of Fourth Street east of downtown and the west side of Campbell Road north of Twelve Mile.

Multiple-Family Residential – buildings which contain three or more attached units which are occupied as either apartments (rental units) or condominiums (owner-occupied). Multiple-Family Residential uses exist in scattered areas within the southern neighborhoods of the city, around the outskirts of downtown, in concentrated areas such as south of downtown west of Main Street, in the northern part of the city north of Fourteen Mile Road, and along Coolidge Highway east of Beaumont Hospital.

Commercial – includes uses such as retail, service, restaurant, office, and entertainment facilities located in small or large commercial areas. Commercial uses are located primarily in the downtown, along Woodward Avenue, and along other commercial corridors such as Eleven Mile Road, Rochester Road, and North Main Street.

Restricted Parking – parking lots which are accessory to a commercial or industrial use and are located on a separate residentially-zoned and adjacent parcel. Restricted Parking areas are located predominantly along Woodward Avenue behind commercial frontage.

Industrial – uses include warehousing, storage, research, laboratory, manufacturing, processing, and fabrication. Industrial uses in the city are concentrated into three areas including east of Coolidge Highway north of Fourteen Mile Road, the southeast corner of Campbell Road and Bellaire Avenue, and in the southern portion of the city along the railroad tracks south of Lincoln Avenue.

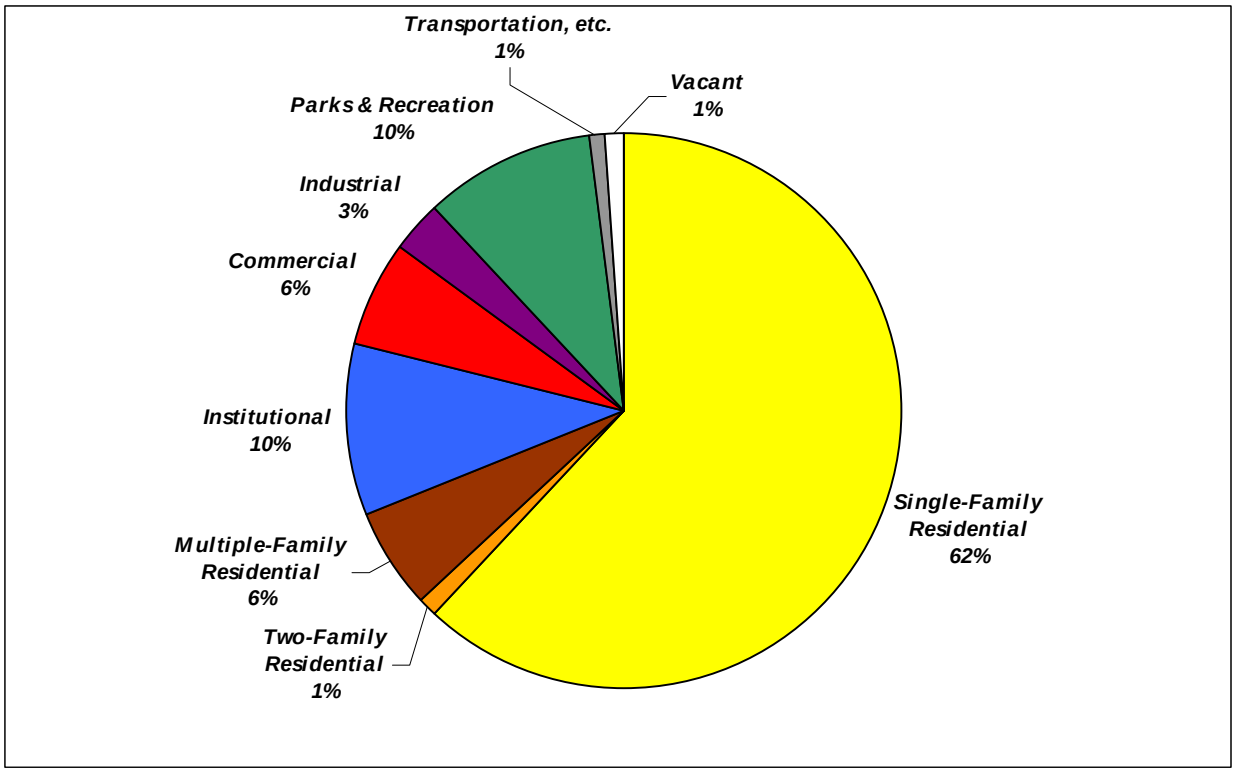
Institutional – uses include public buildings and parking lots, hospitals, schools, cemeteries, and churches. Institutional uses are located throughout the city such as Beaumont Hospital, schools, and cemeteries, and in the downtown such as City Hall, the Farmers Market, 44th District Court, and library.

Parks and Recreation – includes public and private parks, recreational facilities, and open space systems. Parks and Recreation uses area located throughout the city both in the form of small, scattered neighborhood parks and larger city-wide parks and facilities such as the Royal Oak Golf Club.

Vacant – parcels that are undeveloped and/or unused. There are very few vacant parcels remaining in the city. One larger vacant parcel located in the southern portion of the city is the area at the east corner of Main Street and I-696.

Transportation, Utilities, and Communication – areas utilized for the provision of essential services such as gas, electricity, and telecommunications. There are only a few areas of Transportation, Utilities, and Communication in the city. Notable areas include the southeast corner of Fourteen Mile Road and Coolidge Highway, the east side of Troy Street between Lincoln Avenue and Seventh Street, and some scattered locations along the railroad.

Existing Land Use 1998
Royal Oak



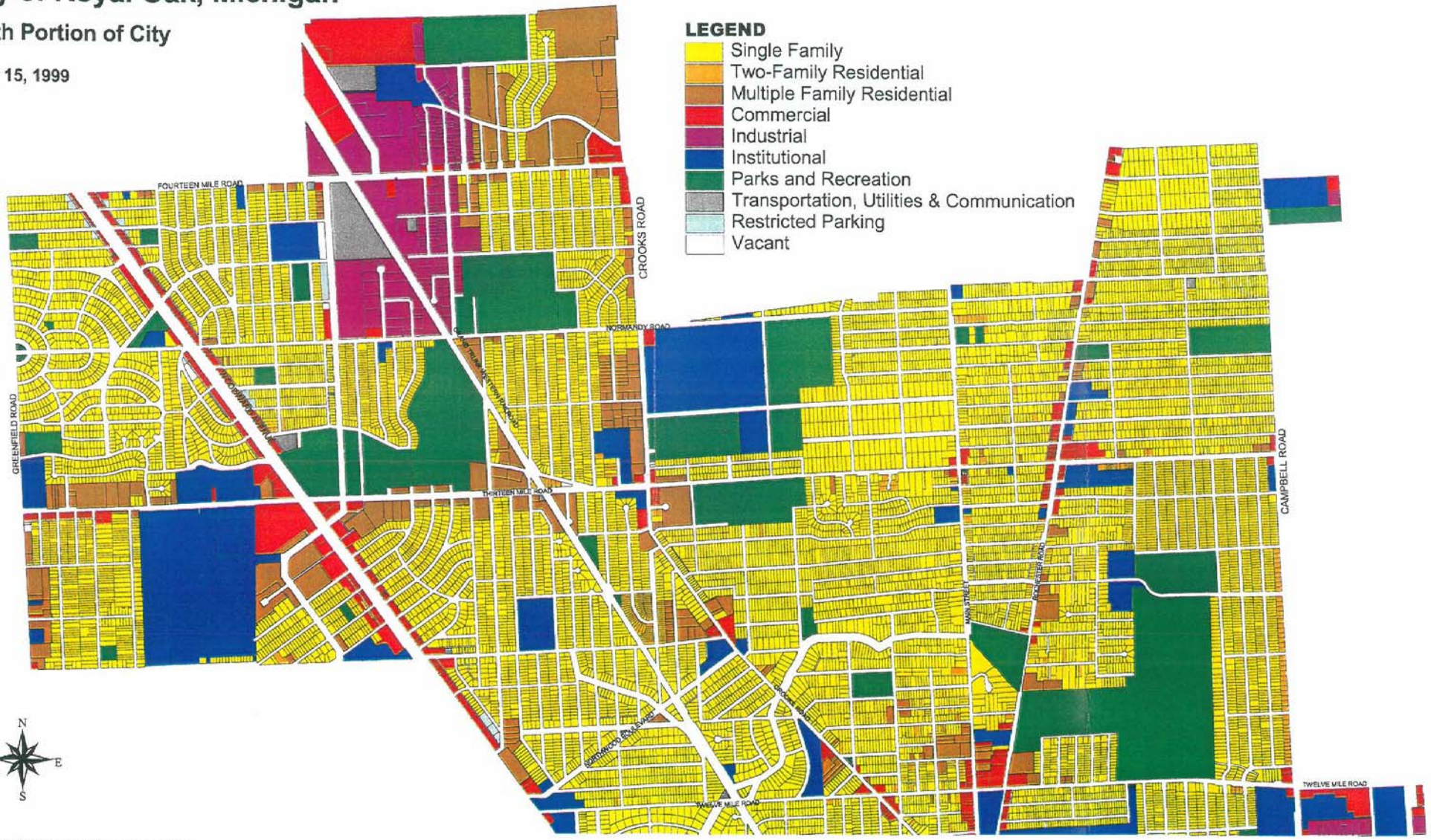
Source: Carlisle / Wortman Associates, Inc.

Existing Land Use

City of Royal Oak, Michigan

North Portion of City

July 15, 1999



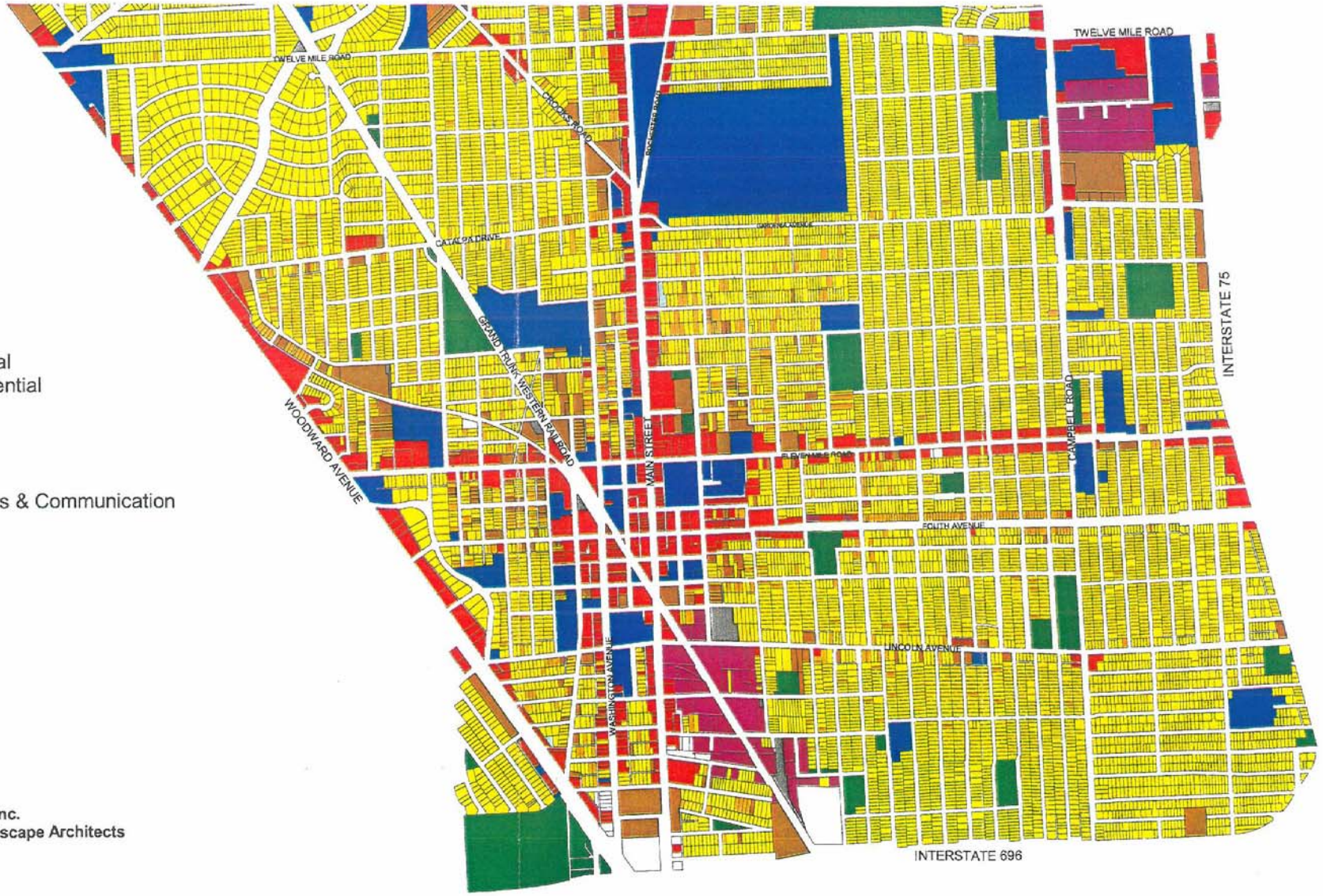
Carlisle/Wortman Associates, Inc.
Community Planners and Landscape Architects
Ann Arbor, Michigan

Existing Land Use

City of Royal Oak, Michigan

South Portion of City

July 15, 1999



LEGEND

- Single Family
- Two-Family Residential
- Multiple Family Residential
- Commercial
- Industrial
- Institutional
- Parks and Recreation
- Transportation, Utilities & Communication
- Restricted Parking
- Vacant

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Carlisle/Wortman Associates, Inc.
Community Planners and Landscape Architects
Ann Arbor, Michigan

Subarea Existing Land Use Descriptions

For purposes of organizing workshops and analyzing areas, the city was divided into seven planning subareas as depicted on the Existing Land Use Sub-Area Map. A brief description of the location, land uses, and major landmarks are included in the subarea land use descriptions below.

Subarea 1

Subarea 1 is the smallest of all the subareas and is located in the northern portion of the city, bounded by Clawson to the east, Troy to the north, Birmingham to the west, and Normandy Road to the south. This portion was annexed into the city in the 1920's. Single-family neighborhoods contain post-war cape cods and ranches. New residential development in this subarea has been the 18-unit Cummunigston Court condominiums along Parmenter Boulevard. There is a large residential development called Coventry Parkhomes located along the west side of Crooks Road north of Fourteen Mile Road which contains attached condominium units.

Industrial and intense commercial (Meijer's) uses are located along the railroad, while the east side is predominantly residential. Light commercial uses are located along Fourteen Mile Road, and there is a commercial node at the Fourteen Mile Road and Crooks Road intersection. Landmarks include the large wooded Cummingston Park along the northern boundary of Royal Oak, the Normandy Oaks Golf Course, and the railroad.

Subarea 2

This subarea is located in the northwestern portion of the city, bounded by Birmingham to the north, Beverly Hills and Greenfield Road to the west, Berkley and Twelve Mile Road to the south, and the railroad tracks to the east. This area was annexed into the city in the 1920's.

The neighborhoods are varied architecturally including the Beverly Hills area on the west side of Woodward Avenue which was built in the 1930's and 1940's. This area includes colonial revival and ranch styles. A portion of the Vinsetta Park neighborhood is located in the southern section of subarea 2. The remaining neighborhoods are generally post-war cape cods and ranches.

The land use patterns in subarea 2 are predominantly single-family, with commercial and office uses along Woodward Avenue and Thirteen Mile Road, and multiple-family uses along Coolidge Highway, Thirteen Mile Road, Fourteen Mile Road, and Greenfield Road. There is one industrial area between the railroad and Coolidge Highway, north of Normandy Road. Beaumont Hospital is located on the south side of Thirteen Mile Road west of Woodward Avenue. Landmarks include the Royal Oak Golf Club, Memorial Park, and the fire station at Thirteen Mile Road and Woodward Avenue.

Subarea 3

Subarea 3 is located in the northern portion of the city and is bounded by Normandy Road and Clawson to the north, Main Street to the east, the railroad tracks to the west, and Twelve Mile

Road to the south. This area was annexed into the city in the 1920's. Neighborhoods are predominantly comprised of post-war houses such as cape cods and ranches.

The subarea is predominantly single-family residential with two areas of duplexes south of Thirteen Mile Road, east of the railroad tracks, and north of Webster Road. Multiple-family residential uses are located along Normandy Road and the railroad, across Crooks Road from Royal Oak High School, along Thirteen Mile Road, along Webster Road, and other pockets in the southern section of the subarea.

Commercial uses exist along Crooks Road at Thirteen Mile Road, at Webster Road, and near Twelve Mile Road, and at the intersection of Main Street and Twelve Mile Road. New residential development has been limited to the 12-unit Oak Shade condominium project along Crooks Road. Landmarks include Royal Oak High School, the senior / community center, Quickstand Park, Worden Park, and Starr Park.

Subarea 4

Subarea 4 is located in the northern portion of the city and is bounded by Madison Heights to the east, Clawson to the north, Main Street to the west, and Twelve Mile Road to the south. This portion of the city was annexed in the late 1920's, with the small area east of Campbell Road being annexed in the 1950's. With the exception of the Lakeside Drive area which contains older large scale homes from the 1920's, the remaining neighborhoods are predominantly post-war cape cods and ranches.

Land uses are predominantly single-family. There are duplexes along Campbell Road adjacent to Madison Heights, and scattered multiple-family projects along Rochester Road and Main Street. Commercial uses are located along Main Street and along Rochester Road, and at the corner of Twelve Mile Road and Campbell Road. The small pocket on the east side of Campbell Road contains a park and commercial and industrial uses. Landmarks include the Red Run Golf Club, Wagner Park, and the fire station along Rochester Road.

Subarea 5

Subarea 5 is located between the downtown to the east, Woodward Avenue to the west, I-696 to the south, and Twelve Mile Road to the north. A small portion of subarea 5 is located across Woodward Avenue directly north of the Detroit Zoo, although this small area is virtually indistinguishable from surrounding Huntington Woods. The area of the city which encompasses subarea 5 was annexed by 1922 and serves as the gateway to Royal Oak.

Architectural styles are varied with some older neighborhoods built in the 1910's and 1920's containing larger colonial revival, English Tudor revival, and Dutch colonial. These areas are located along Hendrie Boulevard and in the Vinsetta Park area. Remaining architecture in subarea 5 can be described as predominantly arts-and-crafts, early 20th century bungalows, American foursquares, and building styles taken from the Sears & Roebuck catalog.

Identifiable landmarks and points of interest in subarea 5 include the Detroit Zoo at the southern portion of I-696, the Grand Trunk Railroad which bisects the northern neighborhoods, the Woodward Avenue corridor, the South Oakland YMCA, Royal Oak Middle School, Meininger Park, and the Royal Oak Women's Club built in 1839, the city's oldest structure. New housing has mainly consisted of the 14-unit Washington Place condominiums located across from Royal Oak Middle School.

The portion of Woodward Avenue located in subarea 5 consists mainly of commercial, office, and multiple-family uses. Both Eleven Mile Road and Washington Avenue (south of downtown) provide a mix of small commercial, office, services, and small-scale multiple-family uses. The commercial uses along Main Street north of downtown are characterized by more intense commercial uses such as automobile dealerships and repair. The remaining area is single-family in nature with scattered multiple-family uses.

Subarea 6

The location of subarea 6 generally coincides with the existing Downtown Development Authority boundaries with the exception of the northern boundary, which extends north to Oakland, University, and Pingree Avenues respectively, and the west side of the southern portion of Main Street, which is included in subarea 6. The area which is now the downtown core was the origin of the city and was established in 1836. Several historic structures are located in the downtown area.

Land uses are predominantly commercial and office in nature, with scattered multiple-family and institutional uses such as churches. Two high-rise senior housing complexes are located just east of downtown and residential uses are located north of Eleven Mile Road and east of Main Street.

The civic center area includes the Farmers Market, City Hall, the library, the 44th District Court, and the police station. Oakland Community College is located along Lincoln Avenue on the west side of downtown. Overall, downtown has a unique character with many restaurants, night spots, and galleries. The southern node of subarea 6 includes the Main Street Square townhouse development.

Subarea 7

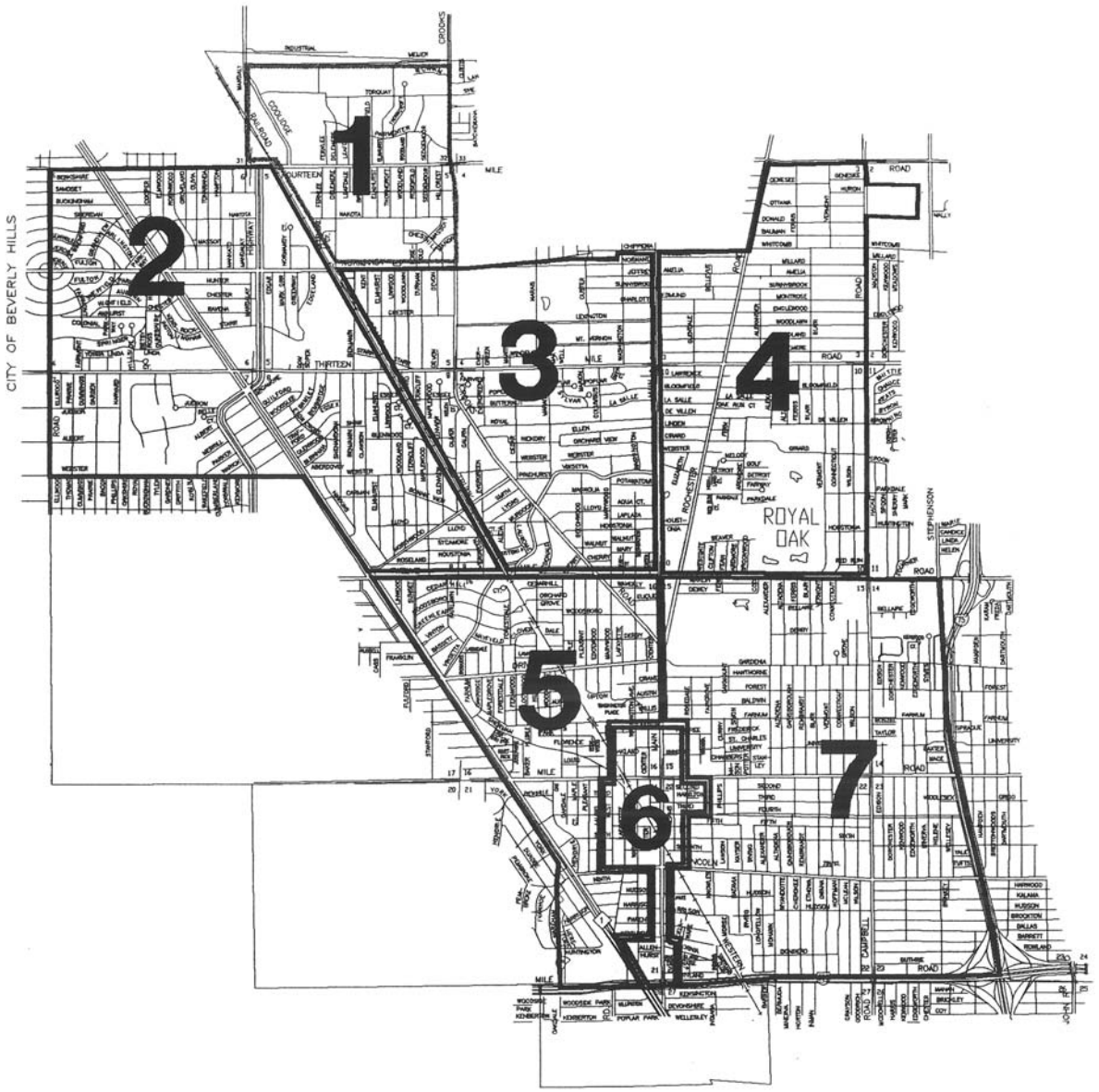
Subarea 7 is located in the southeast portion of the city and is bounded by I-696 to the south, I-75 and Madison Heights to the east, the downtown to the west, and Twelve Mile Road to the north. The western portion of subarea 7 was annexed into the city in the 1920's, with the remaining area annexed in the 1940's. The architectural styles of the western portion includes predominantly arts-and-crafts, Sears-Roebuck, bungalows, and American four-squares. The eastern area is predominantly post-war architecture which includes cape cods and ranches. New development has been concentrated in the southern portion of subarea 7, such as the Maryland Club condominiums, but also small scale condominium projects have been built throughout the subarea.

Land uses are generally categorized as varied commercial, office, and industrial uses along the western border adjacent to downtown, and commercial and multiple-family uses along Eleven Mile Road, Campbell Road, Fourth Street, and Lincoln Avenue. A predominantly industrial area is located in the northeast corner of the subarea between Campbell Road, Gardenia Avenue, I-75, and Twelve Mile Road. The remaining area is single-family in nature with scattered multiple- and two-family developments, and various institutional uses such as churches and schools. Major landmarks include the Royal Oak, Oakview, and St. Mary's cemeteries.

Implications for Planning

- As the city nears build-out, planning efforts should be focused on maintaining existing neighborhoods and promoting the viability of existing commercial centers such as the Downtown and Woodward Avenue.
- The city should continue exploring enhancement opportunities and potential for focused redevelopment efforts.

Existing Land Use Sub-Area Map



Source: Carlisle / Wortman Associates, Inc.

Summary of Implications for Planning

The following is a summary of the implications for planning from all of the various background studies which were conducted including Population, Housing, Economic Base, Community Facilities, Transportation, and Land Use:

- Consideration of what is occurring in adjacent communities is integral to the planning process.
- Coordination should occur with adjacent communities to benefit the entire area.
- Past plans should be utilized in all current and future planning efforts.
- The city should update and re-evaluate the city Master Plan on an on-going basis.
- The city can expect a relatively stable population base in the future.
- Decreasing household size will slow population increases and have implications on the types of new housing that will be needed in the city.
- An aging population will increase the demand for senior housing and services.
- The amount of older housing stock in the city will require proactive and on-going rehabilitation measures.
- A strong, stable residential base is vital to the city.
- Large employers in the city should be encouraged to stay and provide jobs for residents.
- The continued strong economic role of the Woodward Avenue corridor, downtown, and other economic areas are vital to the future of the city.
- Residents will continue to expect the high quality of city services and programs currently provided.
- The city should continue to seek cooperative efforts with neighboring communities to increase efficiency of services.
- On-going maintenance of existing city roadways is imperative.
- Continue efforts to lessen and slow traffic along local streets within residential neighborhoods.

- Explore alternative transportation measures to lessen traffic and improve circulation throughout the city.

- Ensure adequate parking is provided to meet the growing demand.

- As the city nears build-out, planning efforts should be focused on maintaining existing neighborhoods and promoting the viability of existing commercial centers such as the Downtown and Woodward Avenue.

- The city should continue exploring enhancement opportunities and potential for focused redevelopment efforts.

Visioning & Public Participation

Visioning Workshops

A series of town meetings were conducted as the first step in the public input phase of the City of Royal Oak's Mater Plan update effort. For planning purposes, the city was divided into seven planning subareas. A workshop was conducted for each subarea. The primary focus of each workshop was to gain an understanding of the issues pertinent to that subarea.

In conducting the town meetings, a technique called "visioning" was used. The visioning process provides a vehicle for people of diverse viewpoints to identify the common dreams and desired future for their community. Each workshop entailed identifying vision statements via a brainstorming process based upon the following principles:

- *Visions should generate new and bold ideas for the future.*
- *All ideas and visions are welcome.*
- *No ideas or visions will be criticized.*
- *Participation from all is encouraged.*

A common format was followed at each workshop. Central to the process was small group discussions. Workshop participants were divided into small groups and, with the help of a trained volunteer facilitator, generated lists of vision statements which reflected individual ideas.

Topics covered by the small groups included:

- ❑ *Housing and Neighborhood Preservation;*
- ❑ *Commercial, Office, and Industrial Land Use; and*
- ❑ *Community Services, Recreation, and Transportation.*

Topics somewhat altered for the downtown visioning workshop. After all statements were recorded, the small groups voted on which statements were "priority" visions statements. This step facilitated both the prioritization of issues, as well as built consensus amongst participants. The facilitator recorded all statements and votes. Each small group then presented its "priority" vision statements to the large group, and again the large group voted on the statements producing "top priority" visions for that particular workshop.

The following table gives the details regarding each workshop including date, location, and attendance. Nearly 200 people attended the workshops.

Royal Oak Visioning Workshops

Subarea	Date	Location	Participants
1 & 2	December 10, 1997	Royal Oak High School	12
3	November 12, 1997	Royal Oak High School	10
4	October 29, 1997	Royal Oak High School	16
5	June 17, 1997	Royal Oak Middle School	68
6	January 14, 1998	Royal Oak Women's Club	60
7	October 8, 1997	Royal Oak Middle School	32

Priority Visions

Several predominant themes arose from the visioning workshops. In general, those themes focused on the following elements:

- *Neighborhood preservation*
- *Areas around the downtown*
- *Commercial corridor improvements along major roadways*
- *Woodward Avenue improvements*
- *Downtown*
- *Community facilities*
- *Transportation*

The results of each workshop are discussed in detail by subarea in the balance of this section. However, the following table summarizes the predominant themes expressed in each subarea.

Summary of Subarea Issues

Subarea Issues	Area 1	Area 2	Area 3	Area 4	Area 5	Area 6	Area 7
Neighborhood Preservation	✓	✓	✓	✓	✓		✓
Historic Resources		✓	✓		✓	✓	✓
Relationship to Downtown					✓	✓	✓
Appearance / Image	✓	✓	✓	✓	✓	✓	✓
Transportation / Circulation		✓		✓	✓	✓	
Commercial Corridor	✓	✓		✓	✓		✓
Woodward Avenue		✓			✓		

The following identifies the priorities expressed at each of the visioning workshops. Although the majority of these issues which arose related to the subarea in which the workshop was conducted, several issues which were of city-wide significance arose and are listed separately. A complete documentation of all vision statements is contained in Appendix I for each subarea workshop, and is organized both by small group and by topic.

Subareas 1 and 2

1. *Protect single-family neighborhoods with use of buffering, only small-scale multiple-family, and prevention of commercial encroachment.*

2. *Improve Woodward Avenue corridor addressing appearance, quality of businesses, parking, pedestrian access, etc.*

Subarea 3

1. *Maintain existing character of single-family neighborhoods.*
2. *Protect historic resources and maintain trees and open space.*
3. *Promote residential scale and character of commercial areas adjacent to neighborhoods.*

Subarea 4

1. *Protect character of residential neighborhoods and encourage single-family housing.*
2. *Restrict cut-through traffic through neighborhoods.*
3. *Maintain parks as natural areas.*

Subarea 5

1. *Promote historic neighborhood identification and develop design and density standards for new development.*
2. *Encourage consistency between existing land use and zoning.*
3. *Reduce cut-through traffic in residential neighborhoods.*
4. *Ensure buffers and transitional uses between commercial areas and neighborhoods.*
5. *Improve Eleven Mile corridor with regards to façades, landscaping, signage, parking, and code enforcement.*

Subarea 6 (Downtown)

1. *Promote mix of land uses downtown including high-density housing, office space, and a retail and service mix that meets day-to-day needs of residents.*
2. *Encourage preservation of historic structures and promote urban character.*
3. *Consider a cultural facility / center and enhance civic center area.*
4. *Parking should be consolidated into mixed-use, multiple-level structures.*
5. *Consider expansion of the Downtown Development Authority south of Lincoln Avenue.*

Subarea 7

1. *Preserve integrity of single-family neighborhoods.*
2. *Ensure buffers between commercial areas and neighborhoods.*
3. *Improve appearance (landscaping, screening, signage) of Eleven Mile Road corridor and other commercial, office, and industrial areas.*

In all of the workshops, a number of visions were expressed that went beyond the boundaries of the particular subarea. The following statements of city-wide significance were expressed:

Community Facilities

1. *Improve and maintain parks.*
2. *Consider a community recreation center with a swimming pool, tennis courts, skate board and roller rink, and ice rink.*
3. *Provide programs for adolescents and young adults.*
4. *Develop strategy for school building re-use.*
5. *Consider a cultural facility / center and enhance civic center area.*
6. *Reorganize civic center and promote as a focal point.*
7. *Expand Farmers Market complex.*

Transportation

1. *Increase opportunities for walking, biking, and rollerblade trails.*
2. *Restrict cut-through traffic in single-family neighborhoods.*
3. *Promote non-motorized transportation.*
4. *Consider city-wide public transportation system.*
5. *Bury railroad below grade and reclaim land for development.*
6. *Promote pedestrian walkways downtown.*

Concept Plan Workshops

Following completion of the visioning workshops, concept plans were formulated for each planning subarea. The purpose of the concept plan was to illustrate the common themes which emerged from the visioning workshops and provide a vehicle for discussion with the Steering Committee and the public in following workshops.

The concept plans contained the overall key concepts plan for Royal Oak as well as more detailed land use concept plans for each subarea.

While the overall plan identified and illustrated the key concepts for the entire city in a generalized fashion, the subarea concepts provided and illustrated more specific recommendations. Key concepts and specific recommendations were derived directly from the visioning workshops as well as analysis of existing land use patterns and other physical conditions. Particular attention was given to areas where there are conflicts between current zoning and existing land use (i.e., single-family dwellings zoned for multiple-family).

Key concepts were identified for the following areas:

- *Residential neighborhoods.*
- *Major corridors that are primarily commercial in nature.*
- *Woodward Avenue corridor.*
- *Downtown area.*
- *Areas where existing land uses are to be maintained; and*
- *Opportunities / enhancement areas, selected target areas designated for redevelopments and/or enhancement.*

The subarea concept plan narrative followed a similar format for each subarea with a brief description of the area giving location, neighborhood character, major existing land uses, and subarea landmarks. Second, issues emerging from the visioning workshops and from further analysis were identified. Finally, subarea land use concept plan illustrated specific recommendations for future land use.

The concept plans were reviewed by the Steering Committee prior to the scheduling of the public workshops. The purpose of the workshops was to present concept plans to the public and receive their input on the general content and direction. In an effort to bring continuity to the planning process, concept plans for the entire city and each subarea were presented.

Two workshops were held. The first workshop was conducted at Royal Oak High School on May 21, 1998 and was attended by 9 people. The second workshop was conducted on June 2, 1998 at the Baldwin Theater and was attended by 63 people.

Non-Motorized Transportation Plan

Public Act 135 of 2010, one of the "Complete Streets Acts" adopted that year, requires cities receiving money from Michigan's transportation fund to prepare a 5-year plan for the improvement of non-motorized transportation facilities. Bicycling and walking facilities are also supposed to be incorporated into all transportation projects according to an official policy statement of the Federal Highway Administration (U.S. DOT Policy Statement on Integrating Bicycling and Walking into Transportation Infrastructure).

Through 2010 and 2011 the city prepared such a non-motorized transportation plan. The Active Transportation Alliance of Chicago was hired with EECBG grant funding to complete a non-motorized plan for Royal Oak. The result of their work is the Royal Oak Non-Motorized Transportation Plan dated September 13, 2011. That document is composed of recommendations on infrastructure improvements, policies, and programs to make it safer and more convenient to walk, bike, and use transit in Royal Oak.

The following portions of Royal Oak Non-Motorized Transportation Plan were revised and are hereby adopted as part of this amendment to the city's Master Plan.

Introduction

Royal Oak is laid out on a well-established grid system of streets. This street network and the distribution of land uses bring a pedestrian scale to the community. The primary means of providing non-motorized transportation is the sidewalk network. Lacking is a well-defined bicycle route system linking neighborhoods, community facilities, neighboring communities, and regional destinations.

Background

The City of Royal Oak has undertaken a number of planning studies over the past 15 years. One of a number of planning implications identified through these studies is the desire to explore alternative transportation measures to lessen vehicular traffic and improve circulation throughout the community. In other words, place a greater focus on non-motorized modes of transportation – namely bicycling and walking.

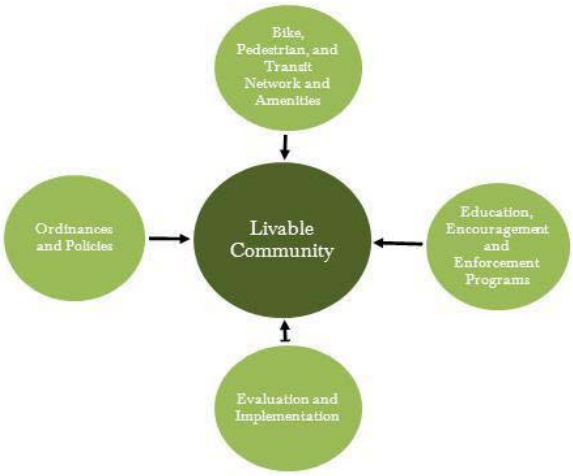
People meet at the Farmers Market to bike in Royal Oak

In 2009, the City of Royal Oak filed an application for Energy Efficiency and Conservation Block Grant (EECBG) Program funding assistance to develop a non-motorized transportation plan. Funds distributed through the EECBG Program provide assistance to

communities to implement strategies to reduce fossil fuel emissions and total energy use, and to improve energy efficiency. The city issued a request for proposals to develop a non-motorized transportation plan. In August of 2009, the City Commission awarded the Active Transportation Alliance a contract to undertake the planning project. The project officially commenced in August of 2010.

Putting in place infrastructure improvements and implementing policies and programs to encourage Royal Oak residents to utilize non-motorized modes of transportation will improve the health and livability of the community. This non-motorized plan is comprised of four implementation tracts that when employed in concert will establish a physical and cultural environment that supports and encourages safe and comfortable travel throughout the city and into surrounding communities.

It is anticipated that the changes to the physical and cultural environment will result in greater numbers of Royal Oak residents choosing to walk, bicycle, or use public transit as their preferred modes of transportation for many trips. These choices will lead to healthier lifestyles, improved air and water quality, and a more energy-efficient transportation system.



The chart to the right illustrates four implementation tracks in the plan. Each track may move forward independently as resources allow. However, it is the integration and implementation of all four tracts that will improve the livability of Royal Oak.

Why a Non-Motorized Plan for Royal Oak

Royal Oak, like many other communities, is looking for ways to be more environmentally, socially, and economically sustainable. While the quality of schools, suburban values, and cost of living attract individuals and families to Royal Oak, people's life choices are increasingly influenced by wellness, sustainability, and mobility considerations.

Many Royal Oak residents already choose to walk or to use a bicycle to get to work or school, to run errands, and for recreation purposes, and the number is growing. With its historic grid system of streets, well-distributed schools and parks, transit service, a pedestrian-friendly downtown, and an active cycling base, Royal Oak is poised to benefit from an improved pedestrian and bicycling network.

This plan intends to chart a course for developing a safe and relevant non-motorized transportation network for Royal Oak that will allow residents from age 8 to 80 to feel comfortable getting around the community on foot or by bicycle. The purposes of this Non-Motorized Transportation Plan are to:

- *Increase bicycling and walking as active modes of transportation.*
- *Make bicycling and walking comfortable and enjoyable transportation choices.*
- *Expand the network of pedestrian ways and bikeways throughout the community.*
- *Create safe and inviting walking and biking environments for residents and visitors.*
- *Contribute to the "quality of life" for current and future residents and visitors.*
- *Coordinate planned improvements with other agencies having jurisdiction over elements of the transportation network.*

Benefits of a Non-Motorized Plan

Having the ability to move about Royal Oak safely, comfortably, and conveniently, on foot or by bicycle, will provide a number of benefits to residents and businesses, including the following:

Mobility

Costs related to transportation are a household's highest expense after housing. Improving accommodations in Royal Oak for bicyclists and pedestrians will make it easier for people to get around without a car, particularly for shorter distance trips. This may allow some families to reduce number of vehicle miles traveled and the number of cars that they own.

Economy

Bicyclists and pedestrians are also consumers. Making Royal Oak more bicycle- and pedestrian-friendly will encourage people to frequent local businesses, whether they are downtown or along other commercial corridors. Bicycle- and pedestrian-friendly accommodations increase people's access to businesses. Providing bicycle and pedestrian friendly infrastructure improvements will encourage residents to travel to local shops on foot or bicycle instead of jumping in their car to spend money in another town.

Health

Sedentary lifestyles are contributing to record levels of obesity and health issues in the United States, including heart disease, stroke, diabetes, and other weight-related problems. Active living is a solution. Traveling by foot or by bike, whether for commuting or recreational purposes, is an inexpensive and convenient way to integrate healthy, physical activity into everyday life.

Environment

Improving bicycle infrastructure and encouraging more bicycling activity has the potential to reduce the number of vehicle trips and vehicle miles travelled in Royal Oak. Fewer cars on the road means less traffic congestion, reduced vehicle exhaust emissions, cleaner air, and a reduced reliance on finite energy resources.

Plan Methodology & Community Outreach

Kick-Off Meeting

The planning process kicked off on August 10, 2010 with a meeting between the Planning Commission, staff, and representatives from the Active Transportation Alliance. The participants discussed the reasons for undertaking the effort, strengths and challenges of the current non-motorized network, and steps to move the process forward.

Community Open House

The process to gather input continued with a Community Open House conducted on September 28, 2010. More than 80 Royal Oak residents and stakeholders offered input regarding local and area destinations, obstacles making bicycling and walking difficult, preferred routes, access to transit, and desired routes to build a more complete non-motorized network. Programmatic initiatives to encourage more individuals to bicycle and walk, and to do so safely, were also discussed. The comments received were used to recommend a series of education, encouragement, and enforcement programs, as well as infrastructure improvements to promote bicycling and walking in Royal Oak.

Community members share their ideas for improving bicycling and walking conditions in Royal Oak

Inventory of Existing Conditions

The Active Transportation Alliance inventoried and reviewed: local and regional plans; bicycle, pedestrian, and transit accommodations; and local programs to get a current snapshot of existing conditions for non-motorized travel in Royal Oak. This existing conditions analysis provided a baseline from which the Active Transportation Alliance developed network and programmatic recommendations to improve non-motorized travel in the community.

Recommended Facilities for Development Report

The Active Transportation Alliance presented an interim report including a draft outline for the non-motorized plan and a series of network recommendations. City staff reviewed the network recommendations and their input is reflected in the infrastructure improvements

Projected Energy Savings Analysis

Funding to develop this non-motorized plan was obtained through the Federal Energy Efficiency Conservation Block Grant Program (EECBG). One of the objectives of this funding source involves documenting energy savings and environmental benefits that might be achieved with the implementation of this plan.

One of the many positive benefits of commuting on foot or by bicycle is the energy savings and environmental impact of shifting trips from car to non-motorized travel. In the last two decades mode share for walking and bicycling has increased. A combination of additional infrastructure, educational, encouragement and safety factors have contributed to this increase. And as additional facilities for walking and bicycling are built or improved, non-motorized travel is likely to continue increasing.

One way to quantify the value of non-motorized travel and its benefits for the community is by looking at the projected reduction in Vehicle Miles Traveled (VMT) as residents substitute trips taken by car for trips taken on foot or by bicycle. For each vehicle mile not traveled, there is a resulting energy savings. In Royal Oak, at the time of complete build-out of this non-motorized plan, more than 15,000 vehicle miles traveled per day will be saved, resulting in 10 fewer tons of CO^2 emitted and 1,000 gallons of gasoline saved due to this reduction in VMT. A complete energy savings analysis can be found in appendix A of the Royal Oak Non-Motorized Transportation Plan prepared by the Active Transportation Alliance.

Legacy of Planning & Active Living

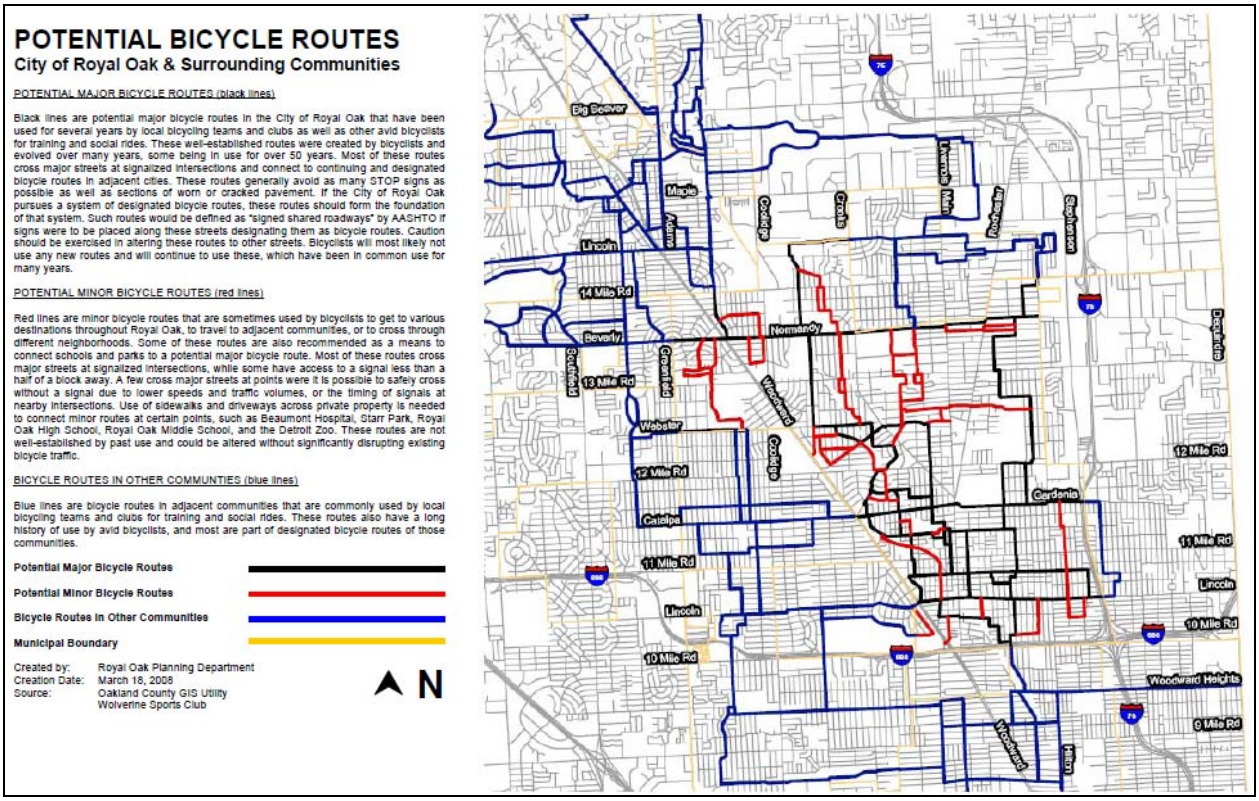
Over the last few decades, Royal Oak has enjoyed a tradition of both active living and planning for active lifestyles. In the city, there are groups that encourage bicycling, and the city itself has completed several plans that have informed or directed bicycle and pedestrian improvements.

Wolverine Sports Club

The Wolverine Sports Club (WSC) started as the Wolverine Wheelmen in 1888. The WSC promotes many active sports including bicycling. The WSC offers road touring, mountain biking, and racing programs for cyclists. The road tourists represent the largest contingent of the WSC. The focus is on proper riding technique and the touring schedule includes over 800 rides a year, including the well-known “Wednesday Night Ride” that has started and finished in downtown Royal Oak for over 50 years.

Potential Bicycle Routes Map

The Potential Bike Route Map was developed by city staff and adopted in 2008. It identifies both major bike routes used by experienced cyclists in Royal Oak and surrounding communities, and minor bike routes used to get through neighborhoods and connect to parks and schools.



Woodward Avenue Action Association

The Woodward Avenue Action Association (WA^3) formed in 1996 as a nonprofit economic development organization representing communities along Woodward Avenue. The WA^3 has been successful in obtaining Michigan Heritage Route, National Scenic Byway, and All-American Road designations for Woodward Avenue as well as close to $5 million in federal funding for various economic development, tourism, promotion and preservation efforts. A number of operating / planning documents have been approved to guide improvement projects along Woodward Avenue, including a Byway Corridor Management Plan, Attractions and Historic Sites, Public Spaces Design Framework Plan, a Transit-Oriented Development Corridor Study, and their own Non-Motorized Plan.

Other Plans & Studies

The City of Royal Oak has initiated various other planning efforts in the past, including the following: the General Development Plan (Master Plan) adopted in 1968 and updated in 1999 and 2012; the Eleven Mile Road Corridor Plan adopted in 1989; the Parks & Recreation Master

Plan last updated in 2009; the Downtown Royal Oak Master Plan adopted in 1994; and the Downtown Parking Study & Master Plan adopted in 1995.

Policy Recommendations

In addition to a robust non-motorized transportation network, Royal Oak can benefit from the adoption of ordinances and policies in place to promote safe, convenient and comfortable walking and bicycling for a wide range of cyclists. The adoption and administration of local pedestrian- and bicycle-friendly ordinances and policies will help encourage community members to walk or bicycle more often and feel safer while doing so, as well as improve driver awareness of their presence.

It is recommended that the following pedestrian- and bicycle-friendly ordinances and policies be adopted by the City of Royal Oak to support the building of non-motorized transportation infrastructure and to enhance the safety, convenience, and comfort of pedestrians and bicyclists.

Complete Streets Policy

The term "complete streets" describes a comprehensive, integrated transportation network with infrastructure and design that allows safe and convenient travel along and across streets for all users. Complete streets should be able to accommodate pedestrians, bicyclists, motorists, transit users, emergency vehicles, and delivery trucks as well as people of all ages and abilities, including children, students, adults, seniors, and individuals with disabilities.

Complete streets encourage walking, bicycling, and transit use as safe, convenient, environmentally-friendly, and economical alternatives to automobile use, promoting health and independence for all people. Careful planning and coordinated development of complete streets infrastructure also offers long-term cost savings for both cities and the state, and provides financial benefits to property owners and businesses alike.

Public participation in community decisions concerning street design and use is also encouraged by complete streets to ensure that such decisions: (a) result in streets that meet the needs of all users; and (b) are responsive to needs of individuals and groups that traditionally are not incorporated in public infrastructure design.

When designed properly, complete streets recognize and reflect the context of adjacent land uses and neighborhoods. The latest and best guidelines and standards are used for designing complete streets, such as the new walkable thoroughfare manual promulgated jointly by the Institute of Transportation Engineers and the Congress for the New Urbanism in 2010 (Designing Walkable Urban Thoroughfares: A Context Sensitive Approach).

Other benefits of complete streets include reduced traffic congestion and fossil fuel use, and improved safety and quality of life of residents by ensuring streets are safe, convenient, and comfortable for walking, bicycling, and transit as well as driving.

Following accepted best practices, the design recommendations throughout this plan are based on a "complete streets" philosophy. Complete streets are designed to enable safe access for all users of the transportation network regardless of age, ability, or travel mode. A complete street has no predefined facilities requirements, but is optimized within its surrounding context to promote safe, convenient, active transportation options for the community. A complete streets policy can be flexible since there is no "one size fits all" solution.

To ensure that these principles play a lasting role in the development of the local transportation network, Royal Oak should adopt a complete streets policy. This means committing to the accommodation of bicyclists, pedestrians, and transit users as well as motor vehicles in all new transportation construction and maintenance projects whenever appropriate.

A "complete street" in Royal Oak with sidewalks and a low traffic volume allows for safe on-road cycling.

Although this street has sidewalks for pedestrians, there is no dedicated place for bicycles. A "complete street" accommodates all roadway users using context-sensitive design.

The State of Michigan and number of communities have already adopted or are considering complete streets legislation. It is recommended that Royal Oak adopt a policy or ordinance modeled after the Michigan's Complete Streets Acts (Public Acts 134 and 135 of 2010).

Bicycle Parking Ordinance

Bicycle parking is an essential amenity for any bicycle transportation network. Residents are more likely use their bike to reach businesses if they can safely lock it at their destination. To promote the use of the network and to boost local commerce, Royal Oak should amend its parking ordinance to include requirements for bike parking at retail, commercial, multiple-family residential developments, and workplaces. The city should also consider offering long-term bike parking in its municipal parking decks and surface lots.

Bike Lane Parking Ordinance

As Royal Oak develops its non-motorized network, bike lanes and shared lanes will be installed on some local streets. In order for these facilities to be safe for bicyclists, they must be kept clear of motor vehicle traffic and parked vehicles. Royal Oak should consider the establishment and enforcement of meaningful penalties for motorists driving or parking in bike lanes, or blocking marked shared lanes with their vehicles.

Development Codes to Promote Pedestrian- & Bicycle-Friendly Environments

The City of Royal Oak should review its development codes and incorporate standards for pedestrian- and bicycle-friendly accommodations and on-site amenities. The design of facilities within private developments plays a significant role in how they are accessed by active modes of transportation. Royal Oak should update its municipal code to ensure connectivity and access for pedestrians, cyclists, and transit users in development or redevelopment projects. Examples include:

- *Use best practice designs to meet ADA accessibility requirements.*
- *Consider requiring short- and long-term bicycle parking as well as other non-motorized amenities at workplaces.*
- *Create minimum standards for bicycle parking accommodations at multiple-family complexes, commercial developments, community facilities, and workplace destinations.*
- *Reduce the required number of car parking spaces when bicycle parking is provided.*
- *Provide for a greater mix and integration of land use types, thereby decreasing distance barriers for walking and bicycling.*
- *Require public sidewalks adjacent to all developments and continuous sidewalk connectivity from the public sidewalk to building entrances – a minimum 5-foot walk in residential areas, 10-foot walk in commercial areas, and a minimum 5-foot tree bank or curbside zone.*
- *Require a maximum setback distance or build-to line for building entrances, ensuring shorter trips through parking lots and yards for cyclists and pedestrians.*
- *Adopt context sensitive design principles for all street resurfacing and reconstruction projects based on recommended standards from National Coalition for Complete Streets and the manual Designing Walkable Urban Thoroughfares: A Context Sensitive Approach adopted by the Institute of Traffic Engineers (ITE) in 2010.*

School Policy Recommendations

Safe Routes to School

Royal Oak schools are major travel destinations for the most vulnerable members of any community – children. Royal Oak public schools no longer offer bus service requiring students to find another way to get to school. The Royal Oak Neighborhood Schools Board of Education and the Parent Teacher Student Associations (PTSA) are exploring options to promote safe transportation to schools. One of the programs being considered is Safe Routes to School.

Safe Routes to School (SR2S) is a federal program to make it safe, convenient, and fun for children to bicycle and walk to school. When routes are safe, walking or biking to and from school is an easy way to get the regular physical activity children need for good health. Safe Routes to School initiatives also help ease traffic jams and air pollution, unite neighborhoods, and contribute to students' readiness to learn in school.

The program provides funding for education, encouragement, enforcement, engineering and evaluation strategies aimed at making the trip to school safe, fun, and convenient for students in elementary and middle school. SR2S provides funding for sidewalks and other infrastructure projects and requires no local match. The City of Royal Oak should work with Royal Oak Neighborhood Schools to take the following steps to assess needs and develop a strategy for Safe Routes to School:

- *Form a Safe Routes to School committee at each elementary and middle school.*
- *Collect baseline data, such as student walking and bicycling rates, parent surveys and walking and bicycling audits around each school. Free tools are available for download through the National Center for Safe Routes to School.*
- *Identify a list of education, encouragement, and enforcement strategies that address barriers to walking and bicycling to school.*
- *Complete a School Travel Plan. A template is available for download on the Michigan Department of Transportation (MDOT) Safe Routes to School web page.*
- *Identify and implement a handful of low- and no-cost strategies from the School Travel Plan.*
- *Apply for a federal Safe Routes to School grant through MDOT.*

A group of students and parents take the "walking school bus" to school. Safe Routes to School provides funding to support walking school buses and many other programs to facilitate walking and biking to school.

Elementary Bicycle Education

Completion of a safe bicycling course taught at the end of second grade and again at the end of fifth grade could also be implemented as a prerequisite for the privilege of bicycling to school. Upon completion of a course teaching children on-bike basics, how to fit a helmet, and the ABC quick check, children will earn a "bike license" which allows them to bike to school on their own beginning in third grade.

Children – and their parents – will begin seeing bicycling as a right of passage rewarded with a new privilege, which can be a powerful motivator. A culture of responsible cycling to school would likely spread into middle school. Royal Oak's involved parents would absorb the safe cycling lessons as well, and feel more comfortable about their children riding to school after their children have learned some basic safety lessons.

Public and private elementary schools could establish an end-of-year "bicycle academy" integrated into physical education classes. Children would learn basic bicycling skills, how to perform a bicycle safety check, helmet fit, and appropriate traffic cycling skills such as crossing roads, driveway dangers, and negotiating sidewalks. Children completing the academy would then receive a license permitting them to bicycle to school in third grade. The program would include the identification of safe bicycle routes to school.

A similar lesson should be taught again as students transition to middle school and again as they transition to high school. Students could participate in a ride from their neighborhood elementary school to the junior high and receive a graduated license. During all courses, students should be taught on-road cycling techniques and discuss which streets are safe for cycling.

Driver's Education Curriculum & Multi-Modal Education

The driver's education curriculum in high school could also be modified to educate student drivers regarding alternative transportation choices and on how to share the road with bicyclists. The course should integrate education on other transportation choices, and how drivers should interact with bicyclists and pedestrians into the Royal Oak High School driver's education curriculum.

As teenagers obtain their drivers licenses and gain access to automobiles, they will daily be faced with choices on how to get from place to place. With students having many options besides a car, mobility education helps students recognize those options available in their community and shows them they need not rely on an automobile to get around. Understanding basic rules for sharing the road with bicyclists and pedestrians will make Royal Oak streets safer for all users.

Mobility education lessons could be integrated either directly into the current driver's education curriculum or provided as a supplement. Lessons will reinforce the education they received in their bicycle academy instruction and will teach students how to make appropriate transportation choices based on their destination (or how to get around without a car).

Bicycle & Pedestrian Network

Bicycle Network Map

There is no such thing as a typical pedestrian or bicyclist. An individual's preferences for a bicycle or walking route may vary based on the type of trip. Their daily commute route will likely favor directness of travel over a scenic route (but not always). An evening or weekend ride, walk, or run for recreation and exercise will be based on an entirely different set of criteria. It will likely favor local roads and trails through parks and schools.

Individuals also vary greatly in their tolerance of traffic, hills, weather and numerous other factors. A child will likely choose to stay on local roadways on their way to school provided they have safe ways to cross busy streets. An adult who is just starting to bicycle again will likewise shy away from busy roadways, sticking to residential roads wherever possible. But an experienced bicyclist may choose the busy road for its directness of travel. The solution then is not one dimensional. It responds to the needs of the various users and trip types. By doing so this plan addresses the needs of the majority of the community's population, not simply a small interest group.

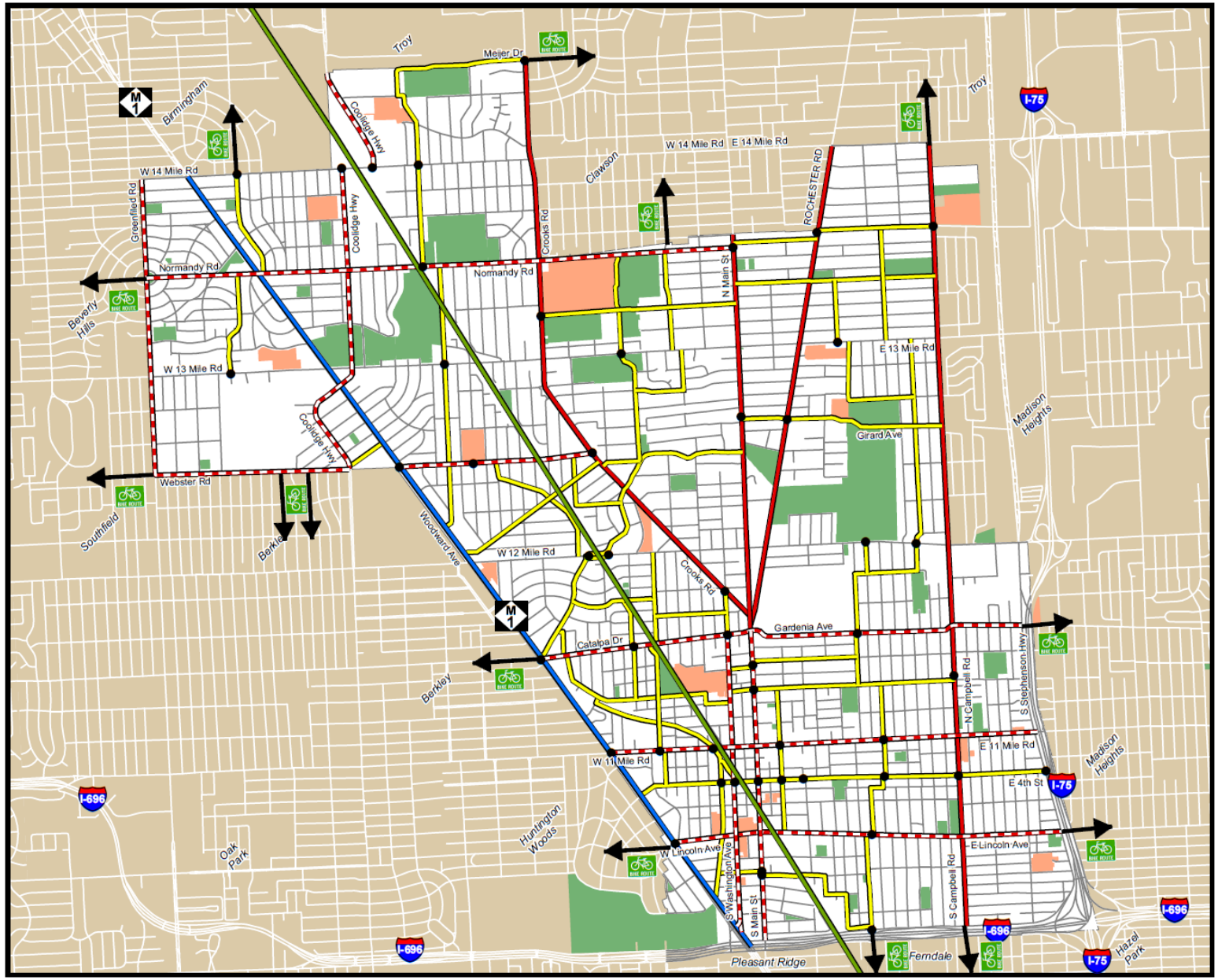
Bicycle and walking are not exclusive modes of travel either. Most bicycle trips will also include some time as a pedestrian. Also, some bicycling and walking trips may be a part of a longer multiple-mode journey. For example, someone may ride their bike to a bus and then walk from the bus to their final destination.

For all the reasons listed above, there needs to be a spectrum of non-motorized facilities available that gives the user the choice to choose the route that they feel most comfortable with - off-road trails, neighborhood connector routes, sidewalks, roadside pathways, and bike lanes are some of the most common facilities that make up the network.

The proposed non-motorized network for Royal Oak recognizes that pedestrians and bicyclists are a diverse population and that no one solution will apply to all. A combination of bike lanes, shared lanes, and sidewalks has been proposed along primary roads in the Royal Oak. Complementing the primary road system is a network of neighborhood connectors and off-road trails that provide access to key destinations while minimizing exposure to a large volume of high-speed motor vehicles.

Additional facility guidance and basic cost estimates can be found in appendices E and F of the Royal Oak Non-Motorized Transportation Plan prepared by the Active Transportation Alliance

Non-Motorized Transportation Bicycle Network Map



Legend

- Shared Lane Marking
- Bike Lane With Road Diet
- Bike Route
- Path or Trail
- Future Improvement Area
- Road Centerlines
- Connection To Adjacent City
- Traffic Signals On Bicycle Routes
- Parks & Open Space
- Educational Facilities

Created by: Royal Oak Planning Department
Creation date: 02/24/2012
Sources: Oakland County Dept of Info Tech
Active Transportation Alliance

Bike Routes

Objective. Create a bicycle network for Royal Oak by signing routes already in use by local cyclists.

Standard "BIKE ROUTE" sign from FHA's Manual on Uniform Traffic Control Devices.

Description. Many Royal Oak streets are comfortable for cyclists who possess a moderate tolerance for traffic. These routes include predominantly low-traffic residential streets. Many residents and most visitors are unaware of the city's existing bike-friendly routes. Most of these routes have been used by "cyclists in the know" for several years. They typically cross major streets at signalized intersections and connect to designated routes in adjacent cities.

Signing the network will provide immediate value and encouragement to cyclists while raising awareness of all road users and the acceptance of cycling within the city. The wayfinding signs marking the bikeway network are also appreciated by drivers and pedestrians looking for specific destinations within the city. Signage should comply with the Federal Highway Administration's Manual on Uniform Traffic Control Devices (MUTCD).

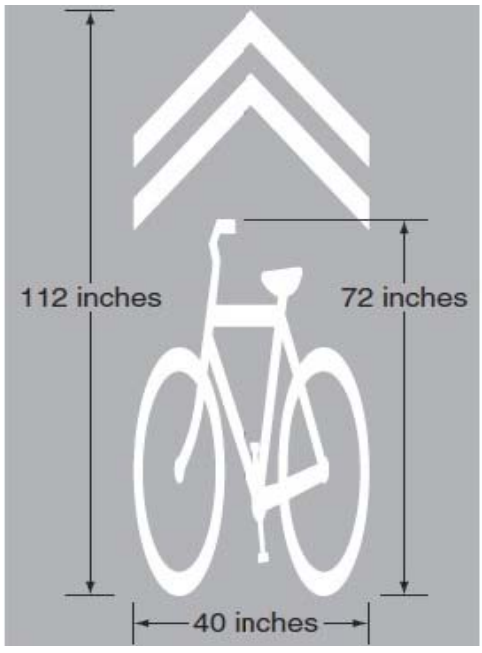
As bike traffic increases, some of these routes should be enhanced to prioritize bicycle traffic. These streets should be selected for their outstanding connectivity within the network and connections to important destinations in Royal Oak. Paint, pavement markings, planters, chicanes, and other diverters will make cycling on these streets more comfortable for even the youngest and oldest cyclists. Streets where these additional route enhancements would be appropriate include Vinsetta Boulevard, Fourth Street, and Northwood Boulevard.

Special roadway treatments to guide cyclists and cars are necessary along streets with higher traffic volumes and motor vehicle speeds. These roadway treatments include shared lane markings and road diets with bike lanes.

Shared Lane Markings

Objective. Install shared lane markings on signed bike network routes without sufficient width for 5-foot bicycle lanes and posted speed limits of 35 mph or less.

Description. Marked shared lanes and bike route signs help drivers expect and accept cyclists in the street, and the markings encourage drivers to pass bicyclists with caution at an acceptable distance. For bicyclists, marked shared lanes encourage legal behavior, such as riding on the street with traffic, and raise cyclists' comfort levels helping them ride more predictably and safely.



Recommended dimensions for a shared lane marking or "sharrow."

Shared lane marking are most commonly found on streets with a minimum 13-foot travel lane, but can be used on narrower streets to raise awareness of cyclists. The following recommended streets meet established design parameters for adding marked shared lanes, but are not suitable for dedicated bike lanes due to their narrow width and on-street parking spaces.

When on-street parking is allowed, place shared lane markings at a minimum 11 feet of center from the curb. When on-street parking is prohibited, place shared lane markings at a minimum 4 feet of center from the curb.

Recommended Routes for Shared Lane Markings

East / West Routes

Lincoln Avenue

Existing Conditions

- 36-foot paved surface.
- Parking both sides of the street.

Recommendations

- Sign the street as a bike route.
- Stripe the roadway with a continuous 7-foot parking stripe where parking is permitted.
- Place shared lane markings at 11 or 12 feet of center from the curb to create awareness for cyclists and to guide cyclists where to bike.

Eleven Mile Road (RCOC jurisdiction)

Existing Conditions

Troy Street to Stevenson Highway:

- Four narrow lanes w/ 9.5-11.5 feet each lane.

Woodward Avenue to Troy Street:

- Four lanes plus a turn lane.
- ADT = 15,000 to 17,000 vehicles / day.

Recommendations

- Sign the street as a bike route.
- Place shared lane markings at 4 to 6 feet of center from the curb to create awareness for cyclists and to guide cyclists where to bike.

Catalpa Drive

Existing Conditions

- 36-foot paved surface.
- Curb or on-street parking on both sides.

Recommendations

- Sign the street as a bike route.
- Stripe the roadway with a continuous 7-foot parking stripe where parking is allowed.
- Put shared lane markings at 11 or 12 feet of center from the curb to create awareness for cyclists and to guide cyclists where to bike.

Gardenia Avenue

Existing Conditions

- 25-foot paved surface curb-to-curb.
- No on-street parking.

Recommendations

- Sign the street as a bike route.
- Place shared lane markings at 4 to 6 feet of center from the curb to create awareness for cyclists and to guide cyclists where to bike.

Webster Road

Existing Conditions

- 36-foot paved surface.

Recommendations

- Sign the street as a bike route.
- Stripe the roadway with a continuous 7-foot parking stripe where parking is allowed.
- Apply shared lane markings on the street at the appropriate distance from the curb to create awareness for cyclists and to guide cyclists where to bike.

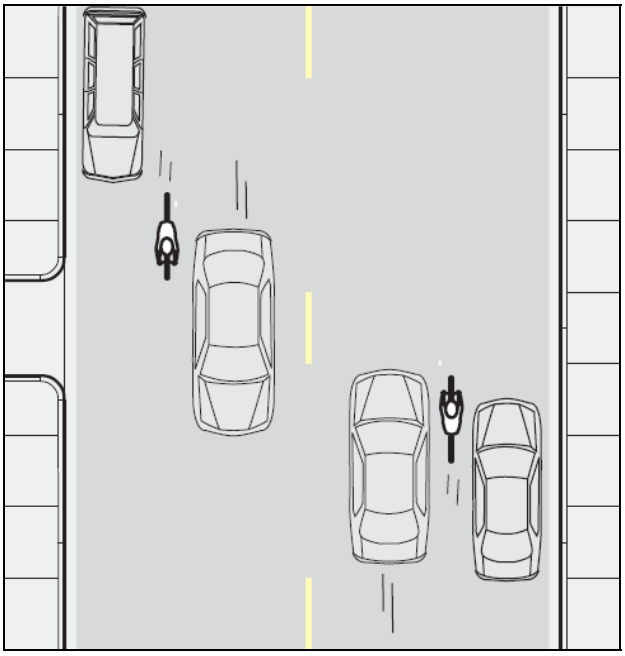
Normandy Road

Existing Conditions

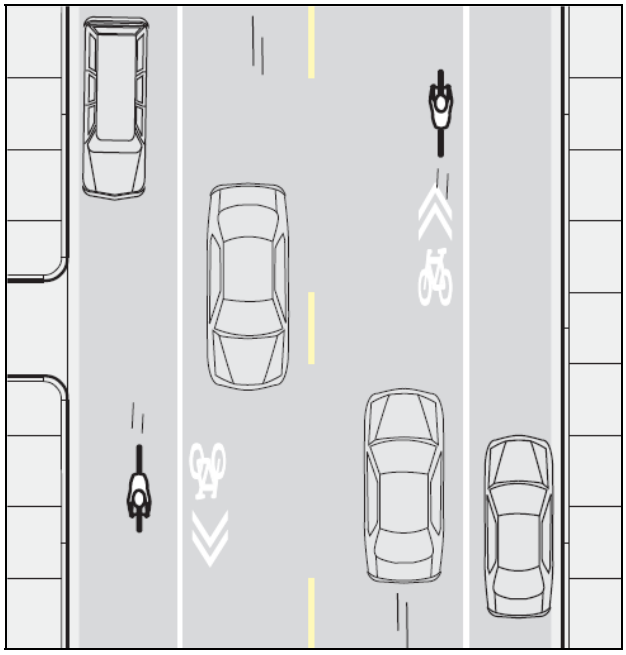
- 36-foot paved surface.
- Occasional curb or on-street parking both sides of the street.

Recommendations

- Sign the street as a bike route.
- Stripe a bike lane where on-street parking is prohibited.
- Stripe the roadway with a continuous 7-foot parking stripe where on-street parking is permitted.
- Place shared lane markings at 11 or 12 feet of center from the curb to create awareness for cyclists and to guide cyclists where to bike.



Existing conditions on Lincoln Avenue, Catalpa Drive, and Normandy Road.



Proposed conditions on Lincoln Avenue, Catalpa Drive, and Normandy Road. When a car is parked, the cyclist shares the travel lane. When no car is parked, the cyclist can use the parking lane.

North / South Routes

Main Street

Existing Conditions

Gardenia Avenue to I-696:
- 60- to 70-foot paved surface.
- Parking on both sides of the street.

North of Eleven Mile Road:
- Two lanes in each direction with a center turn lane.

Recommendations

- Sign the street as a bike route.
- Stripe the roadway with a continuous 7-foot parking stripe where parking is permitted.
- Place shared lane markings at 11 or 12 feet of center from the curb to create awareness for cyclists and to guide cyclists where to bike.

Washington Avenue

Existing Conditions

Between Eleven Mile Road and Austin Avenue:
- 36-foot paved surface.
- On-street parking on west side only.

North of Austin Avenue:
- 25-foot paved surface.
- No on-street parking.

South of Sixth Street:
- 62-foot paved surface.
- Intermittent on-street parking.

Recommendations

- Sign the street as a bike route.
- Apply shared lane markings on the street from Lincoln Avenue to Catalpa Drive.
- Place markings at the appropriate distance from the curb to create awareness for cyclists and to guide cyclists where to bike.

Coolidge Highway

Existing Conditions

- 24-foot paved surface in each direction with a center median.

Recommendations

- Place shared lane markings at 4 to 6 feet of center from the curb to create awareness for cyclists and to guide cyclists where to bike.

Greenfield Road (RCOC jurisdiction)

Existing Conditions

- 60-foot paved surface including 2 travel lanes in each direction and a center turn lane.
- Narrows to 26 feet north of Springer Avenue.

Recommendations

- Place shared lane markings at 4 to 6 feet of center from the curb to create awareness for cyclists and to guide cyclists where to bike.

Primary objectives in establishing these marked shared lanes are to identify and formalize existing east/west bicycle routes and to establish a recognized system of north/south routes. The "half mile" roads – Lincoln Avenue, Catalpa Drive / Gardenia Avenue, Webster Road, and Normandy Road – have been used for years as major east/west routes by experienced bicyclists. The proposed markings and signage will now formally identify these routes as the preferred method for east/west travel by bicycle within Royal Oak.

Although these east/west routes have a long history, there are no readily identifiable north/south bicycle routes in Royal Oak of the same stature. Bicyclists are instead forced to weave and meander down local streets though neighborhoods and subdivisions. The proposed marked shared lanes will finally begin to establish recognized north/south bicycle routes in Royal Oak, especially along Main Street and Washington Avenue.

Other east/west streets could possibly accommodate marked shared lanes, namely Twelve Mile, Thirteen Mile, and Fourteen Mile Roads. The width of these roads and their current traffic volumes (over 20,000 average daily trips) make them unsuitable for dedicated bike lanes, but shared lane markings could be placed in their right-hand lanes. Marked shared lanes could be useful on portions of these roads, especially along Thirteen Mile Road near Beaumont Hospital. Even if shared lane markings are added to these major streets they should not be signed as designated bike routes. Bicyclists should instead be encouraged to use the preferred parallel routes on "half mile" streets for east/west travel, using the "mile" roads only as necessary to reach a given destination.

Road Diets with Bike Lanes

Objective. Accommodate additional types of roadway users by putting the road on a "diet."

Standard "BIKE LANE" sign from FHA"s Manual on Uniform Traffic Control Devices.

Description. Road diets are often conversions of four-lane undivided roads into 3 lanes (two through lanes and a center two-way left turn lane). Narrowing a roadway by reducing the number of lanes or lane width is a traffic calming strategy used to decrease congestion caused by left-turning vehicles, making space for other roadway user types. The former right-of-way of the fourth lane could be used for bicycle lanes, sidewalks, and/or on-street parking. Pedestrian refuge islands, bulb-outs, and flare-outs can easily be coupled with road diets to increase pedestrian safety at crossings.

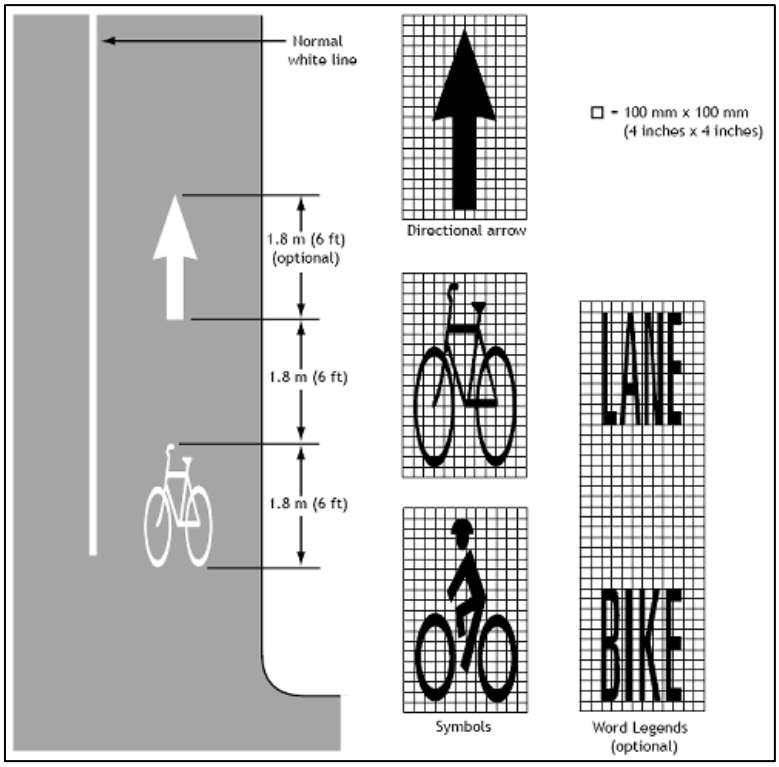
An alternative form of road diet could involve keeping the same number of lanes on a street but reducing the width of each lane. For example, a street with five 12-foot lanes of traffic (two in each direction and a center turning lane) could have its lanes reduced to 10 feet each. This would create 5 feet for a bike lane on each side while keeping the same number of travel lanes for motorists. Both forms of road diets have the advantage of avoiding expensive reconstruction of streets. Adding bike lanes can usually be accomplished by simply re-striping existing pavement, making them an extremely cost-effective form of achieving "complete streets."

The proposed road diets will each require a separate and thorough traffic study at least one year before being installed. Preferably, these studies should be conducted simultaneously to be cost-efficient. Traffic counts should be conducted and other applicable factors studied prior to implementation in order to ensure that motorists will continue to travel at a similar and acceptable level-of-service. Currently available traffic counts are five or more years old, and although still valid, new counts should be conducted along the proposed routes.

Some streets may not be able to accommodate a road diet and other options may need to be considered. Main Street and Crooks Road are already at or near the 20,000 average daily trip threshold over which a 4-to-3 lane road diet is not recommended. It may be possible to keep the same number of lanes and instead simply narrow the width of each lane to create space for bike

lanes on these streets. Otherwise, marked shared lanes may need to be used instead of bike lanes if traffic counts prove to be too high and lane widths can not be narrowed.

Dedicated bike lanes are recommended on north / south routes as part of these road diets. Bike lanes should be from 5 to 6 feet in width and separated from automobile traffic with a solid white line. A width of 3 to 4 feet can be used under limited conditions where there may not be enough space for a full-width bike lane. Lane markings should also be used according to the recommended forms and dimensions of the MUTCD, including symbols, arrows, and words. Bike lanes should also be identified separately from bike routes with signs that comply with the MUTCD. These features help cyclists ride more predictably and safely while also alerting motorists to share the road.



Recommended dimensions and markings for standard bike lane.

Recommended Routes for Road Diets with Bike Lanes

Campbell Road

Existing Conditions

North of Gardenia Avenue:
- 55-foot paved surface including 2 lanes in each direction and a center turn lane.

South of Gardenia Avenue:
- 44-foot paved surface including 2 travel lanes in each direction.

Recommendations

North of Gardenia Avenue:
- One travel lane in each direction with two-way left turn lane in the center.
- Stripe for on-street bike lanes.
- Consider using a buffered bike lane.

South of Gardenia Avenue:
- One travel lane in each direction with two-way left turn lane in the center.
- Stripe for on-street bike lanes.

Rochester Road

Existing Conditions

- Two lanes in each direction.
- No on-street parking.
- 45-foot paved surface.
- Lots of residential driveways.

Recommendations

- One travel lane in each direction with two-way left turn lane in the center.
- Stripe for on-street bike lanes.

Main Street

Existing Conditions

Gardenia Avenue to Fourteen Mile Road:
- Two lanes in each direction.
- No on-street parking.
- 40-foot paved surface.
- Lots of residential driveways fronting on this street.
- (ADT = 23,500 vehicles / day (2006)

Recommendations

- One travel lane in each direction with two way left turn lane in the center.
- Stripe for on-street bike lanes.

Crooks Road

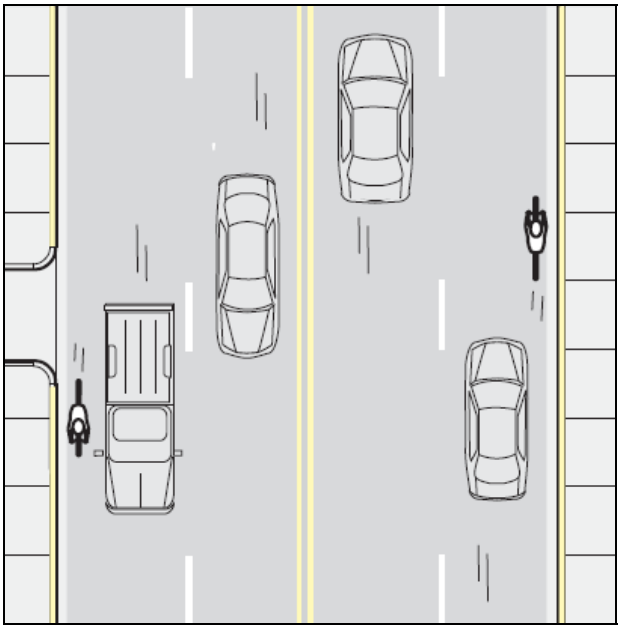
Existing Conditions

- Two lanes in each direction.
- No on-street parking.
- 40-foot paved surface.
- Lots of residential driveways.
- ADT = 24,500 vehicles / day (2006)

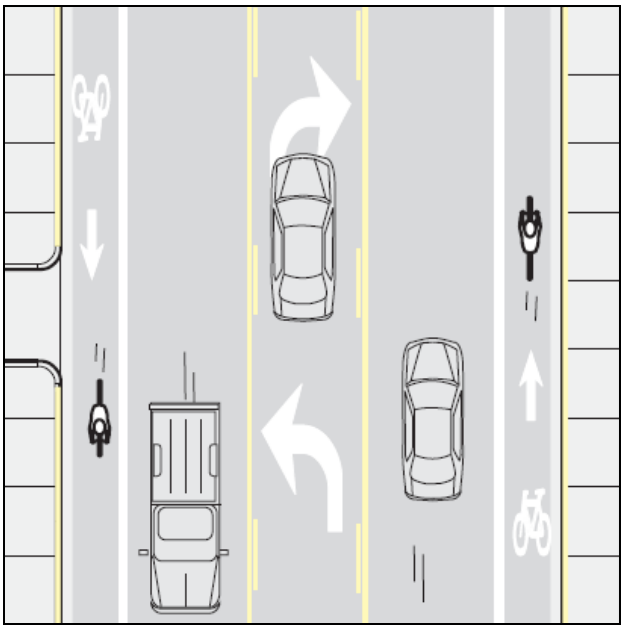
Recommendations

- One travel lane in each direction with two-way left turn lane in the center.
- Stripe for on-street bike lanes.

ADT = Average Daily Traffic

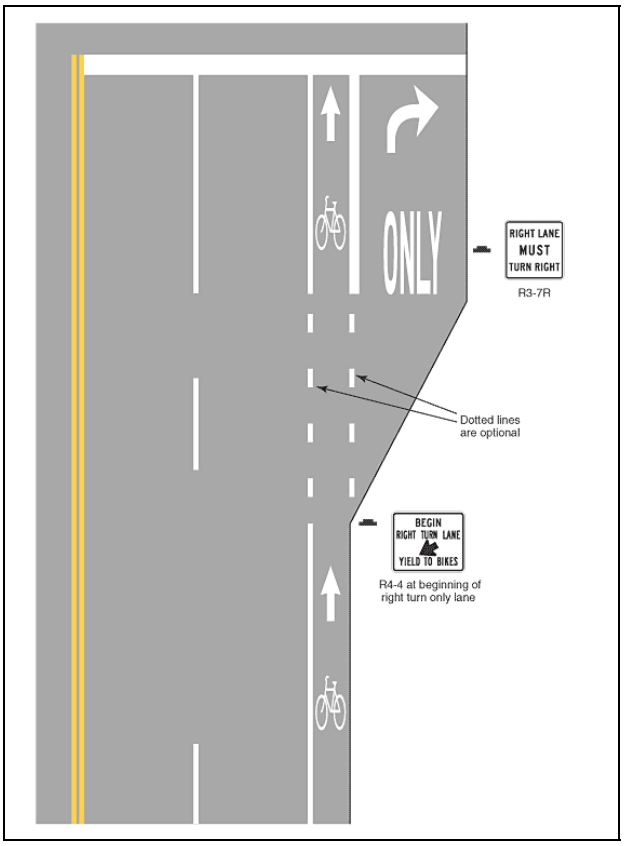


Existing Conditions Before Road Diet

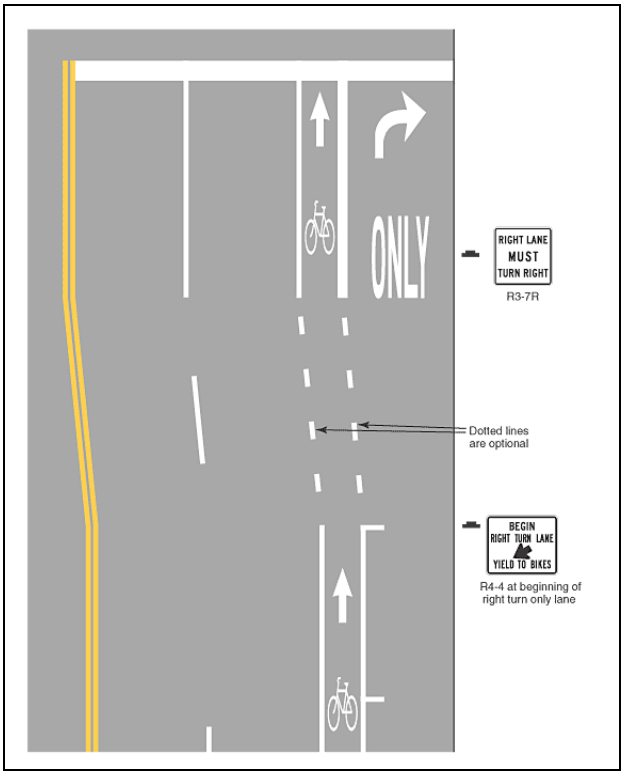


Proposed Conditions After Road Diet

Care must be exercised where bike lanes approach signalized intersections. Bicyclists and motorists alike need to be properly directed, especially where vehicles are turning right across a bike lane. Special signage and lane markings are necessary to indentify proper methods of proceeding through an intersection for both bicycles and cars.



Examples of lane markings and signage for bike lanes at signalized intersections (left and below).



Places & Corridors

First-rate places to eat, learn, shop and recreate anchor Royal Oak's high quality of life. These places of special consideration will help residents reach their favorite places without a car. Putting places first in the consideration of biking, walking, and transit improvements will help integrate sustainable, efficient, healthy living into community life.

Woodward Avenue

Woodward Avenue is one of Southeastern Michigan's most famous roads. Often called "Michigan's Main Street," this road connects from downtown Detroit to Pontiac. It has traditionally been an automobile-oriented corridor bringing from people around the region. In 2004, this street was designated a National Scenic Byway, awarded to commemorate the important and historic role this street played in American history. In 2009, it was given the prestigious All-American Road designation. It is largely a commercial corridor connecting shops, offices, restaurants, health services, and communities.

Objective 1. Implement a "road diet" for Woodward Avenue.

Description. The current configuration of Woodward Avenue was conceived prior to the opening of I-75. It was therefore designed and constructed to carry far greater volumes of traffic than it actually does today. At that time adjoining cities had larger populations, too – almost 1/3 more people than they now do. As a result Woodward Avenue now operates with significant

excess capacity, having too many lanes that are too wide for the actual volume of traffic they handle. This in turn encourages speeds which are dangerously fast for adjacent land use patterns.

Overall, Woodward Avenue is in good condition for vehicular traffic, but its non-motorized amenities are in need of improvement. Although a sidewalk system is in place, it is too narrow to be considered pedestrian-friendly, and there are no bicycle facilities at all. The speed of traffic makes walking or bicycling along Woodward Avenue difficult and dangerous. While the condition of travel lanes and the landscaped center medians are excellent, what little on-street parking that remains is usually in poor condition and badly configured.

To better accommodate pedestrians, bicyclists, and transit users as well as much needed on-street parking, a road diet should be applied to Woodward Avenue. This can be done without reducing capacity and levels of service for automobiles considering both current and anticipated traffic volumes. Elements to be considered for such a road diet include the following:

- *Eliminating the outside (far left) vehicle lane and reducing the width of reaming lanes.*
- *Reducing the speed limit to 35 mph.*
- *Improving parallel on-street parking and re-establishing it where it was removed.*
- *Providing a dedicated bike lane on the inside (far right) lane next to on-street parking.*
- *Adding a landscaped median (6-10 feet) to separate the bike lane and on-street parking from vehicle lanes.*
- *Expanding the width of sidewalks to at least 8 feet.*
- *Adding 14-foot bicycle / pedestrian bridges over I-696 on each side.*
- *Adding non-motorized rest stops (parking, lockers, maps, restrooms) at key locations (Detroit Zoo, Memorial Park).*
- *Enhancing landscaping and streetscape amenities while reducing the width of the center median.*

With Royal Oak's dense, urban development pattern, both motorized and non-motorized traffic must share the same streets. As a result, some typical road diet elements may not be appropriate for the city's portion of Woodward Avenue. These items are more suited to a conventional suburb where non-motorized traffic is completely separate from the streets and roadways. Such an element would be two-way bicycle and pedestrian pathways, or "cycle tracks," where the outside lane travels in the opposite direction of oncoming vehicular traffic. When placed immediately next to vehicular traffic these types of cycle tracks are inherently dangerous to non-motorized traffic and should not be implemented as part of a Woodward Avenue road diet. Bicycle traffic should always travel in the same direction as adjacent vehicular traffic, whether within a dedicated bike lane or a marked shared lane.

Due to its current design, Woodward Avenue is neither safe nor suitable to accommodate anyone but the most experienced bicyclists at this time. Therefore, bicycle traffic on Woodward Avenue

should not be promoted until such time as a road diet that implements the above listed design elements can be accomplished.

Objective 2. Provide swift and frequent transit service along Woodward Avenue from Pontiac to downtown Detroit

Description. A new transit system is currently being planned for Woodward Avenue from downtown Detroit to Eight Mile Road. Although originally proposed as a light rail system it is most likely to be developed as bus rapid transit (BRT) according to the latest reports. In order to continue transit service for cities north of Eight Mile Road, BRT should be implemented along the remainder of Woodward Avenue in conjunction with the Detroit project.

BRT is a high-capacity transit option that provides frequent service along a fixed route at lower costs than light rail. Stops are often spaced farther apart than traditional bus service. Faster boarding and decreased number of stops make bus rapid transit faster and more appealing to riders. BRT operates in the same manner as a light rail system except for using rubber-wheeled buses on existing pavement rather than specialized cars running on fixed rails. BRT systems can utilize many of the same amenities common of light rail, such dedicated travel lanes and priority timing at signalized intersections.

BRT could utilize the either existing center medians of Woodward Avenue for stops along the route, or the additional medians proposed to separate travel lanes from on-street parking and bike lanes as part of the Woodward Avenue road diet. Pedestrian amenities, crossing improvements, and long-term bike parking at the stops will need to be made in order to facilitate use of BRT. Potential locations for BRT stops and associated improvements include the Detroit Zoo, Eleven Mile Road or Fourth Street for connecting to Royal Oak's downtown, and Coolidge Highway and Thirteen Mile Road for Beaumont Hospital. The system could even venture off of Woodward Avenue and proceed directly to and from Royal Oak's Downtown Transit Center.

Downtown Transit Center

Objective. Increase use and awareness of the Downtown Transit Center.

Description. Transit complements bicycle and pedestrian facilities by taking people longer distances without the use of an automobile. To improve accessibility of this transit center and increase SMART bus ridership, the transit center, along with all bus stops, should post route maps and timetables for each route. Long term bicycle parking and instructions for how to put a bike on the bus should be clearly posted.

Beaumont Hospital

Objective. Increase bicycle and pedestrian accessibility to Royal Oak's largest employer, Beaumont Hospital

Description. As Royal Oak's largest employer, Beaumont Hospital attracts staff and patients from the metropolitan region. In order to decrease traffic congestion at shift changes and offer

commute alternatives for staff, improvements to bicycle and pedestrian access and on-site facilities should be made. At Thirteen Mile Road and Hillside Drive, add accommodations for bikes in this area such as bike boxes to prioritize and help cyclists safely cross the intersection. The city and hospital should also work together to offer employees commute trip reduction incentives for choosing a means of travel other than driving alone.

Regional Trail Connections

Objective. Convert the undeveloped portion of the Canadian National (CN) railroad right-of-way that parallels the existing CN railroad tracks into a regional rail-with-trail multiple-use path

Description. The CN railroad right-of-way was established and graded for 4 parallel railroad tracks, but only two were ever laid, leaving substantial room for a parallel multiple-use path that is 10 to 12 feet wide.

As an older Detroit suburb, Royal Oak is landlocked by surrounding communities with difficult access to the region's few regional trails, such as the Paint Creek and Clinton River Trails. Long term, this path could stretch from Pontiac all the way to downtown Detroit. The CN railroad right-of-way parallels historic Woodward Avenue, presenting an opportunity for story telling along a non-motorized, sustainable, and slower-paced corridor.

Many of the street crossings north of Royal Oak are above grade, offering safety and appeal to trail users. In downtown Royal Oak, crossings become at-grade, offering convenient access for trail users to Royal Oak's shops, restaurants, businesses, schools, and parks. Access ramps at half-mile and mile roads provide an essential front door to the trail, a health infrastructure connection for all Royal Oak neighborhoods and residents. Parallel trail development would supplement and showcase current Amtrak service.

Amtrak only uses the tracks twice a day and freight use occurs mostly at night, presenting a rare acquisition opportunity prime for leveraging national resources such as federal trail banking legislation and support from the Rails to Trails Conservancy. Public desire is already amply demonstrated by extensive paths from current use of the railroad right-of-way by cyclists, walkers, and runners.

Plans for any trail within the railroad right-of-way will have to be flexible. Although the space is used infrequently at present, it is still possible that the right-of-way could be used for local light rail transit or even a regional high-speed rail system. Alternative designs and possibly locations, too, may need to be pursued if the right-of-way is ever developed for additional rail capacity.

Non-Motorized Amenities

Pedestrian Amenities & Crossing Improvements

Objective. Improve the pedestrian network by incorporating 'best practices' traffic control devices such as countdown timers, ladder-style crosswalks, bidirectional curb cuts, and pedestrian refuges where appropriate.

Description. A near miss by a car or long waits to cross safely will quickly discourage a person from choosing to walk or bike to their destination. Improving crossings is a cost-effective strategy to encourage walking, biking, and transit use. They also save lives. These simple improvements are recommended at all of the network's major intersections, with priority given to areas with higher volumes of pedestrian traffic such as in downtown Royal Oak, schools, parks and community centers. The following recommendations illustrate intersection and crossing improvements that should be made. Technical guidance for these recommendations can be found in the MUTCD:

Install Countdown Pedestrian Signals

Pedestrian crossings at all signalized intersections should be upgraded with countdown pedestrian signals. These signals show pedestrians how much time they have to cross the street and discourage pedestrians from running across the street when there is not enough time.

Install Bidirectional Curb-Cuts & Truncated Domes

All new intersection crossings should be equipped with bidirectional curb-cuts and truncated domes to insure the intersection complies with ADA standards. These amenities direct the visually impaired through an intersection at a crosswalk.

Curb extensions and clearly striped crosswalks with red truncated domes make it easy for people of all abilities to cross the street.

Countdown timers let pedestrians know how much time is left before the traffic signal changes.

Install & Re-Stripe Visible Crosswalks

All crosswalks in high-use areas should be upgraded to "ladder-style" markings per the MUTCD and be installed where missing. These crosswalk styles are significantly more visible to drivers than the traditional parallel line crosswalks and promote safe crossing at both signalized and non-signalized intersections.

Appliqués that resemble stones, brick pavers, or other types of aesthetic features could also be used to mark pedestrian crossings. They provide just as much visibility for pedestrians and motorists, offer a more decorative alternative to ladder-style crossings, and are a more cost-effective option than the actual paving materials. Appliqués can also be easily replaced after being worn though by cars, trucks and snow plows. The pedestrian crossing between the library and Farmers Market across Troy Street is made from such an appliqué (right).

Install Curb Extensions Along Streets & Intersections

A curb extension reduces the roadway width to create a shorter crossing for pedestrians. Curb extensions can also improve driver and pedestrian visibility all while calming motor vehicle traffic.

Continue to Support & Install Street Furniture in Pedestrian-Oriented Areas

Pedestrians are sensitive to character and convenience features which can encourage more people to walk further as well as more often. Some examples include pedestrian scale lighting, seat walls, benches, trash cans, shade trees, plantings, and public art. These amenities are most effective in areas with higher pedestrian traffic, such as shopping districts, and to improve the pedestrian experience along arterial road corridors.

Bicycle Amenities

Objective. Improve the bicycle network by incorporating 'best practices' bicycle amenities such as wayfinding signage and bike racks.

Description. Providing people with information about where to bike and a safe place to lock a bike will encourage a person to choose biking. Improving signage and bike parking are a cost-effective strategies to encourage biking. These simple improvements are recommended at all of the network's major routes and destinations, with priority given to areas with higher volumes of bike traffic such as in downtown Royal Oak and at schools, parks, workplaces and community centers. Technical guidance for these recommendations can be found in the Manual for Uniform Traffic Control Devices (2009 edition).

Traffic Signal Detectors for Bicycles

Objective. Place consistent markings at signalized intersections using vehicle detector loops to show cyclists where to place their bike for detection by demand-actuated signals.

Description. Unless properly positioned over an under pavement detector loop, most bikes will not activate demand-actuated traffic signals. The MUTCD placement marking shows cyclists where to position their bicycle. Prioritize installation of detector loops at signalized intersections

on local cross streets and on designated bike routes. Some traffic signal loop detectors will not detect a bicyclist regardless of the bike's position. A near-term priority is to adjust these loop detectors so they will detect most cyclists.

Bicycle Network Signs

Objective. Mark the Royal Oak bicycle network using signs that display destination, direction, and distance.

Description. The MUTCD also provides guidance and specifications for implementing a wayfinding sign program. In the near term, the city should use the Bike Network Map in this plan to guide which streets and major destinations to sign, focusing on routes that cyclists identified as most comfortable for cycling. In addition to guiding cyclists, signs are useful as wayfinding for all residents and visitors. Begin by signing frequently-used local routes and continue adding signs to mark the bicycle network as it develops.

Bike Route Sign Directing Cyclists to Key Destinations

Bicycle Parking

Objective. Install inverted-U or functionally similar bike racks in commercial and retail areas, at public buildings and parks, and on publicly owned property near businesses and multiple-unit residences.

Description. Racks should be located within clear view of the destination's entranceway, preferably as close as the closest motor vehicle parking space, and no more than 50 feet away from a building entrance. If multiple racks are clustered in a visible and signed location, they can be sited up to 100 feet away from the entrance. Placing racks further away than this discourages their use and cyclists are likely to ignore the racks and look for a closer place to lock up. Rack placement should be coordinated with other street furniture such as benches, trash cans, newspaper boxes, planters, and street lights along the curbline to create a buffer between the street and the pedestrian zone.

Bike parking installation should focus on destinations along existing and proposed bicycle corridors. By choosing racks with a unique color or shape at high visibility locations, the racks can add character to a community. Coordinating purchases and installation with regional agencies such as SMART or Oakland County are likely to reduce the per-unit cost of racks.

The inverted "U" or similarly shaped racks, such as an "A" frame or post-and-loop rack, are recommended for public bicycle parking. These racks are able to support a bicycle upright by its frame in two places – either at the top tube, down tube, or seat tube – while preventing its wheels

from tipping over. They also allow a bicycle's fame and one or both wheels to be secured simultaneously.

Typical Inverted "U" Style Bike Rack on Commercial Street

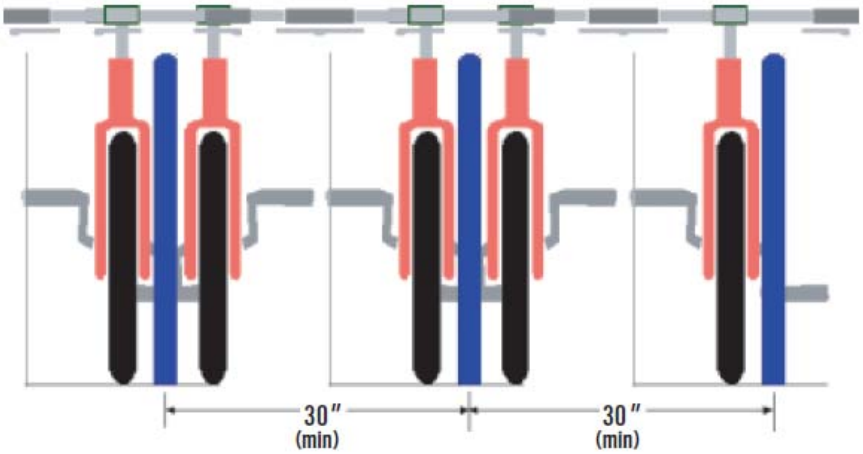
Inverted "U" racks allow two bicycles to be parked side-by-side to one rack. With a single bicycle, they also allow front-in parking (front wheel and down tube secured to rack) and back-in parking (rear wheel and seat tube secured). Bicycles with a horizontal top tube instead of a diamond-shaped frame can also be secured to these racks. These racks offer significant resistance to being cut or detached with common hand tools thereby minimizing the risk of bicycle theft. Their size allows them to be used in locations with limited space, even when combined in rows of multiple racks. When properly used they will not damage bicycle wheels the way other types of racks will.

Other common bicycle racks types should be avoided, such as comb, toaster, or schoolyard style racks. These racks secure bicycles by their wheels only and not by the frame. Even when properly used, bicycle wheels can be easily bent and damaged. They are also highly susceptible to theft. Most avid cyclists will not use such racks for these reasons.

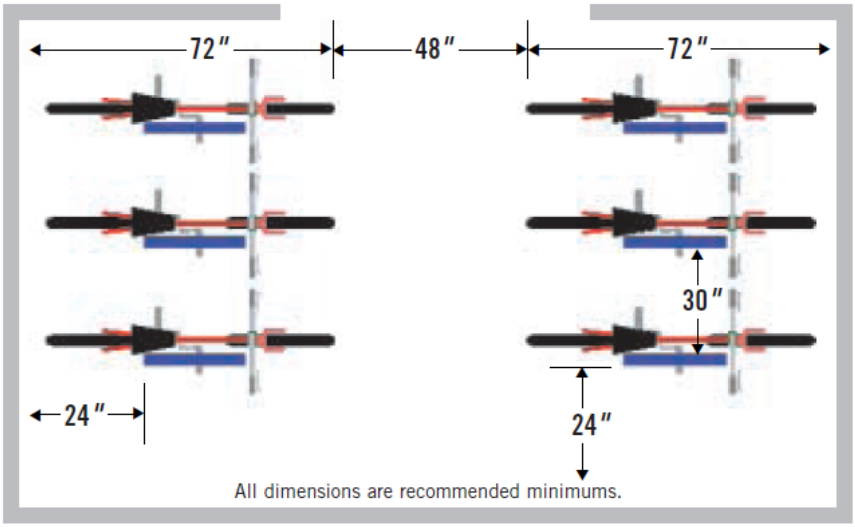
Although not an ideal method, wave racks can be used for bicycle parking in certain circumstances. When used properly – back-in and front-in parking – wave racks can accommodate several bicycles. Unfortunately, wave racks are often used improperly for side-by-side parking significantly reducing their capacity. Wave racks also require significantly more space than rows of inverted "U" racks, an important concern where sidewalk width is limited. A wave rack with 3 loops needs at least 48 square feet of area. A row of 3 inverted-U racks has the same capacity but requires only 30 square feet

For ease of access, inverted "U" racks mounted in a row should be placed on 30-inch centers. This allows enough room for 2 bicycles to be secured to each rack. But if the racks are placed too close together, it becomes difficult to attach 2 bikes to the same rack. If it is too inconvenient and time consuming to squeeze the bikes into the space and attach a lock, cyclists will look for an alternative place to park or use one rack element per bike and reduce the projected parking capacity by half.

The minimum separation between aisles of a rack area or "bicycle parking lot" should be 48 inches. This provides enough space for one person to walk one bike. Wider aisles up to 72 inches can be provided in high traffic areas where many users park or retrieve bikes at the same time, such as at transit centers, college classrooms, etc. Six feet or 72 inches of depth should be allowed for each row of parked bicycles. Conventional upright bicycles are just less than 72 inches long and can easily be accommodated in that space.



Bicycle rack space (above) and a typical bike "parking lot" (below). The recommended inverted "U" style can park up to two bikes per "U" and requires minimum spacing between each rack and around each parking spot. (Source: Association of Pedestrian & Bicycle Professionals)



Transit Amenities

SMART Routes & Information

Royal Oak has eleven SMART bus routes that serve the community, taking residents along Woodward Avenue, Main Street, Eleven, Twelve, Thirteen and Fourteen Mile Roads and into neighboring communities. Transit service helps residents choose walking and biking for many of their longer daily trips. People are generally willing to walk or bike up to 10 minutes to a dependable and direct transit access point, roughly a one-half mile walk or a 2-mile bike ride. Connecting the local network to transit hubs will help to coordinate the local system with regional transit service.

Objective. Create awareness for routes and increase access to buses.

Description. Integrate the active transportation network with current SMART routes by improving stop visibility, posting route maps and time tables at stops, providing enhanced amenities such as paved waiting areas at all stops, covered shelters at priority stops, participating in SMART route planning to increase frequency of service, and educating residents on the potential trips that can be made using the available service. Posting the following information at each stop will create awareness for the bus system: route name and number; route map with information about where each bus route goes; bus schedules including estimated arrival times at major destinations along the route; and instructions on how to use bike racks on buses.

SMART recently installed new shelters with a modern design in several communities throughout the region, including Ferndale (below left) and Birmingham (below right). Advertising was used to defray the costs. The city should encourage SMART to install similar shelters in Royal Oak.

Program Recommendations

In addition to infrastructure and policy, the city and organizations throughout the community can work together to educate people about safe bicycle and pedestrian habits, encourage increased use of walking and biking as a mode of transportation, and enforce the rules of the road through both positive and educational methods. The following sections are a listing of education, encouragement, and enforcement programs that, when implemented, will increase bicycle and pedestrian traffic.

Resources for holding these programs including both funding and a list of organizations that can provide guidance can be found in appendix E of the Royal Oak Non-Motorized Transportation Plan prepared by the Active Transportation Alliance

Education

Residents of Royal Oak will begin to feel more comfortable bicycling when they know the rules of the road and how to safely ride on the streets. The following recommendations include ways to distribute information and educate residents of various age levels and abilities on bicycling and pedestrian issues.

Mobility Education Campaign

Distribute information on rules of the road for drivers and cyclists to community members in partnership with other organizations.

- *Distribute one page informational sheet in the Insight newsletter, library newsletters, school notices, utility bills, and the city website.*
- *Use local media outlets such as WROK and Facebook to broadcast videos and publish articles on bike and pedestrian safety.*
- *Arrange for bicycle and pedestrian information to be reprinted and/or distributed by partner agencies, utility companies, and the private sector*
- *Partner with American Cycle & Fitness / Trek Store and the Wolverine Sport Club to distribute publications.*
- *Work with Beaumont Hospital and local doctors to distribute information on the health benefits of cycling and walking.*
- *Offer bike maintenance and traffic skills classes to adults and teens through the Recreation Department, schools, other community groups and local shops*
- *Hang posters demonstrating safe cycling at the Salter Center, Mahany / Meininger Center, Ice Arena, Farmers Market, and other community destinations.*

Free educational materials can be found through the Michigan Trails and Greenways Alliance, League of Michigan Bicyclists, Active Transportation Alliance, Michigan Bicycle Racing Association, and Michigan Mountain Biking Association.

Enforcement

Successful implementation of this plan will result in an increase in active transportation users and create new challenges for enforcement of laws. At the same time, traffic safety laws are only as good as the enforcement of those laws. Royal Oak should prioritize enforcement of laws that deter reckless behavior by road users.

Train Police Officers on Bicycling & Pedestrian Issues

Objective. Train all officers, not just on-bike officers, on laws and enforcement techniques for bicyclists and pedestrians.

Benefits. By learning bicycle and pedestrian laws and enforcement techniques, officers are more likely to enforce them and make Royal Oak's streets safer for cyclists and pedestrians. Police officers enforce laws they understand and support.

How It Works. Officers receive additional training on the following topics. Holding a full or half training day, screening videos at roll call, distributing Action Alerts, memorandums to police

officers, or requiring officers to watch training videos are all ways to get the information out to officers.

- *Rules of the road for bicyclists and pedestrians*
- *Illegal motorist behaviors that endanger bicyclists and pedestrians*
- *Most dangerous types of bicycling behaviors*
- *Most common causes of bicycle and pedestrian crashes*
- *Importance of reporting bicycle and pedestrian crashes*
- *Importance of investigating serious bicycle and pedestrian crash sites*
- *Best ways to prevent bicycle theft*
- *Best practices for policing by bicycle*
- *Transportation, health, and environmental benefits of bicycling*

Encouragement

Although most people understand the many benefits of walking and biking, it can be challenging to change a person's usual travel routine. By starting with schools, making information available, holding events, and leading by example, the people of Royal Oak will be encouraged to walk and bike. The following are a few of the many ways the city can work with community members and organizations to encourage people.

School Travel

Encouraging students to walk or bike to school will instill life-long active transportation habits in the younger residents of Royal Oak. Some examples of school based initiatives to encourage walking and biking include:

- *Walking Wednesdays – designate one day per week where all students are encouraged to walk to school.*
- *Walking School Buses – parent volunteers lead a walking group from their neighborhood to school.*
- *Mileage Clubs – classes or schools track students walking and biking habits and compete against each other.*
- *Walking and Biking Routes – distribute recommended walking and biking routes to parents.*

Bicycle-Friendly & Walk-Friendly Community Awards

Objective. The City of Royal Oak gains local and national recognition as a bicycle- and/or pedestrian-friendly community.

Description. Improving Royal Oak's bike and pedestrian network will make the city an even better place to live, work, shop and play. National recognition of these efforts can generate commerce and increase property values. The Bicycle Friendly Community Program (BFC) led by League of American Bicyclists provides incentives, hands-on assistance, and award recognition for communities that actively support bicycling. To apply for recognition, a step-by-step guide is available through the League of American Bicyclists website. Walk Friendly Communities is a similar program the Pedestrian and Bicycle Information Center uses to honor bicycle- and pedestrian-friendly cities.

Royal Oak can be eligible for a Bicycle Friendly Community or Pedestrian Friendly Community award.

Community Encouragement through Information Access

Objective. Provide easily accessible information on recommended routes, rides, and classes.

Description. Knowledge about when and where to bike and walk safely supports increased use of active transportation. The following are some ways to make bicycle and pedestrian information more accessible:

Royal Oak Non-Motorized Facebook Page – Royal Oak can reach a large and diverse audience by posting regular updates about the non-motorized plan on an easily accessible Facebook page. This site can also be used to promote local events such as bike maintenance classes and convey important safety information. A member of the bicycle and pedestrian advisory committee could manage the page.

Bike Network Map – A user-friendly bike and pedestrian network map would encourage use of the improved pedestrian and bicycle network and patronage of the key places identified in this plan. Royal Oak should work with local volunteers, the Wolverine Sports Club, Michigan Trails and Greenways, or a contractor to produce and distribute a free active transportation network map that includes safe bicycling and walking routes to key places and safety tips. Beaumont Hospital, the DDA, American Cycle & Fitness / Trek Store, and the WA^3 could be approached for sponsorship and/or distribution of the map.

Transit Information – Royal Oak can increase use of public transit by distributing transit service information. The city can partner with the SMART bus to display timetables and install transit vending machines in key places besides the Royal Oak Transit Center, as well as promote SMART's existing transit mapping service available on Google's Transit Trip Planner.

Community Events & Programs

Community events centered on walking and biking will create awareness for active transportation and encourage residents who do not often walk or bike to start doing so. These

events also provide opportunities for community members to come out and get to know their neighbors, shop locally, and explore their community. Some examples include:

Bike-and-Dine – progressive dinner where patrons bike to a restaurant, eat one course, and proceed by bike to another restaurant a few miles away by bike. Bike-and-Dine rides have been organized in Royal Oak and should continue.

Open Streets Royal Oak – Close one street in Royal Oak to cars for half a day and allow residents to bike and walk in the middle of the street. Coordinate with local street closing festival such as a street fair, community run, or family bike ride

Shop by Foot and by Bike – Residents are rewarded with discounts for shopping and visiting stores or restaurants by bike. Coordinate with WA^3 and the DDA.

Car Free Day – Choose a single day to encourage residents and people who work in Royal Oak to choose a mode of travel other than their car for a whole day. Reward walkers and cyclists with gifts and snacks. Track participation and allow businesses to compete against each other.

Community Bike Rides – Organize a large scale bike ride event in Royal Oak. This can make a great fundraiser and bring visitors from neighboring communities. These events can be organized alone, or can be an addition to local events such as the Oak Apple Run, Birmingham Bicycle Festival, and Green Cruise.

Implementation

This plan provides a comprehensive set of network, policy, and programming ideas. The effective implementation of this plan will require leadership by Royal Oak staff and residents. It will also require cooperation with community organizations, neighboring municipalities, Oakland County, RCOC, and MDOT.

Bicycle & Pedestrian Advisory Committee (BPAC)

Background. Plan stakeholders—including representatives from city departments, local bicycle advocates, residents, and the Royal Oak Planning Commission—gave input on this plan to guide and direct its development.

Objective. The City Commission should appoint a Bicycle and Pedestrian Advisory Committee (BPAC). The BPAC should work to implement the recommendations set forth in this plan and be charged with directing and overseeing its implementation. The BPAC will facilitate coordination between the city, area schools, and institutions as well as oversee the development of related programs such as Safe Routes to School, bicycling and walking events, and education. The committee should set goals for plan implementation and monitor those goals. Examples of goals are number of bike racks installed, miles of bike routes signed, number of educational events held, or number of group rides held.

The BPAC could take one of several different forms. The Planning Commission could serve as the BPAC since it is charged with overseeing the city's overall Master Plan and Capital Improvements Programs, including the recommendations of this plan. As an alternative, the BPAC could be setup as a subcommittee of the Planning Commission. Members from the city's previous non-motorized task force could be included as liaisons or ad-hoc members if the BPAC was formed as a subcommittee of the Planning Commission.

A separate, stand-alone body could also be established as the BPAC. This form should include at least one Planning Commission member and a city staff member charged with being the Bicycle and Pedestrian Coordinator. Up to 5 residents / advocates with a strong interest in bicycling and walking should be included, including at least one individual representing the disabled community. Liaisons from Royal Oak Neighborhood Schools, WA[3], Beaumont Hospital, the DDA, Oakland Community College, and local bike shops should also be included.

The group should meet at least quarterly to review plan progress and set next steps and implementation, and should take an active role in implementing the safety and encouragement objectives. Representatives from the City Manager, Engineering, Planning, Police, Fire, and Recreation Departments as well as the senior and community centers should be available on an ad-hoc basis.

Bicycle & Pedestrian Coordinator

Expand a position within the Planning or Engineering departments responsible for convening the BPAC and implementing this plan. This individual will manage the implementation of the plan's facility recommendations, coordinate with other city, county, and state transportation projects, and pursue grants to implement this plan's recommendations. A long-term goal for this position is to grow into a full-time grant-funded position. His/her primary responsibilities are as follows:

- *Convening the BPAC.*
- *Managing the implementation of the plan's recommendations.*
- *Coordinating with the BPAC to establish baseline walking and cycling metrics and regularly measuring changes.*
- *Serving as point of contact for residents regarding the plan.*
- *Coordinating with other city, county, and state transportation projects.*
- *Reporting progress annually to the City Commission.*
- *Pursuing grants for the plan's implementation.*
- *Applying for a Bicycle Friendly Community award through the League of American Bicyclists and the Walk Friendly Community Award through the Pedestrian and Bicycle Information Center.*

Capital Improvements Program

The Michigan Planning Enabling Act mandates the preparation and annual review of a 6-year capital improvements program by the Planning Commission. Capital improvements programs consider the funding and timing of all municipally-related capital needs including street reconstruction projects.

The Planning Commission, in conjunction with the BPAC, will need to monitor the city's capital improvements program on an annual basis to ensure the non-motorized facilities and infrastructure called for in this plan are incorporated into the specifications for street reconstruction projects – bike route signage, shared lane markings, road diets with bike lanes, etc. This will be the most important method of implementing the plan's recommendations by seeing that non-motorized amenities are first budgeted for and then built.

Indicators & Evaluation

The overall success of this plan will be judged by how the city implements the recommendations and the impact they have on the safety and operations for all users in the community. This section establishes a set of performance indicators to quantitatively judge the effectiveness of the plan. As this plan is implemented, reviewing the following performance measures and setting goals for the future will help measure the success and effectiveness of this plan. These indicators should be reviewed annually by the BPAC. Should these indicators show that the objectives are not being met, (e.g. bicycle/pedestrian crash rates go up instead of down), initiatives and programs in future years should focus on addressing the specific indicators.

Mode Share

The city should have the goal of increasing the number of trips taken by walking and biking.

Vehicle Crash Rates

The city should work with MDOT and RCOC to monitor vehicular crashes on an annual basis with the goal of reducing vehicular crashes.

Pedestrian & Bicycle Crash Rates

As stressed throughout the study, individuals are less likely to walk or bike if they don't feel safe. The city should work with MDOT and RCOC to monitor pedestrian and bicycle crashes on an annual basis with the goal of reducing both types of crashes.

Allocate Funds for Bike Parking & Route Signage on Annual Basis

The city can make a strong commitment to biking by allocating a set amount of money per year towards bike parking and route signage.

Maintain Existing Parking Demand While Increasing Office & Retail Space

The city should continue to encourage use of transit and communing by foot and bike. The goal should be to maintain the existing parking demand, even as the city grows in the future.

Grants & Other Resources

Grant programs and organizational resources should be reviewed and updated annually to capture changes in funding sources and funding cycles. Funding cycles can be unpredictable and the approval process through MDOT can be challenging. Integration of recommended projects with other capital projects can streamline costs and timelines and even open other funding sources.

Woodward Avenue Transit-Oriented Development Corridor Study

In October of 2010, the Woodward Avenue Action Association (WA^3) convened a task force to create a plan for advancing transit-oriented development along Woodward Avenue in southern Oakland County. This effort was prompted by planning currently underway for in Detroit for what was originally a light rail project but which is now poised to become a bus rapid transit (BRT) project. Key members of the task force include elected officials from the cities of Berkley, Birmingham, Ferndale, Huntington Woods, and Royal Oak, as well as institutional and business partners from MDOT, SMART, SEMCOG, the Michigan Suburbs Alliance, the Detroit Zoo and Beaumont Hospital.

The primary task force mission is to identify the land use, zoning, and master plan changes needed to support transit-oriented development along Woodward Avenue. The result of this effort is the Woodward Avenue TOD Corridor Study for South Oakland County prepared by LSL Planning, Inc., of Royal Oak with direction from the WA^3 Transit Task Force. The corridor study was paid for in part by a Planning and Research Grant from MDOT.

The following portions of the corridor study were revised and are hereby adopted as part of this amendment to the city's Master Plan.

Introduction

What Is Transit-Oriented Development?

Transit-oriented development (TOD) is a concept intended to encourage use of mass transit systems through site design, system planning, and road patterns. It involves pedestrian-friendly development that includes mixed-use land forms and increased accessibility for pedestrians, bicyclists, and transit users. TOD is an attempt to provide compact, walkable communities with a heightened sense of place for community residents. TOD's typically involve uses that best support transit, transit-friendly site and building design, a mixture of uses clustered around a transit stop or transit corridor, and a walkable environment.

Transit Options

While the corridor study did not evaluate transit alternatives, an understanding of possible future transit options can help recognize why TOD is important for Woodward Avenue. The right mix and design of land uses can help make transit more feasible. The following are the key transit types expected to serve Woodward Avenue communities in the future:

Enhanced Local Bus Service

SMART currently operates buses along Woodward Avenue as part of its regional transit system. This effort will help identify how to improve pedestrian connections to stops and crossing Woodward Avenue. Future improvement could include more frequent buses or express buses.

Bus Rapid Transit (BRT)

Depending on what occurs south of Eight Mile Road with Detroit's project along its portion of Woodward Avenue, a possible mode of transit in Oakland County could be bus rapid transit (BRT) with dedicated bus lanes and express buses with fewer stops. BRT provides the service quality of rail transit with the flexibility and cost savings of regular bus transit.

Densities Required to Support Transit

Supports:	Residential (units)	Business (employees)
Light Rail Service Bus Rapid Transit	15 to 24+	150+
Local Bus Service	7+	40+
Carpools & Vanpools	1 to 6	2+

Source: LSL Planning, Inc.

Light Rail Transit (LRT)

Light rail service was previously being explored south of Eight Mile Road. Extending any future light rail line from Detroit into Oakland County is one possibility.

Why Plan for Transit-Oriented Development?

TOD development can improve the local economy along Woodward Avenue and increase transit ridership by making the environment attractive to pedestrians and bicyclists, especially around transit stops. This typically involves inviting building design, careful interface between public and private land, and thoughtful placement of vehicular parking lots. It often results in more pleasing aesthetic environments and reduced automobile dependency, which then can lead to a host of secondary benefits:

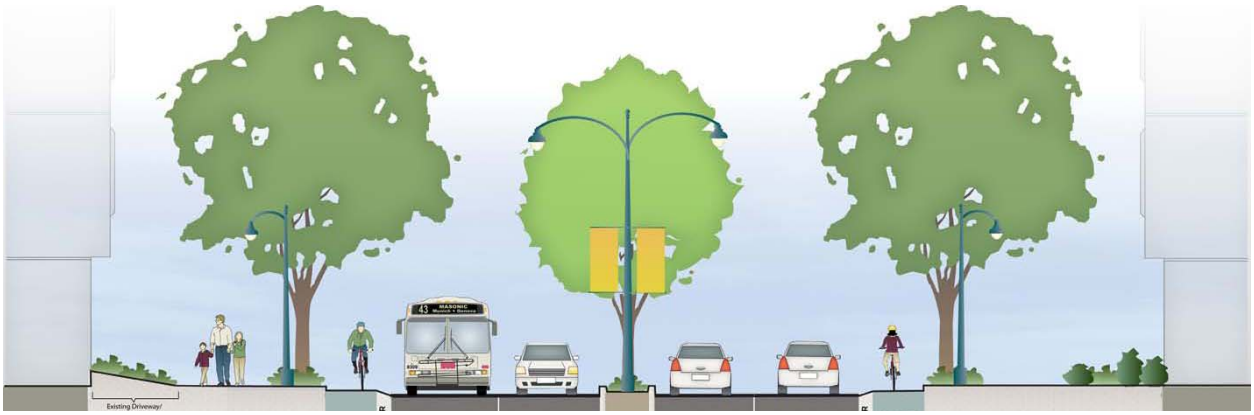
- *Safer pedestrian and bicycle environments.*
- *Improved accessibility for those less able.*
- *Increased walk-by traffic for local businesses.*
- *More convenient access to businesses for local residents.*
- *Less congestion and associated fuel emissions.*
- *Creation of a "sense of place" for the community.*

Project Overview

Complete Streets

Transportation practices in the past 50 years or so tended to focus on the efficiency and safety of automobile travel. And, while design applications and engineering have made our roadways much safer to travel by automobile, it has also resulted in designs that increase vehicle speeds while discouraging walking, biking and transit use.

Complete streets presents a shift in attitude about transportation planning that focuses more on equality for all users of the roadway. Recent legislative changes under the Michigan Complete Streets Acts now lend more weight to road design that considers motorists, pedestrians, bicyclists, transit riders, and users of all ages and ability. Not surprisingly, increasing fuel costs, desires to improve air quality, concerns about community health, coupled with campaigns to end obesity, especially among children and teens, have all contributed to a demand for travel alternatives to the single-occupant automobile. Complete streets seek to meet that demand through policy and regulatory changes at the local, regional, state and federal levels.



Typical "complete streets" include safe, convenient travel options for *ALL* users. (San Francisco Planning Dept. / SFMTA)

The following key principles of complete streets should be applied to the Woodward Avenue corridor to enhance the road's functionality for all users, and to create an active and dynamic corridor that will support transit:

1. ***Accommodate all roadway travelers***, which includes pedestrians, bicyclists, and transit passengers of all ages and abilities, as well as trucks, buses, and automobiles.

2. ***Emphasize interconnected road and sidewalk networks*** to create a comprehensive, integrated, connected network for all modes. Such networks are needed to provide shorter, more direct routes that will reduce walking time. A typical citizen will walk about 5 minutes or a quarter-mile before seeking other travel alternatives.

3. ***Integrate into all project types***, including planning, road and development design, maintenance, traffic signals, and operations for the entire right of way.

4. ***Integrate best practices for design*** while recognizing the need for flexibility in balancing user needs.

5. ***Select designs*** that will complement the character of the Woodward Avenue district and the context of each different community.

6. ***Create plans*** that seek to link transportation and land use planning.

7. ***Develop realistic expectations*** for walking and biking and apply design tools where appropriate along Woodward Avenue. This does not mean that every tool must be applied to every block. It may involve creation of alternate bike routes or improvements on side streets to ensure bicycle safety.

8. ***Develop an implementation plan*** that includes specific next steps.

TOD Principles

The Woodward Avenue TOD Corridor Study focuses on incorporating the following key principles in the future development of the Woodward Avenue corridor:

Plan Around Transit Stations

- Allow the highest commercial intensity in areas within ¼ mile of locations that seem most likely for transit stations. Expand maximum building heights, encourage high floor-to-area ratios, or minimize lot coverage limitations to provide greater development potential.
- Consider increased residential densities within ½ mile area from station locations (see previously listed density suggestions).
- Allow for intensification of uses over time, such as increased building heights or allowing surface parking lots to be gradually replaced by buildings and parking structures.
- Consider revisions to the master plan and zoning map to allow deepening of commercial lots along Woodward Avenue, especially at TOD nodes and where taller buildings are allowed. This may involve rezoning of some residential lots to accommodate redevelopment or additional parking needs. Where such changes will advance the goals of this corridor study, they should be carefully considered to ensure proper transitions to the residential areas, screening, and other site design elements are included to protect the integrity of nearby neighborhoods. Any potential encroachment into residential neighborhoods for TOD nodes will require an in-depth study on a site-by-site basis. The goals and objectives of the city's Master Plan call for clear and understandable boundaries between established neighborhoods and non-residential areas. Encroachments for TOD nodes should therefore only be encouraged where negative impacts to established neighborhoods can be minimized or eliminated.

Use Regulations

- Encourage transit-supporting uses, especially within ¼ to ½ mile of transit stops. This includes commercial and mixed uses that provide activity throughout the day and into the evening, such as retail, restaurants, personal and business services, high-density residential (including senior housing), universities, civic centers, and upper-story offices and residential.
- Discourage uses that will either dilute the concentration of residents or employees, or those which, by nature of the business will create activity likely to disrupt the pedestrian and transit-friendly environment. These include uses such as drive-through facilities, automobile dealerships, regional "big box" retailers, and other uses requiring large surface parking facilities.

Bulk, Setback & Area Controls

- Encourage land to be used for buildings rather than surface parking or expansive yards. This includes reducing the amount of parking allowed or required, and increasing the amount of building that may or must be built.
- Locate buildings close to the street and sidewalk so those on foot, bike or transit can easily reach building entrances.
- Remove maximum lot coverage requirements in core TOD areas.
- Encourage building design that will engage passers-by. First floor uses should include active storefronts that attract customers and pedestrian-scale design, with the primary operable pedestrian entrance oriented to Woodward Avenue.

Impact Studies

- Require study of potential development impacts on the entire transportation system. Where already required, modify traffic impact study standards into transportation impact studies that evaluate development impacts to all modes of travel.
- Shift transportation planning priorities in core and transitional areas from improving the speed and efficiency of automobile travel, to one that emphasizes safety for pedestrians, bicyclists, and transit users.
- Apply access management to minimize the number of driveways that pedestrians must cross using access management techniques.

Parking Management

- Implement standards to limit parking in core TOD areas. Regulations like maximum parking standards, parking space reductions, shared parking, payment-in-lieu of parking programs, floor-to-area ratios (or requiring them where they do not exist) can be applied for this purpose.
- Provide incentives in core TOD areas to reduce parking, or encourage structured lots over surface lots.

- Include amenities for bicyclists, pedestrians, and transit riders, including wider sidewalks, bicycle storage facilities, bus shelters, lighting and landscaping in the standards for site plan review.
- Arrange parking in the rear yard (or side yard only if necessary) to provide safer pedestrian access to store fronts. The Woodward Avenue profile also lends itself to other options, such as on-street or median parking, if allowed by MDOT.
- Recognize the variables contributing to parking demand, and match local policies to individual geographic factors such as density, transit access, income, and household size.

Transit Framework

The Transit Framework Map is a simple map that illustrates potential TOD nodes, infill or redevelopment opportunities, potential transit stations, concepts of how to improve connectivity and convenience of bus stop locations and pedestrian crossings, access management, and parking. This map and the recommendations in this document are intended to be used as a schematic – something that can be built upon in future planning efforts.

The framework map began with a general assessment of the corridor; identifying signal locations, current destinations and development nodes. Next, discussion with local planners identified the following challenges and opportunities:

Challenges

- *Shallow lot depths.*
- *Residential concerns over commercial encroachment, building height, density, etc.*
- *Woodward Avenue right-of-way parking*
- *Lack of open / green spaces*

Opportunities

- *Primary nodes at I-696 and Thirteen Mile Road*
- *Secondary notes at Eleven Mile and Twelve Mile Roads*

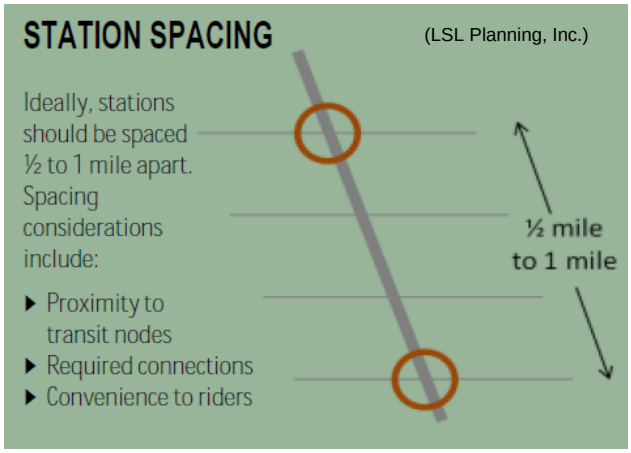
Potential Station & Stop Nodes

The above analysis resulted in the Transit Framework Map. It includes potential station locations, which consider existing development, identified opportunity locations, signalized crossing locations, typical spacing for bus rapid transit or light rail (ideally no less than ½ mile spacing), and suggested connections to local destinations like the Detroit Zoo and downtown Royal Oak, which are vibrant areas that rely on the corridor for regional access, and have the potential to add riders to the system. Station locations shown on the Framework Map are described in more detail below.

The station and stop locations, crosswalk types, and shuttle connections shown on the map are preliminary and conceptual in nature. They are only meant to illustrate one scenario of how these features might be spaced and are not intended to suggest preferred transit stop locations, route alignments, crosswalk types, or shuttle connections to other sites. A more detailed feasibility study, including ridership projections, cost-vs.-funding analysis, and other applicable factors will be required before the routes and stops can be formalized.

Spacing Guidelines

Stop and station location should be given careful consideration for the corridor. Stops should be kept to a minimum necessary to support the land-use and accessibility needs. Stop and station structures and amenities should be developed and designed with pedestrian and bike amenities, and should consider automobile access, but not so that it dominates the station design. Priority must be given to pedestrians, bicyclists, and transit riders, with less emphasis on maintaining higher vehicle speeds or faster automobile travel time. Stops should be between one-half (½) to one mile apart for ideal transit service. The quality of the stop should also be designed to accommodate the expected use in the area. Stations could be used at route termini and transfer points with improved amenities at on-route major attractors, and stops with more basic facilities could be used at key TOD points between major destinations.



Connecting Nodes

Several proposed transit node locations have opportunities for connections to nearby downtowns, Amtrak / SMART stations, and the future Woodward Light Rail or BRT project. These are suggested at Thirteen Mile Road / Beaumont Hospital, downtown Royal Oak, and I-696 / Detroit Zoo in Royal Oak. These intersections were identified as ideal locations for nodes due to their proximity to nearby amenities and existing or potential densities to support transit. Stations at these locations for either bus rapid transit or light rail could be incorporated into new mixed-use buildings with indoor seating and ticketing areas. Since these stations will connect to a different form of transit, indoor facilities will allow a safe place for travelers to wait for their connection.

- *Thirteen Mile Road / Beaumont Hospital*

  One of the busiest intersections along the corridor, Thirteen Mile Road already had the activity required for a feasible transit station. A station could be located just south of Thirteen Mile Road near Coolidge Highway to provide connecting shuttles to the Beaumont Health Systems campus and downtown Berkley. Future redevelopment of the shopping center on the southwest corner of the intersection would be an ideal catalyst to spur future TOD.

- *Downtown Royal Oak*

  Although not directly on Woodward Avenue, Royal Oak's downtown is a logical spot for a connecting node with its existing bus and train station and transit-ready zoning. It is already a major transit hub for the region due to the Amtrak / SMART station at Lafayette Avenue and Sherman Drive. In addition to serving train passengers, the station is a collection point for

several SMART bus routes, including those that travel on Ten Mile and Twelve Mile Roads, Woodward Avenue, and Main Street / Livernois Road. The area surrounding the station is zoned Central Business District so it is already conducive to transit-oriented development. The proposed Michigan Regional Transit Authority (RTA) even utilizes this station as a hub for a future light rail or BRT project, moving the primary transit route off of Woodward Avenue and through downtown Royal Oak.

- *I-696 / Detroit Zoo*

  The existing parking structure at the Detroit Zoo can support a future station and park-and-ride at this busy node. As the gateway to Royal Oak from the interstate, this node could provide a circulating shuttle to the Detroit Zoo, downtown Royal Oak, or even a parallel transit route that stops at the downtown Amtrak/SMART station in Royal Oak.

On / Off Nodes

In between the connecting nodes, transit will stop at outdoor platforms for boarding which are labeled as "on / off" nodes on the analysis map. These station/stops' platforms would be elevated to raise the travelers to the level of the transit equipment and be covered shelters to protect users from the elements. For enhanced transit to be most efficient, stops will not be as frequent as traditional fixed-route bus service but at key locations to collect sufficient passengers from nearby housing and businesses.

The proposed on/off nodes in Royal Oak include the Twelve Mile and Fourteen Mile Road intersections, and possibly the Catalpa Drive intersection. These on/off nodes were identified as being good central locations between the connecting nodes where existing development is conducive to TOD or where development could be further intensified to support transit.

- *Fourteen Mile Road*

  The area between Fourteen Mile Road and Lincoln Avenue / Adams Road in Birmingham has been identified by the city as a future TOD. This location is halfway between the proposed connecting nodes at Maple Road and Fourteen Mile Road.

- *Twelve Mile Road / Catalpa Drive*

  This area has large, institutional uses which are typically not conducive to TOD, including a cemetery. However, the Shrine of the Little Flower Catholic Church and Elementary School are heavily used and could benefit from an on/off stop. The southwest and northeast corners of this intersection already have commercial and multiple-family residential uses which could be intensified and expanded with a TOD redevelopment program. A stop at this location would also provide a direct transit link to Berkley's downtown.

  If a station proves unfeasible at Twelve Mile Road due to the institutional uses then it could be moved to Catalpa Drive. A stop at this intersection would be half-way between the primary stops at I-696 for the Detroit Zoo and Thirteen Mile Road for Beaumont Hospital.

This area has been identified for strengthened commercial development in the Berkley Master Plan and could collect riders between Twelve and Eleven Mile Roads.

Pedestrian Crossings

Type A – Byway Significant Crosswalks

Type A1 crosswalks are the most significant, providing connections between the intrinsic resources of the byway. The only A1 crossing in the study area is at Twelve Mile Road, improvements for which are currently in the final construction stages. Type A2 crosswalks are also significant, but are more so locally than regionally. Downtown crosswalks provide important connections between buildings on opposite sides of the street, and they provide a gateway or entrance to a downtown area. No A2 crossings are designated in Royal Oak.

Type B – Community / District Connectors

Type B pedestrian crosswalks are community / district connectors that provide connections for a specific local draw and may be historically significant in the community and/or state, but not necessarily to the byway. Typically, they would occur at major intersections. Most of the Mile roads along the corridor are considered type B crossings.

Type C – Remainder

Type C pedestrian crosswalks are essentially all other crosswalks that do not meet the criteria established for type A and type B crosswalks. From a byway and community standpoint, they are less significant than type A and B and do not occur at major intersections.

Crosswalk Element	Type AI	Type A2	Type B	Type C
Pedestrian Crosswalk Signalization	X	X	X	X
Pedestrian Crosswalk Signalization w/ Count Down	X	X		
Mast Arm Signalization	X	X		
Crosswalk Designation - Painted			X	X
Crosswalk Designation – Pavement / Material Change	X	X	Optional	
District Identity Element	X	X	Optional	
Woodward Heritage Identity Element	X			
Historical Reference Element	X	X	Optional	
Lighting	X	X	X	
Plantings	X	X	X	
Bump-Outs (if applicable)	X	X	X	
Bollards	Optional	Optional		

Transit Framework Map

Transit-Oriented Development Corridor

5 minute walk (1/4 mile radius)
10 minute walk (1/2 mile radius)

Potential Primary / Connecting Station & Stop

5 minute walk (1/4 mile radius)
10 minute walk (1/2 mile radius)

Potential Secondary / On-Off Station & Stop

Primary Transit Route

Potential Shuttle Connections

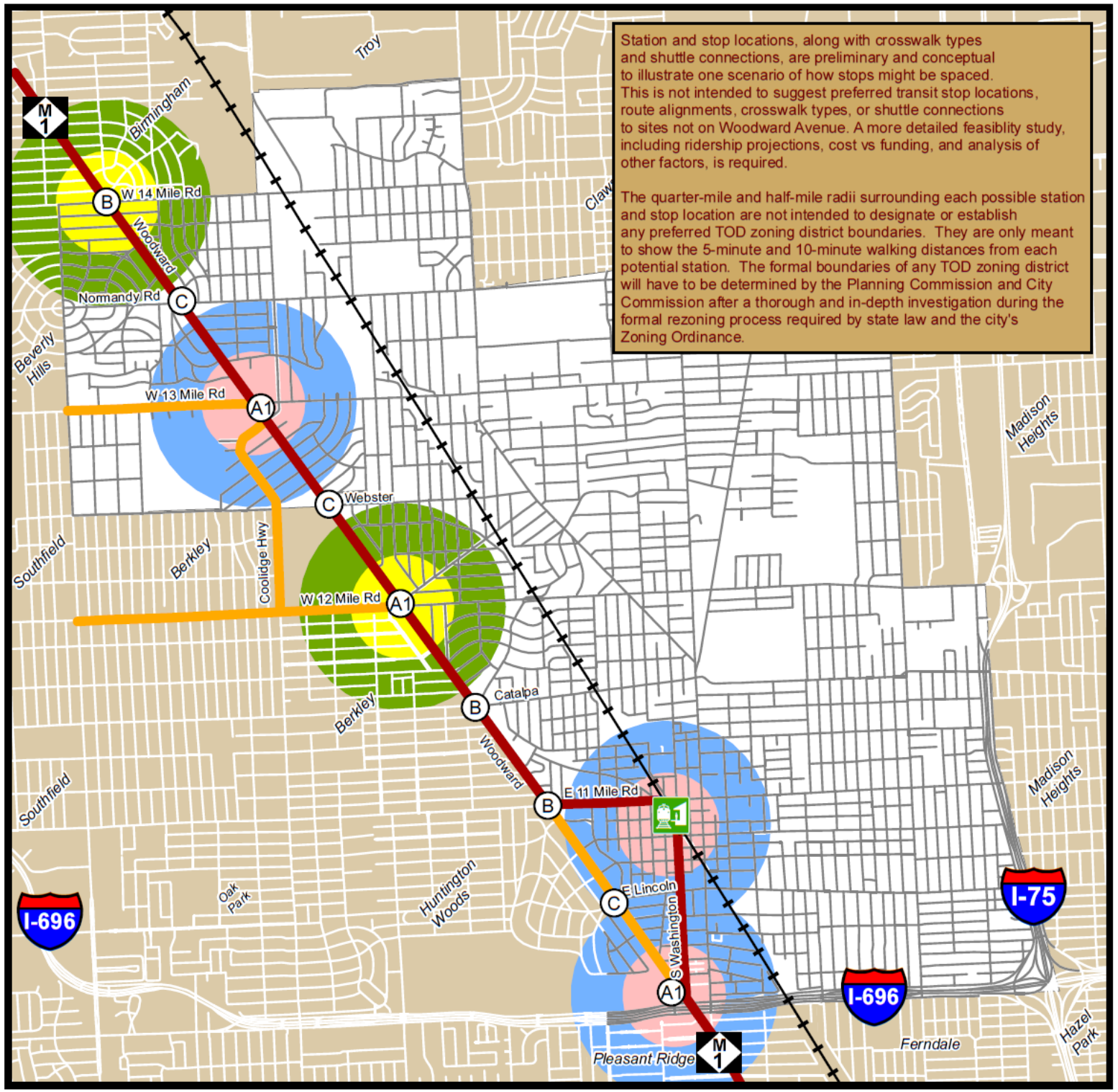
A1 B C

Crosswalk Types

Existing Amtrak / SMART Transit Station

Road Centerlines

Created by: Royal Oak Planning Department
Creation date: 02/28/2012
Sources: Oakland County Dept of Info Tech
LSL Planning, Inc
Woodward Avenue Action Association



Recommendations & Implementation

Typically, the next step in transit planning would include determination of the transit modal vehicle type, which is not part of the scope of this corridor study. This project is intended to provide the framework for such planning efforts. A common misconception is that transit will drive development, which can be true to some extent. However, the opposite is also true – development of a certain type and density can be a catalyst for transit. Therefore, a key component of this project was to identify ground-level planning efforts that can be made to provide a transit-supportive atmosphere that will drive future transit decisions.

Parcel & Massing Analysis

Parcel Analysis

With few exceptions, parcels along Woodward Avenue are quite shallow for the type of businesses they attract. Small lot sizes can limit development options and deter real estate investors. One way to identify opportunities is to analyze potential development or redevelopment sites. In some locations, these sites are obviously vacant or obsolete, but in others, opportunities may not be so evident. Analysis of property ownership along the corridor will reveal parcels in common ownership that, if consolidated, could provide more viable redevelopment sites.

Create a Massing Model

Creation of a two-dimensional or three-dimensional corridor model will help residents and stakeholders visualize how TOD might be implemented in the future. Modeling existing and future development forms will help to locate underutilized sites. When matched with a parcel analysis above, key redevelopment sites will emerge.

Economic Development Initiatives

Establish a Corridor Improvement Authority

Pursuant to the Corridor Improvement Authority Act, Michigan's Public Act 280 of 2005, the purpose of a corridor improvement authority (CIA) is to plan for, correct and prevent deterioration in business districts, to encourage historic preservation, and to promote economic growth within the district. Unlike some other tax capturing authorities, a CIA may span more than one jurisdiction and is therefore ideal for Woodward Avenue. If established, taxes from the increase in property values can be captured and re-assigned for capital improvement projects within the district. Such a mechanism could leverage future economic growth on Woodward Avenue into physical improvements that will attract even more business, visitors and investment.

Secure Funding

The collaboration facilitated by WA^3 has yielded positive results already with grant funding secured for the Twelve Mile Road crossing improvements which were recently constructed. The

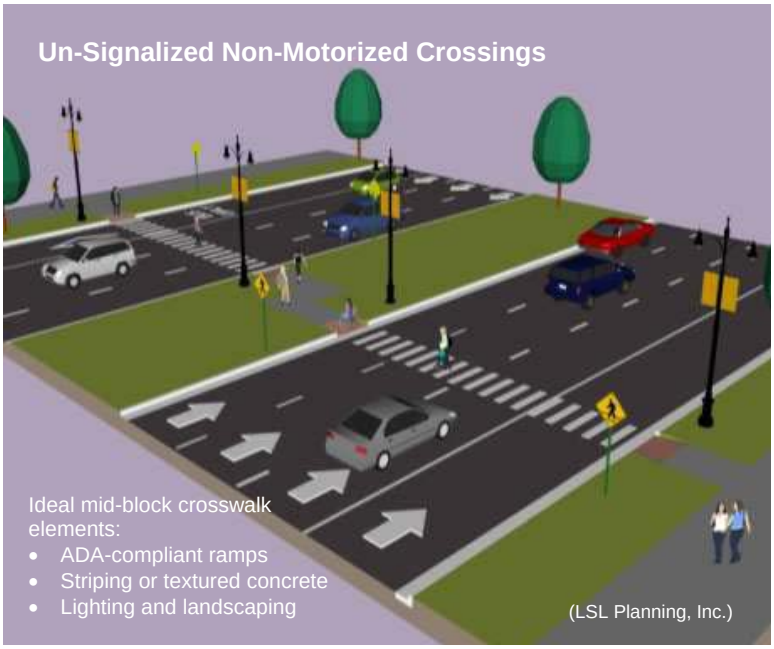
association has also received a National Scenic Byway Grant, Michigan State Planning and Research Grant, and an Urban Land Institute grant for even more significant transit-planning projects which are expected to begin in the near future. The nature of the group, which not only represents a multiple-jurisdictional effort but also a public-private partnership, poises it above many others seeking grants, as this spirit of cooperation is given increasing weight with funding groups.

Walkability & Transit Guidelines

In many ways, walkability and transit go hand-in-hand. Without a safe, walkable environment, people cannot reach transit facilities and ridership rates decline. Designing any non-motorized system requires careful planning that considers safety, efficiency, convenience and costs versus benefits. It is important to provide clearly delineated pedestrian areas both along the corridor and connecting to private commercial developments. Non-motorized improvements should focus on providing safe routes for bicyclists and pedestrians which may require alternative routes or facilities on other roads as well.

Un-Signalized Non-Motorized Crossings

Ideally, crossings will be accommodated at signalized intersections, but pedestrians are likely to cross where it is most convenient. Studies show that people will usually take the most direct route, not necessarily the one designated for them. They are more likely to cross at un-signalized locations when signalized crossings are spaced farther than ½ mile apart, or where they are not proximate to transit stop locations.



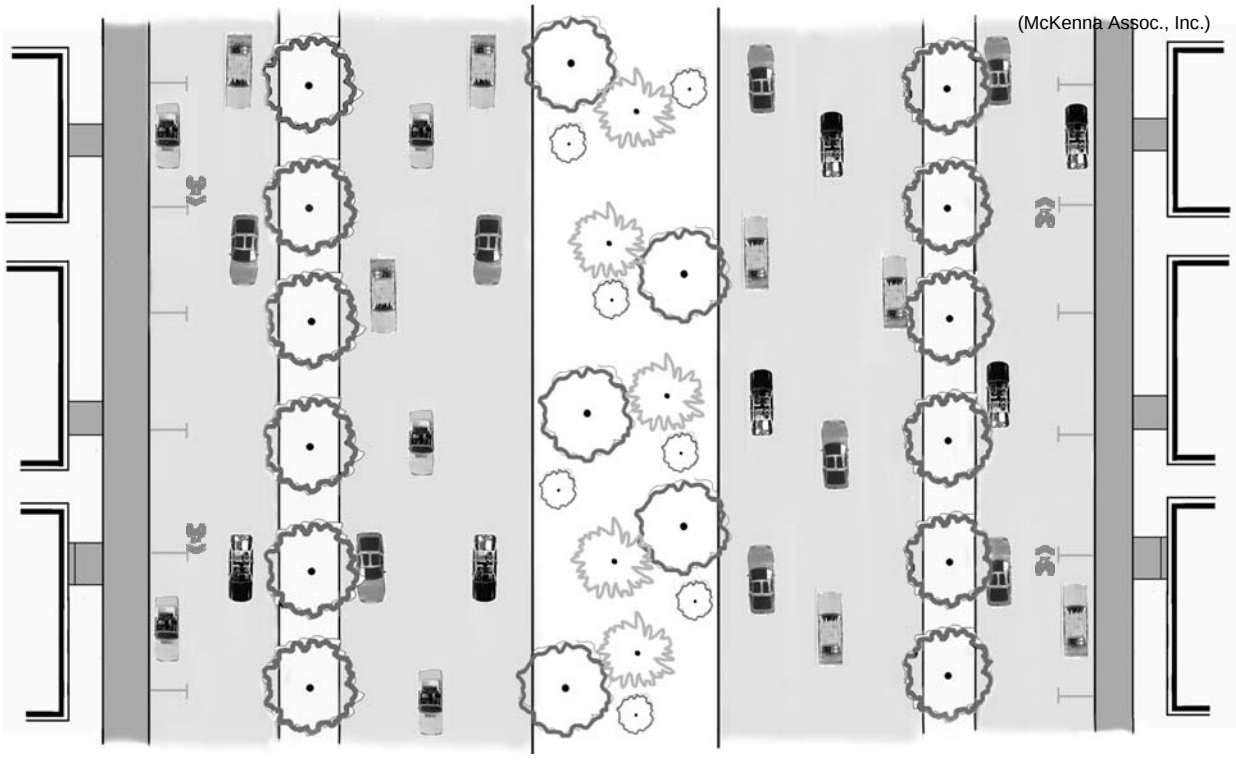
Where un-signalized crossings are needed, they should be designed so the pedestrian is clearly visible and feels safe, including elements such as lighting, signage, textured pavement treatments and context-sensitive crossing design. Using flashing beacons and reflective road striping can also help improve pedestrian safety.

Road Diet

A road diet involves replacing travel lanes with bike lanes, exclusive transit lanes, and/or wider sidewalks. On Woodward Avenue, a road diet could be implemented to provide a dedicated bus lane or bike lane. Careful consideration of the interface between bicyclists, motorists, and

businesses is required to ensure that these facilities remain safe and attractive to users. The figures below illustrate how Woodward Avenue could look with a road diet, including fewer vehicle lanes with a dedicated bus or bike lane, plus amenities like wide sidewalks and landscaped buffers for pedestrian comfort. Application of a road diet would require additional study and traffic modeling, but it is a real possibility for the future.

Illustrations of how Woodward Avenue could look if a road diet was implemented. The number of and/or width of vehicular travel lanes could be reduced and the center median narrowed to make room for dedicated transit lanes, or for additional non-motorized facilities like wider sidewalks, dedicated bike lanes, and on-street parking.



Speed of Travel

Currently, Woodward Avenue is posted for a maximum speed of 45 miles per hour in Royal Oak. Vehicles sometimes travel at speeds in excess of these maximums, which degrades the pedestrian environment. Higher vehicle speeds reduce the perceived safety of travel along the corridor because they result in more frequent and more severe crashes, especially when they involve pedestrians or bicyclists. Some TOD guidelines suggest a speed limit of 30 m.p.h. is ideal for pedestrian safety.

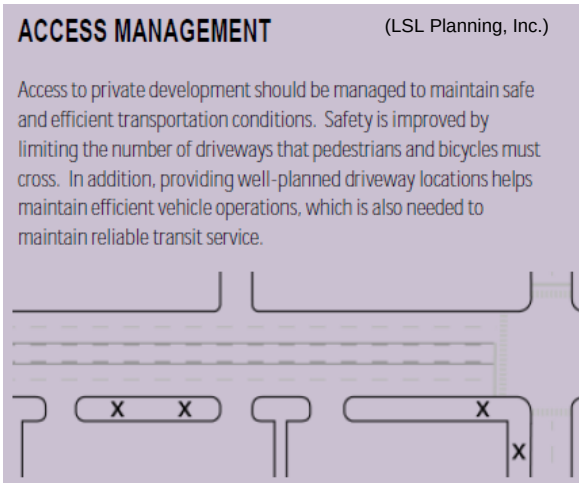
The City of Birmingham's Triangle District Urban Design Plan includes a suggested 35 m.p.h. for portions of the corridor near Maple Road where a road diet is suggested. This speed limit is already established in parts of Ferndale and could be considered for the rest of the study corridor if acceptable to MDOT. Such a reduction in speeds, either alone or as part of a road diet, would require changes to signal timing and perhaps some traffic modeling to ensure travel conditions will remain at acceptable levels.

Accommodate Bicycles

Non-motorized systems must also accommodate bicycle activity. Amenities like bicycle storage, staging areas, and rest spots should be included in community-wide non-motorized systems. In some locations along the corridor, the existing road can be re-striped to include bike lanes or shared lane markings without widening the expanse of pavement. Such a "road diet" is recommended in areas where motorized and non-motorized traffic volumes suggest fewer travel lanes and more bicycle facilities are needed. However, in others, on-street bicycle facilities may not be safe or comfortable for riders. In these places, alternate routes on adjacent streets may be needed.

Driveway Design

The geometric design of access points, including the width, throat, radius, and pavement type, should all include consideration of the interaction with off-street non-motorized users. Excessively wide driveways with little or no separation from off-street parking areas and broad, sweeping driveway curbs provide an unprotected non-motorized environment that lacks clear definition for turning movements and increases the amount of time a pedestrian or bicyclist is exposed to traffic. Driveways should include a clear-vision zone at the entrance, free of visual obstructions like shrubs, signs, utility boxes, or other barriers so oncoming traffic can clearly see pedestrians entering the driveway.



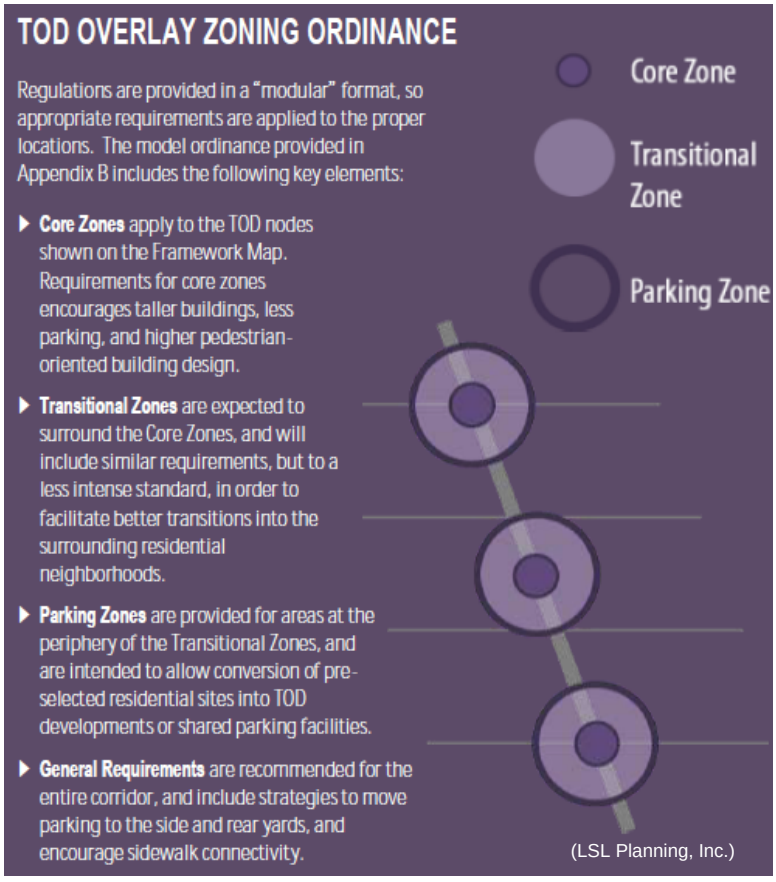
Delineate Driveway Crossings

Sidewalk crossings of driveways should be clearly delineated. For higher volume areas (traffic or pedestrian) the crossing could be striped or constructed of durable contrasting material. Textured or colored concrete are the preferred options for Woodward Avenue since they can withstand vehicular weight and wear while attracting the attention of motorists. Maintenance of crosswalk markings on private land should be made a condition of site plans, just like maintenance of parking lot striping.

Transit-Friendly Zoning

Adopt the Corridor TOD Zoning Overlay Model

Zoning is an effective way to transform the form of development. Along Woodward Avenue, a model TOD overlay zoning district is recommended. The overlay would be a "modular" ordinance that includes a set of regulations to apply in core TOD node areas, another set for the transitional areas around them, and potentially a basic set of uniform regulations for the entire corridor. The model also includes strategies to assemble land in the core areas, or where additional depth is needed to accommodate redevelopment or shared parking facilities. The approach presented respects the fact that, while transit-friendly development is desired by most communities, it may take some refining at the local level in order to achieve support.



The basic standards for development include side-walk requirements, parking standards, use restrictions, etc., that should apply within core and transitional zones in order to promote walking and biking along the corridor. The core TOD node standards are more form-based and focused on creating desirable places for pedestrians, bicyclists and transit riders. The transitional standards will involve some form-based elements, but requires less intense development as a way to slowly step down building intensities and scale as they get farther from the core and closer to residential areas.

Standards for areas not designated as core or transitional zones could also include incentives to replace commercial uses that should be relocated to the core, with supportive residential or office uses. Such policies will depend on local desires and attitudes, but may provide opportunities for redevelopment of some of the existing underutilized commercial areas for multiple-family or other uses that could be accommodated on some of the shallower development sites not located in the core areas.

Define District Zone Boundaries

The TOD zoning model provided in the appendix of Woodward Avenue TOD Corridor Study for South Oakland County is intended to apply to all parcels with frontage along Woodward Avenue in south Oakland County. The model could easily be modified to apply to only connecting and on/off node intersections, leaving the areas between nodes subject to underlying zoning. It suggests that three additional zones be established: a core zone, a transitional zone, and a parking zone. This plan does not suggest specific boundaries for each zone; however, it is assumed that core zones will generally occupy areas within ¼-mile of the center, while transitional zones will extend out ½-mile. The parking zones are expected to be applied at the periphery of transitional zones, as determined necessary to create redevelopment sites of a viable size and shape.

Again, it should be re-emphasized that the ¼-mile and ½-mile radii surrounding each possible core and transition zone are not intended to designate or establish any preferred TOD zoning district boundary. They are only meant to show the 5-minute and 10-minute walking distances from a potential station or stop. The formal boundaries of any TOD zoning district will have to be determined by the Planning Commission and City Commission after a thorough and in-depth investigation of all potential core and transitional zones during the formal rezoning process required under both state law and the city's Zoning Ordinance.

Two- to three-story buildings, such as those suggested in the core areas typically require sites with depths of 140 to 160 feet, but that does not account for parking needs. Ideally, parking programs will be implemented at the city or corridor-wide level using one of the approaches discussed in the project overview section. However, in the short-term, some on-site surface parking may be needed. Therefore, cities should plan for parcel depths of up to 250 feet for sites where on-site parking is needed, and to up to 350 feet for areas where parking structures are planned, such as in the core TOD nodes.

More specific analysis may be needed to identify the specific property depths needed to achieve the desired building form. Elements such as building height, lot coverage, parking lot location, front yard setbacks, and required buffers from residential areas will all impact the amount of land that is needed for development.

Take a Phased Approach

Each local zoning ordinance was reviewed to determine needed changes to promote additional development and growth that will encourage transit ridership. These models should be adopted to help direct future development to desired areas. Once some success is achieved, cities may choose to take their TOD efforts a step further by initiating redevelopment projects, increasing densities, and planning for municipal parking.

- Redevelopment of sites along Woodward Avenue may require acquisition of additional land to accommodate larger buildings or parking needs. Communities may consider parking zones within the proposed TOD overlay district that would allow certain residential sites to be converted to temporary surface parking lots to support core areas, that can eventually transition into parking structures or mixed-use infill sites.

- Plan parking in areas away from the TOD core to maximize building potential, but consider reasonable replacement locations, or take a phased approach so businesses are still served in the short-term. Consider adoption of local parking programs.

- Consider higher residential densities within proximity (½ to 1 mile) of Woodward Avenue that consider local community conditions.

Rochester Road Access Management Plan

LSL Planning, Inc., of Royal Oak was hired with funding from SEMCOG to complete an access management plan for Rochester Road as it travels through Royal Oak, Clawson, Troy, Rochester Hills, and Rochester. The result of their work is the Rochester Road Access Management Plan dated September 27, 2011. That document contains recommendations on access management strategies to improve safety and efficiency of travel along the Rochester Road corridor.

The preceding chapters of this access management plan discuss overall guidelines for access, non-motorized travel, and green infrastructure changes along Rochester Road. Those chapters are consistent for each community because the basis and standards for them are the same for all communities. However, because site conditions and character vary by community, a community-specific chapter was crafted for the individual cities, and includes an inventory of existing conditions, analysis, and recommendations, and concludes with maps that illustrate changes.

The recommendations in this plan were based on access management studies, traffic conditions, and analysis conducted in 2010 and 2011. The plan is intended to be implemented as opportunities arise, and is flexible so it will be useful for many years, but can be adapted as conditions change.

While the basic access management principles in the chapter *Access Management Guidelines* should always be applied, precise locations and configurations of driveways and service roads illustrated on the maps may need to be modified as development plans come into focus and more detailed site information is known.

The following portions of Rochester Road Access Management Plan were revised and are hereby adopted as part of this amendment to the city's Master Plan.

Introduction

Study Area

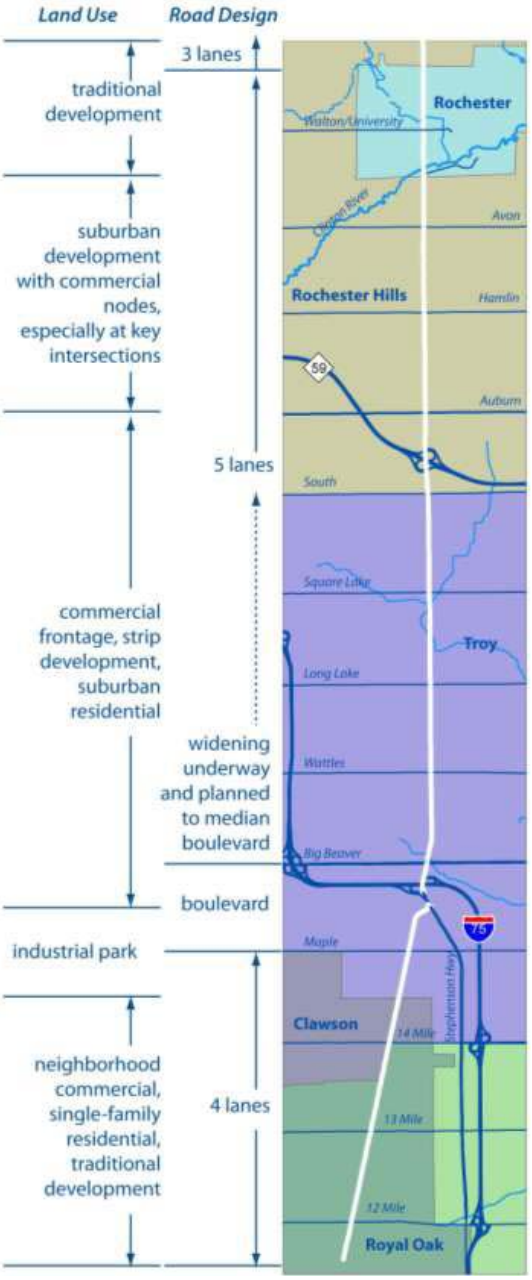
The limits of the study area corridor begin at Main Street in Royal Oak, where it diverges northeast through the City of Clawson until it meets with Stephenson Highway in the City of Troy. From there, Stephenson Highway becomes Rochester Road as it proceeds north and crosses I-75, then M-59 where it officially becomes M-150 in the City of Rochester Hills, before terminating at Mead Road.

The study area for this project extends 660 feet east and west of the centerline of Rochester Road. The study focuses on access to non-residential frontage properties. As discussed in this report, this portion of Rochester Road is referred to as the "Rochester Road Corridor" or "Rochester Road."

Project Need

Segments of Rochester Road, especially along portions located north of I-75, experience periodic congestion and a relatively high number of crashes. Data and observations indicate that vehicles entering and exiting the roadway at cross streets and individual driveways contribute significantly to these problems. Managing access along the corridor can reduce crash potential and congestion because it considers the number, placement, and design of access points (intersecting streets and commercial driveways) in the context of the overall roadway, not just on each individual site.

The primary purpose of this project is to assess access conditions along the corridor and recommend changes that will improve safety and efficiency of travel. However, applying access management has other secondary benefits, including higher pedestrian comfort and safety, improved biking environments, improved economic vibrancy, and increased opportunity to "green" the corridor. Recommendations to achieve these benefits are provided throughout this plan.



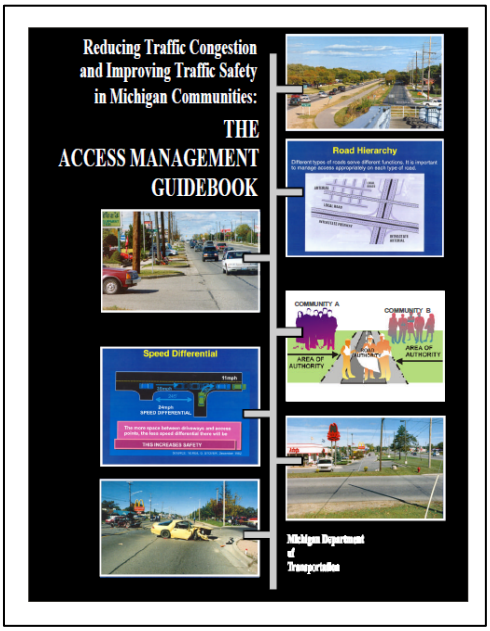
Overview of Corridor Conditions

The Rochester Road corridor is generally a four-lane road, with a center left turn lane for segments north of I-75. A small segment at the north end of the corridor, north of Cross Creek Drive, is three lanes, and another segment south of I-75 is constructed as a divided road with a center median. The median was extended north to Wattles Road in 2010. Remaining portions of the corridor in Troy are also planned for a median in the future.

The character of land use is generally segmented by the I-75 freeway, which crosses the corridor in Troy, just south of Big Beaver Road. Areas south contain small-lot, traditional single-family neighborhoods with scattered pockets of neighborhood retail, while areas north maintain a more suburban commercial character with larger retailers and national chains dominating the commercial areas, and more modern multiple-family developments scattered throughout. Exceptions to this pattern exist just south of I-75, where approximately one mile of the corridor contains industrial development, and in the City of Rochester, where the corridor serves as Main Street through the city's downtown.

Preparation of Plan

The recommendations in this access management plan were developed from a site-by-site review of the corridor that considered access, crash data, site design, land use (existing and planned), zoning, and topography. They consider the standards contained in MDOT's Access Management Guidebook, other publications and research supporting access management from around the country. The cache of research available on access management, which is summarized in the MDOT Guidebook, forms a solid base for recommendations to reduce the number of driveways and promote the benefits of access management.



MDOT's Access Management Guidebook was a reference for recommendations in this plan.

To synchronize input from each city and the various agencies, a steering committee was established to oversee development and administration of the plan. The committee consisted of representatives from each city, MDOT, SEMCOG, and Oakland County. This group acted as the technical review and coordinating group and facilitated communication with city officials and the public.

Development of this plan also considered input from the public. A series of meetings with the public and individual local communities and agencies were conducted throughout the process. The key public meeting was a public open house held at Troy Community Center on January 10, 2011, where draft recommendations were displayed for review and comment. The meeting began with presentations on the benefits of improved access management. Drafts of the plan recommendations and concepts for select intersections were displayed in an "open house" setting. Comments by the public, local officials, and the MDOT staff were considered and many were incorporated into the final recommendations.

Corridor Analysis

Crash Analysis

A crash rate is a calculation that considers the number of crashes related to the volume of traffic. For purposes of evaluation, crashes along the corridor were classified as "intersection" crashes and "link" crashes. To evaluate the "link" crashes, Rochester Road was divided into segments between each signalized intersection. Crashes within 250 feet of a signalized intersection were considered to be "intersection" crashes.

Crash rates for intersections along Rochester Road were compared to SEMCOG's crash rates for the southeast Michigan region from the past three years. SEMCOG classifies intersections with

relatively high crash rate as "critical." No intersections in Royal Oak were found to exceed SEMCOG's critical crash rate threshold based on average daily traffic (ADT) volumes.

Unlike intersections, SEMCOG has not compared crash rates for links, so critical crash rates were established specifically for Rochester Road, based on available SEMCOG crash data for the entire roadway. This comparison found a critical crash rate for links of 2.55 where ADT was below 35,000, while sections where ADT was over 35,000 had a rate of 4.04. (source: LSL Planning, Inc.) It verifies that crashes are more likely to occur in areas with higher traffic volumes.

The established crash rates were then compared to rates for each link along the corridor. Crash types along critical crash links were evaluated to identify access-related patterns to the crashes. This comparison revealed that no links in Royal Oak met the average critical crash criteria with rates from 1.21 to 2.27 (source: LSL Planning, Inc.)

Intersection Operational Analysis

Intersection capacity analysis is the traditional form of measuring operational performance, as intersections control the flow of most roadways. Intersection capacity is a function of a calculated delay experienced by the average vehicle due to the intersection control. Intersection delay can then be equated to level of service (LOS), which is an intuitive scale of "grades" from "A" to "F" that measure how a roadway is operating. The level of service is defined in terms of delay, which is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. These variables are summarized and provided as grades for signalized intersections in the *2000 Highway Capacity Manual Special Report 209*, which are shown in the following table:

Level of Service for Signalized Intersections Based on Control Delay		
Level of Service	**Description**	**Average Control Delay per Vehicle (seconds)**
A	Very low control delay. Favorable progression and/or short cycle lengths.	Less than 10.0
B	Low control delay. Good progression and/or short cycle lengths.	10.0 to 20.0
C	Average control delays. Fair progression and/or longer cycle lengths. Individual cycle failures begin to appear.	20.0 to 35.0
D	Longer control delays. Combination of unfavorable progression, long cycle lengths, high volume-to-capacity ratios, many vehicles stop. Individual cycle failures noticeable.	35.0 to 55.0
E	High control delay values. Poor progression, long cycle lengths, and high volume-to-capacity ratios, frequent individual cycle failures. Limit of acceptable delay.	55.0 to 80.0
F	Control delays unacceptable to most drivers. Over saturation, poor progression, or very long cycle lengths.	More than 80.0
Source: 2000 Highway Capacity Manual Special Report 209		

Measures of delay and levels of service for this study were evaluated using a micro-simulation model (Synchro / SimTraffic) that used peak hour traffic movements and signal timing. The existing conditions AM and PM peak hour models were calibrated within SimTraffic to help ensure the model reflected actual traffic conditions.

Typically, municipalities and road agencies prefer a LOS "D" or better for each approach at an intersection. Any movement at the intersection (e.g. through, left-turn, or right-turns from any leg of the intersection) rated below a "D" was evaluated to identify changes that could improve the level of service. These changes, often called "mitigation measures," included adjusting signal timings at a minimum and then geometric conditions were modified to improve operations and/or safety.

Driveway Density

The MDOT Access Management Guidebook recommends spacing between access points, based on the posted speed limits. Few segments along the corridor currently conform to these recommendations. For each segment, actual access density (or number of access points per mile), were compared to the MDOT spacing standards. Key findings of this evaluation are listed below, with detailed density information shown below.

1. Driveway frequency along the corridor is 1.45 times higher than that suggested by the MDOT spacing standards.

2. In total, this plan recommends a 14% reduction in the number of existing driveways. If fully implemented, the corridor will actually fall below MDOT's recommended density, meaning there will be fewer driveways than would be acceptable according to MDOT standards.

3. If all of the proposed driveways are gradually removed, it can result in elimination of approximately 48,525 square feet (or 1.1 acres) of impervious coverage/pavement.

Rochester Road Driveway Density & Impervious Coverage

Segment	Existing Access	Access Density (# of access / mile)		Proposed to be Removed	Removed Access Area
		Existing Density	MDOT Standard		
Main to Twelve Mile	13	20.9	18.6	2	100 s.f.
Twelve Mile to Detroit	19	30.5	21.2	0	-
Detroit to Thirteen Mile	48	62.0	23.6	6	3,000 s.f.
Thirteen Mile to Whitcomb	48	53.4	25.0	2	250 s.f.
Whitcomb to Fourteen Mile	19	34.6	9.3	2	-
Overall	147	201.4	97.7	12	3,350 s.f.

Source: LSL Planning, Inc.

Improving the Corridor

Access management is a key tool in reducing congestion, preventing crashes and preserving road capacity. While these benefits are most obvious to motorists, access management can also improve conditions for those walking and biking. Access management can support local non-motorized policies by reducing driveways and improving the safety of sidewalk crossings. Businesses, especially those along congested segments, can also benefit since access to their establishments can be safer and more convenient for customers. Some locations may also benefit from the additional parking spaces that could be claimed in place of driveways that have been removed due to closure or consolidation.

This plan includes a set of general guidelines for managing access along the corridor, as well as a set of site-specific maps that show existing conditions and recommendations for improvement. The next chapter, A*ccess Management Guidelines,* discusses in detail the benefits that can be achieved through proper planning and management, and the guidelines for access changes.

Walking and biking systems depend on many factors, most importantly, the extent of attractions within walking distance (approximately ¼ to ½ mile) and the pedestrian environment. Factors such as the width and condition, provision of bike lanes or routes along nearby local streets, the ease of road crossings, and maintenance of sidewalks influence the number of pedestrians and bicyclists.

Implementation

Successful implementation of plan recommendations will require continued coordination between the cities, RCOC, MDOT, SEMCOG and other quasi-public organizations. Therefore this access management program fosters a collaborative approach so the various groups can work together to achieve the same goals.

To implement the recommendations for Rochester Road, each city was advised to amend its master plan to incorporate the contents of this plan. Each city was provided with a plan document for this purpose that contained consistent guidelines for access management and other corridor improvements, along with a local chapter that discusses the conditions and recommendations specific to each city. If full integration of this plan is not possible or desired, the local master plan should at least be revised to include a basic discussion of access management, its benefits, and ways the community plans to implement it. This will provide the required legal framework upon which each city can adopt specific zoning regulations.

The key regulatory tool to implement access management is a zoning overlay ordinance. A model ordinance was provided to each city for their use and integration into their own zoning ordinance. It was crafted using MDOT's spacing guidelines, but includes the appropriate amount of flexibility needed to respond to existing conditions or unusual situations in the future.

Access Management Guidelines

Rochester Road in Oakland County holds an important transportation function, but due in part to a proliferation of driveways and access points, experiences periodic congestion, and some locations along the corridor experience relatively high crash rates. This access management plan was created to help identify areas of concern along the corridor, and recommend changes to improve them.

Numerous studies in Michigan and nationwide have shown that a proliferation of driveways or an uncontrolled driveway environment can increase the number and severity of crashes, reduce roadway capacity, and create a need for more costly improvements in the future. Access management can also restore capacity that is lost due to frequent flow interruptions for turns into and out of poorly spaced driveways.

In the State of Michigan, access management has been in practice for over two decades. In 1999, MDOT commissioned a task force to research, discuss, and organize best practices on access management, and officially adopted a statewide guide, known as The Access Management Guidebook, in 2001. That document and its foundation in significant national research and statistics form the basis for this plan's standards and recommendations.

What Is Access Management?

Access management is a series of techniques and standards used to maximize existing street capacity and minimize the potential for crashes. Studies show reducing or limiting the number of access points, carefully placing, spacing and design of access points can help achieve safer environments and preserve efficient traffic flow.

Access management techniques are used to improve transportation operations and increase safety while maintaining reasonable access to properties. In some cases, access may be provided through shared or indirect means, but in every case, reasonable access is always maintained.

Access management can also improve the corridor for bicyclists and pedestrians by reducing and limiting the number of potential conflict points along the corridor. Proper placement and design of access points can help improve visibility of pedestrians and bicyclists and reduce the risk involved in crossing multiple driveways and intersections.

Benefits of Access Management

By considering the relationship between access points along a roadway, all road users and property owners stand to benefit. National experience and case studies of other corridors have shown that access management can result in 25-50 percent reductions in access-related crashes (Access Management Manual, Transportation Research Board), but can also have secondary benefits on non-motorized and transit environments while providing improved business environments and opportunities for inter-agency coordination.

- *Decreased potential for and severity of crashes by reducing conflict points.*
- *Restored efficiency of travel by eliminating access points that cause traffic disruptions and delays.*
- *Boosts local property values and increase the vitality of adjacent businesses by reducing congestion and improving business visibility.*
- *Improved air quality through reduced braking and accelerating, eliminating unnecessary vehicle idling, and promoting alternative travel options.*
- *Enhanced access to and from businesses, both in terms of safety and convenience.*
- *Less need for costly road widening or other major improvements by maximizing the efficiency and volume of traffic.*

While application of access management can provide the above benefits, merits of the planning *process* are often overlooked. Bringing communities together into a joint planning effort increases opportunities for information sharing and cross-education. It is also helpful in educating the public, especially those directly impacted by the plan's recommendations. This planning effort can help to:

- *Provide information on the benefits of access management and the various implementation techniques to assist local and county officials in their planning efforts.*
- *Promote continued coordination and communication among SEMCOG, MDOT, RCOC, Oakland County, local governments and the public during the development review process.*
- *Inform property owners, business operators, potential developers, and the general public about access management, its benefits, the rationale for recommendations, and how they will be applied over time.*
- *Provide guidance for future development reviews through advance planning, clear and consistent protocol and early coordination with local communities and business owners.*
- *Inform communities and property owners that access management can support other corridor goals for safety, aesthetics, and enhanced walking, biking, transit, and green infrastructure.*

Access Management Principles

To achieve the benefits of access management, this plan was developed using the following principles:

- ***Design for efficient access.*** Identify driveway design criteria that promote safe and efficient ingress and egress at driveways, while considering the interaction with pedestrians and bicyclists.

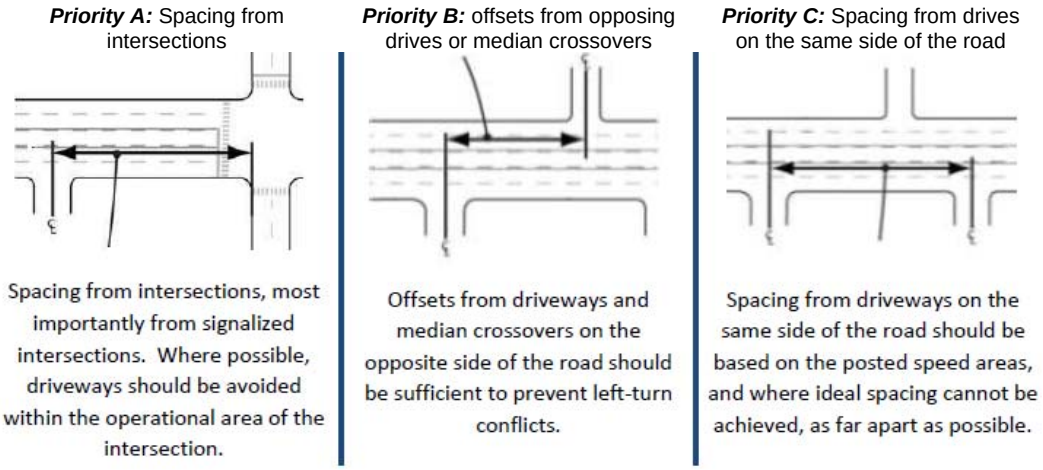
- ***Separate the conflict areas.*** Reduce the number of driveways, increase the spacing between driveways and between driveways and intersections, and reduce the number of poorly aligned driveways.

- ***Remove turning vehicles or queues from through lanes.*** Reduce both the frequency and severity of conflicts by providing separate paths and storage areas for turning vehicles and queues.

- ***Limit the types of conflicts.*** Reduce the frequency of conflicts or reduce the area of conflict at some or all driveways by limiting or preventing certain kinds of maneuvers.

- ***Provide reasonable access.*** Recognize that property owners have an inherent right to access public roadways, although reasonable access may be indirect in some instances.

Access recommendations are not made according to a static set of standards. Rather, they are made by considering the context of the site, volume of traffic using each access point, existence of support facilities (such as shared drives, side access, etc.), interface with walking, biking and transit systems, and proximity to other nearby access points. Often, these existing conditions can prevent full compliance with ideal access standards, so it is important to know which are most critical to implementation. Where this occurs, other alternatives such as shared access, service drives and traffic signals should be considered to improve access conditions. To identify the best recommendation for each situation, access recommendations should be made using the following priorities:

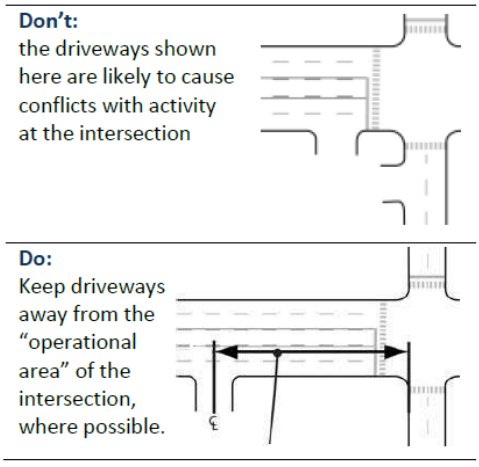


Access Tools & Techniques

Access management can be accomplished through a variety of techniques, both physical and regulatory. Recommendations and regulations are based on the following techniques:

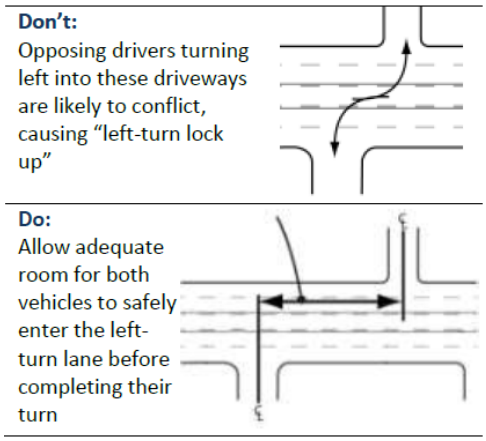
Driveway Spacing from Intersections

Driveways need to be spaced far enough from intersections, especially signalized intersections, to reduce crash potential between traffic entering or exiting a driveway and intersection traffic. Standards take into account the type of roadways involved, type of intersection control, and type of access requested (full- or partial-movement). For state trunklines with speed limits of 30 or more miles per hour, full movement driveways should typically be at least 230 feet away from a signalized intersection (460 feet in 40 mph zones) and 115 to 230 feet away from un-signalized intersections.



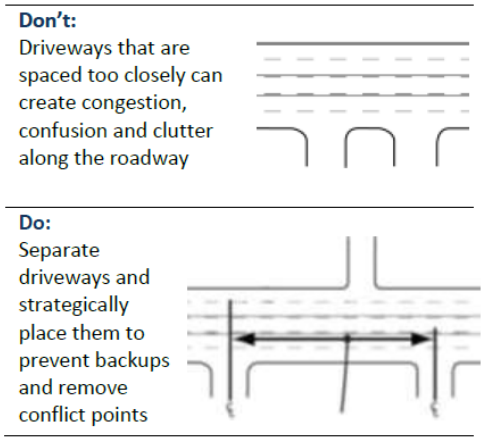
Driveway Alignment & Offsets Relative to Other Driveways

One problem with two-way left-turn lanes is the potential for opposing automobiles to prevent the other from safely completing their maneuver due to "left turn lock up," as shown. To help prevent this situation, driveways should be aligned with those across the street or offset a sufficient distance to reduce left-turn turning movement conflicts. Minimum offsets on the corridor should be determined by posted speed limits and range from 255 feet in 25-mile per hour zones to 750 feet in 50 mile per hour zones.



Driveway Spacing from Other Driveways

Optimum driveway spacing simplifies driving by reducing the amount of information to which a driver must react. Adequate spacing between adjacent driveways and between driveways and intersections can reduce confusion that otherwise requires drivers to watch for ingress and egress traffic at several points simultaneously while controlling their vehicle and monitoring other traffic ahead and behind them. Reducing the amount of information related to selecting an access point and avoiding conflicting turns and traffic provides greater opportunity to see and safely react to automobiles in the street and pedestrians and bicyclists on sidewalks.



Recommended MDOT Spacing Standards

Generally, higher posted speed limits demand greater driveway spacing. Spacing standards recommended for this corridor are based upon MDOT guidelines for minimum distances between driveways, measured centerline to centerline. The posted speed limits in the spring of 2010 for the corridor are illustrated on the recommendations maps. While these recommended spacing guidelines will be difficult to achieve along Rochester Road, where existing lot widths and driveway locations are likely to prevent compliance, they do provide a good benchmark for review. Realistically, each city should strive to achieve greater compliance with these recommendations.

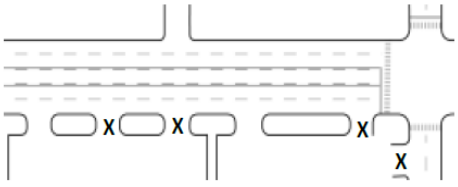
Posted Speed (mph)	MDOT Spacing (in feet)
25	130
30	185
35	245
40	300
45	350
50 +	455

These driveway spacing standards will require more in-depth study before being applied along Rochester Road in Royal Oak. Most driveways in Royal Oak can not meet these standards. The city's smaller lot sizes and fully-developed land use patterns make adoption of these standards extremely difficult. A balance will need to be achieved between how close Royal Oak can come to achieving these standards without creating too many nonconforming lots and driveways.

Number of Access Points

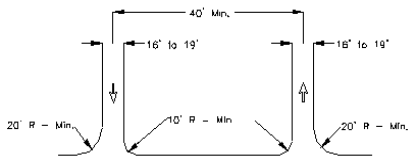
The number of access points to a development should be limited to one where possible. Every effort should be made to limit the number of driveways and encourage access from side streets, service drives, frontage roads, shared parking areas, and shared driveways. Certain developments generate enough traffic to consider allowing more than one driveway and larger parcels with frontages that are wide enough to meet spacing standards may also warrant an additional driveway. These possibilities need to be considered when crafting zoning regulations to ensure reasonable application of this standard.

Do:
Seek removal of driveways that do not meet the MDOT spacing standards, or that are not necessary for reasonable access

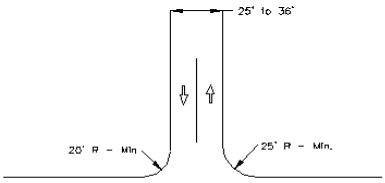


Access Design

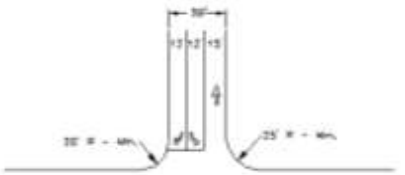
The geometric design of access points, including the width, throat, radius, and pavement type, should meet relevant standards wherever possible to promote smooth transition between Rochester Road, cross streets, and private driveways.



DETAIL A: TYPICAL ONE-WAY PAIR DRIVEWAY CONFIGURATION



DETAIL B: TYPICAL TWO-WAY DRIVEWAY ONE ENTRANCE LANE, ONE EXIT LANE



DETAIL C: TYPICAL TWO-WAY DRIVEWAY ONE ENTRANCE LANE, TWO EXIT LANES

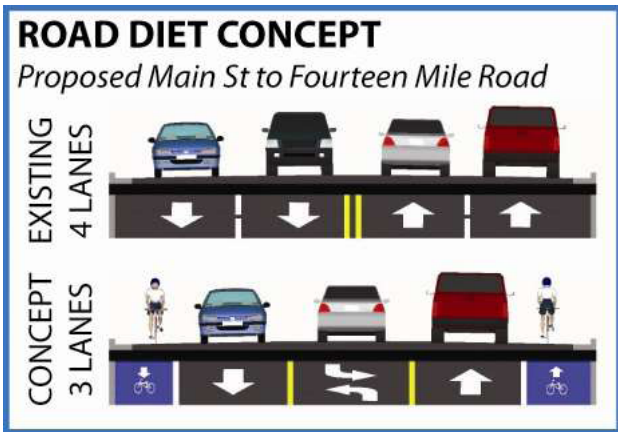
Road Design

Historically, congestion issues were often addressed through widening the road or intersection. While this is still appropriate in some cases, other less extensive physical changes can also be made to improve access conditions.

Installation of center medians or channelized driveways can be used to create "right-in / right-out" driveways, immediately eliminating half the potential conflict points. A segment of Rochester Road in Troy was reconstructed into a divided road with center median in 2010. Among the benefits of this type of median is an improvement to traffic flow and safety. Studies consistently show a median can improve capacity by 10% to 25% and reduce crashes by 25% to

50%. Intersection redesign is another more costly approach, but where warranted, can be necessary to address a safety concern.

A less costly road redesign option is to convert a four-lane road to a three-lane road, sometimes called a "road diet." This plan proposes such a change in Royal Oak, where the four existing vehicle lanes would be replaced by three vehicle lanes and dedicated bike lanes on both sides, the same as proposed under the Non-Motorized Transportation Plan. The road diet allows for addition of a center left-turn lane, and can sometimes be implemented with simple striping changes.

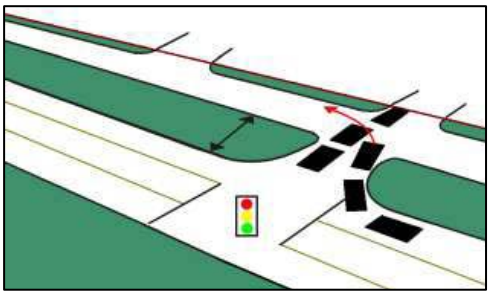


The road diet proposed from Main Street to Fourteen Mile Road will improve the bicycling environment by providing dedicated, on-street bike lanes in lieu of unnecessary vehicle lanes.

Shared Driveways & Cross-Access

Sharing or joint use of a driveway by two or more property owners should be encouraged. This will require a written easement for access and maintenance from all affected property owners before or during the site plan approval process. Where future shared access is desired, the developer should construct a 'stub' drive up to the property line (with access easement) or initiate a floating cross-access easement that will be reciprocated by adjacent development in the future to facilitate an easy connection when opportunities arise on adjacent property.

Alleys & Service Drives



Frontage drives, rear service drives, and shared access can be used to minimize the number of driveways, while preserving property owner rights to reasonable access. Such facilities provide customers with access to multiple sites without the need to re-enter the main roadway. In areas within one-eighth of a mile of existing or future signal locations, access to individual properties should be provided via these shared or indirect access methods first, rather than by direct roadway connections. Use of these secondary access opportunities helps disburse traffic and alleviate congestion at direct driveway locations. Any new service drives should be constructed to public roadway standards in regard to cross section (i.e. 22-30 feet wide), materials, design, and alignment. Use of service drives should be encouraged, and incentives enacted, where they can:

1. *Provide through connections between side streets.*
2. *Relieve a congestion or safety condition.*
3. *Serve numerous properties.*
4. *Benefit the general public to an extent that their use provides a greater service to the community than to the individual property owner.*

Internal Sidewalk Connections to Public System

Clearly marked internal sidewalks and paths should be included in site design. Walkways need to be located in convenient, visible locations to encourage use, but also should be clearly separated or protected from driveway and internal circulation lanes. This is especially important for segments of the corridor with higher sidewalk traffic.

Corridor Improvement Guidelines

The focus of this access management plan is addressing access-related issues along the Rochester Road corridor. However, when access points are removed or redesigned, new opportunities emerge to improve the corridor in other ways. Improving driveway location and design can improve the environment not only for motorists, but also for pedestrians, bicyclists, and transit riders. The following sections outline site and access design considerations that can improve walking, biking and transit environments, and explains how use of green infrastructure and low-impact development (LID) concepts can enhance the corridor as well.

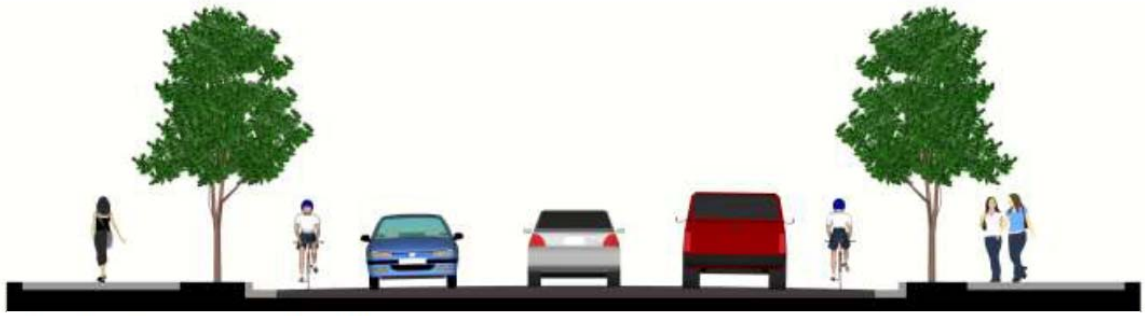
Rochester Road has historically been planned to accommodate motorized traffic, but it also serves pedestrians and bicyclists. Access management is one tool with the potential to improve the safety and flow of traffic from all modes. By reducing the number of and improving the design of driveways, the interface between motorists and pedestrians and bicyclists is safer and less frequent. This approach of considering the function of the whole corridor and all who use it for transportation purposes is referred to as "complete streets."

Recent amendments to the Michigan Planning Enabling Act (MPEA) and the State Trunkline Highway System Act (Act 51) show the State's support of Complete Streets policies, as summarized below:

- The MPEA was amended to provide for the inclusion of complete streets: "*A system of transportation to lessen congestion on streets and provide for safe and efficient movement of people and goods by motor vehicles, bicycles, pedestrians, and other legal users*." This amendment requires local master plans to include a comprehensive transportation component that addresses all modes of transportation, and requires communities to work together, and with appropriate road agencies, toward local complete streets policies.

- Act 51 was amended to mandate the creation of a State Advisory Council that will adopt a state-wide policy. It also requires state departments of transportation to provide technical knowledge and assistance to local communities, and demands best practices be used when planning improvements to the state's transportation system.

The Rochester Road Access Management Plan seeks to advance the concept of complete streets by integrating non-motorized data, including bike routes, regional trails, and sidewalk locations, into the project maps, and by identifying gaps in the existing sidewalk or pathway systems. In addition, many of the proposed access recommendations will have secondary benefits to the non-motorized environments, such as fewer driveway crossings, better visibility to motorists, and safer road and driveway crossings.



Complete Streets accommodate all users...

Wide Paths:	On-Street Bike Lanes:	Travel Lanes:	On-Street Parking:	On-Street Bike Lanes:	Wide Paths:
▪ Pedestrians ▪ Recreational users	▪ Bicyclists	▪ Motorists	▪ Business customers	▪ Bicyclists	▪ Pedestrians ▪ Recreational users

Non-Motorized Travel

Pedestrians and bicyclists (referred to as "non-motorized users") are the most vulnerable travelers. To be most effective when planning corridor features, the pedestrian and bicyclist must be considered a priority. By encouraging fewer access points and proper spacing and design, access management can improve the non-motorized environment. Improved driveway design (e.g. geometric, materials) can improve visibility of pedestrians and bicyclists for automobiles. Pedestrian and bicycle travel along corridors with a proliferation of access points can be dangerous for several reasons:

- *More driveway crossings means pedestrians face interaction with vehicles more often, increasing the likelihood of a vehicle-to-pedestrian crash.*
- *More driveways often include more signs and clutter within the right-of-way, which can be distracting to motorists and can block views of pedestrians and bicyclists.*
- *Driveways designed without proper curb radii, throat depth, and other design factors can reduce visibility, reaction times and hamper circulation. Access management supports driveway designs that intuitively cause motorists to drive with caution.*

Existing Trail & Sidewalk Systems

Three regional trail systems converge just east of the study corridor in the City of Rochester. The Paint Creek Trail originates in Lake Orion and continues southeast to Rochester, and the Clinton River Trail generally follows the Clinton River, beginning at Opdyke Road and running northeast. East of Rochester, the trail enters Macomb County as the Macomb-Orchard Trail and continues northeast to the City of Richmond. Rochester Road is located near the point where these trails connect, and as such has the potential to connect numerous residents in the five cities involved in this effort with these regional trails. Therefore, as development progresses along the corridor, wider sidewalks and multiple-use pathways should be encouraged to provide more residents with access to these regional assets.

Sidewalk gaps exist in various locations along the corridor, most commonly in the northern end where vacant development sites exist and the system has not been completed. These locations are noted on the site-specific recommendation maps so each community is well-aware of deficiencies in the system before development proposals are submitted for review.

Non-Motorized Design Guidelines

Designing any non-motorized system requires careful planning that considers safety, efficiency, convenience and costs versus benefits. It is important to provide clearly delineated pedestrian areas both along the corridor and connecting to private commercial developments. Non-motorized improvements should focus on linking the planned regional trails and improving safety and convenience for transit users and walkers or bikers traveling in high-use areas.

In general, when planning for future non-motorized systems, communities should follow the guidelines listed below.

- ***Access Design.*** The geometric design of access points, including the width, throat, radius, and pavement type, should all include consideration of the interaction with off-street non-motorized users. Excessively wide driveways with little or no separation from off-street parking areas and broad, sweeping driveway curbs provide an unprotected non-motorized environment that lacks clear definition for turning movements and increases the amount of time a pedestrian or bicyclist is exposed to traffic. Driveways should include a clear-vision zone at the entrance, free of visual obstructions like shrubs, signs, utility boxes, or other barriers so oncoming traffic can clearly see pedestrians entering the driveway.

- ***Delineate Driveway Crossings.*** Sidewalk crossings of driveways should be clearly delineated. For higher volume areas (traffic or pedestrian) the crossing could be striped or constructed of durable contrasting material. Textured or colored concrete are good options since they can withstand vehicular weight while attracting the attention of motorists. Maintenance of crosswalk markings should be made a condition of site plans, just like maintenance of parking lot striping.

Example of how driveway design can draw attention to pedestrians in crosswalks.

- ***Mid-Block Non-Motorized Crossings.*** When convenient, pedestrians will cross in the safest location. Preferably these are at signalized intersections, but pedestrians are more likely to cross in un-signalized locations when crossings are spaced more than ½-mile apart.

  While there is not much potential to see new signals in the more urban, developed communities in the southern end of the corridor, new design technologies and advanced traffic signals may be used to facilitate mid-block crossings in suburban settings. These options can help safely move pedestrians near school sites, key destinations or other locations, with minimal impacts to higher speed automobile traffic.

- ***Accommodate Bicyclists.*** Non-motorized systems must also accommodate bicycle activity. Amenities like bicycle storage, staging areas, and rest spots should be included in community-wide non-motorized systems. In some locations along the corridor, existing 4-lane roads can be re-striped to include bike lanes without widening the actual road. Such a "road diet" is recommended in areas where motorized and non-motorized traffic volumes suggest fewer travel lanes and more bicycle facilities are needed, such as the segment in Royal Oak between Main Street and Fourteen Mile Road.

Example of bike lane on suburban arterial road.

Low Impact Development (LID) and Green Infrastructure

Stormwater management has historically been addressed from an engineering standpoint, to manage the quantity of runoff and prevent flooding. Stormwater runoff, especially in the more established urban areas of the corridor has historically been directed to privately- and municipally-owned detention or retention ponds with little regard for the water's volume, flow and especially quality. These systems are expensive to build and maintain. Techniques to lessen the volume and speed of runoff, and improve the quality of water that enters municipal stormwater systems can help reduce the need for costly improvements in the future.

In the last decade or so, increased focus has been given to the quality of stormwater runoff. Best practices encourage application of "green infrastructure" techniques or low impact development (LID), which use a basic principle modeled after nature: manage rainfall by using design techniques that infiltrate, filter, store, evaporate, and detain runoff close to its source. Instead of conveying, managing and treating stormwater in large, costly, end-of-pipe facilities often located in drainage areas, LID addresses stormwater through smaller, more cost-effective landscape features.

Providing incentives for green infrastructure and LID with required access management improvements provides numerous benefits to property owners, regulatory agencies and the general public:

- *Reduces the volume and improves the quality of stormwater runoff*
- *Provides storage areas to minimize flash flooding*
- *Reduces municipal infrastructure and utility maintenance costs (e.g., streets, curbs, gutters, storm sewers)*
- *Increases energy and cost savings for heating, cooling, and irrigation*
- *Protects community character and aesthetics*
- *Reduces salt usage and snow removal on paved surfaces*
- *Protects and restores water quality in rivers and lakes and groundwater supplies*
- *Improves air quality*

Low Impact Development Guidelines

Example of using curb lawn to capture runoff while "greening" the corridor

Because application of low-impact design will vary from site to site depending on soil conditions, existing drainage and stormwater systems, this plan provides a policy framework for strongly recommending the use of LID techniques. They should be considered as part of the menu of other potential improvements when there is a change to a site plan or a proposed new development to determine if there are ways to better address stormwater runoff.

Low-impact design should be encouraged wherever it can be applied along the corridor, but it is specifically warranted in areas where vegetation may be installed in lieu of impervious surfaces (i.e. pavement). Green infrastructure techniques and LID should be encouraged, although not absolutely required, when access management improvements become necessary during the site plan review process for individual properties. Detailed design criteria for LID can be found in SEMCOG's Low Impact Development Manual (*A Design Guide for Implementation and Reviewers*).

- ***Bioretention (rain gardens) and bioswales*** should be considered in areas between the new or existing sidewalk where driveways are removed and in areas where a road median is installed or redesigned. Plant species should be salt tolerant, provide aesthetic benefits, and be low maintenance.

- ***Native street tree planters*** are recommended where earth is disturbed due to the removal or relocation of a driveway or median crossover. Maximizing exposed soil around the tree will facilitate water infiltration; however, tree grates and planter options can be applied in more urban or pedestrian high-traffic areas. Street tree species should be varied to minimize the potential of invasive threats.

- ***Porous pavement*** may be considered instead of impervious applications (i.e. asphalt or concrete) in parking areas or the road gutter. To function properly, porous pavement requires adequate subsurface soil conditions, overflow connection to a storm sewer or other final discharge location and routine vacuum maintenance. Porous pavement should not be installed in areas where there is a potential for soil contamination.

- ***Installation of landscaped islands within parking areas*** can help provide additional "green" areas that serve various functions. Landscaped islands sometimes act as pedestrian refuge areas for those entering or exiting a store. They also provide planting areas for trees and other native vegetation, which can help reduce temperatures, water usage, and maintenance costs.

Transit

Fixed-line, connector, paratransit and community partnership bus service is provided to Oakland County residents by SMART (Suburban Mobility Authority for Regional Transportation). SMART began providing transit service to Wayne, Oakland and Macomb Counties in 1967. It has provided paratransit service to residents since 1994. What began as a modest service has become a necessity for those whose disabilities prevent them from using the fixed line service. Weekday curb-to-curb connector service is available to senior and handicap residents upon 24 hour advance notice.

SMART does not offer fixed line service on Rochester Road, but the 430 (Main Street - Big Beaver Road) and 760 (Thirteen and Fourteen Mile Roads) lines offer service in the vicinity. Because there is no fixed line service on Rochester Road, there are no bus stops located in the study corridor. Where these transit lines run proximate to the study corridor, they are noted on the site-specific maps. Where possible, communities should encourage sidewalk connections to these routes, but fixed route transit service it is not anticipated for this corridor, and improvements are likely to be minimal.

Specific Recommendations for Royal Oak

Introduction

The southern end of the Rochester Road corridor is located in Royal Oak, beginning at Main Street, where it proceeds north-northeast in direction. This segment of the corridor is similar to other arterial streets in the city, with a four-lane cross section through predominantly single-family neighborhoods with small pockets of neighborhood-scale commercial development.

Data and observations indicate that vehicles entering and exiting the roadway at cross streets and individual driveways can create potential for crashes and congestion. Managing access along the corridor can reduce these effects because it considers the number, placement, and design of access points (intersecting streets and commercial driveways) in the context of the overall roadway, not just on each individual site.

Analysis of Rochester Road begins with broad evaluation of local planning policies and regulations along the corridor then proceeds with analysis of existing conditions including posted speed limits, traffic volumes, crash locations and concentrations, driveway locations and non-motorized conditions. These analyses, when combined with on-site reviews and discussions with

local officials, create the basis for access recommendations for the corridor and individual sites within the City of Royal Oak.

Local Considerations

Lot Sizes & Development Patterns

Similar to most established communities in the region, development in Royal Oak transformed over time. The city experienced the largest population growth in the 1960's and 1970's, so it is natural that parcel sizes and development patterns reflect the character and style of that period. Lots fronting on Rochester Road vary in size, depending on the use of the property. Most of the corridor is residential and lot sizes are typically small in size; typically 40 feet wide by 110 feet deep.

Due mostly to these small lot sizes, many of the commercial sites contain several platted lots that have been combined together to accommodate larger buildings and associated parking. Even those lots combined for commercial development are still quite small compared to modern standards.

These lot sizes and building arrangements restrict options for shared access, since many buildings have short front yard setbacks that do not provide room for cross-access connections. In addition, most of the commercial sites abut neighborhoods to the rear, which can sometimes limit indirect access via rear alleys or service drives. Because of these limitations, most businesses have one or more driveways with direct access to Rochester Road. A few have assembled enough land to extend from side street to side street.

Example of small parking lot without cross-access.

Road Jurisdiction

While portions of the Rochester Road corridor in Oakland County fall under the jurisdiction of the Road Commission for Oakland County and the Michigan Department of Transportation, the entire 2.5-mile length through Royal Oak is under control of the city.

Planning Policy

The City of Royal Oak Master Plan envisions a mixture of uses along Rochester Road. Downtown Royal Oak and Woodward Avenue contain much of the city's planned general commercial districts, so the majority of future land uses along Rochester Road include mixed-use, multiple-family, and single family residential with a few nodes of general commercial located on the north sides of Twelve and Thirteen Mile Roads. The city's transportation goal, as stated previously in this Master Plan, is ***"to provide an integrated and accessible transportation system comprised of a balanced range of travel options to facilitate the safe, convenient, reliable and smooth flow of motorized and non-motorized vehicles and pedestrians."***

In accomplishing this goal, the city supports use of access management, and encourages continuous sidewalks, coordinated non-motorized planning, and proper road improvements to improve safety conditions. Several objectives and strategies from the city's Master Plan support the recommendations presented in this access management plan.

Zoning

Zoning along the corridor in Royal Oak is generally consistent with the existing land uses. The predominant zoning in the area is One-Family Residential with pockets of Neighborhood Business and Mixed Use 2 zoning at key intersections.

Traffic Conditions

Rochester Road between Main Street and Fourteen Mile Road is generally two lanes in each direction with left turn lanes at major intersections. The average daily traffic (ADT) along this segment of Rochester Road ranges from approximately 10,000 to 20,000 vehicles per day. The following table illustrates the average daily traffic along Rochester Road in the City of Royal Oak. The speed limit along Rochester Road in the City of Royal Oak is 35 m.p.h.

Rochester Road Average Daily Traffic (ADT) in Royal Oak

Segment	ADT
Main St. / Catalpa Dr. / Crooks Rd. to Twelve Mile Rd.	10,600
Twelve Mile Rd. to Girard Ave.	13,700
Girard Ave. to Thirteen Mile Rd.	13,000
Thirteen Mile Rd. to Fourteen Mile Rd.	20,100

Source: LSL Planning, Inc.

Non-Motorized Conditions

Sidewalks exist on both sides of Rochester Road for the entire length of the corridor in Royal Oak. The city's sidewalk system is well-connected along streets and through adjacent neighborhoods. Therefore, the primary objectives are to provide safe routes and road crossings.

Driveway Density

Analysis of driveway density, or the number of access points per mile, can help identify concentrations of driveways that may contribute to unsafe conditions or congestion. Areas with higher concentrations are more likely to create frequent disruptions to traffic flow in the right lane, and less likely to attract non-motorized traffic. Understanding the average dimensions and area of driveways also provides an idea of the amount of land that, if the driveway were removed, could otherwise be used for stormwater detention or corridor greening efforts.

Ideally, access along Rochester Road would adhere to MDOT's suggested spacing requirements, but in Royal Oak, existing lot sizes, driveway locations, frequency of access and truck traffic patterns sometimes dictate specific access locations that cannot be modified. Understanding the existing built, urban nature of development in Royal Oak prevents full conformance with the

MDOT access standards, this plan focuses more on achieving greater conformance with the spacing requirements, while still maintaining reasonable access to private property.

The following table shows the number of existing access points (streets and driveways) on both sides of the road in Royal Oak. Of the existing 147 access points, 8% are proposed to be closed or consolidated. While the number of remaining driveways is still over one and a half times the number of access points that would result if MDOT's spacing standards were applied, it sill represents a decrease in access points while maintaining reasonable access to difficult sites with size and shape constraints.

Existing & Resulting Access Points

Segment	Density		# of Access Points		
	Length (ft)[1]	Access / Mile	Existing	Remove	Keep
Main St. to Twelve Mile Rd.	2,277	20.9	13	2	7
Twelve Mile Rd. to Detroit St.	2,593	30.5	19	0	15
Detroit St. to Thirteen Mile Rd.	2,896	62.0	48	6	28
Thirteen Mile Rd. to Whitcomb Ave.	3,067	53.4	48	2	29
Whitcomb Ave. to Fourteen Mile Rd.[2]	2,287	34.6	19	2	13
Overall	13,120	41.9	147	12	92

Notes:
1. Segment lengths are approximate.
2. Rochester Road is the boundary between Royal Oak and Clawson in this segment. Only access points on the east side of this segment were counted.

Source: LSL Planning, Inc.

Crash Segment Analysis

There were four segments of Rochester Road in the City of Royal Oak that were evaluated for crash frequency and rate – Main Street / Catalpa Drive / Crooks Road to Twelve Mile Road, Twelve Mile Road to Girard Avenue, Girard Avenue to Thirteen Mile Road, and Thirteen Mile Road to Fourteen Mile Road. From the crash analysis, it was found that none of the segments had a crash rate above the threshold used by SEMCOG to qualify as a critical crash location.

Intersection Crash Analysis

Intersection crash rates were also calculated and compared to the SEMCOG critical crash rates for signalized intersections in the Detroit metropolitan area. None of the Rochester Road intersections in the City of Royal Oak exceeded the critical rate for intersections with the same average daily traffic.

Intersection Operation Analysis

Existing traffic and safety conditions along the Rochester Road corridor within the City of Royal Oak are currently acceptable, based on traffic engineering standards. Analysis determined that the four study intersections were operating at an acceptable level of service (LOS) during the AM and PM peak hours, and none of the intersections or segments in the city exceeded the SEMCOG critical crash threshold. Based on the volumes, existing signal timings, and current laneage described above, the following table summarizes the existing levels of service at the four

study intersections. An acceptable LOS is "D". All intersections currently operate at LOS "C" or better during both time periods under existing conditions. This suggests there may be some additional capacity available to accommodate a 4-lane to 3-lane road diet along Royal Oak's portion of Rochester Road.

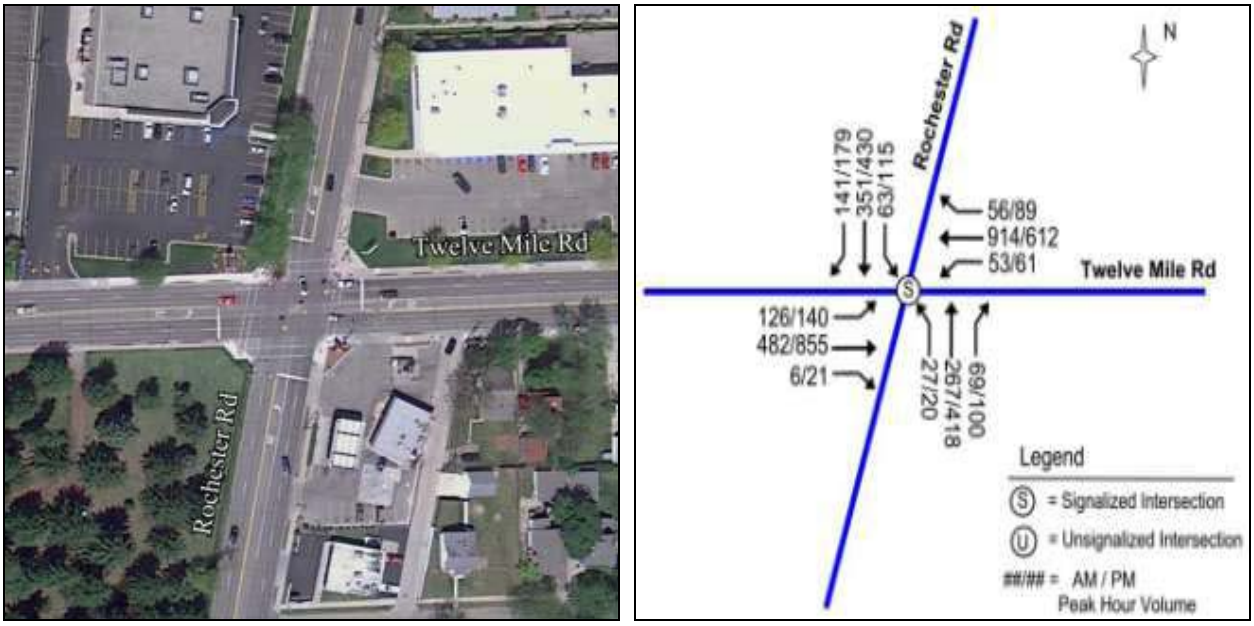
Existing LOS for AM / PM Peak Hour				
Existing	**North Bound**	**South Bound**	**East Bound**	**West Bound**
Twelve Mile Road	C / A*	C / A	A / A	A / A
Girard Avenue	A /A	A / A	C / A	A / A
Thirteen Mile Road	B / A	C / A	B / A	B / A
Fourteen Mile Road	C / A	C / A	C / B	C / B

* AM / PM
Source: LSL Planning, Inc. / SEMCOG

The mixture of stopped left-turning vehicles with through traffic can also result in a higher number of rear end, sideswipe, left-turn related, and driveway related crashes along four lane roads. Although none of the segments along Rochester Road in the City of Royal Oak were above the critical crash threshold, safety improvements may still be realized by implementing the general recommendations of this plan.

Twelve Mile Road Intersection

All four approaches at the intersection of Rochester Road and Twelve Mile Road have three approach lanes consisting of one left, one through, and a through-shared right turn lane. The signal operates in two phases with three timing plans, one for the morning peak period, one for the evening peak period, and one for the remaining times. The signal is actuated-coordinated with detection on all approaches and Twelve Mile Road as the coordinated phase. This means that any green time not used by Rochester Road will be given to traffic on Twelve Mile Road.



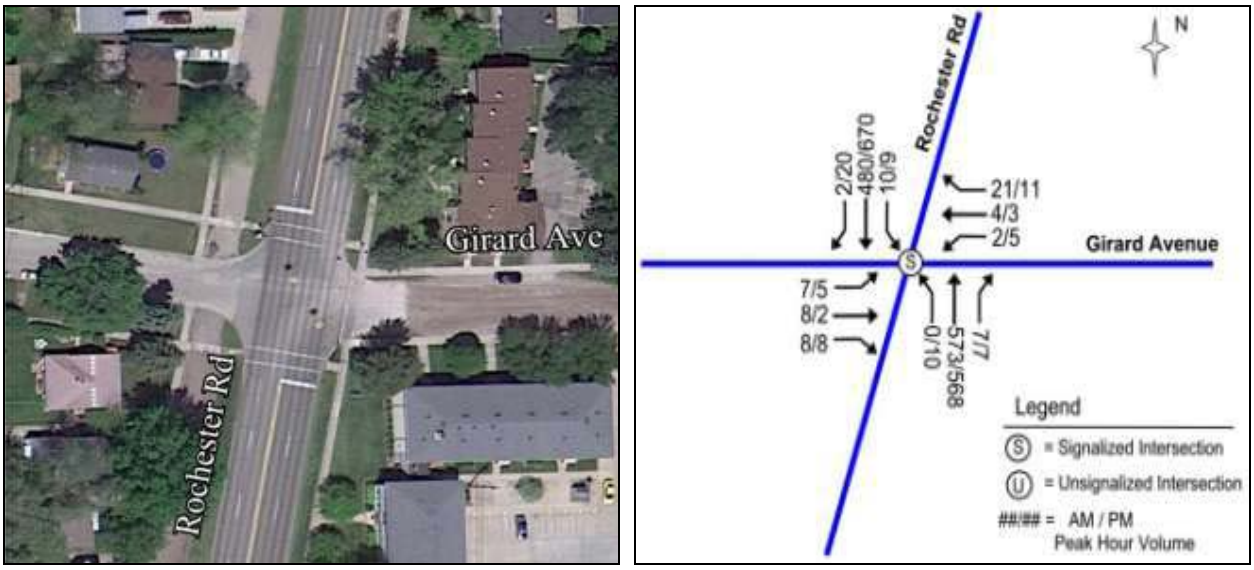
Existing laneage at Twelve Mile Road (left) and AM / PM peak hour volumes (right).

There is heavy westbound through movement on Twelve Mile Road during the morning peak hour and a heavy eastbound movement during the evening peak hour. There are heavy

southbound through and right turn movements on Rochester Road in both the morning and evening peak hour.

Girard Avenue Intersection

The northbound and southbound approaches of Rochester Road have three approach lanes consisting of one left, one through, and a through-shared right turn lane. The eastbound and westbound approaches of Girard Avenue have one approach lane with all movements shared. The signal operates in two phases with three timing plans, one for the morning peak period, one for the evening peak period, and one for the remaining times. The signal runs actuated-coordinated with detection on all approaches and Rochester Road as the coordinated phase. This means that any green time not used by Girard Avenue will be given to traffic on Rochester Road. There is a heavy northbound volume in the AM peak hour and a heavy southbound volume in the PM peak hours.

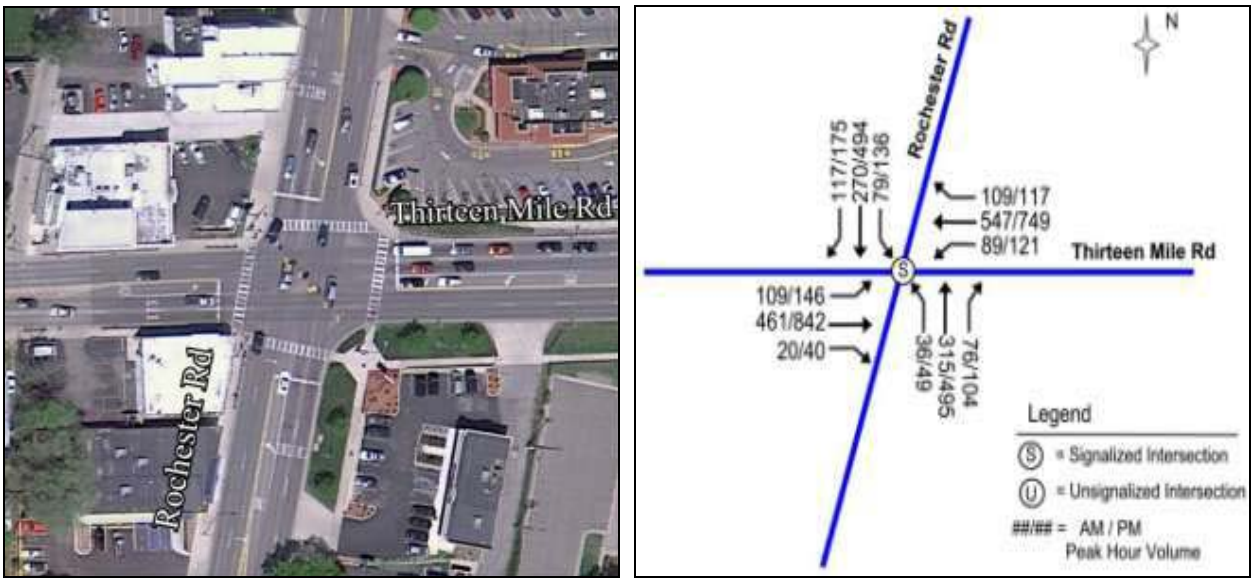


Existing laneage at Girard Avenue (left) and AM / PM peak hour volumes (right).

Thirteen Mile Road Intersection

All four approaches at the intersection of Rochester Road and Thirteen Mile Road have three approach lanes consisting of one left, one through, and a through-shared right turn lane. The signal operates in four phases with lagging permitted-protected left turns for all approaches. The signal at this location has three timing plans, one for the morning peak period, one for the evening peak period, and one for the remaining times. The signal runs actuated-coordinated with detection on all approaches and Thirteen Mile Road as the coordinated phase. This means that any green time not used by Rochester Road will be given to traffic on Thirteen Mile Road.

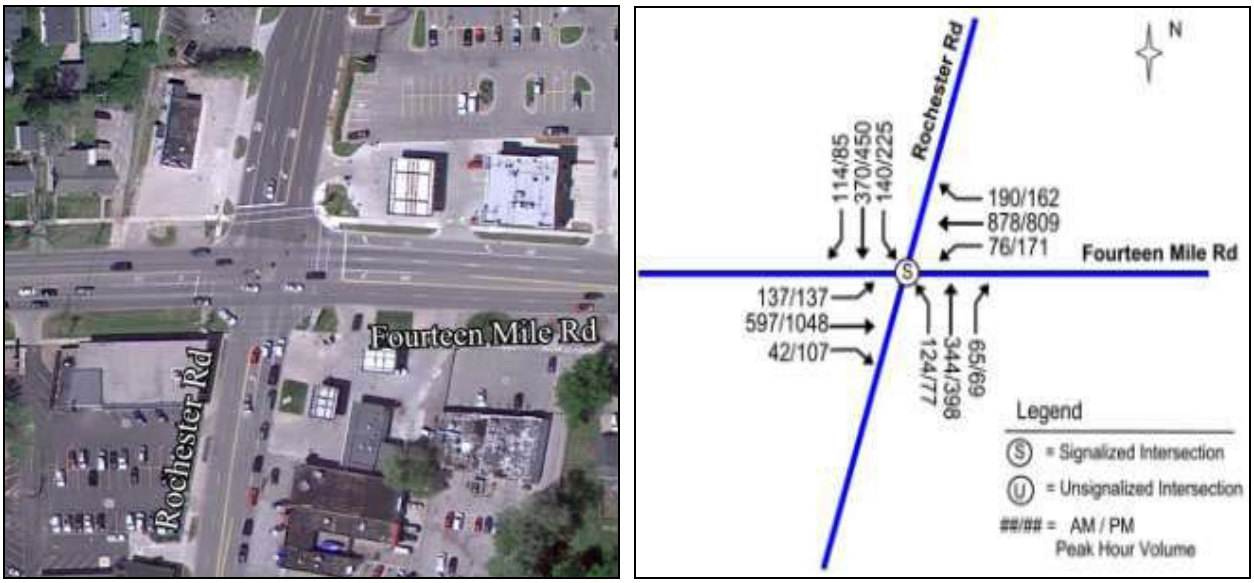
There is a heavy westbound through movement on Thirteen Mile Road in the morning peak hour and a heavy eastbound movement in the evening peak hour. There are heavy southbound through and right turn movements on Rochester Road in both the morning and evening peak hour.



Existing laneage at Thirteen Mile Road (left) and AM / PM peak hour volumes (right).

Fourteen Mile Road Intersection

The northbound approach of Rochester Road at Fourteen Mile Road has three approach lanes consisting of one left, one through, and a through-shared right turn lane. The southbound approach of Rochester Road has four approach lanes consisting of one left, two through, and one exclusive right turn lane. The eastbound approach of Fourteen Mile Road has three approach lanes consisting of one left, one through, and a through-shared right turn lane. The westbound approach of Fourteen Mile Road has four approach lanes consisting of one left, two through, and one exclusive right turn lane.



Existing laneage at Fourteen Mile Road (left) and AM / PM peak hour volumes (right).

The signal operates in four phases with lagging permitted-protected left turns for all approaches. The signal at this location has three timing plans, one for the morning peak period, one for the evening peak period, and one for the remaining times. The signal runs actuated-coordinated with detection on all approaches and Fourteen Mile Road as the coordinated phase. This means that any green time not used by Rochester Road will be given to traffic on Fourteen Mile Road.

There is a heavy westbound through movement on Fourteen Mile Road in the morning peak hour and a heavy eastbound movement in the evening peak hour. The peak flow of traffic along Rochester Road is evenly distributed in the AM peak hour and shows a slightly heavier southbound volume in the PM peak hour.

Recommendations

The section of this access management plan titled *Access Management Guidelines* describes the general standards that should be applied along the entire length of the study corridor, while *Corridor Improvement Guidelines* includes other general recommendations for non-motorized systems and greening of the corridor.

Road Design

By redesigning its streets over time, Royal Oak can not only provide a safe system that balances the needs of various users, but also that also responds to the desired character of adjacent land use and development to make street design more context sensitive.

Because average daily traffic volumes along the corridor in the cities of Royal Oak and Clawson are less than 18,000 per day, Rochester Road is a good candidate to convert from four to three lanes, or “road diet.” A road diet converts multiple-lane roads into roads with fewer lanes, usually converting the two inside travel lanes into one center left-turn lane, therefore leaving additional shoulder width that can be used to accommodate other modes of travel. Often, road diets are used to narrow roads with extra vehicle carrying capacity by converting one lane into bike lanes, on-street parking, landscaping, and/or sidewalks.

This four-lane to three-lane conversion would reduce the existing corridor’s two northbound lanes and two southbound lanes to one northbound through lane and one southbound through lane, and a shared center left turn lane. Converting the two inside travel lanes into one center left-turn lane frees up space in the existing pavement width for on-street bike lanes, new on-street parking, widened sidewalks or landscaped areas and other streetscape enhancements. These types of conversions have been shown to reduce crashes, especially left-turn and driveway related crashes; enhance mobility for all users and better harmonize street design with adjacent land uses.

Road diets are most often implemented on four-lane “prime connector” and “arterial corridors” with traffic volumes low enough (generally 18,000 – 20,000 vehicles per day or less) and where the conversion is expected to maintain acceptable levels of service, both along Rochester Road, and at key intersections.

To investigate the operational impact of the proposed road diet, the four intersections discussed on the previous pages were further evaluated. Traffic volumes for three of the four intersections were obtained from the Road Commission for Oakland County (RCOC) 2008 signal optimization project. An updated turning movement count was taken at Thirteen Mile Road on August 28, 2010. An intersection analysis was conducted to determine the amount of intersection delay along Rochester Road under existing conditions and with the road diet in place. The analysis indicated that the four study intersections would operate at an acceptable level of service (LOS "D" or higher) with the road diet in place.

The road diet would reduce the existing corridor's two northbound and two southbound travel lanes, to one northbound through lane, one southbound through lane, and a shared center left turn lane. Currently, the corridor's existing four lanes have only a slightly higher capacity than it would if it was reduced to the proposed three-lane cross section because the inside lanes can be blocked by motorists waiting to turn left. When this occurs, Rochester Road essentially operates with only one through lane in each direction. A conceptual example of a road diet at the intersection of Rochester Road and Fourteen Mile Road is shown at right. A center left turn lane and northbound and southbound bike lanes are illustrated, although the additional shoulder space could be used for a number of other purposes as well. Due to turning movement volumes, right turn storage pockets were added to increase vehicle capacity and alleviate congestion at the three mile road intersections. At Girard Avenue, the right turn storage pockets were not necessary due to low northbound and southbound right turn volumes.

Fourteen Mile Road – Road Diet Layout

The table on the following page compares the modeled LOS of the existing versus road diet configurations during the morning and evening peak hours (busiest one-hour periods of the day). Just as traffic engineers have made adjustments over time to maximize the LOS of the existing road, minor adjustments were made to the signal timing 'splits' in the model to maximize LOS

of the road diet. Elements such as 'cycle length' and 'offsets' were not altered to ensure progression on the cross streets would not be impacted.

AM Peak Existing LOS & Road Diet LOS				
Roadway	**North Bound**	**South Bound**	**East Bound**	**West Bound**
Twelve Mile Rd.	C / C*	C / C	A / B	A / A
Girard Ave.	A / A	A / A	C / A	A / B
Thirteen Mile Rd.	B / C	C / C	B / B	B / B
Fourteen Mile Rd.	C / C	C / D	C / C	C / C
PM Peak Existing LOS & Road Diet LOS				
Roadway	**North Bound**	**South Bound**	**East Bound**	**West Bound**
Twelve Mile Rd.	A / A	A / B	A / A	A / A
Girard Ave.	A / A	A / A	A / A	A / A
Thirteen Mile Rd.	A / B	A / B	A / B	A / A
Fourteen Mile Rd.	A / A	A / B	B / C	B / B

* Existing LOS / Road Diet LOS
Source: LSL Planning, Inc.

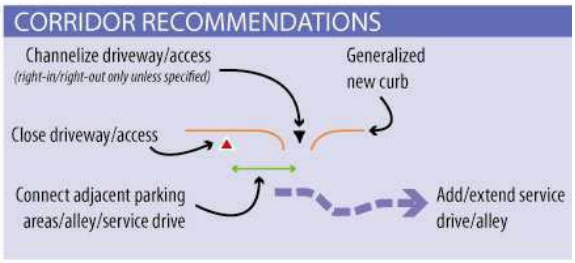
While an acceptable level of service for intersection approaches is "D" or better (lower letters are better), all 32 approaches modeled have an existing LOS of "C" or better. With the road diet in place, 30% of the approaches had a decreased level of service, with only one of those falling to "D" (all others remained "C" or better). For the one approach that fell to "D," at Rochester Road and Fourteen Mile, data shows that the southbound through movement has the highest delay of the three movements (with a volume to capacity ratio of 0.71). Review of the SimTraffic simulation did not show any excessive queuing for this movement. Based on this information, the southbound through movement is expected to operate sufficiently in the field. These results would indicate that implementing a road diet in this stretch would not significantly impact traffic operations at any of the signalized intersections.

Access

Historic development patterns along Rochester Road have resulted in placement of buildings very close to Rochester Road and side streets. The trajectory angle of Rochester Road causes side streets to intersect at odd angles, and building locations can limit sight distances when they are located near the corridor. In some locations signage has been placed to inform travelers of sight distance limitations. The city should ensure all signs are visible and not blocked by overgrown vegetation or utility poles. The city should monitor conditions at intersections and determine if additional measures to reduce crash potential (e.g. more visible warning signage or an overhead yellow beacon) are warranted and practical. Opportunities to improve sight distance should be taken as they arise, but may require changes to building placement or other costly development options, which may or may not occur in the future. If a road diet was implemented, these situations could improve to some degree, because there would only be one lane of traffic in each direction, and because of the wider turning radius and resulting clear views created by the additional feet of separation between the curb and travel lanes.

The corridor recommendation maps illustrate specific recommendations for the corridor through Royal Oak, including suggestions for driveway closings, shared and cross-access locations, proper alignments and alternative access opportunities. These recommendations are based on state and national research, a thorough review of the existing conditions along the corridor, and

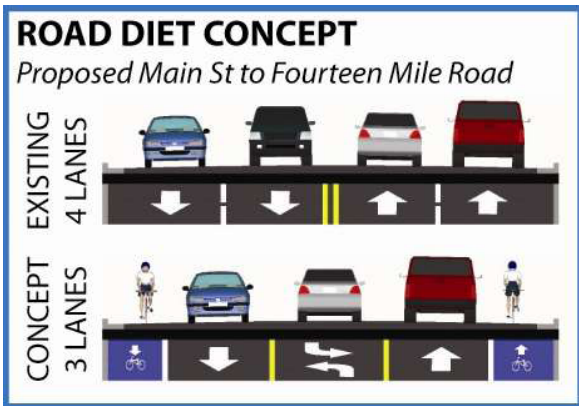
the extensive experience and expertise of the access management plan team with access management implementation across the state.



Because the recommendations are based on the existing conditions at the time this plan was developed, a significant change in conditions on a site should prompt a thorough consideration of any proposed project in the context of the policies, standards, and goals of this plan. The city, Oakland County, MDOT, SEMCOG and members of the Steering Committee will play an important role in reviewing development proposals along this corridor to promote the most efficient, and safe configuration of access.

Walking & Biking

Royal Oak' non-motorized transportation plan to help facilitate walking and biking throughout the community will be helpful in identifying key routes, destinations, and barriers to mobility that should be addressed in the future. Future non-motorized planning should consider the various types of users, and coordinate a "complete streets" approach to mobility that addresses the needs of citizens of varying age, ability and socio-economic status. Some citizens use the system for recreation, and others for commuting. Achieving better mobility will require a combination of various non-motorized facilities, including sidewalks, separate bike paths, regional trails and on-street bike lanes.



The road diet proposed from Main Street to Fourteen Mile Road will improve the biking environment by providing dedicated, on-street bike lanes in lieu of unnecessary vehicle lanes.

Special consideration should be given to the places where the non-motorized and motorized systems interface. Pedestrian path and bike route crossings should be planned or improved in locations where traffic signals can facilitate safer road crossings, and where local roads, rather than large mile roads, can be used for pedestrian and bicycle traffic. If the road diet recommended for Royal Oak's segment of Rochester Road is implemented, it would provide additional room for an on-street bike lane.

Low-Impact Development

It has been shown that implementing access management policies can improve other corridor conditions. As the science of planning for access evolves and improves, additional benefits are continually being identified. One such benefit is the potential to "green" the corridor. Every driveway that is removed as a result of access management presents an opportunity to replace hard surfaces like asphalt or concrete with pervious surfaces like grass, rain gardens or detention.

The average driveway in Royal Oak occupies approximately 275 square feet, but some driveways are very shallow, which limits low impact opportunities. Those larger driveways, if removed, could be used as green space, additional stormwater retention, or to reclaim needed parking. Based on the access recommended to be removed, this plan suggests a total of 3,350 square feet of impervious surface that can be reclaimed for other purposes, as previously discussed.

Transit

Presently, there is no fixed route transit service on Rochester Road. Local connector service seems adequate to serve residents living near the corridor, but if future demands suggest new routes, the city should coordinate with neighboring communities and SMART toward filling such needs. SMART should be contacted if a large employer or traffic generator locates in the city, to determine if service extensions are needed.

Recommendations for Specific Corridor Segments

Broad recommendations that apply to the entire corridor in Royal Oak are discussed above and in the preceding sections, but are only a small part of the larger access management program. Improved safety and traffic operations will most likely come as a result of small improvements and gradual changes to individual access points made over time. The maps provided for Royal Oak illustrate the changes for each property along the corridor, so the city can implement access changes on site-by-site basis. To help explain the mapped recommendations, the corridor was broken into half-mile segments; specific recommendations that apply to that segment are described below.

Main Street to Twelve Mile Road

Existing Conditions. Cemeteries are a predominant use in this segment, with some office and retail uses emerging at the southeast corner of Rochester and Twelve Mile Roads. Lots here are shallow, with short front yard setbacks, and rear service alleys.

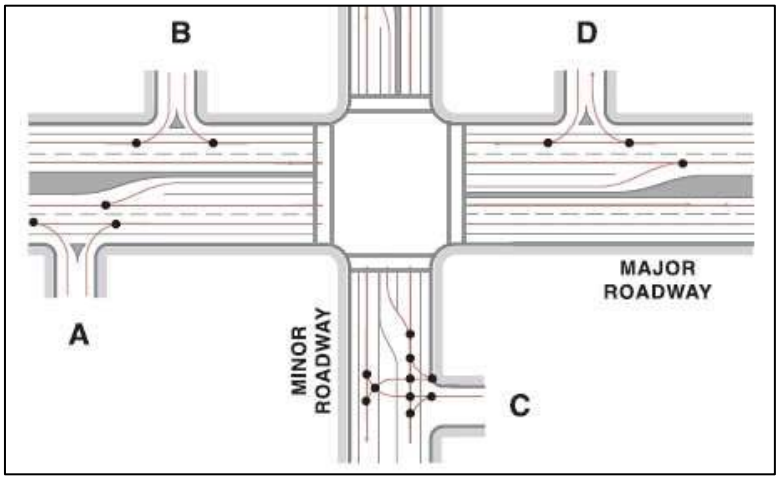
Recommendations. *(See Map 1 of the Site-Specific Recommendation Maps.)* Because of the few access points that exist in this segment, this segment operates safely. The access and non-motorized standards of this plan should be applied.

Twelve Mile Road to Thirteen Mile Road

Existing Conditions. The intersection at Twelve Mile Road is largely commercial, with pharmacies, banks and restaurants. These commercial uses extend almost a quarter mile north of Twelve Mile Road to Wagner Park and the Red Run Golf Club begins the transition to single-family residential. Aside from a few apartment complexes, smaller office, retail, civic and municipal uses, this segment of the corridor consists of single-family residential lots. Two blocks of homes on the west side, between Girard and Devillen Avenues, are provided access via gravel frontage roads that have been constructed between the sidewalk and west curb of the road.

Recommendations. *(See Maps 2 and 3 of the Site-Specific Recommendation Maps.)* It is recommended that the access and non-motorized standards of this plan be applied in this segment. More specific recommendations are given for the following locations

- *CVS Pharmacy*. Access to the CVS Pharmacy on the northeast corner at Twelve Mile Road has existing driveways on both Twelve Mile and Rochester Roads. Because of its proximity to the signalized intersection, it is recommended that the Rochester Road driveway be restricted to right-in, right-out turning movements only, to avoid left-turn conflicts.



Restricting turning movements into and out of driveways reduces the potential for crashes. Driveways with full turning movements (see driveway C) have significantly more conflict points than those with restricted movements (see A, B, and D). *Source: FHWA.com*

- *Intersection at Detroit Avenue*. The party store on the southeast corner at Detroit Avenue should have shared access with the office to the south, to facilitate directional access driveways. It is recommended the southern driveway be designated for inbound traffic and the northern for outbound.

- *Side Street Offsets*. Two cross streets in this stretch are offset just enough to create the potential for "left-turn lock-up," where opposing vehicles each attempting a left turn 'lock up' just before they're close enough to complete their left turn: DeVillen and Linden Avenues. While available crash data didn't show an existing crash concentration, an increase in traffic in the future or reconfiguration of the lanes with a road diet could increase crash potential. These intersections should be regularly evaluated by Royal Oak; if there is a need, the plan recommends signage to prohibit left turns from southbound traffic on these two cross streets, instead routing left turns to the next street south (Girard Avenue). Fern Street runs parallel to Rochester Road 300 feet east and connects Girard Avenue to DeVillen and Linden Avenues.

- *East Side between LaSalle & Lawrence Avenues.* Two businesses and the fire station in this stretch of two short blocks have six driveways directly onto Rochester Road and four additional access points via cross streets. The plan recommends closing and consolidating the drives to have four driveways onto Rochester Road with better spacing and offsets from opposing driveways.

- *West Side between Lawrence & Bloomfield Avenues*. Two offices on the west side have two driveways in the mid-block near an adjacent parking area. One of the two driveways should be closed, with cross-access provided between properties to allow shared use of the remaining driveway.

Thirteen Mile Road to Fourteen Mile Road

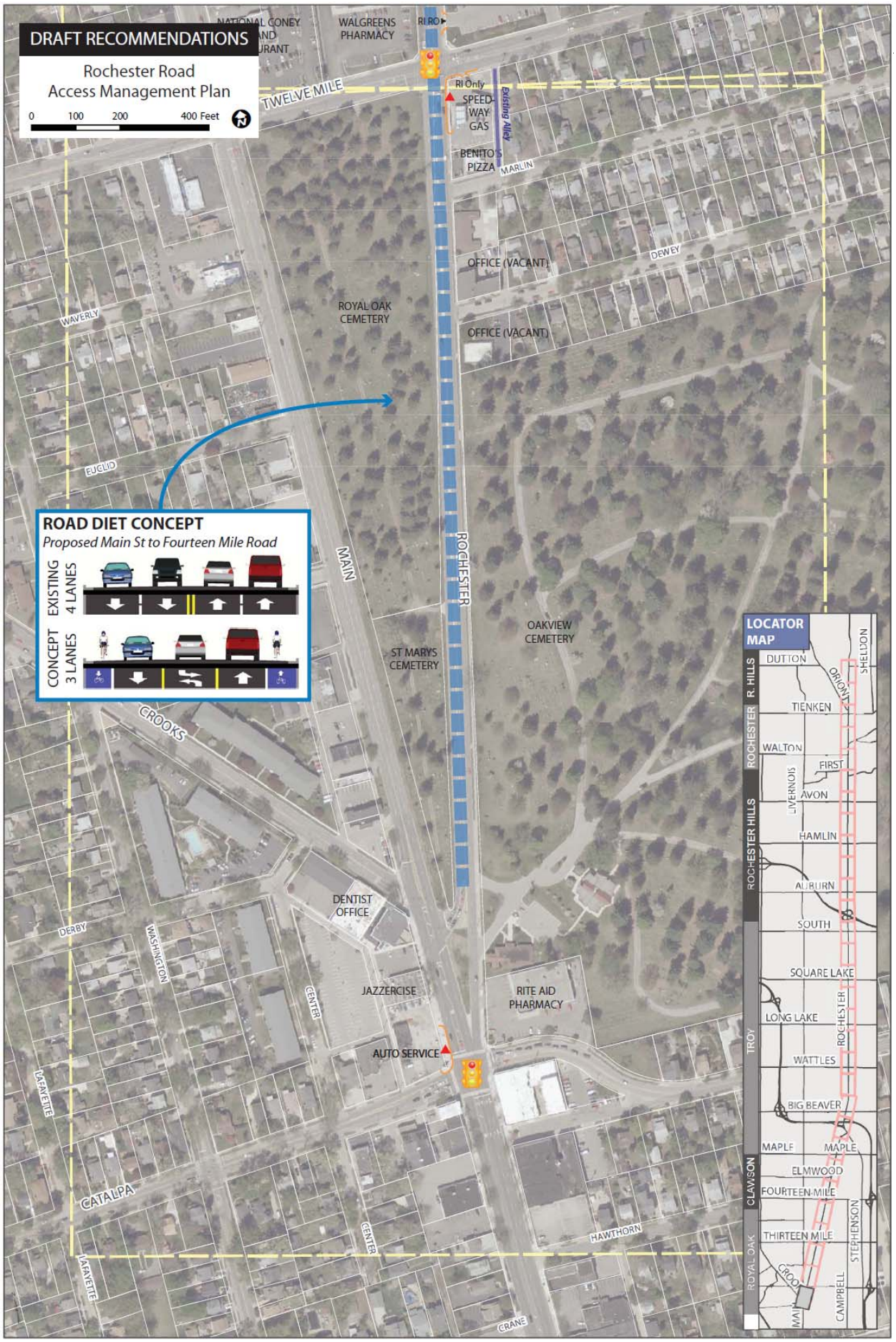
Existing Conditions. Land along this segment is a mix of residential, retail, office and service uses located on shallow lots. The sites between Thirteen Mile and Midland Roads are served by a rear alley and farther north, the intersections at Edmund Avenue / Montrose Avenue, at Sunnybrook Drive, and at Amelia Street are askew, causing locations where turning left onto the side streets can be unsafe if met by an opposing left-turning vehicle. To the north is Whitcomb Avenue, which if extended west of the corridor would be the city boundary between Royal Oak and Clawson. North of Whitcomb Avenue, the City of Royal Oak maintains jurisdiction over the east side of Rochester Road, and the City of Clawson maintains jurisdiction over the west side. Land uses on the Royal Oak side have a similar land use pattern as found to the south, with automobile-oriented and commercial uses at the intersection at Fourteen Mile Road.

Recommendations. *(See Maps 4 to 6 of the Site-Specific Recommendation Maps.)* The access and non-motorized standards in this plan should be applied, in addition to the following:

- *Side Street Offsets*. Three sets of cross streets in this stretch are offset just enough to create the potential for "left-turn lock-up," where opposing vehicles each attempting a left turn 'lock up' just before they're close enough to complete their left turn: Edmund Avenue / Montrose Avenue, Sunnybrook Drive, and Amelia Street. While available crash data didn't show an existing crash concentration, an increase in traffic in the future or reconfiguration of the lanes with a road diet could increase crash potential. These intersections should be regularly evaluated by Royal Oak; if there is a need, the plan recommends signage to prohibit left turns for one direction of Rochester Road at each crossing:

    - Edmund Avenue / Montrose Avenue would allow left turns from northbound Rochester Road, with southbound traffic turning left on Sunnybrook Drive and using Alexander Avenue to connect with Montrose Avenue.
    - Sunnybrook Drive would allow left turns from southbound Rochester Road, with northbound traffic turning left on Edmund Avenue and using Bellevue Avenue to connect to Sunnybrook Drive.
    - Amelia Street would allow left turns from northbound Rochester Road, with southbound traffic turning left on Millard Avenue and using Alexander Avenue to connect to Amelia Street. Allowing northbound instead of southbound left turns was chosen because Amelia Street does not have any connecting north-south cross streets west of Rochester Road.

- *Access at NE Corner at Whitcomb Avenue.* Parking for the businesses on the east side between Whitcomb Avenue and Bauman Avenue is currently provided via angled on-street parking spaces, but there is no defined service drive to separate Rochester Road traffic from vehicles backing out of these spaces. Access to the parking should be channelized and better defined to manage the number of places where parking traffic interfaces with through traffic on Rochester Road.



LEGEND

CORRIDOR RECOMMENDATIONS

- Channelize driveway/access (right-in/right-out only unless specified)
- Generalized new curb
- Close driveway/access
- Connect adjacent parking areas/alley/service drive
- Add/extend service drive/alley

TRANSPORTATION NOTES & DATA

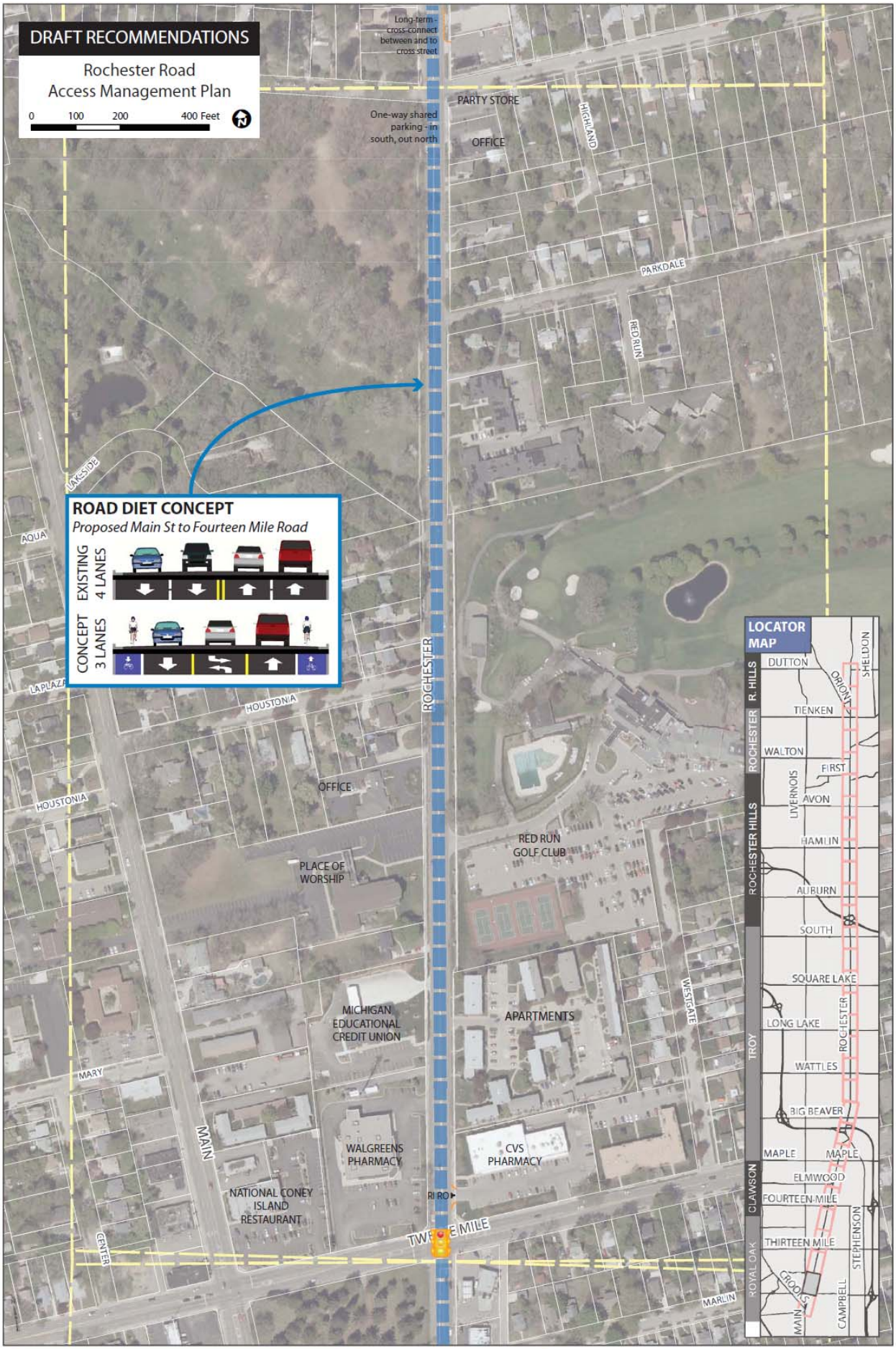
- Critical crash intersection
- Posted speed limit (SPEED LIMIT 45)
- Critical crash segment
- Existing alley/service drive
- Signalized intersection
- Existing regional pathway

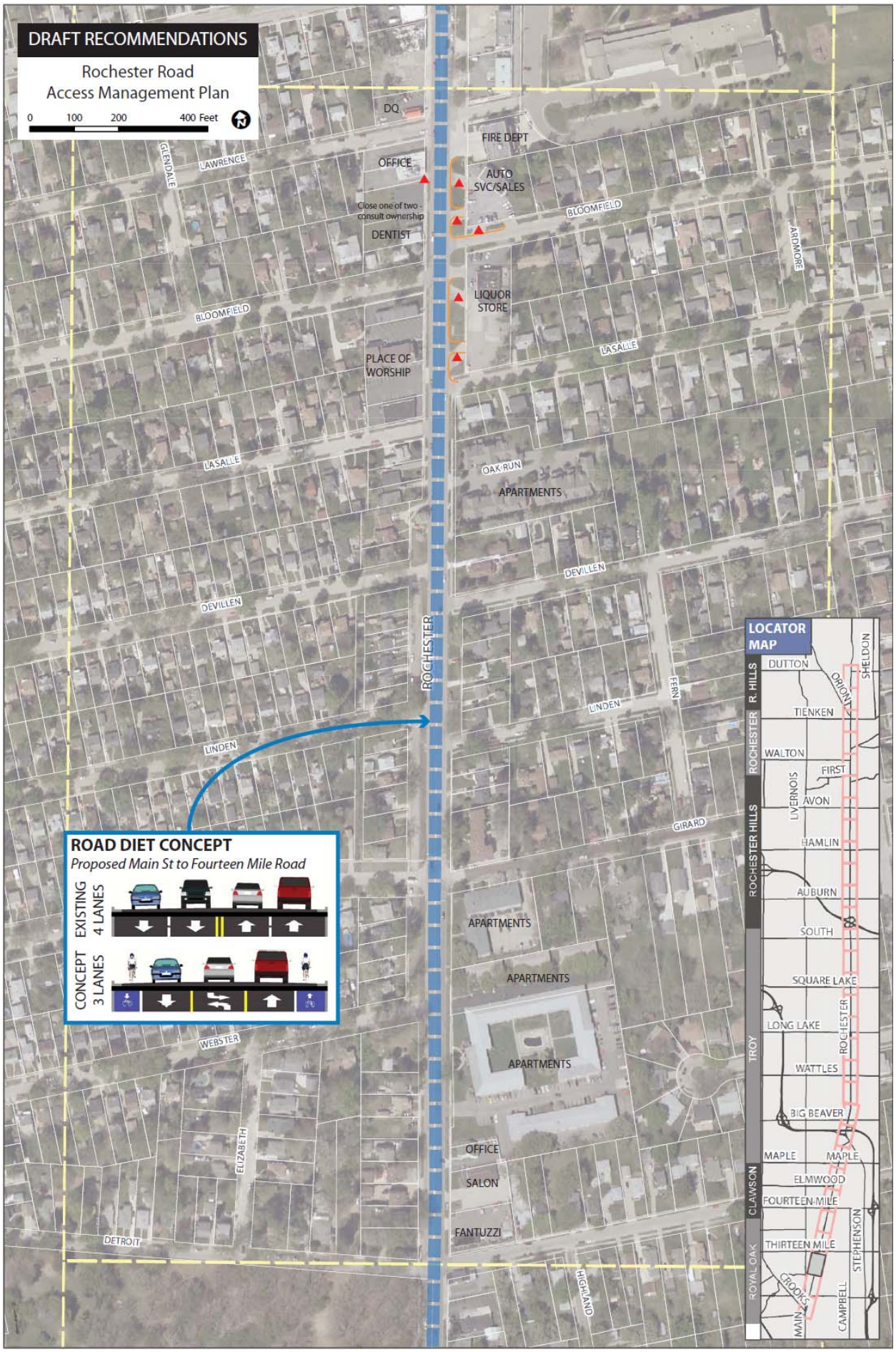
PROJECT TEAM

SEMCOG
MDOT
LSL Planning, Inc.
PB

MAP NUMBER

1 OF 30


DRAFT RECOMMENDATIONS
Rochester Road
Access Management Plan
0 100 200 400 Feet
Long-term - cross-connect between and to cross street
One-way shared parking - in south, out north
PARTY STORE
OFFICE
HIGHLAND
PARKDALE
RED RUN
ROCHESTER
ROAD DIET CONCEPT
Proposed Main St to Fourteen Mile Road
EXISTING 4 LANES
CONCEPT 3 LANES
LAKESIDE
AQUA
LA PLAZA
HOUSTONIA
OFFICE
PLACE OF WORSHIP
RED RUN GOLF CLUB
MICHIGAN EDUCATIONAL CREDIT UNION
APARTMENTS
WESTGATE
MARY
MAIN
WALGREENS PHARMACY
CVS PHARMACY
NATIONAL CONEY ISLAND RESTAURANT
CENTER
TWELVE MILE
MARLIN
LOCATOR MAP
R. HILLS
ROCHESTER
ROCHESTER HILLS
TROY
CLAWSON
ROYAL OAK
DUTTON
SHELDON
ORION
TIENKEN
WALTON
FIRST
AVON
LIVERNOIS
HAMLIN
AUBURN
SOUTH
SQUARE LAKE
LONG LAKE
WATTLES
BIG BEAVER
MAPLE
ELMWOOD
FOURTEEN MILE
THIRTEEN MILE
CROOKS
STEPHENSON
CAMPBELL
MAIN
CORRIDOR RECOMMENDATIONS
Channelize driveway/access (right-in/right-out only unless specified)
Generalized new curb
Recommended Design Concept
Close driveway/access
Connect adjacent parking areas/alley/service drive
Add/extend service drive/alley
TRANSPORTATION NOTES & DATA
Critical crash intersection
Posted speed limit
Critical crash segment
Existing alley/service drive
Signalized intersection
Existing regional pathway
LEGEND
PROJECT TEAM
SEMCOG
MDOT
LSL Planning, Inc.
PB
MAP NUMBER
2
OF
30



CORRIDOR RECOMMENDATIONS

- Channelize driveway/access (right-in/right-out only unless specified) — Generalized new curb
- Close driveway/access
- Connect adjacent parking areas/alley/service drive — Add/extend service drive/alley

TRANSPORTATION NOTES & DATA

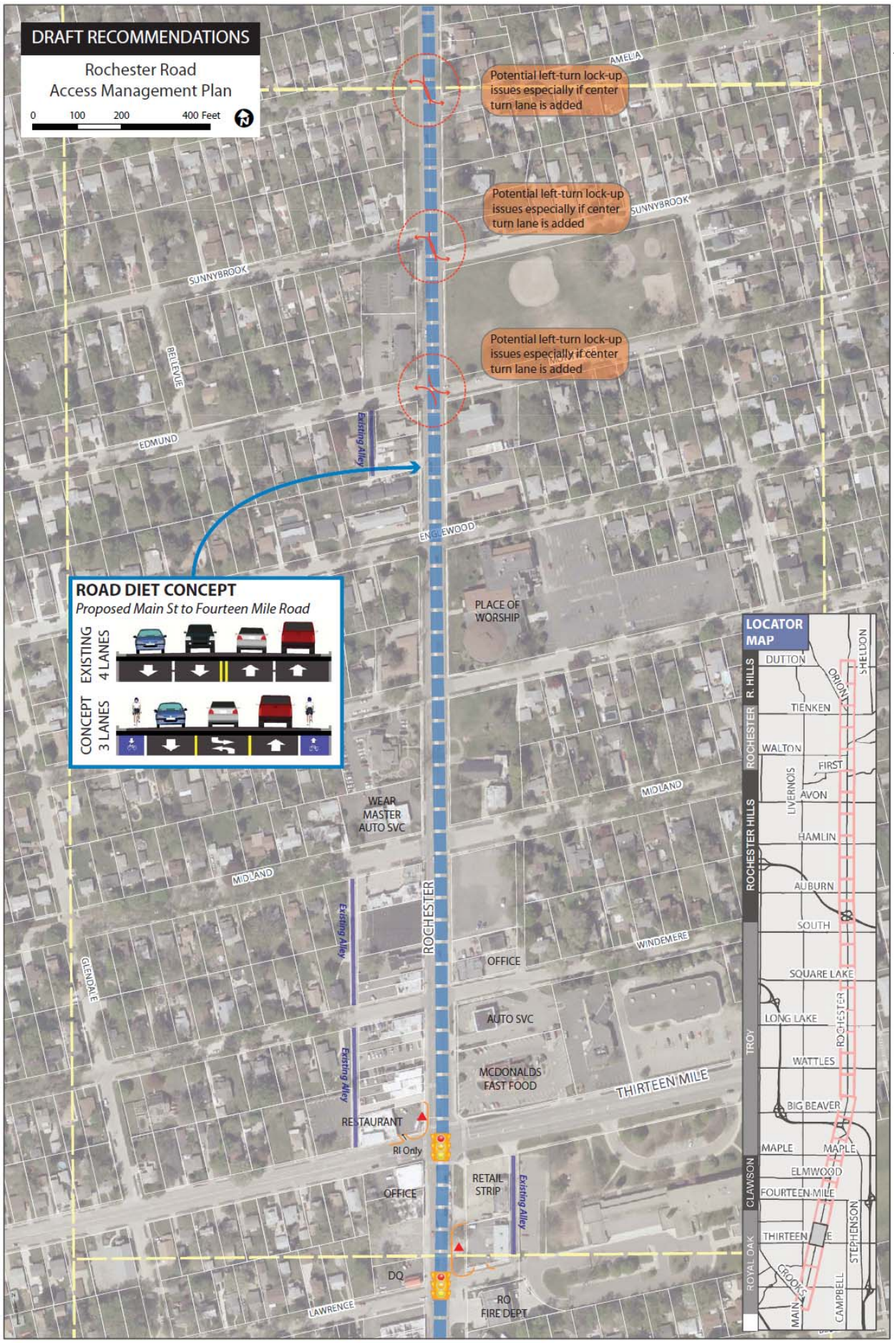
- Critical crash intersection
- Critical crash segment
- Signalized intersection
- Posted speed limit (SPEED LIMIT 45)
- Existing alley/service drive
- Existing regional pathway

LEGEND

PROJECT TEAM

SEMCOG MDOT LSL Planning, Inc. PB

MAP NUMBER 3 OF 30



CORRIDOR RECOMMENDATIONS

LEGEND

- Channelize driveway/access (right-in/right-out only unless specified) → Generalized new curb
- Close driveway/access
- Connect adjacent parking areas/alley/service drive → Add/extend service drive/alley

TRANSPORTATION NOTES & DATA

- Critical crash intersection
- Critical crash segment
- Signalized intersection
- Posted speed limit
- Existing alley/service drive
- Existing regional pathway

PROJECT TEAM

SEMCOG
MDOT
LSL Planning, Inc.
Community Planning Consultants
PB

MAP NUMBER

4 OF 30

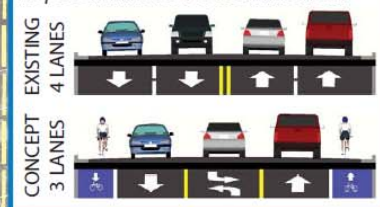
DRAFT RECOMMENDATIONS

Rochester Road Access Management Plan

0 100 200 400 Feet

ROAD DIET CONCEPT

Proposed Main St to Fourteen Mile Road



ACCESS CONCEPT

Reduces four driveways to one full movement and two one-way

CITIZENS BANK

CANDY STORE

Redesign parking?

Combine on property line

JULIAN BROS BAKERY

RETAIL

Narrow, shift north to align with Donald, redesign

FLUTE SPECIALISTS

AUTO SVC

AUTO SVC

AUTO SVC

MEDICAL OFFICE

CONDOS

OFFICE

Narrow, define + share

Existing Alley

CITY OF CLAWSON
CITY OF ROYAL OAK

Potential left-turn lock-up issues especially if center turn lane is added

GENESEE

GROVE

ALLEN

DONALD

OTTAWA

BAUMAN

WHITCOMB

WOODSIDE

MILLARD

AMELIA

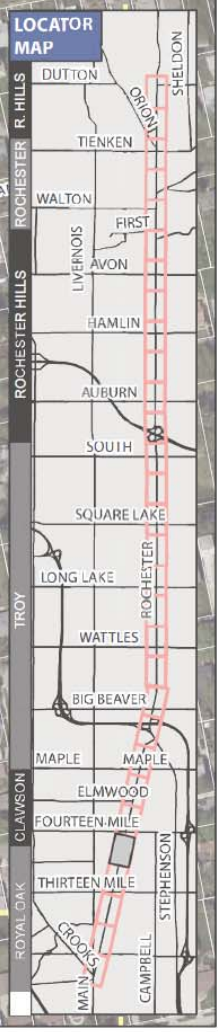
BELLEVUE

ROCHESTER

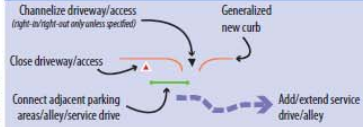
FERRIS

SHELDON

LOCATOR MAP



CORRIDOR RECOMMENDATIONS



TRANSPORTATION NOTES & DATA

- Critical crash intersection
- Critical crash segment
- Signalized intersection
- Posted speed limit
- Existing alley/service drive
- Existing regional pathway

LEGEND

PROJECT TEAM

SEMCOG
MDOT
LSL Planning, Inc.
PB

MAP NUMBER

5 OF 30

The southeast corner of Fourteen Mile Road and Rochester Road is the only potion of Map 6 in the City of Royal Oak. The remainder of Map 6 is in the City of Clawson

LEGEND

CORRIDOR RECOMMENDATIONS

- Channelize driveway/access (right-in/right-out only unless specified)
- Generalized new curb
- Close driveway/access
- Connect adjacent parking areas/alley/service drive
- Add/extend service drive/alley

TRANSPORTATION NOTES & DATA

- Critical crash intersection
- Posted speed limit 45
- Critical crash segment
- Existing alley/service drive
- Signalized intersection
- Existing regional pathway

PROJECT TEAM

SEMCOG
MDOT
LSL Planning, Inc.
PB

MAP NUMBER

6 OF 30

Implementation

Amendment to Master Plan

To provide a legal basis for requiring access design in site plan review, the preceding chapters have been adopted as an amendment to the City of Royal Oak's Master Plan. The city will need to continually work with county and regional agencies to further regional pathway initiatives, and should maintain relationships with regional transit agencies in order to ensure future plan updates reflect their efforts and progress toward improved service.

Model Zoning Ordinance Amendment

Purpose of Model Zoning Ordinance Amendment

This access management plan provides specific recommendations along Rochester Road based on a review of existing conditions and best practices. But the plan cannot be enforced unless a supporting set of zoning regulations is adopted. Therefore, a model access management ordinance was developed for the Rochester Road corridor based on the standards in MDOT's Access Management Guidebook. The proposed Rochester Road overlay zone is the regulatory document that translates the general policies of the access management plan into specific regulations and standards that apply when properties are developed, redeveloped or reused.

The intent of the regulations is to provide a means to review access to sites when development applications have the potential to change traffic or parking patterns. Triggers for review are provided in the model zoning ordinance, and include review of building or parking expansions, increases in parking demand or traffic that will be generated, etc. Access management reviews in Royal Oak could be processed according to existing site plan review procedures.

The goal is to achieve gradual compliance with the standards in the plan, so some consideration for each city's nonconforming policies is needed to ensure that reasonable changes are being required in response to the potential impact.

How the Model Zoning Ordinance Amendment Works

The Rochester Road overlay zone is proposed to be additional regulations that apply in addition to those already in place. They would not replace any existing regulations, but would apply alongside existing regulations (such as setbacks, uses, parking, etc.) to all parcels with frontage on Rochester Road. For example, if the current zoning is commercial, the uses permitted in that zoning district, the dimensional standards (setbacks, height, etc.) and other regulations would still apply. But, for sites with Rochester Road frontage, the access spacing and circulation design standards of the proposed overlay zone would also apply.

The overlay zone can be adopted either as an additional district that would apply over top of the traditional zoning district regulations, with a notation on the official zoning map, or as a general provision in the ordinance (such as in the parking section of the ordinance). Either approach is

equally effective, the decision whether to create an overlay zone "district" or a general regulation is really more one of local preferences and past practice.

Where & When Does the Model Zoning Ordinance Amendment Apply?

As written, the overlay zone applies only to non-residential property on Rochester Road. It could also apply to other roads, if desired. By amending specific references to Rochester Road to include other streets with similar characteristics, the ordinance can easily be applied to other roads that could benefit from access management.

When new access regulations are adopted in developed areas, communities often ask when they should apply. Driveways and access points proposed with new land division or development should comply with all of the requirements. This ordinance was written to require compliance for changes in use that will attract more traffic to the site, or new buildings or additions that will increase the building by more than 25%. This threshold can be changed to a higher or lower percentage if it is felt the number is too lenient or restrictive.

Many communities ask if it is fair to require every land owner to comply with these more restrictive standards. First, it is important to remember that the purpose and intent of access management is to improve the safety and efficiency of the existing transportation system, a purpose that is in the best interest of the entire community. In some cases, where a safety hazard exists, it is more important to improve access for the good of the community than to preserve an extra driveway that someone has had for a while. In other cases, where building addition or business expansion will bring additional traffic, a potential safety hazard is anticipated and access changes are required to prevent them for the good of the community. Yet still, in other cases, the extent of an application may not be significant enough to demand a change. Communities need to ensure that the access changes required are proportional to the extent of changes proposed in the application submitted.

Flexibility in Required Standards

Because this ordinance is intended to provide direction for all communities along Rochester Road, it contains regulations for any possible scenario, which includes divided roads or boulevards. Since no portion of Rochester Road in Royal Oak is divided, this section can be deleted. If the city desires to regulate other divided roads in the community, then this provision could remain in the final draft.

Because of the developed nature of Royal Oak along the Rochester Road corridor, it is difficult to implement the optimal access spacing standards recommended by MDOT. In many cases, not all standards can be met, and when reviewing such, the hierarchy of standards, which is discussed further in the chapter *Access Management Guidelines* should be as follows:

1. *Maximize spacing from signalized intersections.*
2. *Directly align driveways, or provide sufficient offset from, access and median crossovers located across the street.*
3. *Maximize spacing from other driveways on the same side of the street.*

4. *Where minimum spacing and offsets are not practical, access should be located to maximize the spacing. In some cases, a shared access system should be considered.*

The model zoning amendment was written to give the city the flexibility to modify the requirements where they may not be reasonable or appropriate. It provides the city the ability to approve modifications of the spacing and dimensional requirements on a case-by-case basis. Modifications may be granted by the Planning Commission during site plan review, by the Zoning Board of Appeals as a formal variance, or administratively by the Planning Department. Standards for review of modifications are provided in the model ordinance to guide decision makers and ensure that deviations from the access management ordinance are applied as consistently as possible.

ARTICLE ___
Rochester Road Access Management Overlay District ❶

§ 770-___. Intent.

The intent of the Rochester Road Access Management Overlay District is to improve traffic operations; reduce potential for crashes; improve pedestrian and transit environments; and preserve the vehicular carrying capacity of roads through regulations on the number, spacing, placement and design of access points (driveways and intersections). Published reports and recommendations by the Michigan Department of Transportation (MDOT) show a relationship between the number of access points and the number of crashes.

Planning Commission Option ❶

This ordinance is written as an overlay zoning district, but the provisions can be added as an amendment to existing parking or access requirements. If a separate overlay district is preferred, the district boundary should also be shown on the zoning map.

Planning Commission Option ❷

As written, these access standards apply to sites on Rochester Road only. Are there other major roads where access management is needed? If so, they should be specified here.

§ 770-___. Applicability.

This overlay zone shall apply to all land with frontage along Rochester Road ❷, except for single-family homes, duplexes or essential service facility structures. The following applications must comply with the standards in this Article:

A. MDOT Permit Review. In accordance with P.A. 200 of 1969, as amended, applicants may need to have a review of the current MDOT access permit to determine if a new permit is required [R 247.214 Rule 14(4)].

B. Land Division, Subdivision or Site Condominium. Any land division or subdivision or site condominium development, including residential developments.

C. Site Plan Review or Changes in Use. Any activity that requires site plan review at according to § 770-12, Site Plan Review, shall be submitted for review. Activities subject to site plan review, changes in use, or expansions on sites where any of the following will result:

1. Any increase in intensity of use of any building, structure, or lot through the addition of dwelling units, increase in floor area, increase in seating capacity, or through other means ❸.

2. The amount of parking required will increase by 20 spaces or by more than 10%, whichever is less.

Planning Commission Option ❸

As written, any increase or expansion would require a review of access, but these triggers can be quantified as percentages if desired. Review of access for expansions over 25% is suggested, but this trigger can be greater or less.

3. The existing driveway(s) does not meet current geometric engineering design standards enforced by MDOT or the City of Royal Oak, as applicable [see P.A. 200 of 1969, as amended, and published *Rules Regulating Driveways, Banners and Parades on and Over Highways*].

4. The site is located along a segment that experiences congestion.

5. The site is located along a segment that has experienced high crash rates.

6. Any access that is within 250 feet of a signalized intersection (measured at the edge of the right-of-way).

7. The change will increase automobile trips into and out of the site by more 25% or 50 total trips in the peak hour, as estimated using the most recent edition of the ITE Trip Generation Manual.

8. Any access that does or is expected to exceed 100 total trips per peak hour, or 1,000 total trips daily.

§ 770-___. Standards.

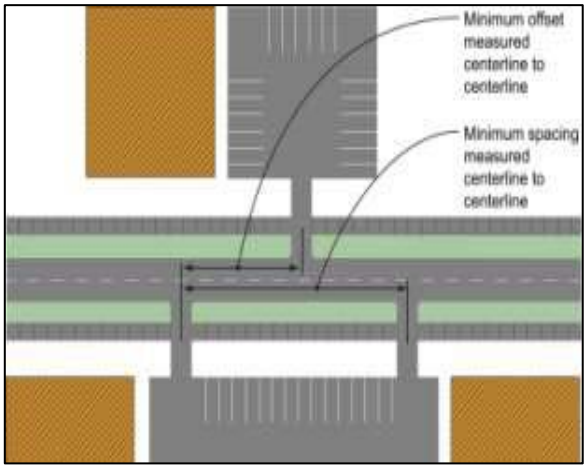
Unless otherwise noted, spacing and offsets shall be measured from centerline to centerline. The following regulations of this Section shall be considered by the Planning Commission:

A. Compliance with Sub-Plans. Where specific sub-plans have been adopted, such as the Rochester Road Access Management Plan, access shall generally adhere to the recommendations and standards contained therein. Where conflicts arise, the standards and specific recommendations of the plan shall prevail.

B. Number of Driveways. The number of resulting driveways shall be the fewest necessary to provide reasonable access to the site. Each lot shall be permitted reasonable access, which

may consist of an individual driveway, a shared access with an adjacent use, or access via a service drive.

C. Offsets and Spacing from Intersections. Driveways shall be either directly aligned or spaced / offset as far from intersections as practical, especially signalized intersections. A minimum spacing or offset of 150 feet, measured from the edge of the intersection to the centerline of the driveway, is preferred.



D. Driveway Spacing. Access points shall be spaced as far as practical from other driveways on the same side of the road, considering the posted speed limit along the road segment. The spacing listed in *Table 1* is preferred.

Table 1
Minimum Driveway Spacing * – Same Side

Posted Speed (mph)	Driveway Spacing (feet) Arterial Road	Other Road
25	130	90
30	185	120
35	245	150
40	300	185
45	350	230
50+	455	275

* Unless greater spacing is required by MDOT or RCOC.

Table 2
Minimum Driveway Offset – Opposite Side

Posted Speed (mph)	Driveway Spacing (feet)
25	255
30	325
35	425
40	525
45	630
50+	750

E. Driveway Offsets on Undivided Roads. Driveways shall be either aligned with driveways on the opposite side of the road or offset to the greatest distance practical. Consideration for weaving across travel lanes shall be given, especially where signalized intersections are present. The offsets listed in *Table 2* are preferred.

F. Driveway Locations on Divided Roads ❹. Access points along divided roads shall be located in consideration of median crossovers. Access points shall directly align with or be offset a sufficient distance from median crossovers to allow for weaving across travel lanes and storage within the median. A minimum offset of 250 feet, measured from the edge of the driveway to the nose of the crossover, is preferred.

Planning Commission Option ❹

This subsection addresses divided roads. This subsection should remain only if: (1) the portion of Rochester Road in your community is divided; or (2) you plan to regulate other divided roads in the community.

G. Consideration of Adjacent Sites. Where the subject site adjoins land that may be developed or redeveloped in the future, the access shall be located to ensure the adjacent site(s) can also meet the access location standards in the future.

H. Shared Driveways. Where direct access consistent with the above regulations cannot be achieved, access should be provided via a shared driveway or service drive. Conditional driveway permits may be issued in these situations [R 247.234 Rule 34].

I. Access Design. Where practical given right-of-way constraints, driveways shall be designed with radii, tapers and other geometrics as determined by MDOT that are required to minimize the impacts of inbound right turns on traffic flow.

§ 770-___. Administration.

Applications subject to review shall be processed according to the following:

A. Submittal Information. Along with any other information required in § 770-12, Site Plan Review, developments subject to review according to this Section shall submit:

1. Detailed information showing nearby intersections; existing driveways on adjacent sites; proposed driveways; changes to existing access; and any information requested by the city necessary to review site access.

2. The Planning Commission may require submittal of a traffic impact report, prepared by a qualified traffic engineer, to verify the need for additional driveways or to justify a modification.

3. Evidence that MDOT and the Road Commission for Oakland County have been sent a copy of the proposed plan for review and approval, where applicable.

B. Allowed Modifications. It is recognized that certain existing site conditions may prohibit full compliance with this Section. The Planning Commission may, after considering the criteria of subparagraph (C) below, modify the standards of this Section in the following situations:

1. The modification will allow an existing driveway to remain that does not meet the standards of this Section but that has, or is expected to have very low traffic volumes (less than 50 in- and out-bound trips per day) and is not expected to significantly impact safe traffic operations.

2. The use is expected to generate a relatively high number of trips and an additional driveway will improve overall traffic operations.

3. Practical difficulties exist on the site that make compliance unreasonable (sight distance limitations, existing development, topography, unique site configuration or shape), or existing off-site driveways make it impractical to fully comply with the standards.

4. Because of restricted turning movements or presence of a median that restricts turning movements, the driveway does not contribute to congestion or an unsafe situation.

C. Modification Criteria. The Planning Commission ❺ may waive certain requirements of this Section upon consideration of the following:

1. The proposed modification is consistent with the general intent of the standards of this overlay zone, the recommendations of the Access Management Plan, and published MDOT guidelines.

2. MDOT staff endorses the proposed access design.

3. Driveway geometrics have been improved to the extent practical to reduce impacts on traffic flow.

4. Shared access has been provided, or the applicant has demonstrated it is not practical.

5. Such modification is the minimum necessary to provide reasonable access, will not impair public safety or prevent the logical development or redevelopment of adjacent sites and is not simply for convenience of the development.

Planning Commission Option ❺

This draft gives the Planning Commission authority to grant modifications to the above standards during site plan review, but the city can require variances from the ZBA instead. If this is the city's preferred approach, these criteria should be modified into specific variance standards for access-related applications. If desired, the city may wish to form an Access Management Review Committee to advise the Planning Commission on access and/or modification decisions. Such committee should include, but need not be limited to: planning & engineering staff; Planning Commission representative; neighboring community representative (especially if the application is within ¼ mile of border); and MDOT or RCOC staff.

Administrative Procedures

Development decisions along different segments of the corridor fall under the purview of different agencies. In all cases, the city has jurisdiction over land use planning, zoning, site plan and subdivision reviews outside the corridor right-of-way. For some segments, MDOT or the RCOC has jurisdiction to review access permits and changes within the right-of-way. The City of Royal Oak has jurisdiction over its entire portion of Rochester Road.

The ideal access environment considers a variety of conditions, which can make administration of rigid standards difficult. The zoning ordinance model provided includes the needed flexibility to implement access changes in a way that responds to existing conditions and limitations. When doing so, it is also important to consider administrative procedures and sight distance, driveway design, permitting and other requirements of other road agencies. It is sometimes helpful to confer with other community or road agency officials when making access decisions.

The recommended process occurs in three stages:

Stage 1: Submittal

The development review process begins with a submittal from an applicant to revise the use or development on a property. Applications are submitted to city staff according to the Zoning and Subdivision Ordinances. Larger development projects within a quarter-mile of a city boundary should be sent to the adjacent city for review and comment. Special attention should be given to the interaction of access points and non-motorized facilities around these transition areas.

Stage 2: Review

Once received, applications are processed according to procedures in the city's Zoning and Subdivision Ordinances. The suggested process includes feedback loops between the Planning Commissions and agencies as modifications are made to access and circulation. Developing a partnership between MDOT, RCOC, and private property owners is essential to accommodating planned development along the corridor.

Stage 3: Action & Permitting

After all boards and commission have reviewed the application according to the city's ordinances and policies, the applicant will secure final approval for driveway permits, land use permits and building permits. Sometimes, access approvals will require execution of documents and deposit of financial guarantees to ensure future cross-access or service drive connections. Locations for shared access connections should be shown on the site plan and proper access agreements, easements, and guarantees executed that ensure construction in the future, indicating those responsible for initial construction costs and on-going maintenance. If cross-access is not feasible due to off-site conditions, temporary access may be approved. The site plan should note the temporary driveway and the terms under which it will be removed. Most often, it will be removed by the private property owner upon availability of an alternative or shared access system in the future, so provision for its removal should also be secured.

On-Going Implementation

Implementation of the plan's recommendations through site plan and development review, as discussed above, is one way to achieve the benefits of access management. However, the process is expected to be gradual, taking a number of years to achieve. There may be other opportunities that can accelerate implementation of the recommendations, which are described further below, that include:

Road Reconstruction or Resurfacing Projects

Access management can be implemented with streetscape plans or road resurfacing or reconstruction projects. The design process for such projects should include time for coordination meetings with private property owners to discuss changes along their frontage. Often, the road agency can absorb the cost of driveway closures that are coordinated within the

larger project. In fact, this approach is more cost-effective than reconstructing each individual driveway. During the design process, the focus should be on modifying or removing access points that have the potential to contribute to congestion or crash potential, especially those near intersections and high-crash areas.

Local or County Funding Sources

Implementation of many of the plan's recommended improvements will depend on available funding. In some cases, the costs of the improvements will be borne by the property owner as part of changes to private property. In others, grants or other transportation funds may be earmarked for access changes along Rochester Road. Still in other cases, a local Corridor Improvement Authority may seek to fund improvements that further their plans and goals.

Conclusion

The underlying benefits of access management can be realized on other major roads, and the city may choose to expand the scope of this effort to apply to other roads. While the access management ordinance provided is written to apply only to Rochester Road, it can be expanded to include other roads. When developing city-wide access management regulations, the city should confer with MDOT to discuss appropriate spacing requirements or standards that should apply to different roads with different conditions and character.

Access management can incorporate non-motorized and low impact design elements to improve the potential positive impacts of investment along the corridor. As access improvements are made over time, simultaneous review of non-motorized and stormwater systems is also needed to capitalize on opportunities to enhance the overall corridor and provide a catalyst for future improvements and economic growth.

Appendices

Appendix I – Visioning Statements

The following appendix contains verbatim listings of vision statements from each Subarea Workshop. Only the priority visions statements which were presented by the small groups to the large group are presented. Visions are listed by subarea, and are organized in two ways: by small group, and by topic. The number of large groups votes are given for each vision statement.

Vision Statements by Group - Subareas 1 and 2

Group 1 Visions		Vote
1.1	Protect character of viable neighborhoods by preventing intrusion by more intense uses	6
1.2	Increase Woodward parking by removing commercial buildings	9
1.3	Buffering between residential and more intense uses: 10-15' landscaped	5
1.4	Increase Woodward parking by removing housing	9
1.5	Eliminate "seedy" businesses (e.g. motels)	5
1.6	Reduce sign clutter increase uniformity on Woodward	9
1.7	Add transit up Woodward ... a tram?	6

Group 2 Visions		Vote
2.1	Use Memorial Park for more recreational uses: music, dances, etc.	8
2.2	Maintain our school property	5
2.3	Fewer (maybe none) motels in Royal Oak	1
2.4	Improve and maintain our neighborhood parks	6
2.5	Improve Woodward Ave. businesses with regard to: appearance, quality of business conducted, parking	11

Group 3 Visions		Vote
3.1	"Westborn" style use closing streets forming cul-de-sacs to separate business from residential, use ½ walls, landscaping	11
3.2	More consideration of parking needs of businesses/business owners	9
3.3	Create pedestrian-friendly walkways/malls behind/adjacent to Woodward business "park-like settings"	9
3.4	Use of "small scale" multiple family, creates intimacy/friendly setting	7
3.5	Commercial/Industrial/Office = Moratorium on fast-food/carry out due to traffic considerations	5

Neighborhood Related Visions		Vote
3.1	"Westborn" style, use closing streets and forming cul-de-sacs to separate business from residential, use ½ walls, landscaping	11
3.4	Use of "small scale" multiple family, creates intimacy/friendly setting	7
1.1	Protect character of viable neighborhoods by preventing intrusion by more intense uses	6
1.3	Buffering between residential and more intense uses: 10-15' landscaped	5

Woodward Ave. Related Visions		Vote
2.5	Improve Woodward Ave. businesses with regard to: appearance, quality of business conducted, parking	11
1.6	Reduce sign clutter increase uniformity on Woodward	9
3.3	Create pedestrian-friendly walkways/malls behind/adjacent to Woodward business "park-like settings"	9
1.4	Increase Woodward parking by removing housing	9
1.2	Increase Woodward parking by removing commercial buildings	9
1.7	Add transit up Woodward . . . a tram?	6

Commercial/Industrial/Office Related Visions		Vote
3.2	More consideration of parking needs of businesses/business owners	9
1.5	Eliminate "seedy" businesses (e.g. motels)	5
3.5	Moratorium on fast-food/carry out due to traffic considerations	5
2.3	Fewer (maybe none) motels in Royal Oak	1

Community Services Related Visions		Vote
2.1	Use Memorial Park for more recreational uses: music, dances, etc.	8
2.4	Improve and maintain our neighborhood parks	6
2.2	Maintain our school property	5

Vision Statements by Group - Subarea 3

Group 1 Visions		Vote
1.1	Control commercial development on Crooks, Main & Rochester Roads from 12 Mile to Clawson border.	1
1.2	Identify City (school district) goals for current public areas, school district buildings and properties in Kimball area.	7
1.3	Restrict destruction of single family homes to allow multiple housing. Maintain current single-family housing areas. Maintain undeveloped greenbelt areas around residential areas (Bloomfield & 13 Mile) (Lawrence & Glen Court)	5
1.4	Stress enforcement of codes both to rental and owner occupied properties.	2
1.5	Commercial buildings limited in height relating to adjacent residential properties.	3
1.6	Commercial properties must be kept in character with surrounding residential area.	5
1.7	Maintain current number of parks.	1
1.8	Allow access and better egress to public properties in Kimball area to Quickstad Park residential area.	3
1.9	Improve drainage and walking/riding facility in park areas.	0

Group 2 Visions		**Vote**
2.1	Cap commercial/industrial development. Keep it a neighborhood - single family with height restriction.	8
2.2	Quickstad and other parks: preserve them as open space and restrict recreational development.	7
2.3	Code enforcement: • signage (commercial) • outdoor display area • lighting • maintenance - neatness of structures • notification area expanded (beyond 300 feet)	5
2.4	Need to combine city, school, and community when discussing school closings or utilization of public facilities.	4
2.5	Maintain resources: • trees • greenspaces • historical sites	8
2.6	Develop continuous, comprehensive maintenance of sidewalks and street lighting.	1

Neighborhood/Transitional Areas Related Visions		**Vote**
1.6	Commercial properties must be kept in character with surrounding residential area.	5
1.3	Restrict destruction of single family homes to allow multiple housing. Maintain current single-family housing areas. Maintain undeveloped greenbelt areas around residential areas (Bloomfield & 13 Mile) (Lawrence & Glen Court)	5
1.5	Commercial buildings limited in height relating to adjacent residential properties.	3

Commercial/Office/Industrial Related Visions		**Vote**
2.1	Cap commercial/industrial development. Keep it a neighborhood - single family with height restriction.	8
1.1	Control commercial development on Crooks, Main & Rochester Roads from 12 Mile to Clawson border.	1

Parks and Community Services Related Visions		**Vote**
2.5	Maintain resources: • trees • greenspaces • historical sites	8
1.2	Identify City (school district) goals for current public areas, school district buildings and properties in Kimball area.	7
2.2	Quickstad and other parks: preserve them as open space and restrict recreational development.	7
2.4	Need to combine city, school, and community when discussing school closings or utilization of public facilities.	4
1.8	Allow access and better egress to public properties in Kimball area to Quickstad Park residential area.	3
2.6	Develop continuous, comprehensive maintenance of sidewalks and street lighting.	1
1.7	Maintain current number of parks.	1
1.9	Improve drainage and walking/riding facility in park areas.	0

City Image/Appearance Related Visions		**Vote**
2.3	Code enforcement: • signage (commercial) • outdoor display area • lighting • maintenance - neatness of structures • notification area expanded (beyond 300 feet)	5
1.4	Stress enforcement of codes both to rental and owner occupied properties.	2

Vision Statements by Group - Subarea 4

Group 1 Visions		Vote
1.1	Maintain City parks (Mark Twain) and improve recreational use and add bike trails, lit tennis courts, etc.	5
1.2	More Community Center needs: busses, north center and south center	9
1.3	Mass transportation plan	9
1.4	Specifically plan where single family houses and condos/apartments should be located within neighborhoods (no strip malls)	7
1.5	Berm to keep Foodland shoppers out of nearby neighborhood	6

Group 2 Visions		Vote
2.1	Protect Royal Oak from strip malls--"We don't need them"	10
2.2	Enforce strong lawn care/appearance code for commercial/office/industrial	4
2.3	Restrict commercial traffic flows into residential neighborhoods	12
2.4	Provide 5th lane for 14 Mile between Rochester and Campbell	5
2.5	More supervised recreation facilities for everyone--community swimming pools	10

Group 3 Visions		Vote
3.1	Encourage single-family housing	14
3.2	Keep parks natural- don't be trendy, don't over specialize. Maintain them.	14
3.3	Fix existing roads and sidewalks	9
3.4	Consistency of contiguous land uses - no mixing	3
3.5	A city with high appearance standards which all work to maintain	11

Group 4 Visions		Vote
4.1	Protect character of our residential neighborhoods	15
4.2	Preserve parks and greenbelts (especially Mark Twain Park)	4
4.3	Facilitate non-motorized traffic	4
4.4	Improve utilization and appearance of parks	1
4.5	Redevelop commercial and industrial to residential	1
4.6	Encourage diversity of CBD by terminating parking subsidy for sellers of alcohol	7

Neighborhood Related Visions		Vote
4.1	Protect character of our residential neighborhoods	15
3.1	Encourage single-family housing	14
1.4	Specifically plan where single family houses and condos/apartments should be located within neighborhoods (no strip malls)	7
1.1	Maintain City parks (Mark Twain) and improve recreational use and add bike trails, lit tennis courts, etc.	5

Transitional Areas Related Visions		Vote
1.5	Berm to keep Foodland shoppers out of nearby neighborhood	6
3.4	Consistency of contiguous land uses - no mixing	3
4.5	Redevelop commercial and industrial to residential	1

Transportation Related Visions		Vote
2.3	Restrict commercial traffic flows into residential neighborhoods	12
1.3	Mass transportation plan	9
3.3	Fix existing roads and sidewalks	9
2.4	Provide 5th lane for 14 Mile between Rochester and Campbell	5
4.3	Facilitate non-motorized traffic	4

Parks and Community Services Related Visions		Vote
3.2	Keep parks natural- don't be trendy, don't over specialize. Maintain them.	14
2.5	More supervised recreation facilities for everyone--community swimming pools	10
1.2	More Community Center needs: busses, north center and south center	9
1.1	Maintain City parks (Mark Twain) and improve recreational use and add bike trails, lit tennis courts, etc.	5
4.2	Preserve parks and greenbelts (especially Mark Twain Park)	4

City Image/Appearance Related Visions		Vote
3.5	A city with high appearance standards which all work to maintain	11
2.2	Enforce strong lawn care/appearance code for commercial/office/industrial	4

Commercial Land Use Related Visions		Vote
2.1	Protect Royal Oak from strip malls--"We don't need them"	10
4.6	Encourage diversity of CBD by terminating parking subsidy for sellers of alcohol	7

Vision Statements by Group - Subarea 5

Group 1 Visions		Vote
1.1	Loft Apartments/Condo/Businesses - Development	22
1.2	Elected Officials to set policy and let staff run it	6
1.3	Promote a mass transit subway; trolley; integrate all transportation	6
1.4	Planning areas to have neighborhood retail within walking distance	0
1.5	Create zoning to help corridor business flourish	0

Group 2 Visions		Vote
2.1	Maintain buffer between residential and commercial areas with regard to layout and planning of business district as related to neighborhoods	11
2.2	Preserve the neighborhood with regard to multi/single/two party homes	4
2.3	Green space	4
2.4	Preserve historical character	3
2.5	Greatly increased free parking	3
2.6	Retail - support incentives from a proactive City government	1

Group 3 Visions		Vote
3.1	Historical neighborhood identification, guidelines (landscaping, colors, textures), and standards for new development (i.e. nice mix of multi and single family homes, density concerns). Neighborhood lacks certain feel (old elms) - plan for appropriate tree replacement.	18
3.2	Woodward Avenue - parking issues, no common plan for businesses, speed limit too high	9
3.3	CBD needs businesses that support every day life (i.e. shoe stores, clothing stores, hardware), not just fill voids, but strengthen patterns and elements.	7
3.4	Downtown must continue to revitalize and not become stagnant. Avoid inappropriate use of prime spaces (i.e. used car sales at 11 Mile and Main St.)	6
3.5	All utilities underground	4

Group 4 Visions		Vote
4.1	Bring 11 Mile up to standard - eliminate all motels, exterior upgrading, landscaping, crime, homeless, stricter code enforcement on commercial and apartment exteriors (Citywide)	22
4.2	Bike/running/rollerblading paths in parks, rollerblade rink	11
4.3	Limiting multi-family housing in residential neighborhoods	10
4.4	Woodward / 11 Mile Roads, locations where business meets residential, setbacks, improved parking, appearances, etc.	2
4.5	SEMCOG regional transportation system; railroad below street level in Downtown	0

Group 5 Visions		**Vote**
5.1	Enforcement of (non)conforming uses; SF-multiple, multiple-SF, Zoning should reflect actual use, Better public transportation within the City and intra-City (bus, trolley, and light rail)	22
5.2	Planned, revised Civic Center with community recreational facilities (swimming, rollerblade and skateboard pads)	3
5.3	Maintain neighborhood occupant diversity	2
5.4	Conformity with Woodward commercial architectural design	1
5.5	Hiking/biking paths	1
5.6	Downtown landscaping (planters)	1
5.7	No encroachment by Commercial/Industrial on Residential	0
5.8	Incentive for conformity with signage to regulations	0

Group 6 Visions		**Vote**
6.1	"CBD" - expansion with guidelines - possibly to South or any other place within reason	9
6.2	Create recreational "Bike Path"	6
6.3	Preserve neighborhoods, less government, and integration of neighborhoods and business	1
6.4	Within transition areas - between business and neighborhood - "buffer zones." (create continuity)	0
6.5	Keep a variety of businesses in town	0

Group 7 Visions		**Vote**
7.1	Expand and improve Farmer's Market area to create a "Commons" or Town Center – incorporate City Hall, Court House and Library	20
7.2	No condos on streets zoned single family	13
7.3	Buffer zones between business and single family residential in the form of Multi family condos and green space	12
7.4	Improve 11 Mile road and businesses appearance	6
7.5	Quality new construction carefully planned with neighborhood input	5

Group 8 Visions		**Vote**
8.1	Reduce through-traffic in residential neighborhoods	13
8.2	Establish City-wide public transportation system	10
8.3	Address parking in downtown area (congestion/density)	6
8.4	Retain/protect family atmosphere of City and single-family residences (use of buffer zones)	2
8.5	Balance future development between uses (retail, office, restaurants, etc.)	2

Neighborhood Related Visions		**Vote**
3.1	Historical neighborhood identification, guidelines (landscaping, colors, textures), and standards for new development (i.e. nice mix of multi and single family homes, density concerns). Neighborhood lacks certain feel (old elms) - plan for appropriate tree replacement.	18
7.2	No condos on streets zoned single family	13
8.1	Reduce through-traffic in residential neighborhoods	13
4.3	Limiting multi-family housing in residential neighborhoods	10
5.1	Enforcement of (non)conforming uses; SF-multiple, multiple-SF, Zoning should reflect actual use	*16
7.5	Quality new construction carefully planned with neighborhood input	5
2.2	Preserve the neighborhood with regard to multi/single/two party homes	4
2.4	Preserve historical character	3
8.4	Retain/protect family atmosphere of City and single-family residences (use of buffer zones)	2
5.3	Maintain neighborhood occupant diversity	2
6.3	Preserve neighborhoods, less government, and integration of neighborhoods and business	1
1.4	Planning areas to have neighborhood retail within walking distance	0
5.7	No encroachment by Commercial/Industrial on Residential	0

Transitional Areas Related Visions		**Vote**
7.3	Buffer zones between business and single family residential in the form of Multi family condos and green space	12
2.1	Maintain buffer between residential and commercial areas with regard to layout and planning of business district as related to neighborhoods	11
6.4	Within transition areas - between business and neighborhood - "buffer zones." (create continuity)	0

Downtown Related Visions		**Vote**
1.1	Loft Apartments/Condo/Businesses - Development	22
7.1	Expand and improve Farmer's Market area to create a "Commons" or Town Center – incorporate City Hall, Court House and Library	20
6.1	"CBD" - expansion with guidelines - possibly to South or any other place within reason	9
3.3	CBD needs businesses that support every day life (i.e. shoe stores, clothing stores, hardware), not just fill voids, but strengthen patterns and elements.	7
3.4	Downtown must continue to revitalize and not become stagnant. Avoid inappropriate use of prime spaces (i.e. used car sales at 11 Mile and Main St.)	6
8.3	Address parking in downtown area (congestion/density)	6
2.5	Greatly increased free parking	3
8.5	Balance future development between uses (retail, office, restaurants, etc.)	2
5.6	Downtown landscaping (planters)	1
6.5	Keep a variety of businesses in town	0

Commercial Corridor (11 Mile, Woodward) Related Visions		**Vote**
4.1	Bring 11 Mile up to standard - eliminate all motels, exterior upgrading, landscaping, crime, homeless, stricter code enforcement on commercial and apartment exteriors (Citywide)	22
3.2	Woodward Avenue - parking issues, no common plan for businesses, speed limit too high	9
7.4	Improve 11 Mile road and businesses appearance	6
4.4	Woodward / 11 Mile Roads, locations where business meets residential, setbacks, improved parking, appearances, etc.	2
5.4	Conformity with Woodward commercial architectural design	1
2.6	Retail - support incentives from a proactive City government	1
1.5	Create zoning to help corridor business flourish	0
5.8	Incentive for conformity with signage to regulations	0

Recreation Related Visions		**Vote**
4.2	Bike/running/rollerblading paths in parks, rollerblade rink	11
6.2	Create recreational "Bike Path"	6
2.3	Green space	4
5.2	Planned, revised Civic Center with community recreational facilities (swimming, rollerblade and skateboard pads)	3
5.5	Hiking/biking paths	1

Transportation Related Visions		**Vote**
8.2	Establish City-wide public transportation system	10
1.3	Promote a mass transit subway; trolley; integrate all transportation	6
5.1	Better public transportation within the City and intra-City (bus, trolley, and light rail)	*6
4.5	SEMCOG regional transportation system; railroad below street level in Downtown	0

Miscellaneous Visions		**Vote**
1.2	Elected Officials to set policy and let staff run it	6
3.5	All utilities underground	4

* Group 5, statement 1 had three elements to it, but participants voted for it as a whole. Twenty-two votes were given to the entire grouping of statements, so when statements were organized by topic, points were broken down accordingly.

Vision Statements by Group - Subarea 6 (Downtown)

Group 1 Visions		Vote
1.1	Make paths from parking lot to the retail/entertainment areas an “adventure”	7
1.2	Generate more varied commercial merchants downtown (clothing, education materials, stationery, gas station.)	0
1.3	Expand DDA area to further south of Lincoln	25
1.4	Change 11 Mile Road to an “Old Town” area	8
1.5	More “green spaces”, “larger squares”, and pedestrian mall	10

Group 2 Visions		Vote
2.1	Improve downtown visually by adding greenbelts, parks, and rest areas	0
2.2	Utilize corridor between downtown and I-696	5
2.3	Retail mix commercial office space and service related business	22
2.4	Change CBD residential to more permanent loft type residential apartments, or small condos	4
2.5	Establish graduated building heights from residential peaking toward downtown	19

Group 3 Visions		Vote
3.1	Integrate Residential housing in CBD area and provide housing nearby for Senior Citizens	8
3.2	Provide integrated parking capability	0
3.3	Provide historic diversity of commercial activity	2
3.4	Clustered development as mixes of residences, businesses, green spaces, recreation/civic areas	1
3.5	Central community plaza with swimming pool, skate board ½ pipe, outdoor ice rink and civic/athletic accommodations	22

Group 4 Visions		Vote
4.1	Parking Deck - Combine Center St. and First of America decks and go over RR tracks use spaces also for retail, etc. Generally use of decks	28
4.2	Farmer’s Market - Revamp/clean up parking area, improve appearance. Increase use of activity - perhaps auction extravaganza - weekdays.	15
4.3	Downtown - Improve pedestrian access, speed perhaps one-way streets, improve flow, make it more pedestrian-friendly	11
4.4	Fringe areas - Use homes for businesses perhaps business on lower floor and residence above, this will act as a transition to residential	1
4.5	Encourage a mixture of businesses, need more service oriented and office space	3

Group 5 Visions		Vote
5.1	Downtown Traffic: Higher density through in-fill of well thought out plan	12
5.2	Taller facilities/higher density of housing close to downtown	1
5.3	Downtown “central” park	3
5.4	Cultural facility - performing arts, banquet hall museum, civic events plaza	26
5.5	Develop linear corridor to I-696 - Main and Washington	14
5.6	Parking system that address employees, long-short term shoppers, diners, with shuttle service	1

Group 6 Visions		Vote
6.1	Fabric - Zoning to encourage preservation and continued use of historic buildings and urban character - not suburban	32
6.2	Attract higher income residents	5
6.3	Must have land use mix - not all bars/restaurants	0
6.4	Railroad - elevate or bury for safety and reclaimed real estate	21

Group 7 Visions		**Vote**
7.1	Eliminate surface parking lots and replace with multi-level lots	13
7.2	Promote residential/retail use, encourage day use, sundry, bookstores, small scale department store	26
7.3	Encourage higher density housing in downtown lofts	36
7.4	Use bell-shaped curve to limit building heights in downtown - 6 story maximum	6
7.5	Reorganize civic center area	12
7.6	Promote intensively pedestrian and slightly off-beat atmosphere	11

Group 8 Visions		**Vote**
8.1	Redefine/expand CBD boundaries	14
8.2	Develop cultural/civic/auditorium/amphitheater center	15
8.3	Apartments over businesses	3
8.4	Do not allow non-conforming businesses	3
8.5	Railroads underground	1
8.6	Preserve historical buildings	1

Housing Related Visions		**Vote**
7.3	Encourage higher density housing in downtown lofts	36
5.1	Downtown Traffic: Higher density through in-fill of well thought out plan	12
3.1	Integrate Residential housing in CBD area and provide housing nearby for Senior Citizens	8
6.2	Attract higher income residents	5
2.4	Change CBD residential to more permanent loft type residential apartments, or small condos	4
5.2	Taller facilities/higher density of housing close to downtown	1

Land Use Mix Related Visions		**Vote**
7.2	Promote residential/retail use, encourage day use, sundry, bookstores, small scale department store	26
2.3	Retail mix commercial office space and service related business	22
4.5	Encourage a mixture of businesses, need more service oriented and office space	3
8.3	Apartments over businesses	3
8.4	Do not allow non-conforming businesses	3
3.3	Provide historic diversity of commercial activity	2
3.4	Clustered development as mixes of residences, businesses, green spaces, recreation/civic areas	1
4.4	Fringe areas - Use homes for businesses perhaps business on lower floor and residence above, this will act as a transition to residential	1
1.2	Generate more varied commercial merchants downtown (clothing, education materials, stationery, gas station.)	0
6.3	Must have land use mix - not all bars/restaurants	0

Design/Appearance Related Visions		**Vote**
6.1	Fabric - Zoning to encourage preservation and continued use of historic buildings and urban character - not suburban	32
2.5	Establish graduated building heights from residential peaking toward downtown	19
1.5	More “green spaces,” “larger squares,” and pedestrian mall	10
1.4	Change 11 Mile Road to an “Old Town” area	8
7.4	Use bell-shaped curve to limit building heights in downtown - 6 story maximum	6
5.3	Downtown “central” park	3
8.6	Preserve historical buildings	1
2.1	Improve downtown visually by adding greenbelts, parks, and rest areas	0

Civic/Cultural Center Related Visions		Vote
5.4	Cultural facility - performing arts, banquet hall museum, civic events plaza	26
3.5	Central community plaza with swimming pool, skate board ½ pipe, outdoor ice rink and civic/athletic accommodations	22
8.2	Develop cultural/civic/auditorium/amphitheater center	15
4.2	Farmer's Market - Revamp/clean up parking area, improve appearance. Increase use of activity - perhaps auction extravaganza - weekdays.	15
7.5	Reorganize civic center area	12

Transportation/Parking/Pedestrian Related Visions		Vote
4.1	Parking Deck - Combine Center St. and First of America decks and go over RR tracks use spaces also for retail, etc. Generally use of decks	28
6.4	Railroad - elevate or bury for safety and reclaimed real estate	21
7.1	Eliminate surface parking lots and replace with multi-level lots	13
7.6	Promote intensively pedestrian and slightly off-beat atmosphere	11
4.3	Downtown - Improve pedestrian access, speed perhaps one-way streets, improve flow, make it more pedestrian friendly	11
1.1	Make paths from parking lot to the retail/entertainment areas an "adventure"	7
8.5	Railroads underground	1
5.6	Parking system that address employees, long-short term shoppers, diners, with shuttle service	1
3.2	Provide integrated parking capability	0

Downtown Expansion Related Visions		Vote
1.3	Expand DDA area to further south of Lincoln	25
5.5	Develop linear corridor to I-696 - Main and Washington	14
8.1	Redefine/expand CBD boundaries	14
2.2	Utilize corridor between downtown and I-696	5

Vision Statements by Group - Subarea 7

Group 1 Visions		Vote
1.1	Preserving the integrity of the single family neighborhoods in Subarea 7	38
1.2	Eliminate transitional use of neighborhoods that opens the door for forced redevelopment	18
1.3	Restrict "overbuilding" in relation to lot size (no small box houses)	8
1.4	11 Mile Rd. - develop a beautification "theme"/streetscape wider street	8
1.5	More "green space"	7

Group 2 Visions		Vote
2.1	Stricter code enforcement on owner occupied & rental residential properties	13
2.2	Create more programs for adolescents, young adults, i.e. rollerblading, skateboarding, hiking and biking trails	17
2.3	No more condo clusters in south end of town	19
2.4	Create buffers between residential & commercial/industrial	10
2.5	Enforcement of commercial, industrial and office so that they are clean, neat and responsible	12

Group 3 Visions		Vote
3.1	Single family zoning in neighborhoods, less density in multiple complexes	5
3.2	Streetscape on 11 Mile/Main more welcoming. Have combination of 1st floor retail/office, upper floors residential	11
3.3	Enforce codes to bring buildings up to higher standards/clean up building. Make businesses accountable for all 4 sides of property.	12
3.4	Plant trees when old ones die/prune older trees to keep them in good shape	7
3.5	Expansion of Library/City Hall area, update both outside and inside, computerize City Hall/Library, educate both staffs, expand school libraries and make them public	11

Group 4 Visions		**Vote**
4.1	Transition zones must be from lower density to higher density, property location of buffer zones should be on high density side of property	2
4.2	Remove parking meters	17
4.3	Add buffer zones with greenbelt, landscaping where the three zones meet	5
4.4	Improve public transportation by using smaller van-type units to various business areas	2
4.5	Add Park & Ride areas from downtown to Woodward Corridor	3

Group 5 Visions		**Vote**
5.1	Appropriate placement of condos with regard to ingress and egress of traffic	1
5.2	Preservation of single family neighborhoods	6
5.3	Mixed use development (offices and residential) in same building	15
5.4	Better managed parking in City, including free parking in downtown	14
5.5	Expand use of Farmers Market as a community center	14

Group 6 Visions		**Vote**
6.1	Maintain residential density	8
6.2	Transition areas = green areas	7
6.3	Traffic control	5
6.4	Expansion of businesses confined within existing commercial zones and not encroach on residential areas	11
6.5	Increase non-motorized accessibility and public transportation for recreational facilities/downtown	10

Neighborhood Related Statements		**Vote**
1.1	Preserving the integrity of the single family neighborhoods in Subarea 7	38
1.2	Eliminate transitional use of neighborhoods that opens the door for forced redevelopment	18
2..1	Stricter code enforcement on owner occupied & rental residential properties	13
6.1	Maintain residential density	8
5.2	Preservation of single family neighborhoods	6
3.1	Single family zoning in neighborhoods, less density in multiple complexes	5

Transitional Areas Related Statements		**Vote**
6.4	Expansion of businesses confined within existing commercial zones and not encroach on residential areas	11
2.4	Create buffers between residential & commercial/industrial	10
6.2	Transition areas = green areas	7
4.3	Add buffer zones with greenbelt, landscaping where the three zones meet	5
4.1	Transition zones must be from lower density to higher density, property location of buffer zones should be on high density side of property	2

Transportation/Parking Related Statements		**Vote**
4.2	Remove parking meters	17
5.4	Better managed parking in City, including free parking in downtown	14
6.5	Increase non-motorized accessibility and public transportation for recreational facilities/downtown	10
6.3	Traffic control	5
4.5	Add Park & Ride areas from downtown to Woodward Corridor	3
4.4	Improve public transportation by using smaller van-type units to various business areas	2
5.1	Appropriate placement of condos with regard to ingress and egress of traffic	1

Community Services Related Statements		**Vote**
2.2	Create more programs for adolescents, young adults, i.e. rollerblading, skateboarding, hiking and biking trails	17
5.5	Expand use of Farmers Market as a community center	14
3.5	Expansion of Library/City Hall area, update both outside and inside, computerize City Hall/Library, educate both staffs, expand school libraries and make them public	11

City Image Related Statements		Vote
2.5	Enforcement of commercial, industrial and office so that they are clean, neat and responsible	12
3.3	Enforce codes to bring buildings up to higher standards/clean up building. Make businesses accountable for all 4 sides of property.	12
3.2	Streetscape on 11 Mile/Main more welcoming. Have combination of 1st floor retail, office, upper floors residential	11
1.3	Restrict "overbuilding" in relation to lot size (no small box houses)	8
1.4	11 Mile Rd. - develop a beautification "theme"/streetscape wider street	8
3.4	Plant trees when old ones die/prune older trees to keep them in good shape	7
1.5	More "green space"	7

Miscellaneous Statements		Vote
2.3	No more condo clusters in south end of town	19
5.3	Mixed use development (offices and residential) in same building	15

APPENDIX II – Master Plan Meetings: Planning Commission & Sterring Committee

Master Plan Steering Committee Meetings 1997-1999

DATE	LOCATION	TYPE OF MEETING
5-1-97	Planning Dept. Conference Room	Regular
6-5-97	Senior / Community Center	Regular
6-17-97	Royal Oak Middle School	Visioning Workshop
7-3-97	Senior / Community Center	Regular
8-7-97	Senior / Community Center	Regular
8-26-97	Senior / Community Center	Regular
9-16-97	Royal Oak Middle School	Town Meeting Follow-Up
10-2-97	Senior / Community Center	Regular
10-8-97	Royal Oak Middle School	Visioning Workshop
10-29-97	Royal Oak High School	Visioning Workshop
11-6-97	Senior / Community Center	Regular
11-12-97	Royal Oak High School	Visioning Workshop
12-10-97	Royal Oak High School	Visioning Workshop
1-14-98	Royal Oak Women's Club	Visioning Workshop
2-5-98	Senior / Community Center	Regular
3-5-98	Senior / Community Center	Regular
3-23-98	Senior / Community Center	Regular
4-2-98	Senior / Community Center	Regular
4-30-98	Senior / Community Center	Special
5-21-98	Royal Oak High School	Town Meeting
6-2-98	Baldwin Theater	Town Meeting
6-18-98	Senior / Community Center	Regular
9-3-98	Senior / Community Center	Regular
9-16-98	Library Auditorium	Neighborhood Review
9-23-98	Library Auditorium	Neighborhood Review
10-1-98	Senior / Community Center	Regular
10-20-98	Oakland Comm. College Theater	Public Hearing
11-5-98	Senior / Community Center	Regular
12-1-98	Senior / Community Center	Regular
1-13-99	Cancelled Due to Weather	Cancelled Due to Weather
1-20-99	Senior / Community Center	Regular
2-4-99	Senior / Community Center	Regular
2-24-99	Senior / Community Center	Regular
3-11-99	Library Auditorium	Public Comment – Closed Session
3-24-99	Baldwin Theater	Public Hearing
3-31-99	Senior / Community Center	Regular

Planning Commission
Master Plan Schedule

Type of Meeting	Day	Date	Location	Time
Meeting	Saturday	March 27	Senior Center	9:30 a.m.
Meeting	Saturday	April 17	Senior Center	9:30 a.m.
Meeting	Monday	April 26	City Hall	6:30p.m.
Meeting	Tuesday	May 4	Senior Center	6:30p.m.
Meeting	Monday	May 10	Senior Center	6:30p.m.
Meeting	Tuesday	May 11	City Hall	6:00p.m.
Meeting	Wednesday	May 26	Senior Center	6:30p.m.
Meeting	Tuesday	June 1	Senior Center	6:30p.m.
Public Hearing	Tuesday	June 8	Royal Oak Middle School	7:00p.m.
Meeting	Wednesday	June 23	Senior Center	6:30p.m.
Meeting	Wednesday	July 7	Senior Center	6:30p.m.
Meeting	Tuesday	July 13	City Hall	6:30p.m.
Public Hearing	Tuesday	August 10	Royal Oak Middle School	7:30p.m.
Meeting	Tuesday	August 24	Senior Center	6:30p.m.

APPENDIX III – Resolution of Master Plan Adoption

RESOLUTION OF MASTER PLAN ADOPTION

WHEREAS the Master Plan for the City of Royal Oak was adopted at a Special Meeting of the Plan Commission, held on August 24, 1999:

COMMISSIONERS PRESENT: Mr. Anderson, Mr. Boismier, Mayor Cowan, Mr. Farhat, Ms. Harrison, Mr. Lee, Mr. Gomez, Mr. Kondek

COMMISSIONERS ABSENT: Ms. Hofman

WHEREAS the City of Royal Oak Plan Commission recognizes the need to formulate and adopt a Master Plan, including establishment and support of a Land Use Plan as described in this document; and

WHEREAS preparation of the Master Plan included 35 public meetings, workshops and hearings held by the Master Plan Steering Committee and 14 public meetings and hearings held by the Plan Commission; and

WHEREAS the Master Plan Steering Committee and the Plan Commission were assisted by the City of Royal Oak Planning Department and Carlisle/Wortman Associates, Inc., in the preparation of the Master Plan;

NOW, THEREFORE, BE IT RESOLVED THAT:

1. The City of Royal Oak Plan Commission hereby adopts the Master Plan, dated August 1999, with amendments approved thereto, including the Future Land Use Plan Maps, dated July 15, 1999; and

2. A certified copy of the Master Plan be forwarded to the Oakland County Register of Deeds for filing; and

3. All resolutions and parts of resolutions, insofar as they conflict with the provisions of this resolution be and the same, hereby are rescinded.

AYES: Mr. Anderson, Mr. Boismier, Mayor Cowan, Mr. Farhat, Mr. Gomez, Mr. Kondek

NAYS: Ms. Harrison, Mr. Lee

RESOLUTION DECLARED ADOPTED, this 24th day of August 1999.

Michael Kondek, Chairman
Royal Oak Plan Commission

Mary Haverty, City Clerk
City of Royal Oak, Michigan

APPENDIX IV – Resolutions of Master Plan Amendment

ADTOPION BY PLANNING COMMISSION:

The City of Royal Oak Planning Commission, at its meeting on April 17, 2012, took the following action regarding this Amendment to the City of Royal Oak Master Plan:

> **BE IT RESOLVED**, that the Amendment to the City of Royal Oak Master Plan, dated including amendments to the following chapters: Goals, Objectives, and Strategies; Land Use Plan; and Implementation; also the Future Land Use Maps, Bicycle Network Map, TOD Corridor Transit Framework Map, and Rochester Road Access Management Concept Maps; and also including the referenced portions of the Non-Motorized Transportation Plan, Rochester Road Access Management Plan, and Woodward Avenue TOD Corridor Study; is hereby adopted in its entirety as an update to the City of Royal Oak's Master Plan.

Respectfully,

Timothy E. Thwing, Director
Planning Department

ACCEPTANCE BY CITY COMMISSION:

The Royal Oak City Commission, at its meeting of May 7, 2012, took the following action regarding this Amendment to the City of Royal Oak Master Plan:

> **BE IT RESOLVED**, that the City Commission accepts and approves the Amendment to the City of Royal Oak Master Plan, including amendments to the following chapters: Goals, Objectives, and Strategies; Land Use Plan; and Implementation; also the Future Land Use Maps, Bicycle Network Map, TOD Corridor Transit Framework Map, and Rochester Road Access Management Concept Maps; and also including the referenced portions of the Non-Motorized Transportation Plan, Rochester Road Access Management Plan, and Woodward Avenue TOD Corridor Study; in its entirety as an update to the City of Royal Oak Master Plan.

Respectfully,

Melanie Halas, City Clerk

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