



Royal Oak
Non-Motorized Transportation
Plan



ACTIVE TRANSPORTATION
ALLIANCE



Royal Oak Non-Motorized Transportation Plan

Presented by Active Transportation Alliance, September 13, 2011



ACTIVE TRANSPORTATION
ALLIANCE

Acknowledgements

Non-Motorized Transportation Plan Steering Committee

This plan represents the combined vision and goals of the steering committee that guided its development as well as residents and other key stakeholders. Thank you to these residents and the members of the steering committee for donating their time to this project.

City of Royal Oak Staff

Tim Thwing, Director of Planning
Joe Murphy, Planning
Doug Hedges, Planning
Matt Callahan, Engineering

Royal Oak Planning Commission

Tom Hallock, Chairman
Clyde Esbri, Vice-Chairman
Sharlan Douglas
Jim Ellison, Mayor
Dan Godek
Scott Newman
David Poulton, Commissioner
Anne Vaara
Stacie Vorves

Residents

Melissa Damaschke
Tom Regan
Todd Scott

About the Consultants

The mission of Active Transportation Alliance is to make bicycling, walking, and public transit so safe, convenient, and fun that we will achieve a significant shift from environmentally harmful, sedentary travel to clean, active travel. We advocate for transportation that encourages and promotes safety, physical activity, health, recreation, social interaction, equity, environmental stewardship, and resource conservation.

Our staff includes planning, policy, and education experts who developed many of the best practice programs and policies included in this plan. By partnering with us on this project, you not only get the best plan possible, you also support our mission to improve active transportation throughout the Chicagoland and the Midwest region.

The Active Transportation Alliance Project Team:

Steve Buchtel
Marissa Dolin
Carolyn Helmke
Dan Persky

Contents

Acknowledgements		7 Appendices	45
Executive Summary	5	Appendix A: Energy Efficiency Calculations	46
1 Introduction	7	Appendix B: Michigan Complete Streets Acts	51
Background	8	Appendix C: Sample Complete Streets Ordinances	58
Why a Non-Motorized Transportation Plan for Royal Oak	8	Appendix D: Sample Bike Parking Ordinance	61
Benefits of a Non-Motorized Transportation Plan	9	Appendix E: Sample Distracted Driver Ordinance	61
Plan Methodology and Community Outreach	10	Appendix F: Pedestrian and Bicycle Facility Guidance	62
A Legacy of Planning and Active Living	11	Appendix G: Cost Estimates	64
Timeframe	12	Appendix H: Funding Resources	65
		<i>Unless otherwise noted, all images courtesy of Active Transportation Alliance</i>	
2 Policy Recommendations	13		
Municipal Ordinance and Policy Recommendations	14		
School Policy Recommendations	17		
3 Bicycle and Pedestrian Network	19		
Bicycle Network Map	20		
Bike Routes	22		
Shared Lane Markings	23		
Road Diets with Bike Lanes	25		
Places and Corridors	27		
4 Non-Motorized Transportation Amenities	29		
Pedestrian Amenities and Crossing Improvements	30		
Bicycle Amenities	31		
Transit Amenities	33		
5 Program Recommendations	35		
Education	36		
Enforcement	37		
Encouragement	38		
6 Implementation	41		
Bicycle and Pedestrian Advisory Committee	42		
Bicycle and Pedestrian Coordinator	42		
Indicators and Evaluation	43		

Executive Summary

Executive Summary

Royal Oak partnered with consultants from Active Transportation Alliance to produce this non-motorized transportation plan for the community. The plan is composed of improvements to the physical infrastructure, policies, and programs that make it safer and more convenient for people to walk, bike, and use transit in Royal Oak. To develop these recommendations, the consultants turned to the experts—the users of the network. Guided by their insight, this plan will position the community for a brighter, healthier, and more active future.

Active Transportation Network—Key Places and Routes

The active transportation network recommended in this plan provides door-to-door safe access to the key places in Royal Oak. Highlights of the network include:

- Designated routes and bike lanes
- Connections to important places and corridors such as Woodward Avenue, Beaumont Hospital, Downtown Royal Oak, and potential regional trail connections
- Amenities to increase safety and convenience pedestrians and cyclists

Policies

Increasing use of the active transportation network requires adoption and implementation of municipal and school policies that facilitate safe use of these facilities. This plan includes the following recommended policies:

- Complete Streets
- Bicycle Parking
- Distracted Driving
- Snow Clearance on Sidewalks
- School Related Policies

Programs

The plan provides guidance on the development of nationally recognized programs for education, encouragement, enforcement, and evaluation. These programs include:

- Elementary, high school and adult education programs
- Rewarding good bicycling behavior and enforcing safe roadway usage
- Themed community and group rides

Implementation

The planning process does not end with the adoption of this plan. It will require years of implementation and the dedication of key stakeholders. The plan includes a comprehensive timeline for implementation. The appendix includes resources for funding and implementing the plan's recommendations. Model policies and data used in developing this plan are also included to facilitate effective implementation.

Introduction

Background	8
Why a Non-Motorized Plan for Royal Oak	8
Benefits of a Non-Motorized Plan	9
Plan Methodology and Community Outreach	10
A Legacy of Planning and Active Living	11
Timeframe	12

Background

The City of Royal Oak, Michigan enjoys a prime location within the greater Detroit metropolitan area. It has the appeal of a small town, while affording many of the amenities of a large metropolis. Royal Oak draws visitors from throughout southeast Michigan. The city is known for its vibrant downtown and commercial districts, established neighborhoods, historic structures, arts and culture, fine schools, and exemplary parks system.

Royal Oak residents and businesses benefit from access to regional thoroughfares, major airports, Amtrak rail service, and transit service provided by the Suburban Mobility Authority for Regional Transportation (SMART). Its central location and regional accessibility positions Royal Oak as the 'gateway' to southeast Michigan.

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 bikeway 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 biking and walking.

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 2009, the City Commission awarded Active Transportation Alliance a contract to undertake the planning project. The project officially commenced in August 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. The Royal Oak 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.

Why a Non-Motorized Plan



Two women drive in from a neighboring community, meet at the Farmers Market and bike in Royal Oak.

It is anticipated that the changes to the physical and cultural environment will result in greater numbers of Royal Oak residents choosing to walk, bike 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 following chart 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.

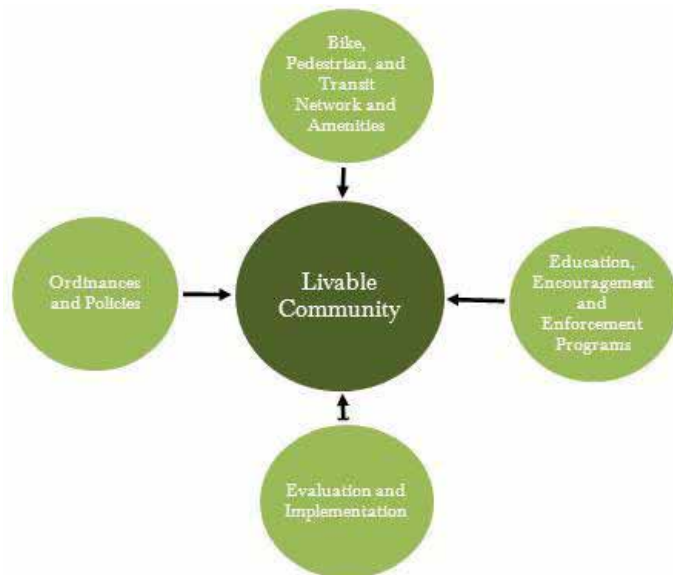
Why a Non-Motorized Plan for Royal Oak

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.

Benefits of a Non-Motorized Plan

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 bike. The purposes of the Royal Oak Non-Motorized 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 Non-Motorized Transportation

Having the ability to move about Royal Oak safely, comfortably and conveniently, on foot or by bike, 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 at large shopping centers. 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 bike 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, 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.



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

Plan Methodology and Community Outreach

Kickoff Meeting

The planning process kicked off in August 2010 with a meeting between the Royal Oak Planning Commission, City of Royal Oak staff, and representatives from Active Transportation Alliance (Active Trans). 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 biking 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 bike 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, and infrastructure improvements to promote biking and walking in Royal Oak.

Inventory of Existing Conditions

Active Trans 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 Active Trans developed network and programmatic recommendations to improve non-motorized travel in the community.

Recommended Facilities for Development Report

Active Trans presented an interim report including a draft outline for the non-motorized plan and a series of network recommendations. City of Royal Oak staff reviewed the network recommendations and their input is reflected in the infrastructure improvements and facility recommendations following in this plan.

Projected Energy Savings Analysis

Funding to develop the Royal Oak 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.

A Legacy of Planning and Active Living

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 CO₂ emitted and 1,000 gallons of gas saved due to this reduction in VMT. *Reference Appendix A for the complete analysis.*

A Legacy of Planning and 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.

Potential Bike Route 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, and minor bike routes used to get through neighborhoods and connect to parks and schools.

Master Plan

The City of Royal Oak has initiated various comprehensive planning efforts in the past. These efforts have included the General Development Plan (Master Plan) adopted in 1968 and updated in 1999. The plan guides the physical development of the community.

Eleven Mile Road Corridor Plan

The Eleven Mile Road Corridor Plan was adopted in 1989. The plan recommends programs and strategies to improve the physical appearance and the commercial vitality of the corridor.

Parks and Recreation Master Plan

The Parks and Recreation Master Plan was adopted in 2009. The plan guides decision-making for improvements to the parks system and is required to qualify for state grant funding programs.

Downtown Royal Oak Master Plan

The Downtown Royal Oak Master Plan was adopted in 1994 for the Downtown Development Authority (DDA). The plan includes strategies to address market growth, land use and development, urban design, and cooperative downtown management.

Downtown Parking Study and Master Plan

The Downtown Parking Study and Master Plan was adopted in 1995. The recommends improvements and expansion opportunities for parking in the downtown area.

Woodward Avenue Action Association (WA3)

The Woodward Avenue Action Association (WA3) formed in 1996 as a nonprofit economic development membership organization representing seven communities along Woodward Avenue in Oakland County. The organization was later expanded to include Wayne County, Detroit, and Highland Park. The WA3 has been successful in obtaining America's Byways and All-American Road designations for Woodward Avenue.

To date, the designations have brought in close to \$4 million in federal funding for various economic development, tourism, promotion and preservation efforts along Woodward Avenue. A number of operating/ planning documents have been approved to guide improvement projects along Woodward, including a Byway Corridor Management Plan, Woodward Public Framework Plan, Woodward Crosswalk Framework Plan, and Woodward Attractions and Historic Sites.

The WA3 is studying the transit oriented development (TOD) potential of the Woodward Avenue corridor. The TOD study is considering ways to enhance the corridor using heritage, economic development, placemaking, access, and design principles.

Timeframe

Timeframe

The recommendations are divided into three categories: near term, mid term, and long term. These categories should help the city coordinate these efforts with staffing plans and work plans.

Near-term priorities

Network: Near-term network recommendations can generally be described as corridors and intersections that are currently walkable and bikeable but may be aided by some low-cost improvements, such as network signage or crossing improvements.

Policy and Programming: Near-term projects involve little to no start-up costs or long-term organization. Many education and encouragement initiatives are proposed for near-term implementation to build support for later projects.

Mid-term priorities

Network: Mid-term network recommendations can generally be described as corridors and intersections where current conditions could be easily improved to become more walkable and bikeable, with a moderate construction budget. Examples are corridors with low average daily traffic (ADT) and ample width to add bike lanes or shared lane markings, and intersections that are currently signaled but could be improved by curb-extensions, transit shelters, local sidewalk completion, and other network amenities like benches and identity features.

Policy and Programming: Mid term means projects will require preliminary work or support building in the near term. These projects may have initial start-up costs and coordination with community organizations. Mid-term projects generally involve more coordination.

Long-term priorities

Network: Long-term network recommendations are often complicated by jurisdictional issues or the balancing of regional network priorities. These recommendations may have other feasibility issues like high ADT or restricted road width or right-of-way.

Policy and Programming: These projects frequently depend on the completion of earlier projects and local support.

Opportunistic Implementation:

While this plan offers a guide to prioritizing these recommendations as near-, mid-, or long-term priorities, the city should actively seek out opportunities to coordinate implementation with private development and larger public projects. Implementing agencies should remain aware of these kinds of opportunities and seek to coordinate the implementation of this plan with parallel county and regional efforts.

Policy Recommendations

Municipal Ordinance and Policy Recommendations	14
School Policy Recommendations	17

Policy Recommendations

Municipal Ordinance and 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 biking 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 bike 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.



A “complete street” in Royal Oak with sidewalks and the 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.

Complete Streets Policy

Time Frame: Near-term

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.

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 legislation (Public Acts 134 and 135 of 2010).

See appendix B for a sample policy.

Bicycle Parking Ordinance

Time Frame: Near-term

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, multi-family residential and workplaces. The City should also consider offering long term bike parking in its municipal parking garages.

See Appendix C for sample ordinance language.

Policy Recommendations (Continued)

Snow Clearance Ordinance

Time Frame: Near-term

The accumulation of snow and ice on sidewalks creates a major barrier to pedestrians, especially seniors and children. To ensure the safety of the pedestrian network, the City should consider the establishment of an ordinance requiring residents to clear snow and ice from the sidewalks adjacent to their properties. In addition, Royal Oak should consider developing a program to help people who need assistance with snow clearance.

Distracted Driver Ordinance

Time Frame: Near-term

Traffic safety is a major barrier to active transportation, especially for children and seniors. Nationwide trends show that distracted driving is a major contributor to roadway tragedies, and many communities are targeting this behavior with tough penalties and targeted enforcement. The City should consider adopting and publicizing a distracted driver ordinance restricting the use of hand held mobile phones while driving on local roadways. Safety goals could be further bolstered by a partnership with neighboring communities and Oakland County to pass similar polices throughout the region.

See Appendix D for sample ordinance language.

Bike Lane Parking Ordinance

Time Frame: Mid-term

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 a Pedestrian and Bicycle Friendly Environments

Time Frame: Mid-term

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



Nationwide trends show that distracted driving is a major contributor to roadway tragedies



Icy and snowy sidewalks often force pedestrians to walk on the roadway with cars, a very dangerous scenario. Requiring residents to shovel ensures that pedestrians have a safe, clear place to walk after a snowfall.

Policy Recommendations (Continued)

access for pedestrians, cyclists and transit users in development or redevelopment projects.

Examples include:

- Use best practice designs to meet Americans with Disabilities (ADA) accessibility requirements.
- Consider requiring short and long-term bicycle parking, showers and locker rooms at workplaces.
- Create minimum standards for bicycle parking accommodations at multi-family residential, community facility, commercial 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. Require a minimum five foot wide walk in residential areas, ten foot wide walk in commercial areas, and a minimum five foot wide treebank or curbside zone.
- Require a maximum setback distance on 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 ITE manual "Designing Walkable Urban Thoroughfares: A Context Sensitive Approach."

School Policy Recommendations

School Policy Recommendations

Timeframe

Near-term: *Form Safe routes to School committee, collect baseline data*

Mid-term: *Complete School Travel Plan, implement low-cost strategies, apply for funding*

Long term: *Implement infrastructure projects*

The 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) of the district schools 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. SRTS provides funding for sidewalks and other infrastructure projects and requires no local match. The City of Royal Oak should work with the Royal Oak 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.







Bicycle and Pedestrian Network

Bicycle Network Map	20
Bike Routes	22
Shared Lane Markings	23
Road Diets with Bike Lanes	25
Places and Corridors	27

CITY OF ROYAL OAK Non-Motorized Transportation Plan Bicycle Network Map August 2011

Bicycle Facility Recommendations

-  Future Improvement Area
-  Bike Route
-  Bike Lane with Road Diet
-  Shared Lane Marking
-  Trail or Path

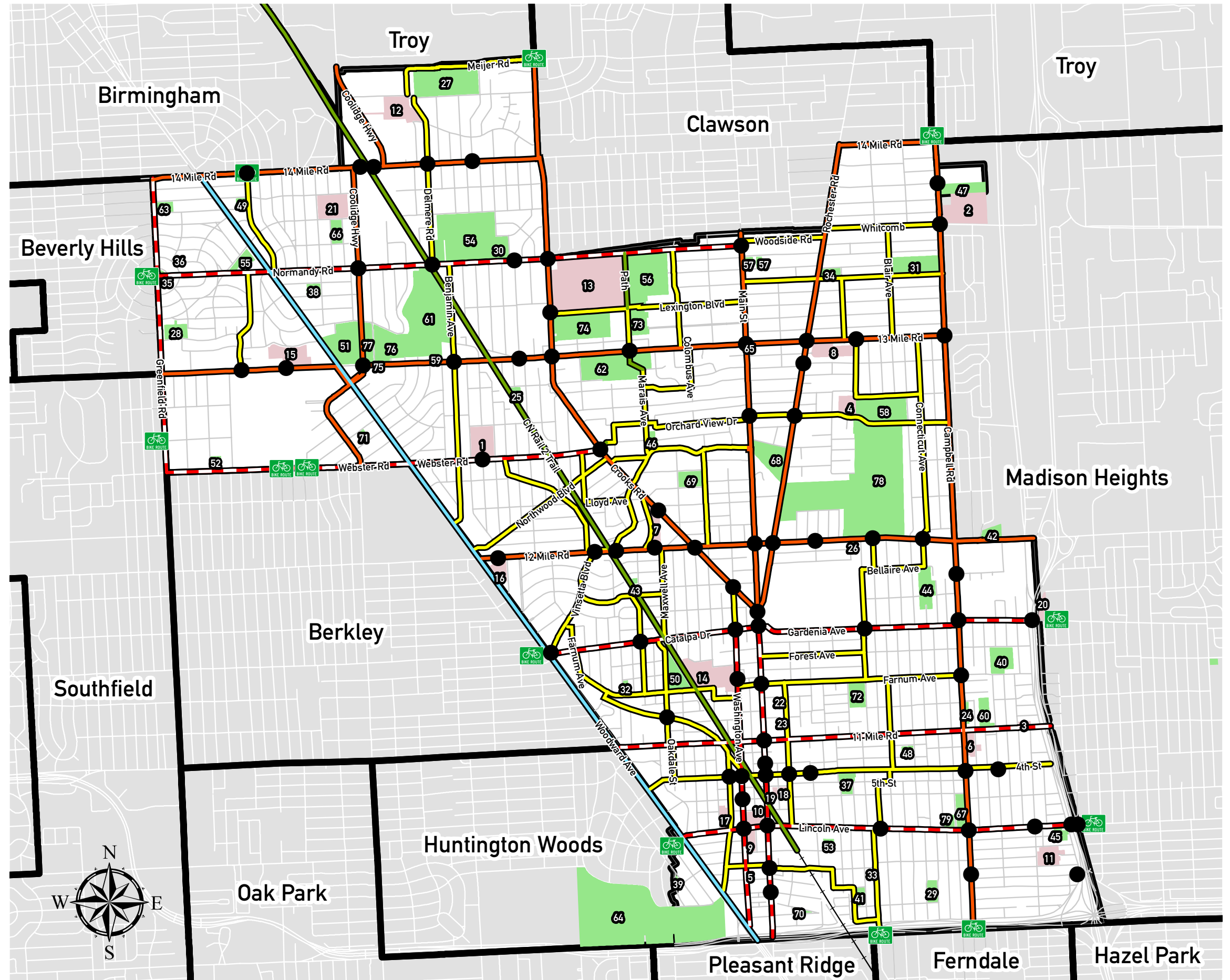
-  Connection to Adjacent City
-  Roads
-  Railroad
-  Schools
-  Parks and Open Space
-  Traffic Signal



ACTIVE TRANSPORTATION
ALLIANCE



Prepared By:
Active Transportation Alliance August 2011
Data Source:
Active Transportation Alliance, Royal Oak, SEMCOG



SCHOOLS

- 1 Addams Elementary School
- 2 Bishop Foley Catholic High School
- 3 Calvary Christian School
- 4 Churchill Center/School Facility
- 5 David Pressley School of Cosmetology
- 6 Lockett Christian Academy
- 7 Northwood Elementary
- 8 Oak Ridge Elementary
- 9 Oakland Community College (Royal Oak Campus Parking Structure)
- 10 Oakland Community College (Royal Oak Campus)
- 11 Oakland Elementary
- 12 Oakland Technical Center (Southeast Campus)
- 13 Royal Oak High School
- 14 Royal Oak Middle School
- 15 Shrine High School
- 16 Shrine Of The Little Flower Grade School
- 17 St. Mary Catholic School
- 18 St. Paul Lutheran
- 19 St. Paul Lutheran School
- 20 St. Vincent Ferrer
- 21 Upton Elementary
- 22 Barton Park North
- 23 Barton Park South

PARKS

- 24 Bassett Park
- 25 Clawson Park
- 26 Cody Park
- 27 Cumingston Park
- 28 Dickinson Park
- 29 Dondero Park
- 30 Elks Park
- 31 Exchange Park
- 32 Fernwood Park
- 33 Franklin Park
- 34 Fred Piper Optimist Park
- 35 Fries Park
- 36 Fulton Park
- 37 Grant Park
- 38 Gunn/Dyer Park
- 39 Huntington Woods Park
- 40 Kenwood Park
- 41 Lawson Park
- 42 Lions Club Park
- 43 Lions Club Park
- 44 Lockman Park
- 45 Maddock Park
- 46 Marais Park
- 47 Mark Twain Park
- 48 Marks Park
- 49 Maudlin Park
- 50 Meininger Park
- 51 Memorial Park/Grand Slam Baseball
- 52 Miller Park
- 53 Milt Hey/Hudson Park
- 54 Normandy Oaks Golf Club
- 55 Pioneer Park
- 56 Quickstad Park/Tenhave Woods
- 57 Realtor Park
- 58 Red Run Park
- 59 Rotary Park
- 60 Royal Oak Community Farm
- 61 Royal Oak Golf Club
- 62 Starr/J.C. Park
- 63 Sullivan Park
- 64 The Detroit Zoological Park
- 65 Thirteen Mile/Main Park
- 66 Upton Park
- 67 VFW Memorial Park
- 68 Wagner Park
- 69 Waterworks Park
- 70 Wendland Park
- 71 Westwood Park
- 72 Whittier Park
- 73 Mahany/Meininger Senior Community Center
- 74 Worden Park
- 75 Adventure Golf
- 76 Golden Bear Driving Range
- 77 Grand Slam Baseball
- 78 Red Run Golf Course
- 79 Salter Community Center

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 multi-modal 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 or sidepaths have 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 Appendix E and F.

Bike Routes

Objective: Create a near-term bike network for Royal Oak by signing routes already in use by local cyclists.

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.

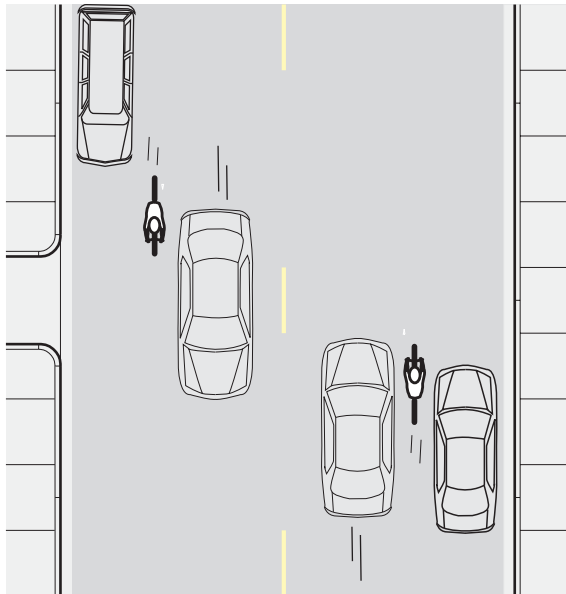
As bike traffic increases, some of these routes should be enhanced to prioritize bicycle traffic. These streets should be selected for their outstanding connectivity within the network and connections to important destinations in Royal Oak. Paint, pavement markings, planters, chicanes, and other diverters 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, 4th and Northwood.

Network Context

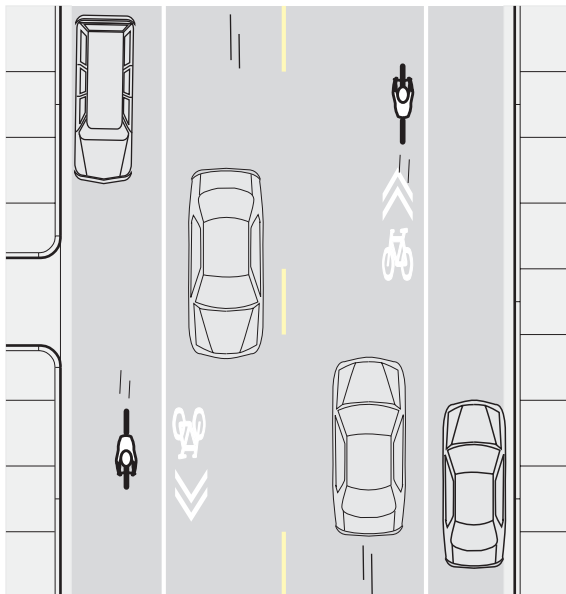
Special roadway treatments to guide cyclists and cars are necessary along streets with higher traffic volumes and motor vehicle speeds. These roadway treatments include shared lane markings, bike lanes and road diets.

Shared Lane Markings

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



Existing conditions on Catalpa, Normandy and Lincoln



Proposed conditions on Catalpa, Normandy and Lincoln. When a car is parked, the cyclist shares the lane. When no car is parked, the cyclist uses the parking lane.

note: drawing not to scale

Description: Marked shared lanes 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. Shared lane markings are most commonly found on streets with a minimum 13' travel lane, but can be used on narrower streets to raise awareness of cyclists. When on-street parking is allowed, place shared lane markings at a minimum 11 feet center from curb. When on-street parking is prohibited, place shared lane markings at a minimum 4 feet center from curb.

Recommended locations:

Catalpa

Existing: 36 feet paved surface, curb parking 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 center from curb to create awareness for cyclists and to guide cyclists where to bike

Gardenia

Existing: 25 feet paved curb to curb, no on-street parking

Recommendation:

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

Normandy

Existing: 36 feet, occasional curb 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 ft center from curb to create awareness for cyclists and to guide cyclists where to bike

Network Context

Lincoln

Existing: 36 feet paved, parking both sides of the street

Recommendation:

- 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 center from curb to create awareness for cyclists and to guide cyclists where to bike

Washington

Existing: Between 11 Mile Rd. and Austin, 36 ft paved surface, on street parking on west side only. North of Austin, 25 ft paved surface, no on-street parking. South of 6th St., 62 ft paved surface, intermittent on-street parking.

Recommendations:

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

Webster

Existing: 36 feet 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 marking on the street at the appropriate distance from the curb to create awareness for cyclists and to guide cyclists where to bike

Coolidge

Existing: 24 feet paved surface in each direction with center median.

Recommendations:

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

Greenfield (RCOC jurisdiction)

Existing: 60 feet paved surface including two travel lanes in each direction and a center turn lane. Narrows to 26 ft. north of Springer.

Recommendations:

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

Main

Existing: Gardenia to I-696: 60-70 feet paved surface, parking on both sides of the street. Two lanes in each direction with center turn lane north of Eleven Mile.

Recommendation:

- 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 center from curb to create awareness for cyclists and to guide cyclists where to bike

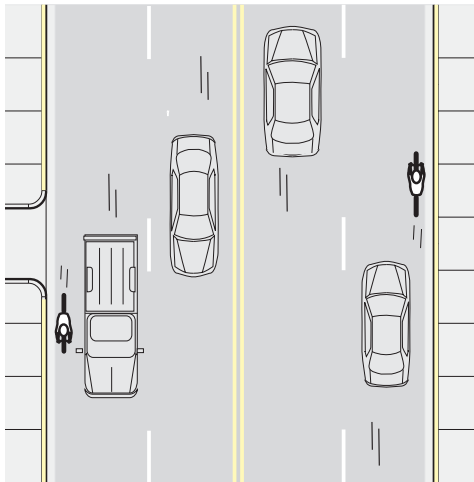
Network Context

Road Diets with Bike Lanes

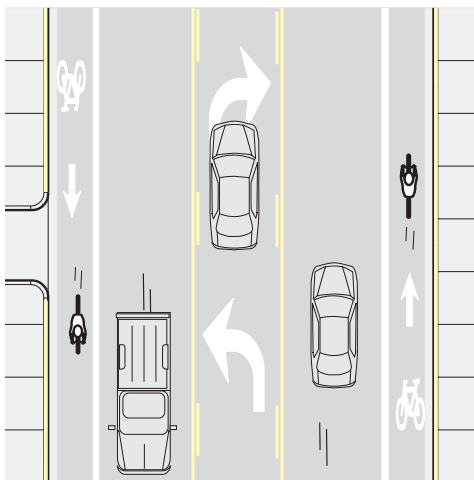
Objective: Accommodate additional types of roadway users by putting the road on a “diet.”

This type of change will require a traffic study. Traffic counts should be conducted prior to implementation in order to ensure that roadway users will continue to travel at a similar 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.

Description: Road diets are often conversions of four-lane undivided roads into three 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.



Existing conditions before a road diet



Proposed conditions after a road diet

Recommended locations:

Eleven Mile (RCOC jurisdiction)

Existing:

Troy to Stevenson Hwy:

- Four narrow lanes 9.5-11.5 feet each lane

Woodward to Troy:

- Four Lanes plus a turn lane.

Average Daily Traffic: 15,000-17,000 vehicles/day

Recommendation:

Troy to Stevenson Hwy:

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

Woodward to Lafayette:

- Convert outside turn lane to on-street parking plus a bike lane.

Campbell

Existing:

North of Gardenia: 55 feet paved including two lanes in each direction and a center turn lane.

South of Gardenia: 44 feet paved surface, including two travel lanes in each direction.

Recommendation:

North of Gardenia:

- 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:

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

Rochester

Existing: Two lanes in each direction, no on-street parking, 45 feet paved, lots of residential driveways fronting on this street.

Recommendation:

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

Network Context

**Due to recorded traffic counts for these streets, it may not be possible to install full road diets. As an alternative, these streets could instead be equipped with shared lane markings.*

Twelve Mile*

Existing:

Four narrow lanes 9.5-11.5 feet each lane
Average Daily Traffic: 23,400 vehicles/day (2006)

Recommendation:

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

Thirteen Mile*

Existing:

Four narrow lanes 9.5-11.5 feet each lane
Average Daily Traffic: 27,000 vehicles/day (1999)

Recommendation:

Review appropriate locations to put in medians with pedestrian refuge at mid-block to aide pedestrian crossings

Crooks*

Existing:

Two lanes in each direction, no on-street parking, 40 feet paved, lots of residential driveways fronting on this street.
Average Daily Traffic: 24,500 vehicles/day (2006)

Recommendation:

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

Main*

Existing:

Gardenia to Fourteen Mile: Two lanes in each direction, no on-street parking, 40 feet paved, lots of residential driveways fronting on this street.
Average Daily Traffic: 23,500 vehicles/day (2006)

Recommendation:

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

Fourteen Mile*

Existing:

Greenfield to Crooks: Two lanes in each direction, plus a center turn lane, no on-street parking, 60 feet paved
Rochester to Campbell: Two lanes in each direction, no on-street parking, 40 feet paved, lots of residential driveways
Average Daily Traffic: 22,530-28,200 vehicles/day (1999/2006)

Recommendation:

Greenfield to Crooks:

- 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.

Rochester to Campbell:

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

Network Context

Places and 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 auto-oriented corridor bringing 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. It is largely a commercial corridor connecting shops, offices, restaurants, health services, and communities.

OBJECTIVE 1: Implement sections of the Woodward Avenue Non-Motorized Plan prepared by the Woodward Avenue Action Association located in Royal Oak.

DESCRIPTION: The Woodward Avenue Action Association (WA3), worked with the cities of Ferndale, Pleasant Ridge, Huntington Woods, Royal Oak, Berkley and Birmingham to create a non-motorized plan for the corridor. The goals of that plan are as follows:

- Provide recommendations to enhance the pedestrian experience
- Provide recommendations to introduce dedicated bicycle facilities
- Provide municipalities with options and a phased approach to implementing non-motorized recommendations
- Identify linkages into the Woodward Communities to expand non-motorized efforts into each municipality and enhance community based nonmotorized plans as they are created
- Enhance the experience of the pedestrian and cyclist Byway traveler as Woodward Avenue is designated as a National Scenic Byway and a State Heritage Route.

This plan recommends working with the WA3 and the communities along the corridor in order implement the bicycle and pedestrian facilities recommended in that plan. In addition to those recommendations, the corridor should utilize best practices bicycle and pedestrian amenities including high visibility crosswalks and pedestrian countdown signals as outlined in this plan and the Woodward Avenue Public Spaces Framework Plan Amendment-Pedestrian Crosswalks.

Consideration for each goal, objective and design standard should be made based on existing and expected future conditions before adopting the plan in its entirety. It may be necessary to adopt and implement only the goals and objectives of the WA3 non-motorized plan and not the specific design standards. Some of the standards in the WA3 plan are more appropriate for a conventional suburb where non-motorized traffic is completely separate from the streets and roadways. With Royal Oak's dense, urban development pattern, both motorized and non-motorized traffic must share the same streets. Some design elements of the plan, such as having bicycle and pedestrian pathways travel in the opposite direction of oncoming traffic, are inherently dangerous to non-motorized traffic and should not be promoted.

OBJECTIVE 2: Provide swift and frequent transit service along Woodward Avenue from Pontiac to Downtown Detroit

DESCRIPTION: Currently light rail is planned for Woodward Avenue from Downtown to Eight Mile Road. In order to continue transit service for cities north of Eight Mile, Bus Rapid Transit should be implemented along the remainder of Woodward Ave. prior to the light rail extension. Bus Rapid Transit (BRT) is a high capacity, lower cost transit option that provides frequent service along a fixed route. 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 should utilize the medians along Woodward Avenue for stops along the route. 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 Zoo, Coolidge Highway, Beaumont Hospital, and Fourth Street.

Downtown Transit Center

OBJECTIVE: Increase use and awareness of the Downtown Transit Center.

DESCRIPTION: Transit compliments bicycle and pedestrian facilities by talking 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 posted clearly.

Network Context

Beaumont Hospital

OBJECTIVE: Increase bicycle and pedestrian accessibility to one of Royal Oak's largest employers: Beaumont Hospital

DESCRIPTION: As one of Royal Oak's largest employers, 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 and Hillside Drive, add accommodation for bikes in this area such as bike boxes to prioritize cyclists 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) right of way that parallels the existing CN tracks into a regional rail-with-trail multi-use path

DESCRIPTION: The ROW was established and graded for 4 parallel tracks, but only two were ever laid, leaving substantial room for a parallel multi-use path 10'-12' wide

As an older Detroit suburb, Royal Oak is landlocked by surrounding communities with difficult access to the region's few regional trails. Long term, this path could stretch from Pontiac all the way to downtown Detroit. The CN 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 trail 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 other use appears infrequent, presenting a rare acquisition opportunity prime for leveraging national resources such as federal trail banking legislation and support from Rails to Trails Conservancy. Public desire is already amply demonstrated by extensive desire paths from current use of the right of way by cyclists, walkers and runners.

Additional Recommendations:

Spearhead a regional "Historic Woodward Greenway" coalition, specifically with the corridor's communities, to build public will and begin identifying the funding for the right of way's development. The coalition should include federal legislative offices and the State of Michigan as a stake holder, both whose participation is likely necessary to negotiate with CN and maintain the Amtrak service Tap civic resources to hire a "Historic Woodward Greenway" coordinator part-time or contractually, reporting to the Historic Woodward Greenway coalition, to shepherd coalition building, liaison and create buy-in with regional, state and national organizations, create public outreach campaigns and events along the corridor.

Identify both on and off street connections to the trail in each community. Identify parallel on-street alternatives where ROW does not exist, or is not available.

Non-Motorized Amenities

Pedestrian Amenities and Crossing Improvements	30
Bicycle Amenities	31
Transit Amenities	33

Pedestrian Amenities

Pedestrian Amenities and 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 Manual for Uniform Traffic Control Devices, 2009 edition.

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 and truncated domes.

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

Install and restripe visible crosswalks.

All crosswalks in high-use areas should be upgraded to “ladder style” markings per the 2009 Manual for Uniform Traffic Control Devices (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.

Install curb extensions along streets and at 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.

Install no right turn on red signs.

Drivers looking to turn right on red often do not notice pedestrians to their right because their attention is focused on traffic approaching from their left. No right turn on red restrictions reduce the risk of a car and pedestrian crashes.

Continue to support and 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 effectively in areas with higher pedestrian traffic, such as shopping districts, and to improve the pedestrian experience along arterial road corridors.



Curb extensions, and clearly striped crosswalks and truncated domes (red) 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.

Bicycle Amenities

Bicycle Amenities

OBJECTIVE: Improve the bicycle network by incorporating ‘best practices’ bicycle amenities, such as wayfinding signage and bike racks.

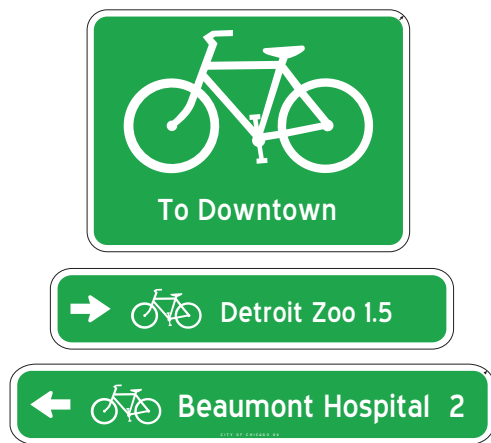
DESCRIPTION: Providing people with information about where to bike and a safe place to lock a bike will encourage a person to choose biking. Improving signage and bike parking are a cost-effective strategies to encourage biking. These simple improvements are recommended at all of the network’s major 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.

Bicycle Network Signs

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

DESCRIPTION The 2009 Manual for Uniform Traffic Control Devices (MUTCD) 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.



Top: Bike Route Sign directing cyclists to key destinations.

Right: Typical inverted “U” style bike rack on a commercial street.

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 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 multi-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’ 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 curblin, 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.



Bicycle Amenities

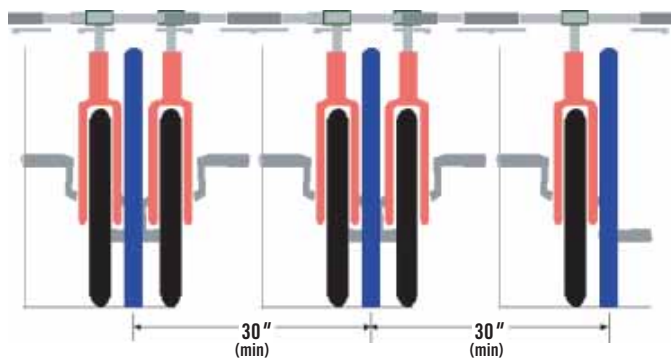
Bicycle Parking (continued)

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 it’s wheels from tipping over. They also allow a bicycle’s frame and one or both wheels to be secured simultaneously. 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.

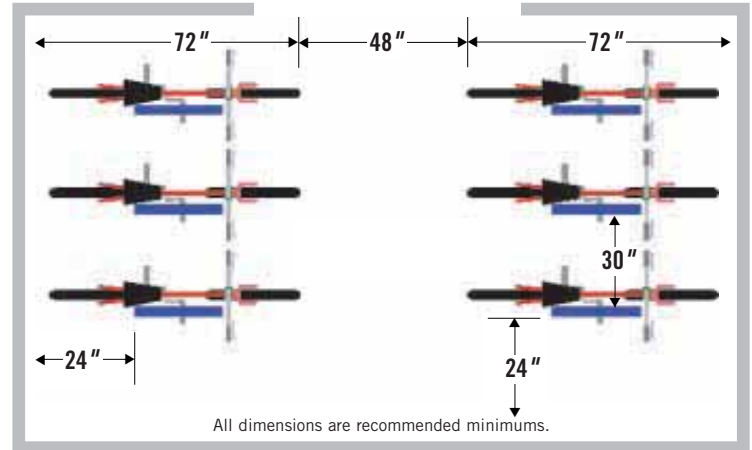
Inverted “U” racks have other advantages. These racks offer significant resistance to being cut or detached with common hand tools thereby minimizing the risk of bicycle theft. Their size allows them to be used in locations with limited space, even when combined in rows of multiple racks. When properly used they will not damage bicycle wheels as other types of racks will.

Other common bicycle racks types should be avoided, such as the comb, toaster-rack, 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 these 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 about 30 square feet.



A rack is one or more rack elements joined on a common base or arranged in a regular array and fastened to a common mounting surface.



The rack area is a bicycle parking lot where racks are separated by aisles.

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

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.

Transit Amenities

Transit Amenities

SMART Routes and Information

Royal Oak has eleven SMART bus routes that serve the community, taking residents along Woodward Ave, Main St., 10 Mile, 12 Mile, and 13/14 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
- Instructions on how to use bike racks on buses

SMART recently installed new shelters with a modern design in several communities throughout the region. Advertising was used to defray the costs. The City should encourage SMART to install these new shelters in Royal Oak as well.



A new SMART bus shelter in Frensdale, MI. The bench and roof at this shelter help protect bus riders from the elements while waiting for a bus.

Program Recommendations

Education	36
Enforcement	36
Encouragement	38

Education

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 section 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 are listed in Appendix E.

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

Time Frame: Near-Term

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 the American Cycle and Fitness/Trek Store and 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 Michigan Trails and Greenways Alliance, League of Michigan Bicyclists, Active Transportation Alliance,

Education- Bicycle & Pedestrian Safety through the Schools

Safe Routes to Schools

Reference policy recommendations on page 17 for a description of the Safe Routes to School program.

Elementary Bike Education

Time Frame: Mid-Term

The Objective: Deliver safe bicycling education to children and their parents in a fun, engaging way, and to mitigate growing school traffic aggravated by the elimination of bus routes.

The Program: Make completion of a safe bicycling course taught at the end of second grade and again at the end of fifth grade, 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.

The Benefits: 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.

How it Works: Public and private elementary schools adopt travel policies that limit bicycling to school to third grade and above, and establish an end-of-year “bicycle academy” integrated into second grade physical education classes. Children learn basic bicycling skills, how to perform a bicycle safety check,

Enforcement

helmet fit, and appropriate traffic cycling skills such as crossing roads, driveway dangers, and negotiating sidewalks. Children completing the academy receive a license permitting them to bicycle to school in third grade. The academy could take place during the school day as part of a gym class. The program would include the identification of safe bicycle routes to school.

A similar lesson should be taught again to fifth graders as students transition to middle high school and again as eighth graders as they transition to high school. Students participate in a ride from their neighborhood elementary school to the junior high and receive a graduated license. During the 8th grade cycling course, students should be taught on-road cycling techniques and discuss which streets are safe for cycling.

Modify Drivers Education Curriculum to include multimodal education

Time Frame: Long-Term

The Objective: To educate student drivers regarding alternative transportation choices and on how to share the road with bicyclists.

The Program: Drivers education classes in most high schools typically only cover automobile use and rules. Most curriculums do not address how to use other modes of transportation, or how drivers, pedestrians and cyclists can interact safely. The mobility education program will integrate education on other transportation choices, and how drivers should interact with bicyclists and pedestrians into the Royal Oak High School drivers education curriculum.

The Benefits: Royal Oak is already very walkable, and is headed towards becoming a more bikable community. 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.

How it Works: Mobility education lessons are either integrated directly into the current driver 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). Additional lessons may also be integrated into subject areas that further reiterate the benefits of using all the transportation options available to students.

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.

Reward good bicycling behavior

Time Frame: Near-Term

Objective: Cyclists, especially children and teens, who are following the rules of the road and wearing a helmet should be rewarded. Even a small reward will significantly increase good behavior and encourage more people to engage in safe cycling.

The Program: Police issue “tickets” such as a gift certificate for a free ice cream, cookies from a bakery, hot chocolate to resident cyclists “caught” following the rules of the road. “Tickets” can be issued for any number of good biking behaviors including wearing a helmet, stopping at stop signs and red lights, and crossing the street at a permitted location.

The Benefits: It engages a real strength of the community—its police force—in a positive public relations campaign that will reward residents for doing the right thing and riding safely. It will also encourage residents to engage the police. Actually, many children will probably ride around, looking for police to show their good biking behaviors.

How it works: Residents obey rules of the road. Police issue free ice cream or cookie ticket. Resident gets ice cream or cookie. This program would be most effective if conducted after the another bike education event. It will re-enforce lessons learned by rewarding children for putting their new skills into practice.

Encouragement

Train police officers on bicycling and pedestrian issues

Time Frame: Near-Term

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

The 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

Time Frame: Near-Term

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.

Encouragement

Community Encouragement through Information Access

Time Frame: Near-Term

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 local volunteers, 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, Downtown Royal Oak, and the Woodward Avenue Association 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 Transit Trip Planner.

Community Encouragement through Events and Programs

Time Frame: Near-Term

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 WA3 and Downtown Royal Oak.

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, the Birmingham Bicycle Festival, and Green Cruise.

City of Royal Oak Bicycle Fleet

Time Frame: Mid-Term

Objective: The City of Royal Oak makes bicycles available to their staff as a way to travel to meetings or run errands during work hours.

Description: Encouraging City staff to use bicycles for work travel around Royal Oak can be considerably cheaper than using automobiles. Employees will have better contact with residents in the neighborhoods. Using bicycles for work also improves employee health and fitness. To encourage use and basic understanding of on-road bike safety, Royal Oak should offer annual classes for city employees covering basic bike safety, simple roadside maintenance, and commuting by bike.

Encouragement

Bicycle Friendly and Walk Friendly Community Awards

Time Frame: Mid-Term

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 pedestrian-friendly cities.



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

Implementation

Bicycle and Pedestrian Advisory Committee	42
Bicycle and Pedestrian Coordinator	42
Indicators and Evaluation	43

Bicycle and Pedestrian Advisory Committee

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, and the Michigan Department of Transportation.

Appoint a Standing Bicycle and Pedestrian Advisory Committee (BPAC)

Target for completion: immediately

Background: Plan stakeholders—including representatives from city departments, the WA3, local bicycle advocates, residents and the Royal Oak Planning Commission gave input on this plan to guide and direct its development. (See Acknowledgements for a full listing of members.)

Objective: The city commissioners should appoint a stand alone Bicycle and Pedestrian Advisory Committee (BPAC). The BPAC should work to implement the recommendations set forth in this plan and as a standing committee and be charged with setting goals and directing and overseeing the implementation of this plan. The BPAC will facilitate coordination between the city, area schools, 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 should include a city staff member charged with being the Bicycle and Pedestrian Coordinator, up to five resident/advocates with a strong interest in bicycling and walking, including at least one individual representing the disabled community, and liaisons from the Royal Oak schools, WA3, Beaumont Hospital, Downtown Royal Oak, Oakland Community College, and local bike shops. The group should meet 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, Recreation and Senior/Community Center departments should be available on an ad hoc basis.

Bicycle and Pedestrian Coordinator

Target for completion: near term

Expand a position within the city planning or engineering departments responsible for convening the BPAC and implementing the Royal Oak Non-Motorized Plan. This individual will manage the implementation of the plan's facility recommendations, coordinate with other city, county, 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 Plan Task Force
- Managing the implementation of the plan's recommendations
- Coordinating with the Task Force 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 council
- 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

Indicators and Evaluation

Indicators and 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 bicycle and pedestrian advisory committee. 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.

This plan includes grant programs and organizational resources (reference Appendix G). Program and resource listings 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.

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 to monitor vehicular crashes on an annual basis with the goal of reducing vehicular crashes.

Pedestrian and 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 to monitor pedestrian and bicycle crashes on an annual basis with the goal of reducing both types of crashes.

Allocate Funds for Bike Parking and Route Signage on an Annual Basis

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

Maintain Existing Parking Demand While Increasing Population, Office and Retail Space

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

Appendices

Appendix A: Energy Efficiency Calculations	46
Appendix B: Michigan Complete Streets Acts	51
Appendix C: Sample Complete Streets Ordinances	58
Appendix D: Sample Bike Parking Ordinance	61
Appendix E: Sample Distracted Driver Ordinance	61
Appendix F: Pedestrian and Bicycle Facility Guidance	62
Appendix G: Cost Estimates	64
Appendix H: Funding Resources	65

Appendix A: Energy Efficiency Calculations (Projected Energy Savings)

Funding for the Royal Oak Non-Motorized Plan was obtained through the Federal Energy Efficiency Conservation Block Grant Program (EECBG). One of the requirements 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 by bicycle is the energy savings and environmental impact of shifting trips from car to bicycle. In the last two decades mode share for bicycling has increased.¹ A combination of additional infrastructure, educational, encouragement and safety factors have contributed to this increase. And as additional facilities for bicycling are built, bicycle usage is likely to continue increasing.

One way to quantify the value of bicycling 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 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 bicycle plan, a total of 15,443 miles per day will be saved, resulting in 10.55 fewer Tons of CO₂ emitted due to this reduction in VMT.

Existing Commuter Mode-split

In order to understand the impact of additional bicycling facilities, it is helpful to begin by reviewing current levels of bicycling. Reviewing current levels of bicycling will inform projections of additional bike ridership.

There are two methods of comparison for bicycling rates. One method is to compare communities with similar population. Another method is to compare neighboring communities. Making both comparisons helps to understand factors such as differentiation in land uses, density residential and job density, road patterns, and access to trails and transit. Neighboring communities are likely to have similar demographics and development patterns, but dissimilar population counts.

Using either method of comparison, Royal Oak is one of the leading bicycling communities, with 0.33% mode share for bicycling and 1.9% mode share for walking. Compared to other Southeastern Michigan municipalities with 50,000 to 60,000 residents (Census 2000) this is the second highest mode share for bicycling. And compared to neighboring municipalities, Royal Oak also has the second highest portion of bicyclists, with only Hazel Park having a higher mode share (0.42%).

¹ US Census 1990, 2000, 2010

Appendix A: Energy Efficiency Calculations

Commute to Work Comparisons

Michigan municipalities with 55,000 to 65,000 residents (Census 2000)

Commuter Mode Share

Rank	Place	Population	Bike (%)	Walk (%)	Use Public Transit (%)	Don't Drive To Work (%)	Households without a car (%)
1	Saginaw city	61,842	0.53	2.05	1.53	4.11	14.7
2	Royal Oak city	60,062	0.33	1.9	1.04	3.27	6.56
3	Dearborn Heights city	58,264	0.12	1.09	0.37	1.58	6.8
4	St. Clair Shores city	63,124	0.03	1.07	0.65	1.75	5.4
5	West Bloomfield Township CDP	64,804	0.02	0.54	0.21	0.77	2.02

Municipalities near or adjacent to Royal Oak (Census 2000)

Commuter Mode Share

Rank	Place	Population	Bike (%)	Walk (%)	Use Public Transit (%)	Don't Drive To Work (%)	Households without a car (%)
1	Hazel Park city	18,963	0.42	4.2	1.7	6.32	11.24
2	Royal Oak city	60,062	0.33	1.9	1.04	3.27	6.56
3	Ferndale city	22,105	0.28	1.89	1.26	3.43	8.24
4	Madison Heights city	31,101	0.26	1.1	0.68	2.04	8.58
5	Clawson city	12,732	0.25	1.64	0	1.89	6.05
6	Berkley city	15,531	0.24	0.94	0.51	1.69	4.85
7	Birmingham city	19,373	0.18	1.43	0.57	2.18	4.51
8	Beverly Hills village	10,442	0.15	0.44	0.17	0.76	1.79
9	Southfield city	78,296	0.06	1.51	1.17	2.74	9.94
10	Pleasant Ridge city	2,594	0	0.97	0	0.97	1.44

Source: <http://www.bikesatwork.com/carfree/carfree-census-database.html>

Appendix A: Energy Efficiency Calculations

Probable Mode Shift Due to Environmental Change

Several studies, including the California Department of Transportation (Caltrans) Air Resources Board suggest that a reasonable mode share target for bicycles in suburban communities with complete bicycle networks is 2%. University towns have an even higher suggested mode share target of 6.8%. This figure is determined by the ratio of bicycle routes and lanes to arterial and highway lane miles.

In its current state, there are about 0 miles of bike route or trail for every mile of arterial roadway in Royal Oak. When it is built out, there will be 1.45 miles of bicycle route, lane or trail for every mile of arterial roadway.

Considering the recommended mode share target from Caltrans, and the expected growth in Royal Oak's bicycle and pedestrian network, 2% is a reasonable baseline target for bicycling mode share at build out for Royal Oak's bicycling network. Additionally, since the plan includes programmatic and policy recommendations that target work, school and recreational trips, it can be assumed that these trip types will see an additional increase in bicycling mode share.

Reduction in Vehicle Miles Traveled

Using the current population count and data from Federal Highway Administration (FHWA), an estimate of the daily total miles traveled by Royal Oak residents was made. Assuming a baseline mode share of 2% for bicycles and some trip types with a 3% mode share, it can be estimated that there will be more than 5,000 bicycle trips per day in Royal Oak.

The purpose of each trip, length of trip and willingness to travel a longer distance vary greatly depending on the traveler and trip purpose. For example, a person will probably only want to travel for a few minutes to buy a gallon of milk, but that same person is willing to spend more time traveling to work. Depending on the mode of travel, trip distance can vary significantly as well. In order to account for this variation, average trip length for was not used.

The end result of a complete bicycle network in Royal Oak is likely to show a reduction of about 16,000 miles traveled by bicycle each day, or about .35 miles per person per day. Royal Oak residents will reduce their greenhouse gas emissions by nearly 11 tons per day, or more than 3,800 Tons per year.

Appendix A: Energy Efficiency Calculations

Existing to Proposed Condition Comparison

Existing Conditions

Primary Motorized Routes

Highway	3.73
Principal Arterial	4.82
Major Local	45.60
Collector	

Total 54.15 miles

Primary Bicycle Route

Bike Lanes	0.00
Bike Routes	0.00
Off-Road Trails	0.00

Total 0.00 miles

Proposed Conditions

Primary Bicycle Route

Bike Lanes and Shared Lanes	26.27
Bike Routes	48.00
Off-Road Trails	4.00

Total 78.27 miles

Comparison of Existing and Proposed Conditions

Bicycle

Existing Miles of Bike Routes	0%	of existing miles of primary motorized routes
Existing + Proposed Miles of Bike Routes	145%	of existing miles of motorized routes

Estimated Trip and Greenhouse Gas Reduction

Current Vehicle Miles Traveled

Population (Census 2000)	60,062
Daily Trips Per Person	4.03
Daily Total Number of Trips	242,050
Average Vehicle Trip Length	9.1
Daily Total Vehicle Miles Traveled	2,202,654

Reduction in Vehicle Miles Traveled by Biking Trips

Trip Type	Daily Total # Of Trips	Percent of Total Trips	Reduction Goal	Trip Reduction	Trip Length	VMT Reduction
To or From Work	38,728	16%	2%	775	2	1549
Work Related business	7,261	3%	0%	0	0.5	0
Shopping	48,410	20%	1%	484	1	484
All other Family and Personal Business	58,092	24%	2%	1,162	1	1162
School/church	24,205	10%	2%	484	1	484
Social and Recreational	65,353	27%	3%	1,961	6	11764
Other	2,420	1%	0%	0	2	0
Total	244,470	101%		4,865		15,443

Reduction in Vehicle Miles Traveled

21,083	Miles Per Day
1%	Total Reduction in VMT
0.35	Miles Per Person/Day

7,695,128 Total Reduction in VMT per year

Projected CO2 Reductions

CO2 Emission Factor	454	Grams Per Mile
Daily CO2 Reduction	9,571,474	Grams Per Mile
Daily CO2 Reduction	10.55	Tons
Yearly CO2 Reduction	3,851	Tons

Projected Fuel Savings

Daily Motor Gasoline Saved	1,039	Gallons of Gasoline based on 20.3 mi/gal
Daily Oil Savings	52	Barrels of Oil based on 20 gallons of gas per barrel
Yearly Oil Savings	18,954	Barrels of Oil

Act No. 134
Public Acts of 2010
Approved by the Governor
August 1, 2010
Filed with the Secretary of State
August 2, 2010
EFFECTIVE DATE: August 2, 2010

**STATE OF MICHIGAN
95TH LEGISLATURE
REGULAR SESSION OF 2010**

Introduced by Reps. Byrnes, Switalski, Leland, Liss, Bledsoe, Wayne Schmidt, Donigan, Lisa Brown, Tlaib, Gonzales, Young, Robert Jones and Roberts

ENROLLED HOUSE BILL No. 6152

AN ACT to amend 2008 PA 33, entitled “An act to codify the laws regarding and to provide for county, township, city, and village planning; to provide for the creation, organization, powers, and duties of local planning commissions; to provide for the powers and duties of certain state and local governmental officers and agencies; to provide for the regulation and subdivision of land; and to repeal acts and parts of acts,” by amending sections 3, 7, and 33 (MCL 125.3803, 125.3807, and 125.3833).

The People of the State of Michigan enact:

Sec. 3. As used in this act:

(a) “Chief administrative official” means the manager or other highest nonelected administrative official of a city or village.

(b) “Chief elected official” means the mayor of a city, the president of a village, the supervisor of a township, or, subject to section 5, the chairperson of the county board of commissioners of a county.

(c) “County board of commissioners”, subject to section 5, means the elected county board of commissioners, except that, as used in sections 39 and 41, county board of commissioners means 1 of the following:

(i) A committee of the county board of commissioners, if the county board of commissioners delegates its powers and duties under this act to the committee.

(ii) The regional planning commission for the region in which the county is located, if the county board of commissioners delegates its powers and duties under this act to the regional planning commission.

(d) “Ex officio member”, in reference to a planning commission, means a member, with full voting rights unless otherwise provided by charter, who serves on the planning commission by virtue of holding another office, for the term of that other office.

(e) “Legislative body” means the county board of commissioners of a county, the board of trustees of a township, or the council or other elected governing body of a city or village.

(f) “Local unit of government” or “local unit” means a county or municipality.

(g) “Master plan” means either of the following:

(i) As provided in section 81(1), any plan adopted or amended before September 1, 2008 under a planning act repealed under section 85.

(ii) Any plan adopted or amended under this act. This includes, but is not limited to, a plan prepared by a planning commission authorized by this act and used to satisfy the requirement of section 203(1) of the Michigan zoning enabling act, 2006 PA 110, MCL 125.3203, regardless of whether it is entitled a master plan, basic plan, county plan, development plan, guide plan, land use plan, municipal plan, township plan, plan, or any other term.

Appendix B: Michigan Complete Streets Acts

(h) “Municipality” or “municipal” means or refers to a city, village, or township.

(i) “Planning commission” means either of the following, as applicable:

(i) A planning commission created pursuant to section 11(1).

(ii) A planning commission retained pursuant to section 81(2) or (3), subject to the limitations on the application of this act provided in section 81(2) and (3).

(j) “Planning jurisdiction” for a county, city, or village refers to the areas encompassed by the legal boundaries of that county, city, or village, subject to section 31(1). Planning jurisdiction for a township refers to the areas encompassed by the legal boundaries of that township outside of the areas of incorporated villages and cities, subject to section 31(1).

(k) “Population” means the population according to the most recent federal decennial census or according to a special census conducted under section 7 of the Glenn Steil state revenue sharing act of 1971, 1971 PA 140, MCL 141.907, whichever is the more recent.

(l) “Street” means a street, avenue, boulevard, highway, road, lane, alley, viaduct, or other public way intended for use by motor vehicles, bicycles, pedestrians, and other legal users.

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 and provide for safe and efficient movement of people and goods by motor vehicles, bicycles, pedestrians, and other legal users.

(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. 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. If a county has not adopted a zoning ordinance under former 1943 PA 183 or the Michigan zoning enabling act, 2006 PA 110, MCL 125.3101 to 125.3702, a land use plan and program for the county may be a general plan with a generalized future land use map.

(b) The general location, character, and extent of all of the following:

(i) 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.

(ii) Waterways and waterfront developments.

(iii) Sanitary sewers and water supply systems.

(iv) Facilities for flood prevention, drainage, pollution prevention, and maintenance of water levels.

(v) Public utilities and structures.

Appendix B: Michigan Complete Streets Acts

(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.

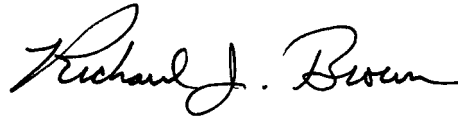
(d) For a local unit of government that has adopted a zoning ordinance, a zoning plan for various zoning districts controlling the height, area, bulk, location, and use of buildings and premises. The zoning plan shall include an explanation of how the land use categories on the future land use map relate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

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

(3) If a master plan is or includes a master street plan or 1 or more elements described in subsection (2)(b)(i), the means for implementing the master street plan or elements in cooperation with the county road commission and the state transportation department shall be specified in the master street plan in a manner consistent with the respective powers and duties of and any written agreements between these entities and the municipality.

(4) This section is subject to section 81(1).

This act is ordered to take immediate effect.



Clerk of the House of Representatives



Secretary of the Senate

Approved

Governor

Act No. 135
Public Acts of 2010
Approved by the Governor
August 1, 2010
Filed with the Secretary of State
August 2, 2010
EFFECTIVE DATE: August 2, 2010

**STATE OF MICHIGAN
95TH LEGISLATURE
REGULAR SESSION OF 2010**

Introduced by Reps. Switalski, Byrnes, Leland, Liss, Bledsoe, Wayne Schmidt, Donigan, Lisa Brown, Tlaib, Gonzales, Young, Robert Jones and Roberts

ENROLLED HOUSE BILL No. 6151

AN ACT to amend 1951 PA 51, entitled "An act to provide for the classification of all public roads, streets, and highways in this state, and for the revision of that classification and for additions to and deletions from each classification; to set up and establish the Michigan transportation fund; to provide for the deposits in the Michigan transportation fund of specific taxes on motor vehicles and motor vehicle fuels; to provide for the allocation of funds from the Michigan transportation fund and the use and administration of the fund for transportation purposes; to set up and establish the truck safety fund; to provide for the allocation of funds from the truck safety fund and administration of the fund for truck safety purposes; to set up and establish the Michigan truck safety commission; to establish certain standards for road contracts for certain businesses; to provide for the continuing review of transportation needs within the state; to authorize the state transportation commission, counties, cities, and villages to borrow money, issue bonds, and make pledges of funds for transportation purposes; to authorize counties to advance funds for the payment of deficiencies necessary for the payment of bonds issued under this act; to provide for the limitations, payment, retirement, and security of the bonds and pledges; to provide for appropriations and tax levies by counties and townships for county roads; to authorize contributions by townships for county roads; to provide for the establishment and administration of the state trunk line fund, local bridge fund, comprehensive transportation fund, and certain other funds; to provide for the deposits in the state trunk line fund, critical bridge fund, comprehensive transportation fund, and certain other funds of money raised by specific taxes and fees; to provide for definitions of public transportation functions and criteria; to define the purposes for which Michigan transportation funds may be allocated; to provide for Michigan transportation fund grants; to provide for review and approval of transportation programs; to provide for submission of annual legislative requests and reports; to provide for the establishment and functions of certain advisory entities; to provide for conditions for grants; to provide for the issuance of bonds and notes for transportation purposes; to provide for the powers and duties of certain state and local agencies and officials; to provide for the making of loans for transportation purposes by the state transportation department and for the receipt and repayment by local units and agencies of those loans from certain specified sources; and to repeal acts and parts of acts," by amending the title and section 10k (MCL 247.660k), the title as amended by 2004 PA 384 and section 10k as amended by 2006 PA 82, and by adding section 10p.

The People of the State of Michigan enact:

TITLE

An act to provide for the classification of all public roads, streets, and highways in this state, and for the revision of that classification and for additions to and deletions from each classification; to set up and establish the Michigan transportation fund; to provide for the deposits in the Michigan transportation fund of specific taxes on motor vehicles and motor vehicle fuels; to provide for the allocation of funds from the Michigan transportation fund and the use and administration of the fund for transportation purposes; to promote safe and efficient travel for motor vehicle drivers, bicyclists, pedestrians, and other legal users of roads, streets, and highways; to set up and establish the truck safety

Appendix B: Michigan Complete Streets Actss

fund; to provide for the allocation of funds from the truck safety fund and administration of the fund for truck safety purposes; to set up and establish the Michigan truck safety commission; to establish certain standards for road contracts for certain businesses; to provide for the continuing review of transportation needs within the state; to authorize the state transportation commission, counties, cities, and villages to borrow money, issue bonds, and make pledges of funds for transportation purposes; to authorize counties to advance funds for the payment of deficiencies necessary for the payment of bonds issued under this act; to provide for the limitations, payment, retirement, and security of the bonds and pledges; to provide for appropriations and tax levies by counties and townships for county roads; to authorize contributions by townships for county roads; to provide for the establishment and administration of the state trunk line fund, local bridge fund, comprehensive transportation fund, and certain other funds; to provide for the deposits in the state trunk line fund, critical bridge fund, comprehensive transportation fund, and certain other funds of money raised by specific taxes and fees; to provide for definitions of public transportation functions and criteria; to define the purposes for which Michigan transportation funds may be allocated; to provide for Michigan transportation fund grants; to provide for review and approval of transportation programs; to provide for submission of annual legislative requests and reports; to provide for the establishment and functions of certain advisory entities; to provide for conditions for grants; to provide for the issuance of bonds and notes for transportation purposes; to provide for the powers and duties of certain state and local agencies and officials; to provide for the making of loans for transportation purposes by the state transportation department and for the receipt and repayment by local units and agencies of those loans from certain specified sources; and to repeal acts and parts of acts.

Sec. 10k. (1) Transportation purposes as provided in this act include provisions for facilities and services for nonmotorized transportation.

(2) Of the funds allocated from the Michigan transportation fund to the state trunk line fund and to the counties, cities, and villages, a reasonable amount, but not less than 1% of those funds shall be expended for construction or improvement of nonmotorized transportation services and facilities.

(3) An improvement in a road, street, or highway that meets accepted practices or established best practices and facilitates nonmotorized transportation such as the paving of unpaved road shoulders, the widening of lanes, the addition or improvement of a sidewalk in a city or village, or any other appropriate measure shall be considered to be a qualified nonmotorized facility for the purposes of this section.

(4) Units of government need not meet the provisions of this section annually, if the requirements are met as an average over a reasonable period of years, not to exceed 10.

(5) The state transportation department or a county, city, or village receiving money from the Michigan transportation fund annually shall prepare a 5-year program for the improvement of qualified nonmotorized facilities which when implemented would result in the expenditure of an amount equal to at least 1% of the amount distributed to the state transportation department or the county, city, or village, whichever is appropriate, from the Michigan transportation fund in the previous calendar year, multiplied by 10, less the accumulated total expenditures by the state transportation department or the county, city, or village for qualified nonmotorized facilities in the immediately preceding 5 calendar years. A county shall notify the state transportation department and each municipality in the county when the county completes preparation of its 5-year program under this subsection. A city or village shall notify the state transportation department and the county where the city or village is located when the city or village completes preparation of its 5-year program under this subsection. The department shall notify each affected county, city, or village when the department completes preparation of its 5-year program. A city or village receiving money from the Michigan transportation fund shall consult with the state transportation department or county in the city's or village's preparation of the 5-year program under this subsection when planning a nonmotorized project affecting a facility under the jurisdiction of the state transportation department or county. A county receiving money from the Michigan transportation fund shall consult with the state transportation department or a city or village when planning a nonmotorized project affecting a transportation facility under the jurisdiction of the state transportation department or the city or village. The department shall consult with a county, city, or village when planning a nonmotorized project affecting a transportation facility within the county, city, or village.

(6) Facilities for nonmotorized transportation including those that contribute to complete streets as defined in section 10p may be established in conjunction with or separate from already existing highways, roads, and streets and shall be established when a highway, road, or street is being constructed, reconstructed, or relocated, unless:

- (a) The cost of establishing the facilities would be disproportionate to the need or probable use.
- (b) The establishment of the facilities would be contrary to public safety or state or federal law.
- (c) Adequate facilities for nonmotorized transportation already exist in the area.

(d) The previous expenditures and projected expenditures for nonmotorized transportation facilities for the fiscal year exceed 1% of that unit's share of the Michigan transportation fund, in which case additional expenditures shall be discretionary.

(7) The state transportation department may provide information and assistance to county road commissions, cities, and villages on the planning, design, and construction of nonmotorized transportation facilities and services.

Appendix B: Michigan Complete Streets Acts

Sec. 10p. (1) As used in this section:

(a) “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.

(b) “Complete streets policy” means a 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.

(iii) Considers the varying mobility needs of all legal users of the roadway, of all ages and abilities.

(c) “Department” means the state transportation department.

(d) “Local road agency” means that term as defined in section 9a.

(e) “Municipality” means a city, village, or township.

(2) The state transportation commission shall do both of the following by not later than 2 years after the effective date of the amendatory act that added this section:

(a) Adopt a complete streets policy for the department.

(b) Develop a model complete streets policy or policies to be made available for use by municipalities and counties.

(3) Before a municipality approves any project in its multiyear capital program that affects a roadway or transportation facility under the jurisdiction of the state transportation department or within or under the jurisdiction of a county or another municipality, it shall consult with the affected agency and agree on how to address the respective complete streets policies, subject to each agency’s powers and duties. Before the department submits its multiyear capital plan to the commission or a county road agency approves its multiyear capital plan, for any project that affects a roadway or transportation facility within or under the jurisdiction of a municipality, the department or county road agency shall consult with the municipality and agree on how to address the respective complete streets policies, subject to each agency’s powers and duties. Failure to come to an agreement shall not prevent the department from submitting its multiyear capital plan to the commission. This subsection does not apply under any of the following circumstances:

(a) If neither the agency proposing the project nor the affected agency has a complete streets policy.

(b) If the project was included in a municipality’s multiyear capital program or the department’s or a county’s multiyear capital plan on July 1, 2010.

(4) The department may provide assistance to and coordinate with local agencies in developing and implementing complete streets policies. The department shall share expertise in nonmotorized and multimodal transportation planning in the development of trunk line projects within municipal boundaries.

(5) The department, local road agencies, and municipalities may enter into agreements with each other providing for maintenance of transportation facilities constructed to implement a complete streets policy.

(6) A complete streets advisory council is created within the department. The advisory council shall consist of the following members appointed by the governor:

(a) The director of the state transportation department or his or her designee.

(b) The director of the department of community health or his or her designee.

(c) The director of the department of state police or his or her designee.

(d) One individual representing the state transportation commission.

(e) One individual representing environmental organizations.

(f) One individual representing planning organizations.

(g) One individual representing organizations of disabled persons.

(h) One individual representing road commission organizations.

(i) One individual representing public transit users organizations.

(j) One licensed professional engineer or traffic engineer.

(k) One individual representing the Michigan municipal league.

(l) One individual representing the AARP.

(m) One individual representing the league of Michigan bicyclists.

(n) One individual representing a pedestrian organization.

(o) One individual representing the Michigan public transit association.

Appendix B: Michigan Complete Streets Acts

(p) One individual representing the Michigan townships association.

(q) As nonvoting members, the director of the department of natural resources and environment or his or her designee, the executive director of the Michigan state housing development authority or his or her designee, and the heads of such other state departments and agencies, as the governor considers appropriate, or their designees.

(7) The members first appointed to the advisory council shall be appointed within 60 days after the effective date of this section. Members of the advisory council shall serve for terms of 3 years or until a successor is appointed, whichever is later, except that of the members first appointed 3 shall serve for 1 year, 3 shall serve for 2 years, and 3 shall serve for 3 years. If a vacancy occurs on the advisory council, the governor shall make an appointment for the unexpired term in the same manner as the original appointment. The governor may remove a member of the advisory council for incompetency, dereliction of duty, malfeasance, misfeasance, or nonfeasance in office, or any other good cause.

(8) The first meeting of the advisory council shall be called by the director of the state transportation department. At the first meeting, the advisory council shall elect from among its members a chairperson, vice-chairperson, secretary, and other officers as it considers necessary or appropriate. After the first meeting and before 2018, the advisory council shall meet at least quarterly, or more frequently at the call of the chairperson or if requested by 3 or more members. A majority of the members of the advisory council constitute a quorum for the transaction of business at a meeting of the advisory council. The affirmative vote of a majority of the members are required for official action of the advisory council.

(9) The business that the advisory council may perform shall be conducted at a public meeting of the advisory council held in compliance with the open meetings act, 1976 PA 267, MCL 15.261 to 15.275. A writing prepared, owned, used, in the possession of, or retained by the advisory council in the performance of an official function is subject to the freedom of information act, 1976 PA 442, MCL 15.231 to 15.246.

(10) Members of the advisory council shall serve without compensation. However, members of the advisory council may be reimbursed for their actual and necessary expenses incurred in the performance of their official duties as members of the advisory council.

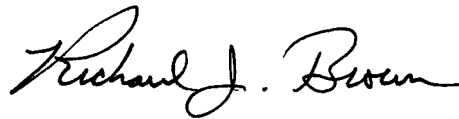
(11) The advisory council shall do all of the following:

(a) Provide education and advice to the state transportation commission, county road commissions, municipalities, interest groups, and the public on the development, implementation, and coordination of complete streets policies.

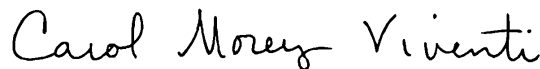
(b) By December 30, 2011, and each calendar year thereafter, report to the governor, the state transportation commission, and the legislature on the status of complete streets policies in this state. The report shall contain a summary of the advisory council's proceedings, a statement of instances in which the department and a municipality were unable to agree under subsection (3) on a department project affecting a roadway or transportation facility within or under the jurisdiction of the municipality, and any other necessary or useful information and any additional information that may be requested by the governor.

(c) Advise the state transportation commission on the adoption of model policies under subsection (2).

This act is ordered to take immediate effect.



Clerk of the House of Representatives



Secretary of the Senate

Approved

Governor

ORDINANCE NO. 1101

**CITY OF FERNDALE
OAKLAND COUNTY, MICHIGAN**

To add Article IV, Complete Streets, Section 16-50 to Chapter 16 of the Ferndale Codified Ordinances to encourage the implementation of a non-motorized network plan to provide complete streets that accommodate pedestrians, bicyclists, public transportation passengers, and users of all ages and abilities.

The Council of the City of Ferndale finds and declares as follows:

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, including pedestrians, bicyclists, motor vehicle drivers, public transportation riders and drivers, emergency vehicles, and people of all ages and abilities, including children, youth, families, older adults, and individuals with disabilities; and

The City of Ferndale wishes to encourage walking, bicycling, and public transportation use as safe, convenient, environmentally friendly, and economical modes of transportation that promote health and independence for all people; and

The City of Ferndale recognizes that the careful planning and coordinated development of Complete Streets infrastructure offers long-term cost savings for local and state government, benefits public health, and provides financial benefits to property owners, businesses, and investors, while yielding a safe, convenient, and integrated transportation network for all users; and

The City of Ferndale wishes to encourage public participation in community decisions concerning street design and use 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; and

The City of Ferndale therefore wishes to initiate Complete Streets and desires that its streets form a comprehensive and integrated transportation network promoting safe, equitable, and convenient travel for all users while preserving flexibility, recognizing community context, and using the latest and best design guidelines and standards; and

It is the intent of the Council of the City of Ferndale in enacting this ordinance to encourage healthy, active living, reduce traffic congestion and fossil fuel use, and improve the safety and quality of life of residents of Ferndale by ensuring its routes are safe, convenient, and comfortable for walking, bicycling, and public transportation;

Appendix C: Sample Complete Streets Ordinances

NOW, THEREFORE, THE CITY OF FERNDALE ORDAINS:

Section 1. That Chapter 16, Article IV, Complete Streets, Section 16-50, of the Codified Ordinances of the City of Ferndale, Michigan, be and is added to read as follows:

Section 16-50.

- (a) For the purposes of this Ordinance, “complete streets” are streets that safely accommodate all users of the right-of-way, including pedestrians, people requiring mobility aids, bicyclists and drivers and passengers of transit vehicles, trucks, automobiles and motorcycles.
- (b) In order to improve the safety and efficiency of the City's transportation system and to promote the health and economic opportunities of residents and visitors, it is the policy of the City to encourage complete streets, and in furtherance of that policy:
 - 1) City Council shall adopt a non-motorized transportation network plan. This plan shall be approved by the Planning Commission, in consultation with Community Development Services Department, the Department of Public Works, the Recreation Department and the Parks and Recreation Advisory Committee and the Downtown Development Authority before Council consideration.
 - 2) The non-motorized transportation network plan shall include, at a minimum, accommodations for accessibility, sidewalks, curb ramps and cuts, trains and pathways, signage and bike lanes and shall incorporate principles of complete streets and maximize walkable and bikeable streets within the City.
 - 3) After initial adoption, the non-motorized transportation network plan shall be updated regularly as part of the City master plan update process.
 - 4) Until the City Council adopts the initial non-motorized transportation network plan, the Planning Commission shall review all street plans prior to the adoption of the non-motorized plan, and all public street projects or public street reconstruction projects in the City shall be designed to safely accommodate all users of the right-of-way, including pedestrians, people requiring mobility aids, bicyclists and drivers and passengers of transit vehicles, trucks, automobiles and motorcycles with the following exceptions:
 - Bicycle and pedestrian facilities are not required where they are prohibited by law.
 - Public transit facilities are not required on streets not serving as transit routes.
 - If the cost is excessively disproportionate to the need or probable use, of the overall project cost, the City Council may choose to not require bicycle, pedestrian and/or transit facilities.
 - 5) After initial adoption of the non-motorized transportation network plan, all public street projects or public street reconstruction projects in the City shall be in conformity with the non-motorized transportation network plan.

Appendix C: Sample Complete Streets Ordinances

Section 2. Severability/repealer.

- (a) If any section, subsection, sentence, clause, phrase, or portion of this article is for any reason held invalid or unconstitutional by any court of competent jurisdiction, such portion shall be deemed a separate distinct and independent provision and such holding shall not affect the validity of the remaining portions.
- (b) All ordinances in conflict herewith are repealed.

Section 3. Savings Clause.

All proceedings pending and all rights and liabilities existing, acquired or incurred at the time this Ordinance takes effect are saved and may be consummated according to the law enforced when they are commenced.

Section 4. Repeal.

All regulatory provisions contained in other city ordinances which are inconsistent with the provisions of this ordinance, are repealed.

Section 5. Effective Date; Publication.

This ordinance shall become effective upon publication of a notice in a newspaper circulated in the City, stating the date of the enactment and the effective date of the ordinance, a brief notice as to the subject matter of this ordinance, and such other facts as the city clerk shall deem pertinent and that a copy of the ordinance is available for public use and inspection at the office of the city clerk.

MADE, PASSED AND ADOPTED BY THE CITY COUNCIL OF THE CITY OF FERNDALE, OAKLAND COUNTY, MICHIGAN, THIS ____ DAY OF _____, 2010.

CRAIG COVEY, MAYOR

J. CHERILYNN TALLMAN, CITY CLERK

Date of Adoption: _____

Date of Publication: _____

Appendix D: Sample Bike Parking Ordinance

Sample Bike Parking Ordinance

Bicycle Parking Ordinance – The following sample bicycle parking ordinance is modeled after that found in the Code of Ordinances for the City of Durango, Colorado.

[Insert Municipal Code Chapter and Section] Bicycle parking spaces.

(A) At least two (2) bicycle parking spaces or one (1) bicycle parking space for each ten (10) of the required off-street automobile parking spaces, whichever is greater, must be provided in all districts[, except districts...].

(B) No more than thirty (30) bicycle parking spaces shall be required on any one (1) property.

Appendix E: Sample Distracted Driver Ordinance

Sample Distracted Driver Ordinance

[Municipal Code Chapter and Title] Use of electronic communication devices

(A) Definitions:

(1) For the purposes of this section, “electronic communication device” shall include but not be limited to mobile, cellular, analog wireless or digital telephones, personal digital assistants, or portable or mobile computers.

(2) For the purposes of this section “using an electronic communication device” shall include, but not be limited to, the following activities: (a) talking or listening to another person on the telephone; (b) composing, sending, reading or listening to a text message or other electronic message; or (c) browsing the internet via the mobile, cellular, analog wireless or digital telephone.

(3) For the purposes of this section “a hands free device” is an internal software application, or an external device that allows the user to engage in a telephone call without touching the user's electronic communication device.

(B) Except as otherwise provided in subsection (C) of this Section, no person shall operate a motor vehicle while using an electronic communication device.

(C) The provisions of this section shall not apply to:

(1) Law enforcement officers and operators of emergency vehicles, when on duty and acting in their official capacities.

(2) Persons using an electronic communication device with a hands free device activated.

(3) Persons using a telephone to call 911 telephone numbers or other emergency telephone numbers.

(4) Persons using a telephone while maintaining a motor vehicle in a stationary parked position, and not in gear.

(D) Any person who violates the requirements of this section shall be subject to a fine of one hundred dollars (\$100.00), provided however, that if a violation occurs at the time of a traffic crash, the driver shall be subject to an additional fine not to exceed five hundred dollars (\$500.00).

5.3 Appendix F: Pedestrian and Bicycle Facilities Guidance

Pedestrian Facilities

Guide for the Planning, Design, and Operation of Pedestrian Facilities

American Association of State Highway and Transportation Officials (AASHTO), 2004

<http://www.transportation.org>

Designing Sidewalks and Trails for Access

U.S. DOT Federal Highway Administration

<http://www.fhwa.dot.gov/environment/sidewalks/index.htm>

Bicycle Facilities

Guide for the Development of Bicycle Facilities, 3rd Edition

American Association of State Highway and Transportation Officials (AASHTO), 1999

<http://www.transportation.org>

Urban Bikeway Design Guide

National Association of City Transportation Officials

<http://nacto.org/cities-for-cycling/design-guide/>

Bike Lane Design Guide

City of Chicago and the Active Transportation Alliance, 2002

http://www.chicagobikes.org/pdf/bike_lane_design_guide.pdf

Bike Parking

Association of Pedestrian and Bicycling Professionals

Bicycle Parking Design Guidelines

<http://www.apbp.org/?page=Publications>

Bike Parking for Your Business

Active Transportation Alliance, 2003

http://www.chicagobikes.org/pdf/bike_parking_business.pdf

Other Resources

Active Transportation Alliance

<http://www.activetrans.org>

National Complete Streets Coalition

<http://www.completestreets.org>

Manual on Uniform Traffic Control Devices

Federal Highway Administration, 2009

<http://mutcd.fhwa.dot.gov/>

Pedestrian and Bicycle Information Center

<http://www.pedbikeinfo.org>

5.3 Appendix F: Pedestrian and Bicycle Facilities Guidance

Facility and Programming Resources -Michigan

M-Bike www.m-bike.org M-bike web is a media and technical resource dedicated to improving the bicycling environment and promoting its culture within Oakland, Macomb, and Wayne County -- with a focus on the City of Detroit.

Rails with Trails <http://www.fhwa.gov/environment/rectrails/rwt/index.htm> Rails with Trails: Lessons Learned is a research report about trails located near railroad and transit rights-of-way.

League of Michigan Bicyclists www.lmb.org The mission of the League of Michigan Bicyclists (LMB) is to promote bicycling and the safety of bicyclists on the roadways of Michigan. LMB is a non-profit, tax-exempt statewide membership organization working to improve conditions for bicycling in Michigan. LMB supports many programs and projects and cooperates with state and local agencies and other like-minded groups toward this goal.

Michigan Department of Transportation (MDOT) <http://www.michigan.gov> MDOT is responsible for planning, designing, and operating streets, highways, bridges, transit systems, airports, railroads and ports to provide for the safe, rapid, comfortable, economical, convenient, and environmentally safe movement of people and goods.

Michigan Complete Streets Coalition <http://michigancompletestreets.wordpress.com/>

The Michigan Complete Streets Coalition began in 2009 as a way to connect grassroots Complete Streets movements across the state. Today, the Coalition represents over 100 organizations, businesses and individuals. They work to promote statewide Complete Streets policy and support local communities' initiatives.

Michigan Safe Routes to Schools <http://saferoutesmichigan.org/> Michigan's Safe Routes to School program is managed by the Michigan Department of Transportation (MDOT), with training, logistical, administrative, and technical support from the Michigan Fitness Foundation.

Benefit Cost Analysis of Bicycle Facilities <http://www.bicyclinginfo.org/bikecost/> How much do bicycle facilities cost? Can we quantify their benefits? In what cases do estimates of benefits outweigh costs? If your community is considering building a new bicycle facility, you can use this tool to estimate costs, the demand in terms of new cyclists, and measured economic benefits (e.g., time savings, increased livability, decreased health costs, a more enjoyable ride).

Designing Walkable Urban Thoroughfares: A Context Sensitive Approach <http://www.ite.org/emodules/scriptcontent/Orders/ProductDetail.cfm?pc=RP-036A-E> This report has been developed in response to widespread interest for improving both mobility choices and community character through a commitment to creating and enhancing walkable communities. Many agencies will work towards these goals using the concepts and principles in this report to ensure the users, community and other key factors are considered in the planning and design processes used to develop walkable urban thoroughfares.

Law Officer Training <http://www.massbike.org/projectsnew/law-officer-training/> The Law Officer's Guide to Bicycle Safety is a national program to educate police departments about laws relating to bicyclists. The program is intended to be taught by law enforcement officers to law enforcement officers as a stand-alone resource. The major objective of the program is to give law enforcement officers of all backgrounds the tools they need to properly enforce the laws that affect bicyclists. The program focuses on all police officers, including those who may not be interested in bicycling or who are not able to attend in-depth trainings. The program will also be useful to police departments who wish to do outreach to the bicycle community or other organizations.

Appendix G: Cost Estimates

Maintenance and Operations Budgets

There are many other factors that can affect cost of maintenance for a non-motorized system. However, the main factor affecting cost is the difference in agencies that maintain and operate facilities. Each agency will have different labor costs, access to different machinery and equipment, and may or may not have a volunteer base to offer assistance. Routine maintenance can be defined as maintenance that is needed to keep the facility operating in a safe and usable condition, not involving major development or reconstruction. Below is a list of typical routine maintenance activities and their associated annual cost per mile (when applicable):

For additional cost estimates use: <http://www.bicyclinginfo.org/bikecost/>

- Asphalt Paved Trail - \$4,500 per mile annually (includes sweeping/blowing of debris, mowing of shoulders, vegetation control, asphalt sealing, and snow removal)
- Asphalt Side Path - \$700 per mile annually (includes asphalt sealing, and snow removal)
- Concrete Sidewalk – 30+ year useful life with little or no yearly maintenance (assumes adjacent property owners are required to remove snow and repair broken or shifting flags as needed)
- Pedestrian Bridge – 50+ year useful life with little or no yearly maintenance (dependent on deck surface)
- Boardwalk - \$18,000 per mile annually (based on power-washing, mildewcide application and sealing of decking every three years)
- Bicycle Lanes - \$10,000 per mile annually (includes weekly sweeping and annual re-striping)
- Signals - \$200 annually

What Program Is My Project Eligible For?



	Transportation Enhancements	Congestion Mitigation and Air Quality Improvement (CMAQ)	Surface Transportation Program	Safe Routes to Schools	Recreational Trails Program	Highway Safety Program (HSIP)	State and Community Improvement Safety Grant Program	National Highway Program (Section 402)	Scenic Byways	Federal Lands Highway Program	Highway Bridge Program	Trans and Community Preservation State/Metropolitan Planning Funds	Access to Jobs/ Reverse Commute (AJRC)	Federal Transit Planning Funds	Federal Transit Capital	Transit Enhancements
Bicycle and pedestrian plan	*	*									*	*				
Bicycle lanes on roadway	*	*	*	*		*		*	*	*	*			*	*	
Paved shoulders	*	*	*	*		*		*	*	*	*					
Signed bike route	*	*	*	*		*		*	*	*	*					
Shared use path/trail	*	*	*	*	*	*		*	*	*	*					
Single track hike/bike trail					*											
Spot improvement program	*	*	*	*		*										
Maps		*	*	*			*									
Bike racks on buses	*	*	*	*									*	*		
Bicycle parking facilities	*	*	*	*				*					*	*		
Trail/highway intersection	*	*	*	*	*	*		*	*	*						
Bicycle storage/service center	*	*	*	*						*			*	*	*	
Sidewalks, new or retrofit	*	*	*	*		*		*	*	*			*	*		
Crosswalks, new or retrofit	*	*	*	*		*		*	*	*			*	*		
Signal improvements	*	*	*	*		*		*								
Curb cuts and ramps	*	*	*	*		*		*								
Traffic calming			*	*		*					*					
Coordinator position		*	*	*							*					
Safety/education position		*	*	*			*									
Police patrol			*	*			*									
Helmet promotion	*		*	*			*									
Safety brochure/book	*	*	*	*	*	*	*									
Training	*	*	*	*	*	*	*									

Source: "FHWA Guidance: Bicycle and Pedestrian Provisions of Federal Transportation Legislation," <http://www.fhwa.dot.gov/ENVIRONMENT/bikeped/bp-guid.htm#bp4> (Last Accessed 9/3/2010)



ACTIVE
TRANSPORTATION
ALLIANCE

9 West Hubbard Street
Suite 402
Chicago, IL 60654-6545

T 312.427.3325
F 312.427.4907
info@activetrans.org
www.activetrans.org