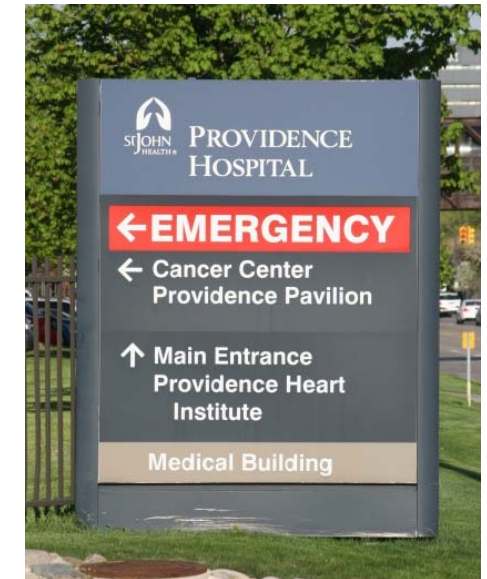




Southfield Downtown Development Authority Non-motorized and Transit Sub-Area Plan



Prepared by:





Southfield Downtown Development Authority Non-motorized and Transit Sub-Area Plan

City of Southfield, Michigan



**Southfield
Downtown Development Authority**
Non-motorized and Transit Sub-Area Plan

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Southfield Downtown Development Authority Non-motorized and Transit Sub-Area Plan

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Southfield Downtown Development Authority Non-motorized and Transit Sub-Area Plan

Executive Summary

The goal of the Southfield Downtown Development Authority (DDA) is: “halt property value deterioration, eliminate the causes of deterioration, and to promote economic growth¹” within the DDA district.

The City of Southfield (www.cityofsouthfield.com) was developed primarily during the latter half of the 20th century as a car centric community. Furthermore, as the 20th century came to an end and the metro Detroit area continued to expand outward, Southfield, being an inner ring suburb, experienced a loss of population and commercial development. The auto centric design of the 1960’s and 1970’s provided the connections needed for car travel, but did not provide the infrastructure network for pedestrians, bicycles, and transit.

Recognizing a need to redevelop the southeast commercial district of the city, the City of Southfield created the Cornerstone Development Authority (now the Downtown Development Authority (DDA)) in 1988. At the heart of the DDA mission is “to halt property value deterioration, eliminate the causes of deterioration, and to promote economic growth.” To assist in reaching the stated goal, the Southfield DDA is in need of an improved non-motorized transportation network that connects key destinations and encourages pedestrian, bicycle, and transit and transportation alternatives to the car.

Begun in 2011, and adopted in 2012, the *Southfield Non-Motorized Pathway and Public Transit Plan* is the basis for pedestrian, bicycle and transit improvements on a city-wide scale. The master plan recommended performing sub-area plans for the City Centre and Downtown Development Authority (DDA) that would have specific projects and priorities for implementation. These sub-areas plans would create the needed connections at a pedestrian scale.

This sub-area plan began with a review of the previous planning efforts and on-going City sponsored projects. Public input included an on-line survey, and interviews with City & DDA staff, DDA businesses, and transit stakeholders.

The majority of respondents claim to walk several days throughout the week, primarily to get breakfast or lunch and for recreational purposes. According to respondents, distance and time concerns were the primary reasons preventing them from walking more often, stating that they would indeed walk more if these concerns were addressed and a distinct pathway system was created within the DDA.

The majority of respondents does not bike regularly or use public transit. Those who claim to bike quite often stated that it was primarily for recreational purposes and not as a means of transportation. Respondents shared a variety of concerns, including safety and convenience, as major deterrents to biking more often. Respondents seemed open to the idea of biking more often if an improved system were provided.

In response to the interviews and surveys, the primary recommendations of the DDA Sub-Area plan are as follows:

- Pedestrian Connections
 - Infill of sidewalk gaps within existing sidewalk network
 - ADA Compliance for intersection ramps
 - Mid-block pedestrian crossings with refuge islands and pedestrian signals
 - Aesthetics and amenity improvements, including lighting, landscaping, and benches.
 - Bridge improvements to facilitate pedestrian crossings of the Lodge Freeway (M-10).
- Bicyclists
 - Northwestern connector to Lawrence Tech, MDOT/Greyhound and the City Centre district
 - On-street bike lanes on Mt Vernon
 - Bicycle parking as part of new developments
 - Bicycle routes connecting east and west of the Lodge Freeway.
- Transit
 - Creation of a transit center along Nine Mile Road near the Oakland Community College Southfield campus.
 - Staged improvements to the existing transit center at Northland Center
 - ADA compliance, including keywalk installations
 - Additional installations of bus shelters, including benches, trash receptacles and bike racks, where appropriate.
- Wayfinding Signage
 - Multiple levels of signage to include:
 - Gateways to the district
 - Vehicular
 - Bicycle
 - Pedestrian.

Southfield Downtown Development Authority Non-motorized and Transit Sub-Area Plan

Introduction

During the second half of the 20th century Southfield developed into a thriving model suburb of the auto era. Convenient access via the Lodge (M-10) and I-696 freeways contributed to the development of a “modern” city with high rise office buildings, corporate centers, municipal complex and the nation’s first indoor mall.

In the last few years, and as noted in the 2009 *Comprehensive Master Plan*, City leaders realized the City needs to continue to evolve to retain its competitive advantage and to remain a “sustainable first-tier city”. One example is to redirect the focus from a safe and convenient place to drive to a place that offers a multimodal transportation system.

The City, like communities throughout the country, recognizes that a multi-modal system can help relieve traffic congestion, improve community health and provide choices for a diverse population. Alternatives to driving can also improve mobility for those with disabilities, without access to a car, or that would like to age “in place”. In addition, studies show that a quality multi-modal transportation system can help retain and attract families, young professionals and employers.

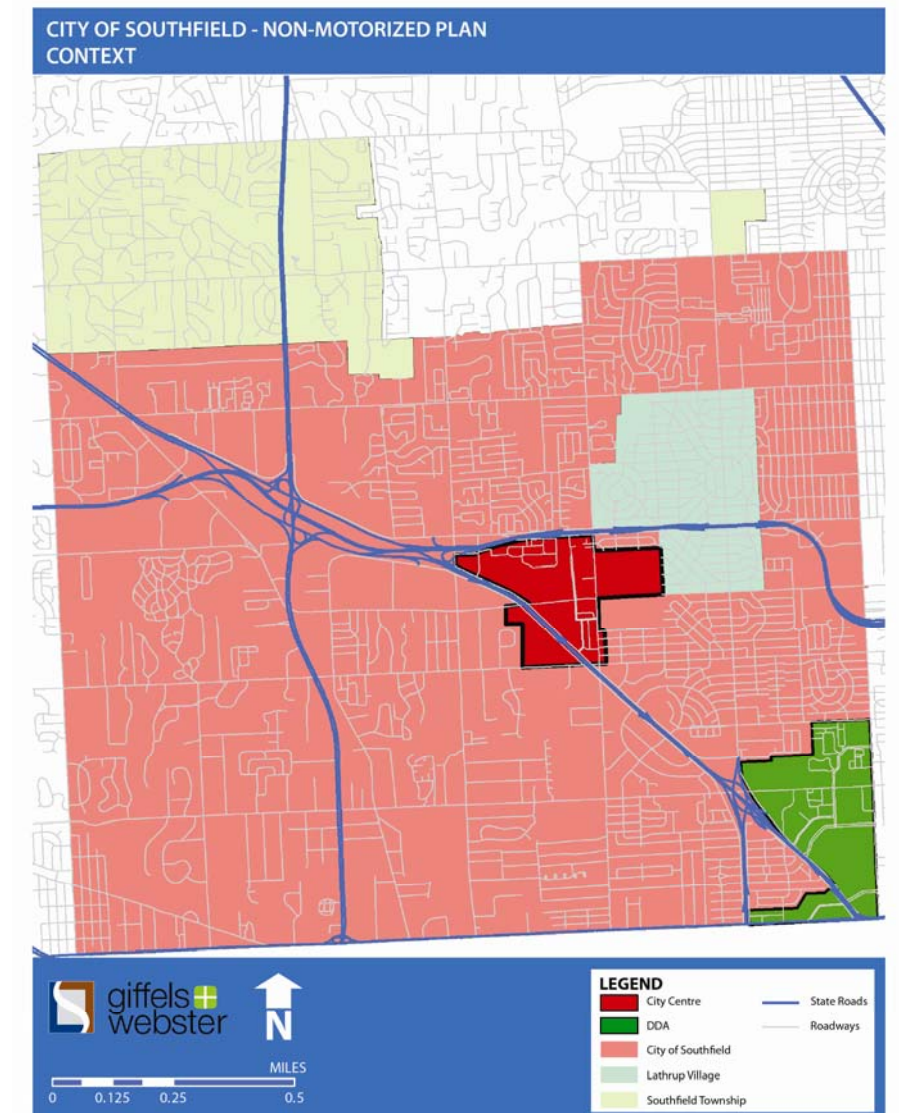
In the last few years the national transportation agencies, MDOT and other organizations have gradually changed design standards and procedures to promote a more multi-modal perspective. Terms like “Complete Streets” that serve “all users of all ages and abilities” and “multi-modal level of service” have started to become part of general transportation engineering practice. Many Michigan communities and transportation agencies (including Oakland County, the Road Commission for Oakland County and MDOT) have adopted Complete Streets policies, ordinances and procedures for street planning and design that reflect this change in thinking.



Southfield’s recent *Comprehensive Master Plan* and *Non-Motorized Pathway and Public Transit Plan* demonstrate that shift in the City’s approach. Both documents were shaped by public input and support a city-wide non-motorized and transit system to encourage walking, bicycling and transit.

The population of Southfield is just over 72,000 according to the 2010 US Censusⁱ, with a daytime population of approximately 175,000. The DDA area alone has approximately 6,400 daytime jobs. Anchoring the Nine Mile Road spine of the DDA area are Providence Hospital and the Southfield Campus of Oakland Community College. While there are certainly a large number of auto trips that commute into and out of those centers of activity, there are also many short trips (those of less than ½ mile) that could be made as easily by walking or bicycling if it was perceived to be safe and convenient. The development of a Non-Motorized and Transit Plan for the DDA area is the first step toward achieving this goal.

This sub-area plan for the Southfield DDA area is based on the efforts of the 2009 *Comprehensive Master Plan* and the 2012 *Non-Motorized Pathway & Public Transit Plan*. These plans were prepared by the City in alignment with the tenets of Complete Streets, and whose requirements have been developed to encourage a more comprehensive multi-modal evaluation of transportation planning. The Southfield Downtown Development Area (DDA) sub-area plan is also prepared in parallel with a sub-area plan for the Southfield City Centre.

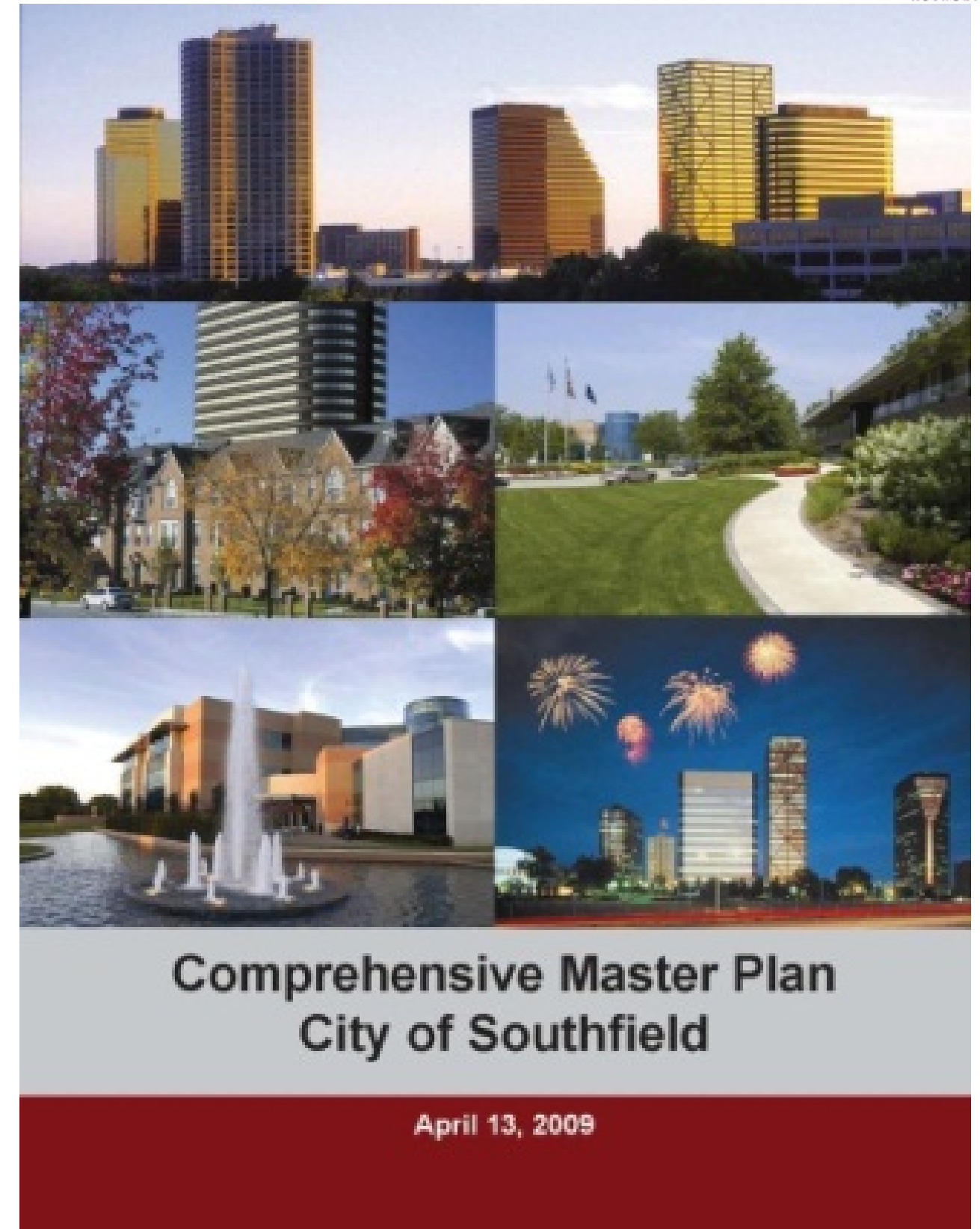


Southfield Downtown Development Authority Non-motorized and Transit Sub-Area Plan

Data Gathering

As noted in the Introduction, the City and DDA already have several documents that form a framework for this non-motorized evaluation that concentrates on the DDA area. The development of this sub-area plan was heavily influenced by these documents, and should be considered the next step in preparing for implementation of their ideas and concepts. The following is a summary of those documents:

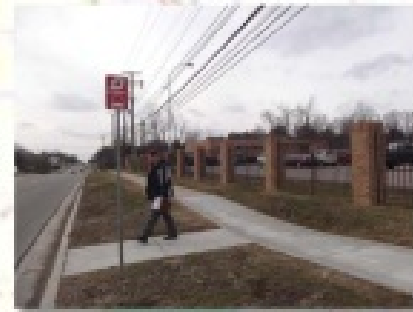
City of Southfield Comprehensive Master Plan:
The Comprehensive Master Plan contains the goals of “providing a high-quality system that provides safe and efficient access to all areas of the community for all users”.



City of Southfield DDA: Strategic Plan 2008-2013
Building a Vision for Tomorrow: The Strategic Plan contains the goal to “reestablish an overall plan” for the district and defines “priorities, outlines strategies as a roadmap to accomplish the priorities identified, and further to identify benchmarks for measuring progress”.



Non-Motorized Pathway & Public Transit Plan



Adopted March 19, 2012
City of Southfield, Michigan



City of Southfield: Non-motorized Pathway and Public Transit Plan: The transit component endorses the use of transit as a transportation alternative and recommends connections to the MDOT /Greyhound Transit Center on Lahser and Eleven Mile Road. Image courtesy of the Eight Mile Boulevard Association (<http://eightmile.org/>).

City of Southfield Non-motorized and Transit Plan: The Non-Motorized and Public Transit Plan provides a broad vision for providing pedestrian and bicycle connections throughout the city, linking the neighborhoods and the business districts.

MAP 4.2: PROPOSED NON-MOTORIZED TRANSPORTATION PLAN
Source: Greenway Collaborative, Inc., 2011

City of Southfield
Non-motorized and Transit
Vision Workshop Map

NOTES:

LEGEND

Proposed Non-motorized Facilities:

- Neighborhood Connector Routes (red dashed line)
- Trails and Pathways (blue dashed line)
- Bicycle & Pedestrian Focus Corridor (green dashed line)
- Proposed Key Corridors (yellow dashed line)

Points of Interest:

- Education Facility (red dot)
- Signalized Intersection (yellow dot)
- Proposed Road Crossing Improvements (green dot)
- DDOT & SMART Bus Stops (blue dot)

Existing Landuse:

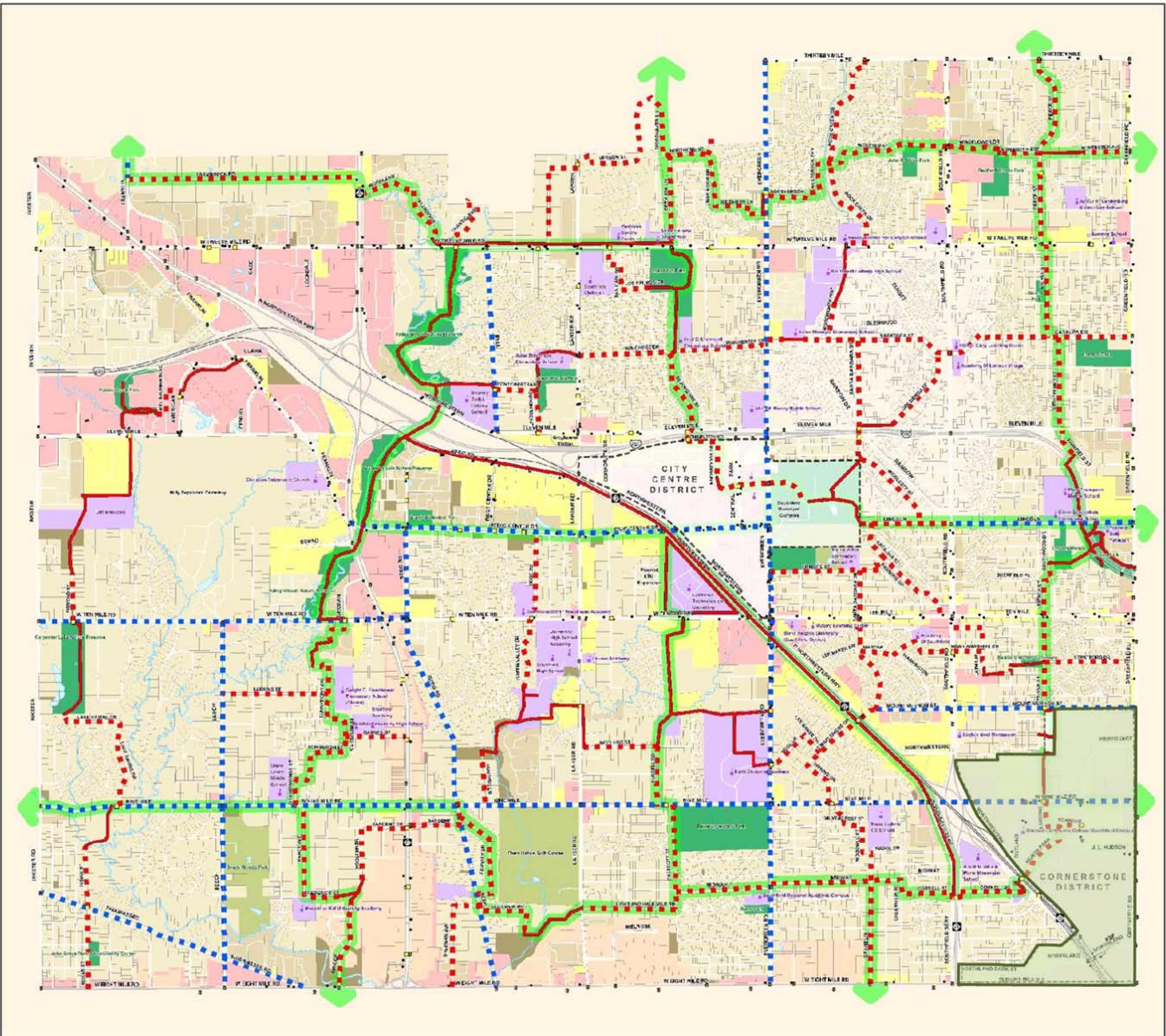
- Park (green)
- City Property (light green)
- Water (blue)
- Panel (grey)
- Dakings (dark grey)
- Golf Course (light green)
- Commercial (pink)
- Industrial (orange)
- Office (yellow)
- Single Family Residential (light yellow)
- Multi Family Residential (light orange)
- Pollution (purple)

SCALE

0 1/2 1
Mile
Scale: 1" = 1/2 Mile
A mile takes between 16 to 21 minutes to walk and
4 to 9 minutes to bike not accounting for delays.

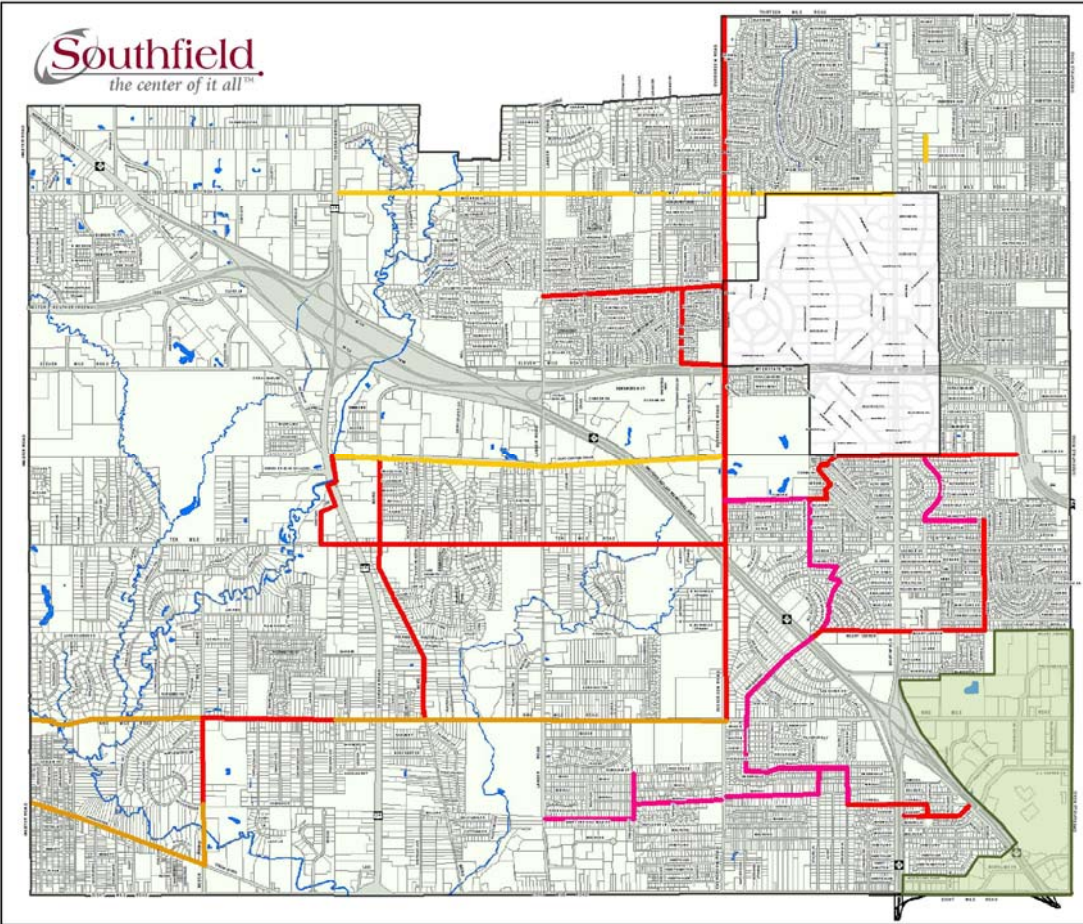
Map Prepared By:
THE GREENWAY
COLLABORATIVE, INC.

DRAFT - November 16, 2011
Please note that the information shown on this map is for informational purposes only and is not intended to be used for any other purpose. All recommendations
for the map are subject to change and are subject to the discretion of the City of Southfield.



DRAFT 14-FEB-12

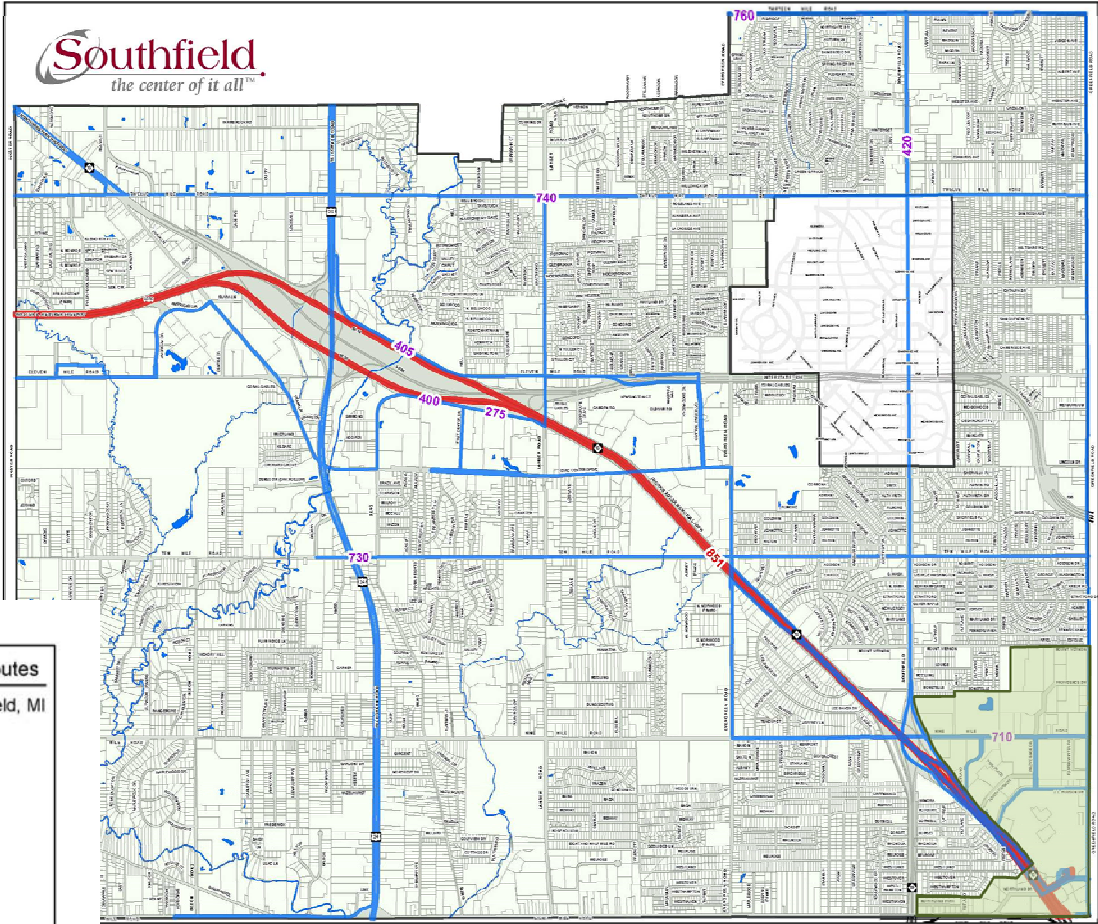
City of Southfield: Non-motorized Pathway and Public Transit Plan: Vision Workshop Map (map 4.2)
The Vision Workshop Map is the result of the public visioning workshop and shows a network of neighborhood connector routes, trails and pathways, bicycle and pedestrian focused corridors and “key” (e.g. high priority) corridors throughout the city.



Map 2.1: Existing Bike Routes
City of Southfield, MI

— Asphalt
— Paved Shoulder
— Road Route
— Sidewalk Route

Miles
0 0.25 0.5 1
12/19/2010



Map 1.2: Existing SMART Bus Routes
City of Southfield, MI

— SMART - Fixed Routes
— SMART - Park & Ride

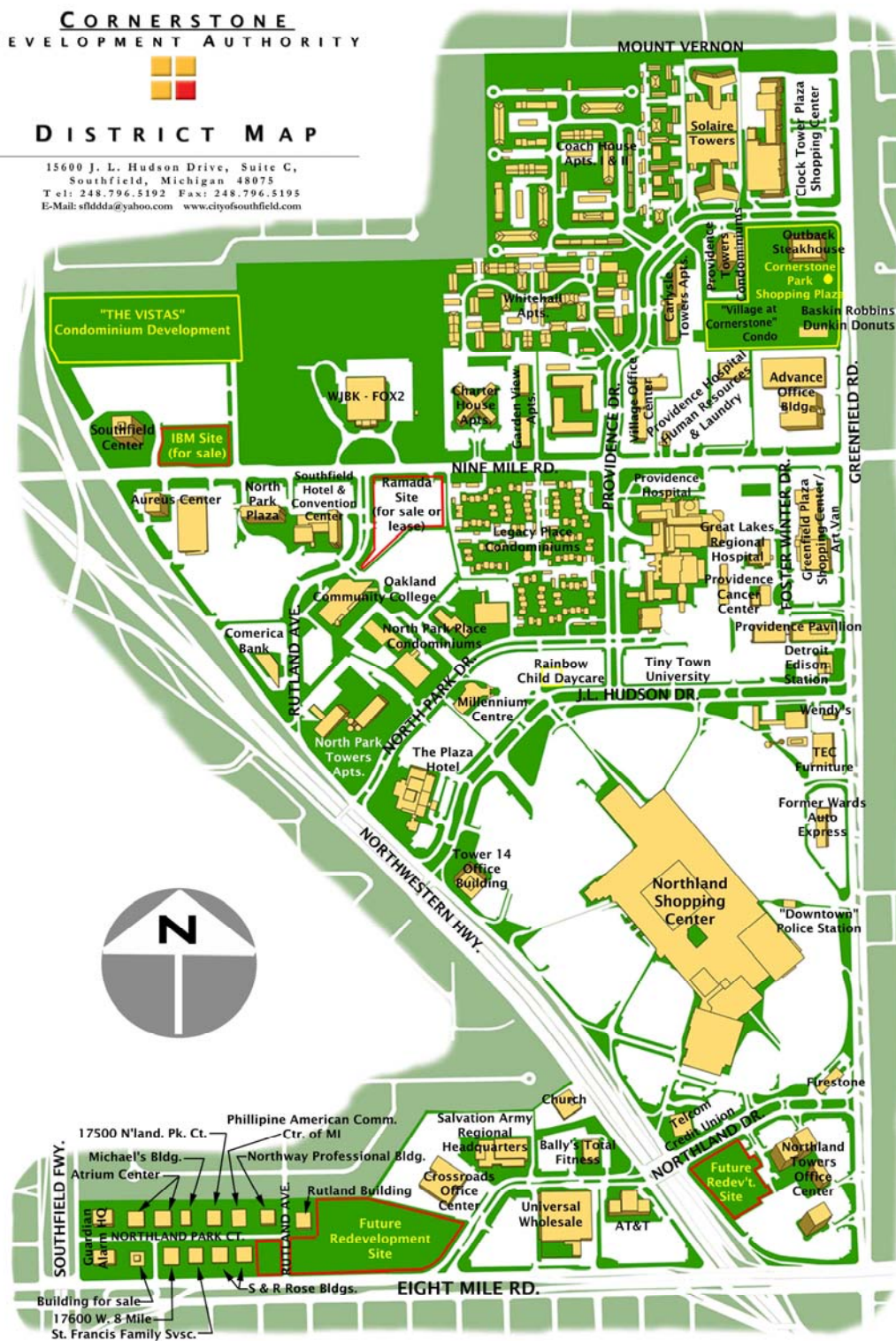
Miles
0 0.25 0.5 1
12/18/2011

City of Southfield: Non-motorized Pathway and Public Transit Plan: Map 1.2 – Existing SMART routes.

City of Southfield: Non-motorized Pathway and Public Transit Plan: Map 2.1 – Existing bike routes.

CORNERSTONE
DEVELOPMENT AUTHORITY
DISTRICT MAP

15600 J. L. Hudson Drive, Suite C,
Southfield, Michigan 48075
T el: 248.796.5192 Fax: 248.796.5195
E-Mail: sfhdda@yahoo.com www.cityofsouthfield.com



Southfield Downtown Development Authority Map:
Southfield DDA Website

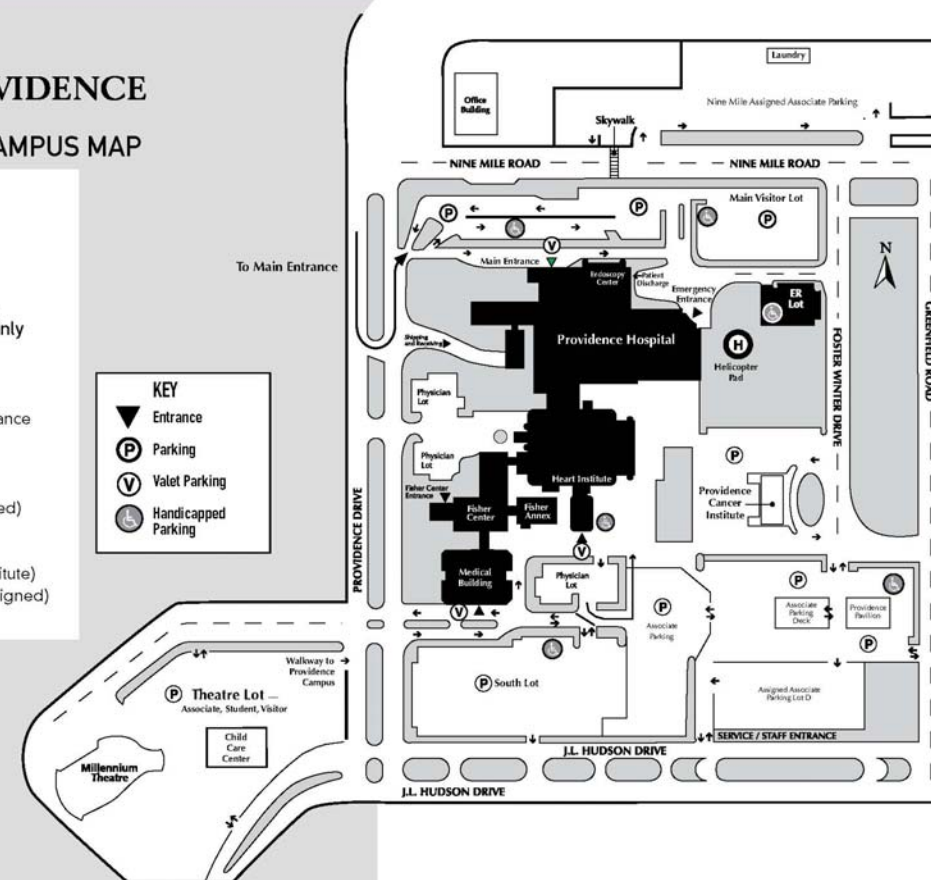
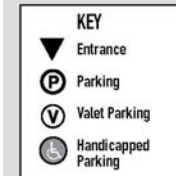
STJOHN HEALTH SYSTEM PROVIDENCE
SOUTHFIELD CAMPUS MAP

- Free Visitor Parking
- Main Visitor Lot
 - South Lot
 - Theatre Lot

- Emergency Parking –
Emergency Patients Only

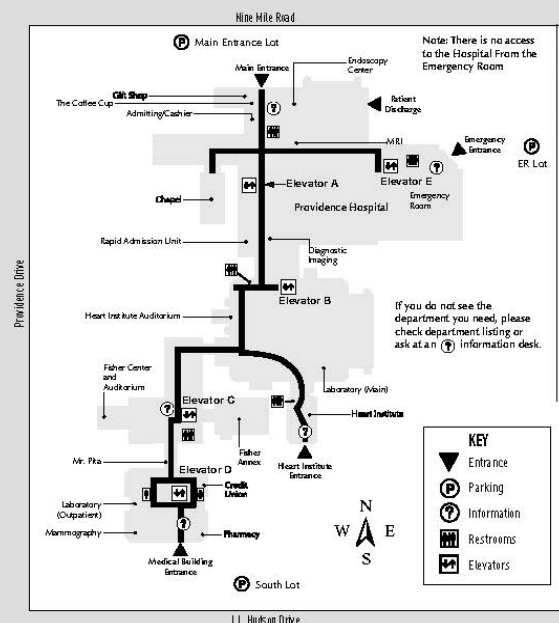
- Valet Parking
- Main Entrance
 - Medical Building Entrance
 - Heart Institute

- Associate Parking
- Nine Mile Lot (Assigned)
 - Lot D (Assigned)
 - Physicians' Lots
(Fisher and Heart Institute)
 - Medical Building (Assigned)
 - Theatre Lot

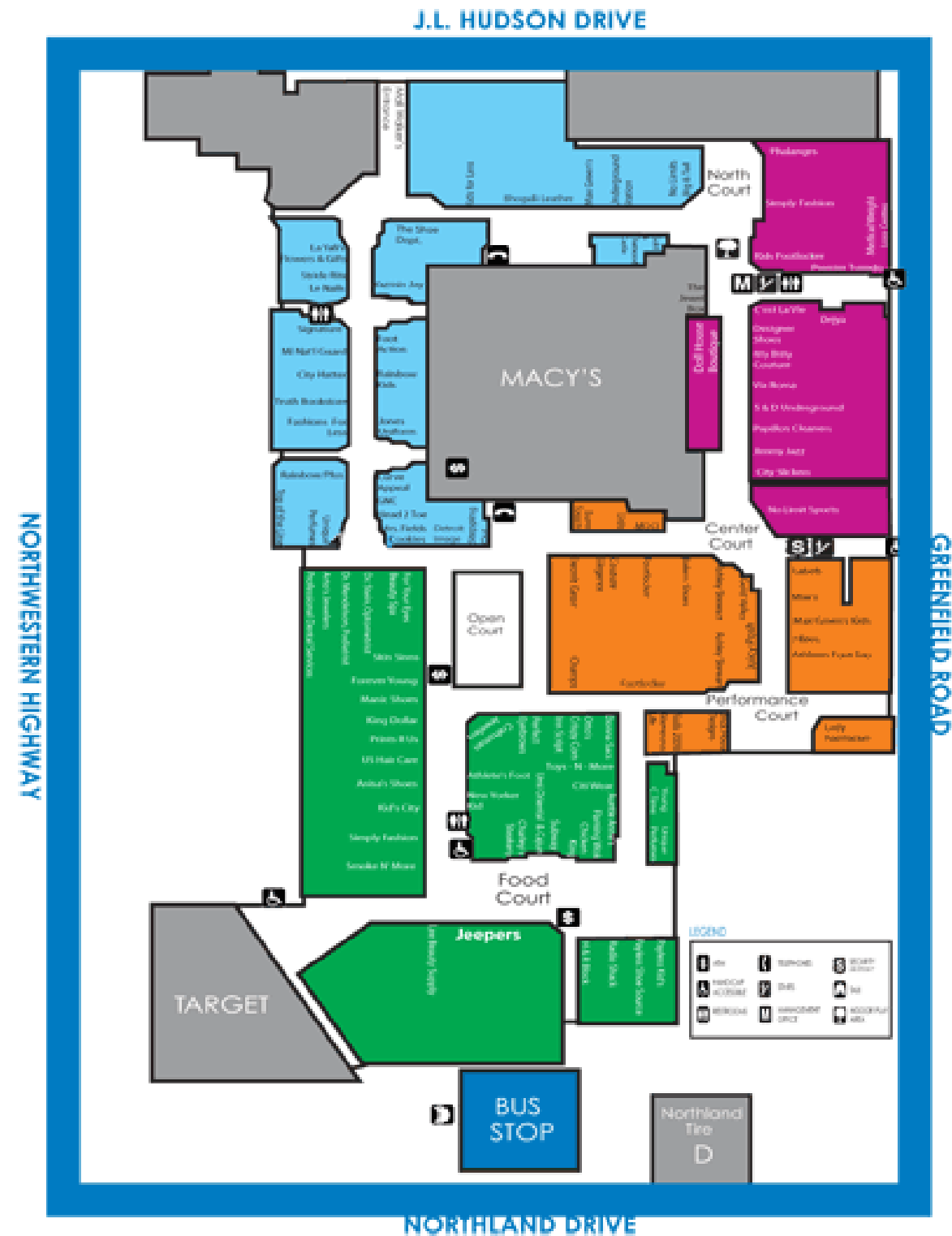


80-9500-001 (11/09)

SOUTHFIELD CAMPUS MAP



Providence Hospital Complex Map:
Providence Hospital Website



Northland Center Map

<http://www.shopatnorthland.com/go/dirlisting.cfm?fl=all#map>



Oakland Community College – Southfield Campus Map

<https://oaklandcc.edu/Maps/SFCampus/>

In addition to building upon recent city-wide plans, new data was collected for this plan including street rights-of-way and pavement widths, location and width of sidewalks, location of trails and bike routes and similar data. Since the appeal of walking and biking is influenced by factors such as traffic volumes, traffic speed, ease of crossing and amenities that make non-motorized travel appealing, that type of information was gathered as well.

Using that data and observations, sidewalks were evaluated for their quality and level for service for pedestrians and bicyclists. For this purpose, streets were divided into logical segments that have common characteristics and common segment ends.

Sidewalk Threshold Ratings

1. Sidewalks non-existent
2. Sidewalks not present but a worn path is noticeable showing the need for a sidewalk.
3. Sidewalks are present, but are less than 5 ft. in width and/or in very poor condition.
4. Sidewalks are present and in excellent physical condition, but no pedestrian amenities or tree cover is present.
5. Sidewalks are present and in excellent physical condition, and have pedestrian amenities and tree cover. A physical separation or barrier has also been provided between pedestrians and vehicles.

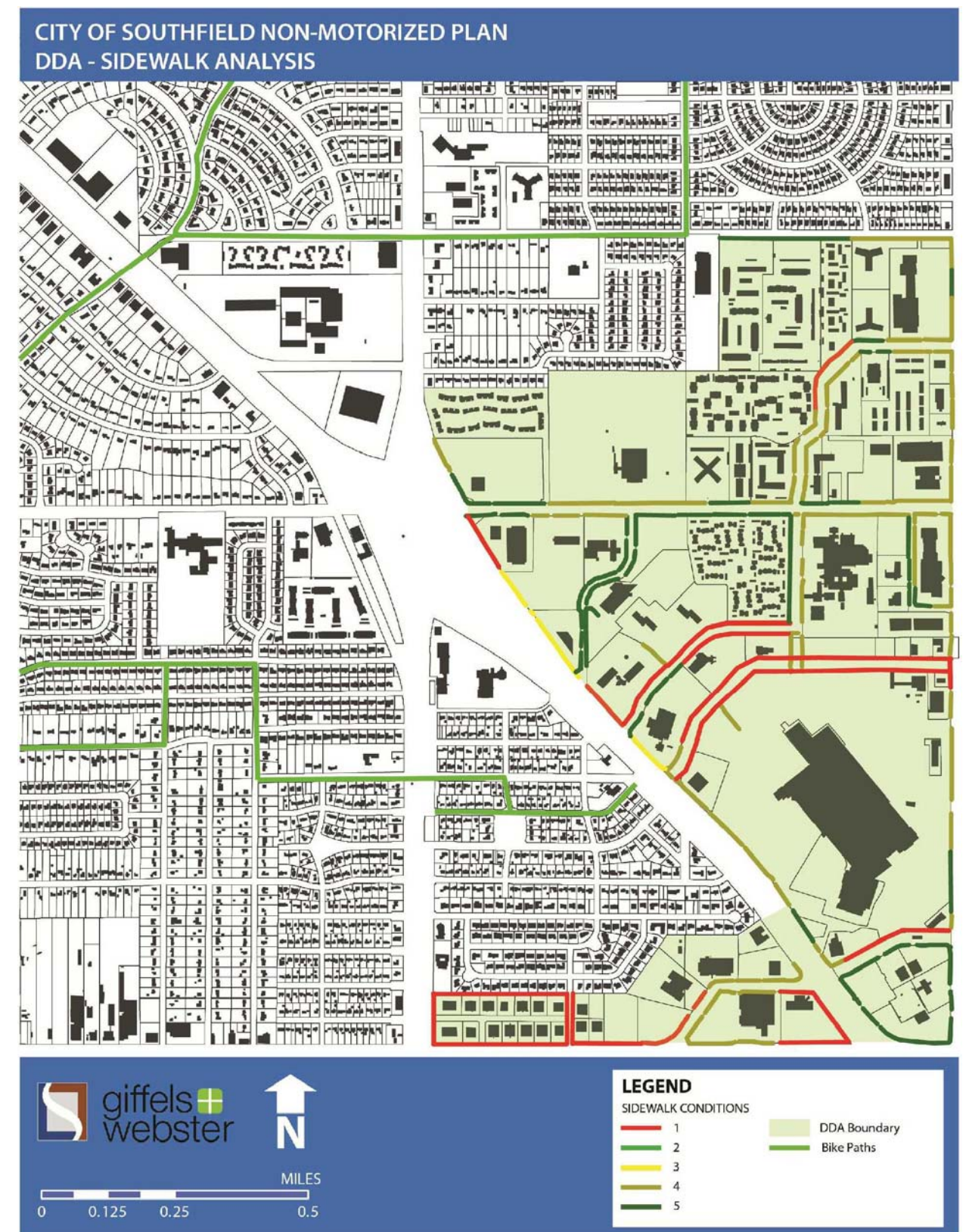
As a result of the data collection, we recommend that addressing the areas with a rating of 1 and 2 should be a high priority for creating the complete and looped sidewalk and pathway system that is indicated by the survey. A summary of these findings is shown in the *Sidewalk Analysis Map (right)*.

While not within the district, we also observed that the MDOT recently installed bike lanes on Northwestern Highway, as shown in the photo below. While not only providing a possible external linkage to any proposed improvements within the DDA district, this also shows the changes in philosophy that have reached MDOT over the last few years and makes us consider the use of the Northwestern Service Drives for non-motorized linkages.



Northwestern Highway Bike Lanes:

On-road bike lanes placed in 2012 by MDOT as part of an asphalt resurfacing project on Northwestern Highway (M-10) between Franklin and Inkster Roads. The bike lanes were created by restriping the existing shoulder width.



Southfield Downtown Development Authority Non-motorized and Transit Sub-Area Plan

Public Input

An on-online public survey was prepared with invitations to take the survey on the DDA website. A total of 9 responses were submitted, and a synopsis of the survey results follows. The totals for some of the questions may add to more than 100% as the respondent was allowed multiple answers. The full results of the survey are contained in Appendix 3.

The primary goal of the survey conducted within the Southfield DDA was to determine how accommodating the area is to non-motorized transportation and transit and how these systems are used. Once the current condition of non-motorized transportation and transit was collected, the survey provided us with primary concerns and suggestions of respondents on how the system can be improved.

We first required information on where survey-takers live and work in order to determine their level of use within the DDA. Respondents' homes were distributed throughout Southfield and adjacent communities, but over half work within the DDA.

The majority of respondents claim to walk several days throughout the week, primarily to get breakfast or lunch and for recreational purposes. According to respondents, distance and time concerns were the primary reasons preventing them from walking more often, stating that they would indeed walk more if these concerns were addressed and a distinct pathway system was created within the DDA.

The majority of respondents do not bike or use public transit. Those who claim to bike quite often stated that it was primarily for recreational purposes and not as a means of transportation. Respondents shared a variety of concerns, including safety and convenience, as major deterrents to biking more often. Respondents seemed open to the idea of biking more often if an improved system were provided.

Connections between the medical and educational institutions along Nine Mile Road, Northland Mall and various areas within and outside of the DDA district have also been noted as desired improvements.

- 1) What sector of the City do you live in?
 - Outside of Southfield 44%
 - Other areas of Southfield 33%
 - DDA 0%
- 2) What sector of the City do you work in?
 - DDA 33%
 - Other areas of Southfield 56%
 - Outside of Southfield 21%
- 3) How often do you take public transit
 - Never 100%
- 4) Why do you take public transit
 - No answer 100%
- 5) When do you usually take public transit
 - No answer 100%
- 6) How often do you use the Northland Mall transit center?
 - No answer 100%
- 7) When using the transit center, what is your most common destination?
 - No answer 100%
- 8) How do you usually get to the transit center?
 - Drive 11%
- 9) If the City received extra funding for public transit, which of the following do you think is the most important?
 - Improve transit stops/shelters 60%
 - Create more routes 20%
 - Improve transit vehicles 20%
- 10) How often do you **walk** within the DDA?
 - Daily or Weekly 43%

11) Why do you **walk**?

- Recreation/exercise 75%
- Work (to/from) 25%

12) When do you usually **walk**?

- Lunch 75%
- Morning or Afternoon 25%

13) How often do you **bike** within the DDA district?

- Never 86%
- Weekly 14%

14) Why do you **bike**?

- Work (to/from) 100%
- Recreation/exercise 100%

15) When do you usually **bike**?

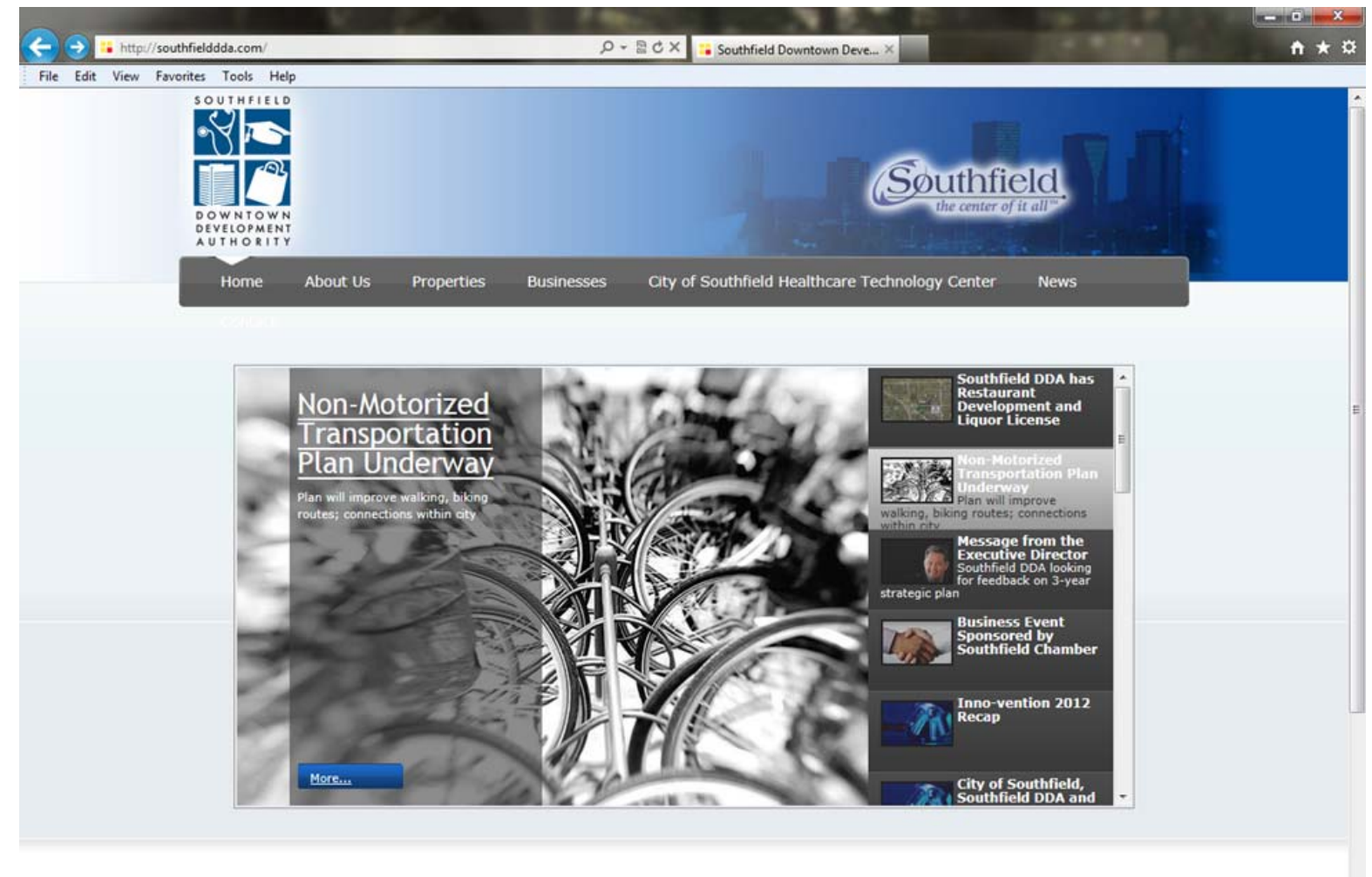
- Morning, Afternoon or Evening 100%

16) What is your age?

- 35-54 43%
- 55-64 29%
- 65+ 29%

17) Do you have Children?

- Yes 86%



Southfield Downtown Development Authority Non-motorized and Transit Sub-Area Plan

Projects Just Completed and Work in Progress

The City of Southfield and the DDA have already begun in earnest to construct improvements to the area. This section, including the table above, shows the work done in recent years and about to begin in the next 1-2 years.



Decorative Crosswalks: Intersection of Civic Center Drive and Central Park Boulevard showing decorative crosswalks installed with resurfacing project in 2012. Similar crossing treatments are planned for Nine Mile Road within the DDA during 2013 as part of a resurfacing project.



Gateway Plaza at Cornerstone Shopping Center
Southwest corner of Greenfield Road and Mt Vernon



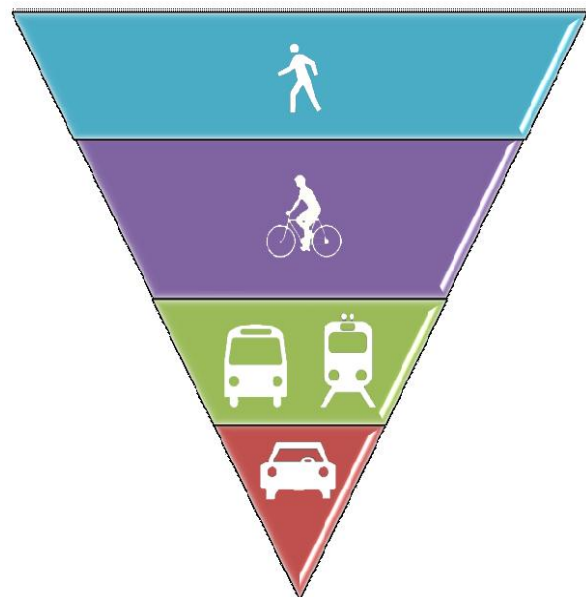
SMART Bus Stop – Furniture Suite
West side of Greenfield Road, south of Mt Vernon

Southfield Downtown Development Authority Non-motorized and Transit Sub-Area Plan

Non-motorized Concepts & Recommendations

In the context of an urban community, non-motorized transportation refers to walking and cycling. A complete non-motorized transportation system provides many benefits:

- Provides a transportation network for people without access to a vehicle, and to those who choose not to drive;
- Provides a means of safe travel for the young and the old who are unable to drive;
- Potentially reduces short vehicle trips, thereby reducing traffic congestion;
- Attracts families and professionals, thereby providing economic opportunities for the City and its businesses;
- Increases safe and affordable options for people to get the recommended amount of physical activity to remain healthy and combat the epidemics of obesity, diabetes, and heart disease in the country.



Vehicles are expensive to own and operate.ⁱⁱ Not everyone in Southfield can afford to own one or more vehicles, but they still need access to work, school, stores, doctor's offices, and places of worship. Nationally, approximately 8.8% of households do not own a car.ⁱⁱⁱ Some people have a car, but prefer to bicycle or walk for the exercise or to reduce their "carbon footprint." In other cases, old age or other physical limitations has removed the ability to drive.

In 2010, approximately 15% of annual household expenditures were spent on car ownership and operating expenses.

Providing a safe non-motorized transportation network allows people to move around the community on bicycle or by foot. For some it gives mobility choices so they do not need to rely on friends and neighbors for transportation.

If properly designed and implemented near population centers (residential and/or business), an improved non-motorized transportation network can reduce vehicle miles traveled. Short trips (within ½ mile each way) can be perceived to be safer, quicker, and more enjoyable on foot or by peddle. Whether talking about a quick trip to the corner store, or going out for lunch at work, the corresponding trip reduction can ease congestion on main thoroughfares.

More intrinsically, numerous studies from the [Urban Land Institute](#), [Brookings Institute](#), etc. show that today's young professionals want to live in a community that they can safely walk and bicycle within. It is becoming not only a positive selling point but, indeed, a requirement for a growing portion of the population that their community provide a complete non-motorized network. In providing one, the City can attract and retain a strong residential base while simultaneously attracting businesses that want to locate near a talented workforce.

It is becoming not only a positive selling point but, indeed, a requirement for a growing portion of the population that their community provide a complete non-motorized network.

Lastly, any increase in walking or biking can significantly improve individual health. Chronic diseases related to physical inactivity (obesity, diabetes, and heart disease) are reaching epidemic levels in the country and Michigan. The Centers for Disease Control recommends that adults get 30 minutes of physical activity at least five days a week and that children get 60 minutes of physical activity at least five days a week.^{iv} This can be broken into smaller segments and still be effective, so a 10-15 minute walk helps meet the targeted amount of exercise. Making walking and biking the easiest transportation choices for short trips is thus one way to combat chronic disease.

The Centers for Disease Control recommends that adults get 30 minutes of physical activity at least five days a week and that children get 60 minutes of physical activity at least five days a week.

To achieve those benefits, there must be a complete non-motorized network of travel. This section describes some of the improvements that can be made to increase walking and biking in the City.

1. Understanding the Different Needs of Different Types of Bicyclists



The focus of a complete non-motorized network is on increasing transportation options and safety for pedestrians and cyclists. In designing such a network, however, it is important to understand the differences *between* pedestrians and cyclists. Bicycles may not be considered a “vehicle” by the *Michigan Vehicle Code*^v but they operate in a very similar manner, particularly from the perspective of a pedestrian.

Planning for bicyclists is in some ways more complicated than planning for motorists or pedestrians. Though some drivers will alter their trip to avoid the most congested times of the day or take the “back roads” to avoid traffic signals or congested areas, generally motorists follow similar routes regardless of their experience or skill level.

It is different with bicyclists, in that the level of confidence or skill level often has great influence on the travel route selected. If there is not a comfortable route, most people will simply choose not to bicycle. Bicycle planning therefore often classifies riders into three groups:

A - “Advanced” riders include the more experienced bicyclists (approx. 5%) who often travel at a faster pace than those with less confidence or experience. They are comfortable riding on most streets, even those with higher volumes and higher speeds that discourage others. Many of the Class A cyclists ride year round, regardless of all but the most extreme weather conditions. Most cyclists that commute to work on a bicycle fall into this category but there are also many recreational cyclists that fall into the Class A group.

B – “Basic” bicyclists comprise the highest percentage of bicyclists. Approximately 95% of bicyclists are grouped together in the “B” and “C” groups. Basic bicyclists are those with moderate experience, but limited confidence. Basic bicyclists often ride for recreation or pleasure if there is a convenient and comfortable route available, but generally avoid bad weather and perceived unsafe conditions.

C – “Children” (under 13 years old^{vi}) are less confident and are therefore less likely to use on-street facilities. They will typically use only separate sidewalks on higher volume roads, or may travel in the street on low volume local roads. This is due in part to personal choice and in part to parental directive.

2. A Variety of Options for Cyclists

The variety of user types and their differing needs means that the City should have a variety of bicycle facilities and routing options. The [American Association of State Highway and Transportation Officials \(AASHTO\)](#) and the [National Association of City Transportation Officials \(NACTO\)](#), provide nationally accepted

standards for several types of facilities, including:

Share the Road – Cyclists have a legal right to use most public roads. In the basic scenario a bicycle will share the travel lane with vehicles. Under the most common condition, along a purely residential street, this occurs with no markings or signage at all. In other instances, signs and/or pavement markings known as Sharrows are added when bicycle volumes are higher in order to increase the confidence and visibility of cyclists^{vii} and the awareness of drivers to expect cyclists.



Sharrow
www.pedbikeimages.org/ Lyubov Zuyeva

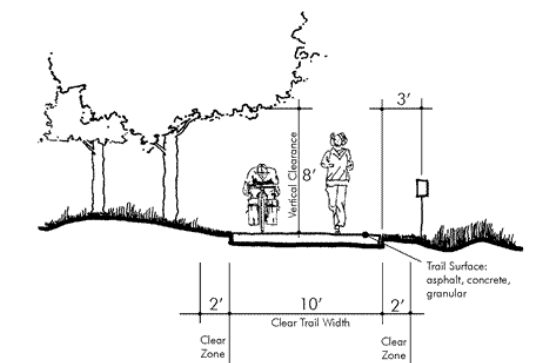
Bicycle Lane – When traffic volumes or speed increase a separately marked and signed bicycle lane can be added to the road to provide dedicated space for cyclists. Bicycle lanes run parallel to the vehicle travel lanes and are typically 5 feet wide (6 feet where auto or truck volumes or speeds are higher). When physical space allows, consideration should be given to the installation of a buffered bike lane, which provides a 4 foot to 6



Buffered Bike Lane
www.pedbikeimages.org/ Steven Faust.

foot wide space which is cross-hatched with pavement markings to provide an additional separation between cyclists and vehicular traffic.

Separate Pathway/Cycle Track – In some instances the volume and speed of traffic has reached a level where separate pathways must be considered in order to appeal to the majority of potential users. A paved pathway, a minimum of 10 feet wide if used for bicycles only or 12 feet wide if intended for both pedestrians and cyclists.



If anticipated bicycle use is high, and if physical space allows, the DDA should consider the installation of Cycle Tracks, which are bicycle paths that are physically separated (sometimes with a barrier) from both vehicular and pedestrian users. Careful consideration must be given during design to ensure that the potential conflict points, particularly at driveways and



Cycle track on campus of Syracuse University built in 2012.

intersections, are properly addressed.

The four rights-of-way identified as bicycle routes in the Non-Motorized Pathway and Public Transit Plan (Mt Vernon Street, Nine Mile Road, North Park Drive, and Northwestern Highway) have been evaluated for feasibility of adding on-street bicycle lanes. As a major north-south connector within the DDA district, and the City as a whole, Nine Mile Road is a logical choice for such improvements.

Mt Vernon Road is a main east-west connector in the district and, as such, should be considered a high priority for improvements. There are currently sidewalks along both the north and south sides of Mt. Vernon. The pavement width would also support the addition of on-street bike lanes from the Lodge Freeway to Greenfield Road.

Pedestrian crossings of Nine Mile Road and the Lodge Freeway are a major component of this plan. Specifically two crossings of the Lodge Freeway should be added, one at either North Park Drive or J. L. Hudson Drive, and a second at Northland Drive. Of interest on Nine Mile Road is the crossing west of Greenfield Road where a significant portion of the users of the parking lot on the north side of Nine Mile do not use the pedestrian bridge over Nine Mile Road to the main Providence Hospital entrance. Consideration should be given to the installation of a HAWK (High-Intensity Activated cross Walk beacon) style traffic signal to afford a higher measure of safety to this crossing.

http://safety.fhwa.dot.gov/provencountermeasures/fhwa_sa_12_012.htm

The 2013 Nine Mile Road resurfacing project also offers an opportunity to install the keywalks to the SMART bus stops along the corridor, bring all sidewalk ramps into full ADA compliance, and install decorative crosswalks at the signalized intersections.

The Northwestern Highway right-of-way can serve as the main thread that ties together the City as a whole, as well as providing an entrance to the greater region. There would appear to be ample room to install a combination of on-street bike lanes and off-road shared use paths to augment the service drives.

Sidewalks – Assuming that a solid bicycle network is in place (as described above), sidewalks should be strongly focused on the pedestrian. It is true that some “C” cyclists and even some “B” cyclists will still use sidewalks for bicycle travel, but a well provided bike network will reduce those numbers significantly, improving overall safety.

Infill gaps in existing sidewalk network

- Connection(s) between Oakland Community College Southfield Campus, Providence Hospital, and the remainder of the DDA district
- Connections between the DDA areas east and west of the Lodge Freeway via improved bridge crossings.
- ADA Compliance
- Mid-block crossings using HAWK signals on Nine Mile Road , North Park Drive, and J.L. Hudson Drive.

3. Road Diets (reducing lane width or number of lanes)

Sometimes bicycle lanes can be accommodated within the existing rights-of-way and within the existing pavement width, through “road diets”. Road diets change the configuration of the cross section, generally without adding pavement, to narrow vehicle travel lanes to add important features to the road like center turn lanes, medians, parking, and/or bicycle lanes. In other cases, the number of travel lanes can be reduced, such as converting a four-lane road to three lanes.



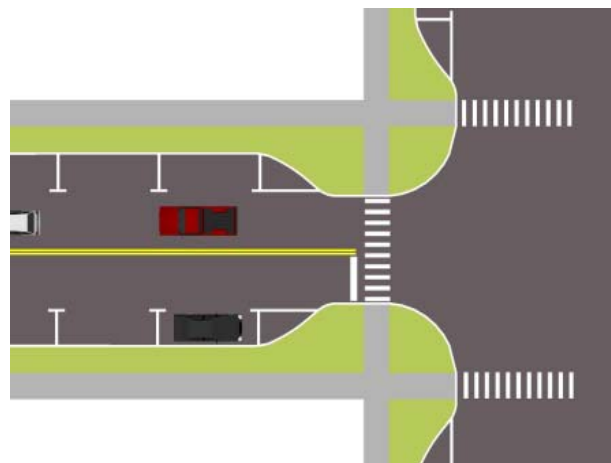
4. Bicycle and Sidewalk Connectivity

A successful non-motorized system is one that connects all the major destinations in the City and provides a number of travel options. Where there are connections between a home and a school, park, bus stop, business or another home, people are more likely to walk or bicycle. When there is not a connection, the walk or bicycle trip may require extra travel. That extra travel might mean the traveler will choose to drive, or have their parent drive, contributing to traffic congestion.

Usually the pedestrian or bicycle connection should be provided along a street, though Southfield also has many fine trail connections. The street system in Southfield is primarily what is referred to as a grid street system, meaning most development is in a block pattern. But in some cases, streets do not connect due to the Rouge River or other natural features, development, highways or other obstacles. In those cases, where it is practical, a pedestrian/bicycle connection should still be provided.

There may be cases where installation is not practical because the adjoining properties are not expected to be developed for a period of time. A property owner may have a valid case that such a sidewalk might deteriorate before connections are built. But in those cases, an escrow or financial guarantee should still be provided that funds the construction of the sidewalk in the future.

5. Traffic Calming Street and Intersection Design



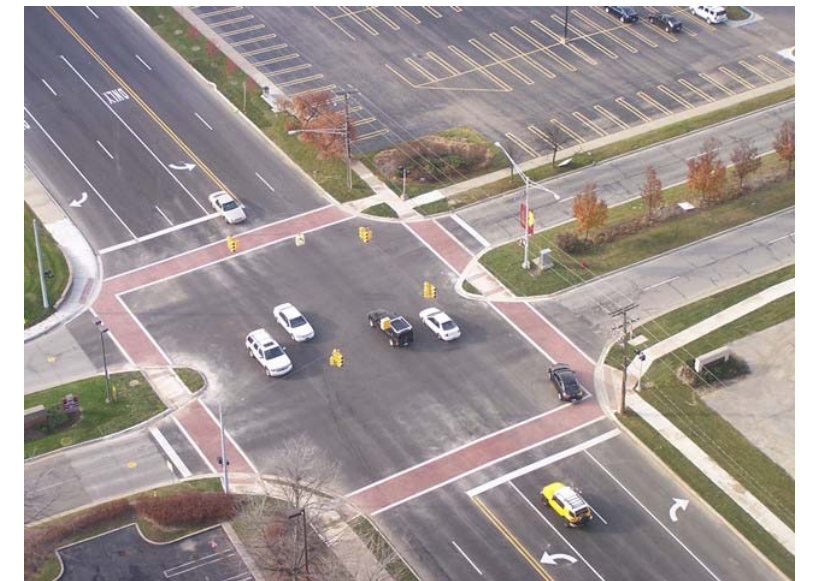
One of the biggest fears of a pedestrian or bicyclist is being hit by an automobile. Studies show that the speed of the vehicle is one of the biggest factors in whether the result of such a collision is a few scrapes, a serious injury or a fatality^{viii}. Research shows that a pedestrian or bicyclist hit by a vehicle traveling 20 mph or less has an 95% chance of survival while only about 55% survive a collision with a vehicle traveling 30 mph (and only 15% if 40 mph or greater). So there is a big difference if cars traveling through residential streets, where pedestrians and bicyclists are most frequent, are traveling at 20, 25 or 30 mph.



Speed Table (Northville Twp., MI)

Those types of statistics led to a package of design techniques called “traffic calming.” Different design elements can be used to help reduce speeds, such as along residential streets, in parking lots or near schools and parks. Traffic calming can include things like various types of road narrowing, special pavement for pedestrian crossings, or raised features in the road (speed humps or tables, not to be confused with speed bumps often found in parking lots). Traffic calming at intersections can also include use of reduced curb radii and curb bump outs to reduce the width that pedestrians must cross. This can actually benefit vehicular traffic too, since shorter crossing paths require less time for pedestrian crossing the street and leaving more time in the traffic signal cycle for vehicular traffic. These types of design techniques should be considered for streets and intersections where there are relatively high volumes of pedestrians or bicyclists and where typical traffic speeds are notably higher than the target or posted speed limit.

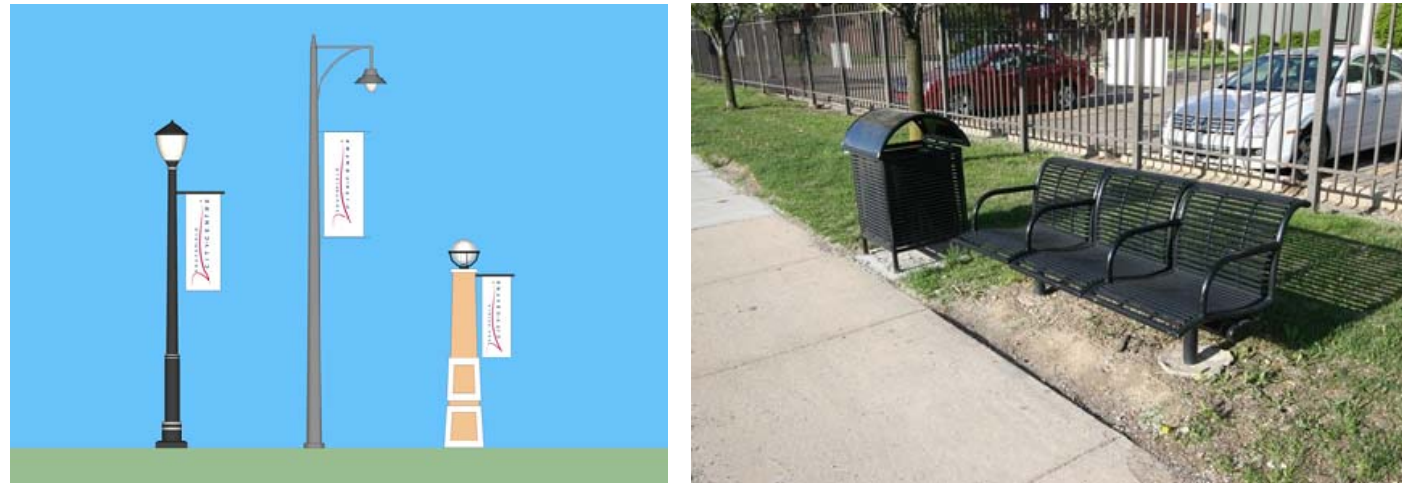
The City of Southfield is in the final stages of design for the resurfacing of Nine Mile Road, currently planned for 2013. This project will include the installation of decorative crosswalks at the signalized intersections. These improvements will greatly enhance the aesthetics of the corridor,



Decorative Crosswalks at Civic Center Drive and Central Park Boulevard

6. Street Furniture and Street Trees

In order to create a pedestrian-friendly environment and encourage walking as a form of transportation, it is important to provide places for people to stop and rest. Benches, trash cans (and recycling containers), drinking fountains, and similar amenities make a community inviting to walking.



Possible lighting and furniture options to encourage pedestrian activity and emphasize the DDA district brand.

Similar to street furniture, street trees provide needed shade and visual interest that make it more enjoyable to walk in the community and more likely that people will choose to walk. When selecting street trees it is important to work with a qualified professional to choose species that will not threaten the pavement and utilities (underground and overhead), drop messy seeds, pods, nuts, or fruits, inhibit ADA compliance, and/or block clear zones or sight lines.

7. Site Design

Many of the improvements for non-motorized travel involve providing facilities in the public rights-of-way or along off-road trails. However, there are many elements that should be provided as part of the site plan design for individual businesses and multiple family developments. These include:

- Providing direct connections from the street sidewalk to building entrances
- Providing on-site trees to shade sidewalks



- Painted crosswalks across higher volume drives
- Providing bicycle racks or parking.
- Reducing the number or width of driveways to make it easier to walk in front of the site

8. Bicycle Racks/Parking

Article 4 Section 5.29 (12), Chapter #45 Southfield Zoning Ordinance

***Bike Racks and Bike Parking Credit:** To promote non-motorized transit and to reduce impervious surfaces, the City is encouraging alternate means of transportation. The lack of a secure bike parking space keeps many people from using their bikes, thus a minimum of 4 bicycle parking spaces shall be provided for each non-residential and multi-family development.*



Bicycle parking is needed at key destinations throughout the community to encourage bicycling as a mode of transportation. The safety, location, and type of bicycle parking facility are important to encouraging cyclists to use it. Parking should be located where it is close to entrances, have metal framing that is secured to the ground, and allow for bicycle frames to be locked to the rack in addition to front wheels.

Bicycle racks can have a unique “Southfield” inspired design and be considered public art. Southfield has already taken the progressive step to permit adding bicycle parking to a development as an incentive to reduce vehicle parking as a part of the site development provisions in the zoning ordinance.^{ix}

Bicycle corrals are another tool for bicycle parking that can be used to retrofit existing areas where there are a number of people desiring to ride and park bicycles. A bicycle corral typically removes 1-2 parking spaces and designates them for bicycle parking. These can be done at a relatively low cost and accommodate a large number of bicycles.



Pedal & Park programs (<http://pedalandpark.org/>) can also be successful for major events, such as fairs and farmer's markets. These programs have secured areas that are generally monitored by volunteers, where bicycles can park for free to discourage driving to events that may have limited parking or difficult parking.

Potential locations for additional bicycle racks and lockers include the following:

- Northland Center
 - Bike Racks at multiple entrances
 - Bike Lockers for employees
- Oakland Community College Complex
 - Bike Racks
- Providence Hospital
 - Bike Racks at multiple entrances
 - Bike Lockers for employees

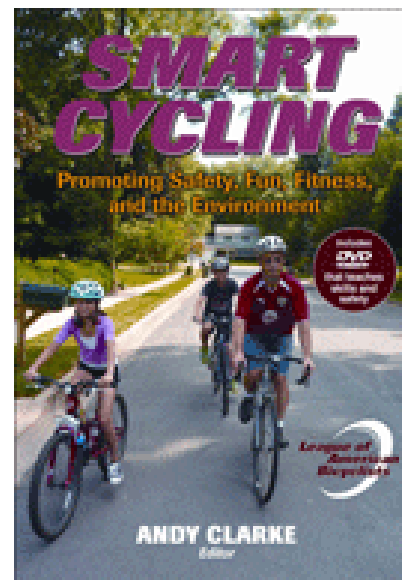


An excerpt of the City of Southfield Bike Rack and Bike Parking Credit text from the Zoning Ordinance and the related bicycle rack details can be found in Appendix 5.

9. Education

Learning to share the road – by bicyclists, drivers, and pedestrians – is important for everyone's safety. Many bicyclists are unaware of the rules of the road and how to ride safely. Often pedestrians make unsafe choices like walking with traffic where there is no sidewalk or wearing dark/low visibility clothing. Both of these situations can lead to conflicts with vehicles. Drivers also need to learn to share the road with bicycles and pedestrians, and do so safely.

The Southfield Police Department has, in the past, provided safety training through the schools. One of the recommendations in this plan is to have the Police Department, and possibly the Parks & Recreation Department, supplement existing education programs by including information on some of the findings and best practices listed in this section.



The League of American Bicyclists provides an educational book [*Smart Cycling: Promoting Safety, Fun, Fitness, and the Environment*](#) which is geared toward both the novice and experienced cyclists. More information can be found at: <http://www.bikeleague.org/programs/education/>

10. Safe Routes to School

Federal transportation legislation has provided special funding for “Safe Routes to School” programs. Under the current MAP-21 (Moving Ahead for Progress in the 21st Century) legislation, “Safe Routes to Schools” is included in the Transportation Alternatives Program (TAP) funded through the [Michigan Department of Transportation](#) (MDOT) and the [Southeast Michigan Council of Governments](#) (SEMCOG). Typically, individual schools or the school district seek funding for a particular school, in partnership with the local Act 51 road agency.



Programs include a combination of physical improvements to make walking and bicycling to school easier plus promotion to build enthusiasm among students and their parents. Often the technical effort is shared by representatives of the school administration, city planning and engineering, the hospital, community health agencies, and police department. Involvement by parents, students and residents who live along key walking routes helps build awareness, support and momentum for implementation.

Typical outcomes are installation of additional sidewalks, crosswalks and signs. In some cases school site plans might be modified to better support those that walk or bike to school. But the programs also extend beyond the physical. This can be accomplished by raising the awareness of the benefits of increased walking – physical health, less congestion at the school, less pollution from emissions, less potential for collisions, etc. A program can also demonstrate to parents that children walking can actually be safer than driving through addressing their safety concerns.

10. Complete Streets

Complete streets are designed and operated to enable safe access for all users. Pedestrians, bicyclists, motorists and transit riders of all ages and abilities must be able to safely move along and across a complete street. Since each complete street is unique, it is impossible to give a single description. But ingredients that may be found on a complete street include sidewalks, bike lanes (or wide paved shoulders), special bus lanes, comfortable and accessible transit stops, frequent crossing opportunities, median islands, accessible pedestrian signals, curb extensions, and more.

Southfield Downtown Development Authority Non-motorized and Transit Sub-Area Plan

Transit Concepts & Recommendations

According to the Federal Transit Administration (FTA), a Transit Oriented Development (TOD) is a compact, mixed-use development within walking distance of public transportation and is a key element of livable and sustainable communities^x. TOD increases transit ridership and reduces automobile congestion, providing value for both the public and private sectors. Planned and existing TOD areas have been delineated in Oakland County and throughout Metro Detroit.

Encourage Transit Use

Public transportation can play an important role in confronting environmental challenges. According to the FTA, “Public transportation can improve air quality, reduce greenhouse gas emissions, facilitate compact development (conserving land and decreasing travel demand), and save energy among other benefits.” Public transportation can also improve the accessibility of employment and education opportunities. Since transit is a viable alternative to more resource exhaustive forms of transportation, it can be an integral component for moving towards sustainability, allowing for social equity and economic development while minimizing negative impacts to the environment.

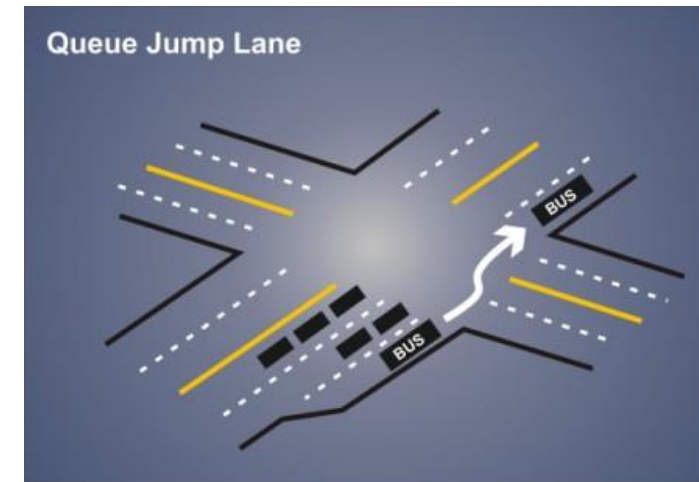
Fare Policy

An important element of transit service (both bus and rail) is fare structure and collection method. Differential fare structures often exist within a transit system to provide various services or to increase ridership in certain markets for a number of reasons. Discounted fares may be offered to support mobility options of various groups based on age, financial capacity, disabilities, or affiliation (students, employer, etc.). Discounts may be offered based on factors such as frequency of use, prepayment, and time commitment purchase (weekly pass, monthly pass, annual pass). Fare structures may also be differentiated based on trip characteristics such as trip location, length, and duration, time of trip (peak or off -peak, weekday or weekend), mode, and quality of service (express or local).

Transit Oriented Development (TOD) is a compact, mixed-use development within walking distance of public transportation and is a key element of livable and sustainable communities.

“Public transportation can improve air quality, reduce greenhouse gas emissions, facilitate compact development (conserving land and decreasing travel demand), and save energy among other benefits.”

Transit Priority



Bus lanes, queue-jumper lanes, bus-priority traffic signals, and other measures, such as grade separation so transit is not delayed by cross-streets and traffic congestion, reduce delay to transit vehicles and can significantly improve travel times and reliability of service.

Comfort and Convenience Improvements

Reduced crowding, better seats and cleaner vehicles can improve the users experience and encourage increased patronage. Transit stop enhancements including shelter (enclosed waiting areas, with heating in winter and cooling in summer), seating, wayfinding and other navigation tools, washrooms, refreshments, internet services, and other convenience features help to promote transit use.



Transit Stop at LTU – Civic Center & Northwestern

Improved Rider Information and Marketing Programs

Real-time information on transit vehicle arrival and multi-modal access guides which include maps, schedules, contact numbers and other information on how to reach a particular destination by public transit can improve the experience of transit users.

Support Non-Motorized Transportation

The American Heart Association (AHA) has estimated that every hour of walking may increase life expectancy by two hours.^{xi} Of course, when residents get out of their car to walk and bike, carbon emissions are avoided as well. Infrastructure improvements, improving safety and promotional and education efforts can all help to encourage non-motorized trips. The 2009 National Household Transportation Survey found that 50% of all

trips are three miles or less and 28% of all trips are one mile or less^{xii} – distances easily traversed by foot or bicycle. Yet 60% of trips less than one mile in length are made by automobile. (National Complete Streets Coalition)^{xiii}.

Transit Facilities- DDA Wide Improvements

- Bus Shelters
 - Installations of furniture continuing to use existing “Southfield DDA Suite”
- Bus Stops
 - Keywalks from mainline sidewalk to terminal
 - ADA compliant at all existing bus stops
 - Adequate signage



Existing SMART bus stop
(Greenfield Road south of Mt Vernon)



Existing SMART bus stop
(Greenfield Road north of Nine Mile Road)



Existing SMART bus stop without “keywalk”
(Evergreen Road south of Civic Center)



Existing SMART bus stop with ADA compliant “keywalk”
(Ten Mile Road between Northwestern and LTU entrance drive)

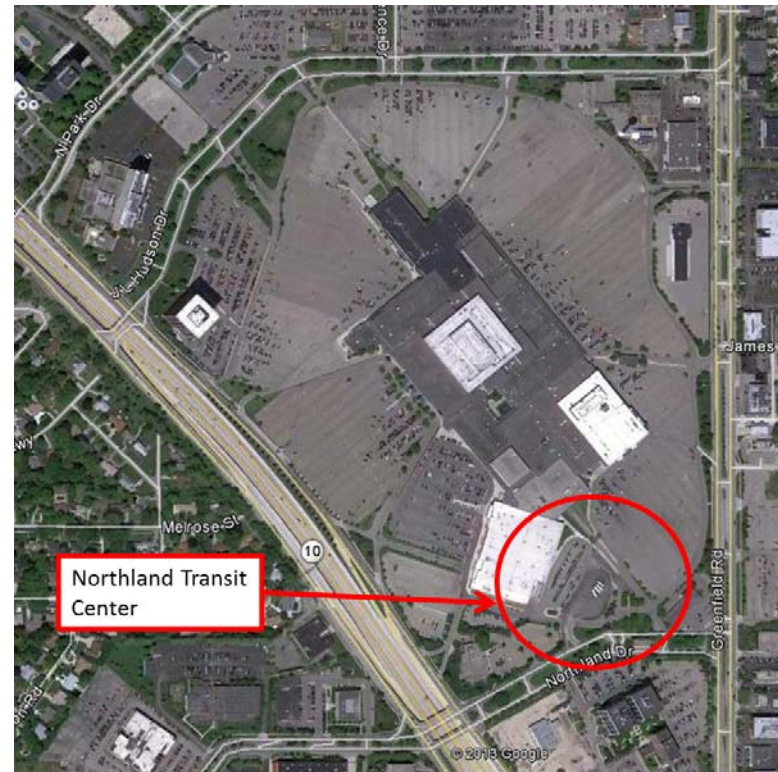
Transit Facilities- Southfield DDA Transit Center

Southfield DDA Transit Center

The existing transit center at the Northland Center Mall is located at the southern end of the mall property between Northland Drive and the Target store. The transit center serves as a transfer point between multiple DDOT routes and between DDOT and SMART. There are four existing shelters in a single row configuration with three owned by DDOT and one by SMART.

There is a significant issue with the existing center with crime (violent and non-violent), vandalism and graffiti, loitering, and littering. A significant Southfield Police Department effort, along with City of Southfield Code Enforcement, is currently required to keep illicit activities in check.

As a result of the stakeholder meetings regarding the Northland Transit Center in specific and the future of a Southfield DDA Transit Center, a three phased approach (short, medium and long term) was considered the most prudent and practical option to provide transit options for the DDA district and greater Southfield community.



Phase 1 - Short Term: Modified Layout of the Existing Northland Transit Center

Time Frame: Immediate (implemented spring, 2013)

- 1) Replace, and separate, the four (4) existing shelters
 - a) The shelters are jointly owned by DDOT (3 shelters) and SMART (1 shelter)
 - a) DDOT has agreed to remove the existing shelters
 - b) SMART will provide four (4) shelters, possibly open sided
 - i) Use current "Southfield style" shelters modified to be "open" (e.g., no side panel)



- c) New shelters will be erected in a separated "L" layout
- d) Shelters to be spaced out farther than existing
- 2) Signage will be added by Northland Center
 - a) Posting of "rules & regulations" to allow better enforcement
 - b) Southfield Police Department needs authorization for signs and enforcement
- 3) Transit Center Lease Renewal
 - a) DDA to coordinate effort with Northland Center owner
 - b) Review lease agreement(s) with mall owner

Phase 2 – Moderate Term: Northland Transit Center Modernization

Time Frame: Immediate (summer & fall, 2013)

- 1) Funding in place for moderate term improvements
 - a) Approximately \$400,000 in place.
 - b) DDOT has a CMAQ grant for new shelters & signage working with the 8MBA
 - c) Obligate & spend existing federal CMAQ grant
- 2) DDOT has hired Parsons Brinckerhoff to design moderate term transit center improvements.
- 3) Bidding expected spring of 2013.
- 4) Construction expected for summer of 2013.
- 5) On-Going Maintenance of Moderate Term plan
 - a) DDOT "Adopt-A-Shelter" program
 - b) SMART monthly maintenance rotation w/ emphasis at NTC

Phase 3 – Long Term: Relocated Transit Center

Time Frame: Five years out

1. Reasons for Relocation
 - a. Help Oakland Community College–Southfield Campus & Providence Hospital expand and connect better to the greater Detroit area.
 - b. Reduce Security Requirements
 - i. Police Mini-Station included with center.
 - c. Increased amenities
 - i. Restrooms
 - ii. Vending
2. Issues:
 - a. Increase connections to OCC & Providence Hospital
 - b. Maintain connection to existing businesses
 - i. Northland Center
 - ii. Greenfield Road businesses (CSL Plasma)
 - iii. Target employees (75% use NTC) & shoppers

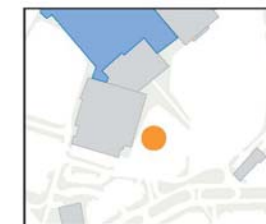
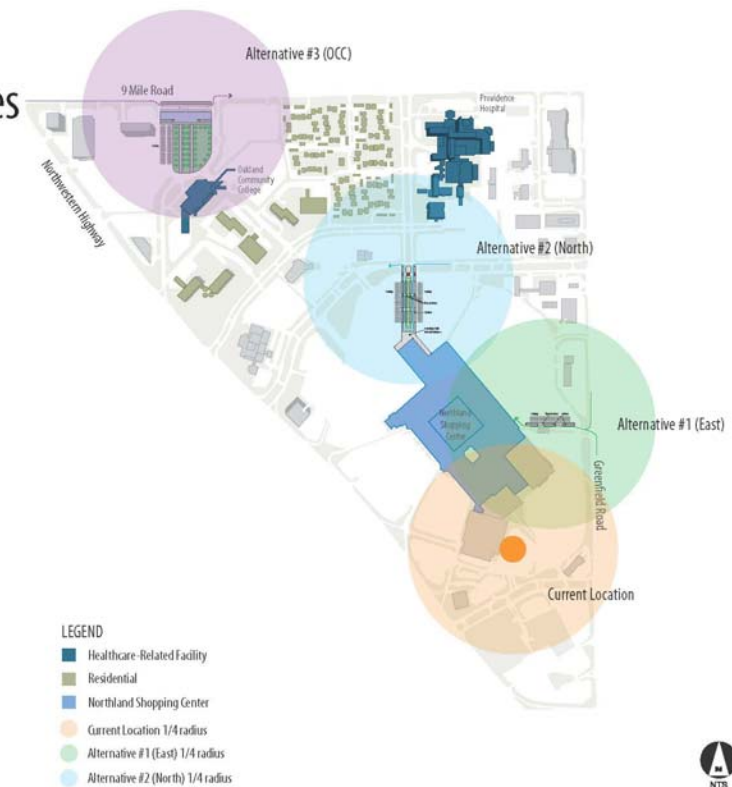
3. Alternate sites for the Northland Transit were developed and presented as shown in the figures at right, top and bottom.
 - a. Northland Mall "A" lot
 - b. Alt No. 1 – east side of Northland Center (Greenfield Road frontage)
 - c. Alt No. 2 – north side of Northland Center (south of J.L. Hudson Drive)
 - d. Alt No. 3 – Nine Mile Road & Rutland Street
4. Preferences
 - a. DDA preference is Nine Mile & Rutland
 - b. SMART's favorite is alternative no. 2
 - c. DDOT doesn't have a preference
 - d. General consensus to have some version of the existing Northland Transit Center to remain

Eight Mile Boulevard Association developed this concept for a transit center. Image courtesy of the Eight Mile Boulevard Association (<http://eightmile.org/>).



Early rendering of Troy Transit Center
Troy, Michigan

Southfield DDA Transit Center Alternatives

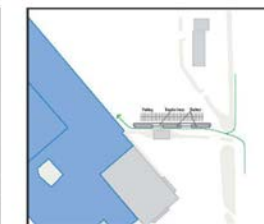


Current Location

Proximity to Generators
Located with access to Northland Shopping Center and Target, but no connectivity or proximity to Providence Hospital or OCC.

Cost
Need current costs associated with transit Center

Bus access
Accessibility by buses is average due to the center's location offset from major roads. Transfer and overflow areas allow ample room for bus access.



Alternative #1 (East)

Proximity to Generators
Alternative #1 is directly connected to Northland Shopping Center and is oriented toward one of its entrances. It is also in closer proximity to Providence Hospital, although outside of the desired 1/4 radius. It is not within proximity to OCC.

Cost
Alternative #1 would require costs for construction of the transfer areas and would also require special consideration of the existing police station.

Bus access
Alternative #1 offers excellent accessibility due to its proximity to Greenfield Road.



Alternative #2 (North)

Proximity to Generators
Alternative #2 offers the most connection to the primary generators within the DDA, being both (directly) accessible to Northland Mall due to its orientation toward a new mall entrance, and its position in axis with Providence Drive. It is not within the desired radius of OCC.

Cost
Alternative #2 would require considerable cost because it would require the development of dedicated two-lane transfer areas and a new entrance.

Bus access
Alternative #2 is centrally located and offers a loop transfer area that would streamline passenger on- and off-loading.



Alternative #3 (OCC)

Proximity to Generators
Alternative #3 is the only scenario that is truly connected to OCC, but is disconnected from the other generators within the DDA.

Cost
Alternative #3 would require considerable cost because it would require the demolition of the former Ramada Hotel and would also require the construction of a new, transit center to occupy the site.

Bus access
Alternative #3 would offer excellent bus access off of 9 Mile Road, requiring the least amount of transfer and overflow areas.



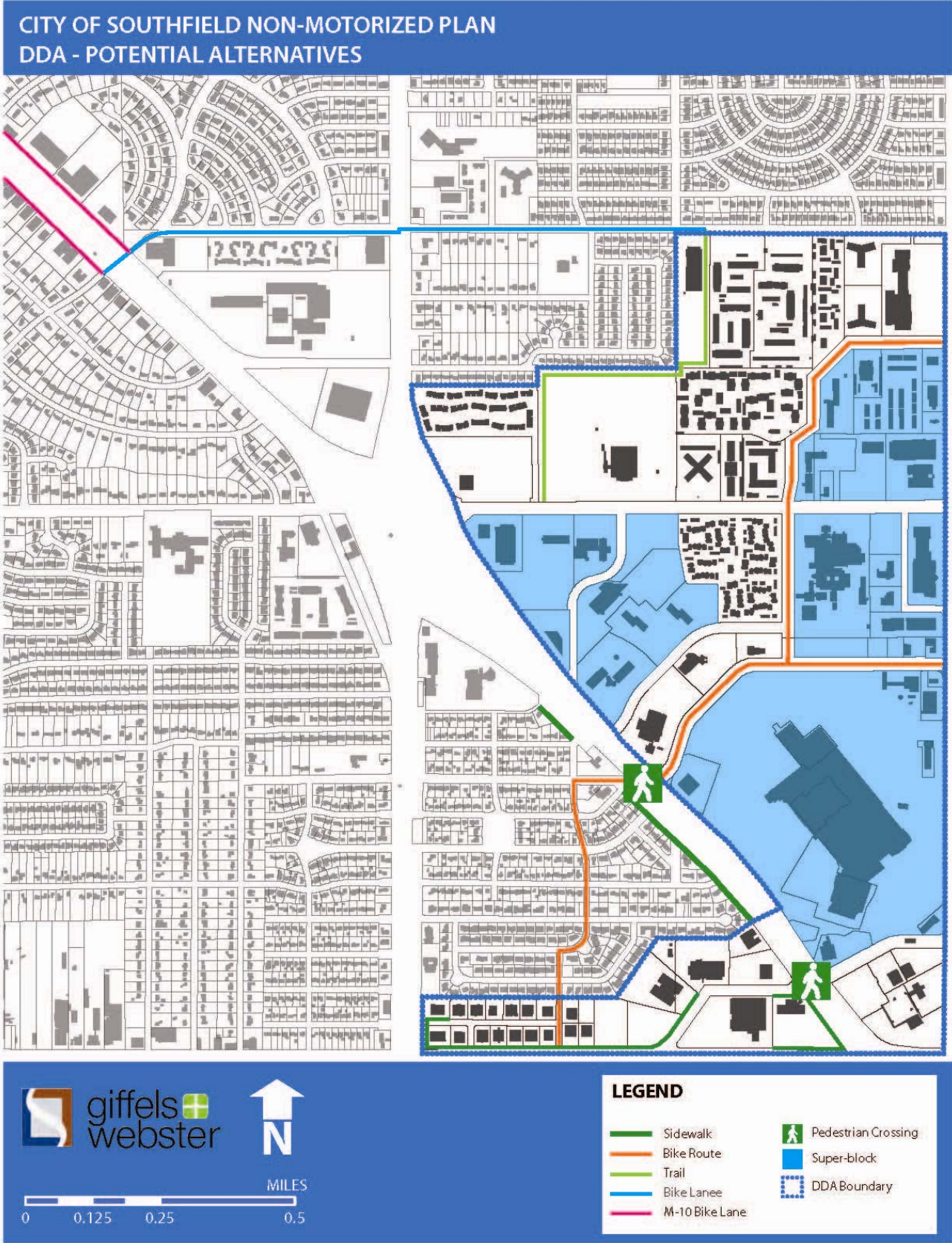
Potential mid-block pedestrian crossing showing decorative crosswalk, HAWK pedestrian signal and Southfield / SMART bus shelter with enhanced landscape plantings.



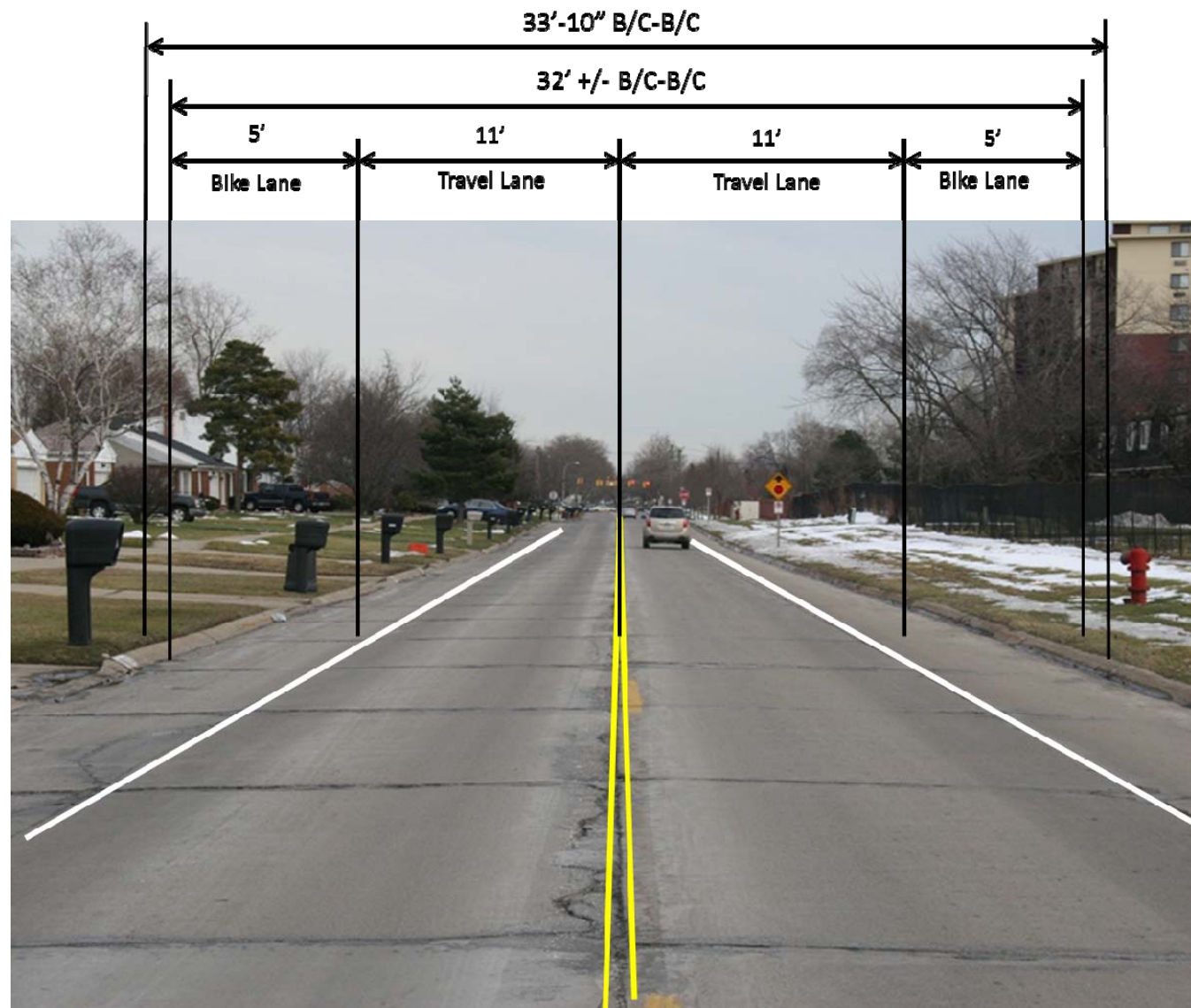
Mid-block pedestrian HAWK style signal with refuge island placed in the center left turn lane.

Southfield
Downtown Development Authority
Non-motorized and Transit Sub-Area Plan

Cost Estimates

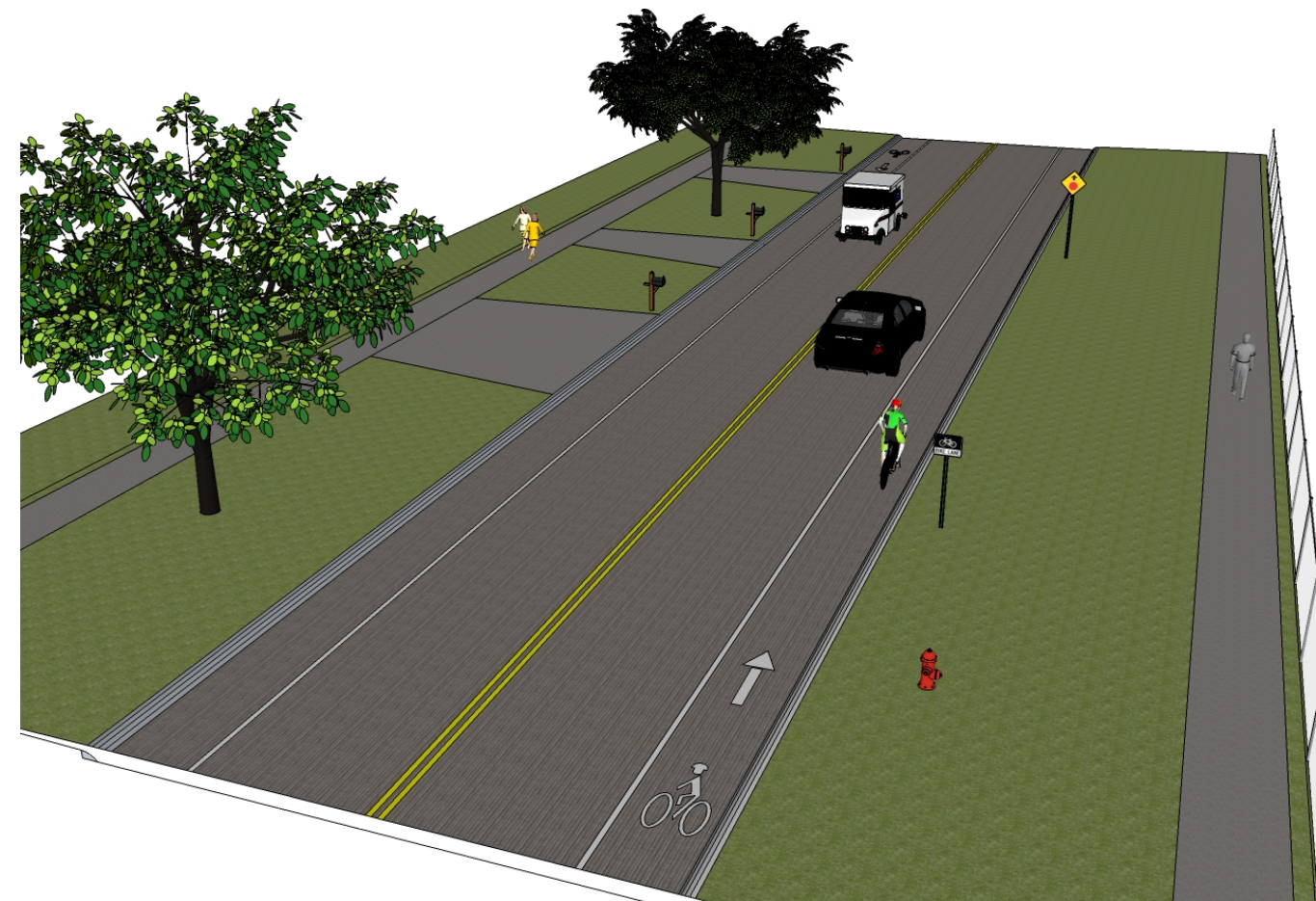


ROAD DIET WITH ADDITION OF ON-ROAD BIKE LANES



Mt Vernon (Southfield Road to Greenfield Road) – Existing:

The existing roadway has wide open vehicular space and no on-street parking. There are existing sidewalks, but little landscape on the edges. There is also no dedicated bike facility.



Mt Vernon (Southfield Road to Greenfield Road) - Proposed:

One approach would be to provide on-street bike lanes to calm traffic and provide additional safety to cyclists.

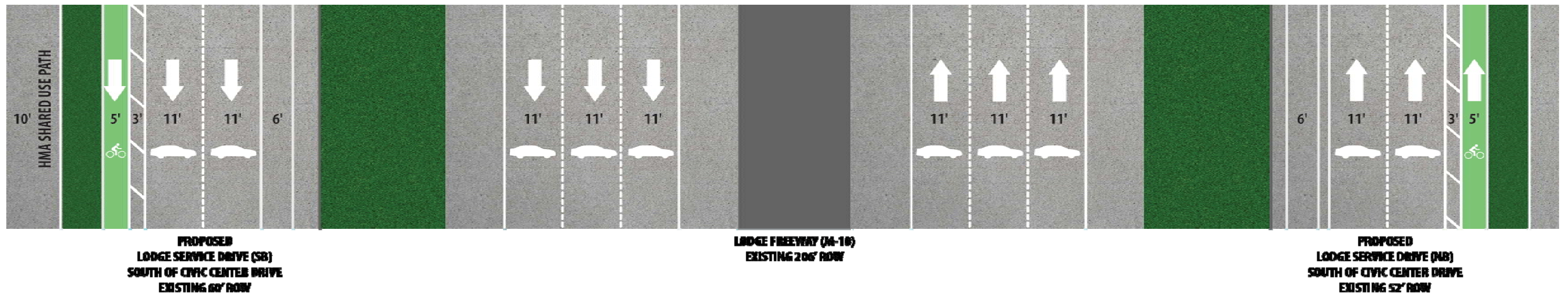
**NORTHWESTERN CONNECTOR
FROM LAHSER ROAD &
11 MILE ROAD TO NINE MILE &
PROVIDENCE DRIVE**



**BUFFERED BIKE LANE USING EITHER EXISTING SHOULDER OR THIRD TRAVEL LANE
WITH SHARED USE SIDE PATH OR SIDEWALK**



Northwestern Connector: A combination of on-street bike lanes within the service drive and adjacent off-street shared use paths would turn a barrier to non-motorized connectivity into the main thread that binds the many district of the city to each other and the greater region.



FREEWAY BRIDGE MODIFICATIONS TO ENHANCE PEDESTRIAN CROSSINGS OPPORTUNITIES



Connectivity over the Lodge (M-10): There are two existing bridges across the Lodge Freeway at North Park Drive (above left) and J.L. Hudson Drive that could be modified to provide connectivity between the residential and commercial area west of the DDA and the main DDA area east of the freeway using traditional bridge widening techniques (above right) or innovative methods like a cantilevered walkway (lower right).

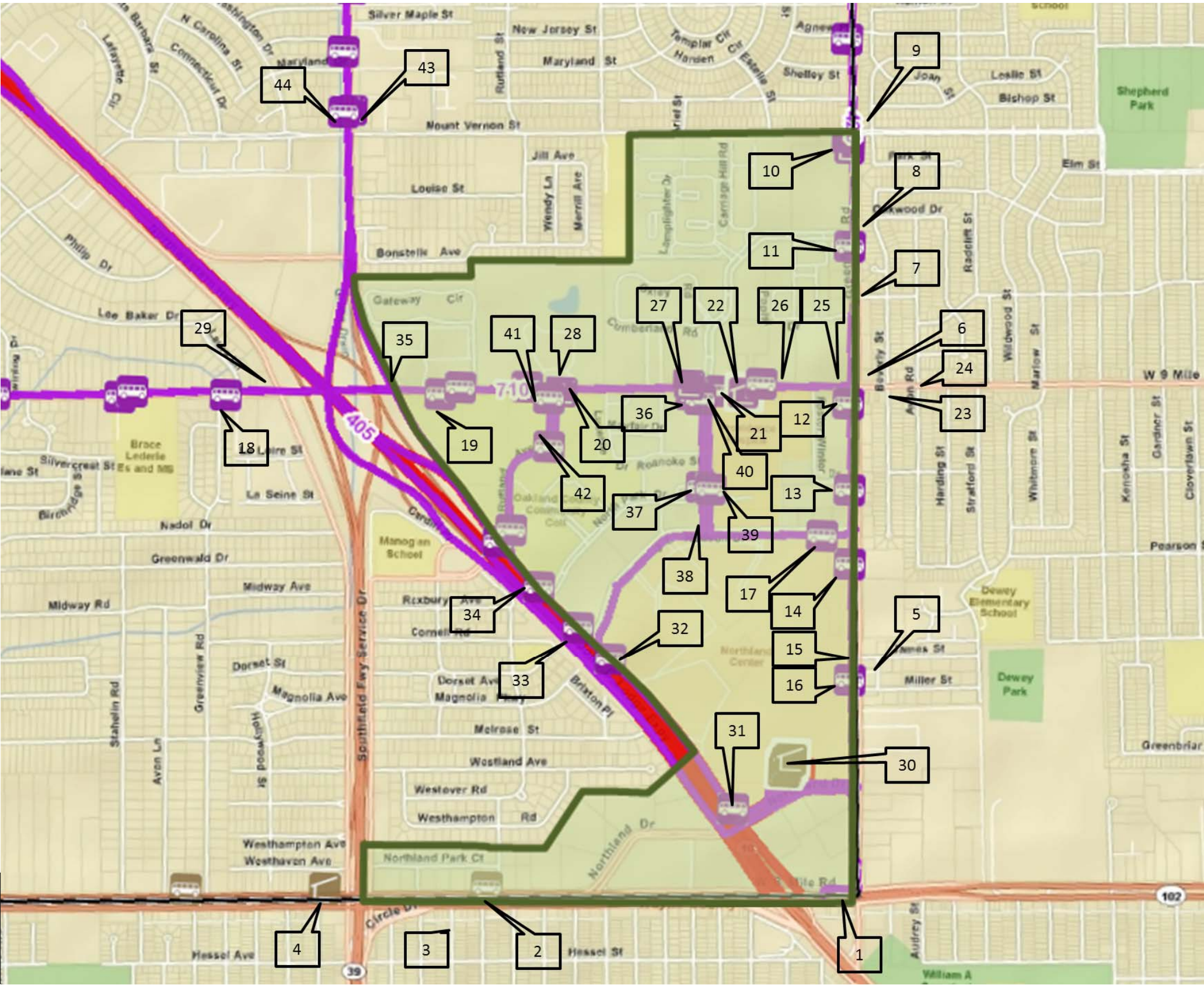


PEDESTRIAN RECOMMENDATION COST ESTIMATES												
		Limits										
Priority	Route	From	To	Side of Road	Public / Private	Owner	Surface	Length (feet)	Width (feet)	Area (sft)	Cost (\$)	Remarks
PUBLIC OWNERSHIP												
1	Providence Drive	Nine Mile Road	Greenfield Road	West	Public	Southfield	Conc	875	5	4,375	26,250.00	
2	Northwestern Service Drive	South of Nine Mile	Nine Mile	East	Public	Southfield	Conc	630	5	3,150	18,900.00	
3	Northwestern Service Drive	North Park Drive	North of North Park Drive	East	Public	Southfield	Conc	670	5	3,350	20,100.00	
4	North Park Drive	Northwestern Service Drive	Providence Drive	North	Public	Southfield	Conc	2,100	5	10,500	63,000.00	
5	North Park Drive	West of Providence	Providence Drive	South	Public	Southfield	Conc	980	5	4,900	29,400.00	
6	J. L. Hudson Drive	Northwestern Service Drive	Greenfield Road	North	Public	Southfield	Conc	3,020	5	15,100	90,600.00	
7	J. L. Hudson Drive	Northwestern Service Drive	Greenfield Road	South	Public	Southfield	Conc	3,190	5	15,950	95,700.00	
8	Northland Drive	Northwestern Service Drive	Greenfield Road	North	Public / Private	Southfield / Northland	Conc	1,020	5	5,100	30,600.00	
9	Northland Drive	West of Northwestn Service	Northwestern Service Drive	South	Public	Southfield	Conc	380	5	1,900	11,400.00	
10	Northwestern Service Drive	North of Northland Drive	Eight Mile Road	West	Public	Southfield	Conc	790	5	3,950	23,700.00	
11	Eight Mile Road	West of Northwestn Service	Northwestern Service Drive	North	Public	MDOT	Conc	655	5	3,275	19,650.00	
12	Northland Drive	Eight Mile Road	North of Eight Mile Road	West	Public	Southfield	Conc	750	5	3,750	22,500.00	
13	Eight Mile Road	Southfield	Northland Drive	North	Public	MDOT	Conc	2,160	5	10,800	64,800.00	
14	Northland Park Drive	Southfield	East of Southfield	North	Public	Southfield	Conc	270	5	1,350	8,100.00	
15	Northland Park Drive	Southfield	West of Rutland	South	Public	Southfield	Conc	1,130	5	5,650	33,900.00	
16	Southfield Road	Eight Mile Road	Northland Park Drive	West	Public	Southfield	Conc	290	5	1,450	8,700.00	
17	North Park Drive	Bridge over	Lodge Freeway		Public	MDOT	Bridge				10,000.00	
18	J. L. Hudson Drive	Bridge over	Lodge Freeway		Public	MDOT	Bridge				15,000.00	
									Total =	94,550	\$592,300.00	
									Average 1 =		\$6.26	with bridges
									Average 2 =		\$6.00	without bridge
	CONSTRUCTION COST BASIS:											
1	Concrete Sidewalk, 4 inch on sand base, including excavation & ADA compliant sidewalk ramps where required.					\$6.00 / square foot						
2	Bridge Structure:					\$2,000.00 / linear foot						
	NOTES:											
3	Cost include construction pay items only. Design engineering and construction administration and inspection are additional.											

Southfield DDA Non-motorized and Transit Sub-Area Plan
Adopted: May 17, 2013

TRANSIT (BUS STOP) RECOMMENDATION COST ESTIMATES																				
No.	Route	Jurisdiction	Road Name	Direction	Location - 1	Location - 2		Sign	Walk	ADA	Sign (ea)	Keywalk (ft)	Area 1 (sft)	ADA Walk (ft)	Area 2 (sft)	Pad	Shelter	Bench	Bike Rack	Trash Can
1	17	DDOT	Eight Mile Road	Westbound	West	Greenfield		Y	N	N		5	25	15	75			1	1	1
2	17, 46, 60	DDOT	Eight Mile Road	Westbound	West	Rutland		Y	N	N		10	50	15	75			1	1	1
3	46, 60	DDOT	Eight Mile Road	Westbound	At	17380 W Eight Mile		N	N	N	1	10	50	15	75			1	1	1
4	17, 46, 60	DDOT	Eight Mile Road	Westbound	West	Southfield		Y	N	N						Y	Y	Y	1	Y
5	415	SMART	Greenfield	Northbound	At	22000 Greenfield		Y	N	N								Y	1	1
6	415	SMART	Greenfield	Northbound	North	Nine Mile Road		Y	N	N		8.5	42.5	15	75					
7	415	SMART	Greenfield	Northbound	North	Kenwood		Y	N	N		8.5	42.5	15	75			Y	1	1
8	415	SMART	Greenfield	Northbound	North	Providence Drive		Y	-	-		8	40	15	75	-	-	-	-	-
9	415	SMART	Greenfield	Northbound	North	Mt Vernon / Oak Park		Y	-	-		8	40	15	75	-	-	-	-	-
10	415	SMART	Greenfield	Southbound	South	Mt Vernon / Oak Park		Y	Y	Y								Y	1	Y
11	415	SMART	Greenfield	Southbound	South	Providence Drive		Y	Y	Y								1	1	Y
12	415, 16	SMART / DDOT	Greenfield	Southbound	South	Nine Mile Road		Y	Y	Y								1	1	Y
13	415, 16	SMART / DDOT	Greenfield	Southbound	North	J L Hudson Drive		Y	Y	Y								Y	1	Y
14	400, 405, 415, 420, 16	SMART / DDOT	Greenfield	Southbound	South	J L Hudson Drive		Y	Y	Y										
15	400, 405, 415, 420	-	Greenfield	Southbound	North	Northland Mall Entrance		N	N	N	1	5	25	15	75			Y	1	1
16	400, 405, 415, 420	SMART	Greenfield	Southbound	South	Northland Mall Entrance		Y	N	N		5	25	15	75			1	1	Y
17	405	SMART	J L Hudson Drive	Eastbound	West	Greenfield		Y	N	N		11	55							
18	400	SMART	Nine Mile Road	Eastbound	East	Greenville		Y	-	-						-	-	1	1	1
19	400	SMART	Nine Mile Road	Eastbound	At	17515 W Nine Mile		Y	-	-						-	-	1	1	1
20	400	SMART	Nine Mile Road	Eastbound	East	Rutland		Y	Y	Y						-	-	Y	1	Y
21	400	SMART	Nine Mile Road	Eastbound	East	Providence Drive		Y	Y	Y						-	-	1	11	Y
22	16	DDOT	Nine Mile Road	Eastbound	East	Providence Drive		N	-	-	1					Y	Y	1	1	Y
23	710	SMART	Nine Mile Road	Eastbound	East	Beverly		Y	Y	Y						Y	Y	Y	1	Y
24	710	SMART	Nine Mile Road	Westbound	East	Avon		Y	y	-						y	-	y	1	1
25	710	SMART	Nine Mile Road	Westbound	West	Greenfield		Y	Y	Y						-	-	Y	1	1
26	710	SMART	Nine Mile Road	Westbound	At	Pedestrian bridge		N	y	y	1					-	-	y	1	1
27	400	SMART	Nine Mile Road	Westbound	West	Providence Drive		Y	Y	Y						-	-	Y	1	Y
28	400	SMART	Nine Mile Road	Westbound	East	WJBK entrance drive		N	y	y	1					-	-	y	1	Y
29	400	SMART	Nine Mile Road	Westbound	west	Southfield		Y	-	-						-	-	1	1	1
30	400, 405, 415, 420, 710, 851, 16, 17, 22, 46, 60	SMART / DDOT	Northland Transit Center		At	Northland Mall		N			1						Y			
31	405	SMART	Northwestern	Northbound	North	Northland Drive		Y	N	N		7	35	15	75			1	1	1
32	405	SMART	Northwestern	Northbound	South	J L Hudson Drive		Y	Y	N		14	70	25	125	Y		1	1	1
33	405	SMART	Northwestern	Northbound	North	J L Hudson Drive		Y	y	?		5	25	25	125			1	1	1
34	405, 16	SMART / DDOT	Northwestern	Northbound	North	North Park Drive		Y	Y	Y								1	1	1
35	405	SMART	Northwestern	Northbound	North	Nine Mile Road		Y	N	N		75	375					1	1	1
36	16	DDOT	Providence Drive	Northbound	North	J L Hudson Drive		Y	-	-						-	-	1	1	1
37	400, 710	SMART	Providence Drive	Northbound	North	North Park Drive		Y	-	-						-	-	1	1	1
38	400, 710	SMART	Providence Drive	Northbound	South	Nine Mile Road		N	-	-	1					-	-	1	1	1
39	400, 710	SMART	Providence Drive	Southbound	South	Nine Mile Road		Y	Y	Y						Y		Y	1	Y
40	400, 710	SMART	Providence Drive	Southbound	North	North Park Drive		Y	Y	Y						Y		Y	1	1
41	400	SMART	Rutland Drive	Southbound	South	Nine Mile Road		Y	N	N		4	20	15	75			1	1	1
42	400	SMART	Rutland Drive	Southbound	At	OCC-Southfield		Y	N	N		22	110	15	75			1	1	1
43	420	SMART	Southfield Road	Northbound	North	Mt. Vernon		Y	Y	?						Y		1	1	1
44	420	SMART	Southfield Road	Southbound	North	Mt Vernon		Y	N	N		54	270					1	1	1
								Proposed Items =			7	235	1175	185	925	0	0	20	45	22
											Each	Feet	Sft	Feet	Sft.	Each	Each	Each	Each	Each
								Unit Costs =			\$150	\$6.00			\$7.20	\$1,500	\$10,000	\$1,600	\$500	\$1,000
								Sub-Total =			\$1,050	\$7,050			\$6,660	\$0	\$0	\$32,000	\$22,500	\$22,000
								Keywalk Total =							\$13,710					
								Location # =							25					
								Cost/location =							\$ 548.40					

Map Source:
Southfield GIS System
Inventory Date: 12/04/2012
Updated: January 17, 2013



Southfield Downtown Development Authority Non-motorized and Transit Sub-Area Plan

Wayfinding Recommendations

Bicycle Signage – conformance with AASHTO, MMUTCD and/or NATCO Guidelines

Mid-scale sized signs to fit between
vehicular and pedestrian signs.



I-275 Metro Trail @ Hines
Drive, (Plymouth, MI)



I-275 Metro Trail @ Hines Drive
(Plymouth, MI)



Ferndale DDA
(Ferndale, MI)



Bicycle Friendly Community Status
League of American Bicyclists
(Traverse City, MI)

BICYCLE WAYFINDING SIGN COSTS

Steel Posts (3 lb./foot):	\$5.50 / foot
Wood Posts (4 inch x 6 inch):	\$18.50 / foot
Sign Panel (MDOT Type IIIA):	\$26.00 / square foot

Assume (1) 36"x24" sign w/ (2) steel posts

\$300.00 /each installed

Prices are 2013 prices based on 2012 MDOT specifications and dependent on number of signs being installed. Higher level of post finish will increase the costs accordingly.

Pedestrian Level Signage (Trails)

Smaller scale sign used for trail / walkway loops



I-275 Metro Trail @ Hines Drive
(Plymouth, MI)



River Trail Wayfinding Signage
(Lansing, MI)

PEDESTRIAN TRAIL WAYFINDING SIGN COSTS

Steel Posts (3 lb./foot):	\$5.50 / foot
Wood Posts (4 inch x 6 inch):	\$18.50 / foot
Sign Panel (MDOT Type IIIA):	\$26.00 / square foot

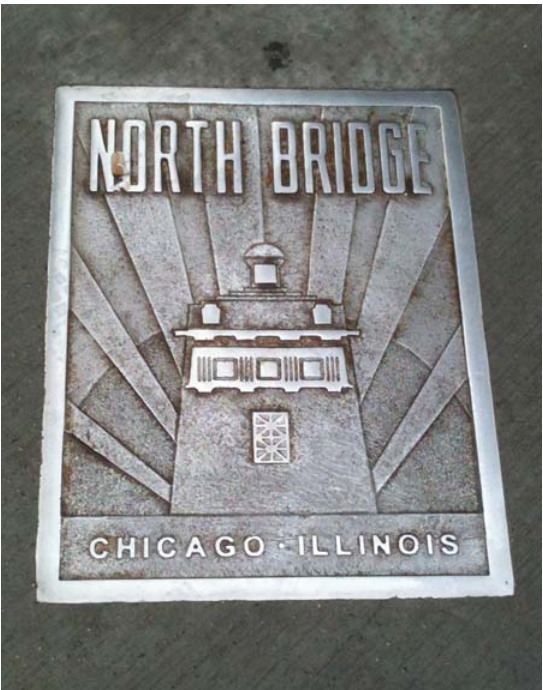
Assume (1) 12"x194" sign w/ (1) wood posts

Trail Wayfinding Signs: \$180.00 / each installed

Prices are 2013 prices based on 2012 MDOT specifications and dependent on number of signs being installed. Higher level of post finish will increase the costs accordingly.



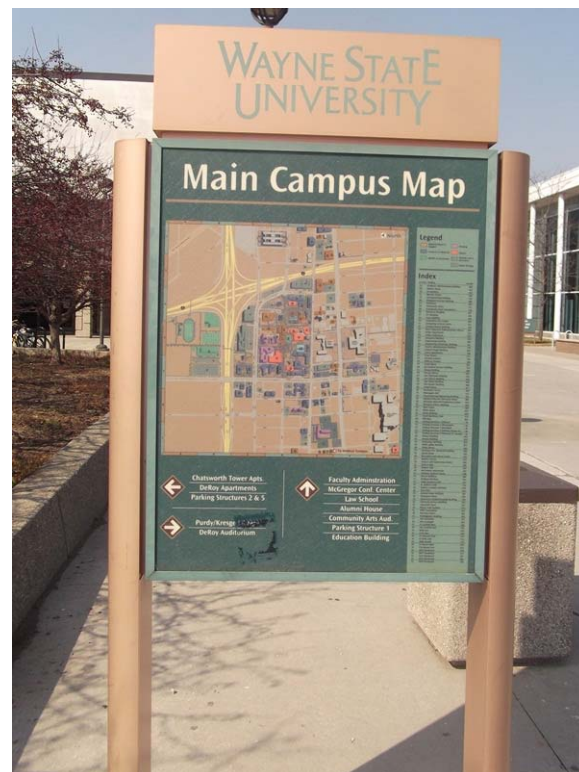
Bike Boulevard Pavement Markings
(Portland, OR)



In sidewalk markings
(Chicago, IL)

Pedestrian Level Signage (Districts)

Examples of smaller scale signs used on campus, within downtowns, and in retail districts throughout Michigan & Ohio.



Wayne State University
(Detroit, MI)



Downtown Plymouth, Michigan



Downtown Plymouth, Michigan



Old Town District, Traverse City, MI



Downtown Grand Rapids, Michigan



Downtown Northville, Michigan



Easton Town Center, Columbus, Ohio

Gateway and Monument Signs



Wayne State University (Detroit, MI)

GATEWAY AND MONUMENT SIGNS

Gateway signs are suggested for major vehicular entry points into the DDA district. Monument signs with pedestrian scale maps can be located at key locations in the district to provide wayfinding.

Prices for gateway and monument style signs can vary greatly based on the size, finishes, and graphics included. Cost estimates for styles similar to those shown here may range from \$7,500 to \$15,000 per location.



Wayne State University (Detroit, MI)



District Branding, Banners and Monument Signs



Oakland Commons w/ City Centre Branding (Civic Center Drive and Northwestern Highway), Southfield, MI



City Centre Banners on Central Park Boulevard north of Civic Center Drive, Southfield, MI



Cornerstone Plaza with Major Gateway Signage Greenfield Road and Mt Vernon Street

Southfield Downtown Development Authority

Non-motorized and Transit Sub-Area Plan

Funding Sources

Federal Sources

- Moving Ahead for Progress in the 21st Century (MAP-21)
 - Enabling legislation from the federal government that creates funding opportunities generally administered by MDOT such as general road and bridge funding and “transportation alternatives”.
 - This bill has been authorized through fiscal 2014 meaning that the congress will work to authorize a new bill for 2015 and beyond. It is therefore the perfect time to lobby local representatives for support of projects within the district.
 - <http://www.fhwa.dot.gov/map21/>
- Congestion Mitigation and Air Quality (CMAQ)
 - http://www.fhwa.dot.gov/environment/air_quality/cmaq/
- Safe Routes to Schools program (included within Transportation Alternatives under MAP-21)
 - Safe Routes to School (SRTS) programs aim to make walking and bicycling to school a safe and appealing form of transportation. Federal funding is available for activities that directly link to school, typically limited to K-8.
 - <http://www.saferoutesinfo.org/>
- Land and Water Conservation Fund
 - Federal appropriation to the National Park Service who distributes funds to the Michigan Department of Natural Resources for land acquisition and development of outdoor recreation facilities.
 - <http://www.nps.gov/lwcf/>

State Sources

- Michigan Transportation Fund (MTF) – PA51 of 1951
 - Section 10k of Act 51 (aka the gas tax) sets aside 1% of state transportation funds for non-motorized transportation.
 - Possible uses includes paved shoulders, bicycles lanes, shared use trails and/or sidewalks
 - <http://www.legislature.mi.gov/%28S%28qvongb45gjyhvk55x2xteo3u%29%29/mileg.aspx?page=getObject&objectname=mcl-247-660k>
- Michigan Natural Resources Trust Fund (MNRTF)
 - Provides funding for both the purchase of land for recreation or protection of land because of its environmental importance or scenic beauty, and the appropriate development of land for public outdoor recreation use.
 - https://michigan.michigan.gov/dnr/0,1607,7-153-58225_58301---,00.html
- Brownfield Revitalization Grants
 - The Brownfield Revitalization and Environmental Restoration Act provides funding for greenways and other “green” activities.
 - <http://www.michiganadvantage.org/Brownfield-Redevelopment/>
- METRO Act (PA 48 of 2002)
 - “Metropolitan Extension Telecommunication Rights-of-way Oversight Act”
 - In exchange for consistent permitting standards and processes across jurisdictional boundaries, telecommunications companies pay into a state fund that is distributed to communities for improvements within the rights-of-way.
 - Included in permissible uses are: engineering costs, blighted tree removal, dust control, street lighting, snow removal, unimproved area maintenance, sidewalks, bike paths, non-commercial telecom facilities, signage, equipment and trees.
 - http://www.michigan.gov/mpsc/0,1607,7-159-16372_22707---,00.html

Local Sources

- Southfield General Fund
 - Act 51 (gas tax revenue)
 - General fund
 - www.cityofsouthfield.com
- Millages, Bonds and Special Assessment Districts (SAD)
 - Parks & Recreation millage
- Tax Increment Financing Authority (TIFA) Districts
 - City Centre Advisory Board - <http://www.southfieldcitycentre.com/>
 - Southfield Downtown Development Authority (DDA) - www.southfielddda.com
- SMART
 - Improvements related to bus shelters and bus stops, including keywalks and ADA compliance.
 - www.smartbus.org

Private Sources

- Foundations
 - Kresge Foundation - <http://www.kresge.org/>
 - Hudson-Webber Foundation - <http://www.hudson-webber.org/about-2>
 - Community Foundation for Southeast Michigan - <http://cfsem.org/>
 - Southfield Community Foundation - <http://www.scfmi.org/>
 - Bikes Belong Coalition - www.bikesbelong.org
 - Other foundations
- Solicit, receive and manage charitable contributions from individuals, families, corporation, other foundations and non-profit organizations.
- Friends Groups and other Organizations

**Southfield
Downtown Development Authority**
Non-motorized and Transit Sub-Area Plan

Appendices

APPENDIX 1: Vehicle Traffic Counts

VEHICLE TRAFFIC COUNTS						
AADT	YEAR	DIR	FROM_RD	ON_ROAD	TO_RD	TYPE
41961	2009	WB	100 Feet West Of Northland Park	8 Mile	100 Feet West Of Northland Park	LINK
2734	2008	NB	From Nine Mile Rd-Cty Southfield	9 Mile/Southfield Ramp	From Nine Mile Rd-Cty Southfield	LINK
15577	2012	NB	8 Mile	Greenfield	9 Mile	LINK
15311	2012	SB	8 Mile	Greenfield	9 Mile	LINK
16046	2012	NB	9 Mile	Greenfield	10 Mile	LINK
16793	2012	SB	9 Mile	Greenfield	10 Mile	LINK
18087	2010	NB	Northland	Greenfield	J L Hudson	LINK
16235	2010	SB	Northland	Greenfield	J L Hudson	LINK
1556	2008	SEB	To M-10 Lodge Service Dr; S.E.Of M-39	M 10 E/M 10 S Service Drive Ramp	To M-10 Lodge Service Dr; S.E.Of M-39	LINK
3739	2008	NWB	To Northland Mall & Service Dr.	M 10 N/M 10 M 10 Service Drive Nb Ramp	To Northland Mall & Service Dr.	LINK
5840	2008	NWB	To Nb Southfield-Cty Southfield	M 10 N/M 39 N Ramp	To Nb Southfield-Cty Southfield	LINK
36009	2006	SEB	Just North Of M-39	M 10 S	Just North Of M-39	LINK
4221	2008	SEB	To 9 Mile Via Service Drive	M 10 S/9 Mile Ramp	To 9 Mile Via Service Drive	LINK
8245	2008	SEB	To Northland Dr & 8 Mile Rd	M 10 S/M 102 Ramp	To Northland Dr & 8 Mile Rd	LINK
20536	2008	SEB	To Southbound M-39(Southfield)	M 10 S/M 39 S Ramp	To Southbound M-39(Southfield)	LINK
4712	2008	NWB	From Nw Serv Rd M39-Cty Southfield	M 10 Service Drive Nb/M 10 N Ramp	From Nw Serv Rd M39-Cty Southfield	LINK
7483	2008	NWB	From Westbound 8 Mile Via Service Road	M 102 W/M 10 N Ramp	From Westbound 8 Mile Via Service Road	LINK
2188	2008	NB	100 Feet North Of M-102(8 Mile Road)	M 102/M 39 N Ramp	100 Feet North Of M-102(8 Mile Road)	LINK
46964	2006	NB	0.5 Mi N Of M102 (8 Mile Road)	M 39 N	0.5 Mi N Of M102 (8 Mile Road)	LINK
50323	2010	NB	Ramp From 8 Mile (M-102)	M 39 N	Ramp To M-10 Nb	LINK
21479	2008	NWB	From Nb Southfield-Cty Southfield	M 39 N/M 10 N Ramp	From Nb Southfield-Cty Southfield	LINK
26120	2008	SB	From South Bd. Southfield Rd	M 39 S	From South Bd. Southfield Rd	LINK
49054	2010	SB	Ramp To 8 Mile (M-102)	M 39 S	Ramp From M-10 Sb	LINK
7193	2008	SEB	From Southbound Southfield Road	M 39 S/M 10 S Ramp	From Southbound Southfield Road	LINK
5765	2008	SB	To Se Bd M-10 -Cty Southfield	M 39 S/M 10 S Ramp	To Se Bd M-10 -Cty Southfield	LINK
2983	2008	SB	To M-102	M 39 S/M 102 Ramp (Exit 15)	To M-102	LINK
42827	2010	NB	Ramp From 8 Mile (M-102)	M-10	Ramp To M-39 Nb	LINK
39519	2010	SB	Ramp From J L Hudson	M-10	Ramp To 8 Mile (M-102)	LINK
2478	2008	SEB	0.2 Mile N.W.Of M-102 Eight Mile	Northland Mall/M 10 S Ramp	0.2 Mile N.W.Of M-102 Eight Mile	LINK
10731	2004	SEB	100 Ft Nw Of Northland Dr	Northwestern	100 Ft Nw Of Northland Dr	LINK
3293	2004	NWB	100ft S. Of Northland	Northwestern	100ft S. Of Northland	LINK
9965	2004	NWB	100ft Se Of JI Hudson Dr	Northwestern	100ft Se Of JI Hudson Dr	LINK
7302	2010	SB	J L Hudson/M-10 Sb Ramp	Northwestern	M-10 Sb/8 Mile (M-102) Ramp	LINK
9887	2010	NB	M-10 Nb/J L Hudson Ramp	Northwestern	J L Hudson	LINK
4867	2010	NB	8 Mile (M-102)/M-39 Nb Ramp	Southfield	Southfield Service Dr Crossover	LINK
6498	2010	SB	M-39 Sb/8 Mile (M-102) Ramp	Southfield	Southfield Service Dr Crossover	LINK
30379	2012	NB	Mt. Vernon	Southfield	10 Mile	LINK
30648	2012	SB	Mt. Vernon	Southfield	10 Mile	LINK
5478	2010	SB	Between Eb And Wb M-102 8 Mile (In Detroit)	Southfield Service Drive	Between Eb And Wb M-102 8 Mile (In Detroit)	LINK
Source: SEMCOG, August 23, 2012						
Hubbell, Roth & Clark, January 29, 2013						

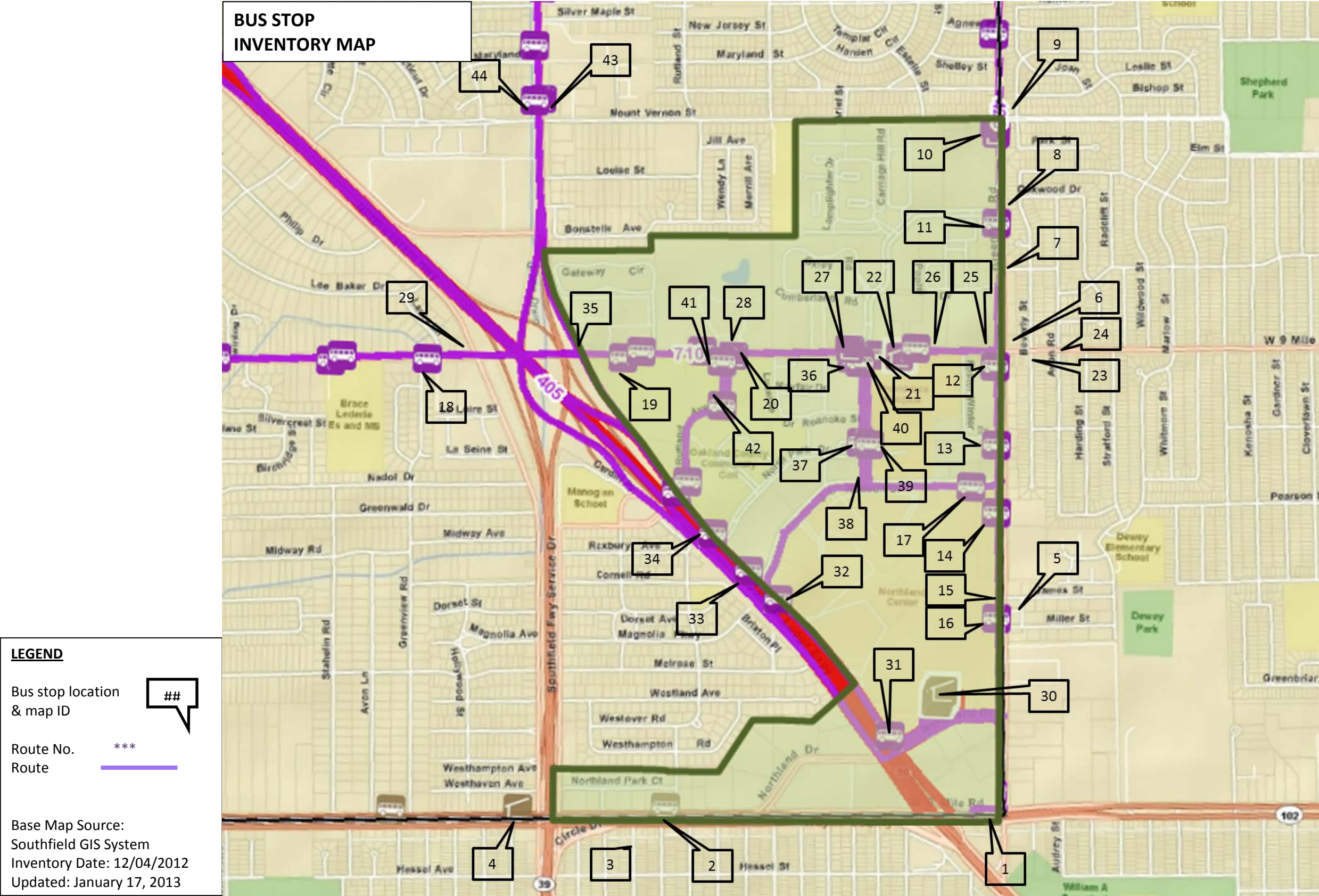
**APPENDIX 2: Transit Data &
Inventory**

SMART TRANSIT DATA												
Map No.	Route No.	Route Name	Stop No.	Stop Id	Street	Cross St	Ons	Offs	Total	Load	Long	Lat
30	4000	Southfield NB	5	557	NORTHLAND	MALL	114	0	114	114	-83.20390	42.44831
31	4000	Southfield NB	10	11137	LODGE SERVICE	NORTHLAND DR	1	0	1	115	-83.20536	42.44718
32	4000	Southfield NB	15	10817	LODGE SERVICE DR	J L HUDSON DR	0	0	0	115	-83.21024	42.45139
39	4000	Southfield NB	20	23129	PROVEDENCE	N PARK DR	0	1	1	114	-83.20656	42.45615
27	4000	Southfield NB	25	558	9 MILE	PROVIDENCE DR	5	1	6	118	-83.20743	42.45924
42	4000	Southfield NB	30	22219	OCC	SOUTHFIELD	2	2	4	118	-83.21312	42.45751
18	4001	Southfield SB	250	20502	9 MILE RD	GREENVIEW	1	0	1	101	-83.22530	42.45861
42	4001	Southfield SB	255	22219	OCC	SOUTHFIELD	0	0	0	101	-83.21312	42.45751
36	4001	Southfield SB	260	577	PROVIDENCE	9 MILE RD	1	4	5	98	-83.20702	42.45884
37	4001	Southfield SB	265	20505	PROVIDENCE	NORTH PARK DR	0	0	0	98	-83.20690	42.45636
17	4001	Southfield SB	270	11678	JL HUDSON DR	GREENFIELD	1	0	1	99	-83.20224	42.45503
14	4001	Southfield SB	275	20566	GREENFIELD	JL HUDSON DR	0	0	0	99	-83.20113	42.45426
16	4001	Southfield SB	280	11687	GREENFIELD	X FROM MILLER	0	5	5	94	-83.20100	42.45093
30	4001	Southfield SB	285	557	NORTHLAND	MALL	0	94	94	0	-83.20390	42.44831
30	4050	Northwestern EB	280	557	NORTHLAND	MALL	0	188	188	0	-83.20390	42.44831
30	4051	Northwestern WB	5	557	NORTHLAND	MALL	233	0	233	233	-83.20390	42.44831
31	4051	Northwestern WB	10	11137	LODGE SERVICE	NORTHLAND DR	7	1	8	239	-83.20536	42.44718
32	4051	Northwestern WB	15	10817	LODGE SERVICE DR	J L HUDSON DR	3	0	3	242	-83.21024	42.45139
39	4051	Northwestern WB	20	11140	LODGE SERVICE	JL HUDSON DR	0	1	1	241	-83.21150	42.45227
27	4051	Northwestern WB	25	11688	NORTHWESTERN	NORTH PARK DR.	1	0	1	242	-83.21308	42.45338
42	4051	Northwestern WB	30	11141	NORTHWESTERN	RUTLAND	0	1	1	241	-83.21463	42.45467
30	4150	Southfield NB	105	557	NORTHLAND	MALL	165	47	212	268	-83.20390	42.44831
31	4150	Southfield NB	110	11137	LODGE SERVICE	NORTHLAND DR	3	0	3	271	-83.20536	42.44718
32	4150	Southfield NB	115	10817	LODGE SERVICE DR	J L HUDSON DR	2	3	5	270	-83.21024	42.45139
-	4150	Southfield NB	120	11686	JL HUDSON DR	GREENFIELD	2	0	2	272	-83.20164	42.45504
5	4150	Southfield NB	125	19868	GREENFIELD	XFOSTER WINTER	3	0	3	275	-83.20084	42.45681
6	4150	Southfield NB	130	653	GREENFIELD	9 MILE	19	19	38	275	-83.20098	42.46005
8	4150	Southfield NB	135	19871	GREENFIELD	XPROVIDENCE DR	6	4	10	277	-83.20113	42.46388
9	4150	Southfield NB	140	19872	GREENFIELD	OAK PARK BLVD	6	6	12	277	-83.20126	42.46687
10	4151	Southfield SB	160	20627	GREENFIELD	MT VERNON RD	11	3	14	300	-83.20155	42.46608
11	4151	Southfield SB	165	20564	GREENFIELD	PROVIDENCE DR	16	14	30	302	-83.20142	42.46329
12	4151	Southfield SB	170	670	GREENFIELD	9 MILE RD.	10	17	27	295	-83.20132	42.45881
15	4151	Southfield SB	175	11139	GREENFIELD	FOSTER WINTER	0	1	1	294	-83.20122	42.45636
14	4151	Southfield SB	180	20566	GREENFIELD	JL HUDSON DR	2	4	6	292	-83.20113	42.45426
16	4151	Southfield SB	185	11687	GREENFIELD	X FROM MILLER	0	4	4	288	-83.20100	42.45093
30	4151	Southfield SB	190	557	NORTHLAND	MALL	55	156	211	187	-83.20390	42.44831

SMART TRANSIT DATA												
Map No.	Route No.	Route Name	Stop No.	Stop Id	Street	Cross St	Ons	Offs	Total	Load	Long	Lat
30	4200	Southfield NB	105	557	NORTHLAND	MALL	124	59	183	210	-83.20390	42.44831
31	4200	Southfield NB	110	11137	LODGE SERVICE	NORTHLAND DR	1	0	1	211	-83.20536	42.44718
32	4200	Southfield NB	115	10817	LODGE SERVICE DR	J L HUDSON DR	0	0	0	211	-83.21024	42.45139
39	4200	Southfield NB	120	11140	LODGE SERVICE	JL HUDSON DR	1	0	1	212	-83.21150	42.45227
34	4200	Southfield NB	125	11688	NORTHWESTERN	NORTH PARK DR.	0	0	0	212	-83.21308	42.45338
42	4200	Southfield NB	130	11141	NORTHWESTERN	RUTLAND	1	0	1	213	-83.21463	42.45467
35	4200	Southfield NB	135	11142	LODGE SERVICE	9 MILE RD	1	6	7	208	-83.21890	42.45911
43	4201	Southfield SB	160	20583	SOUTHFIELD	MT VERNON	2	2	4	133	-83.22096	42.46585
30	4201	Southfield SB	165	557	NORTHLAND	MALL	31	83	114	81	-83.20390	42.44831
30	7100	Nine Mile EB	5	557	NORTHLAND	MALL	204	0	204	204	-83.20390	42.44831
31	7100	Nine Mile EB	10	11137	LODGE SERVICE	NORTHLAND DR	4	0	4	208	-83.20536	42.44718
32	7100	Nine Mile EB	15	10817	LODGE SERVICE DR	J L HUDSON DR	2	0	2	210	-83.21024	42.45139
39	7100	Nine Mile EB	20	1091	PROVIDENCE	HOSPITAL	18	0	18	228	-83.20629	42.45908
27	7100	Nine Mile EB	25	1092	9 MILE RD.	GREENFIELD	39	4	43	263	-83.20036	42.45929
23	7100	Nine Mile EB	30	19827	9 MILE RD	AVON	9	1	10	271	-83.19847	42.45933
24	7101	Nine Mile WB	450	11585	9 MILE RD	AVON NS	2	15	17	277	-83.19832	42.45951
25	7101	Nine Mile WB	455	1113	9 MILE RD.	GREENFIELD	3	16	19	264	-83.20177	42.45938
26	7101	Nine Mile WB	460	20373	9 MILE RD	(UNDER OVERPAS	2	6	8	260	-83.20469	42.45931
36	7101	Nine Mile WB	465	1115	PROVIDENCE	HOSPITAL	4	18	22	246	-83.20702	42.45880
37	7101	Nine Mile WB	470	20380	PROVIDENCE DR	NORTH PARK DR	1	21	22	226	-83.20692	42.45633
17	7101	Nine Mile WB	475	11656	JL HUDSON DR	GREENFIELD	0	6	6	220	-83.20166	42.45501
14	7101	Nine Mile WB	480	20566	GREENFIELD	JL HUDSON DR	0	10	10	210	-83.20113	42.45426
16	7101	Nine Mile WB	485	11687	GREENFIELD	X FROM MILLER	1	6	7	205	-83.20100	42.45093
30	7101	Nine Mile WB	490	557	NORTHLAND	MALL	0	205	205	0	-83.20390	42.44831
30	8510	W Bloomfield OB	125	557	NORTHLAND	MALL	4	69	73	105	-83.20390	42.44831
31	8510	W Bloomfield OB	130	11137	LODGE SERVICE	NORTHLAND DR	0	0	0	105	-83.20536	42.44718
32	8510	W Bloomfield OB	135	10817	LODGE SERVICE DR	J L HUDSON DR	0	0	0	105	-83.21024	42.45139
39	8510	W Bloomfield OB	140	11140	LODGE SERVICE	JL HUDSON DR	0	0	0	105	-83.21150	42.45227
34	8510	W Bloomfield OB	145	11688	NORTHWESTERN	NORTH PARK DR.	0	0	0	105	-83.21308	42.45338
42	8510	W Bloomfield OB	150	11141	NORTHWESTERN	RUTLAND	0	0	0	105	-83.21463	42.45467
30	8511	W Bloomfield IB	160	557	NORTHLAND	MALL	70	1	71	173	-83.20390	42.44831
Source:		SMART, November, 2012										



BUS STOP INVENTORY															
No.	Route	Juris	Road Name	Direction	Location - 1	Location - 2	Sign	Key Walk	ADA	Pad	Shelter	Bench	Bike Rack	Trash Can	Remarks
1	17	DDOT	Eight Mile Road	Westbound	West	Greenfield	Y								schedule
2	17, 46, 60	DDOT	Eight Mile Road	Westbound	West	Rutland	Y								
3	46, 60	DDOT	Eight Mile Road	Westbound	At	17380 W Eight Mile	N								not located in field
4	17, 46, 60	DDOT	Eight Mile Road	Westbound	West	Southfield	Y			Y	Y	Y		Y	
5	415	SMART	Greenfield	Northbound	At	22000 Greenfield	Y					Y			
6	415	SMART	Greenfield	Northbound	North	Nine Mile Road	Y								
7	415	SMART	Greenfield	Northbound	North	Kenwood	Y					Y			bench offset from bus stop to north
8	415	SMART	Greenfield	Northbound	North	Providence Drive	Y	-	-	-	-	-	-	-	
9	415	SMART	Greenfield	Northbound	North	Mt Vernon / Oak Park	Y	-	-	-	-	-	-	-	
10	415	SMART	Greenfield	Southbound	South	Mt Vernon / Oak Park	Y	Y	Y			Y		Y	
11	415	SMART	Greenfield	Southbound	South	Providence Drive	Y	Y	Y					Y	
12	415, 16	SMART / DDOT	Greenfield	Southbound	South	Nine Mile Road	Y	Y	Y					Y	Shared stop
13	415, 16	SMART / DDOT	Greenfield	Southbound	North	J L Hudson Drive	Y	Y	Y			Y		Y	Shared stop
14	400, 405, 415, 420, 16	SMART / DDOT	Greenfield	Southbound	South	J L Hudson Drive	Y	Y	Y						Shared stop
15	400, 405, 415, 420	-	Greenfield	Southbound	North	Northland Mall Entrance	N					Y			un-signed turn-out
16	400, 405, 415, 420	SMART	Greenfield	Southbound	South	Northland Mall Entrance	Y							Y	
17	405	SMART	J L Hudson Drive	Eastbound	West	Greenfield	Y								no mainline sidewalk
18	400	SMART	Nine Mile Road	Eastbound	East	Greenview	Y	-	-	-	-	-	-	-	
19	400	SMART	Nine Mile Road	Eastbound	At	17515 W Nine Mile	Y	-	-	-	-	-	-	-	
20	400	SMART	Nine Mile Road	Eastbound	East	Rutland	Y	Y	Y	-	-	Y	-	Y	
21	400	SMART	Nine Mile Road	Eastbound	East	Providence Drive	Y	Y	Y	-	-	-	-	Y	sign mounted on light pole
22	16	DDOT	Nine Mile Road	Eastbound	East	Providence Drive	N	-	-	Y	Y	-	-	Y	DDOT signage missing, not a shared stop
23	710	SMART	Nine Mile Road	Eastbound	East	Beverly	Y	Y	Y	Y	Y	Y	-	Y	DDOT signage missing, not a shared stop
24	710	SMART	Nine Mile Road	Westbound	East	Avon	Y	y	-	y	-	y	-	-	schedule
25	710	SMART	Nine Mile Road	Westbound	West	Greenfield	Y	Y	Y	-	-	Y	-	-	schedule
26	710	SMART	Nine Mile Road	Westbound	At	Pedestrian bridge	N	y	y	-	-	y	-	-	
27	400	SMART	Nine Mile Road	Westbound	West	Providence Drive	Y	Y	Y	-	-	Y	-	Y	
28	400	SMART	Nine Mile Road	Westbound	East	WJBK entrance drive	N	y	y	-	-	y	-	Y	schedule
29	400	SMART	Nine Mile Road	Westbound	west	Southfield	Y	-	-	-	-	-	-	-	
30	400, 405, 415, 420, 710, 851, 16, 17, 22, 46, 60	SMART / DDOT	Northland Transit Center		At	Northland Mall	N				Y				Four (4) shelters, taxi stand, lighted
31	405	SMART	Northwestern	Northbound	North	Northland Drive	Y								schedule, mounted on light pole
32	405	SMART	Northwestern	Northbound	South	J L Hudson Drive	Y	Y	N	Y					major grade elevation change
33	405	SMART	Northwestern	Northbound	North	J L Hudson Drive	Y	y	?						
34	405, 16	SMART / DDOT	Northwestern	Northbound	North	North Park Drive	Y	Y	Y						
35	405	SMART	Northwestern	Northbound	North	Nine Mile Road	Y								asphalt splash strip, no walks
36	16	DDOT	Providence Drive	Northbound	North	J L Hudson Drive	Y	-	-	-	-	-	-	-	
37	400, 710	SMART	Providence Drive	Northbound	North	North Park Drive	Y	-	-	-	-	-	-	-	
38	400, 710	SMART	Providence Drive	Northbound	South	Nine Mile Road	N	-	-	-	-	-	-	-	apparent stop
39	400, 710	SMART	Providence Drive	Southbound	South	Nine Mile Road	Y	Y	Y	Y		Y		Y	schedule
40	400, 710	SMART	Providence Drive	Southbound	North	North Park Drive	Y	Y	Y	Y		Y			schedule
41	400	SMART	Rutland Drive	Southbound	South	Nine Mile Road	Y								
42	400	SMART	Rutland Drive	Southbound	At	OCC-Southfield	Y								walk contiguous w/ curb, schedule
43	420	SMART	Southfield Road	Northbound	North	Mt. Vernon	Y	Y	?	Y					
44	420	SMART	Southfield Road	Southbound	North	Mt Vernon	Y								large lawn area w/o walk, sign on light pole
Bus stop inventory performed by Giffels Webster															
Original: 12/4/2012															
Updated: 1/17/2013															



APPENDIX 3: On-line Public Survey – Complete Data

Question #1: What sector of the city do you live in?		
Answer Options	Response Percent	Response Count
DDA	0.0%	0
Sector A	33.3%	1
Sector B	0.0%	0
Sector C	33.3%	1
Sector D	33.3%	1
Sector E	0.0%	0
Sector F	0.0%	0
Sector G	0.0%	0
Sector H	0.0%	0
I do not live in the city (please enter city of residence)		4
	ANSWERED	3
	SKIPPED	6

Question #2: What sector of the city do you work in?		
Answer Options	Response Percent	Response Count
DDA	33.3%	3
Sector A	0.0%	0
Sector B	0.0%	0
Sector C	0.0%	0
Sector D	0.0%	0
Sector E	33.3%	3
Sector F	22.2%	2
Sector G	0.0%	0
Sector H	0.0%	0
I'm currently unemployed	11.1%	1
I'm a student	0.0%	0
I do not work in the city (please specify city of employment)		0
	ANSWERED	9
	SKIPPED	0

Question #3: How often do you take public transit?		
Answer Options	Response Percent	Response Count
Daily	0.0%	0
Weekly	0.0%	0
Monthly	0.0%	0
A few times a year	0.0%	0
Never	100.0%	7
	ANSWERED	7
	SKIPPED	2

Question #4: Why do you take public transit?		
Answer Options	Response Percent	Response Count
Work (to/from)	0.0%	0
School (to/from)	0.0%	0
Shopping (to/from)	0.0%	0
Recreation (to/from)	0.0%	0
	ANSWERED	0
	SKIPPED	9

Question #5: When do you usually take public transit?		
Answer Options	Response Percent	Response Count
Morning	0.0%	0
Lunch	0.0%	0
Afternoon	0.0%	0
Evening	0.0%	0
Night	0.0%	0
	ANSWERED	0
	SKIPPED	9

Question #6: How often do you use the Northland Mall transit center?		
Answer Options	Response Percent	Response Count
Daily	0.0%	0
Weekly	0.0%	0
Monthly	0.0%	0
A few times a year	0.0%	0
Never	100.0%	6
	ANSWERED	6
	SKIPPED	3

Question #7: When using the transit center, what is your most common destination?		
Answer Options	Response Percent	Response Count
Northland Mall/Target	0.0%	0
Providence Hospital	0.0%	0
Oakland Community College	0.0%	0
Other shopping	0.0%	0
Transferring to another bus	0.0%	0
	ANSWERED	0
	SKIPPED	9

Question #8: How do you usually get to the transit center?		
Answer Options	Response Percent	Response Count
Walk	0.0%	0
Bike	0.0%	0
Drive	100.0%	1
Get dropped off	0.0%	0
	ANSWERED	1
	SKIPPED	8

Question #9: If the City received extra funding for public transit, which of the following do you think is the		
Answer Options	Response Percent	Response Count
Create more routes	20.0%	1
Improve transit stops/shelters	60.0%	3
Improve transit vehicles	20.0%	1
Other (please specify)		0
ANSWERED		5
SKIPPED		4

Question #10: How often do you walk within the DDA?		
Answer Options	Response Percent	Response Count
Daily	14.3%	1
Weekly	28.6%	2
Monthly	0.0%	0
A few times a year	14.3%	1
Never	42.9%	3
ANSWERED		7
SKIPPED		2

Question #11: Why do you walk?		
Answer Options	Response Percent	Response Count
Work (to/from)	25.0%	1
Lunch/Dining	0.0%	0
School (to/from)	0.0%	0
Shopping	0.0%	0
Recreation/exercise	75.0%	3
Social (e.g. with a friend)	0.0%	0
ANSWERED		4
SKIPPED		5

Question #12: When do you usually walk?		
Answer Options	Response Percent	Response Count
Morning	25.0%	1
Lunch	75.0%	3
Afternoon	25.0%	1
Evening	0.0%	0
Night	0.0%	0
ANSWERED		4
SKIPPED		5

Question #13: How often do you bike within the DDA district?		
Answer Options	Response Percent	Response Count
Daily	0.0%	0
Weekly	14.3%	1
Monthly	0.0%	0
A few times a year	0.0%	0
Never	85.7%	6
ANSWERED		7
SKIPPED		2

Question #14: Why do you bike?		
Answer Options	Response Percent	Response Count
Work (to/from)	100.0%	1
Lunch/Dining	0.0%	0
School (to/from)	0.0%	0
Shopping	0.0%	0
Recreation/exercise	100.0%	1
Social (e.g. with a friend)	0.0%	0
ANSWERED		1
SKIPPED		8

Question #15: When do you usually bike?		
Answer Options	Response Percent	Response Count
Morning	100.0%	1
Lunch	0.0%	0
Afternoon	100.0%	1
Evening	100.0%	1
Night	0.0%	0
ANSWERED		1
SKIPPED		8

Question #16: What is your age?		
Answer Options	Response Percent	Response Count
18 and Under	0.0%	0
19-34	0.0%	0
35-54	42.9%	3
55-64	28.6%	2
65+	28.6%	2
ANSWERED		7
SKIPPED		2

Question #17: Do you have children?		
Answer Options	Response Percent	Response Count
Yes	85.7%	6
No	14.3%	1
ANSWERED		7
SKIPPED		2

APPENDIX 4: Sidewalk Threshold Ratings

1. Sidewalks non-existent



2. Sidewalks not present but a worn path is noticeable showing the need for a sidewalk.



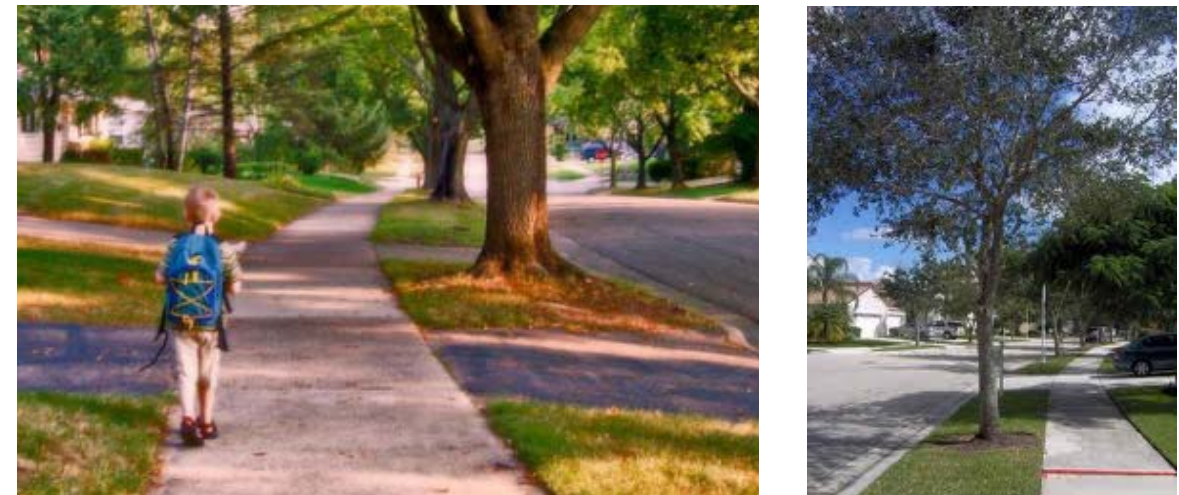
3. Sidewalks present. Sidewalks less than 5ft in width and/or in very poor conditions.



4. Sidewalks are available and in excellent condition. No sidewalk amenities or tree cover is present.



5. Sidewalks are in excellent condition and have tree cover and other amenities throughout the area. Also contains a barrier of some kind between motorists and pedestrians.



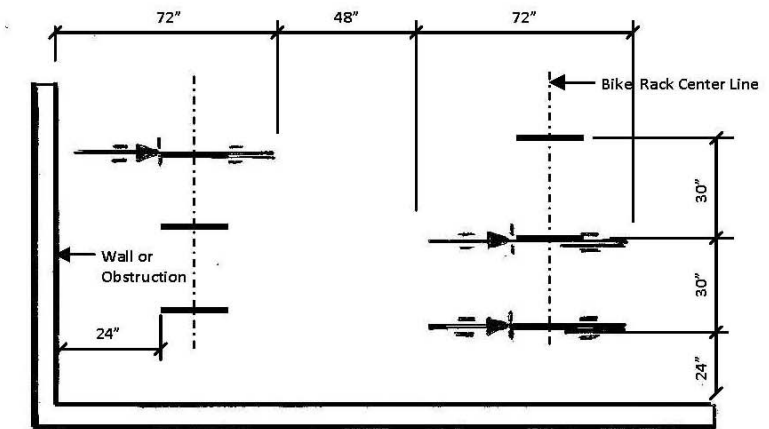
CITY OF SOUTHFIELD BIKE RACK DETAILS

Article 4 Section 5.29 (12), Chapter #45 Zoning Ordinance

Bike Racks and Bike Parking Credit: To promote non-motorized transit and to reduce impervious surfaces, the City is encouraging alternative means of transportation. The lack of a secure bike parking space keeps many people from using their bikes, thus a minimum of 4 bicycle parking spaces shall be provided for each non-residential and multi-family development.

For every bike rack which accommodates four (4) bicycles, one off street parking space, up to a maximum of five (5%) percent of the total required parking may be credited by the City Planner. Bicycle parking racks shall be located close to the building entrance, and shall be separated from vehicle parking areas to minimize motor vehicle damage to bicycles. Bicycle racks shall be securely anchored to the supporting surface, and shall be at least three (3) feet in height and able to support a locked bicycle in an upright position. Additional accommodations for bicyclists that may be considered & include, but are not limited to: bicycle lockers, employee shower facilities and dressing areas for employees. (amended: Ordinance No. 1587-11/6/2011)

All Dimensions Are
Recommended
Minimums



BIKE RACK PLAN VIEW

Not to Scale



BIKE RACK EXAMPLES

For Further Information, Contact the City of Southfield Planning Department at (248) 796-4150

www.cityofsouthfield.com

Southfield Downtown Development Authority Non-motorized and Transit Sub-Area Plan

References

References

American Association of State Highway and Transportation Officials. *Guide for the Development of Bicycle Facilities, 2012 - Fourth Edition*. Washington, D.C.: AASHTO, 2012. Print.

City of Southfield. *Comprehensive Master Plan – City of Southfield*. Michigan: Southfield, 2009. Print.

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studio (Ci) / Lawrence Technological University. *Southfield City Centre Project*. Michigan: Southfield, 2012. Web.

End Notes

ⁱ U.S. Department of Commerce, Census Bureau, State & County Quick Facts for Southfield (city), Michigan. URL: <http://quickfacts.census.gov/qfd/states/26/2674900.html>

ⁱⁱ U.S. Department of Transportation, Federal Highway Administration, 2009 National Household Travel Survey. URL: <http://nhts.ornl.gov>.

ⁱⁱⁱ “The Real Cost of Car Ownership,” *Bikes at Work*. 17 Sep. 2012 <<http://www.bikesatwork.com/blog/the-real-cost-of-car-ownership>>

^{iv} Centers for Disease Control and Prevention, “How much physical activity do adults need?”, <http://www.cdc.gov/physicalactivity/everyone/guidelines/adults.html>

^v State of Michigan, Michigan State Police, Michigan Vehicle Code. URL: <http://www.michigan.gov/msp/0,1607,7-123--15967--,00.html>

^{vi} U.S. Department of Transportation, Federal Highway Administration, FHWA-RD-92-073: Selecting Roadway Design Treatments to Accommodate Bicycles, URL: http://safety.fhwa.dot.gov/ped_bike/docs/select.pdf

^{vii} “FDOT Implementing Sharrows in North Florida,” *Commute Orlando*. 28 Feb. 2012 <http://commuteorlando.com/wordpress/2012/02/28/fdot-implementing-sharrows-in-north-florida>

^{viii} U.S. Department of Transportation, Federal Highway Administration, Synthesis of Safety Research Related to Speed and Speed Management. URL: <http://www.fhwa.dot.gov/publications/research/safety/98154/>

^{ix} City of Southfield, Michigan. Chapter #45 Zoning Chapter. URL: <https://www.cityofsouthfield.com/Portals/0/docs/Planning/ZONING%20ORDINANCE.pdf>

^x U.S. Department of Transportation, Federal Transit Administration, Transit Oriented Development. URL: http://www.fta.dot.gov/12347_6932.html

^{xi} American Heart Association, Walk this Way! With AHA Walking Paths. URL: <http://www.heart.org/HEARTORG/>

^{xii} U.S. Department of Transportation, Federal Highway Administration, National Household Travel Survey (NHTS). URL: <http://www.fhwa.dot.gov/policyinformation/nhts.cfm>

^{xiii} Smart Growth America, National Complete Streets Coalition, Change Travel Patterns. URL: <http://www.smartgrowthamerica.org/complete-streets>