Southfield City Centre Non-Motorized and Transit Sub-Area Plan

Prepared by:

giffels webster

Southfield City Centre Non-Motorized and Transit Sub-Area Plan

City of Southfield, Michigan

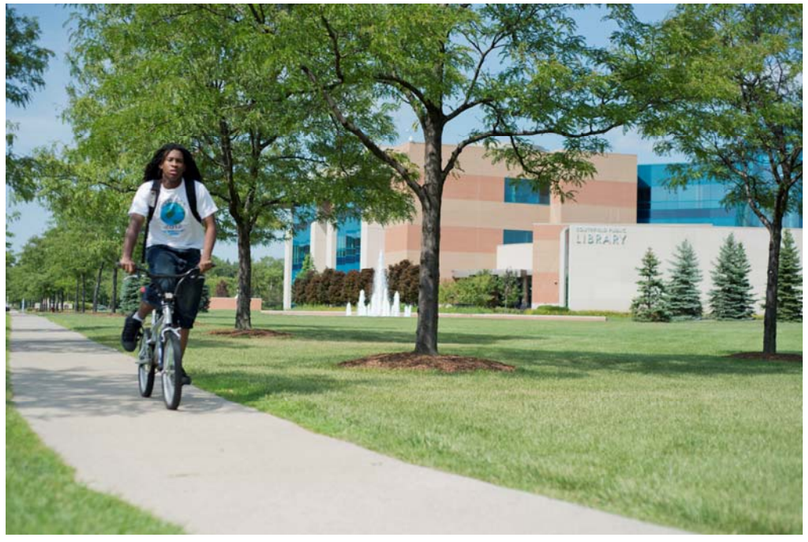

Table of Contents

Southfield City Centre
Non-Motorized and Transit Sub-Area Plan

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Southfield City Centre
Non-Motorized and Transit Sub-Area Plan

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Executive Summary

Southfield City Centre
Non-Motorized and Transit Sub-Area Plan

The goal of the Southfield City Centre is: "To create a vibrant, pedestrian friendly 24/7 mixed-use environment within the Southfield City Centre" 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 central core of the City, Southfield created the Southfield City Centre district in 1992. At the heart of the Southfield City Centre mission is "the reinvention of the district into a walkable, pedestrian-friendly environment that allows office workers, residents, students and visitors in the community to spend their days in an environment designed around their interests and lifestyles." To assist in reaching the stated goal, Southfield 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 Southfield 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 staff and Lawrence Technological University's (LTU) Transit Authority (www.ltu.edu) and studio [Ci].

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 Southfield City Centre.

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.

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

- Pedestrian Connections
  - Infill of sidewalk gaps within existing sidewalk network
  - Additional walking trails
  - ADA Compliance for intersection ramps
  - Mid-block pedestrian crossings with refuge islands and pedestrian signals
  - Aesthetics and amenity improvements, including lighting, landscaping, and benches.
- Bicyclists
  - Northwestern connector to MDOT/Greyhound and the DDA district
  - Bicycle parking as part of new developments
  - Bike Share program at Lawrence Technological University
  - Shared use pathways along Evergreen Road and Civic Center Drive
- Transit
  - 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.

Introduction

Southfield City Centre
Non-Motorized and Transit Sub-Area Plan

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.

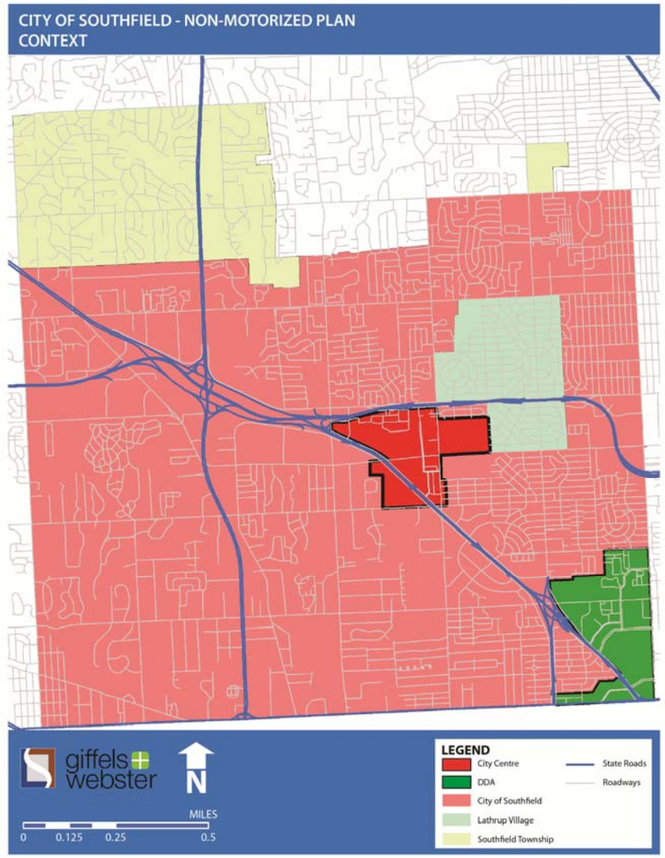
In the last few years, and as noted in the *2009 Comprehensive Master Plan*, City leaders realized the City needs to continue to evolve to retain its competitive advantage and to remain a "sustainable first-tier city". One example is to redirect the focus from a safe and convenient place to drive to a place that offers a multi-modal 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 Census[i], with a daytime population of approximately 175,000. The Southfield City Centre area alone has more than 13,000 daytime jobs. Lawrence Technological University is also within the Southfield City Centre area and boasts over 4,000 students, many of which are now starting to live on campus or in the district. 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 Southfield City Centre area is the first step toward achieving this goal.



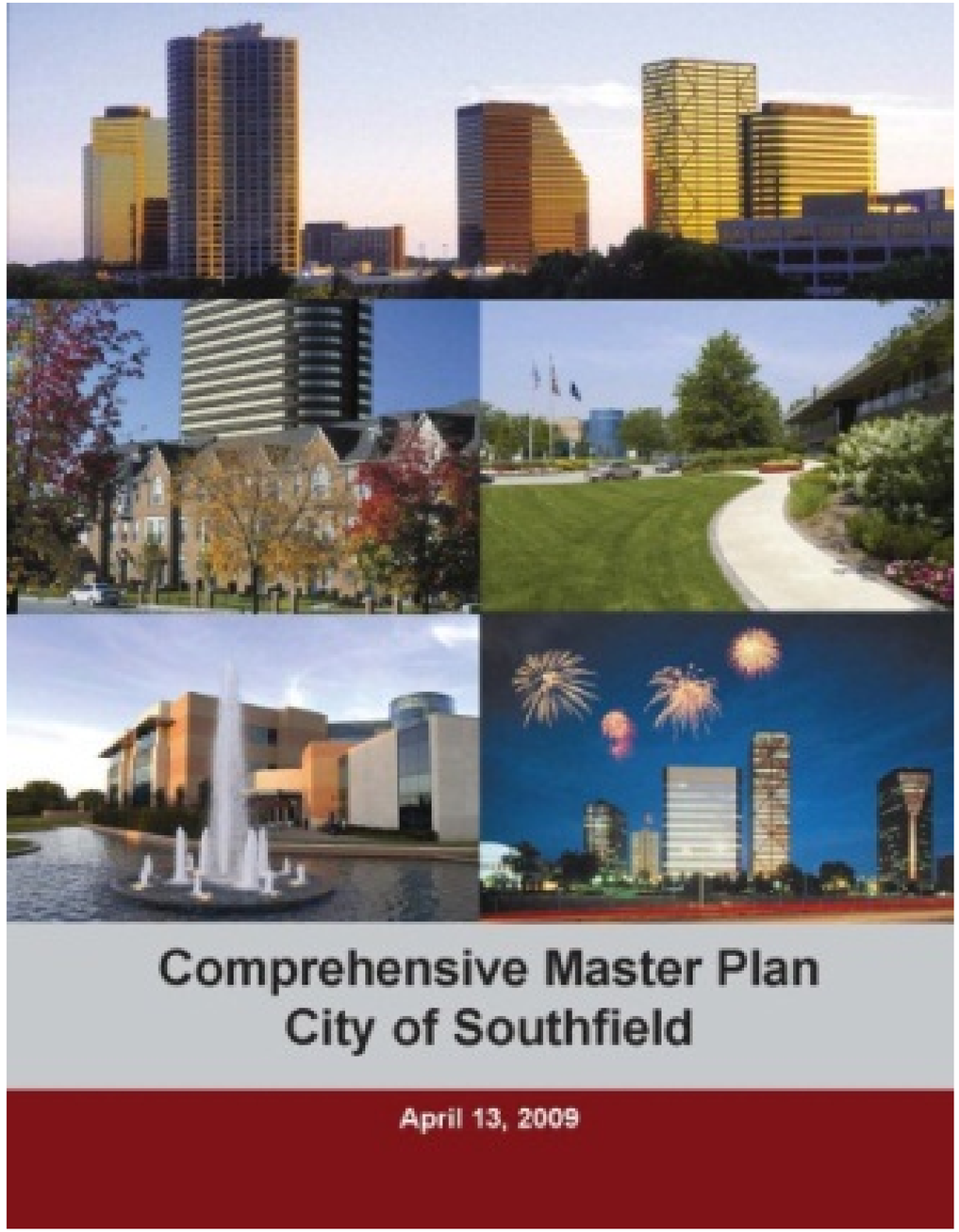
This sub-area plan for the Southfield City Centre District is based on the efforts of the 2009 *Comprehensive Master Plan* and the 2012 *Non-Motorized Pathway & Public Transit Plan*. These plans were prepared by the City in alignment with the tenets of Complete Streets, and whose requirements have been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

Data Gathering

Southfield City Centre
Non-Motorized and Transit Sub-Area Plan

As noted in the Introduction, the City already has several documents that form a framework for this non-motorized evaluation that concentrates on the Southfield City Centre. 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".

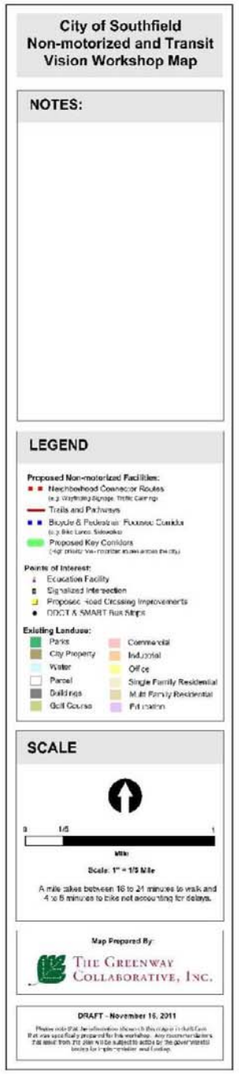


Southfield City Centre District (studio [Ci] @ Lawrence Technological University CoAD): Completed in 2012 under a professional design contract between the City of Southfield Planning Department and studio [Ci] at Lawrence Technological University, the Southfield City Centre project promotes a pedestrian and bicycle friendly mixed-use environment. http://studio-ci.net/

City of Southfield Non-Motorized Pathway and Public 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.

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 Roads.
Image Credit: Eight Mile Boulevard Association (http://eightmile.org/).

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



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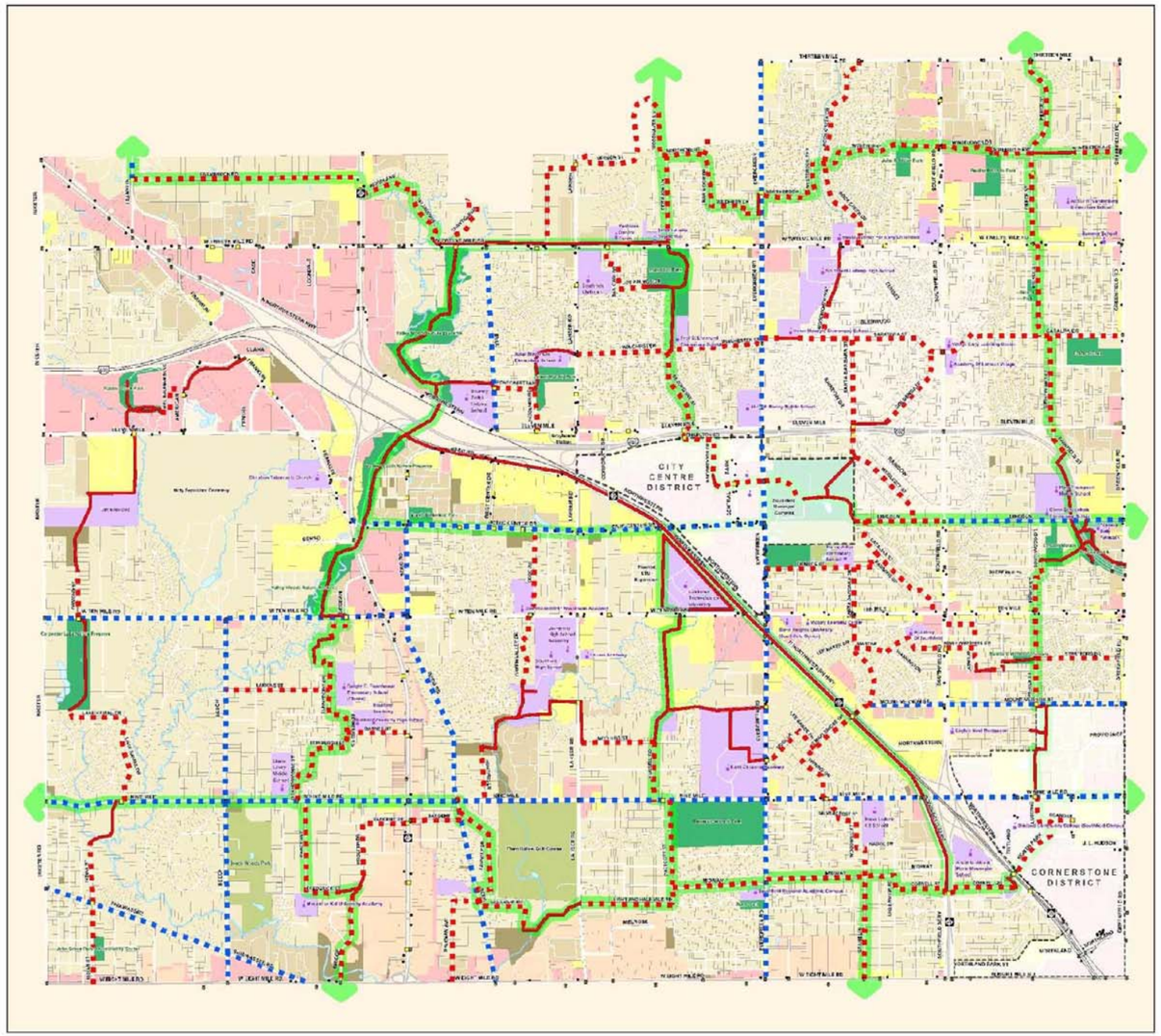
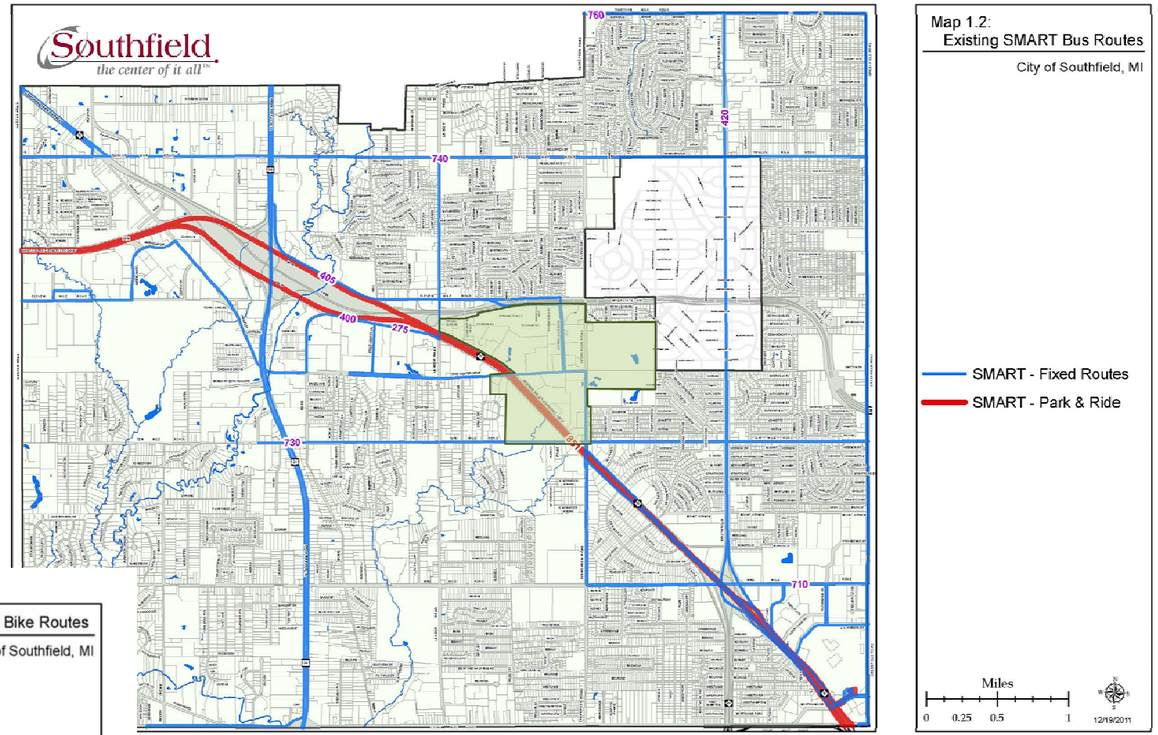
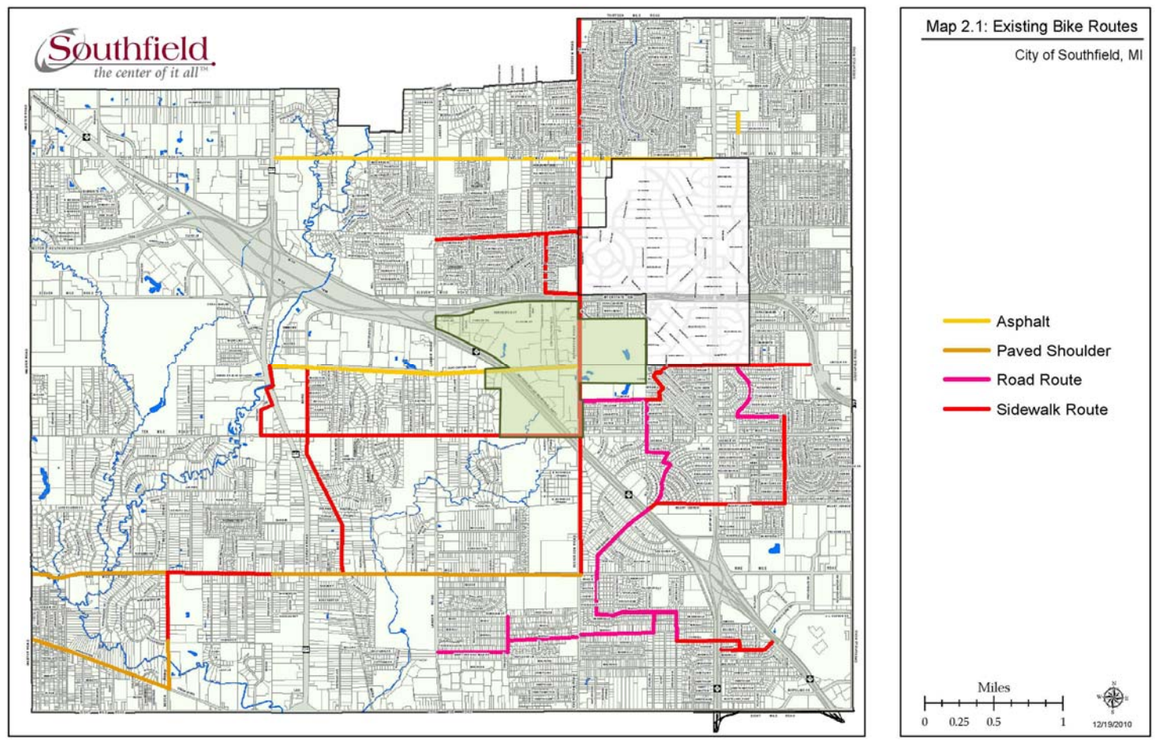


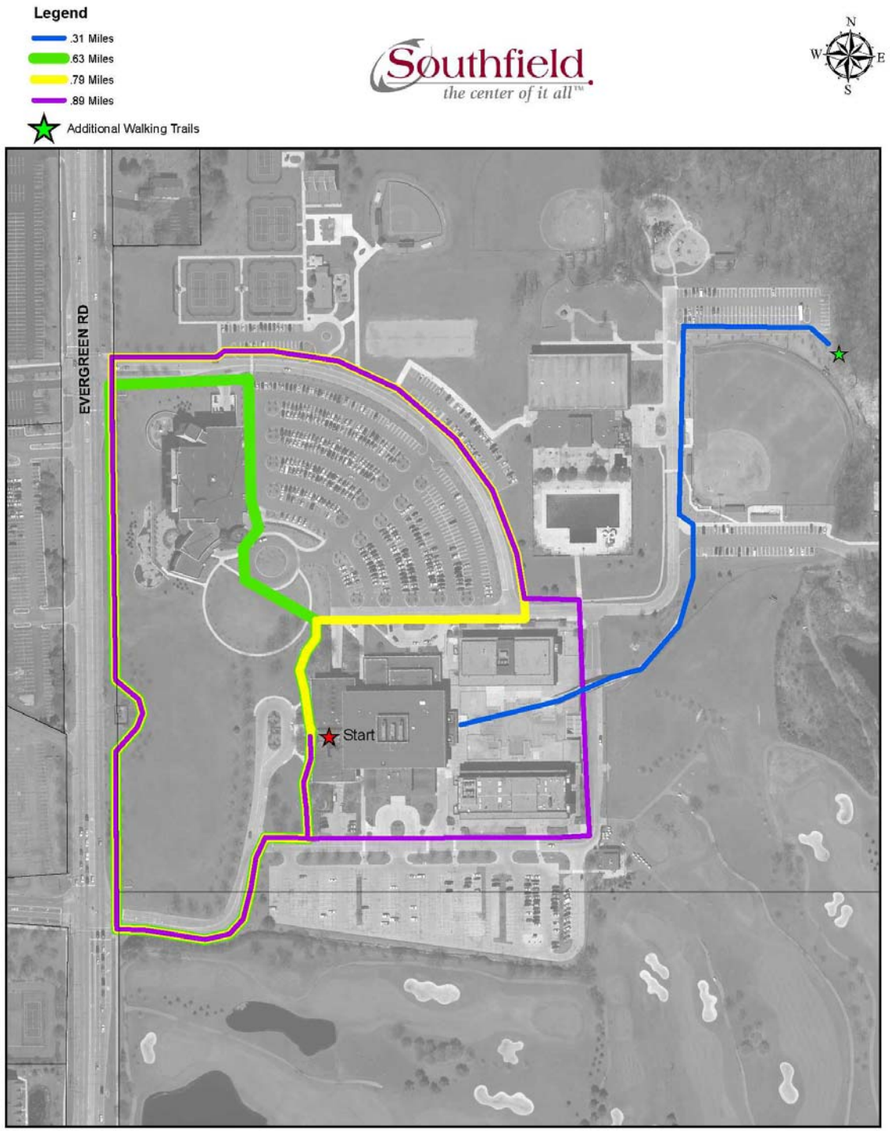
City of Southfield: Non-Motorized Pathway and Public Transit Plan: Vision Workshop Map (map 4.2)
The Vision Workshop Map is the result of the public visioning workshop and shows a network of neighborhood connector routes, trails and pathways, bicycle and pedestrian focused corridors and "key" (e.g. high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



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



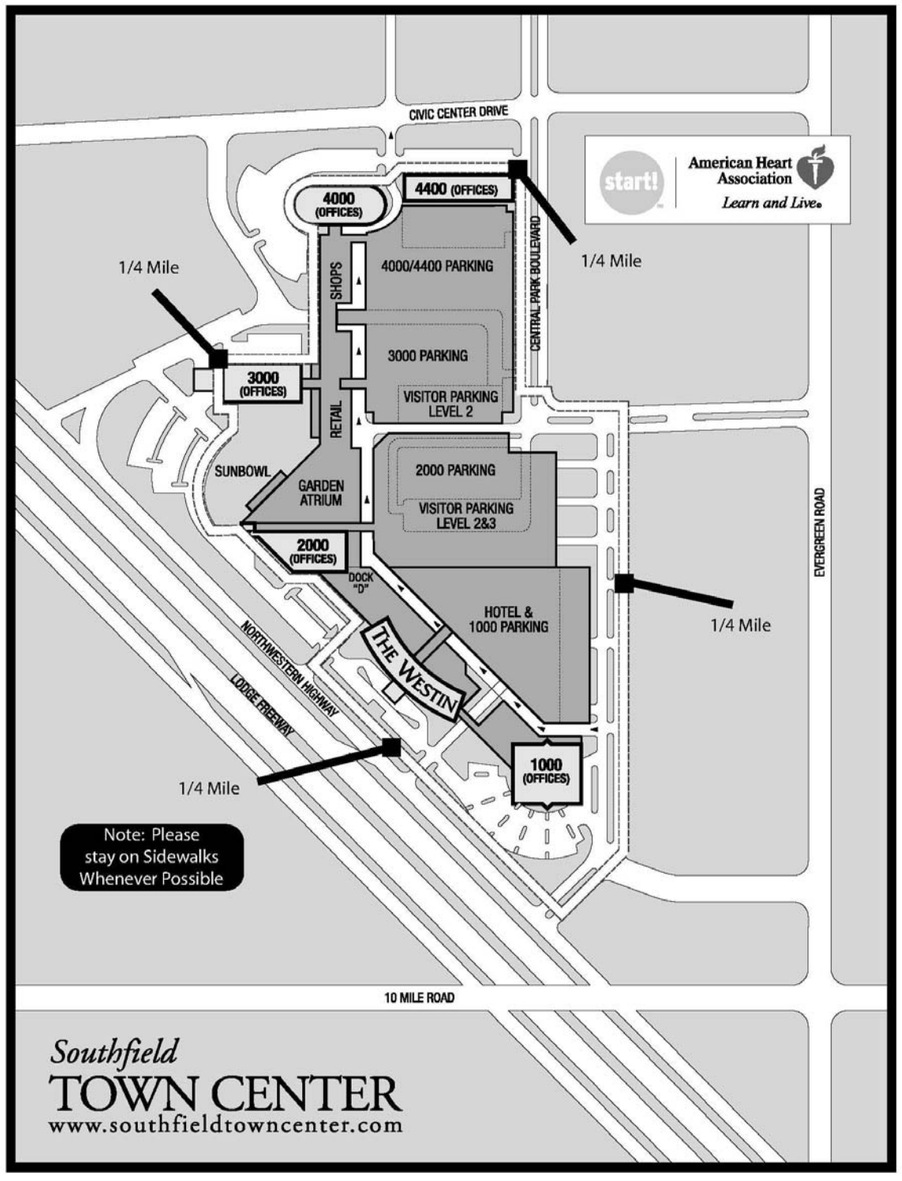
City of Southfield: Non-Motorized Pathway and Public Transit Plan: Map 2.1 – Existing bike routes.



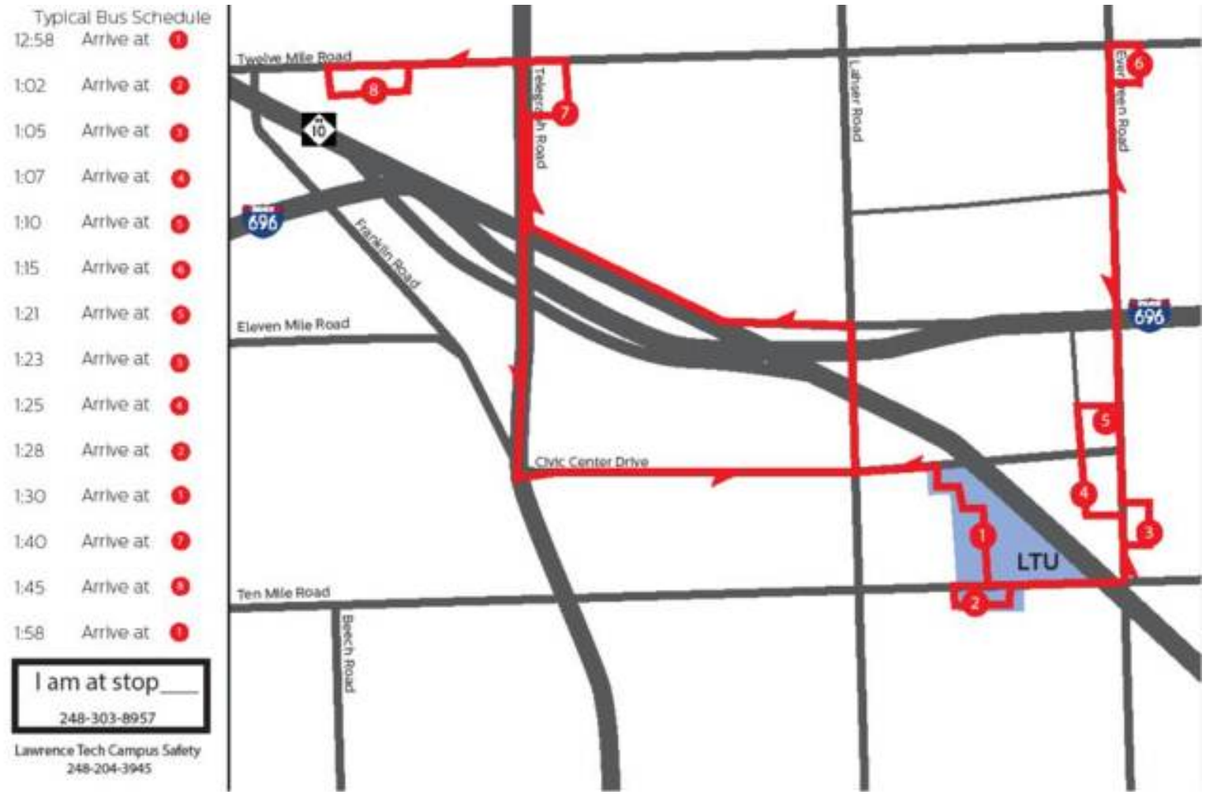
Southfield Municipal Complex Walking Path Map:
Parks & Recreation Department Website

Southfield Municipal Complex Nature Trail Map:
Parks & Recreation Department Website

In addition to the Walking Paths & Nature Trails, within the Pavilion at the Southfield Municipal Complex is an interior walking loop where 9.5 times around the perimeter equals one mile in distance.



Southfield Town Center: American Heart Association Exterior Walking Map
http://southfieldtowncenter.com/images/RevisedExteriorMap.pdf



LTU Transit Authority: Transit Service Map
http://www.ltu.edu/student_affairs/weekend_transit.asp

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 in 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 Southfield City Centre 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 City Centre
Non-Motorized and Transit Sub-Area Plan

Public Input

In the summer and fall of 2012, an on-online public survey was prepared with invitations to take the survey on the Southfield City Centre website. A total of 49 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 City Centre was to determine how accommodating the area is to non-motorized transportation and how these systems are used. Once the current condition of non-motorized transportation was collected, the survey provided us with primary concerns and suggestions of respondents on how the system can be improved.

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 Southfield City Centre.

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

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 Lawrence Technological University campus and various areas within and outside of the Southfield City Centre district have also been noted as desired improvements.

1) What sector of the City do you live in?
   - Outside of Southfield 50%
   - Other areas of Southfield 37%
   - Southfield City Centre 13%

2) What sector of the City do you work in?
   - Southfield City Centre 46%
   - Other areas of Southfield 33%
   - Outside of Southfield 21%

3) How often do you **walk**?
   - Daily or Weekly 63%

4) Why do you **walk**?
   - Recreation/exercise 76%
   - Lunch/Dining 37%
   - Social (e.g., (with a friend") 24%

5) When do you usually **walk**?
   - Evening 45%
   - Lunch 40%

6) Which of the following would you choose to **walk** to?
   - To eat lunch/dinner 69%
   - To buy a coffee/breakfast 60%
   - Southfield City Centre 57%
   - Park 50%
   - Library 45%
   - Shopping 38%
   - Friends/Family 36%

7) Which of the following prevents you from **walking** more often?
   - Distance to Destinations 61%
   - Don't Have Time 46%
   - Lack of Sidewalks 34%

8) If the concerns above were addressed, how often would you **walk**?
- Several times a week 39%
- Daily 34%

9) Would you walk more often if there was a dedicated looped pathway system, with distance markers, located in the Southfield City Centre district?"
- Yes 79%

10) How often do you ride a **bike**?
- Weekly 33%
- Never 33%

11) Why do you **bike**?
- Recreation/exercise 97%
- Work / School / Shopping 10%

12) When do you usually **bike**?
- Evening 72%
- Afternoon 41%

13) Where of the following would you choose to **bike**?
- Park 59%
- Pathways in adjacent communities 59%
- Southfield City Centre 48%
- Friends/Family 45%
- Drive to areas outside of Southfield 35%

14) Which of the following prevents you from **biking** more often?
- Speed or volume of traffic 44%
- Distance to Destinations 41%
- Lack of Bike Parking 41%
- Street/Path Conditions 38%

15) Would improved and/or additional bike routes in the City encourage you to **bike** more?
- Very Much 42%

16) In the last year, how many times have you walked or **biked** to work?
- Never 79%

17) In the last year, how many times have you walked or **biked** to a bus stop?
- Never 97%

18) In the last year, how many times have you taken public transit to work?
- Never 98%

19) If the City received extra funding for bike and pedestrian improvements, which of the following do you think is the most important?
- Fill in sidewalk gaps & provide amenities 43%
- More pedestrian crosswalks/signals 35%
- Bike lanes & paths 23%

20) What is your age?
- 19-34 29%
- 35-54 29%
- 65+ 24%
- 55-64 19%
- 18 and Under 0%

21) Do you have Children?
- Yes 58%

Southfield City Centre
Non-Motorized and Transit Sub-Area Plan

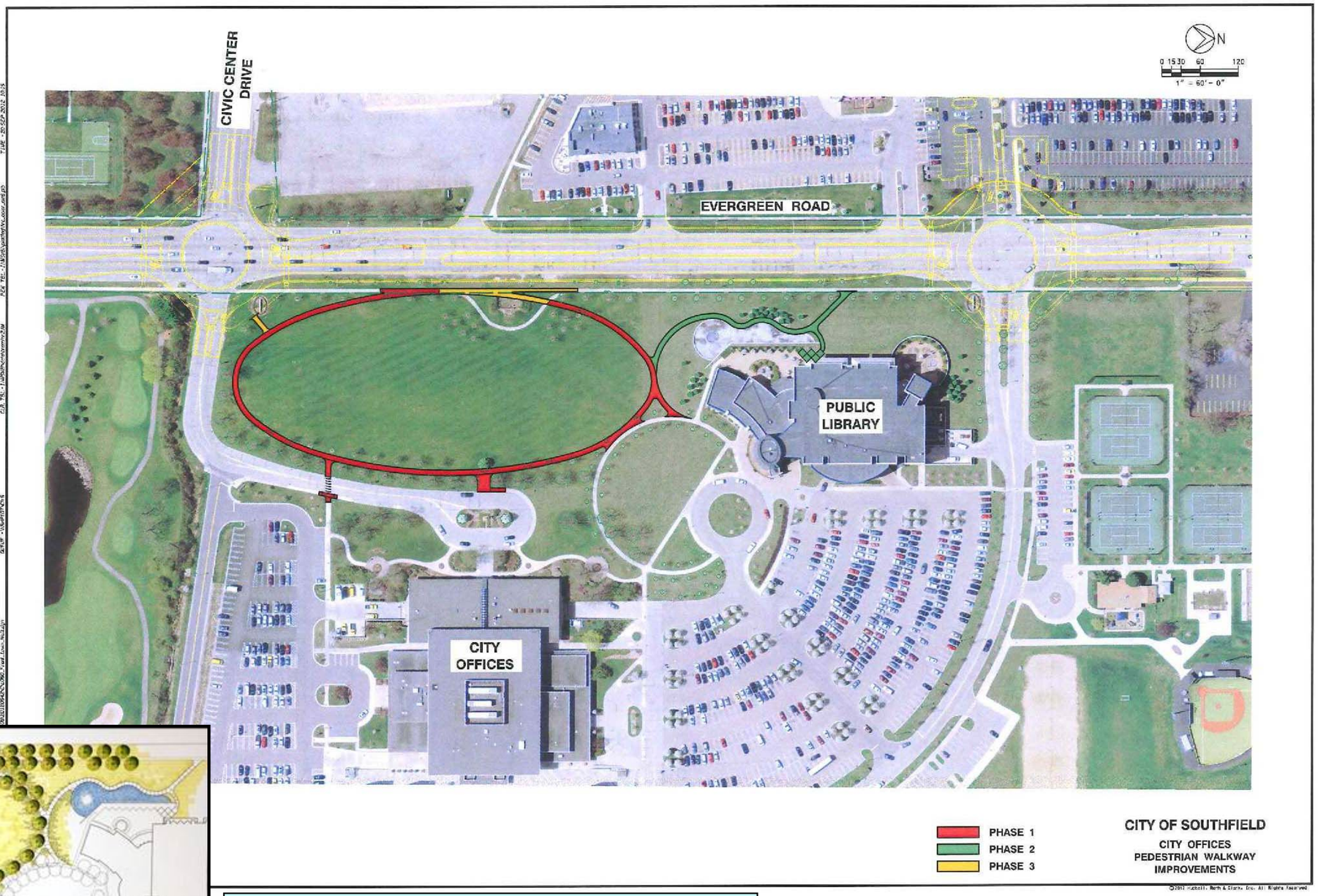
Projects Just Completed and Work in Progress

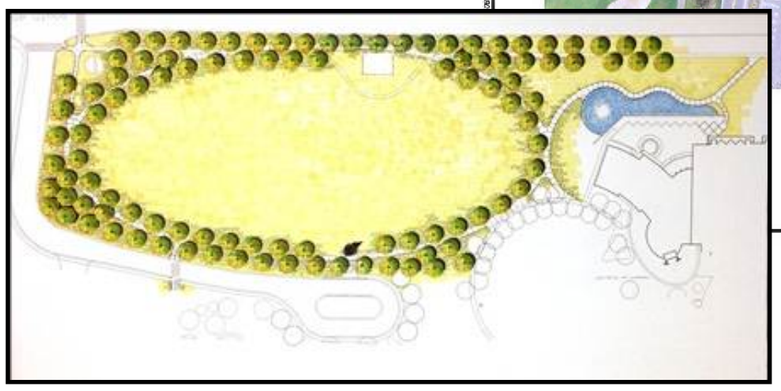
The City of Southfield and the Southfield City Centre district have already begun in earnest to construct improvements to the area. This section, including the table at right, shows the work completed in 2012.

Decorative Crosswalks: Intersection of Civic Center Drive and Central Park Boulevard showing decorative crosswalks installed with resurfacing project completed in 2012.

2012 Southfield City Centre Pedestrian Improvements

#	Description:
	Pathways:
717	Linear feet of new 5 ft. wide concrete sidewalk (north side of Civic Center Drive)
398	Linear feet of new 5 ft. wide concrete sidewalk (east side of Central Park Blvd.)
440	Linear feet of repaved 8 ft. wide asphalt bike/safety path (south side of Civic Center Drive)
232	Linear feet of new 8ft. wide asphalt pathway (LTU Athletic fields)
7	New decorative crosswalks (Civic Centre Dr. / Central Park Blvd.) & (Civic Centre Dr. & NW Highway)
2	Median extensions: pedestrian safe harbors (Central Park Blvd.)
	Upgraded Pedestrian crossing signals and ADA ramp installations
	Pedestrian Amenities:
5	SMART bus shelters
1	Solar panel bus shelter @ Civic Plaza
6	Bike racks (SMART grant)
8	Benches with backs
4	Benches without backs
7	Decorative trash receptacles
	Gateways & Wayfinding:
1	LTU Gateway plaza & landscaping
1	Eaton Corp. Gateway landscaping
1	Oakland Commons sign refacing with Southfield City Centre logo
2	Southfield City Centre Gateway flags (north & south ends of Evergreen Road)
2	Sets of new banners (Spring & Fall) with flags on Central Park Blvd.





Proposed Loop at the Southfield Municipal Complex on the east side of Evergreen Road, north of Civic Center Drive. The loop will connect to the existing Evergreen Road sidewalks and to the proposed City Center plaza west of Evergreen.

Gateway Plaza at Lawrence Technological University
Southwest corner of Civic Center Drive and Northwestern Highway

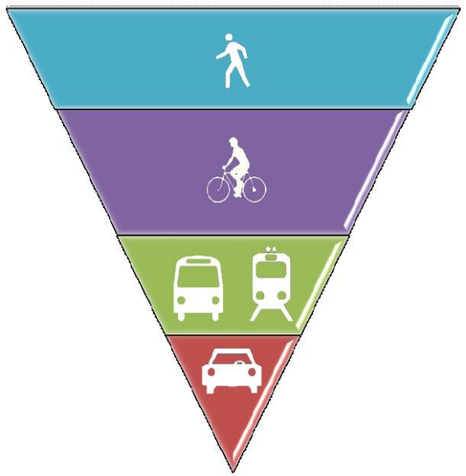
SMART Bus Stop – Furniture Suite
West side of Evergreen Road, north of Ten Mile Road

Southfield City Centre
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:

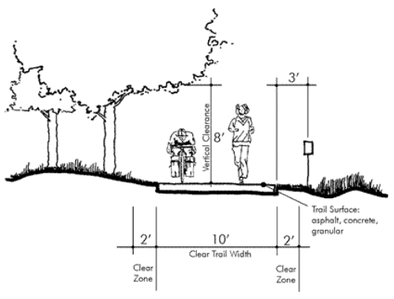
Share the Road – Cyclists have a legal right to use most public roads. In the basic scenario a bicycle will share the travel lane with vehicles. Under the most common condition, along a purely residential street, this occurs with no markings or signage at all. In other instances, signs and/or pavement 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 foot wide space which is cross-hatched with pavement markings to provide an additional separation between cyclists and vehicular traffic.

Buffered Bike Lane
www.pedbikeimages.org/ Steven Faust

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 Southfield City Centre 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 intersections, are properly addressed.

Cycle track on campus of Syracuse University built in 2012

The three rights-of-way identified as bicycle routes in the Non-Motorized Pathway and Public Transit Plan (Evergreen, Civic Center and Northwestern Highway) have been evaluated for feasibility of adding on-street bicycle lanes. As a major north-south connector within the Southfield City Centre district, and the City as a whole, Evergreen is a logical choice for such improvements. A proposed reconstruction project is scheduled for 2014/2015 will install a boulevard pavement section and two roundabouts (at Civic Center and the north entrance to the Southfield Municipal Complex). The scope of these improvements within the existing right-of-way width does not adequately allow for the addition of on-street bike lanes. As an alternative, an off-road shared use pathway should be added along the east side of Evergreen within the right-of-way and/or adjacent property owned by the City of Southfield. Beyond the pedestrian connections, the reconstruction can include storm water management improvements. A green buffer consisting of bio-swales and native landscaping can be incorporated into the boulevard median and/or into the margin between the outside curb and either the sidewalk or shared use path.

Pedestrian crossings of Evergreen Road, besides being mentioned in the public input survey, remain a major component of this plan. The roundabouts will have sidewalk crossings about them, but additional pedestrian crossings should be proposed. Specifically three crossings of Evergreen Road should be added, one between the two roundabouts, one at the existing traffic signal at Boardwalk Park and a third at Town Center Drive. The signal between the roundabouts and at Town Center could be of the HAWK (**H**igh-Intensity **A**ctivated cross **W**al**K** beacon) variety. The signal between the roundabouts should line up with the plaza shown in the studio [Ci] concept plans for the Southfield City Centre.
http://safety.fhwa.dot.gov/provencountermeasures/fhwa_sa_12_012.htm

The Evergreen Road project also offers an opportunity to install the keywalks to the SMART bus stops along the corridor and bring all sidewalk ramps into full ADA compliance.

Civic Center Drive is the main east-west connector in the district and, as such, should be considered a high priority for improvements. While there is currently a shared used path along the south side of Civic Center, it is not wide enough to support significant joint usage by pedestrians and bicycles. This path should be widened to a minimum of 10 feet during future projects, and a similar 10 foot wide shared use path should considered to replace the 5 foot wide concrete sidewalk on the north side of Civic Center Drive.

The Northwestern Highway right-of-way can serve as the main thread that tie together the City as a whole, as well as providing an entrée 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 LTU campus and remainder of Southfield City Centre district
- Connection between Southfield Municipal Complex and City of Lathrup Village to the northeast
- Southfield Town Center Exterior Loop
- Lodge Service Drive
- ADA Compliance
- Roundabout crossings
- Mid-block crossings using HAWK signals
- Southfield City Centre Plaza

Central Park Boulevard

- Connection between Southfield Town Center and Evergreen Road Retail

Trails –Often they are wider than typical sidewalks, and are usually paved, but may be mulched or gravel where the context is appropriate for those materials or for equestrian paths. Pathways may be owned and managed by the community parks and recreation department, the street department, or a non-profit organization. Several trails, including along the Rouge River on the LTU campus and an un-named trail on the 1 Towne Square property, traverse the Southfield City Centre.

Creation and Signage of Trails and Loops

- Lawrence Technological University
- Southfield Municipal Complex
- Walking Paths & Trails
- Nature Trails
- Front Lawn Ellipse
- Southfield Town Center
- 1 Town Center
- North Loop

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.

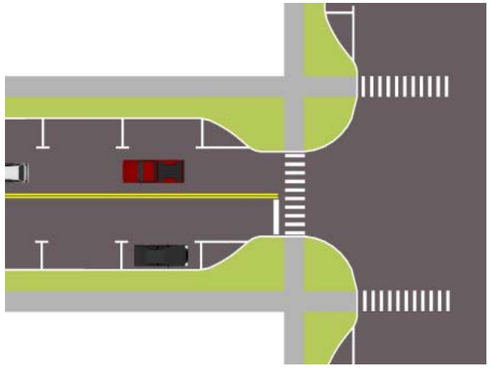
4. Bicycle and Sidewalk Connectivity

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 complete reconstruction of Evergreen Road, currently planned for 2014/2015. This project will include the installation of a median along Evergreen, and two roundabouts (Civic Center Drive and the north entrance to the Southfield Municipal Complex). These improvements will greatly enhance the aesthetics of the corridor, but must properly incorporate the ideas of non-motorized transportation, particularly in relation to pedestrian crossings, in order to be truly successful. Please refer to the recommendations section of this document for details.

Roundabout – Utica & Dodge Park (Sterling Heights, MI)

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 Southfield City Centre 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

<u>Bike Racks and Bike Parking Credit:</u> 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.

Bike Corral (Traverse City, MI)

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

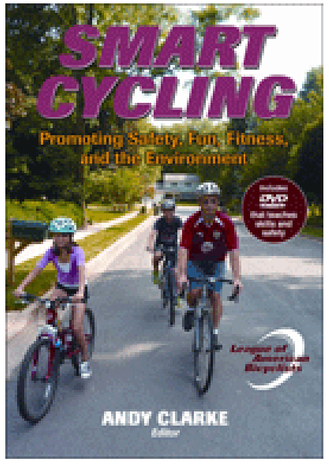
- Lawrence Technological University
  - Bike Racks
  - Bike Lockers at the University Housing buildings (north & south)
- Southfield Municipal Complex
  - Bike Racks
  - Bike Lockers for employees and/or at Parks & Recreation Building
- Southfield City Centre Plaza
  - Additional bike racks

Consideration should also be given to the creation of a bike share program with LTU and the City of Southfield to provide short term rentals to students and 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.

Transit Concepts & Recommendations

Southfield City Centre
Non-Motorized and Transit Sub-Area Plan

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.

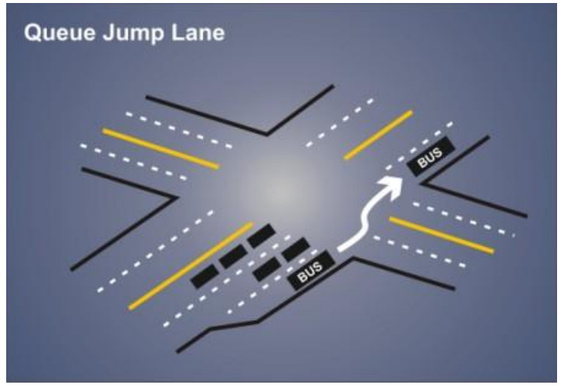
Fare Policy

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

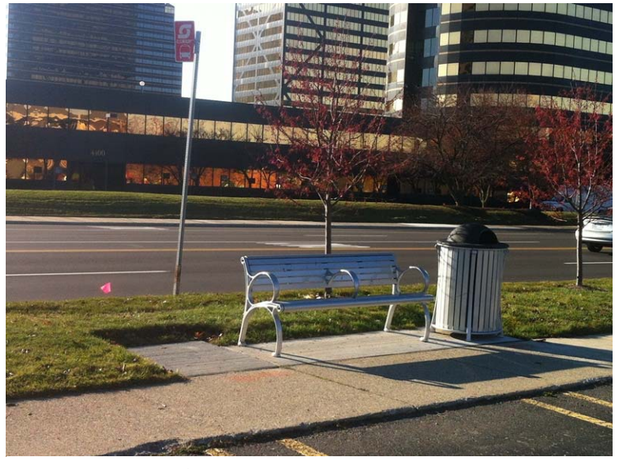
trips are three miles or less and 28% of all trips are one mile or less[xii] – distances easily traversed by foot or bicycle. Yet 60% of trips less than one mile in length are made by automobile. (National Complete Streets Coalition)[xiii].

Transit Facilities

- Bus Shelters
  - Installations of furniture continuing to use existing "Southfield Suite"
- Bus Stops
  - Keywalks from mainline sidewalk to terminal
    - ADA compliant at all existing bus stops
  - Adequate signage
- Connections to MDOT / Greyhound Transit Center
  - Use sidewalk and bicycle network

Solar Transit Stop at Southfield City Centre Plaza

Existing SMART bus stop
(Evergreen south of Civic Center)



Existing SMART bus stop
(Civic Center west of Evergreen)

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

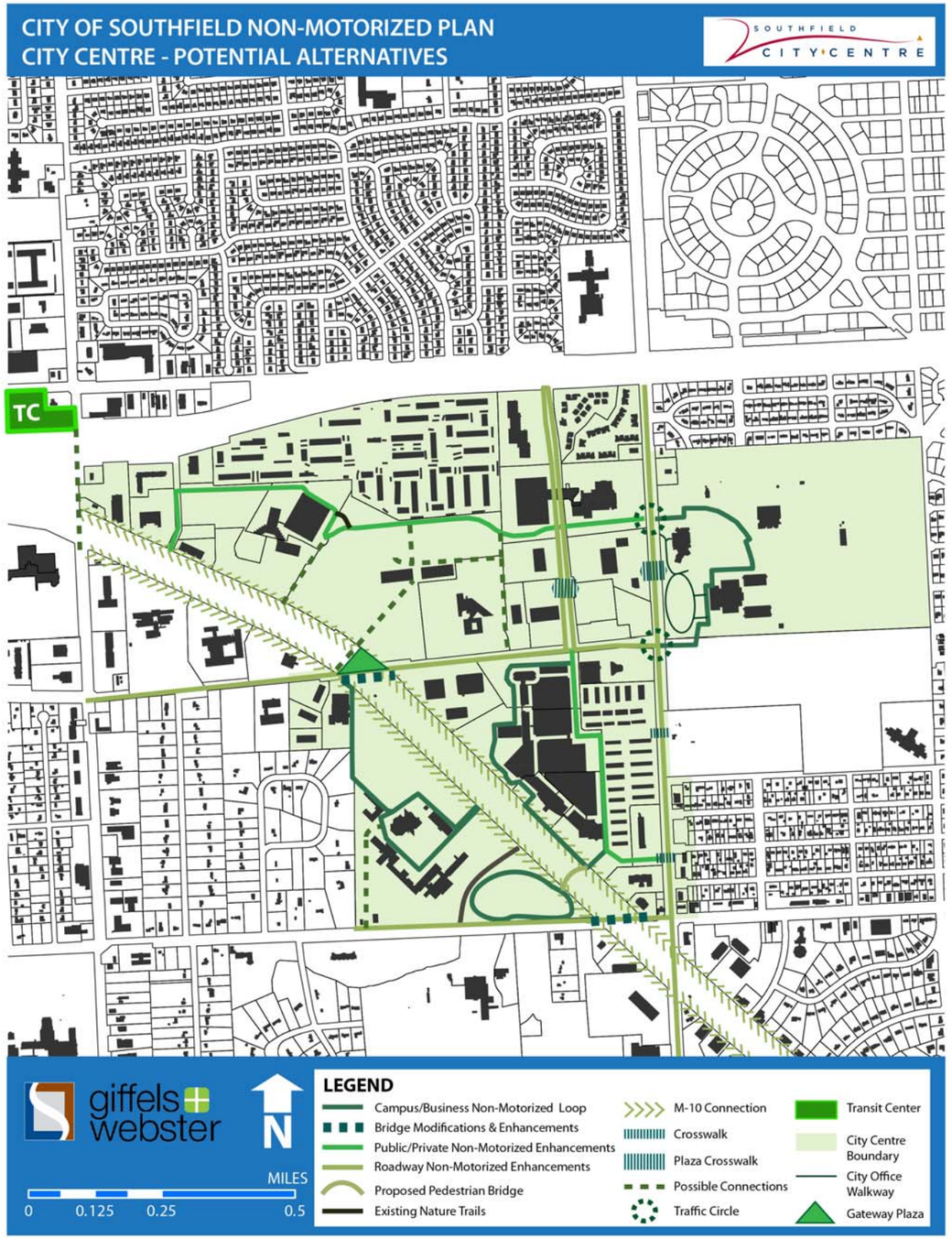
Existing SMART bus stop with ADA compliant "keywalk"
(Ten Mile Road between Northwestern and LTU entrance drive)

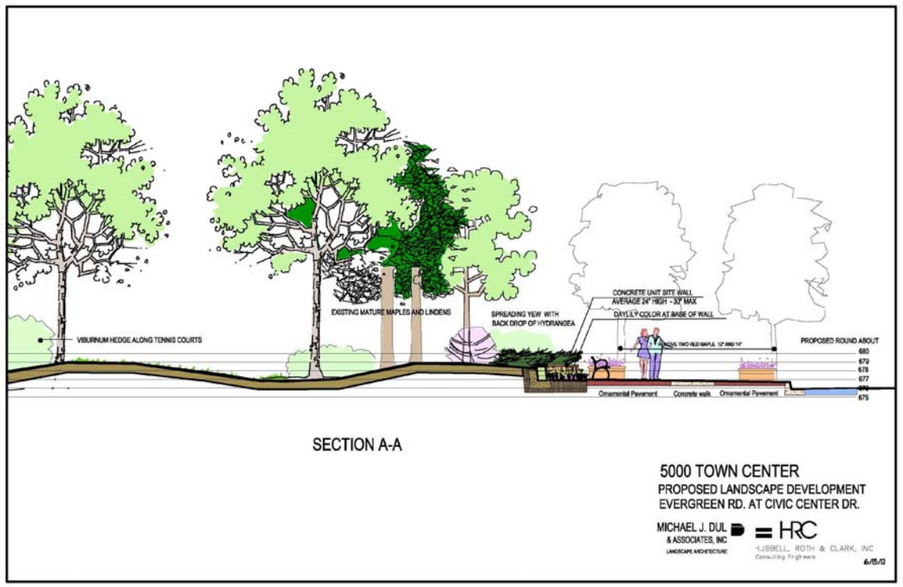
Potential mid-block pedestrian crossing showing decorative crosswalk, HAWK pedestrian signal and Southfield / SMART bus shelter with enhanced landscape plantings.

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

Cost Estimates

Southfield City Centre
Non-Motorized and Transit Sub-Area Plan





EVERGREEN ROAD BOULEVARD RECONSTRUCTION

Evergreen Road Boulevard Reconstruction: Evergreen Road is proposed to be reconstructed with the pavement cross-section changing from a five lane section with two lanes in each direction and a center turn lane to a boulevard section with two lanes in each direction. Roundabout intersections are proposed at Civic Center Drive (shown above) and the north entrance to the Southfield Municipal Complex of the city to each other and the greater region. Enhanced landscaping treatments are being proposed adjacent to the roundabouts (upper and lower right).

ROAD DIET WITH ADDITION OF ON-ROAD BIKE LANE AND ON-STREET PARKING

Central Park Boulevard (south of Civic Center Drive) – Existing:

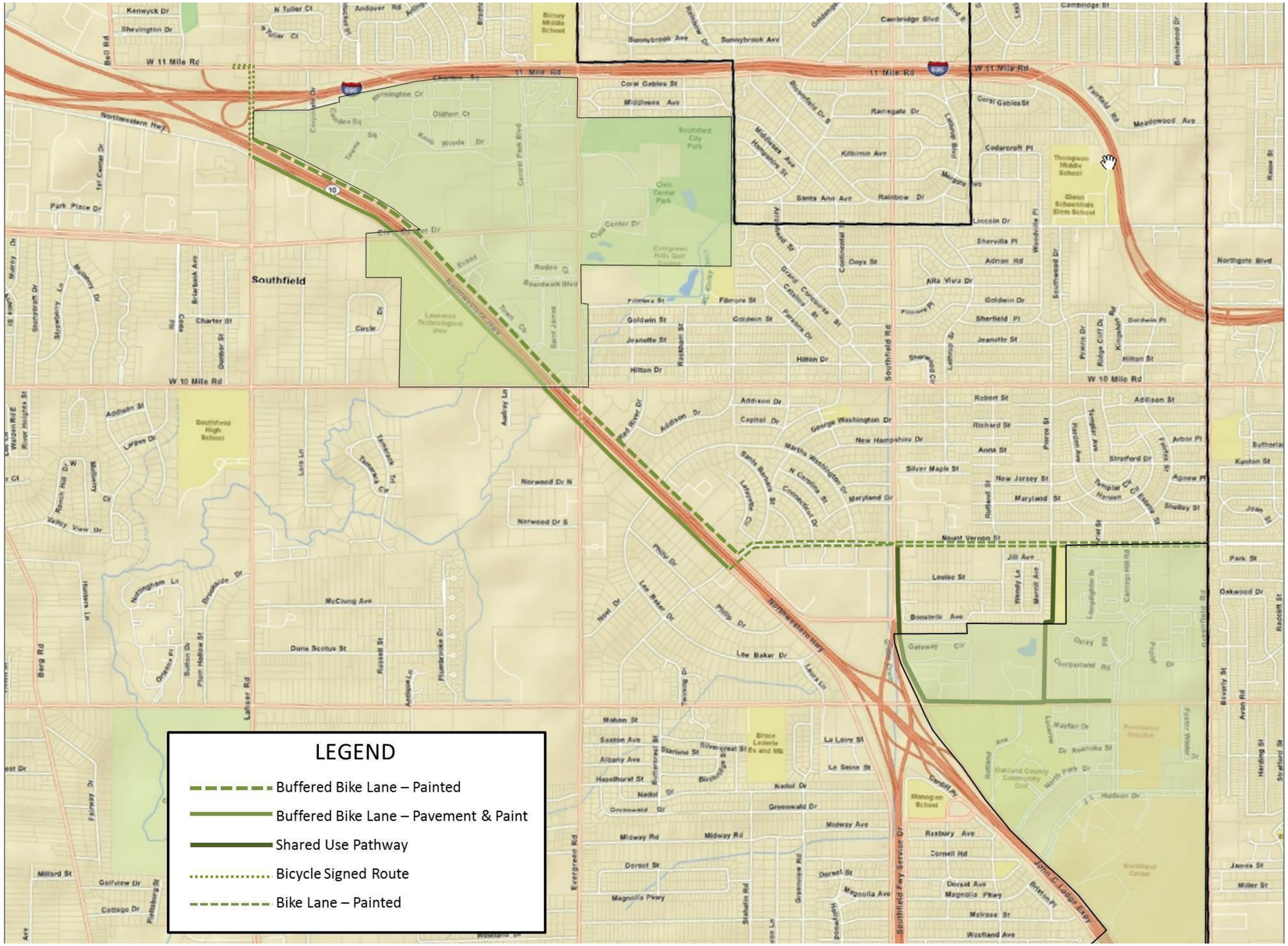
The existing boulevard has wide open vehicular space but little pedestrian or landscape room on the edges. There is also no dedicated bike facility.

Central Park (south of Civil Center Drive) - Proposed:

One approach would be to provide on-street parking and a bike lane to calm traffic and provide additional safety to cyclists and pedestrians.

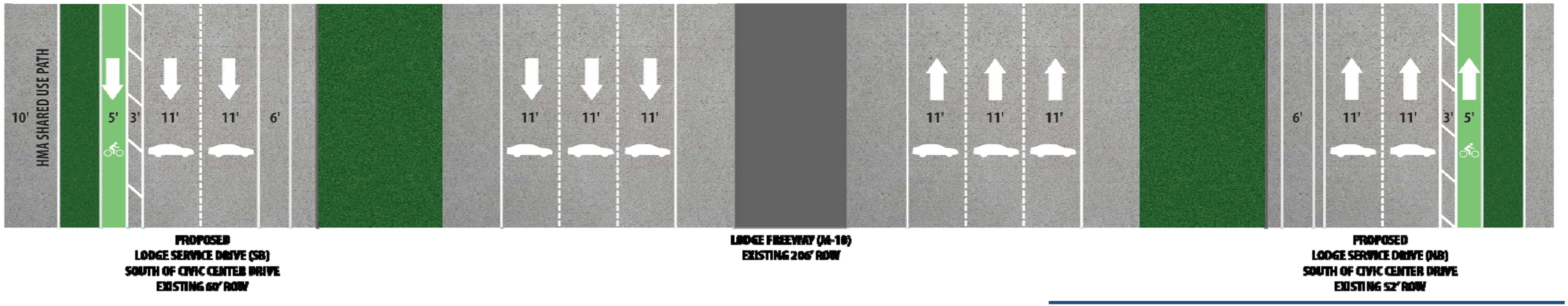
An alternative approach would involve removal of the boulevard and shifting of traffic toward the center. Added space on the fringes would be used to augment the experience for non-motorized users while also offering additional landscape opportunities.

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



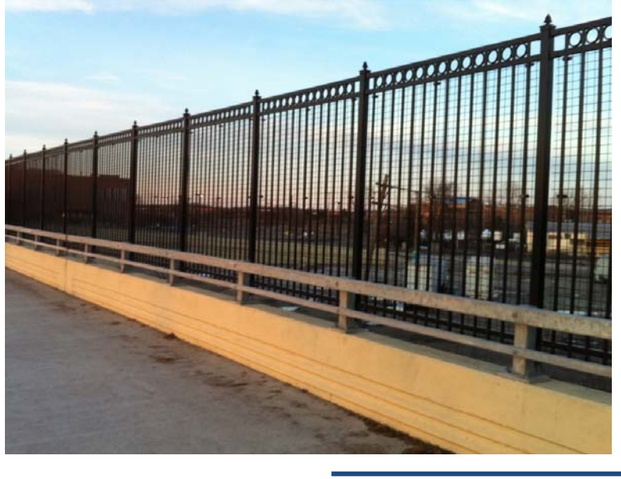
BUFFERED BIKE LANE USING EITHER EXISTING SHOULDER OR THIRD TRAVEL LANE WITH SHARED USE SIDE PATH OR SIDEWALK

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.



PEDESTRIAN BRIDGES USING STANDARD PRECAST CONCRETE OR STEEL CONSTRUCTION WITH SHARED USE SIDE PATH OR SIDEWALK

Connectivity over the Lodge (M-10): There are two existing bridges across the Lodge Freeway at Ten Mile Road (above left) and Civic Center Drive that could be modified to provide connectivity between the LTU campus and the Southfield City Centre proper using traditional bridge widening techniques(above right) or innovative methods like a cantilevered walkway (far lower right).



PEDESTRIAN BRIDGES USING STANDARD PRECAST CONCRETE OR PRE-FABRICATED STEEL CONSTRUCTION

I-696 Expressway between Orchard Lake Road and Middle Belt Road
Linking the Farmington Public School District's Harrison High School and Beechview Elementary and the surrounding neighborhoods.
(Farmington Hills, MI)

Clinton River Trail Crossing
Telegraph Road (US-24) north of Orchard Lake Road (Pontiac, MI)

Connectivity over the Lodge (M-10): As an alternative to widening of the existing vehicular bridges across the Lodge Freeway a separate pedestrian span could be constructed. Dependent on location, a separate bridge structure could span the freeway only or both freeway and service drives.

‘SIGNATURE’ PEDESTRIAN BRIDGES USING CABLE STAYED, TIED ARCH OR SIMILAR CONSTRUCTION CREATING A GATEWAY INTO THE DISTRICT

Connectivity over the Lodge (M-10) – Signature Bridges: Though functionally similar to a conventional pedestrian bridge of standard steel or concrete construction, a “signature” pedestrian bridge design offers the opportunity to mark this freeway crossing in the Southfield City Centre district as something special and unlike anything else in the region.

Bagley Street Bridge over I-75 (Mexicantown, Detroit, MI): As part of the Ambassador Bridge Gateway project, MDOT committed to recreate the pedestrian connections in the Mexicantown neighborhood that were lost during the original I-75 freeway construction. Rather than just provide a standard pedestrian bridge, inFORM studio and HNTB were contracted to design a signature bridge that would provide not only a connection across the freeway, but a community gathering space at the eastern end of the bridge.

Photo credit: james haefner photography

PEDESTRIAN RECOMMENDATION COST ESTIMATES

Priority	Route	Limits: From	Limits: To	Side of Road	Public / Private	Owner	Surface	Length (feet)	Width (feet)	Area (sft)	Cost ($)	Remarks
PUBLIC OWNERSHIP												
1	Southfield Municipal Complex Front Lawn Sidewalk	Phases 1 & 1A	Primary Oval & ADA		Public	Southfield	Conc	1,538	8	12,300	100,000.00	Estimate per HRC - construction only (note 1)
2	Southfield Municipal Complex Front Lawn Sidewalk	Phase 2	Library Connector Walkway		Public	Southfield	Conc	487	8	3,892	35,750.00	Estimate per HRC - construction only (note 1)
3	Southfield Municipal Complex Front Lawn Sidewalk	Phase 3	Main Oval Remaining at Electrical Supply		Public	Southfield	Conc	301	8	2,408	20,350.00	Estimate per HRC - construction only (note 1)
4	Evergreen Road	Civic Center Drive	360' N of Civic Center	West	Public	Southfield	Conc	360	5	1,800	10,800.00	Included in Evergreen Road Project
5	Lodge Service Drive (NB)	Evans	Doner Entrance	East	Public	Southfield	Conc	625	5	3,125	18,750.00	
6	Central Park Boulevard	Civic Center Drive	425' N of Civic Center	East	Public	Southfield	Conc	425	5	n/a	n/a	Completed - Fall, 2012
7	Corporate Drive	South of I-696 Freeway		East	Public	Southfield	Conc	45	5	225	1,350.00	
8	Corporate Drive	North of I-696 Freeway		East	Public	Southfield	Conc	8	5	40	240.00	
9	Lodge Service Drive (SB)	Ten Mile Road	Civic Center Drive	West	Public / Private	Southfield / LTU	Conc	3,300	5	16,500	99,000.00	
10	Ten Mile	over M-10/Lodge Freeway	Cantilever Bridge Location	South	Public	RCOC	Bridge	285	10	2,850	570,000.00	
11	Civic Center Drive	Evergreen	Central Park Boulevard	Norht	Public	Southfield	Conc	725	5	n/a	n/a	Completed - Fall, 2012
PRIVATE OWNERSHIP												
1	Central Park Boulevard	Town Loop South			Private	Town Center	Conc	370	5	1,850	11,100.00	
2	Lawrence Tech University	North Connector			Private	LTU	HMA	870	10	8,700	52,200.00	
3	Central Park Boulevard	South of Boulevard			Private	Town Center	Conc	555	5	2,775	16,650.00	
4	Central Park Boulevard	ADA Compliance			Private	Town Center	Conc	315	5	1,575	9,450.00	
5	St. James				Private	Condos	Conc	50	5	250	1,500.00	
6	St. James				Private	Condos	Conc	340	5	1,700	10,200.00	
7	Holiday Inn Express Hotel	Bldg to sidewalks	2 locations		Private	Holiday Inn	Conc	180	5	900	5,400.00	
8	Lawrence Tech University	Athletic Field Loop			Private	LTU	HMA	1,000	10	10,000	60,000.00	
9	Knob in the Woods	Apartments			Private	Knob in the Woods	Conc	1,675	5	8,375	50,250.00	
10	Kirby Coney Island				Private	Kirby's	Conc	380	5	1,900	11,400.00	
									Total =	**81,165**	**$1,084,390.00**	
									Average 1 =		$13.36	with bridge
									Average 2 =		$6.34	without bridge

	CONSTRUCTION COST BASIS:	
1	Concrete Sidewalk, 4 inch on sand base, including excavation & ADA compliant sidewalk ramps where require.	$6.00 / square foot
2	Bridge Structure:	$2,000.00 / linear foot
	NOTES:	
1	Estimate provided by Hubbell, Roth & Clark, dated 10/24/2012	
2	Cost include construction pay items only. Design engineering and construction administration and inspection are additional.	

BICYCLE RECOMMENDATION COST ESTIMATES

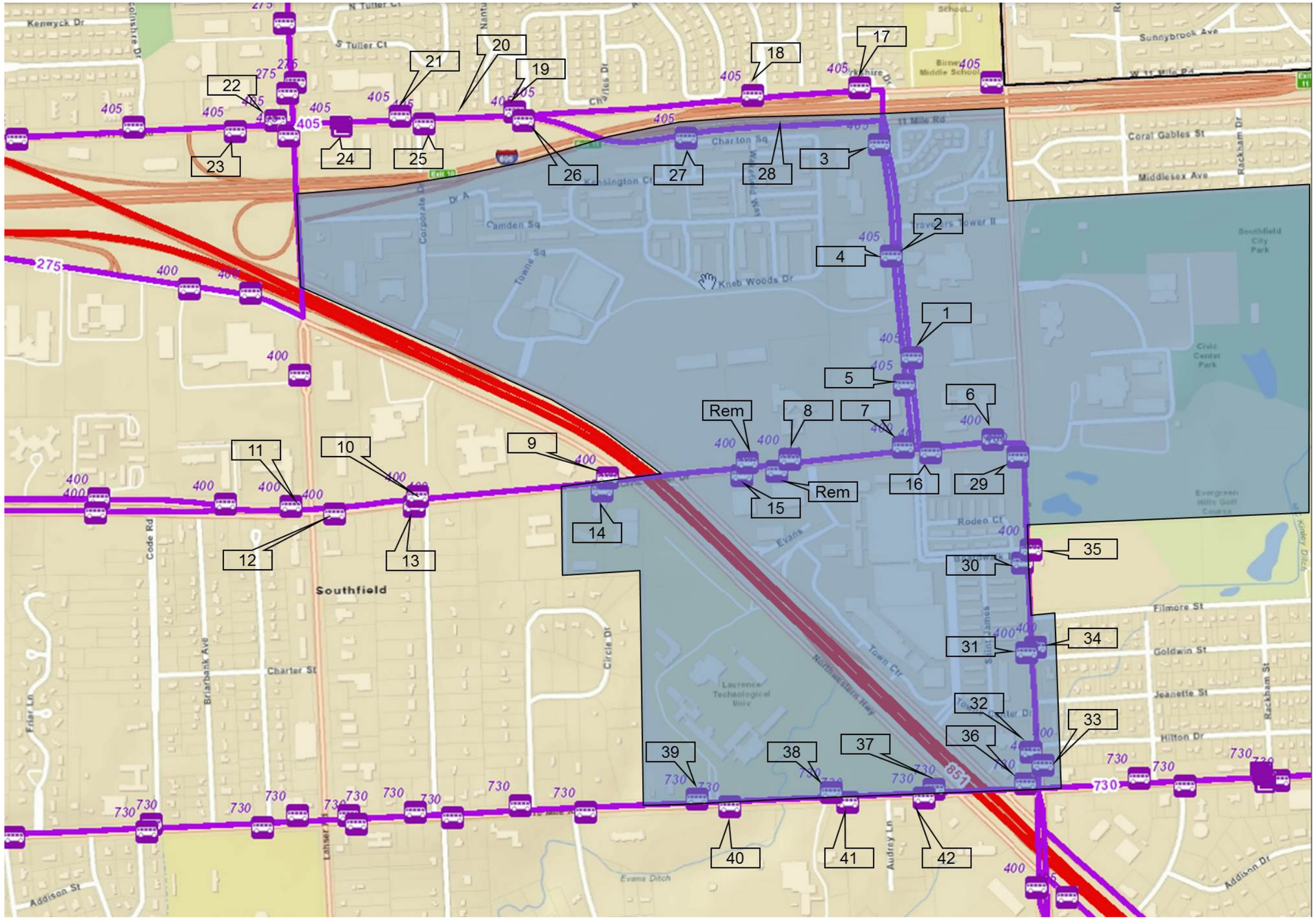
Priority	Route	Limits: From	Limits: To	Side of Road	Public / Private	Owner	Bicycle Facility Type	Project Type	Length (feet)	Width (feet)	Area (sft)	Cost ($)	Remarks
1	Lodge Service Drive (SB)	Ten Mile Road	Civic Center Drive	West	Public	Southfield	Buffered Bike Lane	Pavement Construction	3,475	8	27,800	$ 132,000	
1	Lodge Service Drive (NB)	Ten Mile Road	Civic Center Drive	East	Public	Southfield	Buffered Bike Lane	Pavement Markings	3,475	8	27,800	$ 33,000	
2	Lodge Service Drive (SB)	Civic Center Drive	Lahser Road	West	Public	Southfield	Buffered Bike Lane	Pavement Construction	2,775	8	22,200	$ 105,000	
2	Lodge Service Drive (NB)	Civic Center Drive	Lahser Road	East	Public	Southfield	Buffered Bike Lane	Pavement Markings	3,825	8	30,600	$ 36,000	
3	Lodge Service Drive (SB)	Mt Vernon	Ten Mile Road	West	Public	Southfield	Buffered Bike Lane	Pavement Construction	4,300	8	34,400	$ 163,000	
3	Lodge Service Drive (NB)	Mt Vernon	Ten Mile Road	East	Public	Southfield	Buffered Bike Lane	Pavement Markings	4,300	8	34,400	$ 41,000	
4	Lahser Road	M-10	Eleven Mile Road	West	Public	RCOC	Sharrows & Signed Route	Pavement Markings	1,100		0	$ 10,000	
4	Lahser Road	M-10	Eleven Mile Road	East	Public	RCOC	Sharrows & Signed Route	Pavement Markings	1,100		0	$ 10,000	
5	North Connector Alt 1	Lahser -11 Mile	Telegraph & 12 Mile		Public	Southfield	Sharrows & Signed Route	Pavement Markings	11,250			$ 107,000	via Bell Road
6	North Connector Alt 2	Lahser -11 Mile	Telegraph & 12 Mile		Public / Private	Southfield/Mall	Sharrows & Signed Route	Pavement Markings	10,718			$ 102,000	via Service Drive & Mall Parking Lot
7	Mt Vernon	M-10	Southfield		Public	Southfield	On-Street Bike Lanes	Pavement Markings	2,900		0	$ 27,000	
7	Mt Vernon	Southfield	Greenfield		Public	Southfield	On-Street Bike Lanes	Pavement Markings	5,200		0	$ 49,000	
8	Evergreen Road	Filmore	Municipal Complex	East	Public	Southfield	Shared Use Path	Pavement Construction	3,150	10	31,500	$ 119,000	
9	Civic Center Drive	M-10	Evergreen Road	North	Public	Southfield	Shared Use Path	Pavement Construction	3,000	10	30,000	$ 114,000	
								Totals =	60,568		238,700	$ 1,048,000	
									11.5	miles		$ 91,359	per mile

	CONSTRUCTION COST BASIS:		
1	Pavement Construction involves paving the existing gravel shoulder with hot-mix asphalt (HMA) and related improvements	$200,000.00 / mile	$200,000.00 / mile
2	Pavement Markings involves painting an existing travel lane with a buffer and on-street bicycle lane	$50,000.00 / mile	$50,000.00 / mile

	NOTES:
1	Cost include construction pay items only. Design engineering and construction administration and inspection are additional.

TRANSIT (BUS STOP) RECOMMENDATIONS & COST ESTIMATES

						Existing Conditions			Proposed Items									
No.	Route	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	405	Central Park Boulevard	Northbound	At	City Centre Plaza													
2	405	Central Park Boulevard	Northbound	At	Polk Bldg											1	1	1
3	405	Central Park Boulevard	Southbound	South	I-696 Service Drive		N	N		6	30	20	100			1	1	1
4	405	Central Park Boulevard	Southbound	At	Polk Bldg	N	N	N	1	5	25	20	100			1	1	1
5	405	Central Park Boulevard	Southbound	At	City Centre Plaza													
6	400	Civic Center Drive	Westbound	West	Evergreen												1	
7	400	Civic Center Drive	Westbound	West	Central Park		N	N		13	65	20	100				1	
8	400	Civic Center Drive	Westbound	2700	Civic Center		N	N		13	65	20	100				1	
9	400	Civic Center Drive	Westbound	West	Lodge Freeway		N	N								1	1	1
10	400	Civic Center Drive	Westbound	West	Lois Lane		N	N								1	1	1
11	400	Civic Center Drive	Westbound	West	Lahser		N	N		9	45	20	100			1	1	1
12	400	Civic Center Drive	Eastbound	East	Lahser											1	1	1
13	400	Civic Center Drive	Eastbound	West	Lois Lane		N	N		6	30	20	100			1	1	1
14	400	Civic Center Drive	Eastbound	West	Lodge Freeway													
15	400	Civic Center Drive	Eastbound	East	Lodge Freeway		N	N		10	50	20	100				1	
16	400	Civic Center Drive	Eastbound	East	Central Park		N	N		5	25	20	100			1	1	1
17	405	Eleven Mile Road	Westbound	West	Central Park		N	N		34	170	20	100			1	1	1
18	405	Eleven Mile Road	Westbound	West	Harvard		N	N		16	80	20	100			1	1	1
19	405	Eleven Mile Road	Westbound	West	Arlington		N	N		9	45	20	100			1	1	1
20	405	Eleven Mile Road	Westbound	21540	Eleven Mile		N	N		23	115	20	100			1	1	1
21	405	Eleven Mile Road	Westbound	At	Harvard Row Mall		N	N		24	120	20	100			1	1	1
22	405	Eleven Mile Road	Westbound	West	Lahser		N	N		24	120	20	100			1	1	1
23	405	Eleven Mile Road	Eastbound	At	MDOT Park & Ride		N	N		24	120	20	100			1	1	1
24	405	Eleven Mile Road	Eastbound	East	Lahser										1	1	1	1
25	405	Eleven Mile Road	Eastbound	East	Corporate Drive		N	N		20	100	20	100			1	1	1
26	405	Eleven Mile Road	Eastbound	West	Freeway Bridge		N	N		7	35	20	100			1	1	1
27	405	I-696 Service Drive	Eastbound	East	Knob in the Woods		N	N		7	35	20	100			1	1	1
28	405	I-696 Service Drive	Eastbound	East	Freeway Ramp		N	N		6	30	20	100			1	1	1
29	400	Evergreen Road	Southbound	South	Civic Center Drive		N	N		13	65	20	100			1	1	1
30	400	Evergreen Road	Southbound	South	Boardwalk Blvd		N	N		18	90	20	100			1	1	1
31	400	Evergreen Road	Southbound	strip mall	Park Place Mall													
32	400	Evergreen Road	Southbound	North	Ten Mile Road		N	N		10	50	20	100			1	1	1
33	400	Evergreen Road	Northbound	North	Ten Mile Road		N	N		7	35	20	100			1	1	1
34	400	Evergreen Road	Northbound	North	Goldwin		N	N		29	145	20	100			1	1	1
35	400	Evergreen Road	Southbound	At	Boardwalk Blvd		N	N		28	140	20	100			1	1	1
36	730	Ten Mile	Westbound	West	Evergreen											1	1	1
37	730	Ten Mile	Westbound	East	LTU Athletic Field											1	1	1
38	730	Ten Mile	Westbound	West	LTU Athletic Field											1	1	1
39	730	Ten Mile	Westbound	West	LTU Entrance												1	
40	730	Ten Mile	Eastbound	East	LTU Entrance												1	
41	730	Ten Mile	Eastbound	At	The Word											1	1	
42	730	Ten Mile	Eastbound	West	Lodge Freeway											1	1	
					Proposed Items =				1	366	1,830	500	2,500	0	1	32	38	30
									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
NOTE:	**Items marked with a "1" indicated proposed items to be installed. One items to be installed at each location.**				**Sub-Total =**				**$150**		**$10,980**		**$18,000**	**$0**	**$10,000**	**$51,200**	**$19,000**	**$30,000**
					Keywalk Total =								$28,980					
					Location # =								25					
					Cost/location =								**$ 1,159.20**					



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

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 (e.g. LTU, Municipal Center Ellipse, Walking & Nature Trails, and Town Center Loop)

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

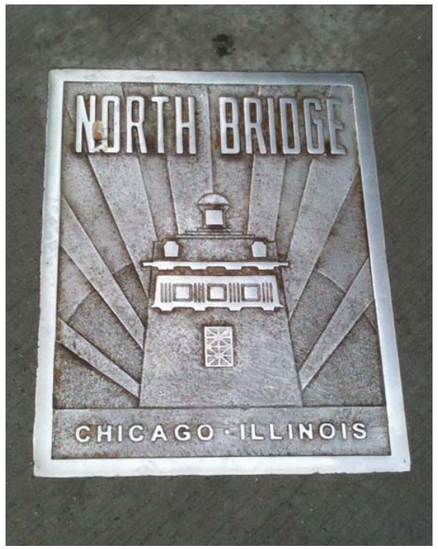
Trail Wayfinding Signs: **$180.00 / each installed**

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.

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

River Trail Wayfinding Signage (Lansing, MI)

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)

Wayne State University (Detroit, MI)

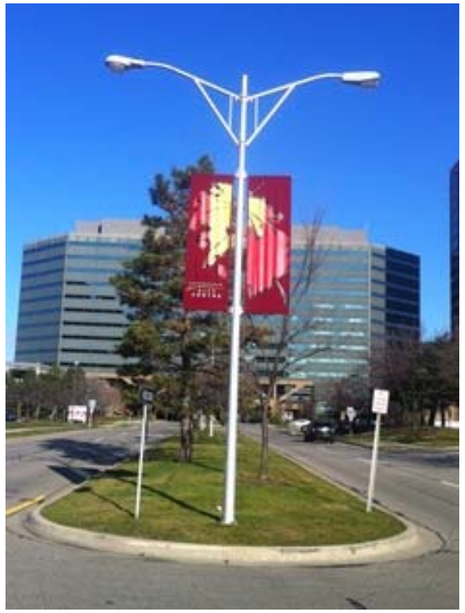
GATEWAY AND MONUMENT SIGNS

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

Prices are 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 locations.

District Branding, Banners and Monument Signs

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



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

Southfield City Centre Plaza with Major Gateway Signage
Civic Center Drive and Lodge Freeway - studio [Ci] / LTU

In conjunction with the redevelopment of the Southfield City Centre, a plaza style gateway is planned at the intersection of the Lodge Freeway (M-10) and Civic Center Drive. The plaza bridge over the freeway is similar in construction to the nearby plaza bridges over I-696. In addition to providing a connection between the proposed east-west flexible street spine of the Southfield City Centre redevelopment, the Lodge Freeway, and Civic Center Drive, the plaza provides an opportunity for placement of a large scale gateway or sculptural element, possibly branded with the Southfield City Centre logo.

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%28qvonqb45gjyhvk55x2xteo3u%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
  - Southfield City Centre Advisory Board - http://www.southfieldcitycentre.com/
  - Southfield Downtown Development Authority (DDA) - www.southfieldddda.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 City Centre
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
7890	2004	2-WAY	Evergreen	10 Mile	Southfield	LINK
5900	2012	EB	Evergreen	10 Mile	Southfield	LINK
7920	2011	WB	Evergreen	10 Mile	Southfield	LINK
11100	2003	2-WAY	Lahser	10 Mile	Evergreen	LINK
6090	2012	EB	Lahser	10 Mile	Evergreen	LINK
5720	2012	WB	Lahser	10 Mile	Evergreen	LINK
18720	2003	2-WAY	Southfield	10 Mile	Greenfield	LINK
9010	2010	EB	Southfield	10 Mile	Greenfield	LINK
8420	2010	WB	Southfield	10 Mile	Greenfield	LINK
85441	2010	EB	0.2 Mile South Of 11 Mile Rd.	I 696 E	0.2 Mile South Of 11 Mile Rd.	LINK
73515	2010	EB	At Evergreen	I 696 E	At Evergreen	LINK
84070	2010	WB	0.2 Mile South Of 11 Mile Rd.	I 696 W	0.2 Mile South Of 11 Mile Rd.	LINK
73367	2010	WB	At Evergreen	I 696 W	At Evergreen	LINK
12636	2011	SB	North of 10 Mile	Evergreen		I-SECTION
11791	2011	NB	South of 10 Mile	Evergreen		I-SECTION
8313	2010	EB	From Evergreen	Evergreen/I 696 E Ramp	From Evergreen	LINK
4064	2010	WB	From Evergreen	Evergreen/I 696 W Ramp	From Evergreen	LINK
15041	2010	NB	10 Mile	Evergreen	Civic Center Dr	LINK
15358	2010	SB	10 MIle	Evergreen	Civic Center Dr	LINK
23761	2010	SB	Civic Center Dr	Evergreen	Southfield Municipal Complex	LINK
22702	2010	NB	Civic Center Dr	Evergreen	Southfield Municipal Complex	LINK
15051	2010	NB	Southfield Municipal Complex	Evergreen	11 Mile	LINK
16332	2010	SB	Southfield Municipal Complex	Evergreen	11 Mile	LINK
9100	2010	NB	Civic Center Dr	Lahser	10 Mile	LINK
9670	2010	SB	Civic Center Dr	Lahser	10 Mile	LINK
10160	2010	NB	Civic Center Dr	Lahser	Northwestern	LINK
11450	2010	SB	Civic Center Dr	Lahser	Northwestern	LINK
22450	2005	2-WAY	Civic Center Drive	Lahser	Northwestern	LINK
35377	2004	NWB	100 Feet Southeast Of Beck Road	M 10 N	100 Feet Southeast Of Beck Road	LINK
997	2004	WB	100ft Sw Of W I-696 On Ramp	M 10 N	100ft Sw Of W I-696 On Ramp	LINK
47999	2005	NWB	At Lahser	M 10 N	At Lahser	LINK
35944	2004	SEB	100 Feet Southeast Of Beck Road	M 10 S	100 Feet Southeast Of Beck Road	LINK
2995	2004	SEB	At Lahser	M 10 S	At Lahser	LINK
36077	2006	SEB	Just North Of M-39	M 10 S	Just North Of M-39	LINK
42830	2010	NB	Ramp From 8 Mile (M-102)	M-10	Ramp To M-39 Nb	LINK
39520	2010	SB	Ramp From J L Hudson	M-10	Ramp To 8 Mile (M-102)	LINK
2900	2004	NWB	100ft. Se Of Civic Center Rd.	Northwestern	100ft. Se Of Civic Center Rd.	LINK
14667	2004	SEB	200 Feet Southeast Of Evergreen Road	Northwestern	200 Feet Southeast Of Evergreen Road	LINK
13584	2004	NWB	250 Feet Southeast Of 10 Mile And Evergreen Roads	Northwestern	250 Feet Southeast Of 10 Mile And Evergreen Roads	LINK
7446	2004	EB	Btwn Sebd M10 Off Ramp & Lahser Rd	Northwestern	Btwn Sebd M10 Off Ramp & Lahser Rd	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
6	4000	Southfield NB	85	593	CIVIC CENTER DR.	EVERGREEN	0	9	9	97	-83.24170	42.48019
7	4000	Southfield NB	90	20476	CIVIC CENTER	CENTRAL PARK BLVD	1	3	4	95	-83.24420	42.48008
8	4000	Southfield NB	95	22235	CIVIC CTR DR	IFO 20500	0	2	2	93	-83.24673	42.47992
Rem	4000	Southfield NB	100	23131	CIVIC CTR DR	IFO 20700	0	2	2	91	-83.24928	42.47974
9	4000	Southfield NB	105	22236	CIVIC CENTER DR	NORTHWESTERN	0	3	3	88	-83.25259	42.47951
10	4000	Southfield NB	110	20477	CIVIC CTR DR	XLOIS LANE	0	0	0	88	-83.25798	42.47919
-	4000	Southfield NB	115	11673	CIVIC CTR DR	LAHSER	3	1	4	90	-83.26156	42.47901
-	4000	Southfield NB	120	20478	CIVIC CTR DR	IFO WILLOW TREE APTS	4	0	4	94	-83.26344	42.47907
-	4000	Southfield NB	125	20479	CIVIC CTR DR	IFO MONTICELLO APTS	0	2	2	92	-83.26699	42.47924
-	4000	Southfield NB	130	22237	1ST CTR DR	IFO 26911	1	4	5	89	-83.27005	42.48153
-	4000	Southfield NB	135	22238	NWESTERN	X FROM 1ST CTR PLAZA	0	2	2	87	-83.27114	42.48470
-	4000	Southfield NB	140	22239	NORTHWESTERN	X FROM MARRIOTT	0	0	0	87	-83.27653	42.48531
13	4001	Southfield SB	170	11121	CIVIC CENTER	LOIS LANE	3	1	4	77	-83.25741	42.47899
14	4001	Southfield SB	175	11122	CIVIC CENTER	NORTHWESTERN	0	1	1	76	-83.25219	42.47931
15	4001	Southfield SB	180	11123	CIVIC CENTER	X FROM 20700	1	0	1	77	-83.24858	42.47956
-	4001	Southfield SB	185	22252	CIVIC CENTER DR	X FROM 20500	0	0	0	77	-83.24628	42.47974
16	4001	Southfield SB	190	11124	CIVIC CENTER	CENTRAL PK BL	3	1	4	79	-83.24294	42.48002
29	4001	Southfield SB	195	588	EVERGREEN	CIVIC CENTER DR.	3	1	4	81	-83.24098	42.47965
30	4001	Southfield SB	200	11130	EVERGREEN	BOARDWALK BLVD.	1	0	1	82	-83.24090	42.47762
31	4001	Southfield SB	205	22253	EVERGREEN	X FROM GOLDWIN	3	0	3	85	-83.24087	42.47565
32	4001	Southfield SB	210	589	EVERGREEN	10 MILE RD	6	0	6	91	-83.24066	42.47308
-	4001	Southfield SB	215	22254	EVERGREEN	NW HWY	1	0	1	92	-83.24062	42.47082

Source: SMART, November, 2012

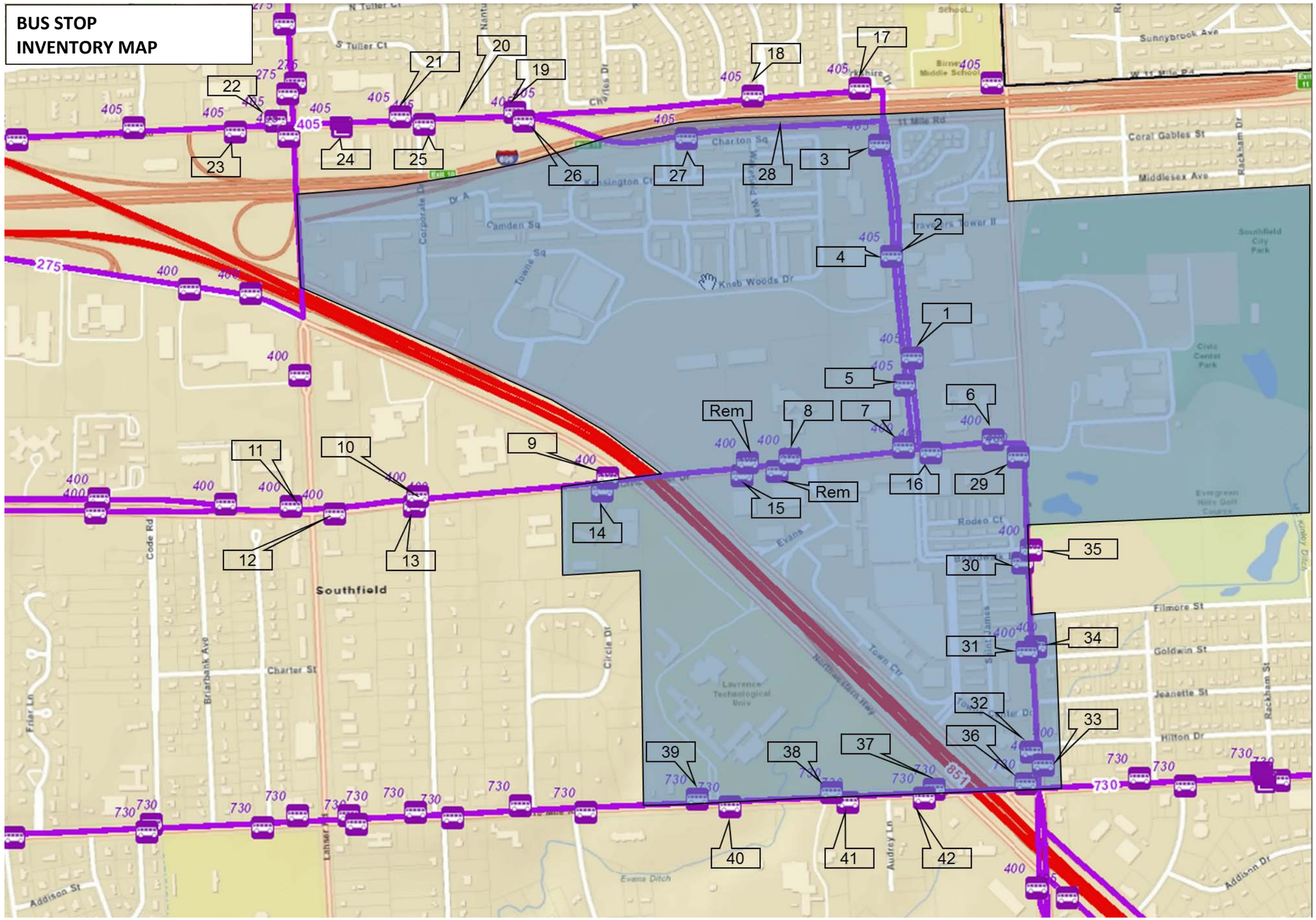
BUS STOP INVENTORY

Map No.	Route	Road Name	Direction	Location - 1	Location - 2	Sign	Walk	ADA	Pad	Shelter	Bench	Bike Rack	Trash Can	Remarks
1	405	Central Park Boulevard	Northbound	At	City Centre Plaza	Y	Y	Y	N	N	Y	Y	Y	
2	405	Central Park Boulevard	Northbound	At	Polk Bldg	Y	Y	Y	N	N	N	N	N	Walk adjacent to curb
3	405	Central Park Boulevard	Southbound	South	I-696 Service Drive	Y	N	N	N	N	N	N	N	
4	405	Central Park Boulevard	Southbound	At	Polk Bldg	N	N	N	N	N	N	N	N	
5	405	Central Park Boulevard	Southbound	At	City Center Plaza	Y	Y	Y	Y	Y	Y	Y	Y	Solar shelter, non Southfield suite
6	400	Civic Center Drive	Westbound	West	Evergreen	Y	Y	Y	Y	Y	Y	N	Y	New Civic Center sidewalk on north side
7	400	Civic Center Drive	Westbound	West	Central Park	Y	N	N	N	N	Y	N	Y	
8	400	Civic Center Drive	Westbound	2700	Civic Center	Y	N	N	N	N	Y	N	Y	
9	400	Civic Center Drive	Westbound	West	Lodge Freeway	Y	N	N	N	N	N	N	N	No mainline walk
10	400	Civic Center Drive	Westbound	West	Lois Lane	Y	N	N	N	N	N	N	N	No mainline walk
11	400	Civic Center Drive	Westbound	West	Lahser	Y	N	N	N	N	N	N	N	
12	400	Civic Center Drive	Eastbound	East	Lahser	Y	Y	Y	N	N	N	N	N	Adjacent to sidepath
13	400	Civic Center Drive	Eastbound	West	Lois Lane	Y	N	N	N	N	N	N	N	
14	400	Civic Center Drive	Eastbound	West	Lodge Freeway	Y	Y	Y	Y	Y	Y	Y	Y	LTU entrance & gateway w/ benches
15	400	Civic Center Drive	Eastbound	East	Lodge Freeway	Y	N	N	N	N	Y	N	Y	
16	400	Civic Center Drive	Eastbound	East	Central Park	Y	N	N	N	N	N	N	N	
17	405	Eleven Mile Road	Westbound	West	Central Park	Y	N	N	N	N	N	N	N	
18	405	Eleven Mile Road	Westbound	West	Harvard	Y	N	N	N	N	N	N	N	
19	405	Eleven Mile Road	Westbound	West	Arlington	Y	N	N	N	N	N	N	N	
20	405	Eleven Mile Road	Westbound	21540	Eleven Mile	Y	N	N	N	N	N	N	N	
21	405	Eleven Mile Road	Westbound	At	Harvard Row Mall	Y	N	N	N	N	N	N	N	
22	405	Eleven Mile Road	Westbound	West	Lahser	Y	N	N	N	N	N	N	N	
23	405	Eleven Mile Road	Eastbound	At	MDOT Park & Ride	Y	N	N	N	N	N	N	N	
24	405	Eleven Mile Road	Eastbound	East	Lahser	Y	Y	?	Y	N	N	N	N	
25	405	Eleven Mile Road	Eastbound	East	Corporate Drive	Y	N	N	N	N	N	N	N	
26	405	Eleven Mile Road	Eastbound	West	Freeway Bridge	Y	N	N	N	N	N	N	N	
27	405	I-696 Service Drive	Eastbound	East	Knob in the Woods	Y	N	N	N	N	N	N	N	Place for School Bus Pick-up
28	405	I-696 Service Drive	Eastbound	East	Freeway Ramp	Y	N	N	N	N	N	N	N	
29	400	Evergreen Road	Southbound	South	Civic Center Drive	Y	N	N	N	N	N	N	N	
30	400	Evergreen Road	Southbound	South	Boardwalk Blvd	Y	N	N	N	N	N	N	N	
31	400	Evergreen Road	Southbound	strip mall	Park Place Mall	Y	Y	Y	Y	Y	Y	Y	Y	
32	400	Evergreen Road	Southbound	North	Ten Mile Road	Y	N	N	N	N	N	N	N	
33	400	Evergreen Road	Northbound	North	Ten Mile Road	Y	N	N	N	N	N	N	N	Benches at strip mall to north
34	400	Evergreen Road	Northbound	North	Goldwin	Y	N	N	N	N	N	N	N	
35	400	Evergreen Road	Southbound	At	Boardwalk Blvd	Y	N	N	N	N	N	N	N	
36	730	Ten Mile	Westbound	West	Evergreen	Y	Y	Y	N	N	N	N	N	Schedule info on sign
37	730	Ten Mile	Westbound	East	LTU Athletic Field	Y	Y	Y	N	N	N	N	N	Schedule info on sign
38	730	Ten Mile	Westbound	West	LTU Athletic Field	Y	Y	Y	N	N	N	N	N	Schedule info on sign
39	730	Ten Mile	Westbound	West	LTU Entrance	Y	Y	Y	Y	Y	Y	N	Y	Schedule info on sign
40	730	Ten Mile	Eastbound	East	LTU Entrance	Y	Y	Y	Y	Y	Y	N	Y	Schedule info on sign
41	730	Ten Mile	Eastbound	At	The Word	Y	Y	Y	N	N	N	N	Y	Schedule info on sign
42	730	Ten Mile	Eastbound	West	Lodge Freeway	Y	Y	Y	N	N	N	N	Y	Schedule info on sign

Bus stop inventory performed by Giffels Webster

Original: 12/4/2012

Updated: 1/17/2013



LEGEND

Bus stop location & map ID ##

Route No. ***
Route

Base Map Source:
Southfield GIS System
Inventory Date: 12/04/2012
Updated: January 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
City Centre	28.0%	7
Sector A	0.0%	0
Sector B	4.0%	1
Sector C	4.0%	1
Sector D	20.0%	5
Sector E	16.0%	4
Sector F	0.0%	0
Sector G	16.0%	4
Sector H	12.0%	3
I do not live in the city (please enter city of residence)		24
	ANSWERED	25
	SKIPPED	25

Question #2: What sector of the city do you work in?		
Answer Options	Response Percent	Response Count
City Centre	54.8%	23
Sector A	0.0%	0
Sector B	2.4%	1
Sector C	9.5%	4
Sector D	4.8%	2
Sector E	7.1%	3
Sector F	0.0%	0
Sector G	14.3%	6
Sector H	0.0%	0
I'm currently unemployed	4.8%	2
I'm a student	2.4%	1
I do not work in the city (please enter city of employment)		8
	ANSWERED	42
	SKIPPED	8

Question #3: How often do you walk?		
Answer Options	Response Percent	Response Count
Daily	26.7%	12
Weekly	37.8%	17
Monthly	13.3%	6
A few times a year	15.6%	7
Never	6.7%	3
	ANSWERED	45
	SKIPPED	5

Question #4: Why do you walk?		
Answer Options	Response Percent	Response Count
Work (to/from)	9.3%	4
Lunch/Dining	34.9%	15
School (to/from)	4.7%	2
Shopping	14.0%	6
Recreation/exercise	76.7%	33
Social (e.g. with a friend)	23.3%	10
	ANSWERED	43
	SKIPPED	7

Question #5: When do you usually walk?		
Answer Options	Response Percent	Response Count
Morning	21.4%	9
Lunch	38.1%	16
Afternoon	19.0%	8
Evening	45.2%	19
Night	4.8%	2
	ANSWERED	42
	SKIPPED	8

Question #6: Which of the following would you choose to walk to? Select as many as you		
Answer Options	Response Percent	Response Count
City Centre	56.8%	25
School	6.8%	3
Park	50.0%	22
Library	43.2%	19
Shopping	38.6%	17
Work	22.7%	10
Friends/Family	36.4%	16
To buy a coffee/breakfast	56.8%	25
To eat lunch/dinner	68.2%	30
Pathways in adjacent communities	31.8%	14
Other (please specify)		2
	ANSWERED	44
	SKIPPED	6

Question #7: Which of the following prevents you from walking more often?		
Answer Options	Response Percent	Response Count
Personal Safety	25.6%	11
Health Reasons	2.3%	1
Don't Have Time	44.2%	19
Distance to Destinations	60.5%	26
Lack of Sidewalks	37.2%	16
Prefer to drive or use transit	11.6%	5
Other (please specify)		3
	ANSWERED	43
	SKIPPED	7

Question #8: If the concerns above were addressed, how often would you walk?		
Answer Options	Response Percent	Response Count
Daily	34.9%	15
Several times a week	39.5%	17
Several times a month	7.0%	3
Occasionally	16.3%	7
Not At All	2.3%	1
	ANSWERED	43
	SKIPPED	7

Question #9: Would you walk more often if there was a dedicated looped pathway system,		
Answer Options	Response Percent	Response Count
Yes	79.5%	35
No	20.5%	9
	ANSWERED	44
	SKIPPED	6

Question #10: How often do you ride a bike?		
Answer Options	Response Percent	Response Count
Daily	2.2%	1
Weekly	31.1%	14
Monthly	13.3%	6
A few times a year	22.2%	10
Never	31.1%	14
	ANSWERED	45
	SKIPPED	5

Question #11: Why do you bike?		
Answer Options	Response Percent	Response Count
Work (to/from)	9.7%	3
School (to/from)	9.7%	3
Shopping	9.7%	3
Recreation/exercise	96.8%	30
	ANSWERED	31
	SKIPPED	19

Question #12: When do you usually bike?		
Answer Options	Response Percent	Response Count
Morning	22.6%	7
Lunch	3.2%	1
Afternoon	41.9%	13
Evening	67.7%	21
Night	0.0%	0
	ANSWERED	31
	SKIPPED	19

Question #13: Where of the following would you choose to bike? Select as many as you		
Answer Options	Response Percent	Response Count
City Centre	48.4%	15
School	19.4%	6
Park	61.3%	19
Shopping	29.0%	9
Work	32.3%	10
Friends/Family	48.4%	15
Pathways in adjacent communities	61.3%	19
Drive to areas outside of Southfield	35.5%	11
Other (please specify)		4
	ANSWERED	31
	SKIPPED	19

Question #14: Which of the following prevents you from biking more often?		
Answer Options	Response Percent	Response Count
Personal Safety	25.0%	9
Health Reasons	5.6%	2
Street/Path Conditions	41.7%	15
Don't Have Time	33.3%	12
Distance to Destinations	41.7%	15
Lack of Bike Parking	41.7%	15
Speed or volume of traffic along adjacent roadway	44.4%	16
Prefer to Drive	25.0%	9
Other (please specify)		1
	ANSWERED	36
	SKIPPED	14

Question #15: Would improved and/or additional bike routes in the City encourage you to		
Answer Options	Response Percent	Response Count
Very Much	45.0%	18
Some	22.5%	9
Neutral	5.0%	2
Not Much	12.5%	5
Not At All	15.0%	6
	ANSWERED	40
	SKIPPED	10

Question #16: In the last year, how many times have you walked or biked to work?		
Answer Options	Response Percent	Response Count
Never	77.5%	31
Up to 10 Times	17.5%	7
A Few Days A Week	5.0%	2
Most Days	0.0%	0
	ANSWERED	40
	SKIPPED	10

Question #17: In the last year, how many times have you walked or biked to a bus stop?		
Answer Options	Response Percent	Response Count
Never	95.1%	39
Up to 10 Times	2.4%	1
A Few Days A Week	0.0%	0
Most Days	2.4%	1
	ANSWERED	41
	SKIPPED	9

Question #18: In the last year, how many times have you taken public transit to work?		
Answer Options	Response Percent	Response Count
Never	97.7%	42
Up to 10 Times	0.0%	0
A Few Days A Week	0.0%	0
Most Days	2.3%	1
	ANSWERED	43
	SKIPPED	7

Question #19: If the City received extra funding for bike and pedestrian improvements,		
Answer Options	Response Percent	Response Count
Fill in gaps in sidewalks	16.7%	7
More pedestrian crosswalks/signals to make it easier and safer to	33.3%	14
Bike lanes	7.1%	3
Bike paths	16.7%	7
Provide more amenities such as benches, bike racks and shade	26.2%	11
	ANSWERED	42
	SKIPPED	8

Question #20: What is your age?		
Answer Options	Response Percent	Response Count
18 and Under	0.0%	0
19-34	27.3%	12
35-54	29.5%	13
55-64	20.5%	9
65+	22.7%	10
	ANSWERED	44
	SKIPPED	6

Question #21: Do you have children?		
Answer Options	Response Percent	Response Count
Yes	55.8%	24
No	44.2%	19
	ANSWERED	43
	SKIPPED	7

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.

APPENDIX 5: City of Southfield Bike Rack Details

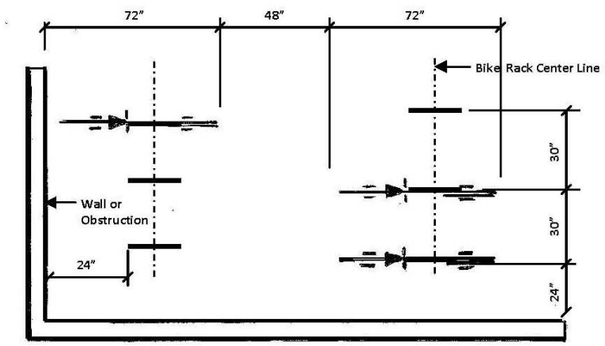
CITY OF SOUTHFIELD BIKE RACK DETAILS

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

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Southfield City Centre
Non-Motorized and Transit Sub-Area Plan

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End Notes

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

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