6. Outreach and Education

The education and marketing is critical for the establishment of a successful non-motorized environment in the City of Novi. This section outlines recommendations and strategies on how the City can develop a program for public outreach and education for the non-motorized system.

Topics:

6.1 – Existing Promotional and Marketing Activities

6.2 – Opportunities and assets

6.3 – Public Outreach and Educational Strategies

Imagine walking into a new sandwich shop. In front of you is a menu 6 feet high and 8 feet wide filled with an overwhelming array of sandwich choices. Many of the sandwiches listed have ingredients you've never tried before. So you decide to go with what you know: a ham and cheese sandwich on white bread. The next day you walk into the shop and order the same thing. And again the day after that. Even though some of the other sandwiches might be cheaper, or better for you, you are hesitant to break out of your routine.

Many people experience their transportation choices in the same way. They think "I could walk to the grocery store or bike downtown, but will it be safe? Will I get dirty? Will I look silly?" So many people stick to what they know and lose out on the great benefits non-motorized transportation can offer.
So how do we break people out of their routine and encourage them to try non-motorized transportation? A public education and outreach program can provide the encouragement many people need to move them from considering using non-motorized transportation to actually using it.

The following recommendations outline the strategies the City can use to develop a public outreach and education program for the non-motorized system. It is important that the recommendations outlined in this section are done in tandem with the infrastructure changes so that what is being sold by the outreach program is truly a good product. If people are told that a particular bike route is safe and then have a fearful experience when they try it out, the result will be counterproductive.

6.1 Existing Promotional and Marketing Activities

The following is a list of activities that are already being done to promote non-motorized transportation in the Novi area.

Southeast Michigan Council of Governments (SEMCOG) (www.semcog.org)
SEMCOG offers limited information on bicycling and walking programs at http://www.semcog.org/WalkableBikeableCommunities.aspx. Their information includes biking maps for Oakland County and the surrounding area.

Safe Routes to School (http://www.saferoutesmichigan.org)
City of Novi has an active Safe Routes to School Committee with three schools having Safe Route Action plans to make it safe for kids to walk and bike to schools.

League of Michigan Bicyclists (www.lmb.org)
The League of Michigan Bicyclists provides advocacy, events, and resources for cycling in Michigan. Their website contains information on bike rides, Smart Commute events throughout the state, and ways to get involved in advocacy efforts around cycling. LMB has regional representatives for each part of the state. Rory Neuner of the Michigan Environmental Council is the current representative for the Lansing/Novi area.

Michigan Mountain Biking Association (www.mmba.org)
The MMBA provides advocacy, events, programs and resources for mountain biking in Michigan. Their website contains information on trail guides, news, upcoming events, and ways to get involved in advocacy efforts around mountain biking. MMBA has regional representatives for each part of the state. Dave Thompson is the current chapter representative for the Metro South region.

Michigan Trails & Greenways Alliance www.michigantrails.org/
Michigan Trails and Greenways Alliance fosters and facilitates the creation of an interconnected statewide system of trails and greenways for environmental/cultural preservation purposes, and includes an extensive database of Michigans trails. The organization has been very active in the Detroit metro area. Their website currently includes information on the I-275 Metro Trail.

City of Novi (cityofnovi.org)

Parks and Recreation
The City of Novi Parks and Recreation department provides information on its website about current biking facilities, including Lakeshore Park mountain biking.

6.2 Opportunities and Assets

When developing a public outreach and education program for the City's non-motorized plan, it is important to survey the opportunities and assets for promoting and encouraging non-motorized transportation.

Partnerships

There are many opportunities for the City of Novi to partner with other groups to promote non-motorized transportation and collaborate on programming educational opportunities and events.

Novi Police Department: Novi's Police Department is highly regarded throughout Michigan for its professionalism, public programming, and in particular for its work to improve traffic safety; it has been awarded the state's Excellence in Traffic Safety award four consecutive times. It already participates in a wellness event, the Run! It's an Emergency! 5K run, in partnership with other emergency response agencies and Providence Park Hospital.

Providence Park Hospital: Novi's primary wellness provider, Providence Park may be a powerful partner in programs and events that promote healthy, active lifestyles, reduce traffic-related crashes, and reduce the incidences and severity of injuries through traffic safety campaigns and classes, such as youth and adult cycling education.

Safe Routes to School: Parents in the Novi Public Schools have been working on the Safe Routes to School Program, already exposing them to the benefits of non-motorized transportation for their children. They may be willing participants in exploring Safe Routes opportunities for other trips within their community for their children and for themselves, such as Safe Routes to summer park programs, to shopping, or to work.

The merchant community: Novi's newest merchant developments, such as Novi Town Center and Main Street, were developed with the pedestrian and bicycling environment in mind. Merchants may be enthusiastic participants in programs and events that leverage their "lifestyle" image to encourage residents to bike or walk to their businesses.

Corporations: Effective company wellness programs send cost savings in health insurance and lost productivity straight to a company's bottom line. Many major employers are located near Novi's existing trails, the I-275 Metro Trail and the M-5 Metro Trail, presenting an opportunity to engage companies from an employee wellness perspective as partners in bicycling and walking programs and events. There may also be opportunities to partner with the Novi Technology Innovation Center since it is based downtown and houses innovative small businesses. Corporations can apply for Bicycle Friendly Business awards as well, from the League of American Bicyclists.

Walled Lake residents: The Lake Area Homeowners Association (LAHA) is a powerful stakeholder in the quality of life for Novi's lakeside residents, and works to promote active, outdoor recreation as a component of lakeside living. The LAHA may be willing partners in recreational cycling and walking events that showcase the lake lifestyle, and in programs that provide safer, more convenient, and enjoyable cycling and walking routes around the lake and to Novi's services, restaurants and shopping.

Community Groups: It was noted that the City of Novi has active Neighborhood Associations, civic groups and environmental groups and volunteer associations, many interested in promoting a higher quality of life for Novi residents. These groups may represent a good avenue for promoting non-motorized transportation and creating a movement around walking and biking as a Novi way of life.

Oakland County: Many other Oakland County communities, such as as Royal Oak, are also pursuing improvements to their walking and biking environments to improve sustainability, economic activity and quality of life. These communities may make powerful allies for Novi as a coalition of bicycling and walking-friendly communities on regional issues, programs, and infrastructure improvements.

Communications

City of Novi: The City of Novi distributes Engage, a recreation program and events guide, to residents three times a year, and publishes a monthly e-newseltter, Novi in a Nutshell. The City produces a variety of programs on its public access channel, Novi Television, including an environmentally themed program, the Green Zone.

Social networks: The City has a robust social networking presence with well over 1200 followers on Facebook and Twitter.

Periodicals: The Novi News is the City's local daily, with a circulation of 4000. Other important publications include the Detroit Free Press and Crain's Detroit Business.

Events

Community Events: Novi hosts many events that could be opportunities for promoting biking and walking and providing traffic safety education. These events include the city's summer festival, Novi Palooza, its summer athletic programs, and events hosted by the Recreation Department, such as 2010's National Take Your Child Outside Day. Bicycling and walking programming and education also will likely fit well with Novi's Farmer's Market, which is open May through October.

5K runs and mountain biking: Novi has a strong community of runners and mountain bikers, thanks to excellent accommodations at its parks such as Lakeshore Park, whose trails include nine miles of "primitive" trails for mountain bike use. These populations may be a rich opportunity to find programming and event participants, but also perhaps to find volunteers interested in supporting the City's efforts to create a community friendlier to walking and biking.

6.3 Public Outreach and Educational Strategies

A non-motorized transportation system isn't of much use if people do not use the system. Too often there is a reliance on a "build it and they will come" approach. This ignores the fact that Novi and many other communities have been designed around automobile use for the last 50 years. Thus, many residents won't naturally feel comfortable using a non-motorized system and will benefit from some encouragement.

To address this issue a public outreach and education strategy has been developed to engage a community to:

- Improve attitudes towards biking and walking
- Teach residents to be safer walkers, bikers and drivers
- Find partners and volunteers in creating better biking and walking conditions and producing events
- Maintain momentum for the often long and frustrating effort to improve the built environment
- Grow a movement

The great thing about public outreach and education is that it can start immediately, before the City of Novi lays one more mile of sidewalk or completes another trail connection. Novi, like most communities, has enough infrastructure and the programs, partners, and community pride to begin adding to the numbers of residents willing to try biking and walking right now. Efforts now will prime the City for success as it begins the hard, tedious work of improving its infrastructure for non-motorized transportation.

This section breaks out a Year One and a Year Two for outreach and encouragement to help the City set a direction and build momentum towards a sustainable, rich and varied outreach and education program. While the programs were selected as suitable for Novi, it's likely that a diverse and committed Task Force of local experts will discover new programs or tweaks to those listed that will work even better.

Year One: Establish the Program

In the first year, Novi can expect to:

- The city administration should determine the home of the city's biking and walking outreach and education program. The Parks and Recreation Department may be a natural location should additional resources be provided.
- Establish a Bicycling and Walking Task Force to help shape, produce and guide the outreach and education efforts.
- Establish a brand for the bicycling and walking outreach and education program
- Create a Facebook and Twitter presence for the outreach and education effort
- Establish partnerships with experienced bicycling and walking organizations such as Michigan Trails and Greenways Alliance, Michigan Mountain Biking Alliance and League of Michigan Bicyclists
- Apply for grants to fund a part-time coordinator for the outreach and education program and related tools and materials like website development, printed materials, and events promotion

- Begin tying active transportation messages and information into existing events such as organized runs, mountain bike events at Lakeshore Park, summer athletic leagues, the Farmers Market, and Novipalooza.
- Produce one stand-alone bicycling event
- Measure the miles of existing non-motorized facilities in the city
- Participate in the National Bicycle and Pedestrian Documentation Project

Establish the Encouragement and Outreach program within the City's Recreation Department
The City's Recreation Department represents the most expertise and best fit among the City's departments for many of the program and outreach components of this program. Already experienced in producing events large and small that leverage existing facilities, educate participants, and promote messages, the Recreation Department should make a capable home for many of the recommendations in this section of the plan.

Establish a Bicycling and Walking Task Force to help shape and direct the Education & Outreach program
If the outreach and education program is going to be successful, its development, direction and oversight needs to include key stakeholders, including interested residents. Forming a Bicycling and Walking Task Force that engages stakeholders helps provide buy-in from important groups as they are involved in the process of creating this program. They'll also be important channels for promoting efforts and programs to their constituencies, enabling the program to tap a much larger pool of potential volunteers, resources, energy and enthusiasm.

The primary responsibility of the Task Force will be to establish the needs of the community for non-motorized transportation education, information, promotion and events, and to provide the expertise, partnerships, resources and coordination to fulfill them.

This plan recommends that the Task Force have up to 12 members. Suggested stakeholders for this Advisory Board include the following:

- Staff member from the City of Novi's Recreation Department who will serve as the administrator for the program
- Staff members from the City of Novi that represents transportation, public relations
- A representative of the Novi Chamber of Commerce
- A representative from the Novi Police Department
- An interested employee of a Novi-headquartered major company
- A representative of Providence Park Hospital
- A representative from Michigan Trails and Greenways Alliance
- Up to three residents interested in bicycling and walking, including a Walled Lake resident
- Representative of Novi Public Schools working on Safe Routes to School issues

This Task Force should meet on a monthly basis to provide input on the direction of the program and help find ways to partner with the program once it is created.

Define a brand for biking and walking programming and education in Novi
A city's non-motorized transportation education and outreach efforts are best delivered through a branded program that gives the city a tool for promoting, communicating and creating buy-in for its events and initiatives. Novi has done this before, with its Novi Goes Green environmental sustainability brand and its associated programs.

There is not one correct way to create a public outreach and education campaign. Some, like Ann Arbor's getDowntown Program, focus on a particular target audience (employers and employees in the downtown), some, like CATA's Clean Commute Options Program, repackage a portion of an organization to promote the use of existing services (CATA's buses, rideshare program, etc) among a certain audience (commuters and students). No matter how a Public Outreach and Education program is organized, it is extremely important that the program is packaged in some way.

While biking and walking safety demonstrations, encouragement programs, and events may seem to fit well under the Novi Goes Green brand, consider that people come to bicycling from diverse preferences and backgrounds. A brand that directly communicates biking and walking separate from Novi Goes Green will give the Task Force and the City more flexibility in marketing programs and messages. Brands that evoke motion and active living also may appeal more to current state, federal and private interests issuing grants and assistance for improving wellness.

Establish a web presence for the program at cityofnovi.org and social networking sites
The branded program should have its own page at cityofnovi.org, similar to the Novi Goes Green program. The page should offer a calendar of biking and walking-related events in the area, information available through the program, an explanation of the Task Force and meeting minutes, and updates regarding grant awards and efforts to improve the built environment. The page should be complimented by links to follow the non-motorized transportation plan on Facebook and Twitter.

It's important that the social networking feeds, Facebook and Twitter, post not just the City's progress towards bicycling and walking improvements but ANY information about walking or biking in Novi or neighboring communities, including mountain biking events and races such as Run, It's an Emergency! The Facebook page should be open to all notes, commentary and encouragement regarding the current cycling and walking experience, good and bad. Novi has no identified group of cyclists or walkers, which communities typically build upon to create a movement around sustainable transportation. Both Facebook and Twitter can build community but only if communication is two-way and open.

A great strategy would be to make two or more of the Task Force members administrators for these pages, allowing posts to reflect a variety of opinions and perspectives about walking and biking in Novi. The goal is to start and grow a conversation around the shared vision of a walking and biking-friendly community. The payoff is community buy-in, a rich source of viewpoints, a ready company of potential volunteers, and a qualified audience for programming and events.

Establish partnerships with experienced bicycling and walking organizations
The Recreation Department's programming at Lakeshore Park has produced at least a basic knowledge of mountain biking across a wide base of residents. But Novi lacks an analogue for street cycling and pedestrian issues, and has no local cycling club or pedestrian rights group to provide ideas and expertise for outreach and education.

Michigan, however, has excellent non-motorized transportation organizations, including Michigan Trails and Greenways Alliance, Michigan Mountain Biking Association and the League of Michigan Bicyclists. These organizations have active volunteers and/or staff working in the Detroit Metro region. These resources should be tapped through the Bicycling & Walking Task Force to supplement the Task Force's

local knowledge with bicycling and walking program expertise, and to help identify opportunities for grant proposals and partnerships. As Novi begins to implement changes to build environment as well as education and outreach initiatives, these contacts become important promotional channels as well to a regional, state and national audience.

Apply for grants to fund a part-time coordinator for the outreach and education program and related tools and materials such as website development, printed materials, and events promotion
Taking a look at successful non-motorized programs throughout the country, from Ann Arbor to Boulder, it's clear that if a community wants to transition from a car-centered culture to one that makes biking and walking a safe and attractive option, that community must make a commitment to provide some staffing for this effort.

The Recreation Department already has clear expertise in program development, event production, instructional services, and promotion. Evaluate if it is possible, or if additional resources should be provided for an existing staff position to be in part recast to spend up to half of their time on coordinating the outreach and education objectives set by the Task Force.

Whether it's a new hire or an internal job description change, the Task Force should pursue grants available through private and public agencies that fund wellness, recreation and non-motorized transportation initiatives. The Kellogg Foundation, the Meier Foundation, and the Kresge Foundation all have funded wellness and active lifestyle staff and programming in the Detroit Metro region and around the state. The state's own Highway Safety program may also provide funding for traffic safety education materials and programs.

Begin tying active transportation messages and promotions into existing events such as organized runs, mountain bike events at Lakeshore Park, summer athletic leagues, the Farmers Market, and Novipalooza

While creating bicycling and walking programming and information from scratch is considerable work, relying on existing materials produced elsewhere and incorporating sustainable transportation messaging and instruction into planned and existing events and publications is simple, effective and inexpensive.

The Task Force can help the Recreation Department determine the City's top three messages for encouraging safe bicycling and walking to be incorporated into the materials developed for Engage, into the City's Go Green materials and communications, and into the community's mountain biking and running/walking events. The Task Force should look to Michigan's bicycling advocacy groups, MDOT, and national advocacy groups for materials suitable for distribution at the farmers market and at events. These materials should become part of the table-top kit for the Recreation Department.

Produce one small-scale stand alone bicycling event
In a city like Novi, which hasn't had an organized cycling community hosting rides and cycling-related events, even a small, well-publicized cycling event can generate interest and excitement community-wide with modest resources.

An event such as Bike & Dine is small enough to be produced wholly within the Recreation Department, whether or not the department is successful in hiring an outreach and education coordinator. A Bike & Dine is simply a progressive dinner by bicycle. The Task Force identifies 3-5 Novi restaurants to visit by bicycle, and asks each restaurant to offer one course of a meal to all participants. Following a pre-selected route, with police escort if desired, participants ride to each establishment, enjoy the restaurant's offerings, and continue on to the next. Bike & Dines typically are limited to less than 35 participants, and involve a fee to cover the restaurants' costs.

While characterized by the Twelve Oaks regional mall and its busy Mile roads and arterials, Novi's clusters of retail and restaurants still offers a selection of high quality dining and drinking within easy riding distances of one another. A select bicycle tour of these establishments can garner media attention to local businesses and raise the profile of cycling as a way to encourage and enjoy local patronage.

The City of Royal Oak hosted its first Bike & Dine in fall 2010 with no city staff time or resources involved; volunteers organized through Facebook produced the event themselves, and more than 35 people spent an enjoyable evening exploring their community by bicycle. It's easy to imagine that a Bike & Dine in Novi would be similarly successful.

Year Two: Build a culture of biking and walking

Year one recommendations provide a structure and process for establishing outreach and education objectives, helps the City identify partners and supporters in the community, and begins a dialogue with the community about biking and walking in Novi. Year two recommendations leverage these efforts to begin initiatives in Education, Enforcement, and Encouragement that can grow biking and walking modeshare and consideration for other transportation system users going forward.

In year two, the City of Novi can expect to:

Educate

- Establish a biking and walking ambassador program within the Youth Police Academy
- Establish third grade bicycling and walking education programs as a prerequisite for riding to school in 4th grade

Enforce

- Deploy crosswalk stings at targeted pedestrian crossings
- "Ticket" children who are wearing bicycling helmets

Encourage

- Produce a community bicycle map
- Host Bike to Work Week
- Produce a larger bicycling event

Evaluate

- Survey residents' attitudes towards biking and walking efforts
- Measure the miles of non-motorized facilities in the city
- Participate in the National Bicycle and Pedestrian Documentation Project
- Apply for the League of American Bicyclists' Bicycle Friendly Community status and the state's Promoting Active Communities award

The following pages provide more details to the proposals listed above.

Education

Bicycling and Walking Ambassadors

The issue
Training children and adults in basic non-motorized traffic safety, developing awareness of all road and trail users, and raising the profile of cycling and walking as a healthy, smart, and valid choice of transportation within the community.

The idea
Junior Bicycle Ambassadors—teenage youth trained in traffic cycling and safe cycling and walking issues in order to deliver bicycle and pedestrian safety demonstrations for all ages, educate motorists and non-motorists, and assist with the development of local cycling activities and events.

Why it works in Novi
The award-winning Novi police force currently offers a popular one-week program that immerses youth in a broad-based, hands-on survey of police department operations, including traffic safety. This existing program provides an administrative structure for training youth and allows additional capacity for further training to be added incrementally. Federal Highway Administration safety funds, administered through MDOT, may provide funding.

How it works
The police department agrees to add an additional week of training for youth interested in serving a summer internship as a Bicycling and Walking Ambassador. The youth receive hands on training in bicycling and walking law and practicable skills, basic bicycle maintenance, and public outreach and presentation. Organizations such as Michigan Trails & Greenways Alliance or the Chicago-area Active Transportation Alliance can train police academy instructors to teach youth bicycle and pedestrian safety education and outreach skills and tactics. International Police Mountain Bike Association-certified instructors or League of American Bicyclist-certified instructors may be contracted to train police academy instructors to teach youth traffic cycling and bicycle handling.

Once trained, the Ambassadors would be programmed out of the Recreation Department to:

- Be deployed as instructors to Novi Parks & Recreation bicycle safety classes and local Safe Routes to School programs where they can provide helmet fitting, basic bicycle safety checks, and basic bicycle and crosswalk skills instruction.
- At motorized/non-motorized conflict points, distribute “Share the Road” and awareness literature to drivers as well as bicyclists and pedestrians (along with a supervising bicycle-mounted officer)
- Capitalize on local walking, running and bicycling events by providing safety demonstrations for participants and spectators, and they can be a safety/support resource for events as ride marshals or course marshals.

Related opportunities:

- Youth may design their own literature for cyclists, walkers and driver tips & awareness, and even their own presentations
- Youth may write a guest column for local news, maintain a Facebook page or blog, produce biking, walking & driving awareness videos
- Trading cards for each of the Jr. Ambassadors with “stats” could spread excitement about the program among pre-teen and younger youth

In Ann Arbor, Ambassadors are used during the month-long Commuter Challenge and are an invaluable resource, encouraging potential walkers and cyclists in the workplace to try sustainable transportation. In Chicago, Ambassadors help officers with targeted pedestrian crossing enforcement, deliver bicycling and walking instruction in the classroom and park programs, provide riding support during city cycling events, and distribute maps, information, and assistance on Chicago's busy Lakefront Trail. The Ambassadors become a high-profile home of community cycling expertise.

Third Grade Bicycle Academy

The issue
Begin normalizing the broad-based delivery of safe cycling education to children and their parents in a fun, engaging way. Mitigate growing school traffic aggravated by the elimination of bus routes for financial savings.

The idea
Make completion of a safe cycling course at the end of third grade, taught by the Ambassadors, a prerequisite for the privilege of cycling to school

Why it works in Novi
Children—and their parents—would begin seeing cycling as a right of passage rewarded with a new privilege, which is a powerful motivator for most people, especially children paying close attention to older kids. A culture of responsible cycling to school would follow the children into middle school.

Also, having to teach is often the greatest teacher: The Biking & Walking Ambassadors, supplemented by a bicycle-mounted supervising officer, could be this program's instructors while encouraging their own training to sink in for life-long behavior and attitude change towards cycling and walking. Novi's involved parents could be engaged by asking them to test their children at home; send-home evaluation materials to be filled out and signed by parents can deliver safe walking and biking education to the adults.

How it works
Elementary school districts adopt school travel policies that limit cycling to school to fourth grade and above, and establish a week-long, end-of-year "bicycle academy" integrated into third grade physical education. Using Ambassadors as instructors, children learn cycling skill basics, basic bicycle safety check, helmet fit, and appropriate traffic cycling skills such as crossing roads, driveway dangers, and negotiating sidewalks. Children completing the academy receive a free helmet and a certificate permitting them to bicycle to school in fourth grade.

This program, obviously, requires that children have a bicycle to use during the program. Not all children wishing to participate will have their own bike to use. The Recreation Department or the police department could quickly establish a small fleet of bicycles for the program by repurposing unclaimed bicycles recovered by the police department.

Enforcement

Police Crosswalk Stings

The issue
Improve the safety and comfort level of street crossings by changing the behavior of motorists to comply with state law requiring motorized traffic to fully stop before right on red, and to yield to the pedestrian or cyclist in the crosswalk.

The idea
Police stings at marked crosswalks and trail crossings that provide a warning period before hard enforcement. Any revenue beyond cost of enforcement can be used to fund the Ambassadors program explained above.

Why it works in Novi
Surveys show that crossing streets is a top safety priority for the Novi walking and biking community. The award-winning police department can leverage MDOT highway safety funding for sting operations at targeted high risk, high pedestrian or trail use crosswalks.

How it works: Crosswalk stings involve a public information campaign, a week of educating and issuing warnings, a week of hard enforcement, a video camera, and a chicken suit:

- **Week one** – A public information week promoting the stings as a response to Novi's residents demanding a safer bicycling and walking community and how yielding to users in the crosswalk is an essential component. Promotion includes specifying the locations of the stings to begin the following week, and that a chicken will be trying to cross the road at these locations.
- **Week two** – at the selected high risk/high use crossings, an officer dressed as a chicken crosses within a marked crosswalk (during the WALK cycle if signalized) while another officer (or Ambassador) films driver behavior. Turning or crossing traffic failing to yield/stop for the chicken are pulled aside by another officer/officers for a warning and education. At the end of the week, news outlets are provided video clips and a press release that includes a reminder of hard enforcement beginning the following week.
- **Week three** – Hard enforcement at targeted locations, including issuing traffic fines.

Humor has a big role in creating a memorable story with a large hook and in keeping the public on the side of enforcing better crosswalk behavior, and this program should leverage all opportunities to incorporate it. For example: Warnings and safety literature can be delivered inside large plastic eggs.

Helmet Ticketing Campaign

The issue
Encourage helmet use among children

The idea
Police issue "tickets"—actually a coupon for free ice cream or other suitable treat—to children "apprehended" wearing helmets properly

Why it works in Novi
It engages a real strength of the community—its police force—in a positive public relations campaign that will galvanize children to beg their parents for a well-fitting helmet. It will also encourage children to engage the police. It's easy to imagine children riding around, looking for police to show their helmets to.

How it works
Child wears helmet. Police issue free ice cream ticket. The ticket can also include a safe cycling message and instructions on proper helmet fit. Also consider a second ticket for children without helmets that offers a discount at a local bike shop or an option to purchase a low-cost helmet through the Recreation Department. (Helmets can be found for bulk order price of less than $4).

Encouragement

Novi Bicycle Map
The Recreation Department, with assistance from the Task Force and volunteers of route checkers, produces a map of recommended bicycle routes and trails, with an emphasis on connectivity using existing infrastructure for all residents to destinations (including trails, other routes and surrounding communities).

The best bicycling maps include the entire street network as a base, and rank on-street routes by color corresponding with the necessary traffic tolerance a cyclist would need to feel comfortable using them. A great map also includes basic traffic cycling safety and trails etiquette information, including equipment choice, helmet information, locking information, and how drivers should pass cyclists on the street.

The map should be a stand-alone document distributed to every household to generate excitement and awareness about cycling in Novi. But the map can be paired with other publications already targeting residents' mailbox for efficiency and coverage, like the park & recreation department's Edge publication.

Bike to Work Week/Commuter Challenge

The issue
A substantial number of adults working in Novi live in Novi and next-door communities, yet only 2% have tried cycling to work

The idea
Invite Novi's companies and organizations to challenge peers (by size, business category and/or organization type), perhaps regionally, to a contest over how many employees try cycling or walking to work during National Bike to Work Week.

Why it works in Novi
The I-275 Metro trail already exhibits unofficial access points near some of Novi's largest corporate clients, and the M-5 Metro Trail provides some access as well. A commuter challenge program leverages this activity to expand awareness of bicycling connections to the work place and to generate excitement among Novi's sizeable corporate community around the health and well-being benefits of cycling or walking to work.

How it works
The program should be housed in the Recreation Department under the Novi biking and walking brand. Key tasks are event promotion and providing a registration and tracking process, which can be as simple as a basic web-based form. Companies, organizations, and other job centers appoint a Commuter Challenge Team Leader who signs up co-workers to try biking or walking to work at least once during Bike to Work Week. The Team Leader also becomes the liaison to the program's organizers and a distribution point for safety information and encouragement items such as maps and fitness gear. During Bike to Work Week, the Team Leader tracks which employees tried walking or biking to work each day, and reports to the program organizer. When the week is over, the program organizers tally the counts and award prizes and acknowledgement to winners in each category as well as an overall winner.

Large Scale Ride

The issue
Generate regional excitement and notoriety for Novi as a healthy community that encourages cycling and walking

The idea
Establish a closed-course route within the Novi community, preferably a route that includes a major thoroughfare and some contact with Walled Lake, for a unique and family-friendly celebration of active living and recreation

Why it works in Novi
Most residents and visitors to Novi have only experienced travel around the community from inside a car, whose speed and seclusion blunt and condense observations of and interaction with the true character of its streets and neighborhoods. On a bike, residents and visitors will have a richer experience that often times seems wonderfully unfamiliar as participants literally see, hear and feel more of their community along the routes many of them have only ever driven. For many, it will begin to change their perspective of the quality of their community and the potential for active living.

How it works
A large scale ride will engage the entire Task Force, a crew of Ambassadors, and a team of volunteers besides, but the Recreation Department and the City of Novi should also invite a partner expert in large scale ride production and management, such as the organizers of Tour De Troit or the Michigan Trails and Greenways Alliance. Involving these organizations also invites their partnership in event promotion to their constituencies.

The event should charge a registration fee. Novi is a stable, upper middle class community whose demographics can support a charged-fee event. Most of the costs will be for personnel, including police control of any intersections with open streets, and they are substantial. Still, the City can expect to raise funding that can be used as matching dollars for federal walking and biking grants, as education and outreach funding, or to fund the bicycling and walking coordinator position. These program options for the funding should be a key message of the events' promotion.

Evaluation

Conduct evaluation survey and report results
By the end of year two, the City of Novi outreach program should be able to conduct a survey of either the entire program or a component of the program and report the results to the community. This evaluation will help highlight the successes of the program as well as some ways that the program might be improved.

Complete application for Bike Friendly Community Award with community and partner input
The League of American Bicyclists promotes communities throughout the country with its Bike Friendly Community Award. The process of applying for the award is a great way to determine what is being done in the community as well as where improvements might need to be made. The community can be engaged in the process of applying for the award through public meetings. In addition, if Novi receives a Bike Friendly Community Award, this becomes a great promotional tool not only for the program but for the community as a whole. Currently, Ann Arbor (Silver Award), Traverse City (Bronze Award), Grand Rapids (Bronze Award), Houghton (Bronze Award), Lansing (Bronze Award), Marquette (Bronze Award), and Portage (Bronze Award) are the other cities in Michigan with Bike Friendly Community designations.

Complete application for the Promoting Active Communities Award with community and partner input

The Promoting Active Communities Award is a Michigan-Based award for communities that show a strong commitment to supporting physical activity. The City has applied for this award in the past. Communities are given awards from the highest level of Gold to the category of Honorable Mention. Just like the Bike Friendly Community Award, this award is a great way to engage the community in non-motorized transportation issues as well as a good promotional tool, should Novi receive a designation.

Document Non-motorized Growth and Demand in the City

A bicycle and Pedestrian Count should be conducted as part of the National Bicycle and Pedestrian Documentation Project to document the uses and demand of non-motorized facilities in the city. The National Bicycle and Pedestrian Documentation Project is a nationwide effort to provide a consistent model of data collection and ongoing data for use by planners, governments, and bicycle and pedestrian professionals. The counts should be done on yearly bases, with consistent locations used each year. Please visit www.bikepeddocumentation.org for more information on conducting a bicycle and pedestrian count and on ways the city can participate in national count.

In addition to counting the number of users, the miles of built facilities should also be documented on a yearly bases to track the development of the non-motorized network. The miles of bike lanes, pathways, sidewalks, neighborhood connectors/bike routes, number of mid-block crossing improvements and number of bike parking spaces should be tracked. It is important to keep up-to-date documentation of these facilities because these measurements are used to apply for awards, such as the Bike Friendly Community Award.

7. Appendix

Topics:

7.1 Web Survey Results

Summary

A web survey for the City of Novi Non-motorized Master Plan was conducted over a three week period from the End of September, 2010 through the Beginning of October, 2010. The purpose of the survey was to collect information about current walking and bicycling patterns, determine the comfort level of using different non-motorized facility types, identify popular bicycle and pedestrian destinations as well as hopes and concerns for a non-motorized network in the project area. A total of 210 people took survey with 182 people completing the entire survey. 188 people who took the survey lived in the City of Novi and 61 people work in the City of Novi.
The survey was separated into six categories which focused on general non-motorized trip characteristics, non-motorized destinations, walking and bicycling to school, roadside pathways, bike lanes and desired project outcomes. The following summary provides key findings from the survey. For more detailed information please refer to the full web survey results which can be found at the end of this section.

General Non-motorized Trip Characteristics:
Participants were asked questions regarding the frequency and location of their current non-motorized trips.

- 2.4% of respondents currently walk and 2% bike to work as their primary mode of transportation
- The majority of respondents currently walk or bike on a daily or weekly basis for fun and/or exercise
    - 85% Walk
    - 67% Bike
- If a system of sidewalks, pathways, crosswalks, bike lanes, ect. were constructed, survey results indicate that there would be a large increase in the number of people who walk and bike for transportation on a daily and weekly basis.
    - Walking would increase from 19% to 47%
    - Bicycling would increase from 22% to 62%
- If a system of sidewalks, pathways, crosswalks, bike lanes, ect. were constructed, survey results indicate that they would be a slight increase in the number of people who walk and bike for fun and/or exercise on a daily and weekly basis.
    - Walking would not change significantly
    - Bicycling would slightly increase from 67% to 86%

Destinations:
Participants were asked questions regarding the destinations they currently walk and/or bike to and what destinations they would be interested in walking and/or biking to if there was a network of sidewalks, pathways, crosswalks and bike lanes.

- Universally there was a desire to walk and bike to all of the destinations that were listed.
- Consistently there were at least 20% more people who would like to bike than walk to the destinations. This may be due to the longer distances between places and the separation of land uses.
- When asked to indicate what items would make the walking or biking trip to the listed destinations actually happen in the future the majority of respondents felt that a complete sidewalk/roadside pathway system and complete bike lane system would be most important.

Walking and Bicycling to School:
Participants were asked how they or their children typically get to school. 54% of the survey respondents were the parent of a school age child or a student themselves. Statistically there were not enough responses to determine each individual school's trip characteristics.

- The majority of students ride a bus or are driven to school
- Thornton Creek Elementary School and Village Oaks Elementary School have students that typically ride their bike to school
- Hickory Woods Elementary School, Orchard Hills Elementary School, Parkview Elementary School, Parkview Elementary School, Thornton Creek Elementary School, Village Oaks Elementary School, Hillside Middle School and Novi High School have students that typically walk to school.
- 50% of respondents said that they or their child would be interested in walking or bicycling to school in the future if there was a network of sidewalks, pathways, crosswalks and bike lanes.
- The main concerns regarding children walking and biking to school are:
    - Lack of sidewalks or pathways along the main roads
    - Lack of sidewalks in the neighborhood
    - Signalized intersections too busy

Roadside Pathways:
Participants were asked questions regarding their comfort and concerns with roadside pathways.

- 40% of respondents walk on a roadside pathway daily or weekly
- 38% of respondents bike on a roadside pathway daily or weekly
- The main concerns regarding walking or biking on a roadside pathway are:
    - Gaps in the system
    - Being hit by a motor vehicle at intersecting driveways and roadways
    - Rough pavement transitions at intersection driveways and roadways
- 50% of respondents are uncomfortable or somewhat uncomfortable riding along a roadside pathway with frequent intersecting driveways and/or roadways

Bike Lanes:
Participants were asked questions regarding their comfort and concerns with bike lanes.

- 32% of respondents bike in a designated bike lane on a daily or weekly basis
- The main concerns regarding bike lanes are:
    - Gaps in the system
    - Being hit by motor vehicles turning into or out of driveways or local roadway
    - Being hit from behind by a motor vehicle
- Majority of Respondents are uncomfortable in a bike lane with speeds over 45 MPH no matter how many vehicular lanes are present
- 76% of respondents are comfortable or somewhat comfortable on a 2 to 3 lane road with speeds 35 MPH or less
- 54% of respondents are comfortable or somewhat comfortable on a 2 to 3 lane road with speeds 35 to 45 MPH

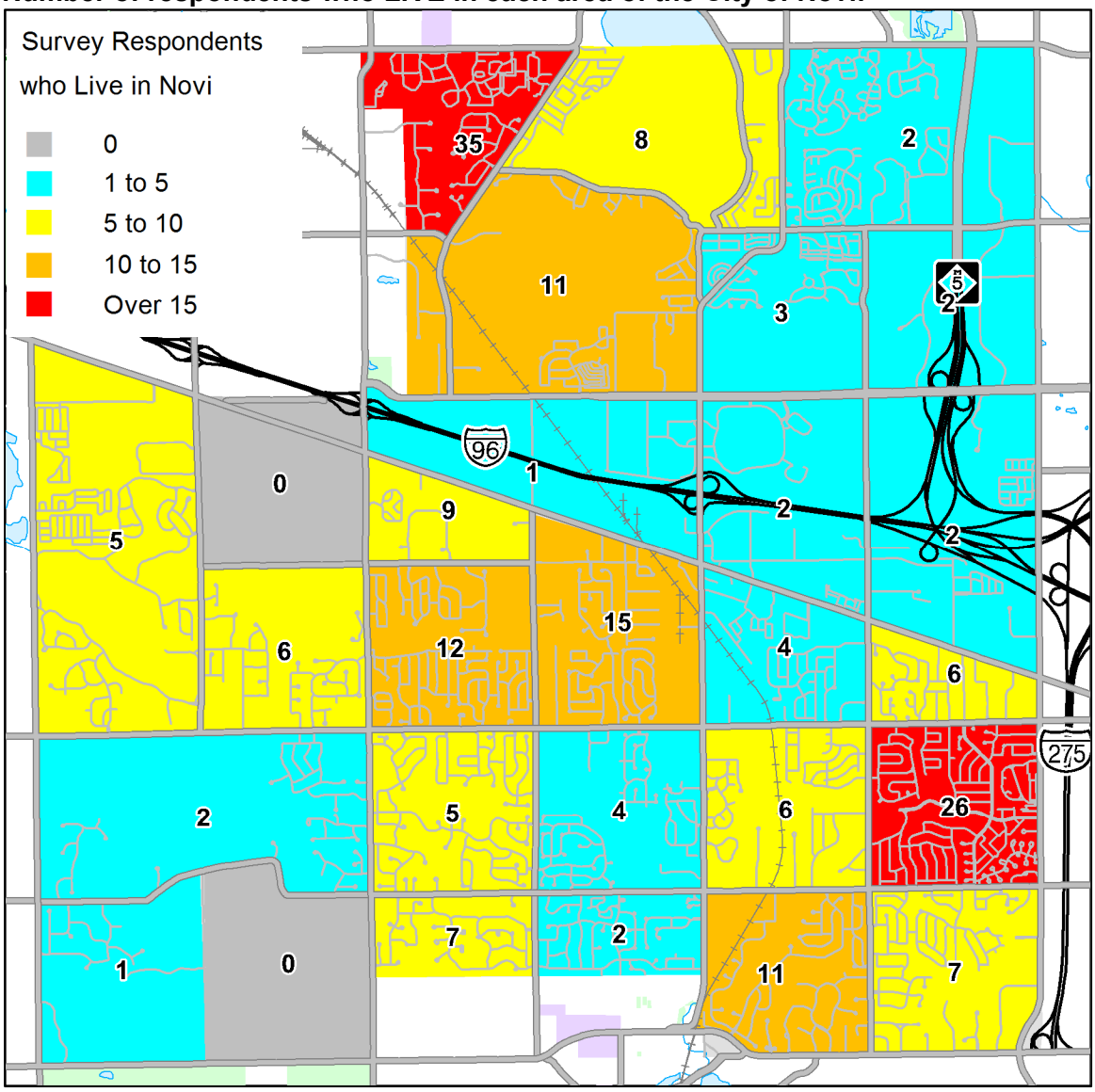
Desired Project Outcomes:
Participants were asked to think about how this non-motorized master plan might improve the way residents, businesses and visitors go about their daily lives and then identify what they thought the top priorities of this project should be. The following is a list of the top visions.

- Continuous sidewalk system along all roads
- More bike lanes throughout the city
- Bicycle and pedestrian friendly city
- Continuous Bicycle and pedestrian network with connections to destinations and neighboring communities
- Safe bicycle and pedestrian crossing at I-96 expressway

The following are the results of the specific questions of the web survey.

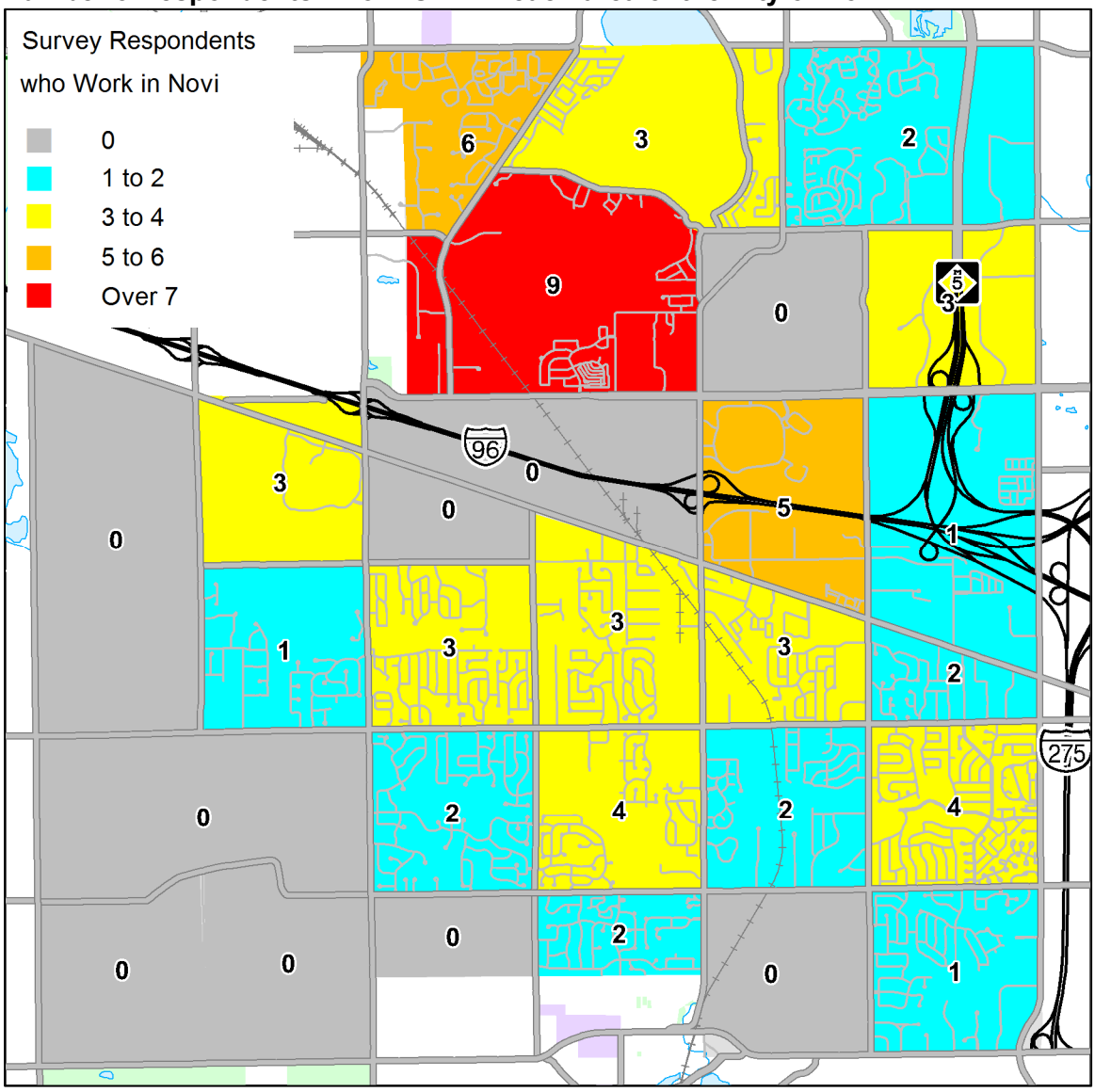
1. **Using the map for reference, please indicate where you live and work in the City of Novi.**

Number of respondents who LIVE in each area of the City of Novi:



- **210 people took the web survey**
- **182 people completed the web survey (86.7%)**
- **202 respondents answered this question (96.2%)**
- **188 respondents live in the City of Novi (93%)**
- **14 survey respondents do NOT live in the City of Novi (7%)**

Number of respondents who WORK in each area of the City of Novi:



- **171 respondents answered this question (81.4%)**
- **61 respondents live in the City of Novi (35.7%)**
- **110 survey respondents do NOT live in the City of Novi (64.3%)**

2. Please indicate which of the following best describes your circumstance. For the purposes of this question, a household is considered any type of residence with one or more occupants.

	Response Percent	Response Count
I am less than 18 years old	0.0%	0
I am part of a household without school age children	38.9%	81
I am part of a household with school age children	52.4%	109
I am a senior citizen	8.7%	18
answered question		208
skipped question		2

3. Please indicate your gender

	Response Percent	Response Count
Male	56.5%	118
Female	43.5%	91
answered question		209
skipped question		1

4.What is your primary mode of transportation for the following types of trips? Please select walking, bicycling, bus, motorcycle, drive yourself, passenger or other. If you don't typically make a particular trip type select "Not Applicable"

	Not Applicable	Walking	Bicycling	Bus	Motorcycle	Drive Yourself	Carpool	Passenger	Other	Response Count
To Work	13.7% (28)	2.4% (5)	2.0% (4)	1.0% (2)	0.0% (0)	**80.0% (164)**	0.5% (1)	0.0% (0)	0.5% (1)	205
Education/School	**59.7% (117)**	6.1% (12)	1.0% (2)	8.7% (17)	0.0% (0)	19.9% (39)	4.1% (8)	0.5% (1)	0.0% (0)	196
Shopping & Personal Business	1.0% (2)	3.4% (7)	3.9% (8)	0.0% (0)	0.0% (0)	**89.4% (185)**	1.0% (2)	1.0% (2)	0.5% (1)	207
Leisure & Recreation	0.0% (0)	18.9% (39)	35.9% (74)	0.5% (1)	0.5% (1)	**41.3% (85)**	0.5% (1)	2.4% (5)	0.0% (0)	206
Other	29.1% (34)	**29.9% (35)**	24.8% (29)	0.0% (0)	0.9% (1)	12.8% (15)	0.0% (0)	1.7% (2)	0.9% (1)	117
									Other (please specify)	37
									answered question	209
									skipped question	1

Other (please specifiy)
lake shore park is a weekly destination
Also Leisure and Recreation
Do alot of shopping by bike also
I would bike to work if 10 mile was bike friendly
Church
Shopping by bicycle if feasible
Church
Leisure
Exercise
Amtrak - business travel
Combination of walking/bicycling/driving myself.
trips to the bank, sports club
Exercise
Leisure & Recreation
wlaking for recreation and exercise
local CVS, etc.
I walk and bicycle for recreation and exercise
Walk to downtown for shopping/dinner
Excercise
Exercise
We walk to the businesses on Novi road.
Exercise
for recreation
We ride our bikes around Walled Lake often
often like to jog or ride bike around community
Leisure Bike Rides
City meetings
Activities with Kids
roller blade
Both forms of leisure
Leisure, Recreation, Excercise
Walk to the neighborhood park and local Schools
Any other destination - we drive since we're "land locked" in our subdivision
Taking child to daycare and summer camp.
exercise
Library
Leisurely walks daily

5. Please describe how frequently you walk and bicycle for the following types of trips:

	Daily	Weekly	Monthly	Rarely	Never	Response Count
Walk for fun and/or exercise	42.4% (87)	42.4% (87)	7.8% (16)	7.3% (15)	0.0% (0)	205
Walk for transportation	3.6% (7)	15.7% (31)	14.2% (28)	38.6% (76)	27.9% (55)	197
Bicycle for fun and/or exercise	19.9% (41)	46.6% (96)	18.4% (38)	11.7% (24)	3.4% (7)	206
Bicycle for transportation	5.1% (10)	16.8% (33)	8.2% (16)	40.3% (79)	29.6% (58)	196
					answered question	208
					skipped question	2

6. If a system of sidewalks, pathways, crosswalks, bike lanes, etc. is constructed, how do you think that would change your walking and bicycling habits?

	Daily	Weekly	Monthly	Rarely	Never	Response Count
Walk for fun and/or exercise	60.4% (119)	29.4% (58)	6.1% (12)	3.0% (6)	1.0% (2)	197
Walk for transportation	18.0% (34)	29.1% (55)	22.2% (42)	19.6% (37)	11.1% (21)	189
Bicycle for fun and/or exercise	46.3% (94)	39.9% (81)	7.4% (15)	4.9% (10)	1.5% (3)	203
Bicycle for transportation	30.1% (59)	32.1% (63)	19.4% (38)	9.2% (18)	9.2% (18)	196
					answered question	207
					skipped question	3

7. Are there sidewalks along the local streets in your neighborhood?

	Response Percent	Response Count
All or most of the streets have sidewalks	34.0%	70
Some sidewalks but with gaps	34.5%	71
Just a few sidewalks	9.7%	20
No sidewalks at all	21.8%	45
answered question		206
skipped question		4

8. Are you interested in getting more sidewalks in your neighborhood?

	Response Percent	Response Count
Yes	61.6%	125
No	27.6%	56
Not sure	10.8%	22
answered question		203
skipped question		7

9. For the following commercial/employment areas in Novi, please indicate if you currently walk and/or bicycle to the destinations and if you would be interested in doing so in the future if there was a network of sidewalks, pathways, crosswalks, bike lanes, etc.

	Currently WALK	Would Like to WALK	Would Not WALK	Currently BIKE	Would Like to BIKE	Would Not BIKE	Response Count
8 Mile and Haggerty Rd area	2.1% (3)	16.2% (23)	**44.4% (63)**	7.0% (10)	**44.4% (63)**	43.0% (61)	142
10 Mile, Grand River Ave and Haggerty area	6.4% (9)	21.4% (30)	37.9% (53)	9.3% (13)	**53.6% (75)**	33.6% (47)	140
13 Mile and Novi Rd area	6.3% (9)	19.7% (28)	38.0% (54)	9.9% (14)	**50.0% (71)**	33.8% (48)	142
Briar Point - Beck Rd and 10 Mile area	4.4% (6)	21.3% (29)	34.6% (47)	9.6% (13)	**51.5% (70)**	30.9% (42)	136
Main Street - Grand River Av and Novi Rd area	4.7% (7)	34.7% (52)	24.7% (37)	6.0% (9)	**69.3% (104)**	15.3% (23)	150
Maples Place - 14 Mile and Novi Rd area	3.0% (4)	18.2% (24)	43.9% (58)	6.8% (9)	**46.2% (61)**	40.2% (53)	132
Novi Town Center	6.0% (9)	27.3% (41)	26.0% (39)	10.0% (15)	**62.7% (94)**	20.0% (30)	150
Novi and 10 Mile area	8.8% (13)	35.4% (52)	23.1% (34)	15.0% (22)	**59.2% (87)**	19.7% (29)	147
Novi and Meadowbrook area	15.3% (22)	34.7% (50)	21.5% (31)	17.4% (25)	**56.3% (81)**	18.8% (27)	144
Oak Point - 9 Mile and Novi Rd area	4.5% (6)	27.1% (36)	33.8% (45)	15.0% (20)	**51.9% (69)**	24.8% (33)	133
Pontiac Trail and Beck Rd area	6.0% (9)	21.9% (33)	39.1% (59)	8.6% (13)	**51.0% (77)**	33.8% (51)	151
Providence Park Hospital	2.9% (4)	30.0% (42)	35.0% (49)	7.1% (10)	**49.3% (69)**	31.4% (44)	140
Twelve Oaks/West Oaks/Twelve Mile Crossing area	1.4% (2)	31.5% (46)	32.2% (47)	5.5% (8)	**56.8% (83)**	28.8% (42)	146
West Market Square area	2.4% (3)	21.0% (26)	41.9% (52)	3.2% (4)	43.5% (54)	**46.0% (57)**	124
West Park Dr and Pontiac Trail area	8.7% (13)	26.0% (39)	36.0% (54)	14.0% (21)	**45.3% (68)**	37.3% (56)	150
Wixom Rd and Grand River Ave area	2.9% (4)	22.1% (30)	35.3% (48)	8.1% (11)	**51.5% (70)**	36.8% (50)	136
						answered question	186
						skipped question	24

10. For the following communities and trails surrounding Novi, please indicate if you currently walk and/or bicycle to the destinations and if you would be interested in doing so in the future if there was a network of sidewalks, pathways, crosswalks, bike lanes, etc.

	Currently WALK	Would Like to WALK	Would Not WALK	Currently BIKE	Would Like to BIKE	Would Not BIKE	Response Count
Downtown Farmington	6.2% (9)	10.3% (15)	39.3% (57)	6.9% (10)	**42.8% (62)**	42.1% (61)	145
Downtown Northville	12.7% (21)	21.2% (35)	22.4% (37)	24.2% (40)	**55.2% (91)**	15.8% (26)	165
Downtown Walled Lake	9.9% (16)	19.8% (32)	27.8% (45)	16.0% (26)	**51.9% (84)**	24.1% (39)	162
Downtown Wixom	5.6% (8)	11.1% (16)	39.6% (57)	11.8% (17)	**48.6% (70)**	31.9% (46)	144
Huron Valley Trail System	3.3% (5)	17.1% (26)	28.9% (44)	17.1% (26)	**59.9% (91)**	18.4% (28)	152
West Bloomfield Trail	2.2% (3)	12.3% (17)	37.7% (52)	10.1% (14)	**57.2% (79)**	29.0% (40)	138
					answered question		187
					skipped question		23

11. For the following recreation areas, please indicate if you currently walk and/or bicycle to those destinations and if you would be interested in doing so in the future if there was a network of sidewalks, pathways, crosswalks, bike lanes, etc.

	Currently WALK	Would Like to WALK	Would Not WALK	Currently BIKE	Would Like to BIKE	Would Not BIKE	Response Count
I-275 Metro Trail	2.2% (3)	10.9% (15)	31.9% (44)	18.8% (26)	**51.4% (71)**	24.6% (34)	138
ITC Community Sports Park	3.4% (4)	17.8% (21)	28.0% (33)	1.7% (2)	**61.0% (72)**	28.8% (34)	118
Lakeshore Park	16.0% (26)	23.9% (39)	14.7% (24)	30.7% (50)	**51.5% (84)**	12.3% (20)	163
Landings Parkland	9.7% (10)	12.6% (13)	37.9% (39)	11.7% (12)	**46.6% (48)**	35.9% (37)	103
M-5 Metro Trail	1.6% (2)	16.3% (21)	30.2% (39)	6.2% (8)	**62.8% (81)**	23.3% (30)	129
Maybury State Park	11.1% (17)	20.9% (32)	17.0% (26)	22.9% (35)	**58.8% (90)**	11.1% (17)	153
Novi Civic Center/Novi Public Library/Ella Mae Power Park	15.3% (21)	24.1% (33)	16.8% (23)	21.9% (30)	**54.7% (75)**	14.6% (20)	137
Novi Ice Arena	1.7% (2)	20.0% (23)	35.7% (41)	11.3% (13)	**40.9% (47)**	39.1% (45)	115
Rotary Park	8.6% (11)	20.3% (26)	28.1% (36)	21.9% (28)	**41.4% (53)**	27.3% (35)	128
Wildlife Woods Park	4.4% (5)	22.1% (25)	30.1% (34)	5.3% (6)	**54.0% (61)**	31.9% (36)	113
					answered question		178
					skipped question		32

12. For those destinations on this and the previous page that you indicated that you would like to walk or bicycle to in the future, please indicate the importance of following items in making that trip actually happen in the future.

	Very Important	Somewhat Important	Not Very Important	Not Important	Response Count
Bicycle parking	25.7% (43)	**45.5% (76)**	22.8% (38)	6.0% (10)	167
Complete sidewalk / roadside pathway system	**80.0% (144)**	16.1% (29)	2.8% (5)	1.1% (2)	180
Complete bike lane system	**62.0% (106)**	27.5% (47)	7.6% (13)	2.9% (5)	171
Hands-on training on safe and effective bicycling	7.5% (12)	19.5% (31)	**36.5% (58)**	**36.5% (58)**	159
Lighting along sidewalks and pathways	23.5% (40)	**37.6% (64)**	25.9% (44)	12.9% (22)	170
Mid-block crosswalks	13.8% (22)	32.5% (52)	**37.5% (60)**	16.3% (26)	160
Map of available pedestrian and bicycle facilities	36.1% (61)	**37.3% (63)**	20.1% (34)	6.5% (11)	169
On-line customized walking and bicycling routes	25.8% (42)	**41.7% (68)**	20.9% (34)	11.7% (19)	163
Snow and ice removal from sidewalks and pathways	40.0% (68)	**40.6% (69)**	17.1% (29)	2.4% (4)	170
Wayfinding signs for suggested bicycle and pedestrian routes to key destinations	32.7% (55)	**41.1% (69)**	18.5% (31)	7.7% (13)	168
				answered question	183
				skipped question	27

13. Are you the parent of a school age child or a student yourself? If you answer yes, please fill out the relevant questions on the remainder of this page, otherwise you may proceed to the next page.

	Response Percent	Response Count
Yes	**54.1%**	**92**
No	45.9%	78
answered question		170
skipped question		40

14. Elementary Schools Which elementary school do you or your children attend and how do you typically get to school?

How do your or your children typically get to school?

	Walk	Bike	Bus	Driven	Response Count
Amerman Elementary School	0.0% (0)	0.0% (0)	**100.0% (3)**	0.0% (0)	3
Deerfield Elementary School	0.0% (0)	0.0% (0)	**50.0% (1)**	**50.0% (1)**	2
Hickory Woods Elementary School	5.3% (1)	0.0% (0)	**84.2% (16)**	10.5% (2)	19
Meadowbrook Elementary School	0.0% (0)	0.0% (0)	**100.0% (2)**	0.0% (0)	2
Novi Meadows School	10.0% (1)	0.0% (0)	**80.0% (8)**	10.0% (1)	10
Novi Woods Elementary School	0.0% (0)	0.0% (0)	**100.0% (2)**	0.0% (0)	2
Orchard Hills Elementary School	25.0% (1)	0.0% (0)	**50.0% (2)**	25.0% (1)	4
Parkview Elementary School	25.0% (1)	0.0% (0)	**75.0% (3)**	0.0% (0)	4
Thornton Creek Elementary School	**33.3% (2)**	16.7% (1)	**33.3% (2)**	16.7% (1)	0
Village Oaks Elementary School	**36.4% (4)**	9.1% (1)	18.2% (2)	**36.4% (4)**	11
				Other (please specify)	11
				answered question	55
				skipped question	155

Other (please specifiy)

Concordia Lutheran in Farmington Hills - Drive
Novi Community Preschool
West Bloomfield
st william catholic school
Farmington Schools
No children in school
walks in warm weather
Our Lady of Victory
childtime kindergarten, farmington hills...we drive there
Young Fives - walk in afternoon and ride in morning
St William Catholic School

15. Middle Schools Which middle school do you or your children attend and how do you typically get to school?

How do your or your children typically get to school?

	Walk	Bike	Bus	Driven	Response Count
Geisler Middle School	0.0% (0)	0.0% (0)	**100.0% (11)**	0.0% (0)	11
Hillside Middle School	**33.3% (1)**	0.0% (0)	**33.3% (1)**	**33.3% (1)**	3
Novi Middle School	0.0% (0)	0.0% (0)	**80.0% (12)**	20.0% (3)	15
				Other (please specify)	5
				answered question	29
				skipped question	181

Other (please specifiy)
Wyandotte Chipawa valley
Greenhills Ann Arbor
Farmington Schools
No children in school
drives in bad weather

16. High Schools Which high school do you or your children attend and how do you typically get to school?

How do your or your children typically get to school?

	Walk	Bike	Bus	Driven	Drive Themselves	Response Count
Catholic Central High School	0.0% (0)	0.0% (0)	0.0% (0)	**60.0% (3)**	40.0% (2)	5
Novi High School	12.5% (2)	0.0% (0)	**43.8% (7)**	18.8% (3)	25.0% (4)	16
Walled Lake Western High School	0.0% (0)	0.0% (0)	**61.5% (8)**	30.0% (4)	7.7% (1)	13
					Other (please specify)	4
					answered question	33
					skipped question	177

Other (please specifiy)
Chipawa Valley 9th Grade Center
Driven to Walk home
No children in school
Northville High School

17. Other Schools Which school do you or your children attend and how do you typically get to school?

How do your or your children typically get to school?

	Walk	Bike	Bus	Driven	Drive Themselves	Response Count
Franklin Road Christian School	0.0% (0)	0.0% (0)	0.0% (0)	100.0% (1)	0.0% (0)	1
Novi Christian School	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
Novi Woods Montessori	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
St Paul's Evangelical Lutheran Church & School	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
Walsh College	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	100.0% (1)	1
Wixom Christian School	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0.0% (0)	0
					Other (please specify)	6
					answered question	2
					skipped question	208

Other (please specifiy)

Peanut Patch Preschool- Drive

Northern Walled Lake (Driven)

Treasure Box Preschool

st william school

Private Preschool not in Novi

St William Catholic School

18. Would you or your child be interested in walking or bicycling to school in the future should if there is a network of sidewalks, pathways, crosswalks, bike lanes, etc.?

	Response Percent	Response Count
Definitely	49.6%	62
Perhaps	26.4%	33
Probably Not	18.4%	23
No	5.6%	7
answered question		125
skipped question		85

19. What concerns do you or your child have about walking or bicycling to school?

	Major Concern	Somewhat of a Concern	Minor Concern	Not a Concern	Not Applicable or Not Sure	Response Count
Lack of sidewalks in the neighborhood	**52.4% (54)**	9.7% (10)	8.7% (9)	20.4% (21)	8.7% (9)	103
Lack of sidewalks or pathways along the main roads	**77.1% (84)**	8.3% (9)	0.9% (1)	4.6% (5)	9.2% (10)	109
Existing crosswalks too far out of way	**28.4% (27)**	20.0% (19)	13.7% (13)	21.1% (20)	16.8% (16)	95
Signalized intersections too busy	**49.5% (50)**	20.8% (21)	10.9% (11)	7.9% (8)	10.9% (11)	101
Too far to walk or bike	22.7% (22)	15.5% (15)	19.6% (19)	**34.0% (33)**	8.2% (8)	97
No bike racks at school	8.7% (8)	10.9% (10)	16.3% (15)	**37.0% (34)**	27.2% (25)	92
Weather	24.3% (25)	**30.1% (31)**	**30.1% (31)**	6.8% (7)	8.7% (9)	103
Poor lighting along route	26.8% (26)	**29.9% (29)**	17.5% (17)	14.4% (14)	11.3% (11)	97
Personal security concerns	**33.0% (32)**	27.8% (27)	16.5% (16)	13.4% (13)	9.3% (9)	97
					Other (please specify)	12
					answered question	118
					skipped question	92

Other (please specifiy)
Route to high school incomplete, route via 10 mile between meadowbrook and novi rd. incomplete
Need a bridge from Willowbrook Estates #3 to Village Oaks
Morning traffic at School-Young and distracted drivers-very dangerous
Attitudes of motorists towards on-street cyclists
Big concern for when they move up to Geisler MIddle school
crossing the freeway, no signals, no pathways
some paths too close to the road
PERSONAL SECURITY/SAFETY
dark mornings, crossing streets
Lockable bike storage
Pathways too narrow along South Lake & East Lake Dr to feel comfortable letting child go
corner of 10 & Taft poorly lit and busy at 7am!!!

20. Please indicate how frequently you use a roadside pathway?

	Daily	Weekly	Monthly	Rarely	Never	Response Count
As a pedestrian	12.3% (21)	28.1% (48)	14.6% (25)	24.6% (42)	20.5% (35)	171
As a bicyclist	4.5% (8)	33.0% (59)	23.5% (42)	21.2% (38)	17.9% (32)	179
					answered question	181
					skipped question	29

21. What are your concerns when walking or bicycling on a roadside pathway?

	Major Concern	Somewhat of a Concern	Minor Concern	Not a Concern	Not Applicable or Not Sure	Response Count
Overhanging vegetation	13.9% (22)	**38.0% (60)**	24.1% (38)	20.9% (33)	3.2% (5)	158
Condition of pavement	37.6% (64)	**38.2% (65)**	14.1% (24)	7.1% (12)	2.9% (5)	170
Rough pavement transitions at intersecting driveways and roadways	**34.0% (55)**	32.1% (52)	18.5% (30)	12.3% (20)	3.1% (5)	162
Conflicts with pedestrians	9.4% (15)	21.4% (34)	32.7% (52)	**33.3% (53)**	3.1% (5)	159
Conflicts with bicyclists	4.5% (7)	19.5% (30)	35.1% (54)	**36.4% (56)**	4.5% (7)	154
Being hit by motor vehicles at intersecting driveways and roadways	**40.4% (67)**	26.5% (44)	19.3% (32)	10.8% (18)	3.0% (5)	166
Snow and ice	23.0% (37)	**36.0% (58)**	22.4% (36)	16.1% (26)	2.5% (4)	161
Puddles	7.1% (11)	21.2% (33)	**40.4% (63)**	28.2% (44)	3.2% (5)	156
Lighting	19.1% (31)	21.6% (35)	**32.1% (52)**	24.1% (39)	3.1% (5)	162
Gaps in the system	**67.3% (113)**	22.0% (37)	3.0% (5)	5.4% (9)	2.4% (4)	168
					Other (please specify)	12
					answered question	178
					skipped question	32

Other (please specifiy)

Access to trail from workplace
had no idea these existed outside of the i-275 path, which is unusable with no parking/access known
Conflicts with pets, both leashed and unleashed

"Roadside paths" and so-called "safety paths" are better for pedestrians and beginner cyclists, but are not safe or recommended for cyclists generally, and do not meet AASHTO standards. There are too many blind conflicts at driveways where drivers are not watching for cyclists, who are moving much faster than pedestrians. Bike lanes are nice where there is room, but all cyclists really need is a clean, paved shoulder and the respect of other roadway users (motorists.) "Sharrows" and wayfinding can be helpful to mark designated routes, but all roads should be Complete Streets. Attempting to segregate all cyclists off to unsafe sidepaths is not acceptable.
Getting to the pathways because some roads have no sidewalks or bike lanes.
too close to the roads
Make Bicycle Lanes
No sidewalks at all on Ten Mile from Beck to Wixom Rd. Few sidewalks on Beck from Ten Mile to Grand River
SAFETY
distance signage
personal saftey
distance to and Parking at the pathways for access

22. What is your comfort level using a roadside pathway in the following contexts:

	Uncomfortable	Somewhat Uncomfortable	Somewhat Comfortable	Comfortable	Not Applicable or Not Sure	Response Count
With frequent intersecting driveways and/or roadways	14.3% (25)	**35.4% (62)**	26.9% (47)	21.7% (38)	1.7% (3)	175
When the pathway is right next to the roadway	19.4% (34)	26.9% (47)	22.9% (40)	**29.1% (51)**	1.7% (3)	175
When there is a strip of grass between the road and pathway	2.9% (5)	8.0% (14)	18.4% (32)	**69.0% (120)**	1.7% (3)	174
When there is a strip of grass and trees between the road and pathway	4.1% (7)	4.1% (7)	11.6% (20)	**77.9% (134)**	2.3% (4)	172
					answered question	177
					skipped question	33

23. How frequently do you bicycle in a designated bike lane?

	Response Percent	Response Count
Daily	7.3%	13
Weekly	24.6%	44
Monthly	16.2%	29
Rarely	25.1%	45
Never	**26.8%**	**48**
answered question		179
skipped question		31

24. What are your concerns when using or contemplating using a bike lane?

	Major Concern	Somewhat of a Concern	Minor Concern	Not a Concern	Not Applicable or Not Sure	Response Count
Debris	23.3% (37)	**32.1% (51)**	25.8% (41)	13.8% (22)	5.0% (8)	159
Condition of the pavement	32.1% (52)	**35.8% (58)**	21.0% (34)	6.8% (11)	4.3% (7)	162
Being hit by motor vehicles turning into or out of driveways or local roadways	**60.5% (104)**	23.3% (40)	10.5% (18)	2.9% (5)	2.9% (5)	172
Making left turns on busy roadways	**41.7% (68)**	31.9% (52)	16.6% (27)	6.1% (10)	3.7% (6)	163
Being hit from behind by a motor vehicle	**59.1% (101)**	23.4% (40)	11.7% (20)	2.9% (5)	2.9% (5)	171
Snow and ice	22.5% (36)	**27.5% (44)**	26.9% (43)	16.9% (27)	6.3% (10)	160
Puddles	8.2% (13)	21.5% (34)	**36.7% (58)**	29.1% (46)	4.4% (7)	158
Lighting	18.5% (29)	24.2% (38)	**29.9% (47)**	22.3% (35)	5.1% (8)	157
Gaps in the system	**60.8% (101)**	22.3% (37)	10.8% (18)	2.4% (4)	3.6% (6)	166
					Other (please specify)	12
					answered question	173
					skipped question	37

Other (please specifiy)
too close to traffic
11 Mile road between Meadowbrook and Town Center drive needs pavement improvement. And bike lanes and/or sharrows would be nice.
Bike lanes are great, but more important is that car drivers respect and share the road with cyclists.
too close to the road
often doesn't exist
Make more bike lanes
Bikes belong on the road not a sidewalk...by law
SAFETY
Very concerned with letting children ride in these areas.
South Lake Drive the bike lanes are incomplete in areas and it is dangerous given the amount of bike traffic access to the pathway
too close to bus and truck traffic

25. What is or would be your comfort level in using a bike lane in the following contexts:

	Uncomfortable	Somewhat Uncomfortable	Somewhat Comfortable	Comfortable	Not Applicable or Not Sure	Response Count
2 to 3 lane road with speeds 35 MPH or less	7.0% (12)	14.5% (25)	26.2% (45)	**49.4% (85)**	2.9% (5)	172
2 to 3 lane road with speeds 35 to 45 MPH	21.5% (37)	21.5% (37)	25.6% (44)	**27.9% (48)**	3.5% (6)	172
2 to 3 lane road with speeds greater than 45 MPH	**45.9% (79)**	25.0% (43)	13.4% (23)	12.2% (21)	3.5% (6)	172
4 to 5 lane road with speeds 35 to 45 MPH	**42.4% (73)**	18.0% (31)	18.6% (32)	17.4% (30)	3.5% (6)	172
4 to 5 lane road with speeds greater than 45 MPH	**59.6% (102)**	13.5% (23)	11.7% (20)	11.7% (20)	3.5% (6)	171
					answered question	172
					skipped question	38

26. Desired Project Outcomes

	Response Percent	Response Count
First Priority	100.0%	159
Second Priority	84.9%	135
Third Priority	66.0%	105
answered question		159
skipped question		51

27. On Wednesday, September 29 from 7:00 PM to 8:45 PM there will be a Public Workshop at the new Novi Public Library. The purpose of the workshop will be to identify key issues and review preliminary concepts. Do you plan on attending that workshop?

	Response Percent	Response Count
Yes	12.6%	21
No	64.7%	108
Not sure	22.8%	38
answered question		167
skipped question		43

28. On Tuesday, October 26 from 7:00 PM to 8:45 PM there will be a Public Workshop at the new Novi Public Library. The purpose of the workshop will be to review the draft plan. Do you plan on attending that workshop?

	Response Percent	Response Count
Yes	25.4%	46
No	27.6%	50
Not sure	47.0%	85
answered question		181
skipped question		29

29. Would you like to receive e-mail notices of future public workshops and when draft documents are available for review? If yes, please enter the contact information below.

	Response Percent	Response Count
Yes	60.2%	106
No	39.8%	70
answered question		176
skipped question		34

30. Optional Contact Information Your name and e-mail will only be used for notices related to this project.

	Response Percent	Response Count
Name	97.2%	103
e-Mail Address	100.0%	106
answered question		106
skipped question		104

7.2 September 29, 2010 Public Workshop Summary

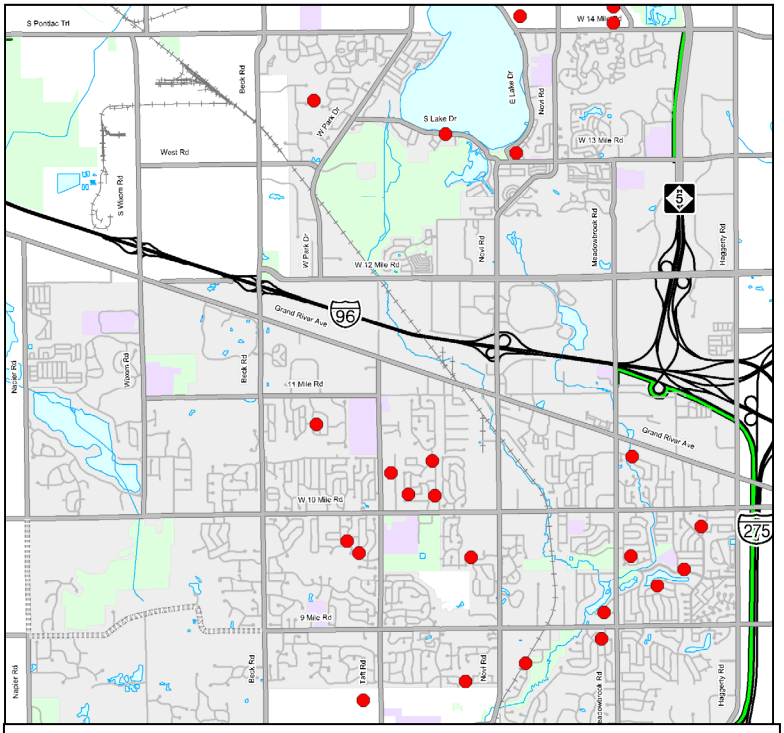
List of Figures

Public Input

A Public Workshop was held on September 29, 2010 for the City of Novi's Non-Motorized Master Plan. Thirty-three people attended. During the public workshop, participants were given the opportunity to give input. There was a series of five exercises that focused on, places of concern, corridor focus, neighborhood connector routes, regional trails and freeway crossings. The participants were also encouraged to mark additional information the on the maps.

The following pages document the input that was collected during the workshop.

1. Places of Concern Exercise
    - Input Findings
    - Summary Map
2. Corridor Focus Exercise
    - Input Findings
    - Summary Map
3. Neighborhood Connector Exercise
    - Neighborhood Connector Routes Map
    - Bike Lane Map
    - Roadside Pathways Map
    - Road Crossing Map
    - Additional Comments Map
4. Potential Regional Trails
    - Input Findings
    - Summary Map
5. Freeway Crossings
    - Input Findings
    - Summary Map



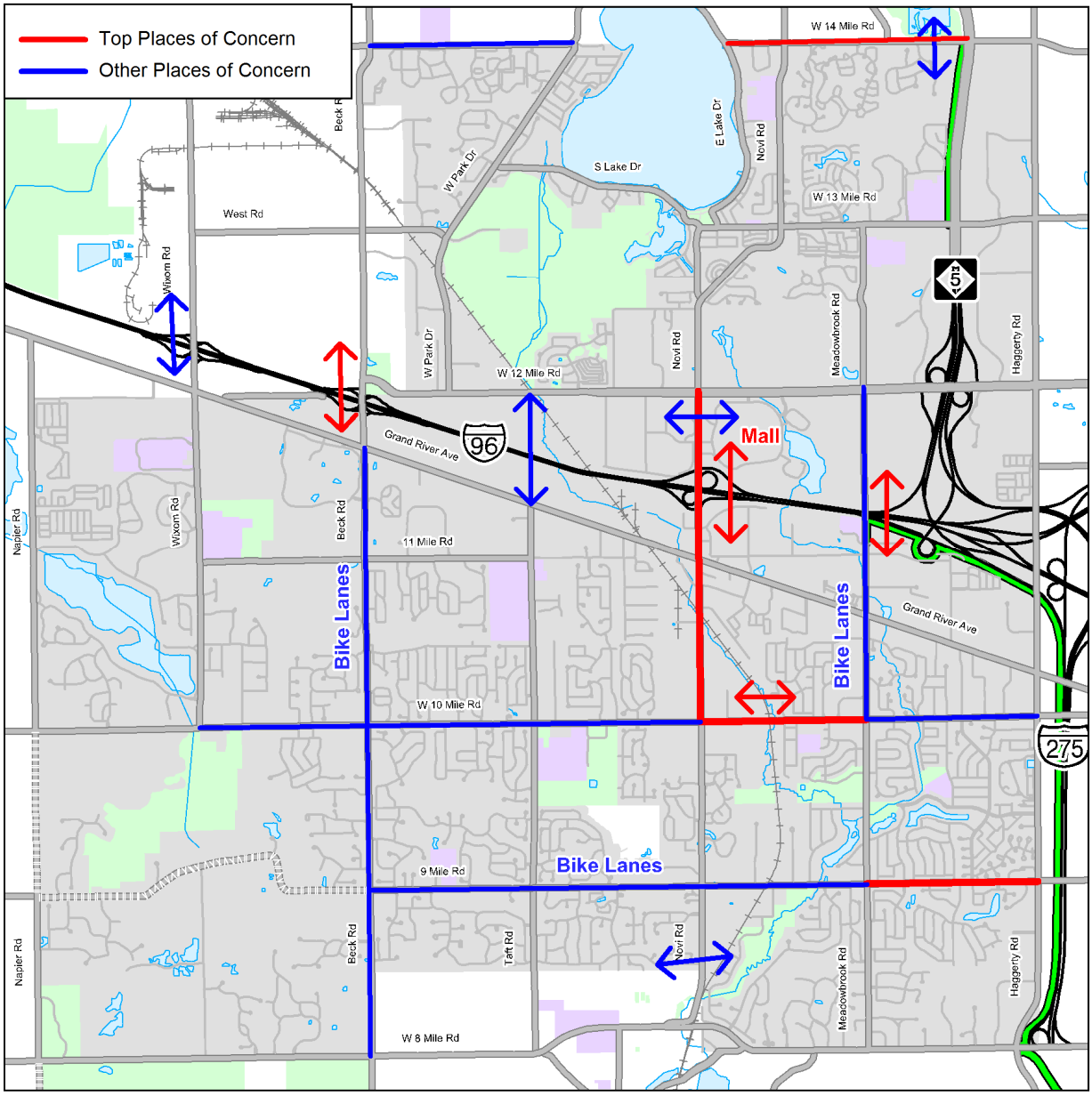
Workshop participants were asked to locate where they live with a red dot. Nine participants did not place a dot.

Places of Concern Exercise

Each participant was given a Places of Concern worksheet and was asked to list and describe three specific areas that this project should address. They then circled the locations on the worksheet map. Documented below is a list of all of the responses.

1st Place of Concern	2nd Place of Concern	3rd Place of Concern
Ten Mile between Novi Road and Haggerty	Beck Rd bewteen GR and 8 Mile	
Crossing Novi Road between 8 & 10 Mile	Path along Novi Road from 10 mile to Mall	Connect Trails to Other Cities
Crossing I-96	Path along 14 Mile	Novi Road Between Grand River and 10 Mile
Cross over I-96	Taft Road connect to 12 Mile	Connect Novi to Other Trails
Along 9 Mile between Meadowbrook and Haggerty		
Novi Road From Town Center to 12 Mile	Meadowbrok Rd from 12 Mile to Cherry Hill	12 Oaks Mall to West Oaks Mall
East/West Conectivity on 14 Mile to the Lake	Access across I-96	Access to Mall Via Bicycle
Novi Rd between 9 and 10 Mile, Sidewalk and Shoulder	Novi Rd or Meadowbrook to 14 mile need safety pathway	
10 Mile at Railroad Crossing	Meadowbrook over I-96	Novi Road North of 10 Mile
Bike Access along Novi Road from 10 mile to Grand River	Bike Access along Meadowbrook from 10 mile to 12 mile	Access to Mall Across I-96 overpass
Connect E.Lebost with Village Oaks Elementary School	Mid-block crosswalk at Lebost and 10 mile	Midblock crosswalk at Malott and Meadowbrook
Beck at I-96 SPUI	Wixom at I-96 SPUI	Novi at I-96
Southwest corner of Grand River and Meadowbrook		
Lack of berm on meadowbrook approaching bridge over I-96	Lake of Sidewalk on 10 Mile between Meadowbrook and Novi Road	Lack of berm on 8 mile road between Beck and Napier
Cannot walk or bike to Geisler Middle School, need sidewalks and crossing	Unsafe to bike/walk all the way around walld lake due to novi sidewalk not meeting up with walled lake sidewalk at wast park/pontiac trail intersection	Cross Freeway at Beck Road
10 Mile between Meadowbrook and Novi Road	9 Mile from meadowbrook to haggerty	
10 Mile crossing beck/wixom	Beck Crossing same problem, no crossing	
No Sidewalk/path on Ashbury Dr from River Bridge sub to Rotary Park. Hidden curves give this section obstruct view of walker biker	No path/bike lanes on 9 mile from Novi Road to Center Street	No Continuouis Path/Bike Lanes connecting south east section of city to Maybury Park
Meadowbrook Rd between 11 mile and 12 Mile a connection between the bike friendly northside of town an dthe population centers to the south	Connections between neighborhoods allowing cyclist and foot traffic to access attractions while minimizingthe need to use major roadways	
Crossing I-96 at Meadowbrook in Bike Lane and Safety Path	Crossing I-96 at Novi	Crossing I-96 at Beck
Improve crossing at 10 mile/Novi rd intersection	Improve access to Meijers a 8mi and Haggerty	Provide bike lane on 9 mile road
Novi road lack of access to 12 Oaks	Gaps in I-275/M-5 System/Lack of I-96 East west	Connection ot Neighboring Cities
13 Mile Rd pathway, drainages causes sand and debri on pathway most of the time	No sidewalk or pathway on south side of 14 mile rd just west of M-5	West Rd between W.Park and Beck Rd is very rough and dangerous
We need a way to get across M-5 at 14 Mile	Would like shoulders widedened where ever possible	Would like a good road from S walled Lake to Kensington
14 Mile between Novi Rd and M-5	Novi Road south of 12 Mile	Novi Road 10 and 11 mile crossing
Bike Lanes along Pontiac Trl (Beck rd to E. Lake)	Bike Lanes along Beck Rd (Pontiact Trail to 10 Mile)	Improve Crossing at Beck and Pontiac Trail
Lack of I-96 crossing Anywhere!	East/West connctions along main roads	More Sidewalks in Neighborhoods

Places of Concern Summary Map



The Top Places of Concern (ranked in order of priority)

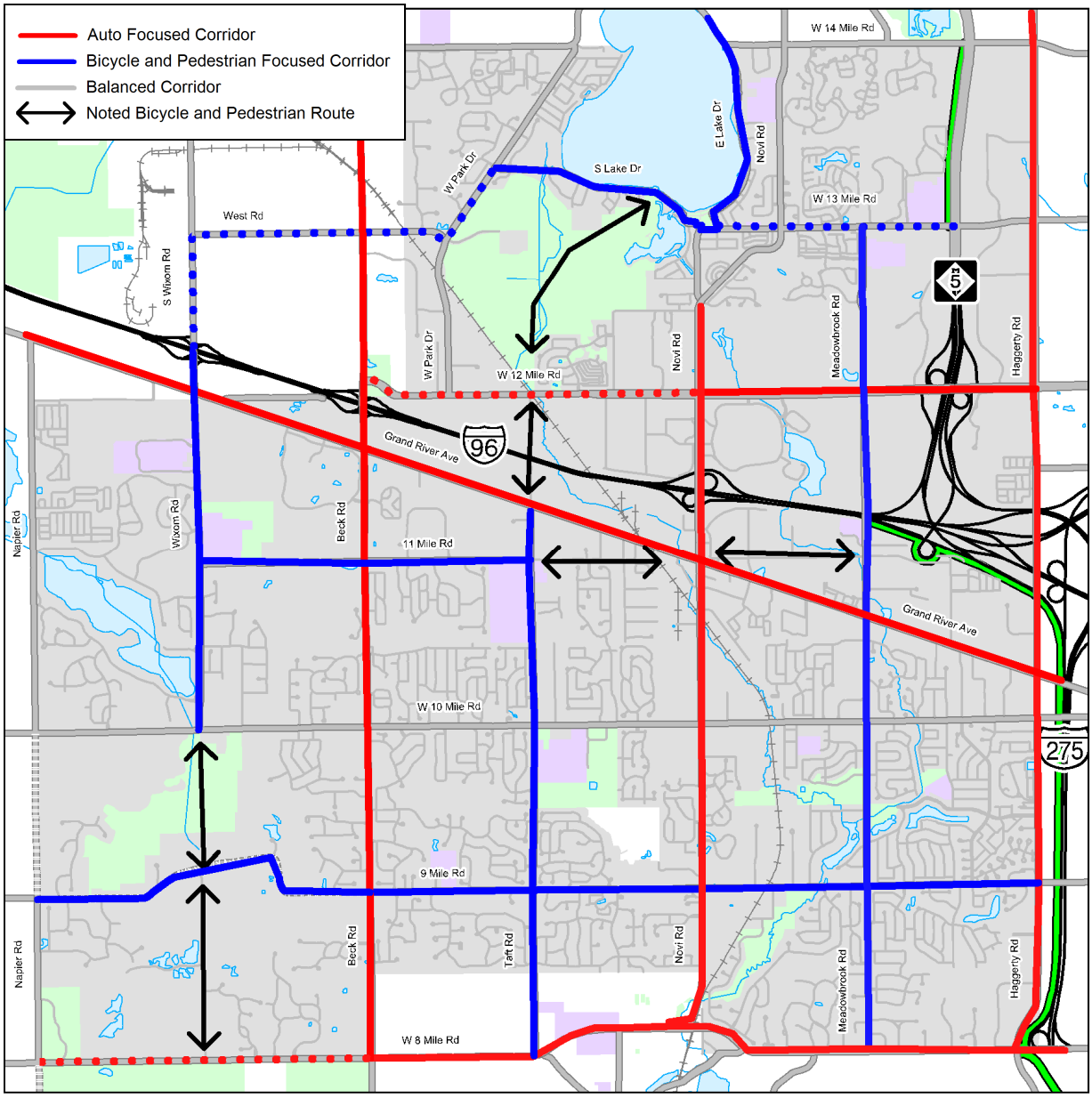
1. Connection needed on Novi Road from 10 Mile Road to 12 Mile with bicycle/pedestrian access across I-96 freeway
2. Bicycle/pedestrian crossing needed across I-96 freeway in general
3. Bicycle and pedestrian crossing needed at Meadowbrook Road across I-96 freeway
4. Need bicycle and pedestrian access to mall
5. Bike facility needed on 9 Mile Road between Meadowbrook Road and Haggerty Road
6. Improve bicycle/pedestrian connections on 10 Mile Road between Meadowbrook Road and Novi Road
7. Freeway Crossing needed at Beck Road and I-96 through S.P.U.I.
8. Connect to Other Cities
9. Provide path along 14 Mile Road to get to M-5 Metro Trail

Corridor Focus Exercise

On individual worksheets, participants were asked to indicate which corridors they thought should have a bicycle and pedestrian focus, an automobile focus and a balance of both. Documented below is a list of the number of votes for each type of corridor.

Corridor	Auto	Bike/Ped	Balance
14 MILE	2	7	**17**
13 MILE	0	12	**14**
12 MILE	13	0	**14**
GRAND RIVER	**20**	4	2
11 MILE	0	**16**	10
10 MILE	3	8	**14**
9 MILE	0	**19**	6
8 MILE	**14**	1	**14**
NAPIER	0	4	**20**
WIXOM	1	**13**	12
BECK	**14**	5	6
W PARK	0	10	**13**
TAFT	5	**20**	5
NOVI	**14**	4	7
LAKE	0	**13**	7
MEADOWBROOK	0	**22**	3
HAGGERTY	**16**	0	9

Corridor Focus Summary Map

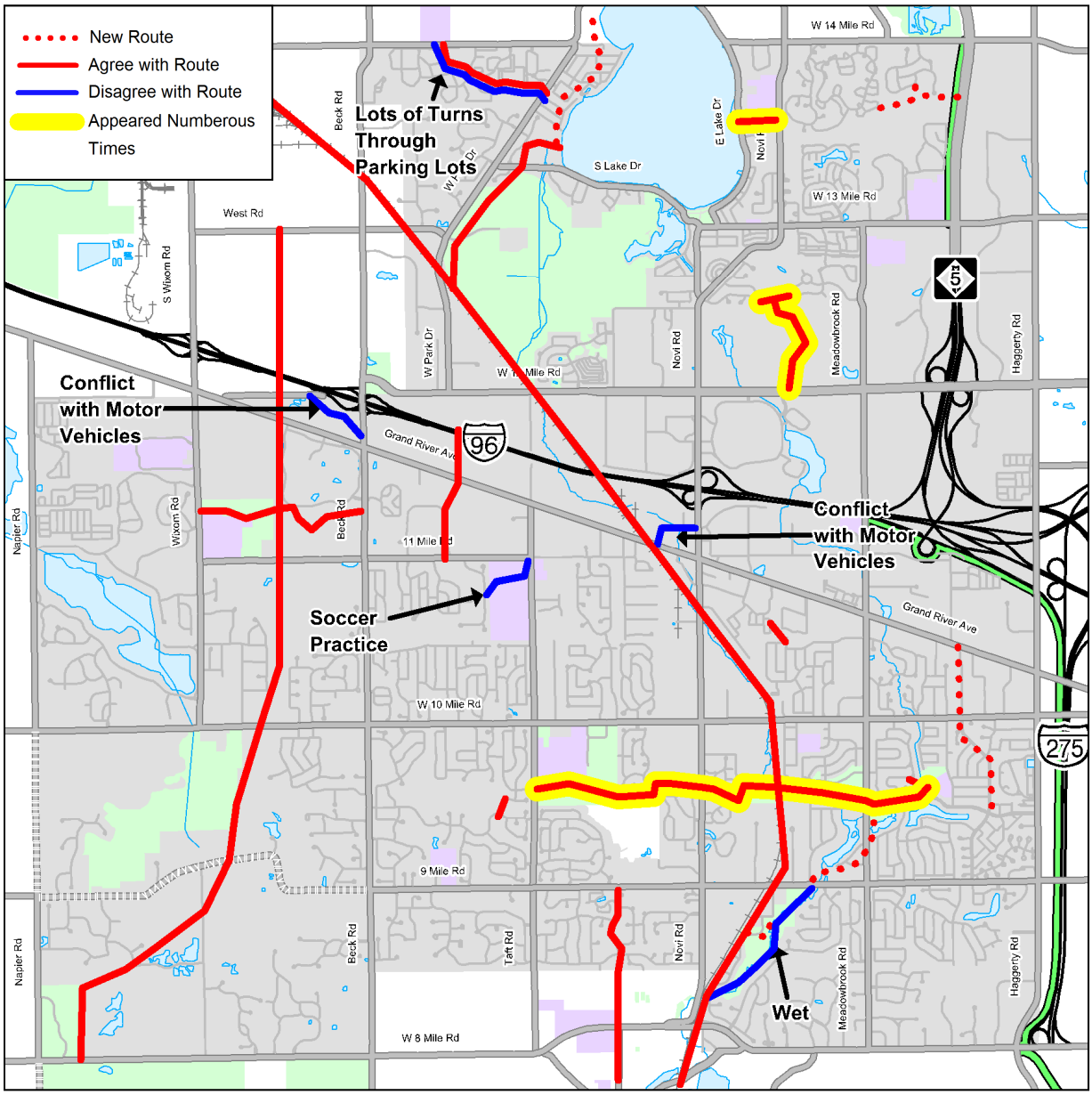


Please note that the corridors with the dotted lines had very close counts.

Neighborhood Connector Exercise

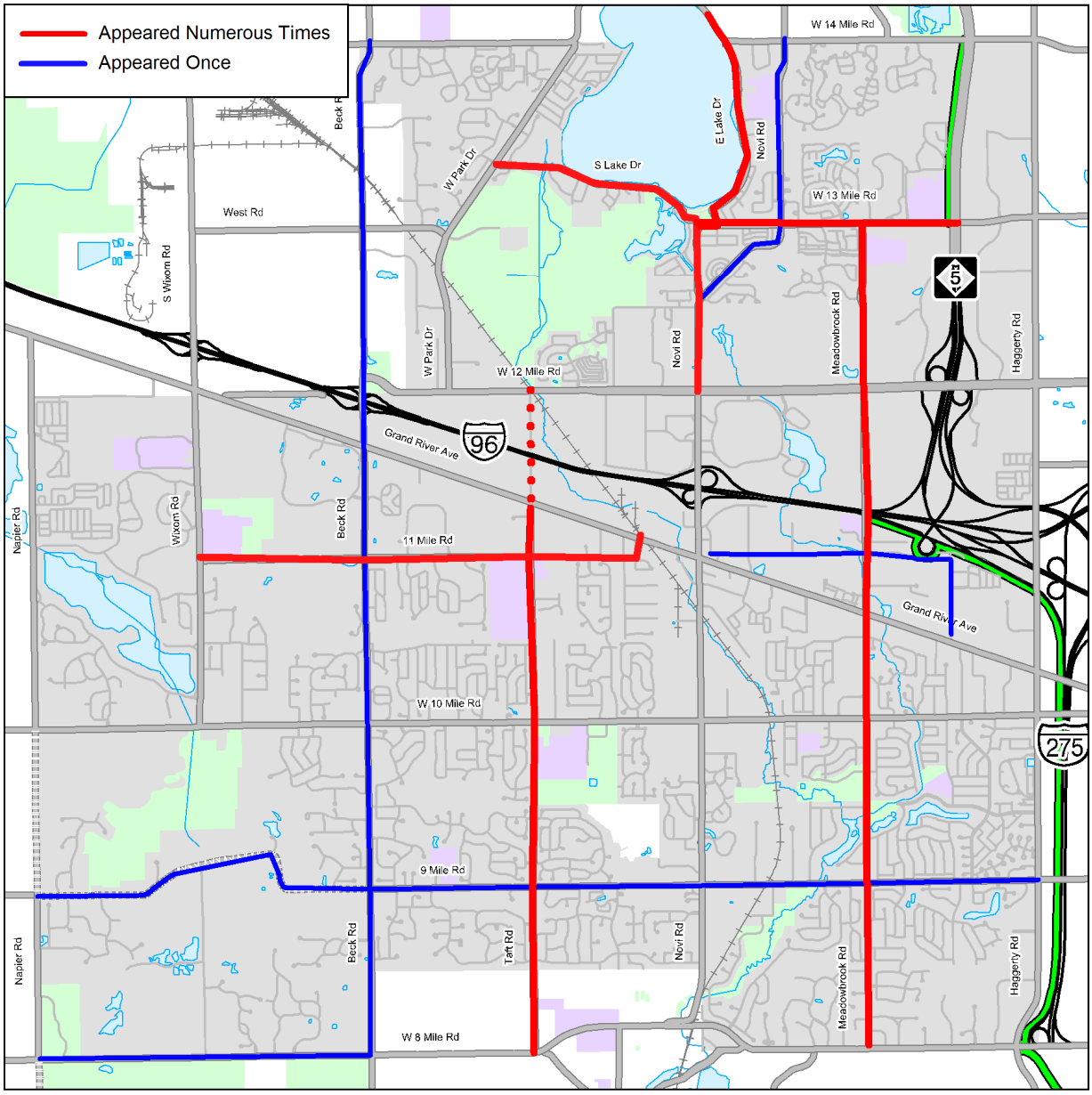
As a group, participants were asked to think about routes that would avoid bicycling or walking along the main roads. Participants were asked to evaluate the provided potential routes and note directly on the large map any changes or concerns they had with the routes. This exercise created a lot of discussion so comments were grouped into five different categories which include, Neighborhood Connectors, Bike Lanes, Roadside Pathway, Crossing Improvements, and Additional Comments. The following maps document the input.

Neighborhood Connector Routes



Please note that alternatives presented in the exercise do not include all potential routes.

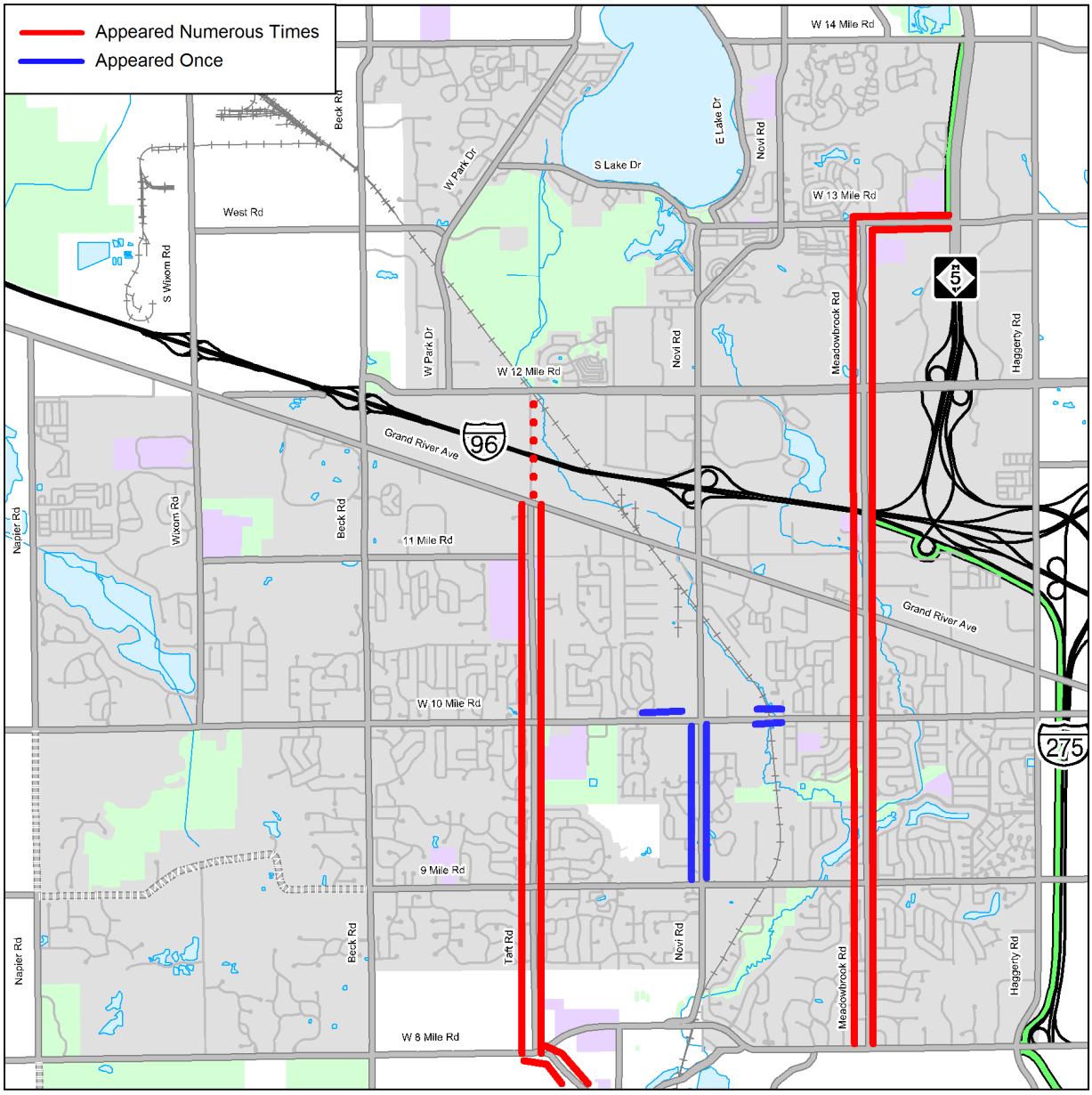
Bike Lanes



Top Bike Lanes

1. Meadowbrook Road
2. Taft Road
3. 11 Mile Road west of Grand River Avenue
4. Novi Road North of W 12 Mile Road
5. South and East Lake Drive
6. W 13 Mile Road to M-5 Metro Trail

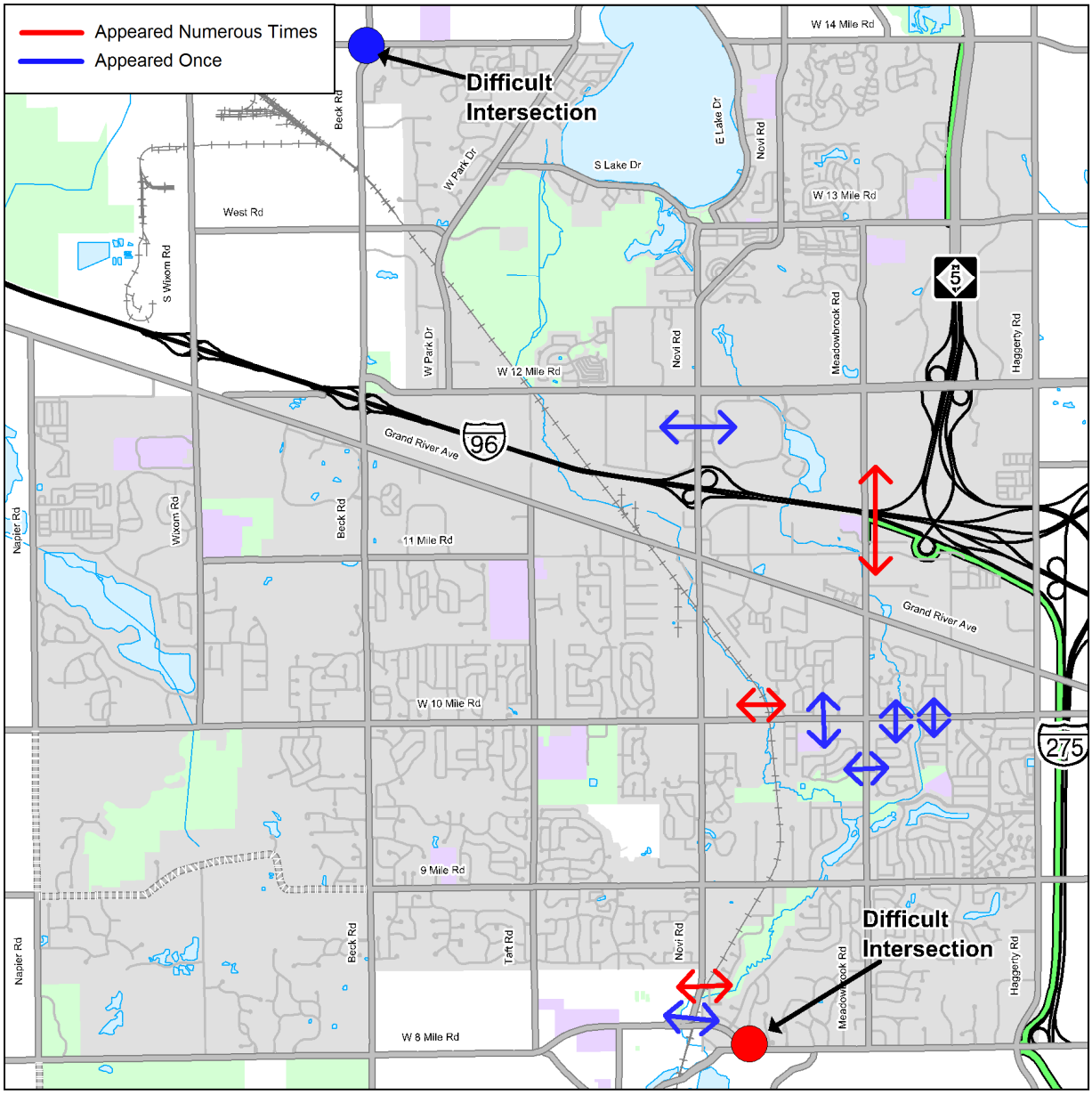
Roadside Pathways



Top Roadside Pathways

1. Along Taft Road
2. Along Meadowbrook Road and a segment of W 13 Mile connecting to M-5 Metro Trail
3. Crossing Over I-96 at Taft Road

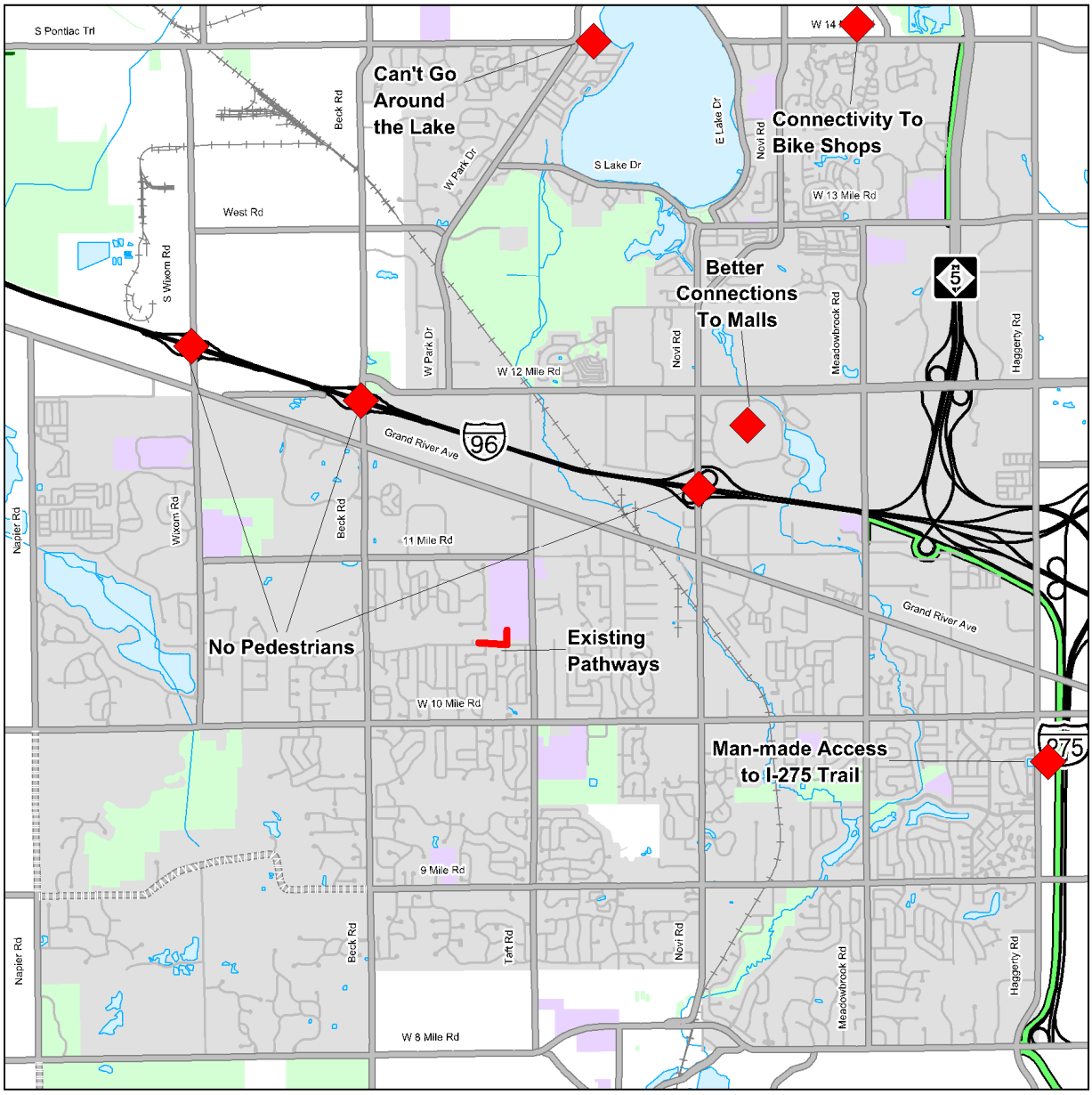
Road Crossing Improvements



Top Road Crossing Improvements

1. Crossing over I-96 at Meadowbrook Road
2. Crossing over Railroad Tracks along 10 Mile between Novi Road and Meadowbrook Road
3. Crossing Novi Road Between 9 Mile Road and W 8 Mile Road
4. Crossing at the Intersection of W 8 Mile Road and Griswold St

Additional Comments

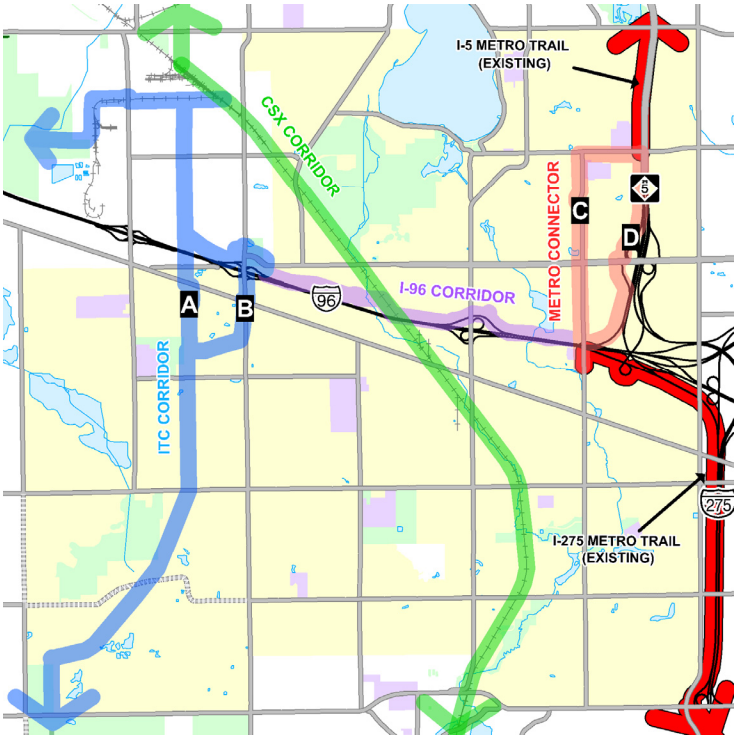


Potential Regional Trail Exercise

Participants were asked to evaluate the potential regional trails by listing pro's and con's and then ranking them in order of significance. Two Trail Corridors also had alternative routes that participates were asked to vote on. Below is documentation of the responses.

	Rank in Order of Significance (1 highest, 4 lowest)				Preferred Alternatives			
	ITC	CSX	I-96	METRO CONNECTOR	A	B	C	D
	4	1	3	2				
	4	2	3	1	1		1	
	4	1	3	2	1			1
	1	2	4	3	1		1	
	2	3	4	1	1		1	
	4	3	2	1	1		1	
	2	4	3	1	1		1	
	2	3	4	1	1		1	
	3	1	2	4	1		1	
	2	1	3	4	1			1
	3	1	4	2	1		1	
	2	1	4	3	1			1
	3	1	4	2				
	2	1	4	3	1		1	
	2	4	3	1	1		1	
	3	4	2	1	1		1	
	1	2	4	3	1		1	
	3	1	4	2		1	1	
	2	1	3	4		1	1	
	4	2	3	1		1		1
	2	3	4	1	1		1	
	1	2	4	3				
	2	3	4	1	1		1	
	2	4	3	1	1			1
Total	60	51	81	48	**18**	3	**16**	5
Rank	3rd	2nd	4th	1st	A Favored		C Favored	

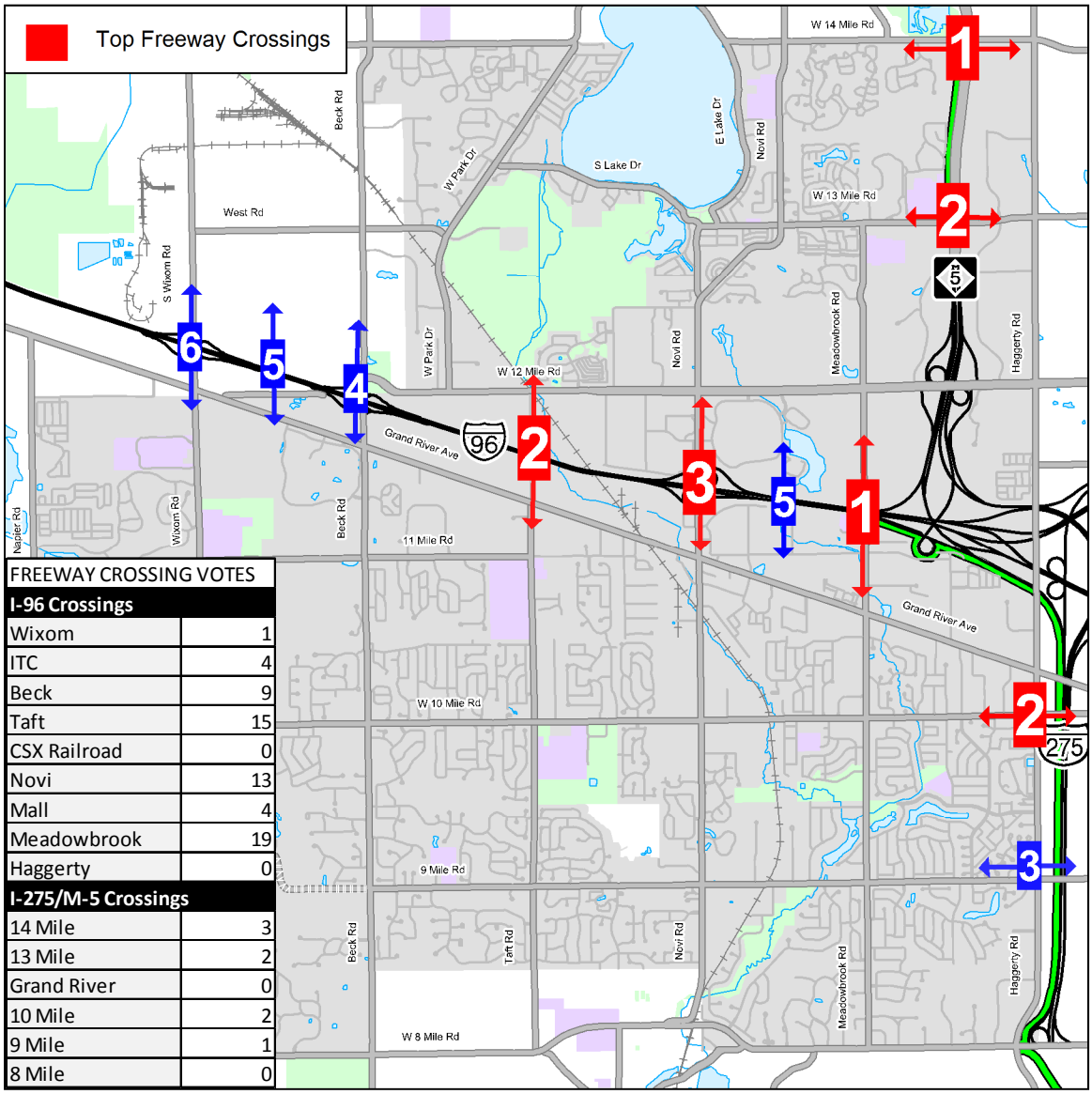
Potential Regional Trail Summary



ITC Corridor	CSX Corridor	I-96 Corridor	Metro Connector
Please Add additional Pro's and Con's to the list.			
Pro's • Connects to Maybury State Park	**Pro's** • Connects to Northville • Access to More People • Close to shopping and Lakeshore park • Middle of Town	**Pro's** • East/West Connection • Alternative to Grand River Ave • Belong to State of Michigan • Many Destinations	**Pro's** • Connects two existing trails • Potential for longer rides
Con's • Close to High Voltage Wires	**Con's** • Close to Active Railroad	**Con's** • Loud noise from nearby expressway • Pollution • Lots of Traffic	**Con's** • Parts of it may be along arterial roadways
Preferred Alternatives:			
Please circle A or B for ITC Corridor and C or D from Metro Connector			
A or B			**C or D**
Rank:			
Based on a regional and local perspective rank the four trails in order of significance from 1 to 4 with 1 being the highest and 4 the lowest			
3	**2**	**4**	**1**

Freeway Crossing Exercise

Individually, participants were asked to identify the top three locations where they thought it was important to provide a safe bicycle and pedestrian crossing over the freeway by placing a dot on the large map. The following map documents the results listed in order of significance, where 1 has the most votes.



FREEWAY CROSSING VOTES	
I-96 Crossings	
Wixom	1
ITC	4
Beck	9
Taft	15
CSX Railroad	0
Novi	13
Mall	4
Meadowbrook	19
Haggerty	0
I-275/M-5 Crossings	
14 Mile	3
13 Mile	2
Grand River	0
10 Mile	2
9 Mile	1
8 Mile	0

The Top Freeway Crossings

North/South across I-96
1. Meadowbrook Road
2. Taft Road
3. Novi Road

East/West across I-275 and M-5
1. 14 Mile
2. W 13 Mile & W 10 Mile

7.3 October 26, 2010 Public Workshop Summary

List of Figures

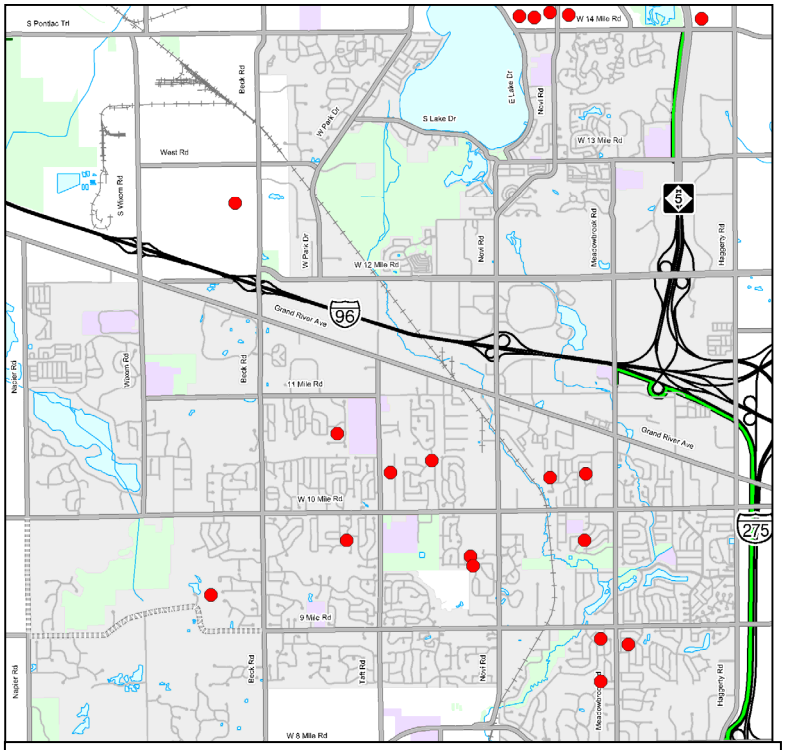
Public Input

A Public Workshop was held on October 26, 2010 for the City of Novi's Non-Motorized Master Plan. Twenty-seven people attended the entire workshop; a few people came in late. During the public workshop, participants were given the opportunity to give input. There was a series of three exercises that focused on refining the non-motorized network, phasing and prioritization. The participants were also encouraged to mark additional information the on the maps.

Please note that the following information was from a small sample of residents and all of the illustrations are drafts for discussion.

The following pages document the input that was collected during the workshop.

1. Non-motorized Network Refinement
2. Phasing Refinement
3. Prioritization Refinement
4. Additional Comments



Workshop participants were asked to locate where they live with a red dot. Eight participants did not place a dot.

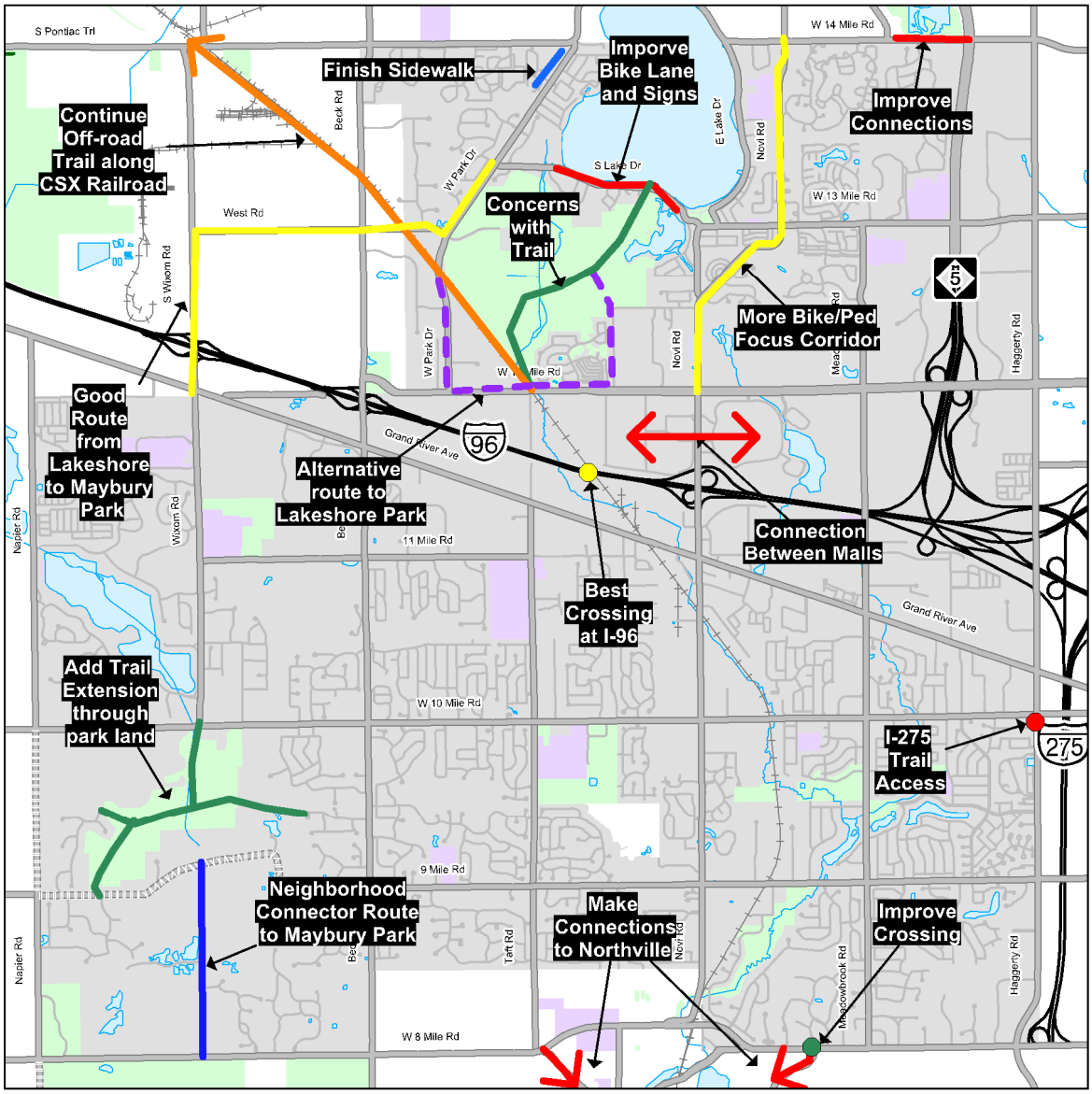
Non-motorized Network Refinement Exercise (Individual)

Each group was given a large base map of the city with the potential non-motorized routes. Participants were asked to review the non-motorized corridors and note any recommended changes and/or concerns. Below is documentation from this exercise. Comments are listed in order of frequency.

Location	Comment
Off road trail through Lakeshore Park (x6)	Major off road trail may create crossing conflicts with Mountain bikers and recreational bikes/pedestrians and impact the natural area. Use Dixon to add bike/ped path across to Taft Road, use limestone to improve existing trail and minimize impact to existing trails
8 mile and Griswold (x4)	Need better crossing and defined route to Downtown Northville (cider mill)
10 Mile and I-275 Trail (x3)	No access between them. Easy quick cheap fix – take down ROW fence on county road property
14 mile at M-5 (x2 agree)	Very important to add bike/ped lanes with new connector
Novi from 12 to 14 Mile (x2)	Could be more bike or mixed focus
Maybury State Park (2)	Access to Maybury State park via Garfield from 9 mile
ITC Trail to Lakeshore Park (x2)	Extend across Beck, West Park to Walled Lake, Western
CSX Crossing (x2)	Continue north to connect to Huron Valley Trail System
CSX Corridor	Using this to get under 96 is great!!!
CSX Corridor	ASAP
CSX Corridor	Too Expensive! Perhaps just use trail with rail for short sections under the expressway
Novi Crossing Over I-96	Just give up, route west to CSX corridor or pedestrian bridge
Crossing I-96	Cross at Meadowbrook since Bridge already wide enough to accommodate non-motorized transportation. Second choice is to use Railroad track space alongside as exists. Make regional connections
Meadowbrook over I-96	Need wider shoulder on bridge approaches
I-96 Crossing	Bridge Taft Road bike path over I-96
Neighborhood connector between west park and Pontiac trail	While this is technically on roads, this is all apartment complexes so you are going through parking lots and buildings. A real safety concern
9 ½ Mile Neighborhood Connector	Probably okay for short connections, but should primarily use mile road walks, trails
Neighborhood connector signs	Rate like ski runs to people know what they're getting onto (ex. Circle, square, diamond, double diamond)
East-west between 9 and 10 mile	Off-road neighborhood connectors: Provide unpaved pathway, parallel to paved pathway for cross country runners and joggers
Meadowbrook Road to 13 Mile	A safe Bike Route n/o Meadowbrook to 13 Mile
9 Mile between Novi and Haggerty	Should be sidewalk only, no bike corridor on road, reduce cost
9 Mile Center to Novi Road	Should be Bike Lane Only, no sidewalk
Grand River	No Bike Lanes
Overall	Phasing is backwards. Install the easy trail or neighborhood connector (laterals) first then bike corridors
12 Mile west of Novi to Beck	Should be mixed focus, necessary ease/west, north of I-96
West Park from South Lake to Pontiac Trail	Need a ped/bike focused trail way to get around lake
ITC Corridor north, through Providence to Beck Road	Connect North to Michigan Airline Trail via Providence Park and Beck Road
Beck and West Intersection	Crossing Improvements – no safe crossing for pedestrians or bikes
All Mile Road Crossing	MDOT has promised safety improvements (ex. Pedestrian activated crossing warning) when are they coming?
Speed Bumps	Remove Speed Bumps to allow bikes between bump and curb
Lakeshore and ITC Corridor	Michigan Mountain Biking Assoc. would love to consult/help!
Top 20	Keep working each year on the top 20 short lengths and safety fixes; seek grant funding for bigger projects. Future road projects should include complete streets

Non-motorized Network Refinement Exercise (Group)

After participants filled out individual sheets they shared their comments and concerns with their group. If there were any ideas that were mentioned numerous times, or a consensus on a particular recommendation the group noted it on the large map. Below is an overview from all of the groups.



The Top Comments

10. Pathway through Lakeshore Park conflicts with existing unpaved trails, use alternative route (5 groups agreed)
11. Continue to follow CSX railroad north through Lakeshore Park to W Park Drive instead of cutting through Lakeshore Park (4 groups agreed)
12. Use Dixon Road to access Lakeshore Park (2 groups agreed)
13. Continue CSX Railroad north into Wixom (2 groups agreed)
14. Improve Crossing at 8 Mile Road and Griswold providing access to Downtown Northville (2 groups agreed)

Phasing Refinement Exercise

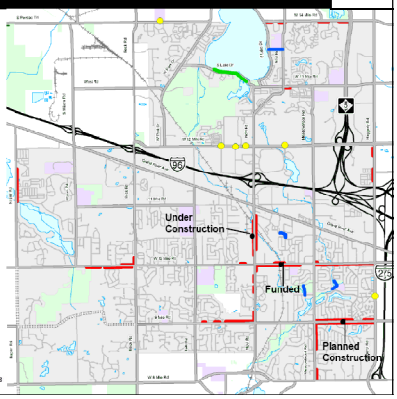
Each group was asked to review the six preliminary phases. Individually, each person voted on their top three priority phases. Then as a group everyone discussed and arranged the phases until they came to a consensus on the order in which they should be implemented. Participants were also allowed to move elements from one phase into another. Once a final order was established, each group renumbered the phases from one to six.

Based on group refinement, the order of the phasing was changed to: **1, 2, 5, 4, 6, 3**

Phase 1: Critical Improvements — **1**

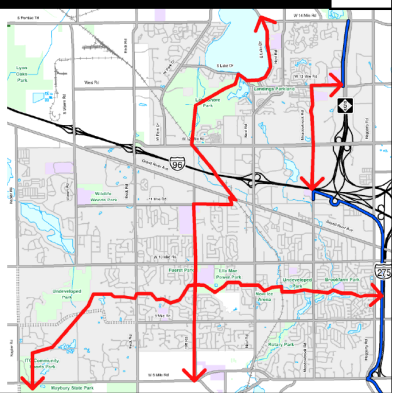
- Fix top 20 priority sidewalk and pathways from city's prioritization process
- Add key short trails to link isolated neighborhoods
- Fix known safety concerns
  - 12 Mile Half Signals
  - Pontiac Trail Crossing at School
  - S Lake Drive One-way Bike Lane Transition
  - Signals without Pedestrian Facilities

Sidewalk Gaps
Neighborhood Connectors
Bike Lane Improvements
Road Crossing Improvements



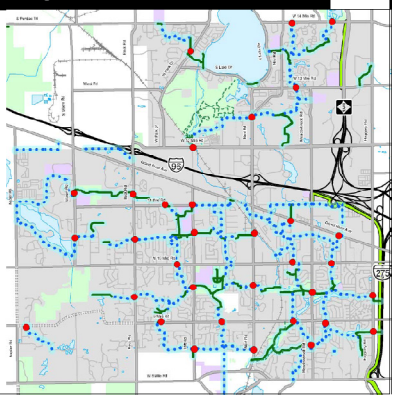
Phase 2: Complete Key Links Across the City — **2**

- Compete I-275/M-5 Metro Trail Connector
- East/West Neighborhood Greenway - alternative to 9 Mile through the neighborhoods
- North/South Connection on Taft Road connecting to Walled Lake and Northville



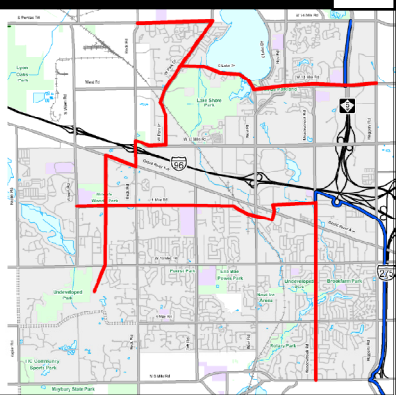
Phase 5: Implement Neighborhood Connectors — **3**

- Construct necessary short trails linking neighborhoods
- Construct additional road crossing improvements (not addressed in previous phases)
- Provide route identification and wayfinding signage



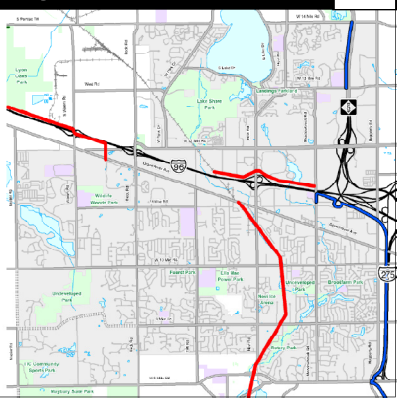
Phase 4: Improve Bike/Pedestrian Focus Corridors — **4**

- Complete sidewalk gaps, provide bike lanes and improve road crossings along the following bicycle and pedestrian focused corridors:
  - Meadowbrook Road
  - 11 Mile Road
  - W Park Drive
  - W 13 Mile
  - Pontiac Trail
  - Beck Rd Crossing
- Complete ITC Trail Extension



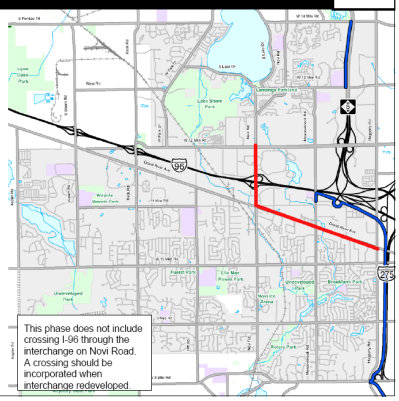
Phase 6: Implement Regional Trails — **5**

- Trail along north side of I-96 including bridge over railroad
- Extend the CSX Rail with Trail south from Grand River Ave to Northville
- Extend the ITC Trail to Lyon Oaks Park to link to Huron Valley Trails and Kensington Metropark Trails



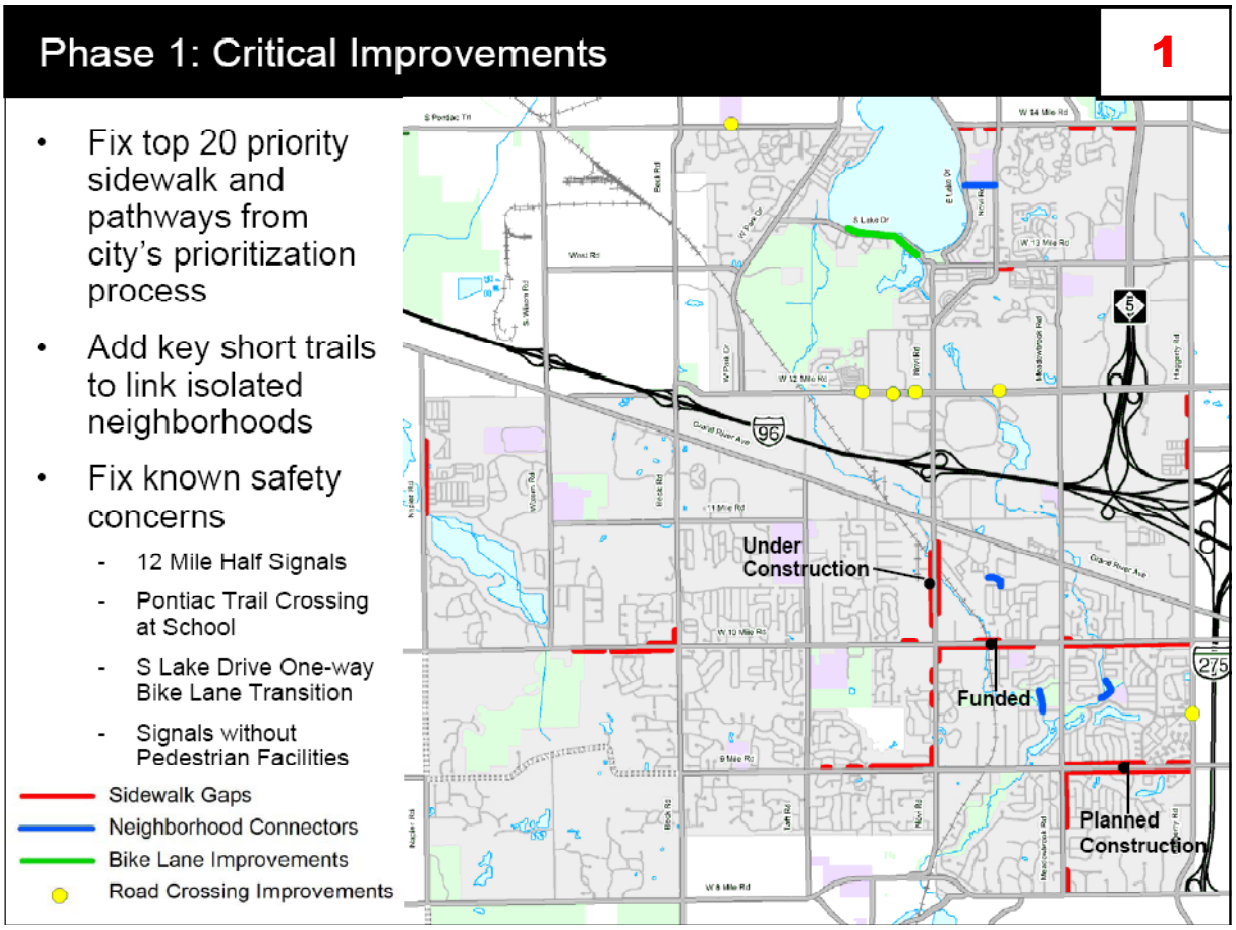
Phase 3: Novi Road and Grand River Improvements — **6**

- Complete sidewalk gaps
- Add pedestrian signals to signalized intersections on Novi Road between 12 Mile Road and Grand River Ave
- Add bike lanes to Grand River
- Add mid-block crossings



Please refer to the following documents for more details regarding the phasing.

Phase 1 Refinement



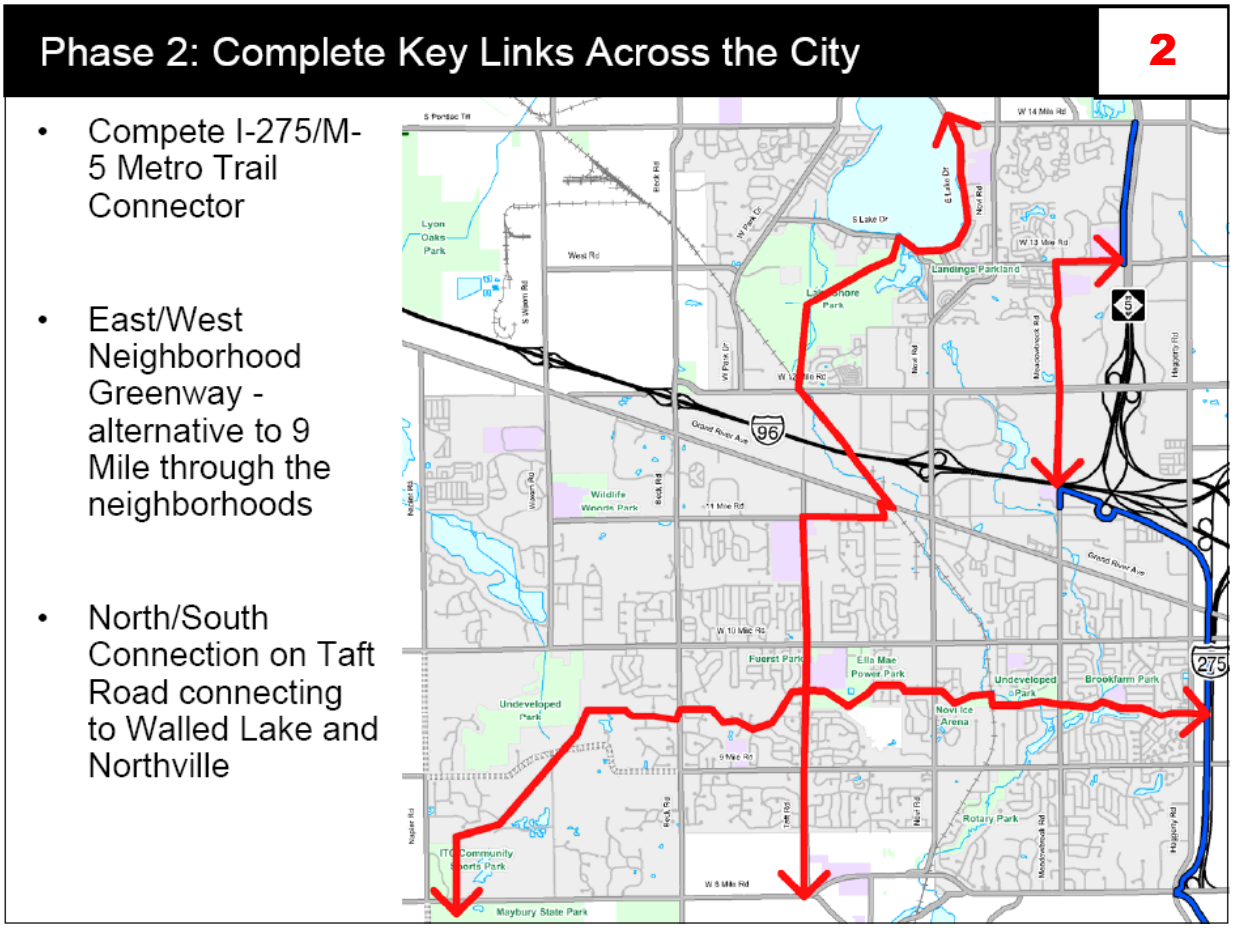
Proposed Phase: 1, 1, 1, 1, 1, 1, 1, 6

General Reasoning to keep at Phase 1: Already being implemented

Proposed Changes:

- Include on-road neighborhood connector routes
- Finish sidewalk gap on north end of W Park Drive near Pontiac Trail on west side of road
- Include Metro Trail Connection on Meadowbrook Road

Phase 2 Refinement



Proposed Phase: 2, 2, 2, 2, 2, 2, 3, 1

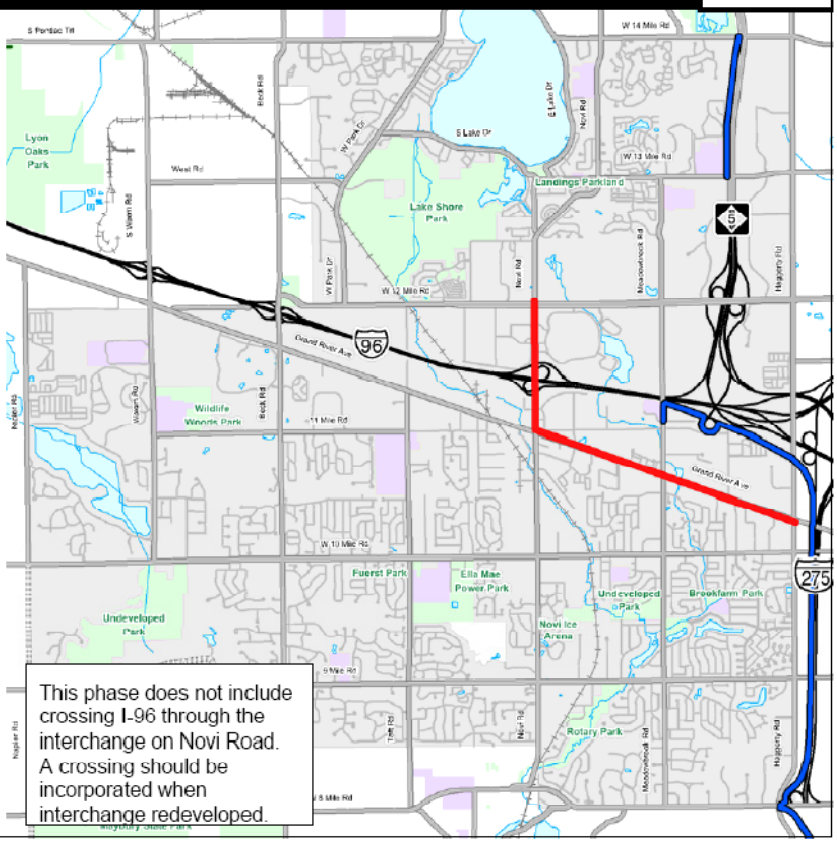
Proposed Changes:

- Avoid building trail through Lakeshore Park, use alternative routes around park
- Complete CSX Railroad south of Grand River toward Northville
- Do not construct ITC trail all the way to ITC Community Sports Park, end at 9 mile and use Garfield Road as the connection to Maybury Park instead

Phase 3 Refinement

Phase 3: Novi Road and Grand River Improvements — 6

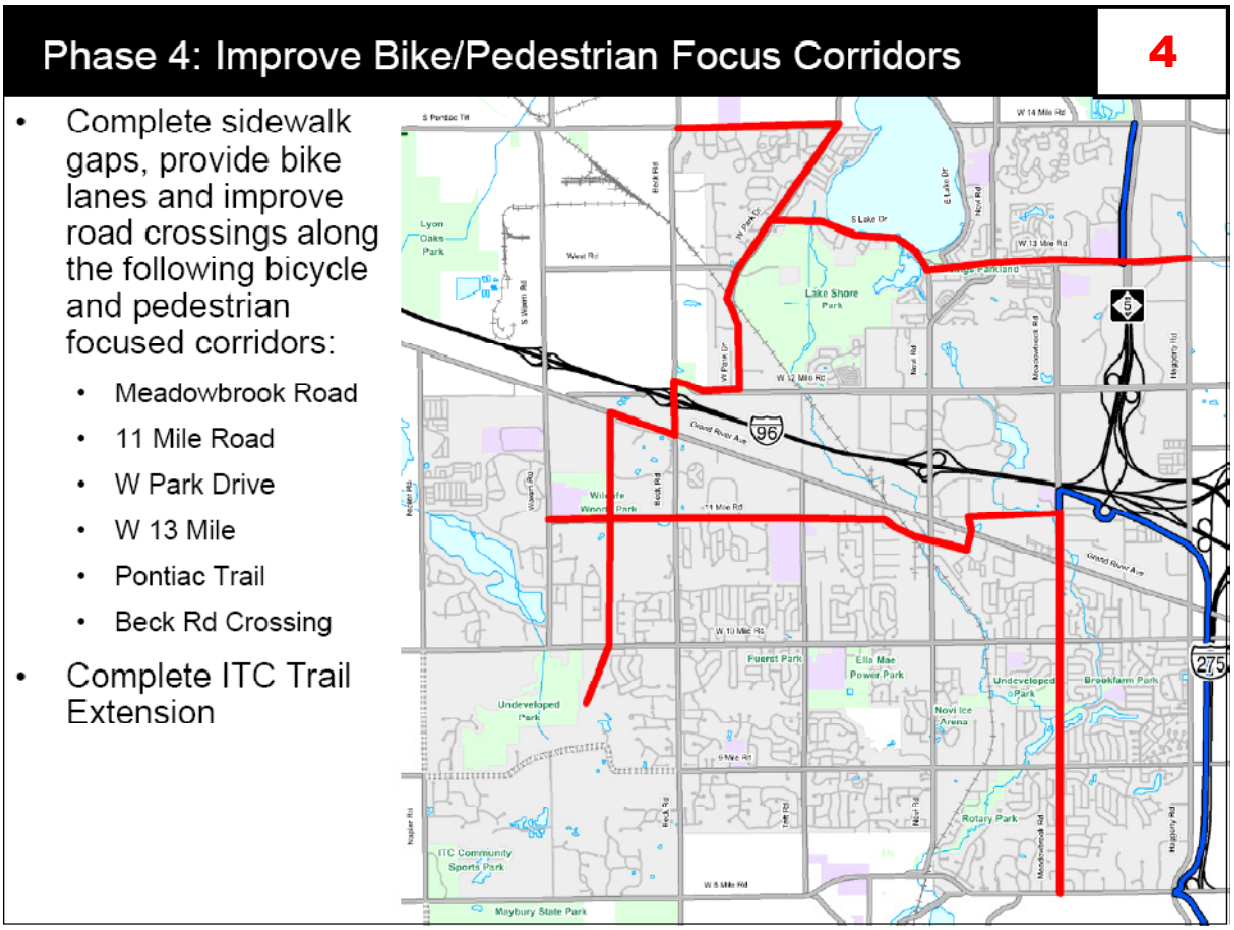
- Complete sidewalk gaps
- Add pedestrian signals to signalized intersections on Novi Road between 12 Mile Road and Grand River Ave
- Add bike lanes to Grand River
- Add mid-block crossings



Proposed Phase: 6, 6, 6, 6, 6, 6, 6, 5

General Reasoning to change to Phase 6: Not a major priority

Phase 4 Refinement



Proposed Phase: 4, 4, 4, 3, 3, 2, 2, 5

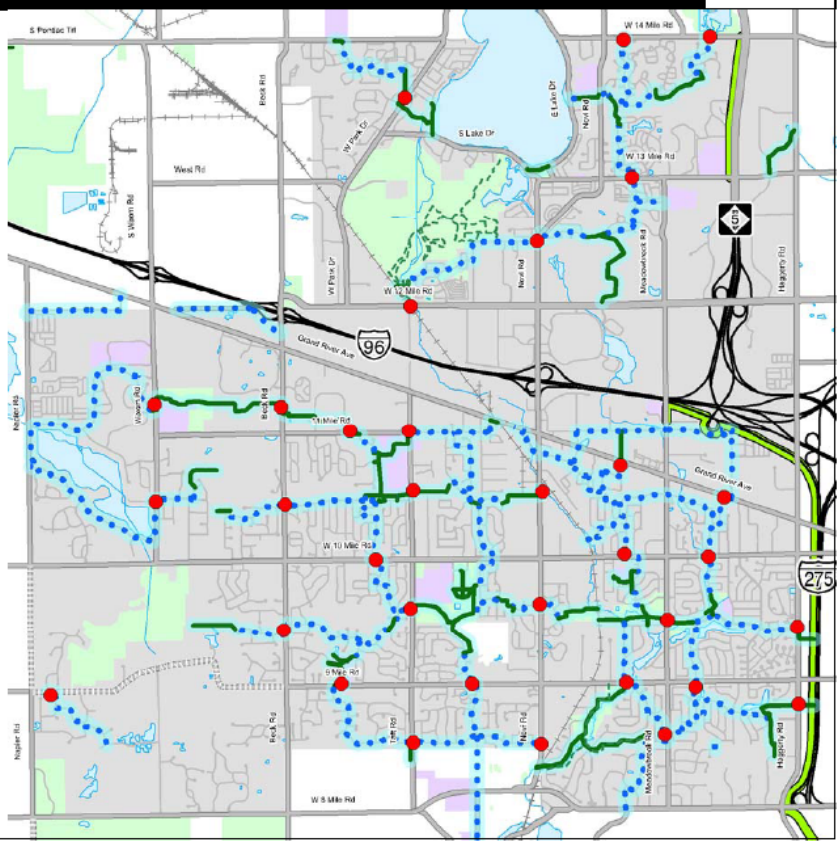
Proposed Changes:

- Include extension of the ITC Trail to Lyon Oaks Park to link to the Huron Valley Trails and Kensington Metropark Trails

Phase 5 Refinement

Phase 5: Implement Neighborhood Connectors — 3

- Construct necessary short trails linking neighborhoods
- Construct additional road crossing improvements (not addressed in previous phases)
- Provide route identification and wayfinding signage



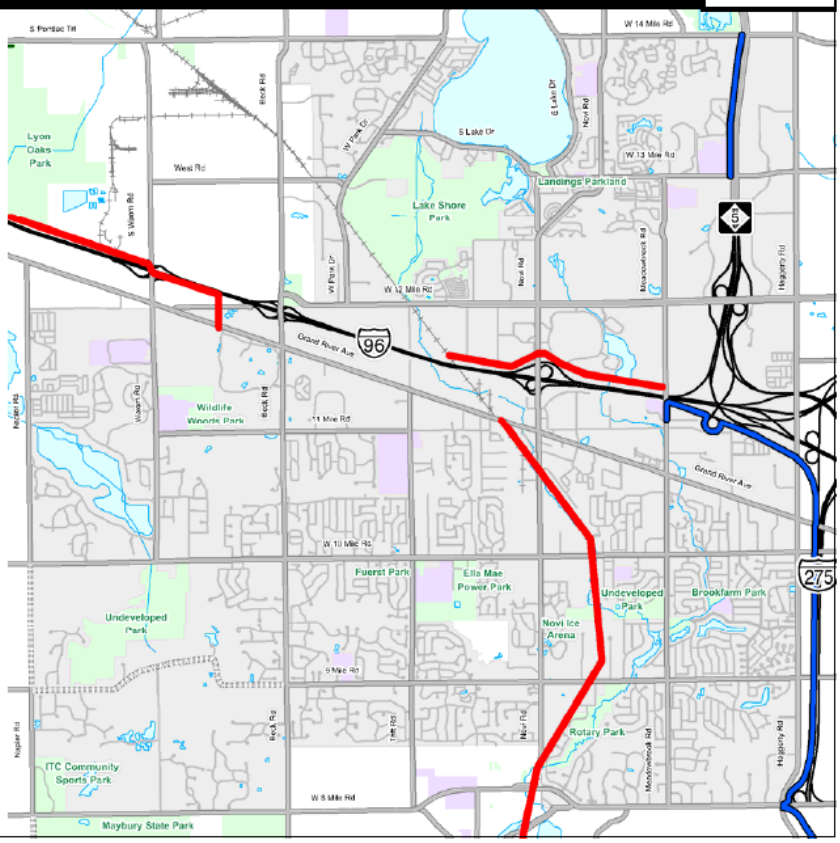
Proposed Phase: 3, 3, 3, 3, 3, 5, 4, 2

General Reasoning to change to Phase 3: Affordable and easy to implements and great for kids

Phase 6 Refinement

Phase 6: Implement Regional Trails — 5

- Trail along north side of I-96 including bridge over railroad
- Extend the CSX Rail with Trail south from Grand River Ave to Northville
- Extend the ITC Trail to Lyon Oaks Park to link to Huron Valley Trails and Kensington Metropark Trails



Proposed Phase: 5, 5, 5, 5, 4, 4, 4, 6

Prioritization Refinement Exercise

Individually, each participant was asked how they would allocate $100 into the following four categories, system maintenance, completing the non-motorized network, system amenities and education and encouragement programs. Then participants were asked to determine how important they felt each line item was in each category. Below is a summary of the input.

System Maintenance:

$ 22 **Total Dollar Allocation for Category**

Line Item Prioritization (Number of Votes)

	High	Medium	Low
Snow and ice removal	7	15	7
Pavement repair	22	6	1

Completing the Non-motorized Network:

$ 52 **Total Dollar Allocation for Category**

Line Item Prioritization (Number of Votes)

	High	Medium	Low
Sidewalks & pathways along primary roadways	17	13	0
Bike Lanes along primary roadways	17	7	4
Neighborhood connectors	16	9	3
Off-road Trails	10	13	6

System Amenities:

$ 18 **Total Dollar Allocation for Category**

Line Item Prioritization (Number of Votes)

	High	Medium	Low
Lighting of pathways/bike lanes	3	11	15
Bicycle parking	2	16	11
Wayfinding signs	15	10	3
Landscaping, benches, drinking fountains, art, etc.	1	13	15

Education and Encouragement Programs:

$ 8 **Total Dollar Allocation for Category**

Line Item Prioritization (Number of Votes)

	High	Medium	Low
Education programs for school-age children	13	10	6
Police enforcement of laws related to bikes and peds.	5	9	15
Commuter challenge	1	8	20
Promotional events such as group rides and fairs	6	10	13

Additional Comments

An optional comment card was provided at the end of the meeting for participants to share any additional information with the design team. Below is documentation from these cards.

- Ensure that the latest update of the Top 20 Critical Sidewalk projects is used
- Adopt maintenance plan: owner responsibility of maintenance along pathways (e.g. landscape and tree maintenance, sight distance, drainage, etc.)
- Provide off-road unpaved pathways for cross country runners and joggers
- Like connection between Chattman and Orchard Hills Elementary and other Neighborhood Connectors
- Consider Bridging Taft over I-96 for easy north-south access to Lakeshore Park
- Thank you for your efforts! I look forward to seeing this to fruition
- PIZZA!
- Good Program!
- Funding costs and available resources need to be taken into account for phasing recommendations
- All good stuff

7.4 Maintenance and Operations Budgets

There are many other factors that can affect cost of maintenance for a non-motorized system. However, the main factor affecting cost is the difference in agencies that maintain and operate facilities. Each agency will have different labor costs, access to different machinery and equipment, and may or may not have a volunteer base to offer assistance.

Routine maintenance can be defined as maintenance that is needed to keep the facility operating in a safe and usable condition, not involving major development or reconstruction. Below is a list of typical routine maintenance activities and their associated annual cost per mile (when applicable):

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

7.5 Implementation Budget Figures

Initial Investments

Sidewalk Gaps

Segment	Priority	Location	Description		Quanti	Unit	Unit Price	Cost Estimate
121	**19**	**Nine Mile**	**South**	**Between Haggerty and Meadowbrook**				
				Pre -Construction Audio Visual	1	ls	$1,500.00	$1,500.00
				Soil Erosion Control	4985	lf	$1.75	$8,723.75
				Maintaining Traffic	4985	lf	$2.00	$9,970.00
				Concrete (6ft)	4985	lf	$24.00	$119,640.00
				Grading	1	ls	$20,000.00	$20,000.00
				ADA Ramps	14	ea	$600.00	$8,400.00
				Restoration	4985	lf	$10.00	$49,850.00
				Sub-Total				*$218,083.75*
				Mobilization (5%)	1	ls		$10,904.19
				Contingency (20%)				$43,616.75
				Construction Estimate				*$272,604.69*
				Professional Fees (25%)				$68,151.17
				TOTAL ESTIMATE				**$340,755.86**
119	**13**	**Meadowbrook**	**East**	**Between Eight Mile and Nine Mile**				
				Section 1:				
				Pre -Construction Audio Visual	1	ls	$1,500.00	$1,500.00
				Soil Erosion Control	1233	lf	$1.75	$2,157.75
				Maintaining Traffic	1233	lf	$2.00	$2,466.00
				Concrete (6ft)	1233	lf	$24.00	$29,592.00
				Grading	1	ls	$5,000.00	$5,000.00
				ADA Ramps	5	ea	$600.00	$3,000.00
				Restoration	1233	lf	$10.00	$12,330.00
				Sub-Total				$56,045.75
				Mobilization (5%)				$2,802.29
				Contingency (20%)				$11,209.15
				Construction Estimate				$70,057.19
				Professional Fees (25%)				$17,514.30
				TOTAL ESTIMATE				**$87,571.48**
				Easement Needed - Approx.	*9405*	*sf*		
				Section 2:				
				Pre -Construction Audio Visual	1	ls	$1,500.00	$1,500.00
				Soil Erosion Control	2533	lf	$1.75	$4,432.75
				Maintaining Traffic	2533	lf	$2.00	$5,066.00
				Concrete (6 ft)	2533	lf	$24.00	$60,792.00
				Enclose Drain	1089	lf	$18.00	$19,602.00
				ADA Ramps	5	ea	$600.00	$3,000.00
				Restoration	2533	lf	$10.00	$25,330.00
				Sub-Total				$119,722.75
				Mobilization (5%)				$5,986.14
				Contingency (20%)				$23,944.55
				Construction Estimate				$149,653.44
				Professional Fees (25%)				$37,413.36
				TOTAL ESTIMATE				**$187,066.80**
				TOTAL ESTIMATE FOR ENTIRE SEGMENT 119				**$274,638.28**

83	**1**	**Nine Mile**	**North**	**Between Haggerty and Meadowbrook**				
				Section 1:				
				Pre -Construction Audio Visual	1	ls	$1,500.00	$1,500.00
				Soil Erosion Control	3155	lf	$1.75	$5,521.25
				Maintaining Traffic	3155	lf	$2.00	$6,310.00
				Asphalt (10 ft)	3155	lf	$40.00	$126,200.00
				Enclose Drain	275	lf	$18.00	$4,950.00
				Tree Removal	1	ls	$5,000.00	$5,000.00
				ADA Ramps	10	ea	$600.00	$6,000.00
				Restoration	3155	lf	$10.00	$31,550.00
				Sub-Total				$187,031.25
				Mobilization (5%)				$9,351.56
				Contingency (20%)				$37,406.25
				Construction Estimate				**$233,789.06**
				Section 2:				
				Pre -Construction Audio Visual	1	ls	$1,500.00	$1,500.00
				Soil Erosion Control	973	lf	$1.75	$1,702.75
				Maintaining Traffic	973	lf	$2.00	$1,946.00
				Asphalt (10 ft)	973	lf	$40.00	$38,920.00
				ADA Ramps	1	ea	$600.00	$600.00
				Restoration	973	lf	$10.00	$9,730.00
				Sub-Total				$54,398.75
				Mobilization (5%)				$2,719.94
				Contingency (20%)				$10,879.75
				Construction Estimate				**$67,998.44**
				TOTAL CONSTRUCTION ONLY ESTIMATE FOR ENTIRE SEGMENT 83				**$301,787.50**
84	**20**	**Meadowbrook**	**East**	**Between Nine and Ten Mile**				
				Pre -Construction Audio Visual	1	ls	$1,500.00	$1,500.00
				Soil Erosion Control	4626	lf	$1.75	$8,095.50
				Maintaining Traffic	4626	lf	$2.00	$9,252.00
				Concrete (6ft)	3680	lf	$24.00	$88,320.00
				Boardwalk (8ft wide)	916	lf	$175.00	$160,300.00
				Bridge (14 ft wide; 30 ft long)	1	ls	$70,000.00	$70,000.00
				ADA Ramps	5	ea	$600.00	$3,000.00
				Restoration	4626	lf	$10.00	$46,260.00
				Sub-Total				$386,727.50
				Mobilization (5%)				$19,336.38
				Contingency (20%)				$77,345.50
				Construction Estimate				$483,409.38
				Professional Fees (25%)				$120,852.34
				TOTAL ESTIMATE				**$604,261.72**
81	**6**	**Ten Mile**	**South**	**Between Haggerty and Meadowbrook**				
				Pre -Construction Audio Visual	1	ls	$1,500.00	$1,500.00
				Soil Erosion Control	4973	lf	$1.75	$8,702.75
				Maintaining Traffic	4973	lf	$2.00	$9,946.00
				Concrete (8ft)	4913	lf	$36.00	$176,868.00
				Adjust Manholes	1	ls	$1,000.00	$1,000.00
				Bridge (Ingersol Creek; 14x30')	1	ls	$70,000.00	$70,000.00
				Bridge (Bishop Creek; 14x30')	1	ls	$70,000.00	$70,000.00
				Tree Removal	1	ls	$5,000.00	$5,000.00
				ADA Ramps	13	ea	$600.00	$7,800.00
				Restoration	4973	lf	$10.00	$49,730.00
				Sub-Total				$400,546.75
				Mobilization (5%)				$20,027.34
				Contingency (20%)				$80,109.35
				Construction Estimate				$500,683.44
				Professional Fees (25%)				$125,170.86
				TOTAL ESTIMATE				**$625,854.30**
				Easement Needed - Approx.	*32700*	*sf*		

80B	**10**	**Ten Mile**	**North**	**East of Meadowbrook**			
				Pre -Construction Audio Visual	1 ls	$1,500.00	$1,500.00
				Soil Erosion Control	215 lf	$1.75	$376.25
				Maintaining Traffic	215 lf	$2.00	$430.00
				Concrete (5ft)	215 lf	$20.00	$4,300.00
				Restoration	215 lf	$10.00	$2,150.00
				Sub-Total			$8,756.25
				Mobilization (5%)			$437.81
				Contingency (20%)			$1,751.25
				Construction Estimate			$10,945.31
				Professional Fees (25%)			$2,736.33
				TOTAL ESTIMATE			**$13,681.64**
				Easement Needed - Approx.	*11960 sf*		
90	**8**	**Ten Mile**	**South**	**Between Meadowbrook and Novi Rd**			
				Pre -Construction Audio Visual	1 ls	$1,500.00	$1,500.00
				Soil Erosion Control	3337 lf	$1.75	$5,839.75
				Maintaining Traffic	3337 lf	$2.00	$6,674.00
	Includes portion planned			Concrete (8ft)	3023 lf	$36.00	$108,828.00
	by developer			Boardwalk	284 lf	$175.00	$49,700.00
				Bridge (14x30')	1 ls	$70,000.00	$70,000.00
				RR Crossing	100 lf	$100.00	$10,000.00
				ADA Ramps	4 ea	$600.00	$2,400.00
				Restoration	3337 lf	$10.00	$33,370.00
				Sub-Total			$288,311.75
				Mobilization (5%)			$14,415.59
				Contingency (20%)			$57,662.35
				Construction Estimate			$360,389.69
				Professional Fees (25%)			$90,097.42
				TOTAL ESTIMATE			**$450,487.11**
				Easement Needed - Approx.	*140850 sf*		
89	**11**	**Novi Rd**	**East**	**Between Ten Mile and Ice Arena**			
				Pre -Construction Audio Visual	1 ls	$1,500.00	$1,500.00
				Soil Erosion Control	464 lf	$1.75	$812.00
				Maintaining Traffic	464 lf	$2.00	$928.00
				Boardwalk (City standard)	464 lf	$175.00	$81,200.00
				Restoration	464 lf	$10.00	$4,640.00
				Sub-Total			$89,080.00
				Mobilization (5%)			$4,454.00
				Contingency (20%)			$17,816.00
				Construction Estimate			$111,350.00
				Professional Fees (25%)			$27,837.50
				TOTAL ESTIMATE			**$139,187.50**

92	**5**	**Novi Rd**	**West**	**Between Nine and Ten Mile**				
				Section 1:				
				Pre -Construction Audio Visual		1 ls	$1,500.00	$1,500.00
				Soil Erosion Control		354 lf	$1.75	$619.50
				Maintaining Traffic		354 lf	$2.00	$708.00
				Concrete (5ft)		314 lf	$20.00	$6,280.00
				Bridge (14'x40')		1 ls	$90,000.00	$90,000.00
				Restoration		354 lf	$10.00	$3,540.00
					Sub-Total			$102,647.50
				Mobilization (5%)				$5,132.38
				Contingency (20%)				$20,529.50
					Construction Estimate			$128,309.38
				Professional Fees (25%)				$32,077.34
				TOTAL ESTIMATE				**$160,386.72**
				Easement Needed - Approx.		*20000 sf*		
				Section 2:				
				Pre -Construction Audio Visual		1 ls	$1,500.00	$1,500.00
				Soil Erosion Control		305 lf	$1.75	$533.75
				Maintaining Traffic		305 lf	$2.00	$610.00
				Concrete (5ft)		305 lf	$20.00	$6,100.00
				Restoration		305 lf	$10.00	$3,050.00
					Sub-Total			$11,793.75
				Mobilization (5%)				$589.69
				Contingency (20%)				$2,358.75
					Construction Estimate			$14,742.19
				Professional Fees (25%)				$3,685.55
				TOTAL ESTIMATE				**$18,427.73**
				Easement Needed - Approx.		*30000 sf*		
				Section 3:				
				Pre -Construction Audio Visual		1 ls	$1,500.00	$1,500.00
				Soil Erosion Control		890 lf	$1.75	$1,557.50
				Maintaining Traffic		890 lf	$2.00	$1,780.00
				Concrete (5ft)		890 lf	$20.00	$17,800.00
				Clearing and Grubbing		1 ls	$5,000.00	$5,000.00
				ADA Ramps		3 ea	$600.00	$1,800.00
				Restoration		890 lf	$10.00	$8,900.00
					Sub-Total			$38,337.50
				Mobilization (5%)				$1,916.88
				Contingency (20%)				$7,667.50
					Construction Estimate			$47,921.88
				Professional Fees (25%)				$11,980.47
				TOTAL ESTIMATE				**$59,902.34**
				TOTAL ESTIMATE FOR ENTIRE SEGMENT 92				**$238,716.80**

93	**12**	**Nine Mile**	**North**	**Between Novi and Taft**				
				Section 1:				
				Pre -Construction Audio Visual		1 ls	$1,500.00	$1,500.00
				Soil Erosion Control		277 lf	$1.75	$484.75
				Maintaining Traffic		277 lf	$2.00	$554.00
				Concrete (6ft)		277 lf	$24.00	$6,648.00
				Restoration		277 lf	$10.00	$2,770.00
					Sub-Total			$11,956.75
				Mobilization (5%)				$597.84
				Contingency (20%)				$2,391.35
					Construction Estimate			$14,945.94
				Professional Fees (25%)				$3,736.48
				TOTAL ESTIMATE				**$18,682.42**
				Easements Needed - Approx.		*12000 sf*		
				Section 2:				
				Pre -Construction Audio Visual		1 ls	$1,500.00	$1,500.00
				Soil Erosion Control		377 lf	$1.75	$659.75
				Maintaining Traffic		377 lf	$2.00	$754.00
				Concrete (6ft)		377 lf	$24.00	$9,048.00
				Restoration		377 lf	$10.00	$3,770.00
					Sub-Total			$15,731.75
				Mobilization (5%)				$786.59
				Contingency (20%)				$3,146.35
					Construction Estimate			$19,664.69
				Professional Fees (25%)				$4,916.17
				TOTAL ESTIMATE				**$24,580.86**
				Easements Needed - Approx.		*18500 sf*		
				Section 3:				
				Pre -Construction Audio Visual		1 ls	$1,500.00	$1,500.00
				Soil Erosion Control		2164 lf	$1.75	$3,787.00
				Maintaining Traffic		2164 lf	$2.00	$4,328.00
				Concrete (6ft)		2164 lf	$24.00	$51,936.00
				Restoration		2164 lf	$10.00	$21,640.00
					Sub-Total			$83,191.00
				Mobilization (5%)				$4,159.55
				Contingency (20%)				$16,638.20
					Construction Estimate			$103,988.75
				Professional Fees (25%)				$25,997.19
				TOTAL ESTIMATE				**$129,985.94**
				Easements Needed - Approx.		*83000 sf*		
				TOTAL ESTIMATE FOR ENTIRE SEGMENT 93				**$173,249.22**
62	**14**	**Ten Mile**	**North**	**Between Novi and Taft**				
				Pre -Construction Audio Visual		1 ls	$1,500.00	$1,500.00
				Soil Erosion Control		283 lf	$1.75	$495.25
				Maintaining Traffic		283 lf	$2.00	$566.00
				Boardwalk (City standard)		283 lf	$175.00	$49,525.00
				Restoration		283 lf	$10.00	$2,830.00
					Sub-Total			$53,416.25
				Mobilization (5%)				$2,670.81
				Contingency (20%)				$10,683.25
					Construction Estimate			$66,770.31
				Professional Fees (25%)				$16,692.58
				TOTAL ESTIMATE				**$83,462.89**
				Easements Needed - Approx.		*22800 sf*		

25	**90**	**Haggerty Rd**	**West**	**Between Twelve Mile and I-696**				
				Section 1:				
				Pre -Construction Audio Visual		1 ls	$1,500.00	$1,500.00
				Soil Erosion Control		888 lf	$1.75	$1,554.00
				Maintaining Traffic		888 lf	$2.00	$1,776.00
				Concrete (6ft)		888 lf	$24.00	$21,312.00
				Clearing and Grubbing		1 ls	$5,000.00	$5,000.00
				Restoration		888 lf	$10.00	$8,880.00
					Sub-Total			$40,022.00
				Mobilization (5%)				$2,001.10
				Contingency (20%)				$8,004.40
					Construction Estimate			$50,027.50
				Professional Fees (25%)				$12,506.88
				TOTAL ESTIMATE				**$62,534.38**
				Easements Needed - Approx.		*31000 sf*		
				Section 2:				
				Pre -Construction Audio Visual		1 ls	$1,500.00	$1,500.00
				Soil Erosion Control		1246 lf	$1.75	$2,180.50
				Maintaining Traffic		1246 lf	$2.00	$2,492.00
				Concrete (6ft)		1246 lf	$20.00	$24,920.00
				Berm Removal		1 ls	$10,000.00	$10,000.00
				ADA Ramps		3 ea	$600.00	$1,800.00
				Restoration		1246 lf	$10.00	$12,460.00
					Sub-Total			$55,352.50
				Mobilization (5%)				$2,767.63
				Contingency (20%)				$11,070.50
					Construction Estimate			$69,190.63
				Professional Fees (25%)				$17,297.66
				TOTAL ESTIMATE				**$86,488.28**
				Easements Needed - Approx.		*45000 sf*		
				TOTAL ESTIMATE FOR ENTIRE SEGMENT 25				**$149,022.66**
129	**50**	**Fourteen Mile**	**South**	**Between two subdivisions**				
				Pre -Construction Audio Visual		1 ls	$1,500.00	$1,500.00
				Soil Erosion Control		628 lf	$1.75	$1,099.00
				Maintaining Traffic		628 lf	$2.00	$1,256.00
				Concrete (6ft)		628 lf	$24.00	$15,072.00
				Grading		1 ls	$40,000.00	$40,000.00
				Restoration		628 lf	$10.00	$6,280.00
					Sub-Total			$65,207.00
				Mobilization (5%)				$3,260.35
				Contingency (20%)				$13,041.40
					Construction Estimate			$81,508.75
				Professional Fees (25%)				$20,377.19
				TOTAL ESTIMATE				**$101,885.94**
				Easements Needed - Approx.		*37800 sf*		
1b	**71**	**Fourteen Mile**	**South**	**Just west of M-5**				
				Pre -Construction Audio Visual		1 ls	$1,500.00	$1,500.00
				Soil Erosion Control		996 lf	$1.75	$1,743.00
				Maintaining Traffic		996 lf	$2.00	$1,992.00
				Concrete (6ft)		996 lf	$24.00	$23,904.00
				Curb and Gutter		315 lf	$25.00	$7,875.00
				Restoration		996 lf	$10.00	$9,960.00
					Sub-Total			$46,974.00
				Mobilization (5%)				$2,348.70
				Contingency (20%)				$9,394.80
					Construction Estimate			$58,717.50
				Professional Fees (25%)				$14,679.38
				TOTAL ESTIMATE				**$73,396.88**

4	**39**	**Fourteen Mile**	**South**	**Just west of Novi Rd**			
				Pre -Construction Audio Visual	1 ls	$1,500.00	$1,500.00
				Soil Erosion Control	241 lf	$1.75	$421.75
				Maintaining Traffic	241 lf	$2.00	$482.00
				Concrete (5ft)	241 lf	$20.00	$4,820.00
				Restoration	241 lf	$10.00	$2,410.00
				Sub-Total			$9,633.75
				Mobilization (5%)			$481.69
				Contingency (20%)			$1,926.75
				Construction Estimate			$12,042.19
				Professional Fees (25%)			$3,010.55
				TOTAL ESTIMATE			**$15,052.73**
				Easements Needed - Approx.	*13000 sf*		
5	**54**	**Fourteen Mile**	**South**	**Just east of East Lake Dr**			
				Pre -Construction Audio Visual	1 ls	$1,500.00	$1,500.00
				Soil Erosion Control	525 lf	$1.75	$918.75
				Maintaining Traffic	525 lf	$2.00	$1,050.00
				Concrete (5ft)	525 lf	$20.00	$10,500.00
				Ped Safety	1 ls	$5,000.00	$5,000.00
				Restoration	525 lf	$10.00	$5,250.00
				Sub-Total			$24,218.75
				Mobilization (5%)			$1,210.94
				Contingency (20%)			$4,843.75
				Construction Estimate			$30,273.44
				Professional Fees (25%)			$7,568.36
				TOTAL ESTIMATE			**$37,841.80**
				Easements Needed - Approx.	*17800 sf*		
9	**9**	**Pontiac Trail**	**South**	**West of West Park Dr**			
				Section 1:			
				Pre -Construction Audio Visual	1 ls	$1,500.00	$1,500.00
				Soil Erosion Control	3325 lf	$1.75	$5,818.75
				Maintaining Traffic	3325 lf	$2.00	$6,650.00
				Concrete (6ft)	3325 lf	$24.00	$79,800.00
				ADA Ramps	9 ea	$600.00	$5,400.00
				Restoration	3325 lf	$10.00	$33,250.00
				Sub-Total			$132,418.75
				Mobilization (5%)			$6,620.94
				Contingency (20%)			$26,483.75
				Construction Estimate			$165,523.44
				Professional Fees (25%)			$41,380.86
				TOTAL ESTIMATE			**$206,904.30**
				Section 2:			
				Pre -Construction Audio Visual	1 ls	$1,500.00	$1,500.00
				Soil Erosion Control	1532 lf	$1.75	$2,681.00
				Maintaining Traffic	1532 lf	$2.00	$3,064.00
				Concrete (6ft)	1532 lf	$24.00	$36,768.00
				ADA Ramps	3 ea	$600.00	$1,800.00
				Restoration	1532 lf	$10.00	$15,320.00
				Sub-Total			$61,133.00
				Mobilization (5%)			$3,056.65
				Contingency (20%)			$12,226.60
				Construction Estimate			$76,416.25
				Professional Fees (25%)			$19,104.06
				TOTAL ESTIMATE			**$95,520.31**
				Easements Needed - Approx.	*62000 sf*		
				TOTAL ESTIMATE FOR ENTIRE SEGMENT 9			**$302,424.61**

55	**15**	**Beck Rd**	**West**	**Just north of Ten Mile**			
				Pre -Construction Audio Visual	1 ls	$1,500.00	$1,500.00
				Soil Erosion Control	811 lf	$1.75	$1,419.25
				Maintaining Traffic	811 lf	$2.00	$1,622.00
				Concrete (8ft)	811 lf	$36.00	$29,196.00
				ADA Ramps	1 ea	$600.00	$600.00
				Restoration	811 lf	$10.00	$8,110.00
				Sub-Total			$42,447.25
				Mobilization (5%)			$2,122.36
				Contingency (20%)			$8,489.45
				Construction Estimate			$53,059.06
				Professional Fees (25%)			$13,264.77
				TOTAL ESTIMATE			**$66,323.83**
54	**15**	**Ten Mile**	**North**	**Just west of Beck**			
				Pre -Construction Audio Visual	1 ls	$1,500.00	$1,500.00
				Soil Erosion Control	886 lf	$1.75	$1,550.50
				Maintaining Traffic	886 lf	$2.00	$1,772.00
				Concrete (5ft)	706 lf	$20.00	$14,120.00
				Boardwalk	180 lf	$175.00	$31,500.00
				Restoration	886 lf	$10.00	$8,860.00
				Sub-Total			$59,302.50
				Mobilization (5%)			$2,965.13
				Contingency (20%)			$11,860.50
				Construction Estimate			$74,128.13
				Professional Fees (25%)			$18,532.03
				TOTAL ESTIMATE			**$92,660.16**
				Easements Needed - Approx.	*72000 sf*		
99	**17**	**Ten Mile**	**South**	**Between Beck and Wixom Rd**			
				Section 1:			
				Pre -Construction Audio Visual	1 ls	$1,500.00	$1,500.00
				Soil Erosion Control	1074 lf	$1.75	$1,879.50
				Maintaining Traffic	1074 lf	$2.00	$2,148.00
				Concrete (8ft)	1074 lf	$36.00	$38,664.00
				Restoration	1074 lf	$10.00	$10,740.00
				Sub-Total			$54,931.50
				Mobilization (5%)			$2,746.58
				Contingency (20%)			$10,986.30
				Construction Estimate			$68,664.38
				Professional Fees (25%)			$17,166.09
				TOTAL ESTIMATE			**$85,830.47**
				Easements Needed - Approx.	*65000 sf*		
				Section 2:			
				Pre -Construction Audio Visual	1 ls	$1,500.00	$1,500.00
				Soil Erosion Control	2211 lf	$1.75	$3,869.25
				Maintaining Traffic	2211 lf	$2.00	$4,422.00
				Concrete (8ft)	2022 lf	$36.00	$72,792.00
				Boardwalk	189 lf	$175.00	$33,075.00
				ADA Ramps	4 ea	$600.00	$2,400.00
				Restoration	2211 lf	$10.00	$22,110.00
				Sub-Total			$140,168.25
				Mobilization (5%)			$7,008.41
				Contingency (20%)			$28,033.65
				Construction Estimate			$175,210.31
				Professional Fees (25%)			$43,802.58
				TOTAL ESTIMATE			**$219,012.89**
				Easements Needed - Approx.	*73500 sf*		
				TOTAL ESTIMATE FOR ENTIRE SEGMENT 99			**$304,843.36**

44	**78**	**Napier Rd**	**East**	**Between**	**Twelve Mile and Island Lake Dr**			
					Pre -Construction Audio Visual	1 ls	$1,500.00	$1,500.00
					Soil Erosion Control	2685 lf	$1.75	$4,698.75
					Maintaining Traffic	2685 lf	$2.00	$5,370.00
					Asphalt (8ft)	1858 lf	$32.00	$59,456.00
					Boardwalk	827 lf	$175.00	$144,725.00
					Restoration	2685 lf	$10.00	$26,850.00
					Sub-Total			$242,599.75
					Mobilization (5%)			$12,129.99
					Contingency (20%)			$48,519.95
					Construction Estimate			$303,249.69
					Professional Fees (25%)			$75,812.42
					TOTAL ESTIMATE			**$379,062.11**
					Easements Needed - Approx.	*150000 sf*		
29		**Twelve Mile Rd**	**South**	**Between**	**Meadowbrook and Twelve Oaks Mall**			
					Pre -Construction Audio Visual	1 ls	$1,500.00	$1,500.00
					Soil Erosion Control	344 lf	$1.75	$602.00
					Maintaining Traffic	344 lf	$2.00	$688.00
					Concrete (8ft)	344 lf	$36.00	$12,384.00
					Restoration	344 lf	$10.00	$3,440.00
					Sub-Total			$18,614.00
					Mobilization (5%)			$930.70
					Contingency (20%)			$3,722.80
					Construction Estimate			$23,267.50
					Professional Fees (25%)			$5,816.88
					TOTAL ESTIMATE			**$29,084.38**
15		**13 Mile Rd**	**South**	**Between**	**Old Novi Rd and Martin Avenue**			
					Pre -Construction Audio Visual	1 ls	$1,500.00	$1,500.00
					Soil Erosion Control	335 lf	$1.75	$586.25
					Maintaining Traffic	335 lf	$2.00	$670.00
					Concrete (5ft)	335 lf	$20.00	$6,700.00
					Restoration	335 lf	$10.00	$3,350.00
					Sub-Total			$12,806.25
					Mobilization (5%)			$640.31
					Contingency (20%)			$2,561.25
					Construction Estimate			$16,007.81
					Professional Fees (25%)			$4,001.95
					TOTAL ESTIMATE			**$20,009.77**
16b		**13 Mile Rd**	**South**	**Between**	**Novi Rd and Holmes Rd**			
					Pre -Construction Audio Visual	1 ls	$1,500.00	$1,500.00
					Soil Erosion Control	253 lf	$1.75	$442.75
					Maintaining Traffic	253 lf	$2.00	$506.00
					Concrete (8ft)	253 lf	$36.00	$9,108.00
					Restoration	253 lf	$10.00	$2,530.00
					Sub-Total			$14,086.75
					Mobilization (5%)			$704.34
					Contingency (20%)			$2,817.35
					Construction Estimate			$17,608.44
					Professional Fees (25%)			$4,402.11
					TOTAL ESTIMATE			**$22,010.55**
					Easements Needed - Approx.	*16000 sf*		
48		**Wixom Rd**	**West**	**Between**	**Ten Mile and Island Lake**			
					Pre -Construction Audio Visual	1 ls	$1,500.00	$1,500.00
					Soil Erosion Control	493 lf	$1.75	$862.75
					Maintaining Traffic	493 lf	$2.00	$986.00
					Asphalt (8ft)	493 lf	$32.00	$15,776.00
					Restoration	493 lf	$10.00	$4,930.00
					Sub-Total			$24,054.75
					Mobilization (5%)			$1,202.74
					Contingency (20%)			$4,810.95
					Construction Estimate			$30,068.44
					Professional Fees (25%)			$7,517.11
					TOTAL ESTIMATE			**$37,585.55**

144	**Meadowbrook**	**West**	**Between Grand River and Ten Mile Rd**				
				Pre -Construction Audio Visual	1 ls	$1,500.00	$1,500.00
				Soil Erosion Control	500 lf	$1.75	$875.00
				Maintaining Traffic	500 lf	$2.00	$1,000.00
				Concrete (8ft)	500 lf	$36.00	$18,000.00
				Clearing and Grubbing	1 ls	$10,000.00	$10,000.00
				Restoration	500 lf	$10.00	$5,000.00
				Sub-Total			$36,375.00
				Mobilization (5%)			$1,818.75
				Contingency (20%)			$7,275.00
				Construction Estimate			$45,468.75
				Professional Fees (25%)			$11,367.19
				TOTAL ESTIMATE			**$56,835.94**

Neighborhood Connectors

NC 1	**East Lake Dr to Novi Rd**				
		Pre -Construction Audio Visual	1 ls	$1,500.00	$1,500.00
		Soil Erosion Control	962 lf	$1.75	$1,683.50
		Asphalt (8ft)	962 lf	$32.00	$30,784.00
		Culvert	20 lf	$18.00	$360.00
		Restoration	962 lf	$10.00	$9,620.00
		Sub-Total			$43,947.50
		Mobilization (5%)			$2,197.38
		Contingency (20%)			$8,789.50
		Construction Estimate			$54,934.38
		Professional Fees (25%)			$13,733.59
		TOTAL ESTIMATE			**$68,667.97**
NC 2	**Brookfarm Park**				
		Soil Erosion Control	442 lf	$1.75	$773.50
		Asphalt (8ft)	442 lf	$32.00	$14,144.00
		Restoration	442 lf	$10.00	$4,420.00
		Sub-Total			$19,337.50
		Mobilization (5%)			$966.88
		Contingency (20%)			$3,867.50
		Construction Estimate			$24,171.88
		Professional Fees (25%)			$6,042.97
		TOTAL ESTIMATE			**$30,214.84**
NC 3	**West of Meadowbrook between Nine Mile and Ten Mile**				
		Pre -Construction Audio Visual	1 ls	$1,500.00	$1,500.00
		Soil Erosion Control	827 lf	$1.75	$1,447.25
		Asphalt (8ft)	660 lf	$32.00	$21,120.00
		Boardwalk	167 lf	$175.00	$29,225.00
		Clearing and Grubbing	1 ls	$10,000.00	$10,000.00
		Restoration	827 lf	$10.00	$8,270.00
		Sub-Total			$71,562.25
		Mobilization (5%)			$3,578.11
		Contingency (20%)			$14,312.45
		Construction Estimate			$89,452.81
		Professional Fees (25%)			$22,363.20
		TOTAL ESTIMATE			**$111,816.02**
NC 4	**West of Meadowbrook between 10 Mile and Grand River**				
		Pre -Construction Audio Visual	1 ls	$1,500.00	$1,500.00
		Soil Erosion Control	632 lf	$1.75	$1,106.00
		Concrete (5ft)	632 lf	$20.00	$12,640.00
		Clearing and Grubbing	1 ls	$5,000.00	$5,000.00
		Fence Gate	1 ls	$5,000.00	$5,000.00
		Restoration	632 lf	$10.00	$6,320.00
		Sub-Total			$31,566.00
		Mobilization (5%)			$1,578.30
		Contingency (20%)			$6,313.20
		Construction Estimate			$39,457.50
		Professional Fees (25%)			$9,864.38
		TOTAL ESTIMATE			**$49,321.88**
		Easements Needed - Approx.	*6320 sf*		

Major Road Crossings					
#1	**12 Mile at Caberet Dr.**				
	Hybrid Pedestrian Signal	1 ls	$120,000.00	$120,000.00
	ADA Ramps	4 ea	$600.00	$2,400.00
	Concrete (8ft)	80 lf	$36.00	$2,880.00
	Crosswalk Striping	70 lf	$4.20	$294.00
	Restoration	80 lf	$10.00	$800.00
	Sub-Total			$126,374.00
	Mobilization (5%)			$6,318.70
	Contingency (20%)			$25,274.80
	Construction Estimate			$157,967.50
	Professional Fees (25%)			$39,491.88
	TOTAL ESTIMATE			**$197,459.38**
#6	**12 Mile at Carlton Way**			
	Hybrid Pedestrian Signal	1 ls	$120,000.00	$120,000.00
	ADA Ramps	4 ea	$600.00	$2,400.00
	Concrete (8ft)	1600 lf	$36.00	$57,600.00
	Crosswalk Striping	70 lf	$4.20	$294.00
	Restoration	1600 lf	$10.00	$16,000.00
	Sub-Total			$196,294.00
	Mobilization (5%)			$9,814.70
	Contingency (20%)			$39,258.80
	Construction Estimate			$245,367.50
	Professional Fees (25%)			$61,341.88
	TOTAL ESTIMATE			**$306,709.38**
	Haggerty at Village Wood Drive			
	Signal Upgrades	1 ls	$40,000.00	$40,000.00
	ADA Ramps	4 ea	$600.00	$2,400.00
	Concrete (8ft)	80 lf	$36.00	$2,880.00
	Crosswalk Striping	100 lf	$4.20	$420.00
	Restoration	80 lf	$10.00	$800.00
	Sub-Total			$46,500.00
	Mobilization (5%)			$2,325.00
	Contingency (20%)			$9,300.00
	Construction Estimate			$58,125.00
	Professional Fees (25%)			$14,531.25
	TOTAL ESTIMATE			**$72,656.25**
	Pontiac Trail at Geisler Middle School			
	Signal Upgrades	1 ls	$15,000.00	$15,000.00
	Crosswalk Striping	50 lf	$4.20	$210.00
	Sub-Total			$15,210.00
	Mobilization (5%)			$760.50
	Contingency (20%)			$3,042.00
	Construction Estimate			$19,012.50
	Professional Fees (25%)			$4,753.13
	TOTAL ESTIMATE			**$23,765.63**

Major Corridor Development:

		Quantity	Unit	Unit Price	Cost Estimate
Meadowbrook Connector between I275 Metro Trail and M5 Metro Trail					
Pre -Construction Audio Visual		1	ls	$1,500.00	$1,500.00
Soil Erosion Control		7200	lf	$1.75	$12,600.00
Maintaining Traffic		7200	lf	$2.00	$14,400.00
Asphalt (10 ft)		7001	lf	$40.00	$280,040.00
ADA ramps		7	ea	$600.00	$4,200.00
Concrete Removal	(5ft wide)	2508	lf	$5.00	$12,540.00
Concrete Removal	(8ft wide)	1179	lf	$8.00	$9,432.00
Restripe Meadowbrook (bike & 11' lanes)		5104	lf	$5.00	$25,520.00
Shoulder Paving & Striping (5 - 6')		4819	lf	$27.00	$130,113.00
Wayfinding Signage		1	ls	$5,000.00	$5,000.00
Restoration		7200	lf	$10.00	$72,000.00
	Sub-Total				$567,345.00
	Mobilization (5%)				$28,367.25
	Contingency (20%)				$113,469.00
	Construction Estimate				$709,181.25
	Professional Fees (25%)				$177,295.31
	TOTAL ESTIMATE				**$886,476.56**
Easements Needed - Approx.	*147800 sf*				
If TE application submitted, discuss with MDOT specifics of adding width to existing 5' and 8' wide sections to accomplish 10' wide AASHTO standard, or remove existing concrete and build new 10' asphalt					
Taft Road Corridor					
Pre -Construction Audio Visual		1	ls	$8,000.00	$8,000.00
Soil Erosion Control		28800	lf	$1.75	$50,400.00
Maintaining Traffic		28800	lf	$2.00	$57,600.00
Bridge	30 ft	1	ls	$70,000.00	$70,000.00
Concrete (8ft)		658	lf	$36.00	$23,688.00
Asphalt (10ft)		8303	lf	$40.00	$332,120.00
Enclose Drain		400	lf	$18.00	$7,200.00
Grading		1	ls	$30,000.00	$30,000.00
Clearing and Grubbing		1	ls	$10,000.00	$10,000.00
Culvert		70	lf	$18.00	$1,260.00
ADA ramps		10	ea	$600.00	$6,000.00
Concrete (6ft)		11606	lf	$24.00	$278,544.00
I-96 Underpass and RR overpass		1	ls	$1,000,000.00	$1,000,000.00
Shoulder Paving (5-6ft)		14512	lf	$27.00	$391,824.00
Boardwalk (8 ft)	City Standard	401	lf	$175.00	$70,175.00
Hybrid Pedestrian Signal	12 Mile	1	ls	$120,000.00	$120,000.00
Restoration		28800	lf	$10.00	$288,000.00
Galway Dr Intersection	X	1	ls	$59,400.00	$59,400.00
Mid-block crossing	Princeton/Byrne	1	ls	$2,000.00	$2,000.00
Rectangular Rapid Flash Beacon	Princeton/Byrne	1	ls	$5,000.00	$5,000.00
Dunbarton Drive Intersection	X	1	ls	$59,400.00	$59,400.00
White Pines Dr Roundabout		1	ls	$198,750.00	$198,750.00
Addington Ln Intersection	T	1	ls	$35,800.00	$35,800.00
Traffic Island at High School		1	ls	$8,000.00	$8,000.00
Dover Blvd Intersection	T	1	ls	$35,800.00	$35,800.00
Emerald Forest Dr Intersection	T	1	ls	$35,800.00	$35,800.00
Jacob Drive Intersection	T	1	ls	$35,800.00	$35,800.00
	Sub-Total				$3,220,561.00
	Mobilization (5%)				$161,028.05
	Contingency (20%)				$644,112.20
	Construction Estimate				$4,025,701.25
	Professional Fees (25%)				$1,006,425.31
	TOTAL ESTIMATE				**$5,032,126.56**
Easements Needed - Approx.	*212500 sf*				

9 1/2 Mile Neighborhood Connector					
Pre -Construction Audio Visual		1	ls	$8,000.00	$8,000.00
Soil Erosion Control		20200	lf	$1.75	$35,350.00
Maintaining Traffic		8000	lf	$2.00	$16,000.00
Bridges (14' x 30')		2	ea	$70,000.00	$140,000.00
Bridge over RR (750' including approach ramps)		1	ls	$500,000.00	$500,000.00
Bury Electrical along RR		100	lf	$100.00	$10,000.00
Novi Rd Crossing	Mini Roundabout	1	ls	$198,750.00	$198,750.00
Meadowbrook Crossing	Crossing Island	1	ls	$8,000.00	$8,000.00
Taft Rd Crossing	Mini Roundabout	1	ls	$198,750.00	$198,750.00
Beck Rd Crossing	T	1	ls	$35,800.00	$35,800.00
Traffic Calming	Allowance	1	ls	$400,000.00	$400,000.00
Asphalt (10ft)	AASHTO	15972	lf	$40.00	$638,880.00
Clearing and Grubbing		1	ls	$50,000.00	$50,000.00
Wayfinding Signage	Allowance	1	ls	$150,000.00	$150,000.00
Boardwalk (City standard)	not AASHTO	4150	lf	$175.00	$726,250.00
	Sub-Total				$3,115,780.00
	Mobilization (5%)				$155,789.00
	Contingency (20%)				$623,156.00
	Construction Estimate				$3,894,725.00
	Professional Fees (25%)				$973,681.25
	TOTAL ESTIMATE				**$4,868,406.25**
Easements Needed - Approx.	*23000 sf*				

Subdivision Entrance Types:

		Quantity	Unit	Unit Price	Cost Estimate
Subdivision Intersection (X) Fig. 5.4AC					
Demolition		1	ls	$1,000.00	$1,000.00
Medians	(50' x 10')	2	ea	$2,500.00	$5,000.00
Speedtable Crosswalk (22')		2	ea	$1,800.00	$3,600.00
Striping		1	ls	$1,250.00	$1,250.00
Signage		1	ls	$1,250.00	$1,250.00
Ramps		14	ea	$600.00	$8,400.00
Lighting		6	ea	$4,000.00	$24,000.00
Landscaping		1	ls	$3,000.00	$3,000.00
	Sub-Total				*$47,500.00*
	Mobilization (5%)				$2,375.00
	Contingency (20%)				$9,500.00
	Construction Estimate				*$59,375.00*
	Professional Fees (25%)				$14,843.75
	TOTAL ESTIMATE				**$74,218.75**
Subdivision T-Intersection (T) Fig 5.4AB					
Demolition		1	ls	$750.00	$750.00
Median (1)	(50' x 10')	1	ls	$2,500.00	$2,500.00
Speedtable Crosswalk (22')		1	ea	$1,800.00	$1,800.00
Striping		1	ls	$1,250.00	$1,250.00
Signage		1	ls	$1,250.00	$1,250.00
Ramps		6	ea	$600.00	$3,600.00
Lighting		4	ea	$4,000.00	$16,000.00
Landscaping		1	ls	$1,500.00	$1,500.00
	Sub-Total				*$28,650.00*
	Mobilization (5%)				$1,432.50
	Contingency (20%)				$5,730.00
	Construction Estimate				*$35,812.50*
	Professional Fees (25%)				$8,953.13
	TOTAL ESTIMATE				**$44,765.63**
Compact Roundabout at Subdivision Entrance Fig 5.4AD					
Demolition		1	ls	$15,000.00	$15,000.00
Road Reconstruction	w/ 60' circle	1	ls	$45,000.00	$45,000.00
Medians	(10' x 40')	4	ea	$1,800.00	$7,200.00
Striping		1	ls	$2,500.00	$2,500.00
Ramps		16	ea	$600.00	$9,600.00
Safety Path	(8' concrete)	700	lf	$36.00	$25,200.00
Lighting		8	ea	$4,000.00	$32,000.00
Landscaping		1	ls	$15,000.00	$15,000.00
Restoration		1	ls	$5,000.00	$5,000.00
Signage		1	ls	$2,500.00	$2,500.00
	Sub-Total				*$159,000.00*
	Mobilization (5%)	1	ls		$7,950.00
	Contingency (20%)				$31,800.00
	Construction Estimate				*$198,750.00*
	Professional Fees (25%)				$49,687.50
	TOTAL ESTIMATE				**$248,437.50**

Miscellaneous Element Cost Estimates:

Neighborhood Connector Elements

Curb Bump-Outs (per corner)

Curb Removal	65 lf	$5.00	$325.00
Asphalt Pavement Removal	50 sy	$3.00	$150.00
Excavation	25 cy	$10.00	$250.00
Curb and Gutter	80 lf	$25.00	$2,000.00
Aggregate Base	25 cy	$7.50	$187.50
4" Concrete Sidewalk	100 sf	$4.00	$400.00
Topsoil	5 cy	$25.00	$125.00
Rain Garden	380 sf	$15.00	$5,700.00
Sub-Total			$9,137.50
Mobilization (5%)			$456.88
Contingency (20%)			$1,827.50
Construction Estimate			$11,421.88
Professional Fees (25%)			$2,855.47
TOTAL ESTIMATE			**$14,277.34**

Traffic Button

Asphalt Pavement Removal	75 sy	$3.00	$225.00
Excavation	37 cy	$10.00	$370.00
Curb and Gutter	60 lf	$25.00	$1,500.00
Aggregate Base	25 cy	$7.50	$187.50
6" Concrete Apron	400 sf	$6.00	$2,400.00
Topsoil	10 cy	$25.00	$250.00
Sod	320 sf	$1.50	$480.00
Sub-Total			$5,412.50
Mobilization (5%)			$270.63
Contingency (20%)			$1,082.50
Construction Estimate			$6,765.63
Professional Fees (25%)			$1,691.41
TOTAL ESTIMATE			**$8,457.03**

One Way Choker

Curb Removal	50 lf	$5.00	$250.00
Asphalt Pavement Removal	65 sy	$3.00	$195.00
Excavation	30 cy	$24.00	$720.00
Curb and Gutter	80 lf	$25.00	$2,000.00
Aggregate Base	5 cy	$7.50	$37.50
4" Sidewalk	120 sf	$4.00	$480.00
Topsoil	7 cy	$25.00	$175.00
Sod	445 sf	$1.50	$667.50
Sub-Total			$4,525.00
Mobilization (5%)			$226.25
Contingency (20%)			$905.00
Construction Estimate			$5,656.25
Professional Fees (25%)			$1,414.06
TOTAL ESTIMATE			**$7,070.31**

Speed Table

Curb Removal		20 lf	$5.00	$100.00
Asphalt Pavement Removal		100 sy	$3.00	$300.00
Aggregate Base		25 cy	$7.50	$187.50
6" Sidewalk		960 sf	$5.00	$4,800.00
	Sub-Total			$5,387.50
Mobilization (5%)				$269.38
Contingency (20%)				$1,077.50
	Construction Estimate			$6,734.38
Professional Fees (25%)				$1,683.59
TOTAL ESTIMATE				**$8,417.97**

Wayfinding Signage (per mile)

Route Signage		24 ea	$200.00	$4,800.00
	Sub-Total			$4,800.00
Mobilization (5%)				$240.00
Contingency (20%)				$960.00
	Construction Estimate			$6,000.00
Professional Fees (25%)				$1,500.00
TOTAL ESTIMATE				**$7,500.00**

Other Miscellaneous Elements			
Asphalt Trail (8ft)		$168,960.00	mi
Asphalt Trail (10ft)		$211,200.00	mi
Concrete Sidewalk (5ft)		$105,600.00	mi
Concrete Sidewalk (8ft)		$190,080.00	mi
Boardwalk (City Standard)		$175.00	lf
Boardwalk (AASHTO Standard - 14' wide)		$325.00	lf
ADA Ramps		$600.00	ea
Rectangular Rapid Flash Beacon		$5,000.00	ea
Hybrid Pedestrian Signal	HAWK	$120,000.00	ea

7.6 Evaluating Alternative Scenarios for Travel Along Road Corridors

There is no single solution for handling bicycle traffic along road corridors that will be the most appropriate facility in all cases. But the City should still strive to establish a consistent approach as possible so that motorists and bicycles have clear and consistent expectations of each other.

Restricting bicycles to a path along the side of a roadway—while potentially a legal option—is fraught with safety concerns. This diminishes the attractiveness of using a bicycle for transportation for many adult cyclists. On the other hand, there exists a great diversity of bicycling skills and comfort levels and the system should attempt to safely accommodate all users to the degree possible. Also, where a bicyclists chooses to ride has an impact on the pedestrian's experience.

Quality and Level of Service Evaluation of Alternative Scenarios

In order to evaluate the alternative approaches to accommodating bicycle and pedestrian travel along the roadway, quality/level of services models were used. The Bicycle and Pedestrian Level of Service Models are statistically reliable methods for evaluating the quality and effectiveness of pedestrian and bicycle conditions of a given roadway environment. Various models have been developed over the past decade. The Bicycle and Pedestrian Level of Service Models used for this plan, developed by Bruce Landis, PE, AICP of Sprinkle Consulting, Inc., models bicycle and pedestrian environments based on data gathered from a wide cross section of users who evaluated numerous real world scenarios. Simplified versions of these models have been incorporated in the Florida Department of Transportation's Multi-modal Quality/Level of Service Model, which is the only LOS analysis that FDOT currently accepts. The Quality/Level of Service score is a measurement of the perceived safety and comfort of pedestrians and bicyclists.

It should be noted that the Bicycle Quality/Level of Service model applies only to bicycle environments *within* the roadway. There currently are not any well-researched models for Bicycle Quality/Level of Service for Shared Use Paths. The Pedestrian Quality/Level of Service Model also does not account for the increased conflicts with bicyclists that are likely to occur on a Shared-use Path.

Pedestrian Quality/Level of Service - Key Factors (in order of statistical significance):

1. Presence of a sidewalk
2. Amount of lateral separation between pedestrians and motor vehicles
3. Presence of physical barriers and buffers (including parking) between pedestrians and motor vehicles
4. Motorized vehicle volume
5. Motorized vehicle speed

Bicycle Quality/Level of Service - Key Factors (in order of statistical significance):

1. Presence of bicycle lane or paved shoulder
2. Proximity of bicyclists to motorized vehicles
3. Motorized vehicle volume
4. Motorized vehicle speed

5. Motorized vehicle type (percent truck/commercial traffic)
6. Pavement condition
7. The amount of on-street parking

The key factors for both modes are the existence of their own space, how far that space is from the traffic, and the nature of the traffic. The Bicycle and Pedestrian Quality/Level of Service score system has been developed using the same letter grading system with the same connotations as the letter grades used in schools: A being the best and F being the worst.

Because letter-grade Level of Service assessments are typical for vehicular traffic, there may be a desire to compare Vehicular Level of Service to that of Bicycle and/or Pedestrian Level of Service. However, the two evaluation systems are quite different and should not be directly compared. One illustration of the difference is that a Pedestrian Level of Service of "E" is likely the result of there not being any accommodations for a pedestrian. A Vehicular Level of Service "E" is defined as a point along an existing facility in which operations are at or near capacity and are quite unstable.

Three Scenarios for Providing Multi-modal Road ROW's

There are three typical scenarios for accommodating pedestrians, bicycles and motorists within a road Right-of-Way:

- Sidewalk (for pedestrians) and a Shared Roadway (for bicyclists and motorists).
- Sidewalk (for pedestrians) and a Bike Lane (a separate bike-only lane in the roadway).
- Shared Use Path (for pedestrians and some cyclists) and a Shared Roadway (for other bicyclists and motorists).

The following section looks at these three different scenarios for accommodating bicyclists, pedestrians and motorists. To evaluate each of these scenarios, a generalized cross section was prepared for each scenario along three different classifications of primary roadways: Principal Arterials (e.g. Grand River Avenue), Minor Arterials (e.g. W 9 Mile), and Urban Collectors (e.g. West 11 Mile Road). While there are significant variances among different road classifications, the generalized input used for each covers most roadway situations.

The following table summarizes the input used in this analysis: along the road corridor have been explored using a Quality/Level of Service Analysis to determine which combination is the most beneficial for users

Table 7.6A. Generalized Road Conditions and Existing AASHTO Guidelines

Criteria		Urban Principal Arterial	Urban Minor Arterial	Urban Collector
ADT motor vehicles	Generalized Average Daily Traffic Volumes for Both Directions	30,000	20,000	10,000
Number of Lanes	Generalized Average	4 Total (2 each way)	4 Total (2 each way)	2 Total (1 each way)
Posted Speed	Generalized Average	40 MPH	35 MPH	30 MPH
Sidewalk Width	AASHTO Pedestrian Guidelines	5' Minimum 6 – 8' Preferred 10 – 15'in CBD & High Use Areas	5' Minimum 6 – 8' Preferred 10 – 15'in CBD & High Use Areas	5' Minimum
Buffer Width	AASHTO Pedestrian Guidelines (from edge of road to sidewalk)	5' Minimum 6' Preferred	5' Minimum 6' Preferred	2' Minimum 4' Preferred
Bike Lane Width	AASHTO Bicycle Guidelines	3.5' minimum (5' total width including gutter)	3.5' minimum (5' total width including gutter)	3.5' minimum (5' total width including gutter)
Shared Outside Lane	AASHTO Bicycle Guidelines	14' recommended 15' maximum	14' recommended 15' maximum	14' recommended 15' maximum

Notes:

- 4' minimum walks may be used if 5' wide passing spaces for wheelchair users are provided at reasonable intervals. Although AASHTO permits 4' foot minimum walks with passing lanes, they are not desirable and should only be used for special circumstances.
- AASHTO also provides guidelines for curb-attached sidewalks (no buffer is provided between the sidewalk and roadway). The minimum width is 6', 8 – 10' is recommended along busy Arterials.
- There are many variables that AASHTO considers that are not articulated in this simplified chart.

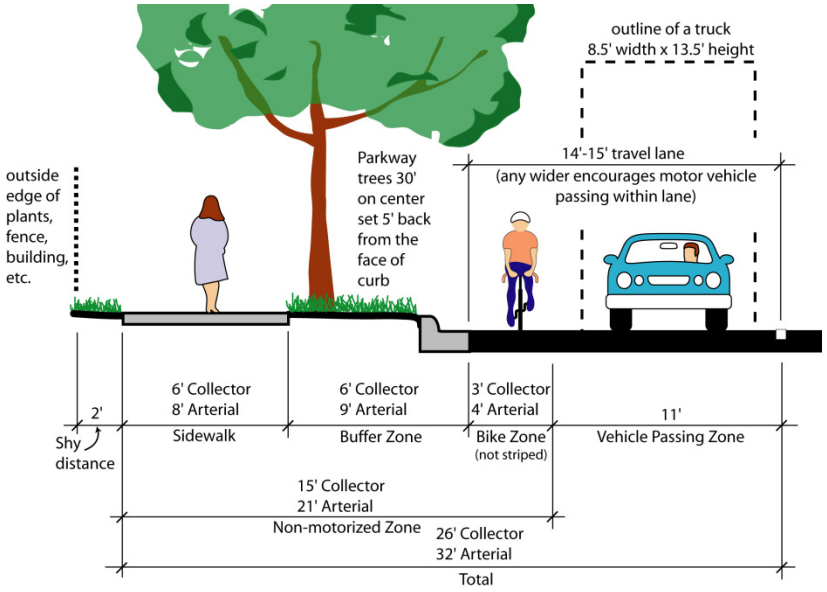
Refining the Scenarios

In comparing the different scenarios, the following design criteria were taken into consideration:

- **Widening the Buffer to Accommodate Trees** – As noted in the Pedestrian Quality /Level of Service – Key Factors, the lateral separation of pedestrians from the roadway and the presence of physical barriers such as trees, are the most important factors after the existence of a sidewalk. While trees provide benefits for pedestrian and roadway aesthetics, they are considered hazards to motorists. To minimize vehicular crashes with fixed roadside objects such as trees and light poles, current guidelines recommend placing the fixed objects at least 5' from the face of curb on urban arterials and 2' on collectors. Trees should be setback from the sidewalk at least 2' to allow for root growth and to provide a clear zone for the sidewalk users. To determine the total minimum desirable buffer with for Arterials, 6" is allocated for the width of a new tree trunk and the 18" from the face of curb to the edge of road is included. The result is that the minimum desirable buffer for Arterials is set at 9' wide. For Collectors, 4' is considered the minimum width for a planting strip that could support trees. This results in the total minimum desirable buffer for Collectors being set at 6' wide. As a general rule, the buffer should be as wide as reasonable for the conditions to minimize vehicular crashes with fixed objects, allow optimum planting conditions for trees, and improve the pedestrian environment.
- **Guidelines and Precedents for Narrow Lanes** - AASHTO guidelines and the MDOT Road Design Manual indicate that 12' lanes are most desirable and should be used where practical. They both indicate that in urban areas on low-speed roads (45 mph or less) 11' lanes are often used, and that 10' lanes may be used in restricted areas where there is little or no truck traffic.
- **Preserved Capacity with Narrower Lanes** - an 11' vehicular lane with an adjacent bike lane likely operates at near the same capacity as a 12' vehicular lane adjacent to a curb.
- **Narrow Turn Lanes -** AASHTO guidelines note that continuous two-way left-turn lanes may be as narrow as 10'.
- **Vehicle Widths** - A generalized sport utility vehicle is 6'- 4" wide, City buses and trucks are 8'- 6" wide.
- **Working Within Existing ROW** - Typical ROW Widths are 66' and 99', which means that the combined width of the sidewalk, buffer zone (space between the road and the sidewalk), bike lane (if any), and outside vehicle lane should be no wider than 33' in order to avoid the need for additional ROW. Using inside and continuous two-way left-turn lanes of 11', a four-lane road can be accommodated in 88' and a five-lane road can be accommodated in 99'.
- **Maximizing Bicycle and Pedestrian Level of Service** - Three scenarios were initially designed based on AASHTO guidelines. The scenarios were then refined by adjusting variables within the parameters of AASHTO guidelines such as the sidewalk width, the width of the buffer between the road, sidewalk and tree spacing, the bike lane width, and right lane width, all to achieve the most desirable Quality/Level of Service score possible within the typical ROW's.

The following pages include an overview of the three scenarios, their general advantages and disadvantages, and the results of the Quality and Level of Service analyses for the three road classifications.

Fig. 7.6B. Scenario A – Sidewalk and Shared Roadway



In this scenario, there are no specifically designated bicycle facilities within the roadway. Bicycles are accommodated through increased right-hand lane width (14' to 15') and reduced traffic speeds. Education and enforcement programs along with signage and potential pavement markings, such as the Shared-use Arrow, are utilized to alert motorists to the bicyclist's presence in the roadway.

Evaluation Results:

Road Classification	Pedestrian Q/LOS	On-road Bike Q/LOS	Notes
Principal Arterial	3.05 = C	4.55 = E	Extremely poor Bicycle Q/LOS
Minor Arterial	2.32 = B	4.23 = D	
Collector	2.47 = B	4.22 = D	Tied for worst Bike Q/LOS w/ scenario C

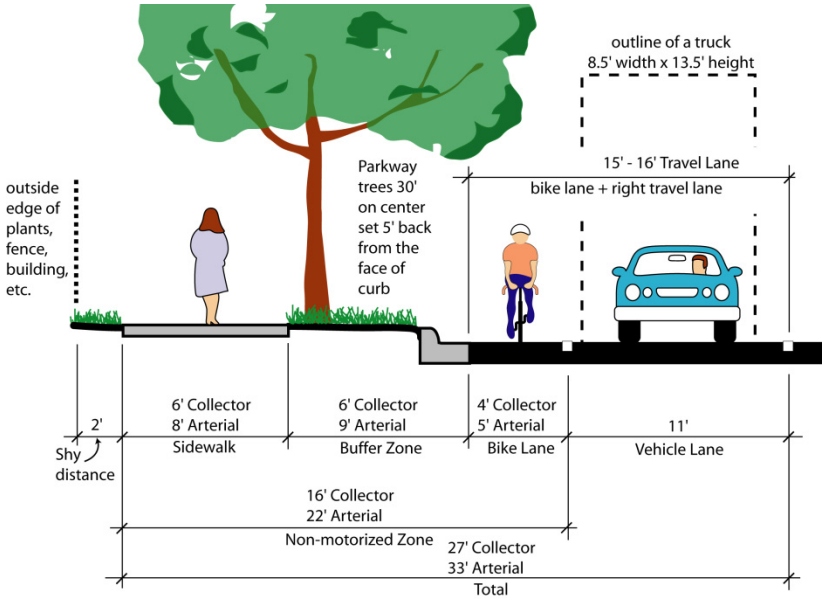
Advantages:

- Simple treatment at intersections.
- Considered by some to be the safest way to integrate bicyclists and motorized vehicles.
- Wide curb lane vs. bicycle lane studies have shown no significant safety differences in separation distances between the bicyclist and motorist.
- Appeals to experienced bicyclists who are often commuters.

Disadvantages:

- Unlikely to attract many new cyclists.
- May be viewed as a do nothing approach by many.
- Many bicyclists will still ride on the sidewalk.
- Cars tend to move further to the left and encroach into adjacent travel lanes when passing a cyclist with wide curb lanes than with bicycle lanes.
- Wider lanes may encourage higher speeds and may require traffic calming measures.

Fig. 7.6C. Scenario B – Sidewalk and Bike Lane (Preferred Option)



In this scenario, striped bicycle lanes or designated paved shoulders are provided on all collectors and minor arterials. Principal Arterials may have bike lanes or widened curb lanes, as determined most prudent for specific situations. The width of the bicycle lanes or shoulders should increase in areas with poor sight lines and/or higher vehicular speeds and volumes.

Evaluation Results:

Road Classifications	Pedestrian Q/LOS	On-road Bike Q/LOS	Notes
Principal Arterial	3.04 = C	3.47 = C	Best Bike Q/LOS, only Scenario with a C rating
Minor Arterial	2.31 = B	3.15 = C	Best Bike Q/LOS, only Scenario with a C rating
Collector	2.46 = B	3.39 = C	Best Bike Q/LOS, only Scenario with a C rating

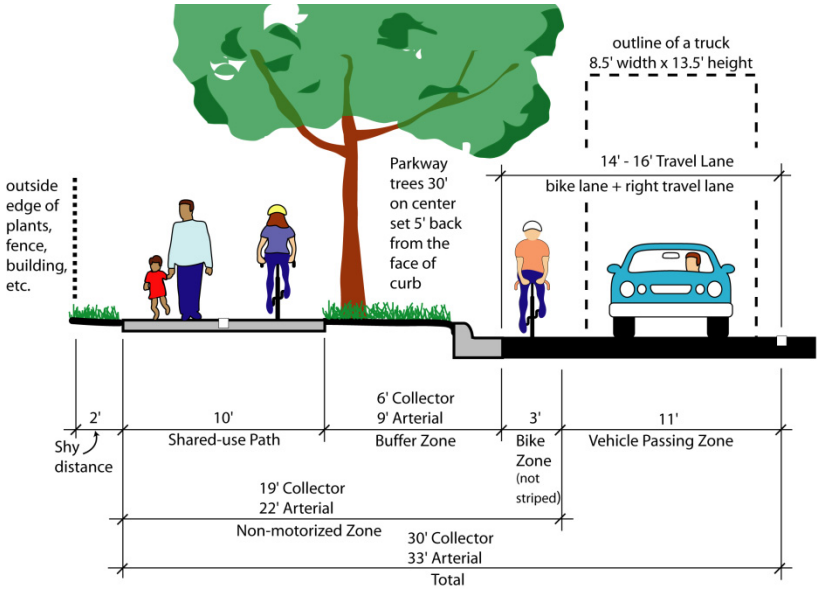
Advantages:

- Highly visible, designated facilities encourage increased bicycle use.
- Designated facilities alert motorists of the presence of bicyclists in the roadway.
- May have a slight traffic calming impact in some situations.
- Concurrent with AASHTO guidelines for most situations.
- Motorists are much less likely to encroach into the adjacent lane when passing a bicyclist.
- Motorists have less variation in their lane placement.

Disadvantages:

- Bicycle lanes require supplemental maintenance to be kept free of debris.
- Intersections must be designed carefully to minimize conflicts with turning movements.
- Presence of lanes may attract less experienced bicyclists to busier roadways.
- Some bicyclists will still ride on the sidewalk.

Fig. 7.6D. Scenario C – Shared-use Path



In this scenario, off-road shared-use paths are provided on Principal and Minor Arterials. Bicycle lanes or designated paved shoulders are provided on Collectors. Some collectors may also have shared-use paths. Driveways crossing shared use paths are modified to improve bicyclist and pedestrian safety.

Evaluation Scenarios:

Road Classifications	Pedestrian Q/LOS	On-road Bike Q/LOS	Notes
Principal Arterial	3.05 = C	4.69 = E	Worst Bike Q/LOS
Minor Arterial	2.32 = B	4.38 = D	Worst Bike Q/LOS
Collector	2.39 = B	3.89 = D	Tied for worst Bike Q/LOS w/ Scenario A

The analysis does not account for increased conflicts between bikes and pedestrians

Advantages:

- Similar to many Novi's existing non-motorized facilities.
- Do not have to modify existing roadways.
- Facilities separate from busy roads appeal to novice users and those with slower reflexes.

Disadvantages:

- Off-road facilities such as sidewalks and pathways are statistically the most dangerous places to bike due to conflicts with motor vehicles at intersections and driveways.
- Increased number of conflicts between bicyclists and pedestrians on pathways.
- Some bicyclists will still choose the roadway rather than a Shared-use Path.
- Few of the City's existing shared-use paths meet current AASHTO guidelines.
- Off-road facilities will need to be cleared of snow and have a higher maintenance standard than is currently in place to be considered a transportation facility.
- Transition between Shared-use Paths and Bike Lanes are awkward.

Scenario Observations

After reviewing the Quality/Level of Service (Q/LOS) analysis and testing alternative inputs for the alternative scenarios, a number of observations were made. These include:

- AASHTO minimum guidelines in many cases do not result in a Q/LOS grade of "C" or better.
- The Sidewalk and Bike Lane scenarios were the only scenarios that consistently achieved a Q/LOS of C or better for bicyclists and pedestrians. The other scenarios consistently had at least one mode rated a Q/LOS of D or worse.
- An 8' wide Bike Lane would be required to achieve a Bicycle Q/LOS higher than C on a typical Principal Arterial due to the traffic volumes and speeds. At that width, the Bike Lane may be misinterpreted as a travel lane and would be difficult to fit in most road ROW's.
- A 21' wide buffer would be required to achieve a Pedestrian Q/LOS higher than C on a typical Principal Arterial due to the traffic volumes and speeds. This would be difficult to accommodate in most road ROW's.
- The non-motorized zone does not vary in width much and all of the scenarios can be accommodated in standard ROW widths.
- While Bike Lanes provide additional buffer space between the vehicular travel way and the sidewalks, the difference in the Q/LOS is not significant.
- The Average Daily Traffic Volume for a 2 Lane Urban Collector would have to be below 3,500 to achieve a Bicycle Q/LOS of C.
- A Bike Lane provides an additional 4 to 5' of lateral separation between fixed objects such as trees and street lights and the motorized travel lanes increasing motorized safety.
- A Bike Lane provides a benefit to trees planted in the buffer by providing an additional 4' to 5' between the canopy of the tree and trucks that may hit the lower branches.

Conclusion

Based on these observations **Scenario B – Sidewalk and Bike Lane** is the preferred alternative for all road classifications under most circumstances. Scenario A – Sidewalks and Shared Roadway may be appropriate for lower volume (<3,500 ADT) and lower speed (<= 30 MPH) Collectors. Scenario C – Shared-use Path may be appropriate for Parkway situations where intersecting roadways and driveways are widely spaced (typically father apart than 1/2 mile). In addition, there should be little need to get to destinations on the other side of the road between intersecting roadways and marked mid-block crosswalks.

While Scenario B – Sidewalk and Bike Lane, is the preferred alternative, the City should not restrict bicycling on most sidewalks. Bicyclists will choose to ride in the road or on a sidewalk based on their individual skills and comfort riding in traffic and current conditions. Thus an individual who may typically ride in the road may choose to ride on a sidewalk if the road is icy or slushy. Also, some individuals may be comfortable riding in bike lanes on some roads but not others. It is not the City's place to dictate where a bicyclist should ride but rather provide new facilities in accordance with current best practices and retrofit existing facilities as best as possible.

The City though needs to underscore that when bicyclists ride on sidewalks they need to always yield to pedestrians. Six to eight foot wide sidewalks can accommodate moderate slower paced bicycle traffic in suburban settings. Thus Scenario B – Sidewalk and Bike Lane provides that option for both on-road and off-road bicycling in many situations. Given that some bicyclists will choose to ride on the sidewalks, the

sidewalks should be designed and maintained such to accommodate these users. This is not to say that they need to meet AASHTO Guidelines for shared-use pathways, but that sightlines at intersecting driveways and roadways should be open so that motorists and bicyclist can see each other. Sidewalk and ramp alignments should take into consideration bicycle travel. Obstructions within and immediately adjacent to the sidewalk should be avoided. Also, the sidewalk surfaces and adjacent overhanging vegetation need to be maintained with bicycle travel in mind.

There will be places in the downtown or other high density mixed use areas where the combination of high pedestrian volumes and limited sidewalk widths will dictate that bicyclists should walk their bikes when on the sidewalk. There may also be places where sidewalk bicycling may be hazardous and likewise require that bicyclists walk their bicycle. Whenever bicycles are restricted from riding on the sidewalk every effort should be made to improve bicyclists accommodations within the roadway.

Notes on the Application of the Conclusions

It should be noted that traffic volumes and speed, rather than road classifications, should determine whether to use a 4' or 5' wide bike lane. As a general rule, where volumes are expected to be over 25,000 trips per day and/or speeds are posted at 40 MPH or above, a 5' bike lane is preferred. 5' bike lanes are also preferable in situations where the vertical and horizontal curves limit sight lines.