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Big Beaver Pedestrian

Special Area Plan

EVERYBODY WALKS.

Walking is the most basic form of transportation; however we more often view ourselves as drivers, passengers, and even cyclists, and overlook the walking part of the journey. As a result walking is often disregarded in the quest to build more sophisticated transportation systems.

It's time to pay attention to the pedestrian. As Troy, and more specifically Big Beaver Road evolves, the desire to walk along and across Big Beaver Road has increased. The City realizes that walking along and across Big Beaver is difficult. That is why we need your help.

Big Beaver Corridor Study adopted in 2006

Vision established for transforming Big Beaver into a World Class Boulevard

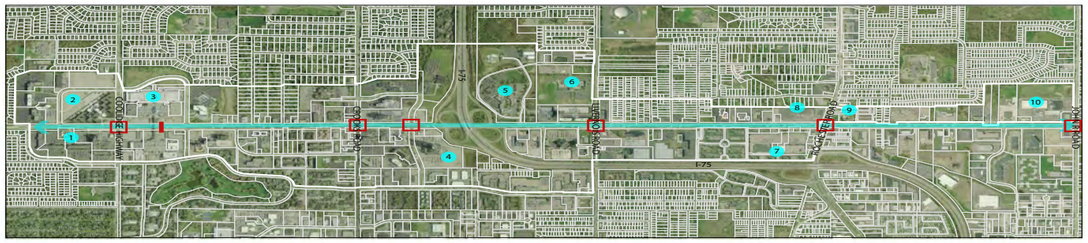
Key Concepts:
1. Gateways, Districts and Transitions
2. Trees and Landscape as "Ceilings and Walls"
3. Walking Becomes Entertainment
4. Mixing the Uses Turns on the Lights
5. The Automobile and Parking are no Longer #1
6. Civic Art as the Wise Sage of the Boulevard

Recent Investment on/near Big Beaver Road

- Big Beaver is attracting new users/businesses
- New users/businesses are generating more pedestrian activity
- Limited options available to cross Big Beaver
- I-75 acts as physical and mental barrier
- Big Beaver employment and commercial centers are not aligned with existing crossings

Big Beaver Challenges

- Granite City Food and Brewery - Restaurant
- Galleria of Troy – Retail and hotels
- Big Beaver Center - Retail and single family residential
- Troy Shoppes - Retail
- Fifth Third Bank – Bank branch
- DMC Children's Hospital – Hospital
- Amber Town Center Townhomes and Lofts – Loft apartments



0 0.25 0.5 1 Miles

TRAFFIC COUNTS	EB	WB
Adams to Coolidge	12,950	12,790
Coolidge to Crooks	14,980	20,970
Crooks to I-75	28,800	27,670
I-75 to Livernois	21,010	20,120
Livernois to Rochester	20,590	20,360
Rochester to John R	24,110	18,700

Source: AADT SEMCOG, 2011

MAP LEGEND

Big Beaver Road
1 Landmark
Intersection Crossing
Mid-Block Crossing

1. Kresge Foundation
2. Vacant Kmart Headquarters
3. Somerset Collection
4. PNC Tower
5. Troy City Hall Campus
6. Troy Community Center
7. Troy Market Place shopping center
8. Troy Commons shopping center
9. Gateway Park
10. Troy Sports Center

Introduction

The Big Beaver corridor represents one of the most important components to economic development in Southeast Michigan. Home to the Somerset Collection, numerous corporations, foundations, and other thriving businesses, the corridor draws tens of thousands of people to Troy on a daily basis. Additionally, the roadway itself has always functioned as a critical vehicular arterial, carrying 50,000 vehicles per day, many of which use it to access Interstate 75, Interstate 94 or travel east-west across the region. Because of this vehicular demand and connection, the corridor was designed and constructed to move vehicles as efficiently as possible.

One of the most dramatic changes that has recently occurred along the corridor is the increased amount of pedestrian activity. Reflecting a trend that is occurring both regionally and nationally, more people are walking on Big Beaver Road. Whether it's to grab a coffee in the morning, get lunch, or socialize after work, these "pedestrian pioneers" are taking advantage of the existing infrastructure for pedestrians. Pedestrians along the corridor enjoy continuous sidewalks and retail frontage along both sides of Big Beaver. These are examples of the many benefits of form-based code which requires new businesses to have their front door adjacent to the sidewalk. However, there exist many challenges that pedestrians need to overcome to reach their destination. Simply crossing Big Beaver can be difficult for many people, particularly those with limited mobility. Both big barriers, for instance crossing the interchanges to I-75, and small, such as the large turning radii at key intersections, impact the walkability of the corridor as a whole. Additionally, the overall length of the corridor makes it unlikely that a person will walk long distances during their lunch hour.

The opportunity exists to create a transportation corridor along Big Beaver Road that is not only unique in Michigan, but in the United States – a corridor that not only carries a high volume of vehicles, but is walkable, hosts continuous pedestrian activity, and provides a variety of transportation options. Recognizing that the majority of people will still likely drive to their place of work along the corridor, the guiding philosophy of this plan is "Park Once". Employees and visitors will park once when they arrive to their initial destination, then will be able to walk, bike, or take transit along the corridor to reach other destinations throughout the day.

Accomplishing this goal will require considerable change ranging from how the existing infrastructure operates, to the design of future developments, to the overall culture of all users of the corridor. This is a big task that will require a number of large infrastructure projects such as pedestrian bridges, new transit options, and the elimination of infrastructure barriers. But, there are a number of projects that can immediately improve conditions for Big Beaver's pedestrian pioneers and build more pedestrian activity. These now-term projects are the first step toward building momentum and support for catalytic infrastructure projects.

Sam Schwartz Engineering and Carlisle/Wortman Associates were retained by the City of Troy to develop this plan. The project included a workshop with key stakeholders and an open house that brought out a considerable number of residents, business owners, and employees. The recommendations in this report reflect the feedback received during these meetings.

Sam Schwartz Engineering D.P.C.

Existing Conditions

Big Beaver Road is a six-mile long, six-lane boulevard with a 50-55 ft landscaped median separating eastbound and westbound traffic along much of the corridor. Traffic signals are provided with major mile roads, Interstate 75 ramps, and a number of other intersections. Between Coolidge Highway and John R Road, there are 22 left-turn opportunities for eastbound vehicles and 23 left-turn opportunities for westbound vehicles. Big Beaver Road is under the jurisdiction of the Road Commission for Oakland County.

The average daily traffic volumes (and the year they were collected) at different locations along the corridor are listed below:

- Coolidge Highway – 41,153 vehicles (2011)
- Butterfield Road – 35,976 vehicles (2011)
- Crooks Road – 54,987 vehicles (2012)
- Wilshire Drive – 56,599 vehicles (2011)
- Civic Center Drive – 41,153 vehicles (2011)
- Livernois Road – 50,280 vehicles (2010)
- Charter Drive – 32,890 vehicles (2014)
- Rochester Road – 53,629 vehicles (2012)

The corridor's geometrics were designed to accommodate these large traffic volumes during the weekday morning and evening peak hours. However, this leaves a considerable amount of capacity during the day and on weekends. This sometimes encourages vehicles to travel above the posted speed limit.

There is a considerable amount of pedestrian infrastructure along the Big Beaver corridor. Wide sidewalks are provided on both sides of the street for the entire corridor. Continental style crosswalks are located at most signalized intersections. Refuge islands are provided in the landscaped median at midblock crossing locations. Pedestrian signal heads are provided at all signalized locations, with countdown timers informing pedestrians how much time is left to cross the street at most locations. Pedestrian push buttons are also at all signalized intersections to allow pedestrians to call a walk signal.

Additionally, recent developments along the corridor have been planned and constructed to make it much easier for pedestrians to access. Instead of the typical commercial building that is set far back from the sidewalk—which forces pedestrians to walk through a surface parking lot—recent developments, including the Starbucks and Carrabba's Italian Grill have been built adjacent to the sidewalk. This orientation encourages pedestrian access. This is a result of the progressive form based code that the City of Troy recently developed and implemented.

There still remain a number of challenges for pedestrians that want to walk along the corridor to their destination, including:

- High speeds of vehicular traffic, particularly during hours outside of the normal morning and evening commuting hours.
- There are only seven pedestrian crossings across Big Beaver along the entire corridor. The spacing between the crossings in some locations exceeds one mile.
- There are only three signalized midblock crossings along the entire length of the corridor.
- The width of Big Beaver Road, particularly at major intersections, requires pedestrian crossings at some locations to exceed 150'. For some pedestrians, this equates to 50 seconds to cross the entire street.
- Interstate 75 essentially divides the corridor for pedestrians. The pedestrian underpass is narrow, dark, and feels unsafe and unpleasant and the ramp designs encourage vehicles to speed on to the ramps and not stop for pedestrians.
- The radii at most intersections are designed for large trucks, further increasing the distance pedestrians have to cross and encouraging higher speed turns for vehicles.
- Surface parking lots are the most common land use next to the sidewalk.
- There exists a lack of pedestrian crossings on the minor streets and access drives intersecting Big Beaver Road.
- There exists a lack of places to sit along the entire corridor.

The Suburban Mobility Authority for Regional Transportation (SMART) runs a fixed route bus service along the Big Beaver Corridor. However, it only operates during the morning and afternoon/evening commuting hours and has 30 minute headways. They also run a Somerset Collection Shuttle that provides point to point service in the area, but requires a phone call within 60 minutes of your desired pick-up time.

Case Studies

The following case studies provide real examples of how other communities in the United States and across the globe have addressed pedestrian connectivity.

Canyon Boulevard

Boulder, Colorado

Canyon Blvd has two vehicle lanes in each direction and a wide, contiguous sidewalk along its north side. Canyon (between 9th and 14th) has several examples of midblock, and side-street connection crossings through planted medians using pedestrian actuated Rapid Flash Beacons. This stretch of roadway utilizes raised curbs and landscaping in the central median for aesthetic appeal; this has the added benefit of discouraging jaywalking outside of designated crossings.

Mandela Parkway

Oakland, California

Mandela Parkway is a median divided street with an on-street bike lane in each direction. The street is designed with a linear park occupying an extremely wide center median, complete with a wide walking path, landscaped and grassy lawns. This spatial configuration makes sense for safe pedestrian passage; Mandela Parkway is lined with industrial land use with many truck loading docks breaking up the sidewalks on either side of the street. A center running pedestrian walkway allows for safe, uninterrupted walking or biking along the corridor, and adds much needed green space to the immediate area.

West Side Highway

New York City, New York

New York's West Side Highway (reconstruction completed 2001) is a 6- to 8-lane urban boulevard. Alongside the highway roughly between Battery Park and the Washington Bridge there is a barrier protected two-way bike lane, called the Hudson River Greenway, alongside a walking path. The active transportation is separated from vehicular traffic in most places by a planted median. The large central median splitting the two directions of vehicular traffic provides a refuge island for pedestrians crossing this busy street.

Da Praia Street

Rio de Janeiro, Brazil

This beach-side highway has 2-3 lanes of vehicular traffic in each direction, and a two-way bike facility at street level, separated from vehicular traffic by a 2 ft curb. At intersections, the bike lane is raised to sidewalk level, giving pedestrians the priority as they cross the bike lane. A large central median provides a pedestrian refuge island for those crossing the street. The central median and sidewalk use decorative pavers to highlight the wide pedestrian boardwalk lined with small kiosks and shops. The patterns of these pavers vary by neighborhood.

Highway 7

Toronto, Canada

Highway 7 in Toronto integrates Bus Rapid Transit into a multi lane roadway, complete with pedestrian crossing safety measures, and bike facilities. Textured pavers add visual interest to the continental marked crossing paint. Due to the width of the roadway, pedestrians must cross using two pedestrian countdown cycles, after waiting in the pedestrian refuge islands in the center medians. Highway 7 illustrates the importance of clear signage for all modes.

The Toolbox

Both the speed of cars along Big Beaver and the overall roadway width pose challenges for pedestrians attempting to cross the street safely. Visibility and consistent physical treatment of crossings is key to ensuring that motorists recognize a pedestrian crossing far enough in advance of the crosswalk to stop safely, without encroaching on the pedestrian's space. By repeating the elements of crossing treatments at many nodes along the Big Beaver corridor, a predictable relationship will be built between cars and pedestrians at intersections.

The following treatments are best practices and should be installed consistently along the corridor.

Marked crosswalks

Fundamentally, marked crosswalks designate paths where pedestrians may safely cross the street, and where drivers can expect them to cross. Continental style crosswalks provide the highest visibility to pedestrians. At a higher cost, material options such as bricks or decorative pavers are often used as an alternative to white paint designating a pedestrian crossing for their aesthetic benefit to the pedestrian environment. At signalized intersections, the vehicular stop bar should be placed at least 10 ft before the pedestrian crossing to ensure cars do not encroach on the crosswalk. Use decorative patterns or color to make pedestrian crossings exciting and unique. Decorative crossing patterns such as those in Pasadena, CA can be created using basic paint and stencil methods.

Pasadena, CA

Application

Marked crosswalks are already located at a number of locations along the corridor. Marked crosswalks should be installed at all crossing locations. Faded or otherwise deteriorating crosswalks should be improved.

Pedestrian Countdown Timers

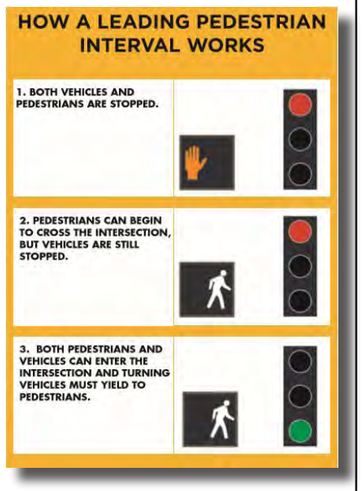
A pedestrian countdown timer is an alternative to the typical pedestrian crossing signals, with the addition of numbers counting down the time remaining for pedestrians to clear the crosswalk. The pedestrian countdown timer begins in conjunction with the flashing "DON'T WALK" signal interval.

Application

The majority of crossings along the corridor already have pedestrian countdown timers. All new or modernized traffic signals should include countdown timers. Existing signalized intersections can be retrofitted with this type of signal. All countdown timers should be programmed to allow pedestrians to cross the street at a maximum walking speed of 3.5 ft per second. Walking speeds slower than 3.5 ft per second should be considered at all locations, particularly at crossings typically used by children, seniors, and people with disabilities.

Leading Pedestrian Intervals

A leading pedestrian interval (LPI) gives pedestrians a head start into an intersection before vehicles by changing the signal timing of the intersection.



Application

LPIs should be installed at intersections with high pedestrian crossing volumes, and are installed by re-timing an existing traffic signal. Typically, the 'WALK' signal is turned on approximately three seconds before vehicles are given a green signal.

Pedestrian Refuge Islands

A pedestrian refuge island is a protected area in the center of a multi lane crossing which gives pedestrians a space to pause safely between traffic lanes in each direction. Pedestrian refuge islands should be at least 6 ft wide and should be protected by a curbed median on both sides. Detectable warnings, using truncated dome surface areas, must also be installed to allow pedestrians who are visually impaired to detect the refuge island.

Application

Pedestrian refuge islands located within the existing median should be considered at all crossing locations on Big Beaver.

Corner Radius Design

Reducing corner radii can be achieved by reconstructing curbs at the corners of an intersection or simply using paint. Smaller corner radii effectively slow turning vehicles, resulting in a shorter pedestrian crossing distance and better pedestrian ramp alignment. The size of the corner radius relates directly to the length of the crosswalk. Larger turning radius requires pedestrians to walk a longer distance in the roadway to reach the opposite sidewalk.

Application

Smaller corner radii should be considered at all intersections and side-street connections along Big Beaver. Where it is not possible to reconstruct a curb immediately, a new radius can be a delineated using interim material such as paint, planters, and bollards. The actual radius should be designed to accommodate delivery vehicles with a turning speed of 15 mph or less.

Crossing Ramps & Truncated Domes

All pedestrian crossings should be designed to the Americans with Disabilities Act (ADA), specifications which outline the slope, rise, width, and landing requirements. Ideally there should be a separate curb ramp for each crosswalk; ramps installed diagonally toward the center of an intersection serving two crosswalks are not preferred. All new crossing treatments should be outfitted with truncated dome textured ground surface indicators which advises the visually impaired of a change from pedestrian path to vehicular path.

Application

Truncated domes should be installed in consistent design and color to new and existing crossings. The color must provide contrast from the path/ramp.

Speed Tables and Raised Crosswalks

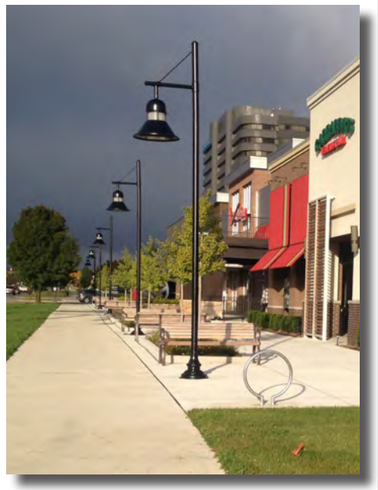
A speed table and a raised intersection are essentially longer speed humps used to raise the crosswalk or intersection and reduce vehicle speeds. This type of intersection treatment gives priority to the pedestrian by making a seamless, sidewalk level connection across vehicle lanes.

Application

Speed tables or raised crosswalks can be installed at channelized right-turn lanes or minor side-street connections to Big Beaver to alert drivers to the sidewalks continuing across these small streets.

Lighting

Sidewalks and intersections should have lighting installed at a pedestrian scale, and directed onto pedestrian paths. Lighting installed along a major roadway is positioned such that the roadway is washed with as much even lighting for vehicle lanes as possible. Sidewalks adjacent to such roadway do not have direct lighting at an appropriate height to serve pedestrians.



Application

A secondary system of pedestrian scale lighting should be installed adjacent to all sidewalks and crossings, similar to the existing segment on the north side of Big Beaver, west of I-75. The lights should be installed more frequently approaching each intersection. Many lighting designs offer the opportunity to incorporate banners or signage. These types of additional aesthetic enhancements should also consistently appear more frequently around designated central crossing nodes.

Planted curbs and edges

Consistent landscaping and edge treatments can also be used to make the pedestrian environment safer and more predictable for drivers. Planting trees between sidewalks and the roadway provide physical barriers, improved aesthetic environment, and sound absorption. A contiguous buffer of low plants along the sidewalk edge approaching a pedestrian crossing discourages pedestrians from jaywalking, or crossing outside the crosswalk itself. Snow mounds resulting from street snow removal must be shoveled out of pedestrian ramps and sidewalk connections at intersections. In addition, efforts should be made to identify native or salt-tolerant plants for these areas.

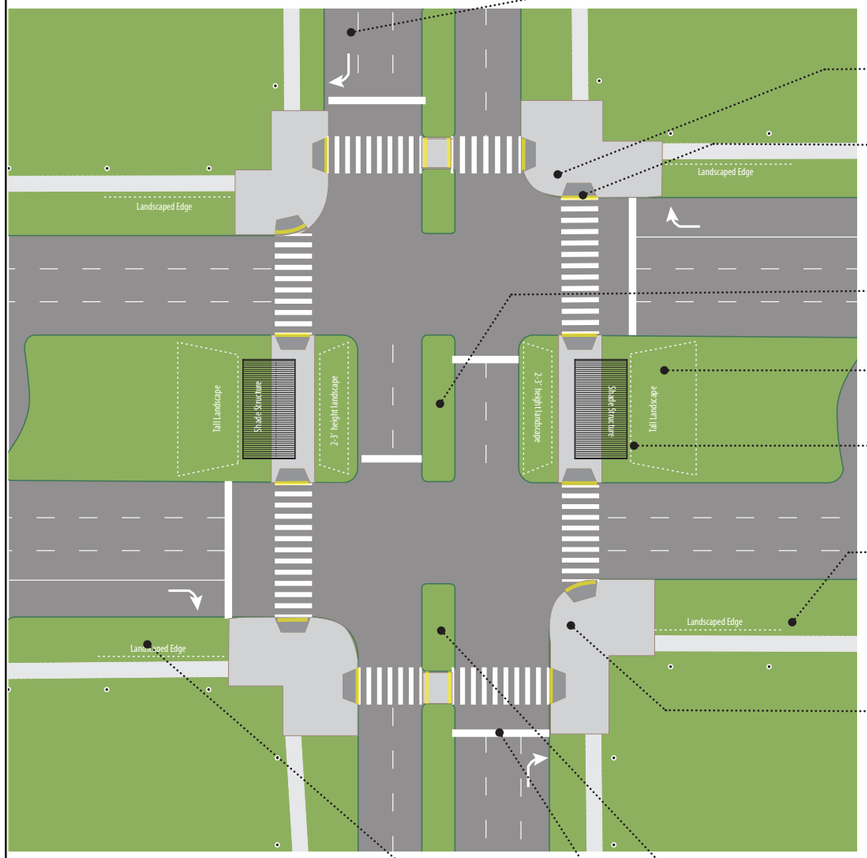
Application

Landscaping around intersections should be low so as not to block views of pedestrians approaching a crosswalk. Trees and tall landscaping should not be planted within a 25 ft view triangle at intersections or side street connections. Most lengths of sidewalk along Big Beaver are offset 10-15 ft from the shoulder. Locating a small trench along the shoulder will help chemicals and salt water runoff drain away from plants lining the sidewalk.

Multi-Use Path

A multi-use pathway is a facility built for combined bicycle and pedestrian traffic, and is physically separated from motor vehicle traffic. Multi-use trails intended to accommodate both pedestrians and cyclists need to be wide enough and have clear sight-lines to accommodate users moving at different speeds, and should be clearly marked. The minimum width for such pathways is 10 ft to accommodate both pedestrians and bicyclists. Where possible, a minimum 5 ft buffer should exist between the multi-use path and the roadway; vertical separation is preferred.

Toolbox: Typical Intersection



Dedicated turning lanes with 'No Turn On Red' restrictions

Generous waiting space at each corner

ADA compliant ramps to street level with detectable warning strips

Planted central median island

Landscaping, art installations, and shade structures on center median, provided they do not obstruct sight distance

Pedestrian scale lighting positioned frequently along path approaching intersection

Reduced curb radius to slow turning vehicles and reduce pedestrian crossing distances

Build curb out to edge of vehicle through lanes creating pedestrian refuge islands

Pull stop bar away from crosswalk

Landscape street-side of sidewalk to discourage jay-walking

Recommendations

The Basics:

Continuity - Pedestrians should have a continuous path from the sidewalk along Big Beaver Road, across intersections, and to the front entrance of adjacent businesses along the corridor.

Consistency - Use intentional and consistent physical treatments of intersections and pathways ensure predictable movement of pedestrians, cyclists, and cars to minimize conflicts.

Ease - Make it easy, safe, interesting, and fun to walk around the Big Beaver corridor nodes to encourage more people to walk to nearby destinations.

Start Now

1. Establish 'Nodes' Along Big Beaver Road

   Due to the overall size of the corridor, it is recommended that improvements be focused in specific areas, or nodes, instead of a scattershot approach. This method will not only provide the maximum benefit to the area, but will also allow for trial and error to determine if changes should be made before moving on to the next node.

   Within each node, establish a high-priority crossing (or crossings) which will receive the full set of intersection treatments described in the Toolbox. Focus first on the crossing at Automation Alley Smart Zone. Identify future crossing locations so crossings are within 600 ft of each other.

   Recommended nodes and key intersections are included in the Short-term and Long-term Recommendations.

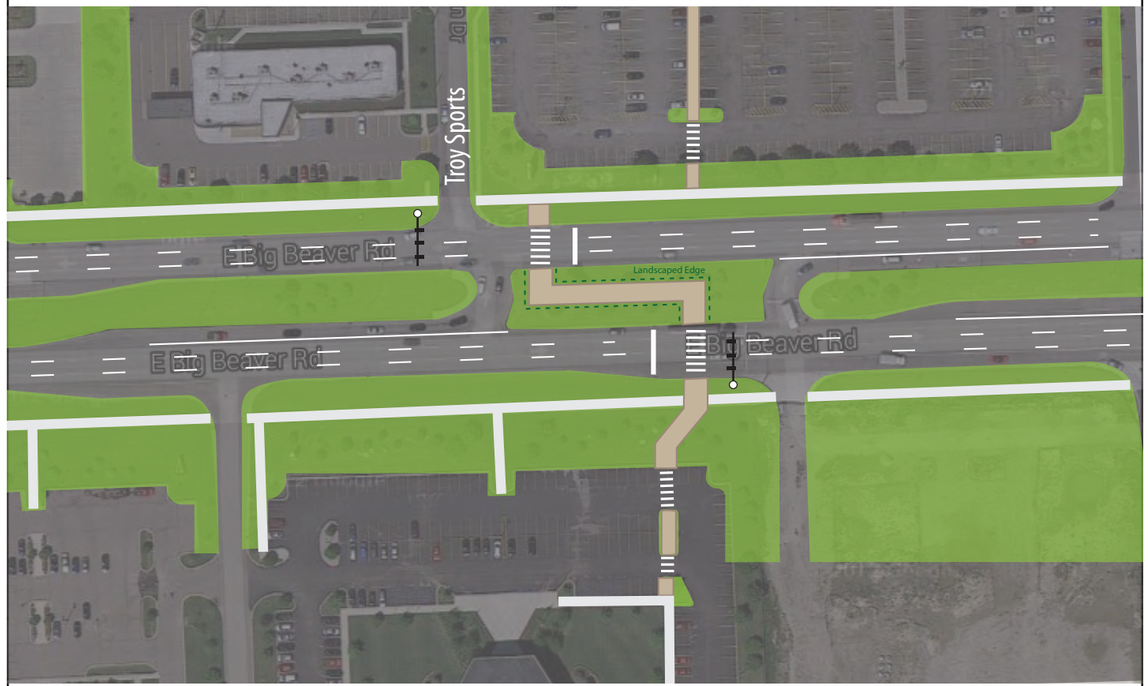
2. Focus Initial Efforts at Automation Alley Smart Zone Crossing

   A new mid-block crossing should be installed, approximately 850 ft west of John Road, to allow employees of Automation Alley Smart Zone to easily access Starbucks and the numerous restaurant and retail options on the north side of the street. The crossing should include the following:

   - A new traffic signal.
   - Continental crossings using thermoplastic or paint at all legs of the intersections within the node. Work with Automation Alley Smart Zone to incorporate their branding into one of the crossings.
   - Directional and distance signs for dining and/or shopping destinations in all four directions consistent with larger wayfinding system along the corridor.
   - Signage to make pedestrians aware of the new crossing.
   - New pedestrian walkways through the parking lots of both Altair Engineering and the shopping center of the north side of the street.

3. Outreach
   - Focus immediately on establishing website and basic graphics and marketing materials -- such as maps and pamphlets --for use in future outreach and awareness events.
   - Set a goal for the number of outreach events to occur in the following year.

John R Road Node - Automation Alley Smart Zone Midblock Crossing

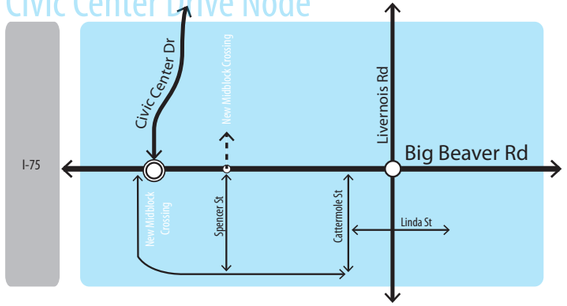


Short Term

1. Establish Nodes Along Big Beaver Road

   The node diagrams included here provide general guidance on the location of new midblock crossings, and high priority crossings to be considered for full install of intersection treatments described in the Toolbox. All new midblock crossings should have a full traffic signage for vehicles.

Civic Center Drive Node



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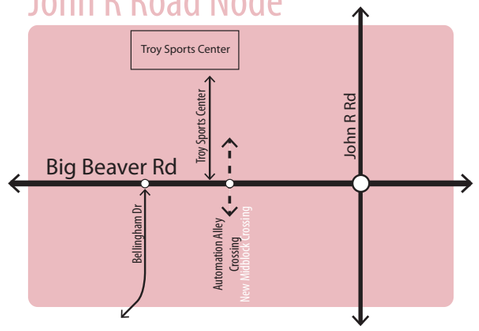
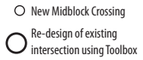




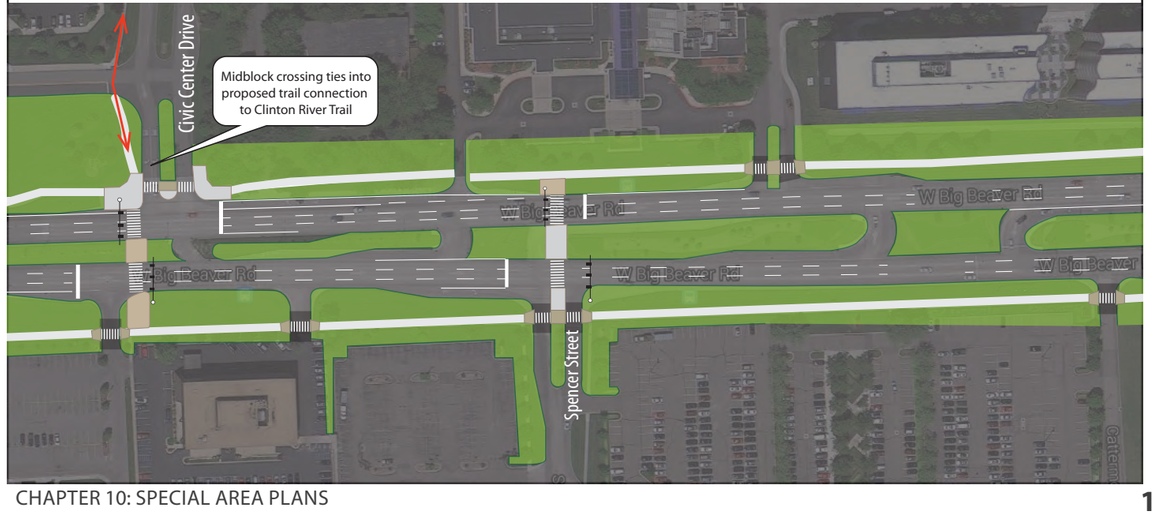
Civic Center Drive Node*

- Install new intersection at Civic Center Drive with signalized pedestrian crossing.
- Explore midblock crossing at Spencer Street connecting Columbia Center and Liberty Center across the center median
- Update Livernois Road intersection with Toolbox treatments

John R Road Node

- Explore additional midblock crossing connecting at Bellingham Drive
- Update John R Road intersection with Toolbox treatments
- Consider a pedestrian overpass to connect Automation Alley Smart Zone with the development on the north side of the street

Civic Center Drive Node Reconfiguration



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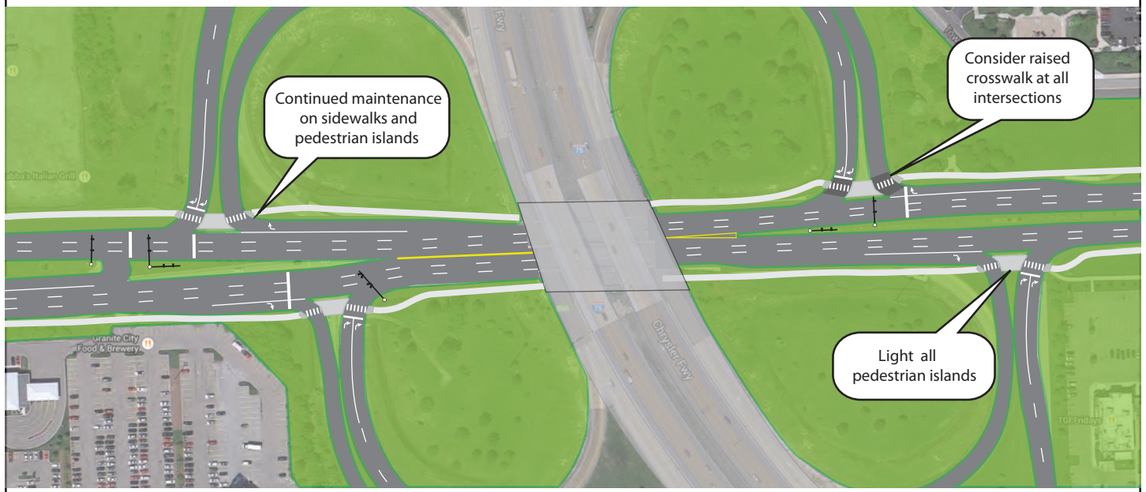
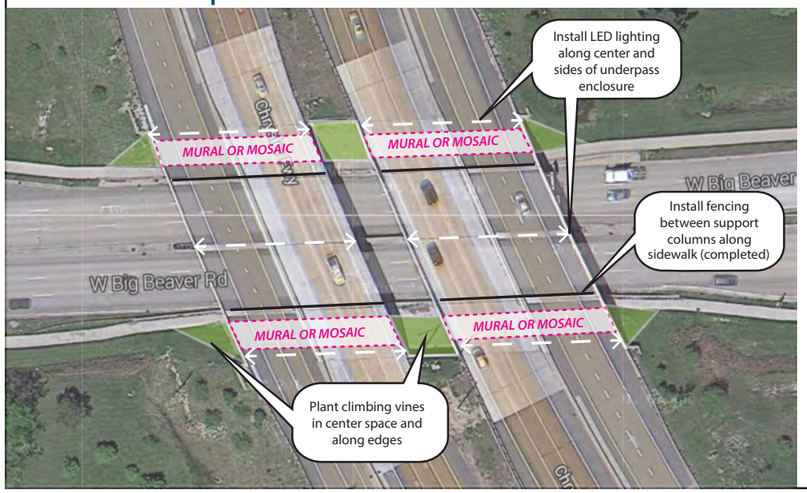
2. Interstate 75

   The I-75 highway underpass is a barrier that separates the two sides of Big Beaver for pedestrians. The many challenges it poses include diminished light, narrow sidewalks positioned much closer to vehicle right-of-way, amplified vehicle noise, in addition to generally unpleasant aesthetic conditions. Additionally, the on-ramps to I-75 are one of the most dangerous places for pedestrians because vehicles do not have to stop and are accelerating to get up to the speed of vehicles on I-75. Because reconfiguring these underpasses can be prohibitively expensive and time intensive, instead focus on cosmetic changes which can effectively alleviate some of these harsh conditions for pedestrians.

I-75 Interchange Reconfiguration



I-75 Underpass Interventions



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Create standard 90 degree intersections

- Relocate ramp entrances and exits so they create 90 degree intersections with Big Beaver Road.

Soften the concrete edges of the underpass

- Plant climbing plants at the edges of the underpass, as well as in the open space between the two-highway directions. This will soften the concrete edges in the space, and bring greenery in from the outside toward the enclosed sidewalk. Building a trellis in the center gap space and along the sides of the underpass will encourage growth in these areas. These types of plants must be maintained to avoid their creeping onto the roadways above and below. Plants will also help to dampen echoes in the space by absorbing bouncing vehicle noise.
- Engage the community in the design or installation of a large mural or mosaic installed along the angled concrete faces underneath the overpass. If a

mosaic is selected, integrate reflective materials to bounce light further into the space. Explore three-dimensional artwork and sculpture to break up the concrete faces. This texture and visual interest will significantly improve the pedestrian experience.

Increase lighting and separation

- Install bright LED lighting along all sidewalks. In addition, direct light down the angled concrete faces illuminating the art installation at night. Differentiate -- through light color or lighting style variation-- between pedestrian space and vehicular space.
- Install segments of fencing between support columns separating the sidewalk and vehicle right of way. Position the fencing as close to the vehicular edge of the support structure as possible.

3. All Intersection Treatments:

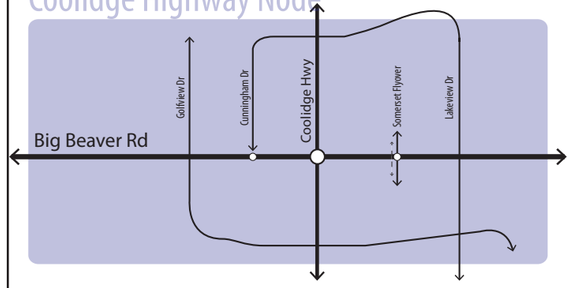
   All intersection treatments described in the Toolbox should be considered at high priority and midblock crossings. In addition to those baseline treatments, implement the following at high priority and midblock crossings:

   - Install MUTCD compliant signage on the approach to and at all pedestrian crossings along the corridor.
   - Document and evaluate intersection geometry pilot projects installed with paint and bollards.
   - Install speed tables at high volume access drives along Big Beaver Road .
   - Install "Sharrow" symbols on all possible low-/mid-volume streets intersecting Big Beaver. Begin building a bicycle network to support need for multi-use trail conversion (Long term).
   - Increase the supply of highly visible bicycle parking at all establishments along Big Beaver to encourage active transportation along the corridor. This lays the groundwork for the long-term goal of expanding the sidewalks along Big Beaver Road into a multi-use trail.

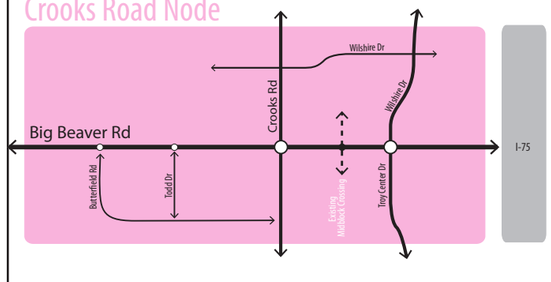
4. Lighting and Landscaping improvements:
   - Install pedestrian scale sidewalk lighting along full length of Big Beaver per Toolbox guidance. Begin with higher frequency clustering around major intersections and midblock crossings. Follow with infill between nodes.
   - Establish landscaping guidelines for the Big Beaver corridor. Include a selection of native or salt-tolerant plants. Focus first on landscaping sidewalk segments approaching midblock and major crossings with trees and shrubs per Toolbox guidance. Follow with tree infill between nodes.
   - Encourage businesses along the corridor to participate in City placemaking and outreach initiatives.
5. Transit
   - Pilot a trolley system on the corridor for one summer, a few days a week. Consider partnering with another municipality to share costs.
   - Install shelters, benches, and bike racks at all bus stop locations with real-time bus arrival data.
6. Legal/Ordinance:
   - Consider pursuing a "shared parking lot" development ordinance.

Long Term

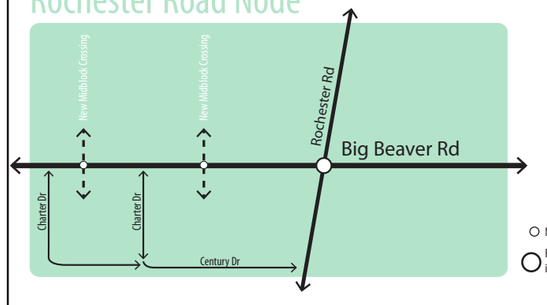
Coolidge Highway Node



Crooks Road Node



Rochester Road Node



Coolidge Highway Node

- Update Coolidge Highway intersection with Toolbox treatments
- Update midblock crossing at Somerset Flyover with Toolbox treatments
- Explore midblock crossing at Cunningham Drive

Crooks Road Node

- Update Crooks Road intersection and Troy Center Drive/Wilshire Drive with Toolbox treatments
- Explore midblock crossing at Butterfield Road or Todd Drive
- Existing midblock crossing at Troy Center Drive/ Wilshire Drive connecting to the City Center building entrance

Rochester Road Node

- Explore midblock crossing location between Charter Drive(west) and Charter Drive(east)
- Explore midblock crossing near Pei Wei Asian Diner. Extend sidewalk connections to shopping center(s) across parking lots
- Update Rochester Road intersection with Toolbox treatments

Additional Recommendations

- Determine feasibility of streetcar, bike share, or other high capacity pedestrian accelerator. Conduct feasibility study for the corridor.
- Expand sidewalk along one side of Big Beaver into a multi-use trail. Connect pathway to all housing adjacent to the Big Beaver corridor.
- Build pedestrian bridges at major intersection crossing locations, both signalized and mid-block.
- At all high-priority intersections with wide medians, install shade structures. Installing high-profile features such as artistic or colorful shade/weather protection structures for pedestrians crossing the street will signal to drivers that pedestrians are likely to be present in the space.
- Infill development of retail businesses within established nodes. Incentivize shared parking lots and buildings positioned facing Big Beaver; make direct connections with Big Beaver multi-use trail.
- Continue to expand bicycle infrastructure throughout the area providing direct connections to the Big Beaver multi-use trail.

Placemaking, Outreach and Events

For the City: Initiatives

Simply building infrastructure does not ensure that people will use it. An encouragement effort, led by the City, will have a tremendous impact on increasing the amount of pedestrian activity along the corridor.

1. Create a Move Across Troy website:
   - This should be a one-stop shop with updates on new multi-modal infrastructure, safety tips, event information, and "Node-Maps" listing destinations and businesses within walking distance.
   - Post a list of "walking facts," information about the economic benefits of driving less, and the numerous health benefits of walking.
2. Create and distribute a Big Beaver corridor "Node-Maps" or "Lunch-Maps" to large business centers/towers informing workers of the walkable food, personal services and shopping destinations nearby. These maps should show the contiguous sidewalks and highlight new intersection designs. This could be part of a business promotion campaign highlighting lunch-time specials at individual establishments.
3. Install wayfinding and directional signage along the corridor. At all major intersections, post similar sign posts with nearby businesses and amenities. By creating a cohesive signage system, pedestrians navigating the corridor know they can depend on consistent information along the way.
4. Produce an eye-catching pamphlet with information on walking and biking connections along the corridor, and destinations to provide to hotel reception desks, and post at business entrances, message boards, and coffee shops.
5. Use the sidewalk as a canvas. Post distance and directional queues to nearby businesses or destinations, and "walking facts" on the pavement in temporary paint or decals. Informing pedestrians how far they are from the next safe crossing will encourage the use of the crossing instead of jaywalking. Parking lots and sidewalks also serve as great canvases for temporary community artwork. Many washable, or chalk based paints exist for such purposes.

For the City: Events

Hold 2-3 outdoor events in the community during fair-weather months to raise awareness and encourage outdoor activity. Also, consider locating events on the lawn in front of the Civic Center complex after the Civic Center Drive improvements are complete.

Events to consider might include:

- Ciclovia: A number of cities, large and small, have had great success with closing major corridors on an annual basis and using the day to encourage walking and biking. The City should work with Somerset Collection and other businesses to ensure an event like this helps businesses and doesn't harm them.
- Sidewalk or parking lot game days: Create oversized game boards on unused parking lot or sidewalk space.
- Restaurant Walk Weeks: Raise awareness for walkable dining destinations by featuring one restaurant per week of the summer; offer prizes to those who walked or biked to reach them.
- Celebrate Big Beaver's food options: Host food truck or local food markets in business center parking lots.
- Bike/Walk-to-Work Week or Pedometer Challenge: Kick off a week-long bike or walk to work competition. Participating businesses log miles traveled on foot or bike into the event website. Host a kickoff celebration, daily prizes or smaller events, and offer prizes to the company and individual who log the most miles.
- Walk-a-thon or Fun-Run: Host a charity walk-a-thon or Fun-Run utilizing sidewalks along the length of Big Beaver.
- Parking Day: Work with local businesses to install temporary mini-parks in parking spaces. Consider making successful projects permanent.

Help Start-up Running, Walking, or Stroller Clubs:

Contact local businesses and residents to start running, walking, or stroller clubs around the area. Promote and encourage the use of paths with pedestrian infrastructure improvements.

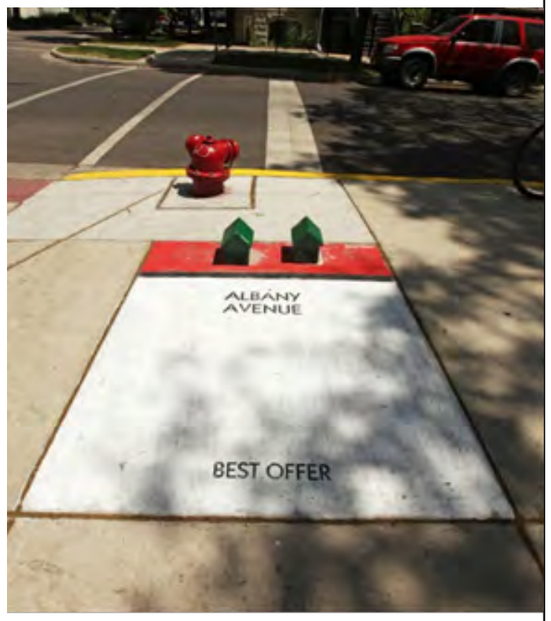
Create an Outdoor Beautification Campaign:

Encourage all businesses to improve their sidewalks and outdoor space to help give the Big Beaver corridor a more comfortable outdoor environment. Encourage the businesses to install signage drawing attention to the larger area-wide effort.

Find Opportunities for Community Driven Murals and Artwork:

Wall murals and sidewalk/pavement art adds life and personality to the built environment. There are many ways to garner community involvement in creating a public art piece. For instance, artwork options could be posted as a web-vote, artwork could be created by local schools, or an artist could be selected in a public competition.

Focus first on the Interstate 75 Underpass. Install a mural or mosaic using vegetation, reflective materials, and lots of color to increase light and comfort walking through the space.



Celebrate New Pedestrian Infrastructure:

Install large eye-catching temporary installations on the central median to celebrate the new pedestrian improvements at major intersections or midblock crossings. Median awareness should also be included, such as ribbon cuttings, press releases, and email announcements.

Pop-Up Events:

Look for opportunities to create a display of information at non-City sponsored events planned in the area. Contact schools, churches, and businesses along the corridor to find out when they have scheduled large events. Use

these opportunities to spread the word about the City's new walking amenities, events, and opportunities.

Adopt-a-Sidewalk along Big Beaver Road:

Encourage businesses to 'adopt' the stretch of Big Beaver adjacent to their building or parking lot. Provide support for additional landscaping, maintenance, connections, or sidewalk expansion along their adopted segment.

For Law Enforcement:

Bolster law enforcement to support physical changes along Big Beaver.

- Issue warnings and ticket drivers who fail to stop behind the white stop bar at intersections.
- Issue warnings and ticket drivers who fail to yield to pedestrians while turning right.
- Feature local police officers and firemen in a short video describing pedestrian and bike safety best practices, and post it on the City's information website.
- Install radar speed signs along the corridor to alert drivers to the Big Beaver corridor speed limit.

For Drivers:

Add signage for drivers clarifying vehicle movements approaching intersections with pedestrian crossings. Refer to the Manual on Uniform Traffic Control Devices (MUTCD) for clarification on sign selection and legal signage placement.

- To supplement traffic signal control, 'STOP HERE ON RED' signs (MUTCD: R10-6 or R10-6a) can be considered to keep vehicles away from crosswalks. Along the Big Beaver corridor, these signs should be paired with moving the stop bar at least 10 ft away from the pedestrian crosswalk at all intersections.
- A 'Pedestrian Crossing' (MUTCD: W11-2) warning sign may be placed overhead or may be post-mounted with a diagonal downward pointing arrow (W16-7P) plaque at the crosswalk location where 'Yield Here To ('Stop Here For') Pedestrians' signs have been installed in advance of the crosswalk.
- 'Yield Here To (Stop Here For) Pedestrians' (MUTCD: R1-5 series) signs can be used if yield (stop) lines are used in advance of a marked crosswalk that crosses an uncontrolled multi-lane approach. This sign may be used even if a stop bar is not present to indicate where a driver may stop.
- 'In-Street Pedestrian Crossing' (MUTCD: R1-6 or R1-6a) signs or the 'Overhead Pedestrian Crossing' (MUTCD: R1-9 or R1-9a) signs may be used to remind drivers of laws regarding right-of-way at an unsignalized pedestrian crosswalk.

For Families:

- Focus on youth and families to begin to change the culture of transportation on Big Beaver.
- Distribute information to all day-care, pre-school, and elementary school locations.
- Encourage community leaders and educators to visit and share facts and information from the Move Across Troy website.
- Host pop-up tables during school pick-up times and community events with information about new pedestrian infrastructure and walkability.

For Businesses:

- Encourage businesses to not only advertise their proximity to walkable destinations, but to participate in events and educational campaigns run by the City.
- Encourage all businesses to create and update their profiles on social media with key words like "walk-up""outdoor seating" or information with distances from the nearest major intersection and connections

to sidewalks on Big Beaver. Include a link to the 'Node-Map' on website with walking directions.

- Encourage businesses to engage the sidewalk. Encourage the use of temporary sidewalk chalk paint or decals to direct people to destinations. Also, encourage businesses to provide outdoor shade structures, lighting, and seating to patrons.
- Distribute destination "Node-maps" or "Lunch-Maps" to large business centers/towers informing workers of the walkable destinations nearby.