Clinton River Trail Master Plan

Auburn Hills, Pontiac, Sylvan Lake,
Rochester, and Rochester Hills, Michigan

A project of:

RAILS to TRAILS CONSERVANCY

Prepared by:

THE GREENWAY COLLABORATIVE, INC.

With funding from:

GREENWAYS INITIATIVE

COMMUNITY FOUNDATION

FINAL REPORT – November 4, 2003

Clinton River Trail Master Plan

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1. Introduction

The Clinton River Trail is a proposed multi-use path nearly 16 miles in length that travels through the eastern half of Oakland County, Michigan, roughly paralleling and frequently crossing the Clinton River. While primarily located on an abandoned railroad grade, the proposed path includes an almost 4 ½-mile arc that circumnavigates a gap in railroad corridor ownership. The surrounding landscape includes downtowns, industry, residential areas, parks, and some sites likely to see development in the near future.

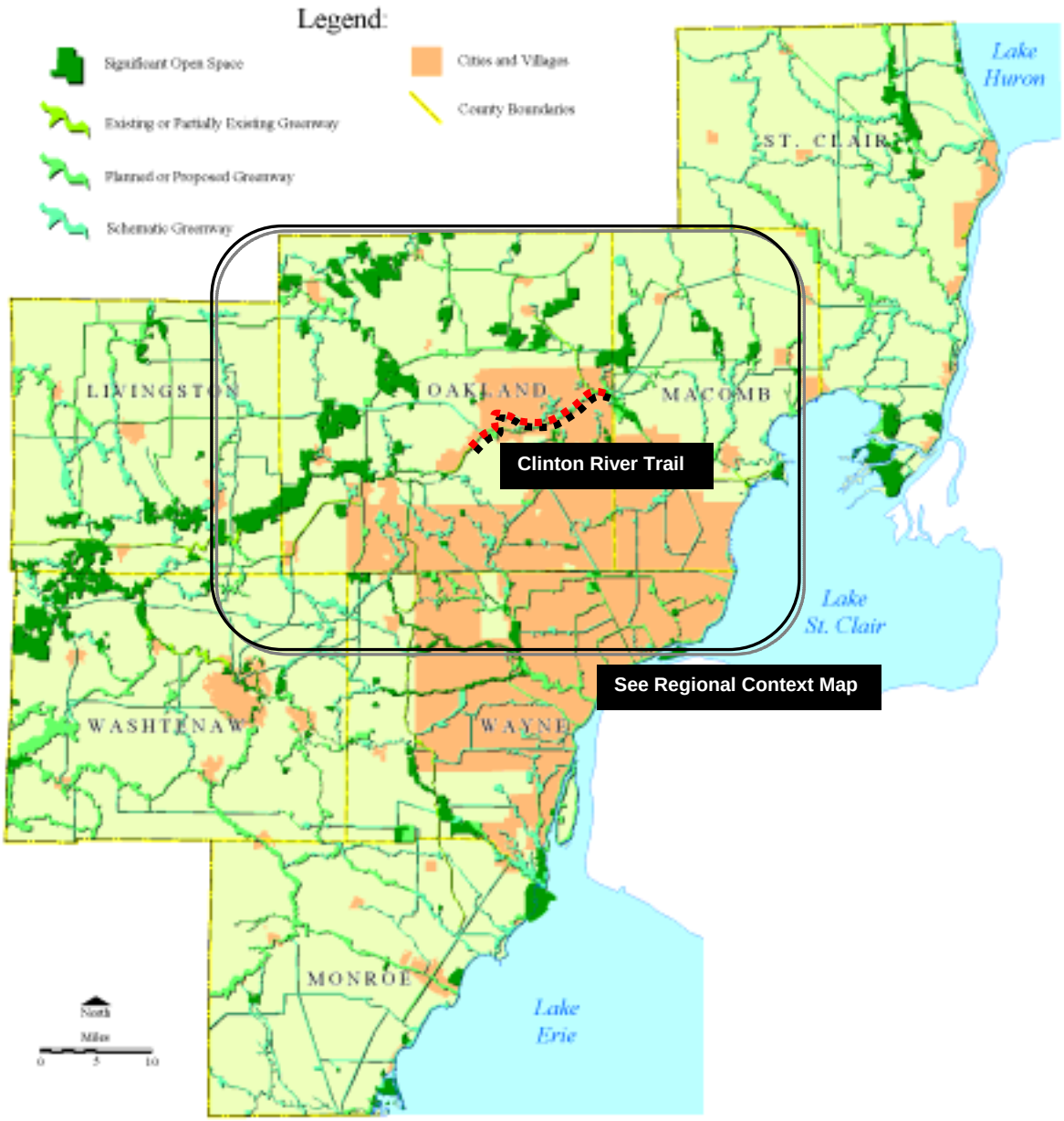
The Clinton River Trail presents a wonderful opportunity and a significant challenge. The proposed path transverses five communities linking housing to business districts, schools, recreation areas, and largely unknown natural areas nestled within surrounding development. It is also part of a much larger trail system that in the near future will provide over 100 miles of an interconnected trail system that is within two miles of over half a million people.

The two most significant challenges of the project were the eighteen major road crossings and determining the best way to circumnavigate the gap in ownership in Pontiac. The potential for conflict at the points where the trail intersects high-volume and high-speed roads calls for significant improvements. The road/trail intersections are designed to maximize the visibility between both road and trail users and facilitate safe and efficient crossing of the roadways.

Circumnavigating the gap in ownership in Pontiac provided the chance to follow the historic course of the Clinton River through downtown Pontiac and provide access to a portion of the Clinton River in Pontiac that few people are aware exists. This route requires balancing a sense of continuity of the trail, the urban environment, and the safest way to move bicycles and pedestrians through that environment.

The report introduces the trail as a whole followed by sections that focus on each of the key elements of the trail's design: Pathway Construction, Trail/Road Intersections, Staging Areas, Interpretive Approach, Bridges and Overlooks. The final two sections cover the implementation of the plan and background information on how the plan was developed.

Southeast Michigan Greenway Vision



The Clinton River Trail is a key component in the Rails-to-Trails Conservancy's Southeast Michigan Greenways Vision. The Greenways Vision was created based on public input and an extensive resource inventory. It calls for a seven-county interconnected system of greenways serving over 4.5 million people and the natural systems upon which they depend. Both the Clinton River and the adjacent abandoned railroad corridor were identified in the vision as multi-purpose greenway corridors.

Regional Context

The map above shows the existing major trails (shown in red) in relationship to the Clinton River Trail (shown in yellow). Please note that while the Macomb Orchard Trail and the Polly Ann Trail are open they are currently unimproved. The eastern terminus of the Clinton River Trail, Bloomer Park, will be the connecting hub of over 100 miles of an interconnected "X" shaped trail system. The box around the Clinton River Trail indicates the area shown on the Trail Overview Map that follows.

Downtown Pontiac Detail

Clinton River Trail Overview

Legend

- Major Road/ Trail Intersection (18 total)
- Trail Access Point
- Trail Staging Area
- Overlook Location
- Parks
- Underpass
- Bridge
- Alternate route
- Adjacent trailway
- Clinton River Trail Rail-Trail
- Clinton River Trail Shared-Use Path
- Clinton River Trail Bike Lane/ Sidewalk

NORTH

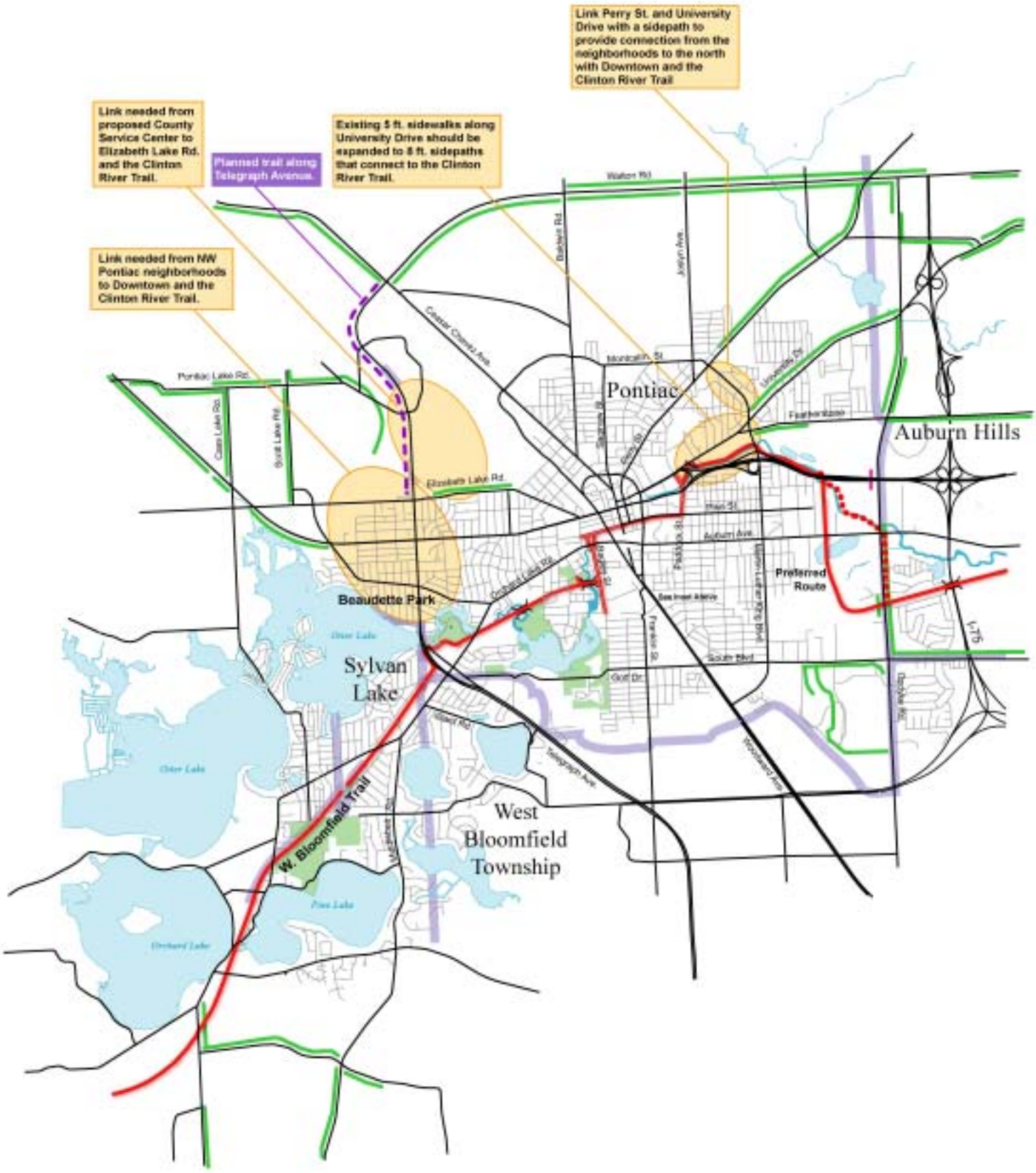
0 1/4 1/2 1

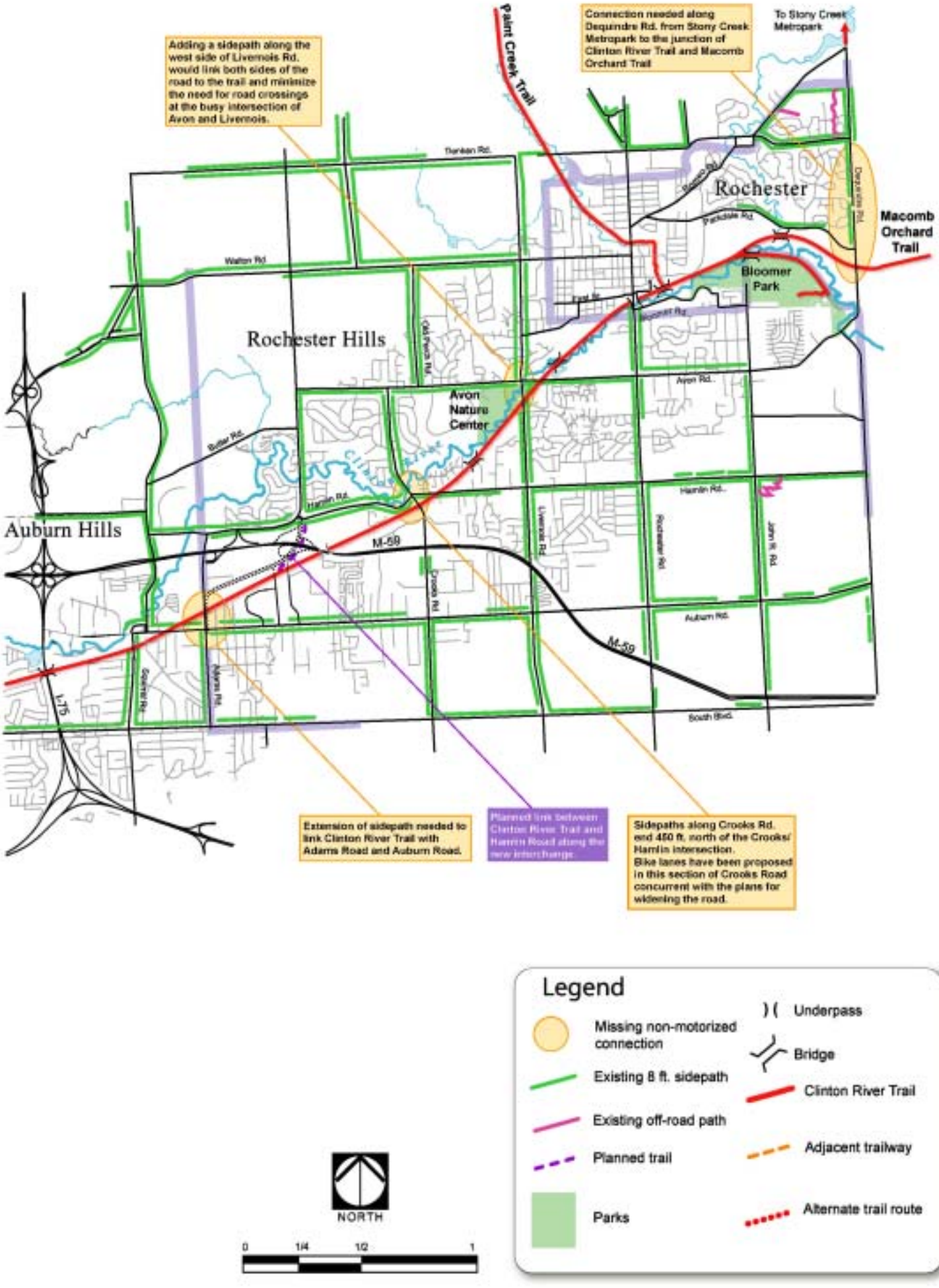
Prepared by:

The Greenway Collaborative, Inc.

February 24, 2005

Clinton River Trail: Connecting Sidepaths




Adding a sidepath along the west side of Livernois Rd. would link both sides of the road to the trail and minimize the need for road crossings at the busy intersection of Avon and Livernois.
Connection needed along Dequindre Rd. from Stony Creek Metropark to the junction of Clinton River Trail and Macomb Orchard Trail
To Stony Creek Metropark
Paint Creek Trail
Rochester
Macomb Orchard Trail
Bloomer Park
Rochester Hills
Avon Nature Center
Auburn Hills
M-59
I-75
Extension of sidepath needed to link Clinton River Trail with Adams Road and Auburn Road.
Planned link between Clinton River Trail and Hamlin Road along the new interchange.
Sidepaths along Crooks Rd. end 450 ft. north of the Crooks/ Hamlin intersection.
Bike lanes have been proposed in this section of Crooks Road concurrent with the plans for widening the road.
Legend
Missing non-motorized connection
Existing 8 ft. sidepath
Existing off-road path
Planned trail
Parks
Underpass
Bridge
Clinton River Trail
Adjacent trailway
Alternate trail route
NORTH
0
1/4
1/2
1

2. Pathway Construction

The Clinton River Trail has three distinct types of construction throughout its length:

- **Rail-Trail** – 12.3 miles or 78% of the trail is on an abandoned railroad grade;
- **Shared-use Path** – 1.9 miles along the Clinton River and through Beaudette Park in Pontiac; and
- **Bike Lanes and Sidewalks** – 1.6 miles through downtown Pontiac.

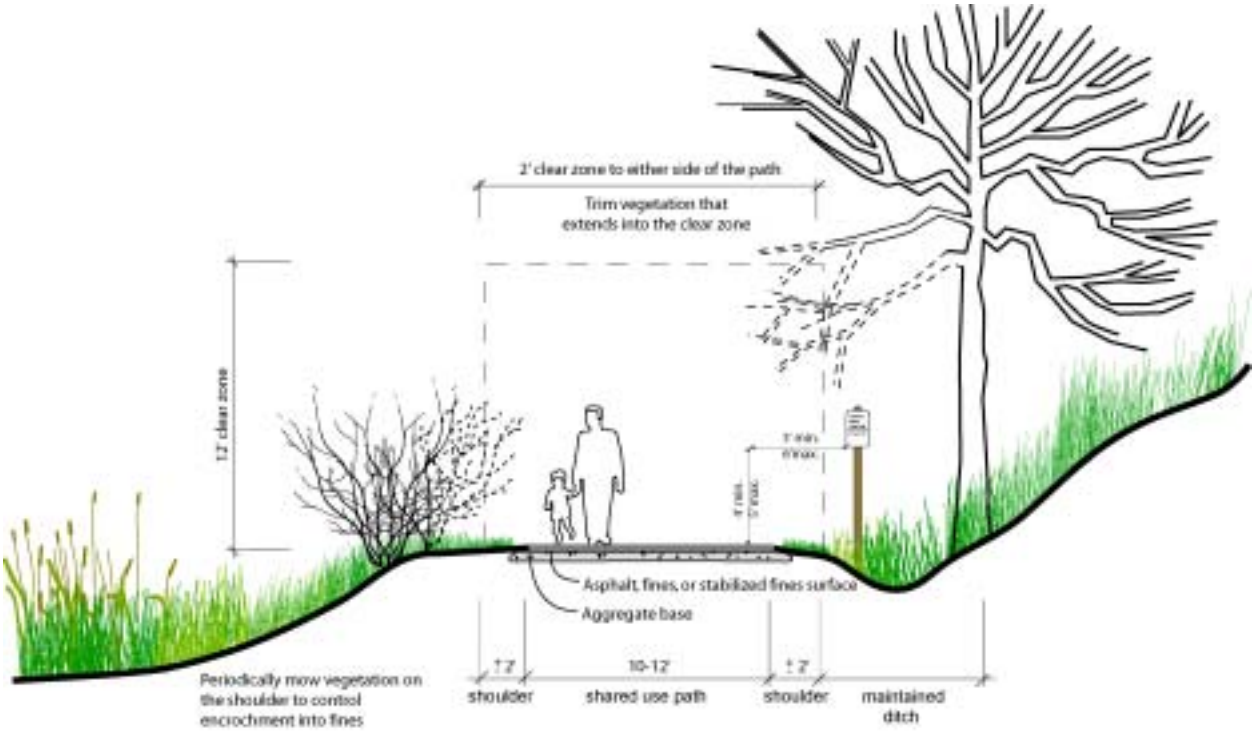
While each section presents its own unique challenges, they do share some characteristics. The Clinton River Trail has been designed to be accessible to people with mobility and vision impairments. It has also been designed to accommodate multiple users including bicyclists, walkers, runners, and people pushing strollers. Inline skating may be accommodated depending on the surface type and local regulations.

The trail is planned to accommodate multiple uses along shared trail facilities, except in the case of bike lanes and sidewalks through downtown Pontiac. In that case, the adult bicyclists are encouraged to use a designated lane in the roadway, which is the safest and most expedient place for a bicyclist to ride when bicycling along a roadway.

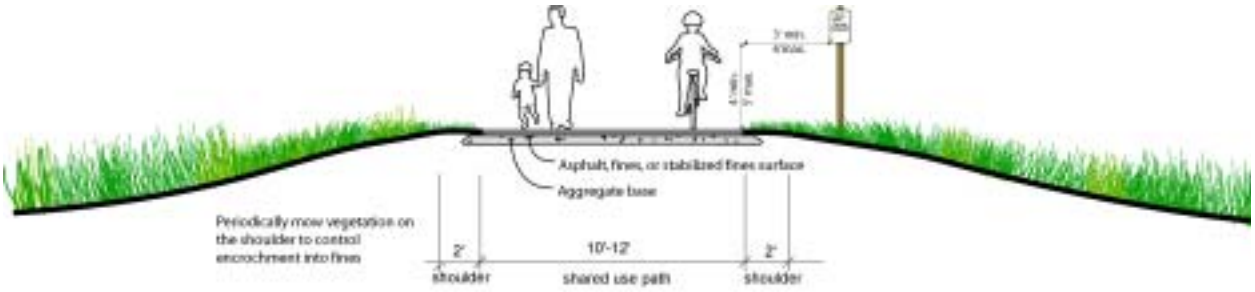
When all of the users share a path, it must be of sufficient width to accommodate mixed uses with minimal conflicts. 10’ wide is the minimum width for a shared-use path. Ideally, a 12’ wide pathway is preferred in an urban or suburban situation or where substantial use is expected. In the case of the abandoned railroad grade, there is only enough width to accommodate a 10’ wide trail with 18” to 2’ shoulders on either side.

Whether the surface of the path is asphalt, fines or another material, it should have a solid base and positive drainage, as the path may have maintenance and policing vehicles on it at all times of the year. The vegetation along the trail should also be regularly trimmed and mowed to maintain a clear zone around the trail. The following sections outline key dimensions.

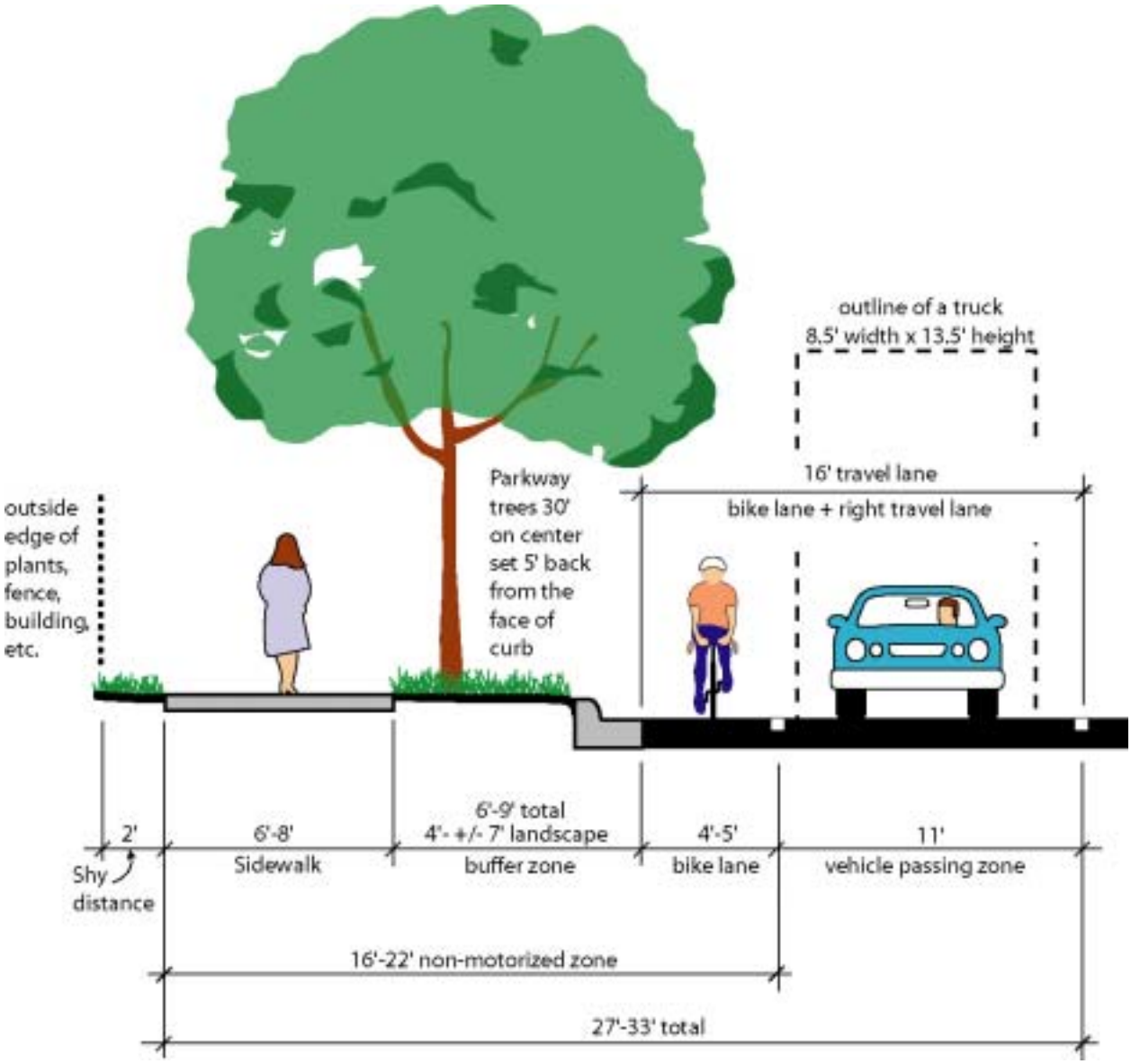
Rail-Trail



Shared-use Path



Bike Lane and Sidewalk



Surfacing Alternatives

Of all of the elements of the trail, the surface has the most profound impact on the ultimate use of the trail. Opinions about what the surfacing of the Clinton River Trail should be fall mainly into two separate groups: asphalt vs. fines. One group advocates a crushed fines surface, keeping the trail as natural as possible and simultaneously slowing bicycle speeds and restricting inline skaters. The other group advocates asphalt pavement primarily because of its ease of bicycling and ability to support inline skating.

At issue is how the trail fits into the matrix of recreation and transportation options in the communities it goes through. Rochester Hills and Auburn Hills have an extensive existing system of asphalt paths along the major roads throughout their communities. Fines advocates point to those paths and the MetroPark's asphalt path systems as the appropriate place for inline skating. Asphalt advocates point to the Paint Creek Trail, and the West Bloomfield Trail, other rail-trails that are fines. They argue that one of the rail-trails in the area should be asphalt to support bicycling and inline skating.

Another option for trail surfacing is the use of a plant-based aggregate binder. Resin or powder-based binders are increasingly being used as environmentally friendly compromises for trail construction. The plant-based binders are relatively new technologies. A variety of companies have competing products. Although the surface of the plant-based fines is smoother than loose fines, it is not an appropriate surface for inline skating.

In the end, it is a decision that will be made by each community based on available construction dollars, long-term maintenance costs, and community sentiment. The following is a summary of the surfacing alternatives.

Crushed Fines

Supported Uses:

Key Points:

- 3" to 4" of limestone or slag fines (3/8" down to dust) material is placed on a 5" to 6" aggregate base
- Low initial cost but requires frequent maintenance to control erosion and vegetation encroachment
- Coarser aggregate base may be exposed on the surface with erosion and unusual wear requiring expensive rehabilitation every 10 to 15 years
- Works well with walkers, runners and horses
- Slower speeds for bikes
- Makes approaching bicycles more audible to walkers
- Dust from fines can be a maintenance problem for bicycles
- Limestone fines are dustier and take longer to set-up than slag fines

Asphalt

Supported Uses:

Key Points:

- About 3” to 4” of asphalt is placed in two lifts over a 5” to 6” aggregate base
- Moderate initial cost- somewhat difficult to repair satisfactorily
- Moderately long life – can be expanded with surface and crack sealants
- Excellent surface for bicyclists and in-line skaters
- Faster speeds for bikers can be problematic for other users
- Dark color leads to pavement heat retention- snow is more likely to melt on asphalt making it a less suitable surface for cross-country skiing,
- Asphalt can be plowed in the winter.
- Works well with pavement markings
- Familiar construction techniques
- Issues with run-off pollution especially when first applied

ResinPave Bound Fines

Supported Uses:

Key Points:

- 2” to 4” of fine aggregate (3/8” down to dust) bound by a plant based emulsion on a 5” to 6” aggregate base
- Construction techniques use standard equipment: the emulsion mixtures are applied cold but installed like hot mix asphalt pavement mixtures with paving machines and steel drum rollers
- Does not affect the color of the aggregate – light colored aggregate reduces the heat retaining properties of pavement
- The plant-based resin binder has a similar strength and performance to asphalt
- Relatively easy to repair without specialized equipment
- Considered a “green” building material – very low run-off problems
- Approximately twice the cost of asphalt for the emulsion form

Stabilized Crushed Stone Surface

Supported Uses:

Key Points:

- Non-toxic organic, colorless and odorless plant-based powder serves as a binding agent.
- 3” of fine aggregate (3/8” down to dust) stabilized by the powder binder over 5” to 6” aggregate base course
- For best results aggregate fines and powder are mechanically mixed off-site, placed dry, then hydrated in place
- Surface takes 2 days to a week to set depending on weather conditions.
- When set the surface is rigid semi-porous surface
- Prolonged saturation will result in a pliable surface prone to rutting
- Very easy to repair without specialized equipment- mixing on spot for patch jobs
- Considered a “green” building material – very low run-off problems
- Approximately the same cost as asphalt The powder-based binder creates a surface inappropriate for inline skating

3. Trail / Road Intersections

The Clinton River Trail intersects eighteen high volume/high speed roadways. Most of these crossings are at unsignalized mid-block locations. Motorists are typically not expecting the presence of mid-block crosswalks, therefore, important safety standards must be incorporated into the design of these intersections. To be effective and safe, the trail/ road intersection should be designed to:

- Alert Motorists and Trail Users to the Approaching Intersection
- Provide Clear Guidance on the Rules-of-the-Road
- Allow Clear Visibility between Motorists and Trail Users
- Minimize Crossing Distances
- Provide Accessible Solutions

Alert motorists and trail users to the approaching intersection.

Careful placement of signage and pavement markings is needed on both the roadway and trail to alert motorists and trail users to the presence of the intersection. Advance warning signs and pavement markings should be placed at an adequate distance from the intersection given the speed of the traffic. Trail identification signage, set back outside the road right-of-way, also acts as a warning of the approaching intersection.

Regardless of the surfacing material of the trail, a stable pavement free of loose aggregate should be used for the portion of the trail that approaches the road intersection. Pavement increases traction for bicycle users where it is needed most and allows for pavement markings. This also minimizes the accumulation of loose aggregate from the trail on the crosswalk. The change in materials can also help to notify users of the upcoming intersection.

The stable pavement should be used along the portion of the trail that leaves the rail bed and curves in approach of the intersection, therefore the amount used at each intersection varies. Care should taken to make the transition between materials as seamless as possible. At rural intersections, gravel shoulders should also be paved adjacent to the trail to minimize debris in the stopping zone.

Provide Clear Guidance on the Rules-of-the-Road

Clear guidance through signage and pavement markings as to the rules-of-the-road and rights-of-way needs to be provided for both motorists and trail users. Marking a crosswalk clarifies that a legal crosswalk exists at that location and it indicates to trail users the best place to cross the road. The typical yellow diamond shaped crosswalk signs that are frequently used to indicate the presence of the crosswalk to motorists are not recommended because research has shown that they poorly identify the exact location of the crosswalk and do not explicitly indicate that the motorist is required to yield.

As an alternative, the "Yield to Pedestrians Here" sign, R1-5, shown at the left is recommended in conjunction with a yield bar. This combination clearly indicates to motorists the need to yield to pedestrians in the crosswalk and the optimum location at which to stop to maximize visibility between crosswalk and roadway users.

Trailway signs at major access points along the trail, including intersections, should indicate the rules of the trail. Pavement markings at the beginning of the trail should notify users of direction of travel and right-of-way regulations. However, pavement markings further along the trail should be minimized to avoid visual clutter.

Allow Clear Visibility between Motorists and Trail Users

The ability of pedestrians to see motorists is equally as important as their own visibility in the roadway. The trail should meet the roadway at as close to a 90-degree angle as possible for maximum visibility. Wide white ladder crosswalk markings are recommended instead of the standard marking of two parallel lines because the ladder crosswalks are more visible and resistant to tire wear.

Yield bars placed ten to twenty feet in advance of the crosswalk on multi-lane roads increase the visibility of pedestrians in the crosswalk from all lanes of traffic. Also, signage placed at the yield bars is less likely to obscure pedestrians than when placed at the crosswalk. Lighting in the area of the crosswalk also helps improve the visibility of trail users to motorists.

Minimize Crossing Distances

Minimizing the distance that pedestrians need to cross the street is a critical safety issue. As crossing distances increase, the comfort and safety of a pedestrian decreases. Refuge islands are an effective method for both increasing visibility and reducing pedestrian crossing distances. Refuge islands are raised areas that separate lanes of opposing traffic and eliminate the need for pedestrians to cross more than one direction of traffic at a time.

Refuge islands allow the pedestrian to undertake the crossing in two separate stages. This increases their comfort level and opens up many more opportunities to safely cross the road. Refuge islands also have the benefit of reducing vehicle delay because more users can cross at gaps. Refuge islands should be added to two lane roadways with heavy traffic and all roadways that have four or more lanes. Many of the two lane roads crossed by the Clinton River Trail qualify for the placement of a refuge island due to the heavy traffic loads and high speeds at which vehicles are traveling.

Provide Accessible Solutions

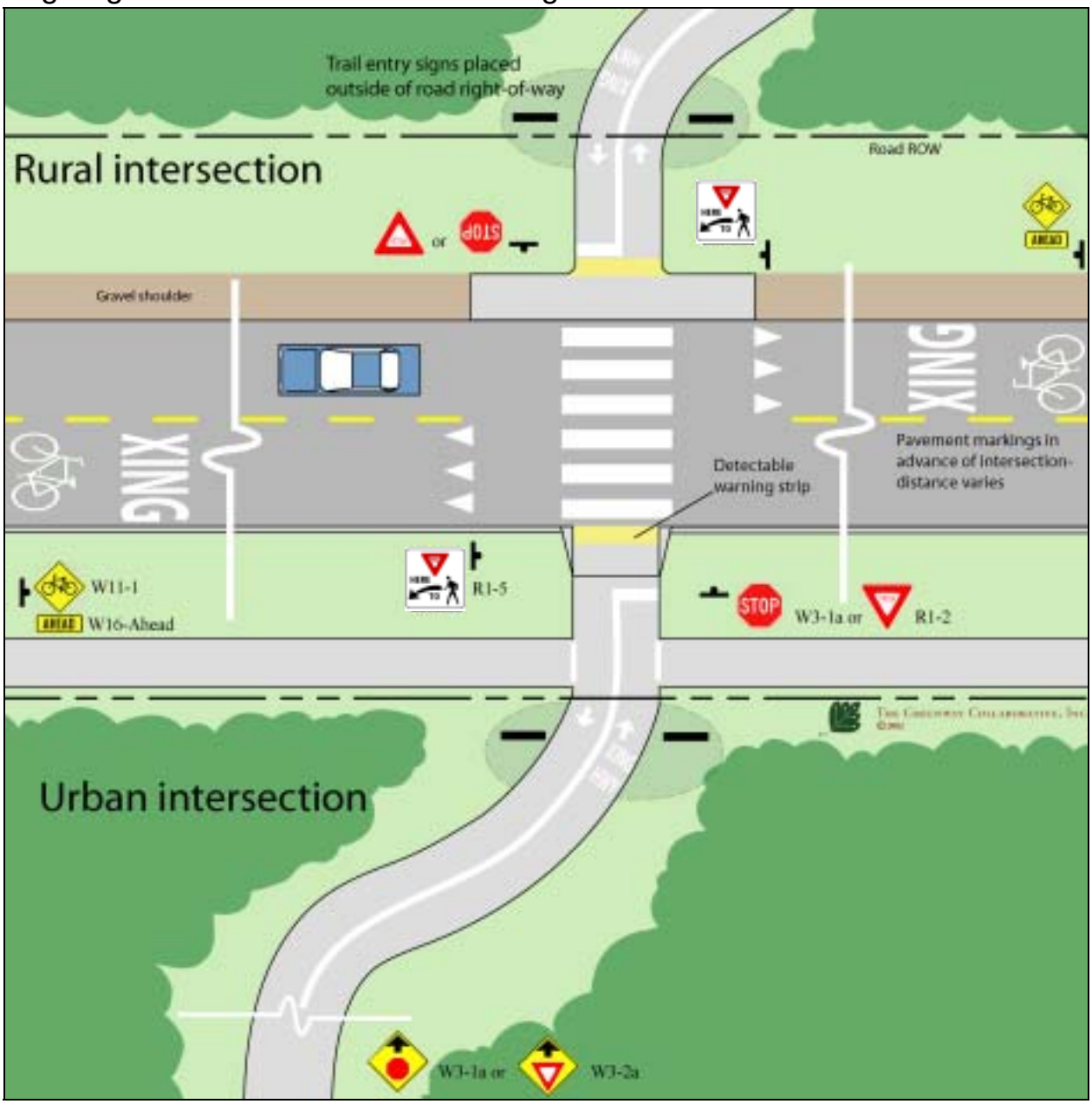
Providing accessible options for all users crossing the street is the law. Crosswalk locations that are only identifiable by sight, have blocked sight lines, have short signal timings or signals without accessible information act as barriers to movement for people with visual or mobility impairments. Several treatments of the crosswalk can increase accessibility for impaired users:

- The use of directional curb ramps can guide people with visual impairments to the crosswalk.
- The use of detectable warning strips at the ends of the crosswalks can warn people with visual impairments when they are leaving the sidewalk and entering the roadway.
- Median refuge islands should also include detectable warning strips, curb ramps with a level landing or full cut-throughs at road grade for accessibility.
- Traffic control signals at mid-block locations can be triggered by pedestrians who cannot judge the gaps in traffic or pedestrians with mobility impairments who cannot cross the road in the available gaps.
- Inclusion of audible pedestrian signals that indicate when the pedestrian signal has changed and the traffic has come to a stop prevents a person with a visual impairment from having to discern traffic flow solely through the traffic sounds, which can be difficult at busy intersections and not always reliable.

Including the options listed above in the new crosswalk design makes the pedestrian environment safer for all users. Consistent design treatment of all trail/ road intersections will help users of all abilities feel more comfortable and more able to navigate road crossings. Continuity in design will not only allow pedestrians to feel more at ease, but motorists will also know what to expect and where to be looking for it.

In the following pages, the key points for the safe design of a road/ trail intersection are illustrated and discussed in more detail. See the AASHTO Guide for the Development of Bicycle Facilities, pages 46-51, for a detailed discussion of shared-use path intersection design guidelines.

Signage and Pavement Marking Overview



Description

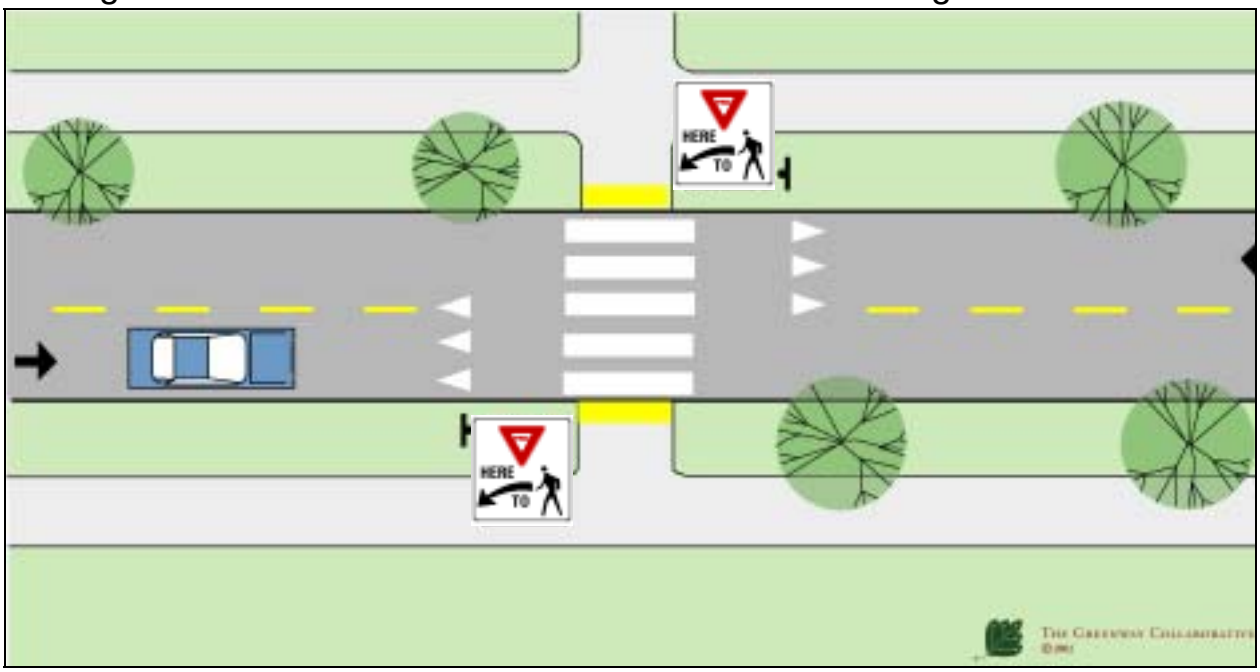
1. Both the road and the trail users are provided advanced warnings of the intersection and the appropriate ROW at the intersection itself.
2. Pavement markings are used at the start of the trail to indicate basic rules, a solid white line is used through tight turns to minimize head-on conflicts

Application

The signs and pavement markings indicated above may be used as appropriate with the various mid-block crosswalk design guidelines on the following pages.

Yield signs may be used on the trail at minor road intersections with slower moving traffic where there is good visibility between trail and road users.

Unsignalized Basic Mid-block Crosswalk Design Guideline



Description

A mid-block crosswalk for a two-lane road at an unsignalized location without parking. The treatments shown should be used in conjunction with advance warning signs (not shown).

Key Elements:

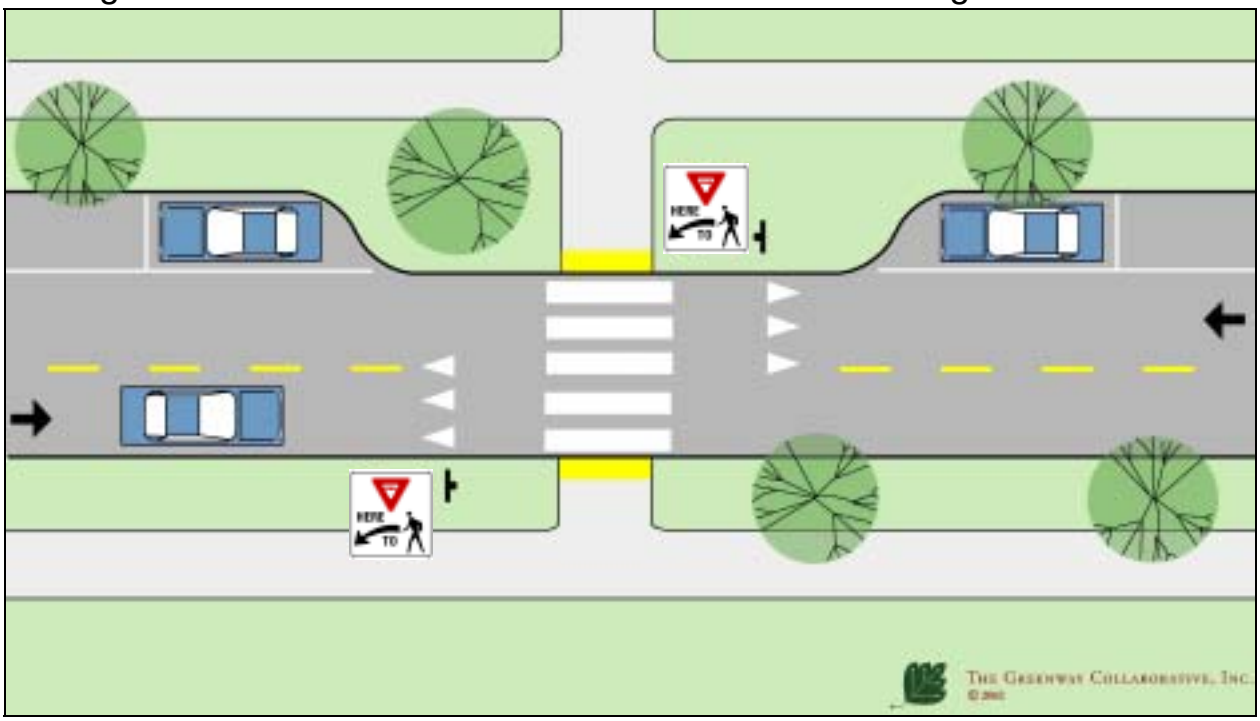
1. A "Yield Here to Pedestrians" sign is used in conjunction with pavement markings signifying yielding and pedestrian right-of-way.
2. The yield markings are set back from the ladder crosswalk.
3. Sightlines are kept clear of vegetation.
4. A 2' wide detectable warning strip is used at the base of the ramps.

Applications

Generally used on a relatively low volume, low speed road where sufficient gaps in the motorized traffic exist. This crosswalk design should not be used in any situations where there are greater than two travel lanes or when there is on street parking.

Example

Unsignalized Mid-block Crosswalk With Parking Guideline



Description

A mid-block crosswalk for a two-lane road at an unsignalized location with parking. The treatments shown should be used in conjunction with advance warning signs (not shown).

Key Elements:

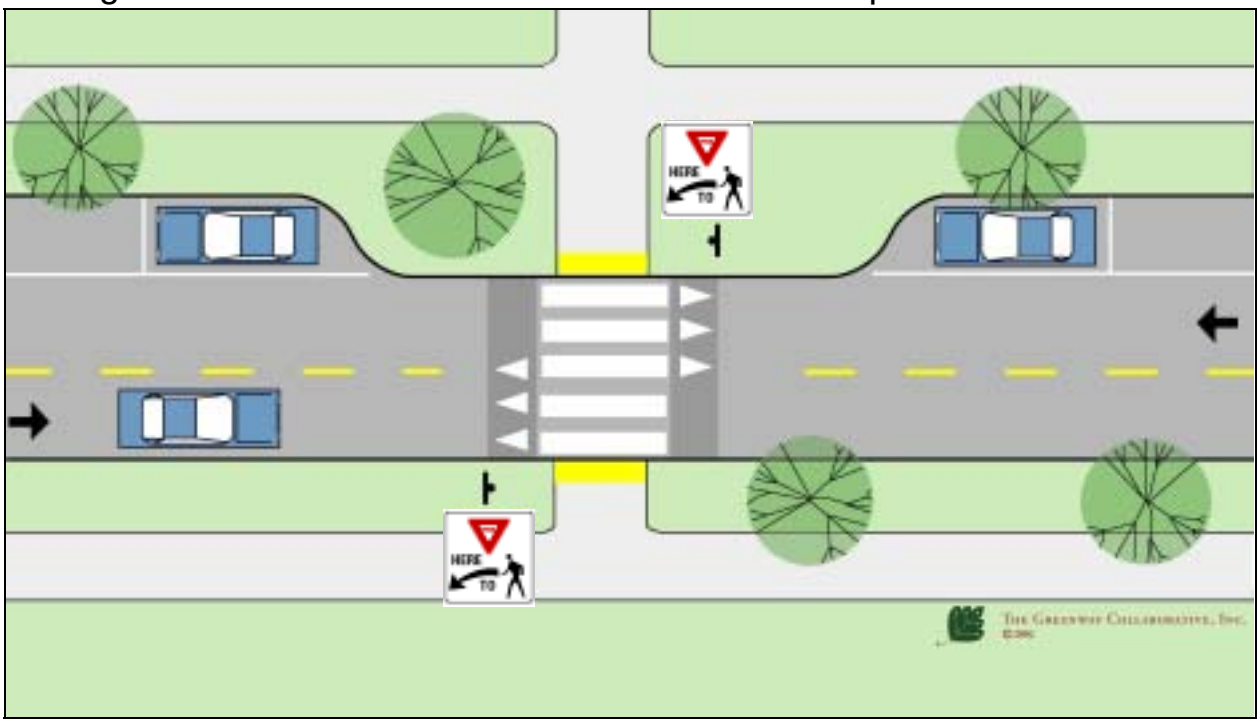
1. See elements listed under Unsignalized Basic Mid-block Crosswalk.
2. A bulb out extends the pedestrian ramp into the sightlines of oncoming vehicles, reducing the potential for a “dart-out” type crash.

Applications

Generally used on a relatively low volume, low speed road where sufficient gaps in the motorized traffic exist. This crosswalk design should not be used in any situations where there are greater than two travel lanes.

Example

Unsignalized Basic Mid-block Crosswalk Speed Table



Description

A mid-block crosswalk for a two-lane road at an unsignalized location with parking. The treatments shown should be used in conjunction with advance warning signs (not shown).

Key Elements:

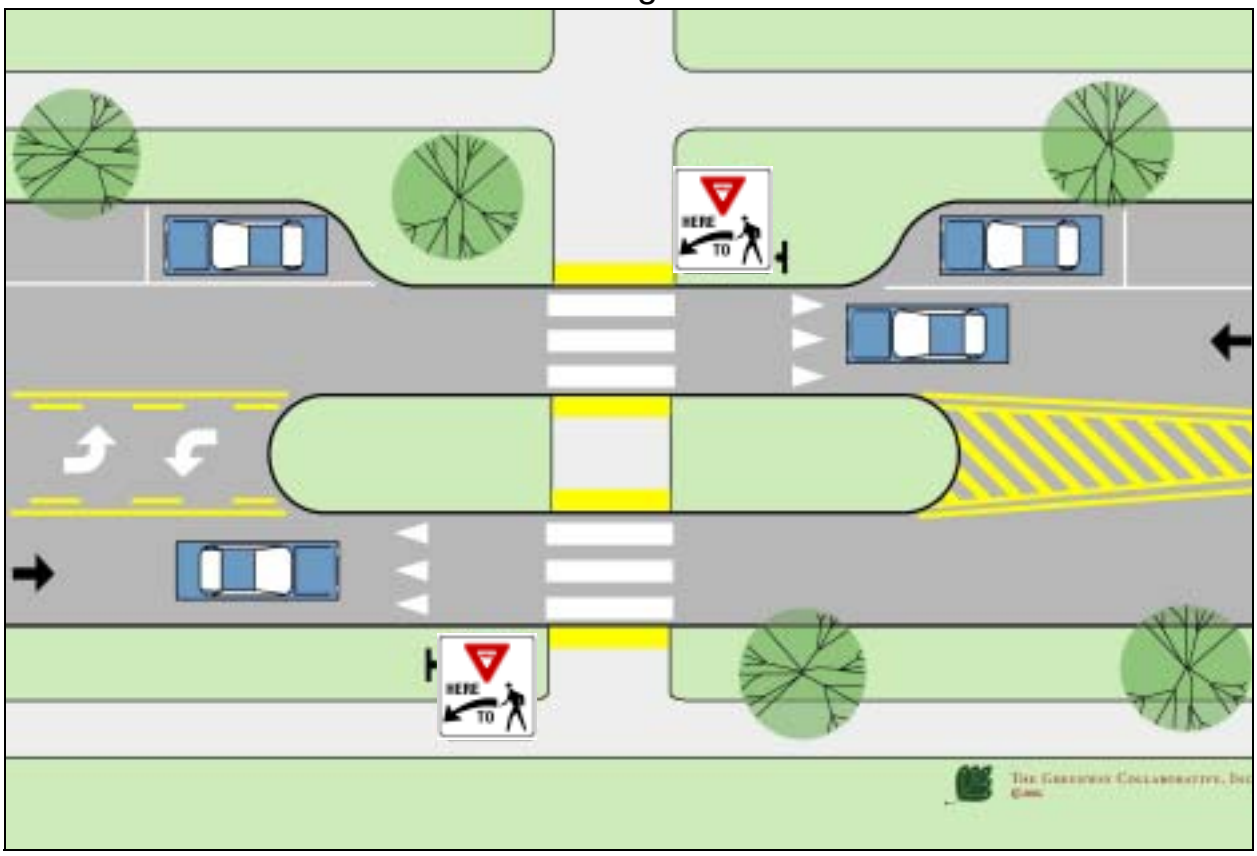
1. See elements listed under Unsignalized Basic Mid-block Crosswalk and Unsignalized Mid-block Crosswalk with Parking
2. A speed table with 6' long approach ramps and a 4" high table is placed under the crosswalk to bring travel speeds to approximately 20 MPH

Applications

Generally used on a relatively low volume, low speed road where sufficient gaps in the motorized traffic exist. This crosswalk design should be used in areas where traffic speeds typically exceed posted speeds.

Example

Mid-block Crosswalk with Refuge Island Guidelines



Description

A mid-block crosswalk for a two-lane or three-lane road at an unsignalized location with or without parking. The treatments shown should be used in conjunction with advance warning signs (not shown).

Key Elements:

1. See elements listed under Unsignalized Basic Mid-block Crosswalk and Unsignalized Mid-block Crosswalk with Parking
2. A refuge island is provided to break the crossing into two separate legs. The island has a minimum width of 6' with 11' or wider preferred

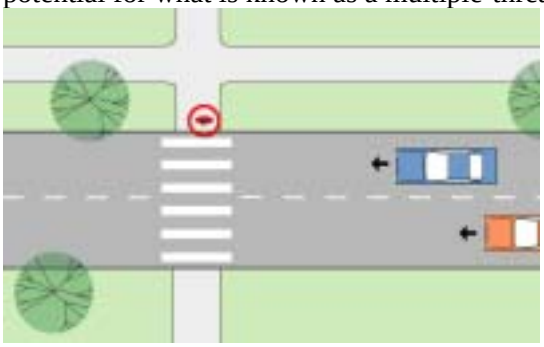
Applications

Generally used on a higher volume and higher speed road where suitable gaps to cross both directions of traffic in one movement are infrequent.

Example

Multiple Threat Crashes Issues

Whenever a crosswalk traverses multiple lanes of traffic traveling in the same direction, there is a potential for what is known as a multiple-threat crash. The crash unfolds as follows:



1. The driver in the lane closest to the pedestrian sees the pedestrian approaching the ramp or just entering the roadway and begins to slow down.

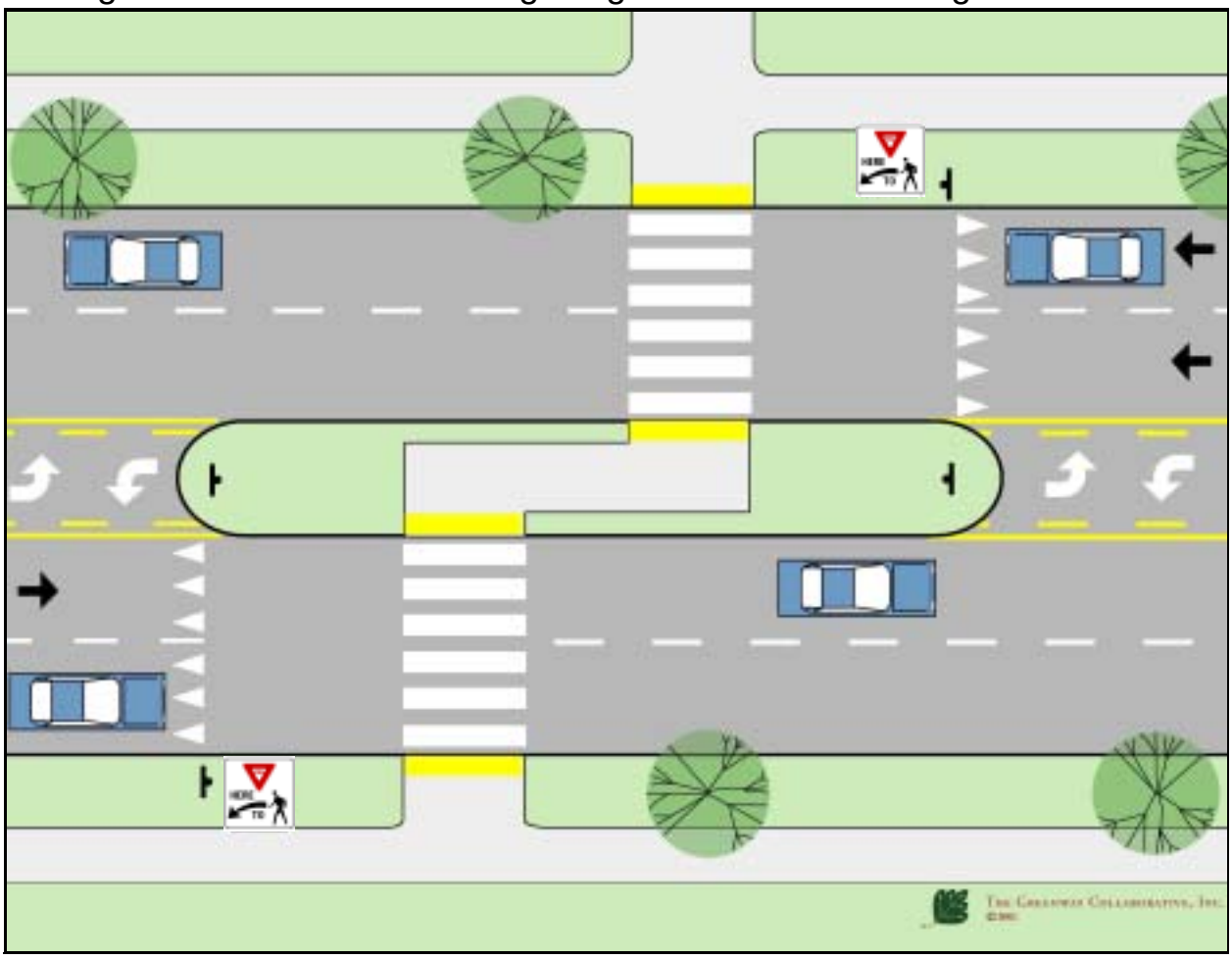
2. The driver closest to the pedestrian lane stops, yielding the right-of-way to the pedestrian. The car is stopped immediately adjacent to the crosswalk, therefore blocking the sightlines between the pedestrian and the driver of the other car.

3. The driver of the other car fails to see the pedestrian and continues towards the crosswalks without slowing down.

4. The driver of the second car does not see the pedestrian until it is too late to come to a complete stop and hits the pedestrian.

A combination of high visibility crosswalks, yield lines set back from the crosswalk, and crosswalk signage on both sides of the street can help reduce multiple-threat crashes.

Unsignalized Mid-block Zig-Zag Crosswalk Design Guidelines



Description

A mid-block crosswalk for a four or more lane road at an unsignalized location without parking.

Key Elements:

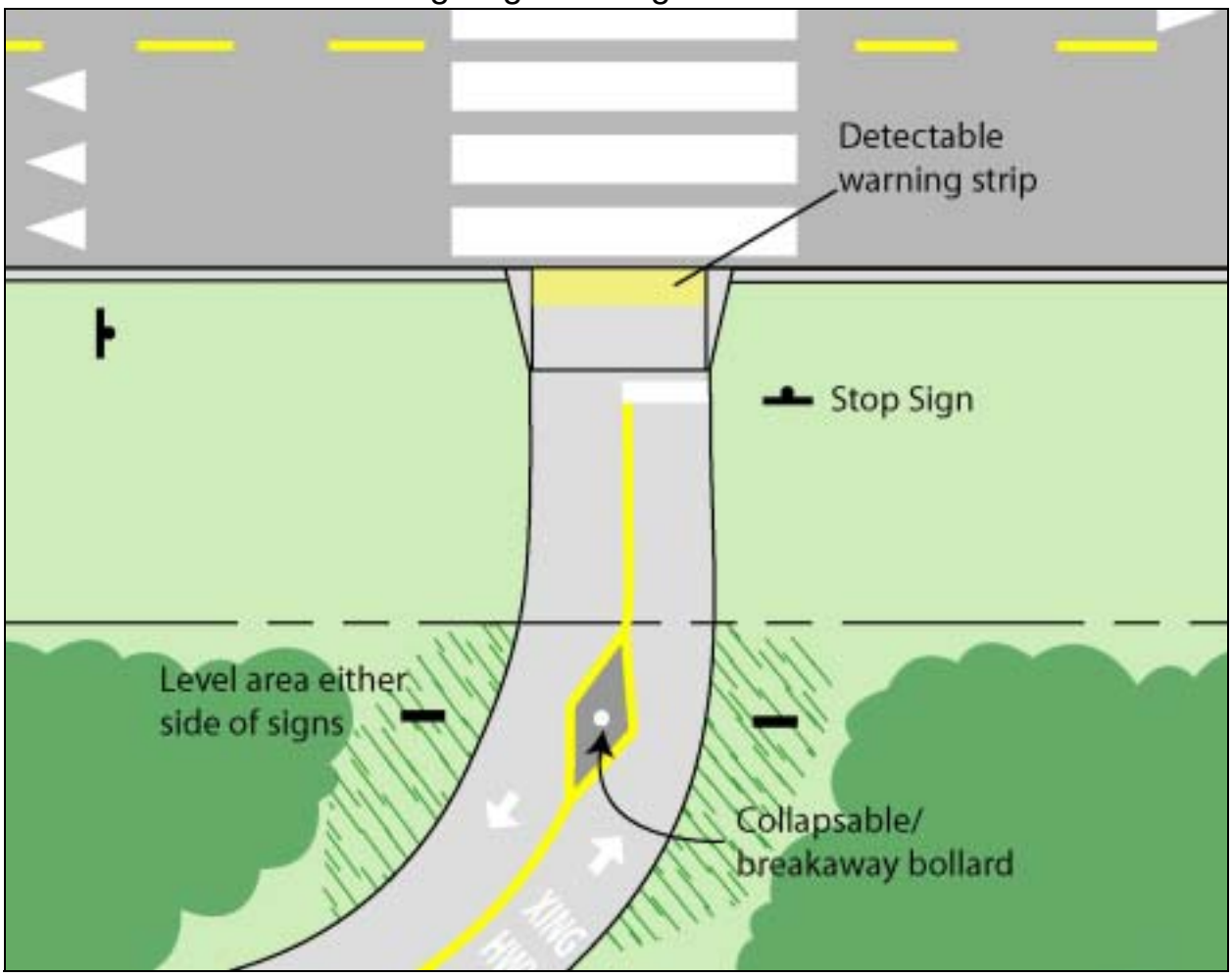
1. See elements listed under Unsignalized Basic Mid-block Crosswalk and Unsignalized Mid-block Crosswalk with Refuge Island
2. The crosswalks are staggered to direct the pedestrian view towards oncoming traffic
3. Yield markings are set further back to improve pedestrian visibility from both lanes and minimize multiple-threat crashes

Application

Generally used on a high volume / high-speed multi-lane roads.

Example

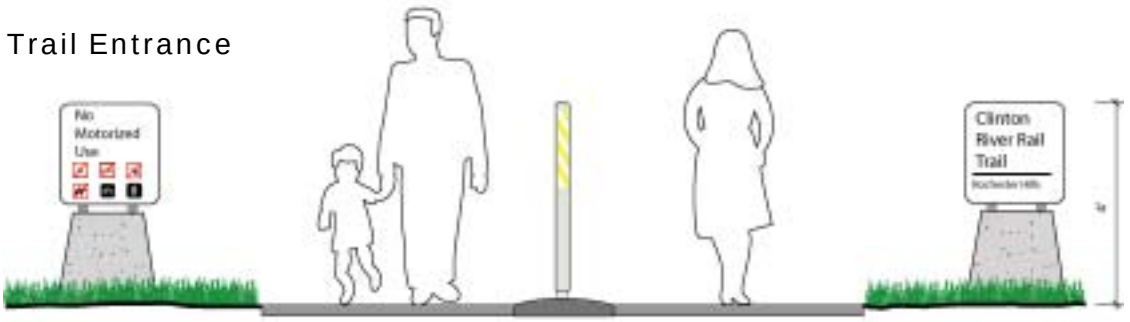
Trail Identification Signage Design Guidelines



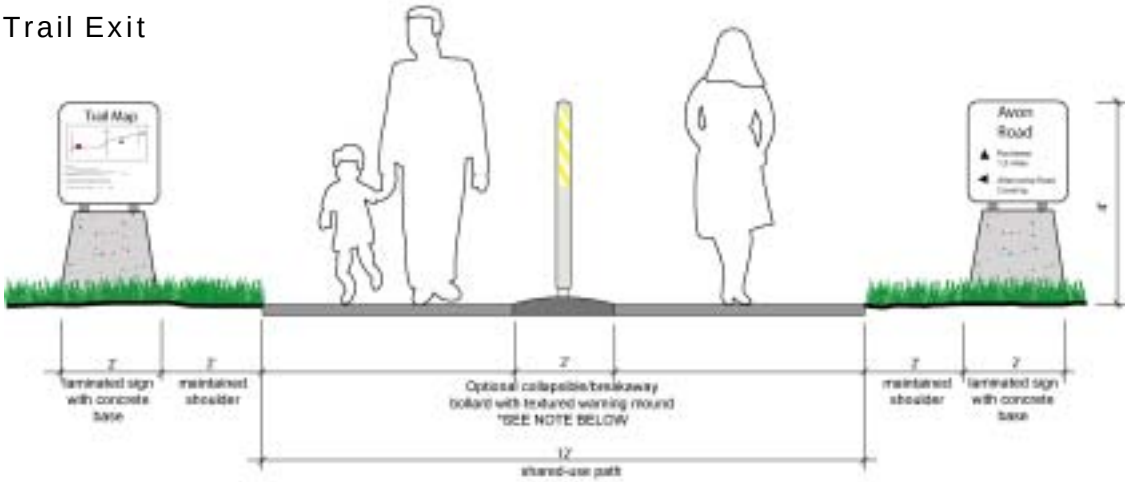
If designed correctly, signage can be a pleasing amenity to the trail while providing valuable safety and orientation information to the users of the trail. Key considerations for the design of trail signage include:

- Signs should be placed at the beginning of trail intersections with the roadway to orient the user to his or her location along the trail, the distance to the next intersection crossing, and the rules and regulations of the trail.
- Signs should be a sufficient distance from the shoulder of the trail to prevent obstruction or collisions.
- Signs should be placed outside the road ROW and positioned to allow access for maintenance vehicles to the trail
- Sign design should be consistent along the length of the trail
- Include flat graded areas at the trail intersections where people can gather without blocking the trail.

Trail Entrance



Trail Exit



The trail entrance and exit signs are a simple but graceful design appropriate for urban and suburban setting of the trail. They have been designed with longevity and maintenance in mind. The concrete base is resistant to damage caused by mowing and trimming. The sign faces can be easily removed from the supporting posts and replaced as necessary.

Trail Entrance Signs

The trail entrance signs serve to identify the trail, the community and the basic rules of the trail. The relatively tight spacing either side of the trail also helps distinguish the trail from a driveway.

Trail Exit Signs

The trail exit signs provide two orientation approaches. The trail map on one side lets the user know where they are along the entire trail. The road name and distance/directions to immediate landmarks on the other sign lets the users keep track of their progress and how far it may be to the next town or staging area. This sign can also indicate the ability to cross the road at an alternative location such as a nearby signal.

Collapsible/Breakaway Bollard

It is recommended that the barrier post be omitted as it presents a hazard to bicyclists. If used, the bollard should be designed to yield if hit by a cyclist to minimize injury. Bollards must be well-marked with reflective taping and visible to users day or night. Painted pavement warning signs and a raised textured warning area should surround the bollards. See the AASHTO Guide for the Development of Bicycle Facilities, page 57, for design guidelines for restriction of motor vehicle traffic.

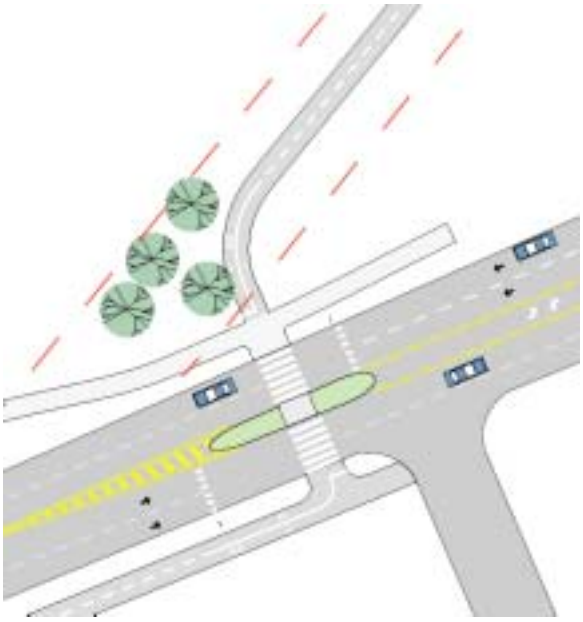
Orchard Lake Road West – Existing Conditions

Orchard Lake Road looking east by the railroad corridor

Issues:

- High volume four to five lane road with few gaps in traffic suitable for pedestrian crossings
- Center shared left-turn lane to the east ends near intersection of Woodrow Wilson Drive; road tapers to four lanes near original road crossing
- Trail meets road at an acute angle
- Numerous intersecting roads and driveways with wide turning radii in the immediate area of the trail crossing create dangerous crossing conditions
- Existing sidewalks on both sides of roadway
- Stoplights are a ¼ mile in either direction

Orchard Lake Road West – Proposed Plan



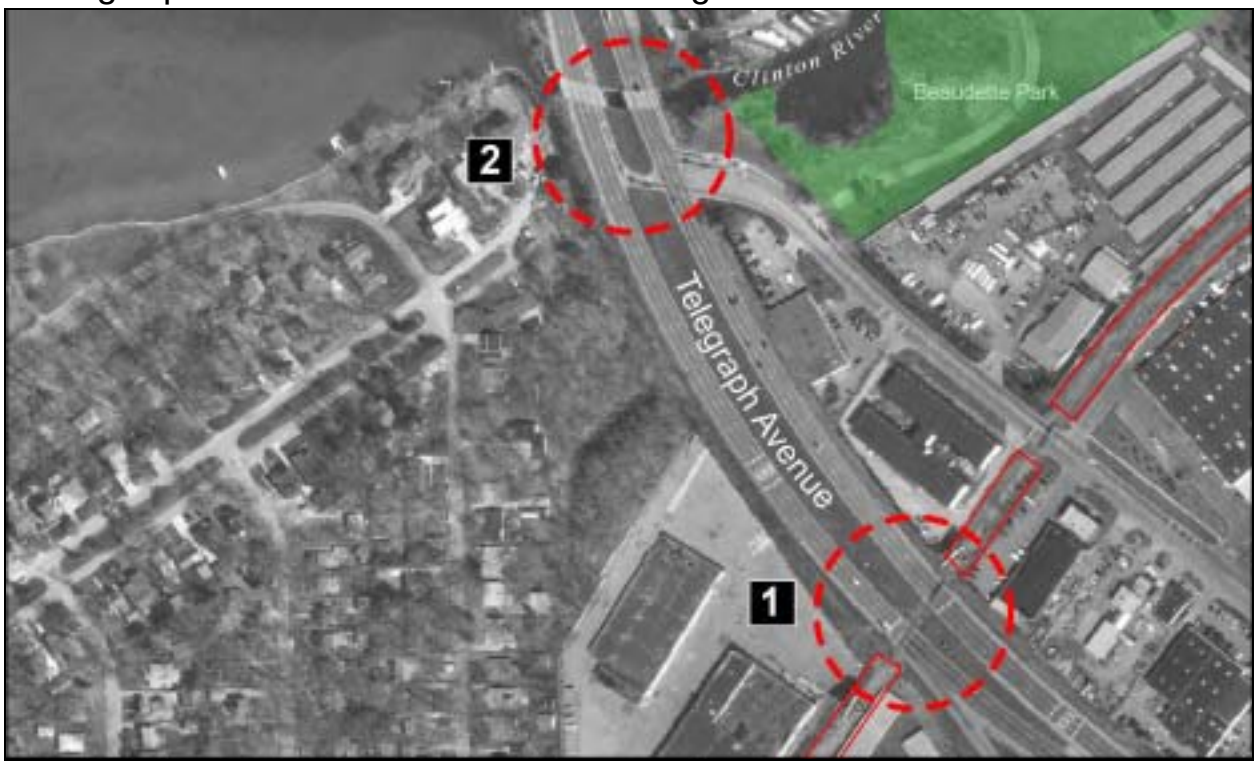
Recommendations:

- Construct a refuge island in the portion of the center turn lane that is not needed for turning movements.
- Close the Orchard Lake Road access to the marina to minimize potential conflicts with vehicles crossing sidepath. Focus access to the marina through the entrance off of Woodrow Wilson Drive. This eliminates the driveway as a conflict point along that portion of the sidepath.
- This configuration could easily be adapted to work with a signal at Woodrow Wilson Drive should a signal be deemed necessary in the future.
- A moderate zig-zag sidewalk may also be incorporated into the refuge island.
- Plant trees in the trail ROW to guide users to intersection crossing.

East side of Telegraph Ave. near the railroad grade looking north

East side of Telegraph Ave. near the Clinton River looking north

Telegraph Road Potential Crossings



View of old rail corridor crossing Telegraph Ave from Orchard Lake Road overpass looking north

Issues:

- The old rail corridor crosses Telegraph Avenue at a curving six lane divided highway (1). Sight lines are limited and traffic is moving at high speeds making crossing this large expanse of highway very dangerous. A trail crossing in this area would require the addition of 2 signalized lights.
- The intersection of Telegraph Avenue with Old Telegraph (2). This option has several advantages over the first option:
  - o There is an existing light on the northbound portion of Telegraph.
  - o The intersection is adjacent to Beaudette Park, which is more scenic than the alternative and from the intersection, the trail can be routed along a former park road alignment
  - o The trail would be adjacent to its namesake, the Clinton River

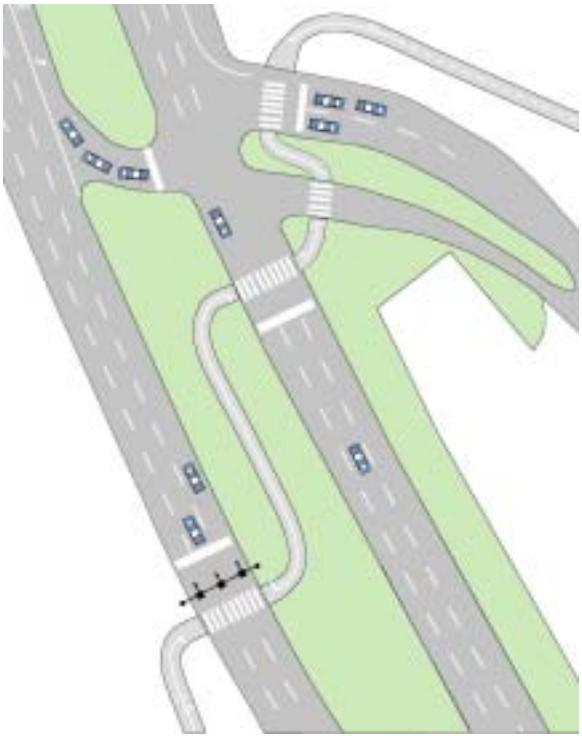
Telegraph Road at Clinton River – Existing Conditions

Beaudette Park frontage on Old Telegraph Road

Issues:

- 2 three lanes roads separated by a wide boulevard.
- Existing light at intersection of Telegraph and Old Telegraph Road.
- This portion of Telegraph is adjacent to Beaudette Park and the Clinton River.
- Sight lines are adequate.
- Traffic is moving at high speeds.
- Wide ROW on west side of the trail for sidepath

Telegraph Road at Clinton River – Proposed Plan



Recommendations:

- Route the trail from existing railroad corridor to cross Telegraph Ave. and travel up the median to the conjunction of Telegraph Ave and Old Telegraph. This route takes advantage of existing traffic signal and clear sight lines and avoids the steep slope on the west side of Telegraph.
- Add a signalized crosswalk on the southbound leg of Telegraph Road where the trail crosses.
- Route trail to meet existing road in Beaudette Park that has been closed for automobile use.
- Replace paved median strips with planted boulevards.

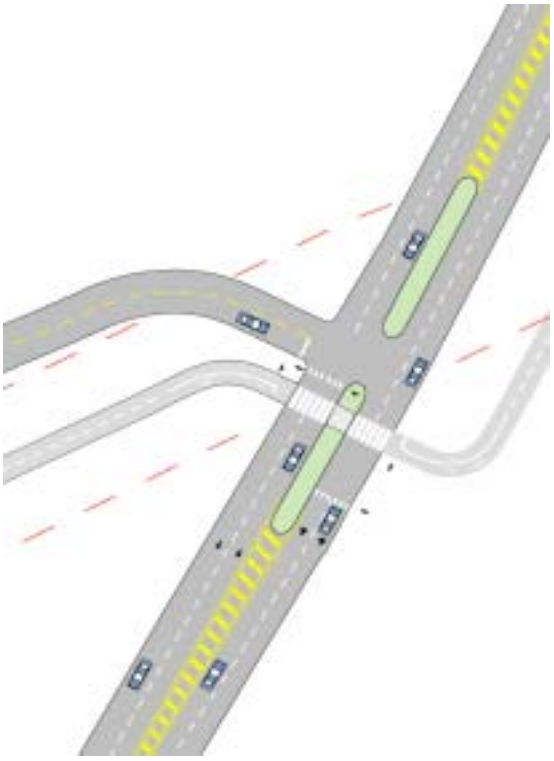
Orchard Lake Road East – Existing Conditions

Looking east along the railroad corridor across Orchard Lake Road

Issues:

- Four-lane road with moderate to heavy traffic.
- Trail ROW is directly adjacent to a poorly aligned Beaudette Park entrance road, causing increased potential for conflicts with vehicles existing the park.
- Trail meets road at an acute angle.

Orchard Lake Road East – Proposed Plan



Recommendations:

- Widen road to include a refuge island.
- Realign Beaudette Park access road to meet Orchard Lake Road near the trail at a 90-degree angle to increase motorists' visibility and minimize conflicts with the trail crossing.
- Realign trail to meet the road at 90 degrees.
- Construct a berm in eastern trail right-of-way to encourage trail users to follow the path alignment.

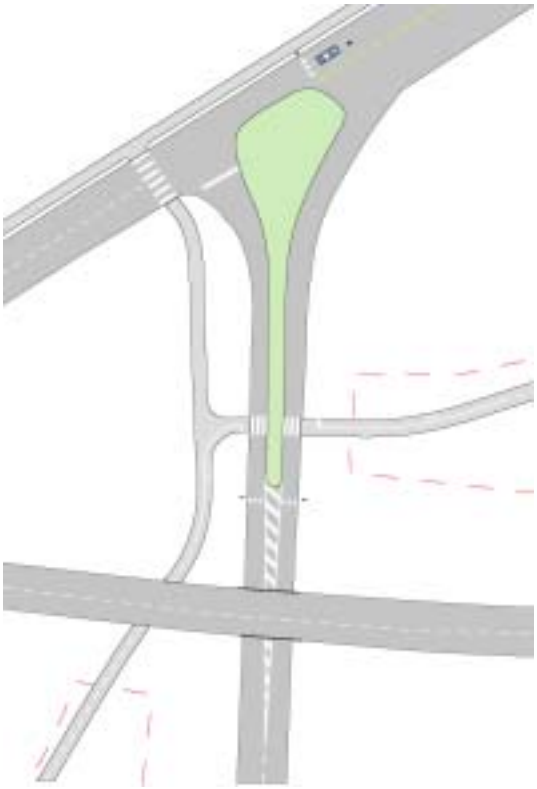
University Drive – Existing Conditions

Looking north under the M-59 bridge over the Clinton River from the west bank of the river

Issues:

- Train corridor along the Clinton River leads underneath the M-59 entrance and exit ramps. The space directly underneath the two overpasses is too tight to accommodate a trail next to the river.
- Visibility along the trail corridor is very limited in this area and people are using the space under the M-59 overpass as a living shelter, leading to safety and personal comfort concerns for trail users.
- Exit ramp has fast moving cars exiting onto University Drive. Currently, a wide expanse of pavement serves as a separator between the two turning lanes.
- MDOT will be reconstructing this intersection in the immediate future.

University Drive – Proposed Plan



Recommendations:

- Route trail under the westbound M-59 off-ramp and across the M-59 eastbound off - ramp before the intersection with University Drive. Replace the striped pavement markings at the intersection with a central island and extended median.
- Construct crosswalk connecting to the existing sidepath to the north of University Dr. to link northern Pontiac neighborhoods to the trail.
- If the intersection is changed to a simple Tee intersection with future improvements to University Drive, maintain the median along the exit ramp for crossing safety.

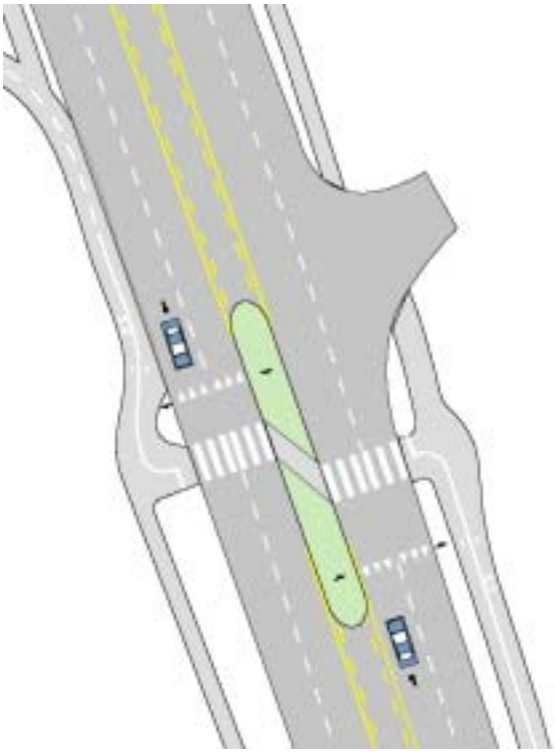
Martin Luther King, Jr. Drive – Existing Conditions

Looking east across Martin Luther King, Jr. Drive towards the M-59 entrance ramp

Issues:

- Five-lane road with moderate to heavy traffic.
- Good visibility.
- Trail must cross the river at this location because the Water Treatment Plant property is to the north of the river on the eastern side of MLK Drive.
- Existing sidewalks on both sides of road.

Martin Luther King Jr. Drive – Proposed Plan



Recommendations:

- Route trail to cross the river along the narrow sidewalk of the bridge. While this narrow sidewalk is not ideal, there is no room to cross the river below grade.
- Widen road-crossing points to provide a level, visible waiting area for trail users crossing the road.
- Construct Refuge Island in unused portion of the center turn lane.
- Route trail across the roadway at a point as removed from the interchange traffic as possible to extend sight lines and reduce conflicts from turning movements in this area.

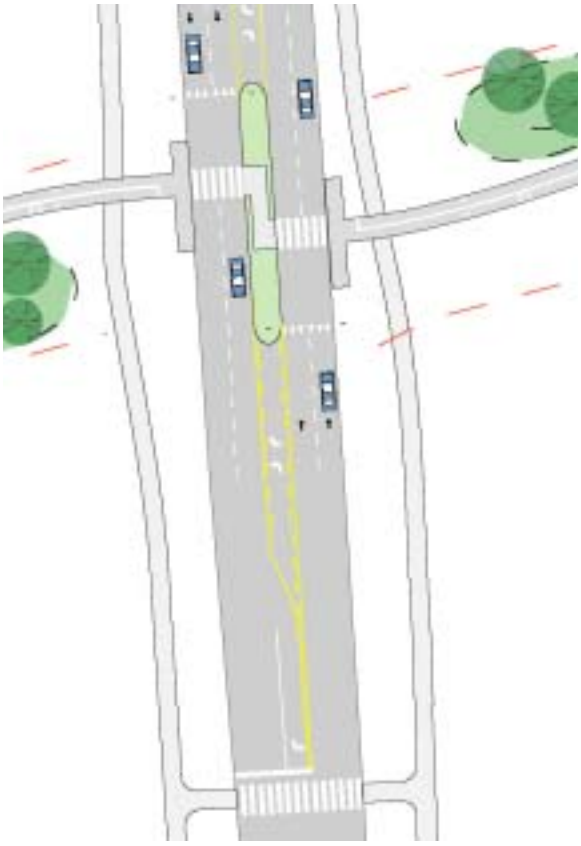
Opdyke Road – Existing Conditions

Looking west along the railroad corridor across Opdyke Road

Issues:

- Busy five lane road with heavy traffic
- Center turn lane is not necessary in this section of the road.
- Existing signalized intersection at Opdyke Road and Hempstead Road, 280 ft. from the trail crossing at Opdyke Road. The intersection has an existing crosswalk to the south but no crosswalk to the north.

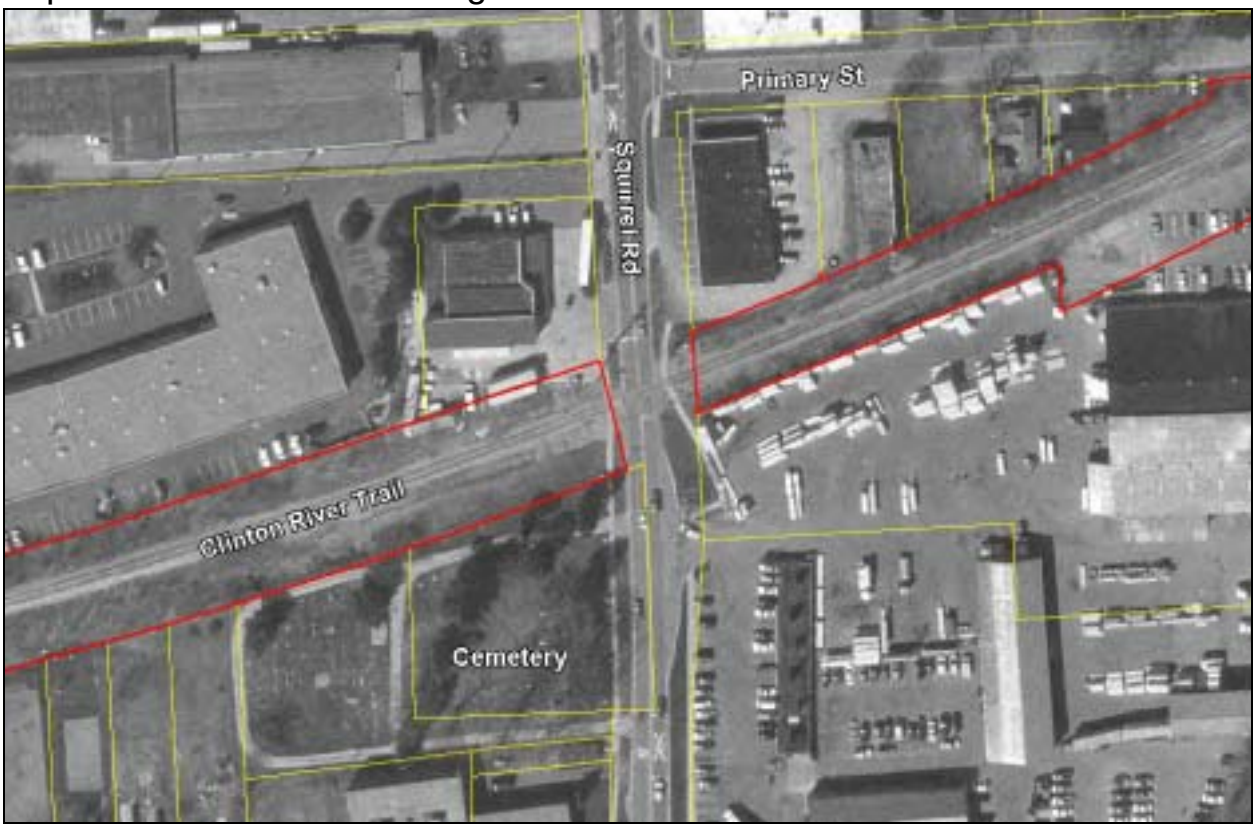
Opdyke Road – Proposed Plan



Recommendations:

- Construct Refuge Island in unused portion of the center turn lane.
- Route the trail to meet the road at a 90 degrees angle.
- Construct berms in trail ROW to encourage trail users to follow the alignment of the path.
- Construct a crosswalk and include a pedestrian activated walk light on the existing signal on northern side of the intersection of Opdyke Road and Hempstead Road as an alternative to crossing at the unsignalized trail corridor.

Squirrel Road – Existing Conditions

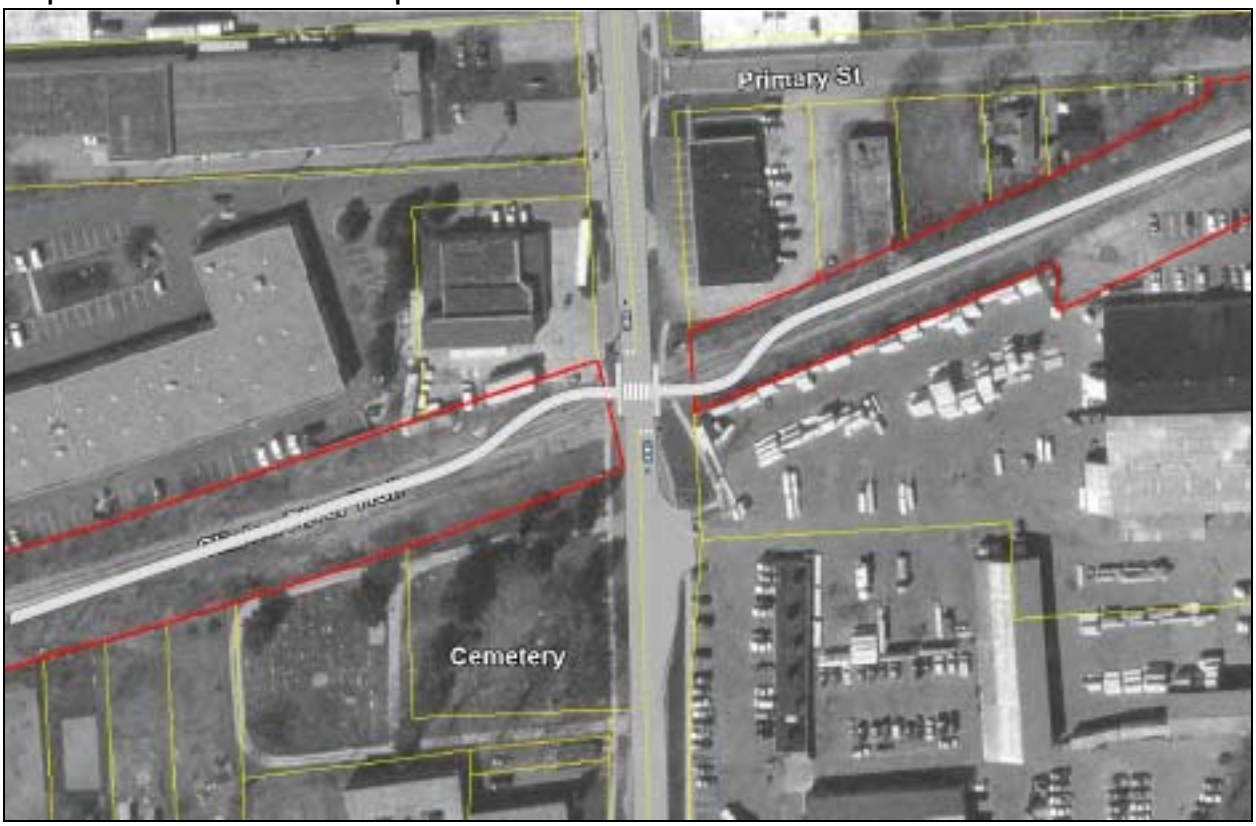


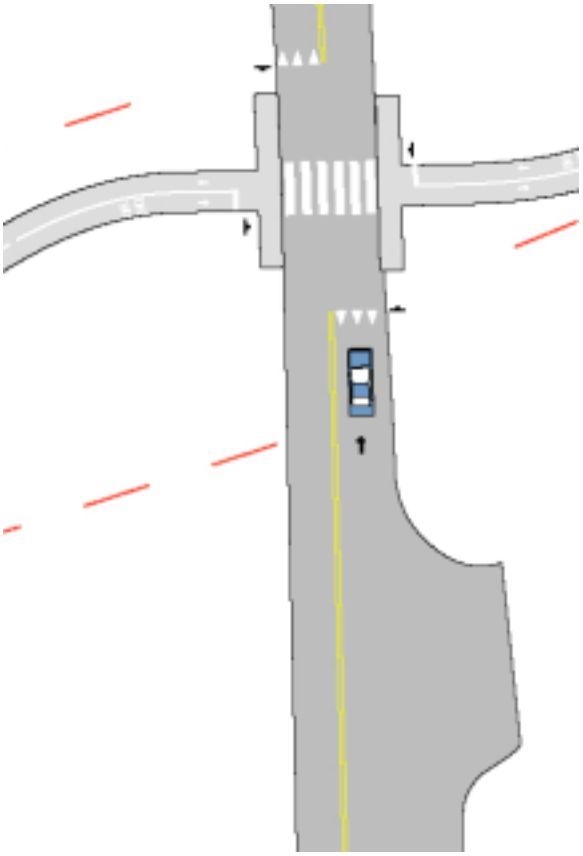
Looking east along the railroad corridor across Squirrel Road

Issues:

- Two-lane road with moderate amounts of traffic.
- Trail does not meet roadway at a right angle.
- Clear sight lines.
- Parking lot entrance with large turning radius just south of trail crossing has the potential to create conflicts of fast moving turning movements in this area.

Squirrel Road – Proposed Plan





Recommendations:

- Route trail to meet road at 90 degrees
- Because of relatively low traffic levels and clear sight lines, no pedestrian refuge island is needed.
- Turning radius on parking lot entrance south of the trail should be tightened to slow turning movements and reduce potential for conflicts.

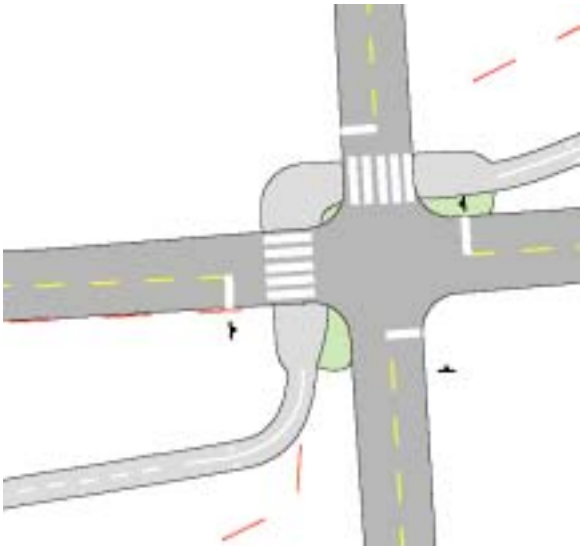
Primary Road – Existing Conditions

Looking east along Primary Road at the juncture with Grey Street and the railroad corridor

Issues:

- Primary Road makes a slight jog at Grey Street, causing an awkward intersection.
- Trail corridor runs through the center of the intersection of Primary Road and Grey Road.
- Both roads have minimal amounts of traffic.
- No existing sidewalks.

Primary Road Crossing – Proposed Plan



Recommendations:

- Straighten Primary Street to eliminate the jog at the intersection and tighten turning radii at the intersection.
- Route trail corridor to cross both roads at 90 degree angles with marked crosswalks.
- Widen crossing points adjacent to the road to provide a level, visible waiting area for trail users crossing the road.
- Plant beds beside landings to discourage direct crossing through intersection.

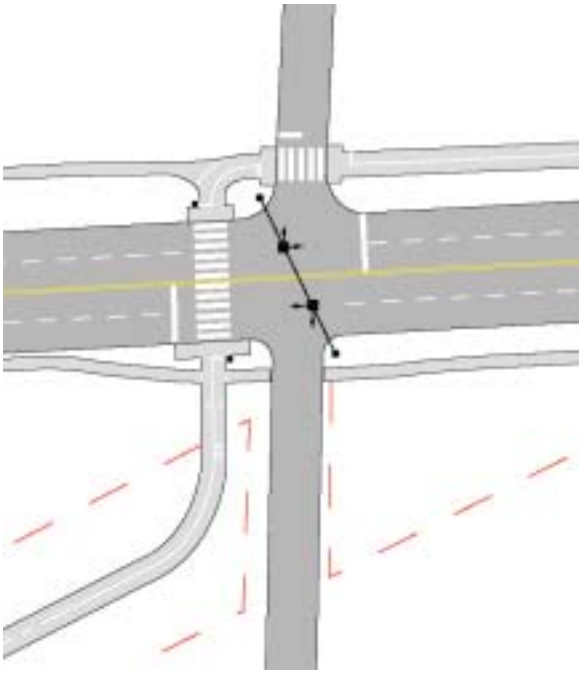
Auburn Road – Existing Conditions

Looking west along Auburn Road at Juniper Avenue during construction of new streetscape

Issues:

- Newly widened four lane road
- Trail meets Juniper Road and Auburn Road at angle less than 90 degrees and makes for an awkward crossing of both streets.
- Existing sidewalks on both sides of Auburn Road.
- Two intersecting roads with wide turning radii to the north of Auburn Road create dangerous crossing conditions.

Auburn Road – Proposed Plan



Recommendations:

- Add pedestrian activated light and marked crosswalk at the intersection of Juniper Avenue and Auburn Road.
- Tighten radii and add marked crosswalks to the intersecting roads on the north side of Auburn Road.

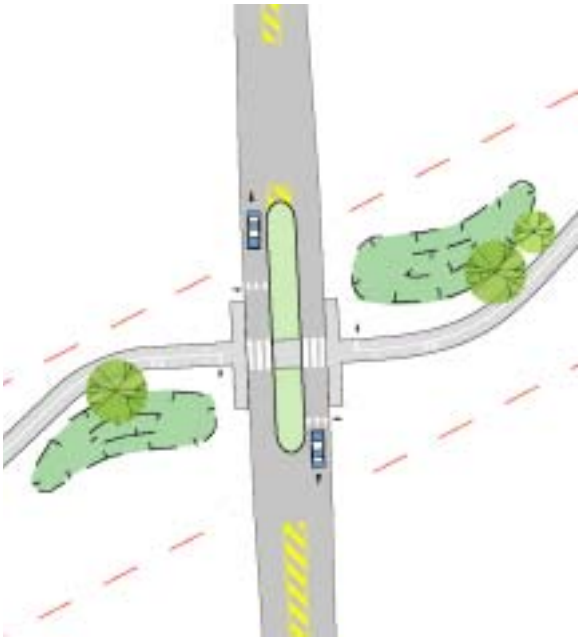
Adams Road – Existing Conditions

Looking west along the railroad corridor across Adams Road

Issues:

- Two-lane road with heavy traffic
- Trail meets road at an acute angle
- Forrester Square – a large neo-traditional community is being developed at the northwest corner or the trail/road intersection. This development is planning on a small trail-based park where the trail meets Adams Road.

Adams Road – Proposed Plan



Recommendations:

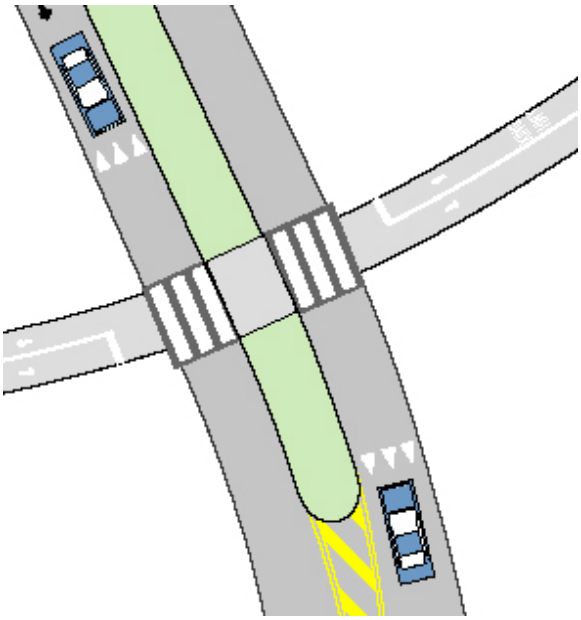
- Route trail to meet road at 90-degree angle.
- Construct detention basins within the trail ROW to encourage people to stay on the path alignment.
- Narrow travel lanes to 11 ft. wide and widen roadway to accommodate a refuge island.
- Construct staging area on City-owned property with a parking lot for 35 cars, a restroom, information kiosk, picnic areas as well as additional detention areas (See further discussion under Staging Areas).
- Coordinate trail alignment with Forrester Square's trail-based park.

Existing Conditions for M-59 Interchange Additions at Leach Road and Technology Drive

Issues:

The addition of the new M-59 interchange along Adams Road includes plans extend both Leach Road and Technology Drive to the new interchange. This means 2 additional road crossings with heavy truck traffic along the trail.

Proposed Plan for M-59 Interchange Additions at Leach Road and Technology Drive



Recommendations:

- Route trail to meet both roads at a 90 degree angle and as far from the relocated Adams Road as possible to allow room for semi-trucks to line up without blocking the trail.
- Narrow travel lanes to 11 ft. wide and widen roadway to accommodate a refuge island. The refuge islands may be extended from the trail crossing to the relocated Adams Road as a part of the redevelopments image improvements.
- Construct crosswalk with speed table to discourage vehicles from blocking the trail while in line and to keep traffic speeds inline with posted speeds.

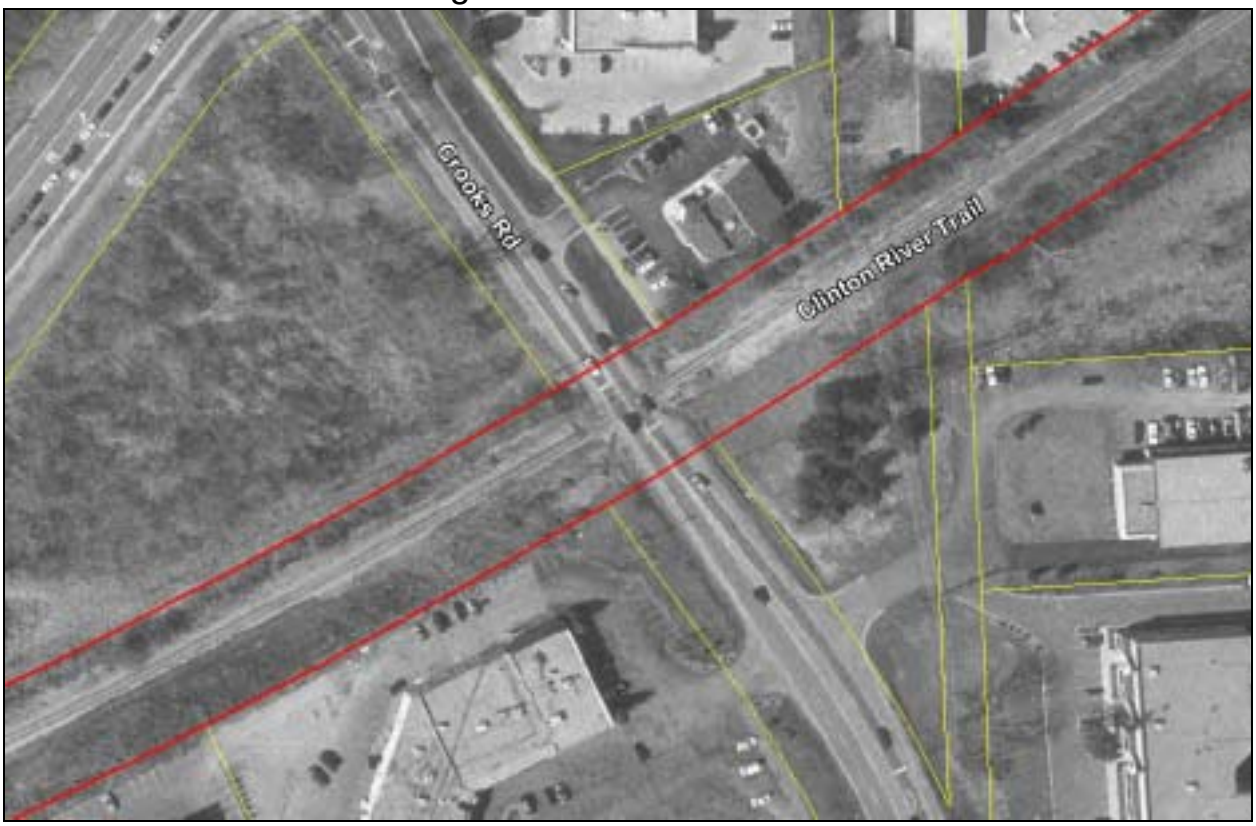
Crooks Road / Hamlin Road Triangle

Looking north along Crooks Road at Hamlin Road

Issues:

- In this area, the trail crosses 2 busy roads with heavy traffic volumes within a very short section.
- The signalized intersection at Hamlin/ Crook presents many challenges as an alternative trail routing:
  - The north side of Hamlin has a very narrow right-of-way bounded by wetlands leaving little room for a trail
  - Several intersecting roads and driveways along the north side of Hamlin makes use of a sidepath potentially dangerous
  - This is a significant diversion from the direct route of trail leading to a high potential for people to cross directly at both Crooks and Hamlin regardless of the availability of an alternate route

Crooks Road – Existing Conditions

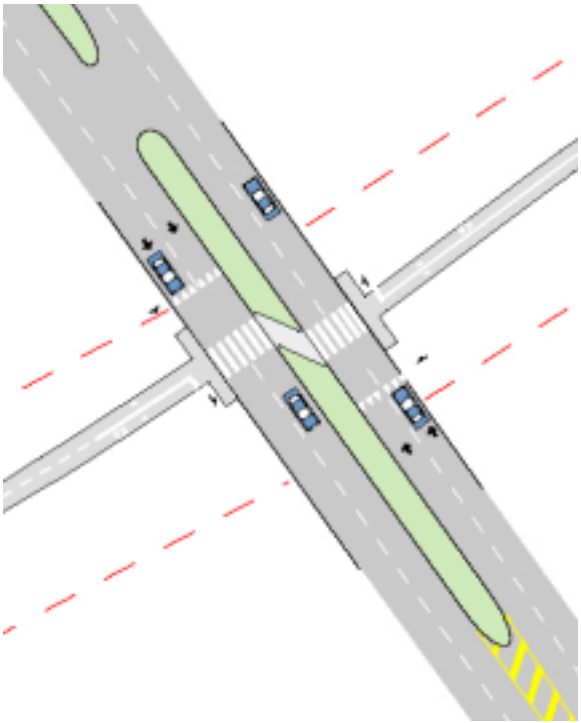


Looking south along Crooks Road at the railroad corridor

Issues:

- Two-lane road with heavy rush hour traffic and moderate mid-day traffic
- Clear sight lines
- The road is scheduled to be widened to a four-lane boulevard along this section in 2004.

Crooks Road – Proposed Plan



Recommendations:

- The trail path is curved slightly to meet the road at 90 degrees
- The new boulevard plans work well with the need for a refuge island at this location. The plans need a minor modification to include curb cuts and a cut-through as shown. This drawing shows how the pedestrian refuge island could be incorporated in the existing plans for the widened road and new boulevard

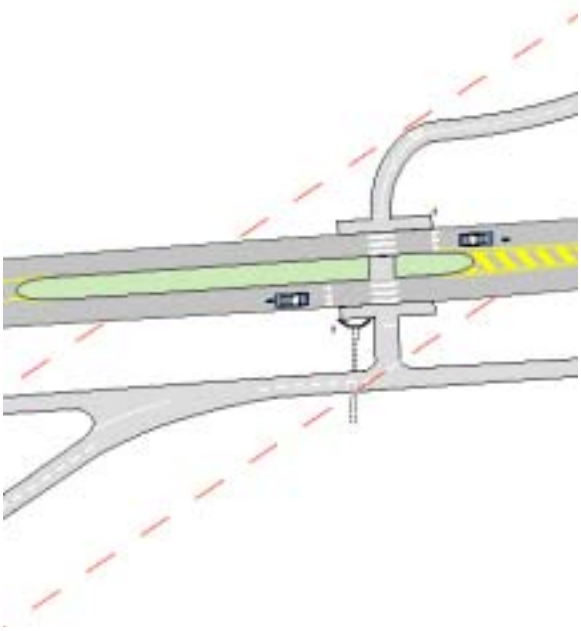
Hamlin Road – Existing Conditions

Looking east along Hamlin Road at the railroad corridor

Issues:

- Busy two lane road narrowing from a three lane road to the west
- Heavy traffic volumes and cars moving at high speeds
- Hamlin Road is scheduled to be widened and a boulevard added in 2006.
- Trail meets roadway at an acute angle
- Clear sight lines
- Existing sidepath to the south of Hamlin Road
- Large stormwater pipe exists within the trail ROW

Hamlin Road – Proposed Plan



Recommendations:

- Construct the trail to link with the existing sidepath on south side of Hamlin Road.
- Shift the trail intersection to the east to meet the road at 90 degrees and avoid the stormwater pipe in the ROW.
- Widen road to extend center turn lane and accommodate a pedestrian refuge island at trail crossing

Livernois Road / Avon Road Triangle

Issues:

- In this area, the trail crosses 2 busy roads with heavy traffic volumes within a very short section.
- The Veteran's Memorial Park is a potential staging area with limited parking available
- The signalized intersection at Livernois/ Avon presents many challenges as an alternative trail routing:
  - This is a very significant diversion from the direct route of trail leading a high potential for people to cross directly at both Livernois and Avon regardless of the availability of an alternate route
  - A trail bridge would have to be built at the intersection because there is no room to accommodate the trail in the limited road ROW.

Livernois Road – Existing Conditions

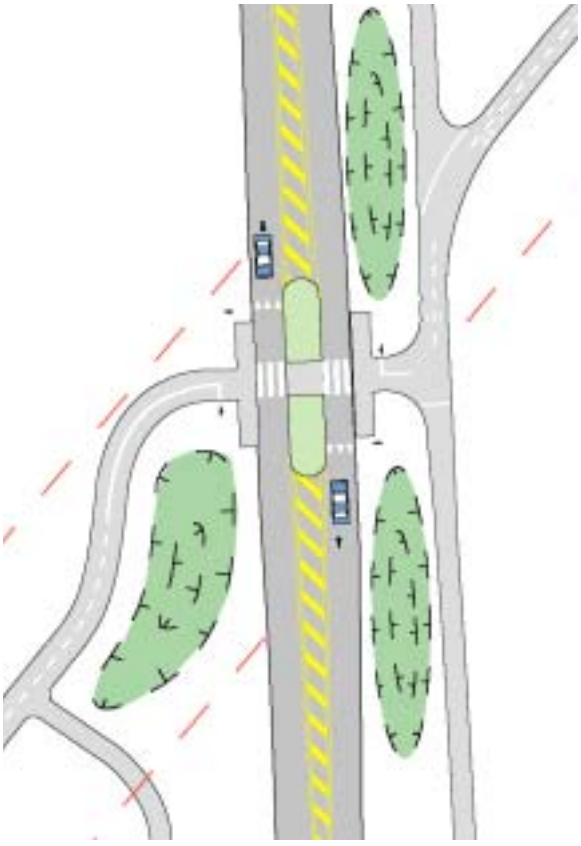
Looking north along Livernois Road from the railroad corridor

Issues:

- Two-lane road with moderate traffic volumes
- Traffic moving at high speeds
- Adequate sight lines
- Trail crosses road at an acute angle

Existing sidepath on east side of Livernois Road

Livernois Road – Proposed Plan



Recommendations:

- Reroute trail to meet Livernois Road at a 90 degree angle
- Narrow travel lanes to 11 ft. wide and widen roadway to accommodate a refuge island
- Realign the sidepath on east side of the road to meet the trail and construct culverts between trail and road surface to encourage people to use the designated crosswalk
- Extend the sidepath on west side of the road to meet the trail

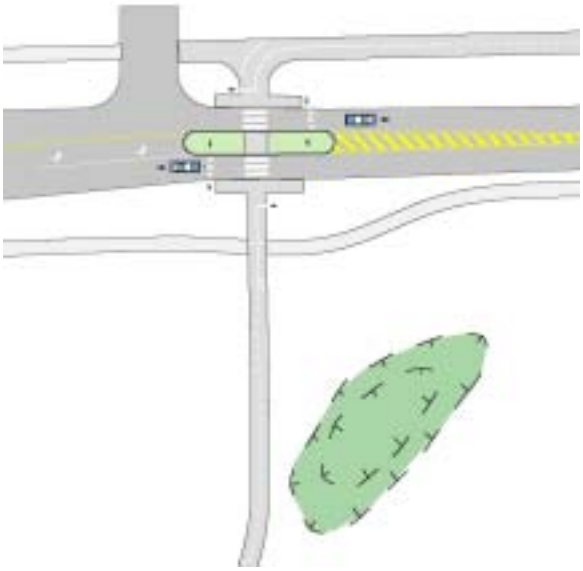
Avon Road – Existing Conditions

Looking along Avon Road from the railroad corridor

Issues:

- Two-lane road with heavy traffic volumes
- Outside passing lane to the west ends shortly before trail crossing
- Trail meets road at an acute angle
- Hill to the east of the trail makes sight lines short
- Wetlands to the west of the trail
- Existing sidepaths along both sides of Avon Road
- Trail crossing is adjacent to Rochester College

Avon Road – Proposed Plan



Recommendations:

- Route trail to the west of the ROW to increase sight lines along Avon Road
- Link trail to existing sidepaths south and north of Avon Road
- Instead of having a right passing lane, provide a designated left-turn lane.
- Utilizing the property of Rochester College for an alternative crossing and entrance to the trail is problematic because currently the road proposed for the crossing is being used as the main access to the back part of the property.

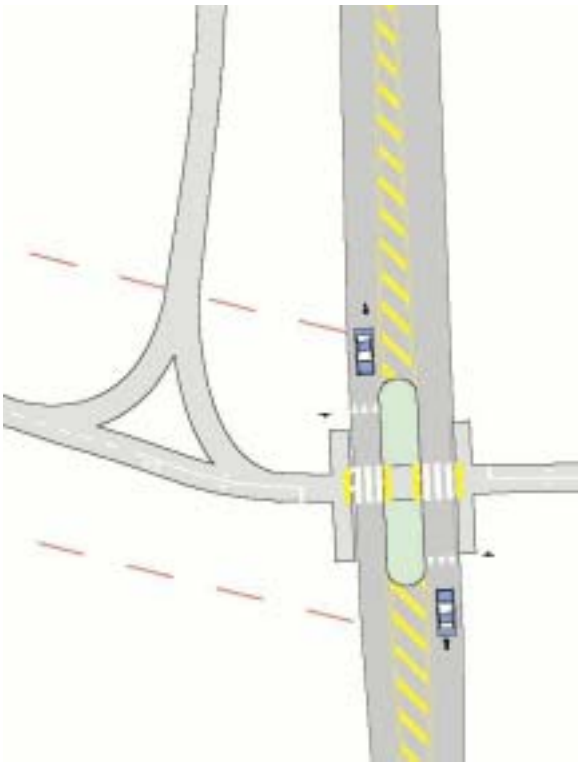
Dequindre Road – Existing Conditions

Looking north along Dequindre Road at the railroad corridor

Issues:

- Dequindre Road is the county line and the eastern end of the trail
- Two-lane road with high traffic volumes, high speeds and very few gaps in traffic
- Adequate sight lines

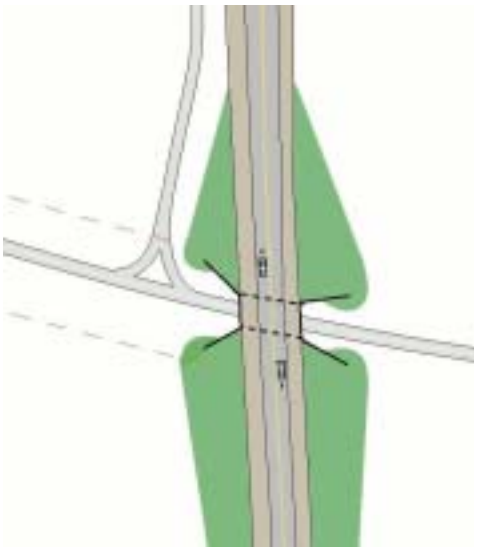
Dequindre Road – Proposed Plan



Recommendations:

- Route trail to meet road at 90 degrees
- Narrow travel lanes to 11 ft. wide and widen roadway to accommodate a refuge island

Dequindre Road – Alternative Plan: Tunnel



Recommendations:

- Raise the road above trail by filling in the low area of the road and place a pre-fabricated concrete bridge system to allow the trail to pass below the roadway.
- This may be best undertaken when this road is widened to a four-lane road

4. Staging Areas and Access Points

Providing adequate support facilities for trail users at regular intervals along the trail is key to the trail's long-term success. Clustering trail support facilities such as restrooms, drinking fountains, trash receptacles and picnic areas into central "staging areas" along the trail has several advantages. Grouping these amenities makes them more visible and recognizable to trail users moving along the trail. Clustering the facilities reduces visual clutter along the trail, reduces the environmental impact of the facilities and can minimize degradation of the trail in areas along the river.

Staging areas should have easy access by maintenance vehicles and plenty of room for negotiating bicycles so that groups can gather without interfering with the trail throughway. Because of the cost of constructing and maintaining restrooms and parking areas, it is often advantageous to utilize existing facilities, adding elements as needed. This also provides a good way to introduce people to the trail who might not necessarily know about its existence. Staging areas or access points are planned for every 1-3 miles along the length of the Clinton River Rail-Trail.

Staging Areas

A full service staging area is a likely starting point for a visitor from out of town as well as providing support for those spending an extended period of time on the trail.

Typical Elements:

- Restroom
- Car Parking Area
- Orientation Kiosk
- Trash/Recycle Bins
- Water
- Compressed Air
- Bike Racks
- Benches
- Picnic Areas
- Donation Box

The Sanford staging area along the Pere Marquette Rail-Trail of Mid-Michigan has a depot themed restroom with numerous support elements. It also includes a community garden and historical interpretive signage.

Access Point:

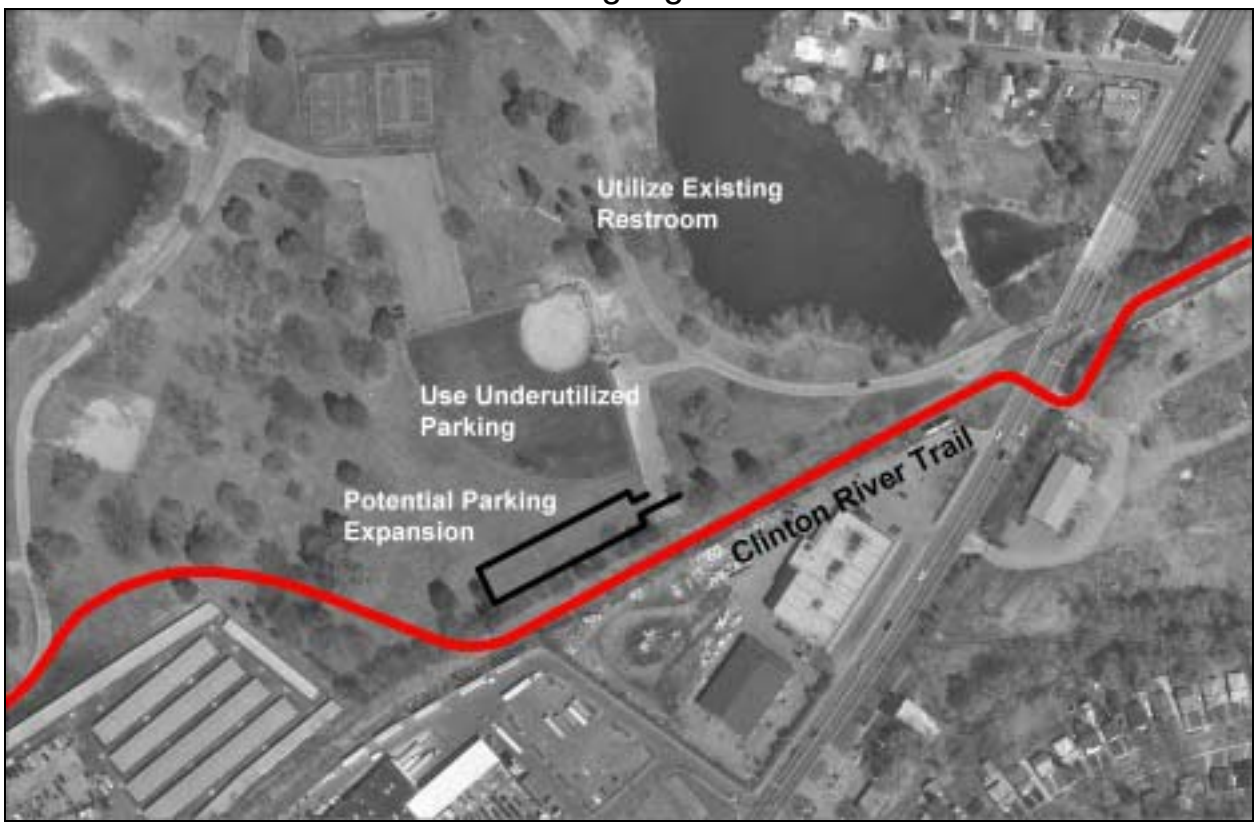
An access point is low key facility providing a minimum of amenities that is typically used by people familiar with the trail who are generally more self sufficient.

Typical Elements:

- Car Parking Area
- Orientation Kiosk
- Trash/Recycle Bins

Staging Area and Access Point Locations

Beaudette Park Potential Staging Area



Issues and Recommendations:

- Nearest proposed staging areas or access area is Hayes Jones High School 1.2 miles to the east.
- Existing facilities include:
  - A parking lot of 35,000 sq. ft. used for events at the softball diamond but generally underutilized.
  - Existing restroom facility on the property.
- Room for potential parking expansion along trail if needed

Hayes Jones Community Center Potential Access Point

This historic drinking fountain at Hayes Jones Community Center

Issues and Recommendations:

- Nearest proposed staging or access areas are Beaudette Park 1.2 miles to the west and Opdyke Road 4.5 miles to the east.
- Room for potential parking expansion along trail if needed
- Existing facilities include:
  - Existing parking lot that is underutilized after community center hours
  - Existing historic ornamental water fountain
  - Existing restroom facility on the property that may be available during community center hours

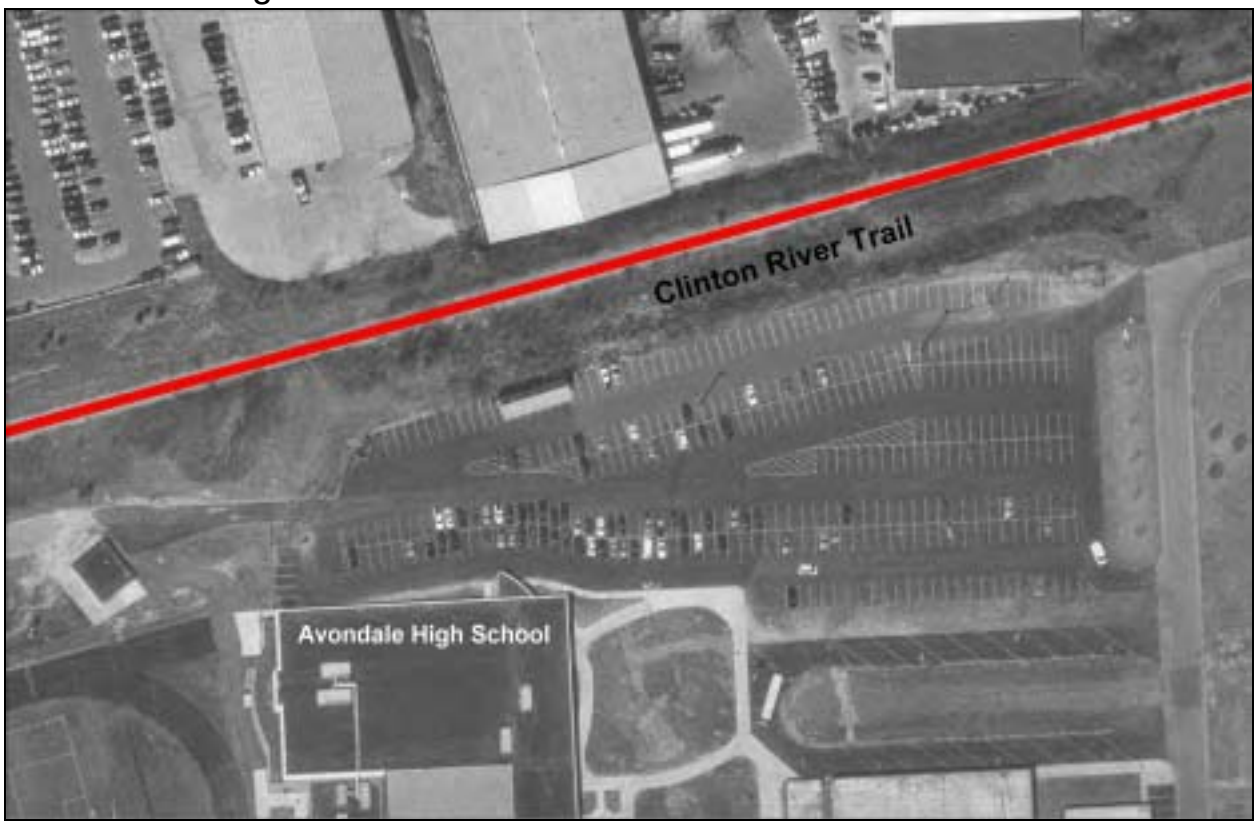
Opdyke Road Potential Access Point

Looking west along the railroad corridor across Opdyke Road, the staging area would be in the left of the photo

Issues and Recommendations:

- Nearest proposed staging or access areas are Hayes Jones 4.5 miles to the west and Avondale High School .7 miles to the east.
- No existing facilities
- Room for potential parking lot on the city owned parcel to the northeast of trail.

Avondale High School Potential Access Point



Issues and Recommendations:

- Nearest proposed staging or access areas are Opdyke Road .7 miles to the west and Hamlin Road 3.8 miles to the east.
- Existing facilities include:
  - Existing parking lot that is underutilized after school hours

Hamlin Road Potential Staging Area

Issues and Recommendations:

- Nearest proposed staging or access areas are Avondale High School 3.8 miles to the west and Veteran's Memorial Park 1.2 miles to the east.
- No existing facilities
- Room for staging area on south side of trail which is currently city-owned property. Staging area would include with a parking lot, a restroom, information kiosk, and picnic areas.

Veteran's Memorial Park Potential Access Point

Veteran's Memorial Park

Issues and Recommendations:

- Nearest proposed staging or access areas are Hamlin Road 1.2 miles to the west and First Street 1.5 miles to the east.
- Veteran's Memorial Park is 300' from the Clinton River Trail crossing at Livernois Road
- Existing facilities include:
  - 8 parking spaces

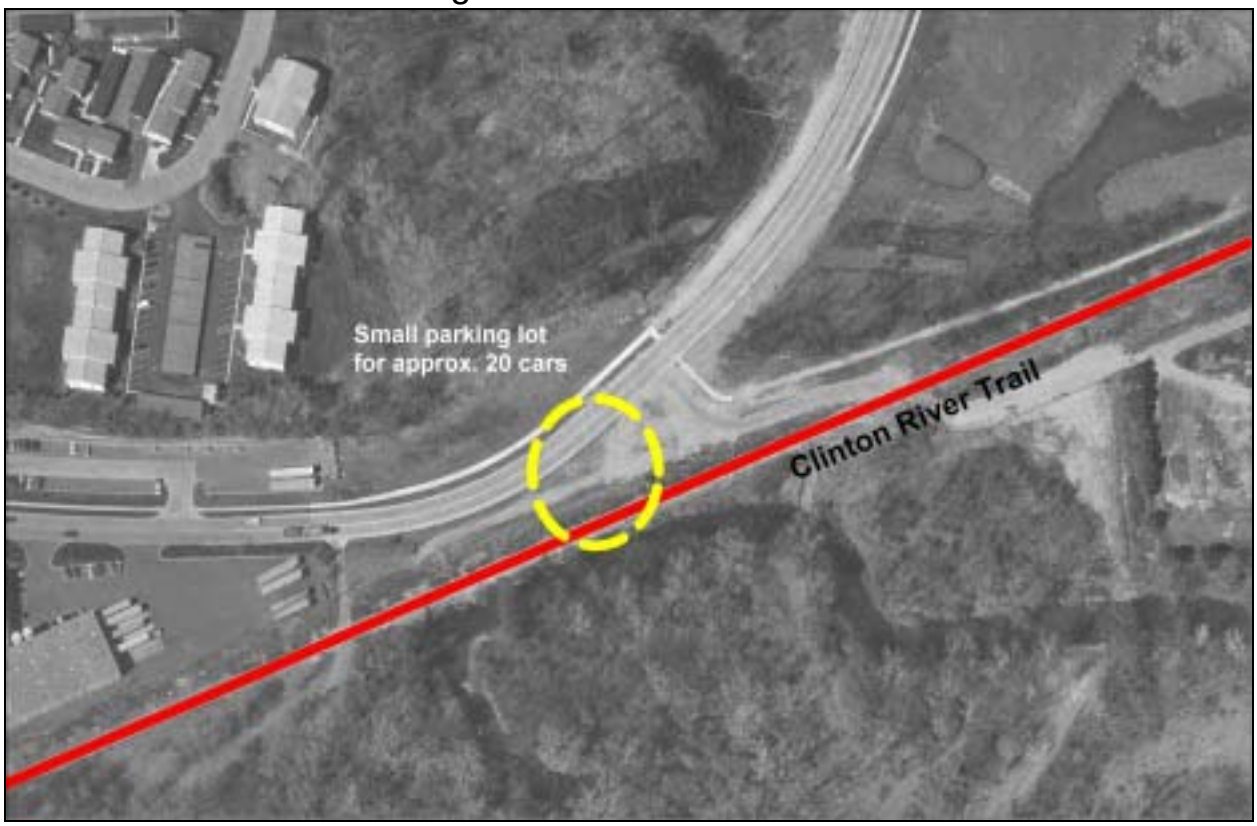
Potential First Street Staging Area

Looking east along the railroad corridor as it passes underneath the Rochester road viaduct

Issues and Recommendations:

- Nearest proposed staging or access areas are Veteran's Memoria1 Park 1.5 miles to the west and Second Street .9 miles to the east.
- Numerous developments are planned for this area that preclude a definitive location of a staging area at this time.
- A clear connection between the trail and the Downtown area should be established through use of signage and increased bike and pedestrian facilities along the chosen route.
- The location of the staging area and the connections between the trail and downtown should address the potential for misuse of available parking by either trail users or downtown shoppers.
- MDOT has jurisdiction of the property under the Rochester Road viaduct.

Second Street Existing Access Point

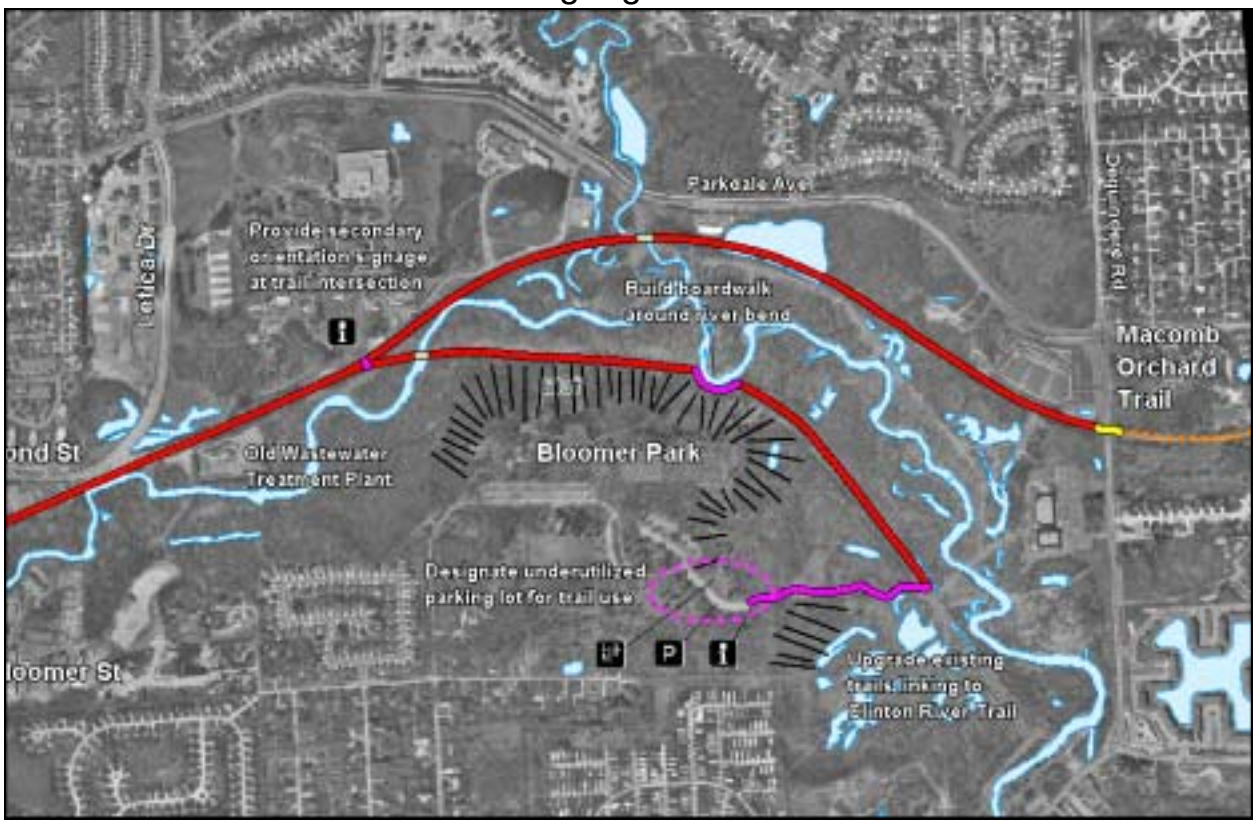


The Second Street Staging Area

Issues and Recommendations:

- Nearest proposed staging or access areas are a potential staging area to be built in Rochester, 0.9 miles to the west and Bloomer Park 1.4 miles to the east.
- Existing facilities include:
  - Small parking lot built for Clinton River Trail users

Bloomer Park Potential Staging Area



Bloomer Park

Issues and Recommendations:

- Nearest staging or access area is Second Street 1.4 miles to the west.
- Existing facilities include:
  - Large underutilized parking lot at eastern end of park.
  - Restroom facilities
- Existing trails connecting to Clinton River Trail through park need upgrading including a boardwalk at the river's bend and grading of the steep trail to the parking lot at the top of the park.
- Bloomer Park is the junction of the Clinton River Trail, the Paint Creek Trail and potential trails continuing along the Clinton River to the south. A kiosk with regional trail information is recommended here.

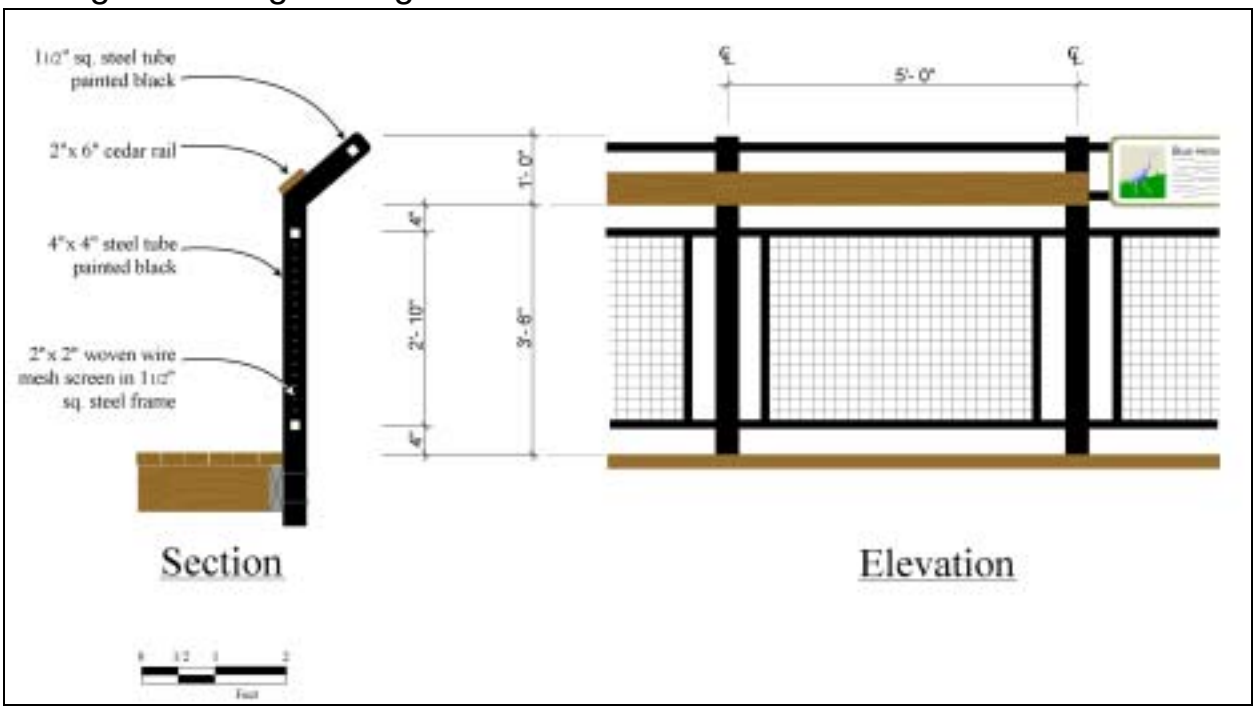
5. Bridges and Overlooks

Both bridges and overlooks serve as exciting events along a rail-trail. Although safety is the primary consideration for bridge design, if it is designed well, a bridge can act as an amenity along a multi-use trail such as the Clinton River Trail. Trail users tend to collect along the bridges and overlooks to rest and contemplate the views. Therefore, their design should be aesthetically pleasing as well as safe. Specific construction specifications vary from bridge to bridge and a careful inventory of the site and/or existing structures is needed before proceeding with the design and development of the bridge structures. Likewise, the design of each overlook will vary from site to site. Overlooks should be carefully sited so as to provide optimal views of the river while incurring the least amount of environmental impact along the riverbank.

Existing bridges will often need to be resurfaced to make them usable for bicyclists and walkers. The new bridge decking should be made of a durable, non-slip material that fits as seamlessly as possible with the trail edge. The trail should be widened at the approach to the bridge to accommodate possible congestion. Bridge railings are another safety feature of the bridge the design of which can greatly enhance the experience of the bridge. Bridge railings should be simple, safe, and unobtrusive. On the following pages are some suggestions for the design of general features of bridge railings and overlooks.

Bridges and Overlook Locations

Bridge Railing Design Guidelines

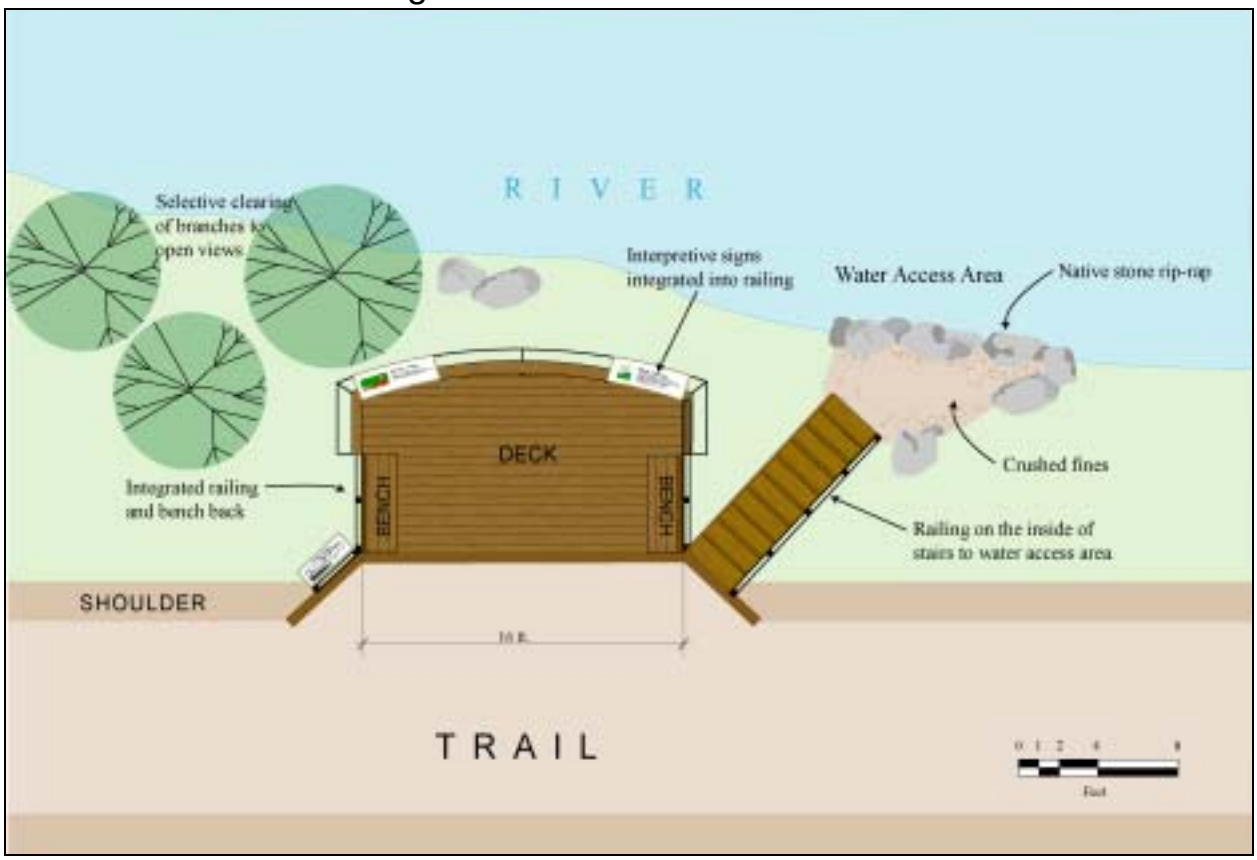


Existing open deck bridge over the Clinton River in Pontiac

Design Features:

- The retracted angle of the railing top allows bikes to be ridden close to the railing of the bridge without the handle-bars colliding with the top safety bars of the railing.
- The retracted angle of the railing allows the top portion of the railing to serve as a base for interpretive signage.
- The black steel tubing and woven wire mesh is designed to be simple and unobtrusive while providing protection to bicyclists, pedestrians and small children.

Overlook Deck Design Guidelines



View of the Clinton River in Pontiac

Design Features:

- Site-specific design of the overlooks is encouraged to minimize environmental impact along the riverbank.
- Elevated deck features include interpretive signage integrated into the railings (see illustration above), benches, and trail location signage.
- Elevated steps leading down to the water access area minimize erosion on riverbank slope.
- Water access area is minimally developed to reduce damage to riverbank habitat.

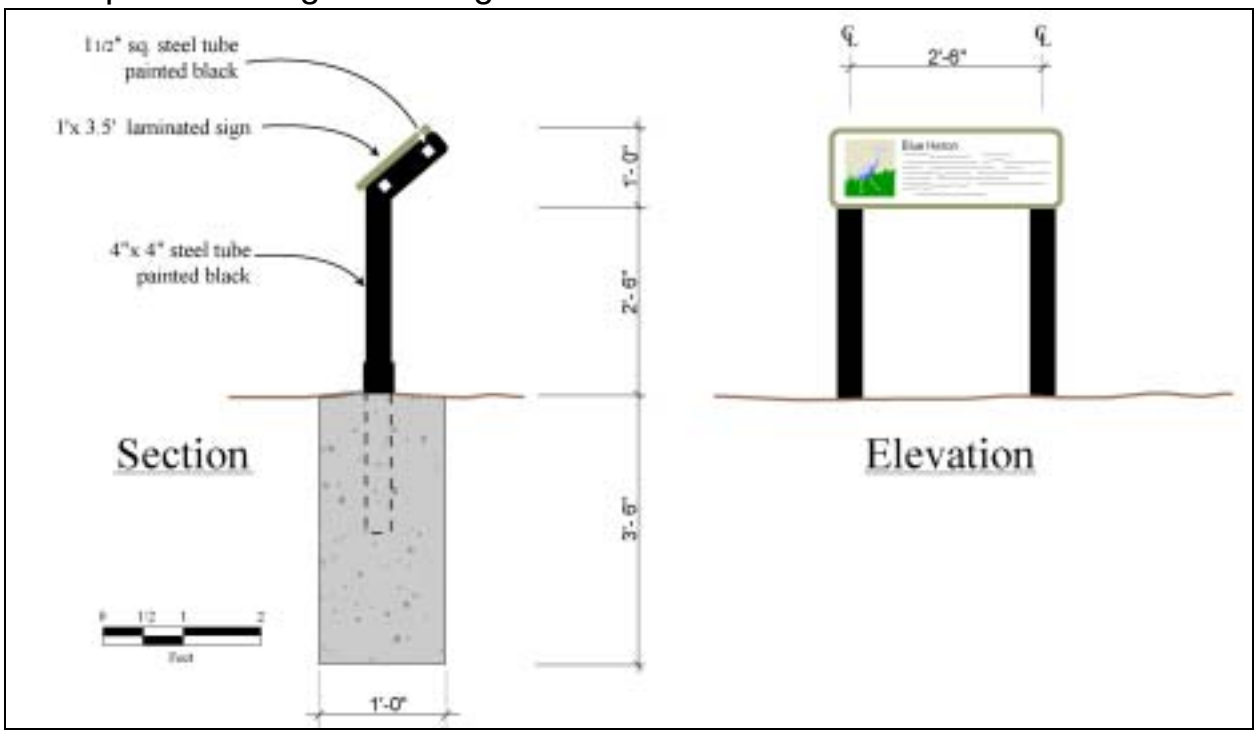
6. Interpretation System

Interpretive signage along the Clinton River Trail can give the trail a unique character and increase people's appreciation of the history of the area. There are many different opportunities for interpretation along the trail. Public input clearly showed a preference for highlighting aspects of both the natural and cultural history of the Clinton River (see Appendix for further discussion of theme options). This could include providing interpretation of historically significant points along the trail such as canal and mill structures or ecological and geological phenomenon such as native prairie remnants, local animal habitats, or evidence of the glacial history of the area.

Whatever features are chosen for interpretation along the trail, careful and thoughtful use of signage can greatly enhance a user's experience of the trail. Several important considerations for the design and use of interpretive signage are:

- Keep signage consistent in design along the length of the trail to establish a sense of continuity and character. Repetition of a sign design, color scheme or logo along the trail reinforces the image of a common trail identity through different jurisdictions.
- Signs should be clearly legible, understandable, and be made of fade-proof and weather-proof surface materials and inks.
- Signs should be durable and require minimal maintenance.
- Signs should be placed to prevent obstruction or collision along the trail. Place signs in clear areas at least 4' off the side of the path so groups of pedestrians, wheelchair users or people on bicycles can be completely out of the travel lane while reading signs.
- Self-guided interpretive systems with simple numbered posts may be used along the trail. The river overlooks may be used for large interpretive signs that introduce the tour and as a place to distribute self-guided tour pamphlets.

Interpretive Signs Design Guidelines



Design Features:

- The design of the interpretive signs matches the design features of the bridge railings and overlook decks, providing a design vocabulary along the trail that is consistent and uniform.
- The black steel tubing of the posts is durable, weather-proof, and unobtrusive.
- The steel post is bolted to a concrete footing to enhance its durability and the ease with which it can be replaced or repainted.

7. Pontiac Routing

A gap in railroad corridor ownership requires that an alternative route be found between Bagley Street and Opdyke Road through Pontiac. While this may appear at first to be a negative, the rerouting allows the Clinton River Trail to pass through areas of Pontiac that are much more interesting than the portion of abandoned corridor that was unable to be purchased. The route has three distinct segments:

- Downtown Pontiac – where the trail is comprised of bike lanes and sidewalks and takes people to the heart of revitalized downtown Pontiac
- Along the Clinton River – where the trail parallels the river through previously inaccessible natural areas
- On the Northern Spur Rail Line – where the trail follows another abandoned rail line over numerous busy roads and through scenic landscapes

Downtown Pontiac

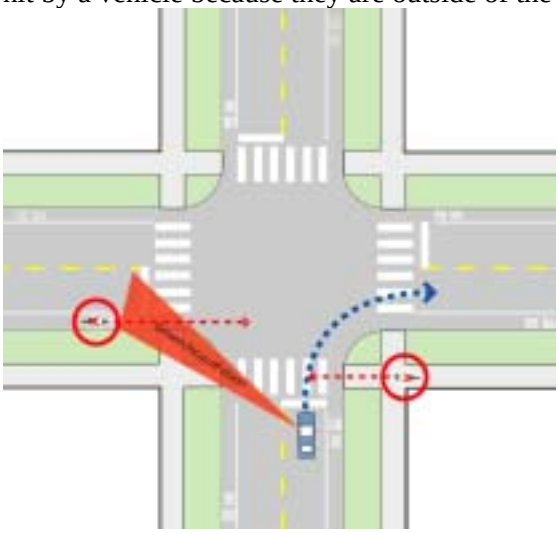
Accommodating bike and pedestrian traffic through the streets of downtown Pontiac requires a different solution than when the trail is within its own corridor. The trail will consist of bike lanes, sidewalks and improved landscaping. The area between the curb and the sidewalk will be improved with trees every thirty feet and all of the intersections will be optimized for bicycle and pedestrian travel. Given the traffic dynamics and the space limitations, accommodating bicycles in the roadway is the only safe and prudent approach.

Research shows that the safest and most comfortable way to accommodate bicycles in a typical urban area is with bike lanes and sidewalks, versus a shared sidepath alongside the road. Sidepaths are statically the most dangerous place to bicycle due to conflicts with motor vehicles at intersections and driveways. This is due to bicycles moving quickly, often opposite of the flow of traffic, outside of field of vision of motorists making turning movements.

The bike lanes indicated are wider than typical bike lanes and should provide a high level of comfort for even novice adult cyclists. The pavement markings within the bike lanes will alert motorists to the presence of bikes in the roadway and indicate to cyclists to bicycle with the traffic flow. The bike lanes have also been shown to help calm fast moving traffic in some situations.

Bicycle Lane Visibility Vs. Sidewalk Visibility

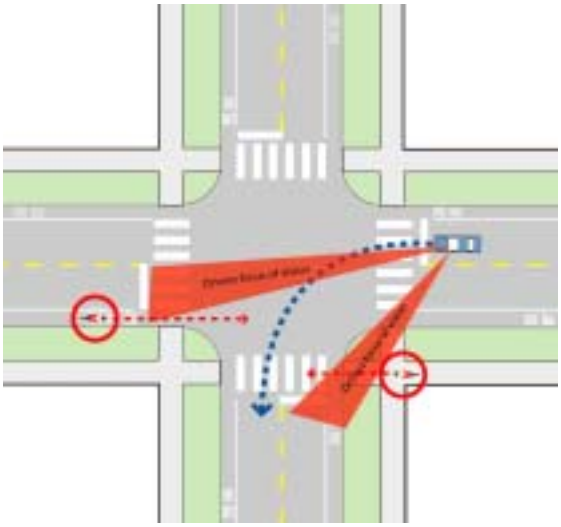
Bicycles traveling the opposite direction of traffic on sidewalks have significantly greater chance of being hit by a vehicle because they are outside of the driver's typical field of view



Car turning right

Bicyclist in Bike Lane is in the driver's focus of vision as they scan oncoming traffic and is easily seen.

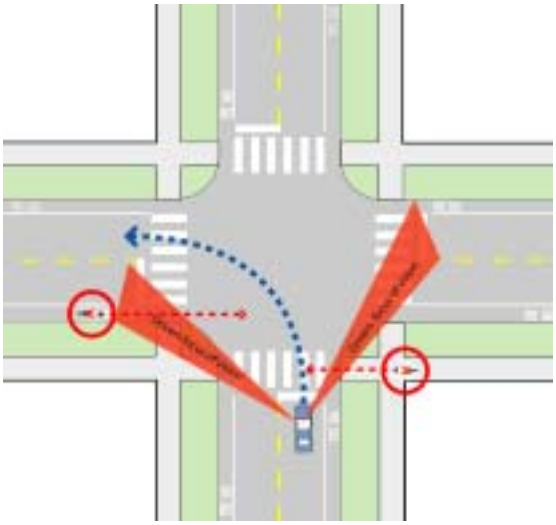
Bicyclist on Sidepath/Sidewalk is not in the driver's focus of vision and can't easily be seen until just before impact.



Car turning left

Bicyclist in Bike Lane is in the driver's focus of vision as he/she scans oncoming traffic and is easily seen.

Bicyclist on Sidepath/Sidewalk is not in the driver's focus of vision and can't easily be seen until they are in crosswalk.

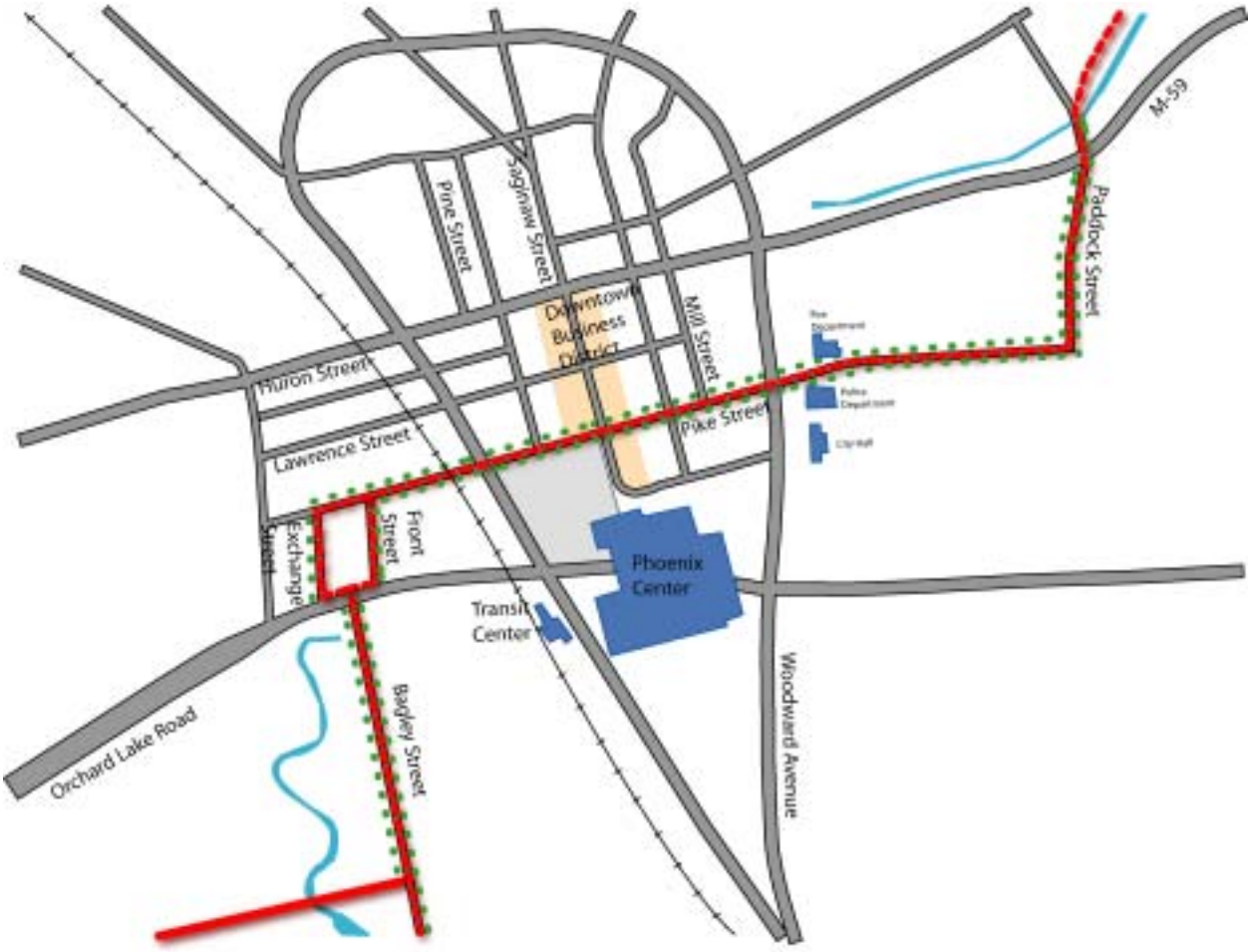


Car turning left

Bicyclist in Bike Lane is in the driver's focus of vision and is easily seen.

Bicyclist on Sidepath/Sidewalk is not in the driver's focus until just before impact.

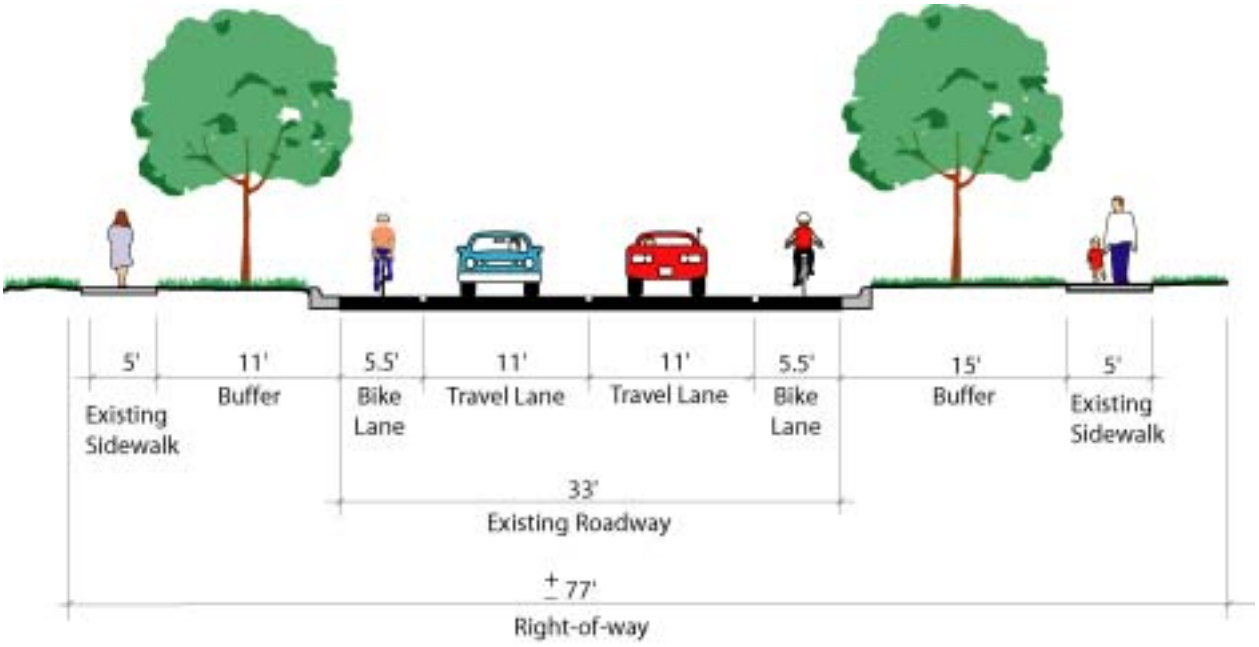
Downtown Pontiac Trail Routing



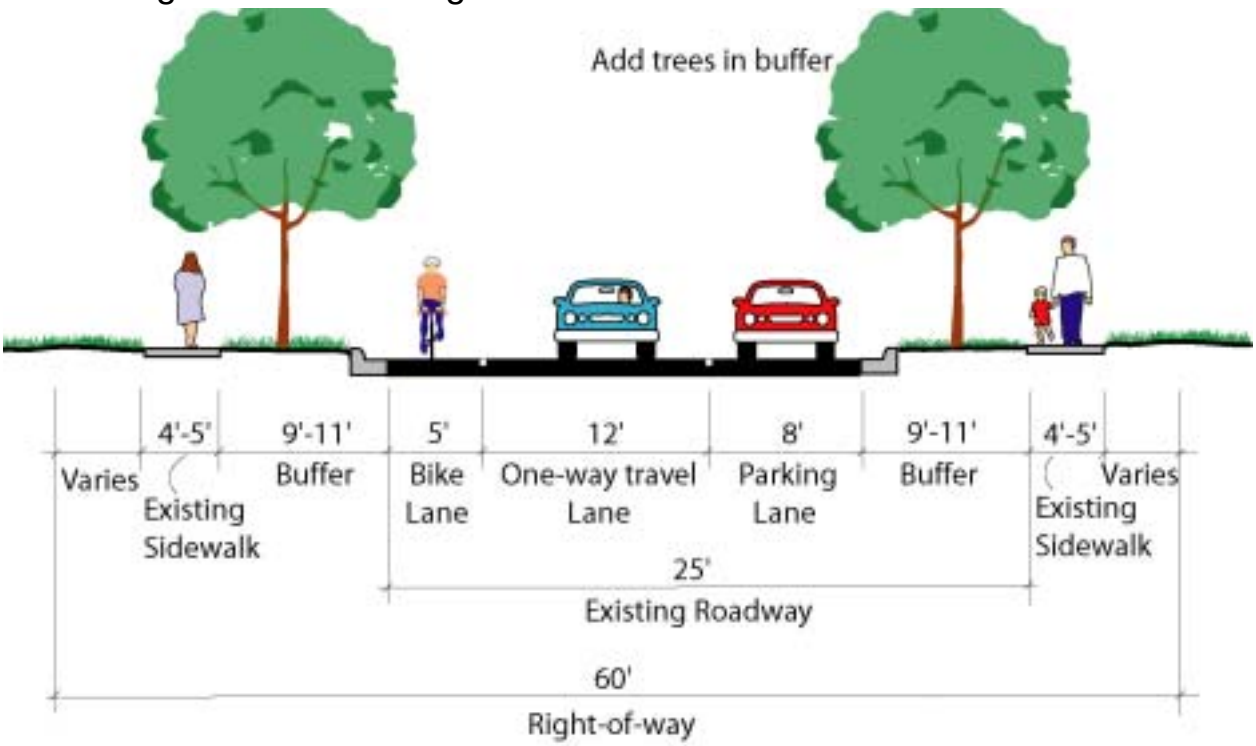
The illustration above shows the sidewalk and bike lane segment of the Clinton River Trail as it threads its way through downtown Pontiac. The solution has the added benefit of providing neighborhoods east and west of the downtown with a new pedestrian and bicycle friendly way into the downtown and across the Woodward Avenue "Loop."

The following pages show how the existing road system can be converted to accommodate bike lanes with minimal changes needed.

Bagley Street Design Guidelines

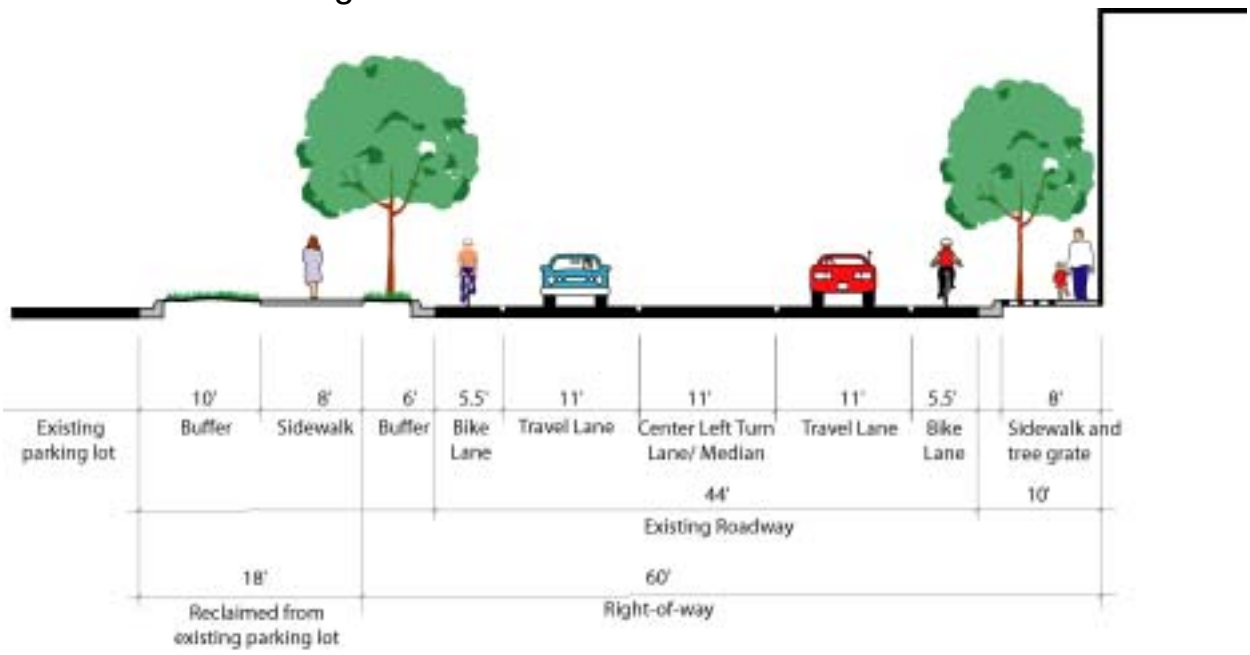


Exchange Street Design Guideline

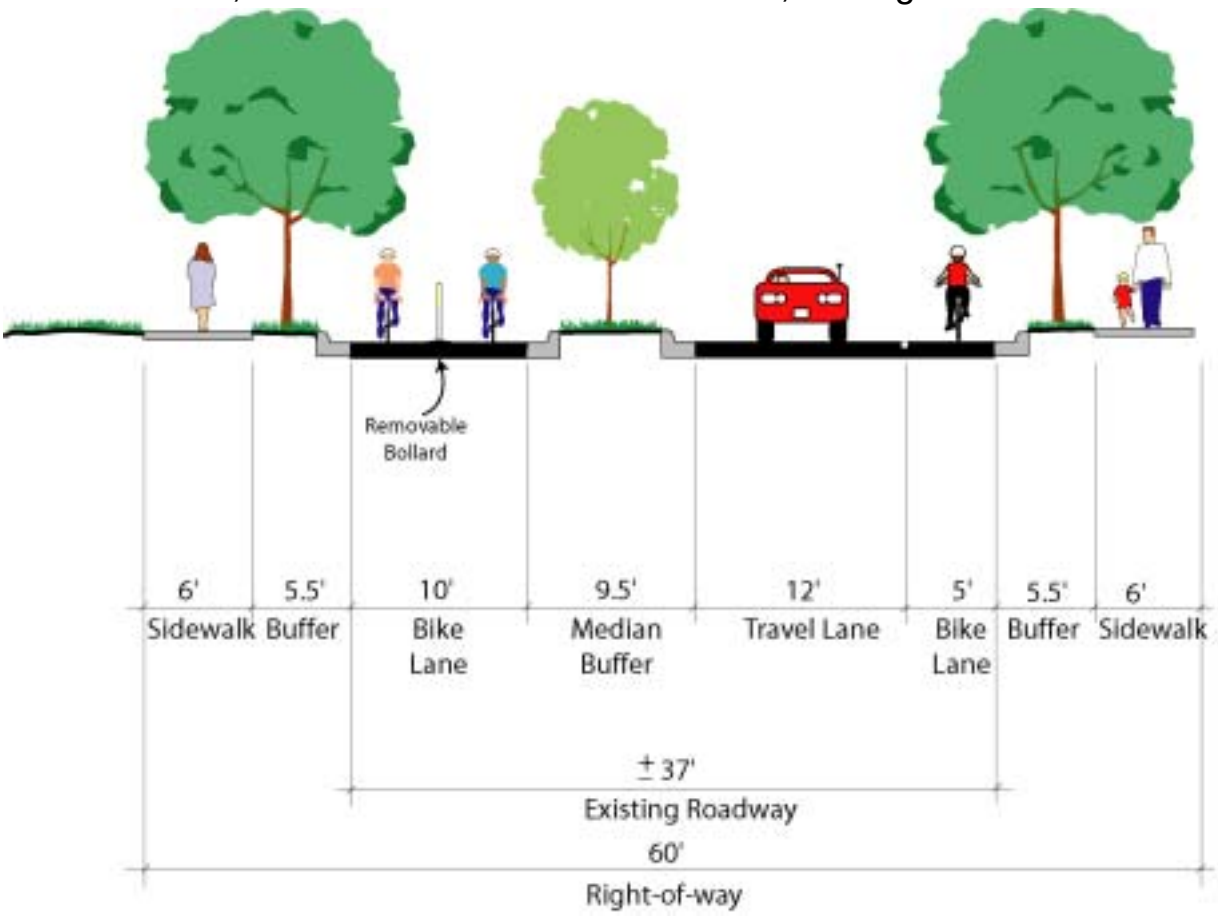


Note: Convert from two-way street to one-way street with bike lane.
If one-way conversion is not feasible, mark segment as a Bike Route.

Pike Street Design Guidelines



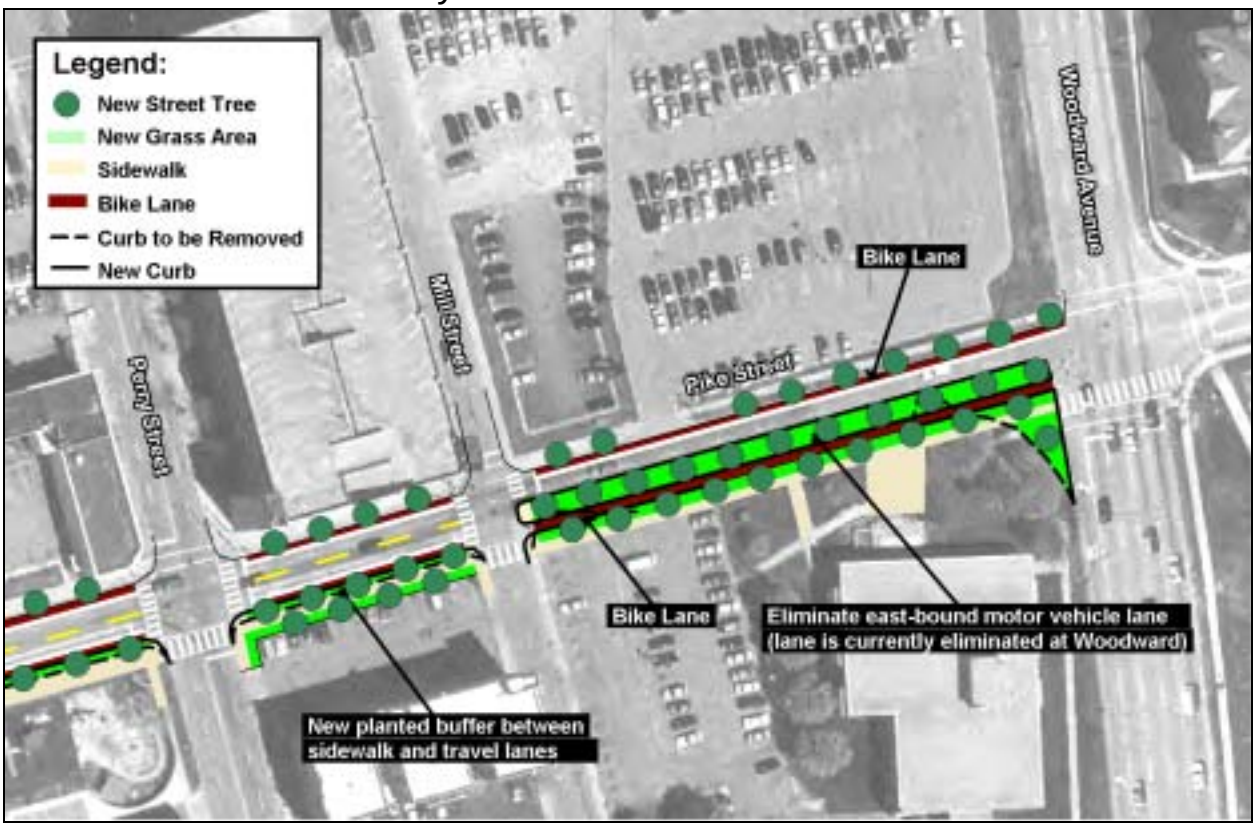
Pike Street, Mill St. East to Woodward, Design Guidelines



Pike Street looking west from Woodward Avenue

Pike Street looking east from Perry Street. Note that the east bound traffic is currently halted at Mill Street

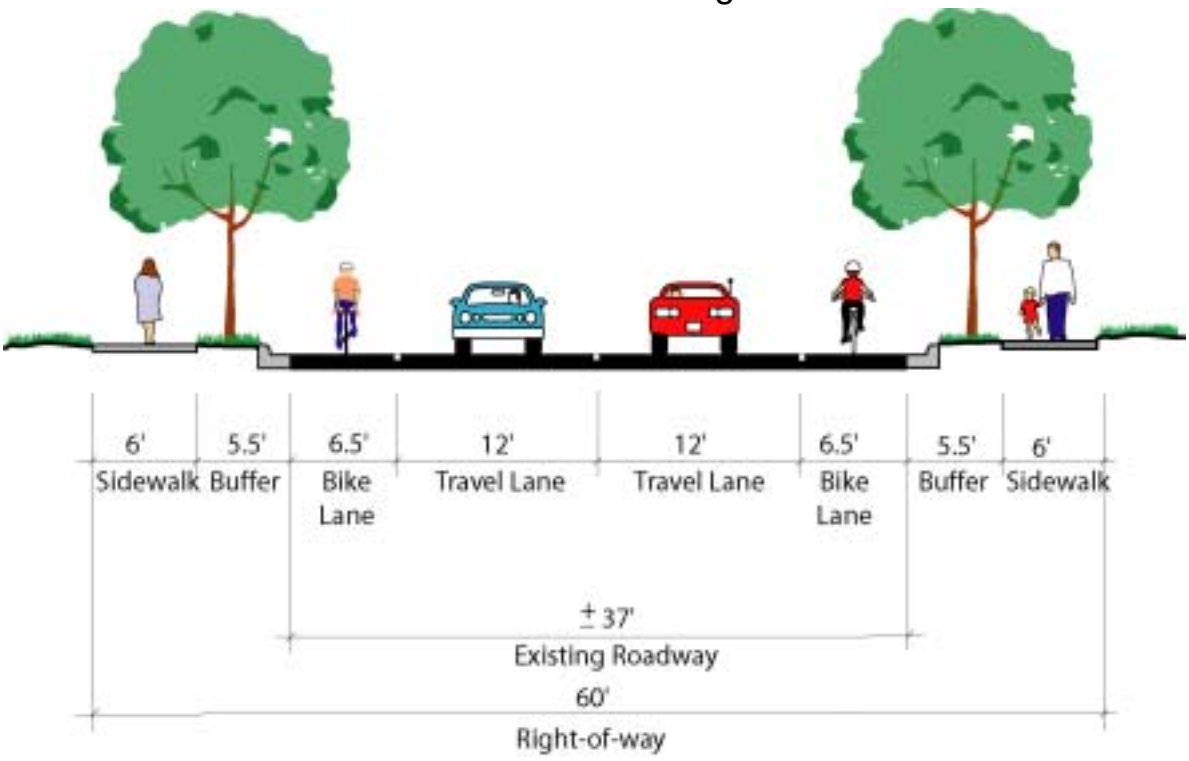
Pike Street from Perry Street to Woodward Avenue



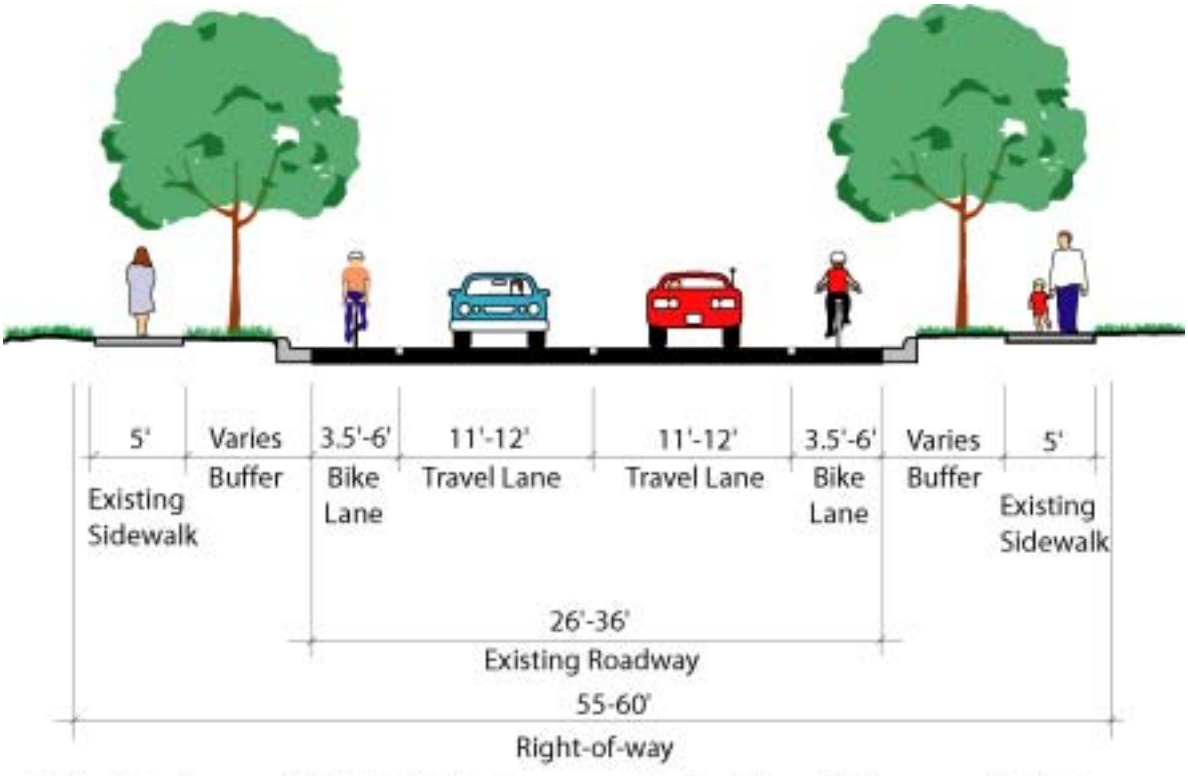
Design Features:

- A landscaped island is placed in the unused portion of the Pike Street between Mill Street and Woodward Avenue where eastbound traffic is currently banned.
- An eastbound bike lane is provided on the south side of the new landscaped island.
- Access to the surface parking lot at the southeast corner of Mill Street and Pike Street is changed from Pike Street to Mill Street to minimize conflicts with the eastbound bike lane.
- The two westbound motor vehicle lanes along Pike Street west of Mill Street are reduced to one westbound motor vehicle lane to make room for bike lanes.
- The curb on the south side of Pike Street west of Mill Street is moved north about five feet to provide a landscaped buffer between the road and the sidewalk.

Pike Street East of Woodward Design Guidelines



Paddock Street Facilities Guidelines



Note: Short segment of Paddock Street may need to be widened to incorporate bike lanes

Along the Clinton River in Pontiac Segment

View along the Drain Commission's Property

From Paddock Street, east to the Northern Spur abandoned rail corridor, the trail follows the Clinton River mostly within property controlled by the Oakland County Drain Commission and Michigan Department of Transportation. This area has no current public access and is an under-utilized natural treasure in the heart of Pontiac.

This segment of the trail presents outstanding scenery and wildlife viewing opportunities. Foxes and Great Blue Herons were spotted during site visits.

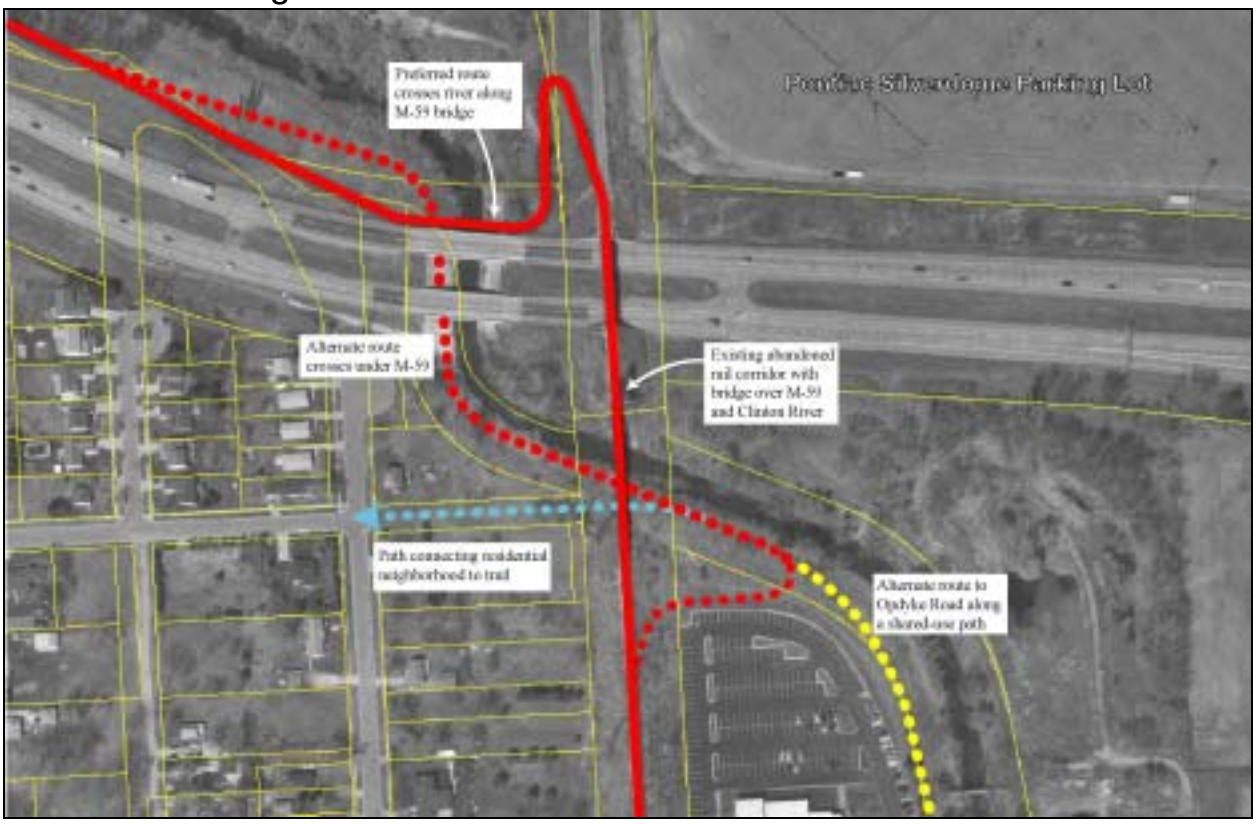
For most of the length, there is a wide-open flat grassy area that is currently mowed for maintenance vehicles. This route would be ideal for a trail.

By locating the trail on the north side of the Clinton River, it would be accessible to Pontiac's northern neighborhoods via University Drive and Martin Luther King, Jr. Drive.

M-59 looking west from the railroad bridge

M-59 Bridge over the Clinton River looking north

M-59 Crossing Alternatives



Northern Spur Rail Line bridge over the Clinton River

There are several alternatives for linking the Clinton River Segment to the Northern Spur Segment. This requires either going above or under M-59 east of the Pontiac Silverdome Parking Lot:

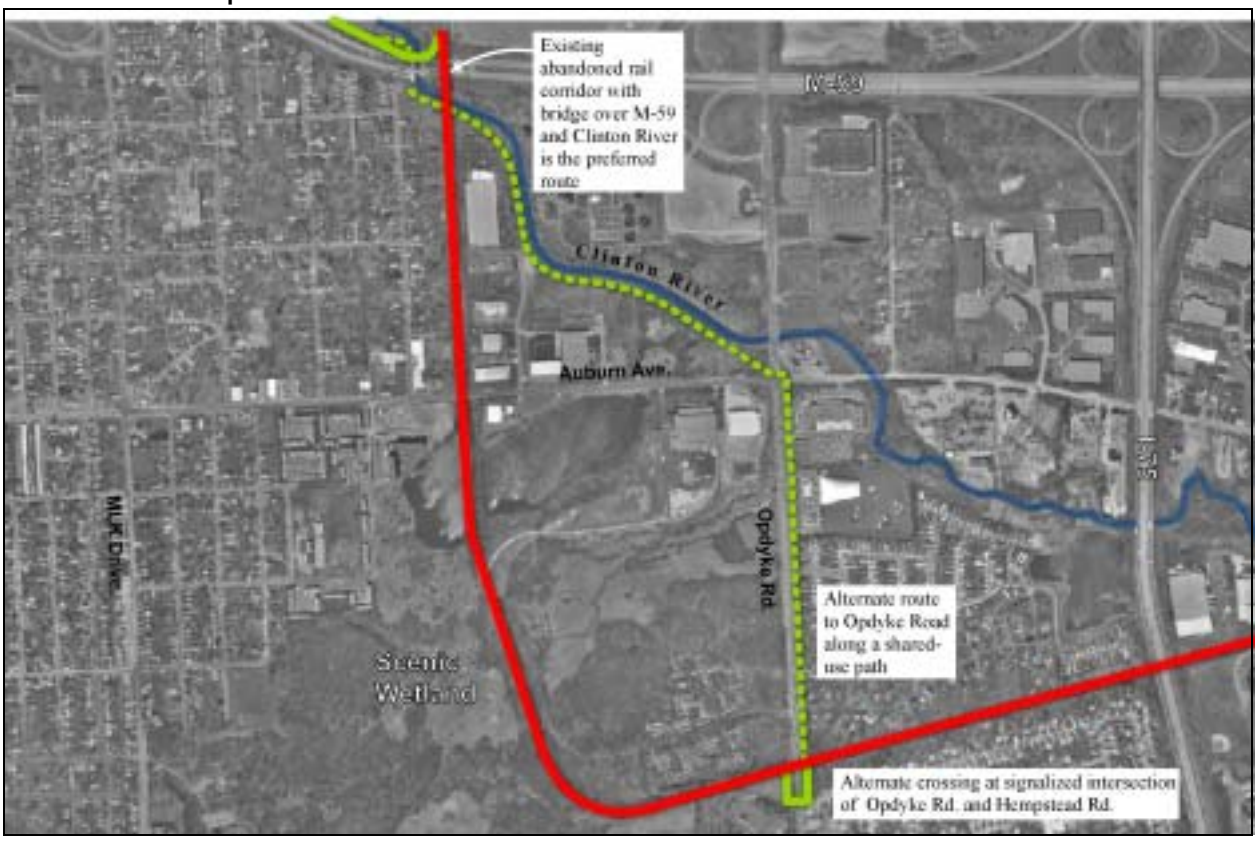
- Option 1 is to cross the Clinton River on a bridge parallel to M-59 then switchback up to the railroad grade and use the existing bridges to cross M-59 and the Clinton River.
- Option 2 is pass under M-59 then switchback up to the railroad grade.

Option 1 is preferred because of the personal safety that is perceived as greater on an overpass vs. an underpass, the scenic view of the Clinton River from the bridge, and the benefit of maintaining a non-motorized connection that links Pontiac's southwest neighborhoods to the Pontiac Silverdome site.

Landscape along the Northern Spur Rail Line
Photo by Todd Scott

View of the large wetland along the Northern Spur Rail Line
Photo by Todd Scott

Northern Spur Rail Line Overview



Looking south along the Northern Spur Rail Line just south of Auburn Avenue

While the Northern Spur Rail Line has not yet been purchased by a public entity, it is without a doubt the best alternative to get from the Clinton River Segment back to the original railroad corridor. The City of Pontiac is interested in purchasing the property as it allows a number of options for future use by utilities and potentially by any redevelopment of the Silver Dome property. The cost of the corridor necessitates a joint venture that can draw upon outside public and/or private funds. The use of the corridor as a trail opens up numerous funding opportunities.

The abandoned railroad corridor would provide some of the best scenery of the entire Clinton River Trail and provide safe overpasses of two busy roads.

The portion of the alternate route that uses the Opdake Road sidepath is not suitable for the trail for safety reasons. The portion that would be built along the river has numerous construction challenges that would be costly to overcome.

8. Implementation Plan

The following Preliminary Site Development Cost Opinions are based on the improvements shown in the preceding pages. The cost opinions are organized by community and are followed by a number of worksheets that apply to the project as a whole. The following worksheets are included:

- Sylvan Lake Preliminary Site Development Cost Opinions
- Pontiac Preliminary Site Development Cost Opinions
- Auburn Hills Preliminary Site Development Cost Opinions
- Rochester Hills Preliminary Site Development Cost Opinions
- Rochester Preliminary Site Development Cost Opinions
- Paving Cost Worksheet
- Clinton River Trail Summary and Funding Strategy
- Clinton River Trail Phasing Summary

The unit prices used in the cost opinions are largely drawn form *RSMeans 2003 Site Work & Landscape Cost Data* adjusted appropriately.

For the trail surfacing a 10' wide Asphalt / Stabilized Fines trail was used uniformly. At the time of printing it appears as if the cost of Asphalt and Stabilized Fines are about the same. It is felt that the long-term maintenance benefits of the Stabilized Fines outweigh the short term cost savings of loose fines. Loose fines are only about 22% less expensive than the stabilized fines. All unit prices as well as the supporting worksheets have been included so that alternatives may be evaluated.

Sylvan Lake Segment

Preliminary Site Development Cost Opinion

Item	Qty.	Unit	Unit Cost	Item Total
Trail				
Asphalt or Stabilized Fines Rail-Trail	-	LF	$ 18.79	$ -
Fines Rail-Trail	5,219	LF	$ 14.70	$ 76,698.91
ResinPave Rail-Trail	-	LF	$ 34.02	$ -
Asphalt or Stabilized Fines Shared-use Path	-	LF	$ 18.79	$ -
Trim and Clear Vegetation	5,219	LF	$ 0.05	$ 243.55
Rubbish Removal Allowance	5,219	LF	$ 0.06	$ 334.10
Drainage Ditch Restoration Allowance	5,219	LF	$ 0.06	$ 313.14
Temporary Silt Fence Allowance	5,219	LF	$ 0.07	$ 370.55
Mile Markers, Interp. Posts, & Bench Allow.	5,219	LF	$ 0.40	$ 2,103.42
				$ 80,063.66
Orchard Lake Road West Road Intersection				
Sawcut Pavement	190	LF	$ 1.95	$ 370.50
Remove and Dispose of Pavement	156	SY	$ 6.89	$ 1,074.84
Remove and Dispose of Curb	90	LF	$ 3.69	$ 332.10
Road Pavement	0	SY	$ 14.71	$ -
Shoulder Pavement	0	SY	$ 14.71	$ -
Curb and Gutter	215	LF	$ 19.20	$ 4,128.00
Asphalt Trail	90	LF	$ 18.79	$ 1,691.36
6" Concrete Sidewalk	4100	SF	$ 5.45	$ 22,345.00
Trail Identification and Orientation Signs	4	Each	$ 1,400.00	$ 5,600.00
Trail Regulatory and Warning Signs	4	Each	$ 100.00	$ 400.00
Road Regulatory and Warning Signs	6	Each	125	$ 750.00
Thermoplastic 4" Wide Pvmt. Markings	700	LF	$ 0.87	$ 609.00
Thermoplastic 1' Wide Pvmt. Markings	110	LF	$ 2.47	$ 271.70
Thermoplastic Crosswalk/Stop Bars	240	SF	$ 2.47	$ 592.80
Thermoplastic Arrows and Yield Symbols	40	SF	$ 5.36	$ 214.40
Thermoplastic Bike Symbol	4	Each	$ 45.73	$ 182.92
48" Pavement Marking Letters on Path	14	Each	$ 24.21	$ 338.94
96" Pavement Marking Letters on Road	16	Each	$ 83.20	$ 1,331.20
Detectable Warning Strip	80	SF	$ 30.00	$ 2,400.00
Culvert Drain	0	Each	$ 831.40	$ -
Earthwork	1	LS	$ 1,000.00	$ 1,000.00
Median Landscape	550	SF	$ 1.25	$ 687.50
Approach Landscape	2000	SF	$ 0.85	$ 1,700.00
Shade Trees	6	Each	$ 350.00	$ 2,100.00
				$ 48,120.26

Minor Road Intersections				
Inverness Avenue	1 LS	$ 12,693.09	$	12,693.09
			$	**12,693.09**
Subtotal			**$**	**140,877.00**
Contingency	15%		$	21,131.55
Construction Subtotal			**$**	**162,008.55**
Construction Documents and Admin.	10%		$	16,200.86
Segment Total			**$**	**178,209.41**

Pontiac Segment

Preliminary Site Development Cost Opinion

Not including corridor acquisition

Item	Qty.	Unit	Unit Cost	Item Total
Trail				
Asphalt or Stabilized Fines Rail-Trail	13,829	LF	$ 18.79	$ 259,886.35
Fines Rail-Trail	-	LF	$ 14.70	$ -
ResinPave Rail-Trail	-	LF	$ 34.02	$ -
Asphalt or Stabilized Fines Shared-use Path	10,585	LF	$ 18.79	$ 198,922.33
Bike Lane Signage and Striping	10,503	LF	$ 22.50	$ 236,289.07
Trim and Clear Vegetation - Rail-Trail	13,829	LF	$ 0.05	$ 645.35
Clear Vegetation Shared-use Path	10,585	LF	$ 2.32	$ 24,543.97
Rubbish Removal Allowance	24,414	LF	$ 0.06	$ 1,562.87
Drainage Ditch Restoration Allowance	24,414	LF	$ 0.06	$ 1,464.84
Temporary Silt Fence Allowance	24,414	LF	$ 0.07	$ 1,733.39
Mile Markers and Bench Allowance	24,414	LF	$ 0.40	$ 9,839.58
				$ 734,887.75
Telegraph Avenue Road Intersection				
Sawcut Pavement	207	LF	$ 1.95	$ 403.65
Remove and Dispose of Pavement (on island)	193	SY	$ 6.89	$ 1,329.77
Remove and Dispose of Curb	207	LF	$ 3.69	$ 763.83
Road Pavement	0	SY	$ 14.71	$ -
Shoulder Pavement	0	SY	$ 14.71	$ -
Curb and Gutter	356	LF	$ 19.20	$ 6,835.20
Asphalt Trail	1250	LF	$ 18.79	$ 23,491.06
6" Concrete Sidewalk	1500	SF	$ 5.45	$ 8,175.00
Pedestrian Actuated Signal	1	LS	$ 27,438.00	$ 27,438.00
Trail Identification and Orientation Signs	4	Each	$ 1,400.00	$ 5,600.00
Trail Regulatory and Warning Signs	4	Each	$ 100.00	$ 400.00
Road Regulatory and Warning Signs	10	Each	125	$ 1,250.00
Thermoplastic 4" Wide Pvmt. Markings	400	LF	$ 0.87	$ 348.00
Thermoplastic 1' Wide Pvmt. Markings	40	LF	$ 2.47	$ 98.80
Thermoplastic Crosswalk/Stop Bars	769	SF	$ 2.47	$ 1,899.43
Thermoplastic Arrows	4	SF	$ 5.36	$ 21.44
Thermoplastic Bike Symbol	10	Each	$ 45.73	$ 457.30
48" Pavement Marking Letters on Path	14	Each	$ 24.21	$ 338.94
96" Pavement Marking Letters on Road	40	Each	$ 83.20	$ 3,328.00
Detectable Warning Strip	140	SF	$ 30.00	$ 4,200.00
Culvert Drain	0	Each	$ 831.40	$ -
Earthwork	1	LS	$ 1,000.00	$ 1,000.00
Median Landscape	3225	SF	$ 1.25	$ 4,031.25
Approach Landscape	4000	SF	$ 0.85	$ 3,400.00
Shade Trees	6	Each	$ 350.00	$ 2,100.00
				$ 96,909.67

Orchard Lake Road East Intersection

Sawcut Pavement	1810	LF	$	1.95	$ 3,529.50
Remove and Dispose of Pavement	450	SY	$	6.89	$ 3,100.50
Remove and Dispose of Curb	1480	LF	$	3.69	$ 5,461.20
Road Pavement	475	SY	$	14.71	$ 6,986.74
Curb and Gutter	1850	LF	$	19.20	$ 35,520.00
Asphalt Trail	430	LF	$	18.79	$ 8,080.93
6" Concrete Sidewalk	110	SF	$	5.45	$ 599.50
Trail Identification and Orientation Signs	4	Each	$	1,400.00	$ 5,600.00
Trail Regulatory and Warning Signs	4	Each	$	100.00	$ 400.00
Road Regulatory and Warning Signs	7	Each		125	$ 875.00
Thermoplastic 4" Wide Pvmt. Markings	2300	LF	$	0.87	$ 2,001.00
Thermoplastic 1' Wide Pvmt. Markings	610	LF	$	2.47	$ 1,506.70
Thermoplastic Crosswalk/Stop Bars	260	SF	$	2.47	$ 642.20
Thermoplastic Arrows and Yield Triangles	40	SF	$	5.36	$ 214.40
Thermoplastic Bike Symbol	4	Each	$	45.73	$ 182.92
48" Pavement Marking Letters on Path	14	Each	$	24.21	$ 338.94
96" Pavement Marking Letters on Road	16	Each	$	83.20	$ 1,331.20
Detectable Warning Strip	80	SF	$	30.00	$ 2,400.00
Culvert Drain	0	Each	$	831.40	$ -
Earthwork	1	LS	$	1,000.00	$ 1,000.00
Median Landscape	1870	SF	$	1.25	$ 2,337.50
Approach Landscape	2000	SF	$	0.85	$ 1,700.00
Shade Trees	6	Each	$	350.00	$ 2,100.00
					$ 85,908.22

Downtown Pontiac Area

Sawcut Pavement	1450	LF	$	1.95	$ 2,827.50
Remove and Dispose of Pavement	76	SY	$	6.89	$ 523.64
Remove and Dispose of Curb	698	LF	$	3.69	$ 2,575.62
Road Pavement	0	SY	$	26.63	$ -
Curb and Gutter	1450	LF	$	19.20	$ 27,840.00
Asphalt Trail	0	LF	$	34.02	$ -
Remove Old 5' Sidewalk	2500	LF	$	4.60	
New 5' Sidewalk	2500	LF	$	20.71	
Trail Identification and Orientation Signs	4	Each	$	1,400.00	$ 5,600.00
Trail Regulatory and Warning Signs	4	Each	$	100.00	$ 400.00
Road Regulatory and Warning Signs	43	Each		125	$ 5,375.00
Thermoplastic 6" Wide Pvmt. Markings	17215	LF	$	1.21	$ 20,830.15
Thermoplastic 4" Wide Pvmt. Markings	2300	LF	$	0.87	$ 2,001.00
Thermoplastic 1' Wide Pvmt. Markings	610	LF	$	2.47	$ 1,506.70
Thermoplastic Crosswalk/Stop Bars	9180	SF	$	2.47	$ 22,674.60
Thermoplastic Arrows and Yield Triangles	43	SF	$	5.36	$ 230.48
Thermoplastic Bike Symbol	43	Each	$	45.73	$ 1,966.39
48" Pavement Marking Letters on Path	0	Each	$	24.21	$ -
96" Pavement Marking Letters on Road	0	Each	$	83.20	$ -
Detectable Warning Strip	2320	SF	$	30.00	$ 69,600.00
Culvert Drain	0	Each	$	-	$ -
Earthwork	1	LS	$	1,000.00	$ 1,000.00
Median Landscape	0	SF	$	1.25	$ -
Approach Landscape	8434	SF	$	0.85	$ 7,168.90
Shade Trees	430	Each	$	350.00	$ 150,500.00
					$ 322,619.98

University Drive Intersection

Sawcut Pavement	300	LF	$	1.95	$ 585.00
Remove and Dispose of Pavement	360	SY	$	6.89	$ 2,480.40
Remove and Dispose of Curb	200	LF	$	3.69	$ 738.00
Road Pavement	0	SY	$	14.71	$ -
Shoulder Pavement	0	SY	$	14.71	$ -
Curb and Gutter	300	LF	$	19.20	$ 5,760.00
Asphalt Trail	560	LF	$	18.79	$ 10,524.00
6" Concrete Sidewalk	1050	SF	$	5.45	$ 5,722.50
Trail Identification and Orientation Signs	4	Each	$	1,400.00	$ 5,600.00
Trail Regulatory and Warning Signs	4	Each	$	100.00	$ 400.00
Road Regulatory and Warning Signs	6	Each		125	$ 750.00
Thermoplastic 4" Wide Pvmt. Markings	300	LF	$	0.87	$ 261.00
Thermoplastic 1' Wide Pvmt. Markings	10	LF	$	2.47	$ 24.70
Thermoplastic Crosswalk/Stop Bars	180	SF	$	2.47	$ 444.60
Thermoplastic Arrows and Yield Triangles	22	SF	$	5.36	$ 117.92
Thermoplastic Bike Symbol	3	Each	$	45.73	$ 137.19
48" Pavement Marking Letters on Path	14	Each	$	24.21	$ 338.94
96" Pavement Marking Letters on Road	12	Each	$	83.20	$ 998.40
Detectable Warning Strip	120	SF	$	30.00	$ 3,600.00
Culvert Drain	0	Each	$	831.40	$ -
Earthwork	1	LS	$	1,000.00	$ 1,000.00
Median Landscape	4894	SF	$	1.25	$ 6,117.50
Approach Landscape	10000	SF	$	0.85	$ 8,500.00
Shade Trees	6	Each	$	350.00	$ 2,100.00
					$ 56,200.15

Martin Luther King Drive Intersection

Sawcut Pavement	0	LF	$	1.95	$ -
Remove and Dispose of Pavement	123	SY	$	6.89	$ 847.47
Remove and Dispose of Curb	0	LF	$	3.69	$ -
Road Pavement	0	SY	$	14.71	$ -
Shoulder Pavement	22	SY	$	14.71	$ 323.60
Curb and Gutter	210	LF	$	19.20	$ 4,032.00
Asphalt Trail	100	LF	$	18.79	$ 1,879.29
6" Concrete Sidewalk	2700	SF	$	5.45	$ 14,715.00
Trail Identification and Orientation Signs	4	Each	$	1,400.00	$ 5,600.00
Trail Regulatory and Warning Signs	4	Each	$	100.00	$ 400.00
Road Regulatory and Warning Signs	6	Each		125	$ 750.00
Thermoplastic 4" Wide Pvmt. Markings	300	LF	$	0.87	$ 261.00
Thermoplastic 1' Wide Pvmt. Markings	10	LF	$	2.47	$ 24.70
Thermoplastic Crosswalk/Stop Bars	240	SF	$	2.47	$ 592.80
Thermoplastic Arrows and Yield Triangles	40	SF	$	5.36	$ 214.40
Thermoplastic Bike Symbol	4	Each	$	45.73	$ 182.92
48" Pavement Marking Letters on Path	14	Each	$	24.21	$ 338.94
96" Pavement Marking Letters on Road	16	Each	$	83.20	$ 1,331.20
Detectable Warning Strip	80	SF	$	30.00	$ 2,400.00
Culvert Drain	0	Each	$	831.40	$ -
Earthwork	1	LS	$	1,000.00	$ 1,000.00
Median Landscape	2000	SF	$	1.25	$ 2,500.00
Approach Landscape	10000	SF	$	0.85	$ 8,500.00
Shade Trees	6	Each	$	350.00	$ 2,100.00
					$ 47,993.31

M-59 and Clinton River Overpass						
Asphalt or Stabilized Fines Rail-Trail	310	LF	$	18.79	$	5,825.78
Asphalt or Stabilized Fines Shared-use Path	255	LF	$	22.50	$	5,736.81
Supply and Install 150' x 10' Bridge	1500	SF	$	110.00	$	165,000.00
Bridge Foundation	80	LF	$	400.00	$	32,000.00
Bridge Site Restoration and Erosion Control	1	LS	$	15,000.00	$	15,000.00
Railings on M-59 Bridge	170	LF	$	50.00	$	8,500.00
Railings on Clinton River Bridge	270	LF	$	50.00	$	13,500.00
Deck Clinton River Bridge	3000	SF	$	10.00	$	30,000.00
Earthwork	1	LS	$	10,000.00	$	10,000.00
Landscape	10000	SF	$	0.85	$	8,500.00
Miscellaneous Signage	1	LS	$	2,000.00	$	2,000.00
					$	**296,062.59**

Opdyke Road Intersection - West Side						
Sawcut Pavement	120	LF	$	1.95	$	234.00
Remove and Dispose of Pavement	61.5	SY	$	6.89	$	423.74
Remove and Dispose of Curb	0	LF	$	3.69	$	-
Road Pavement	0	SY	$	14.71	$	-
Shoulder Pavement	11.5	SY	$	14.71	$	169.15
Curb and Gutter	105	LF	$	19.20	$	2,016.00
Asphalt Trail	300	LF	$	18.79	$	5,637.86
6" Concrete Sidewalk	1200	SF	$	5.45	$	6,540.00
Trail Identification and Orientation Signs	2	Each	$	1,400.00	$	2,800.00
Trail Regulatory and Warning Signs	2	Each	$	100.00	$	200.00
Road Regulatory and Warning Signs	3	Each		125	$	375.00
Thermoplastic 4" Wide Pvmt. Markings	100	LF	$	0.87	$	87.00
Thermoplastic 1" Wide Pvmt. Markings	5	LF	$	2.47	$	12.35
Thermoplastic Crosswalk/Stop Bars	270	SF	$	2.47	$	666.90
Thermoplastic Arrows	20	SF	$	5.36	$	107.20
Thermoplastic Bike Symbol	2	Each	$	45.73	$	91.46
48" Pavement Marking Letters on Path	7	Each	$	24.21	$	169.47
96" Pavement Marking Letters on Road	8	Each	$	83.20	$	665.60
Detectable Warning Strip	60	SF	$	30.00	$	1,800.00
Culvert Drain	0	Each	$	831.40	$	-
Earthwork	1	LS	$	1,000.00	$	1,000.00
Median Landscape	550	SF	$	1.25	$	687.50
Approach Landscape	5000	SF	$	0.85	$	4,250.00
Shade Trees	3	Each	$	350.00	$	1,050.00
					$	**28,983.22**

Minor Road Intersections						
Pontiac Drive	1	LS	$	12,693.09	$	12,693.09
Lake Street	1	LS	$	12,693.09	$	12,693.09
Branch Street	1	LS	$	12,693.09	$	12,693.09
Bagley Street	1	LS	$	12,693.09	$	12,693.09
					$	**50,772.34**

West Clinton River Bridge Conversion - 60' Existing Timber Frame Open Deck Bridge						
Bridge Decking	780	SF	$	10.00	$	7,800.00
Bridge and Approach Railing	140	LF	$	50.00	$	7,000.00
					$	**14,800.00**

East Clinton River Bridge - 76' Existing Timber Frame Closed Deck Bridge					
Bridge and Approach Railing	172	LF	$ 50.00	$	8,600.00
Asphalt or Stabilized Fines Bridge Surfacing	76	LF	$ 22.50	$	1,709.79
				$	**10,309.79**
Northern Spur Auburn Avenue Bridge - 135' Existing Concrete Closed Deck Bridge					
Bridge and Approach Railing	290	LF	$ 50.00	$	14,500.00
Asphalt or Stabilized Fines Bridge Surfacing	135	LF	$ 22.50	$	3,037.13
				$	**17,537.13**
Northern Spur Wetland Bridge - 210' Existing Concrete Closed Deck Bridge					
Bridge and Approach Railing	440	LF	$ 50.00	$	22,000.00
Asphalt or Stabilized Fines Bridge Surfacing	210	LF	$ 22.50	$	4,724.43
				$	**26,724.43**
Clinton River Overlook and River Access					
Overlook Deck	150	SF	$ 25.00	$	3,750.00
Headwall	26	LF	$ 25.00	$	650.00
Railings	40	LF	$ 50.00	$	2,000.00
Benches	2	Each	$ 600.00	$	1,200.00
Interpretive Signs	3	Each	$ 400.00	$	1,200.00
Stairs	1	LS	$ 2,500.00	$	2,500.00
Water Access Area	1	LS	$ 3,000.00	$	3,000.00
				$	**14,300.00**
Beaudette Park Staging Area					
Asphalt or Stabilized Fines Rail-Trail	100	LF	$ 18.79	$	1,879.29
Bicycle Parking	2	Each	$ 400.00	$	800.00
Trailhead Sign	1	Each	$ 1,500.00	$	1,500.00
Entry Sign	1	Each	$ 1,000.00	$	1,000.00
				$	**5,179.29**
Hayes Jones Access Site					
Asphalt or Stabilized Fines Rail-Trail	357	LF	$ 18.79	$	6,709.05
Bicycle Parking	2	Each	$ 400.00	$	800.00
Trailhead Sign	1	Each	$ 1,500.00	$	1,500.00
Entry Sign	1	Each	$ 1,000.00	$	1,000.00
				$	**10,009.05**
Subtotal				**$**	**1,819,196.94**
Contingency	15%			$	272,879.54
Construction Subtotal				**$**	**2,092,076.48**
Construction Documents and Admin.	10%			$	209,207.65
Segment Total				**$**	**2,301,284.13**

Auburn Hills Segment

Preliminary Site Development Cost Opinion

Item	Qty.	Unit	Unit Cost	Item Total
Trail				
Asphalt or Stabilized Fines Rail-Trail	10,028	LF	$ 18.79	$ 188,454.72
Fines Rail-Trail	-	LF	$ 14.70	$ -
ResinPave Rail-Trail	-	LF	$ 34.02	$ -
Asphalt or Stabilized Fines Shared-use Path	268	LF	$ 18.79	$ 5,036.48
Trim and Clear Vegetation	10,296	LF	$ 0.05	$ 480.48
Rubbish Removal Allowance	10,296	LF	$ 0.06	$ 659.10
Drainage Ditch Restoration Allowance	10,296	LF	$ 0.06	$ 617.76
Temporary Silt Fence Allowance	10,296	LF	$ 0.07	$ 731.02
Mile Markers and Bench Allowance	10,296	LF	$ 0.40	$ 4,149.60
				$ 200,129.16
Opdyke Road Intersection - East Side (includes new crosswalk to south)				
Sawcut Pavement	120	LF	$ 1.95	$ 234.00
Remove and Dispose of Pavement	61.5	SY	$ 6.89	$ 423.74
Remove and Dispose of Curb	0	LF	$ 3.69	$ -
Road Pavement	0	SY	$ 14.71	$ -
Shoulder Pavement	11.5	SY	$ 14.71	$ 169.15
Curb and Gutter	105	LF	$ 19.20	$ 2,016.00
Asphalt or Stabilized Fines Rail-Trail	300	LF	$ 18.79	$ 5,637.86
6" Concrete Sidewalk	1200	SF	$ 5.45	$ 6,540.00
Trail Identification and Orientation Signs	2	Each	$ 1,400.00	$ 2,800.00
Trail Regulatory and Warning Signs	2	Each	$ 100.00	$ 200.00
Road Regulatory and Warning Signs	3	Each	125	$ 375.00
Thermoplastic 4" Wide Pvmt. Markings	100	LF	$ 0.87	$ 87.00
Thermoplastic 1' Wide Pvmt. Markings	5	LF	$ 2.47	$ 12.35
Thermoplastic Crosswalk/Stop Bars	270	SF	$ 2.47	$ 666.90
Thermoplastic Arrows and Yield Symbols	20	SF	$ 5.36	$ 107.20
Thermoplastic Bike Symbol	2	Each	$ 45.73	$ 91.46
48" Pavement Marking Letters on Path	7	Each	$ 24.21	$ 169.47
96" Pavement Marking Letters on Road	8	Each	$ 83.20	$ 665.60
Detectable Warning Strip	60	SF	$ 30.00	$ 1,800.00
Culvert Drain	0	Each	$ 831.40	$ -
Earthwork	1	LS	$ 1,000.00	$ 1,000.00
Median Landscape	550	SF	$ 1.25	$ 687.50
Approach Landscape	5000	SF	$ 0.85	$ 4,250.00
Shade Trees	3	Each	$ 350.00	$ 1,050.00
				$ 28,983.22

Squirrel Road Intersection (includes driveway widening to south)

Sawcut Pavement	100	LF	$ 1.95	$	195.00
Remove and Dispose of Pavement	56	SY	$ 6.89	$	385.84
Remove and Dispose of Curb	0	LF	$ 3.69	$	-
Road Pavement	0	SY	$ 14.71	$	-
Shoulder Pavement	23	SY	$ 14.71	$	338.31
Curb and Gutter	0	LF	$ 19.20	$	-
Asphalt Trail	300	LF	$ 18.79	$	5,637.86
6" Concrete Sidewalk	0	SF	$ 5.45	$	-
Trail Identification and Orientation Signs	4	Each	$ 1,400.00	$	5,600.00
Trail Regulatory and Warning Signs	4	Each	$ 100.00	$	400.00
Road Regulatory and Warning Signs	4	Each	125	$	500.00
Thermoplastic 4" Wide Pvmt. Markings	200	LF	$ 0.87	$	174.00
Thermoplastic 1' Wide Pvmt. Markings	10	LF	$ 2.47	$	24.70
Thermoplastic Crosswalk/Stop Bars	120	SF	$ 2.47	$	296.40
Thermoplastic Arrows	22	SF	$ 5.36	$	117.92
Thermoplastic Bike Symbol	2	Each	$ 45.73	$	91.46
48" Pavement Marking Letters on Path	14	Each	$ 24.21	$	338.94
96" Pavement Marking Letters on Road	8	Each	$ 83.20	$	665.60
Detectable Warning Strip	40	SF	$ 30.00	$	1,200.00
Culvert Drain	0	Each	$ 831.40	$	-
Earthwork	1	LS	$ 1,000.00	$	1,000.00
Median Landscape	0	SF	$ 1.25	$	-
Approach Landscape	10000	SF	$ 0.85	$	8,500.00
Shade Trees	6	Each	$ 350.00	$	2,100.00
				$	**27,566.02**

Grey Road Intersection

Sawcut Pavement	400	LF	$ 1.95	$	780.00
Remove and Dispose of Pavement	83	SY	$ 6.89	$	571.87
Remove and Dispose of Curb	360	LF	$ 3.69	$	1,328.40
Road Pavement	53	SY	$ 14.71	$	779.57
Shoulder Pavement	150	SY	$ 14.71	$	2,206.34
Curb and Gutter	550	LF	$ 19.20	$	10,560.00
Asphalt Trail	300	LF	$ 18.79	$	5,637.86
6" Concrete Sidewalk	0	SF	$ 5.45	$	-
Trail Identification and Orientation Signs	4	Each	$ 1,400.00	$	5,600.00
Trail Regulatory and Warning Signs	4	Each	$ 100.00	$	400.00
Road Regulatory and Warning Signs	0	Each	125	$	-
Thermoplastic 4" Wide Pvmt. Markings	200	LF	$ 0.87	$	174.00
Thermoplastic 1' Wide Pvmt. Markings	0	LF	$ 2.47	$	-
Thermoplastic Crosswalk/Stop Bars	336	SF	$ 2.47	$	829.92
Thermoplastic Arrows/Yield bars	4	SF	$ 5.36	$	21.44
Thermoplastic Bike Symbol	4	Each	$ 45.73	$	182.92
48" Pavement Marking Letters on Path	14	Each	$ 24.21	$	338.94
96" Pavement Marking Letters on Road	16	Each	$ 83.20	$	1,331.20
Detectable Warning Strip	80	SF	$ 30.00	$	2,400.00
Culvert Drain	0	Each	$ 831.40	$	-
Earthwork	1	LS	$ 1,000.00	$	1,000.00
Median Landscape	0	SF	$ 1.25	$	-
Approach Landscape	10000	SF	$ 0.85	$	8,500.00
Shade Trees	6	Each	$ 350.00	$	2,100.00
				$	**44,742.46**

Auburn Road Intersection

Sawcut Pavement	0	LF	$ 1.95	$	-
Remove and Dispose of Pavement	0	SY	$ 6.89	$	-
Remove and Dispose of Curb	0	LF	$ 3.69	$	-
Road Pavement	0	SY	$ 14.71	$	-
Curb and Gutter	0	LF	$ 19.20	$	-
Asphalt or Stabilized Fines Rail-Trail	200	LF	$ 18.79	$	3,758.57
6" Concrete Sidewalk	200	SF	$ 5.45	$	1,090.00
Pedestrian Actuated Signal	1	LS	$ 27,438.00	$	27,438.00
Trail Identification and Orientation Signs	4	Each	$ 1,400.00	$	5,600.00
Trail Regulatory and Warning Signs	4	Each	$ 100.00	$	400.00
Road Regulatory and Warning Signs	4	Each	125	$	500.00
Thermoplastic 4" Wide Pvmt. Markings	200	LF	$ 0.87	$	174.00
Thermoplastic 1' Wide Pvmt. Markings	10	LF	$ 2.47	$	24.70
Thermoplastic Crosswalk/Stop Bars	616	SF	$ 2.47	$	1,521.52
Thermoplastic Arrows	4	SF	$ 5.36	$	21.44
Thermoplastic Bike Symbol	4	Each	$ 45.73	$	182.92
48" Pavement Marking Letters on Path	14	Each	$ 24.21	$	338.94
96" Pavement Marking Letters on Road	12	Each	$ 83.20	$	998.40
Detectable Warning Strip	120	SF	$ 30.00	$	3,600.00
Culvert Drain	0	Each	$ 831.40	$	-
Earthwork	1	LS	$ 1,000.00	$	1,000.00
Median Landscape	0	SF	$ 1.25	$	-
Approach Landscape	10000	SF	$ 0.85	$	8,500.00
Shade Trees	6	Each	$ 350.00	$	2,100.00
				$	**57,248.49**

Adams Road Intersection - West Side

Sawcut Pavement	735	LF	$ 1.95	$	1,433.25
Remove and Dispose of Pavement	61.5	SY	$ 6.89	$	423.74
Remove and Dispose of Curb	0	LF	$ 3.69	$	-
Road Pavement	175	SY	$ 14.71	$	2,574.06
Shoulder Pavement	11.5	SY	$ 14.71	$	169.15
Curb and Gutter	105	LF	$ 19.20	$	2,016.00
Asphalt or Stabilized Fines Rail-Trail	170	LF	$ 18.79	$	3,194.78
6" Concrete Sidewalk	55	SF	$ 5.45	$	299.75
Trail Identification and Orientation Signs	2	Each	$ 1,400.00	$	2,800.00
Trail Regulatory and Warning Signs	2	Each	$ 100.00	$	200.00
Road Regulatory and Warning Signs	2	Each	125	$	250.00
Thermoplastic 4" Wide Pvmt. Markings	1000	LF	$ 0.87	$	870.00
Thermoplastic 1' Wide Pvmt. Markings	250	LF	$ 2.47	$	617.50
Thermoplastic Crosswalk/Stop Bars	60	SF	$ 2.47	$	148.20
Thermoplastic Arrows	11	SF	$ 5.36	$	58.96
Thermoplastic Bike Symbol	1	Each	$ 45.73	$	45.73
48" Pavement Marking Letters on Path	7	Each	$ 24.21	$	169.47
96" Pavement Marking Letters on Road	4	Each	$ 83.20	$	332.80
Detectable Warning Strip	40	SF	$ 30.00	$	1,200.00
Culvert Drain	1	Each	$ 831.40	$	831.40
Earthwork	1	LS	$ 1,000.00	$	1,000.00
Median Landscape	550	SF	$ 1.25	$	687.50
Approach Landscape	5000	SF	$ 0.85	$	4,250.00
Shade Trees	3	Each	$ 350.00	$	1,050.00
				$	**24,622.29**

Opdyke Road Access Site

Asphalt or Stabilized Fines Rail-Trail	100	LF	$ 18.79	$	1,879.29
Asphalt or Stabilized Fines Parking Lot	1100	SY	$ 14.71	$	16,179.81
Bicycle Parking	2	Each	$ 400.00	$	800.00
Sawcut Pavement	55	LF	$ 1.95	$	107.25
Remove and Dispose of Pavement	15	SY	$ 6.89	$	103.35
Remove and Dispose of Curb	55	LF	$ 3.69	$	202.95
Curb and Gutter	100	LF	$ 19.20	$	1,920.00
Earthwork	1	LS	$ 1,000.00	$	1,000.00
Landscape	1000	SF	$ 0.85	$	850.00
Shade Trees	6	Each	$ 350.00	$	2,100.00
Trailhead Sign	1	Each	$ 1,500.00	$	1,500.00
Entry Sign	1	Each	$ 1,000.00	$	1,000.00
				$	**27,642.65**

Avondale High School Access Site

Asphalt or Stabilized Fines Rail-Trail	100	LF	$ 17.59	$	1,759.30
Bicycle Parking	2	Each	$ 400.00	$	800.00
Earthwork	1	LS	$ 1,000.00	$	1,000.00
Landscape	1000	SF	$ 0.85	$	850.00
Shade Trees	3	Each	$ 350.00	$	1,050.00
Trailhead Sign	1	Each	$ 1,500.00	$	1,500.00
Entry Sign	1	Each	$ 1,000.00	$	1,000.00
				$	**7,959.30**

Subtotal		**$**	**418,893.59**
Contingency	15%	$	62,834.04
Construction Subtotal		**$**	**481,727.62**
Construction Documents and Admin.	10%	$	48,172.76
Segment Total		**$**	**529,900.39**

Rochester Hills Segment

Preliminary Site Development Cost Opinion

Item	Qty.	Unit	Unit Cost	Item Total
Trail				
Asphalt or Stabilized Fines Rail-Trail	22,732	LF	$ 18.79	$ 427,199.10
Fines Rail-Trail	-	LF	$ 14.70	$ -
ResinPave Rail-Trail	-	LF	$ 34.02	$ -
Asphalt or Stabilized Fines Shared-use Path	-	LF	$ 18.79	$ -
Trim and Clear Vegetation	22,732	LF	$ 0.05	$ 1,060.83
Rubbish Removal Allowance	22,732	LF	$ 0.06	$ 1,455.19
Drainage Ditch Restoration Allowance	22,732	LF	$ 0.06	$ 1,363.92
Temporary Silt Fence Allowance	22,732	LF	$ 0.07	$ 1,613.97
Mile Markers and Bench Allowance	22,732	LF	$ 0.40	$ 9,161.68
				$ 441,854.70
Adams Road Intersection - East Side				
Sawcut Pavement	735	LF	$ 1.95	$ 1,433.25
Remove and Dispose of Pavement	61.5	SY	$ 6.89	$ 423.74
Remove and Dispose of Curb	0	LF	$ 3.69	$ -
Road Pavement	175	SY	$ 14.71	$ 2,574.06
Shoulder Pavement	11.5	SY	$ 14.71	$ 169.15
Curb and Gutter	105	LF	$ 19.20	$ 2,016.00
Asphalt or Stabilized Fines Rail-Trail	170	LF	$ 18.79	$ 3,194.78
6" Concrete Sidewalk	55	SF	$ 5.45	$ 299.75
Trail Identification and Orientation Signs	2	Each	$ 1,400.00	$ 2,800.00
Trail Regulatory and Warning Signs	2	Each	$ 100.00	$ 200.00
Road Regulatory and Warning Signs	2	Each	125	$ 250.00
Thermoplastic 4" Wide Pvmt. Markings	1000	LF	$ 0.87	$ 870.00
Thermoplastic 1" Wide Pvmt. Markings	250	LF	$ 2.47	$ 617.50
Thermoplastic Crosswalk/Stop Bars	60	SF	$ 2.47	$ 148.20
Thermoplastic Arrows	11	SF	$ 5.36	$ 58.96
Thermoplastic Bike Symbol	1	Each	$ 45.73	$ 45.73
48" Pavement Marking Letters on Path	7	Each	$ 24.21	$ 169.47
96" Pavement Marking Letters on Road	4	Each	$ 83.20	$ 332.80
Detectable Warning Strip	40	SF	$ 30.00	$ 1,200.00
Culvert Drain	1	Each	$ 831.40	$ 831.40
Earthwork	1	LS	$ 1,000.00	$ 1,000.00
Median Landscape	550	SF	$ 1.25	$ 687.50
Approach Landscape	5000	SF	$ 0.85	$ 4,250.00
Shade Trees	3	Each	$ 350.00	$ 1,050.00
				$ 24,622.29

Leach Road Intersection

Remove and Dispose of Curb	0	LF	$	3.69	$ -
Curb and Gutter	0	LF	$	19.20	$ -
Speed Table	1	LS	$	6,000.00	$ 6,000.00
Asphalt or Stabilized Fines Rail-Trail	300	LF	$	18.79	$ 5,637.86
6" Concrete Sidewalk	110	SF	$	5.45	$ 599.50
Trail Identification and Orientation Signs	4	Each	$	1,400.00	$ 5,600.00
Trail Regulatory and Warning Signs	4	Each	$	100.00	$ 400.00
Road Regulatory and Warning Signs	4	Each		125	$ 500.00
Thermoplastic 4" Wide Pvmt. Markings	200	LF	$	0.87	$ 174.00
Thermoplastic 1' Wide Pvmt. Markings	10	LF	$	2.47	$ 24.70
Thermoplastic Crosswalk/Stop Bars	120	SF	$	2.47	$ 296.40
Thermoplastic Arrows	22	SF	$	5.36	$ 117.92
Thermoplastic Bike Symbol	2	Each	$	45.73	$ 91.46
48" Pavement Marking Letters on Path	14	Each	$	24.21	$ 338.94
96" Pavement Marking Letters on Road	8	Each	$	83.20	$ 665.60
Detectable Warning Strip	80	SF	$	30.00	$ 2,400.00
Culvert Drain	0	Each	$	831.40	$ -
Earthwork	1	LS	$	1,000.00	$ 1,000.00
Median Landscape	0	SF	$	1.25	$ -
Approach Landscape	10000	SF	$	0.85	$ 8,500.00
Shade Trees	6	Each	$	350.00	$ 2,100.00
					$ 34,446.38

Note: Median and road construction costs are included in the initial expansion of Leach Road

Technology Drive Intersection

Remove and Dispose of Curb	0	LF	$	3.69	$ -
Curb and Gutter	0	LF	$	19.20	$ -
Speed Table	1	LS	$	6,000.00	$ 6,000.00
Asphalt or Stabilized Fines Rail-Trail	300	LF	$	18.79	$ 5,637.86
6" Concrete Sidewalk	110	SF	$	5.45	$ 599.50
Trail Identification and Orientation Signs	4	Each	$	1,400.00	$ 5,600.00
Trail Regulatory and Warning Signs	4	Each	$	100.00	$ 400.00
Road Regulatory and Warning Signs	4	Each		125	$ 500.00
Thermoplastic 4" Wide Pvmt. Markings	200	LF	$	0.87	$ 174.00
Thermoplastic 1' Wide Pvmt. Markings	10	LF	$	2.47	$ 24.70
Thermoplastic Crosswalk/Stop Bars	120	SF	$	2.47	$ 296.40
Thermoplastic Arrows	22	SF	$	5.36	$ 117.92
Thermoplastic Bike Symbol	2	Each	$	45.73	$ 91.46
48" Pavement Marking Letters on Path	14	Each	$	24.21	$ 338.94
96" Pavement Marking Letters on Road	8	Each	$	83.20	$ 665.60
Detectable Warning Strip	80	SF	$	30.00	$ 2,400.00
Culvert Drain	0	Each	$	-	$ -
Earthwork	1	LS	$	1,000.00	$ 1,000.00
Median Landscape	0	SF	$	1.25	$ -
Approach Landscape	10000	SF	$	0.85	$ 8,500.00
Shade Trees	6	Each	$	350.00	$ 2,100.00
					$ 34,446.38

Note: Median and road construction costs are included in the initial expansion of Technology Drive

Crooks Road Intersection						
Sawcut Pavement	0	LF	$	1.95	$	-
Remove and Dispose of Pavement	0	SY	$	6.89	$	-
Remove and Dispose of Curb	20	LF	$	3.69	$	73.80
Road Pavement	0	SY	$	14.71	$	-
Shoulder Pavement	23	SY	$	14.71	$	338.31
Curb and Gutter	0	LF	$	19.20	$	-
Asphalt or Stabilized Fines Rail-Trail	300	LF	$	18.79	$	5,637.86
6" Concrete Sidewalk	110	SF	$	5.45	$	599.50
Trail Identification and Orientation Signs	4	Each	$	1,400.00	$	5,600.00
Trail Regulatory and Warning Signs	4	Each	$	100.00	$	400.00
Road Regulatory and Warning Signs	4	Each		125	$	500.00
Thermoplastic 4" Wide Pvmt. Markings	200	LF	$	0.87	$	174.00
Thermoplastic 1' Wide Pvmt. Markings	10	LF	$	2.47	$	24.70
Thermoplastic Crosswalk/Stop Bars	240	SF	$	2.47	$	592.80
Thermoplastic Arrows	40	SF	$	5.36	$	214.40
Thermoplastic Bike Symbol	4	Each	$	45.73	$	182.92
48" Pavement Marking Letters on Path	14	Each	$	24.21	$	338.94
96" Pavement Marking Letters on Road	16	Each	$	83.20	$	1,331.20
Detectable Warning Strip	80	SF	$	30.00	$	2,400.00
Culvert Drain	0	Each	$	831.40	$	-
Earthwork	1	LS	$	1,000.00	$	1,000.00
Median Landscape	0	SF	$	1.25	$	-
Approach Landscape	10000	SF	$	0.85	$	8,500.00
Shade Trees	6	Each	$	350.00	$	2,100.00
					$	**30,008.42**
Hamlin Road Intersection						
Sawcut Pavement	1750	LF	$	1.95	$	3,412.50
Remove and Dispose of Pavement	278	SY	$	6.89	$	1,915.42
Remove and Dispose of Curb	0	LF	$	3.69	$	-
Road Pavement	525	SY	$	14.71	$	7,722.18
Shoulder Pavement	23	SY	$	14.71	$	338.31
Curb and Gutter	450	LF	$	19.20	$	8,640.00
Asphalt and Stabilized Fines Rail-Trail	500	LF	$	18.79	$	9,396.43
6" Concrete Sidewalk	850	SF	$	5.45	$	4,632.50
Trail Identification and Orientation Signs	4	Each	$	1,400.00	$	5,600.00
Trail Regulatory and Warning Signs	4	Each	$	100.00	$	400.00
Road Regulatory and Warning Signs	4	Each		125	$	500.00
Thermoplastic 4" Wide Pvmt. Markings	1610	LF	$	0.87	$	1,400.70
Thermoplastic 1' Wide Pvmt. Markings	210	LF	$	2.47	$	518.70
Thermoplastic Crosswalk/Stop Bars	120	SF	$	2.47	$	296.40
Thermoplastic Arrows and Yield Triangles	22	SF	$	5.36	$	117.92
Thermoplastic Bike Symbol	2	Each	$	45.73	$	91.46
48" Pavement Marking Letters on Path	14	Each	$	24.21	$	338.94
96" Pavement Marking Letters on Road	8	Each	$	83.20	$	665.60
Detectable Warning Strip	80	SF	$	30.00	$	2,400.00
Culvert Drain	2	Each	$	831.40	$	1,662.80
Earthwork	1	LS	$	1,000.00	$	1,000.00
Median Landscape	1100	SF	$	1.25	$	1,375.00
Approach Landscape	10000	SF	$	0.85	$	8,500.00
Shade Trees	6	Each	$	350.00	$	2,100.00
					$	**63,024.85**

Note: There are plans to widen Hamlin Road in 2006, but this intersection has been priced to include a b

Livernois Road Intersection

Sawcut Pavement	630	LF	$	1.95	$ 1,228.50
Remove and Dispose of Pavement	123	SY	$	6.89	$ 847.47
Remove and Dispose of Curb	0	LF	$	3.69	$ -
Road Pavement	380	SY	$	14.71	$ 5,589.39
Shoulder Pavement	23	SY	$	14.71	$ 338.31
Curb and Gutter	210	LF	$	19.20	$ 4,032.00
Asphalt or Stabilized Fines Rail-Trail	200	LF	$	18.79	$ 3,758.57
6" Concrete Sidewalk	110	SF	$	5.45	$ 599.50
Trail Identification and Orientation Signs	4	Each	$	1,400.00	$ 5,600.00
Trail Regulatory and Warning Signs	4	Each	$	100.00	$ 400.00
Road Regulatory and Warning Signs	4	Each		125	$ 500.00
Thermoplastic 4" Wide Pvmt. Markings	2300	LF	$	0.87	$ 2,001.00
Thermoplastic 1' Wide Pvmt. Markings	610	LF	$	2.47	$ 1,506.70
Thermoplastic Crosswalk/Stop Bars	120	SF	$	2.47	$ 296.40
Thermoplastic Arrows and Yield Triangles	22	SF	$	5.36	$ 117.92
Thermoplastic Bike Symbol	2	Each	$	45.73	$ 91.46
48" Pavement Marking Letters on Path	14	Each	$	24.21	$ 338.94
96" Pavement Marking Letters on Road	8	Each	$	83.20	$ 665.60
Detectable Warning Strip	80	SF	$	30.00	$ 2,400.00
Culvert Drain	2	Each	$	831.40	$ 1,662.80
Earthwork	3	LS	$	1,000.00	$ 3,000.00
Median Landscape	1100	SF	$	1.25	$ 1,375.00
Approach Landscape	10000	SF	$	0.85	$ 8,500.00
Shade Trees	6	Each	$	350.00	$ 2,100.00
					$ 46,949.56

Avon Road Intersection

Sawcut Pavement	920	LF	$	1.95	$ 1,794.00
Remove and Dispose of Pavement	123	SY	$	6.89	$ 847.47
Remove and Dispose of Curb	0	LF	$	3.69	$ -
Road Pavement	335	SY	$	14.71	$ 4,927.49
Shoulder Pavement	23	SY	$	14.71	$ 338.31
Curb and Gutter	210	LF	$	19.20	$ 4,032.00
Asphalt or Stabilized Fines Rail-Trail	200	LF	$	18.79	$ 3,758.57
6" Concrete Sidewalk	110	SF	$	5.45	$ 599.50
Trail Identification and Orientation Signs	4	Each	$	1,400.00	$ 5,600.00
Trail Regulatory and Warning Signs	4	Each	$	100.00	$ 400.00
Road Regulatory and Warning Signs	4	Each		125	$ 500.00
Thermoplastic 4" Wide Pvmt. Markings	1425	LF	$	0.87	$ 1,239.75
Thermoplastic 1' Wide Pvmt. Markings	310	LF	$	2.47	$ 765.70
Thermoplastic Crosswalk/Stop Bars	120	SF	$	2.47	$ 296.40
Thermoplastic Arrows and Yield Triangles	22	SF	$	5.36	$ 117.92
Thermoplastic Bike Symbol	2	Each	$	45.73	$ 91.46
48" Pavement Marking Letters on Path	14	Each	$	24.21	$ 338.94
96" Pavement Marking Letters on Road	8	Each	$	83.20	$ 665.60
Detectable Warning Strip	80	SF	$	30.00	$ 2,400.00
Culvert Drain	2	Each	$	831.40	$ 1,662.80
Earthwork	2	LS	$	1,000.00	$ 2,000.00
Median Landscape	1100	SF	$	1.25	$ 1,375.00
Approach Landscape	10000	SF	$	0.85	$ 8,500.00
Shade Trees	6	Each	$	350.00	$ 2,100.00
					$ 44,350.90

Creek Bridge Conversion - Existing 50' Timber Frame Open Deck Bridge						
Bridge Decking	650	SF	$	10.00	$	6,500.00
Bridge Covering	1	LS	$	90,000.00	$	90,000.00
Bridge and Approach Railing	120	LF	$	50.00	$	6,000.00
					$	**102,500.00**

Prefabricated Weathering Steel Bow Truss Bridge with Wood Deck over Clinton River						
Supply and Install 100' x 14' Bridge	1400	SF	$	130.00	$	182,000.00
Bridge Foundation	80	LF	$	400.00	$	32,000.00
Site Restoration and Erosion Control	1	LS	$	25,000.00	$	25,000.00
					$	**239,000.00**

East Overlook and River Access						
Overlook Deck	150	SF	$	25.00	$	3,750.00
Headwall	26	LF	$	25.00	$	650.00
Railings	40	LF	$	50.00	$	2,000.00
Benches	2	Each	$	600.00	$	1,200.00
Interpretive Signs	3	Each	$	400.00	$	1,200.00
Stairs	1	LS	$	2,500.00	$	2,500.00
Water Access Area	1	LS	$	3,000.00	$	3,000.00
					$	**14,300.00**

West Overlook and River Access						
Overlook Deck	150	SF	$	25.00	$	3,750.00
Headwall	26	LF	$	25.00	$	650.00
Railings	40	LF	$	50.00	$	2,000.00
Benches	2	Each	$	600.00	$	1,200.00
Interpretive Signs	3	Each	$	400.00	$	1,200.00
Stairs	1	LS	$	2,500.00	$	2,500.00
Water Access Area	1	LS	$	3,000.00	$	3,000.00
					$	**14,300.00**

Hamlin Road Staging Area						
Asphalt or Stabilized Fines Walkway	100	SY	$	14.71	$	1,470.89
Double Pre-Fab Vault Restroom Building	1	EA	$	30,000.00	$	30,000.00
Install Pre-Fab Restroom	1	LS	$	10,000.00	$	10,000.00
Water Service Tap	1	EA	$	700.00	$	700.00
Water Supply Line	200	LF	$	16.00	$	3,200.00
Drinking Fountain	1	LS	$	1,500.00	$	1,500.00
Parking Lot	23	Spaces	$	588.00	$	13,524.00
Earthwork	1	LS	$	15,000.00	$	15,000.00
Site Restoration and Landscaping	1	LS	$	10,000.00	$	10,000.00
Trailhead Signage	1	LS	$	1,500.00	$	1,500.00
Entry Signage	1	LS	$	1,000.00	$	1,000.00
Picnic Tables	4	EA	$	1,200.00	$	4,800.00
Benches	2	EA	$	900.00	$	1,800.00
Trash and Recycle Receptacles	3	EA	$	300.00	$	900.00
Bicycle Parking	2	EA	$	400.00	$	800.00
					$	**96,194.89**

Bloomer Park Staging Area				
Asphalt or Stabilized Fines Rail-Trail	4,278	LF	$ 18.79	$ 80,395.82
Asphalt or Stabilized Fines Shared-use Path	1,456	LF	$ 18.79	$ 27,362.39
10' Wide Boardwalk	250	LF	$ 300.00	$ 75,000.00
Earthwork	1	LS	$ 15,000.00	$ 15,000.00
Site Restoration and Erosion Control	1	LS	$ 10,000.00	$ 10,000.00
Trailhead Signage	1	LS	$ 1,500.00	$ 1,500.00
Entry Signage	1	LS	$ 1,000.00	$ 1,000.00
Bicycle Parking	2	EA	$ 400.00	$ 800.00
				$ 211,058.21
Subtotal				**$ 1,397,056.58**
Contingency	15%			$ 209,558.49
Construction Subtotal				**$ 1,606,615.07**
Construction Documents and Admin.	10%			$ 160,661.51
Segment Total				**$ 1,767,276.57**

Rochester Segment

Preliminary Site Development Cost Opinion

Item	Qty.	Unit	Unit Cost	Item Total
Trail				
Asphalt or Stabilized Fines Rail-Trail	13,337	LF	$ 18.79	$ 250,640.26
Fines Rail-Trail	-	LF	$ 14.70	$ -
ResinPave Rail-Trail	-	LF	$ 34.02	$ -
Asphalt or Stabilized Fines Shared-use Path	-	LF	$ 18.79	$ -
Trim and Clear Vegetation	13,337	LF	$ 0.05	$ 622.39
Rubbish Removal Allowance	13,337	LF	$ 0.06	$ 853.77
Drainage Ditch Restoration Allowance	13,337	LF	$ 0.06	$ 800.22
Temporary Silt Fence Allowance	13,337	LF	$ 0.07	$ 946.93
Mile Markers and Bench Allowance	13,337	LF	$ 0.40	$ 5,375.22
				$ 259,238.79
Dequindre Road Intersection - West Half				
Sawcut Pavement	350	LF	$ 1.95	$ 682.50
Remove and Dispose of Pavement	61.5	SY	$ 6.89	$ 423.74
Remove and Dispose of Curb	0	LF	$ 3.69	$ -
Road Pavement	175	SY	$ 14.71	$ 2,574.06
Shoulder Pavement	115	SY	$ 14.71	$ 1,691.53
Curb and Gutter	105	LF	$ 19.20	$ 2,016.00
Asphalt or Stabilized Fines Rail-Trail	300	LF	$ 18.79	$ 5,637.86
6" Concrete Sidewalk	55	SF	$ 5.45	$ 299.75
Trail Identification and Orientation Signs	2	Each	$ 1,400.00	$ 2,800.00
Trail Regulatory and Warning Signs	2	Each	$ 100.00	$ 200.00
Road Regulatory and Warning Signs	2	Each	125	$ 250.00
Thermoplastic 4" Wide Pvmt. Markings	650	LF	$ 0.87	$ 565.50
Thermoplastic 1' Wide Pvmt. Markings	305	LF	$ 2.47	$ 753.35
Thermoplastic Crosswalk/Stop Bars	60	SF	$ 2.47	$ 148.20
Thermoplastic Arrows and Yield Triangles	11	SF	$ 5.36	$ 58.96
Thermoplastic Bike Symbol	1	Each	$ 45.73	$ 45.73
48" Pavement Marking Letters on Path	7	Each	$ 24.21	$ 169.47
96" Pavement Marking Letters on Road	4	Each	$ 83.20	$ 332.80
Detectable Warning Strip	40	SF	$ 30.00	$ 1,200.00
Culvert Drain	1	Each	$ 831.40	$ 831.40
Earthwork	0.5	LS	$ 1,000.00	$ 500.00
Median Landscape	550	SF	$ 1.25	$ 687.50
Approach Landscape	5000	SF	$ 0.85	$ 4,250.00
Shade Trees	3	Each	$ 350.00	$ 1,050.00
				$ 27,168.34
Minor Road Intersection				
Diversion Road Intersection	1	LS	$ 12,693.09	$ 12,693.09
				$ 12,693.09

Paint Creek Bridge Conversion - Existing 60' Timber Frame Open Deck Bridge				
Deck Bridge	780	SF	$ 10.00	$ 7,800.00
Bridge Railing	140	LF	$ 50.00	$ 7,000.00
				$ 14,800.00

East Bridge Conversion - Existing 80' Steel Frame Closed Deck Bridge				
Bridge Railing	180	LF	$ 50.00	$ 9,000.00
Asphalt or Stabilized Fines Bridge Surfacing	135	LF	$ 22.50	$ 3,037.13
Cleaning and Painting of the Steel Frame Not Included				**$ 9,000.00**

Overlook and River Access				
Overlook Deck	150	SF	$ 25.00	$ 3,750.00
Headwall	26	LF	$ 25.00	$ 650.00
Railings	40	LF	$ 50.00	$ 2,000.00
Benches	2	Each	$ 600.00	$ 1,200.00
Interpretive Signs	3	Each	$ 400.00	$ 1,200.00
Stairs	1	LS	$ 2,500.00	$ 2,500.00
Water Access Area	1	LS	$ 3,000.00	$ 3,000.00
				$ 14,300.00

Downtown Staging Area (Allowance as location and design has yet to be defined)				
Asphalt or Stabilized Fines Walkway	150	SY	$ 14.71	$ 2,206.34
Double Pre-Fab Vault Restroom Building	1	EA	$ 30,000.00	$ 30,000.00
Install Pre-Fab Restroom	1	LS	$ 10,000.00	$ 10,000.00
Water Service Tap	1	EA	$ 700.00	$ 700.00
Water Supply Line	300	LF	$ 16.00	$ 4,800.00
Drinking Fountain	1	LS	$ 1,500.00	$ 1,500.00
Parking Lot	30	Spaces	$ 588.00	$ 17,640.00
Earthwork	1	LS	$ 15,000.00	$ 15,000.00
Site Restoration and Landscaping	1	LS	$ 10,000.00	$ 10,000.00
Trailhead Signage	1	LS	$ 1,500.00	$ 1,500.00
Entry Signage	1	LS	$ 1,000.00	$ 1,000.00
Picnic Tables	4	EA	$ 1,200.00	$ 4,800.00
Benches	2	EA	$ 900.00	$ 1,800.00
Trash and Recycle Receptacles	3	EA	$ 300.00	$ 900.00
Bicycle Parking	2	EA	$ 400.00	$ 800.00
				$ 102,646.34

Subtotal		**$ 439,846.55**
Contingency	15%	$ 65,976.98
Construction Subtotal		**$ 505,823.53**
Construction Documents and Admin.	10%	$ 50,582.35
Segment Total		**$ 556,405.88**

Paving Cost Worksheet

Preliminary Site Development Cost Opinion

Item	Qty.	Unit	Unit Cost	Item Total	RSMeasns 2003 2003 Site Work Division Ref.
Asphalt Paving					
Fine Grade Sub-base	1	SY	$ 0.34	$ 0.34	02310-440-0010
Sub-base Herbicide Application	1	SY	$ 0.04	$ 0.04	02360-800-3000
Sub-base Grading and Compaction	1	SY	$ 1.39	$ 1.39	02720-215-0010
6" Deep Crushed 3/4" Stone Base	1	SY	$ 4.61	$ 4.61	02700-200-0050
2" Asphalt Base Course	1	SY	$ 3.92	$ 3.92	02740-300-0120
1-1/2 Asphalt Finish Course	1	SY	$ 3.37	$ 3.37	02740-300-0340
Adjustments:				**$ 13.67**	**SY**
Detroit City Cost Index			1.076	**$ 14.71**	**SY**
Difficult to Access Site Premium			1.150	**$ 16.92**	**SY**
10' Wide Rail-Trail	1.11	SY	$ 16.92	**$ 18.79**	**LF**
12' Wide Trail	1.33	SY	$ 16.92	**$ 22.50**	**LF**
Crushed Slag Fines					
Fine Grade for Road Base	1	SY	$ 0.34	$ 0.34	02310-440-0010
Sub-base Herbicide Preparation	1	SY	$ 0.04	$ 0.04	02360-800-3000
Sub-base Grading and Compaction	1	SY	$ 1.39	$ 1.39	02720-215-0010
6" Deep Crushed 3/4 Stone Base	1	SY	$ 4.61	$ 4.61	02700-200-0050
4" Deep Crushed Slag Fines	1	SY	$ 4.31	$ 4.31	02700-02775-2250
Adjustments:				**$ 10.69**	**SY**
Detroit City Cost Index			1.076	**$ 11.50**	**SY**
Difficult to Access Site Premium			1.150	**$ 13.23**	**SY**
10' Wide Rail-Trail	1.11	SY	$ 13.23	**$ 14.70**	**LF**
12' Wide Trail	1.33	SY	$ 13.23	**$ 17.59**	**LF**
ResinPave Bound Fines					
Fine Grade for Road Base	1	SY	$ 0.34	$ 0.34	02310-440-0010
Sub-base Herbicide Preparation	1	SY	$ 0.04	$ 0.04	02360-800-3000
Sub-base Grading and Compaction	1	SY	$ 1.39	$ 1.39	02720-215-0010
6" Deep Crushed 3/4 Stone Base	1	SY	$ 4.61	$ 4.61	02700-200-0050
2" Deep Resin Bound Limestone Fines	1	SY	$ 20.25	$ 20.25	
Adjustments:				**$ 26.63**	**SY**
Detroit City Cost Index			1.000	**$ 26.63**	**SY**
Difficult to Access Site Premium			1.150	**$ 30.62**	**SY**
10' Wide Rail-Trail	1.11	SY	$ 30.62	**$ 34.02**	**LF**
12' Wide Trail	1.33	SY	$ 30.62	**$ 40.73**	**LF**
Stabilized Crushed Stone Surface Paving					
Fine Grade Sub-base	1	SY	$ 0.34	$ 0.34	02310-440-0010
Sub-base Herbicide Application	1	SY	$ 0.04	$ 0.04	02360-800-3000
Sub-base Grading and Compaction	1	SY	$ 1.39	$ 1.39	02720-215-0010
6" Deep Crushed 3/4" Stone Base	1	SY	$ 4.61	$ 4.61	02700-200-0050
3-1/2" Deep Stabilized Limestone Fines	1	SY	$ 7.29	$ 7.29	
Adjustments:				**$ 13.67**	**SY**
Detroit City Cost Index			1.076	**$ 14.71**	**SY**
Difficult to Access Site Premium			1.150	**$ 16.92**	**SY**
10' Wide Rail-Trail	1.11	SY	$ 16.92	**$ 18.79**	**LF**
12' Wide Trail	1.33	SY	$ 16.92	**$ 22.50**	**LF**

Clinton River Trail Summary and Funding Strategy

Based on the Preliminary Site Development Cost Opinions

Project Cost Summary

Community	Construction Subtotal	% of Total	Construction Docs. & Admin. (10%)	Subtotals
Sylvan Lake	$ 162,008.55	3%	$ 16,200.86	$ 178,209.41
Pontiac	$ 2,092,076.48	43%	$ 209,207.65	$ 2,301,284.13
Auburn Hills	$ 481,727.62	10%	$ 48,172.76	$ 529,900.39
Rochester Hills	$ 1,606,615.07	33%	$ 160,661.51	$ 1,767,276.57
Rochester	$ 505,823.53	10%	$ 50,582.35	$ 556,405.88
Totals	$ 4,848,251.25	100%	$ 484,825.13	$ 5,333,076.38

Funding Strategy

Funding Source	Construction Share	% of Total	CD & Admin Share	% of Total	Total Share	% of Total
Federal - MDOT, TEP	$ 1,939,300.50	40%	$ -	0%	$ 1,939,300.50	36%
State - MDNR, NRTF	$ 969,650.25	20%	$ -	0%	$ 969,650.25	18%
Local	$ 1,454,475.38	30%	$ 324,832.83	67%	$ 1,779,308.21	33%
Private - CFSEM, GWI	$ 484,825.13	10%	$ 159,992.29	33%	$ 644,817.42	12%
	$ 4,848,251.25	100%	$ 484,825.13	100%	$ 5,333,076.38	100%

Note:
The funding source share figures are drawn from the Funding Share Worksheet prepared as a part of Rails-to-Trails Conservancy's Greenway Specialist project in 2001. The Overall funding share (including acquisition, construction, CD and Administration) is based on Federal - 30%, State - 30%, Local - 30%, Private - 10%.
Only the primary funding sources are listed, additional funding may be obtained from such sources as MDNR Land and Water Conservation Fund, local businesses and individuals

Local Funding Summary

Community	Total Share	% of Total	Length of Trail in Miles	% of Total
Sylvan Lake	$ 59,457.14	3%	1.0	6%
Pontiac	$ 767,792.07	43%	6.6	40%
Auburn Hills	$ 176,794.04	10%	2.0	12%
Rochester Hills	$ 589,627.73	33%	4.3	26%
Rochester	$ 185,637.24	10%	2.5	15%
	$ 1,779,308.21	100%	16.4	100%

Acronyms:

TEP	Transportation Enhancement Program
NRTF	Natural Resources Trust Fund
GWI	GreenWay Initiative
MDOT	Michigan Department of Transportation
MDNR	Michigan Department of Natural Resources
CFSEM	Community Foundation for Southeastern Michigan

Clinton River Trail Phasing Summary

Based on the Preliminary Site Development Cost Opinions

Community	2003	*	2004	*	2005	*	2006	*
Sylvan Lake	$ -	0%	$ -	0%	$ -	0%	$ 179,000	100%
Pontiac	$ 208,000	9%	$ -	0%	$ 829,000	36%	$ 1,266,000	55%
Auburn Hills	$ -	0%	$ -	0%	$ 530,000	100%	$ -	0%
Rochester Hills	$ 654,000	37%	$ 1,114,000	63%	$ -	0%	$ -	0%
Rochester	$ -	0%	$ 557,000	100%	$ -	0%	$ -	0%
Total	$ 862,000		$ 1,671,000		$ 1,359,000		$ 1,445,000	

Grand Total $ 5,337,000

* The percent indicated is the portion of each community's total project that is scheduled for that year

Summary Work by Year

2003
- For Rochester Hills, install new bridges, retrofit existing bridges, install road crossings, and 1.2 miles of trail. This portion of trail may be used to evaluate stabilized fines.
- MDOT to install bridge over I-75 in Auburn Hills.
- For Pontiac, surface trail between Bagley Street and Telegraph Road.

2004
- For Rochester Hills, complete trail installation and install staging areas and overlooks.
- For Rochester, install trail, road crossings, overlooks, and retrofit bridges.

2005
- For Pontiac, install downtown Pontiac improvements, road crossings and retrofit bridges.
- For Auburn Hills, install trail and road crossings.

2006
- For Pontiac, install trail, overlooks and staging areas.
- For Sylvan Lake, install trail and road crossings.

Notes:
- All costs are in 2003 dollars.
- Acquisition of northern spur railroad corridor is not included in this cost opinion.
- Rochester Hills has $600,000 already committed for construction ($400,000 MDOT-TEA + $200,000 Match)
- Pontiac has $190,000 already committed for construction ($152,000 MDOT-TEA + $38,000 Local Match)
- Rochester has $350,000 already committed for construction ($175,000 MDNR-LWCF + $175,000 Local Match)

9. Appendix

The Appendix includes the following documents:

- Clinton River Trail Memorandum of Understanding , Draft, February 20, 2003
- Economic Impact and Trail Usage Projections
- Clinton River Trail Kick-off Meeting with Steering Committee, Tuesday May 21, 2002 from 1:30 to 3:15 at the Auburn Hills Public Library
- Clinton River Trail Steering Committee Inventory and Analysis Meeting, Wednesday June 12, 2002 from 1:00 to 3:00 at the Auburn Hills Public Library
- Clinton River Trail Issues and Project Guidance Public Input Meeting, Tuesday, July 17, 2002 6:30-9:30 at the Auburn Hills Public Library
- Clinton River Trail Issues and Project Guidance Public Input Meeting, Tuesday, July 17, 2002 6:30-9:30 at the Auburn Hills Public Library
- Clinton River Trail Steering Committee Alternatives Meeting, August 14th, 2002 from 1:00-4:30 at the Auburn Hills Public Library
- Clinton River Trail Alternatives Open House Input, Tuesday, Sept. 23, 2002 4:30-7:30 p.m., in Pontiac and Wednesday, Sept. 24, 2002 4:30-7:30 p.m. in Rochester Hills
- Clinton River Trail Steering Committee Meeting Master Plan Direction, October 16th, 2002 from 1:00-4:00 at the Auburn Hills Public Library
- Clinton River Trail Presentation of Master Plan Draft to Steering Committee, February 6, 2003 from 1:00 to 3:15, Auburn Hills Recreation Center

The Project Website http://www.greenwaycollab.com/CRTMP.htm has an online version this report.

Clinton River Trail
Memorandum of Understanding

By and Among the Communities of Sylvan Lake, Pontiac, Auburn Hills, Rochester Hills and Rochester

DRAFT February 20, 2003

This Memorandum of Understanding between these five communities is for the purpose of clarification of the management of the Clinton River Trail. This Memorandum is intended to acknowledge a voluntary, cooperative association among the participating communities and shall not be construed to create or establish binding or enforceable commitments, responsibilities, burdens, obligations or liabilities on the part of any participating community. Any participating community may terminate its participation upon notice to other communities.

Continuous Trail

Each community agrees to provide and maintain a continuous trail through their community for non-motorized transportation and recreational purposes with trail connections at each community's borders.

Management and Maintenance

All issues of trail management, maintenance, and rule enforcement of each community's trail link will remain the sole responsibility and be under the total control of each local community.

Quarterly Meetings

Quarterly Clinton River Trail Meetings will be scheduled for representatives of the five local units of government for the purpose of cooperation in areas of mutual benefits.

Concurrence

The communities of Sylvan Lake, Pontiac, Auburn Hills, Rochester Hills, and Rochester concur with the intent of this Memorandum of Understanding.

_____ _____

City of Sylvan Lake Date

_____ _____

City of Pontiac Date

_____ _____

City of Auburn Hills Date

_____ _____

City of Rochester Hills Date

_____ _____

City of Rochester Date

Economic Impacts of the Clinton River Trail

The table on the following page is a projection of the yearly usage and the economic impacts the Clinton River Trail and other regional trails. These projections are based on a comparison of several trail studies around the country. The trail studies are also included in the table.

This research was conducted in 2001 as part of the Greenway Specialist project for the MDNR and the Rails-to-Trails Conservancy that targeted priority projects in the Southeast Michigan area for technical assistance.

Economic Impact and Trail Use Comparison and Projections

September 28, 2001

For the Clinton River Trail, the Macomb Orchard Trail, and the Stony Creek Metropark / Clinton River Park Link
Prepared by the Southeast Michigan Greenways Specialist Team

	Lafayette/ Moraga Trail	Little Miami Scenic Trail	Northern Central Rail-Trail	St. Marks Trail	Heritage Trail	Average of Studies	Clinton River Trail	Macomb Orchard Trail	Stony Creek MP Clinton R Pk Tr.
General Info:									
Length in Miles	7.6	62	20	16	28	26.32	18.9	23.9	9.6
Surface	Asphalt	Asphalt	Crushed Limestone	Asphalt	Crushed Limestone		Not Determined	Not Determined	Not Determined
First Portion Established	1976	1964	1984	1988	1982		Not Open	Not Open	Not Open
Study Date	1991	1995	1994	1991	1991		Not Applicable	Not Applicable	Not Applicable
Study Age	10	3	7	10	10				
Inflation Adjustment	1.31	1.09	1.2	1.31	1.31				
Nearest Metro Area	Oakland, CA	Cincinnati, OH	Baltimore, MI	Tallahassee, FL	Dubuque, IA		Pontiac, MI	Sterling Heights, MI	Sterling Heights, MI
Distance to Metro Area	6 Miles	6 Miles	14 Miles	5 Miles	2 Miles		Runs Through	8 Miles	2 Miles
Surrounding Land Uses	urban and suburban	rural with some suburban and urban	rural with some suburban	small communities and forests	rural farmland and wooded river valley		suburban	suburban and rural	suburban
Fees	$0	$0	$0	$0	$5/year $1/visit				
Adjacent Population:*									
Population within 2 miles	58,927	170,686	27,957	16,814	37,232	62,603	164,190	86,416	89,766
Average per mile	7,754	2,753	1,398	1,176	1,432	2,896	9,715	2,779	9,351
Population within 10 miles	1,237,178	1,283,509	426,571	204,121	89,636	650,243	1,068,500	625,932	921,877
Average per mile	162,787	20,702	21,329	12,758	3,840	44,283	63,226	26,190	96,029
Use Estimates:**									
Estimated Yearly Visits	400,000	305,303	457,540	170,000	135,000	293,569	338,000	358,500	192,000
Per Yearly Visits a mile	52,631.58	4,924.24	22,877.00	10,625.00	5,192.31	19,250	20,000	15,000	20,000
Per Avg. Pop. within 2 Miles	6.8	1.8	16.7	9.0	3.6	7.6	2.1	5.4	2.1
Per Avg. Pop. within 10 Miles	0.3	0.2	1.1	0.8	1.4	0.8	0.3	0.6	0.2
Economic Impacts:									
Average Trip Expenditures	$ 3.97	$ 13.54	$ 7.39	$ 11.02	$ 9.21	$ 9.03			
Adjusted to 2001 Dollars***	$ 5.20	$ 14.76	$ 8.86	$ 14.44	$ 12.07	$ 11.07	$ 6.00	$ 8.00	$ 6.00
Total Annual Expenditures (TAE)	$ 1,588,000	$ 4,133,603	$ 3,380,013	$ 1,873,400	$ 1,243,350	$ 2,443,713			
Adjusted to 2001 Dollars***	$ 2,080,280	$ 4,506,845	$ 4,056,016	$ 2,454,154	$ 1,628,789	$ 2,945,017	$ 2,028,000	$ 2,868,000	$ 1,152,000
% of TAE from Outside Area****	19%	23%	13%	21%	51%	25%	20%	25%	20%
TAE from "Outside" Area	$ 294,000	$ 950,775	$ 439,402	$ 400,000	$ 630,000	$ 542,835			
Adjusted to 2001 Dollars***	$ 385,140	$ 1,036,344	$ 527,282	$ 524,000	$ 825,300	$ 669,613	$ 405,600	$ 717,000	$ 230,400
Projections:									
Total Annual Exp. Per Mile	$ 208,947	$ 66,674	$ 169,001	$ 117,088	$ 47,821	$ 121,906			
Adjusted to 2001 Dollars***	$ 273,721	$ 72,675	$ 202,801	$ 153,385	$ 62,646	$ 153,045	$ 120,000	$ 120,000	$ 120,000
TAE per population within 2 miles	$ 26.95	$ 24.22	$ 123.55	$ 99.57	$ 33.39	$ 61.54			
Adjusted to 2001 Dollars***	$ 35.30	$ 26.40	$ 148.26	$ 130.44	$ 43.75	$ 76.83	$ 12.35	$ 43.18	$ 12.83
TAE per population within 10 miles	$ 1.28	$ 3.22	$ 7.92	$ 9.18	$ 12.45	$ 6.81			
Adjusted to 2001 Dollars***	$ 1.68	$ 3.51	$ 9.51	$ 12.02	$ 16.31	$ 8.61	$ 1.90	$ 4.56	$ 1.25

Notes:

* Population figures are based on 2,000 Census Data: within two miles is a proportional sum of of the census blocks, within ten miles is a proportional sum of census block groups.

** For the Little Miami Scenic Trail, 150,000 to 175,000 users were estimated for the Warren County Portion that is 33 miles long. This data was averaged and distributed for the length of the trail

*** Adjusted using the Consumers Price Index to 2001 dollars

**** Outside of county(s) or over 10 miles away

Calculated Field

Subjective Input

Clinton River Trail Kick-off Meeting with Steering Committee

Tuesday May 21, 2002 from 1:30 to 3:15
Auburn Hills Public Library

This was the first meeting of a Steering Committee that will oversee the development of a Master Plan as well as plans for maintenance and operations for the Clinton River Trail.

Attendance

Dan Keifer, Friends of Clinton River Trail
Mark Pompetzki, Friends of Clinton River Trail
Larry Falardeau, Oakland County Planning
Madhu Oberoi, City of Pontiac Community Development
Butch Finnegan, City of Pontiac Recreation
Brian Marzolf, Auburn Hills Parks and Recreation
Alan Buckmeyer, City of Rochester Hills Parks and Recreation
Derek Delacourt, City Rochester Hills Planning
Mike Hartner, City of Rochester Hills Parks and Recreation
Bruce Austin, City of Rochester Parks and Recreation
Philip Wells, MDNR Trailways Division
Norman Cox, The Greenway Collaborative, Inc.
Nancy Krupiarz, Rails to Trails Conservancy Michigan Field Office

Presentation

The meeting started with introductions of all present. Norm Cox then walked the group through a PowerPoint presentation, which outlined:

- The history of the Clinton River Trail Project as part of the Southeast Michigan Greenways Project
- Past progress on the project under the Greenway Specialist Project, done by the Greenways Collaborative, Inc. and Rails-to-Trails Conservancy under a contract with the Michigan DNR, including products in place which will start as a jumping-off point for this new phase of the project. Among the products were: Maps and cost estimates for each local jurisdiction along the trail, an implementation checklist for each jurisdiction, and an economic benefit and trail usage estimate.
- Rails to Trails Conservancy's role in the new phase of the project: Grant administrator, oversight of The Greenway Collaborative, Inc.'s work, and primary contact for questions and concerns about the interlocal agreement development.
- The Greenway Collaborative Inc.'s role in the new phase of the project: Master Plan development, assistance to Rails to Trails Conservancy on identifying maintenance issues and GIS analysis where needed to support the interlocal agreement, and primary contact for any design or construction questions
- The Steering Committee's role in the new phase of the project: to provide input and set project direction, to share extensive local knowledge of resources and issues, and to provide existing resources to help plan the project.

- The project timeline: Master Plan development - May, 2002 - January, 2003; Interlocal Agreement for Maintenance and Operations - May, 2002 - April, 2003
- Proposed Meeting format and schedule: two-hour meeting each for master plan and interlocal govt. discussion - 4 hours total. Having the two meetings on the same day would necessitate 1/2 day total per month.
- Next Meeting Agenda: For the Master Plan component, participants will take a "virtual tour" of the corridor, refine the inventory and analysis of existing conditions along the corridor, and analyze community master plans and zoning plans for inclusion and incongruities. For the Operations and Maintenance Plan component, participants will take a look at various models in existence and discuss alternative approaches.

Participants decided that the preferred meeting times would be 4 hours in the afternoon once a month, starting with lunch, and divided by a break. The tentative schedule of meetings for the rest of the year are as follows:

June 12th
July 10th
August 14th
September 11th
October 9th
November 13th
December 11th

Community Update

During the review of the accomplishments to date, each community gave an update on their trail segment:

Sylvan Lake – A representative of the community was not in attendance. It was believed that they are awaiting MDNR approval of their appraisal. The land is currently being held by the Trust for Public Land.

Auburn Hills - Trail is open to the public. New bridge over I-75 will be constructed by MDOT in FY 2003-2004. They are looking at a National Trails Day event.

Rochester Hills - Trail appraisal was approved by MDNR today, grant money to follow soon. Trail plans need to tie in with city plans and the Local Development Finance Authority District, a 140-acre parcel south of M-59. (M-59 will be realigned along Adams Rd. as part of it.)

Rochester - The bridges are passable. They have cleaned up the corridor and are getting maintenance plans in order. Grants for Land and Water Conservation, Natural Resources Trust Fund, and TEA-21 are pending for final surfacing.

Pontiac - They have identified a preliminary route for the non-rail corridor part of the trail. They will need to seek easements across drain property; therefore, the Drain Commissioner should be added to the Steering Committee list. The Trust for Public Land is currently holding the property.

Other Business

- A concern was raised about interfacing with local elected officials. Although they are on the mailing list, a special effort will be needed to keep them informed. Norm mentioned that Nancy and he would be available to make presentations to planning commissions and city councils as needed.

- A need for the participation of the Oakland County Road Commission on the Steering Committee was also mentioned because of the importance of the road crossings. It was noted that they were invited.

- Community input was discussed. It was decided to move the public input workshops around to different communities, to look into Cable TV accommodation and other public relations methods for getting the word out.

- In order to prepare for the next meeting, Norm Cox will be making appointments to visit each community in the next month to collect information on: community master plans, recreation plans, road project plans and any other plans that my impact the project.

- He would also appreciate any access to maps with GIS coverage, aerial photos, utility corridor info, parcel ownership and planned developments information.

- He also asked the Committee to be thinking about possible locations for public workshops, steering committee meetings, promotion options (including newsletter deadlines) and potential project killers.

- The importance of defining the road crossings in the master plan was discussed

- Norm clarified that the location and general design of staging areas would be apart of the Master Plan

- Issues that need to be addressed soon is interim improvements and maintenance for the trail as it becomes public property.

- The meeting summary and presentation will be posted on The Greenway Collaborative Inc.'s website, www.greenwaycollab.com

The Next Meeting will be held on Wednesday, June 12th at the Auburn Hills Community Center (Brian Marzolf to arrange the final location).

Clinton River Trail Steering Committee Inventory and Analysis Meeting

Wednesday June 12, 2002 from 1:00 to 3:00
Auburn Hills Public Library

This was the second meeting of a Steering Committee that will oversee the development of a Master Plan for the Clinton River Trail.

Attendance:

Brian Blazing, Road Commission for Oakland County
Norman Cox, The Greenway Collaborative, Inc.
Larry Falardeau, Oakland County Planning and Economic Development Department
Mike Hartner, Rochester Hills Parks Department
Dan Keifer, Friends of Clinton River Trail
Nancy Krupiarz, Rails to Trails Conservancy – Michigan Field Office
Brian Marzolf, Auburn Hills Parks Department
Bob Meyers, Friends of Clinton River Trail
Jessica Pitelka Opfer, Clinton River Watershed Council
Daniel Rhodes, City of Pontiac
Chip Smith, Johnson Hill Land Ethics Studio
Bill Stark, Paint Creek Trail Commission

Agenda:

1. Review of the project schedule
2. Review of key issues
3. Tour of the corridor with feedback
4. Interim improvements
5. Homework
6. Next month's public workshop
7. Presentation by Chip Smith of Johnson Hill Land Ethics Studio on the County-wide Greenway Effort

Presentation

The meeting started with introductions of all present. Norm Cox then walked the group through a PowerPoint presentation, which covered the following:

- Issues and options for the following elements:
    - Trail / Road Intersections
    - Bridges (or lack thereof)
    - Corridor Conditions
    - Adjacent Facilities and History
    - Surrounding Non-motorized Network
    - Potential Staging Areas

- Planning and Administrative Issues
- Institutional Capacity

- A "Virtual Tour" of the corridor looking a air photos and ground level photographs of the corridor and trail/road intersections. This forum was used to share observations to date and collect information from the Steering Committee.

- Interim Improvement to the trail were discussed including
  - Obstructing access by vehicular traffic
  - Signs for no dumping and list fine
  - Patrol for dumping and motorized use
  - That Trust for Public Lands property should marked no trespassing
  - Consider no trespassing signs on all unimproved segments especially those without bridge decking and railings
  - Mark as future trail / parkTasks for the Steering Committee Members were discussed including:
  - Review all easements
  - Install temporary signage
  - Install temporary access control
  - Investigate subsurface contamination and soil conditions
  - Remove debris
  - Public relations program regarding access and dumping on the trail
  - Help make contact with adjacent businesses with potential shared parking
- Next Month's Public Workshop was discussed:MMBA, CRT, MOT, list serves would be a good venue to reach a large number of people who are already interested in the trail
  - City websites could also be used
  - The Oakland County Press and the Free Press would also be contacted by Nancy

- Chip Smith of Johnson-Hill/Land Ethics Studio gave an update on how the County-wide Trail Planning Effort was progressing

Clinton River Trail Issues and Project Guidance Public Input Meeting

Tuesday, July 17, 2002 6:30-9:30
Auburn Hills Public Library

This was the first meeting to gather public input for the Master Plan for the Clinton River Trail. Thirty-one people attended the public input meeting.

Agenda:

Review of project schedule
Tour of the corridor with feedback
Small group discussions
Questions and Comments
Announcements

Presentation

The meeting started with introductions of all present. Norm Cox then walked the group through a PowerPoint presentation, which outlined:

- The project timeline
- A "Virtual Tour" of the Clinton River Trail corridor- presentation of existing conditions, issues and challenges faced along the corridor including location of staging areas, road crossings, and potential land swapping locations in the future. Points of notice included:

Points of notice raised during the meeting:

- The trail will cross Juniper street in Auburn Hills, rather than Cherrylane Lane, St. as stated in the presentation.
- The mobile park home in West Rochester Hills (just south of Suburban Softball) is a senior community.
- It is critical that there be access to Leach Road available along the West Rochester Hills area of the corridor.
- There is a nice potential trail access and open space north of Rochester College.
- The area north of Bloomer Park between the river and the Clinton River Trail corridor is private property owned by Ledica, not public open space as stated in the presentation.

After the presentation, small group discussions were initiated:

Participants were asked to fill out a worksheet of their thoughts on the trail development. Areas of focus included their hopes and concerns about the trail, as well as what activities they envision the trail being used for. After filling out the worksheets, participants were asked to exchange their thoughts with the other people sitting at their tables. At the end of the allotted discussion time (15 minutes), each table reported to the larger group several of the similar hopes, concerns, and activities that surfaced during the discussions. Each group recorded a summary of their table's discussion on the worksheet provided.

- After the small group discussions, Norm briefly presented an overview of alternative approaches that can be taken in the development of the trail. These alternatives will be further explored in the next phase of the project according to the feedback received during this public workshop.

- Norm asked for any additional comments or questions:
    - Michael Sproul, a representative from the League of Michigan Voters advocated for continued support of bike trails around Southeast Michigan.
    - Nancy Krupiarz of the Rails-to-Trails Conservancy urged participants to support Proposal 2 in the August 6th primaries.
    - Dan Keifer announced several events related to trail development around the region.

The Next Meeting will take place at Auburn Hills Public Library on September 11, from 6:30-8:30.

The following pages are the results of the small group process.

Individual Thoughts

Hopes:	**Tally**
Space for active recreational opportunities, uninterrupted stretch for exercise/linear greenway	11
Preservation of open space/keeping it natural/protection of natural resources Increase awareness of nature-Increase citizen protection of nature- increase greenspace	10
Safety	6
Links to parks, greenspace and nature centers	5
Passive recreation-restorative opportunities- connection with nature-Rest and relaxation	5
Bring communities together/build community loyalty/Promote community	4
River access	4
Encourage Non-motorized transportation as an alternative to cars	4
Interpretive learning experiences	4
Connection to other trails	3
Link neighborhoods and communities	2
Shopping/dining opportunities	2
Sustainable funding/cost	2
Improve quality of life	2
Social- meet new people	2
Revenue for area businesses	1
Landscaping	1
Similar to Paint Creek Trail	1
Impetus for sustainable development	1
Maps	1
Low maintenance	1
Good signage	1
Gateways	1
Scouts	1

Individual Thoughts

Concerns	**Tally**
Busy road crossings	8
Adequate restroom facilities, staging areas, parking, signage,	7
Lack of funding for maintenance and improvements, or development	7
Surfacing-pro fines	6
Debris/trash	5
Consistency along the trail- surface, signage, width	4
Access	4
Environmental impacts, erosion control	3
Surfacing-pro asphalt	2
Community involvement and upkeep-maintenance	2
Crime	2
Concerned trail will preclude on road cycling facilities	1
Wants adequate trail connections	1
Road crossings vs. maintaining traffic flows	1
Personal safety	1
Reliance of sidepaths	1
Making trail as wide as possible	1
Making bridges with wood-not cyclone fencing	1
Concern of lack of support from adjacent property owners	1
Brownfields	1
Use of existing parklands	1
Knowledge, advertising of trail	1
Would like a trail authority overseeing trail	1
Accessibility of surface	1
Liability	1
Buffers along residential areas	1
Over-maintenance	1
Emergency phones	1
Burden on the community	1
Community control of trail	1
Misuse by motor vehicles	1

Individual Thoughts

Activities	**Tally**
Biking	16
Walking	11
Interpretive nature walks/wildlife viewing/ Learning history of area/ Learning about plants and animals in the area/ Restoration/passive activities/ Enjoying scenery	10
Running	6
X-country skiing	6
Open Space/river-based opportunities	4
Commute/alternative to accessing communities by car	4
Inline Skating	3
Picnicking	2
Riding to other trails	2
Skateboards	2
Camping	2
Fishing	2
Walks to get ice cream	2
Helping with landscaping, using native plants	1
Riding to the velodrome	1
Exploring greenspace	1
Visible trail markers and walks	1
Horse-back riding	1
canoeing	1
Charity-fund raisers	1
Snowshoing	1
Performed clean-ups	1
Walk dogs	1
Winter walks	1

Table Summaries

Hopes:	**Tally:**
Diverse Recreation and exercise opportunities	4
Connecting communities	3
Off-road transportation corridor	2
Learning opportunities	2
Preserve open space/natural areas. Utilize trail corridor as a habitat corridor	2
Maps	1
Access to natural areas	1
Concerns:	**Tally:**
Road crossings	4
Parking	3
Restrooms	3
Sustainable funding/cost to communities	3
Trash, Garbage cans	2
Access	2
Maintenance	2
Staging areas	1
Maintenance	1
Consistent and user friendly design	1
Personal safety	1
Knowledge about site	1
Signage, Visible trail markers	1
Activities:	**Tally:**
Cycling	4
River activities	4
Walking/hiking	3
Running	2
Restorative activities/nature watching	2
Charity fundraising events/special events	2
Picnicing	1
Community involved landscaping	1
Rollerblading	1
Commuter corridor	1
Winter activities (x-country skiing, snowshoeing)	1

Clinton River Trail Steering Committee Alternatives Meeting

August 14th, 2002 from 1:00-4:30
Auburn Hills Public Library

The purpose of this meeting with the Clinton River Trail Steering Committee was to review the results of the Public Input meeting and to share preliminary options developed for the trail.

Attendance:

Norman Cox, The Greenway Collaborative, Inc.
Nancy Krupiarz, Rails-to Trails Conservancy
Clea Rome, The Greenway Collaborative, Inc.
Brian Marzolf, City of Auburn Hills Parks and Recreation
Madhu Oberoi, City of Pontiac Community Development
Mike Hartner, City of Rochester Hills Parks and Recreation
Sue Malone, Oakland County Road Commission
Bob Myers, Friends of the Clinton River Trail,
Mark Van Rheenen, Rochester College
Butch Finnegan, City of Pontiac Parks and Recreation
Bruce Austin, City of Rochester Parks and Recreation

Presentation:

Norm Cox's presentation to the group included:

- Review of the results of public input
- Discussion of the preliminary options developed for trail configuration
- trail surfacing- asphalt, limestone fines, slag and resin paving
- Possible staging area locations
- Intersection alternatives and pedestrian safety issues
- Interpretive themes including People and the River and The River System

After Norm's presentation, Nancy Krupiarz reviewed the research she has been doing on various examples of managing multi-jurisdictional trails. She will continue to gather more information on examples from around the country and present them next meeting.

Questions asked/concerns raised during the meeting:

- (Regarding the resin paving product) Can crumb rubber be used with the resin product?
- Is the resin product plowable?
- Are there local sources available for the resin product?
- What is the minimum AASHTO bridge width?
- Could we run the trail right thru the intersection at Primary and Grey and mark it with special hatching?

- Will the Master Plan contain phasing and multiple options? (Mike Hartner stressed including multiple options and not just one solution to each problem intersection).
- Should the name be changed to the Clinton River Rail Trail? There was general agreement from the people present that the name Clinton River Trail is by no means set in stone and is open for further discussion. However, it was also agreed that the name change should be looked into in terms of liability issues, etc. (i.e. does designating it as a rail-trail vs. path open it up to being responsible for incorporating specific standards?) Changing the name would also highlight the railroad history of the trail- the railroad theme should be added to the list of interpretive theme options.

Points of notice raised during the meeting:

- The convention center parking lot in Pontiac is a future development site.
- Regarding the Opdyke Rd. staging area- the triangle sections of land there will be available for use.
- There are plans to enhance the Adams Rd. entrance to the trail and including spots for several public parking spaces is an option.
- The Road Commission would like to receive and review a copy of the proposed changes.
- The 2 roads at Primary and Grey do need to connect.
- Sue Malone (Road Commission) urged us to develop the alternative of bringing the trail up to the intersection at Crooks and Hamlin Rd. instead of just developing the refuge island alternative.
- Hamlin Road has plans for a boulevard but it will not be developed in the immediate future.
- The road at the Rochester College crossing is used mostly be employees but it does also get some use by students going to the gym facilities back there. Mark Van Rheenen from Rochester College tentatively said that routing the trail along there was “worth exploring”.
- Trail advocates involved with developing the trail favor limestone fines, however, the general public favors asphalt paving. It was agreed by the group that more public input is still needed and perhaps getting the press involved in advertising the meetings and some of the issues is a way to help the public become more involved.

Norm’s comments (a to-do list based on points raised during the presentation):

- Talk to the public school district in Sylvan Lake about a possible staging area near the abandoned school.
- Look into the parking capacity of some of the shared parking facilities along the Pontiac portion of the trail (Perhaps talk to park and Rec. people about this…)
- Review with Pontiac officials about the water treatment plant and the plans for the Silver Dome.
- Talk with Pontiac/Auburn Hills Public Schools about shared parking and staging area facilities.
- Send sketches of proposed staging area to Rochester College.

Clinton River Trail Alternatives Open Houses

Tuesday, Sept. 23, 2002 4:30-7:30 p.m., Pontiac
Wednesday, Sept. 24, 2002 4:30-7:30 p.m., Rochester Hills

The purpose of the Open Houses was to have an informal setting at two locations over an extended period of time where people could drop by to review the work to date and provide input. The Pontiac Forum was held at the Downtown Pontiac Studio, the Rochester Hills Forum was held at the Nature Center.

At each location approximately fourteen 30" x 40" color display boards that discussed various issues and options. These display boards were placed around the room. These displays included:

- Trail Overview Map
- Downtown Pontiac Detail
- Trail Surface and Design – Two Display Boards
- Trail / Road Intersections – Five Display Boards
- Mid-block Crosswalks Design – Two Display Boards
- Entry Signage and Access Control
- Staging Areas
- Interpretive Signs

There were formal input sheets for the interpretive options, the trail entry and access control options, and trail surface options. Informal input was gathered on all of the other. Thirty-three people signed in at the Rochester Hills Open House, twelve people signed in at the Pontiac Open House. In both cases there were people in attendance who did not sign in. The following is a summary of the input.

Interpretive Themes Proposed:

The River System: * **
Geologic History **
Source of river
The watershed
Importance of tributaries
Floodplains and floodways
River wildlife *

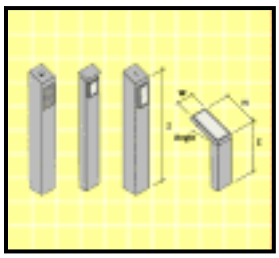
People and the River: * * *
How people have changed the river
Mill History
History of Clinton-Kalamazoo canal
Native American trails *
Railroad history
Development impacts

* signifies the person specifically mentioned a preference for this theme

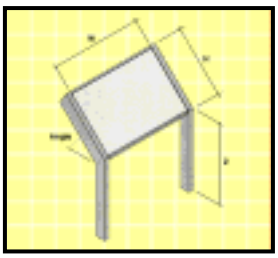
Additional theme comments:

"Color-coded multiple themes"
"Environmental impacts and leave no trace" interpretation
"How about city histories?"
"Emphasize history and natural characteristics"
"I like the idea of historical backgrounds"

Interpretive Sign Options



A. ****



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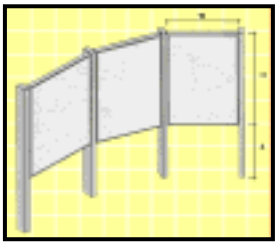

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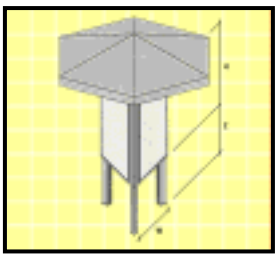

D. **

* signifies the person mentioned a preference for this sign design

- " Prefer Paint-creek trail- type sign"
- "Paint creek trail sign with map is nice."

Additional comments:

- "Mile markers are helpful to check your progress while hiking and biking"
- "Have plexiglass covering interpretive message , prevents permanent damage. Plexiglass can be replaced if necessary"
- "Mile markers are definitely needed. Any signs are better than nothing"
- "This could be created using students as designers and school/ scout/ community groups
- to maintain and adopt-a-sign program"
- "I like milemarkers of some type."

Asphalt Pavement Input

Strongly Prefer	Prefer	Neutral	Dislike	Strongly Dislike	COMMENTS: **Pro:**
1	*3*	*0*	*0*	*0*	*cleaner than fines, less expensive than resin*
5	1	1	1	4	*much cleaner, safer (i.e. no ruts)*
					Necessary for Pontiac sections
					in downtown areas and staging, then to fines on trail
					cleaner safer surface for biking and walking
					known installation methods
					low maintenance,long life, better than fines
					We have Paint Creek for mtn. bikers,
					lets have something for road bikes
					Con:
					too hard for runners, cost and speed
					cracks and breaks too soon- hard to repair
					pollutes, falls apart, not natural
TOTAL					costly maintenace, adds too many users
6	**4**	**1**	**1**	**4**	

Fines Pavement Input

Strongly Prefer	Prefer	Neutral	Dislike	Strongly Dislike	COMMENTS: **Pro:**
0	*1*	*0*	*0*	*0*	*In trail areas but asphalt in downtown areas*
7	2	0	1	1	walkers can hear bikes coming
					keeps bike speeds down
					keeps rural atmosphere
					Keeps cost, maintenance, users in check
					best all around
					better for dirt bikes, better for feet when walking,
TOTAL					**Con:**
7	**3**	**0**	**1**	**1**	gets into cranks and sprokets, messy, dirty bikes

Resin Binder Pavement Input

Strongly Prefer	Prefer	Neutral	Dislike	Strongly Dislike	COMMENTS: **Pro:**
1	0	0	1	0	preferred to asphalt
2	3	2	1	1	nice, but too costly
					not familiar- I would like to see a sample
					like to know more
					good for road or mtn. bikes
					looks real swell, always the best
TOTAL					**Con:**
3	**3**	**2**	**2**	**1**	too expensive, cost and speed concern, looks costly

A. Signs on Concrete Base/ No Access Control Input

Strongly Prefer	Prefer	Neutral	Dislike	Strongly Dislike	COMMENTS:
					can we put concrete signs with no motor acess?
0	*2*	*0*	*0*	*1*	like signage in A/like bollards/ perhaps combine
3	1	0	3	0	**PRO:**
					clean and clear access
					Add bollards and side congrgation area at access pts
					less confusion to vehicle traffic
					like signage at side of trail/bollards ok
					CON:
					this would promote motorized vehicles
TOTAL					can't control motorized access
3	**3**	**0**	**3**	**1**	cost

B. Signs on Posts / Central Bollard Input

Strongly Prefer	Prefer	Neutral	Dislike	Strongly Dislike	COMMENTS:
					PRO:
0	*0*	*0*	*0*	*0*	okay away from road
2	4	2	0	0	on secondary 2 lane crossings, less impact
					limits access, natural
TOTAL					**CON:**
2	**4**	**2**	**0**	**0**	get rid of central bollards- hazard to bikers/ hikers

C. Signs on Gates / Side Bollards Input

Strongly Prefer	Prefer	Neutral	Dislike	Strongly Dislike	COMMENTS:
					PRO:
					to keep safer so there are not motorized vehicles
1	*0*	*0*	*0*	*0*	*keeps with natural resources*
2	0	2	2	1	for heavy crossings/ safety issues
					okay in areas away from road
					seems to be best alternative
					CON:
					ugly
					don't like the signs on gates, obstructive
TOTAL					cost
3	**0**	**2**	**2**	**1**	maintenance problem, ugly

Pontiac Public Mtg., Sept. 23, 2002

Rochester Hills Public Input, Sept. 23, 2002

Clinton River Trail Steering Committee Meeting Master Plan Direction

October 16th, 2002 from 1:00-4:00
Auburn Hills Public Library

The purpose of this meeting with the Clinton River Trail Steering Committee was to review the results of the Public Input Alternatives meeting and to share progress on development of the Master Plan

Attendance:

Norm Cox, The Greenway Collaborative, Inc.
Nancy Krupiarz, Rails-to Trails Conservancy
Clea Rome, The Greenway Collaborative, Inc.
Brian Marzolf, City of Auburn Hills Parks and Recreation
Mike Hartner, City of Rochester Hills Parks and Recreation
Bruce Austin, City of Rochester Parks and Recreation
Larry Falardeau, Oakland County Planning and Economic Development
Brian Blazing, Oakland County Road Commission
Bob Meyers, Friends of the Clinton River Trail
Butch Finnegan, City of Pontiac Parks and Recreation

The meeting began with a discussion led by Nacy Krupiarz and Larry Falardeau about the development of a county Trails Advisory Committee (TAC). The topics of discussion included the nature of the committee and its duties and responsibilities, and how the CRT might be represented at the TAC, as this group is a multi-jurisdictional trail and not every jurisdiction can be individually represented. Mike Hartner volunteered to sit on the committee initially and speak for the group. Representation for the CRT will rotate among the various cities and jurisdictions involved.

Next, Nacy Krupiarz reviewed the information she has collected on multi-jurisdictional governing agencies. No existing example covered all the issues of the trail so it was agreed that the best approach is for Nancy to draft a charter for the group and a meeting will be arranged for the committee to discuss and revise it.

Norm and Clea followed up with a presentation on the progress of the Master Plan.
The presentation to the group included:

- Review of the results of public input
- Proposed solutions for the trail-road intersections
- Staging area locations
- Trail surfacing
- Signage and interpretive Themes

Points of notice raised during the meeting:

- Check on thresholds for resin pavement
- Zig-zag median islands should be included because they provide more room for stacking.
- Check with DNR about rerouting of the Beaudette Park road because it will infringe on trail right-of-way.
- MDOT may own the Opdyke Road staging area
- Hamilin Road is scheduled for widening at 2006 at the earliest, 2007 is more likely.
- Dequindre Rd. is the county line and coordinating reconstruction of the road could be difficult. There was a suggestion to raise the road and bring the trail junctions underneath.
- The right-of-way at Diversion Street in Rochester has been sold and there is no longer room for a staging area there.

The Next Meeting was arranged for Nov.13th from 1:00-4:00 at the Auburn Hills Public Library to discuss budget and pricing before the public meeting, but this schedule has since been revised.

Clinton River Trail Presentation of Master Plan Draft to Steering Committee

Thursday, February 6, 2003 from 1:00 to 3:15
Auburn Hills Recreation Center

This was a meeting to review the first draft of the Master Plan for the Clinton River Trail.

Attendance

Dan Keifer, Friends of Clinton River Trail
Larry Falardeau, Oakland County Planning
Madhu Oberoi, City of Pontiac Community Development
Brian Marzolf, Auburn Hills Parks and Recreation
Mike Hartner, City of Rochester Hills Parks and Recreation
Bruce Austin, City of Rochester Parks and Recreation
John Martin, City of Sylvan Lake
Mark Van Rheenen, Rochester College
Norman Cox, The Greenway Collaborative, Inc.
Clea Rome, The Greenway Collaborative, Inc.
Nancy Krupiarz, Rails to Trails Conservancy Michigan Field Office

Meeting Agenda

The meeting began with a discussion of the proposed name for the trail. Legal concerns about the classification of a "trail" or "path" vs. the designation of "rail-trail" were discussed. It was decided by consensus to call the trail the Clinton River Trail.

Next, the committee page by page covered the document and any requests for changes were noted. Most changes consisted of typos and small rewording requests. Several adjustments to the location of staging areas and some trail/ road intersections were requested. Major changes that were requested included:

- Adams Road staging area should be noted as " Future Adams Road Staging Area" and a new staging area at Hamlin Road with room for 25 cars should be added.
- Opdyke Road staging area should be switched to the Auburn Hills side of Opdyke Road.
- Refuge island at Avon Road should be shortened.
- A new map displaying overlook locations be included in the Bridges and Overlooks section of the Plan.
- A generic cross-section for the trail and shared-use path should replace the one specifying thicknesses of materials to be used that is currently in the report.

It was decided that the next step after the requested corrections and changes were made would be to forward a "Final Draft" of the document with the proposed changes and Powerpoint presentations focusing on the relevant part of the trail to the members of the steering committee for use in presenting the draft to their individual city councils. A public celebration and ribbon cutting ceremony will be scheduled at a later date.

After much discussion, it was decided by the committee to include the existing "Memo of Understanding" as an appendix to the final Master Plan. The committee discussed the possibility of including a more detailed "laundry list" of items to be resolved by on-going meeting of the committee, however, it was decided that inclusion of that list is not appropriate at this time.